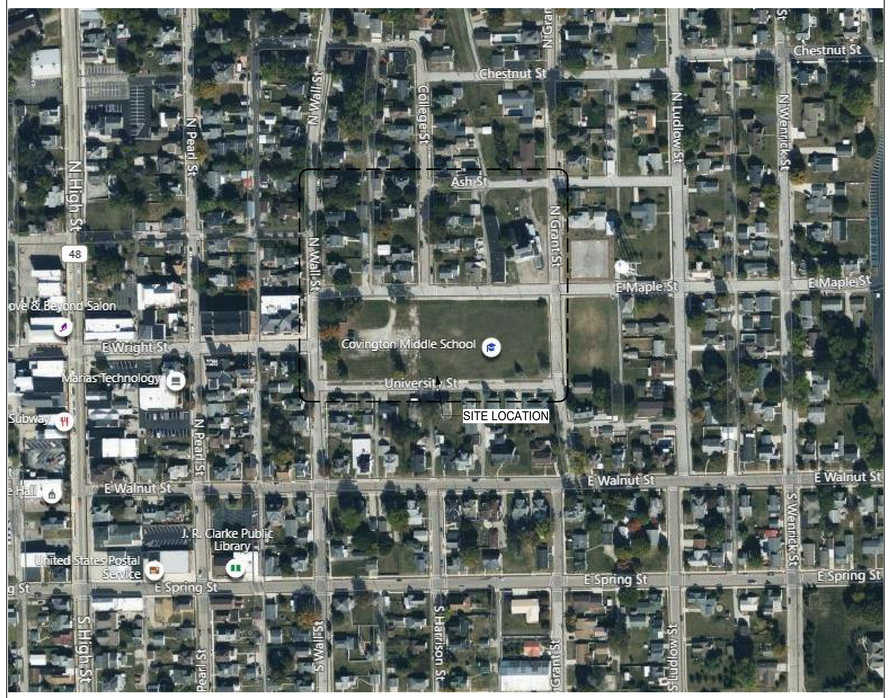
LOCATION MAP



N

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - PAVILION
25 N. GRANT ST., COVINGTON, OH 45318

CONTRACT "A"

ARCHITECT & ENGINEER:

POGGEMEYER DESIGN GROUP, INC.
A KLEINFELDER COMPANY
Engineers | Architects | Planners | Interior Designers | Surveyors

POGGEMEYER DESIGN GROUP
A KLEINFELDER COMPANY

1168 North Main Street
Bowling Green, Ohio 43402

Tel. (419) 352-7537
Fax (419) 353-0187

DRAWING LIST

CODE REVIEW

PROPOSED BUILDING CODE REVIEW

2017 OHIO BUILDING CODE

DESCRIPTION	REQUIREMENT/ACTUAL	REF/ NOTES
OCCUPANCY CLASSIFICATION	A-3	304, 312
ALLOWABLE AREA	6,000 S.F.	507
ACTUAL AREA (GROSS)	PAVILION = 4,000S.F.	
ALLOWABLE HEIGHT	40 FT.	TABLE 504.3
ACTUAL HEIGHT	18'-4" FT. AT PEAK	
CONSTRUCTION CLASSIFICATION	VB	602.5
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS	STRUCT FRAME = 0 HR.	TABLE 601
	BEARING WALLS (INT & EXT) = 0 HR.	
	FLOOR CONST. = 0 HR	
	ROOF CONST. = 0 HR	
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE	0 HOUR = X ≥30 FEET	TABLE 602
AUTOMATIC SPRINKLER SYSTEM	NOT REQUIRED	
MANUAL FIRE ALARM SYSTEM	NOT REQUIRED	907
OCCUPANT LOAD	RESTROOM/PAVILION - OPEN	TABLE 1004.1.1

CONTRACTOR NOTES:

- CONTRACTOR MUST CARRY THIRD PARTY TEST AGENCY COSTS.
- CONTRACTOR MUST PERFORM ONE FIELD TEST FOR THE 1,000 FEET IF EACH KIND OF SEALANT USED.

REVISIONS

DATE	DESCRIPTION
08/19/2022	ISSUED FOR ODNR REVIEW
08/22/2022	ISSUED FOR BIDS & PERMIT
09/30/2022	ISSUED FOR REBID
01/16/2023	ISSUED FOR RE-PERMIT & REBID

VILLAGE OF COVINGTON

SCHOOLHOUSE PARK - PAVILION

25 N. GRANT ST., COVINGTON, OH 45318

JOB NO. 20225751

STATE OF OHIO
SAEED S. HAMIZADEH
ARC.0413693
REGISTERED ARCHITECT

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 PICTOGRAM
- 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 5/8" 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

INTERNATIONAL SYMBOL OF ACCESSIBILITY

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 1/4" MIN. TO 2" MAX. NON CIRCULAR HANDRAILS SHALL HAVE A PERIMETER DIMENSION OF 4" MIN. TO 6 -1/4" MAX. AND A CROSS SECTION DIMENSION OF 2 -1/4" MAX. THE SPACE BETWEEN THE WALL AND THE GRAB BAR SHALL BE 1 -1/2" MIN. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

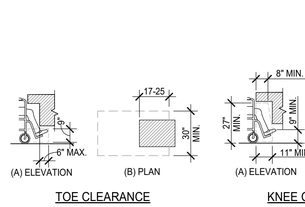
ALL GRAB BARS AND LAVATORIES SHALL BE ABLE TO WITHSTAND 250 LB.

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

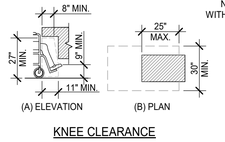
CONTROLS AND OPERATION MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NOT GREATER THAN 5 LB.

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.

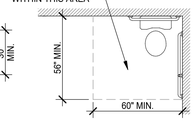
VISUAL ALARM SIGNAL APPLIANCES SHALL BE INTEGRATED INTO THE BUILDING OR FACILITY PLACED 85 IN. ABOVE THE HIGHEST FLOOR LEVEL WITHIN THE SPACE OR 6 IN. BELOW THE CEILING, WHICHEVER IS LOWER.



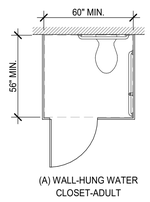
TOE CLEARANCE

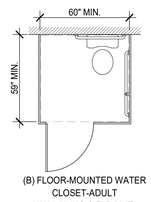


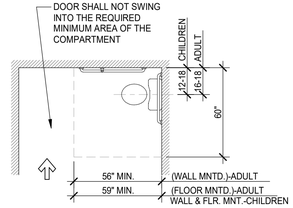
KNEE CLEARANCE



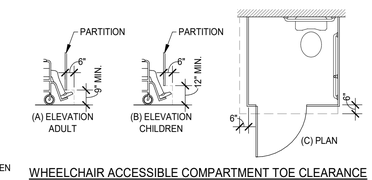
SIZE OF CLEARANCE FOR WATER CLOSET



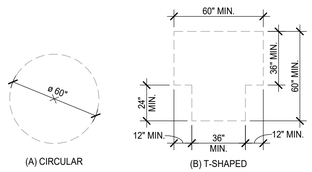




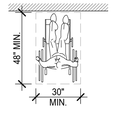
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENTS

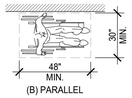


WHEELCHAIR ACCESSIBLE COMPARTMENT TOE CLEARANCE

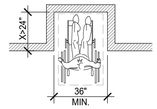


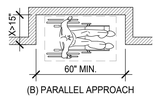
WHEELCHAIR TURNING SPACE



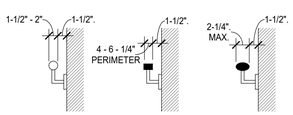


POSITION OF CLEAR FLOOR SPACE

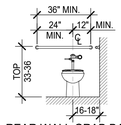




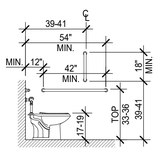
MANEUVERING CLEARANCE IN ALCOVE



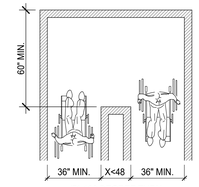
HANDRAIL CROSS SECTION

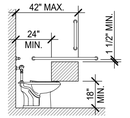


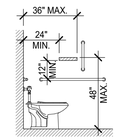
REAR WALL GRAB BAR FOR WATER CLOSET

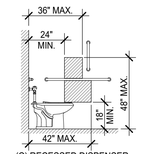


SIDE WALL GRAB BAR AND SEAT HEIGHT FOR WATER CLOSET



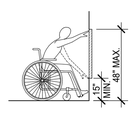


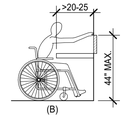




DISPENSER OUTLET LOCATION

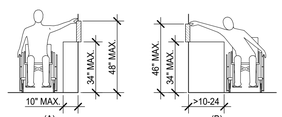
HEIGHT OF LAVATORIES AND SINKS



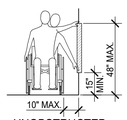


UNOBSTRUCTED FORWARD REACH

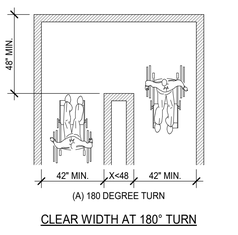
OBSTRUCTED HIGH FORWARD REACH

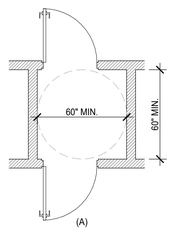


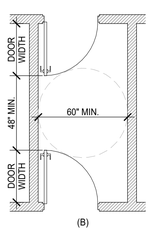
OBSTRUCTED HIGH SIDE REACH

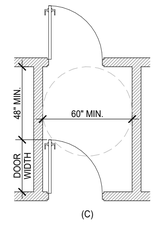


UNOBSTRUCTED SIDE REACH

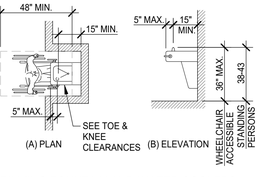




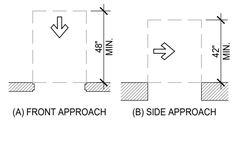




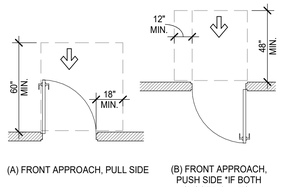
TWO DOORS IN A SERIES

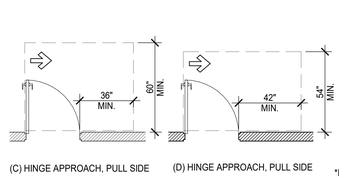


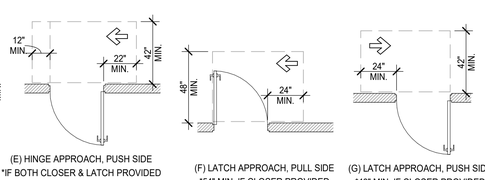
DRINKING FOUNTAIN AND WATER COOLERS



MANEUVERING CLEARANCE AT DOORWAYS WITHOUT DOORS







MANEUVERING CLEARANCE AT MANUAL SWING DOORS

TOILET ROOM FIXTURE MOUNTING HEIGHTS AND NOTES

MK	DESCRIPTION	MNTG. HGT.	REMARKS
AT	ACCESSIBLE HEIGHT TOILET	17" - 19"	TOP OF SEAT
AU	ACCESSIBLE HEIGHT URINAL	17" max.	TOP OF BOWL
BCS	BABY CHANGING STATION	34" max.	TOP OF BED (OPEN POSITION)
EWC	ELECTRONIC WATER COOLER	36" max.	SPOUT HEIGHT
FD	FLOOR DRAIN	--	SEE PLUMBING DRAWINGS
FX/FEC	FIRE EXTINGUISHER / FIRE EXTINGUISHER CABINET	48"	TOP
GB	STAINLESS STEEL GRAB BAR - LENGTH NOTED ON DWG.	33-36" | 39-41"	TOP OF HORIZONTAL BAR | BTM OF VERTICAL BAR
HD	AUTOMATIC HAND DRYER	35"	FLOOR TO BOTTOM OF DRYER
LAV	LAVATORY	34" max.	TOP OF RIM / PROTECT PIPES
M	S.S. FRAMED MIRROR (SIZE AS NOTED ON DWGS.)	40" max.	BTM. EDGE OF REFLECTION SURFACE
PT	PAPER TOWEL DISPENSER	48" max.	TO DISPENSER OPENING
TSC	TOILET SEAT COVERS	--	SEE DISPENSER OUTLET LOCATION DETAILS
SD	SOAP DISPENSER	40"	TO OPERABLE PART
SNWR	SANITARY NAPKIN WASTE RECEPTACLE	--	SEE DISPENSER OUTLET LOCATION DETAILS
TP	TOILET PAPER DISPENSER	--	SEE DISPENSER OUTLET LOCATION DETAILS
DTP	DOUBLE TOILET PAPER DISPENSER	--	SEE DISPENSER OUTLET LOCATION DETAILS
ST	STANDARD HEIGHT TOILET	15"±	TOP OF BOWL
SU	STANDARD HEIGHT URINAL	24"±	TOP OF BOWL

NOTE: MARKS MAY NOT BE USED IN PROJECT

REV.	DATE	DESCRIPTION
4	01/16/2023	ISSUED FOR RE-PERMIT & REBID
3	09/30/2022	ISSUED FOR REBID
2	08/22/2022	ISSUED FOR BIDS & PERMIT
1	08/19/2022	ISSUED FOR ODNR REVIEW

POGGEMEYER DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - PAVILION
25 N. GRANT ST., COVINGTON, OH 45318

TYPICAL ADA DETAILS

DRAWN BY	CHECKED BY
SJM	SSH

STATE OF OHIO
SAEED S. HAMIZADEH
ARC.0413693
REGISTERED ARCHITECT

G001

DATE
1/17/2023
1:48:31 PM
PROJECT NUMBER
20225751

EXISTING LEGEND

- EXISTING MAJOR CONTOUR (625)
- EXISTING MINOR CONTOUR (624)
- EXISTING SPOT ELEVATION (673.85)
- RIGHT-OF-WAY
- EDGE OF PAVEMENT
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERLINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELECOMMUNICATIONS
- EXISTING CATCH BASIN
- EXISTING CURB INLET
- EXISTING SANITARY MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING POWER POLE

GRADING LEGEND

- EXISTING MAJOR CONTOUR (930)
- EXISTING MINOR CONTOUR (929)

BENCHMARK

THE VERTICAL DATUM IS BASED ON NAVD88 AS OBSERVED FROM CONTINUALLY OPERATED BASE STATION MANAGED BY OHIO DEPARTMENT OF TRANSPORTATION.

THE COORDINATES ARE REFERENCED TO OHIO STATE PLAN GRID COORDINATES OH-S NAD83 (2011).

SITE BENCHMARK #1
SOUTH BONNET BOLT ON FIRE HYDRANT LOCATED JUST SOUTH OF ELEVATED WATER STORAGE TANK
N=777073.1060 E=1451299.1360 ELEV: 931.29'

GRAPHIC SCALE
0 20 40 60
(IN FEET)
SCALE: 1" =20'

Ohio Utilities Protection Service
Call 811 before you dig

REV.	DATE	DESCRIPTION
4	01/16/23	ISSUED FOR RE-PERMIT & REBID
3	09/30/22	ISSUED FOR REBID
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POGGEMEYER
DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

EXISTING TOPOGRAPHIC PLAN

DRAWN BY	CHECKED BY
RGS	KAM

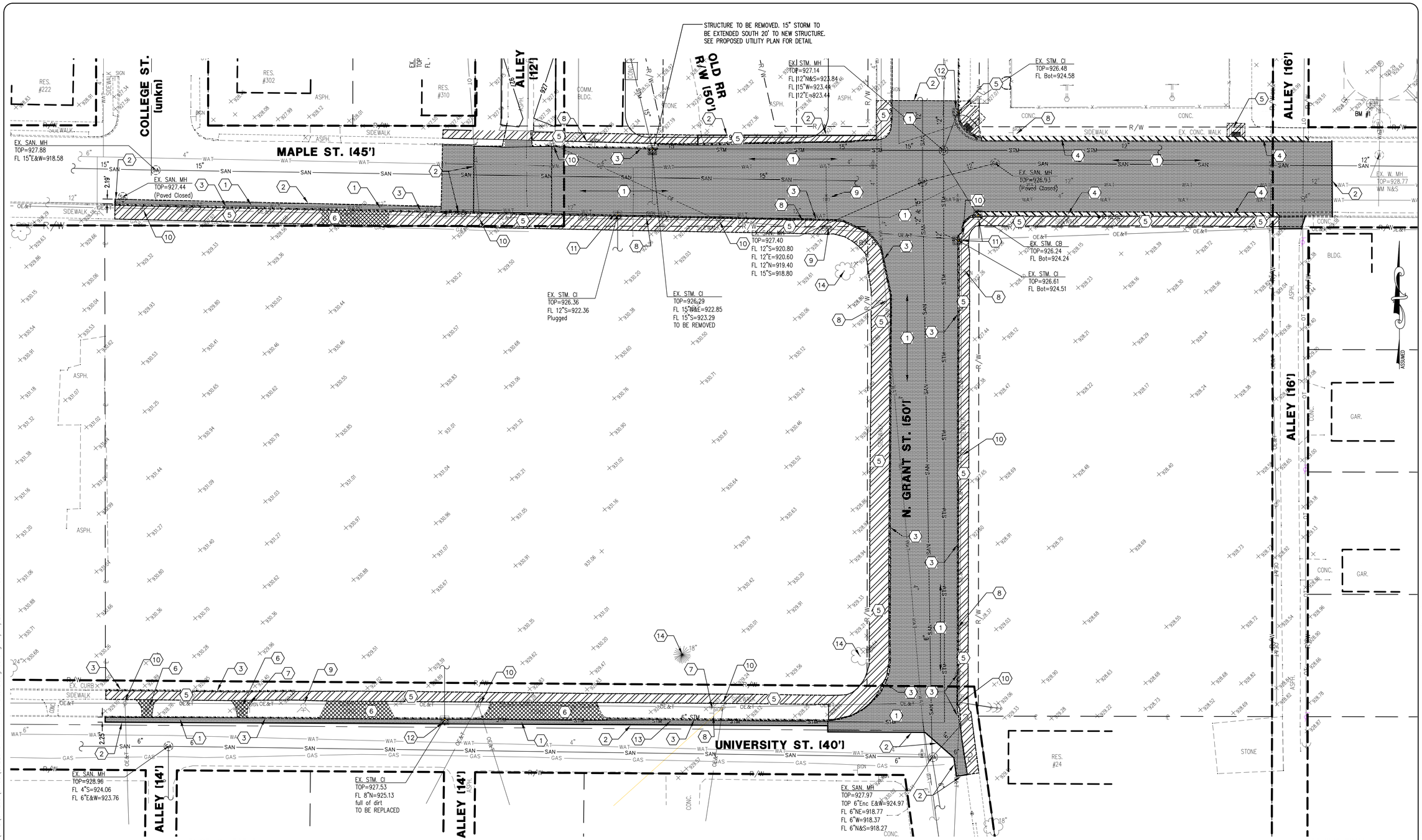
STATE OF OHIO
KENNETH A MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

C101

DATE
1/16/2023
2:14:25 PM

PROJECT NUMBER
20225731

FILE No. Z:\PDG-CAD\CLIENTS\20225731\001A\SITE\CIVIL3D\DWGS\20225731-001A Park Site Design5D.dwg 01/16/23 13:51--RSlith



EXISTING LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING SPOT ELEVATION
- RIGHT-OF-WAY
- EDGE OF PAVEMENT
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERLINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELECOMMUNICATIONS
- EXISTING CATCH BASIN
- EXISTING CURB INLET
- EXISTING SANITARY MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING POWER POLE

DEMOLITION LEGEND

1. ASPHALT PAVEMENT, FULL DEPTH REMOVAL (APPROX. 21,105 S.F.)
2. SAWCUT EXISTING ASPHALT PAVEMENT TO PROVIDE STRAIGHT EDGE FOR NEW PAVEMENT
3. CONCRETE CURB, FULL DEPTH REMOVAL (APPROX. 1,255 L.F.)
4. CURB AND GUTTER, FULL DEPTH REMOVAL (APPROX. 544 L.F.) TO NEAREST JOINT
5. CONCRETE SIDEWALK, FULL DEPTH REMOVAL (APPROX. 7,857 S.F.)
6. CONCRETE DRIVE/WALK APPROACH, FULL DEPTH REMOVAL (APPROX 921 S.F.)
7. ODOT ITEM 630 REMOVAL OF GROUND MOUNTED SIGN FOR STORAGE AND RE-ERECTION (2 EA.)
8. ODOT ITEM 630 REMOVAL OF GROUND MOUNTED SIGN AND RETURNED TO VILLAGE
9. FIRE HYDRANT/WATCH VALVE TO BE REMOVED AND RELOCATED
10. UTILITY POLE TO BE REMOVED
11. CATCH BASIN\CURB INLET TO BE REMOVED AND PIPE(S) PLUGGED
12. CURB INLET CASTING TO BE REMOVED AND REPLACED WITH APPROVED CASTING/GRATE
13. STORM PIPE TO BE REMOVED
14. TREE TO BE REMOVED (3 EA.)

GRAPHIC SCALE
0 20 40 60
(IN FEET)
SCALE: 1" =20'

Ohio Utilities Protection Service
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POGGEMEYER DESIGN GROUP
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Bowling Green, OH 43402
419.352.7537

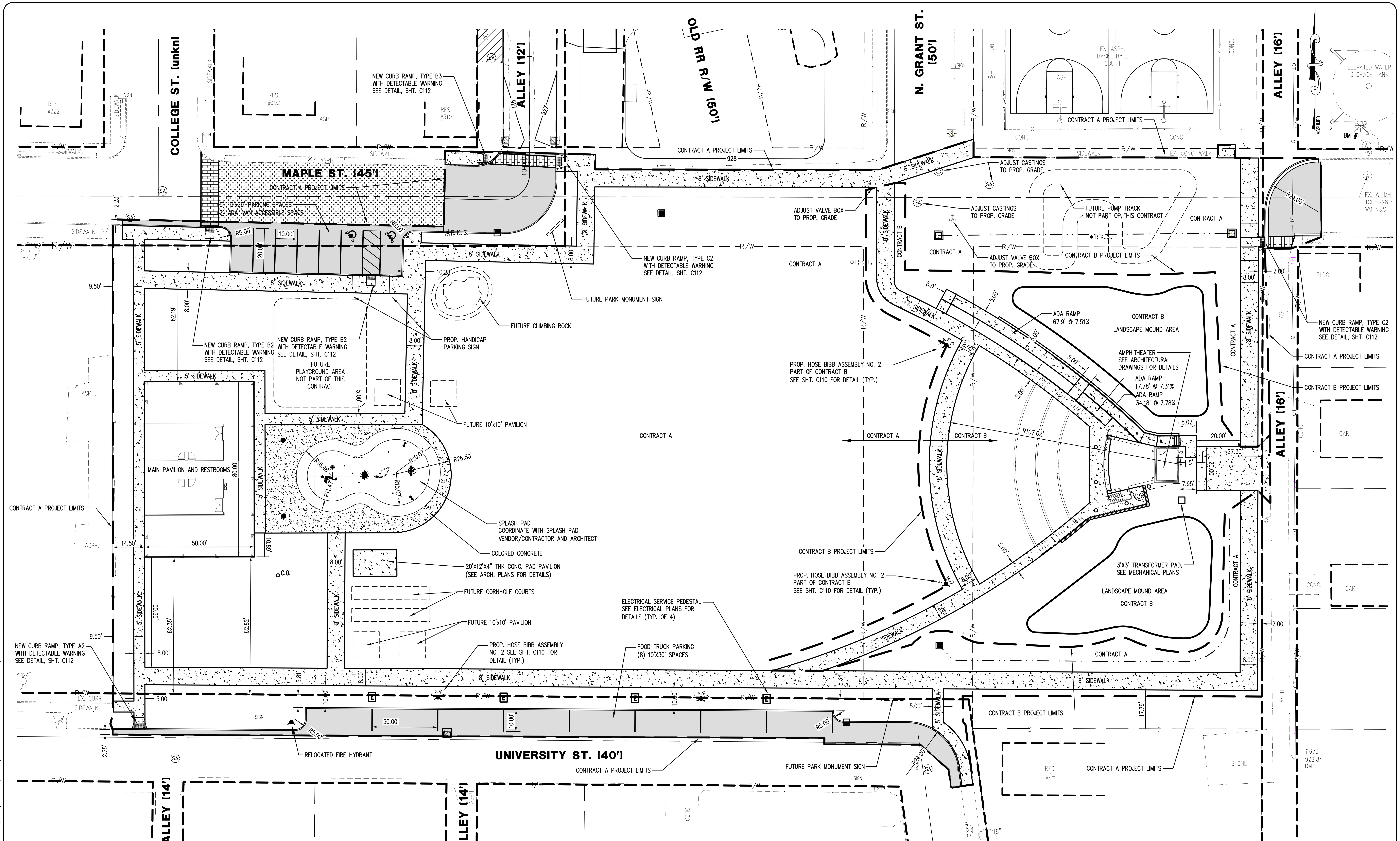
VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

DEMOLITION PLAN

DRAWN BY: RGS
CHECKED BY: KAM

STATE OF OHIO · KENNETH A. MAAG · 53316 · REGISTERED PROFESSIONAL ENGINEER

C102
DATE: 1/16/2023 2:14:25 PM
PROJECT NUMBER: 20225731


COLLEGE ST. (unkn)
MAPLE ST. (45')
ALLEY (12')
OLD RR R/W (50')
N. GRANT ST. (50')
ALLEY (16')
UNIVERSITY ST. (40')
ALLEY (14')
CONTRACT A PROJECT LIMITS
(4) 10'x20' PARKING SPACES
(2) ADA-VAN ACCESSIBLE SPACE
NEW CURB RAMP, TYPE B3 WITH DETECTABLE WARNING SEE DETAIL, SHT. C112
NEW CURB RAMP, TYPE C2 WITH DETECTABLE WARNING SEE DETAIL, SHT. C112
NEW CURB RAMP, TYPE B2 WITH DETECTABLE WARNING SEE DETAIL, SHT. C112
NEW CURB RAMP, TYPE A2 WITH DETECTABLE WARNING SEE DETAIL, SHT. C112
FUTURE PARK MONUMENT SIGN
FUTURE CLIMBING ROCK
PROP. HANDICAP PARKING SIGN
FUTURE PLAYGROUND AREA NOT PART OF THIS CONTRACT
FUTURE 10'x10' PAVILION
MAIN PAVILION AND RESTROOMS
SPLASH PAD COORDINATE WITH SPLASH PAD VENDOR/CONTRACTOR AND ARCHITECT
COLORED CONCRETE
20'X12'X4" THK CONC. PAD PAVILION (SEE ARCH. PLANS FOR DETAILS)
FUTURE CORNHOLE COURTS
PROP. HOSE BIBB ASSEMBLY NO. 2 SEE SHT. C110 FOR DETAIL (TYP.)
ELECTRICAL SERVICE PEDESTAL SEE ELECTRICAL PLANS FOR DETAILS (TYP. OF 4)
FOOD TRUCK PARKING (8) 10'X30' SPACES
RELOCATED FIRE HYDRANT
CONTRACT A
CONTRACT B
ADJUST CASTINGS TO PROP. GRADE
ADJUST VALVE BOX TO PROP. GRADE
FUTURE PUMP TRACK NOT PART OF THIS CONTRACT
CONTRACT B PROJECT LIMITS
ADA RAMP 67.9' @ 7.51%
LANDSCAPE MOUND AREA
AMPHITHEATER SEE ARCHITECTURAL DRAWINGS FOR DETAILS
ADA RAMP 17.78' @ 7.31%
ADA RAMP 34.18' @ 7.78%
PROP. HOSE BIBB ASSEMBLY NO. 2 PART OF CONTRACT B SEE SHT. C110 FOR DETAIL (TYP.)
3'X3' TRANSFORMER PAD, SEE MECHANICAL PLANS
EX. ASPH. BASKETBALL COURT
ELEVATED WATER STORAGE TANK
8' SIDEWALK
5' SIDEWALK
R107.02'
R26.50'
R24.00'
30.00'
50.00'
80.00'
62.82'

EXISTING LEGEND

— 625 —	EXISTING MAJOR CONTOUR
— 624 —	EXISTING MINOR CONTOUR
× 673.85	EXISTING SPOT ELEVATION
— R/W —	RIGHT-OF-WAY
	EDGE OF PAVEMENT
— STM —	EXISTING STORM SEWER
— SAN —	EXISTING SANITARY SEWER
— WAT —	EXISTING WATERLINE
— OE —	EXISTING OVERHEAD ELECTRIC
	EXISTING TELECOMMUNICATIONS
	EXISTING CATCH BASIN
	EXISTING CURB INLET
	EXISTING SANITARY MANHOLE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	EXISTING POWER POLE

PROPOSED LEGEND

— STM —	PROPOSED STORM SEWER
— WAT —	PROPOSED WATERLINE
	PROPOSED CATCH BASIN
	PROPOSED CURB INLET
	PROPOSED FIRE HYDRANT
	PROPOSED HOSE BIBB NO. 2

PAVEMENT LEGEND

- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED ASPHALT PAVEMENT
- PROPOSED STAMPED CONRETE CROSSWALK
- 1-1/2" MILL OF PAVEMENT AND 1-1/2" OVERLAY

GRAPHIC SCALE
0 20 40 60
(IN FEET)
SCALE: 1" = 20'

REV.	DATE	DESCRIPTION
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1	08/19/22	ISSUED FOR ODNR REVIEW

POGGEMEYER DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

PROPOSED SITE DIMENSION PLAN

DRAWN BY: RGS
CHECKED BY: KAM

STATE OF OHIO KENNETH A. MAAG 53316 REGISTERED PROFESSIONAL ENGINEER

C103
DATE 1/16/2023 2:14:25 PM
PROJECT NUMBER 20225731

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DESIGN GROUP
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Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

PROPOSED UTILITY PLAN

DRAWN BY	CHECKED BY
RGS	KAM

KENNETH A. MAAG 53316 REGISTERED PROFESSIONAL ENGINEER
STATE OF OHIO

C104

DATE
1/16/2023
2:14:25 PM

PROJECT NUMBER
20225731

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4	01/16/23	ISSUED FOR RE-PERMIT & REBID
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GRAPHIC SCALE
0 20 40 60
(IN FEET)
SCALE: 1" = 20'

Ohio Utilities Protection Service
Call 811 before you dig

EXISTING LEGEND

- 625 — EXISTING MAJOR CONTOUR
- 624 — EXISTING MINOR CONTOUR
- 673.85 — EXISTING SPOT ELEVATION
- R/W — RIGHT-OF-WAY
- EDGE OF PAVEMENT
- STM — EXISTING STORM SEWER
- SAN — EXISTING SANITARY SEWER
- WAT — EXISTING WATERLINE
- OE — OE — EXISTING OVERHEAD ELECTRIC
- EXISTING TELECOMMUNICATIONS
- EXISTING CATCH BASIN
- EXISTING CURB INLET
- EXISTING SANITARY MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING POWER POLE

PROPOSED LEGEND

- STM — PROPOSED STORM SEWER
- WAT — PROPOSED WATERLINE
- PROPOSED CATCH BASIN
- PROPOSED CURB INLET
- PROPOSED FIRE HYDRANT
- PROPOSED HOSE BIBB NO. 2

PAVEMENT LEGEND

- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED ASPHALT PAVEMENT
- PROPOSED STAMPED CONRETE CROSSWALK
- 1-1/2" MILL OF PAVEMENT AND 1-1/2" OVERLAY

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COLLEGE ST. (unkn)
MAPLE ST. (45')
ALLEY (12')
OLD RR R/W (50')
N. GRANT ST. (50')
ALLEY (16')
UNIVERSITY ST. (40')
ALLEY (14')
ALLEY (14')
ALLEY (16')

EX. SAN. MH
TOP=927.88
FL 15"E&W=918.58

EX. SAN. MH
TOP=927.44
(Paved Closed)

EX. SAN. MH
TOP=926.93
(Paved Closed)

EX. SAN. MH
TOP=927.40
FL 12"S=920.80
FL 12"E=920.60
FL 12"N=919.40
FL 15"S=918.80

EX. STM. MH
TOP=927.14
FL 12"N&S=923.84
FL 15"W=923.44
FL 12"E=923.44

EX. STM. CI
TOP=926.48
FL Bot=924.58

EX. W. MH
TOP=928.27
FL 8"W N&S

EX. SAN. MH
TOP=928.96
FL 4"S=924.06
FL 6"E&W=923.76

EX. STM. CI
TOP=927.53
FL 8"N=925.13
full of dirt
TO BE REPLACED

PROP. CATCH BASIN #1
CB-2-2B
GRATE=926.70
CB-3A
FL 12"E=923.44
FL 12"N=923.44 (STUB)

PROP. CATCH BASIN #2
CB-2-2B
GRATE=926.0
FL 15"N=922.89
FL 12"W=923.25

PROP. CATCH BASIN #3
CB-2-2B
GRATE=927.0
FL 12"E=924.23

PROP. CATCH BASIN #4
CB-2-2B
GRATE=927.53
PLUG 8" NORTH
FL 12"E=924.70

PROP. CATCH BASIN #5
CB-2-2B
GRATE=926.25
FL 3"NE=922.0
FL 12"SW=924.10

PROP. CURB INLET #1
GRATE=926.70
CB-3A
FL 12"E=923.44
FL 12"N=923.44 (STUB)

PROP. CURB INLET #2
CB-3A
GRATE=927.74
FL 12"W=924.24
FL 12"NE=924.24

EX. SAN. MH
TOP=927.97
TOP 6"Enc E&W=924.87
FL 6"NE=918.77
FL 6"W=918.37
FL 6"N&S=918.27

CONTRACT A
CONTRACT B

MAIN PAVILION AND RESTROOMS
F.F.E.=930.00

SPLASH PAD
COORDINATE WITH SPLASH PAD
VENDOR/CONTRACTOR AND ARCHITECT

SEE AMPHITHEATER DETAIL
PROPOSED SITE GRADING, SHT.
C106 FOR PROPOSED GRADES.

AMPHITHEATER
SEE ARCHITECTURAL
DRAWINGS FOR DETAILS

(2) PARKING SPACES FOR
AMPHITHEATER DROP-OFF

EX. ASPH. BASKETBALL COURT

ELEVATED WATER STORAGE TANK

BM #1

TOP OF WALL=928.50

TOP OF WALL=928.00

TOP OF WALL=926.50

ADA RAMP 7.51%

ADA RAMP 7.76%

F.F.E.=926.35

SWALE 1.0%

GRAPHIC SCALE
0 20 40 60
(IN FEET)
SCALE: 1" = 20'

GRADING LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED CROSS SLOPE
- PROPOSED ELEVATION
- PROPOSED TOP OF CURB ELEVATION (T/C) / PROPOSED EDGE OF PAVEMENT ELEVATION (EP)
- PROPOSED ELEVATION–MATCH EXISTING
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR

PAVEMENT LEGEND

- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED ASPHALT PAVEMENT
- PROPOSED STAMPED CONRETE CROSSWALK
- 1-1/2" MILL OF PAVEMENT AND 1-1/2" OVERLAY

Ohio Utilities Protection Service
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POGGEMEYER
DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

PROPOSED SITE GRADING PLAN

DRAWN BY	CHECKED BY
RGS	KAM

STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

C105

DATE
1/16/2023
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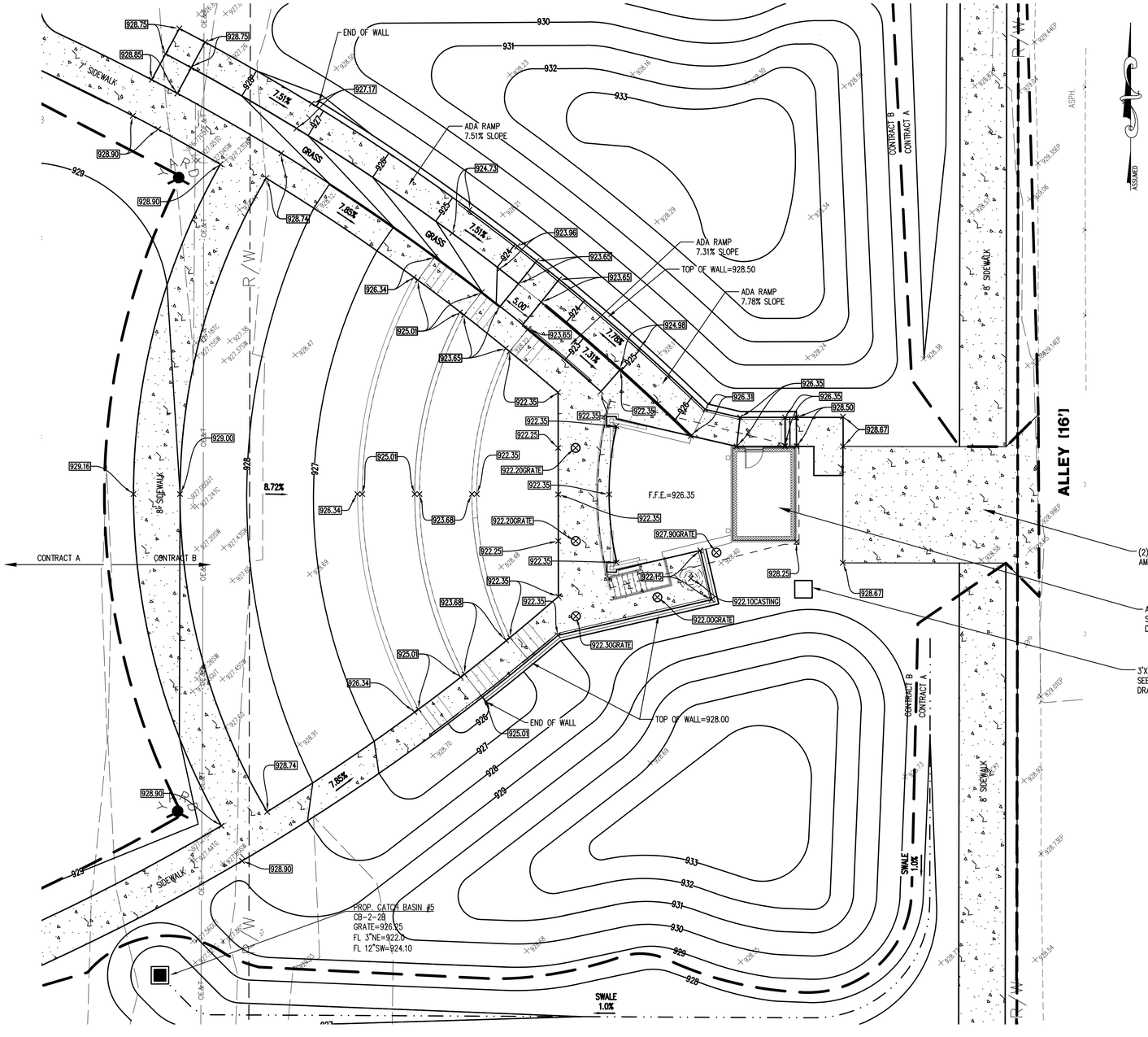
PROJECT NUMBER
20225731



NOTE:
SEE ARCHITECTURAL PLANS FOR DETAILS FOR RETAINING WALLS, WALKS, STAIRS ETC.

GRAPHIC SCALE
0 10 20 30
(IN FEET)
SCALE: 1" = 10'

GRADING LEGEND

+928.91	EXISTING SPOT ELEVATION
2%	PROPOSED SLOPE
928.45	PROPOSED ELEVATION
927.99T/C 927.49EP	PROPOSED TOP OF CURB ELEVATION (T/C) PROPOSED EDGE OF PAVEMENT ELEVATION (EP)
928.45ME	PROPOSED ELEVATION–MATCH EXISTING
930	EXISTING MAJOR CONTOUR
929	EXISTING MINOR CONTOUR
930	PROPOSED MAJOR CONTOUR
929	PROPOSED MINOR CONTOUR

PAVEMENT LEGEND

PROPOSED 4" CONCRETE SIDEWALK

Ohio Utilities Protection Service
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before you dig

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VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

AMPHITHEATER DETAIL
PROPOSED
SITE GRADING PLAN

DRAWN BY	CHECKED BY
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STATE OF OHIO
KENNETH A. MAAG
53316
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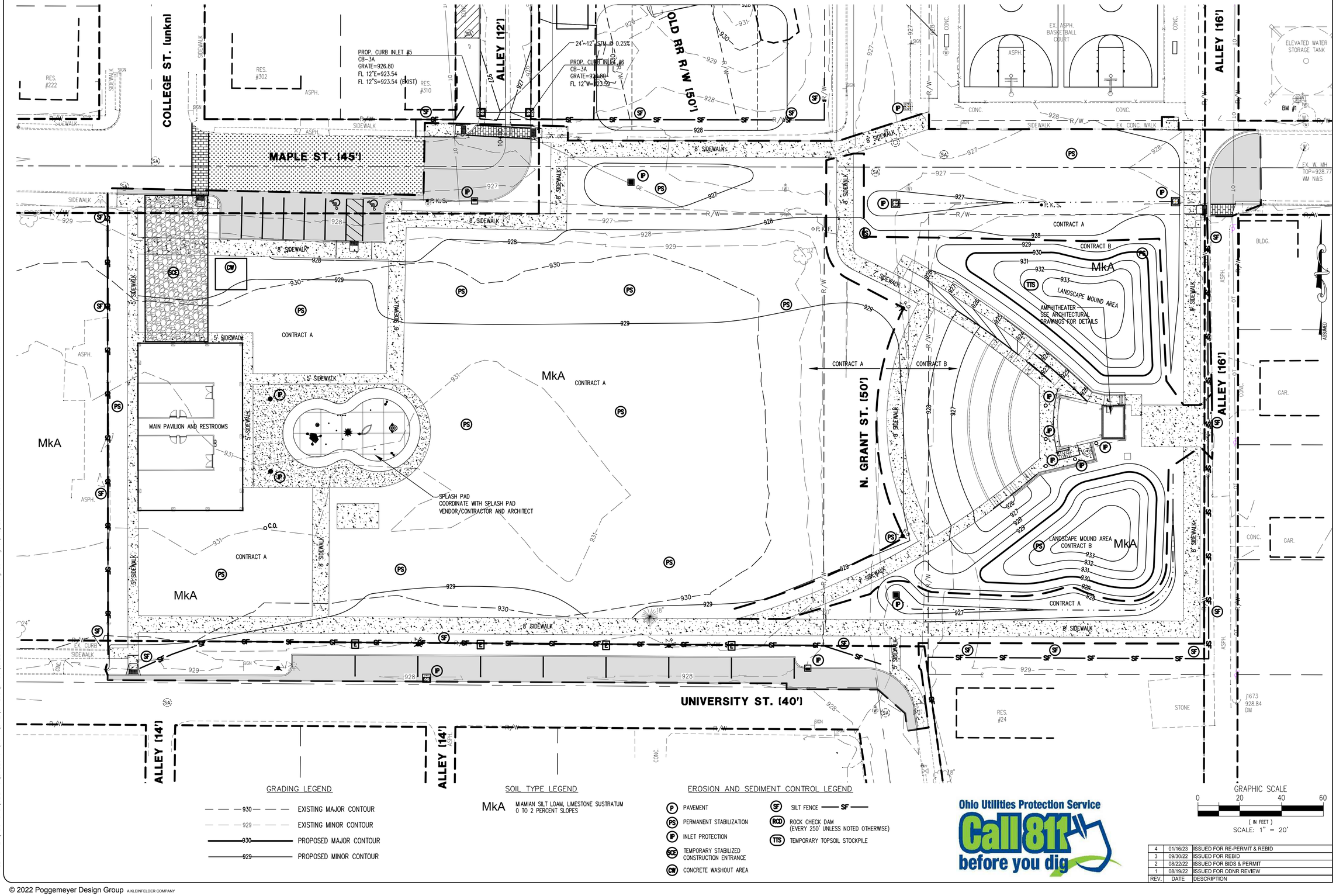
FILE No. Z:\PDG-CAD\CLIENTS\20225731\001A\SITE\CIVIL3D\DWGS\20225731-001A Park Site Design50.dwg 01/16/23 13:26-RStith



GRADING LEGEND

- 930 — EXISTING MAJOR CONTOUR
- 929 — EXISTING MINOR CONTOUR
- 930 — PROPOSED MAJOR CONTOUR
- 929 — PROPOSED MINOR CONTOUR

SOIL TYPE LEGEND

MkA — MIAMIAN SILT LOAM, LIMESTONE SUSTRATUM 0 TO 2 PERCENT SLOPES

EROSION AND SEDIMENT CONTROL LEGEND

- (P) PAVEMENT
- (PS) PERMANENT STABILIZATION
- (IP) INLET PROTECTION
- (SCE) TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
- (CW) CONCRETE WASHOUT AREA
- (SF) SILT FENCE — SF —
- (RCD) ROCK CHECK DAM (EVERY 250' UNLESS NOTED OTHERWISE)
- (TTS) TEMPORARY TOPSOIL STOCKPILE

Ohio Utilities Protection Service
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GRAPHIC SCALE
0 20 40 60
(IN FEET)
SCALE: 1" = 20'

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VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

EROSION AND SEDIMENT CONTROL PLAN

DRAWN BY	CHECKED BY
RGS	KAM

STATE OF OHIO
KENNETH A MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

C107

DATE
1/16/2023
2:14:25 PM

PROJECT NUMBER
20225731

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FILE No. Z:\PDG-CAD\CLIENTS\20225731\001A\SITE\CIVIL3D\DWGS\20225731-001A Park Site Design Details.dwg 01/16/23 14:00-RStith

STORM WATER POLLUTION PREVENTION PLAN
SCHOOL HOUSE PARK IMPROVEMENTS
COVINGTON, OHIO

I. SUMMARY

ALL STORM WATER POLLUTION PREVENTION PROVISIONS PROVIDED WITH THESE CONSTRUCTION DRAWINGS REFLECT THE OHIO EPA REQUIREMENTS FOR CONSTRUCTION STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL. TO ENSURE COMPLIANCE, THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE OHIO EPA'S NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (NO. OHC000005). THIS PLAN PROVIDES FOR CONSTRUCTION AS DEFINED IN PROJECT DESCRIPTION BELOW.

THE OWNER SHALL COMPLETE AND SUBMIT AN OHIO EPA NOI FORM TO PERFORM CONSTRUCTION ACTIVITIES ASSOCIATED WITH VILLAGE OF COVINGTON UNDER THE GENERAL NPDES PERMIT A MINIMUM OF 21 DAYS PRIOR TO THE COMMENCEMENT OF EARTH DISTURBING ACTIVITIES.

THE CONTRACTOR SHALL OR SHALL CAUSE THE INSTALLATION AND MAINTENANCE TO OCCUR IN CONFORMANCE WITH THE REQUIREMENTS OF THIS PLAN AND ALL REGULATIONS ENFORCED BY THE OHIO EPA AND ITS AGENTS.

THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) INCLUDES, BUT IS NOT LIMITED TO THE EROSION AND SEDIMENTATION CONTROL PLAN INCLUDED IN THE CONSTRUCTION DRAWINGS, THE NOTICE OF INTENT, PERMIT AUTHORIZATION, GENERAL PERMIT, NOTICE OF TERMINATION, ALL RECORDS OF INSPECTIONS AND ACTIVITIES WHICH ARE CREATED DURING THE COURSE OF THE PROJECT, AND OTHER DOCUMENTS AS MAY BE INCLUDED BY REFERENCE TO THIS SWPPP. CHANGES, MODIFICATIONS, REVISIONS, ADDITIONS OR DELETIONS SHALL BECOME PART OF THIS SWPPP AS THEY OCCUR.

THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED WITH A CONSTRUCTION ACTIVITY THAT DISTURBS SITE SOIL OR WHO IMPLEMENT A POLLUTANT CONTROL MEASURE IDENTIFIED IN THE STORM WATER POLLUTION PREVENTION PLAN MUST COMPLY WITH THE FOLLOWING REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATIONS SYSTEM (NPDES) GENERAL PERMIT ("GENERAL PERMIT") AND ANY LOCAL GOVERNING AGENCY HAVING JURISDICTION CONCERNING EROSION AND SEDIMENTATION CONTROL:

A. THE CONTRACTOR SHALL SUBMIT A CO-PERMITTE NOTICE OF INTENT FOR COVERAGE UNDER OHIO EPA STORM WATER CONSTRUCTION GENERAL PERMIT.

B. A COPY OF THE NOTICE OF INTENT (NOI) THE PERMIT AUTHORIZATION NUMBERS, A DESCRIPTION OF THE PROJECT, AND THE GENERAL CONTRACTOR'S LOCAL CONTACT NAME AND NUMBER (SITE STORM WATER COORDINATOR) MUST BE POSTED IN A PROMINENT PLACE FOR PUBLIC VIEWING AT THE CONSTRUCTION SITE UNTIL TERMINATION OF PERMIT COVERAGE HAS BEEN OBTAINED BY A NOTICE OF TERMINATION (NOT).

C. COMPLETE COPY OF THE SWPPP, INCLUDING COPIES OF ALL INSPECTION REPORTS, PLAN REVISIONS, ETC., MUST BE RETAINED AT THE PROJECT SITE AT ALL TIMES DURING WORKING HOURS AND KEPT IN THE PERMANENT PROJECT RECORDS FOR AT LEAST FIVE YEARS FOLLOWING SUBMISSION OF THE NOTICE OF TERMINATION (NOT).

D. THE GENERAL CONTRACTOR MUST PROVIDE NAMES AND ADDRESSES OF ALL SUBCONTRACTORS WORKING ON THIS PROJECT WHO WILL BE INVOLVED WITH THE MAJOR CONSTRUCTION ACTIVITIES THAT DISTURB SITE SOIL ("SUB-CONTRACTOR LIST"). THAT INFORMATION MUST BE KEPT WITH THIS SWPPP.

E. REGULAR INSPECTIONS MUST BE MADE TO DETERMINE EFFECTIVENESS OF THE SWPPP. THE STORM WATER POLLUTION PREVENTION PLAN INCLUDING THE BEST MANAGEMENT PRACTICES IMPLEMENTED ON THE JOB SITE SHALL BE MODIFIED AS NEEDED TO PREVENT POLLUTANTS FROM DISCHARGING FROM THE SITE. THE INSPECTOR MUST BE A PERSON FAMILIAR WITH THE SITE, THE NATURE OF THE MAJOR CONSTRUCTION ACTIVITIES, AND QUALIFIED TO EVALUATE BOTH OVERALL SYSTEM PERFORMANCE AND INDIVIDUAL COMPONENT PERFORMANCE. INSPECTORS QUALIFICATIONS MUST BE ENTERED ON THE INSPECTION REPORT FORM. THE INSPECTOR MUST EITHER BE SOMEONE EMPOWERED TO IMPLEMENT MODIFICATIONS TO THIS SWPP AND THE POLLUTANT CONTROL DEVICES, IF NEEDED, IN ORDER TO INCREASE EFFECTIVENESS TO AN ACCEPTABLE LEVEL, OR SOMEONE WITH THE AUTHORITY TO CAUSE SUCH THINGS TO HAPPEN. ADDITIONALLY, THE INSPECTOR SHALL BE PROPERLY AUTHORIZED IN ACCORDANCE WITH THE APPLICABLE GENERAL PERMIT TO CONDUCT AND CERTIFY SITE STORM WATER INSPECTIONS.

F. THIS SWPPP MUST BE AMENDED AS NECESSARY DURING THE COURSE OF CONSTRUCTION IN ORDER TO KEEP IT CURRENT WITH THE POLLUTANT CONTROL MEASURES UTILIZED AT THE SITE. AMENDING THE SWPPP DOES NOT MEAN THAT IT HAS TO BE REPRINTED. IT IS ACCEPTABLE TO ADD ADDENDA, SKETCHES, NEW SECTIONS, AND/OR REVISED DRAWINGS. THE SITE MAP SHOWING THE LOCATIONS OF ALL STORM WATER CONTROLS MUST BE POSTED ON THE SITE AND UPDATED TO REFLECT THE PROGRESS OF CONSTRUCTION.

G. ONCE THE SITE REACHES FINAL STABILIZATION, ALL PERMANENT EROSION AND SEDIMENTATION CONTROLS INSTALLED AND ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS REMOVED, THE GENERAL CONTRACTOR AND OWNER MUST COMPLETE A FINAL SITE INSPECTION. UPON APPROVAL BY OWNER, THE OWNER AND GENERAL CONTRACTOR, AS APPLICABLE, MUST COMPLETE AND SUBMIT A NOTICE OF TERMINATION (NOT), WITHIN 45 DAYS OF COMPLETING ALL PERMITTED LAND DISTURBANCE ACTIVITIES.

H. A RECORD OF THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES ARE INITIATED MUST BE MAINTAINED UNTIL THE NOT IS FILED. CONTROLS MUST BE IN PLACE DOWN SLOPE OF SITE DISTURBING ACTIVITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND NOTED ON THE SITE MAP AND RECORD OF STABILIZATION AND CONSTRUCTION ACTIVITY DATES.

II. INTRODUCTION

THIS SWPPP HAS BEEN PREPARED FOR THE CONSTRUCTION OF A PARK PAVILLION AND PARK

THE NATURE AND TYPE OF CONSTRUCTION IS A VILLAGE PARK. THE SITE DRAINAGE INCLUDES THE FOLLOWING:

- ROOF DRAINAGE DIRECTLY TO THE STORM SEWER SYSTEM;
- PAVEMENT DRAINAGE SHEET FLOWING TO DRAINAGE COLLECTION STRUCTURES;
- CHANNELIZED CONCENTRATED FLOW THROUGH A SYSTEM OF STORM SEWERS AND OPEN CHANNELS TO A DETENTION POND;

CONSTRUCTION PHASE POLLUTANT SOURCES ANTICIPATED AT THE SITE ARE DISTURBED (BARE) SOIL, VEHICLE FUELS AND LUBRICANTS, CHEMICALS ASSOCIATED WITH BUILDING CONSTRUCTION, CONSTRUCTION-GENERATED LITTER AND DEBRIS, AND BUILDING MATERIALS.

THIS PROJECT CONSISTS PRIMARILY OF SITE GRADING, PAVING, UNDERGROUND UTILITIES AND NEW BUILDING.

A. SCOPE

THIS SWPPP WILL TERMINATE WHEN DISTURBED AREAS ARE STABILIZED, PERMANENT EROSION AND SEDIMENTATION CONTROLS INSTALLED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS REMOVED, CONSTRUCTION ACTIVITIES COVERED HEREIN HAVE CEASED, AND A COMPLETED NOTICE OF TERMINATION (NOT) IS MAILED TO THE GOVERNING AGENCY.

THE NATIONAL GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES PROHIBITS MOST NON-STORM WATER DISCHARGES DURING THE CONSTRUCTION PHASE. ALLOWABLE NON-STORM WATER DISCHARGES THAT COULD OCCUR DURING CONSTRUCTION ON THIS PROJECT, WHICH WOULD THEREFORE BE COVERED BY THE GENERAL PERMIT, INCLUDE:

1. DISCHARGES FROM FIRE FIGHTING ACTIVITIES;
2. FIRE HYDRANT FLUSHING;
3. WATER USED TO WASH VEHICLES OR CONTROL DUST;
4. WATER FLOWING FROM POTABLE SOURCES AND WATER LINE FLUSHING;
5. IRRIGATION DRAINAGE;
6. EXTERNAL BUILDING WASH DOWN WHICH DOES NOT USE DETERGENTS;
7. RUNOFF FROM PAVEMENT WASH DOWN WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED (UNLESS ALL SPILLED MATERIAL HAS BEEN REMOVED) AND WHERE DETERGENTS HAVE NOT BEEN USED;
8. AIR CONDITIONING CONDENSATE;
9. SPRINGS AND UNCONTAMINATED GROUNDWATER; AND
10. FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS SUCH AS SOLVENTS.

BEST MANAGEMENT PRACTICES MUST BE IMPLEMENTED FOR THE ABOVE ALLOWABLE FORESEEABLE DISCHARGES FOR THE DURATION OF THE PERMIT. EACH NON-STORM WATER DISCHARGE SHOULD BE NOTED IN THE SWPPP AND WEEKLY INSPECTION WITH THE EXCEPTION OF DISCHARGES FROM FIRE FIGHTING ACTIVITIES.

III. PROJECT DESCRIPTION

THE DEVELOPMENT WILL CONSIST OF A PARK PAVILLION/RESTROOM FACILITY LOCATED ON THE SOUTH SIDE OF MAPLE STREET, EAST OF WALL STREET IN THE VILLAGE OF COVINGTON, OHIO ON 3.13 +/- ACRES, THAT CONSIST OF A SINGLE STORY STRUCTURE, SITE PAVING, UTILITIES.

SIGNIFICANT EARTHWORK IS ANTICIPATED ON THIS SITE, WITH CUTS AND FILLS ON THE ORDER OF 1 FOOT.

EROSION CONTROL IMPLEMENTATION SEQUENCE

A. PHASE I: EARTHWORK OPERATIONS

1. INSTALL SILT FENCE AROUND PERIMETER OF SITE.
2 INSTALL PROJECT GRAVEL CONSTRUCTION ACCESS DRIVE(S). THE ROCK PAD SHALL BE A MINIMUM 70' LONG X 30' WIDE PER THE DETAIL.
3. REMOVE TOPSOIL IN BUILDING PAD AREA
4. STOCKPILE TOPSOIL IN PERMANENT MOUNDING AREAS. EXCESS TOPSOIL TO BE STOCKPILED AS LOCATED ON THE SWPPP PLAN.
5. STABILIZE PERMANENT MOUNDING AND EXCESS TOPSOIL. STABILIZE WITH TEMPORARY AND PERMANENT SEEDING, MULCHING, AND HYDROSEEDING.
6. CONSTRUCT BUILDING SUB-PAD WITH PROPER COMPACTED MATERIAL EXCAVATED FROM STORM MANAGEMENT AREA.
7. STRIP TOPSOIL FROM REMAINING AREAS OF CONSTRUCTION AND STOCKPILE OR PLACE IN PERMANENT PERIMETER MOUNDS. TEMPORARY OR PERMANENT SEED, MULCH, HYDROSEED.

B. PHASE II: UNDERGROUND UTILITIES/BUILDING FOUNDATION/ PAVEMENT BASE

1. INSTALL UNDERGROUND WATER, SANITARY SEWER, AND STORM SEWER THROUGHOUT THE PROJECT SITE.
2. INSTALL INLET PROTECTION ON ALL STORM STRUCTURES.
3. CONSTRUCT BUILDING FOUNDATIONS AND PROVIDE COMPACTED AGGREGATE BUILDING BASE.
4. GRADE, COMPACT PAVEMENT AREAS, INSTALL COMPACTED AGGREGATE BASE.
5. MAINTAIN GRAVEL CONSTRUCTION ACCESS DRIVE(S).

C. PHASE III: FINAL CONSTRUCTION

1. ERECT BUILDING STRUCTURE.
2. CONSTRUCT PAVEMENT.
3. TOPSOIL AREAS TO RECEIVE PLANTINGS.
4. INSTALL LANDSCAPING.
5. FINE GRADE.
6. SEED, MULCH, AND HYDROSEED, BERMS, MOUNDS, LANDSCAPE AREAS.
7. REMOVE SILT FENCE AND STORM INLET PROTECTION ONCE SITE IS STABILIZED.

IV. SITE DESCRIPTION

INCLUDED AS PART OF THIS SWPPP ARE THE PROJECT CONSTRUCTION DRAWINGS. REFER TO THE CONSTRUCTION DRAWINGS FOR DETAILED SITE INFORMATION.

A. SITE LOCATION – VILLAGE OF COVINGTON, MIAMI COUNTY, OHIO, SUBJECT PROPERTY IS A 9.774 ACRE PARCEL OF LAND LOCATED IN A RESIDENCIAL AREA. THE SUBJECT SITE IS LOCATED IN NW 1/4 OF SECTION 29, TOWNSHIP 5 NORTH, RANGE 5 EAST, IN THE VILLAGE OF COVINGTON, MIAMI COUNTY, OHIO. THE SITE IS BOUNDED ON THE NORTH, EAST, SOUTH AND WEST SIDES BY RESIDENTIAL LAND. THE LOCATION OF THE SUBJECT SITE, AS PLOTTED ON THE UNITED STATES GEOLOGICAL SURVEY (USGS) PLEASANT HILL, OHIO QUADRANGLE 7.5 MINUTE TOPOGRAPHIC MAPS, DATED 2016.

B. SITE TOPOGRAPHY – THE SITE IS GENTLY ROLLING WITH VERY MINOR SLOPES SLIGHTLY ROLLING IN THE EAST AND WEST DIRECTION (1%)

THE SITE DRAINS TO CITY OF COVINGTON STORM SEWER SYSTEM.

C. RAINFALL INFORMATION – AVERAGE YEARLY RAINFALL IS 40 INCHES PER YEAR. THE BULK OF THIS RAINFALL COMES IN THE MONTHS OF APRIL THROUGH SEPTEMBER.

D. SITE SOILS.

A SOIL SURVEY MAP OBTAINED FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE WAS REVIEWED TO DETERMINE GENERAL SOIL COMPOSITION IN THE AREA OF THE SUBJECT SITE. THE SITE IS IN AN AREA MAPPED AS HAVING THE TYPE OF SOIL CONSIST OF

-MIAMIAN SILT LOAM, LIMESTONE SUBSTRATUM

E. TOTAL AREA AND DISTURBED AREA – THE ENTIRE SITE CONTAINS 3.1 ACRES AND THE AREA TO BE DISTURBED BY GRADING IS ANTICIPATED TO BE APPROXIMATELY 3.1 +/- ACRES.

F. QUALITY OF RECEIVING SURFACE WATERS.

THERE ARE NO OTHER SPECIAL AQUATIC FEATURES ON THE SITE.

G. EROSION AND SEDIMENTATION CONTROL – THE SOIL EROSION CONTROL PLAN IS LOCATED ON CIVIL SHEETS.

H. THREATENED AND ENDANGERED SPECIES – UNKNOWN

I. HISTORIC PROPERTIES – UNKNOWN.

V. STORM WATER POLLUTION PREVENTION MEASURES AND CONTROLS

APPROPRIATE APPLICATIONS OF SPECIFIC SEDIMENT AND EROSION CONTROL METHODS AT THIS SITE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

- AGGREGATE CONSTRUCTION ENTRANCES AT ALL POINTS OF CONSTRUCTION TRAFFIC EGRESS FROM THE SITE ONTO PAVEMENT.
- INLET PROTECTION AT ALL STORM INLETS.
- SEDIMENT BARRIERS AT AREAS OF SHEET FLOW AND AROUND ALL SOIL STOCKPILES.
- SEDIMENT BASINS AT THE TERMINATION OF CHANNELIZED FLOW THAT CANNOT BE ADEQUATELY PROTECTED WITH SEDIMENT TRAP AS DETERMINED BY THE STORM WATER POLLUTION PREVENTION PLAN.

A. EROSION AND SEDIMENT CONTROLS

- APPROPRIATE METHODS OF LAND STABILIZATION DURING VARIOUS STAGES OF CONSTRUCTION PROGRESS FOR DISTURBED AREAS NOT DESIGNATED TO RECEIVE A FINAL PAVEMENT SURFACE AT THIS SITE INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: TEMPORARY SEEDING, PERMANENT SEEDING,AND MULCHING. IF VEGETATIVE STABILIZATION TECHNIQUES ARE DETERMINED TO BE INADEQUATE AND MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES SUCH AS ROCK CHANNEL PROTECTION, ROCK STABILIZATION, BEDDING BLANKETS, NETS AND MATS, AGGREGATE COVER, ETC., MUST BE UTILIZED.

1. SOIL STABILIZATION – THE PURPOSE OF SOIL STABILIZATION IS TO PREVENT SOIL FROM LEAVING THE SITE. IN THE NATURAL CONDITION, SOIL IS STABILIZED BY NATIVE VEGETATION. THE PRIMARY TECHNIQUE TO BE USED AT THIS PROJECT FOR STABILIZING SITE SOIL WILL BE TO PROVIDE A PROTECTIVE COVER OF TURF GRASS, PAVEMENT, OR BUILDING. WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED.

A. TEMPORARY SEEDING (WITH FAST-GERMINATING TEMPORARY SEED AND PROTECTED WITH MULCH)

1. FOR ANY AREAS WITHIN 50 FEET OF A STREAM AND NOT AT A FINAL GRADE: APPLY WITHIN TWO DAYS AFTER CONSTRUCTION ACTIVITY CEASES ON ANY PARTICULAR AREA, ALL DISTURBED GROUND WHERE THERE WILL NOT BE CONSTRUCTION FOR LONGER THAN 21 DAYS MUST BE SEEDED.
2. FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND WITHIN 50 FEET OF A STREAM: APPLY WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA.
3. DISTURBED AREAS THAT WILL BE IDLE OVER WINTER: APPLY PRIOR TO THE ONSET OF WINTER WEATHER.
4. WITHIN 14 DAYS AFTER CONSTRUCTION ACTIVITY CEASES ON ANY PARTICULAR AREA, ALL DISTURBED GROUND WHERE THERE WILL NOT BE CONSTRUCTION FOR LONGER THAN 21 DAYS MUST BE SEEDED WITH FAST GERMINATING TEMPORARY SEED AND PROTECTED WITH MULCH.
5. THE TEMPORARY SEED MIX SHALL BE 100% ANNUAL RYE GRASS (LOLIUM MULTIFLORUM) APPLIED AT THE RATE OF TWO (2) POUNDS PER 1,000 SQUARE FEET. PRIOR TO SEEDING, TEN (1) POUNDS OF 12 12-12 FERTILIZER SHALL BE APPLIED TO EACH 1,000 SQUARE FEET TO BE STABILIZED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH STRAW AT A RATE OF TWO (2) TONS PER ACRE.

B. PERMANENT SEEDING SEEDED AREAS SHALL BE PROTECTED BY MULCH.

1. ANY AREAS THAT WILL LIE DORMANT FOR MORE THAN ONE YEAR: APPLY WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE.
2. ANY AREAS WITHIN 50 FEET OF A STREAM AND AT FINAL GRADE: APPLY WITHIN TWO DAYS OF REACHING FINAL GRADE.
3. ANY OTHER AREAS AT FINAL GRADE: APPLY WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA.
4. ALL AREAS AT FINAL GRADE MUST BE SEEDED WITHIN 14 DAYS AFTER COMPLETION OF THE MAJOR CONSTRUCTION ACTIVITY. SEEDED AREAS SHALL GENERALLY BE PROTECTED WITH MULCH.
5. THE PERMANENT SEED MIX SHALL CONSIST OF 40% KENTUCKY BLUEGRASS (POA PRATENSIS), 40% CREEPING RED FESCUE (FESTUCA RUBRA), AND 20% ANNUAL RYEGRASS (LOLIUM MULTIFLORUM). THIS MIX SHALL BE APPLIED AT THE RATE OF THREE (3) POUNDS PER 1,000 SQUARE FEET. PRIOR TO SEEDING TWENTY (20) POUNDS OF 12-12-12 FERTILIZER SHALL BE APPLIED TO EACH 1,000 SQUARE FEET TO BE STABILIZED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH STRAW AT A RATE OF TWO (2) TONS PER ACRE. THE PERMANENT SEED MIX SHALL BE APPLIED BY "HYDRO-SEEDING" WHERE SPECIFIED.

B. STRUCTURAL CONTROLS

1. STRUCTURAL PRACTICES SHALL BE USED TO CONTROL EROSION AND TRAP SEDIMENT FROM A SITE REMAINING DISTURBED FOR MORE THAN 14 DAYS.

A. SILT FENCE – SILT FENCE IS A SYNTHETIC PERMEABLE MESH FABRIC TYPICALLY INCORPORATING WOODEN SUPPORT STAKES AT INTERVALS SUFFICIENT TO SUPPORT THE FENCE AND WATER AND SEDIMENT RETAINED BY THE FENCE. SILT FENCE IS ALSO AVAILABLE WITH A WIRE MESH BACKING. THE FENCE IS DESIGNED TO RETAIN SEDIMENT-LADEN WATER TO ALLOW SETTLEMENT OF SUSPENDED SOILS BEFORE FILTERING THROUGH THE MESH FABRIC FOR DISCHARGE DOWNSTREAM. SILT FENCE SHALL BE LOCATED TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS AS FOLLOWS: THE MAXIMUM UP SLOPE AREA IS .5 ACRES AND THE MAXIMUM SLOPE THE SILT FENCE WILL BE PLACED ON IS 1%. INSTALL SILT FENCE AT A FAIRLY LEVEL GRADE (ALONG THE CONTOUR) TO PROVIDE SUFFICIENT UPSTREAM STORAGE VOLUME FOR THE ANTICIPATED RUNOFF.

B. CONSTRUCTION ENTRANCE – ALL ACCESS POINTS FROM THE PUBLIC STREET INTO THE CONSTRUCTION SITE SHALL INCLUDE A CONSTRUCTION ENTRANCE COMPOSED OF COURSE STONE TO THE DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS. THE ROUGH TEXTURE OF THE STONE HELPS TO REMOVE CLUMPS OF SOIL ADHERING TO CONSTRUCTION VEHICLE TIRES THROUGH THE ACTION OF VIBRATION AND JARRING OVER THE ROUGH SURFACE AND THE FRICTION OF THE STONE MATRIX AGAINST SOILS ATTACHED TO VEHICLE TIRES.

C. STORM SEWER INLET PROTECTION – CURB AND GRATED INLETS ARE PROTECTED FROM THE INTRUSION OF SILT AND SEDIMENT THROUGH A VARIETY OF MEASURES AS SHOWN ON THE CONSTRUCTION DRAWINGS. THE PRIMARY MECHANISM IS TO PLACE CONTROLS IN THE PATH OF FLOW SUFFICIENT TO SLOW SEDIMENT-LADEN WATER TO ALLOW SETTLEMENT OF SUSPENDED SOILS BEFORE DISCHARGING INTO THE STORM SEWER. CONTROLS TYPICALLY PROVIDE A SECONDARY BENEFIT BY MEANS OF FILTRATION. GRATED INLETS TYPICALLY INCLUDE A STURDY FRAME WRAPPED IN SILT FENCE OR CRUSHED STONE-LINED PERIMETER TO SLOW THE FLOW OF WATER. CURB INLETS TYPICALLY INCLUDE CRUSHED STONE BARRIERS HELD IN PLACE WITH SILT FENCE MATERIAL OR GEOTEXTILE FABRIC.

C. OTHER POLLUTANT CONTROLS

CONTROL OF SEDIMENTS HAS BEEN DESCRIBED PREVIOUSLY. OTHER ASPECTS OF THIS SWPPP ARE LISTED BELOW:

1. DUST CONTROL – CONSTRUCTION TRAFFIC MUST ENTER AND EXIT THE SITE AT THE STABILIZED CONSTRUCTION ENTRANCE. THE PURPOSE IS TO TRAP DUST AND MUD THAT WOULD OTHERWISE BE CARRIED OFF-SITE BY CONSTRUCTION TRAFFIC.

WATER TRUCKS WILL BE USED AS NEEDED DURING CONSTRUCTION TO REDUCE DUST GENERATED ON THE SITE. DUST CONTROL MUST BE PROVIDED BY THE GENERAL CONTRACTOR TO A DEGREE THAT IS ACCEPTABLE TO THE ENGINEER, AND IN COMPLIANCE WITH APPLICABLE LOCAL AND STATE DUST CONTROL REGULATIONS. AFTER CONSTRUCTION, THE SITE WILL BE STABILIZED (AS DESCRIBED ELSEWHERE), WHICH WILL REDUCE THE POTENTIAL FOR DUST GENERATION.

2. SOLID WASTE DISPOSAL – NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, ARE ALLOWED TO BE DISCHARGED FROM THE SITE WITH STORM WATER. ALL SOLID WASTE, INCLUDING DISPOSABLE MATERIALS INCIDENTAL TO THE MAJOR CONSTRUCTION ACTIVITIES, MUST BE COLLECTED AND PLACED IN CONTAINERS. THE CONTAINERS WILL BE EMPTIED AS NECESSARY BY A CONTRACT TRASH DISPOSAL SERVICE AND HAULED AWAY FROM THE SITE. THE LOCATION OF SOLID WASTE RECEPTACLES SHALL BE SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN.

SUBSTANCES THAT HAVE THE POTENTIAL FOR POLLUTING SURFACE AND/OR GROUNDWATER MUST BE CONTROLLED BY WHATEVER MEANS NECESSARY IN ORDER TO ENSURE THAT THEY DO NOT DISCHARGE FROM THE SITE. AS AN EXAMPLE, SPECIAL CARE MUST BE EXERCISED DURING EQUIPMENT FUELING AND SERVICING OPERATIONS. IF A SPILL OCCURS, IT MUST BE CONTAINED AND DISPOSED SO THAT IT WILL NOT FLOW FROM THE SITE OR ENTER GROUNDWATER, EVEN IF THIS REQUIRES REMOVAL, TREATMENT, AND DISPOSAL OF SOIL. IN THIS REGARD, POTENTIALLY POLLUTING SUBSTANCES SHOULD BE HANDLED IN A MANNER CONSISTENT WITH THE IMPACT THEY REPRESENT.

3. SANITARY FACILITIES – ALL PERSONNEL INVOLVED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH STATE AND LOCAL SANITARY OR SEPTIC SYSTEM REGULATIONS. TEMPORARY SANITARY FACILITIES WILL BE PROVIDED BY THE CONTRACTOR AT THE SITE THROUGHOUT THE CONSTRUCTION PHASE. THEY MUST BE UTILIZED BY ALL CONSTRUCTION PERSONNEL AND WILL BE SERVICED BY A COMMERCIAL OPERATOR. THE LOCATION OF SANITARY FACILITIES SHALL BE SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN.

4. WATER SOURCE – NON-STORM WATER COMPONENTS OF SITE DISCHARGE MUST BE CLEAN WATER. WATER USED FOR CONSTRUCTION WHICH DISCHARGES FROM THE SITE MUST ORIGINATE FROM A PUBLIC WATER SUPPLY OR PRIVATE WELL APPROVED BY THE STATE HEALTH DEPARTMENT. WATER USED FOR CONSTRUCTION THAT DOES NOT ORIGINATE FROM AN APPROVED PUBLIC SUPPLY MUST NOT DISCHARGE FROM THE SITE. IT CAN BE RETAINED IN THE PONDS UNTIL IT INFILTRATES AND EVAPORATES.

5. CONCRETE WASTE FROM CONCRETE READY-MIX TRUCKS – DISCHARGE OF EXCESS OR WASTE CONCRETE AND/OR WASH WATER FROM CONCRETE TRUCKS WILL BE ALLOWED ON THE CONSTRUCTION SITE, BUT ONLY IN SPECIFICALLY DESIGNATED DIKED AREAS THAT HAVE BEEN PREPARED TO PREVENT CONTACT BETWEEN THE CONCRETE AND/OR WASH WATER AND STORM WATER THAT WILL BE DISCHARGED FROM THE SITE OR IN LOCATIONS WHERE WASTE CONCRETE CAN BE LACED INTO FORMS TO MAKE RIPRAP OR OTHER USEFUL CONCRETE PRODUCTS. THE CURED RESIDUE FROM THE CONCRETE WASHOUT DIKED AREAS SHALL BE DISPOSED IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS. THE JOBSITE SUPERINTENDENT IS RESPONSIBLE FOR ASSURING THAT THESE PROCEDURES ARE FOLLOWED. THE LOCATION OF CONCRETE WASHOUT AREAS SHALL BE ESTABLISHED BY THE SITE CONTRACTOR.

6. FUEL TANKS – TEMPORARY ON-SITE FUEL TANKS FOR CONSTRUCTION VEHICLES SHALL MEET ALL STATE AND FEDERAL REGULATIONS. TANKS SHALL HAVE APPROVED SPILL CONTAINMENT WITH THE CAPACITY REQUIRED BY THE APPLICABLE REGULATIONS. THE TANK SHALL BE IN SOUND CONDITION FREE OF RUST OR OTHER DAMAGE WHICH MIGHT COMPROMISE CONTAINMENT. HOSES, VALVES, FITTINGS, CAPS, FILLER NOZZLES, AND ASSOCIATED HARDWARE SHALL BE MAINTAINED IN PROPER WORKING CONDITION AT ALL TIMES. THE LOCATION OF FUEL TANKS SHALL ESTABLISHED BY THE SITE CONTRACTOR.

ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF OIL, GASOLINE OR ANTI-FREEZE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ON-SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

VEHICLE OIL CHANGING ON-SITE WILL BE PROHIBITED UNLESS THE OIL IS CAPTURED AND PROPERLY DISPOSED. ABSOLUTELY NO OIL, ANTI-FREEZE, FUEL OR USED FILTERS WILL BE DISCARDED ON-SITE.

FUEL TANKS SHALL BE STORED WITHIN EARTHEN DIKES AND OVER A LAYER OF VISQUEEN FABRIC.

PETROLEUM PRODUCT SPILLS OF 25 GALLONS OR MORE SHALL BE REPORTED TO OHIO EPA'S SPILL HOTLINE (1-800-282-9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE DISCOVERY OF A RELEASE. ALL SPILLS WHICH RESULT IN CONTACT WITH WATERS OF THE STATE MUST ALSO BE REPORTED TO OHIO EPA'S HOTLINE.

THE GENERAL CONTRACTOR SHALL DESIGNATE AREAS FOR EQUIPMENT CLEANING, MAINTENANCE, AND REPAIR. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL UTILIZE SUCH DESIGNATED AREAS. CLEANING, MAINTENANCE, AND REPAIR AREAS SHALL BE PROTECTED BY A TEMPORARY PERIMETER BERM.

7. HAZARDOUS WASTE – ALL HAZARDOUS MATERIALS SHALL BE HANDLED AND STORED ON-SITE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND LOCAL, STATE AND FEDERAL REGULATIONS. ALL INCOMPATIBLE MATERIALS WILL BE KEPT ISOLATED FROM ONE ANOTHER AND STORED IN A SECURE, WELL VENTILATED AREA WITH SUFFICIENT CONTAINMENT WHEN NOT IN USE.

ALL HAZARDOUS WASTE GENERATED FROM THE CONSTRUCTION ACTIVITY WILL BE PROPERLY IDENTIFIED AND PACKAGED FOR DISPOSAL IN ACCORDANCE WITH APPLICABLE EPA AND DOT REGULATIONS. ABSOLUTELY NO HAZARDOUS MATERIALS OR WASTES WILL BE DISPOSED OF IN THE SOLID WASTE DUMPSTERS. HAZARDOUS WASTES WILL BE PROPERLY MANIFESTED AND DISPOSED THROUGH AN APPROVED PERMITTED WASTE HANDLING FACILITY. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE STRICTLY FOLLOWED.

8. MATERIAL MANAGEMENT PRACTICES – THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

A. GOOD HOUSEKEEPING – THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.

- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
- MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

B. HAZARDOUS PRODUCTS – THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS OF LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

D. DEWATERING

ALL DEWATERING FLOWS ARE TO BE SETTLED IN SEDIMENTATION BASINS OR DIRECTED THROUGH FILTERING DEVICES BEFORE DISCHARGE TO STABILIZED SITES, SUCH AS STREAMS OR STORM SEWERS; NOT ONTO EXPOSED SOILS, STREAM BANKS, OR ANY OTHER SITE WHERE THE FLOW COULD CAUSE EROSION.

SILT FROM CONSTRUCTION OPERATIONS SHALL NOT BE PERMITTED TO ENTER THE STORM SEWER SYSTEM. WHEN CONSTRUCTION OCCURS NEAR STORM SEWER INLETS, EROSION CONTROL MEASURES SUCH AS INLET FILTERS AND HAY BALES SHALL BE USED TO PREVENT SILT FROM ENTERING THE STORM SEWERS.

CONVEY WATER FROM THE CONSTRUCTION SITE IN A CLOSED CONDUIT. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DRAINAGE DITCHES.

E. PROHIBITED CONSTRUCTION ACTIVITIES

1. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAIN, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER;
2. LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS;
3. INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS;
4. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM SEWERS; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE;
5. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS IMPOUNDMENTS, OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO;
6. PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF ANY STREAM;
7. DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA;
8. DISPOSING OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDOR, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS;
9. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT;
10. DISCHARGING INJURIOUS SILICA DUST CONCENTRATIONS INTO THE ATMOSPHERE RESULTING FROM BREAKING, CUTTING, CHIPPING, DRILLING, BUFFING, GRINDING, POLISHING, SHAPING, OR SURFACING CLOSER THAN 200 FEET TO PLACES OF RESIDENCES OR COMMERCIAL, PROFESSIONAL, QUASI-PUBLIC OR PUBLIC PLACES OF HUMAN OCCUPATION.
11. DISCHARGE OF OIL OR OTHER HAZARDOUS SUBSTANCES INTO STORM WATER OR THE STORM WATER (STORM SEWER) SYSTEM IS SUBJECT TO REPORTING AND CLEANUP REQUIREMENTS.
12. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED ON THE PLANS BY THE ENGINEER FOR SUCH PURPOSES;
13. RUNNING WELL POINT OR PUMP DISCHARGE LINES THROUGH PRIVATE PROPERTY OR PUBLIC PROPERTY AND RIGHTS-OF-WAY WITHOUT THE WRITTEN PERMISSION OF THE PROPERTY OWNER AND THE CONSENT OF THE ENGINEER.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

TYPICAL SILT FENCE DETAIL
NOT TO SCALE

CONCRETE WASHOUT DETAIL
SCALE: NONE (PRACTICE 3.76)

TEMPORARY CONCRETE WASHOUT FACILITY NOTES:

1. TEMPORARY CONCRETE WASHOUT FACILITIES (TYPE BELOW GRADE) SHOULD BE CONSTRUCTED AS SHOWN ON THE DETAIL, WITH A RECOMMENDED MINIMUM LENGTH AND MINIMUM WIDTH OF 15 FEET. THE QUANTITY AND VOLUME SHOULD BE SUFFICIENT TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
2. PLASTIC LINING MATERIALS SHALL BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHALL BE FREE OF HOLES, TEARS OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

DANDY BAG® II
Installation and Maintenance Guidelines

Installation: Remove the grate from catch basin. If using optional oil absorbents; place absorbent pillow in unit. Stand the grate on end. Move the top lifting straps out of the way and place the grate into the Dandy Bag® II so that the grate is below the top straps and above the lower straps. Holding the lifting devices, insert the grate into the inlet.

Maintenance: Remove all accumulated sediment and debris from vicinity of unit after each storm event. After each storm event and at regular intervals, look into the Dandy Bag® II. If the containment area is more than 1/3 full of sediment, the unit must be emptied. To empty unit, lift the unit out of the inlet using the lifting straps and remove the grate. If using optional oil absorbents; replace absorbent when near saturation.

NOTE:
CURB BASINS SILTED UP OR CLOGGED DURING CONSTRUCTION SHALL BE MAINTAINED BY THE DEVELOPER OR CONTRACTOR AT THE DIRECTION OF THE CITY.

SITE MANAGEMENT

CONCRETE WASHOUT

- COMPLETE CONSTRUCTION/INSTALLATION OF THE SYSTEM AND HAVE WASHOUT LOCATIONS OPERATIONAL PRIOR TO CONCRETE DELIVERY.
- DO NOT WASH OUT CONCRETE TRUCKS OR EQUIPMENT INTO STORM DRAINS, WETLANDS, STREAMS, RIVERS, CREEKS, DITCHES, OR STREETS.
- NEVER WASH OUT INTO A STORM SEWER DRAINAGE SYSTEM. THESE SYSTEMS ARE TYPICALLY CONNECTED TO A NATURAL CONVEYANCE SYSTEM.
- WHERE NECESSARY, PROVIDE STABLE INGRESS AND EGRESS.
- IT IS RECOMMENDED THAT WASHOUT SYSTEMS BE RESTRICTED TO WASHING CONCRETE FROM MIXER AND PUMP TRUCKS AND NOT USED TO DISPOSE OF EXCESS CONCRETE OR RESIDUAL LOADS DUE TO POTENTIAL TO EXCEED THE DESIGN CAPACITY OF THE WASHOUT SYSTEM. SMALL AMOUNTS OF EXCESS OR RESIDUAL CONCRETE (NOT WASHOUT WATER) MAY BE DISPOSED OF IN AREAS THAT WILL NOT RESULT IN FLOW TO AN AREA THAT IS TO BE PROTECTED.
- INSTALL SIGNAGE IDENTIFYING THE LOCATION OF CONCRETE WASHOUT SYSTEMS.
- RUNOFF FROM A RAINSTORM OR SNOW MELT SHOULD NOT CARY WASTES AWAY FROM THE WASHOUT LOCATION.

MAINTENANCE

- INSPECT DAILY AND AFTER EACH STORM EVENT.
- INSPECT THE INTEGRITY OF THE OVERALL STRUCTURE INCLUDING, WHERE APPLICABLE, THE CONTAINMENT SYSTEM.
- INSPECT THE SYSTEM FOR LEAKS, SPILLS, AND TRACKING OF SOIL BY EQUIPMENT.
- INSPECT THE POLYETHYLENE LINING FOR FAILURE, INCLUDING TEARS AND PUNCTURES.
- ONCE CONCRETE WASTES HARDEN, REMOVE AND DISPOSE OF THE MATERIAL.
- EXCESS CONCRETE SHOULD BE REMOVED WHEN THE WASHOUT SYSTEM REACHES 50 PERCENT OF CAPACITY. USE OF THE SYSTEM SHOULD BE DISCONTINUED UNTIL APPROPRIATE MEASURES CAN BE INITIATED TO CLEAN THE STRUCTURE. PREFABRICATED SYSTEMS SHOULD ALSO UTILIZE THIS CRITERION, UNLESS THE MANUFACTURER HAS ALTERNATE SPECIFICATIONS.
- UPON REMOVAL OF THE SOLIDS, INSPECT THE STRUCTURE. REPAIR THE STRUCTURE AS NEEDED OR CONSTRUCT A NEW SYSTEM.
- DISPOSE OF ALL CONCRETE IN A LEGAL MANNER.
- THE PLASTIC LINER SHOULD BE REPLACED AFTER EVERY CLEANING.
- THE CONCRETE WASHOUT SYSTEM SHOULD BE REPAIRED OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE.
- CONCRETE WASHOUT SYSTEMS ARE DESIGNED TO PROMOTE EVAPORATION. HOWEVER, IF THE LIQUIDS DO NOT EVAPORATE AND THE SYSTEM IS NEAR CAPACITY, IT MAY BE NECESSARY TO VACUUM OR REMOVE THE LIQUIDS AND DISPOSE OF THEM IN AN ACCEPTABLE METHOD. DISPOSAL MAY BE ALLOWED AT THE LOCAL SANITARY SEWER AUTHORITY PROVIDED THEIR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMITS ALLOW FOR ACCEPTANCE OF THIS MATERIAL. ANOTHER OPTION WOULD BE TO UTILIZE A SECONDARY CONTAINMENT SYSTEM OR BASIN FOR FURTHER DEWATERING.

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REV.	DATE	DESCRIPTION
4	01/16/23	ISSUED FOR RE-PERMIT & REBID
3	09/30/22	ISSUED FOR REBID
2	08/22/22	ISSUED FOR BIDS & PERMIT
1	08/19/22	ISSUED FOR ODNR REVIEW

POGGEMEYER
DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

DRAWN BY: RGS
CHECKED BY: KAM

KENNETH A. MAAG
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PROJECT NUMBER
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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 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

1. VERIFY LOCATIONS OF SURVEY CONTROL POINTS PRIOR TO STARTING WORK. PROMPTLY NOTIFY OWNER OF ANY DISCREPANCIES DISCOVERED.

2. 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

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.

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

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. TRAFFIC CONTROL

A. FURNISH AND MAINTAIN CONSTRUCTION BARRICADES AND TRAFFIC CONTROL DEVICES WHEN WORKING IN AREAS OPEN TO TRAFFIC. BARRICADES AND TRAFFIC CONTROL DEVICES SHALL COMPLY WITH STATE DOT STANDARDS.

B. THE CONTRACTOR SHALL KEEP EXISTING STREETS, ROADS, DRIVES, AND BUILDING ENTRIES CLEAR OF DIRT, DEBRIS AND EQUIPMENT.

11. TESTING

A. TESTING LABORATORY SERVICES

REFERENCES

1. ANSI/ASTM D3740 – PRACTICE FOR EVALUATION OF AGENCIES ENGAGED IN TESTING AND/OR INSPECTION OF SOIL AND ROCK AS USED IN ENGINEERING DESIGN AND CONSTRUCTION.

2. ANSI/ASTM E329 – RECOMMENDED PRACTICE FOR INSPECTION AND TESTING AGENCIES FOR CONCRETE, STEEL AND BITUMINOUS MATERIALS AS USED IN CONSTRUCTION.

B. SELECTION AND PAYMENT

1. CONTRACTOR SHALL EMPLOY AND PAY FOR SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PERFORM SPECIFIED INSPECTION AND TESTING.

2. EMPLOYMENT OF TESTING LABORATORY SHALL BE IN NO WAY RELIEVE CONTRACTOR OF OBLIGATION TO PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS.

C. CONTRACTOR SHALL ARRANGE AND PAY FOR SOIL AND BASE COURSE TESTING AS REQUIRED BY THE CONTRACT DOCUMENTS AND AS FOLLOWS:

1. SITE FILL: PERFORM AT LEAST ONE FIELD DENSITY TEST FOR EVERY 10,000 SQ. FT. OF FILL PLACED WITHIN BUILDING, SLAB, AND PAVEMENT AREAS, WITH AT LEAST ONE TEST FOR EVERY 2 FT. OF FILL PLACED.

2. UTILITY TRENCH BACKFILL: PERFORM AT LEAST TWO TESTS IN RANDOM COMPACTED BACKFILL LAYERS FOR EVERY 400 L.F. OF TRENCH UNDER PAVEMENTS AND SLABS.

3. DETENTION POND DIKES: PERFORM AT LEAST ONE TEST FOR EVERY 100 L.F. OF DIKE IN RANDOM FILL LAYERS.

4. BASE COURSE: PERFORM AT LEAST ONE FIELD DENSITY TEST FOR EVERY 10,000 SQ. FT. OF BASE COURSE PLACED.

5. FAILED TESTS: IF ANY OF THE ABOVE TESTS INDICATED THAT MATERIALS HAVE BEEN PLACE AT A LOWER DENSITY THAN REQUIRED, PERFORM ADDITIONAL TESTS AS REQUIRED TO DETERMINE THE EXTENT OF THE DEFICIENCY.

D. CONTRACTOR SHALL ARRANGE AND PAY FOR ASPHALT AND CONCRETE TESTING AS REQUIRED BY THE CONTRACT DOCUMENTS.

E. CONTRACTOR SHALL ARRANGE AND PAY FOR TESTING OF PIPE LINES AS SPECIFIED HEREIN.

12. CLEARING AND GRUBBING

A. THIS WORK SHALL CONSIST OF ALL CLEARING AND GRUBBING, REMOVAL OF EXISTING STRUCTURES UNLESS OTHERWISE STATED. PROPER AND APPROVED DISPOSAL OF MATERIALS NOT REUSED FOR THE PROJECT. PREPARATION OF THE LAND TO BE FILLED, FILLING OF THE LAND, SPREADING AND COMPACTION OF THE FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING OF THE CUT AND FILL AREAS TO CONFORM WITH THE LINES, GRADES, SLOPES AND SPECIFICATIONS.

B. SUBSURFACE CONDITIONS: PRIOR TO BIDDING THE WORK, THE CONTRACTOR SHALL EXAMINE, INVESTIGATE, AND INSPECT THE CONSTRUCTION SITE AS TO THE NATURE AND LOCATION OF THE WORK AND THE GENERAL AND LOCAL CONDITIONS AT THE CONSTRUCTION SITE, INCLUDING, WITHOUT LIMITATION, THE CHARACTER OF SURFACE OR SUBSURFACE CONDITIONS AND OBSTACLES TO BE ENCOUNTERED ON AND AROUND THE CONSTRUCTION SITE; AND SHALL MAKE SUCH ADDITIONAL INVESTIGATION NECESSARY FOR THE PLANNING AND PROPER EXECUTION OF THE WORK.

C. REMOVE TREES, STUMPS, SNAGS, SHRUBS, BRUSH, HEAVY GROWTHS OF GRASS, WEEDS AND OTHER VEGETATION, IMPROVEMENTS, RUBBISH AND DEBRIS, AND OBSTRUCTIONS THAT INTERFERE WITH PROPOSED CONSTRUCTION; REMOVE ITEMS ONLY AS NECESSARY FOR COMPLETION OF WORK.

D. CUT BRUSH AND VEGETATION FLUSH WITH GROUND. GRUB OUT STUMPS, AND ROOTS HAVING A DIAMETER OF 2" OR LARGER, AND ROOT CLUSTERS TO A DEPTH OF AT LEAST 24 INCHES BELOW SUBGRADE ELEVATION FOR PAVEMENTS, STRUCTURES, AND EMBANKMENTS AND 6" BELOW GROUND SURFACE IN OTHER AREAS.

13. TOP SOIL STRIPPING

A. STRIP TOPSOIL FROM PROJECT AREA TO WHATEVER DEPTHS ENCOUNTERED; PREVENT INTERMINGLING WITH UNDERLAYING SUBSOIL OR OTHER OBJECTIONABLE MATERIAL. REMOVE HEAVY GROWTHS OF GRASS FROM AREAS BEFORE STRIPPING TOPSOIL.

B. STOCKPILE TOPSOIL IN STORAGE PILES IN AREAS AS DESIGNATED BY OWNER. CONSTRUCT STORAGE PILES TO FREELY DRAIN SURFACE WATER. COVER OR SPRINKLE WATER ON STORAGE PILES TO PREVENT WINDBLOWN DUST.

14. EARTH WORK AND GRADING CONSTRUCTION

A. ALL EARTH AND GRADING SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE STATE DEPARTMENT OF TRANSPORTATION LATEST EDITION.

B. THE GRADING OPERATIONS SHALL BE CLOSELY SUPERVISED AND INSPECTED, PARTICULARLY DURING THE REMOVAL OF UNSUITABLE MATERIAL AND THE CONSTRUCTION OF EMBANKMENTS OR BUILDING PADS, BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. ALL TESTING, INSPECTION AND SUPERVISION OF THE SOILS RELATED OPERATIONS SHALL BE ENTIRELY THE RESPONSIBILITY OF THE GEOTECHNICAL ENGINEER.

C. THE GRADING AND CONSTRUCTION OF THE SITE IMPROVEMENTS SHALL NOT CAUSE PONDING OF STORMWATER. ALL AREAS ADJACENT TO THESE IMPROVEMENTS SHALL BE GRADED TO ALLOW POSITIVE DRAINAGE.

D. THE PROPOSED GRADING ELEVATIONS SHOWN ON THE PLANS ARE FINISHED GRADE, EXCEPT FOR AREAS AS DESIGNATED FOR FUTURE DEVELOPMENT.

E. THE SELECTED FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS SO THAT THE COMPACTED THICKNESS IS APPROXIMATELY SIX INCHES (6"). EACH LAYER SHALL BE THOROUGHLY MIXED DURING SPREADING TO INSURE UNIFORMITY.

F. PLACE FILL IN PAVEMENT AREAS, DETENTION POND DIKES, UNDER BUILDING FOUNDATIONS AND SLABS, UNDER OUT LOT BUILDING PADS, AND WITHIN 10 FEET OF BUILDING LINES IN LOOSE LIFTS NOT MORE THAN 8 INCHES THICK, AT A MOISTURE CONTENT AT OR NEAR OPTIMUM, AND COMPACT TO AT LEAST 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM SPECIFICATION D-1557 (MODIFIED PROCTOR METHOD), OR TO OTHER DENSITY AS DETERMINED BY THE GEOTECHNICAL ENGINEER. PLACE FILL IN LANDSCAPE AREAS IN LOOSE LIFTS 12 INCHES THICK AND COMPACT TO 90% OF MAXIMUM STANDARD PROCTOR DENSITY.

FILL: FILL MATERIALS SHALL BE CLEAN GRANULAR MATERIAL. SUITABLE ON-SITE CUT MATERIAL MAY BE USED FOR REQUIRED FILLS. PROVIDE ADDITIONAL OFF-SITE FILL AS NECESSARY TO BRING SITE TO REQUIRED GRADES. FILL MATERIALS SHALL BE APPROVED BY GEOTECHNICAL ENGINEER.

G. THE SURFACE VEGETATION, TOPSOIL AND ANY OBVIOUSLY SOFT UNDERLYING SOIL SHOULD BE STRIPPED FROM ALL AREAS TO RECEIVE FILL. IF THE UNDERLYING SUBGRADE SOILS RUT DEEPER THAN ONE INCH (1") UNDER THE CONSTRUCTION EQUIPMENT OR IF THE MOISTURE CONTENT EXCEEDS THAT NEEDED FOR PROPER COMPACTION, THE SOIL SHALL BE SCARIFIED, DRIED AND RE-COMPACTED TO NINETY-FIVE PERCENT (95%) OF MODIFIED PROCTOR WITHIN BUILDING PAD AND PAVEMENT AREAS.

IF UNSUITABLE BEARING SOILS ARE REMOVED FROM BENEATH PROPOSED FOOTINGS, EXCAVATION SHALL EXTEND LATERALLY BEYOND PERIMETER OF FOUNDATION FOR A DISTANCE AT LEAST EQUAL TO THICKNESS OF BACKFILL BELOW FOOTING BASE. THIS PROVISION SHALL ALSO APPLY WHERE A RAISED STRUCTURAL PAD IS CONSTRUCTED TO ACHIEVE A BEARING ELEVATION GREATER THAN THE EXISTING GRADES.

UNSUITABLE MATERIALS: EXCAVATE ORGANIC, FROZEN, WET, SOFT, AND LOOSE SOILS (INCLUDING PREVIOUSLY PLACED UNCOMPACTED FILL SOILS); BOULDERS; REMNANTS OF PREVIOUS CONSTRUCTION; AND OTHER UNSUITABLE MATERIALS FROM BENEATH PROPOSED FOUNDATIONS, SLABS, PAVEMENTS, AND DETENTION POND DIKES. THE COST OF THIS WORK SHALL BE INCLUDED IN THE BASE BID FOR THE PROJECT.

ALL UNSTABLE MATERIAL AND ALL SURPLUS EXCAVATED MATERIAL NOT REQUIRED SHALL BE REMOVED FROM THIS SECTION. THE LOCATION OF DUMP AND LENGTH OF HAUL SHALL BE THE CONTRACTOR'S RESPONSIBILITY WITH THE OWNER'S APPROVAL, PRIOR TO EXPORTING FILL FROM SITE. AN ADDITIONAL EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED AS AN AMENDMENT/ADDITION TO THIS PROJECT.

H. TOLERANCE FOR AREAS TO RECEIVE SLABS OR PAVEMENTS SHALL BE 0.10 FT. ABOVE OR BELOW ESTABLISHED SUBGRADE. TOLERANCE FOR AREAS TO RECEIVE TOPSOIL SHALL BE 0.30 FT. ABOVE OR BELOW ESTABLISHED SUBGRADE.

I. THE SUBGRADE FOR PAVEMENT AREAS SHALL BE PROOF-ROLLED BY THE CONTRACTOR AND ANY UNSUITABLE AREAS ENCOUNTERED SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

SUBGRADE: PRIOR TO FILLING, PROOF-ROLL EXPOSED SUBGRADE TO DETECT AREAS WHICH MUST BE UNDERCUT OR IMPROVED BY APPROPRIATE PREPARATION AND COMPACTION TECHNIQUES. SUBGRADE FOR FOUNDATIONS, SLABS, PAVEMENTS, AND FILL SHALL BE APPROVED BY GEOTECHNICAL ENGINEER.

J. UPON COMPLETION OF THE SURFACE IMPROVEMENTS, THE CONTRACTOR SHALL RE-SPREAD A MINIMUM OF FOUR INCHES (4") OF TOPSOIL ON ALL DISTURBED AREAS.

K. BACKFILL: PLACE FILL OR BACKFILL ADJACENT TO STRUCTURES IN A MANNER TO PREVENT DAMAGE AND ALLOW STRUCTURES TO ASSUME LOADS GRADUALLY AND UNIFORMLY, AT APPROXIMATELY SAME RATE ON ALL SIDES. BACKFILL FOR FOUNDATION WALLS AND BEHIND RETAINING WALLS FOR A LATERAL DISTANCE OF AT LEAST 3 TO 4 FT., OR FOR A DISTANCE AT LEAST EQUAL TO WIDTH OF BASE OF FOOTING, WHICHEVER IS GREATER, SHALL BE WELL-GRADED, FREE DRAINING GRANULAR MATERIAL.

DEWATERING: PERFORM SITE GRADING IN A MANNER TO PREVENT SURFACE WATER AND GROUND WATER FROM FLOWING INTO WORK AREA. PROMPTLY REMOVE WATER FROM EXCAVATIONS USING PUMPS, SUMPS, AND DEWATERING SYSTEM COMPONENTS NECESSARY TO CONVEY WATER AWAY FROM EXCAVATIONS. CONVEY WATER REMOVED FROM EXCAVATIONS AND RAIN WATER TO COLLECTION OR RUN-OFF AREAS. PROVIDE AND MAINTAIN TEMPORARY DRAINAGE DITCHES. IF UNDERGROUND SPRINGS OR DRAIN TILE ARE ENCOUNTERED, NOTIFY GEOTECHNICAL ENGINEER BEFORE PROCEEDING. WHEN POSSIBLE MAINTAIN EXISTING DRAIN TILE OR REROUTE INTO NEW STORM SEWER.

15. 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.

16. WATERLINE

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.

17. 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.

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.

18. 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.

19. 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.

20. 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.

21. 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.

22. 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.

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.

23. 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 SEAL TO BE RUBBER-O-RING. VALVES SHALL CONFORM TO ANSI/AWWA STANDARD C509.

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

24. 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 <u>ONE</u> PIECE LOWER BARREL ANS <u>ONE</u> 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.

25. 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.

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REV.	DATE	DESCRIPTION
4	01/16/23	ISSUED FOR RE-PERMIT & REBID
3	09/30/22	ISSUED FOR REBID
2	08/22/22	ISSUED FOR BIDS & PERMIT
1	08/19/22	ISSUED FOR ODNR REVIEW

POGGEMEYER
DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
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VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

GENERAL NOTES

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26. 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 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.

27. 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.

28. 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.

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 .

29. PAVEMENT CONSTRUCTION

A. ALL PAVEMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE STATE DEPARTMENT OF TRANSPORTATION LATEST EDITION.

B. UNSUITABLE MATERIAL ENCOUNTERED IN EXCAVATING FOR PAVEMENT SUBGRADE SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL TO THE LIMITS APPROVED BY THE ENGINEER. UNSUITABLE MATERIAL THAT IS EXCAVATED SHALL BE DISPOSED OF ELSEWHERE AT THE CONTRACTORS EXPENSE.

C. THE PAVEMENT SUBGRADE AND BASE COURSE MATERIAL SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE AGGREGATE BASE COURSE, AT WHICH TIME, THE SUBGRADE AND BASE COURSE SHALL BE "PROOF ROLLED" BY THE CONTRACTOR WITH LEGALLY LOADED SIX-WHEELED TRUCK IN THE PRESENCE OF THE ENGINEER AND OWNER.

D. SUBGRADE COMPACTION: COMPACTED SUB-BASE SOIL UNDER ROADWAY WILL BE PROOF ROLLED FOR COMPACTION BY CONTRACTOR BY A TANDEM DUMP TRUCK LOADED WITH A LEGAL LOAD OF STONE, BEFORE STONE BASE IS PLACED. ALL SOFT SPOTS FOUND DURING PROOF ROLL OF SUB-BASE SHALL BE DUG OUT AND REPLACED WITH SUITABLE SOIL OR #2 STONE. IN LIEU OF USING #2 STONE, FABRIC OR GEOGRIDS MAY BE USED. STONE BASE WILL BE PROOF ROLLED AGAIN BY DUMP TRUCK OUT TO THE EDGES OF THE PAVEMENT, BEFORE PAVING BEGINS. SUB-BASE SOIL COMPACTION TESTS SHALL MEET CURRENT SPECIFICATIONS FOR SUBGRADE COMPACTION.

30. CURB AND GUTTER, WALKS, AND SLABS

A. CURBS SHALL BE DEPRESSED AT LOCATIONS WHERE PUBLIC WALKS/PEDESTRIAN PATHS INTERSECT CURB LINE AT PAVEMENT INTERSECTION, CONCRETE SPILLWAYS, AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER.

B. CONCRETE CURB AND GUTTER SHALL BE IN ACCORDANCE WITH DOT STANDARD SPEC., LOCATE CONTRACTION JOINTS AT 20 FT. ON CENTER, UNLESS OTHERWISE SHOWN. LOCATE EXPANSION JOINTS AS REQUIRED BY STATE DOT STD. SPEC.

C. CONCRETE WALKS, SHALL BE IN ACCORDANCE WITH DOT STANDARD SPECS. UNLESS OTHERWISE SHOWN, LOCATE SIDEWALK CONTRACTION JOINTS AT 5FT. ON CENTER AND EXPANSION JOINTS AT 50 FT. ON CENTER. UNLESS OTHERWISE SHOWN, LOCATE CONTRACTION JOINTS IN LARGER SLABS AT 15 FT. INTERVALS IN EACH DIRECTION, REINFORCED WITH LUBRICATED SMOOTH DOWEL BARS (3/4 INCH DIAMETER, 18 INCH LENGTH, AT 12 INCH CENTERS).

D. ALL CONCRETE CURB AND GUTTER AND PAVEMENT SHALL BE BROOMED FINISHED. CONCRETE TEST CYLINDERS SHALL BE TAKEN EACH DAY THAT CONCRETE IS POURED. A COMPRESSIVE STRENGTH OF AT LEAST 3,500 PSI FOR CURB AND GUTTER AND 4,000-4,500 PSI FOR PAVEMENT SHALL BE VERIFIED BY AN INDEPENDENT LABORATORY TO BE ACCEPTABLE. RESULT OF THE TESTING SHALL BE SUBMITTED TO THE ENGINEER AND OWNER.

E. FOR ALL CONCRETE CURB AND GUTTER AREAS, THREE-QUARTER INCH (3/4") THICK PRE-MOLDED FIBER EXPANSION JOINTS WITH 3/4" X 20" PLAIN ROUND STEEL DOWEL BARS SHALL BE INSTALLED AT ALL P.C.'S, P.T.'S, CURB RETURNS, AND AT THE END OF EACH POUR. ALTERNATE ENDS OF THE DOWEL BARS SHALL BE GREASED AND FITTED WITH METAL EXPANSION TUBES. THREE-QUARTER INCH (3/4") THICK FIBER EXPANSION JOINTS SHALL BE USED IN EVERY CASE AT TWELVE FOOT (12') MAXIMUM INTERVALS IN THE CURB AND CUT 2 ¾" DEEP. CURB JOINTING SHALL BE LOCATED AT CONCRETE PAVEMENT JOINTS. THE GRANULAR CURB BASE SHALL BE A MINIMUM OF SIX (6) INCHES OF AGGREGATE BASE MATERIAL TO ALLOW FOR PROPER SUBGRADE DRAINAGE. COMPACTED CURB SUBGRADE SHALL BE SHAPED PARALLEL TO THE CURB FLOW LINE AND POSITIVELY DRAINED TO INLETS AND CATCH BASINS. ALL ROADWAYS SHALL BE CONSTRUCTED TO A SELECT COMPACTED SUBGRADE, GRADED PARALLEL TO THE FINISH SURFACE.

31. BASE COURSE

PLACE CRUSHED AGGREGATE BASE COURSE TO THE LINES AND GRADES SHOWN IN ACCORDANCE WITH STATE DOT STD. SPEC. BASE COURSE SHALL BE GRADUATION NO. 2. COMPACT BASE COURSE IN 6 INCH MAXIMUM LIFTS TO 95% OF STANDARD PROCTOR DENSITY, ASTM D698.

32. P.C.C. PAVEMENT

A. THIRTY DAYS PRIOR TO THE START OF PAVING THE CONTRACTOR SHALL SUBMIT A MIX DESIGN ANALYSIS OF THE PROPOSED CONCRETE. THE MIX DESIGN SHALL INCLUDE THE SOURCE AND QUANTITY OF ALL CONSTITUENTS, COMPRESSIVE STRENGTH, FLEXURAL STRENGTH, AIR CONTENT, SLUMP AND YIELD. PAVING MAY NOT BEGIN PRIOR TO OWNER'S APPROVAL OF THE MIX DESIGN.

B. CONCRETE SHALL CONFORM TO THE DEPARTMENT OF TRANSPORTATION AND ALL OTHER APPLICABLE SECTIONS WITH A WATER/CEMENT RATIO OF .45 OR LESS AND AIR CONTENT OF 6% (-1 TO +2).

C. FOR EACH 150 CUBIC YARDS OR PORTION THEREOF PLACED PER DAY, THE FOLLOWING TESTS SHALL BE PERFORMED: SLUMP, AIR CONTENT, TEMPERATURE, ON SET OF 3 COMPRESSIVE STRENGTH CYLINDERS. FOR EVERY FIFTH SET OF CYLINDERS ONE SET OF THREE FLEXURAL STRENGTH BEAMS SHALL BE CAST. ALL TESTING SHALL COMPLY WITH ASTM STANDARDS: C-31, C-39, C-78, C-143.

D. AFTER CONCRETE HAS SET, ALL EXPANSION JOINTS ADJACENT TO BUILDINGS SHALL BE CLEANED AND SEALED WITH HOT APPLIED RUBBERIZED SEALANT MEETING FEDERAL SPECIFICATION SS-S-1401C AND ASTM D3405.

E. CONTRACTOR SHALL PROVIDE A JOINTING AND EXPANSION LAYOUT PLAN TO OWNER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.

33. ASPHALTIC CONCRETE PAVEMENT

PLACE ASPHALTIC CONCRETE BINDER AND WEARING COURSES TO THE LINES AND GRADES SHOWN IN ACCORDANCE WITH DOT STD. SPEC. ASPHALT CEMENT SHALL BE PENETRATION GRADE 85-100 OR PERFORMANCE GRADE PG 58-28. COMPACT PAVEMENT UNTIL ROLLER MARKS ARE ELIMINATED AND NOT LESS THAN 92% OF THE TARGET MAXIMUM DENSITY IS OBTAINED.

A. THE BITUMINOUS PAVEMENT COURSE MATERIAL SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY AT THE ASPHALT MIXING PLANT TO VERIFY THAT THE PORTIONS OF MATERIAL ARE WITHIN THE ALLOWABLE LIMITS OF THE SPECIFICATIONS AS DEFINED BY THE DEPARTMENT OF TRANSPORTATION APPLICABLE SECTIONS. WRITTEN CONFIRMATION OF CONFORMANCE SHALL BE SUBMITTED TO THE OWNER.

B. AFTER THE BITUMINOUS AGGREGATE BASE COURSE HAVE BEEN PROOF ROLLED AND REPAIRED WHEN REQUIRED AND PRIOR TO PLACING THE SURFACE COURSE, THE BITUMINOUS AGGREGATE BASE COURSE SHALL BE SURFACE TESTED BY THE CONTRACTOR. ANY VARIATIONS IN THE SURFACE OF THE BITUMINOUS AGGREGATE BASE COURSE EXCEEDING ONE HALF (1/2") INCH SHALL BE CORRECTED BY THE REMOVAL AND REPLACEMENT OF ANY SUB-STANDARD AREAS OR THE CONSTRUCTION OF CORRECTIVE LEVELING COURSE AT THE DIRECTION OF THE ENGINEER.

C. AFTER THE INSTALLATION OF THE AGGREGATE BASE COURSE, ALL TRAFFIC SHALL BE KEPT OFF THE AGGREGATE BASE UNTIL THE BITUMINOUS AGGREGATE BASE COURSE IS LAID. AFTER INSTALLATION OF THE BITUMINOUS AGGREGATE BASE COURSE AND UPON THE COMPLETION OF INSPECTION OF SAME AND APPROVED BY THE ENGINEER AND OWNER, THE PAVEMENT SHALL BE CLEANED, PRIMED AND THE INTERMEDIATE AND SURFACE COURSES LAID. ALL DAMAGED AREAS IN THE BITUMINOUS AGGREGATE BASE COURSE, AGGREGATE BASE OR CURB AND GUTTER SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND OWNER, PRIOR TO LAYING THE SURFACE COURSE. THE PAVING CONTRACTOR SHALL PROVIDE WHATEVER EQUIPMENT AND MANPOWER IS NECESSARY, INCLUDING THE USE OF POWER BROOMS, TO PREPARE THE PAVEMENT FOR APPLICATION OF THE SURFACE COURSE. EQUIPMENT AND MANPOWER FOR CLEANING SHALL BE CONSIDERED AS INCIDENTAL TO THE COST OF THE CONTRACT OR AS NOTED IN THE PROPOSAL.

D. AFTER COMPLETION OF THIS ITEM, AN ASPHALT-SEALING BAND SHALL BE PLACED AT ALL INTERSECTIONS, FEATHERS, TRANSITIONS AND ASPHALT DRIVEWAYS.

34. PAVEMENT MARKING

A. PAINT LINE WORK ON ASPHALTIC PAVING, CONCRETE CURBS, WALKS, AND RAMPS AS SHOWN. PAINT SHALL BE FACTORY MIXED, QUICK DRYING, NON-BLEEDING TRAFFIC MARKING PAINT COMPLYING WITH AASHTO M248, TYPE S. COLOR SHALL BE WHITE, EXCEPT WHERE ANOTHER COLOR IS REQUIRED BY CODE.

B. CLEAN SURFACE IN AREAS TO RECEIVE MARKINGS. PAINT MARKINGS AND SYMBOLS WITH TRAFFIC MARKING PAINT. APPLY PAINT WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY TWO COATS AT MANUFACTURERS RECOMMENDED RATES.

35. HANDICAPPED PARKING SIGNS

A. MINIMUM 12 INCH, X 18 INCH X 18 GA. COLD ROLLED GALVANIZED STEEL, TREATED WITH A BAKED ENAMEL FINISH. COLORS, TEXT AND DESIGN AS SHOWN ON DETAILS.

B. SIGN SHALL BE MOUNTED ON A SINGLE 2 INCH SQUARE STEEL POST WITH PAINTED ENAMEL FINISH.

C. SIGNS SHALL BE SET PLUMB AND LEVEL. TOUCH-UP ANY ABRASIONS TO FINISH. COMPLETELY CLEAN SIGNS OF ALL FOREIGN MATTER.

36. TRAFFIC SIGNS

TRAFFIC SIGNS SHALL COMPLY WITH THE PERTINENT STATE AND LOCAL REQUIREMENTS FOR THE SIGN TYPE(S) DESIGNATED ON DRAWINGS.

3" SUBMERSIBLE SEWAGE PUMPS

GENERAL
Furnish all labor, materials, equipment and incidentals required to provide 2 (qty.) solids handling submersible centrifugal sewage pumps(s) as specified herein.

OPERATING CONDITIONS
Each pump shall be rated 2 HP, volts, 230, single phase, 60 hertz, and 1750 RPM. The unit shall produce 300 U.S. GPM at 15 feet TDH. The S3S shall be capable of handling a 2-1/2" spherical solid and the S4S a 3" spherical solid. The pump shall be non-overloading throughout the entire range of operation without employing service factor. The pump shall reserve a minimum service factor of 1.20. The performance curve submitted for approval shall state in addition to head and capacity performance, the pump efficiency and solid handling capability.

CONSTRUCTION
Each pump shall be of the sealed submersible type, Models S3S, S4S, SB3S, SB4S, S3SD, S4SD, SB3SD, and SB4SD as manufactured by Hydromatic Pump. The pump volute, motor and seal housing shall be high quality gray cast iron, ASTM A-48, Class 30. The pump discharge shall be fitted with a 3" standard ASA 125 lb. flange, faced and drilled for the S3S models, and a 4" standard ASA 125 lb. flange, faced and drilled for the S4S models. All external mating parts shall be machined and Nitrile O-ring sealed on a beveled edge. Gaskets shall not be acceptable. All fasteners exposed to the pumped liquids shall be 300 series stainless steel.

ELECTRICAL POWER CORD
Electrical power cord shall be 500W or W, water resistant 600V, 90°C, UL and CSA approved and applied dependent on amp draw for size.

The pump shall be double protected with compression fitting and an epoxy potted area at the power cord entry to the pump.

The power cable entry into the cord cap assembly shall first be made with a compression fitting. Each individual lead shall be stripped down to the bare wire, at staggered intervals, and each strand shall be individually separated. This area of the cord cap shall then be filled with an epoxy compound potting which will prevent water contamination to gain entry even in the event of wicking or capillary attraction.

The power cord assembly shall then be connected to the motor leads with insulated butt connectors rather than a terminal board that allows for possible leaks.

The cord cap assembly where bolted to the motor housing shall be sealed with a Nitrile O-ring on a beveled edge to assure proper sealing.

MOTOR
The stator, rotor and bearings shall be mounted in a sealed submersible type housing. The stator windings shall have Class F insulation (155°C or 311°F) and dielectric oil-filled motor, NEMA B design. Single-phase motors shall have thermal type overload protection with automatic reset and be capacitor start with capacitor located in the control panel. Three phase motors shall use magnetic starters with overload relays located in the control panel for further protection. Because air-filled motors do not dissipate heat as efficiently as oil- filled motors, air-filled designs shall not be acceptable.

Stators shall be securely held in place with threaded fasteners so they may be easily removed in the field. No special tools shall be required for pump and motor disassembly.

BEARINGS AND SHAFT
An upper radial bearing and lower thrust bearing shall be required. Both the upper radial bearing and the lower thrust bearing shall be heavy-duty single row ball bearings that are permanently lubricated by the dielectric oil that fills the motor housing. Double row, sealed grease packed bearings shall not be acceptable. Bearings that require lubrication according to a prescribed schedule shall not be acceptable.

The shaft shall be machined from a solid 400 stainless steel and be a design that is of larger diameter with minimum overhand to reduce shaft deflection and prolong bearing life.

SEALS
The S3S, S4S, SB3S, and SB4S shall have a mechanical single seal, Type 21. The S3SD, S4SD, SB3SD, and SB4SD shall have a mechanical dual seal, Type 21. The seal shall be used with the rotating seal face being carbon and the stationary seal face to be ceramic. The seal shall be replaceable without disassembly of the seal plate and without the use of special tools. Pump-out vanes shall be present on the backside of the impeller to keep contaminants out of the seal area. Units that require the use of tungsten-carbide seals or foreign manufactured seals shall not be acceptable.

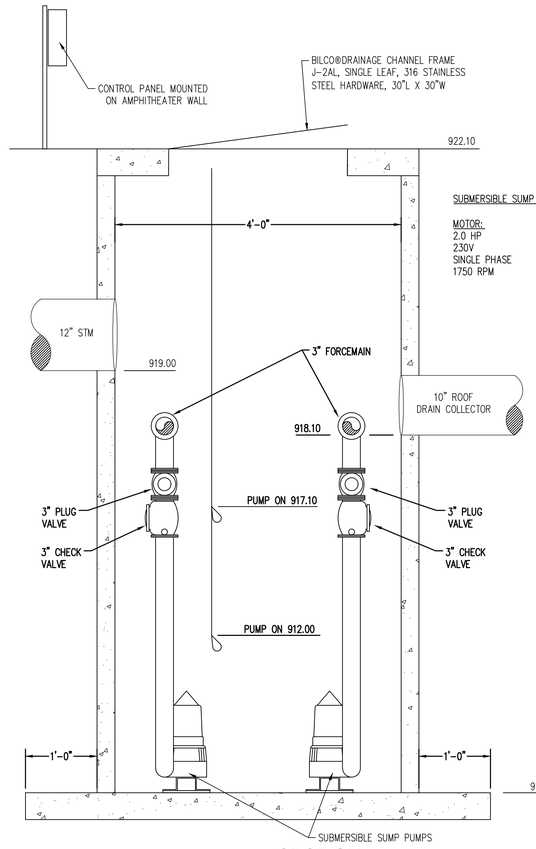
IMPELLER
Impeller shall be of the two-vane, semi-enclosed design and have pump-out vanes on the backside of the impeller to prevent grit and other materials from collecting in the seal area. Single vane design impellers that cannot be easily trimmed and that do not maintain balance with wear, causing shaft defections and reducing seal and bearing life, are not acceptable. Impeller shall not require coating. Because most impeller coatings do not remain beyond the very early life of the impeller, efficiency and other performance data submitted shall be based on performance with an uncoated impeller. Attempts to improve efficiency by coating impeller shall not be acceptable.

Impellers shall be dynamically balanced. The tolerance values shall be as listed below according to the International Standard Organization grade 6.3 for rotors in rigid frames.

RPM	TOLERANCE
1750	.02 IN.-OZ/LB. OF IMPELLER WEIGHT

The impeller shall be slip fit to the shaft and key driven. A 400 series stainless steel washer and impeller bolt shall be used to fasten the impeller to the shaft. Threaded shafts for attachment of the impeller shall not be acceptable.

CASING
The casing shall be of the end suction volute type having sufficient strength and thickness to withstand all stress and strain from service at full operating pressure and load. The casing shall be of the centerline discharge type equipped with an automatic pipe coupling arrangement for ease of installation and piping alignment. The design shall be such that the pumps will be automatically connected to the discharge piping when lowered into position with the guide rails. The casing shall be accurately machined and bored for register fits with the suction and casing covers.

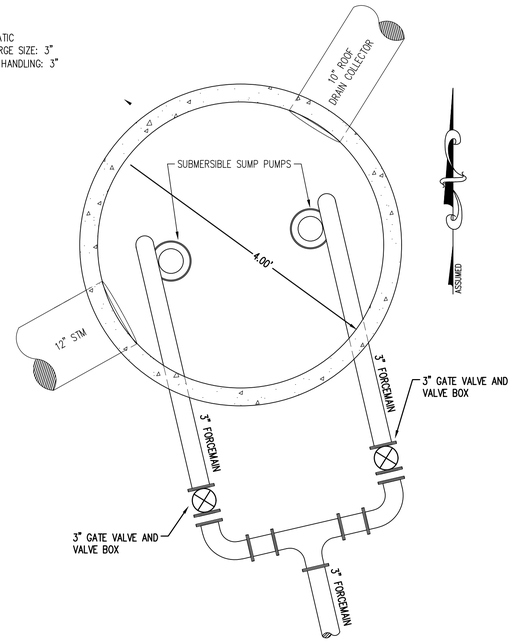


SUBMERSIBLE SUMP PUMP

MOTOR:
2.0 HP
230V
SINGLE PHASE
1750 RPM

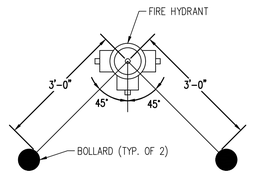
PUMP:
AUTOMATIC
DISCHARGE SIZE: 3"
SOLIDS HANDLING: 3"

SECTION

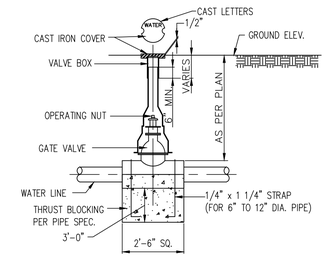


PLAN

STORMWATER PUMP STATION SECTION
NOT TO SCALE

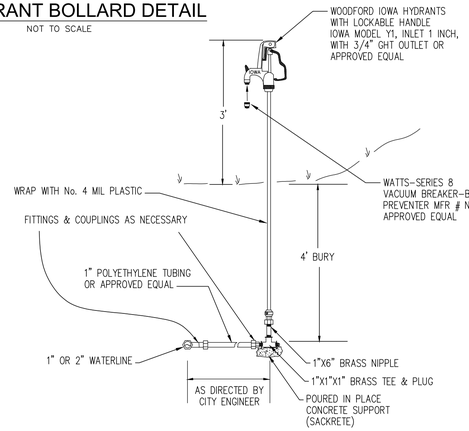


FIRE HYDRANT BOLLARD DETAIL
NOT TO SCALE

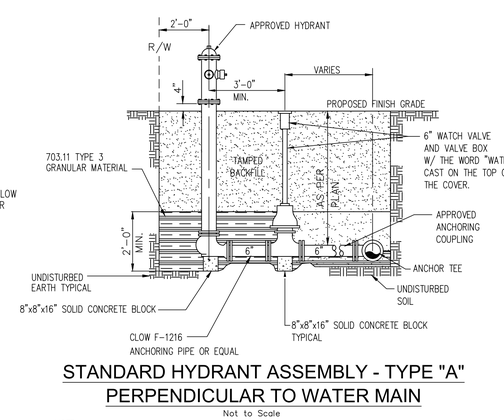


GATE VALVE INSTALLATION
Not to Scale
(12" MAX.)

INSTALLATION OF VALVES
UNDER PRESSURE CONDITIONS, ALL VALVES (INCLUDING THOSE IN HYDRANT RUN-OUTS) REQUIRE ANCHORAGE AGAINST THRUST CREATED WHEN VALVE IS CLOSED. JOINT RESTRAINTS ARE REQUIRED EACH DIRECTION FROM VALVE FOR A DISTANCE (L_{de}), SEE JOINT RESTRAINT REQUIREMENTS FOR DEAD END LINES FOR THIS DISTANCE.



HOSE BIBB ASSEMBLY NO. 2
NOT TO SCALE



STANDARD HYDRANT ASSEMBLY - TYPE "A" PERPENDICULAR TO WATER MAIN
Not to Scale

NOTE:
ALL NOZZLES SHALL CORRESPOND TO APPLICABLE EXISTING LOCAL FIRE APPARATUS.

REV.	DATE	DESCRIPTION
4	01/16/23	ISSUED FOR RE-PERMIT & REBID
3	09/30/22	ISSUED FOR REBID
2	08/22/22	ISSUED FOR BIDS & PERMIT
1	08/19/22	ISSUED FOR ODNR REVIEW

Ohio Utilities Protection Service
Call 811 before you dig

POGGEMEYER DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

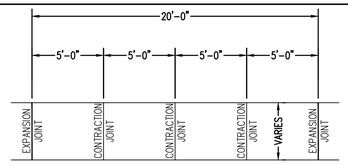
GENERAL NOTES, WATER LINE AND STORMWATER PUMP STATION DETAILS

DRAWN BY	CHECKED BY
RGS	KAM

STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

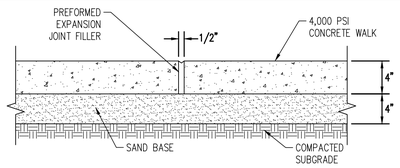
C110
DATE
1/16/2023
2:14:25 PM
PROJECT NUMBER
20225731

FILE No. Z:\PDG-CAD\CLIENTS\20225731\001A\SITE\CIVIL3D\DWGS\20225731-001A Park Site Design Details.dwg 01/16/23 14:02-RStith



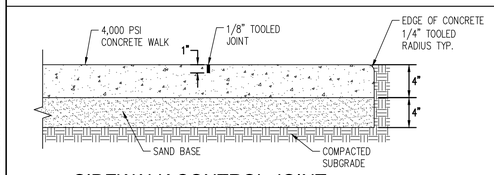
TYPICAL SIDEWALK DETAIL

NOT TO SCALE



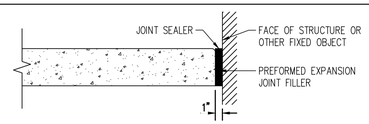
SIDEWALK EXPANSION JOINT

NOT TO SCALE



SIDEWALK CONTROL JOINT

NOT TO SCALE

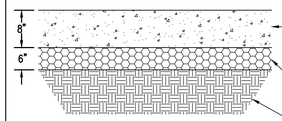


EXPANSION JOINT AT RIGID STRUCTURE DETAIL

NOT TO SCALE

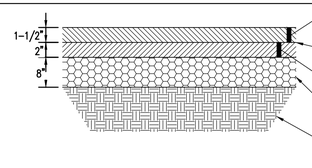
NOTES:
1. THIS JOINT TO BE USED WHENEVER CONCRETE PAVEMENT ABUTS A RIGID STRUCTURE (RETAINING WALLS, BUILDINGS WALLS, ETC.)

NOTE: PAVEMENT JOINTS SHALL CONFORM TO ODOT ITEM 452 AND ODOT STANDARD DRAWINGS BP-2.1 AND BP-2.2. CONTRACTOR SHALL PROVIDE CONCRETE PAVEMENT JOINTING PLAN FOR ACCEPTANCE.



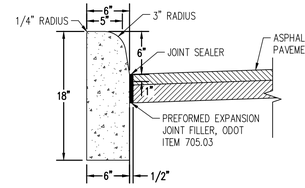
TYPICAL CONCRETE PAVEMENT SECTION

NOT TO SCALE



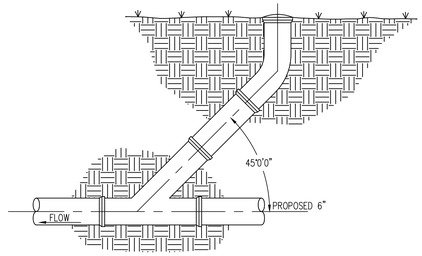
TYPICAL STANDARD DUTY ASPHALT PAVEMENT SECTION

NOT TO SCALE



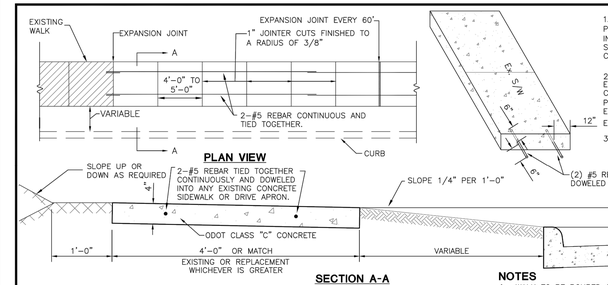
ODOT CURB TYPE 6

NOT TO SCALE



CLEAN-OUT DETAIL

NOTE: Not to Scale
ALL NOZZLES SHALL CORRESPOND TO APPLICABLE EXISTING LOCAL FIRE APPARATUS.



NOTES

A. WALK TO BE POURED ON UNDISTURBED EARTH OR COMPACTED GRANULAR BEDDING.

B. PROVIDE BROOM FINISH TO ALL EXPOSED SURFACES.

C. CONCRETE SHALL CONFORM TO ODOT ITEM 499 CONCRETE. CONCRETE WORK SHALL CONFORM TO ODOT ITEM 608, UNLESS OTHERWISE SPECIFIED WITHIN.

D. PROVIDE EDGING AROUND ALL EXPOSED SURFACES.

E. USE CLEAR CURING COMPOUND IMMEDIATELY AFTER FINISHING SURFACES. ANY OTHER METHOD OR TYPE OF CURING COMPOUND MUST BE PREAPPROVED.

F. WHEN RENOVATING EXISTING STREETS, THE SIDEWALKS SHALL BE REPLACED TO CONFORM WITH THE VILLAGE CONSTRUCTION STANDARDS AND DRAWINGS.

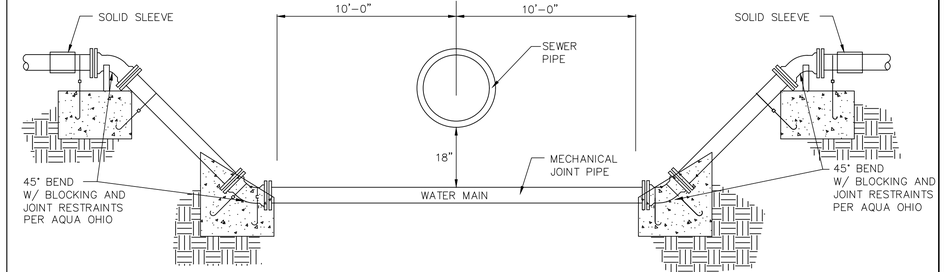
G. CONCRETE SHALL BE ODOT CLASS C WITH 1.5LB FIBER MESH PER CUBIC YARD AND REINFORCED WITH #5 REBAR PER DETAIL (4000 PSI, 600LB/CY CEMENT). PROPORTIONING OPTIONS 1 AND 2 NOT ALLOWED.

H. CONCRETE SHALL CONTAIN 6% ± 1% OF TOTAL AIR.

VILLAGE OF COVINGTON
CHOICE ONE ENGINEERING

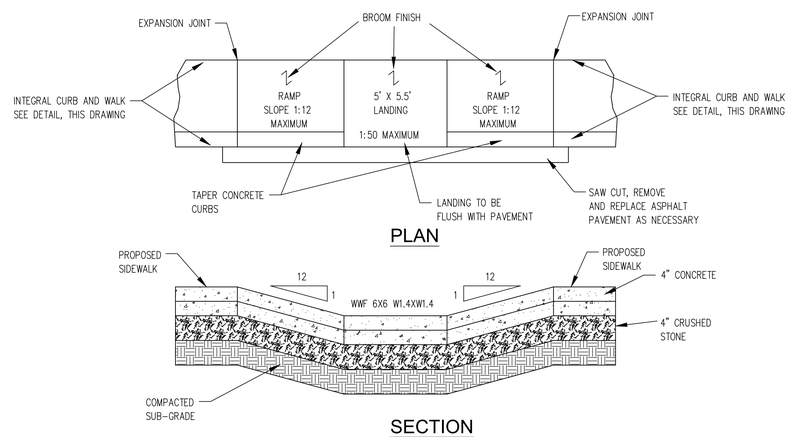
CONCRETE SIDEWALK DETAIL

REVISIONS:	DATE APPROVED: NOV. 2003
10-4-12 5-15-13	PAGE No. 300-10



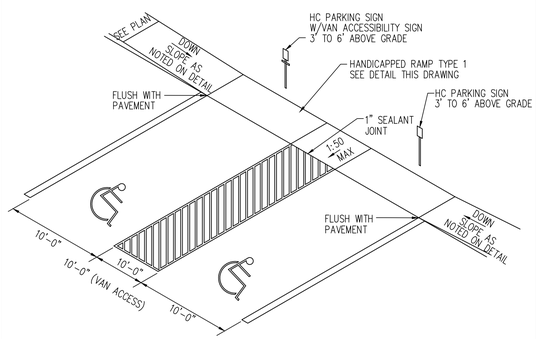
WATERLINE RELOCATION DETAIL

NO SCALE



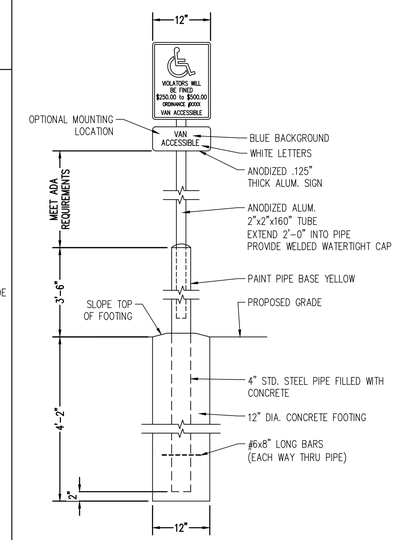
SIDEWALK RAMP - TYPE 1 (HANDICAP) DETAIL

NO SCALE



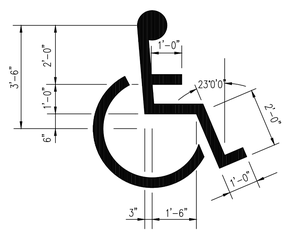
HANDICAP PARKING DETAIL

NO SCALE



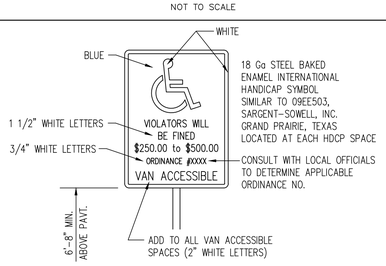
HANDICAP PARKING SIGN

NOT TO SCALE



PAINTED HANDICAP SYMBOL

NOT TO SCALE



HANDICAP PARKING SIGN DETAIL

NOT TO SCALE

REV.	DATE	DESCRIPTION
4	01/16/23	ISSUED FOR RE-PERMIT & REBID
3	09/30/22	ISSUED FOR REBID
2	08/22/22	ISSUED FOR BIDS & PERMIT
1	08/19/22	ISSUED FOR ODNR REVIEW

STANDARD DRAWINGS

ALL STANDARD DRAWINGS SHALL BE THE CURRENT RELEASE FROM THE VILLAGE OF COVINGTON, OHIO.

300 (COMPLETE, INCLUDING BUT NOT LIMITED TO)
- TYPE 6 BARRIER CURB
- TYPE 2 COMBINATION CURB AND GUTTER
- CURB RAMPS
- CONCRETE SIDEWALK DETAIL (WIDTHS PER PLAN)
- NOTES

POGGEMEYER DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

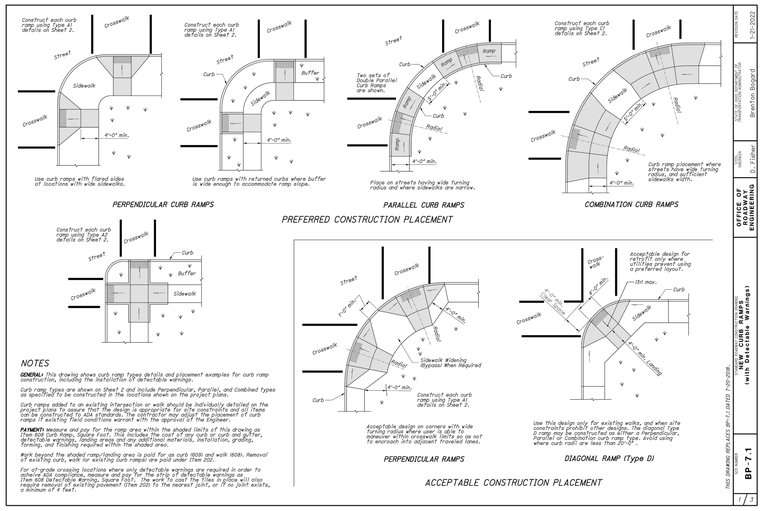
SITE DETAILS

DRAWN BY	CHECKED BY
RGS	KAM

STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

C111

DATE
1/16/2023
2:14:25 PM
PROJECT NUMBER
20225731



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NOTES

GENERAL: This drawing shows curb ramp types details and placement examples for curb ramp construction, including the installation of detectable warnings.

Curb ramp types are shown on Sheet 2 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans.

Curb ramps added to an existing intersection or walk should be individually detailed on the project plans to assure that the design is appropriate for site constraints and all items can be constructed to ADA standards. The contractor may adjust the placement of curb ramps if existing field conditions warrant with the approval of the Engineer.

PAYMENT: Measure and pay for the ramp area within the shaded limits of this drawing as Item 608 Curb Ramp, Square Foot. This includes the cost of any curb or curb and gutter, detectable warnings, landing areas and any additional materials, installation, grading, forming, and finishing required within the shaded area.

Work beyond the shaded ramp/landing area is paid for as curb (609) and walk (608). Removal of existing curb, walk (or existing curb ramps) are paid under Item 202.

For at-grade crossing locations where only detectable warnings are required in order to acheive ADA compliance, measure and pay for the strip of detectable warnings as Item 608 Detectable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.

NOTES CONTINUED

The running slope of the curb ramp shall be a 13:1 maximum or flatter. In existing sidewalks, where the maximum ramp slope is not feasible due to site constraints (e.g. utility poles or vaults, right-of-way limits) it may be reduced as follows:

A) 10:1 for a max. rise of 6",
B) 8:1 for a max. rise of 3",
C) 6:1 over a max. run of 2'-0" for historic areas where a flatter slope is not feasible.

To prevent chasing the grade indefinately, the transition from exisiting sidewalk to the shaded curb ramp area is not required to exceed 15 feet in length.

While ramps may be skewed to the crosswalk, the entire lower landing area must fall within the cross walk that the ramp serves and cannot be located in the traveled lane of opposing traffic.

The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transitions shall be 20:1 ot flatter.

The bottom edge of the ramp shall change planes perpendicular to the landing.

The edge of the curb shall be flush with the edge of the adjacent pavement and gutter and surface slopes that meet grade breaks shall also be flush.

Ramp landings shall be 4' min. x 4' min. with a 64:1 or flatter cross slope and running slope.

DETECTABLE WARNINGS: Install Detectable Warnings on each curb ramp with approved materials, as shown on Sheet 3. Install these proprietary products as per manufacturer's written instructions.

DRAINAGE: Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding ⅛" between the 1) pavement and gutter, and 2) gutter and ramp, are not allowed.

SURFACE TEXTURE: Texture concrete surfaces by coarse brooming transverse to the ramp slopes to be rougher than the adjacent walk.

JOINTS: Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a ½" Item 705.03 expansion joint filler around the edge of ramps built in existing concrete walks. Lines shown on this drawing indicate the ramp edges and slope changes, and do not necessarily indicate joint lines.

SECTION D-D
See Sheet 2.
*Where possible, pour ramp area integral with the curb, otherwise use 6" thick walk.

DETECTABLE WARNINGS NOTES

GENERAL: Detectable Warnings are a distinctive surface pattern of truncated domes which are detectable by cane or underfoot to alert people with vision impairments of their approach to streets and hazardous drop-offs.

PLACEMENT: Detectable warnings are to be installed at any location where pedestrians might cross paths with vehicular traffic lanes, such as the base of curb ramps or at blended curbs. A 24" strip of domes is to be installed for the full width of the ramp or walk. Typical street corner placement locations are shown on Sheet 1.

Some detectable warning products require a concrete border for proper installation. The concrete border should not exceed 2". Where the back of curb edge is tooled to provide a radius, the border dimension should be measured from the end of the radius.

The depth of concrete underneath detectable warning products shall be a minimum of 4". See DETAIL A.

ALIGNMENT: Truncated domes should be aligned with the primary direction of the ramp as shown on the DETECTABLE WARNING ALIGNMENT Detail. Normally the detectable warnings should be flush with the back of the curb, but for skewed conditions see DETECTABLE WARNING ALIGNMENT Detail. For non-standard layouts, detectable warning materials may have to be mitered and placed segmentally.

PRODUCTS & COLORS: Color of the detectable warnings should contrast with surrounding concrete walk and ramp. Black is not an acceptable color. Approved products and guidance on color may be found on the Office of Roadway Engineering Service's Detectable Warnings Approved List. Install products as per manufacturer's printed instructions.

1.0 GENERAL

1.1 Summary

This generic specification refers to stamping a pattern into the asphalt surface and applying a colored surface coating treatment. The pattern and color of the stamped asphalt shall be specified on the project drawings.

1.2 Related Sections

Section 1.0 General
Section 2.0 Asphalt Stamping
Section 3.0 Coating Composition and Performance Characteristics
Section 4.0 Delivery, Storage and Handling
Section 5.0 Surface Preparation
Section 6.0 Coating Application
Section 7.0 Coating Thickness
Section 8.0 Applicator Training
Section 9.0 Samples and Mockups
Section10.0 Field Quality Control

2.0 Asphalt Stamping

2.1 Hot Mix Asphalt (HMA)

New asphalt must be placed to meet local required specifications. Compaction density must be met prior applying the asphalt stamps.

Existing asphalt must contain sufficient surface binder (asphalt cement) to allow a pliable surface when heated.

2.2 Stamping the Asphalt

Using flexible templates, stamp the pattern into the asphalt using a vibratory plate compactor. Stamping can be performed on a freshly placed asphalt surface when the asphalt is still pliable or into an existing asphalt surface. An existing asphalt surface must be heated using an infrared heating apparatus insuring not to heat the surface above 325ºF (163ºC)
Use slow cycled heat to ensure the surface does not burn. The surface should be heated to a depth of at least ¾" to ensure compaction (not crushing of the aggregate) below the template.

3.0 Coating Composition and Performance Characteristics

This section covers the composition, handling and application characteristics for the Stamped Asphalt Coating System. Coatings used with this surfacing system must meet the minimum characteristic and performance properties described below.

3.1 Asphalt Coating (Tint Base)

Material Composition and Application Characteristics

Table: 1

Characteristics	Requirement
Resin	waterborne latex
% Solids by weight	> 80%
% Solids by volume	> 65%
Weight per gallon	13.5 lbs/gal
% non-reactive fillers	< 40%
% calcined bauxite aggregate	>15%
Volatile Organic Compounds	< 75 g/l or 1/4lb/gal
Boiling Range	147° - 477°F
Vapor Density	Heavier than air
Liquid Density	1.5 – 1.7 kg/l @ 20°C
Flashpoint ASTM D 3278	>201°F
Flashpoint ASTM D 3278	>201°F
Hazardous Ingredients	none
Viscosity @ 70°F (20°C)	100-110 kU
Mix Ratio (Coating : LiquidTint) gal/pints	5gal: 1pint
Dry mil thickness per coat	20 to 25 mils
Number of coats to achieve rec. thickness	3 coats

Performance Requirements

Table: 2

Test	Requirement
Dry Time (to re-coat) @ 50°F (10°C)............	50 min
Dry Time (to re-coat) @ 90°F (32°C)............	30 min
85% Cure (to permit traffic) @ 50°F (10°C)............	6 to 8 hours
85% Cure (to permit traffic) @ 90°F (32°C)............	2 to 4 hours
ASTM 2486 Scrub Resistance (30 dry mils)............. Applied as per manufacturers specifications.................	5000 cycles to max loss of 50% coating thickness
Dry mil build thickness per coat	20 to 25 mils
Temp. limits for service (of cured material)	-35°F to 145°F
Friction using a locked wheeled tester at 30 mph	>45 FN30R
Friction using a locked wheeled tester at 30 mph	>40 FN30R
Pedestrian Friction ASTM E303 British Pendulum............	>70 BPN

3.2 Liquid Tint (coloring system)

The coloring system "Liquid Tint" shall consist of no less than 95% pure inorganic iron oxide pigments in a water base liquid carrier. Pigment particle size (fineness) must pass 95% minus 325 mesh. Liquid Tint must be alkali resistant, water insoluble, inert, light resistant, inorganic, and lime-proof.

3.3 Primer

Primer shall be water based 100% acrylic waterborne

Material Composition, Handling and Application Characteristics

Table: 3

Characteristics	Requirement
Resin	waterborne latex
% Solids by weight	> 30%
% Solids by volume	> 29%
Weight per gallon	8.5 lbs/gal
% non-reactive fillers	< 0%
Volatile Organic Compounds	< 45 g/l or 1/10lb/gal
Boiling Range	147° - 477°F
Vapor Density	Heavier than air
Flashpoint ASTM D 3278	>201°F
Flashpoint ASTM D 3278	>201°F
Hazardous Ingredients	none
Viscosity @ 70°F (20°C)	44> kU
Mix Ratio (Primer : Water)	1 primer : 1 water
Dry mil thickness per coat	1 to 2 mils
# of prime coats to achieve rec. thickness	1 coat

Performance Requirements

Table:4

Test	Requirement
Dry Time (to re-coat) @ 50°F (10°C)............	50 min
Dry Time (to re-coat) @ 90°F (32°C)............	30 min
ASTM 2486 Scrub Resistance (3 wet mils).............	500 cycles
Dry mil build thickness per coat	1 to 2 mils
Temp. limits for service (of cured material)	-35°F to 145°F

4.0 Delivery, Storage and Handling

4.1 Packaging and Labeling

All coating products shall be packed in standard closed containers. Each container of separately packaged component shall be clearly and durably labeled to indicate the date of manufacture, manufacturer's batch number, quantity, color, component identification and designated name or formula specification number together with special instructions.

4.2 Delivery, Storage and Handling

Coating products shall be delivered to the site in sealed containers that plainly show the designated name, batch number, color, date of manufacturer, and name of the manufacturer. Store the material on site in enclosures, out of direct sunlight in a warm, ventilated and dry area at room temperature; do not allow coating to freeze. Care shall be taken in handling of coating containers to prevent puncture, inappropriate opening or other action, which may lead to product contamination. No materials that are past the coating manufacturer's recommended shelf life shall be used without the approval of the coating manufacturer.

5.0 Surface Preparation

5.1 Cleaning

Broom using mechanical brooming device, or stiff bristle hand broom. Scrape and blow fine sand and debris off of surface. Pressure washing may be necessary to remove bonded debris. Use a non-solvent based degreaser to remove stains. Spray degreaser on stained area and let stand for 15 minutes. Using a stiff broom or brush, agitate the stained area to remove stain and rinse with water. Repeat this procedure on severe stains. Thoroughly rinse the area and let dry for 24 hours.

5.2 Repair Damaged Asphalt

Damaged and cracked asphalt shall be repaired by heating damaged area until the asphalt cement is in a liquid state (ensuring asphalt does not exceed 375° F), turning over and mixing in new fresh asphalt if necessary to ensure repair is level with adjacent area. Infrared type heating mechanisms are the recommended tool for this procedure.

5.3 Preparation of New Asphalt

New asphalt surfaces shall be allowed to cool after final compaction roll to less than 140° F before applying coating. Asphalt mix design shall specified by a qualified Pavement Engineer and shall be designed for the purpose of the application.

6.0 Coating Application

6.1 Environmental Conditions

Surfaces should be dry for at least 24 hours prior to applying Stamped Asphalt coatings. 50°F and rising, is the recommended minimum air and surface temperature. The temperature of the asphalt surface must be at least 5°F above the dew point temperature during and after applying coating. Coating application must be complete at least two hours before sunset to allow for proper cure.

6.2 Masking

Mask all adjacent areas using paint-grade masking tape. Use duct taped on concrete and asphalt surfaces. Building paper extended a minimum of 48 inches beyond the edge of coated area is required to prevent over-spray of coatings onto adjacent areas.

6.3 Spray Equipment

Spray texture gun (Graco RTX1500 TexSpayer).
or Benron "EZ-TEX DX" sprayers.

The coating manufacturer shall approve spray gun settings and alternative spray equipment.

6.3 Mixing Base Coat

Contractor to follow latest mixing techniques provided by the manufacturer.

7.0 Coating Thickness

7.1 Standard Thickness. The applied thickness of the coating shall be determined according to the application as noted in table 5. The owner may specify a greater thickness if so desired.

Required Film Thickness

Table: 5

Application	Film Thickness
Prime Coat where applicable	5 wet mils (1 dry mil)
First coat	25 wet mils (20 dry mils)
Second coat	30 wet mils (25 dry mils)
Third coat	30 wet mils (25 dry mils)
Seal Coat where applicable	5 wet mils (1 dry mil)

8.0 Applicator Training

8.1 The Applicator shall be approved by the manufacture for the application being applied. The Applicator shall have lead personnel on the project that have been trained by the manufacturer within the past 12 months of starting the project. At least one of these trained personnel shall be on site at all times during the application.

9.0 Samples and Mockups

9.1 Samples shall be provided to the owner (or owners representative) for approval prior to tender closing.

Samples shall display the following:
1. Brick or stone Pattern
2. Brick or stone color
3. Variations of the above if requested

Coating samples and mockups, are to be applied to an asphalt surface covering a 96" x 96" area.

Approval of color and pattern to be provided in writing to the bidding contractor no less than 7 days prior to bid closing.

Approved samples and mockups to be held by owner for future onsite verification.

10.0 Field Quality Control

10.1 The contractor for work under this section shall maintain a quality control program specifically to verify compliance with this specification. A daily log shall be kept to record actions in the field.

10.2 This log shall include the following information;
1. Surface preparation start date and time
2. Photos of surface prior to start of preparation
3. Close up photos of crack repair (before and after) if applicable
4. Ambient temperature start and end of each day
5. Relative humidity start and end of each day
6. Substrate surface temperature start and end of each day
7. Photos of surface after application of each coat

Note:
On projects larger than 1,000 square feet, break project into areas of approximately 1,000 square feet for the purpose of photo taking and record keeping. Number these areas and record the respective numbers on scaled drawing.

10.3 Dry film thickness shall be confirmed by the owner (or owners representative) on site, during the application process.

Method:
2" x 4" lengths of duct-tape (or 2" x 4" thin plastic, glass or metal plates) shall be secured to the substrate that will receive coating. The tape will be randomly placed averaging one tape per 300 sq ft. These tapes shall be pre-marked (on the adhesive side) with location matching a marked, scaled drawing. The tape shall be removed within 1 hour after the final coat has been applied. These samples shall be kept by the owner (or owners representative) for future verification of dry film thickness (if verification becomes necessary).

Ohio Utilities Protection Service
Call 811 before you dig

REV.	DATE	DESCRIPTION
4	01/16/23	ISSUED FOR RE-PERMIT & REBID
3	09/30/22	ISSUED FOR REBID
2	08/22/22	ISSUED FOR BIDS & PERMIT
1	08/19/22	ISSUED FOR ODNR REVIEW

POGGEMEYER
DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - SITE
25 N. GRANT ST., COVINGTON, OH 45318

CURB RAMP DETAILS
AND STAMPED CROSSWALK
SPECIICATIONS

DRAWN BY RGS
CHECKED BY KAM

KENNETH A. MAAG
53316

C112
DATE
1/16/2023
2:14:25 PM
PROJECT NUMBER
20225731

GENERAL NOTES

1. 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.
2. SHOP DRAWINGS REVIEWED BY THE CONTRACTOR AND STAMPED INDICATING APPROVAL SHALL BE SUBMITTED TO THE ENGINEER OF RECORD (EOR) FOR REVIEW PRIOR TO FABRICATION DETAILING ALL NECESSARY COMPONENTS. REPRODUCTIONS OF THE CONTRACT DOCUMENTS WILL NOT BE ACCEPTED WITHOUT PRIOR PERMISSION FROM THE EOR.
3. FIELD VERIFY ALL EXISTING CONDITIONS. NOTIFY EOR OF ANY DISCREPANCIES BEFORE START OF WORK.

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 UNDERSTANDING OF PERIODIC SITE VISITS BY THE 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.

STRUCTURAL DESIGN CRITERIA

ALL DESIGN LOADS AND SERVICEABILITY REQUIREMENTS SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT ADDITION OF THE OHIO BUILDING CODE AND ASCE 7.

STRUCTURAL DESIGN CRITERIA

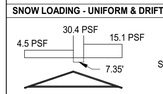
BUILDING INFORMATION

THE STRUCTURE IS RISK CAT. II, TYPE V-B CONSTRUCTION

DESIGNED FOR: ASCE 7-10

LATERAL FORCE RESISTING SYSTEM: ORDINARY REINFORCED MASONRY SHEAR WALL

FLOOR LOADING	**NEW ADDITION**
SLAB LIVE LOAD	100 psf
ROOF LOADING	
UNIFORM LIVE	20 psf
UNIFORM DEAD	10 psf
SNOW LOADING - UNIFORM & DRIFTING	
GROUND SNOW LOAD, P_g	20 psf
ROOF SNOW LOAD, P_f	15.1 psf
SNOW LOAD EXPOSURE FACTOR, C_e	0.9
SNOW LOAD IMPORTANCE FACTOR, I_s	1.0
THERMAL FACTOR, C_t	1.2
RAIN ON SNOW SURCHARGE	5.0 psf
MINIMUM DESIGN SNOW LOAD, P_m	20 psf
WIND LOADING	
BASIC WIND SPEED (3s GUST), V_{ult}	115 mph
WIND EXPOSURE	B
INTERNAL PRESSURE COEFFICIENT, GC_{pi}	±0.0
COMPONENT AND CLADDING WIND LOADS	
DISTANCE "a" END ZONE = 16'-0"	



UNBALANCED SNOW LOADING

	A_e	10 sf		50 sf		200 sf	
		(+)	(-)	(+)	(-)	(+)	(-)
ROOF	FIELD (ZONE 1)	16	40	16	23	16	16
	EDGES (ZONE 2)	16	60	16	40	16	46
	CORNERS (ZONE 3)	16	73	16	47	16	73
WALLS		(+)	(-)	(+)	(-)	(+)	(-)
	FIELD (ZONE 4)	18	18	16	17	16	16
	CORNERS (ZONE 5)	18	36	16	32	16	25

SERVICEABILITY LIMITS	LIVE LOAD	TOTAL LOAD
ROOFS	L/240	L/180
FLOORS	L/360	L/240

FOUNDATIONS AND EARTHWORK

1. CONTRACTOR SHALL ADHERE TO RECOMMENDATIONS FOR SUBGRADE PREPARATIONS AND EARTHWORK, SLABS-ON-GRADE, PAVEMENTS, FOUNDATIONS AND ALL CONSTRUCTION CONSIDERATIONS AND GEOTECHNICAL CONDITIONS DISCLOSED BY THE GEOTECHNICAL REPORT AND BORINGS IF APPLICABLE.
2. FOUNDATIONS SHALL BEAR ON UNDISTURBED SOIL OR ENGINEERED FILL PROVIDING A PRESUMED BEARING CAPACITY OF:
1,500 psf (MIN.) COLUMN SPREAD FOOTINGS
MATERIAL AT BEARING ELEVATIONS WHICH DOES NOT CONFORM WITH THESE REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE A/E FOR REVIEW AND DETERMINATION.
3. BASED ON LOCAL CODE REQUIREMENTS, THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 3'-6" BELOW FINISHED GRADE UNLESS NOTED OTHERWISE.
4. FILL UNDERNEATH STRUCTURES SHALL BE THOROUGHLY COMPACTED TO 100% DRY DENSITY (STANDARD PROCTOR, ASTM D698) AND CONSIST OF SELECT NON-FROST ACTION FILL MATERIAL (IE; DENSE GRADED AGGREGATE) PLACED IN 6" LIFTS. BACKFILL AROUND THE STRUCTURE OR IN UTILITY TRENCHES SHALL BE SELECT FILL MATERIAL PLACED IN 6" LIFTS COMPACTED TO 98% DRY DENSITY (STANDARD PROCTOR, ASTM D698). FILL UNDER BUILDING SLABS, PAVINGS, CURBS, WALKS, ETC. SHALL BE MADE WITH COARSE SAND, GRAVEL, OR CRUSHED STONE COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
5. UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS FOUNDATIONS SHALL EXTEND BELOW LOCAL FROST DEPTHS.
6. DIMENSIONS AND LOCATIONS OF EXISTING FOUNDATIONS, UNDERGROUND UTILITIES, AND OTHER OBSTRUCTIONS HAVE BEEN DEVELOPED FROM OWNER'S DRAWINGS OF RECORD AND/OR OBSERVATIONS IN THE FIELD. THE CONTRACTOR SHALL EXCAVATE WITH CARE AND VERIFY ALL FIELD ASSOCIATED DIMENSIONS, TOLERANCES AND ELEVATIONS WHILE EXCAVATING AND PRIOR TO CASTING CONCRETE. ANY DISCREPANCIES MUST BE REPORTED TO DESIGN ENGINEER IMMEDIATELY.
7. ALLOW FOR ONE #5 BAR TO BE USED IN CONJUNCTION WITH BUILDING GROUNDING/BONDING SYSTEM. VERIFY LOCATION AND OTHER REQUIREMENTS W/ ELECTRICAL.

CONCRETE

1. DESIGN, FURNISH, AND PLACE CONCRETE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE (ACI).
2. UNLESS NOTED OR SPECIFIED OTHERWISE, CONCRETE SHALL HAVE THE FOLLOWING MINIMUM 28 DAY COMPRESSIVE STRENGTH:

LOCATION	MIN f'_c (psi)	TEST AGE (DAYS)	MAX W/C RATIO (a)	AIR (b)	MAX ALLOW AGGREGATE (e)	NOTES
FOOTINGS	3000	28	0.50	---	1"	
EXTERIOR EXPOSED SLAB-ON-GRADE	4500	28	0.45	6%	1"	

A. FLY ASH AND/OR GROUND GRANULATED BLAST FURNACE SLAG MAY BE ADDED TO ANY OF THE MIX DESIGNS SPECIFIED. MAXIMUM FLY ASH AND/OR SLAG ADDED SHALL NOT EXCEED 25% OF THE TOTAL WEIGHT OF CEMENTITIOUS MATERIALS.
B. AIR CONTENT TOLERANCE SHALL BE ±1 1/2% AND SHALL BE MEASURED AT THE POINT OF PLACEMENT (AFTER PUMPING IF APPLICABLE). ALL CONCRETE EXPOSED TO THE WEATHER SHALL HAVE AN APPROVED ADMIXTURE TO ENTRAIN AIR. CONCRETE THAT MAY BECOME SUBJECT TO FREEZE/THAW CONDITIONS DURING CONSTRUCTION SHALL BE AIR ENTRAINED. AIR ENTRAINING ADMIXTURES SHALL CONFORM TO TO ASTM C260.
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 SHALL BE NORMAL WEIGHT WITH STANDARD AGGREGATES IN CONFORMANCE WITH ASTM C33.
4. SLUMP SHALL BE LIMITED TO 3" MINIMUM AND 5" MAXIMUM AS DETERMINED IN ACCORDANCE WITH ASTM C143.
5. SLUMP SHALL BE DETERMINED BY THE CONTRACTOR. THE MIX DESIGN SHALL INDICATE THE SLUMP AND IT SHALL BE MEASURED AT THE JOBSITE WITH A TOLERANCE OF +1". A SLUMP INCREASE OF 2" 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) SHALL NOT EXCEED THE WATER IN THE APPROVED MIX DESIGN.
6. ACCELERATED SET OR HIGH EARLY STRENGTH MAY BE ACHIEVED BY USING APPROVED ADMIXTURES. ALL ADMIXTURES SHALL BE CHLORIDE FREE.
7. CHLORIDE BASED ADMIXTURES ARE PROHIBITED. ALL OTHER ADMIXTURES MUST CONFORM WITH ASTM C494.
8. COLD WEATHER CONCRETING SHALL CONFORM TO ACI 306 AND HOT WEATHER CONCRETE SHALL CONFORM TO ACI 305.
9. CONCRETE FINISH SHALL BE HARD TROWELLED UNLESS OTHERWISE NOTED. A ROUGH BROOM FINISH SHALL BE USED ON EXTERIOR WALKING SURFACES.
10. ALL EXTERIOR CONCRETE SURFACES SHALL BE SEALED WITH A WATER PROOFING AGENT.
11. PROVIDE A 1" NOMINAL CHAMFER AT ALL EXPOSED CORNERS OF BEAMS, COLUMNS, AND WALLS.
12. PROVIDE #3 HORIZONTAL DOWELS IN FLOOR SLABS AT ALL RE-ENTRANT CORNERS (U.N.O.). DOWELS SHALL EXTEND 1'-3" EACH WAY PAST EACH RE-ENTRANT CORNER. PROVIDE ONE BAR FOR SLABS UP TO 6" AND TWO BARS FOR SLABS OVER 6".
13. PROVIDE CORROSION RESISTANT ACCESSORIES SUCH AS GRAY PLASTIC CHAIRS OR CHAIRS WITH GRAY PLASTIC COATED TIPS IN ALL EXPOSED CONCRETE CONSTRUCTION. PRE-CAST CONCRETE CUBES OR SAND PLATE CHAIRS SHALL BE USED FOR THE SUPPORT OF REINFORCING ON GRADE (MASONRY BRICK NOT ALLOWED FOR SLABS ON GRADE).
14. UNLESS NOTED OTHERWISE, CONSTRUCT FLOOR SLABS TO ACI 302 CLASS 4 (INSTITUTIONAL OR COMMERCIAL), OR CLASS 5 (INDUSTRIAL OR WAREHOUSING) AS APPROPRIATE. FLOOR FLATNESS/LEVELNESS SHALL BE COMPOSITE F/F = 35, F/L = 25 (SOV), W/ MLV OF 23 AND 17 RESPECTIVELY.

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 SOUTHERN PINE #2 OR BETTER.
4. PRESERVATIVE TREATED LUMBER SHALL BE SOUTHERN PINE #2 OR BETTER, GROUND CONTACT HEAVY DUTY RATED IN ACCORDANCE WITH AWPA U1 USE CATEGORY UC4B.
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. 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.

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 5psf 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 AND UNBALANCED LOADS.
4. PROVIDE GALVANIZED METAL TRUSS CLIPS TO ANCHOR EACH END OF TRUSS. SIMPSON H10A (OR APPROVED SUBSTITUE) 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.

NOTE:

1. TRUSS CONNECTORS SHALL BE SIMPSON DECORATIVE HARDWARE AVANT COLLECTION.
2. ALL WOOD FRAMING SHALL BE NO. 1 CEDAR.

LAMINATED VENEER LUMBER (LVL)

1. PARALLEL LAMINATED VENEER LUMBER SHALL BE MANUFACTURED FROM APPROPRIATE VENEERS GLUED UP IN A CONTINUOUS PROCESS WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER. LVL SHALL BE MANUFACTURED IN A PLANT AND UNDER PROCESSES APPROVED BY THE NATIONAL RESEARCH BOARD.
2. LVL SHALL BE OF SINGLE, ONE-PIECE LENGTH FREE OF FINGER JOINTS, SCARF JOINTS OR MECHANICAL CONNECTIONS IN FULL LENGTH MEMBERS.
3. LVL'S SHALL BE TREATED FOR EXTERIOR EXPOSURE
4. DESIGN SHALL BE IN ACCORDANCE WITH PROVISIONS OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD".
5. MINIMUM ALLOWABLE DESIGN PARAMETERS SHALL BE (BASIS-OF-DEISIGN PRODUCT PACIFIC WOOD TECH TREATED LVL):
E = 2,000,000 psi
Fb = 2,800 psi
Fv = 285 psi
6. FOLLOW ALL MANUFACTURERS REQUIREMENTS FOR FASTENING MULTI-PLY MEMBERS AND BEARING REQUIREMENTS.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE GRADE 60 (60,000 PSI YIELD) DEFORMED BAR CONFORMING TO A615.
2. EPOXY COATED REINFORCING IS NOT PERMITTED WITHOUT WRITTEN PERMISSION OF ENGINEER OF RECORD.
3. DESIGN, DETAIL, FABRICATE, AND ERECT REINFORCING STEEL ACCORDING TO THE LATEST ACI AND CRSI SPECIFICATIONS.
4. PLAIN WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. DEFORMED WWF SHALL CONFORM TO ASTM A497. BOTH REQUIRE 60,000 PSI MINIMUM YIELD.
5. WALL AND FOOTING REINFORCING SHALL BE HOOKED AROUND CORNERS A MINIMUM OF 30 BAR DIAMETERS OR SEPARATE CORNER BARS SHALL BE PROVIDED.
6. ALL REINFORCING MUST BE SECURELY TIED TO MAINTAIN PROPER COVER, SPACING, AND CLEARANCES. TIE WIRE SHALL CONFORM TO FEDERAL SPECIFICATION QQ-W-461 BLACK ANNEALED STEEL, 16 GAUGE MINIMUM.
7. WELDING OF REINFORCING IS NOT PERMITTED.
8. AT THE TIME OF CONCRETE PLACEMENT, REINFORCING STEEL SHALL BE CLEAN AND FREE OF ALL SCALE, OIL, DIRT, MUD, FORM RELEASE AGENT, OR ANY OTHER SUBSTANCE WHICH MAY INTERFERE WITH CONCRETE BOND.
9. HEATING OF REINFORCING IS NOT PERMITTED; ALL BENDS SHALL BE MADE COLD. MINIMUM BENDING RADII SHALL CONFORM TO THE CHART AND DRAWING BELOW (d/b = BAR DIAMETER).
10. STAGGER ALL SPLICES. SPLICE LENGTHS SHALL CONFORM TO THE CHART BELOW. MINIMUM SPLICE LENGTHS FOR TOP REINFORCING (GREATER THAN 12" OF CONCRETE BELOW HORIZONTAL REINFORCING) SHALL BE 30% LONGER THAN VALUES STATED IN CHART. REFER TO ACI 318 FOR WWF SPLICES.
11. UNLESS NOTED OTHERWISE ON THE DRAWINGS, MINIMUM COVER SHALL CONFORM WITH THE CHART BELOW:

WOOD CONSTRUCTION	C	P	R	**IBC REF**
1. VERIFICATION OF FABRICATION AND QUALITY CONTROL PROCEDURES PROVIDING A BASIS FOR WORKMANSHIP AND CONFORMANCE WITH CONTRACT DOCUMENTS.		P	I/F	1704.2
2. SPECIAL INSPECTIONS ARE NOT REQUIRED WHERE THE FABRICATOR CAN DEMONSTRATE CONFORMANCE WITH CODE REQUIREMENTS FOR THEIR OMISSION.		P	I	

C = CONTINUOUS, P = PERIODIC, R = RESPONSIBILITY, NA = NOT APPLICABLE OR NOT ALLOWED, I = INDEPENDENT TESTING AGENCY, M = MANUFACTURER, F = FABRICATOR OR SYSTEM SUPPLIER.

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.

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 BUILDING OVER 60' IN LENGTH.

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.

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.

INSPECTIONS

1. THE PROJECT UTILIZES BASIC DESIGN PRINCIPLES AND MATERIALS. THEREFORE SPECIAL INSPECTIONS ARE NOT REQUIRED PER OBC 1704.1, EXCEPTION 1.
2. SPECIAL INSPECTIONS OF CONCRETE ARE NOT REQUIRED UNDER THE EXCEPTIONS TO OBC 1704.4. CONTRACTOR SHALL SAMPLE CONCRETE AND HAVE IT TESTED TO VERIFY SPECIFIED DESIGN STRENGTH AND OTHER REQUIREMENTS.
3. INSPECTIONS REQUIRED FOR WOOD UNDER 1704.6 ARE NOT APPLICABLE TO THIS PROJECT.
4. CONTRACTOR SHALL EMPLOY A TESTING AGENCY TO VERIFY THAT THE BEARING SOILS MEET THE PRESUMPTIVE BEARING CAPACITY NOTED AND THAT ANY COMPACTED FILL MATERIALS MEET THE PROJECT REQUIREMENTS.

WOOD CONSTRUCTION	C	P	R	**IBC REF**
1. VERIFICATION OF FABRICATION AND QUALITY CONTROL PROCEDURES PROVIDING A BASIS FOR WORKMANSHIP AND CONFORMANCE WITH CONTRACT DOCUMENTS.		P	I/F	1704.2
2. SPECIAL INSPECTIONS ARE NOT REQUIRED WHERE THE FABRICATOR CAN DEMONSTRATE CONFORMANCE WITH CODE REQUIREMENTS FOR THEIR OMISSION.		P	I	

C = CONTINUOUS, P = PERIODIC, R = RESPONSIBILITY, NA = NOT APPLICABLE OR NOT ALLOWED, I = INDEPENDENT TESTING AGENCY, M = MANUFACTURER, F = FABRICATOR OR SYSTEM SUPPLIER.

MINIMUM DEVELOPMETNT 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

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VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - PAVILION
25 N. GRANT ST., COVINGTON, OH 45318

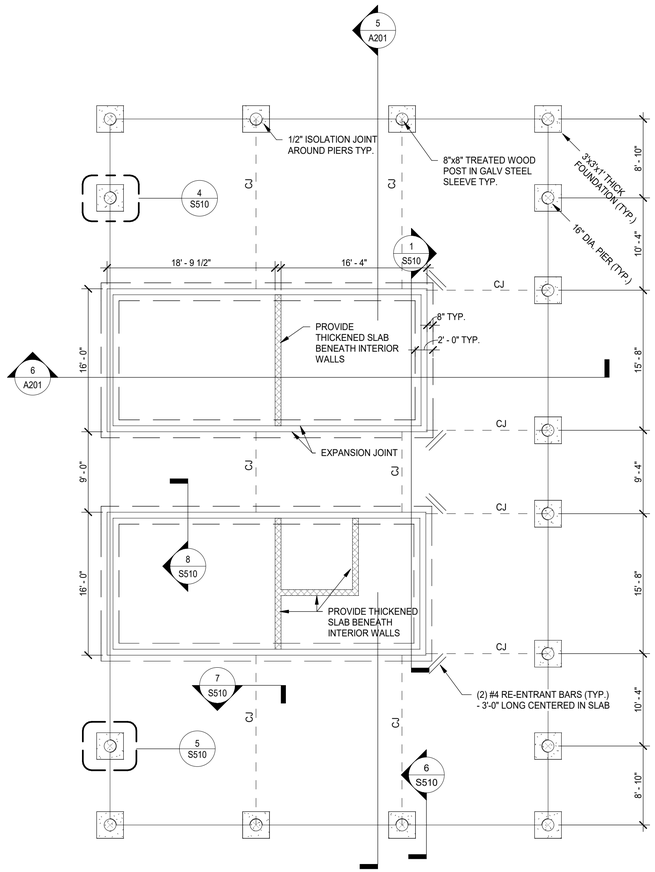
STRUCTURAL NOTES

DRAWN BY	CHECKED BY
KMS	TJD

STATE OF OHIO
THOMAS J. DONALDSON
E-82921
REGISTERED PROFESSIONAL ENGINEER

S001

DATE
1/17/2023
9:41:42 AM
PROJECT NUMBER
20225751



FOUNDATION PLAN

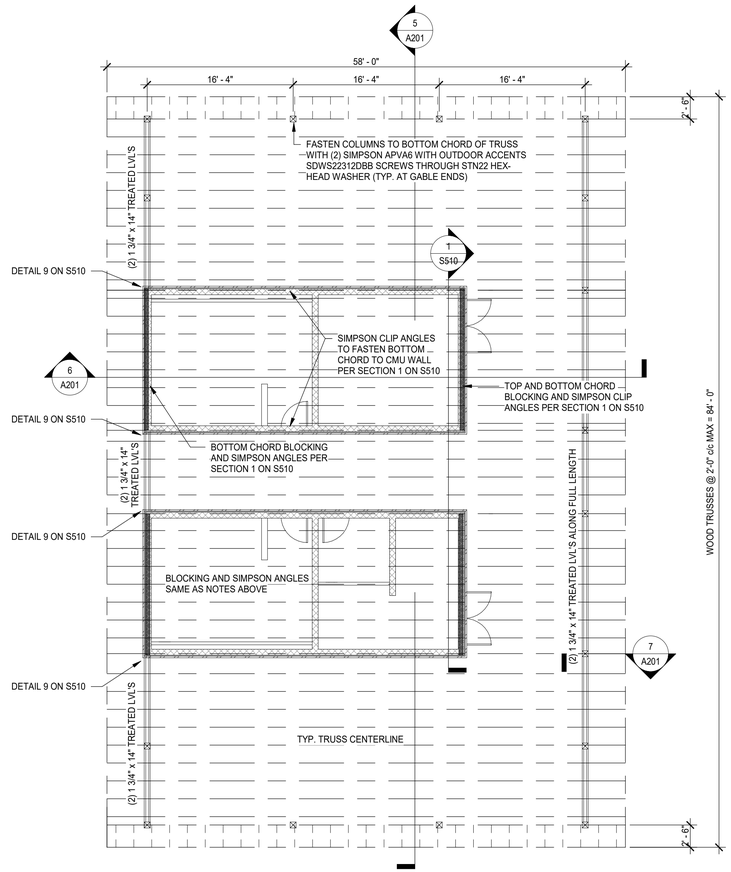
SCALE: 1/8" = 1'-0"

STRUCTURAL INFORMATION:

CONCRETE	4,000 psi, 6% AIR - FLATWORK 3,000 psi - FOOTINGS
FOOTING BEARING CAPACITY	1,500 psf
CONCRETE SLAB	MIN. 4" W. 6x6, W2.1xW2.1 WWF ON COMPACTED GRANULAR BASE

CJ = CONTROL JOINT

GENERAL NOTE:
PER GEOTECHNICAL REPORT, CONTRACTOR SHALL PROVIDE PRICING TO PERFORM OVER EXCAVATION OF FILL MATERIALS WITHIN THE VICINITY IF THE PAVILION STRUCTURE. THE REPORT SHOWS 5' TO GREATER THAN 12' OF UNDOCUMENTED FILL THAT REQUIRES REMOVAL AND BACKFILLING PRIOR TO CONSTRUCTION OF PAVILION. WITHOUT KNOWING THE FULL EXTENT OF THE FILL MATERIALS, G.C. SHALL PROVIDE PRICING FOR REPLACEMENT OF FILL MATERIALS TO A DEPTH OF 6' FOR ONE HALF OF THE PAVILION AND 15' FOR THE OTHER HALF OF THE PAVILION. PLEASE NOTE THE REQUIRED 1' OF ADDED WIDTH FOR EVERY 1' OF EXCAVATION DEPTH PER THE GEOTECHNICAL REPORT.



ROOF FRAMING PLAN - PAVILION

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

NOTES:
- ALL WOOD TRUSSES SHALL BE DELEGATED DESIGN TO A TRUSS DESIGNER / SUPPLIER
- CONTRACTOR TO SUBMIT FINAL TRUSS DRAWINGS TO BUILDING INSPECTION.
- LVL'S SHALL BE TREATED (B.O.D. PACIFIC WOOD TECH.)
- ALL FASTENERS SHALL BE EXTERIOR RATED
- UN-INSULATED WASHROOMS NO HEATING, OR COOLING.
- SEE MECHANICAL FOR VENTILATION
- SEE ELECTRICAL FOR LIGHTING AND POWER,
- FOR SCHEDULES, SEE SHEET A401

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25 N. GRANT ST., COVINGTON, OH 45318

STRUCTURAL FOUNDATION AND FRAMING PLAN-PAVILION

DRAWN BY	CHECKED BY
KMS	TJD

STATE OF OHIO
THOMAS J. DONALDSON
E-82921
REGISTERED PROFESSIONAL ENGINEER

S101

DATE
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PROJECT NUMBER
20225751

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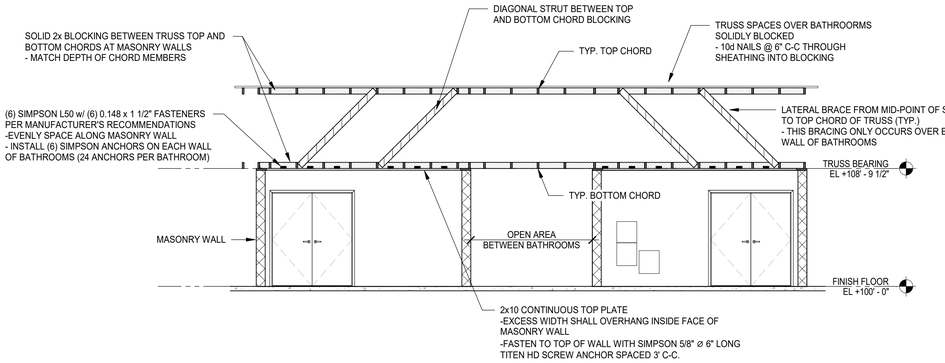
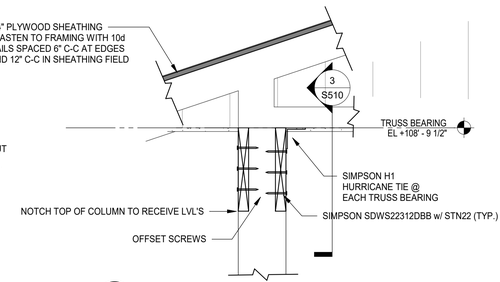
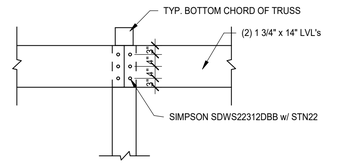


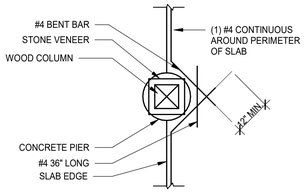
1 S101 **BLOCKING DETAIL**
SCALE: 3/16" = 1'-0"



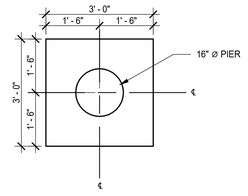
2 A201 **LVL CONNECTION TO COLUMN - SECTION**
SCALE: 1" = 1'-0"



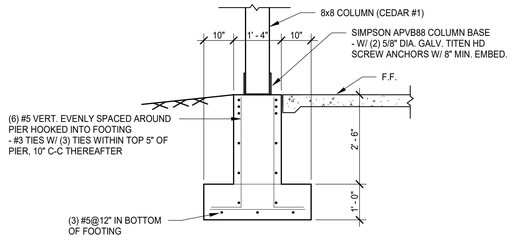
3 S510 **LVL CONNECTION**
SCALE: 1/2" = 1'-0"



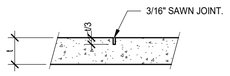
4 S101 **SLAB AROUND COLUMN**
SCALE: 1/2" = 1'-0"



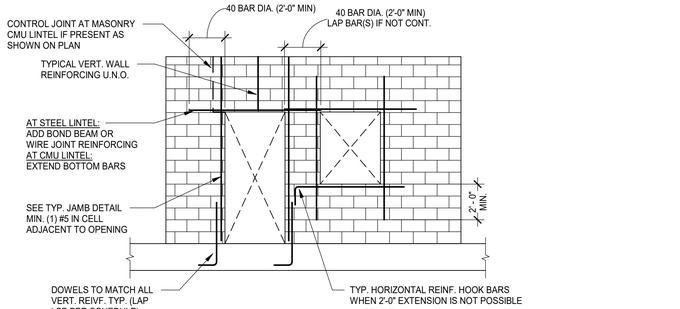
5 S101 **FOUNDATION DETAIL - PLAN**
SCALE: 1/2" = 1'-0"



6 S101 **FOUNDATION DETAIL**
SCALE: 1/2" = 1'-0"



7 S101 **CONTROL JOINT DETAIL**
SCALE: 3/4" = 1'-0"

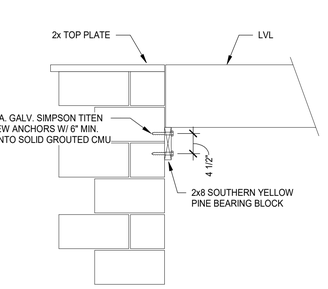


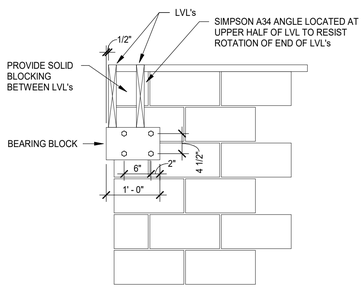
1. FOR CONTROL JOINTS AT MASONRY WALL, SEE TYP. DETAIL
2. FOR MASONRY WALL INTERSECTIONS, SEE TYP. DETAIL

HORIZONTAL BOND BEAM AT 48" C-C WITH (2) #4

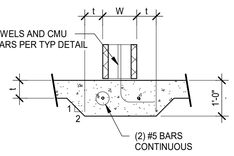
ADDITIONAL CONTINUOUS BOND BEAMS AT FLOORS, ROOF AND TOP OF WALL WITH (2) #4 EACH

CMU TYP. ELEVATION
SCALE: 1/4" = 1'-0"

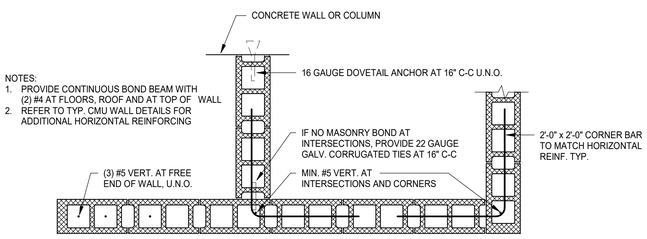




9 S510 **LVL BEARING AT BLOCK WALL**
SCALE: 3/4" = 1'-0"



8 S101 **TYPICAL THICKENED FLOOR SLAB DETAIL**
SCALE: 3/4" = 1'-0"



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

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STRUCTURAL DETAILS

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KMS	TJD

STATE OF OHIO
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REGISTERED PROFESSIONAL ENGINEER

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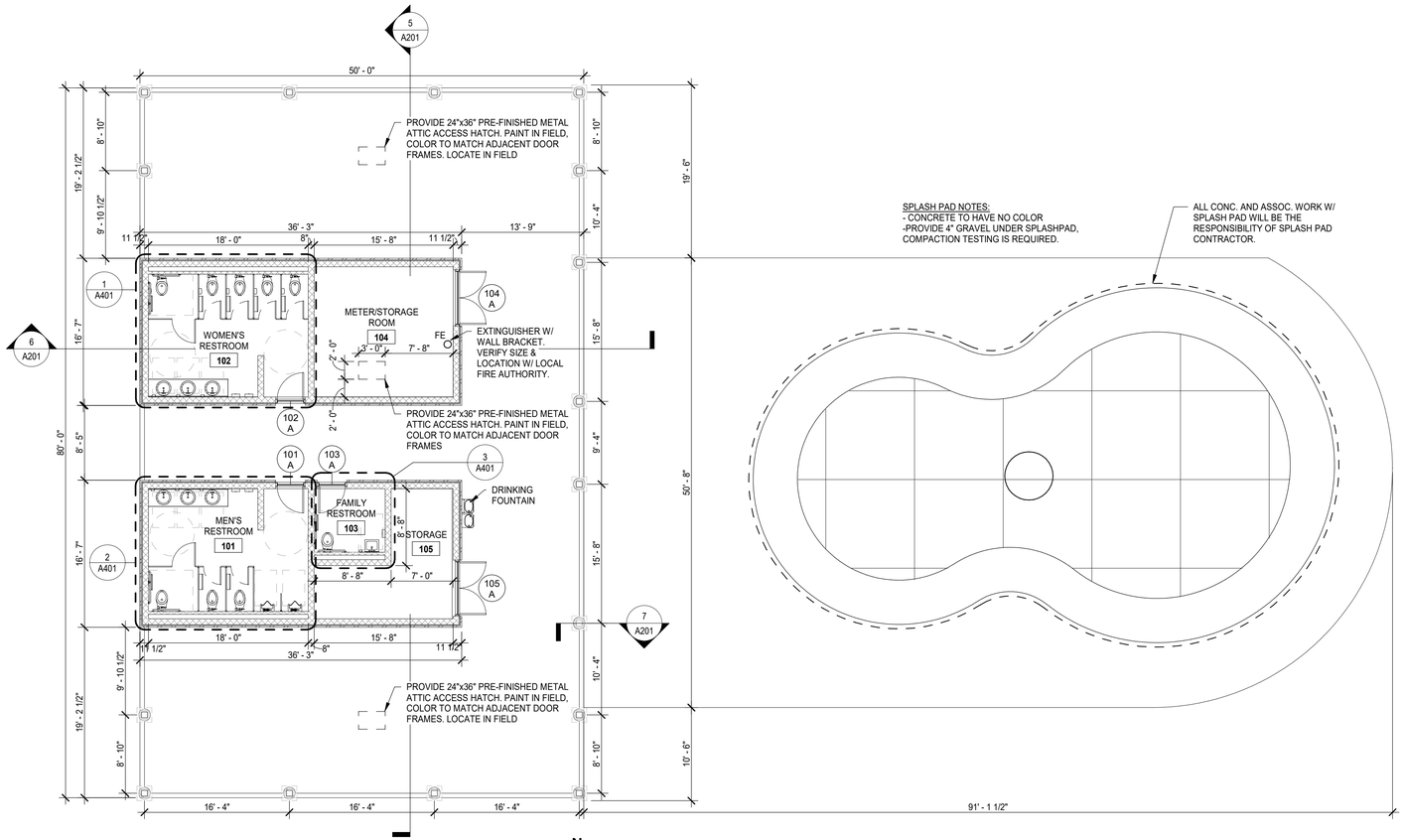

PAVILION - FLOOR PLAN

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

NOTES:
1. TOILET PARTITIONS SHALL BE EQUAL TO METPAR SOLID PLASTIC TOILET PARTITIONS OR EQUIVALENT. PANELS ARE MADE FROM HIGH DENSITY POLYETHYLENE (HDPE) RESINS AND HAVE HOMOGENEOUS COLORING THROUGHOUT THE MATERIAL AND SMOOTH, MACHINED EDGES. COLOR TO BE SELECTED DURING THE SHOP DRAWING PROCESS FROM MANUFACTURE'S STANDARD COLORS.
2. BASIS OF DESIGN FOR ALL RESTROOM ACCESSORIES : BOBRICK.

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS				CEILING HEIGHT	CEILING	REMARKS
				NORTH	SOUTH	EAST	WEST			
101	MEN'S RESTROOM	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	EPOXY PAINT	
102	WOMEN'S RESTROOM	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	EPOXY PAINT	
103	FAMILY RESTROOM	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	EPOXY PAINT	
104	METER/STORAGE ROOM	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	OPEN	
105	STORAGE	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	OPEN	

NOTES:
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 ALL WASHROOMS.
4. PAINT MOISTURE RESISTANT DRY WALL W/ EPOXY PAINT FOR ALL CEILING.

RB = RESILIENT BASE

REV.	DATE	DESCRIPTION
4	01/16/2023	ISSUED FOR RE-PERMIT & REBID
3	09/30/2022	ISSUED FOR REBID
2	08/22/2022	ISSUED FOR BIDS & PERMIT
1	08/19/2022	ISSUED FOR ODNR REVIEW

POGGEMEYER
DESIGN GROUP
A Kleinfelder Company
1168 N. Main Street
Bowling Green, OH 43402
419.352.7537

VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - PAVILION
25 N. GRANT ST., COVINGTON, OH 45318

PAVILION FLOOR PLANS

DRAWN BY: SJM
CHECKED BY: SSH

STATE OF OHIO
SAEED S. HAMIZADEH
APC.0413693
REGISTERED ARCHITECT

A101

DATE
1/17/2023
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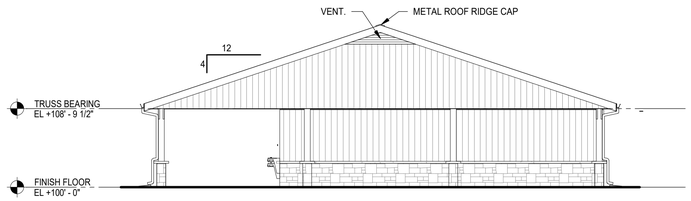
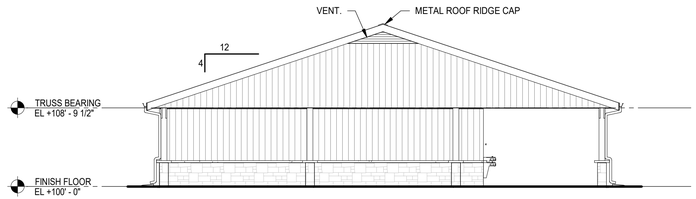
PROJECT NUMBER
20225751



PAVILION - NORTH ELEVATION

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

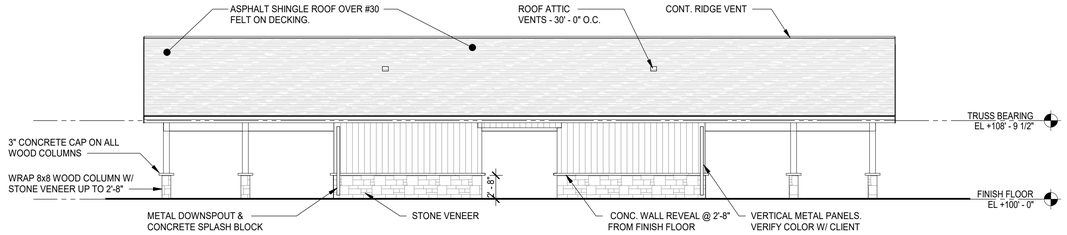
NOTE: ROOF SHINGLES SHALL BE EQUAL TO: OWENS CORNING - DURATION DESIGNER, COLOR : PACIFIC WAVE.



PAVILION - SOUTH ELEVATION

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

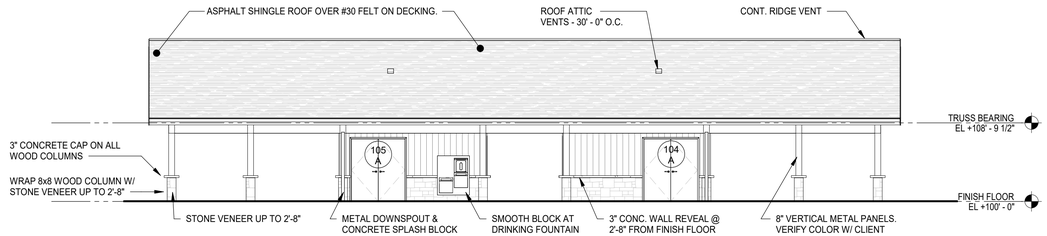
NOTE: ROOF SHINGLES SHALL BE EQUAL TO: OWENS CORNING - DURATION DESIGNER, COLOR : PACIFIC WAVE.



PAVILION - WEST ELEVATION

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

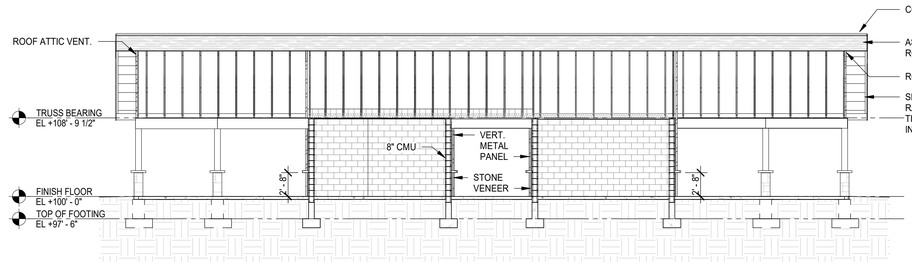
NOTE: ROOF SHINGLES SHALL BE EQUAL TO: OWENS CORNING - DURATION DESIGNER, COLOR : PACIFIC WAVE.



PAVILION - EAST ELEVATION

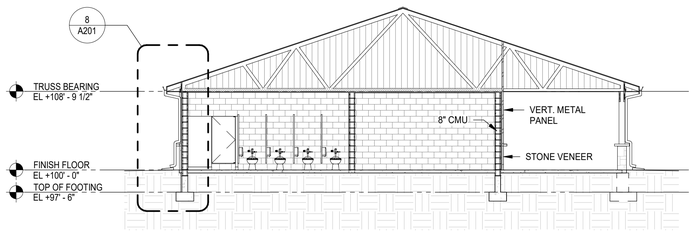
SCALE: 1/8" = 1'-0"

NOTE: ROOF SHINGLES SHALL BE EQUAL TO: OWENS CORNING - DURATION DESIGNER, COLOR : PACIFIC WAVE.



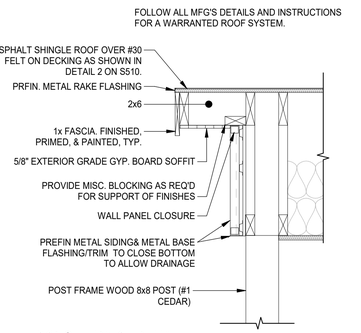
5 A201 LONGITUDINAL BUILDING SECTION

1/8" = 1'-0"



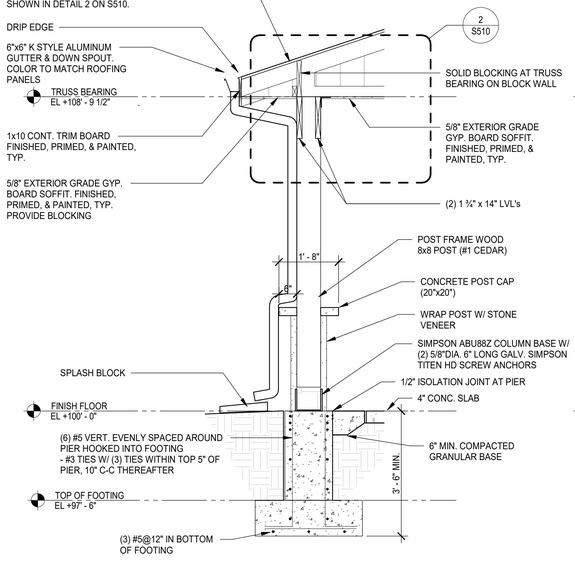
6 A201 TRANSVERSE BUILDING SECTION

1/8" = 1'-0"



TYPICAL RAKE DETAIL

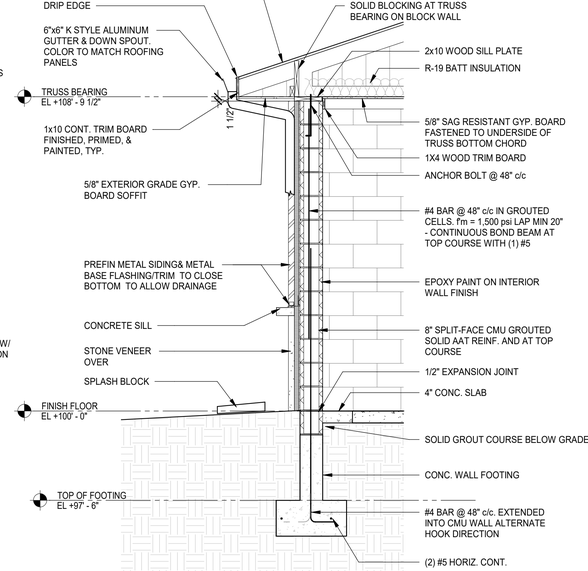
SCALE: 1" = 1'-0"



7 A201 WALL SECTION @ COLUMN

1/2" = 1'-0"

NOTES:
1. ALL WOOD TRUSSES SHALL BE DELEGATED DESIGN RESPONSIBILITY OF TRUSS SUPPLIER
2. CONTRACTOR TO SUBMIT FINAL TRUSS DRAWINGS TO BUILDING INSPECTION.



8 A201 WALL SECTION @ CMU WALL

1/2" = 1'-0"

CONSTRUCTION NOTES:

1. ALL METAL SIDING SHALL BE SIMILAR TO STILLWATER METAL PANEL, 26 GAUGE, 36" WID W/ ALL TRIM REQUIREMENTS.
2. EXTERIOR INSULATION SHALL BE 2" OWENS CORNING FOAMULAR OR EQUAL.
3. STONE VENEER SHALL BE "DUTCH QUALITY STONE", COLOR CHARCOAL, PROVIDED BY SNYDER BRICK & BLOCK OR APPROVED EQUAL.
4. ROOF SHINGLES SHALL BE EQUAL TO: OWENS CORNING - DURATION DESIGNER, COLOR : PACIFIC WAVE.

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VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - PAVILION
25 N. GRANT ST., COVINGTON, OH 45318

PAVILION EXTERIOR ELEVATIONS & SECTIONS

DRAWN BY	CHECKED BY
SJM	SSH

STATE OF OHIO
SAEED S. HAMIZADEH
ARC.0413693
REGISTERED ARCHITECT

A201

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1/17/2023
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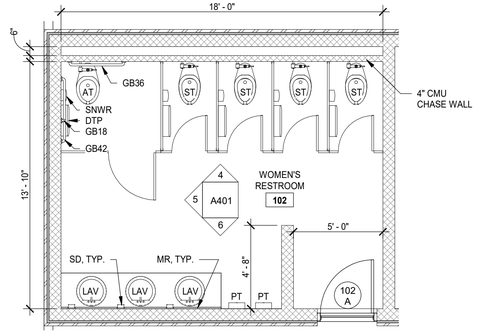
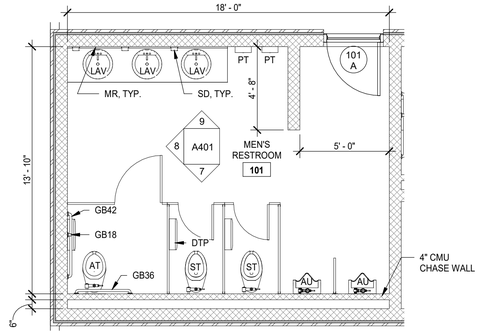
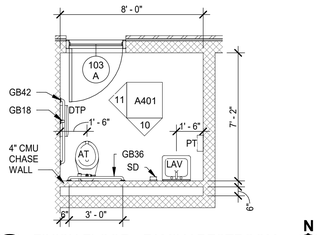
PROJECT NUMBER
20225751



1 A401 FINISH FLOOR - WOMEN RESTROOM
1/4" = 1'-0"



2 A401 FINISH FLOOR - MEN RESTROOM
1/4" = 1'-0"



3 A401 FINISH FLOOR - FAMILY RESTROOM
1/4" = 1'-0"

DOOR AND FRAME SCHEDULE - PAVILION

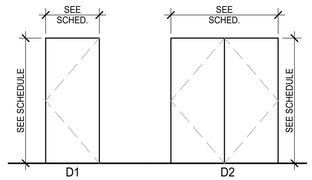
MARK	DOOR INFORMATION						FRAME INFORMATION			HARDWARE	REMARKS
	SIZE										
	WIDTH	HEIGHT	THK	MATERIAL	TYPE	FINISH	MATERIAL	TYPE	FINISH		
101 A	3' - 0"	7' - 0"	1 3/4"	HM	D1	PAINT	HM	F1	PAINT	2	
102 A	3' - 0"	7' - 0"	1 3/4"	HM	D1	PAINT	HM	F1	PAINT	2	
103 A	3' - 0"	7' - 0"	1 3/4"	HM	D1	PAINT	HM	F1	PAINT	1	
104 A	6' - 0"	7' - 0"	1 3/4"	HM	D2	PAINT	HM	F1	PAINT	3	
105 A	6' - 0"	7' - 0"	1 3/4"	HM	D2	PAINT	HM	F1	PAINT	3	

DOOR SCHEDULE GENERAL NOTES:

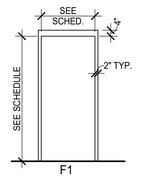
- ALL DOOR HARDWARE TO MEET CURRENT ICC A117.1-2009 REQUIREMENTS.
- ALL DOORS SHALL BE LEVER TYPE. CONTROLS AND OPERATION MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NOT GREATER THAN 5 LBF.
- OPERABLE PARTS SUCH AS HARDWARE SHALL BE 34" MIN. AND 48" MAX. ABOVE FINISH FLOOR WITH EXCEPTION TO LOCKS USED ONLY FOR SECURITY PURPOSES AND NOT USED FOR NORMAL OPERATION.
- COORDINATE FINAL KEYING REQUIREMENTS WITH THE OWNER.

DOOR SCHEDULE KEYED NOTES:

1. FULLY INSULATED ASSEMBLY
2. BY FABRICATED WALK-IN UNIT MANUFACTURER - SEE SPECIFICATION. GC TO PROVIDE SHOP DRAWINGS TO BUILDING DEPARTMENT FOR REVIEW AND APPROVAL.
3. DOOR THICKNESS MAY CHANGE PER MANUFACTURER. SEE NOTE 2.



DOOR TYPE ELEVATIONS
SCALE: 1/4" = 1'-0"



FRAME TYPE ELEVATION
SCALE: 1/4" = 1'-0"

DOOR NOTES:

1. MS = MANUFACTURER'S STANDARD FINISH - COLOR AS SELECTED BY OWNER

DOOR HARDWARE SETS:DOOR HARDWARE SETS:

HARDWARE SET 1:

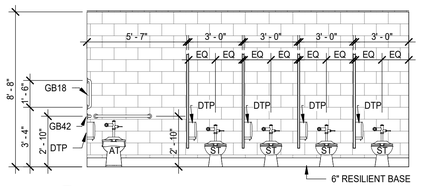
3 HINGES
1 PRIVACY LOCKSET
1 DOOR CLOSER/STOP
1 KICK PLATE 10" x 34"
1 WALL OR FLOOR STOP (VERIFY W/ LOCATION)
1 WEATHER GASKETING
1 THRESHOLD
1 SWEEP

HARDWARE SET 2:

3 HINGES
1 PASSAGE LOCKSET
1 DOOR CLOSER/STOP
1 KICK PLATE 10" x 34"
1 WALL OR FLOOR STOP (VERIFY W/ LOCATION)
1 WEATHER GASKETING
1 THRESHOLD
1 SWEEP

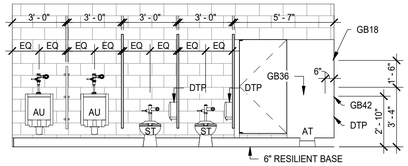
HARDWARE SET 3:

6 HINGES
1 STOREROOM LOCKSET
1 DOOR CLOSER/STOP
1 KICK PLATE 10" x 34"
1 WALL OR FLOOR STOP (VERIFY W/ LOCATION



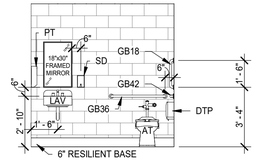
4 A401 WOMEN RR - NORTH ELEVATION
1/4" = 1'-0"

NOTES:
-EPOXY PAINT TO BE USED ON ALL WALLS
-REFERENCE TYPICAL ADA DETAILS LOCATION AS PART OF THIS DRAWING SET



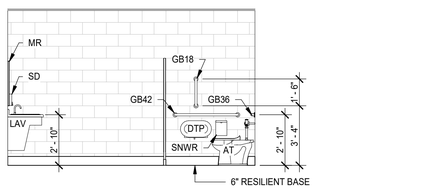
7 A401 MEN RR - SOUTH ELEVATION
1/4" = 1'-0"

NOTES:
-EPOXY PAINT TO BE USED ON ALL WALLS
-REFERENCE TYPICAL ADA DETAILS LOCATION AS PART OF THIS DRAWING SET



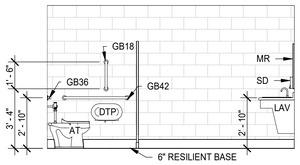
10 A401 FAMILY RR - SOUTH ELEVATION
1/4" = 1'-0"

NOTES:
-EPOXY PAINT TO BE USED ON ALL WALLS
-REFERENCE TYPICAL ADA DETAILS LOCATION AS PART OF THIS DRAWING SET



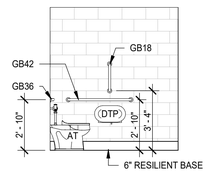
5 A401 WOMEN RR - WEST ELEVATION
1/4" = 1'-0"

NOTES:
-EPOXY PAINT TO BE USED ON ALL WALLS
-REFERENCE TYPICAL ADA DETAILS LOCATION AS PART OF THIS DRAWING SET



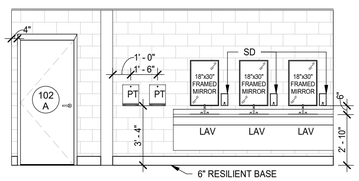
8 A401 MEN RR - WEST ELEVATION
1/4" = 1'-0"

NOTES:
-EPOXY PAINT TO BE USED ON ALL WALLS
-REFERENCE TYPICAL ADA DETAILS LOCATION AS PART OF THIS DRAWING SET



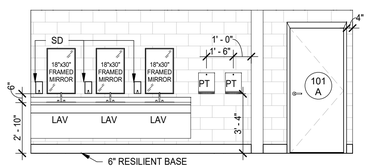
11 A401 FAMILY RR - WEST ELEVATION
1/4" = 1'-0"

NOTES:
-EPOXY PAINT TO BE USED ON ALL WALLS
-REFERENCE TYPICAL ADA DETAILS LOCATION AS PART OF THIS DRAWING SET



6 A401 WOMEN RR - SOUTH ELEVATION
1/4" = 1'-0"

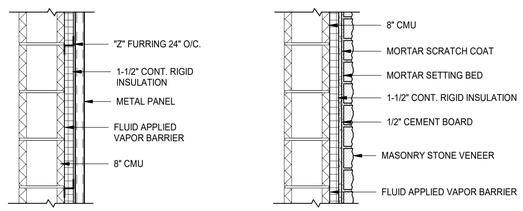
NOTES:
-EPOXY PAINT TO BE USED ON ALL WALLS
-REFERENCE TYPICAL ADA DETAILS LOCATION AS PART OF THIS DRAWING SET



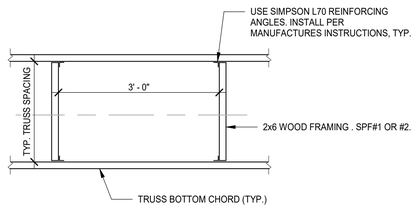
9 A401 MEN RR - NORTH ELEVATION
1/4" = 1'-0"

NOTES:
-EPOXY PAINT TO BE USED ON ALL WALLS
-REFERENCE TYPICAL ADA DETAILS LOCATION AS PART OF THIS DRAWING SET

ENLARGED VIEW NOTES:
1. TOILET PARTITIONS SHALL BE EQUAL TO METPAR SOLID PLASTIC TOILET PARTITIONS OR EQUIVALENT. PANELS ARE MADE FROM HIGH DENSITY POLYETHYLENE (HDPE) RESINS AND HAVE HOMOGENEOUS COLORING THROUGHOUT THE MATERIAL AND SMOOTH, MACHINED EDGES. COLOR TO BE SELECTED DURING THE SHOP DRAWING PROCESS FROM MANUFACTURE'S STANDARD COLORS.
2. BASIS OF DESIGN FOR ALL RESTROOM ACCESSORIES : BOBRICK.



TYPICAL WALL DETAILS
SCALE: N.T.S



TYPICAL ATTIC HATCH FRAMING DETAIL
SCALE: 3/4" = 1'-0"

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS				CEILING HEIGHT	CEILING	REMARKS
				NORTH	SOUTH	EAST	WEST			
101	MEN'S RESTROOM	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	EPOXY PAINT	
102	WOMEN'S RESTROOM	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	EPOXY PAINT	
103	FAMILY RESTROOM	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	EPOXY PAINT	
104	METER/STORAGE ROOM	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	OPEN	
105	STORAGE	SEALED CONCRETE	--	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-9"	OPEN	

NOTE:
SEE SPECIFICATION FOR PAINT SCHEDULE

REV.	DATE	DESCRIPTION
4	01/16/2023	ISSUED FOR RE-PERMIT & REBID
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VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - PAVILION
25 N. GRANT ST., COVINGTON, OH 45318

PAVILION ENLARGED FLOOR PLAN, DOOR INFORMATION, & DETAILS

DRAWN BY: SJM
CHECKED BY: SSH

STATE OF OHIO
SAEED S. HAMIZADEH
ARC.0413693
REGISTERED ARCHITECT

A401
DATE
1/17/2023
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PROJECT NUMBER
20225751

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, TAPS, CURB BOX, BACKFLOW PREVENTER, WATER HEATER, 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. FIRE STOP INCLUDING SLEEVES THRU RATED WALLS AND FLOORS.
H. ALL VALVES, FITTINGS, HANGERS, SLEEVES, ESCUTCHEON PLATES, ANCHORS, GUIDES, ETC., REQUIRED FOR THE PLUMBING SYSTEM INSTALLATION.
I. CHLORINATION, TESTING, ADJUSTMENT AND CLEANING OF ALL SYSTEMS AND EQUIPMENT.
J. 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.
K. INSTRUCTION OF OWNERS' PERSONNEL AND OPERATING MANUALS FOR ALL EQUIPMENT.
L. 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 INSURE 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 ENERGY 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. ASPHALT-COATED SERVICE WEIGHT CAST IRON, HUB AND SPIGOT WITH NEOPRENE RUBBER GASKET. PIPE SHALL CONFORM TO ASTM A74 AND C564. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND LISTED BY NSF INTERNATIONAL.
  2. 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. ASPHALT-COATED SERVICE WEIGHT CAST IRON, HUBLESS END. JOINTS "CLAMP-ALL" #80. PIPE SHALL CONFORM TO ASTM A888 AND CISPI STANDARD 301. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND LISTED BY NSF INTERNATIONAL. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 FOR STANDARD COUPLINGS OR ASTM C1540 FOR SUPER DUTY OR HEAVY DUTY COUPLINGS. GASKETS SHALL CONFORM TO ASTM C564.
  2. 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 UNDERGROUND
  1. TYPE "K" SOFT COPPER TUBE ASTM B88-83A WITH NO JOINTS IF POSSIBLE, OTHERWISE SOLDER WITH PRESSURE RATED FITTINGS.
  2. CROSS-LINKED POLYETHELENE (PEX-A) TUBING WITH NO FITTINGS IF POSSIBLE, OTHERWISE ASTM F1960 COLD EXPANSION FITTINGS. THE USE OF PEX-B OR PEX-C IS NOT PERMISSIBLE.

D. 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. 3" AND SMALLER: TYPE "L" HARD TEMPER COPPER:
    a. WITH LEAD-FREE SOLDERED JOINTS AND WROUGHT STANDARD WEIGHT PRESSURE RATED FITTINGS.
    b. WITH COPPER PRESS FITTINGS, WHICH SHALL CONFORM TO THE MATERIAL AND SIZING REQUIREMENTS OF ASME B16.18 OR ASME B16.22. O-RINGS FOR COPPER PRESS FITTINGS SHALL BE EPDM.

E. RELIEF VALVE DISCHARGE
  1. TYPE "L" COPPER WITH SOLDERED JOINTS AND WROUGHT STANDARD WEIGHT FITTINGS.

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.

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. 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
  3. URINALS; ZURN, TOTO, KOHLER, AMERICAN STANDARD, CRANE
  4. LAVATORIES; ZURN, KOHLER, AMERICAN STANDARD, CRANE
  5. FAUCETS; ZURN, KOHLER, CHICAGO, AMERICAN STANDARD, CRANE, ELKAY, DELTA, MOEN, SPEAKMAN, ENCORE by CHG
  6. STAINLESS STEEL SINKS; ELKAY, DAYTON PRODUCTS, JUST
  7. MIXING VALVES; LAWLER, BRADLEY, POWERS, LEONARD, WATTS
  8. MOP BASINS; FIAT, MUSTEE, CRANE, ZURN
  9. HOSE BIBBS; WOODFORD, NIBCO, WATTS, ZURN
  10. WALL HYDRANTS; WOODFORD, ZURN, J.R. SMITH
  11. CLEANOUTS; ZURN, J.R. SMITH, MIFAB
  12. 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.

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'.
URINAL WALL HUNG-FLUSH VALVE REGULAR OR ADA HEIGHT		UR-1	3/4"	---	3"	1-1/2"	ZURN #Z5755, WHITE VITREOUS CHINA, WASHOUT FLUSHING ACTION, 0.5 GALLON FLUSH AND 3/4" BRASS TOP SPUD. FLUSH VALVE; ZURN #ZER6003-CPM-EWS, BATTERY POWERED, SENSOR OPERATED WITH VACUUM BREAKER AND MANUAL OVERRIDE PUSH BUTTON. CARRIER; ZURN #Z-1222. WATER HAMMER ARRESTOR, SIZE PDI 'A'. INSTALL AT ADA HEIGHT, AS REQUIRED.
LAVATORY-COUNTERTOP ADA		LAV-1	1/2"	1/2"	1-1/2"	1-1/2"	ZURN #Z5114, WHITE VITREOUS CHINA, 20"x17" COUNTERTOP LAVATORY WITH 4" FAUCET CENTERS. FAUCET; ZURN #Z81000-XL-3M (SINGLE LEVER, 0.5 GPM AERATOR). THERMOSTATIC MIXING VALVE; CALEFFI MODEL #5212 (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.
LAVATORY-WALL HUNG ADA		LAV-2	1/2"	1/2"	1-1/2"	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 #Z6900-VG.
MOP SINK	⊠	MS-1	1/2"	1/2"	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-XL, 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.
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.
HOSE BIBB-RECESSED IN LOCKABLE BOX		HB-1	3/4"	---	---	---	WOODFORD #MB26-3/4, WITH BRASS EXTERIOR FINISH, METAL WHEEL HANDLE, 3/4" INLET AND 3/4" HOSE THREAD WITH VACUUM BREAKER, BACKFLOW PREVENTER, COMPOSITE BOX AND HINGED STAINLESS STEEL COVER WITH OPERATING KEY LOCK AND "WATER" STAMPED ON COVER.
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. FURNISH WITH ZURN #Z1072 BARRIER TYPE FLOOR DRAIN TRAP SEAL PROTECTION DEVICE.
FLOOR CLEANOUT	○	FCO	---	---	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	---	---	REFER TO DWGS	---	ZURN #Z1406-HD-VP, EXTERIOR CLEANOUT, HEAVY DUTY WITH VANDAL PROOF SCREWED TOP.
ADA DRINKING FOUNTAIN WALL HUNG, HI/LO		DF-1	1/2"	---	1-1/2"	1-1/2"	HAWS #1119FR, FREEZE-RESISTANT, WALL MOUNTED, 18 GAUGE, TYPE 304 STAINLESS STEEL WITH BACK PANEL. PROVIDE (2) HAWS #6521FR, PNEUMATIC OPERATED SUPPLY VALVE SYSTEM WITH INTERIOR CABINET AND INTEGRAL DRAIN TRAP. PROVIDE WATER SUPPLY SHUTOFF VALVE AT CABINET.

PLUMBING LEGEND

—— - ——	DOMESTIC COLD WATER PIPING (CW)
—— - - ——	DOMESTIC HOT WATER PIPING (HW)
— — 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
—N—	CHECK VALVE
—⋈NN⋈—	BACKFLOW PREVENTER
	STRAINER
C——	PIPING ELBOW DOWN
——	PIPING ELBOW UP
	PIPING TEE DOWN
—— ——	PIPING TEE UP
+—	HOSE BIBB
++—	FREEZEPROOF WALL HYDRANT
⅃‖L	VENT THRU ROOF
	THERMOMETER w/RANGE
	SAFETY OR RELIEF VALVE

PLUMBING DRAWING LIST

DWG NO.	TITLE	FILE NO.
P001	PLUMBING SPECIFICATIONS, LEGEND, & SCHEDULES	22056P001.dwg
P101	PLUMBING PLANS AND DETAILS	22056P101.dwg

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3	09/30/22	ISSUED FOR RE-BIDS
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1	08/19/22	ISSUED FOR ODNR REVIEW
0	07/15/22	PERMIT

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PLUMBING SPECIFICATIONS LEGEND, & SCHEDULES

DRAWN BY	CHECKED BY
ERS	MPW

01/16/2023
ROBERT T. BRANNAN E-54100

P001
DATE

PROJECT NUMBER
300214-00010

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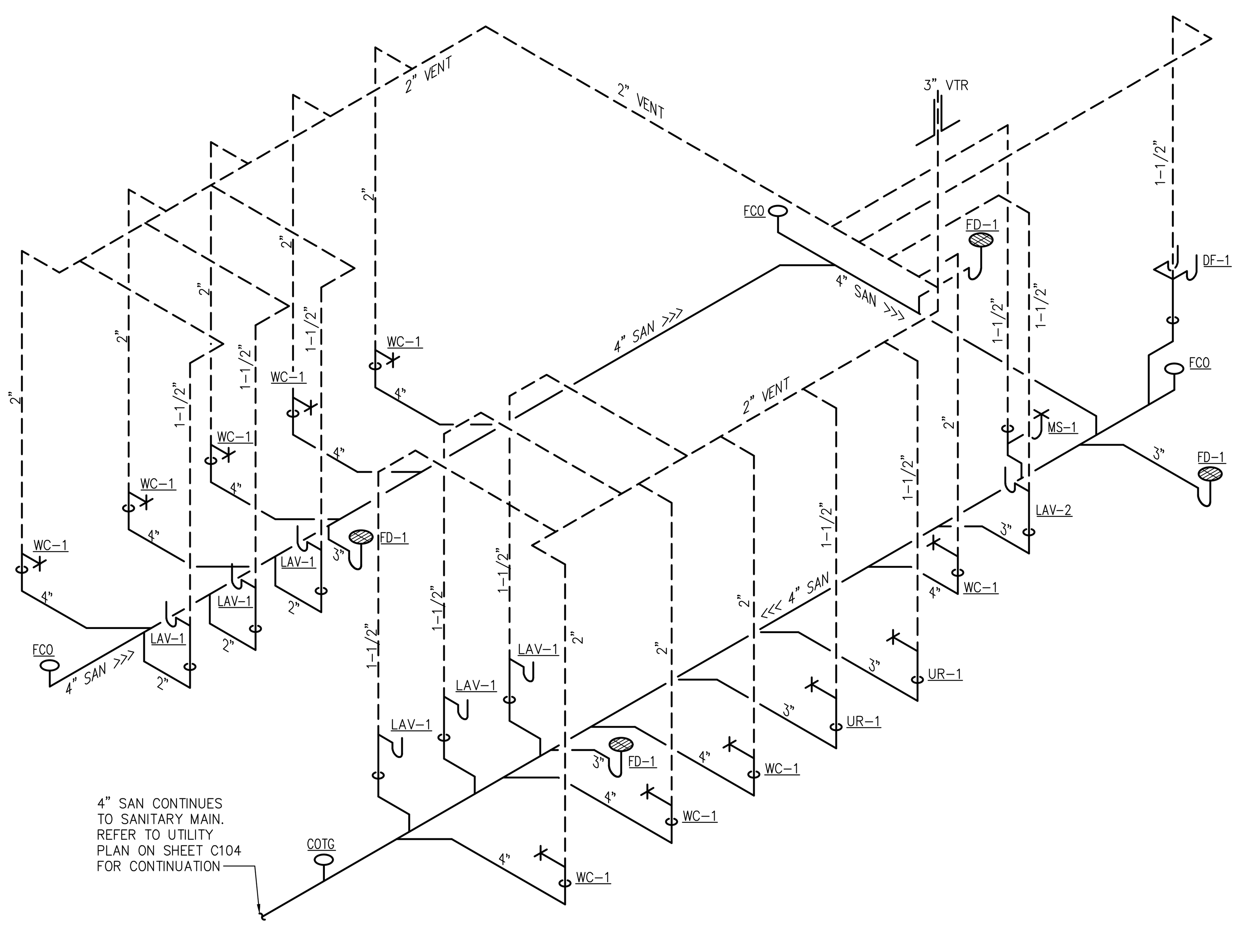
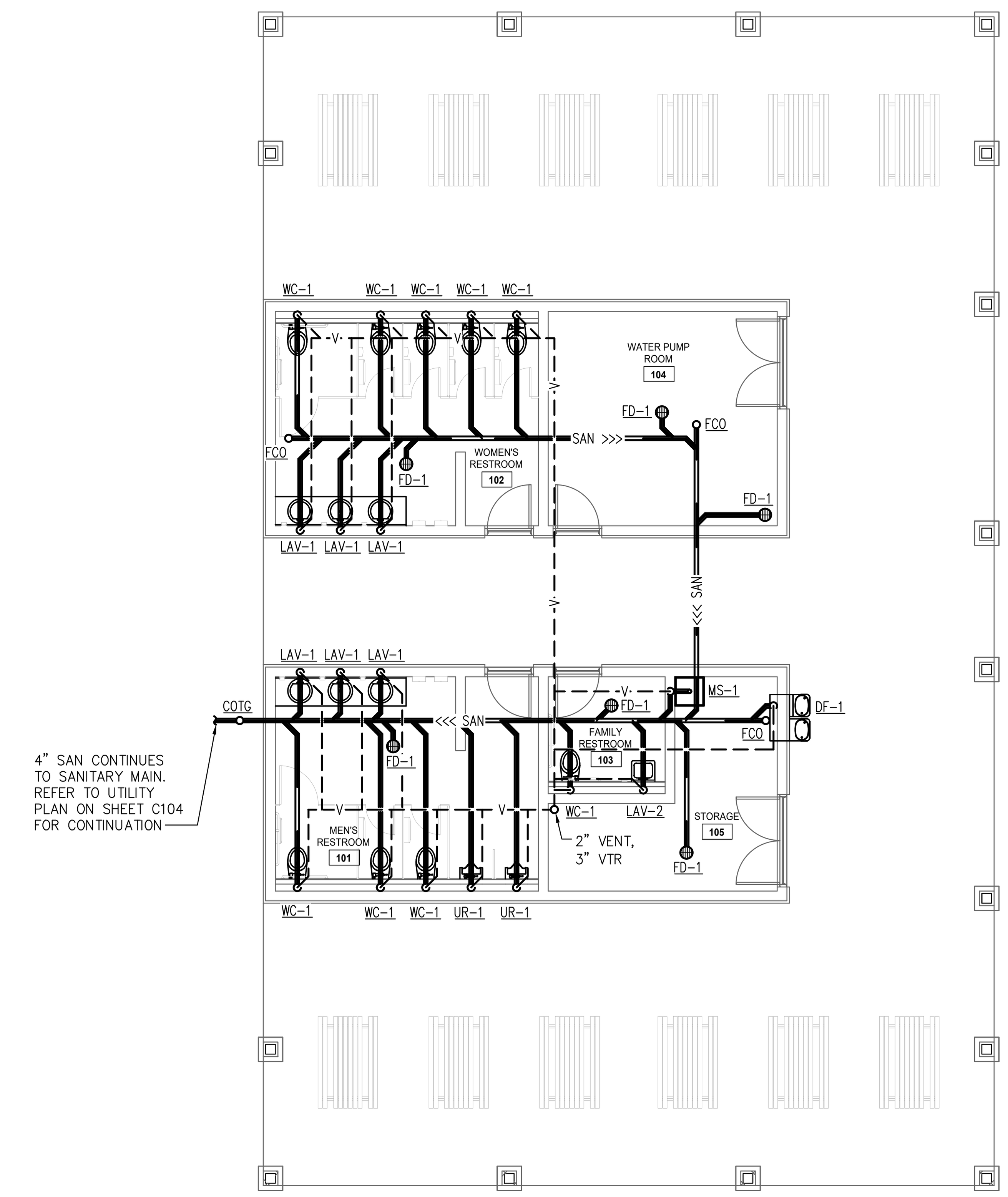
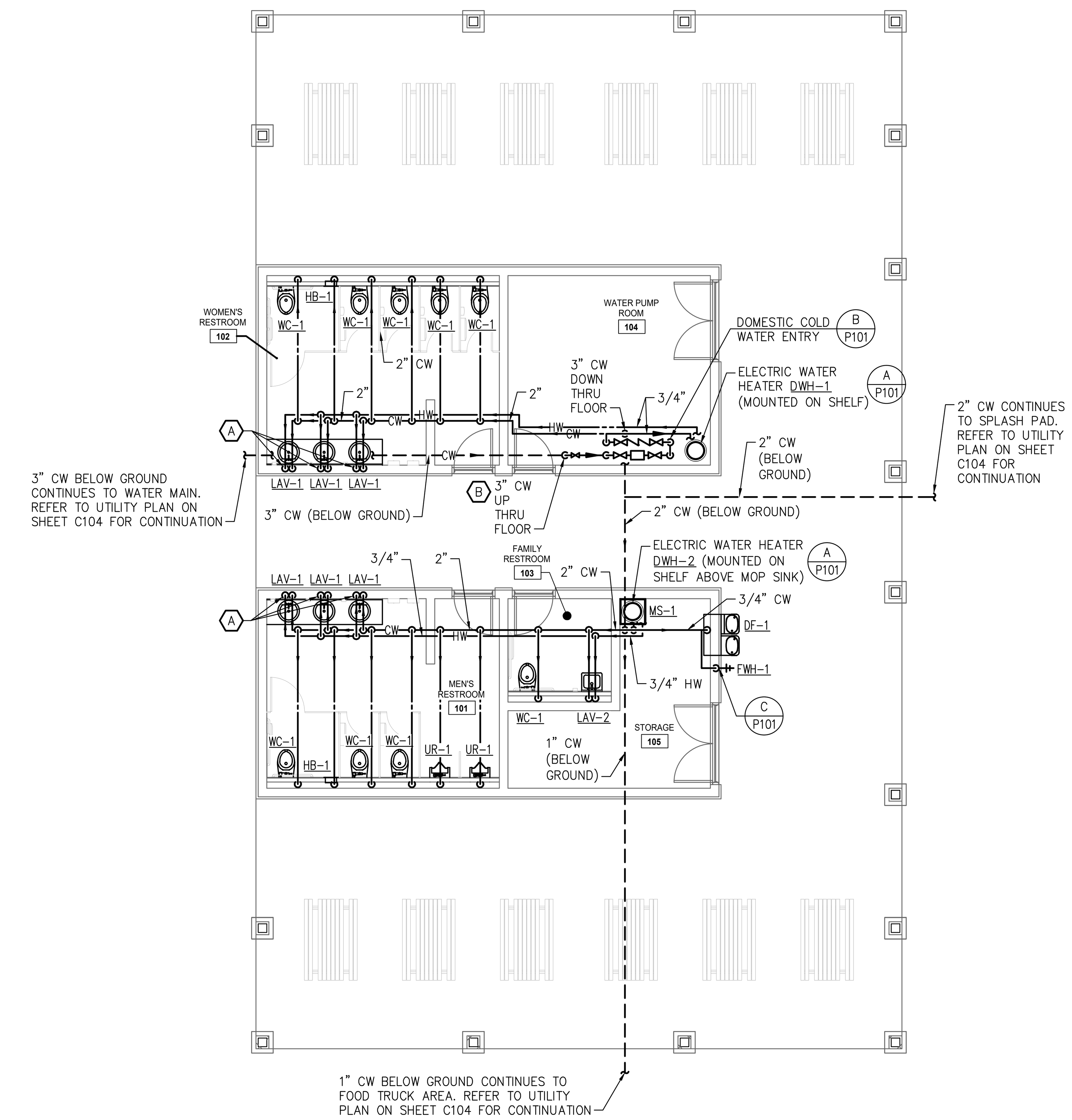


SANITARY ISOMETRIC DIAGRAM
SCALE: NONE



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



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

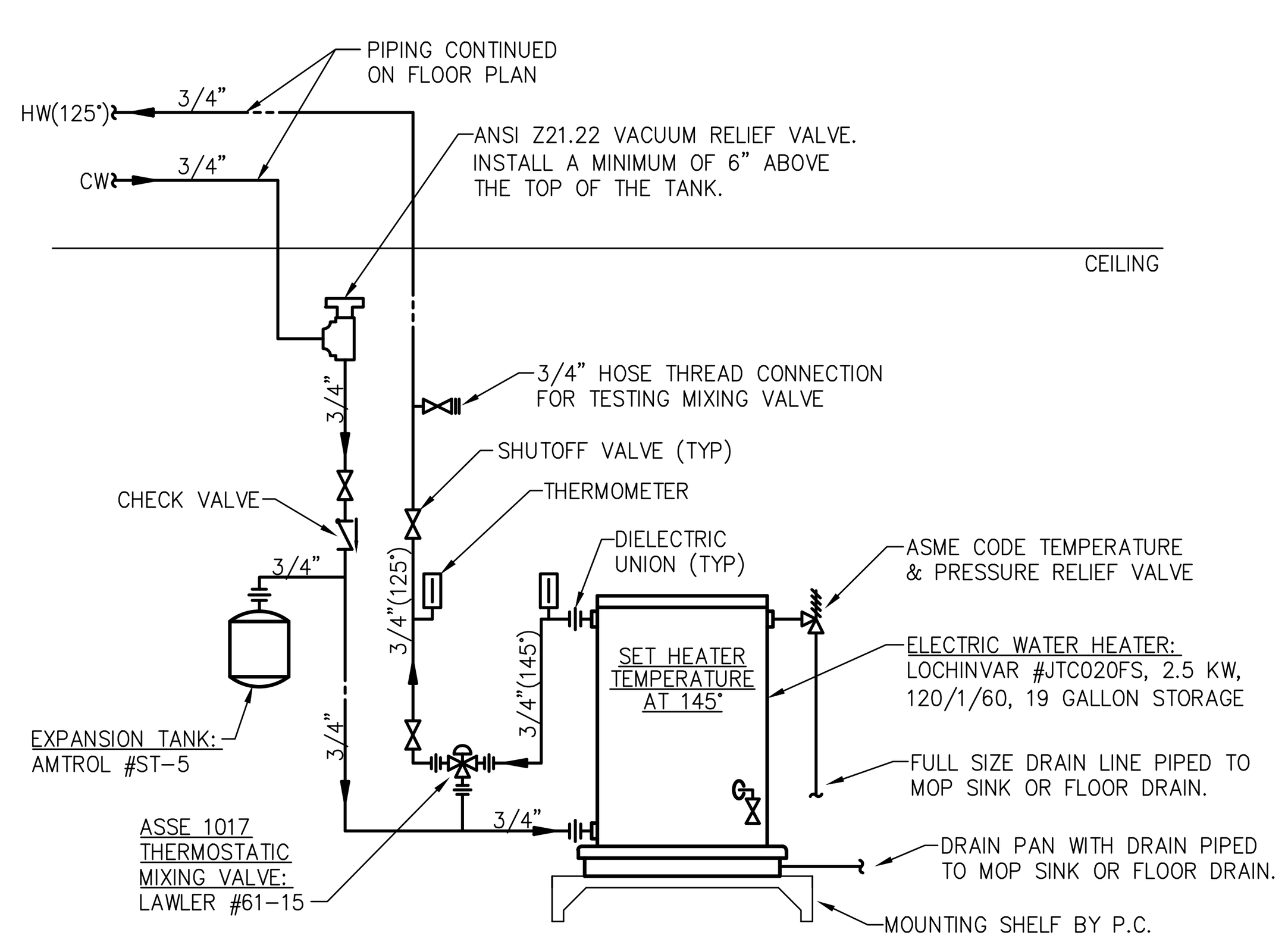
PLAN NOTES:

(A) 1/2" CW AND 1/2" HW DROP DOWN IN WALL CAVITY TO FIXTURE CONNECTIONS. PIPING SHALL BE HEAT-TRACED BY E.C.

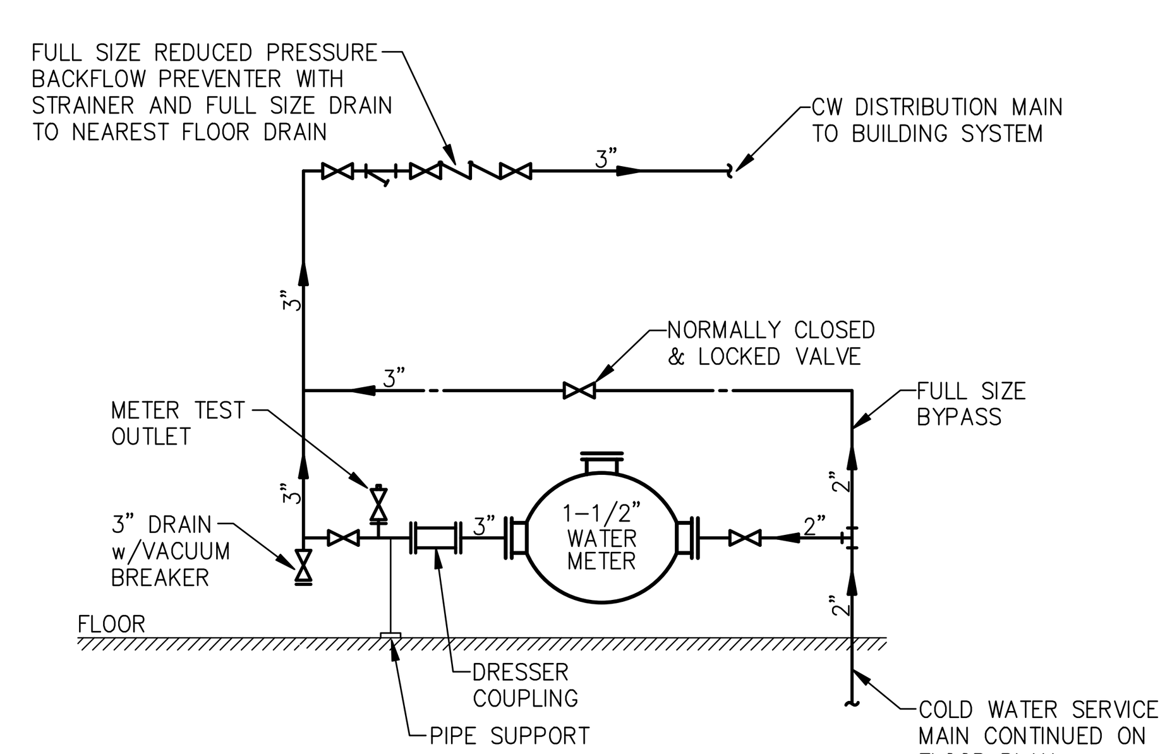
(B) INSTALL SHUTOFF VALVE APPROXIMATELY 12" ABOVE FINISHED FLOOR WITH TEE AND 3/4" DRAIN VALVE WITH HOSE THREAD OUTLET ABOVE THAT FOR THE PURPOSE OF WINTERIZATION DRAINING AND/OR BLOWOUT OF THE SYSTEM. COORDINATE EXACT CONNECTION REQUIREMENTS WITH OWNER.

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.
10. ALL HORIZONTAL PIPING SHOWN ON PLANS SHALL BE LOCATED ABOVE THE CEILING, UNLESS NOTED OTHERWISE.

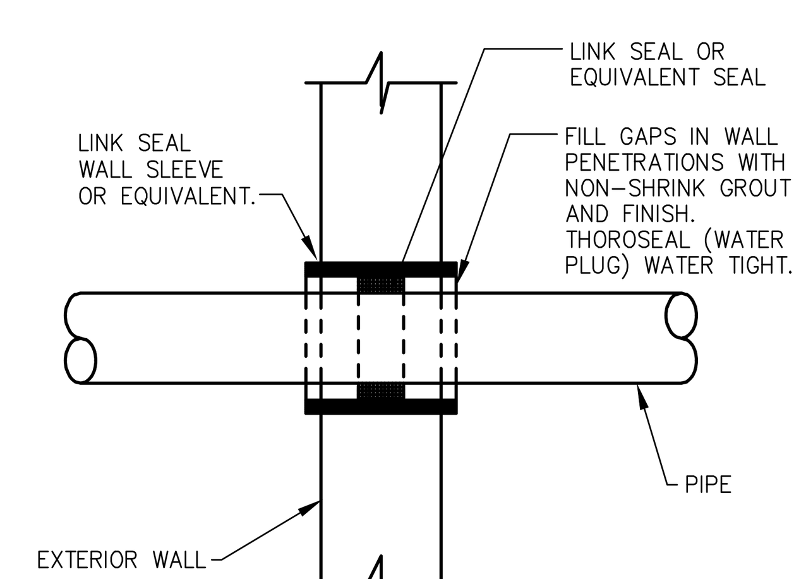


A/P101 ELECTRIC DOMESTIC WATER HEATER DETAIL
NO SCALE (DWH-1 & DWH-2)



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.



C/P101 EXTERIOR WALL SLEEVE DETAIL
NO SCALE

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PLUMBING PLANS AND DETAILS

DRAWN BY	CHECKED BY
ERS	MPW

01/16/2023
STATE OF OHIO
ROBERT T. BRANNAN
E-54100
REGISTERED
PROFESSIONAL ENGINEER

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P101
DATE

PROJECT NUMBER
300214-00010

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 INTERFERENCES. 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, 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. DIMENSIONS, ELEVATIONS OF 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 IN SO FAR AS GENERAL LAYOUT IS CONCERNED. SUCH DIMENSIONS SHALL BE USED FOR NEITHER LAYOUT DRAWINGS NOR DETAILING COMPONENTS. THE RESPONSIBILITY FOR CHECKING IN PLACE ITEMS SHALL BE THE CONTRACTOR'S.
- C. 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. 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 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.

1.04. 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.

1.05. 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.

1.06. 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.

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

1.08. 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.

1.09. 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. LETTER SIZE: 1" HIGH LETTERS.
  3. COLOR CODES: USE THE FOLLOWING BACKGROUND COLORS WITH WHITE LETTERING.
     a. GREEN: FOR EXHAUST AIR DUCT MAINS.
  4. 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. FIRE PROOFING:
- A. PIPE PENETRATIONS THRU ALL FIRE RATED WALLS SHALL BE SEALED BY THE MECHANICAL CONTRACTOR, TO PREVENT SPREAD OF FIRE AND SMOKE AND INGRESS OF MOISTURE.
- B. AREAS AROUND PIPES OR SLEEVES SHALL BE FILLED WITH A DIELECTRIC, NON-HARDENING PUTTY SUCH AS I.P.C. TYPE #FSP1000 OR EXPANDING CAULK MATERIALS SUCH AS SILICONE R.T.V. FOAM OR I.P.C. #FS900, OR EQUAL BY HILTI.
- C. LARGE OPENINGS IN MASONRY WALLS MAY BE SEALED USING LIGHT WEIGHT, LOW DENSITY EXPANDING MORTAR, EQUAL TO I.P.C. TYPE "K.B.S. MORTAR-SEAL".
- D. ALL FIRE PENETRATION SEALS SHALL BE PROPERLY CLOSED USING UL LISTED PRODUCTS TO MATCH THE PENETRATION FIRESTOP SYSTEM DESIGNATION AND ALL FIRE STOP MATERIALS SHALL BE FREE OF ASBESTOS, DANGEROUS SOLVENTS, NON-HALOGENATED AND SHALL NOT PRODUCE TOXIC FUMES OR SMOKE DURING EXPOSURE TO FIRE. FIRE STOP SHALL BE DESIGNED AND INSTALLED TO PROVIDE A MINIMUM 1 HOUR RATING.

2.03. 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.
     a. PRESSURE CLASSIFICATIONS OF 3-INCH WG OR HIGHER: END BEARINGS OR OTHER SEALS FOR DUCTS WITH AXLES FULL LENGTH OF DAMPER BLADES AND BEARINGS AT BOTH ENDS OF OPERATING SHAFT.
  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. DUCT MOUNTED ACCESS DOORS AND PANELS:
  1. GENERAL: FABRICATE DOORS AND PANELS AIRTIGHT AND SUITABLE FOR DUCT PRESSURE CLASS.
  2. FRAME: GALVANIZED, SHEET STEEL, WITH BEND OVER TABS AND FOAM GASKETS.
  3. DOOR: DOUBLE WALL GALVANIZED, SHEET METAL CONSTRUCTION WITH INSULATION FILL AND THICKNESS, AND NUMBER OF HINGES AND LOCKS AS INDICATED FOR DUCT PRESSURE CLASS. INCLUDE VISION PANEL WHERE INDICATED. INCLUDE 1 BY 1 INCH BUTT OR PIANO HINGE AND CAM LATCHES.
  4. SEAL AROUND FRAME ATTACHMENT TO DUCT AND DOOR TO FRAME WITH NEOPRENE OR FOAM RUBBER.
  5. INSULATION: 1 INCH THICK, FIBROUS GLASS OR POLYSTYRENE FOAM BOARD.
- D. 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.

PART 4 VENTILATOR PRODUCTS

4.01. CEILING MOUNTED & IN-LINE CABINET FANS (TF-1 & TF-2):
- 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.

PART 5 INTAKE & RELIEF PRODUCTS

5.01. FIXED BLADE LOUVERS (L-1 & L-2):
- 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 6 TEMPERATURE CONTROLS

6.01. 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.

6.02. TEMPERATURE CONTROL SYSTEM AND SEQUENCE OF OPERATION:
- A. INTENT: THE INTENT OF THIS SPECIFICATION IS TO VERBALLY DESCRIBE THE DESIRED ACTIONS OF THE HVAC EQUIPMENT SPECIFIED HEREIN FOR THIS FACILITY. EACH TEMPERATURE CONTROL CONTRACTOR (T.C.C.) AND EACH MECHANICAL CONTRACTOR (M.C.) SHALL FAMILIARIZE HIMSELF WITH THESE WRITTEN SEQUENCES. WHETHER OR NOT EXPLICITLY SHOWN ON THE DRAWINGS, ALL DEVICES AND ITEMS REQUIRED FOR THE EXECUTION OF THESE SEQUENCES ARE THE RESPONSIBILITY OF THE BIDDING CONTRACTOR.
- B. UNIT HEATERS: THE UNIT HEATER'S HEATING ELEMENT AND FAN SHALL CYCLE TO MAINTAIN THERMOSTAT SETPOINT.
- C. EXHAUST FANS: THE EXHAUST FANS SHALL OPERATE IN ACCORDANCE WITH THE SEQUENCE INDICATED ON THE FAN SCHEDULE.
  1. LOUVER L-1 SHALL BE ELECTRICALLY INTERLOCKED TO OPEN ITS DAMPER WHEN EXHAUST FAN TF-1 IS ACTIVATED
  2. LOUVER L-2 SHALL BE ELECTRICALLY INTERLOCKED TO OPEN ITS DAMPER CORRESPONDING WITH EXHAUST FAN TF-2 WHEN EXHAUST FAN TF-2 IS ACTIVATED, AND TO OPEN ITS DAMPER CORRESPONDING WITH EXHAUST FAN TF-3 WHEN EXHAUST FAN TF-3 IS ACTIVATED.

PART 7 TESTING & BALANCING

7.01. 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. FURNISH SIX (6) CERTIFIED REPORTS.

PART 8 CLOSE OUT

8.01. 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.

8.02. 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
	MANUAL VOLUME BALANCING DAMPER
M	MOTOR OPERATED DAMPER
X / M-Y	DETAIL TAG NUMBER / 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
A.F.F.	ABOVE FINISHED FLOOR
B.O.D.	BOTTOM OF DUCT
cfm	CUBIC FEET PER MINUTE
U.O.N.	UNLESS OTHERWISE NOTED
E.A.	EXHAUST AIR

HVAC DRAWING LIST

DWG NO.	TITLE	FILE NO.
M001	HVAC SPECIFICATIONS AND LEGEND	22056M001.dwg
M101	HVAC FIRST FLOOR PLAN, SCHEDULES, AND DETAILS	22056M101.dwg

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COVINGTON SCHOOLHOUSE PARK
25 N. GRANT ST.
COVINGTON, OH 45318

HVAC SPECIFICATIONS AND LEGEND

DRAWN BY	CHECKED BY
JDC	ERS

01/16/2023
STATE OF OHIO
ROBERT T. BRANNAN E-54100
REGISTERED PROFESSIONAL ENGINEER

M001
DATE

PROJECT NUMBER
300214-00010

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LOUVER SCHEDULE

(REFER TO SPECIFICATIONS PARAGRAPH "5.01" ON DRAWING M001 FOR ADDITIONAL REQUIREMENTS.)

TAG #	DWG #	AREA SERVED	SERVICE	OVERALL SIZE ("Wx"H)	# OF PANELS	PANEL SIZE ("Wx"H)	CFM	MAX. VELOCITY (FPM)	MIN. FREE AREA (SQ. FT.)	MAX PRESS. DROP (IN. W.C.)	DEPTH (IN.)	BLADE ANGLE	BLADE SPACING (IN.)	BLADE STYLE	FRAME/BLADE THICKNESS (IN.)	APPROX. MOUNTING ELEVATION TO BOTTOM (A.F.F.)	REMARKS
L-1	M101	WOMENS RESTROOM	EXHAUST	26x14	1	26x14	375	410	0.91	0.03	4	45	5	STATIONARY DRAINABLE	0.081/0.081	11'-0"	1 THRU 4
L-2	M101	MENS RESTROOM	EXHAUST	26x14	1	26x14	450	492	0.91	0.04	4	45	5	STATIONARY DRAINABLE	0.081/0.081	11'-0"	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 WITH MOTORIZED DAMPER(S). INTERLOCK WITH FAN(S).

DUCTWORK MATERIAL CONSTRUCTION & INSULATION SCHEDULE

(REFER TO SPECIFICATIONS PARAGRAPHS "3.03" ON DRAWING M001 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**	USE 2 INCH FLEXIBLE FIBERGLASS WRAP INSULATION.	1 & 2

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 THIS DRAWING.

FAN SCHEDULE

(REFER TO SPECIFICATIONS PARAGRAPH "4.01" ON DRAWING M001 FOR ADDITIONAL REQUIREMENTS.)

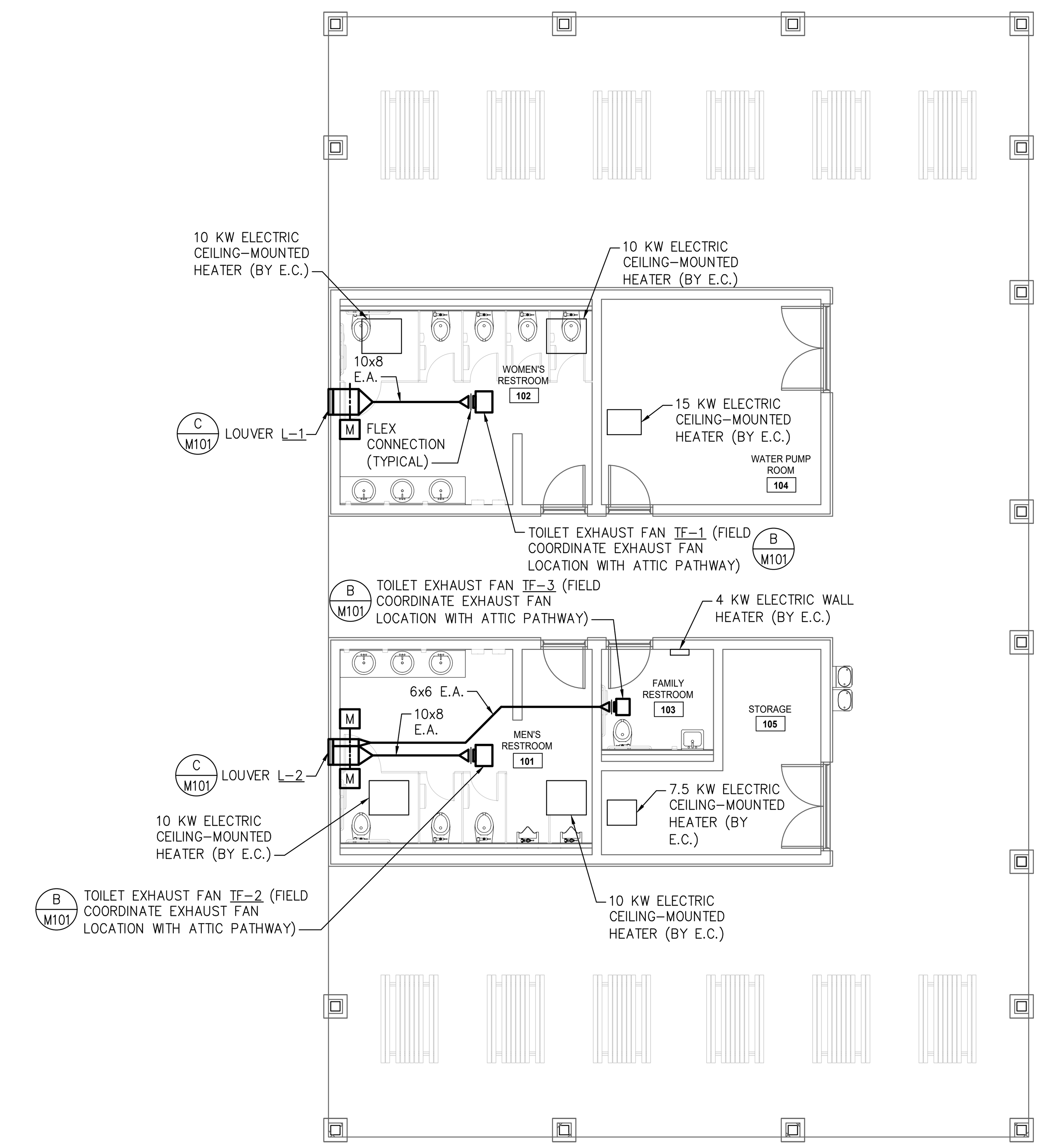
TAG #	DWG #	AREA SERVED	SERVICE	CFM	ESP (IN. W.C.)	FAN RPM	BHP	DRIVE TYPE	DISC'T BY FAN MANF'T	BIRD SCREEN BY FAN MANF'T	BACK DRAFT DMPR BY FAN MANF'T	MAX. SOUND LEVEL (SONES)	FAN ELECT DATA		MEANS OF CONTROL	APPROX. WEIGHT (LBS)	ROOF/WALL OPENING SIZE (IN)	GREENHECK MODEL	REMARKS:
													HP (WATTS)	VOLTS/ PHASE					
TF-1	M101	WOMENS RR	EXHAUST	375	0.5	1,018	---	DIRECT	YES	NO	YES	4.5	(285)	115/1	A	40	---	SP-A710	1 & 2
TF-2	M101	MENS RR	EXHAUST	375	0.5	1,018	---	DIRECT	YES	NO	YES	4.5	(285)	115/1	A	40	---	SP-A710	1 & 2
TF-3	M101	MENS RR	EXHAUST	75	0.5	806	---	DIRECT	YES	NO	YES	2.0	(80)	115/1	A	20	---	SP-B110	1 & 2

MEANS OF CONTROL: FAN SHALL SEQUENCE IN CONJUNCTION WITH...
A ...ROOM LIGHT SWITCH(ES) (SWITCHES FURNISHED & WIRED BY ELECTRICAL CONTRACTOR)

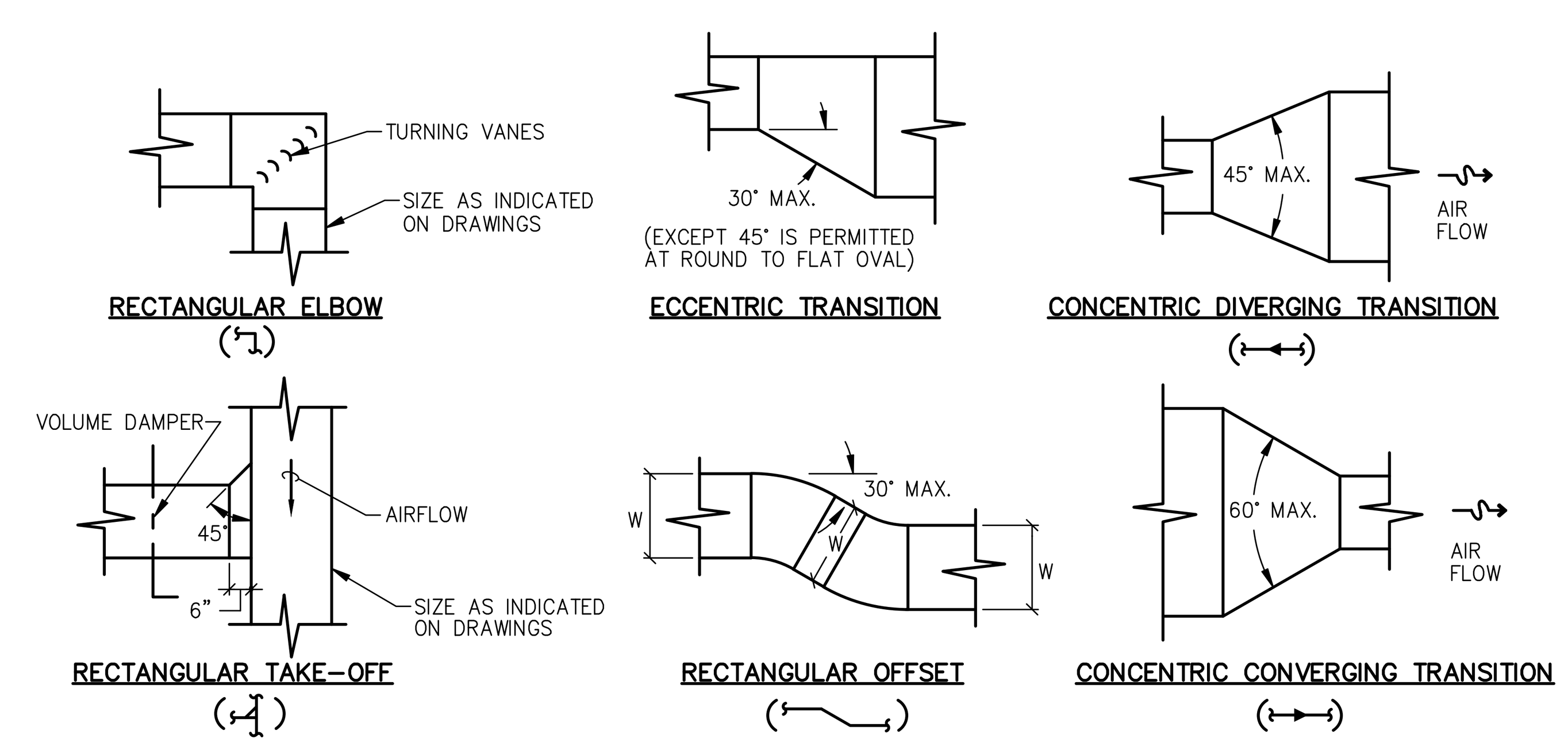
REMARKS:
1. FURNISH DUCTWORK CONNECTING TO FAN IN ACCORDANCE WITH THE "DUCTWORK MATERIAL CONSTRUCTION SCHEDULE" FOUND ON THIS DRAWING.
2. FURNISH FAN WITH ADJUSTABLE SPEED CONTROLLER SHIPPED LOOSE AND FIELD INSTALLED BY MECHANICAL CONTRACTOR.

NATURAL VENTILATION CALCULATIONS

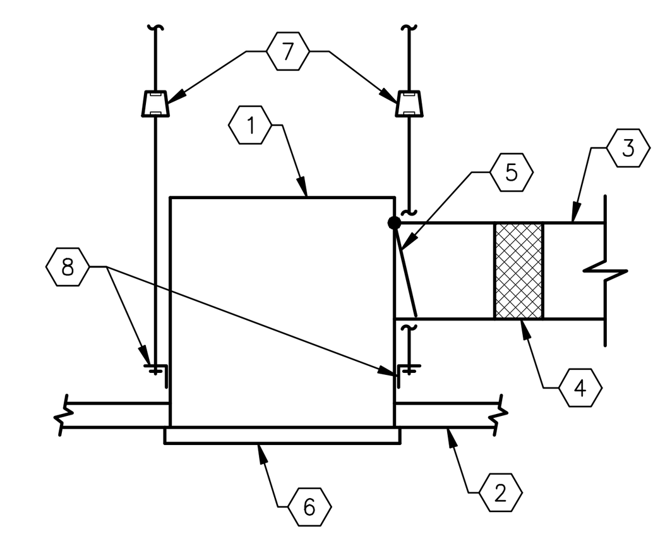
ROOM	AREA OF ROOM (SQ. FT.)	REQUIRED OPENABLE AREA (SQ. FT.)	ACTUAL OPENABLE AREA (SQ. FT.)
104 WATER PUMP ROOM	229.8	9.2	63
105 STORAGE	154.7	6.2	42



RESTROOM HVAC PLAN
SCALE: 1/8" = 1'-0"

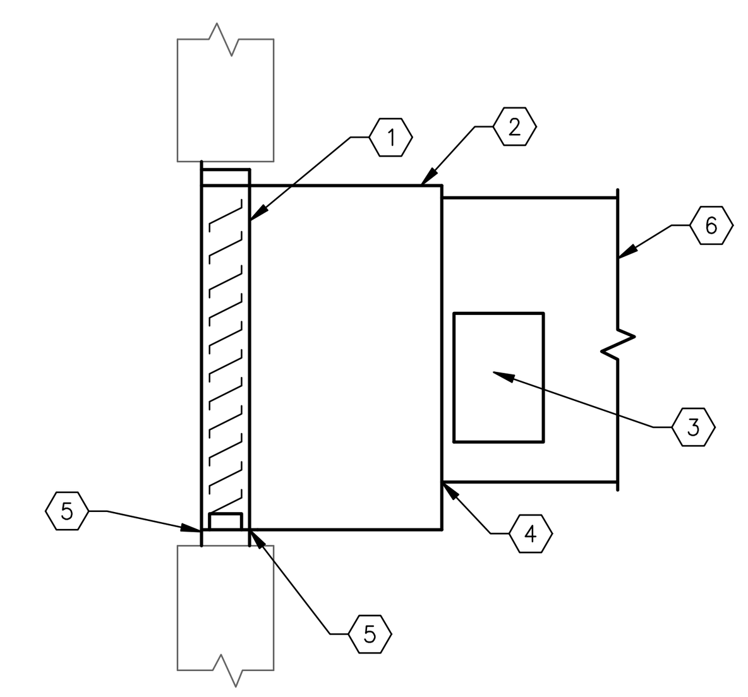


A M101 DUCTWORK TRANSITION DETAILS
NO SCALE (SINGLE LINE, AS SHOWN ON DRAWING.)



1. EXHAUST FAN WITH HORIZONTAL DISCHARGE.
2. CEILING.
3. EXHAUST DUCT. REFER TO PLAN(S) FOR SIZE AND CONFIGURATION.
4. FLEXIBLE CONNECTION.
5. FAN OPENING FOR DUCT CONNECTION, WITH INTEGRAL BACKDRAFT DAMPER.
6. GRILLE (FURNISHED WITH FAN).
7. VIBRATION ISOLATION HANGER.
8. SUPPORT ANGLE AND HANGING RODS. HANGING RODS SHALL BE SIZED BY THE CONTRACTOR AND SUFFICIENT TO SUPPORT LOAD.

B M101 CEILING EXHAUST FAN DETAIL
NO SCALE



1. 1/2" BIRDSCREEN
2. INSULATE LOUVER PLENUM WITH 2 IN. RIGID FIBERGLASS BOARD INSULATION
3. ACCESS DOOR: HALF HEIGHT OF DUCT, 12"x12" MINIMUM (UNLESS SHOWN OTHERWISE ON PLANS).
4. SOLDER BOTTOM JOINT & UP 12".
5. SEAL AND CAULK AROUND PERIMETER OF LOUVER
6. DUCTWORK. REFER TO PLAN(S) FOR SIZE AND CONFIGURATION.

C M101 LOUVER DETAIL
NO SCALE

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COVINGTON SCHOOLHOUSE PARK
25 N. GRANT ST.
COVINGTON, OH 45318

HVAC PLAN, SCHEDULES, AND DETAILS

DRAWN BY: JDC
CHECKED BY: ERS

01/16/2023
STATE OF OHIO — ROBERT T. BRANNAN E-54100 — REGISTERED PROFESSIONAL ENGINEER

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ELECTRICAL OUTLINE SPECIFICATIONS

PART 1 GENERAL

1.01. 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.

1.02. 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.

1.03. 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.

1.04. 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.

1.05. 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.

1.06. 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.

1.07. 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.

1.08. 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.

1.09. 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.

1.14 ALTERNATES:

REQUIREMENTS:

1. SUBMIT ALTERNATE WITH A FULL DESCRIPTION OF THE PROPOSED ALTERNATE AND THE EFFECT OF ADJACENT OR RELATED COMPONENTS.
2. ALTERNATE QUOTED ON BID FORMS WILL BE REVIEWED AND ACCEPTED AT THE OWNER'S OPTION. ACCEPTED ALTERNATE WILL BE IDENTIFIED IN THE OWNER-CONTRACTOR AGREEMENT.
3. COORDINATE AND MODIFY AS NECESSARY RELATED WORK IN ORDER TO INTEGRATE THE WORK OF EACH ALTERNATE.

ALTERNATE E-1: STATE THE AMOUNT TO BE ADDED TO THE BASE BID TO FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE FOLLOWING.
1. EXTERIOR LED BOLLARD LIGHTING: ADD TO THE BASE BID FOR PROVIDING THE ALTERNATE LIGHTING FIXTURES AS DESCRIBED IN THE FIXTURE SCHEDULE AND AS INDICATED IN THE BOUNDED AREAS.

PART 2 PRODUCTS

2.01. 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..

2.02. 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.

2.03. 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. ***PROVIDE REDUNDANT GROUND CONDUCTORS IN PATIENT CARE AREAS AS PER NEC 517.13. ***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.

2.04. 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.

I. **ELECTRIC HEATING EQUIPMENT:** PROVIDE A COMPLETE AND OPERABLE SYSTEM OF LINE VOLTAGE ELECTRIC HEATING EQUIPMENT INCLUDING WALL MOUNTED HEATERS, BASEBOARD HEATERS, DRAFT BARRIER HEATERS, SUSPENDED UNIT HEATERS, AND ASSOCIATED LINE AND LOW VOLTAGE CONTROLS (i.e. THERMOSTATS OR CONTROL RELAYS), AS INDICATED ON THE PLANS, BY SCHEDULE OR BY NOTE. ALL ELECTRIC HEATING EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND WIRING DIAGRAMS. CONTRACTOR SHALL CAREFULLY NOTE ANY INTERNAL CONNECTIONS REQUIRED FOR MULTI-WATTAGE HEATERS. LINE AND LOW VOLTAGE WIRING ASSOCIATED WITH ROOM BY ROOM CONTROLS SHALL BE PROVIDED BY THIS CONTRACTOR. LOW VOLTAGE INTERLOCK WIRING TO CENTRAL TEMPERATURE CONTROL SYSTEMS WILL BE PROVIDED BY THE MECHANICAL TRADES CONTRACTOR.

J. **HEAT TRACING:** PROVIDE A UL LISTED SYSTEM OF HEATING CABLE, COMPONENTS, AND CONTROLS TO PREVENT PIPELINES FROM FREEZING. HEATING CABLE SHALL BE 120 VOLT RATED, SELF-REGULATING, FIELD-CUTTABLE, WITH AN OUTER BRAID OF TINNED-COPPER AND A CROSS-LINKED MODIFIED POLYOLEFIN DIELECTRIC JACKET, RAYCHEM/CHEMELEX CORPORATION "XL-TRACE" OR EQUAL BY THERMON. CABLE SHALL BE DESIGNED TO ALLOW CROSSING OVER ITSELF WITHOUT OVERHEATING, AND BE SUITABLE FOR USE ON PLASTIC PIPE. PROVIDE POWER CONNECTIONS, END SEALS, SPLICE AND TEE KIT COMPONENTS WHERE REQUIRED. THE HEAT TRACING CABLE SHALL BE SELECTED TO PROTECT TO -20 DEGREES F, BASED ON 1" FIBERGLASS INSULATION ON METAL PIPING. INSULATION WILL BE FURNISHED AND INSTALLED BY OTHERS (FIELD VERIFY TYPE AND THICKNESS BEFORE ORDERING MATERIALS). PROVIDE ONE AMBIENT AND ONE ALARM THERMOSTAT FOR EACH SECTION OF HEAT TRACED PIPING; EACH SHALL BE HEAVY DUTY, LINE VOLTAGE, SINGLE POLE-DOUBLE THROW, REMOTE BULB TYPE-SURFACE MOUNTED IN A NEMA 4 ENCLOSURE - PENN A19ANC-1 OR EQUAL BY HONEYWELL OR CHROMALOX. INSTALL ALL ITEMS IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND IN CONFORMANCE WITH NEC ARTICLE 427. APPLY WEATHER-RESISTANT "ELECTRIC TRACED" SIGNS TO THE FINISHED INSTALLATION. TEST CABLE INSTALLATION, BEFORE, DURING AND AFTER INSTALLATION, PRIOR TO ENERGIZING, IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. REPLACE CABLES IF RESISTANCE IS TOO LOW. VERIFY PROPER POWER CONSUMPTION. SUBMIT TO THE ENGINEER, A COPY OF THE SUCCESSFUL FIELD TEST REPORT, PRIOR TO PROJECT ACCEPTANCE.

K. **ENCLOSED CIRCUIT BREAKER:** ENCLOSED CIRCUIT BREAKERS SHALL BE HEAVY DUTY, H.P. RATED, 250 OR 600 VOLTS AC RATED TO MATCH THE CIRCUIT SHOWN, INDIVIDUALLY MOUNTED WITH GROUND LUG ASSEMBLY, THERMAL MAGNETIC MOLDED CASE (UNLESS NOTED OTHERWISE), WITH PADLOCK ATTACHMENT, COMPLETE WITH NEMA 1 ENCLOSURE INDOORS OR NEMA 3R ENCLOSURE OUTDOORS; AS MANUFACTURED BY SQUARE D, SIEMENS, GENERAL ELECTRIC, OR CUTLER-HAMMER.

2.05. 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.

B. **PHOTOMETRICS:** ELECTRICAL CONTRACTOR SHALL EMPLOY THE SERVICES OF HIS EMERGENCY LIGHTING FIXTURE SUPPLIER TO PROVIDE A COMPUTERIZED POINT-BY-POINT LIGHTING CALCULATION FOR THE EMERGENCY (BATTERY POWERED) EGRESS LIGHTING INSTALLED AT THIS FACILITY. CALCULATIONS SHALL BE PREPARED UTILIZING THE SELECTED FIXTURE MANUFACTURER'S COMPUTERIZED LIGHTING CALCULATION SOFTWARE, AND INCLUDE THE FINAL LOCATIONS OF ALL EMERGENCY LIGHTING UNITS, FINAL MOUNTING HEIGHTS, AND FINAL AIMING DIRECTIONS. CALCULATIONS SHALL INCLUDE THE INITIAL HORIZONTAL FOOT-CANDLES ON A GRID PATTERN NO GREATER THAN 2 FEET BY 2 FEET, AND SHALL INCLUDE CALCULATIONS FOR AVERAGE, MINIMUM AND MAX-TO-MIN RATIOS THROUGHOUT THE PATHS OF EGRESS, AS WELL AS ESTIMATES OF ALL SUCH VALUES AT THE CONCLUSION OF THE 90 MINUTES OF BATTERY OPERATION. COPIES OF ALL AUTOCAD ELECTRONIC FILES AND THE LOCATIONS OF ALL PATHS OF EGRESS, INCLUDING THE EXIT DISCHARGE, SHALL BE PROVIDED BY THE ARCHITECT, WITHOUT COST TO THE SUCCESSFUL ELECTRICAL CONTRACTOR. CALCULATIONS SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION, AND SHALL SHOW COMPLIANCE WITH IBC SECTION 1008 MEAN OF EGRESS ILLUMINATION. IF COMPLIANCE IS NOT REFLECTED BY THE CALCULATIONS, ADDITIONAL FIXTURES SHALL BE PROVIDED (VIA CHANGE ORDER), TO ASSURE SUCH COMPLIANCE. FINAL CALCULATIONS SHALL BE SUBMITTED TWO WEEKS BEFORE THE SCHEDULE DATE OF FINAL INSPECTION BY THE BUILDING AUTHORITY HAVING JURISDICTION.

PART 3 EXECUTION

3.01. 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.

3.02. TEMPORARY POWER: THIS CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY ELECTRICAL SERVICES FOR CONSTRUCTION TRAILERS, POWER TOOLS, TEMPORARY LIGHTING, AND TEMPORARY NON-ELECTRIC HEAT, INCLUDING TEMPORARY PANELS, FEEDERS, BRANCH CIRCUITS, GFI-PROTECTED RECEPTACLES, ETC., AS IS APPROPRIATE FOR THE CONSTRUCTION OF ALL TRADES, AND REMOVE SUCH AT PROJECT COMPLETION. EXTENSION CORDS SHALL BE PROVIDED BY EACH CONTRACTOR REQUIRING SUCH. TEMPORARY ELECTRICAL WORK SHALL ALSO CONFORM TO NEC AND OSHA CODES. ELECTRICAL CONSUMPTION AND DEMAND CHARGES SHALL BE PAID BY THE GENERAL CONTRACT ***BY OWNER. HOWEVER, THE OWNER RESERVES THE RIGHT TO LIMIT TEMPORARY POWER AND BACKCHARGE CONTRACTOR WHERE UNNECESSARY OR WASTEFUL USAGE IS OBSERVED.

3.03. DEMOLITION: ELECTRICALLY DISCONNECT THE MECHANICAL EQUIPMENT AND APPLIANCES SHOWN OR SCHEDULED FOR REMOVAL, TO ACCOMMODATE SUCH BY OTHERS. REMOVE THE LIGHT FIXTURES, DEVICES, PANELS, STARTERS, ETC., INDICATED FOR DEMOLITION, AND ALL ASSOCIATED WIRING, NO LONGER IN SERVICE, BACK TO ITS ELECTRICAL SOURCE. REMOVE ALL EXPOSED CONDUIT, BOXES AND RACEWAYS ASSOCIATED THEREWITH. . CUT OFF FLUSH WITH ADJACENT FINISHED SURFACE AND PERMANENTLY PLUG, ANY CONCEALED RACEWAYS WHICH ARE NOT RE-USEABLE. NEATLY CAP FOR FUTURE USE, AND LABEL WITH TERMINUS, ANY CONCEALED RACEWAYS WHICH MAY BE USABLE. RE-FEED ANY CIRCUITS, FIXTURES, DEVICES, EQUIPMENT, ETC., REMAINING IN USE WHICH MAY BE INTERRUPTED BY DEMOLITION. THE OWNER HAS THE OPTION TO RETAIN ALL EQUIPMENT AND/OR MATERIALS REMOVED. ALL OTHER MATERIALS NOT CLAIMED BY THE OWNER OR REUSED SHALL BE PROPERLY REMOVED FROM SITE AND DISPOSE OF.

3.04. RENOVATIONS: REWORK THE EXISTING ELECTRICAL INSTALLATION AS REQUIRED TO ACCOMMODATE THE FINISHED AND OPERATING SYSTEMS AS INDICATED ON THE PLANS. NEW RACEWAYS SHALL BE CONCEALED IN FINISHED SPACES WHEREVER PRACTICALLY POSSIBLE. EXISTING BOXES AND ENCLOSURES SHALL NOT BE RENDERED INACCESSIBLE DUE TO THE NEW WORK OF ANY TRADE. PANEL DIRECTORIES IN RENOVATED AREAS SHALL BE NEATLY UPDATED. INTERRUPTIONS TO EXISTING SYSTEMS SHALL BE PERFORMED AT OFF HOURS, UNLESS SCHEDULED OTHERWISE WITH THE OWNER.

3.05 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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REV.	DATE	DESCRIPTION
4	01/16/23	ISSUED FOR RE-PERMIT & RE-BID
3	09/30/22	ISSUED FOR RE-BIDS
2	08/22/22	ISSUED FOR BIDS AND PERMIT
1	08/19/22	ISSUED FOR ODNR REVIEW
0	07/15/22	PERMIT

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ELECTRICAL SPECS,
LEGEND AND
DRAWING LIST

DRAWN BY: JTH
CHECKED BY: JTH

01/16/2023
ROBERT T. BRANNAN E-54100

E001
DATE

PROJECT NUMBER
300214-00010

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
- LED FIXTURE–SEE SCHEDULE–SHOWN TO SCALE (APPROX.)
- 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.
- $M PP — OCCUPANCY SENSOR–CEILING MOUNTED–DUAL TECHNOLOGY(IR/US) SENSING–W/120V OR 277V POWER PACK AND 20 AMP RELAY–LOWVOLTAGE–ADJUSTABLE TIMER–15 MINUTE MINIMUM–WHITE FINISH. SENSORSWITCH #CM–PDT–10 OREQ. COLOR TO MATCH OTHER DEVICES.
- DUPLEX RECEPT.–20A–120V–NEMA 5–20R W/C.P.– COLOR SELECTED BY ARCHITECT – M.H. 16" HUBBELL #HBL5352W OREQ.
- DUPLEX GFCI RECEPT.–20A–125V–NEMA 5–20R W/C.P.– COLOR SELECTED BY ARCHITECT – M.H.16" IN READILY ACCESSIBLE LOCATION. HUBBELL #GFRST20W OREQ.
- WP — DUPLEX GFCI RECEPT.–WEATHER AND TAMPER RESISTANT DEVICE TO MATCH ABOVE– W/"EXTRA DUTY W.P. IN USE" METAL FLAP C.P.–M.H. 24" IN READILY ACCESSIBLE LOCATION. HUBBELL #GF5362SGW/WP26E OREQ.
- 1 — OUTLET SHALL BE A DUPLEX OR MATCHING RECEPTACLE IF EQUIPMENT IS FURNISHED WITH CORD AND PLUG, OR JUNCTION BOX AND DISCONNECT SWITCH WITH SEALTITE CONNECTION IF EQUIPMENT IS TO BE WIRED DIRECT. IT SHALL BE THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO VERIFY THE REQUIRED OUTLET AND TO WIRE ALL EQUIPMENT COMPLETE.
- RECEPT. PANEL–CIRCUIT BREAKER TYPE–MH 6'0" TO TOP
- CONTRACTORS RESPONSIBILITY TO VERIFY THE REQUIRED OUTLET AND TO WIRE ALL EQUIPMENT COMPLETE.
- DISCONNECT SWITCH–HP RATED–TOGGLE TYPE–20 AMP–1 TO 3 POLES AS REQUIRED FOR EQPT–600 VOLT–NEMA 1 ENCLOSURE U.N.O.–LOCATE ADJACENT TO EQUIPMENT SERVED. (WP=WEATHERPROOF ENCLOSURE) SQUARE D CLASS 2510 SERIES OREQ
- ELECTRIC HEATING EQUIPMENT–FURNISHED, INSTALLED AND CONNECTED BY E.C.–SEE NOTES ON PLAN OR ELECTRIC HEAT SCHEDULE
- 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.
- HH — TIER 15 HANDHOLE – FLUSH IN GRADE – MINIMUM 13" BY 24" BY 24" – PRECAST POLYMER CONCRETE CONSTRUCTION WITH STACKABLE STRAIGHT SIDE, UL LISTED DESIGN, OPEN BOTTOM AND HEAVY DUTY COVER WITH LOGO OF "ELECTRIC". PLACE ON BED OF GRAVEL OR CRUSHED STONE MINIMUM OF 12" DEEP WITH TOP LEVEL WITH SIDEWALK, PAVEMENT OR GRADE. QUAZITE PG SERIES OR EQUAL.
- 30" OUTDOOR PEDESTAL–NEMA 3R–TWO GANG WITH HINGE TOP–LOCKABLE–INTERGRAL BASE ON CONCRETE BASE (REFERENCE DETAIL THIS SHEET)–30AMP RATED–ACCESS PANEL–STAINLESS STEEL 14 GA–REFERENCE BELOW DEVICE FOR INSTALLATION. PEDOC #5P30HT–3 OREQ.
- WP — INSTALL IN PEDESTAL (REFERENCE ABOVE) – DUPLEX GFCI RECEPT.–WEATHER AND TAMPER RESISTANT DEVICE–20A–120V–NEMA 5–20R. HUBBELL #GF5362SGW/WP26E OREQ.
- 30 — INSTALL IN PEDESTAL (REFERENCE ABOVE) – SINGLE TWLK RECEPT. 30A–240V–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.
- LC — LIGHTING CONTACTOR; 30A–MULTI–POLE–240V IN NEMA 1 ENCLOSURE WITH 120V CONTROL COIL AND 'H–O–A' SELECTOR SWITCH MOUNTED IN COVER; SQUARE D CO. 8903 OREQ.
- 600 CB — ENCLOSED CIRCUIT BREAKER–AMP SIZE AS NOTED–VOLTAGE AS REQD–MH 6'0" TO TOP UNO REFER TO SPECS. (NF=NON–FUSED; 3R=NEMA 3R ENCL; GK=NEMA 12 ENCL)
- EC — 120V ELECTRONIC CONTROLLER FOR HEAT TRACE ON COLD WATER PIPING. FIELD VERIFY AND COORDINATE WITH PLUMBING CONTRACTOR ON FINAL LOCATION AND MOUNTING (ENCLOSURE MAY BE REQUIRED).
- EH — 120V ELECTRONIC CONTROLLER FOR HEAT TRACE ON HOT WATER PIPING. FIELD VERIFY AND COORDINATE WITH PLUMBING CONTRACTOR ON FINAL LOCATION AND MOUNTING (ENCLOSURE MAY BE REQUIRED).
- WP — OUTLET FOR OUTDOOR WALL MOUNTED CCTV CAMERA IN WEATHERPROOF HOUSING WITH HEATER & PAN/TILT/ZOOM ACCESSORIES – SHALL BE FURNISHED BY GENERAL TRADE. ONE GANG BOX WITH 1/2" CONDUIT STUB TO ABOVE ACCESSIBLE CEILING. MH 8FT. AFG. – BY ELECTRICAL CONTRACTOR. HARDWARE INSTALLATION AND WIRING SHALL BE BY SUPPLIER.

FIXTURE SCHEDULE

MARK	LAMP CATEGORY	LAMP QTY/TYPE	VOLTS	DESCRIPTION	MFR. AND CATALOG SERIES	VA
A	LED	NOM 35W 3,897 LUMENS 3500K	120	2'X2' LED SURFACE MOUNTED, FROSTED ACRYLIC LENS, REGRESSED DOOR FRAME, WHITE TRIM, ELECTRONIC 0–10V DIMMING DRIVER.	LITHONIA 2ACLX2–40L–EZ1–LP835–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	40
B	LED	10W 1,122 LUMENS 4000K	120	EXTERIOR LED WALLPACK, CAST ALUMINUM HOUSING, TEMPERED GLASS LENS, BRONZE FINISH, ELECTRONIC DRIVER, SURFACE MOUNTING BRACKET, PHOTOCELL INCLUDED, MOUNTED AT NOMINAL 7'–0" A.F.G.	LITHONIA WDGE1–LED–P1–35K–80CRI–VW–MVOLT –SRM–PE–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	15
C	LED	39.6W 2,60 LUMENS 4000K	240	**ALTERNATE E–1** LED BOLLARD, 8" ROUND CAST ALUMINUM SHAFT AND BASE, POLYESTER POWER COAT, POLYCARBONATE LENS, END CAP DIFFUSERS AND OPAL LENS, INTEGRAL ELECTRONIC DRIVER, FINISH SHALL BE SELECTED BY ARCHITECT.	SUNVALLEY B3EL–CAP–VPA–SYM–36LED–350MA–NW–240 –REV OR APPROVED EQUAL BY EATON, CREE, ETC.	45
EM	LED	INCLUDED	120	EMERGENCY EGRESS LIGHT, POLYCARBONATE HOUSING, WHITE FINISH, SEALED FREE NICKEL BATTERY, 90 MIN. BATTERY BACK–UP, M.H. 7'0" UNO	LITHONIA ELM6L–UVOLT–LTP–REV OR EQUAL BY EATON, CREE, ETC.	10

PANELBOARD SCHEDULE

PANEL: LP–A
MAINS: 600A M.L.O.
VOLTS: 120/240V–1ø–3W–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 TIMER CONTROLLED; 22 KAIC

CKT	LOAD DESCRIPTION	NOTES	VOLT AMPS	C.B. AMP	C.B. P	A	B	C.B. P	C.B. AMP	VOLT AMPS	NOTES	LOAD DESCRIPTION	CKT
1	EWH–1A		5000	60	2	5600		1	20	600		INTERIOR LTS	2
3	.		5000	60	2		5000	1	20	0		SPARE	4
5	EWH–1B		5000	60	2	7100		1	25	2100		HAND DRYER	6
7	.		5000	60	2		7100	1	25	2100		HAND DRYER	8
9	EWH–2		5000	60	2	5000		1	20	0		SPARE	10
11	.		5000	60	2		7100	1	25	2100		HAND DRYER	12
13	EWH–3A		5000	60	2	7100		1	25	2100		HAND DRYER	14
15	.		5000	60	2		5000	1	20	0		SPARE	16
17	EWH–3B		5000	60	2	5500		1	20	500	2	ELECTRONIC CONTROLLER	18
19	.		5000	60	2		5500	1	20	500	2	ELECTRONIC CONTROLLER	20
21	EWH–4		1500	20	2	1500		1	20	0		SPARE	22
23	.		1500	20	2		1605	1	20	105	8	EXTERIOR LTS AND TS	24
25	EWH–5		3750	40	2	3950		2	20	200	8	SITE LIGHTING	26 ⟨1⟩
27	.		3750	40	2		3950	2	20	200	8	SITE LIGHTING	28 ⟨1⟩
29	SPARE		0	20	1	0		1	20	0		SPARE	30
31	TF–1,2,3		650	20	1		650	1	20	0		SPARE	32
33	SPARE		0	20	1	0		1	20	0		SPARE	34
35	RECEPT. POWER		1080	20	1		1080	1	20	0		SPARE	36
37	SPLASH PAD TIMER	1	250	20	1	250		1	20	0		SPARE	38
39	SPARE		0	20	1		18000	2	225	18000		PANEL LP–B	40
41	SPARE		0	20	1	11000		2	225	11000		.	42
	HANDLE TIE / HANDLE LOCK					47000	54985						
					BALANCE	92%	108%						

TOTAL LOAD: 101985 TOTAL AMPS: 424.9

PANELBOARD SCHEDULE

PANEL: LP–B
MAINS: 225A M.L.O.
VOLTS: 120/240V–1ø–3W–SN
MOUNTING: SURFACE

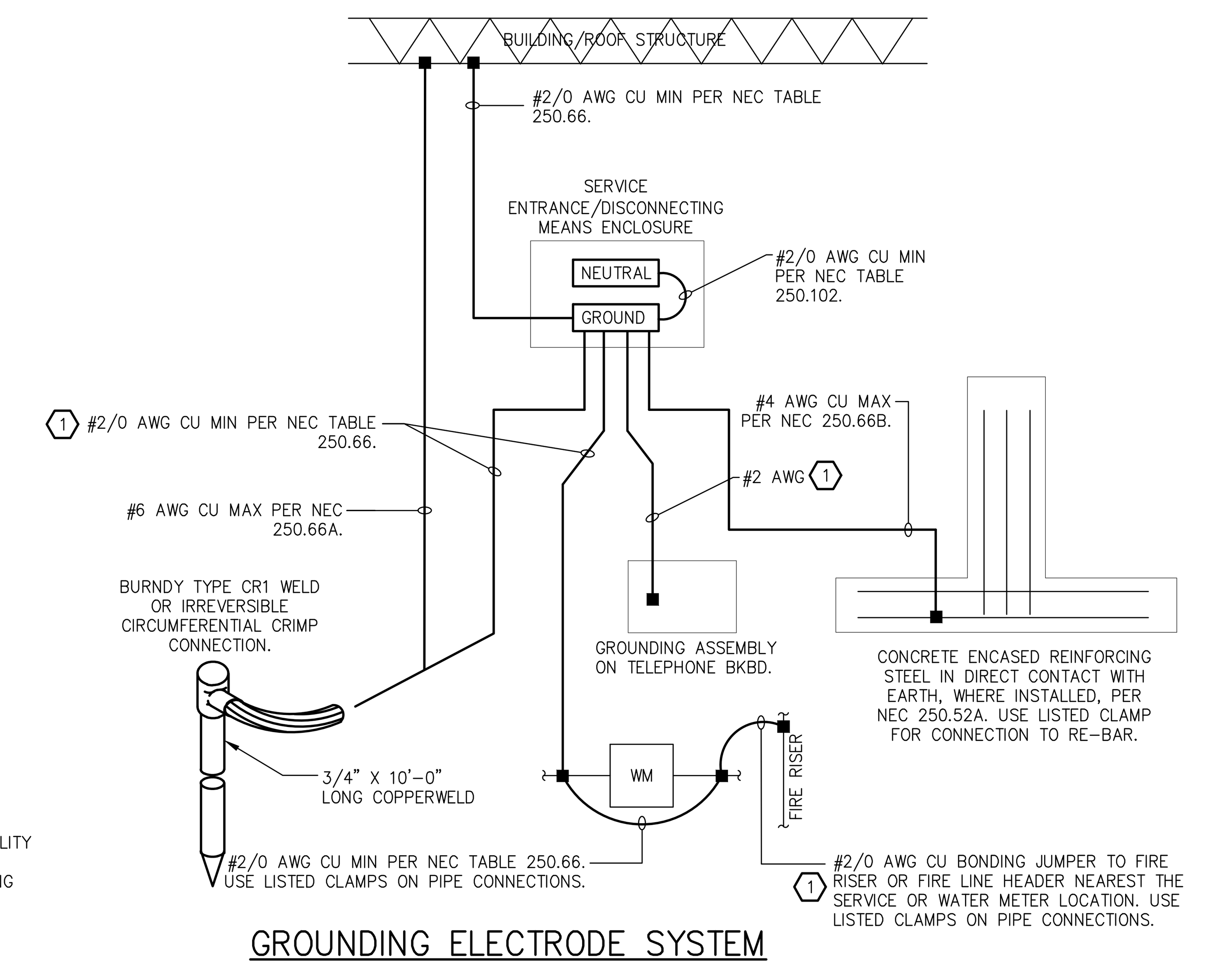
NOTES:
1 GFCI BREAKER; 2 30 MILLIAMP EQUIPMENT GROUND FAULT TRIP; 3 SHUNT TRIP; 4 ARC FAULT; 5 SWITCHED NEUTRAL; 6 MOTOR OPERATED; 7 NON–CONSEQUENT LOAD; 8 TIMER CONTROLLED; 22 KAIC

CKT	LOAD DESCRIPTION	NOTES	VOLT AMPS	C.B. AMP	C.B. P	A	B	C.B. P	C.B. AMP	VOLT AMPS	NOTES	LOAD DESCRIPTION	CKT
1	DWH–1		2500	30	1	3500		1	20	1000		120V PEDESTAL RECPT.	2
3	SPARE		0	20	1		0	1	20	0		SPARE	4
5	DWH–2		2500	30	1	3500		1	20	1000		120V PEDESTAL RECPT.	6
7	SPARE		0	20	1		2750	2	20	2750		240V PEDESTAL RECPT.	8
9	SPARE		0	20	1	2750		2	20	2750			10
11	SPARE		0	20	1		2750	2	20	2750		240V PEDESTAL RECPT.	12
13	SPARE		0	20	1	2750		2	20	2750			14
15	SPARE		0	20	1		2750	2	20	2750		240V PEDESTAL RECPT.	16
17	SPARE		0	20	1	2750		2	20	2750			18
19	SPARE		0	20	1		2750	2	20	2750		240V PEDESTAL RECPT.	20
21	SPARE		0	20	1	2750		2	20	2750			22
23	SPARE		0	20	1		0			0		SPACE	24
25	SPACE		0			0				0		SPACE	26
27	SPACE		0				0			0		SPACE	28
29	SPACE		0			0				0		SPACE	30
31	SPACE		0				0			0		SPACE	32
33	SPACE		0			0				0		SPACE	34
35	SPACE		0				0			0		SPACE	36
37	SPACE		0			0				0		SPACE	38
39	SPACE		0				0			0		SPACE	40
41	SPACE		0			0				0		SPACE	42
	HANDLE TIE / HANDLE LOCK					18000	11000						
					BALANCE	124%	76%						

TOTAL LOAD: 29000 TOTAL AMPS: 120.8

PANEL SCHEDULE NOTES

⟨1⟩ **ALTERNATE E1**

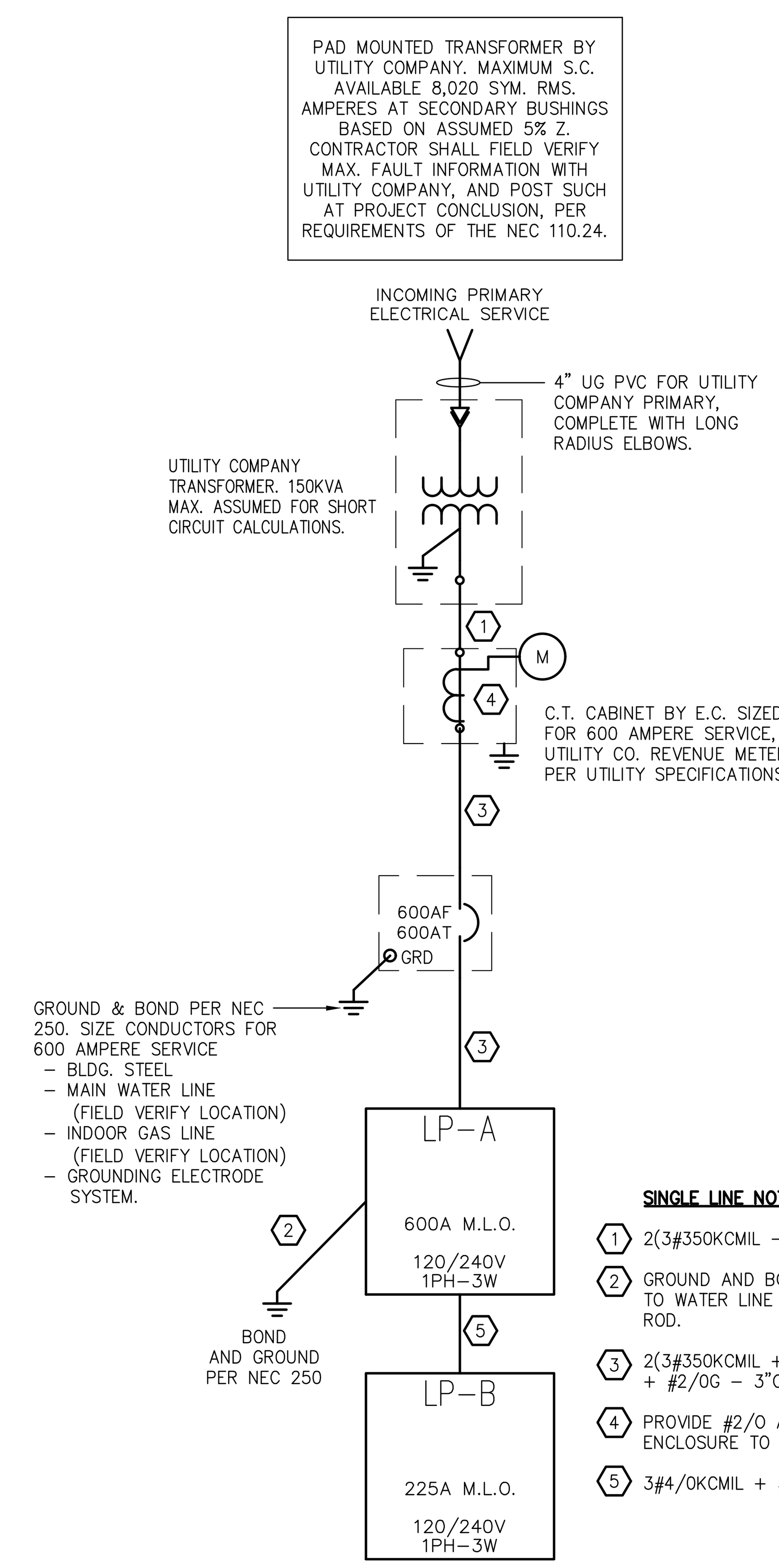


GROUNDING ELECTRODE SYSTEM

N.T.S.

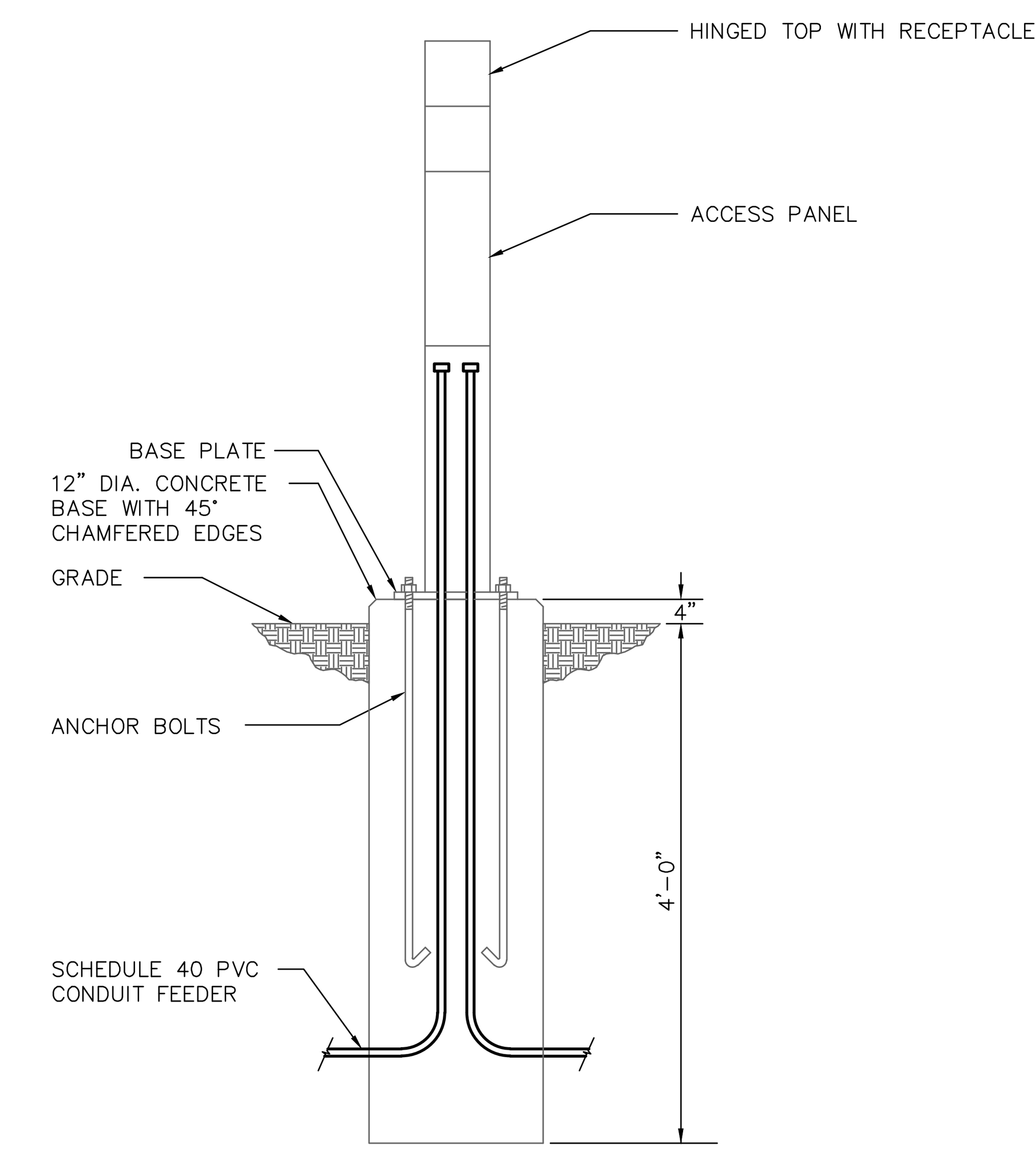
(ALSO PROVIDE #12 AWG BONDING CONNECTION TO INTERIOR GAS LINE PER NEC 250.104, AT AN ACCESSIBLE LOCATION NEAR GAS WATER HEATER IF INSTALLED, WHERE PERMITTED BY THE LOCAL AUTHORITY HAVING JURISDICTION.)

⟨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.



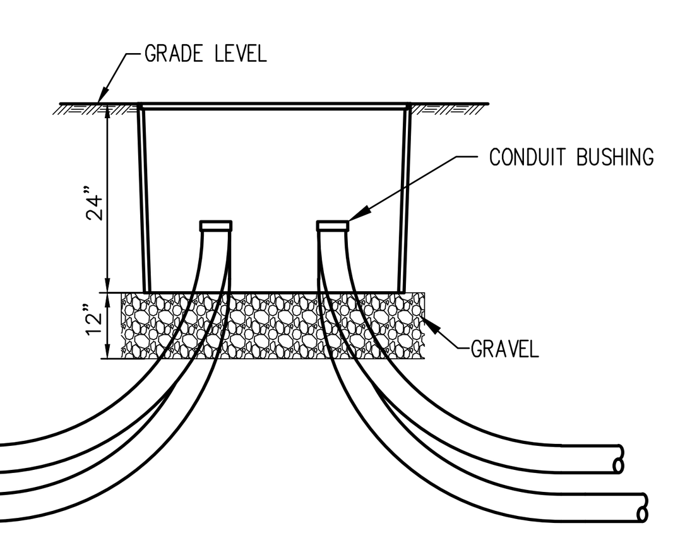
SINGLE LINE NOTES

1. 2(3#350KCMIL – 2.5"C) OR ALUM. 2(3#400KCMIL – 3"C)
2. GROUND AND BOND SERVICE PER N.E.C. 250. #2/0 CU TO WATER LINE & BUILDING STEEL #6 CU TO GROUND ROD.
3. 2(3#350KCMIL + 1#G – 2.5"C) OR ALUM. 2(3#400KCMIL + #2/0G – 3"C)
4. PROVIDE #2/0 AWG BONDING JUMPER TO C/T CABINET ENCLOSURE TO ASSURE LOW IMPEDANCE FAULT PATH.
5. 3#4/0KCMIL + #4G – 2"C



POWER PEDESTAL DETAIL

NO SCALE

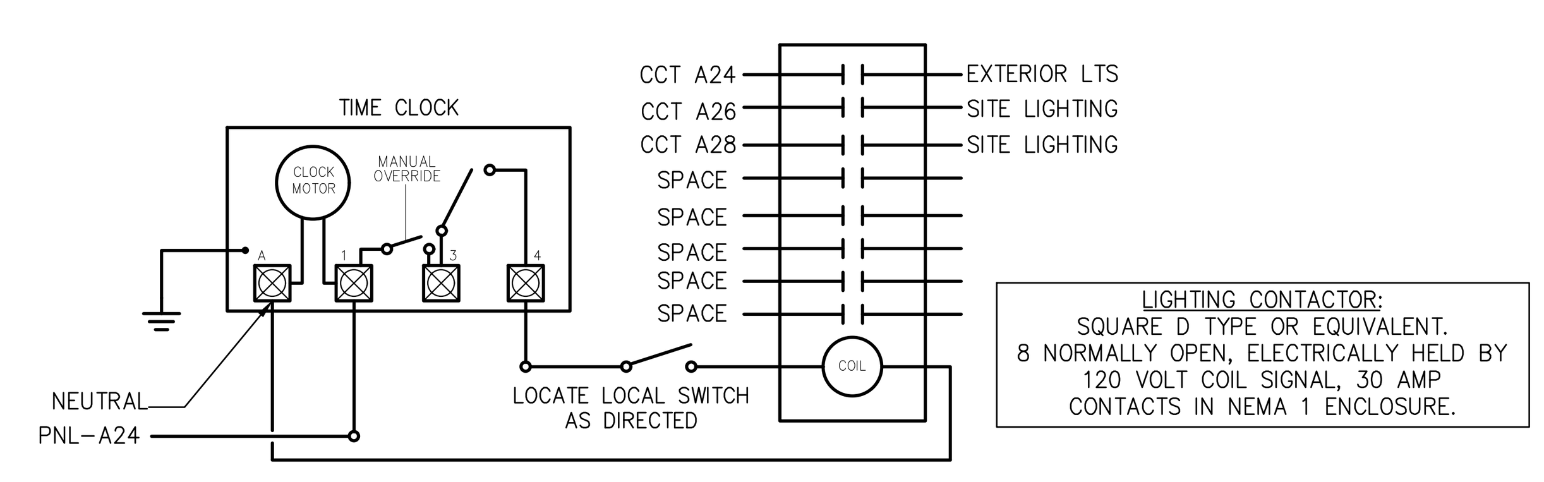


HAND HOLE DETAIL

NO SCALE:

DETAIL NOTES

1. PROPERLY SPACE AND ORGANIZE CONDUITS. LEAVE MINIMUM OF 12" SPACE FROM TOP OF CONDUIT TO BOTTOM OF HAND HOLE COVER FOR CONDUCTORS.



TIME SWITCH AND LIGHTING CONTACTOR DETAIL

NO SCALE

NOTES:

1. A MANUAL SWITCH SHALL BE INCLUDED FOR ADDITION CONTROL.

REV.	DATE	DESCRIPTION
4	01/16/23	ISSUED FOR RE-PERMIT & RE-BID
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2	08/22/22	ISSUED FOR BIDS AND PERMIT
1	08/19/22	ISSUED FOR ODNR REVIEW
0	07/15/22	PERMIT

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COVINGTON SCHOOLHOUSE PARK
25 N. GRANT ST.
COVINGTON, OH 45318

ELECTRICAL FIXTURE SCHEDULE AND SINGLE LINE

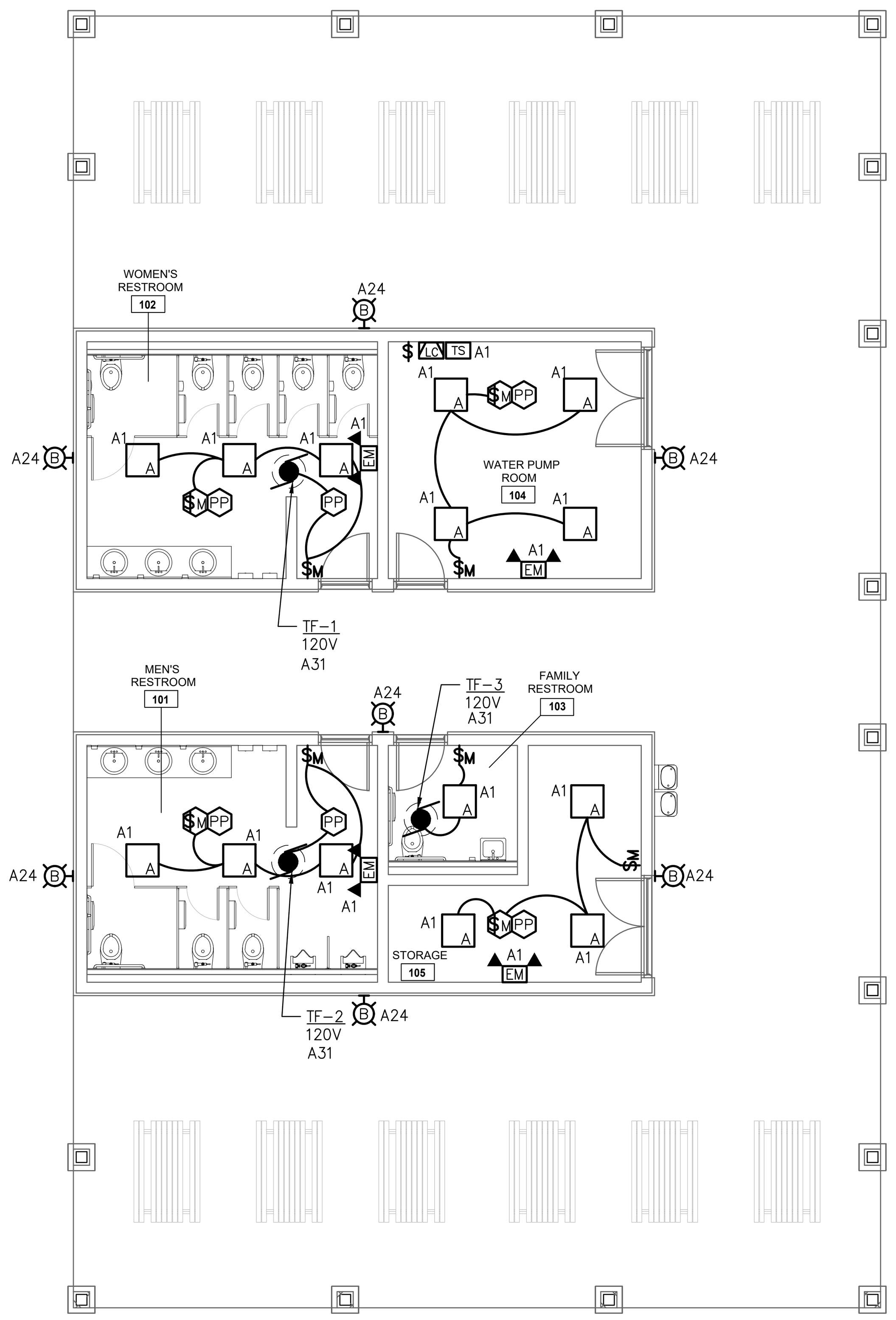
DRAWN BY: JTH | CHECKED BY: JTH

01/16/2023
STATE OF OHIO — ROBERT T. BRANNAN E-54100 — REGISTERED PROFESSIONAL ENGINEER

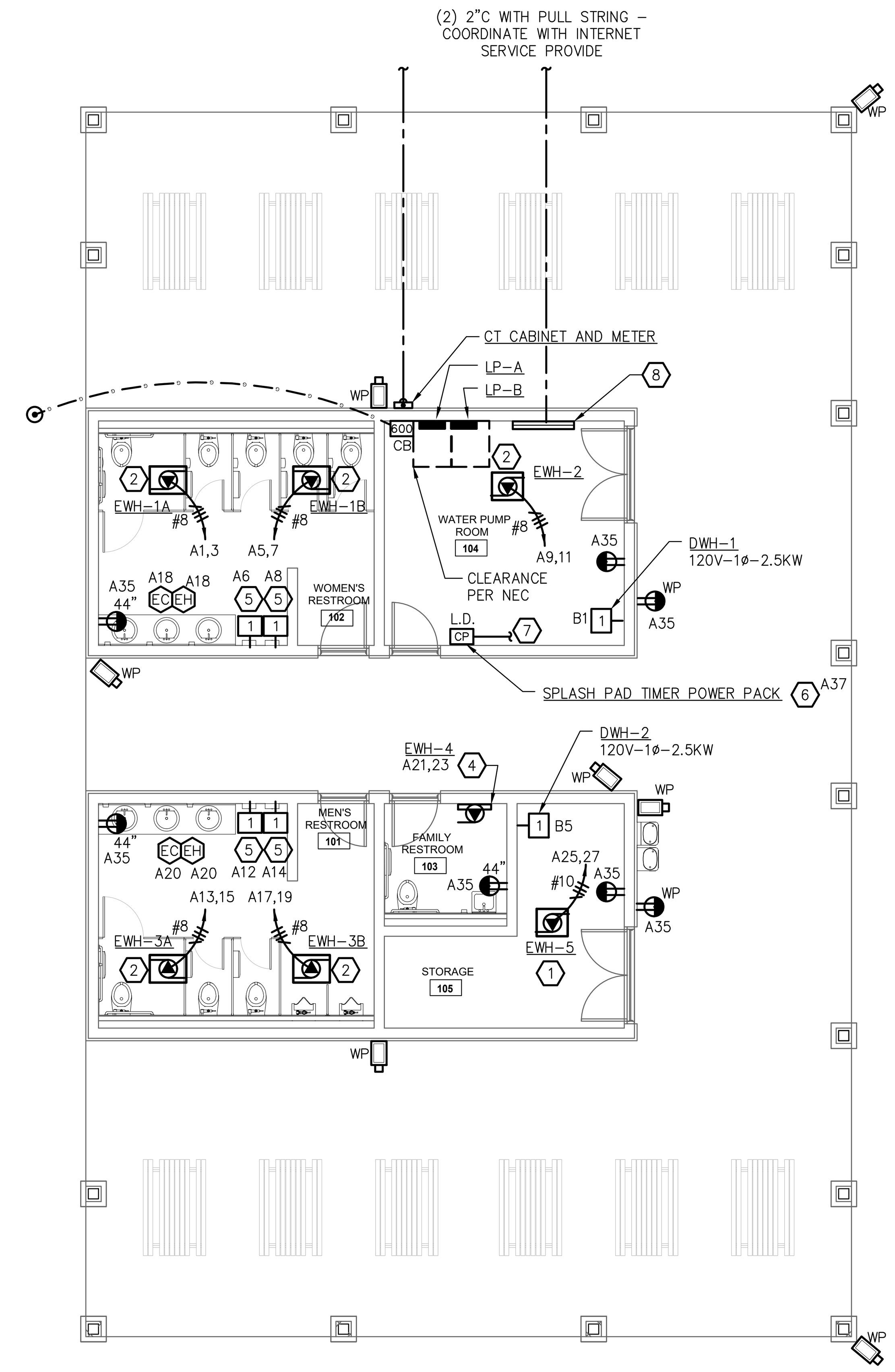
E002

DATE

PROJECT NUMBER
300214-00010



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



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

PLAN NOTES

1. ELECTRIC UNIT HEATER, 7.5KW-240V-1ø, STEEL HOUSING, WITH BUILT IN DISCONNECT AND THERMOSTAT, CEILING MOUNTED. MARKEL #HF2B5107CA1L-DCS403 OREQ.
2. ELECTRIC UNIT HEATER, 10KW-240V-1ø, STEEL HOUSING, WITH BUILT IN DISCONNECT AND THERMOSTAT, CEILING MOUNTED. MARKEL #HF2B5110CA1L-DCS603 OREQ.
3. NOT USED.
4. WALL HEATER, 3KW-240V-1ø, SURFACE MOUNTED SLEEVE, FAN FORCED, WITH BUILT IN DISCONNECT AND THERMOSTAT. MOUNTED 12" AFF TO BOTTOM. MARKEL #HF3325TD-RP-3320EX33 OREQ.
5. HAND DRYERS (F.B.E.C.) 120V-17.5FLA (AMERICAN SPECIALTIES MODEL 0150). 2/10 + #10G - 1/2"C
6. 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.
7. 3/4"C UG FOR LOW VOLTAGE WIRING TO SPLASH PAD. REFERENCE MANUFACTURERS DRAWINGS FOR MORE INFORMATION.
8. TELEPHONE/DATA BACKBOARD-4FT BY 8FT BY 3/4 IN. (UNO) PLYWOOD-PAINTED WHITE-BOND ALL METAL RACEWAYS TOGETHER AND TO GROUNDING ELECTRODE SYSTEM VIA #6 AWG.

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.

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COVINGTON SCHOOLHOUSE PARK
25 N. GRANT ST.
COVINGTON, OH 45318

ELECTRICAL LIGHTING, POWER AND SYSTEM PLAN

DRAWN BY: JTH
CHECKED BY: JTH

01/16/2023
STATE OF OHIO
ROBERT T. BRANNAN
E-54100
REGISTERED
PROFESSIONAL ENGINEER

E101
DATE

PROJECT NUMBER
300214-00010

GENERAL NOTES

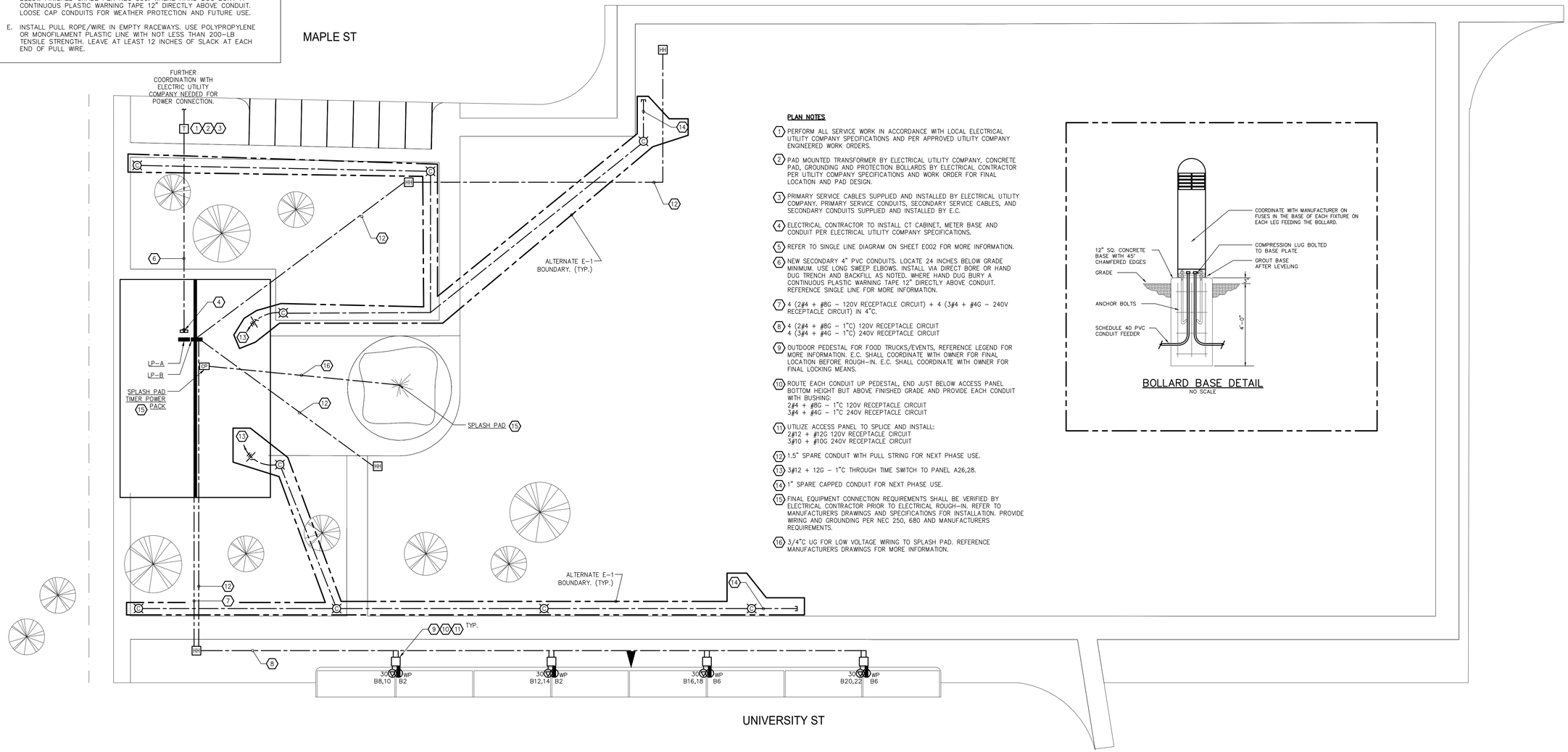
A. THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE CLOSELY DRAWN TO SCALE WHENEVER POSSIBLE TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, AND PRESERVE CLEARANCES, THE CONTRACTOR SHALL USE THIS DATA AS SUPPLEMENTAL INFORMATION AND ADJUST AS NECESSARY TO CONFORM TO ACTUAL PURCHASED EQUIPMENT AND CONSTRUCTION CONDITIONS.

B. THE DRAWING INTENT IS TO PROVIDE PLANS WITH EQUIPMENT AND DEVICE SIZE, TYPE AND GENERAL LOCATION, BASIC SCHEMATIC AND RISER DIAGRAMS AND DETAILS, CIRCUITING REQUIREMENTS, GENERAL INSTALLATION NOTES AND EQUIPMENT AND DEVICE SPECIFICATIONS. IT IS NOT INTENDED THAT THE DRAWINGS INDICATE EXACT LOCATION, MANUFACTURER INSTALLATION DETAILS, DEVICE AND EQUIPMENT WIRING CONNECTIONS AND DETAILS AND RACEWAY ROUTING. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR (MEANS AND METHODS) TO INSTALL EACH ITEM TO PROVIDE AN OPERATIONAL SYSTEM.

C. PRIOR TO ROUGH-IN OF UNDERGROUND CONDUITS, COORDINATE WITH CIVIL, LANDSCAPE AND ARCHITECTURAL DRAWINGS AS WELL AS EXISTING SITE CONDITION FOR EXACT LIGHT FIXTURE LOCATION, ELECTRICAL CONNECTIONS AND ETC.

D. UNDERGROUND CONDUITS SHALL BE INSTALLED AT LEAST 24 INCHES BELOW FINISHED GRADE PER NEC 300. WHERE HAND DUG BURY A CONTINUOUS PLASTIC WARNING TAPE 12" DIRECTLY ABOVE CONDUIT. LOOSE CAP CONDUITS FOR WEATHER PROTECTION AND FUTURE USE.

E. INSTALL PULL ROPE/WIRE IN EMPTY RACEWAYS. USE POLYPROPYLENE OR MONOFILAMENT PLASTIC LINE WITH NOT LESS THAN 200-LB TENSILE STRENGTH. LEAVE AT LEAST 12 INCHES OF SLACK AT EACH END OF PULL WIRE.



5 ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

PLAN NOTES

1. PERFORM ALL SERVICE WORK IN ACCORDANCE WITH LOCAL ELECTRICAL UTILITY COMPANY SPECIFICATIONS AND PER APPROVED UTILITY COMPANY ENGINEERED WORK ORDERS.
2. 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.
3. 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.
4. ELECTRICAL CONTRACTOR TO INSTALL CT CABINET, METER BASE AND CONDUIT PER ELECTRICAL UTILITY COMPANY SPECIFICATIONS.
5. REFER TO SINGLE LINE DIAGRAM ON SHEET E002 FOR MORE INFORMATION.
6. 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.
7. 4 (2#4 + #8G - 120V RECEPTACLE CIRCUIT) + 4 (3#4 + #4G - 240V RECEPTACLE CIRCUIT) IN 4"C.
8. 4 (2#4 + #8G - 1"C) 120V RECEPTACLE CIRCUIT
   4 (3#4 + #4G - 1"C) 240V RECEPTACLE CIRCUIT
9. OUTDOOR PEDESTAL FOR FOOD TRUCKS/EVENTS, REFERENCE LEGEND FOR MORE INFORMATION. E.C. SHALL COORDINATE WITH OWNER FOR FINAL LOCATION BEFORE ROUGH-IN. E.C. SHALL COORDINATE WITH OWNER FOR FINAL LOCKING MEANS.
10. ROUTE EACH CONDUIT UP PEDESTAL, END JUST BELOW ACCESS PANEL BOTTOM HEIGHT BUT ABOVE FINISHED GRADE AND PROVIDE EACH CONDUIT WITH BUSHING:
    2#4 + #8G - 1"C 120V RECEPTACLE CIRCUIT
    3#4 + #4G - 1"C 240V RECEPTACLE CIRCUIT
11. UTILIZE ACCESS PANEL TO SPLICE AND INSTALL:
    2#12 + #12G 120V RECEPTACLE CIRCUIT
    3#10 + #10G 240V RECEPTACLE CIRCUIT
12. 1.5" SPARE CONDUIT WITH PULL STRING FOR NEXT PHASE USE.
13. 3#12 + 12G - 1"C THROUGH TIME SWITCH TO PANEL A26,28.
14. 1" SPARE CAPPED CONDUIT FOR NEXT PHASE USE.
15. 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.
16. 3/4"C UG FOR LOW VOLTAGE WIRING TO SPLASH PAD. REFERENCE MANUFACTURERS DRAWINGS FOR MORE INFORMATION.

BOLLARD BASE DETAIL
NO SCALE

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COVINGTON SCHOOLHOUSE PARK
25 N. GRANT ST.
COVINGTON, OH 45318

ELECTRICAL SITE PLAN

DRAWN BY	CHECKED BY
JTH	JTH

01/16/2023
STATE OF OHIO
ROBERT T BRANNAN E-54100
REGISTERED PROFESSIONAL ENGINEER

E201
DATE

PROJECT NUMBER
300214-00010

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0	07/15/22	PERMIT

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SMARTPOINT No 1

The contractor shall provide and install the following SMARTPOINT No1 COMMAND CENTER as manufactured by VORTEX, 328 Avro St., Montreal, Quebec, Canada H9R 5W5, (514) 694-3868.

1.0 GENERAL MATERIAL SPECIFICATIONS

The Manifold Shall be constructed in stainless steel structural tubing 304/304L, structurally strong, durable, and resistant to corrosive environments. Rigid centri-cast fiber reinforced (FRP) and/or moulded fiberglass, PVC, filament wound tubing, Galvanized Steel, or Aluminum shall **not** be utilized for any distribution systems manifolds. The outlet tube shall be in PVC. The mounting and assembly hardware shall be 304/304L stainless steel. Exposed and accessible hardware shall be tamper resistant, requiring a special tool for removal to deter vandalism and theft. All edges shall be machined to a rounded edge. All welds of manifold shall be watertight and other welds shall be buffed smooth, or polished to a non-visible finish and factory pressure tested. All products shall be designed in accordance with ASTM F2461 and CSA Z614-2007 regulations for public playgrounds.

2.0 VOR-1910.0622 Smartpoint No 1

The Smartpoint No 1 shall run on a low voltage electrical supply, as described below. It consists of a manifold, a pressure regulator, a vault, a drainage system, and solenoid valves. It shall be embedded in a water proof container to prevent corrosion and water damage.

2.1 The water distribution system shall be factory assembled and water pressure tested before delivery.

2.2 Each distribution line shall have electrically activated solenoid valves, operating on 24VAC. Valves should have integrated flow control, should be rated for 150 psi and should be constructed with captive bonnet screws and captive solenoid and diaphragm plunger.

2.3 The electrical solenoid valves shall be wired to the play feature controller on site. All connections into the junction box should be made to respect the enclosure Nema 4X integrity.

2.4 Each distribution line on the manifold shall be Schedule 40 PVC and have a threaded connection to connect each of the lines to the play features.

2.5 The lines from the manifold to the play structures shall be Schedule 80 PVC.

2.6 The manifold body shall be constructed of stainless steel 304. A 3/4" drain valve and a 3/4" vent valve shall be present on the manifold.

2.7 The command center is provided with a flush mounted cover made of painted stainless steel and shall use tamper resistant tools for installation and removal. The Drain cover to the Smart Point control system shall be factory assembled before delivery. The drain grating shall have an anti-skid surface consisting of polyurethane based paint. The drain grating shall have openings no larger than 1/4". The drain grating shall be secured using stainless steel tamperproof hardware. The water line outlet connected to the drain box shall be a maximum of 6" in diameter at a minimum slope of 1%. The
maximum GPM will be 295 through the grating.

	Valve type	Inlet size / Outlet size / Number of Outlet	Controllers	Foot / Post Activator & Polished or Painted Post
VOR-1910-	X	X	0	X
	0= Standard Solenoid Valve 1= Brass Solenoid Valve	3= 1 ½" with Pressure Reducing Valve / 1" / 10 outlet 4= 2" / 1 ½" / 10 outlet 5= 2" with Pressure Regulator / 1 ½" / 10 outlet 6= 3" / 1 ½" / 10 outlet	0= Spraypoint AC 2=External controller	0= Foot activator 1= Post activator painted 3= No activator

3.0 Installation Characteristics:

3.1 **Anchoring and levelling Systems:** The anchoring system shall have an integrated levelling system facilitating installation and a plumb finished to the activity deck surface.

3.2 **Earth Bonding/Grounding:** All Play products are to be equipped with a Grounding Lug and are to be grounded against a lightning strike as per article 680 of the N.E.C.

3.3 **Drawings and Instructions:** Product drawings and installation manuals shall be supplied by the manufacturer for ease of installation.

3.4 **As per Electrical Construction and Safety Codes:** Controller and/or LED power panels and/or any other electrical equipment must be hard-wired to a ground fault circuit interrupter (GFCI) from the input power source. All electrical work should be performed by a licence electrician in accordance to local electrical construction and safety codes.

4.0 Codification:

PLAY PRODUCT SPECIFICATIONS :

The TwinSplash VOR 7242.2008 shall be constructed of steel structural tubing with an outside diameter of 4 ½" (11.4cm) and wall thickness of 0.237" (6 mm). The roof paneling shall be fabricated from ½" (12.7 mm) SEEFLOW™ Polymer and shall be fastened to the roof frame with tamper resistant hardware. The roof frame shall be constructed from ¼" (6.35mm) stainless steel sheet. The TwinSplash bucket shall be fabricated from a high-density fiberglass outer shell. The bucket shall pivot on two (2) UHMWPE bushing inserted in the shaft. An incorporated drain pilot hole shall prevent the accumulation of stagnate water during non-operational hours. The SAFESWAP™ anchoring and leveling system shall be used on one post and a surface mount for the other post.

Overall Play Product Dimensions

The overall height of the structure shall be no less than 182" (463 cm) with a head clearance of no less than 119" (302 cm). The width shall be 57" (144 cm) and the depth 45" (114 cm).

Play Product Interactivity

The TwinSplash shall create visual interest and build anticipation as the bucket fills and then dumps water over the roof so it's create two successive waves onto the immediate play area.

Hydraulic Activity / Components

The fiberglass bucket shall filled to a maximum and to not exceed 15 gallons of water. Once the water has reached the 15 gallons point the bucket will tip backward and release the water onto the roof, causing a large diameter of two successive waves.

Hydraulic Requirements

The hydraulic requirements shall be 10-15 GPM (38-57 lpm) @ 9-10 psi (0.6-0.7 bar).

Play Product Structure: The Spraylink Jet No.1 VOR 3000 shall be constructed of polymer spray housing (1), fittings and pipings in Rigid Polyvinyl Chloride (PVC) without plasticizer according to industry standards. Each spray head housing shall be fitted with a 304-304L passivated Stainless steel ring thickness of 0.1875" (4.75mm), a UHMWPE polymer spray cap and a rubber O-ring assembled with tamper-resistant fasteners. The spray cap shall be free of finger entrapment hazards. Installer must follow installation guide provided to assemble the components. The embedded anchoring and leveling system shall be used.

1.1. Overall play product dimensions**:** The overall height of the Play Product shall be 0" (0 cm) above ground.

1.2. Play Product Interactivity: The high or low stream of water produced by jet creates visual interest.

1.3. Hydraulic Activity/Components: The water effect from the spray head shall produce soft streams.

1.4. Hydraulic Requirements: The hydraulic requirements shall be 2-3 gpm (7.5-11 lpm) @ 2-4 psi (0.1-0.3 bar).

Play Product Structure: The Spraylink Geyser VOR 3005 shall be constructed of polymer spray housing (1), fittings and pipings in Rigid Polyvinyl Chloride (PVC) without plasticizer according to industry standards. Each spray head housing shall be fitted with a 304-304L passivated Stainless steel ring thickness of 0.1875" (4.75mm), a UHMWPE polymer spray cap and a rubber O-ring assembled with tamper-resistant fasteners. The spray cap shall be free of finger entrapment hazards. Installer must follow installation guide provided to assemble the components. The embedded anchoring and leveling system shall be used.

1.1. Overall play product dimensions**:** The overall height of the Play Product shall be 0" (0 cm) above ground.

1.2. Play Product Interactivity: The high or low stream of water produced by jet creates visual interest.

1.3. Hydraulic Activity/Components: The water effect from the spray head shall produce soft streams.

1.4. Hydraulic Requirements: The hydraulic requirements shall be 4-6 gpm (15-23 lpm) @ 2-4 psi (0.1-0.3 bar).

Play Product Structure: The Spraylink Tunnel No.1 VOR 3054 shall be constructed of polymer spray housing (4), fittings and pipings in Rigid Polyvinyl Chloride (PVC) without plasticizer according to industry standards. Each spray head housing shall be fitted with a 304-304L passivated Stainless steel ring thickness of 0.1875" (4.75mm), a UHMWPE polymer spray cap and a rubber O-ring assembled with tamper-resistant fasteners. The spray cap shall be free of finger entrapment hazards. Installer must follow installation guide provided to assemble the components. The embedded anchoring and leveling system shall be used.

1.1 Overall play product dimensions**:** The overall height of the Play Product shall be 0" (0 cm) above ground.

1.2 Play Product Interactivity: The high or low stream of water produced by jet creates visual interest.

1.3 Hydraulic Activity/Components: The water effect from the spray head shall produce soft streams.

1.4 Hydraulic Requirements: The hydraulic requirements shall be 3-5 gpm (11-19 lpm) @ 4-6 psi (0.3-0.4 bar).

Play Product Structure: The Alto N°3 (SW, PC) VOR- 7132-2008 R01 shall have an overall height of 23" (58 cm) above surface, a width of 75" (190cm) and a length of 73" (185cm). A soft polymer molded HAT™ is attached atop a molded polymer main body. The HAT™ has an integrated housing to accept one (1) Geyser nozzle assembly. All nozzles are free of finger entrapment hazards. Attached to the main body are three (3) soft polymer molded PINs and one (1) ROTATING DIVERTER™ allowed to spin freely by means of a mechanism of low friction polymer bushings. Three (3) HOP™ are embedded to the ground and are hydraulically connected to the Geyser water effect. Each HOP™ releases three (3) water streams. The soft polymer molded cover is assembled with a painted stainless steel frame onto a stainless steel base using tamper-resistant fasteners. A winter cap for each HOP™ shall be included. Four (4) steel hex Inserts are molded into the main body, used to attach the body to its four (4) stainless steel anchoring plates using tamper-resistant fasteners. An integrated surface mounted manifold with kink-free flexible pipes provides water distribution to the play feature. The SAFESWAP™ anchoring and leveling system shall be used.

1.1 Overall height of 23" (58 cm) above surface, a width of 75" (190cm) and a length of 73" (185cm) The spray nozzle shall produce an aerated foaming geyser column by drawing air from the atmosphere through the nozzle body into a projected water stream from the top of the HAT™. Kids can affect the pressure of the Geyser water effect by interacting with the three (3) HOP™ by skipping and stepping on the textured pads, encouraging collaborative play, as well as affecting the three (3) water streams on each HOP™.

1.2 The hydraulic requirements shall be13-18 gpm (49.2-68.1 lpm) @ 1.5-2 psi (0.1-0.1 bar).

Play Product Structure: The Bobble no.1 VOR-7232 consists of curved tubing made of 304/304L stainless steel with an outside diameter of 3.50" (8.9cm) and a wall thickness of 0.12" (3.0mm). All bending shall have no joint or ripples. One (1) molded dome is attached to the structure using an HDPE disk and tamper-resistant fasteners. The dome is 21.75" (55cm) in diameter and made of transparent SEEFLOW™ polymer. The HDPE disk has two (2) openings that feed water to fill the dome. Assembled to the structure is one (1) molded polymer ORB attached to a stainless steel cap using tamper-resistant fasteners. The ORB spins freely by means of a mechanism of low friction polymer bushings and is propelled to spin by the force of the movement of the water in the bowl. All nozzles are free of finger entrapment hazards. The SAFESWAP™ anchoring and leveling system shall be used. The TOEGUARD™ will then be added to protect children's toes from anchoring hardware.

1.1 Overall play product dimensions**:** The overall height of the Play Product shall be 31" (78 cm) above surface.

1.2 Play Product Interactivity: One (1) ORB floats in the dome and spins with the movement of the water. Kids can twist, stop, dunk and otherwise manipulate the ORB in the water.

1.3 Hydraulic Activity/Components: There are two (2) water feeds inside the dome.

1.4 Hydraulic Requirements: The hydraulic requirements shall be 6-9 gpm (22-34 lpm) @ 3-5 psi (0.2-0.3 bar).

Play Product Structure: The Luna Cannon no.1 VOR-7235 consists of a curved tubing made of 304/304L stainless steel with an outside diameter of 3.50" (8.9cm) and a wall thickness of 0.12" (3.0mm). All bending shall have no joint or ripples. The unit is constructed into two sections. The bottom section is a fixed structural support for the top. A 3.5" (8.89cm) solid lead-free brass 80° degree-spray TURNTEC™ joint consisting of a stainless steel bearing collar will allow the top to rotate 360° degrees. The TURNTEC™ joint shall be free of pinch points and protrusion hazards and contain no flexible hoses. The upper section is a pivoting curved pipe with a shaft welded onto its end. One (1) molded polymer ORB is attached to the stainless steel shaft with stainless steel caps using tamper-resistant fasteners. The ORB spins freely by means of a mechanism of low friction polymer bushings. The cap on top of the ORB is machined to also serve as a spray nozzle. All nozzles are free of finger entrapment hazards. The SAFESWAP™ anchoring and leveling system shall be used. The TOEGUARD™ will then be added to protect children's toes from anchoring hardware.

1.1 Overall play product dimensions**:** The overall height of the Play Product shall be 39" (99 cm) above surface.

1.2 Play Product Interactivity: The rotational joint allows users to rotate the product 360 degrees and spray water in different directions in a 100 degree range. Kids can spin the head of the cannon consisting of one (1) ORB to make swirling water streams or aim at others.

1.3 Hydraulic Activity/Components: The spray nozzle makes six (6) water streams.

1.4 Hydraulic Requirements: The hydraulic requirements shall be 6-7 gpm (22-26 lpm) @ 7-8 psi (0.5-0.6 bar).

Play Product Structure: The Leaf Nº2 VOR-7657.2008 shall be constructed of 304/304L stainless steel structural tubing with an outside diameter of 4½" (11.4cm) and a wall thickness of .120" (3mm). It shall have seven (7) lead free brass nozzles inserts into the post. The top of the Leaf Nº2 shall be filled with a SEEFLOW™. The SAFESWAP™ anchoring and leveling system shall be used.

1.1 Overall play product dimensions**:** The overall height shall be 129" (327cm) above final grade, shall span 35" (89cm) in width, with a head clearance of 115" (292 cm).

1.2 Play Product Interactivity: The angle of each nozzle can be adujted on site to create a straight down stream jet that sprays from the leaves. Kids can play under the water jets, cross through the leaf in and out in between the water streams without being wet or hide inside under the leaf for an immersive surrounding water effect.

1.3 Hydraulic Activity/Components: Each nozzle shall produce a single soft adjustable stream.

1.4 Hydraulic Requirements: The combined hydraulic requirements of all spray nozzles shall be 3-8gpm (11-30 lpm) @ 5-10 psi (0.3-0.7 bar).

REV.	DATE	DESCRIPTION
4	01/16/2023	ISSUED FOR RE-PERMIT & REBID
3	09/30/2022	ISSUED FOR REBID
2	08/22/2022	ISSUED FOR BIDS & PERMIT
1	08/19/2022	ISSUED FOR ODNR REVIEW

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DESIGN GROUP
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VILLAGE OF COVINGTON
SCHOOLHOUSE PARK - PAVILION
25 N. GRANT ST., COVINGTON, OH 45318

SPLASH PAD SPECIFICATIONS

DRAWN BY	CHECKED BY
SJM	SSH

SP01

DATE
1/17/2023
1:48:31 PM

PROJECT NUMBER
20225751

SPECIFICATIONS FOR CONSTRUCTION

1 GENERAL NOTES

1.1 THESE DESIGN DOCUMENTS WERE PREPARED BY 'VORTEX AQUATIC STRUCTURES INTERNATIONAL' FOR THE USE OF THEIR CLIENT ONLY. THE MATERIAL USED AND IDENTIFIED IN THEM REFLECTS VORTEX AQUATIC STRUCTURES INTERNATIONAL'S BEST JUDGMENT IN LIGHT OF THE INFORMATION AVAILABLE AT THE TIME OF PREPARATION. FOR THE PURPOSE OF THESE DESIGN DOCUMENTS, 'VORTEX AQUATIC STRUCTURES INTERNATIONAL' IS SYNONYMOUS WITH 'VORTEX'.

1.2 VORTEX ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY ANY THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THESE DESIGN DOCUMENTS WITHOUT THE PREVIOUS CONSULTATION TO VORTEX.

1.3 ALL WORK, MATERIALS AND THEIR ASSEMBLIES SHALL CONFORM TO THE STANDARDS, REGULATIONS AND CODES CURRENTLY IN FORCE FOR ALL TRADES, AISC, ACNOR, EN, OR IBC.

1.4 THESE DESIGN DOCUMENTS DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. WHEN APPLICABLE, THE CONTRACTORS SHALL SUPERVISE AND DIRECT ALL THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES AND SEQUENCES AS PER STANDARD BEST PRACTICES.

1.5 DO NOT SCALE DRAWINGS.

1.6 USE ONLY THOSE MARKED "ISSUED FOR CONSTRUCTION".

1.7 THE CONTRACTOR SHALL REVIEW THESE DESIGN DOCUMENTS AND REPORT ANY CONFLICTS OR OMISSIONS TO THE VORTEX IMMEDIATELY.

1.8 TEMPORARY SUPPORTS, WHICH WILL BE REQUIRED DURING CONSTRUCTION, SUCH AS FORMWORK, BRACING, SHORING, ETC. ARE NOT SHOWN ON THESE DRAWINGS AND ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL SAFE CONSTRUCTION PROCEDURES ARE FOLLOWED.

1.9 THE FOLLOWING SPECIFICATIONS ARE VORTEX'S MINIMUM RECOMMENDATIONS TO OBTAIN A QUALITY PRODUCT. THE CONTRACTOR SHALL FOLLOW THE LOCAL CODES IF MORE RESTRICTIVE.

1.10 ALL SEEFLOW COMPONENTS TO BE SNUG-TIGHT ONLY. USING POWER TOOLS OR TIGHTEN HARDWARE FULLY-TENSIONED CAN PRODUCE CRACKING ON THE PLASTIC.

2 EXCAVATION

2.1 ANY SHORING OR TEMPORARY SHORING NOT SHOWN ON DRAWINGS WILL BE EXECUTED, IN A SAFE MANNER, BY THE GENERAL CONTRACTOR.

2.2 IT IS THE RESPONSIBILITY OF OTHERS TO VERIFY THE EXISTENCE OF ANY UNDERGROUND SERVICES ETC.

2.3 IF AVAILABLE, REFER TO SOIL REPORT FOR BACKFILL REQUIREMENTS. ALL BACKFILL (FOR SLAB ON GRADE, ETC.) MUST BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED PROFESSIONAL. USE ONLY FREE DRAINING, GRANULAR, MINERAL, INERT AND NON- REACTIVE FILL.

3 FOUNDATIONS

3.1 REFER TO SOIL REPORT FOR RECOMMENDATIONS.

3.2 ALL FOOTINGS SHALL REST ON A HOMOGENEOUS LAYER OF UNDISTURBED SOIL OR ENGINEERED BACKFILL WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 100KPA (2000 PSF) AND MAXIMUM DIFFERENTIAL SETTLEMENT OF 19 MM (0.75"). ALL ORGANIC MATERIAL SHALL BE REMOVED.

3.3 IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE SOIL AT ALL FOOTING LOCATIONS BE VERIFIED BY A QUALIFIED SOILS EXPERT BEFORE POURING FOOTINGS TO ENSURE FOOTINGS REST ON APPROPRIATE STRATA.

3.4 WHEN APPLICABLE, FOLLOW GEOTECHNICAL EXPERT RECOMMENDATIONS FOR ALL EXTERIOR FOOTINGS TO ENSURE FROST PROTECTION.

4 CONCRETE

4.1 ALL CONCRETE MATERIALS, PROCEDURES, TOLERANCES & WORKMANSHIP SHALL CONFORM TO THE LATEST ISSUES OF ACI-318 AND ACI 317 OR ACNOR CAN3-A23.1 & A23.2, DEPENDING ON PROJECT LOCATION.

4.2 CONCRETE THAT HAS BEEN IN THE TRUCKS LONGER THAN 2 HOURS SHALL BE REJECTED. DO NOT ADD WATER TO THE CONCRETE IN THE TRUCKS OR ON THE SITE UNDER ANY CIRCUMSTANCES.

4.3 USE MAXIMUM 76mm (3") SLUMP, 19mm (3/4") AGGREGATE, UNLESS OTHERWISE-NOTED. USE 5-7% AIR ENTRAINMENT FOR CONCRETE EXPOSED TO WEATHER ONLY.

4.4 ALL GROUT SHALL BE NON-SHRINK TYPE WITH A MINIMUM 28 DAYS STRENGTH OF 35.0 MPA (5000 PSI). USE 25 MM (1") GROUT UNDER ALL STEEL COLUMN BASE PLATES.

4.5 CONCRETE STRENGTH @ 28 DAYS TO BE:

4.5.1 FOUNDATIONS (FOOTINGS): 25.0 MPA (3500 PSI), UNLESS OTHERWISE NOTED.

4.5.2 INTERIOR SLAB ON GRADE: 25.0 MPa (3500 PSI), UNLESS OTHERWISE NOTED.

4.5.3 EXTERIOR SLAB ON GRADE: 32.0 MPa (4500 PSI), UNLESS OTHERWISE NOTED.

4.6 MINIMAL RE-BAR COVER:

4.6.1 CONCRETE POURED ON-GRADE = 76mm (3") COVER

4.6.2 CONCRETE POURED INTO FORMWORK BUT EXPOSED TO SOIL AND WEATHER FOR REBAR 15m (#4) AND UNDER = 50mm (2") COVER

5 REINFORCING STEEL

5.1 DEPENDING ON PROJECT LOCATION, ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 (BARS 15m (#4) TO BE GRADE 60 WITH SUPPLEMENTARY REQUIREMENTS ON S1.

BARS SMALLER THAN 15m (#4), TO BE GRADE 40); OR TO ACNOR GRADE G30.12 [FY = 400MPA (60,000 PSI), UNLESS OTHERWISE NOTED].

5.2 USE CONCRETE, PLASTIC OR STEEL SUPPORT BARS, AS PER ACI (MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES). THE RE-BAR PLACER MUST REMAIN ON-SITE DURING POURS TO VERIFY CORRECT POSITIONING OF RE-BARS. SLANT UPPER REINFORCING STEEL IN LINE WITH THE SLOPE OF THE SLAB, IF APPLICABLE.

5.3 BARS SHALL BE SECURELY WIRED PER LATEST EDITION OF CRSI (RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS).

5.4 ALL REINFORCING STEEL IS TO BE KEPT CLEAN AND FREE OF MUD, SNOW, ICE, AND ANY CONTAMINANTS.

5.5 VERTICAL AND CONTINUOUS REBAR SHALL BE LAPPED TO DEVELOP FULL TENSILE CAPACITY OF THE BAR. FOR 15M (#4) BARS MINIMUM LAP OF 610mm (24").

6 EXTERIOR / INTERIOR SLAB ON GRADE

6.1 FOLLOW THE GEOTECHNICAL EXPERT RECOMMENDATIONS FOR PREPARATION OF SOIL BEFORE POURING THE CONCRETE. ALL GRANULAR MATERIAL SHALL BE MOISTENED

IMMEDIATELY BEFORE POURING THE CONCRETE. WATER AS NEEDED. DO NOT USE A VAPOR BARRIER.

6.2 NO TRUCKS ARE PERMITTED ON THE CONSTRUCTION SITE (OF THE SLAB) AFTER THE FINAL COMPACTION, EITHER BEFORE OR DURING, THE POUR.

6.3 SLAB TO BE MINIMUM 6 INCHES THICK, REINFORCED WITH 10M (#3) @ 300 MM (12") C/C REBAR PLACED IN BOTH DIRECTIONS AT MID-HEIGHT OF THE SLAB, UNLESS OTHERWISE NOTED ON PLANS.

6.4 REFER TO CONCRETE SECTION FOR MINIMUM COMPRESSIVE STRENGTH AND AIR-ENTRAINMENT REQUIREMENTS.

6.5 FINISHING WILL BE MEDIUM BROOM.

6.6 CONTROL JOINTS (SAW-CUTS) TO BE LOCATED IN EACH DIRECTION, AT REGULAR INTERVALS, WITH A MAXIMUM DISTANCE OF 3 METERS (10 FEET). SHALL BE MINIMUM 3 MM (1/8") WIDE AND SHALL PENETRATE THE SLAB TO A MINIMUM DEPTH OF 1/3 OF THE THICKNESS OF THE SLAB. CONTROL JOINTS SHOULD BE DONE AS SOON AS POSSIBLE WITHOUT DAMAGING THE CONCRETE, BUT NO LATER THAN 18 HOURS AFTER POURING.

6.7 WHEN POSSIBLE AND TO AVOID SHRINKAGE CRACKING, HUMIDITY SHALL BE MAINTAINED FOR 7 DAYS DURING THE CURING PERIOD OF THE SLAB. WATER AND USE POLYETHYLENE CLOTH OR BAG. THE CONCRETE MUST DRY UNIFORMLY.

7 CONCRETE WORK IN COLD OR HOT WEATHER (MINIMUM REQUIREMENTS)

7.1 COLD WEATHER REQUIREMENTS APPLY WHEN THE MEAN AIR IS LESS THAN 5 DEGREES CELSIUS (40 DEGREES FAHRENHEIT).

7.2 GENERAL REQUIREMENTS FOR COLD WEATHER CONCRETE WORK SHALL BE AS PER ACI 306R-88; OR AS PER THE NBC'S LATEST REQUIREMENTS INCLUDING THE LATEST ISSUE OF CSA STANDARD CAN3-A23.1.

7.3 ALL SNOW AND ICE SHALL BE REMOVED FROM FORMS AND REBAR WITH STEAM AND COMPRESSED AIR BEFORE POURING. DO NOT USE DE-ICING SALT (CALCIUM CHLORIDE) OR ANY OTHER SALTS UNDER ANY CIRCUMSTANCES.

7.4 CONCRETE SHALL HAVE A MINIMUM TEMPERATURE OF 20 DEGREES CELSIUS AND A MAXIMUM TEMPERATURE OF 25 DEGREES CELSIUS WHILE POURING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THESE REQUIREMENTS ARE SATISFIED. ANY CONCRETE THAT DOES NOT CONFORM MUST BE REJECTED.

7.5 THE SURFACE OF POURED CONCRETE SHALL BE PROTECTED BY MEANS OF SUITABLE COVERINGS AND INSULATION (TO BE DETERMINED BY TEMPERATURE) DURING THE CURING PROCESS.

7.6 GENERAL REQUIREMENTS FOR HOT WEATHER CONCRETE WORK SHALL BE AS PER ACI 305R-99; OR AS PER LOCAL CODE REQUIREMENTS.

8 PIPING

8.1 WDS CONFIGURATION ARE SCHEMATIC AND MAY BE MOVED OR ADJUSTED ON SITE BY VORTEX CERTIFIED INSTALLER TO ADJUST FOR SITE CONDITIONS

8.2 ANY REQUIRED BACKFLOW PREVENTER AND WATER METER ON THE CITY WATER MAIN SHALL BE PROVIDED BY INSTALLER. PRESSURE REGULATOR SHALL BE INSTALLED INSIDE THE SMARTPOINT

8.3 ALL PIPE LINES TO FEATURES TO HAVE A 1% MINIMUM RECOMMENDED SLOPE FOR PROPER WINTERIZATION.

8.4 ALL LINE SIZING (FEATURE CONNECTION TABLE) ASSUMES A MAXIMUM DISTANCE OF 30 FEET BETWEEN THE WATER DISTRIBUTION MANIFOLD AND THE FURTHEST PLAY PRODUCT. DISTANCES ABOVE 30 FEET MAY REQUIRE AN INCREASE IN LINE SIZING. PLEASE CONTACT VORTEX.

8.5 THE LINE DIAMETER FROM SMARTPOINT SHALL BE 6" BASED ON THE MAXIMUM FLOW AT 1% SLOPE. MODIFICATIONS MAY BE REQUIRED DUE TO SPECIFIC SITE CONDITIONS AND LOCAL CODE.

8.6 PRESSURE LINES ARE RECOMMENDED TO BE SCHEDULE 80 PVC OR PEX, AND NON-PRESSURE LINES TO BE SCHEDULE 40, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

8.7 DRAINAGE LINES ARE RECOMMENDED TO BE SDR 35, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

8.8 PIPING SHOULD BE INSPECTED AFTER TRANSPORTATION FOR CUTS, SCRATCHES, GOUGES OR SPLITS; DAMAGED SECTIONS MUST BE DISCARDED OR CUT OUT.

8.9 PIPE SHALL BE INSTALLED BELOW THE FROST LEVEL NOT LESS THAN 12" (ASTM F-645) UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

8.10 PIPE INSTALLATION MINIMUM COVER SHOULD BE EVALUATED ACCORDING TO ASTM D-2774, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

8.11 SPECIAL CONSIDERATIONS SHOULD BE TAKEN FOR THERMAL CONDITIONS, EXPANSION AND CONTRACTIONS DUE TO TEMPERATURE SHOULD BE EVALUATED BEFORE THE INSTALLATION BY THE CONTRACTOR.

8.12 MINIMUM 50 PSI REQUIRED AT THE INLET OF THE BACKFLOW PREVENTER AND PRESSURE REGULATING DEVICE.

8.13MAXIMUM FLOW CAPACITY OF SMARTPOINT IS 72 GPM.

8.14 TOTAL FLOW OF FEATURE IS 78 GPM.

8.15 FACTORY MAXIMUM SEQUENCING FLOW IS 50 GPM ACTUAL FLOW MAY VARY DUE TO SITE CONDITIONS.

9 ELECTRICAL

9.1 WIRING FROM THE TIMER POWER PACK TO SMARTPOINT SHALL BE #14 AWG. A TOTAL OF TWO (2) CONDUCTORS PER SMARTPOINT.

9.2 ALL CONNECTIONS TO THE TIMER POWER PACK AND OTHER VORTEX ELECTRICAL PANEL SHALL BE PERFORMED USING AN APPROVED NEMA 4X CONNECTOR.

9.3 WIRE FROM MAIN POWER TO VORTEX PANEL TO BE DETERMINED BY OTHERS RESPECTING THE LOCAL CODE.

9.4 MAINTAIN A MINIMUM CLEARANCE ZONE OF 36" IN FRONT OF ELECTRICAL PANEL, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

9.5 USE #8 BARE COPPER BONDING WIRE BETWEEN FEATURES TO A GROUNDING

ROD IN THE SOIL, TIED INTO REBAR GRID, OR AS PER LOCAL CODE. SPRAY LINK

FEATURES DO NOT REQUIRE BONDING.

9.6 AS PER ELECTRICAL CONSTRUCTION AND SAFETY CODES: CONTROLLER AND/OR

ANY OTHER ELECTRICAL EQUIPMENT MUST BE HARD-WIRED TO A GROUND FAULT

CIRCUIT INTERRUPTER (GFCI) FROM THE INPUT POWER SOURCE.

9.7 ALL ELECTRICAL WORK SHOULD BE PERFORMED BY A LICENCE ELECTRICIAN IN ACCORDANCE TO LOCAL ELECTRICAL CONSTRUCTION AND SAFETY CODES.

9.8 TIMER POWER PACK TO BE INSTALLED IN EXISTING ENCLOSURE OR WALL MOUNTED ON A VERTICAL STRUCTURE WITHIN 100' FROM THE SMARTPOINT.

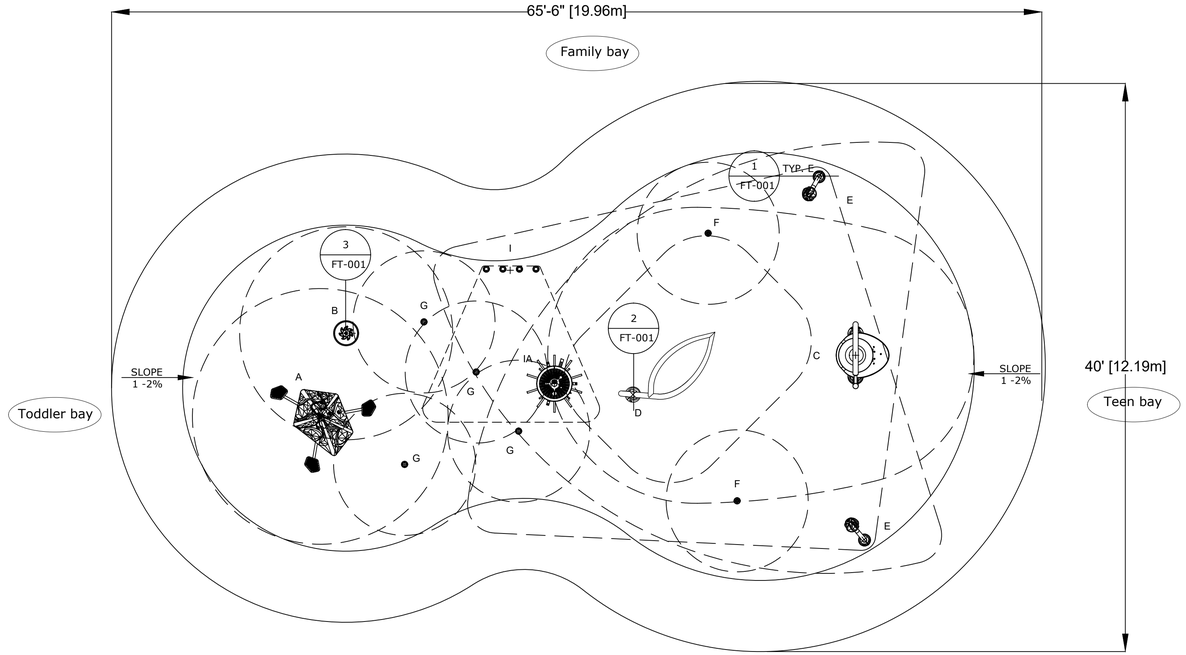
1
A-001

SPRAY ZONE & FEATURE PLAN

1. 5'[1.5M] SPRAY FREE AREA ALL AROUND THE SPLASHPAD
2. RECOMMENDED SLOPE: 1-2% TOWARDS DRAINAGE.
3. COORDINATE THESE DRAWINGS WITH ARCHITECTURAL , CIVIL, PLUMBING & ELECTRICAL SECTIONS.

Abbreviations	
A	Architectural
C	Civil Work
P	Plumbing Layout
PD	Plumbing Details
E	Electrical Layout
FT	Feature Drawings

Drawing #	Drawing Name	Rev#
A-001	Spray Zone Layout	00
A-002	Anchor Plan	00
C-001	Embed Details	00
C-002	Embed Details	00
C-003	Embed Details	00
PE-001	Plumbing & Electrical Layout	00
E-001	Bonding Layout	00
FT-001	Feature Drawings	00



5'[1.5m] SPRAY FREE CONCRETE AREA ALL AROUND THE SPLASHPAD
NOTE: QUANTITY AND LOCATION OF DRAINS BASED ON VORTEX RECOMMENDATIONS.
MODIFICATIONSS MAY BE REQUIRED DUE TO SPECIFIC SITE CONDITIONS AND/OR LOCAL CODE.

SPLASHPAD INFORMATION

TOTAL AREA :	2023 ft²	188 m²
SPRAY AREA :	1213 ft²	113 m²
TOTAL FLOW :	78 GPM	

PRODUCT LEGEND

Ref	Product	Qty
A	Alto N°3 V0R-7132	1
B	Bobble N°1 VOR 7232	1
C	Twinsplash VOR 7242	1
D	Leaf N°2 VOR 7657	1
E	Luna Cannon N°1 VOR 7235	2
F	Spraylink Geyser VOR 3005	2
G	Spraylink Jet N°1 VOR 3000	4
IA	Smartpoint-N°1-Post V0R-1910	1
I	Spraylink Tunnel N°1 VOR 3054	1

VORTEX

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Schoolhouse Park Splashpad

Project Location
Village of Covington, OH

Project Number
38245

Version
VB

Date	Revision Description	No.	By
05/July/2022	Issued for Bid	00	MS

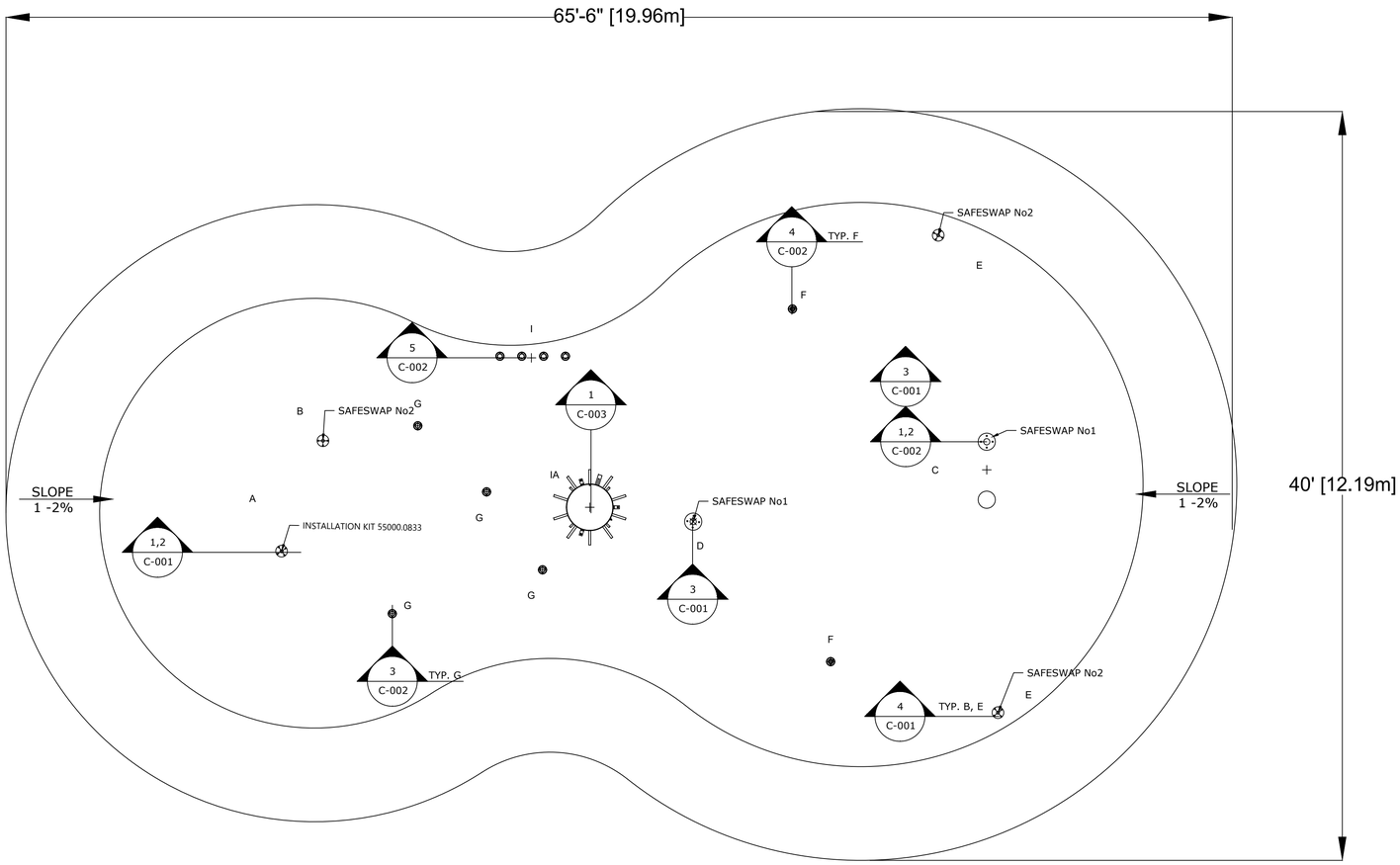
Drawing Title
Spray Zone Layout

Drawn by	Verified by
MS	MAB

Scale	Date
3/16"=1'-0"	05/July/2022

Page #
A-001

Ref	Product	Qty
A	Alto N°3 V0R-7132	1
B	Bobble N°1 VOR 7232	1
C	Twinsplash VOR 7242	1
D	Leaf N°2 VOR 7657	1
E	Luna Cannon N°1 VOR 7235	2
F	Spraylink Geyser VOR 3005	2
G	Spraylink Jet N°1 VOR 3000	4
IA	Smartpoint-N°1-Post V0R-1910	1
I	Spraylink Tunnel N°1 VOR 3054	1



1 A-002 ANCHOR PLAN

1. REFER TO SPECIFICATIONS ON A-001
2. COORDINATE THESE DRAWINGS WITH ARCHITECTURAL, CIVIL, PLUMBING & ELECTRICAL SECTIONS.

VORTEX

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Splashpad Stark Playfield MPS

Project Location
Village of Covington, OH

Project Number
38245

Version
VB

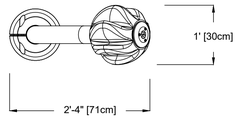
Date	Revision Description	No.	By
05/July/2022	Issued for Bid	00	MS

Drawing Title
Anchor Plan

Drawn by	Verified by
MS	MAB
Scale: 1/4"=1'-0"	Date: 05/July/2022

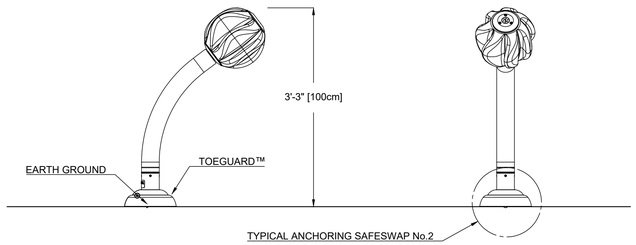
Page # A-002

PLAN VIEW



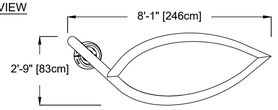
FRONT ELEVATION VIEW

SIDE ELEVATION VIEW



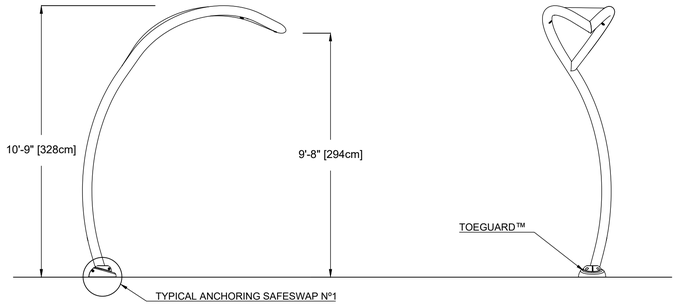
1 / FT-001 — Luna Cannon No.1
VOR-7235.2XXX

PLAN VIEW



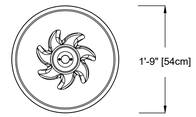
FRONT ELEVATION VIEW

SIDE ELEVATION VIEW



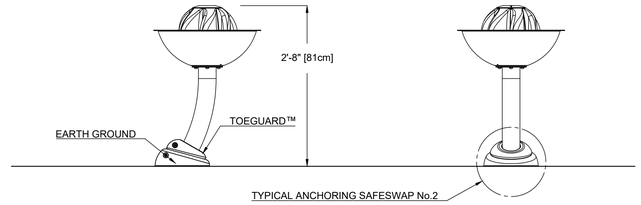
2 / FT-001 — Leaf No.2
VOR-7657.2XXX

PLAN VIEW



FRONT ELEVATION VIEW

SIDE ELEVATION VIEW



3 / FT-001 — Bobble No.1
VOR-7232.2XXX

VORTEX

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Splashpad Stark Playfield MPS

Project Location
Village of Covington, OH

Project Number
38245

Version
VB

Date	Revision Description	No.	By
05/July/2022	Issued for Bid	00	MS

Drawing Title
Feature Drawings

Drawn by	Verified by
MS	MAB

Scale	Date
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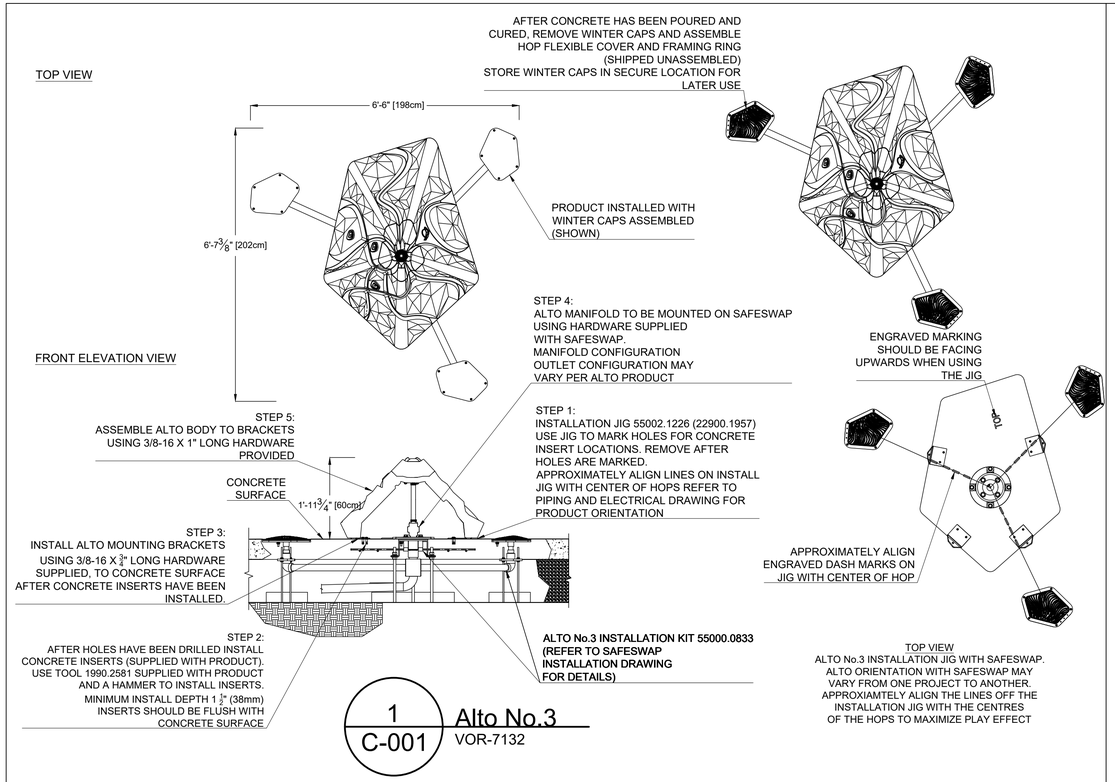
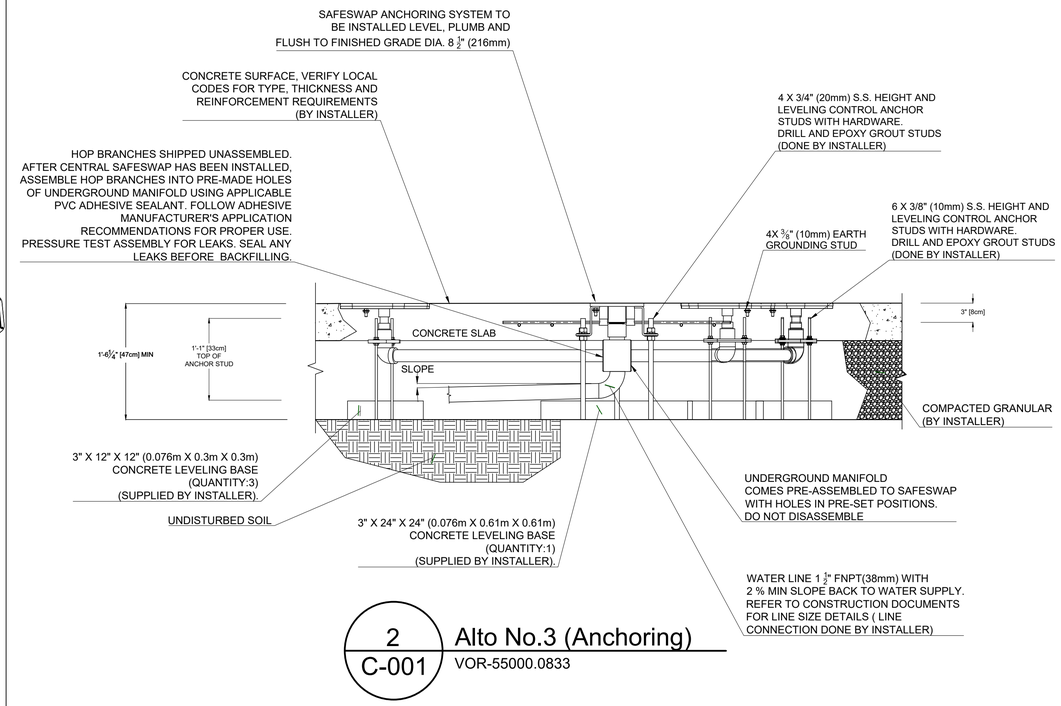
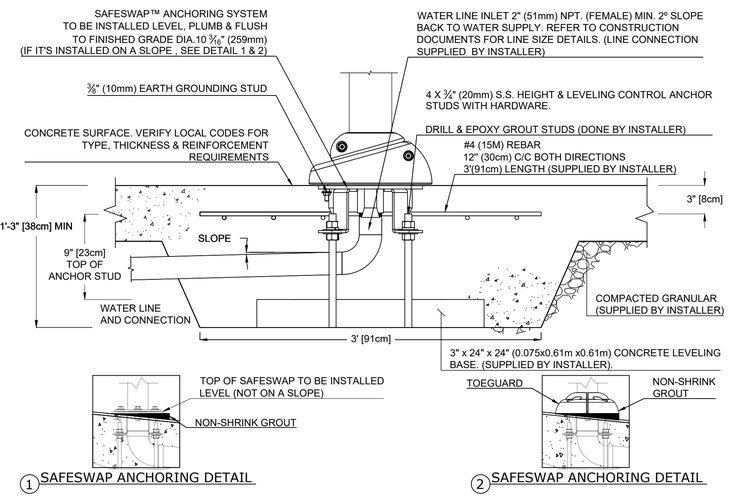


1 C-001 Alto No.3
VOR-7132

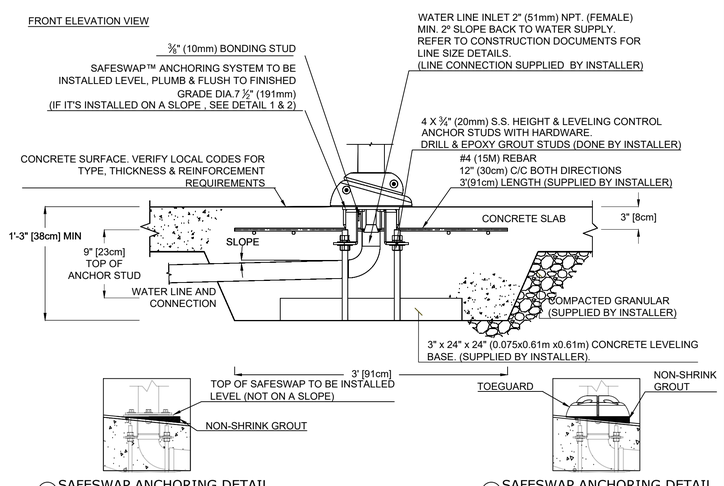


2 C-001 Alto No.3 (Anchoring)
VOR-55000.0833



1 SAFESWAP ANCHORING DETAIL
2 SAFESWAP ANCHORING DETAIL

3 C-001 Safeswap No. 1 Anchor TYP.
VOR-55000.0430



1 SAFESWAP ANCHORING DETAIL
2 SAFESWAP ANCHORING DETAIL

4 C-001 Safeswap No. 2 Anchor TYP.
VOR-55000.0570

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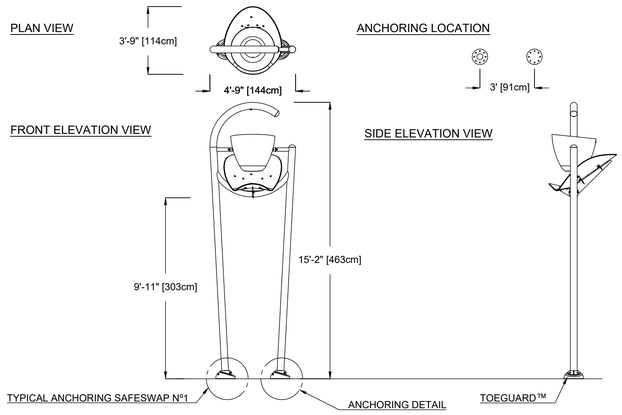
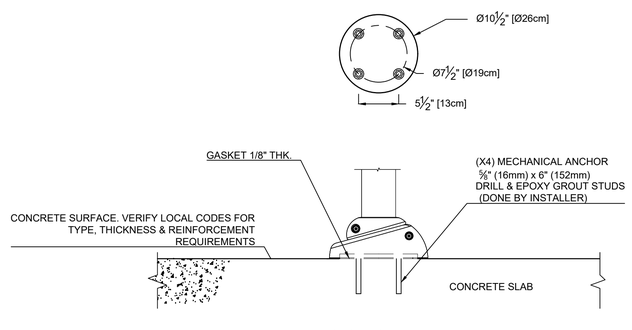


1 / C-002 — Twinsplash

VOR.7242.2XXX



ANCHORING DETAIL

2 / C-002 — Twinsplash (Anchoring Detail)

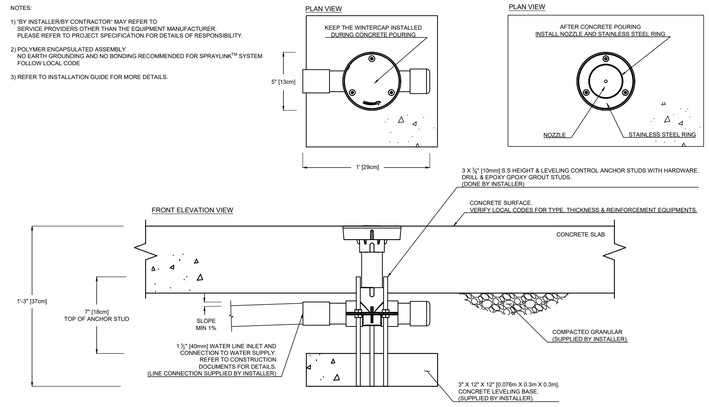
VOR.7242.2XXX

NOTES:

1) "BY INSTALLER/BY CONTRACTOR" MAY REFER TO SERVICE PROVIDERS OTHER THAN THE EQUIPMENT MANUFACTURER. PLEASE REFER TO PROJECT SPECIFICATION FOR DETAILS OF RESPONSIBILITY.

2) POLYMER ENCAPSULATED ASSEMBLY NO EARTH GROUNDING AND NO BONDING RECOMMENDED FOR SPRAYLINK™ SYSTEM FOLLOW LOCAL CODE

3) REFER TO INSTALLATION GUIDE FOR MORE DETAILS.



3 / C-002 — Spraylink Jet No.1

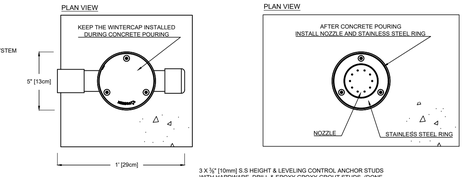
VOR-3000

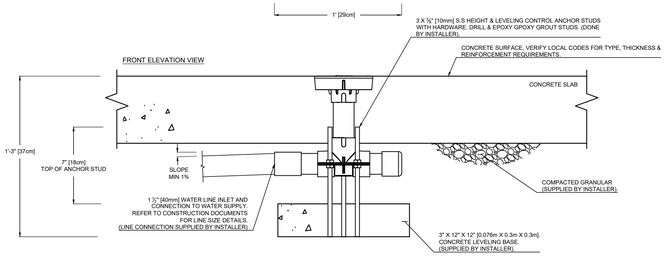
NOTES:

1) "BY INSTALLER/BY CONTRACTOR" MAY REFER TO SERVICE PROVIDERS OTHER THAN THE EQUIPMENT MANUFACTURER. PLEASE REFER TO PROJECT SPECIFICATION FOR DETAILS OF RESPONSIBILITY.

2) POLYMER ENCAPSULATED ASSEMBLY NO EARTH GROUNDING AND NO BONDING RECOMMENDED FOR SPRAYLINK™ SYSTEM FOLLOW LOCAL CODE

3) REFER TO INSTALLATION GUIDE FOR MORE DETAILS.





4 / C-002 — Spraylink Geyser

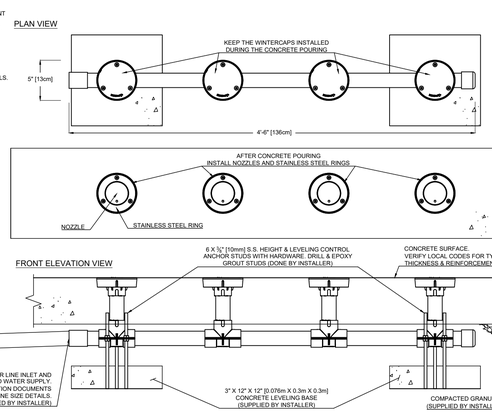
VOR-3005

NOTES:

1) "BY INSTALLER/BY CONTRACTOR" MAY REFER TO SERVICE PROVIDERS OTHER THAN THE EQUIPMENT MANUFACTURER. PLEASE REFER TO PROJECT SPECIFICATION FOR DETAILS OF RESPONSIBILITY.

2) POLYMER ENCAPSULATED ASSEMBLY NO EARTH GROUNDING AND NO BONDING RECOMMENDED FOR SPRAYLINK™ SYSTEM FOLLOW LOCAL CODE

3) REFER TO INSTALLATION GUIDE FOR MORE DETAILS.



5 / C-002 — Spraylink Tunnel No.1

VOR-3054

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Splashpad Stark Playfield MPS

Project Location
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38245

Version
VB

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MS	MAB

Scale	Date
N.T.S.	05/July/2022

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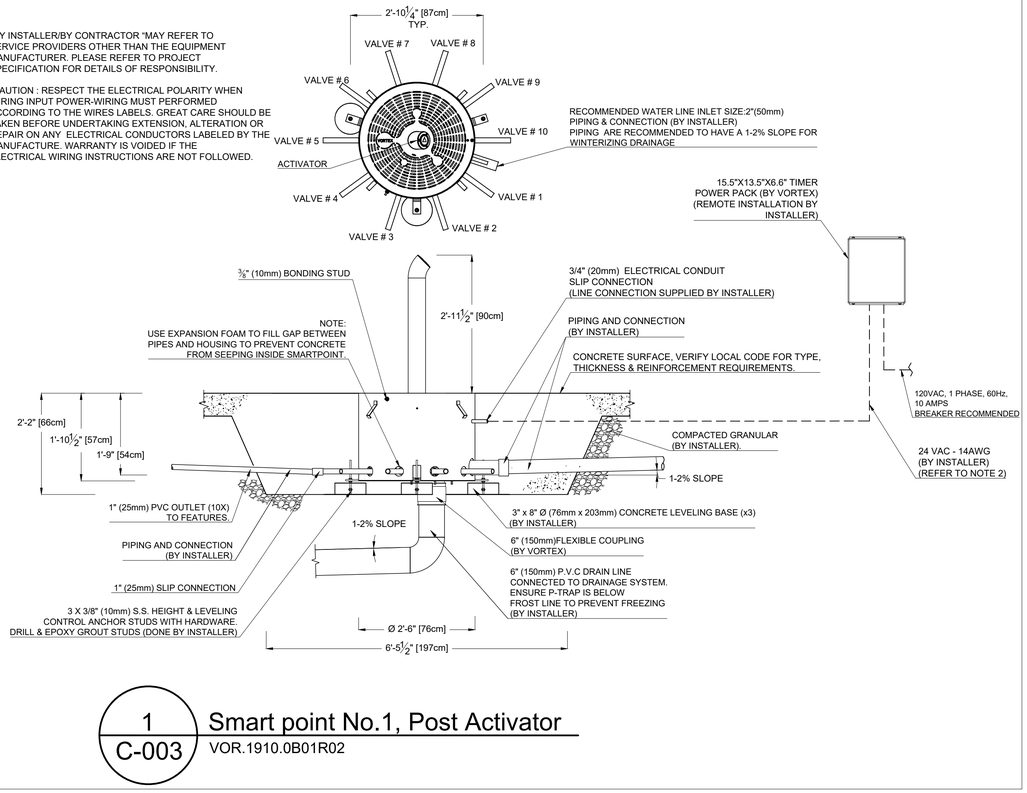
C-002

NOTE:

1- "BY INSTALLER/BY CONTRACTOR "MAY REFER TO SERVICE PROVIDERS OTHER THAN THE EQUIPMENT MANUFACTURER. PLEASE REFER TO PROJECT SPECIFICATION FOR DETAILS OF RESPONSIBILITY.

2- CAUTION : RESPECT THE ELECTRICAL POLARITY WHEN WIRING INPUT POWER-WIRING MUST PERFORMED ACCORDING TO THE WIRES LABELS. GREAT CARE SHOULD BE TAKEN BEFORE UNDERTAKING EXTENSION, ALTERATION OR REPAIR ON ANY ELECTRICAL CONDUCTORS LABELED BY THE MANUFACTURE. WARRANTY IS VOIDED IF THE ELECTRICAL WIRING INSTRUCTIONS ARE NOT FOLLOWED.



1
C-003

Smart point No.1, Post Activator

VOR.1910.0B01R02

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Scale: N.T.S.	Date: 05/July/2022

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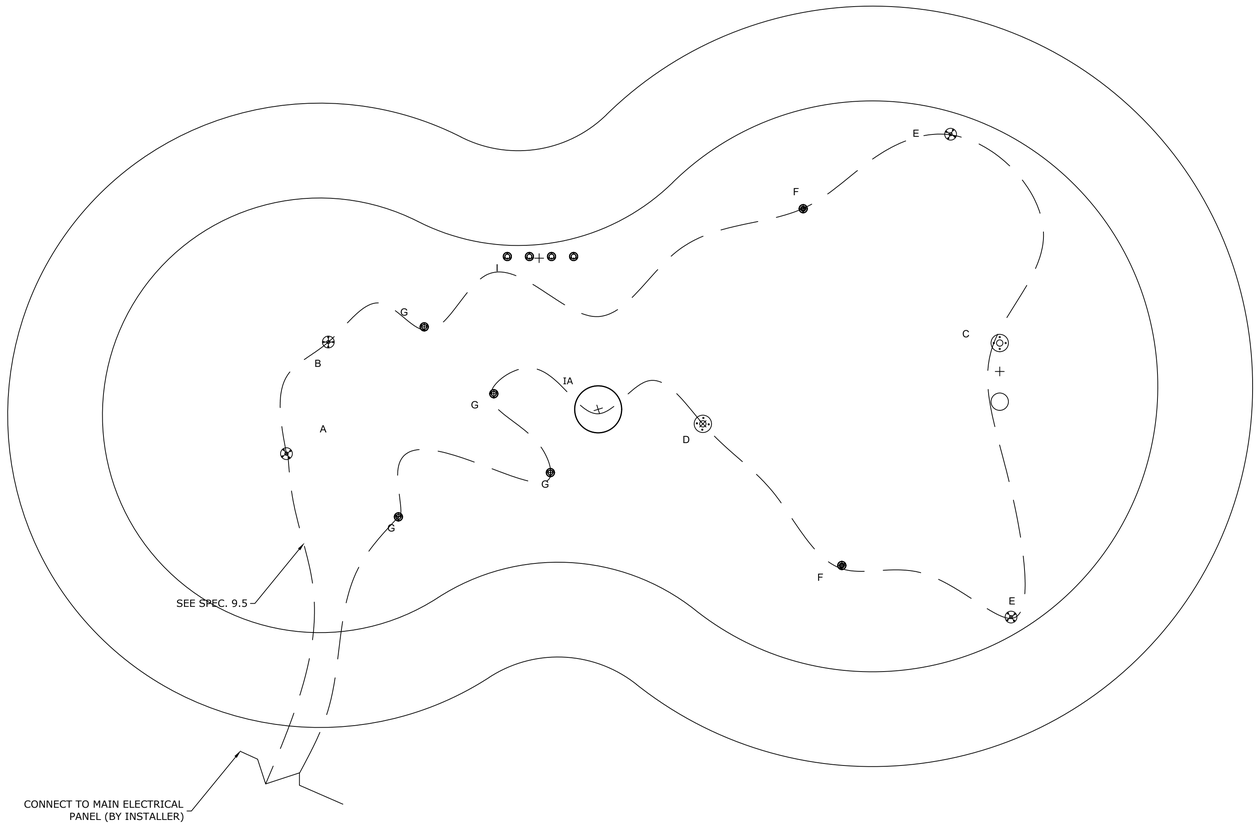
Ref	Product	Qty
A	Alto N°3 V0R-7132	1
B	Bobble N°1 VOR 7232	1
C	Twinsplash VOR 7242	1
D	Leaf N°2 VOR 7657	1
E	Luna Cannon N°1 VOR 7235	2
F	Spraylink Geyser VOR 3005	2
G	Spraylink Jet N°1 VOR 3000	4
IA	Smartpoint-N°1-Post V0R-1910	1
I	Spraylink Tunnel N°1 VOR 3054	1



1 / E-001 BONDING LAYOUT

1. REFER TO SPECS ON A-001
2. COORDINATE THIS DRAWING WITH ARCHITECTURAL, CIVIL, PLUMBING & ELECTRICAL.

Bonding wire - - - - - - - - - - - - - - -

VORTEX

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Bonding Layout

Drawn by	Verified by
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Scale	Date
1/4"=1'-0"	05/July/2022

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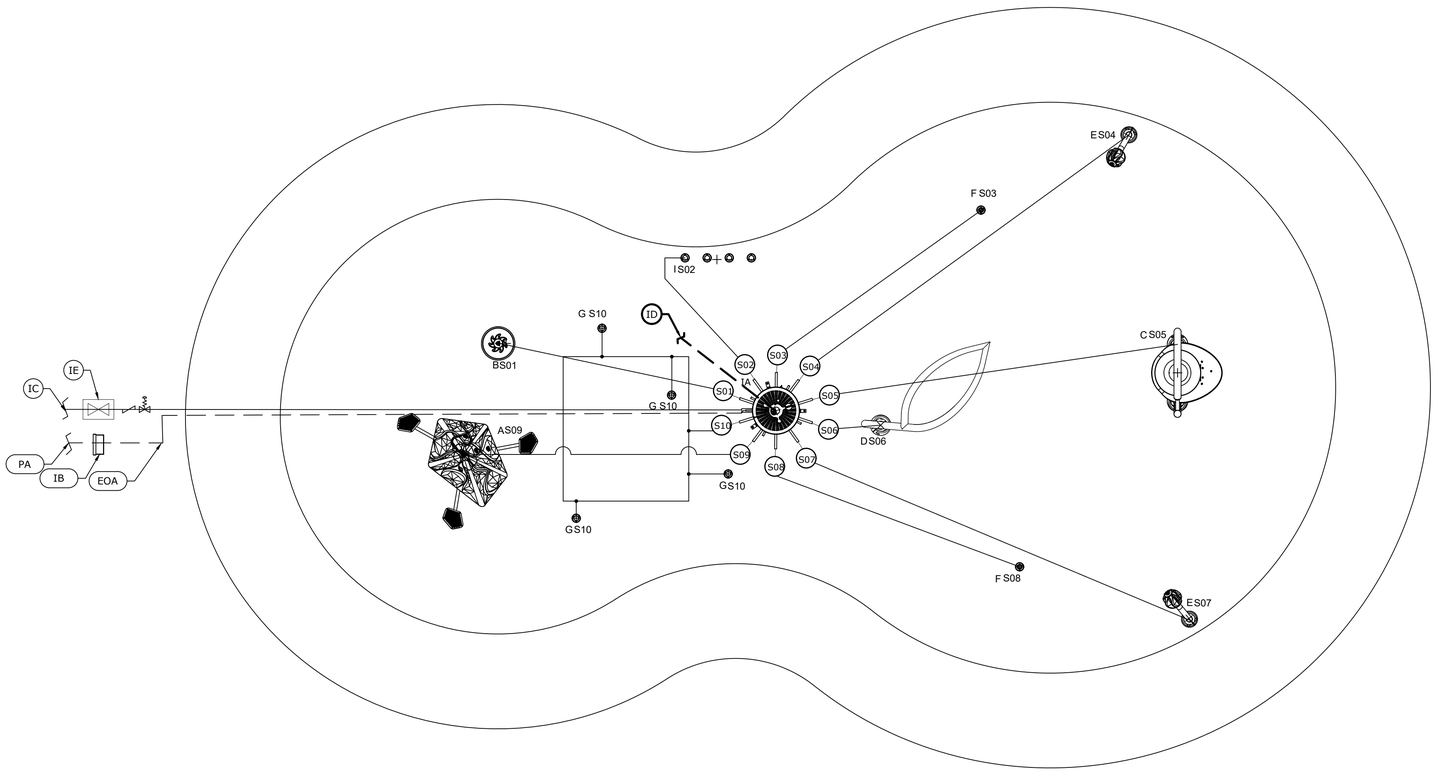
E-001



1 PE-001 PLUMBING & ELECTRICAL LAYOUT

WATER LINE ———————

DRAIN LINE — — — — —

ELECTRICAL LINE – – – – – – – –

Feature Connection Table							
Manifold Output Ref.	Solenoid Valve	Feature Ref.	Feature	Qty	Line Size	Gpm	Output
S01	1" Std	B	Bobble N°1 VOR 7232	1	1"	6	IA-PCB-01
S02	1" Std	I	Spraylink Tunnel N°1 VOR 3054	1	1"	4	IA-PCB-02
S03	1" Std	F	Spraylink Geyser VOR 3005	1	1"	5	IA-PCB-03
S04	1" Std	E	Luna Cannon N°1 VOR 7235	1	1"	6.5	IA-PCB-04
S05	1" Std	C	Twinsplash VOR 7242	1	1"	12	IA-PCB-05
S06	1" Std	D	Leaf N°2 VOR 7657	1	1"	5.5	IA-PCB-06
S07	1" Std	E	Luna Cannon N°1 VOR 7235	1	1"	6.5	IA-PCB-07
S08	1" Std	F	Spraylink Geyser VOR 3005	1	1"	5	IA-PCB-08
S09	1" Std	A	Alto N°3 VOR-7132	1	1"	15.5	IA-PCB-09
S10	1" Std	G	Spraylink Jet N°1 VOR 3000	4	1"	10	IA-PCB-10

Electrical Line Connections Power					
Product Code	From	To	# Conductors	Gauge/Type	Note
PA	Main Power Line (by Owner)	IB-120VAC	3	TBD (by Other)	120V, 1 Phase, 60Hz, 10 Amps Breaker Recommended ± 5% Voltage Drop is Acceptable

Electrical Line Connections Controller Outputs					
Product Code	From	To	# Conductors	Gauge/ Type	Note
EOA	IB	IA-PCB POWER	2	14	Signal from Timer Power Pack to Smartpoint No1, 24VAC (by Installer)

Product Legend		
Product Ref.	Product	Qty
IA	Smartpoint N°1 Post VOR 1910.0B01R02	1
IB	Timer Power Pack VOR 33903.1982	1
IC	2" City Water Line @ 50PSI (by Installer)	1
ID	6" Drain Line to Municipal Drain (by Installer)	1
IE	Self Draining Curb Box Valve (by Installer)	1
	2" Pressure Regulator, Located Inside Smartpoint (by Vortex)	1
	2" Backflow Preventer (by Installer)	1
	1" Solenoid Valve (by Vortex)	10

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