LOCATION MAP

N

VILLAGE OF COVINGTON

SCHOOLHOUSE PARK - AMPHITHEATER

25 N. GRANT ST., COVINGTON, OH 45318

CONTRACT "B"

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

GENERAL

G000 COVER
G001 TYPICAL ADA DETAILS

CIVIL

C101 EXISTING TOPOGRAPHIC PLAN
C102 DEMOLITION PLAN
C103 PROPOSED SITE DIMENSION PLAN
C104 PROPOSED UTILITY PLAN
C105 PROPOSED SITE GRADING PLAN
C106 AMPHITHEATER DETAIL, PROPOSED SITE GRADING PLAN
C107 EROSION AND SEDIMENT CONTROL PLAN
C108 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
C109 GENERAL NOTES
C110 GENERAL NOTES, WATER LINE AND STORMWATER PUMP STATION DETAILS
C111 SITE DETAILS
C112 CURB RAMP DETAILS AND STAMPED CROSSWALK SPECIFICATIONS

STRUCTURAL

S101A STRUCTURAL FRAMING PLAN
S102A AMPHITHEATER SEATING DETAILS

ARCHITECTURAL

A001 ARCHITECTURAL SITE PLAN
A101A FLOOR, REFLECTED CEILING PLANS, & DETAILS
A102A AMPHITHEATER DETAILS
A201A EXTERIOR ELEVATIONS
A301A SECTION & DETAILS

PLUMBING

N/A

MECHANICAL

M001 HVAC SPECIFICATION, LEGEND, & PLAN

ELECTRICAL

E001 ELECTRICAL SPECS, LEGEND & DRAWING LIST
E002 ELECTRICAL FIXTURE SCHEDULE & SINGLE LINE
E101 ELECTRICAL LIGHTING POWER & SYSTEMS PLAN
E201 ELECTRICAL SITE PLAN

CODE REVIEW

PROPOSED BUILDING CODE REVIEW

2017 OHIO BUILDING CODE

DESCRIPTION	REQUIREMENT/ACTUAL	REF/ NOTES
OCCUPANCY CLASSIFICATION	A-3, S-1	304, 312
ALLOWABLE AREA	6,000 S.F.	507
ACTUAL AREA (GROSS)	AMPHITHEATER = 524 S.F.	
ALLOWABLE HEIGHT	40 FT.	TABLE 504.3
ACTUAL HEIGHT	16'-8" 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	28 MAX. ON STAGE	

REVISIONS

DATE	DESCRIPTION
08/19/22	ISSUED FOR ODNR REVIEW
08/22/22	ISSUED FOR BIDS & PERMIT
09/30/22	ISSUED FOR REBID
01/13/23	ISSUED FOR RE-PERMIT & REBID

VILLAGE OF COVINGTON

SCHOOLHOUSE PARK - AMPHITHEATER

25 N. GRANT ST., COVINGTON, OH 45318

JOB NO. 20225751

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

C:\Users\SMogeet\OneDrive - Kleinfelder\Documents\20225751.001A _Covington Schoolhouse Park - AMPHITHEATER_smogeetADKXS.rvt

ACCESSIBILITY & ROOM SIGNAGE

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

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

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

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

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

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

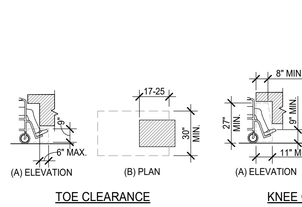
ALL GRAB BARS AND LAVATORIES SHALL BE ABLE TO WITHSTAND 250 LB.

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

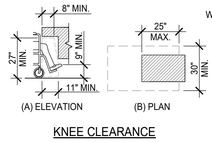
CONTROLS AND OPERATION MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NOT GREATER THAN 5 LB.

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.

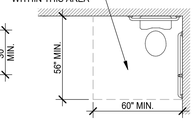
VISUAL ALARM SIGNAL APPLIANCES SHALL BE INTEGRATED INTO THE BUILDING OR FACILITY PLACED 85 IN. ABOVE THE HIGHEST FLOOR LEVEL WITHIN THE SPACE OR 6 IN. BELOW THE CEILING, WHICHEVER IS LOWER.



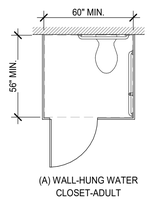
TOE CLEARANCE

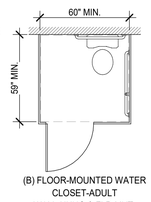


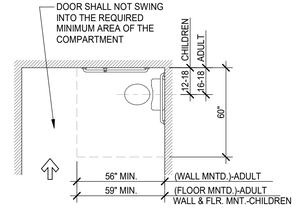
KNEE CLEARANCE



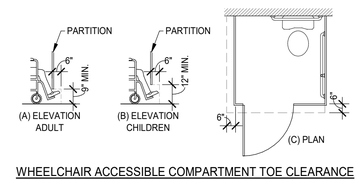
SIZE OF CLEARANCE FOR WATER CLOSET



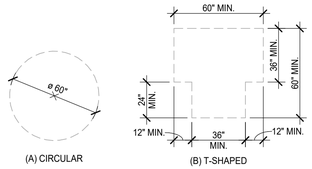




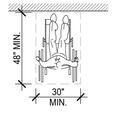
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENTS

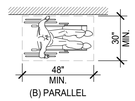


WHEELCHAIR ACCESSIBLE COMPARTMENT TOE CLEARANCE

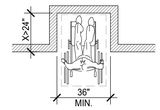


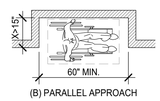
WHEELCHAIR TURNING SPACE



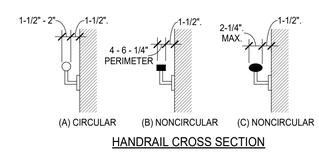


POSITION OF CLEAR FLOOR SPACE

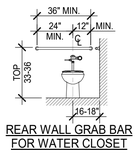




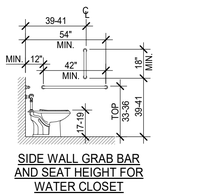
MANEUVERING CLEARANCE IN ALCOVE



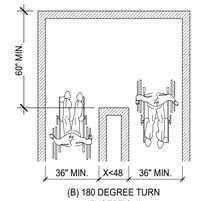
HANDRAIL CROSS SECTION

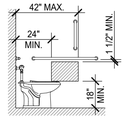


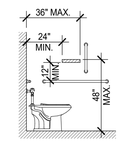
REAR WALL GRAB BAR FOR WATER CLOSET

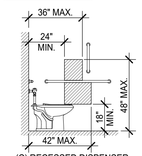


SIDE WALL GRAB BAR AND SEAT HEIGHT FOR WATER CLOSET

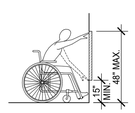








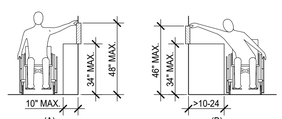
DISPENSER OUTLET LOCATION



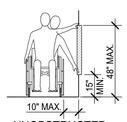
HEIGHT OF LAVATORIES AND SINKS

UNOBSTRUCTED FORWARD REACH

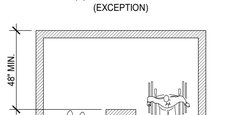
OBSTRUCTED HIGH FORWARD REACH



OBSTRUCTED HIGH SIDE REACH

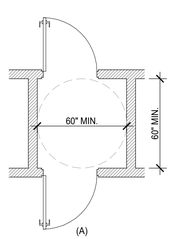


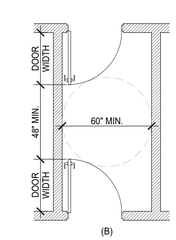
UNOBSTRUCTED SIDE REACH

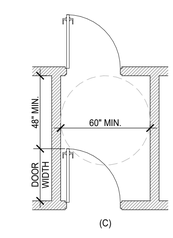


CLEAR WIDTH OF AN ACCESSIBLE ROUTE

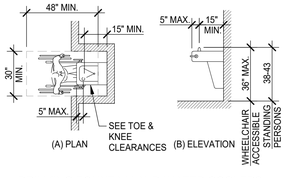
CLEAR WIDTH AT 180° TURN



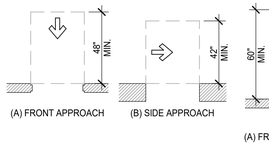




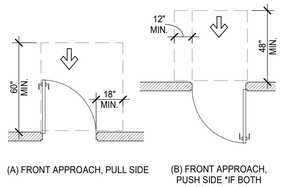
TWO DOORS IN A SERIES

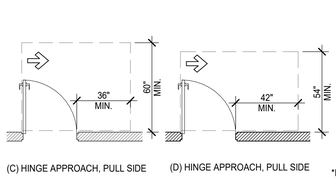


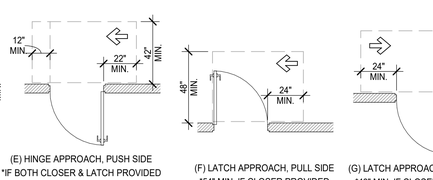
DRINKING FOUNTAIN AND WATER COOLERS



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	01/13/23	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 - AMPHITHEATER
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
3:42:37 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
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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

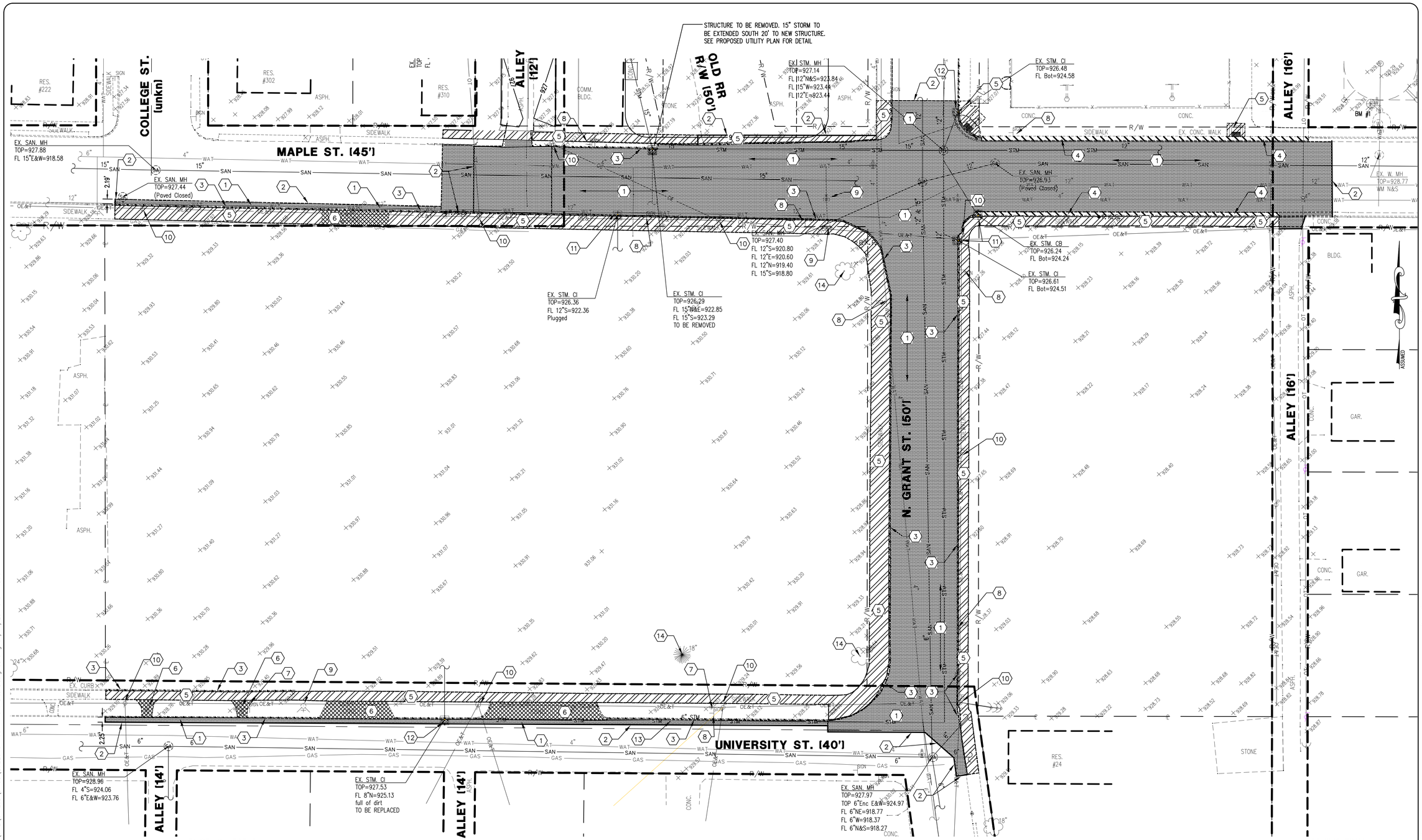
STATE OF OHIO
KENNETH A MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

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
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

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')
ALLEY (14')
RES. #222
RES. #302
RES. #310
CONTRACT A PROJECT LIMITS
CONTRACT B PROJECT LIMITS
6) 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 B2 WITH DETECTABLE WARNING SEE DETAIL, SHT. C112
NEW CURB RAMP, TYPE C2 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
FUTURE 10'x10' PAVILION
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
ADJUST CASTINGS TO PROP. GRADE
ADJUST VALVE BOX TO PROP. GRADE
FUTURE PUMP TRACK NOT PART OF THIS CONTRACT
CONTRACT A
CONTRACT B
ADA RAMP 67.9' @ 7.51%
CONTRACT B 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
LANDSCAPE MOUND AREA CONTRACT B
EX. ASPH. BASKETBALL COURT
ELEVATED WATER STORAGE TANK
EX. W MH TOP=928.7 WM N&S
BM #1 (ASSUMED) 928.84
J1673 928.84 DM
BLDG.
GAR.
STONE
RES. #24

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

PROPOSED LEGEND

- PROPOSED STORM SEWER
- 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'

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

PROPOSED SITE DIMENSION PLAN

DRAWN BY	CHECKED BY
RGS	KAM

STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

C103

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

PROJECT NUMBER
20225731

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

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
3	09/30/22	ISSUED FOR REBID
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GRAPHIC SCALE
0 20 40 60
(IN FEET)
SCALE: 1" = 20'

Ohio Utilities Protection Service
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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

FILE No. Z:\PDG-CAD\CLIENTS\20225731\001A\SITE\CIVIL3D\DWGS\20225731-001A Park Site Design5D.dwg 01/16/23 13:34-RSlith

FILE No. Z:\PDG-CAD\CLIENTS\20225731\001A\SITE\CIVIL3D\DWGS\20225731-001A Park Site Design5D.dwg 01/16/23 13:32-RSlith

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
Call 811 before you dig

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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

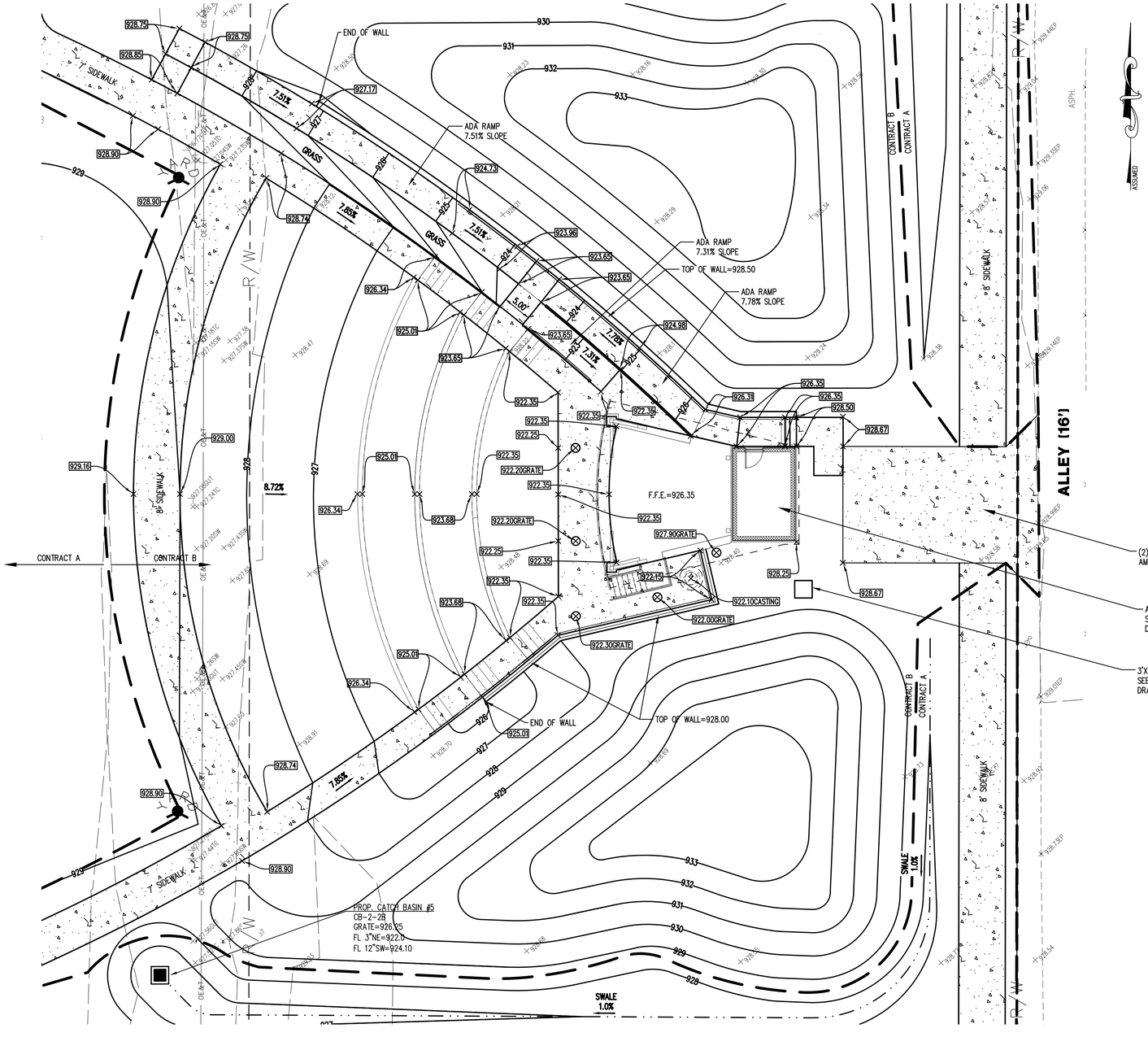
DRAWN BY	CHECKED BY
RGS	KAM

STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

C105

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

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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419.352.7537

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

AMPHITHEATER DETAIL
PROPOSED
SITE GRADING PLAN

DRAWN BY	CHECKED BY
RGS	KAM

STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

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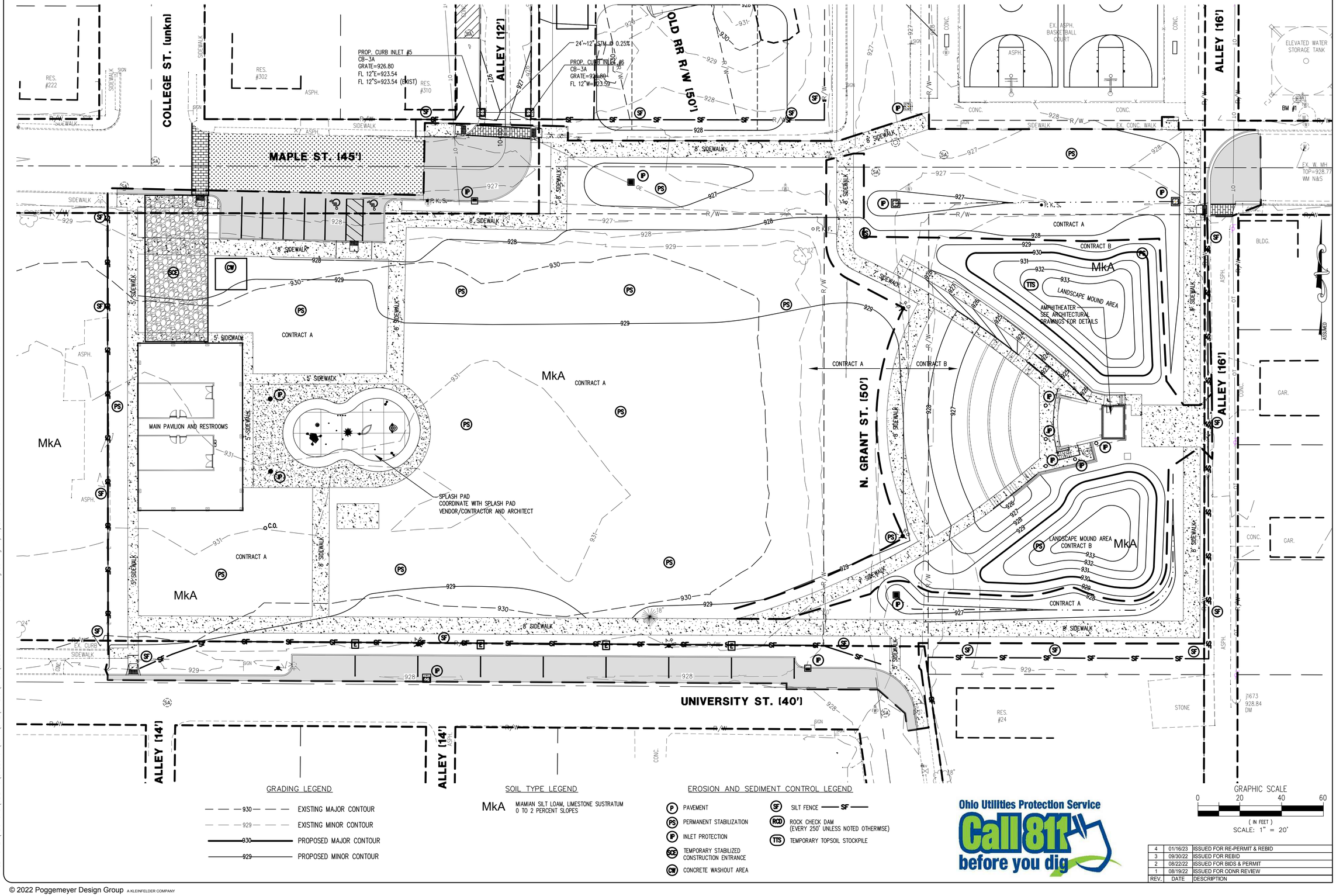
FILE No. Z:\PDG-CAD\CLIENTS\20225731\001A\SITE\CIVIL3D\DWGS\20225731-001A Park Site Design50.dwg 01/16/23 13:26-RStith



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
Call 811 before you dig

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

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

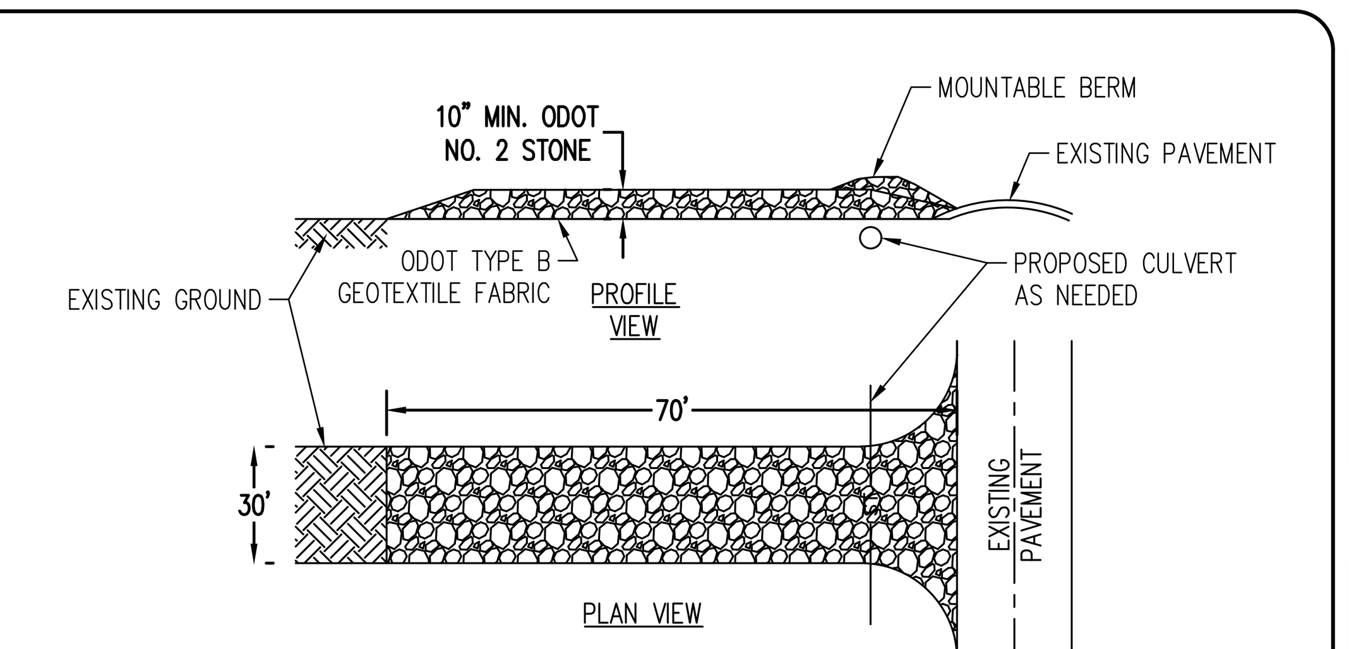
ALL DEWATERING FLOWS ARE TO BE SETTLED IN SEDIMENTATION BASINS OR DIRECTED THROUGH FILTERING DEVICES BEFORE DISCHARGE TO STABILIZED SITES, SUCH AS STREAMS OR STORM SEWERS; NOT ONTO EXPOSED SOILS, STREAM BANKS, OR ANY OTHER SITE WHERE THE FLOW COULD CAUSE EROSION.

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.

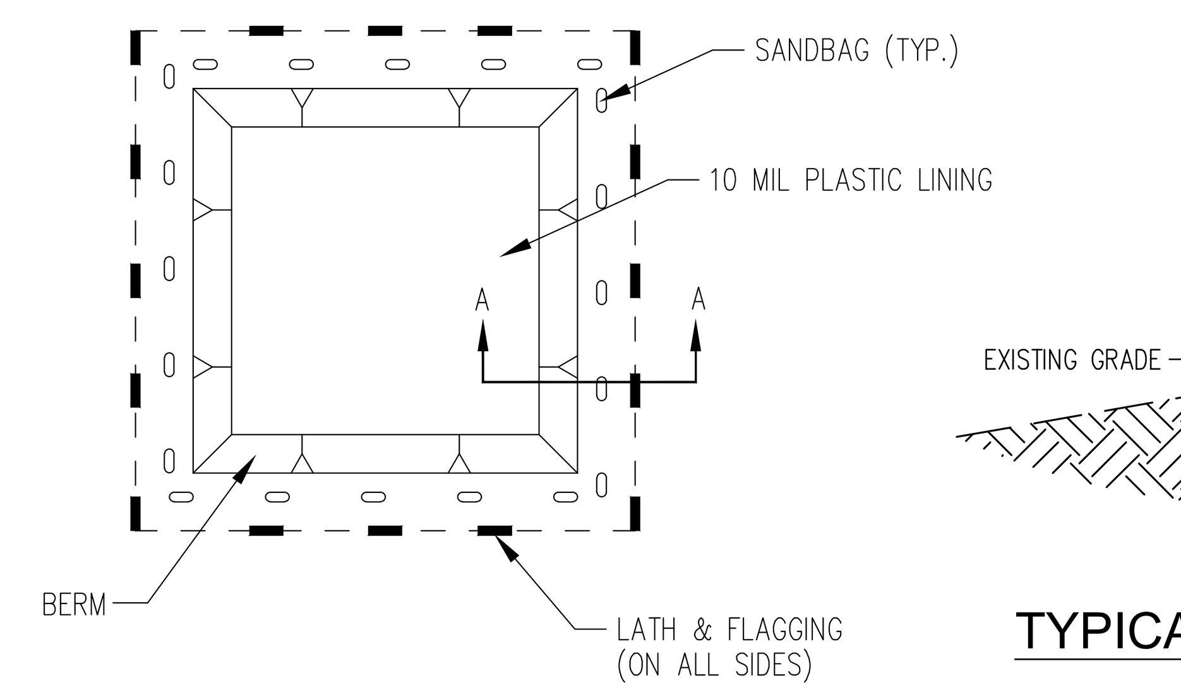
CONVEY WATER FROM THE CONSTRUCTION SITE IN A CLOSED CONDUIT. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DRAINAGE DITCHES.

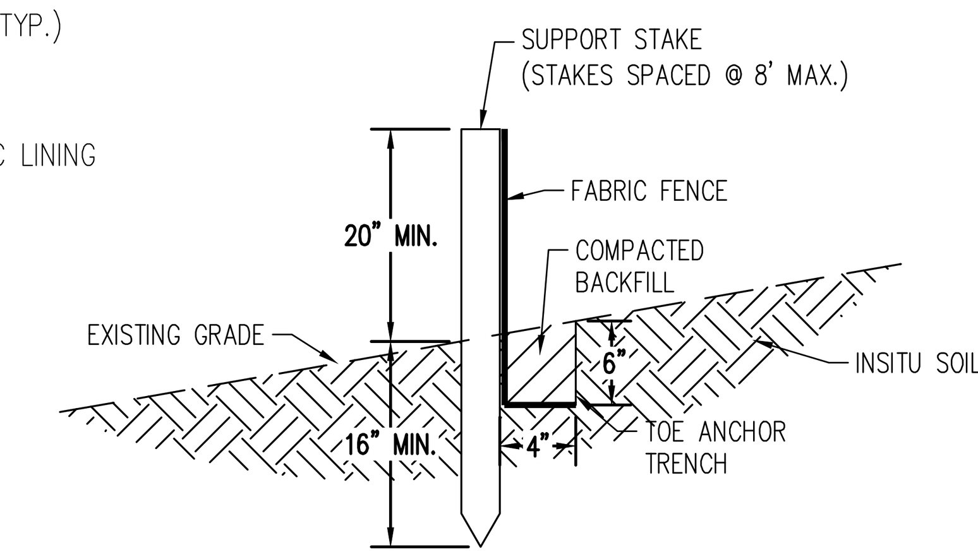
E. PROHIBITED CONSTRUCTION ACTIVITIES

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.

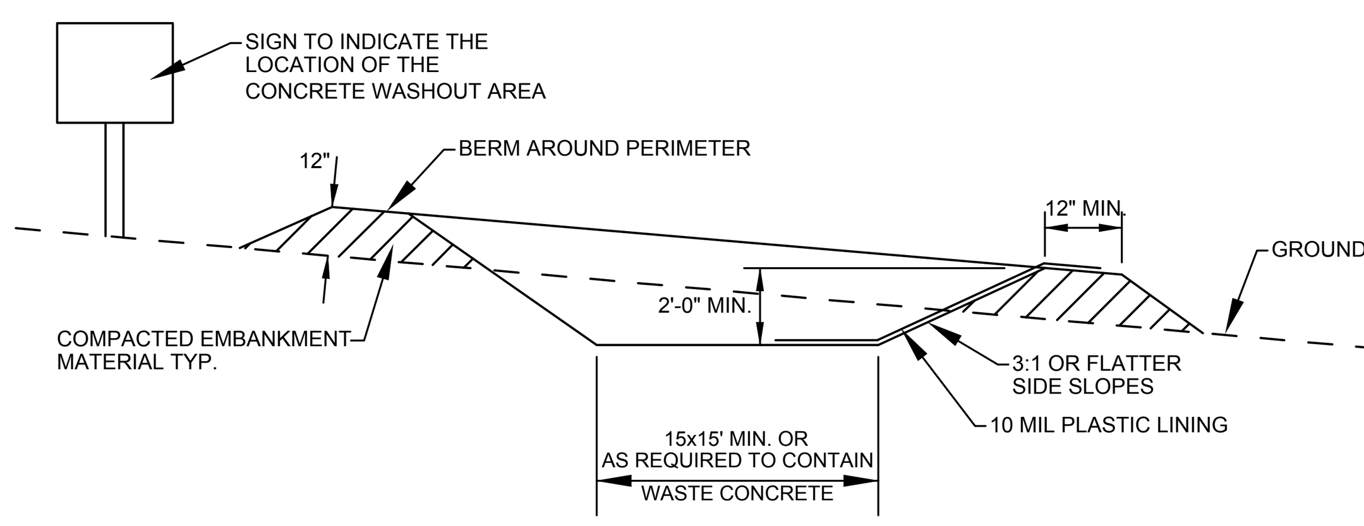


STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE





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.

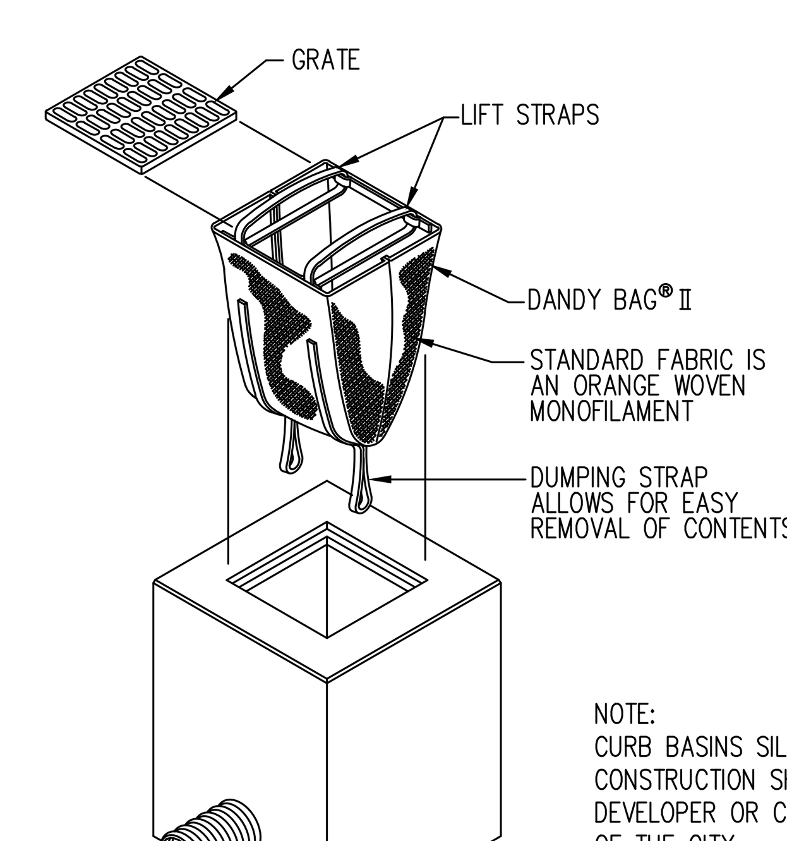
2. PLASTIC LINING MATERIALS SHALL BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHALL BE FREE OF HOLES, TEARS OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

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.

Ohio Utilities Protection Service
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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

STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

C108
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 14:00-RStith

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.

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

GENERAL NOTES

DRAWN BY: RGS
CHECKED BY: KAM

STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

C109
DATE: 1/16/2023 2:14:25 PM
PROJECT NUMBER: 20225731

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.

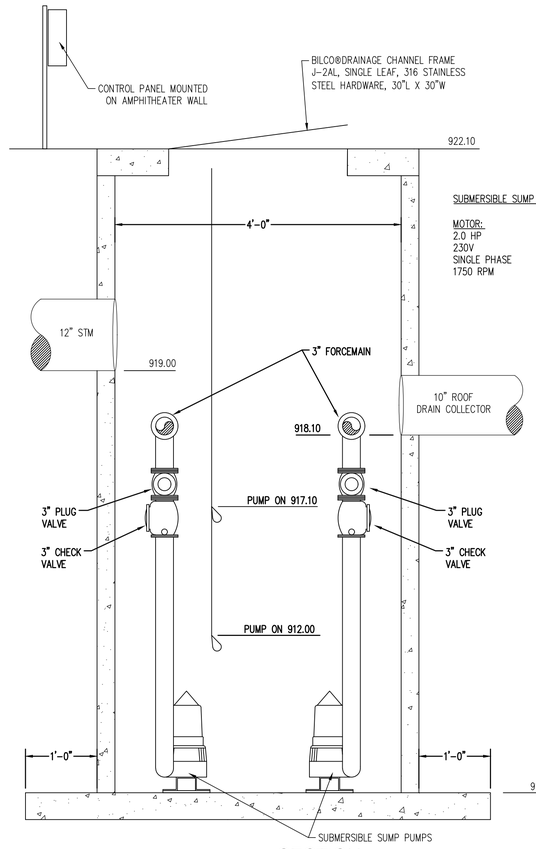
IMPELLER
Impeller shall be of the two-vane, semi-enclosed design and have pump-out vanes on the backside of the impeller to prevent grit and other materials from collecting in the seal area. Single vane design impellers that cannot be easily trimmed and that do not maintain balance with wear, causing 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.

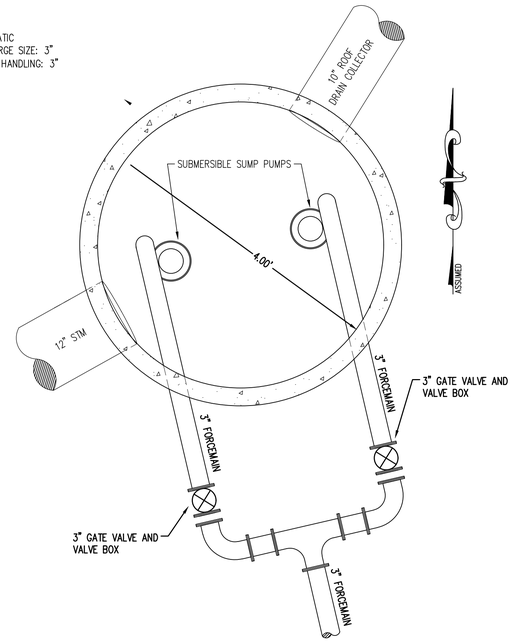


SUBMERSIBLE SUMP PUMP

MOTOR:
2.0 HP
230V
SINGLE PHASE
1750 RPM

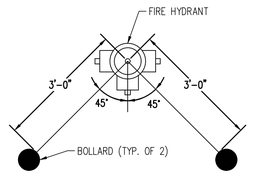
PUMP:
AUTOMATIC
DISCHARGE SIZE: 3"
SOLIDS HANDLING: 3"

SECTION

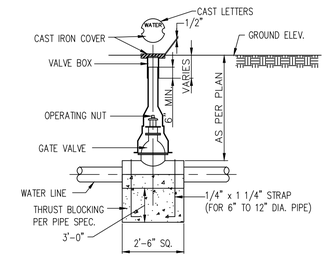


PLAN

STORMWATER PUMP STATION SECTION
NOT TO SCALE

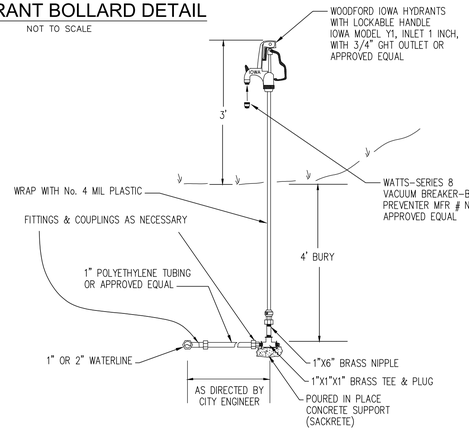


FIRE HYDRANT BOLLARD DETAIL
NOT TO SCALE

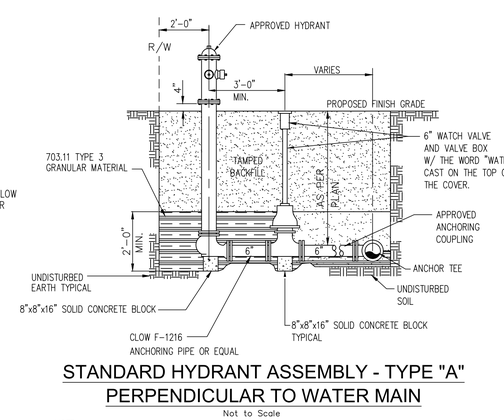


GATE VALVE INSTALLATION
Not to Scale
(12" MAX.)

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

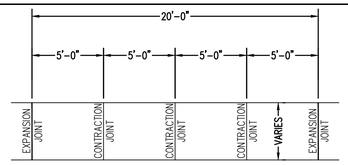
GENERAL NOTES, WATER LINE AND STORMWATER PUMP STATION DETAILS

DRAWN BY	CHECKED BY
RGS	KAM

STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

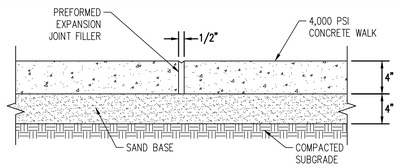
C110
DATE
1/16/2023
2:14:25 PM
PROJECT NUMBER
20225731

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



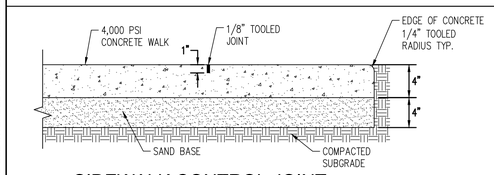
TYPICAL SIDEWALK DETAIL

NOT TO SCALE



SIDEWALK EXPANSION JOINT

NOT TO SCALE



SIDEWALK CONTROL JOINT

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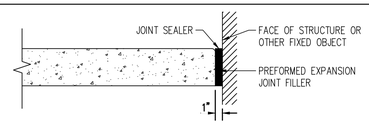
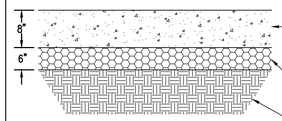


EXPANSION JOINT AT RIGID STRUCTURE DETAIL

NOT TO SCALE

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

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

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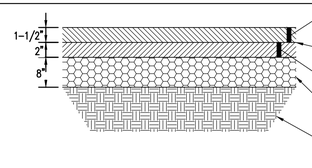
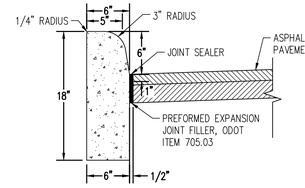


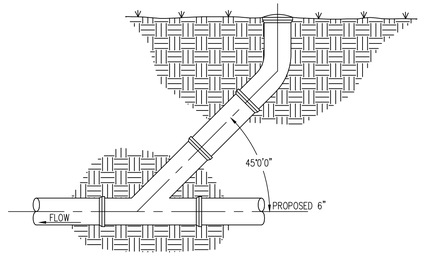
TYPICAL STANDARD DUTY ASPHALT PAVEMENT SECTION

NOT TO SCALE



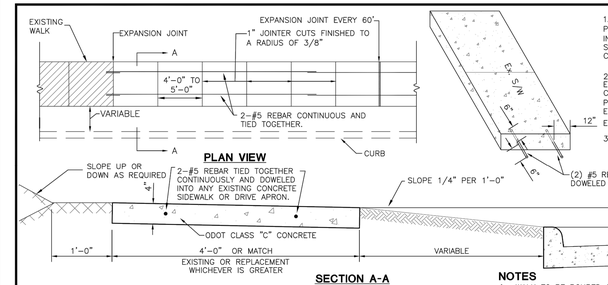
ODOT CURB TYPE 6

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.

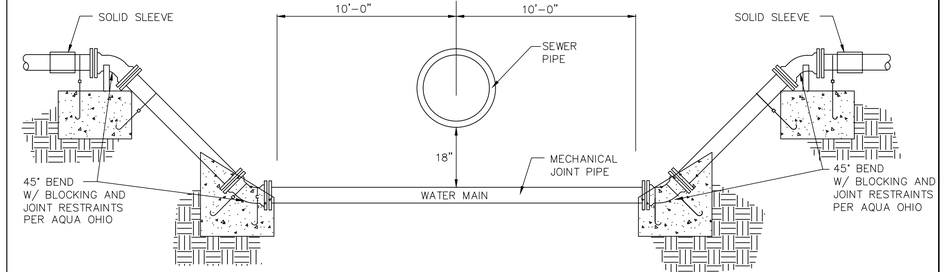
G. CONCRETE SHALL BE ODOT CLASS C WITH 1.5LB FIBER MESH PER CUBIC YARD AND REINFORCED WITH #5 REBAR PER DETAIL (4000 PSI, 600LB/CY CEMENT). PROPORTIONING OPTIONS 1 AND 2 NOT ALLOWED.

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

VILLAGE OF COVINGTON
CHOICE ONE ENGINEERING

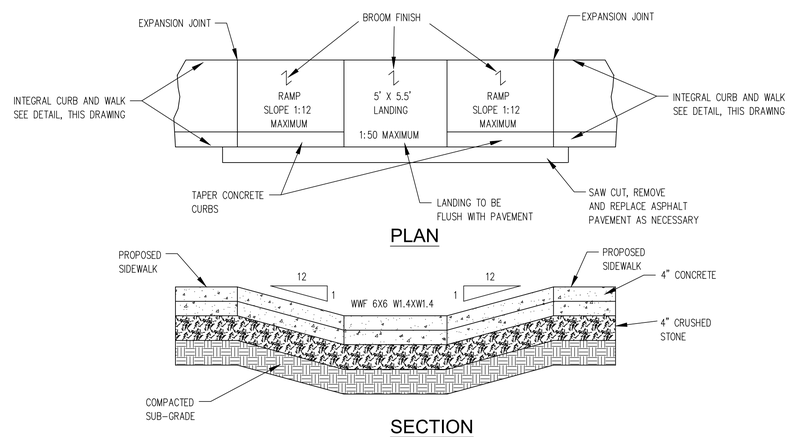
CONCRETE SIDEWALK DETAIL

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



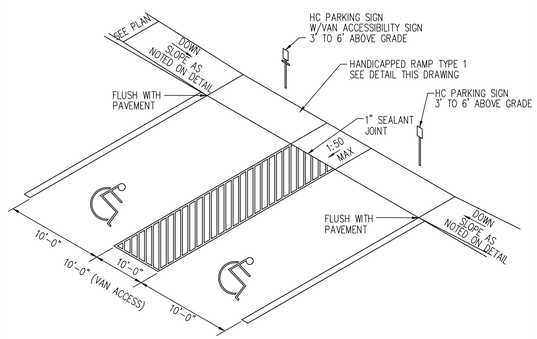
WATERLINE RELOCATION DETAIL

NO SCALE



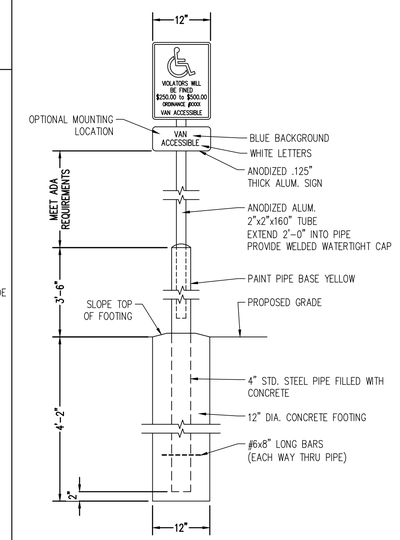
SIDEWALK RAMP - TYPE 1 (HANDICAP) DETAIL

NO SCALE



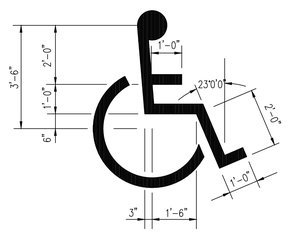
HANDICAP PARKING DETAIL

NO SCALE



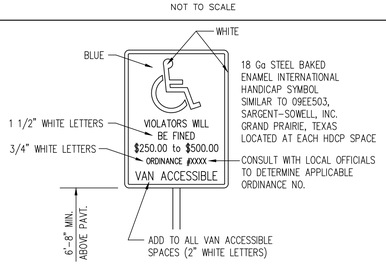
HANDICAP PARKING SIGN

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

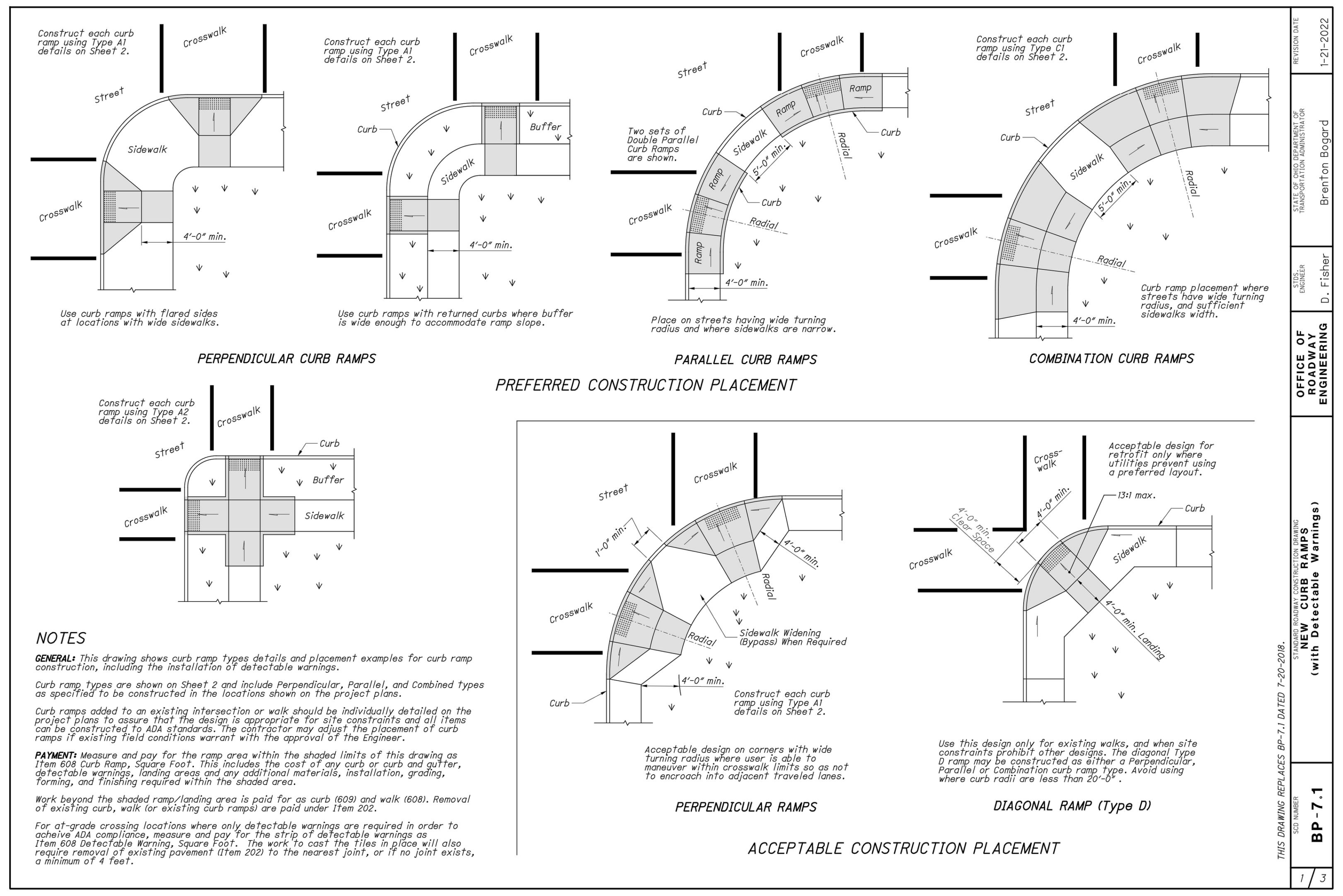
DRAWN BY	CHECKED BY
RGS	KAM

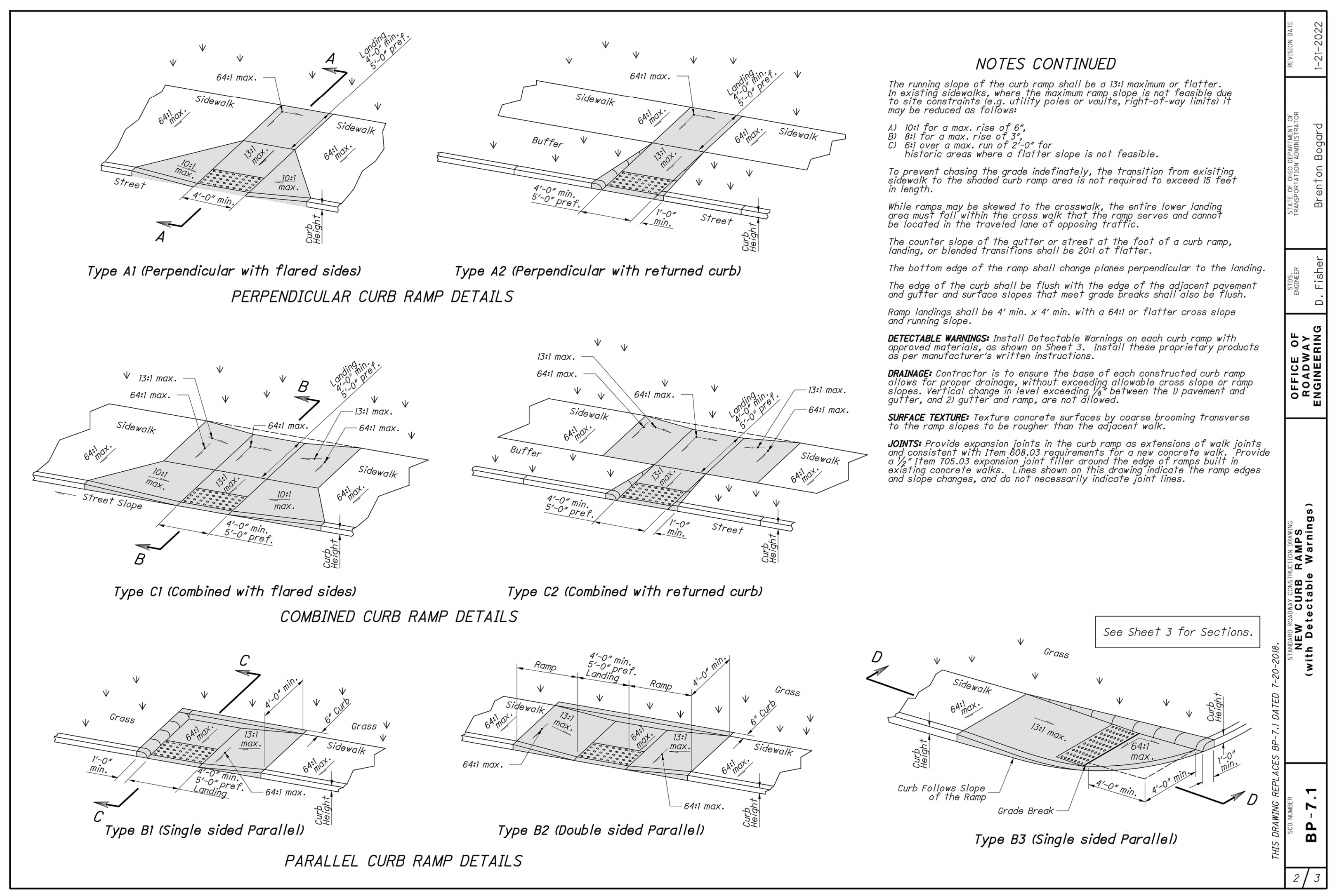
STATE OF OHIO
KENNETH A. MAAG
53316
REGISTERED PROFESSIONAL ENGINEER

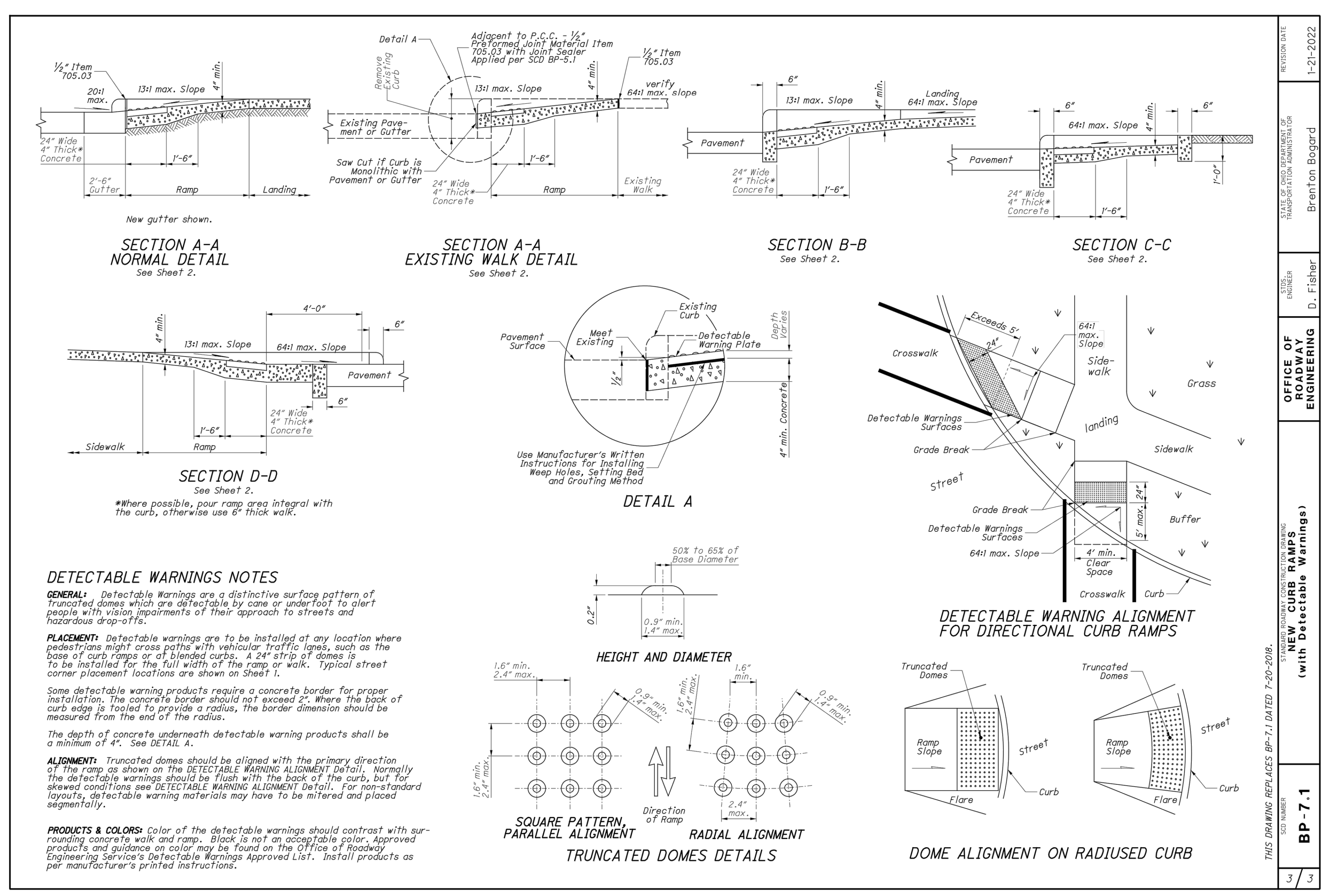
C111

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

FILE No. Z:\PDG-CAD\CLIENTS\20225731\001A\SITE\CIVIL3D\DWGS\20225731-001A Park Site Design Details.dwg 01/16/23 14:04-RStith







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

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

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

C:\Users\TDonaldson\OneDrive - Kleinfelder\Documents\20225751.001A_Covington Schoolhouse Park - AMPHITHEATER_donaldsontQXB8F.rvt

STRUCTURAL DESIGN CRITERIA

BUILDING INFORMATION							
STRUCTURE: BUSINESS, RISK CATEGORY II							
DESIGNED FOR: OHIO BUILDING CODE 2017 w/ IBC 2015 & ASCE 7-10 BASIS OF DESIGN							
LATERAL FORCE RESISTING SYSTEM: MASONRY SHEAR WALLS							
FLOOR LOADING (SERVICE)							
	SLAB ON GRADE LIVE LOAD	80 psf					
ROOF LOADING (SERVICE)							
	UNIFORM LIVE	20 psf					
SNOW LOADING (SERVICE)							
P_f INCLUDES +5 psf RAIN-ON-SNOW SURCHARGE	P_g	20 psf					
	P_m	20 psf					
	I_s	1.0					
	C_e	0.9					
	C_t	1.2					
WIND LOADING (ULTIMATE)							
	ULTIMATE DESIGN WIND SPEED (V_{ult})	115 mph					
	NOMINAL DESIGN WIND SPEED (V_{asd})	89.1 mph					
	RISK CATEGORY	II					
	EXPOSURE	B					
	ENCLOSED STRUCTURE GC_{pi}	± 0.18					
	OPEN STRUCTURE GC_{pi}	± 0.00					

WIND COMPONENT AND CLADDING LOADS - ENCLOSED		10 sf (+)	10 sf (-)	50 sf (+)	50 sf (-)	100 sf (+)	100 sf (-) ULTIMATE
	A_e	10 sf		50 sf		100 sf	
ROOF		(+)	(-)	(+)	(-)	(+)	(-)
ROOF	FIELD (ZONE 1)	16.0	25.8 psf	16.0	25.8 psf	16.0	25.8 psf
ROOF	EDGES (ZONE 2)	16.0	29.8 psf	16.0	28.4 psf	16.0	27.8 psf
ROOF	CORNERS (ZONE 3)	16.0	39.9 psf	16.0	31.5 psf	16.0	27.8 psf
WALLS		(+)	(-)	(+)	(-)	(+)	(-)
WALLS	FIELD (ZONE 4)	21.8	23.6 psf	19.5	21.3 psf	18.6	20.4 psf
WALLS	CORNERS (ZONE 5)	21.8	29.0 psf	19.5	24.6 psf	18.6	22.6 psf

WIND COMPONENT AND CLADDING LOADS - OPEN							ULTIMATE
	A_e	10 sf		50 sf		100 sf	
ROOF		(+)	(-)	(+)	(-)	(+)	(-)
ROOF	FIELD (ZONE 1)	16.0	22.2 psf	16.0	22.2 psf	16.0	22.2 psf
ROOF	EDGES (ZONE 2)	16.0	26.2 psf	16.0	24.8 psf	16.0	24.2 psf
ROOF	CORNERS (ZONE 2')	16.0	32.3 psf	16.0	30.8 psf	16.0	30.2 psf
ROOF	CORNERS (ZONE 3)	16.0	36.3 psf	16.0	27.8 psf	16.0	24.2 psf
ROOF	CORNERS (ZONE 3')	16.0	52.4 psf	16.0	38.3 psf	16.0	32.3 psf
WALLS		(+)	(-)	(+)	(-)	(+)	(-)
WALLS	FIELD (ZONE 4)	18.1	18.1 psf	16.4	17.0 psf	16.0	16.1 psf
WALLS	CORNERS (ZONE 5)	18.1	36.3 psf	16.4	31.7 psf	16.0	31.7 psf

SEISMIC DESIGN DATA (ULTIMATE)	
RISK CATEGORY	II
I_e	1.0
S_S	0.188 g
S_1	0.074 g
SITE CLASS	D
S_{DS}	0.201 g
S_{D1}	0.118 g
DESIGN CATEGORY	B
BASIC SEISMIC FORCE RESISTING SYSTEM	▽

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

JOB-SITE SAFETY

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

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

GENERAL CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

CONCRETE MASONRY

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

2. CONCRETE MASONRY UNITS SHALL BE TYPE 1, NORMAL WEIGHT AND HAVE A MIN. NET AREA COMPRESSIVE STRENGTH f'_{cmu} = 2000 psi IN ACCORDANCE WITH ASTM C-90.

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

4. GROUT FOR POURING SHALL BE A FLUID CONSISTENCY AND CONFORM TO IBC TABLE 2103.12 OR ASTM C476. A MINIMUM COMPRESSIVE STRENGTH f'_g = 2500 psi AT 28 DAYS IS REQUIRED. GROUT MAY BE SPECIFIED BY PROPORTION AND SHALL CONTAIN PORTLAND CEMENT ONLY (NO LIME). FINE GROUT OR COARSE GROUT SHALL BE SELECTED BASED ON MINIMUM GROUT SPACING REQUIREMENTS OF ACI 530.1. MAX AGGREGATE SIZE IS 3/8" FOR COARSE GROUT. WATER REDUCING ADMIXTURES MAY BE ADDED TO ACHIEVE THE DESIRED SLUMP.

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

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

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

8. ALL UNITS TO BE CONSTRUCTED UP IN RUNNING BOND IN ACCORDANCE WITH THE CODE UNLESS NOTED OTHERWISE. THICKNESS OF BED JOINTS SHALL NOT EXCEED 5/8".

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

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

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

12. PROVIDE CONTROL JOINTS IN CONCRETE MASONRY WALLS AT A MAXIMUM SPACING OF 20'-0" CENTERS OR AS OTHERWISE SHOWN ON THE DRAWINGS. EXPANSION JOINTS IN BRICK MASONRY OR AS OTHERWISE SHOWN ON THE DRAWINGS. CONTINUE ALL STRUCTURAL REINFORCING THROUGH THE CONTROL JOINTS.

13. MASONRY WALLS SHOWN IN THESE DRAWINGS ARE NOT DESIGNED AS CANTILEVER WALLS. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY BRACING AND STABILIZING THE MASONRY WALLS DURING CONSTRUCTION UNTIL THE STEEL ROOF FRAMING & DECK IS FULLY INSTALLED. THE ENGINEER CAN PROVIDE AN ALTERNATE WALL REINFORCING SCHEME TO ALLEVIATE THE NEED FOR TEMPORARILY BRACING THE CMU WALLS BACK.

CONCRETE

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

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

2. CONCRETE MIX SPECIFICATIONS

LOCATION	MIN f'_c (psi)	TEST AGE (DAYS)	W/C RATIO (a)	AIR (b)	EXPOSURE	MAX AGGREGATE (e)	NOTES
SHALLOW FOUNDATIONS	4000	28	0.45	4.5%	F2, C1, W0, S0	1"	a, b
SLAB ON GRADE	4000	28	0.45	- -	F1, C0, W0, S0	1"	a
COMPOSITE ELEVATED SLAB ON DECK	4000	28	0.42	- -	F0, C0, W0, S0	3/4"	- -

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

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

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

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

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

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

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

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

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

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

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

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

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

10. JOINTING: PROVIDE ADEQUATE JOINTING TO MINIMIZE EFFECTS OF VOLUME CHANGE. JOINTS SHOWN MAY BE ADJUSTED AT CONTRACTOR'S OPTION, WITH PRIOR APPROVAL FROM ENGINEER.

11. NON-SHRINK GROUT SHALL BE CEMENT BASED AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF f'_c = 7,000 psi AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C109. GROUT BASIS OF DESIGN IS BASF "MASTERFLOW 885" OR APPROVED EQUAL.

12. PROVIDE CONTROL JOINTS IN SLABS ON GRADE AS ANNOTATED ON THE FOUNDATION PLAN DRAWINGS. LOCATE CONTROL JOINTS AT COLUMN CENTER LINES OR AS INDICATED ON THE DRAWINGS. SAW JOINTS TO 1/3 SLAB DEPTH.

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

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

FOUNDATIONS

1. STRUCTURAL DESIGN COMPLIES WITH MINIMUM PRESUMPTIVE CODE DESIGN VALUES.

ALLOWABLE SHALLOW SOIL BEARING PRESSURE = 1,500 psf
SUBGRADE MODULUS OF REACTION = 150 pci
FROST DEPTH = 42" BELOW GRADE

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

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

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

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

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

REINFORCING STEEL

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

2. DO NOT WELD REBAR UNLESS OTHERWISE APPROVED BY ENGINEER

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

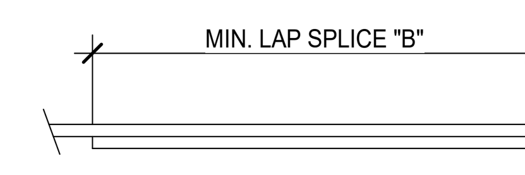
MINIMUM DEVELOPMETNT LENGTH (Ld), CLASS "B" LAP SPLICE LENGTH & HOOK LENGTH (Ldh) (IN.) (U.N.O.)

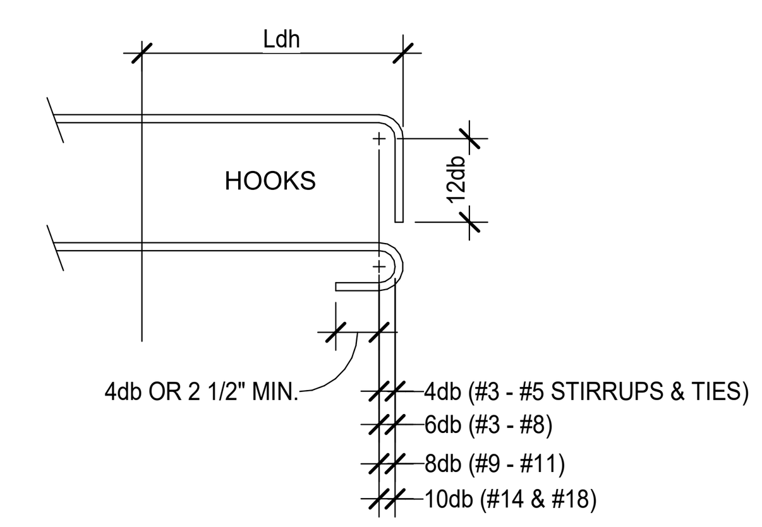
CONCRETE

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





STRUCTURAL AND MISCELLANEOUS STEEL

FABRICATION AND ERECTION OF STEEL SHALL BE IN ACCORDANCE WITH THE FOLLOWING AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) STANDARDS AND SPECIFICATIONS:

1. MANUAL OF STEEL CONSTRUCTION, 14th EDITION (ASD)

2. CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, LATEST EDITION

3. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.

STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS:

BEAM WIDE FLANGE & CHANNELS: ASTM A992 (Min. F_y = 50 ksi)
GUSSET PLATES: ASTM A36 (F_y = 36 ksi) **UNLESS OTHERWISE NOTED IN DETAIL**
ALL OTHER STEEL: ASTM A36 (F_y = 36 ksi)
COMMON BOLTS: ASTM A325
ANCHOR RODS: ASTM F1554 (GRADES 36, PER DETAIL)
THREADED ROD w/ NUT

ANCHOR ROD WASHER DIAMETERS REQUIRED:
3/4" ROD = 2" DIA. WASHER / 1/4" THK.
1" ROD = 3" DIA. WASHER / 3/8" THK.
1.25" ROD = 3" DIA. WASHER / 1/2" THK.

4. ALL ASTM A325 & ASTM A490 BOLTS SHALL BE SNUG-TIGHT

5. ALUMINUM IN CONTACT WITH CONCRETE OR A DISSIMILAR METAL SHALL BE COATED WITH A BITUMASTIC PAINT OR PHYSICAL ELEMENT GAP (IE: BEARING PADS).

6. ALL EXTERIOR STEEL SHALL BE HOT DIP GALVANIZED

7. CONNECTIONS SHALL BE SHOP WELDED AND FIELD BOLTED UNLESS OTHERWISE SHOWN.

8. UNSPECIFIED OR DETAILED BOLTED CONNECTIONS SHALL BE OF 3/4" DIA. A325, WITH A MINIMUM OF 2 BOLTS PER CONNECTION, UNLESS NOTED OTHERWISE.

POST-INSTALLED ANCHORS

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

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

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

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

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

CARPENTRY

1. ALL WOOD CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION".
2. LUMBER AND WOOD FRAMING SHALL NOT HAVE A MOISTURE CONTENT GREATER THAN 19% BY WEIGHT WHEN PLACED INTO THE CONSTRUCTION.
3. LUMBER FOR FRAMING SHALL BE SPRUCE-PINE-FIR #2 OR BETTER U.N.O.
4. PRESERVATIVE OR FIRE RETARDANT TREATED LUMBER SHALL BE SOUTHERN PINE # 2 OR BETTER. PRESERVATIVE TREATMENT (ACQ) SHALL BE MINIMUM 0.4 RETENTION. POSTS AND OTHER MEMBERS BURIED IN CONCRETE OR SOIL SHALL BE 0.6 RETENTION. FASTENERS AND CONNECTORS SHALL BE STAINLESS STEEL OR APPROVED SUBSTITUTE.
5. PROVIDE WOOD FRAMING AS SHOWN AND AS REQUIRED TO COMPLETE THE PROJECT.
   A. STUDS SHALL BE OF SIZE AND SPACING AS SHOWN ON THE DRAWINGS, DOUBLED AROUND OPENINGS AND TRIPLED AT CORNERS.
   B. PROVIDE PLATES TOP AND BOTTOM OF STUD WALLS (DOUBLE TOP PLATES). SPLICES IN TOP PLATES SHALL BE MADE OVER STUDS AND STAGGERED.
6. JOIST, RAFTERS, AND OTHER FRAMING MEMBERS SHALL BE SECURELY ANCHORED TO THEIR SUPPORTING MEMBERS AND BLOCKED TO PREVENT ROTATION. PROVIDE GALVANIZED METAL CONNECTORS WHERE INDICATED.
7. ALL HEADERS SHALL BE MULTIPLE 2 X 10's (1 FOR EACH NOMINAL 2" OF WALL), UNLESS OTHERWISE NOTED.
8. ALL HEADERS SHALL BEAR ON MINIMUM 1 STUD, SISTERED TO 1 FULL HEIGHT STUD UNLESS OTHERWISE NOTED.
9. UNLESS OTHERWISE NOTED, ALL BEAMS BEARING ON WALLS SHALL BE SUPPORTED BY 1 STUD FOR EACH NOMINAL 2" OF BEAM, SISTERED TO 1 FULL HEIGHT STUD.
10. WALL SHEATHING SHALL BE SECURED TO WALLS PER LOCAL CODES. AS A MINIMUM PANELS SHALL BE ATTACHED WITH FASTENERS AT 6" ALONG EDGES AND 12" IN THE FIELD.

REV.	DATE	DESCRIPTION
4	01/13/23	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
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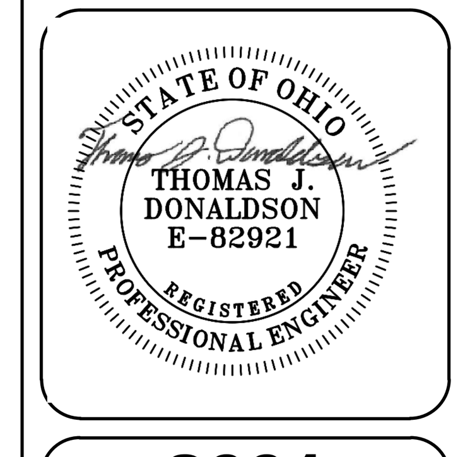
STRUCTURAL NOTES

DRAWN BY: KMS | CHECKED BY: JDB



S001

DATE
1/17/2023
9:47:41 AM
PROJECT NUMBER
20225751

INSPECTIONS

1. SPECIAL INSPECTIONS LISTED ON THIS SHEET ARE SUBJECT TO VERIFICATION OR MODIFICATION BY THE AUTHORITY HAVING JURISDICTION. THE OWNER OR OWNER'S REPRESENTATIVE SHALL CONTRACT FOR INDEPENDENT SPECIAL INSPECTIONS OF THE STRUCTURAL ELEMENTS.

INSPECTIONS OF MASONRY

INSPECTION LEVEL:	**LEVEL 2** QUALITY ASSURANCE
MINIMUM TESTS & SUBMITTALS	MINIMUM INSPECTION
CERTIFICATES FOR MATERIALS USED IN MASONRY CONSTRUCTION INDICATING COMPLIANCE WITH THE CONTRACT DOCUMENTS PRIOR TO CONSTRUCTION: VERIFICATION OF SPECIFIED MASONRY COMPRESSIVE STRENGTH (f'_m) IN ACCORDANCE WITH SPECIFICATION ACI 530-1 / TMS 602 ARTICLE 1.4B	AS MASONRY CONSTRUCTION BEGINS, VERIFY COMPLIANCE ON THE FOLLOWING: - PROPORTIONS OF SITE-PREPARED MORTAR - CONSTRUCTION OF MORTAR JOINTS - LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS & ANCHORAGES (IF APPLICABLE) - PRESTRESSING TECHNIQUE (IF APPLICABLE)
	PRIOR TO GROUTING, VERIFY COMPLIANCE ON THE FOLLOWING: - GROUT SPACE - GRADE & SIZE OF REINFORCEMENT, PRESTRESSING TENDONS & ANCHORAGES (IF APPLICABLE) - PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS & ANCHORAGES (IF APPLICABLE) - PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS - CONSTRUCTION OF MORTAR JOINTS
	VERIFY THAT THE PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE.
	OBSERVE PREPARATIONS OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS.
	VERIFY COMPLIANCE WITH THE REQUIRED INSPECTIONS PROVISIONS OF THE CONTRACT DOCUMENTS AND THE APPROVED SUBMITTALS.
MASONRY INSPECTIONS DENOTED HERE MEET THE IBC REQUIRED PROVISIONS CH. 1704.5	

INSPECTIONS AND TESTS OF SOILS

P - PERIODIC
C - CONTINUOUS

VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	P
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	P
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	P
VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED BACKFILL	C
PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	P

CONCRETE

1. PROVIDE INSPECTIONS OF CONCRETE TO ASSURE CONFORMANCE WITH PROJECT, AMERICAN CONCRETE INSTITUTE (ACI), AND BUILDING CODE REQUIREMENTS.

CONCRETE INSPECTIONS AND TESTS

P - PERIODIC
C - CONTINUOUS
N/A - NOT APPLICABLE, NOT ALLOWED, OR NOT REQUIRED

	REFERENCE	
INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	ACI 318: Ch.20, 25.2, 25.3, 26.6-1 - 26.6-3	P
INSPECT ANCHORS CAST IN CONCRETE	ACI 318: 17.8.2	P
INSPECT ANCHORS POST-INSTALLED IN CONCRETE a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS b. MECHANICAL ANCHOR AND ADHESIVE ANCHORS NOT DEFINED IN ITEM "a" ABOVE	AWS D11.4 ACI 318: 26.6.4	C P
VERIFY USE OF REQUIRED MIX DESIGN	ACI 318: Ch.19, 26.4.3, 26.4.4	P
PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12	C
INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	ACI 318: 26.5	C
VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	ACI 318: 26.5.3 - 26.5.5	P
INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE BEING FORMED	ACI 318: 26.11.1.2 (b)	P

STRUCTURAL ABBREVIATIONS, NOMENCLATURE, & LEGENDS

BBEL	= BOTTOM OF BASE PLATE ELEVATION
BLDG	= BUILDING
BM	= BEAM
BRG	= BEARING
CL	= CENTERLINE
CMU	= CONCRETE MASONRY UNITS
COL	= COLUMN
CONC	= CONCRETE
DO	= DITTO (REPEAT PREVIOUS MEMBER DESIGNATION)
DS	= DRAG STRUT (LATERAL FORCE RESISTING ELEMENT)
EL	= ELEVATION
EOD	= EDGE OF DECK
EOS	= EDGE OF SLAB
EXIST	= EXISTING (IN REFERENCE TO AN EXISTING ELEMENT)
EXP	= EXPANSION
FNDT	= FOUNDATION
F.S.	= FAR SIDE
ft-k	= FOOT KIPS (MOMENT)
GA	= GAUGE
GALV	= GALVANIZED
GB	= GRADE BEAM
GT	= GAS TIGHT
H	= HORIZONTAL
HORIZ	= HORIZONTAL
HSS	= HOLLOW STRUCTURAL SECTION (TUBE)
JG	= JOIST GIRDER
k	= KIPS (FORCE = 1000 lbs)
klf	= KIPS PER LINEAR FOOT
L	= LENGTH
lbs	= POUNDS
LW	= LIGHT-WEIGHT (IN REFERENCE TO CONC. AT 115 pcf)
MP	= MICRO PILE
N.S.	= NEAR SIDE
O.C.	= ON CENTER
PC	= PILE CAP
pcf	= POUNDS PER CUBIC FOOT
PG	= PLATE GIRDER (ie: PG72x446) REFERS TO THE PLATE GIRDER (PG) 72" DEEP AND 446 plf
plf	= POUNDS PER LINEAR FOOT
REF	= REFERENCE / REFERENCING
REINF	= REINFORCING / REINFORCEMENT
REQ'D	= REQUIRED
RXN	= REACTION (SHEAR LOAD)
S	= AMERICAN STANDARD SECTION (MONORAIL BEAMS)
SAFPM	= SPRAY-APPLIED FIRE PROOFING MATERIALS
SIM	= SIMILAR (TO...)
SP	= SPACE / SPACING / SPACED AT
SPx/SPL	= SPECIAL (IN REF. TO MEMBER)
T.O.S.	= TOP OF STEEL
T.O.F.	= TOP OF FOUNDATION
TYP	= TYPICAL (DETAIL IS COMMON FOR SITUATION)
ULT	= ULTIMATE LOAD (FROM LRFD COMBINATION CONTROLLING)
V	= VERTICAL
VERT.	= VERTICAL REINFORCING
WF	= WIDE FLANGE
WWF	= WELDED WIRE FABRIC (IN A SLAB)

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

STRUCTURAL NOTES, LEGENDS, & SPECIAL INSPECTIONS

DRAWN BY	CHECKED BY
KMS	JDB

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

S002

DATE
1/17/2023
9:47:55 AM

PROJECT NUMBER
20225751

REV.	DATE	DESCRIPTION
4	01/13/23	ISSUED FOR RE-PERMIT & REBID
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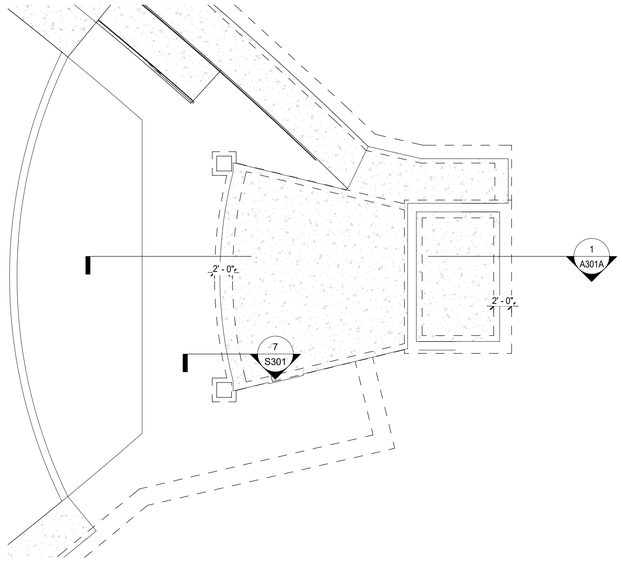
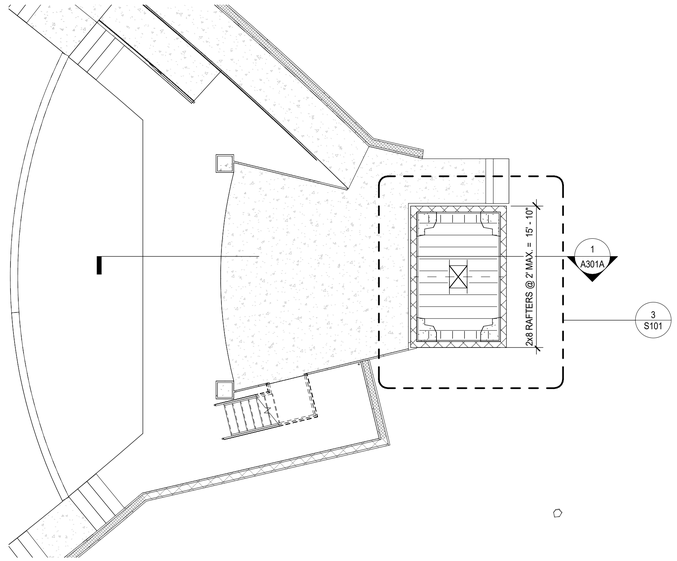


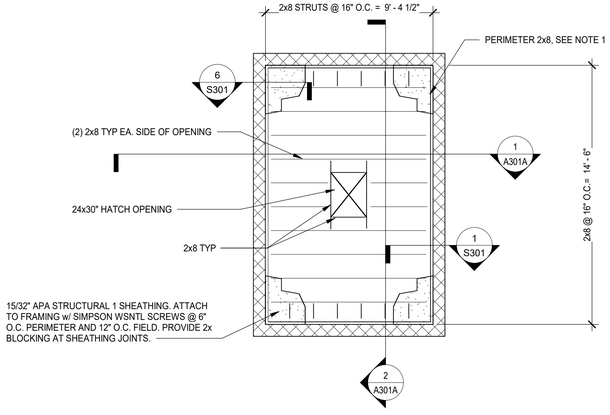
AMPHITHEATER - FOUNDATION PLAN

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



STORAGE ROOM - CEILING FRAMING PLAN

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



3 / S101 ENLARGED CEILING FRAMING PLAN

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

NOTES:
1. ANCHOR PERIMETER 2x8's TO FACE OF BOND BEAM W/ 5/8" HILTI KB-TZ2 ANCHOR @ 24" O.C.

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STRUCTURAL PLANS & DETAILS

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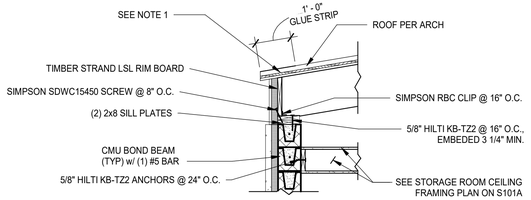
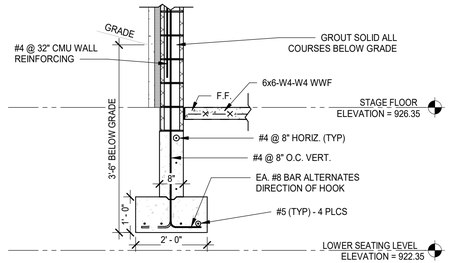
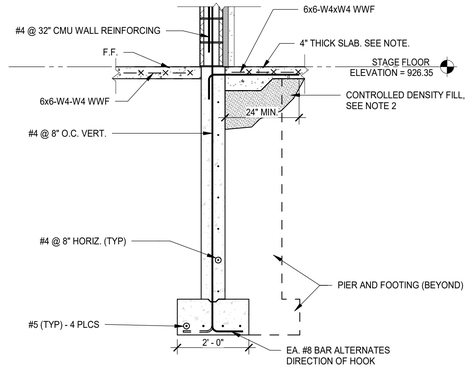


1 A301A TYP. ROOF BEARING ON BACK WALL
SCALE: 1/2" = 1'-0"

NOTES:
1. 15/32" APA STRUCTURAL 1 SHEATHING OVER 1x6 T&G CEDAR PLANKING. PROVIDE 12" WIDE STRIP OF CONSTRUCTION ADHESIVE BETWEEN SHEATHING AND PLANKING. ATTACH SHEATHING TO FRAMING w/ SIMPSON WSNTL SCREWS @ 6" O.C. PERIMETER AND 12" O.C. FIELD.

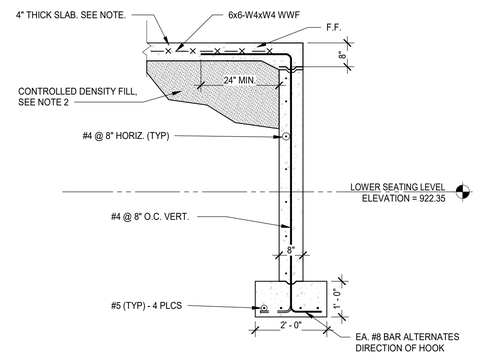


2 A301A TYP. CMU BACK WALL FOUNDATION
SCALE: 1/2" = 1'-0"



3 A301A TYP. CMU FRONT WALL FOUNDATION
SCALE: 1/2" = 1'-0"

NOTES:
1. PLACE WELDED WIRE FABRIC AT SLAB MID-DEPTH AND PROVIDE 5 LB/C.Y. OF FORTA-FERRO SUPPLEMENTAL FIBER REINFORCING.
2. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING OF WALLS DURING PLACEMENT OF CONTROLLED DENSITY FILL.



4 A301A TYP. STAGE FOUNDATION
SCALE: 1/2" = 1'-0"

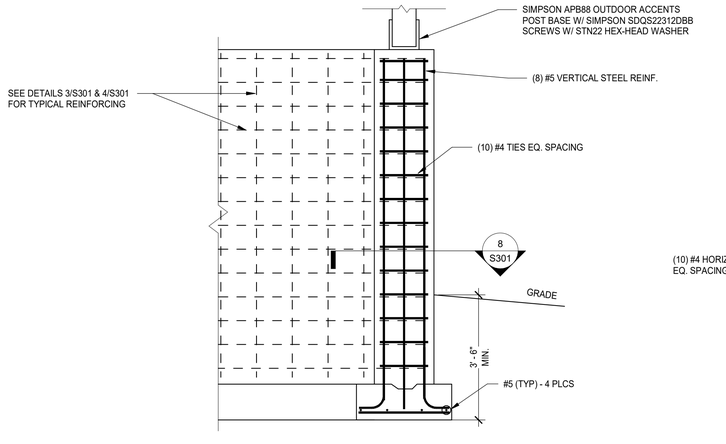
NOTES:
1. PLACE WELDED WIRE FABRIC AT SLAB MID-DEPTH AND PROVIDE 5 LB/C.Y. OF FORTA-FERRO SUPPLEMENTAL FIBER REINFORCING.
2. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING OF WALLS DURING PLACEMENT OF CONTROLLED DENSITY FILL.

5 A301A TYP. ROOF BEARING ON COLUMN
SCALE: 3/4" = 1'-0"

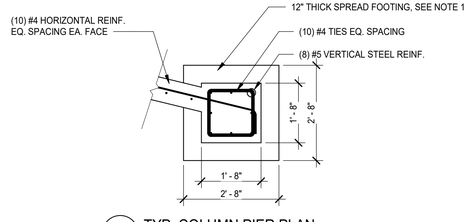
NOTES:
1. 15/32" APA STRUCTURAL 1 SHEATHING OVER 1x6 T&G CEDAR PLANKING. PROVIDE 12" WIDE STRIP OF CONSTRUCTION ADHESIVE BETWEEN SHEATHING AND PLANKING. ATTACH SHEATHING TO FRAMING w/ SIMPSON WSNTL SCREWS @ 6" O.C. PERIMETER AND 12" O.C. FIELD.
2. FASTEN 1x MATERIAL TO ENDS OF LVLs W/ (2) 4" LONG SIMPSON SDWS SCREWS.
3. LAMINATE LAYERS OF 1x MATERIAL TOGETHER W/ CONSTRUCTION ADHESIVE. CLAMP TOGETHER AS REQUIRED DURING CURING TO ENSURE COMPOSITE ACTION AFTER INSTALLATION & SO FINAL SHAPE CONFORMS TO CURVED SHAPE INDICATED ON ARCH DRAWINGS.

6 A301A TYP. ROOF BEARING ON FRONT WALL
SCALE: 3/4" = 1'-0"

NOTES:
1. 15/32" APA STRUCTURAL 1 SHEATHING OVER 1x6 T&G CEDAR PLANKING. PROVIDE 12" WIDE STRIP OF CONSTRUCTION ADHESIVE BETWEEN SHEATHING AND PLANKING. ATTACH SHEATHING TO FRAMING w/ SIMPSON WSNTL SCREWS @ 6" O.C. PERIMETER AND 12" O.C. FIELD.
2. STUD/PLATE CONNECTION SHALL BE (2) SDWC15600 SCREWS.
3. 15/32" APA STRUCTURAL 1 WALL SHEATHING. ATTACH TO FRAMING w/ SIMPSON WSNTL SCREWS @ 4" O.C. PERIMETER AND 12" O.C. FIELD, TYP.
4. ATTACH RIM BOARD TO (2) 2x6 PLATE W/ SIMPSON SDWC15450 SCREW @ 8" O.C.



7 S101 TYP. COLUMN PIER SECTION
SCALE: 1/2" = 1'-0"



8 S301 TYP. COLUMN PIER PLAN
SCALE: 1/2" = 1'-0"

NOTES:
1. FOOTING REINF SHALL BE (4) #5 BARS EA. WAY.

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STRUCTURAL DETAILS

DRAWN BY	CHECKED BY
KMS	JDB

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

S301

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PROJECT NUMBER
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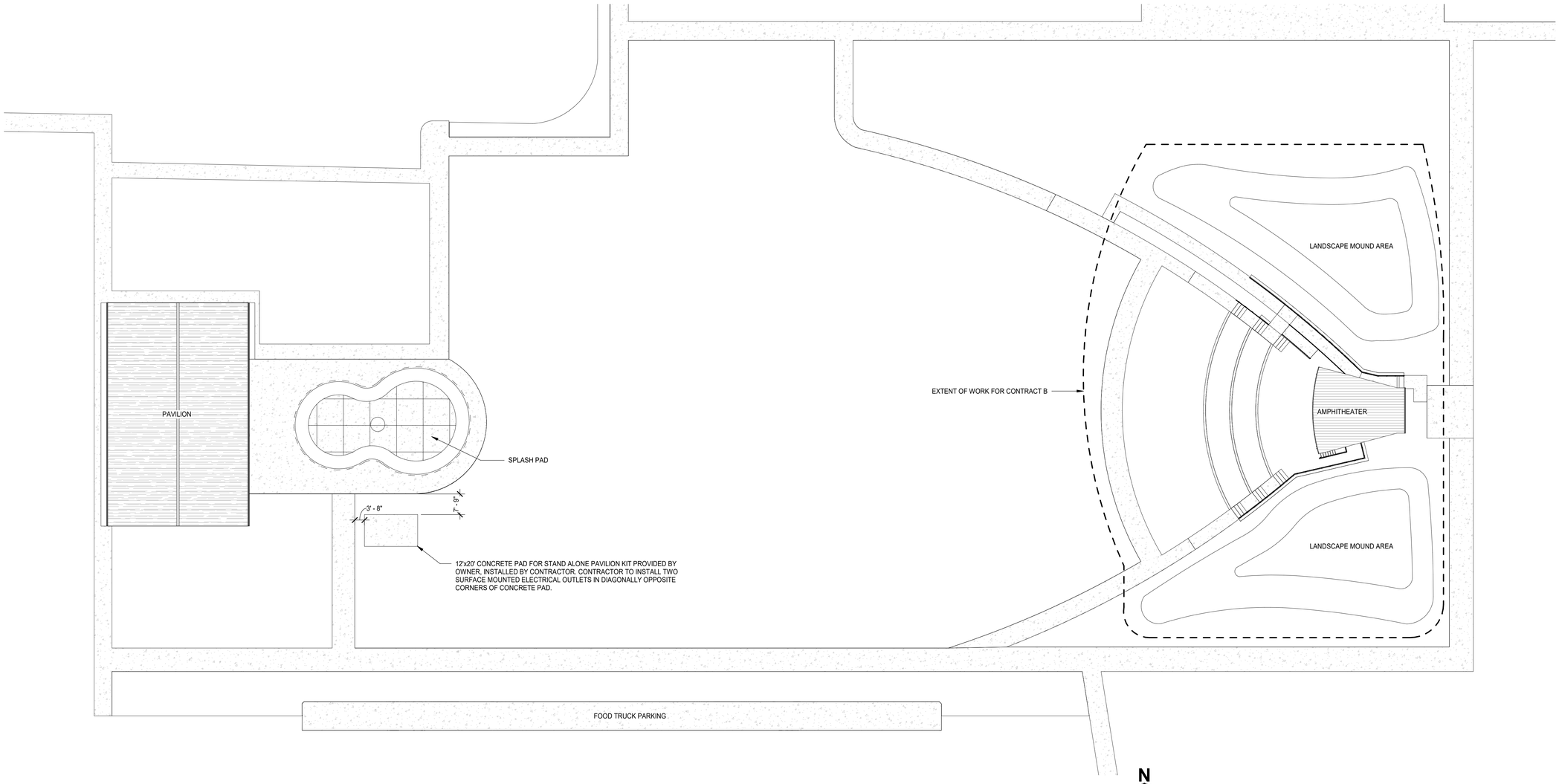

ARCHITECTURAL SITE PLAN

SCALE: 1" = 20'-0"

NOTE:
REFER TO CIVIL FOR EXTEND OF WORK FOR CONTRACT A AND CONTRACT B.

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VILLAGE OF COVINGTON
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ARCHITECTURALSITE PLAN

DRAWN BY	CHECKED BY
SJM	SSH

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

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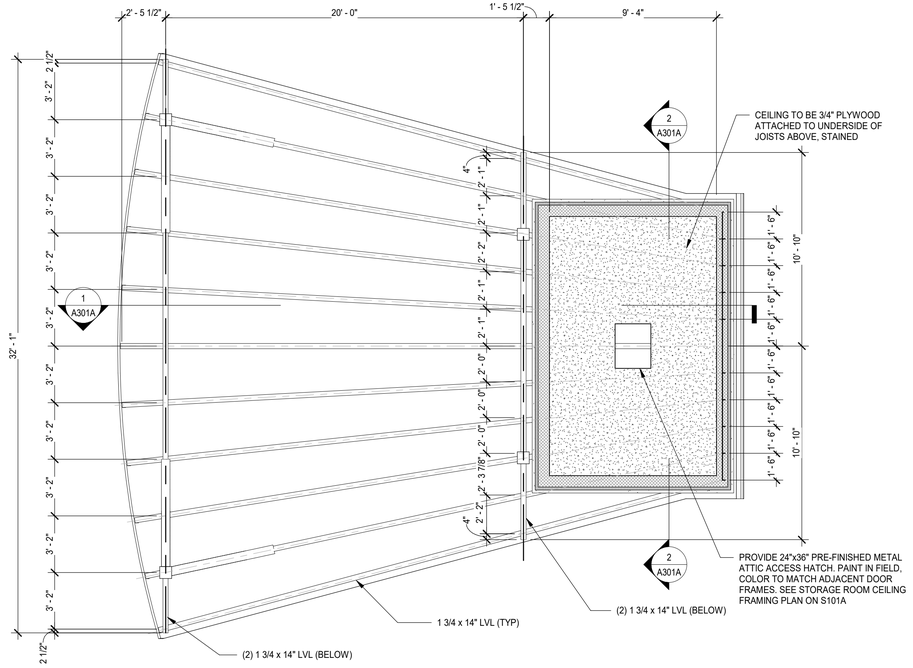
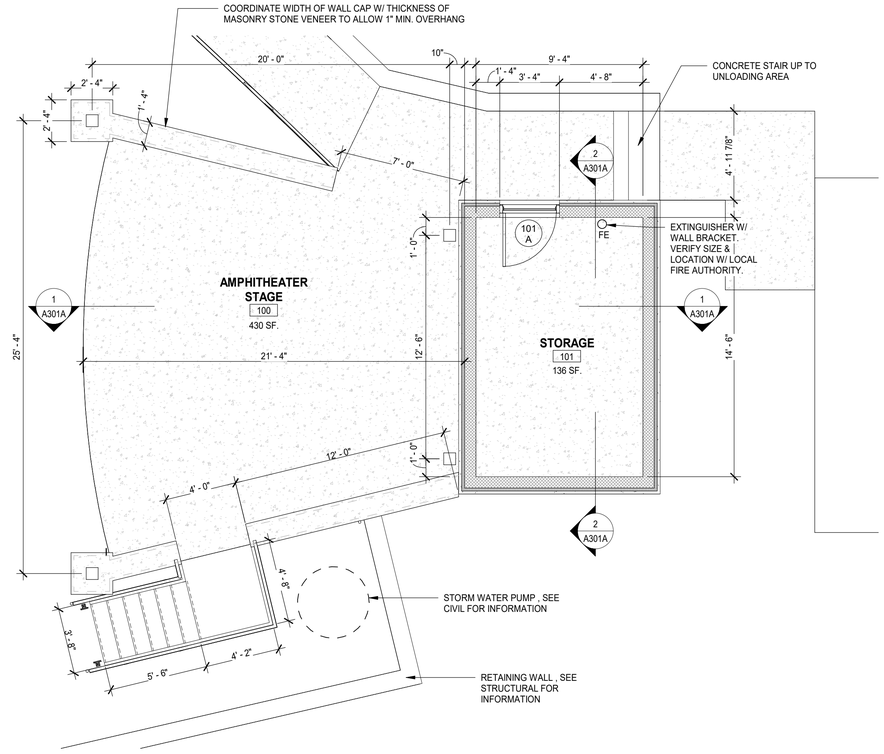


NOTES:
- LVL FRAMING SHALL BE TREATED
- B.O.D. = PWT TREATED LVL OR APPROVED SUBSTITUTE
- IDENTIFICATION STAMPS SHALL BE REMOVED BY SANDING PRIOR TO STAINING

REFLECTED CEILING PLAN

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



AMPHITHEATER FLOOR PLAN

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

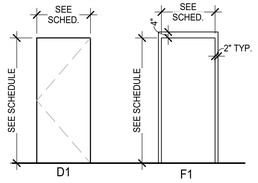
NOTE:
- CONTRACTOR MUST PAINT ALL EXPOSED STEEL RAILING (AMPHITHEATER & STAIRS) W/ ENAMEL PAINT. TYPICAL. COLOR TO BE SELECTED BY OWNER.

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS				CEILING	REMARKS
				NORTH	SOUTH	EAST	WEST		
100	AMPHITHEATER STAGE	SEALED CONCRETE	6" RESILIENT BASE	--	--	--	--	STAINED	
101	STORAGE	SEALED CONCRETE	6" RESILIENT BASE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	STAINED	

DOOR AND FRAME SCHEDULE

MARK	DOOR INFORMATION						FRAME INFORMATION			RATING	HARDWARE	REMARKS
	SIZE			MATERIAL	TYPE	FINISH	MATERIAL	TYPE	FINISH			
	WIDTH	HEIGHT	THK									
101 A	3' - 0"	7' - 0"	1 3/4"	HM	D1	PAINT	HM	F1	PAINT			

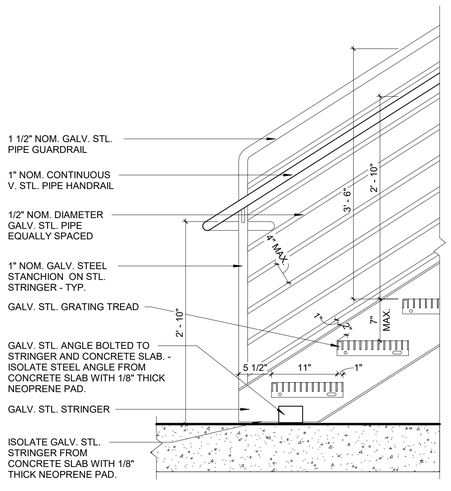


DOOR & FRAME TYPE ELEVATIONS

SCALE: N.T.S

HARDWARE SET 1:

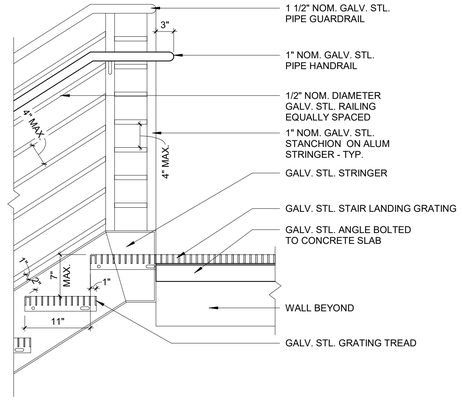
3 HINGES
1 STORE ROOM LOCKSET
1 WEATHER GASKETING
1 THRESHOLD
1 DOOR CLOSER/STOP
1 KICK PLATE 10" x 34"
1 WALL OR FLOOR STOP (VERIFY W/ LOCATION)



TYP. STEEL STAIR DETAIL AT BOTTOM LANDING

SCALE: N.T.S

NOTE:
CONTRACTOR MUST PAINT ALL EXPOSED STEEL RAILING W/ ENAMEL PAINT. TYPICAL. COLOR TO BE SELECTED BY OWNER.



TYP. STEEL STAIR DETAIL AT ALUM TOP LANDING

SCALE: N.T.S

NOTE:
CONTRACTOR MUST PAINT ALL EXPOSED STEEL RAILING W/ ENAMEL PAINT. TYPICAL. COLOR TO BE SELECTED BY OWNER.

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

FLOOR, REFLECTED CEILING PLANS, & DETAILS

DRAWN BY: SJM
CHECKED BY: SSH

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

A101A

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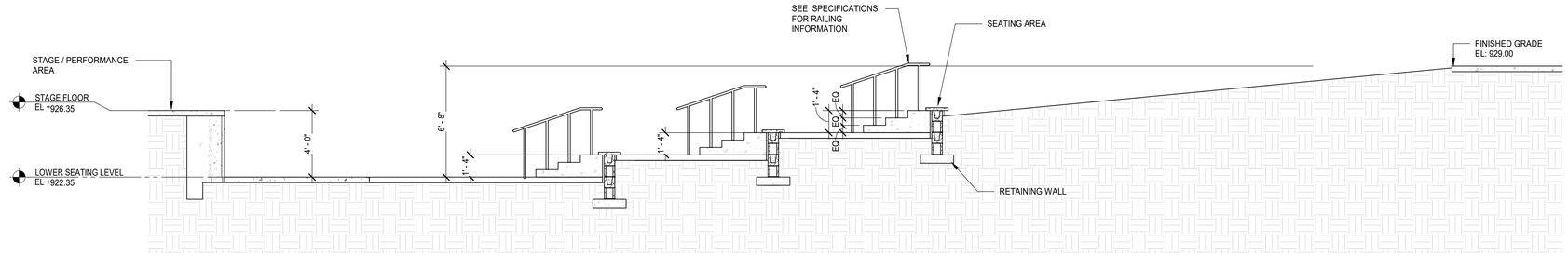
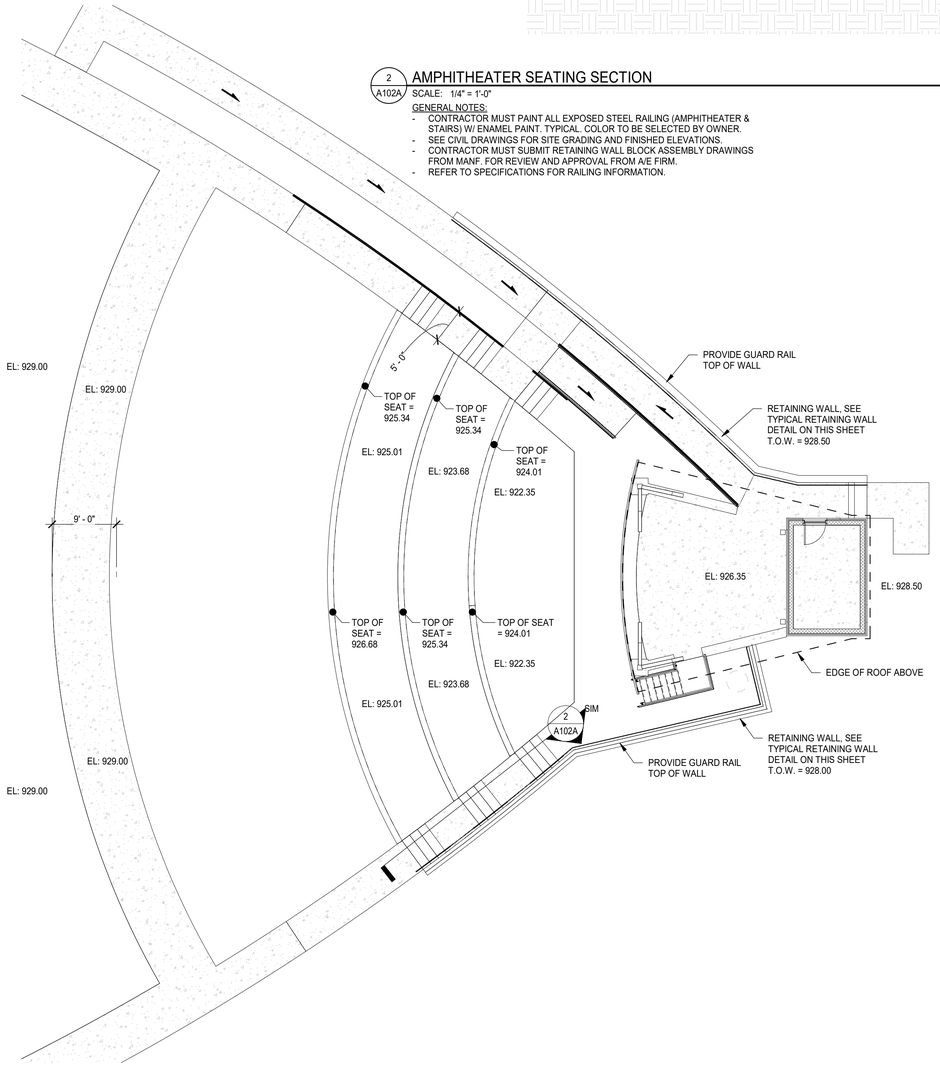


2 A102A AMPHITHEATER SEATING SECTION

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

GENERAL NOTES:
- CONTRACTOR MUST PAINT ALL EXPOSED STEEL RAILING (AMPHITHEATER & STAIRS) W/ ENAMEL PAINT. TYPICAL. COLOR TO BE SELECTED BY OWNER.
- SEE CIVIL DRAWINGS FOR SITE GRADING AND FINISHED ELEVATIONS.
- CONTRACTOR MUST SUBMIT RETAINING WALL BLOCK ASSEMBLY DRAWINGS FROM MANF. FOR REVIEW AND APPROVAL FROM A/E FIRM.
- REFER TO SPECIFICATIONS FOR RAILING INFORMATION.



OVERALL AMPHITHEATER PLAN

SCALE: 1" = 10'-0"

GENERAL NOTES:
- CONTRACTOR MUST PAINT ALL EXPOSED STEEL RAILING (AMPHITHEATER & STAIRS) W/ ENAMEL PAINT. TYPICAL. COLOR TO BE SELECTED BY OWNER.
- SEE CIVIL DRAWINGS FOR SITE GRADING AND FINISHED ELEVATIONS.

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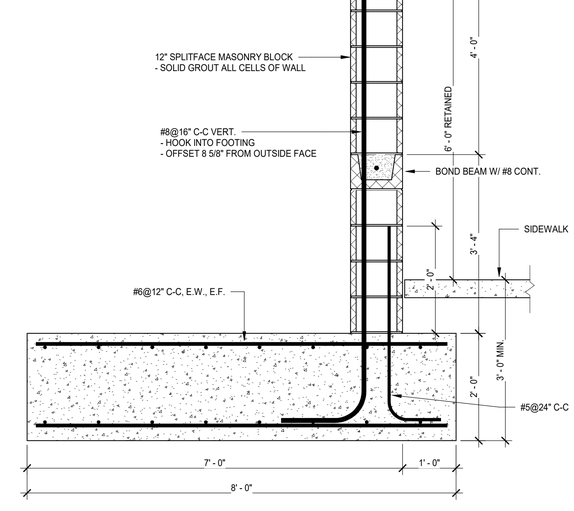
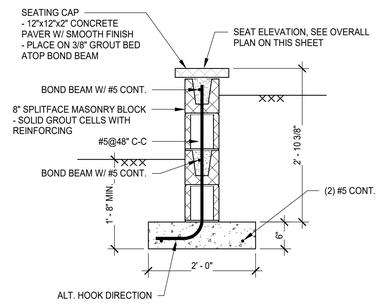


TYPICAL RETAINING WALL DETAIL (MASONRY)

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



TYPICAL SEATING DETAIL (MASONRY)

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

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AMPHITHEATER DETAILS

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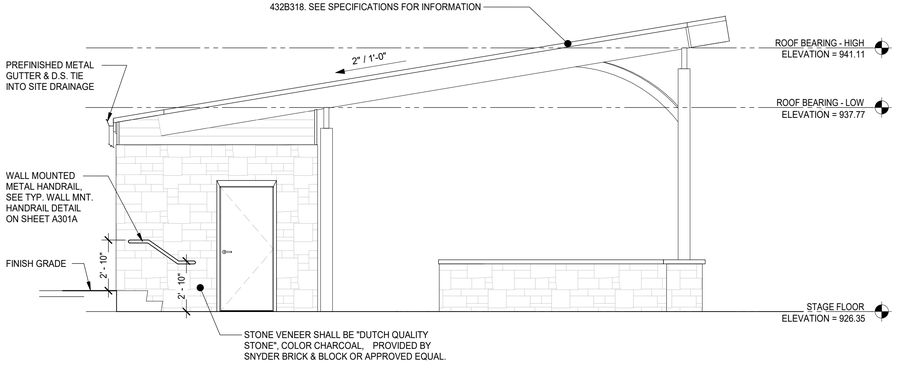
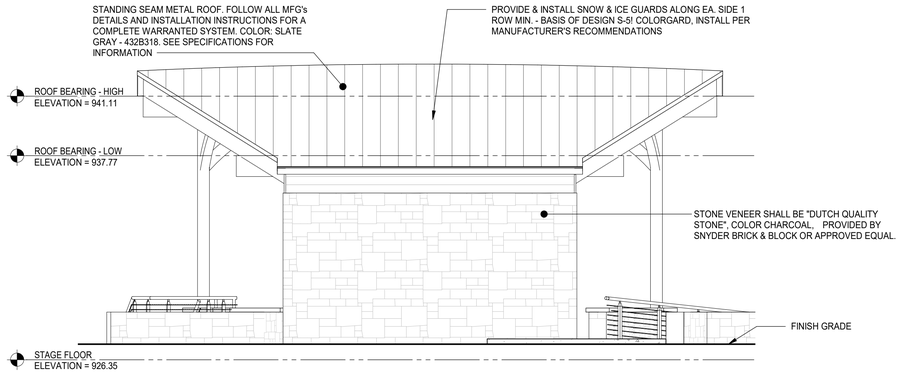


NORTH ELEVATION

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

CONSTRUCTION NOTES:

1. EXTERIOR INSULATION SHALL BE 2" OWENS CORNING FOAMULAR OR EQUAL.
2. STONE VENEER SHALL BE "DUTCH QUALITY STONE", COLOR CHARCOAL, PROVIDED BY SNYDER BRICK & BLOCK OR APPROVED EQUAL.
3. CONTRACTOR MUST PAINT ALL EXPOSED STEEL RAILING (AMPHITHEATER & STAIRS) W/ ENAMEL PAINT. TYPICAL. COLOR TO BE SELECTED BY OWNER.

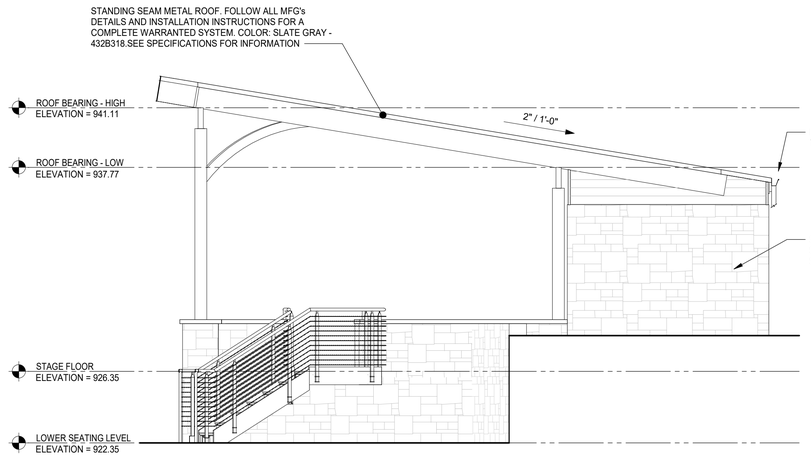


EAST ELEVATION

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

CONSTRUCTION NOTES:

1. EXTERIOR INSULATION SHALL BE 2" OWENS CORNING FOAMULAR OR EQUAL.
2. STONE VENEER SHALL BE "DUTCH QUALITY STONE", COLOR CHARCOAL, PROVIDED BY SNYDER BRICK & BLOCK OR APPROVED EQUAL.
3. CONTRACTOR MUST PAINT ALL EXPOSED STEEL RAILING (AMPHITHEATER & STAIRS) W/ ENAMEL PAINT. TYPICAL. COLOR TO BE SELECTED BY OWNER.

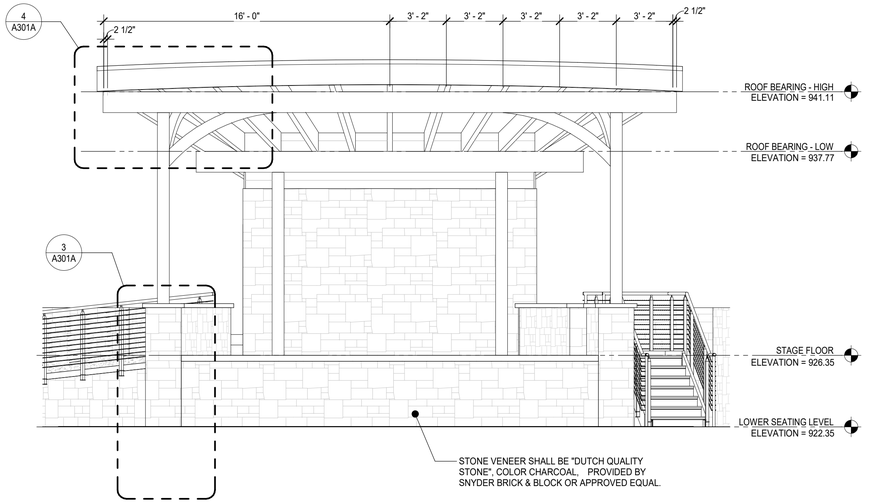


SOUTH ELEVATION

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

CONSTRUCTION NOTES:

1. EXTERIOR INSULATION SHALL BE 2" OWENS CORNING FOAMULAR OR EQUAL.
2. STONE VENEER SHALL BE "DUTCH QUALITY STONE", COLOR CHARCOAL, PROVIDED BY SNYDER BRICK & BLOCK OR APPROVED EQUAL.
3. CONTRACTOR MUST PAINT ALL EXPOSED STEEL RAILING (AMPHITHEATER & STAIRS) W/ ENAMEL PAINT. TYPICAL. COLOR TO BE SELECTED BY OWNER.

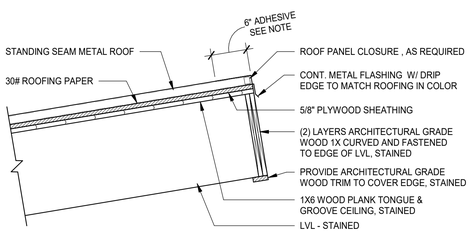


WEST ELEVATION

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

CONSTRUCTION NOTES:

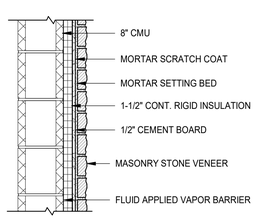
1. EXTERIOR INSULATION SHALL BE 2" OWENS CORNING FOAMULAR OR EQUAL.
2. STONE VENEER SHALL BE "DUTCH QUALITY STONE", COLOR CHARCOAL, PROVIDED BY SNYDER BRICK & BLOCK OR APPROVED EQUAL.
3. CONTRACTOR MUST PAINT ALL EXPOSED STEEL RAILING (AMPHITHEATER & STAIRS) W/ ENAMEL PAINT. TYPICAL. COLOR TO BE SELECTED BY OWNER.



TYP. ROOF EDGE DETAIL

SCALE: 1" = 1'-0"

NOTE:
THERE IS TO BE A 6" WIDE STRIP OF CONSTRUCTION ADHESIVE BETWEEN THE PLYWOOD AND 1x6 PLANKING AROUND THE PERIMETER OF THE ROOF.



TYP. WALL DETAIL

SCALE: N.T.S

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

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

EXTERIOR ELEVATIONS

DRAWN BY	CHECKED BY
SJM	SSH

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

A201A

DATE
1/17/2023
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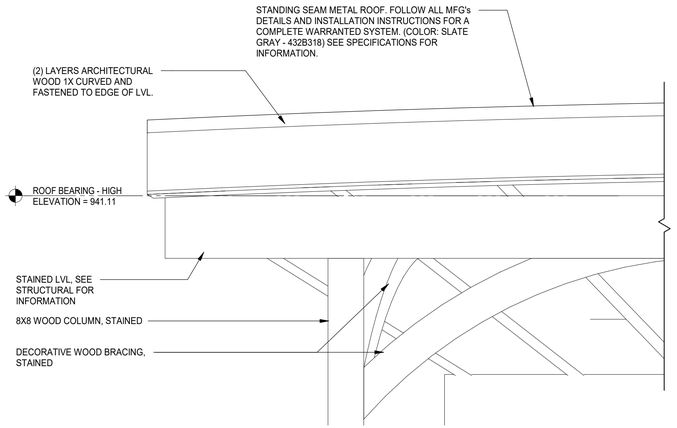
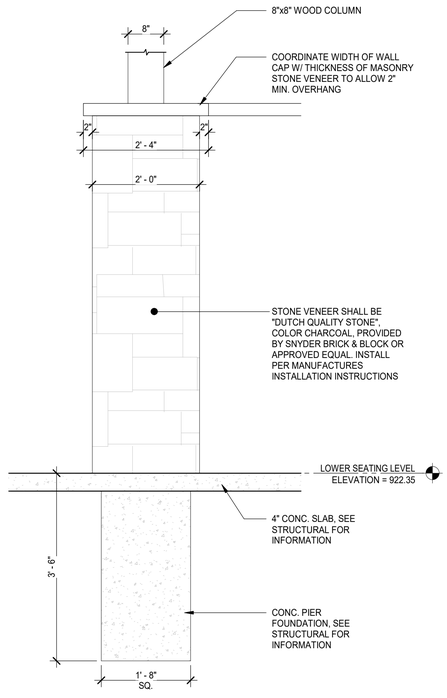
PROJECT NUMBER
20225751

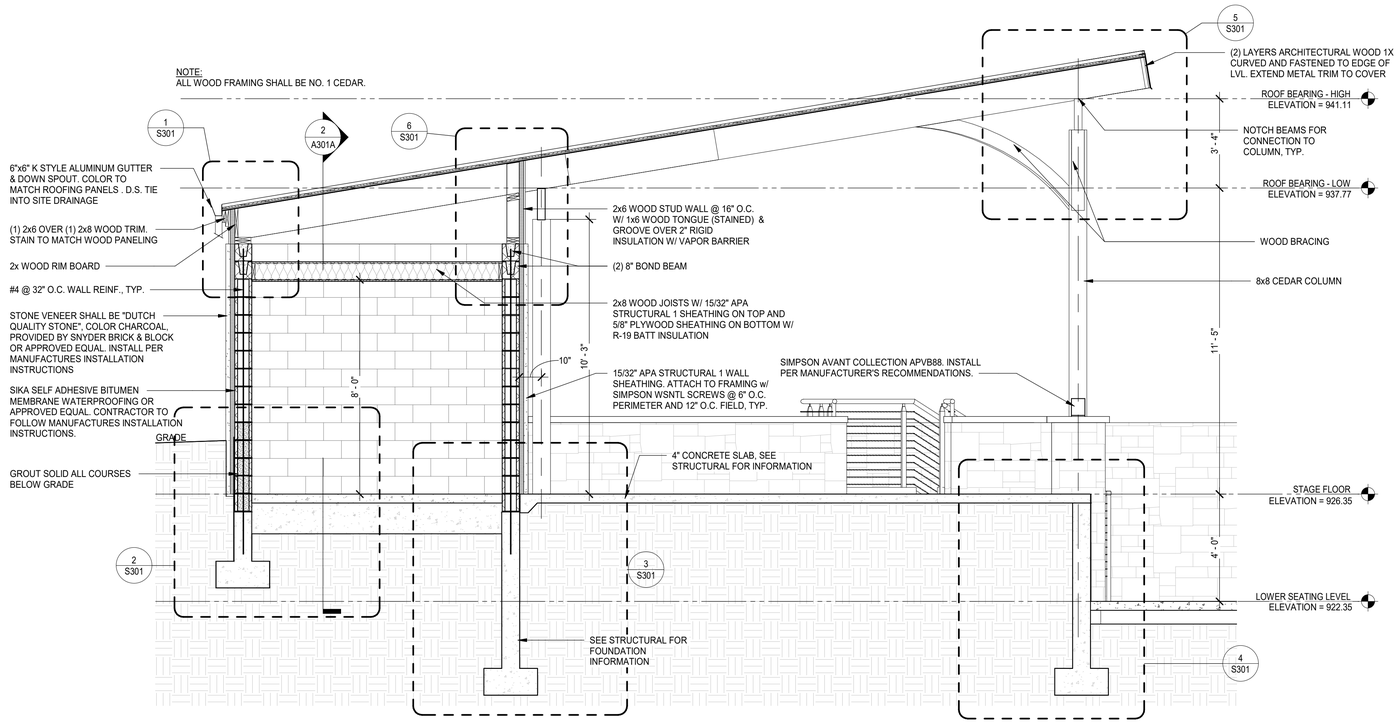
REV.	DATE	DESCRIPTION
4	01/13/23	ISSUED FOR RE-PERMIT & REBID
3	09/30/22	ISSUED FOR REBID
2	08/22/22	ISSUED FOR BIDS & PERMIT
1	08/19/22	ISSUED FOR ODNR REVIEW



4 A201A COLUMN BEARING DETAIL
SCALE: 3/4" = 1'-0"



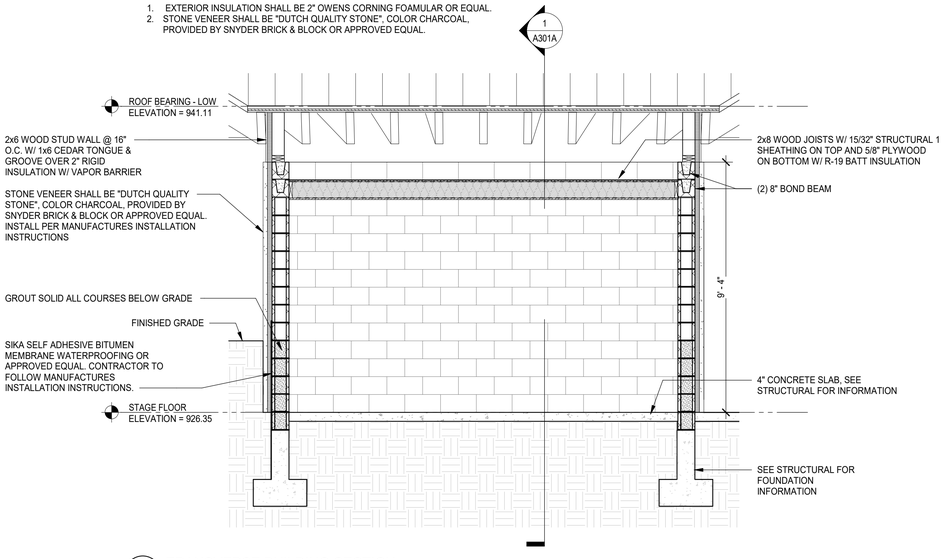
3 A201A COLUMN DETAIL
SCALE: 3/4" = 1'-0"



1 A101A LONGITUDINAL BUILDING SECTION
SCALE: 3/8" = 1'-0"

CONSTRUCTION NOTES:

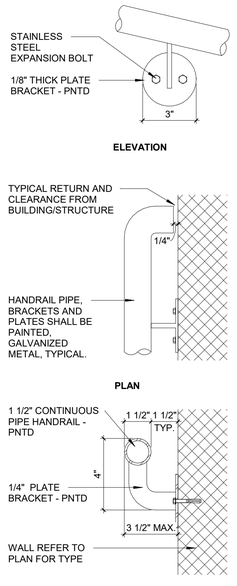
1. EXTERIOR INSULATION SHALL BE 2" OWENS CORNING FOAMULAR OR EQUAL.
2. STONE VENEER SHALL BE "DUTCH QUALITY STONE", COLOR CHARCOAL, PROVIDED BY SNYDER BRICK & BLOCK OR APPROVED EQUAL.



2 A101A TRANSVERSE BUILDING SECTION
SCALE: 3/8" = 1'-0"

CONSTRUCTION NOTES:

1. EXTERIOR INSULATION SHALL BE 2" OWENS CORNING FOAMULAR OR EQUAL.
2. STONE VENEER SHALL BE "DUTCH QUALITY STONE", COLOR CHARCOAL, PROVIDED BY SNYDER BRICK & BLOCK OR APPROVED EQUAL.



TYP. WALL MTD HANDRAIL DETAIL
SCALE: N.T.S

REV.	DATE	DESCRIPTION
3	09/30/22	ISSUED FOR REBID
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SECTIONS & DETAILS

DRAWN BY	CHECKED BY
SJM	SSH

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

A301A

DATE
1/17/2023
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PROJECT NUMBER
20225751

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HVAC SYSTEM SPECIFICATIONS

PART 1 GENERAL

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

1.02. VERIFICATION:

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

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

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. 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.

2.03. ELECTRIC RADIANT HEATER:

A. APPROVED MANUFACTURERS
   1. DETROIT RADIANT PRODUCTS
   2. MARLEY
   3. CUROMALOX
   4. INDEECO

B. APPROVALS
   1. UL LISTED
   2. INDOOR AND OUTDOOR COMMERCIAL/INDUSTRIAL APPROVAL
   3. OUTDOOR RESIDENTIAL APPROVAL.

C. HEATER CONSTRUCTION
   1. 304 BRUSHED STAINLESS STEEL HOUSING FOR ADDED DURABILITY AND CORROSION ASSISTANCE.

D. LAMP ELEMENTS
   1. INTERCHANGEABLE STANDARD MEDIUM WAVE, HIGH-OUTPUT MEDIUM WAVE, & CLEAR OR RUBY SHORT WAVE ELEMENT OPTIONS.
   2. COILED TUNGSTEN FILAMENT HOUSED WITHIN A SEALED QUARTZ TUBING.
   3. STAINLESS STEEL END CAPS.
   4. INSTANTANEOUS HEAT-UP AND COOL-DOWN.

E. CONTROLS
   1. FIELD SUPPLIED.

F. MOUNTING
   1. 0° TO 45° ADJUSTABLE BRACKETS.

G. REFLECTORS
   1. GOLD-COLORED, ANODIZED ALUMINUM REFLECTORS REDUCE VISIBLE LIGHT GLARE.
   2. WIDE, SYMMETRIC DESIGN.

H. LIMITED WARRANTY
   1. 1 YEAR-ALL COMPONENTS.

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.

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.

ELECTRIC RADIANT-HEATER SCHEDULE

(REFER TO SPECIFICATIONS PARAGRAPH "2.03" ON THIS DRAWING FOR ADDITIONAL REQUIREMENTS.)

TAG #	DWG #	TYPE	MTG. TYPE	AREA SERVED	HEATER AMPS	HEATER BTUH	HP (WATTS)	VOLTS/PHASE	APPROX. WEIGHT (LBS.)	DETROIT RADIANT MODEL	REMARKS:
ERH-1	M001	INFRARED	CEILING HUNG	AMPHITHEATRE 100	24.99	20,473	6,000	240/1	40	ELX-46S3-240	1 THRU 7
ERH-2	M001	INFRARED	CEILING HUNG	AMPHITHEATRE 100	24.99	20,473	6,000	240/1	40	ELX-46S3-240	1 THRU 7

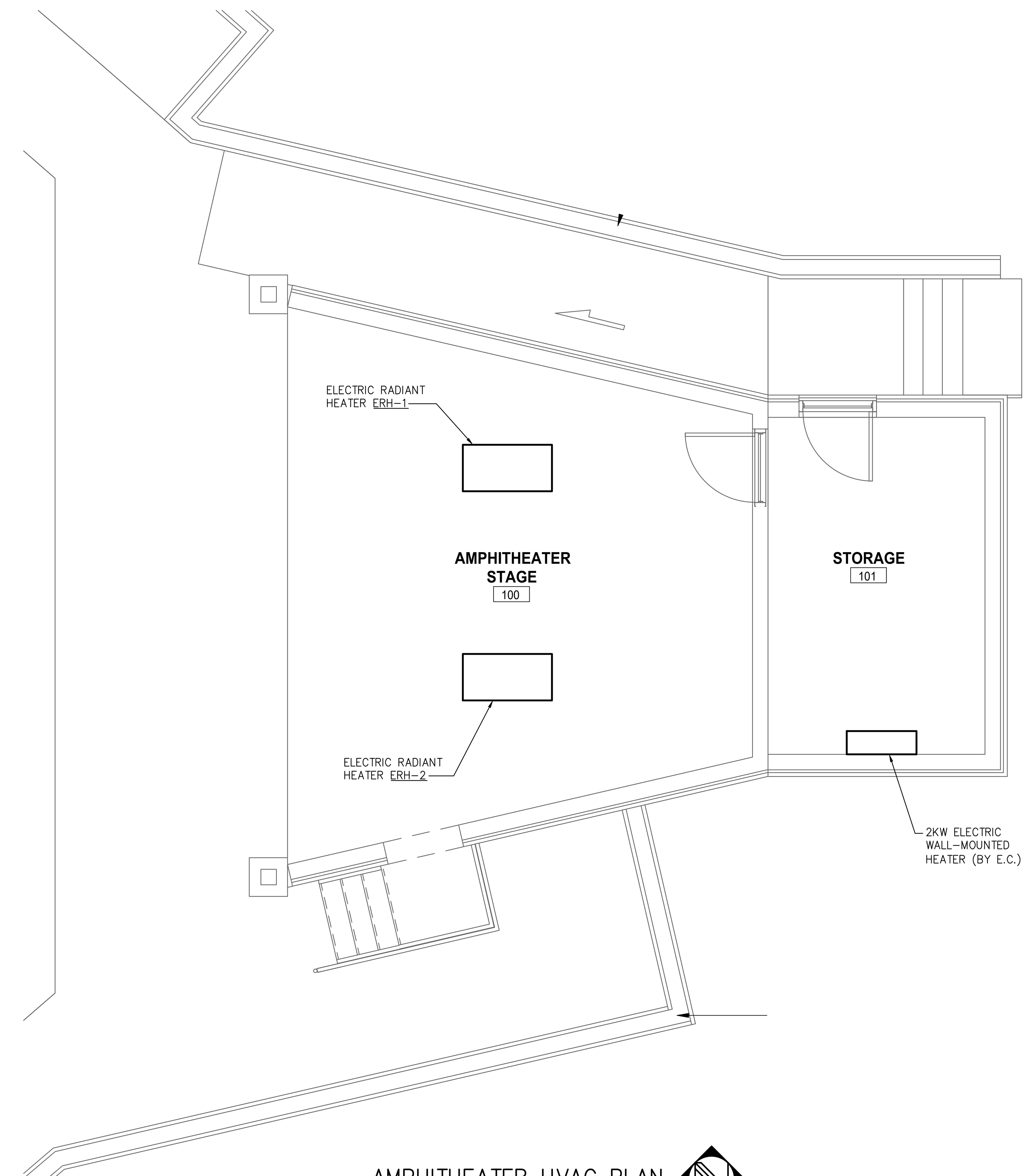
REMARKS:
1. HEATER SHALL BE FURNISHED WITH UL LISTINGS
2. FURNISH HEATER WITH AUTOMATIC HIGH-LIMIT CUTOUT OVERLOAD PROTECTION AND AUTOMATIC RESET.
3. FURNISH HEATER WITH INTEGRAL THERMOSTAT.
4. FURNISH UNIT WITH CEILING MOUNTED BRACKET.
5. FURNISH UNIT WITH WALL MOUNTED DISCONNECT SWITCH.
6. FURNISH HEATER WITH FOUR-WAY ADJUSTABLE LOUVERS.
7. SUSPEND HEATER FROM STRUCTURE ABOVE WITH ALL THREADED ROD AND ANGLE IRON.

NATURAL VENTILATION CALCULATIONS

ROOM	AREA OF ROOM (SQ. FT.)	REQUIRED OPENABLE AREA (SQ. FT.)	ACTUAL OPENABLE AREA (SQ. FT.)
AMPHITHEATRE STORAGE 100	135.4	5.4	42

HVAC LEGEND

(symbol)	NEW DUCTWORK/EQUIPMENT
(symbol)	NEW DUCTWORK/EQUIPMENT
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



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

HVAC DRAWING LIST

DWG NO.	TITLE	FILE NO.
M001	HVAC SPECIFICATIONS, LEGEND, AND PLAN	22056M001.dwg

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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TEL: (419)891-0022 FAX: (419)891-0026
engineering@decagroup.com

COVINGTON AMPHITHEATER
25 N. GRANT ST.
COVINGTON, OH 45318

HVAC SPECIFICATIONS, LEGEND, AND PLAN

DRAWN BY: ERS
CHECKED BY: RDG

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

M001

DATE

PROJECT NUMBER
300214-00010

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.

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.

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.

C. **LIGHTING CONTROL SYSTEM:** PROVIDE A RELAY-BASED, MICRO-PROCESSOR CONTROLLED AND NETWORKABLE CONTROL SYSTEM AS INDICATED ON THE PLANS AND SPECIFIED HEREIN FOR A COMPLETE AND OPERATIONAL CONTROL SYSTEM. CONTROL CABINETS SHALL BE COMPLETE WITH UP TO EIGHT OR SIXTEEN 20 AMPERE RELAYS RATED FOR 277 VOLT BALLAST AND RESISTIVE LOADS; EXPANDABLE UP TO 48 CONTROL RELAYS. CONTROL CABINETS SHALL ALSO INCLUDE HARD-WIRED LOW VOLTAGE SWITCH INPUTS AS REQUIRED, BUT NO LESS THAT ONE FOR EVERY TWO RELAYS. RELAY CABINETS SHALL EMPLOY A USER-FRIENDLY CONTROL INTERFACE AND LOW VOLTAGE CABINET INTERCONNECTIONS TO ACCOMMODATE COMMUNICATION, MONITORING AND PROGRAMMING OF THE ENTIRE SYSTEM FROM ONE LOCATION. RELAY CABINET ENCLOSURES SHALL BE A UL LISTED, PAINTED STEEL WITH FLUSH OR SURFACE TYPE HINGED COVER AS NOTED ON THE PLANS.

LOW VOLTAGE CONTROL STATIONS MAY BE MULTIPLE DRY CONTACT ASSEMBLIES OR NETWORKABLE AND PROGRAMMABLE SWITCH INPUT MODULES, FUNCTIONS AND USES AS REQUIRED OR INDICATED ON THE PLANS.

MICROPROCESSOR BASED CONTROLLER SHALL BE FIELD PROGRAMMABLE VIA INTEGRAL DISPLAY AND USER INTERFACE WITH PROVISIONS FOR FUTURE NETWORK CONNECTIONS (ETHERNET, MODBUS, BACNET, LONWORKS). CONTROLS SHALL INCLUDE REAL TIME AND ASTRONOMIC CLOCK FOR AUTOMATED SCHEDULING, LOCAL OVER-RIDE FOR INDIVIDUAL RELAYS OR GROUPS, PHOTO-CELL AND PHOTO-SENSOR INPUT FOR DUSK/DAWN OR DAYLIGHT HARVESTING FUNCTIONS. MICROPROCESSOR PROGRAMMING SHALL BE STORED IN EEPROM MEMORY FOR CONTINUED STORAGE WITHOUT POWER. CLOCK POWER SHALL BE BACKED-UP WITH A MINIMUM 30 DAY RECHARGEABLE BATTERY.

LIGHTING CONTROL SYSTEM SHALL PROVIDE THE FOLLOWING OPERATIONAL SEQUENCES FOR CONTROL OF LIGHTING CIRCUITS VIA THE SWITCHES, CONTROL STATIONS, PHOTO-SENSORS, TIME CLOCK AND SOFTWARE. THE COMPLETE SYSTEM PROGRAMMING DESCRIPTION INCLUDING SPECIFIC TIMES, DAYS, DATES, SCHEDULES AND BUILDING ZONES, ETC. FOR EACH CIRCUIT, SHALL BE SUBMITTED TO OWNER AND ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO THE INSTALLATION OF FINAL PROGRAMMING.

AUTOMATIC TIME SCHEDULE CONTROL: ALL LIGHTING CIRCUITS SHALL BE ENERGIZED AND DE-ENERGIZED PER A SCHEDULE OF BUILDING USAGE. SOFTWARE SHALL PROVIDE FOR AT LEAST TWELVE DAILY EVENT SCHEDULES (I.E. NORMAL, SATURDAY, SUNDAY, SPECIAL DAY EVENT, SPECIAL EVENING EVENT, HOLIDAY, ETC.), SELECTABLE BY YEARLY CALENDAR OR BY MANUAL SELECTION. A BLINK WARNING BEFORE "OFF" SUB-ROUTINE SHALL BE INCORPORATED INTO ALL TIME SCHEDULE SEQUENCES.

LOCAL ZONE OVER-RIDE: UPON ACTUATION OF A REMOTE OVER-RIDE SWITCH, THE ASSOCIATED ZONE OF LIGHTING SHALL BE ENERGIZED FOR AN ADDITIONAL TIME (PROGRAMMABLE FOR NO MORE THAN 4 HOURS).

ZONES (NOMINAL SIX GEOGRAPHICAL PORTIONS OF THIS BUILDING) SHALL BE DEFINED USING COMMON SENSE UNDERSTANDING OF POTENTIAL BUILDING USAGE. STAFF AND PUBLIC SPACES SHALL BE SEGREGATED. CORRIDORS AND PUBLIC MEETING ROOM SPACES OPEN THERETO, SHALL BE SEGREGATED FROM THE LIBRARY. AREAS SUITABLE FOR EVENING USAGE SHALL BE SEGREGATED FOR SUCH.

EXTERIOR LIGHTING SHALL OPERATE VIA PHOTO-CELL OR PHOTO-SENSOR, IN A TYPICAL "ON" FROM DUSK TO DAWN ARRANGEMENT. SELECTED CIRCUITS SHALL ALSO BE TIME-CONTROLLED TO SHED UNNECESSARY LOAD AT OVER-NIGHT HOURS.

LIGHTING CONTROL SYSTEM SHALL BE AN ILC APPRENTICE II OR EQUIVALENT AS MANUFACTURED BY LITHONIA, WATTSTOPPER, PCI, OR LC&D.

PART 3 EXECUTION

1.1. GENERAL:
G. ALL EQUIPMENT INSTALLATION PROCEDURES SHALL BE BASE ON FUNDAMENTAL ENGINEERING AND CONSTRUCTION PRINCIPLES IN CONFORMANCE WITH ALL APPLICABLE CODES, STANDARDS AND ORDINANCES.
H. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL ELECTRICAL EQUIPMENT IN CONFORMANCE WITH MANUFACTURER ISSUED INSTRUCTIONS AND RECOMMENDATIONS.
I. PROVIDE ONE (1) YEAR WARRANTY ON ALL LABOR AND MATERIAL UNLESS NOTED OTHERWISE.
J. 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.

3.1. 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.

3.2. 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.

3.3. 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	22099E001.dwg
E002	ELECTRICAL LEGEND, SCHEDULE, SINGLE LINE AND PANEL SCHEDULE	22099E002.dwg
E101	LIGHTING AND POWER PLAN	22099E101.dwg
E201	SITE PLAN	22099E201.dwg

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

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ELECTRICAL SPECS, LEGEND AND DRAWING LIST

DRAWN BY: JTH
CHECKED BY: JTH

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

E001

DATE

PROJECT NUMBER
300214-00010

ELECTRICAL LEGEND

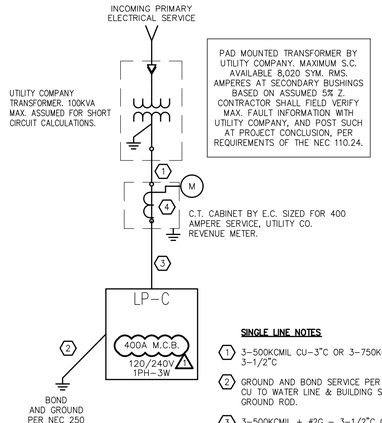
ABBREVIATIONS

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
- STRIP LIGHT –SEE SCHEDULE–SHOWN TO SCALE (APPROX.)
- FLOODLIGHT FIXTURE–SEE FIXTURE SCHEDULE
- WALL MOUNTED FIXTURE–SEE SCHEDULE
- EMERGENCY EGRESS OR COMBINATION EXIT EGRESS LIGHT–SEE SCHEDULE
- EXTERIOR POLE AND 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.
- $D — BUTTON SWITCHPOD–120/277V–LOWVOLTAGE–W/C.P.–WHITE FINISH–W/ON & OFF OVERRIDE BUTTON, UP/DOWN DIMMING BUTTONS– POWER PACK AND RELAY–M.H. 44". NLIGHT #NPODM–DX 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.
- WP — DOUBLE DUPLEX GFCI RECEPT.–WEATHER AND TAMPER RESISTANT DEVICE––2 GANG BOX– W/"EXTRA DUTY W.P. IN USE" FLAP C.P.–M.H. 16" IN READILY ACCESSIBLE LOCATION. HUBBELL #GF5362SGW/WP26E OREQ.
- T — 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
- PC — PHOTOCELL MOUNTED AT ROOF FACING NORTH; LEVITON #EK4236S OREQ PHOTOCELL SHALL BE RATED FOR USE WITH LED FIXTURES AND DRIVERS.
- FLOOR BOX–USE IN CONCRETE FLOORS–MULTISERVICE–FLUSH MOUNTED–W/DUPLEX 120V–20 AMP–NEMA 5–20R RECEPT. AND (PROVISIONS FOR) TELE/DATA JACKS–FLAP COVER SELECTED BY ARCHITECT. COMPLETE WITH 1" CONDUIT STUB WITH BUSHING TO ADJACENT ACCESSIBLE CEILING PLENUM. HUBBELL #CFB2G25 SERIES OREQ
- (2) — MOTOR–SIZE AND FUNCTION AS NOTED
- WIRE TICKS INDICATE BRANCH CIRCUIT PHASE, NEUTRAL, & GROUND WIRES, RESPECTIVELY
- (1) — 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.
- CP / CP — PRE–WIRED CONTROL PANEL WITH MAGNETIC STARTERS, CONTACTORS, ETC., PROVIDED WITH EQUIPMENT. WITH OR WITHOUT DISCONNECT AS SHOWN. POWER FEED WIRING BY E.C.
- S — SPEAKER OUTLET–1/4 IN. JACK IN ONE GANG C.P.–MH AS NOTED. ONE GANG BOX WITH 1/2" CONDUIT W/BUSHING STUBBED TO ABOVE ACCESSIBLE CEILING.
- M — MICROPHONE RECEPTACLE–QUANTITY AS NOTED–W/C.P.–MH 16" ONE GANG BOX WITH 1/2" CONDUIT W/BUSHING STUBBED TO ABOVE ACCESSIBLE CEILING.
- VC — SPEAKER VOLUME CONTROL–W/C.P.–ONE GANG BOX WITH 1/2" CONDUIT STUB TO ABOVE ACCESSIBLE CEILING. MH 44".
- LCP — LIGHTING CONTROL PANEL; SEE SINGLE LINE DIAGRAM AND SPECS. FOR DETAILS
- MASTER LIGHTING CONTROL STATION, WALL MOUNTED, PROGRAMMABLE, BACK–LIT TOUCH SCREEN DISPLAY WITH USER FRIENDLY MENU AND MULTIPLE SCENE SELECTIONS, AS WELL AS INDIVIDUAL ZONE CONTROL.

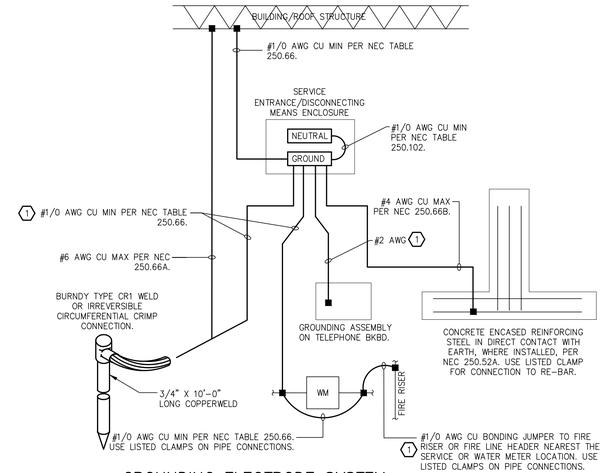
FIXTURE SCHEDULE

MARK	LAMP CATEGORY	LAMP QTY/TYPE	VOLTS	DESCRIPTION	MFR. AND CATALOG SERIES	VA
EC	LED	39.6W 2,60 LUMENS 4000K	120	EXISTING 8" LED BOLLARD TO REMAIN		45
A	LED	NOM 39.5W 4,124 LUMENS 3500K	120	4'–0" SURFACE MOUNTED STRIP LIGHT, WHITE FINISH, END PLATES, INTEGRAL MOTION SENSOR.	LITHONIA WL4–40L–LP835–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	45
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 8'–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	LED BOLLARD, 8" ROUND CAST ALUMINUM SHAFT AND BASE, POLYESTER POWER COAT, POLYCARBONATE LENS, END CAP DIFFUSERS AND OPAL LENS, INTEGRAL ELECTRONIC DIMMABLE DRIVER, FINISH SHALL BE SELECTED BY ARCHITECT/OWNER.	SUNVALLEY B3EL–CAP–VPA–SYM–36LED–350MA–NW–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	45
D	LED	187 WATT 25,000 LUMENS 4000K CCT	240	LED POLE MOUNTED AREA LIGHT, WDE FLOOD DISTRIBUTION, CAST ALUMINUM HOUSING, ELECTRONIC DRIVER, FUSED, HOUSE SHIELD. M.H. NOMINAL 25'–0" A.F.G. MOUNT ON 22'–0" SQUARE STEEL POLE DESIGNED FOR 90 MPH CONSTANT WIND VELOCITY, FINISH TO MATCH LUMINAIRE. ARCHITECT TO SELECT FINISH.	LITHONIA RSXF2–LED–P4–40K–WFL–MVOLT–AASP–SF–FV– REV OR APPROVED EQUAL BY EATON, CREE, ETC.	200
E	LED	INCLUDED	120	COMBINATION EXIT/EGRESS LIGHT, WALL OR CEILING MOUNTED, SINGLE OR DOUBLE FACE AS REQUIRED, 6–INCH RED LETTERS IN WHITE STENCIL FACE, THERMOPLASTIC HOUSING, ARROWS AS SHOWN, WITH TWO HI–INTENSITY ADJUSTABLE FLOOD LIGHT HEADS, UNIVERSAL MOUNTING CANOPY WITH BUILT–IN 90 MINUTE EXTRA CAPACITY BATTERY BACKUP AND OUTDOOR WEATHER PROOF REMOTE FLOODLIGHT HEAD WHERE SHOWN ON PLAN. M.H. 8'0" UNO	LITHONIA LHQM–LED–R–HO–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	10
F	LED	100 WATT 10,990 LUMENS 4000K CCT	120	OUTDOOR LED FLOOD LIGHT WITH DIE–CAST ALUMINUM HOUSING, WET LOCATION LISTED, MOUNTING BRACKET, AND ELECTRONIC DIMMABLE DRIVER. BEAM ANGLE OF FIXTURE IS 60 DEG. FINISH SHALL BE SELECTED BY ARCHITECT/OWNER.	METEOR LIGHTING BLTM–100–40B–UNV–STV–60–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	110
G	LED	10 WATT 400 LUMENS 4000K CCT	120	12" STEP LIGHT, LOUVERED FACE, CASE ALUMINUM, CLEAR TEMPERED GLASS, ELECTRONIC DRIVER. CONSULT MANUFACTURER FOR DIMMING. ARCHITECT TO SELECT FINISH. M.H. 16" A.F.F. ON WALL OR CENTERED ON RISER FOR STEP MOUNTING.	U.S. ARCHITECTURAL LIGHTING 4482–BLED–NW–120–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	15



SINGLE LINE NOTES

1. 3–500KCMIL CU–3"C OR 3–750KCMIL ALUM – 3–1/2"C
2. GROUND AND BOND SERVICE PER N.E.C. 250. #1/0 CU TO WATER LINE & BUILDING STEEL #6 CU TO GROUND ROD.
3. 3–500KCMIL + #2G – 3–1/2"C OR 3–750KCMIL + #1/0 ALUM. – 4"C.
4. PROVIDE #1/0 AWG BONDING JUMPER TO C/T CABINET ENCLOSURE TO ASSURE LOW IMPEDANCE FAULT PATH.



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.

PANELBOARD SCHEDULE

PANEL: LP–C
MAINS: 400A M.C.B.
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

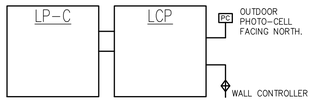
22 KAIC

	LOAD DESCRIPTION	NOTES	VOLT AMPS	C.B. AMP	P	A	B	C.B. P	C.B. AMP	VOLT AMPS	NOTES	LOAD DESCRIPTION	
1	STORAGE RECEPT.		540	20	1	1140		2	20	600		COURT LTS	2
3	STAGE RECEPT		360	20	1		960	2	20	600		.	4
5	STAGE RECEPT		360	20	1	428		2	20	68		WALK LTS	6
7	STAGE FLR RECEPT		360	20	1		428	2	20	68		.	8
9	SPARE		0	20	1	525		1	20	525		STEP LTS	10
11	SPARE		0	20	1		150	1	20	150		STEP LTS	12
13	SPARE		0	20	1	510		1	20	510		AMP. GEN LTS	14
15	SPARE		0	20	1		0			0		SPACE	16
17	SPARE		0	20	1	0				0		SPACE	18
19	SPARE		0	20	1		0			0		SPACE	20
21	SPACE		0			0				0		SPACE	22
23	SPACE		0				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	ERH–1		3000	35	2		4500	2	20	1500		EWH–1	36
37	.		3000	35	2	4500		2	20	1500		.	38
39	ERH–2		3000	35	2		4440	2	30	1440		PUMP STATION	40
41	.		3000	35	2	4440		2	30	1440		.	42
	HANDLE TIE					11543	10478						
	HANDLE LOCK					BALANCE 100%	95%						

TOTAL LOAD: 22021 TOTAL AMPS: 91.8

LIGHTING CONTROL RELAY PANEL SCHEDULE

UNIT LABEL ROOM LOCATION	ZONE DESCRIPTION	NO. OF ZONES	COIL VOLTS	CIRCUITS CONTROLLED	CONTROL SEQUENCE NOTES	NOTES
LCP AT LP–C	STEP LIGHTING	2	120	C10, C12	1 2	
	SIDEWALK LIGHTING	1	240	C6, C8	1 2	
	COURT LIGHTING	1	240	C2, C4	3	
	SPARE	4	120	SPARES		



LIGHTING CONTROL SYSTEM DIAGRAM

NO SCALE

LIGHTING CONTROL SCHEDULE NOTES

1. LIGHTING CONTROLLED BY ASTRONOMIC TIMER OR PHOTOCELL FOR ON & OFF FUNCTIONS SELECTED BY OWNER.
2. MANUAL ON/OFF AND DIMMING/SCENE THROUGH WALL CONTROLLER.
3. LIGHTING CONTROLLED BY ASTRONOMIC TIMER ON & OFF FUNCTIONS SELECTED BY OWNER.

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COVINGTON AMPHITHEATER
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ELECTRICAL FIXTURE SCHEDULE AND SINGLE LINE

DRAWN BY	CHECKED BY
JTH	JTH

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

E002
DATE

PROJECT NUMBER
300214-00010

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2	09/30/22	ISSUED FOR RE-BIDS
1	08/22/22	ISSUED FOR BIDS AND PERMIT
0	08/19/22	ISSUED FOR ODNR REVIEW

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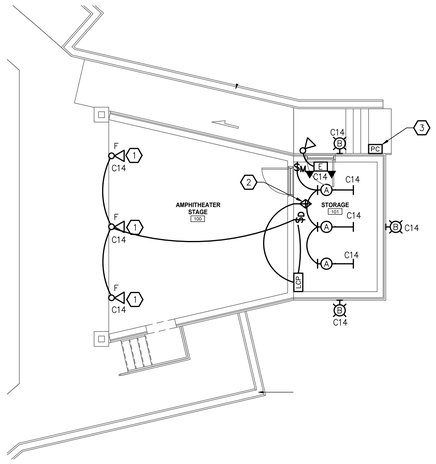
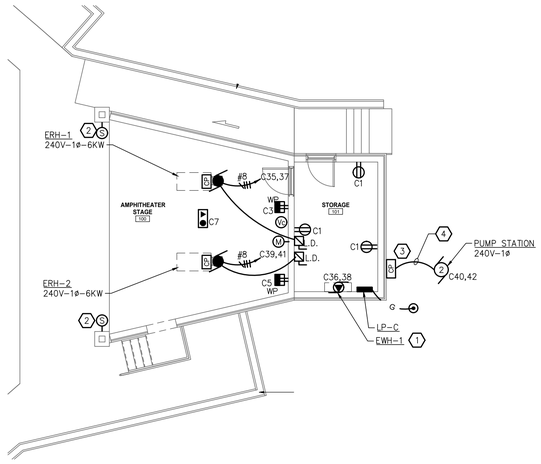


ELECTRICAL LIGHTING PLAN
SCALE: 1/8" = 1'-0"

PLAN NOTES

1. COORDINATE MOUNTING WITH ARCHITECT BEFORE ROUGH-IN.
2. LIGHTING CONTROLLER, REFERENCE DETAIL SHEET E002 FOR MORE INFORMATION ON CONTROL OF EXTERIOR LIGHTING ZONES.
3. REFERENCE DETAIL SHEET E002 FOR MORE INFORMATION



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

PLAN NOTES

1. WALL HEATER, 3KW-240V-1ø, SURFACE MOUNTED SLEEVE, FAN FORCED, WITH BUILT IN DISCONNECT AND THERMOSTAT. MOUNTED 12" AFF TO BOTTOM. MARKEL #H342ST-3420EX34 OREQ.
2. COORDINATE MOUNTING WITH ARCHITECT BEFORE ROUGH-IN.
3. PUMP STATION NEMA 4X STAINLESS STEEL CONTROL PANEL ENCLOSURE, ALARM AND NORMAL POWER LIGHT. E.C. SHALL COORDINATE WITH CIVIL/ARCHITECT FOR FINAL LOCATION BEFORE ROUGH-IN.
4. ALL UNDERGROUND CONDUITS SHALL BE LOCATE 18 INCHES BELOW GRADE MINIMUM. WHERE HAND DUG BURY A CONTINUOUS PLASTIC WARNING TAPE 12" DIRECTLY ABOVE CONDUIT.

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COVINGTON AMPHITHEATER
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COVINGTON, OH 45318

ELECTRICAL LIGHTING, POWER AND SYSTEM PLAN

DRAWN BY	CHECKED BY
JTH	JTH

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

E101
DATE

PROJECT NUMBER
300214-00010

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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.
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. E.C. SHALL LOCATE 1" SPARE CAPPED CONDUIT FROM PHASE 1, EXTEND AND CONNECT NEW FIXTURES THROUGH TIME SWITCH TO PANEL A26,28.
8. E.C. SHALL REFERENCE CIVIL AND ARCHITECTURE PLANS FOR MORE INFORMATION FOR UNDERGROUND CONDUITS AND CONNECTIONS TO STEP LIGHTING.
9. U.G. CONDUITS FOR LIGHTING POWER SHALL BE 1" MINIMUM.
10. U.G. CONDUITS FOR DIMMING CONTROL SHALL BE 1/2" MINIMUM. E.C. SHALL RUN IN THE SAME ROUTE AS CONDUITS FOR POWER TO EACH FIXTURE AS SHOWN.

GENERAL NOTES

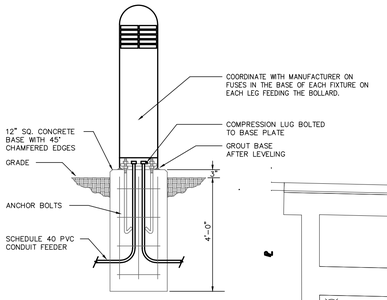
A. THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE CLOSELY DRAWN TO SCALE WHENEVER POSSIBLE TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, AND PRESERVE CLEARANCES. THE CONTRACTOR SHALL USE THIS DATA AS SUPPLEMENTAL INFORMATION AND ADJUST AS NECESSARY TO CONFORM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

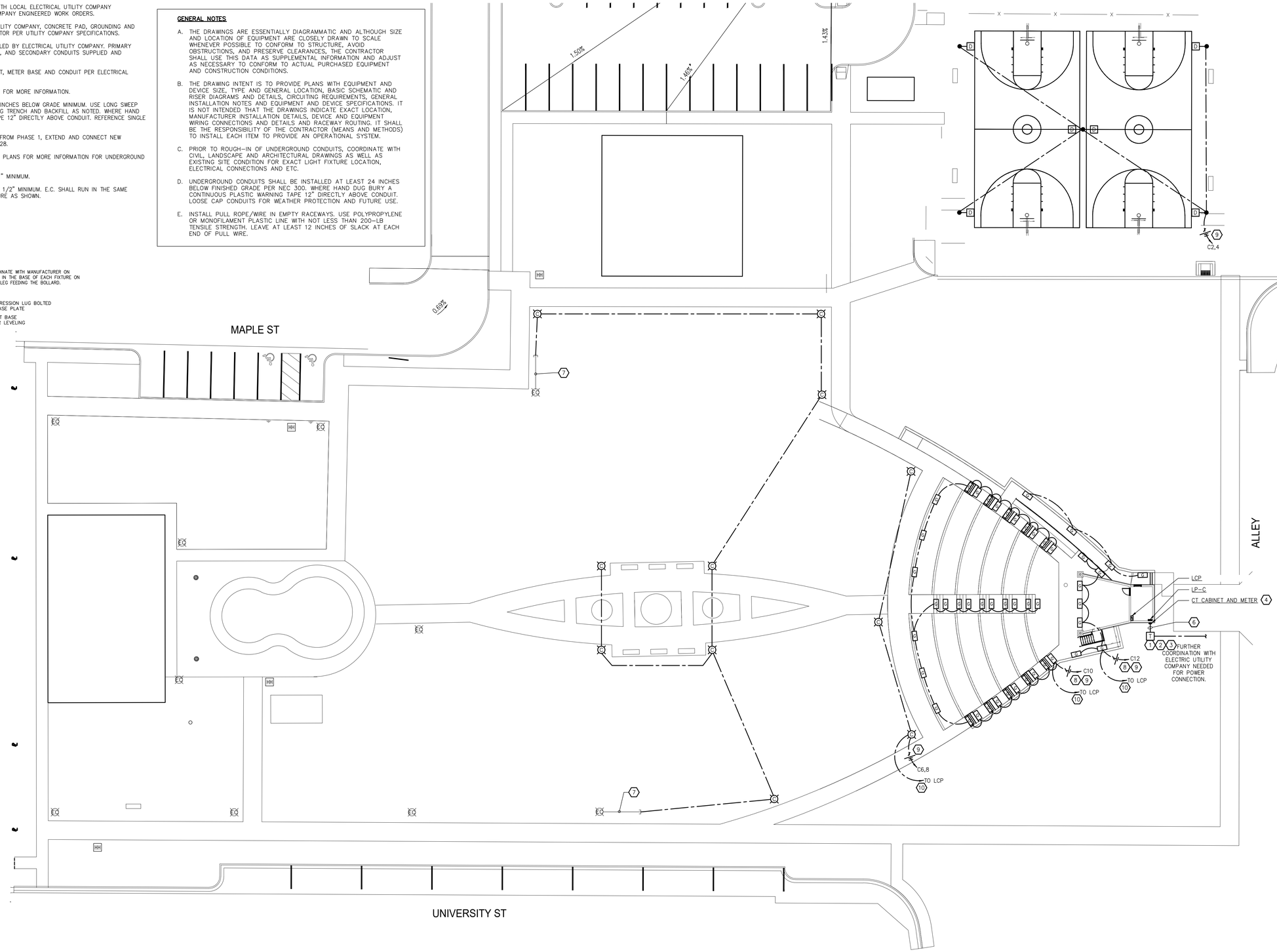
C. PRIOR TO ROUGH-IN OF UNDERGROUND CONDUITS, COORDINATE WITH CIVIL, LANDSCAPE AND ARCHITECTURAL DRAWINGS AS WELL AS EXISTING SITE CONDITION FOR EXACT LIGHT FIXTURE LOCATION, ELECTRICAL CONNECTIONS AND ETC.

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.



BOLLARD BASE DETAIL
NO SCALE



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

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COVINGTON AMPHITHEATER
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

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