BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WASTEWATER TREATMENT PLANT ULTRAVIOLET DISINFECTION

1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
PHONE: 734.665.6000 FAX: 734.213.3003
www.tetratech.com

TETRA TECH

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CALL MISS DIG
(800) 482-7171

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL CALL (800) 482-7171 A MINIMUM OF THREE (3) FULL WORKING DAYS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO EXCAVATING IN THE VICINITY OF UTILITY LINES. ALL "MISS DIG" PARTICIPATING MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

PROJECT LOCATION:

WEST BAY COUNTY REGIONAL WWTP
3933 PATERSON RD. BAY CITY, MI 48706

CLIENT INFORMATION:

BAY COUNTY, MICHIGAN

Tt PROJECT No.:

200-32557-22001

CLIENT PROJECT No.:

PROJECT DESCRIPTION / NOTES:

WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION

ISSUED:

ISSUED FOR BID - 9/15/2023

VICINITY MAP:

LOCATION MAP

GENERAL NOTES (ALL DRAWINGS):

1. THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE DRAWINGS. FOR ADDITIONAL INFORMATION REFER TO DRAWING NOTES AND PROJECT SPECIFICATIONS FOR FURTHER DETAILS AND REQUIREMENTS.
2. ALL EXISTING DIMENSIONS SHOWN WITH THE (+/-) SYMBOL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION. FIELD VERIFY UTILITY LOCATIONS.
3. THE INTENT OF THE DRAWINGS IS THAT THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND TRANSPORTATION NECESSARY FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THE PROJECT IN AN ACCEPTABLE MANNER, READY FOR USE BY THE OWNER.
4. THE CONTRACTOR SHALL REVIEW AND COORDINATE THE SCHEDULING OF ALL CONSTRUCTION WITH THE OWNER AND SUBMIT DETAILED CONSTRUCTION SCHEDULE PRIOR TO BEGINNING WORK.
5. ALL GENERAL NOTES APPLY TO THE SCOPE OF THIS PROJECT.
6. THE GENERAL CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION MEETS OR EXCEEDS APPLICABLE CODES AND STANDARD PRACTICES, INCLUDING ALL FEDERAL, STATE AND LOCAL BUILDING AND ACCESSIBILITY REQUIREMENTS AND REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY VIOLATION OF THE SAME AND SHALL MAKE ALL WORK ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION INVOLVED WITHOUT EXTRA CHARGE.
7. EACH TRADE SHALL VERIFY ALL REQUIREMENTS PERTAINING TO WORK PERFORMED IN THE PROJECT AND ANY REQUIRED PERMITS. ALL SUBCONTRACTORS SHALL DIRECT QUESTIONS, CHANGES OR REQUESTS THROUGH THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL SUBMIT ALL REQUESTS, CHANGES OR QUESTIONS TO THE OWNER'S REPRESENTATIVE IN WRITING.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL FEDERAL, STATE, AND LOCAL CODE REVIEW, PERMITTING AND ASSOCIATED FEES.
9. THE CONTRACTOR SHALL MEET ALL OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA), PART 1910 AND EQUIVALENT OSHA AND FEDERAL STANDARDS.
10. THE CONTRACTOR SHALL FOLLOW OWNER SOIL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS (SESC).
11. CONTRACTOR TO PROVIDE ANY AND ALL NECESSARY FENCES, BARRICADES, OR TRAFFIC CONTROLS TO ENSURE VEHICLE AND PERSONNEL SAFETY AND ADEQUATELY PROTECT THE SITE AT ALL TIMES.
12. PROVIDE ADEQUATE PROTECTION TO PREVENT DAMAGE TO ADJACENT STRUCTURES.
13. CONTRACTOR SHALL COORDINATE WITH OWNER AND ENGINEER FOR ALL RELOCATING AND REROUTING OF EQUIPMENT, PIPING, CONDUIT, ETC.
14. ALL HARDWARE SHALL BE 304 STAINLESS STEEL INCLUDING NUTS, BOLTS, WASHER, ANCHORS, STRUTS, ETC. FOR ALL DRAWINGS. ANY REFERENCES IN ANY SPECIFICATION OR ANY DRAWING REFERRING TO 304 STAINLESS STEEL SHALL HAVE PRECEDENCE OVER STANDARD DETAILS, AND PROJECT MANUAL/SPECIFICATIONS.
15. ALL EXISTING SITE CONDITIONS SHOWN ON THE PLANS ARE FOR REFERENCE ONLY.
16. NO PIPES, CONDUIT, ETC. MAY BE EMBEDDED IN CONCRETE FLOORS, WALLS, OR CEILING UNLESS APPROVED BY ENGINEER.
17. UNDERGROUND UTILITIES ARE APPROXIMATE LOCATIONS ONLY. UNDERGROUND UTILITY LOCATIONS HAVE NOT BEEN FIELD VERIFIED. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL UNDERGROUND UTILITIES. ALL EX. UTILITIES MAY NOT BE SHOWN.
18. CONTRACTOR SHALL NOT UTILIZE ANY PAVED ROADWAYS FOR TRACK EQUIPMENT OPERATION OR STORAGE. ALL DAMAGED ROADWAYS CAUSED BY CONTRACTOR TO BE REPAIRED AT CONTRACTORS EXPENSE.
19. THE CONTRACTOR AND SUBCONTRACTOR SHALL MAKE A PERSONAL INVESTIGATION OF THE SITE AND EXISTING SURFACE AND SUBSURFACE CONDITIONS. THE CONTRACTOR IS RESPONSIBLE TO ACCQUAINT THEMSELVES WITH CONDITIONS OF THE WORK AREA. THE CONTRACTOR IS ADVISED TO DETERMINE THE SUBSURFACE SOIL AND GROUND WATER CONDITIONS. DEWATERING, IF DETERMINED BY NECESSARY BY THE CONTRACTOR AND IF NOT SPECIFICALLY CALLED OUT IN THE CONTRACT DOCUMENTS, WILL BE INCIDENTAL TO THE COST OF INSTALLATION.
20. ALL DISTURBED AREAS SHALL BE RESTORED.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PROPERTY, INCLUDING EXISTING FENCING, LAWN, TREES AND SHRUBBERY.
22. CONTRACTOR TO PROVIDE DEWATERING AS REQUIRED FOR THE WORK.
21. DO NOT LEAVE ANY OPENINGS UNCOVERED AT END OF WORKING DAY, DURING WIND-DRIVEN PRECIPITATION, OR DURING EXCESSIVELY COLD WEATHER.

GENERAL DEMOLITION NOTES (ALL DRAWINGS):

1. DEMOLITION DRAWINGS MAY NOT SHOW ALL DEMOLITION WORK REQUIRED UNDER THIS CONTRACT. OTHER CONTRACT DRAWINGS MAY ALSO SHOW DEMOLITION WORK. COORDINATE DEMOLITION WITH REQUIREMENTS LISTED IN SECTION 01110 OF THE PROJECT MANUAL.
2. SITE INVESTIGATION PRIOR TO BIDS IS STRONGLY RECOMMENDED TO DETERMINE THE COMPLETE EXTENTS OF DEMOLITION REQUIRED. THESE DRAWINGS DO NOT INDICATE ALL MATERIALS THAT ARE TO BE REMOVED OR REROUTED IN AREA OF PROPOSED WORK.
3. PRIOR TO STARTING WORK THE DEMOLITION CONTRACTOR IS TO FIELD VERIFY NOTED AREAS OF DEMOLITION TO DETERMINE ACTUAL SCOPE OF DEMOLITION, AND TO REVIEW SCOPE WITH THE OWNER'S REPRESENTATIVE TO CONFIRM SPECIFIC ITEMS TO BE SALVAGED AND STORED FOR REUSE.
4. COORDINATE WITH OWNER DURING ANY INTERRUPTION OF SERVICE, SO THAT THAT OPERATION OF THE PROCESS EQUIPMENT IS NOT EFFECTED. SEE SPECIFICATIONS 01110 - SUMMARY OF WORK FOR ADDITIONAL REQUIREMENTS. REVIEW WORK ITEMS WITH ENGINEER PRIOR TO PERFORMING WORK.
5. PRIOR TO THE START OF ANY DEMOLITION WORK, COORDINATE WITH PLANT OPERATORS THE LOCATION OF ALL UTILITIES. PLANT LOCK OUT/TAG OUT PROCEDURES SHALL BE STRICTLY FOLLOWED.
6. EXPANSION AND ANCHOR BOLTS REMAINING IN WALL, CEILINGS OR FLOORS SHALL BE POUNDED OR CUT FLUSH WITH SURFACE. IN FINISHED AREAS THEY SHALL BE RECESSED AND PATCHED TO MATCH EXISTING FINISH.
7. ALL OPENINGS REMAINING IN FLOORS, WALLS, OR CEILINGS, INCLUDING SLEEVES, AFTER PIPING AND DUCT DEMOLITION SHALL BE PATCHED TO MATCHING EXISTING FINISH AND AS DETAILED ON DRAWINGS.
8. CAP AND BLIND FLANGE MATERIAL TO BE SAME AS PIPE BEING CAPPED.
9. PROMPTLY PATCH AND REPAIR DAMAGE CAUSED TO ADJACENT BUILDING ELEMENTS BY DEMOLITION WORK. RESTORE EXPOSED FINISHES OF PATCHED AREAS IN A MANNER THAT ELIMINATES EVIDENCE OF PATCHING AND REFINISHING.
10. OWNER RESERVES RIGHT TO RETAIN ANY EQUIPMENT OR MATERIALS REMOVED UNDER THIS CONTRACT. CONTRACTOR IS RESPONSIBLE TO HAUL AND DISPOSE OF OFFSITE ALL REMAINING REMOVED EQUIPMENT, MATERIAL, PIPING, CONDUIT, SOILS AND DEBRIS, NOT RETAINED BY OWNER, IN ACCORDANCE WITH ALL APPLICABLE CODES, LAWS, AND ORDINANCES.
11. CONTRACTOR IS RESPONSIBLE TO PROVIDE AND MAINTAIN SHORING, BRACING, OR STRUCTURAL SUPPORT TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF ITEMS TO BE SELECTIVELY DEMOLISHED OR STABILIZED AND ITEMS WHICH ARE IMMEDIATELY ADJACENT TO THOSE BEING REMOVED. CONTRACTOR SHALL HIRE A LICENSED STRUCTURAL ENGINEER TO PROPERLY DESIGN ANY SHORING OR TEMPORARY SUPPORTS THAT MAY BE REQUIRED DURING THE DEMOLITION PHASE.
12. NO BURNING SHALL BE PERMITTED ON THIS PROJECT.
13. BLASTING IS PROHIBITED ON THIS PROJECT.
14. WHEN EQUIPMENT ITEMS ARE INDICATED FOR DEMOLITION, ALL ANCILLARY UTILITIES, ELECTRICAL ITEMS, CONCRETE SUPPORTS AND STRUCTURAL STEEL SUPPORTS SHALL BE COMPLETELY REMOVED UNLESS INDICATED OTHERWISE. ALL THE ABOVE MENTIONED ITEMS MAY NOT BE INDICATED ON THE DRAWINGS. SITE VISIT PRIOR TO BID DATE IS RECOMMENDED TO QUANTIFY COMPLETE EXTENT OF EQUIPMENT DEMOLITION.
15. CONCRETE FLOOR SLABS UNDER DEMOLISHED CONCRETE EQUIPMENT PADS, THAT WILL BE EXPOSED IN THE FINISHED CONSTRUCTION SHALL BE PATCHED SMOOTH AND ANY DOWELS OR ANCHORS SHALL BE CUT OFF 2" BELOW THE SURFACE AND PATCHED SMOOTH. IF REQUIRED, EXISTING FLOOR SURFACE SHALL BE CHIPPED OR ROUGHENED AND PATCH APPLIED OVER BONDING AGENT.
16. ALL PIPING SHOWN AS BEING DEMOLISHED SHALL BE COMPLETELY REMOVED INCLUDING INSULATION, HANGERS, EXPANSION AND ANCHOR BOLTS AND PIPE SUPPORTS. CAP PIPES LEFT IN PLACE AS REQUIRED. CONTRACTOR SHALL REMOVE PIPE CONTENTS AS WELL WHICH MAY CONTAIN WATER, SLUDGE, WASTEWATER, ETC.
17. FLOORS, WALLS, AND CEILING SURFACES ARE TO BE CLEANED IN EACH AREA AFTER DEMOLITION IS COMPLETE. THE WALLS SHALL BE WET BRUSHED, SCRAPPED, SWEEP, ETC. AS REQUIRED TO REMOVE DIRT, LOOSE CRYSTAL, SCALE, RUST, AND DUST FROM SURFACES PRIOR TO PAINTING OF PIPING. FLOORS ARE TO BE POWER WASHED.
18. FLOOR DRAINS SHALL BE PROTECTED FROM DIRT AND DEBRIS.
19. PIPE, CONCRETE, ASPHALT, ETC. TO BE REMOVED AND REPLACED IS TO BE REPLACED IN KIND UNLESS NOTED OTHERWISE.
20. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL MATERIALS GENERATED DURING DEMOLITION WORK.

TETRA TECH
www.tetratech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
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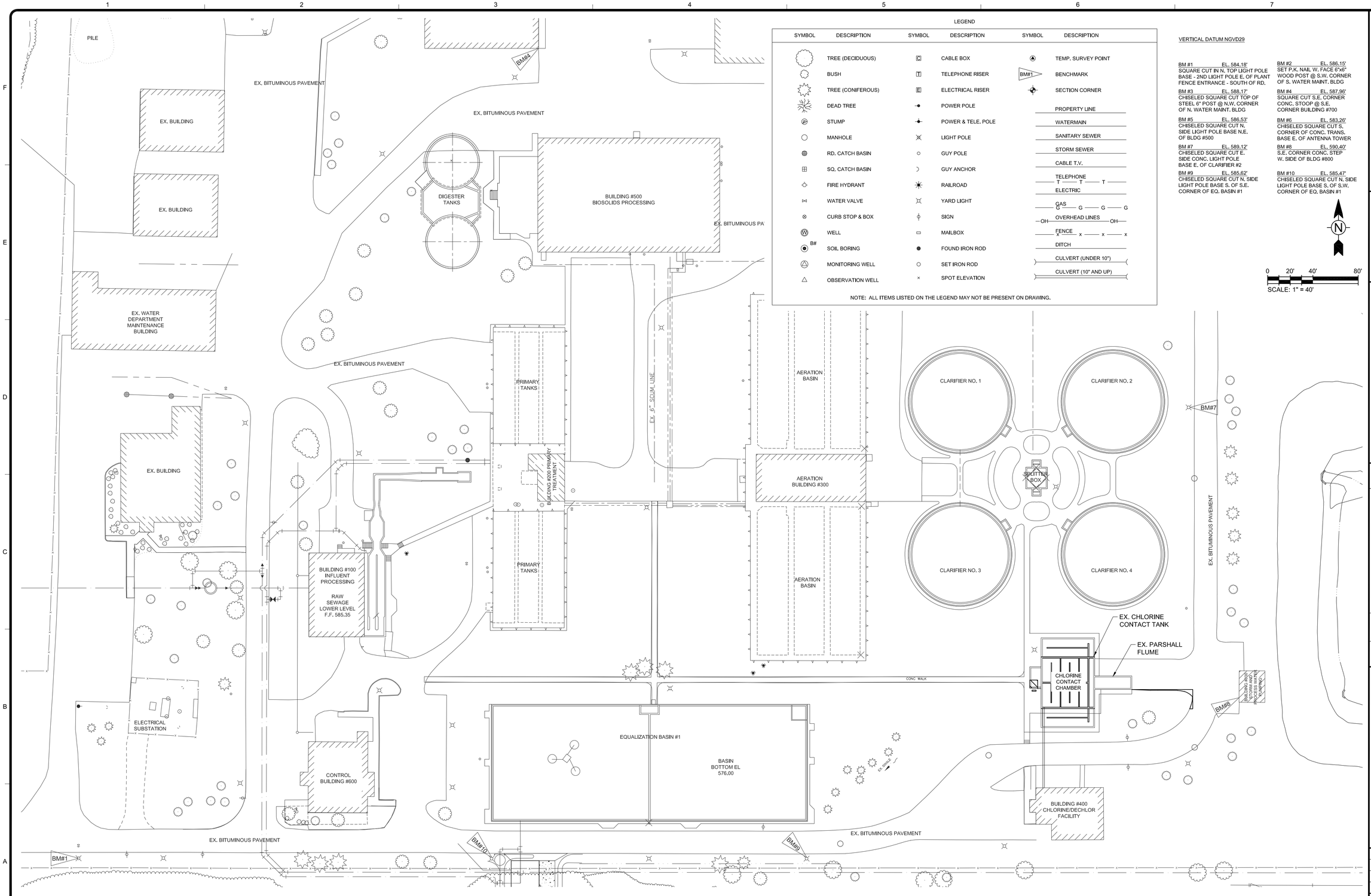
MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
GENERAL NOTES

PROJ:	200-325577-22001
DESN:	MAT
DRWN:	____
CHKD:	____

G-002

Bar Measures 1 inch, otherwise drawing not to scale



LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	TREE (DECIDUOUS)	CB	CABLE BOX		TEMP. SURVEY POINT
	BUSH	TR	TELEPHONE RISER	BM#1	BENCHMARK
	TREE (CONIFEROUS)	ER	ELECTRICAL RISER		SECTION CORNER
	DEAD TREE		POWER POLE		PROPERTY LINE
	STUMP		POWER & TELE. POLE		WATERMAIN
	MANHOLE		LIGHT POLE		SANITARY SEWER
	RD. CATCH BASIN		GUY POLE		STORM SEWER
	SQ. CATCH BASIN		GUY ANCHOR		CABLE T.V.
	FIRE HYDRANT		RAILROAD	T T T	TELEPHONE
	WATER VALVE		YARD LIGHT		ELECTRIC
	CURB STOP & BOX		SIGN	G G G	GAS
W	WELL	MB	MAILBOX	OH OH	OVERHEAD LINES
B#	SOIL BORING		FOUND IRON ROD	x x x	FENCE
	MONITORING WELL		SET IRON ROD		DITCH
	OBSERVATION WELL	×	SPOT ELEVATION		CULVERT (UNDER 10")
					CULVERT (10" AND UP)

NOTE: ALL ITEMS LISTED ON THE LEGEND MAY NOT BE PRESENT ON DRAWING.

VERTICAL DATUM NGVD29

BM #1 EL. 584.18'
SQUARE CUT IN N. TOP LIGHT POLE BASE - 2ND LIGHT POLE E. OF PLANT FENCE ENTRANCE - SOUTH OF RD.

BM #2 EL. 586.15'
SET P.K. NAIL W. FACE 6"x6" WOOD POST @ S.W. CORNER OF S. WATER MAINT. BLDG

BM #3 EL. 588.17'
CHISELED SQUARE CUT TOP OF STEEL 6" POST @ N.W. CORNER OF N. WATER MAINT. BLDG

BM #4 EL. 587.96'
SQUARE CUT S.E. CORNER CONC. STOOP @ S.E. CORNER BUILDING #700

BM #5 EL. 586.53'
CHISELED SQUARE CUT N. SIDE LIGHT POLE BASE N.E. OF BLDG #500

BM #6 EL. 583.26'
CHISELED SQUARE CUT S. CORNER OF CONC. TRANS. BASE E. OF ANTENNA TOWER

BM #7 EL. 589.12'
CHISELED SQUARE CUT E. SIDE CONC. LIGHT POLE BASE E. OF CLARIFIER #2

BM #8 EL. 590.40'
S.E. CORNER CONC. STEP W. SIDE OF BLDG #600

BM #9 EL. 585.62'
CHISELED SQUARE CUT N. SIDE LIGHT POLE BASE S. OF S.E. CORNER OF EQ. BASIN #1

BM #10 EL. 585.47'
CHISELED SQUARE CUT N. SIDE LIGHT POLE BASE S. OF S.W. CORNER OF EQ. BASIN #1

N

0 20' 40' 80'
SCALE: 1" = 40'

EXISTING SITE PLAN
SCALE: 1" = 40'

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BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
EXISTING OVERALL SITE PLAN

PROJ:	200-325577-22001
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CHKD:	___

G-101
Sheet ####

Bar Measures 1 inch, otherwise drawing not to scale

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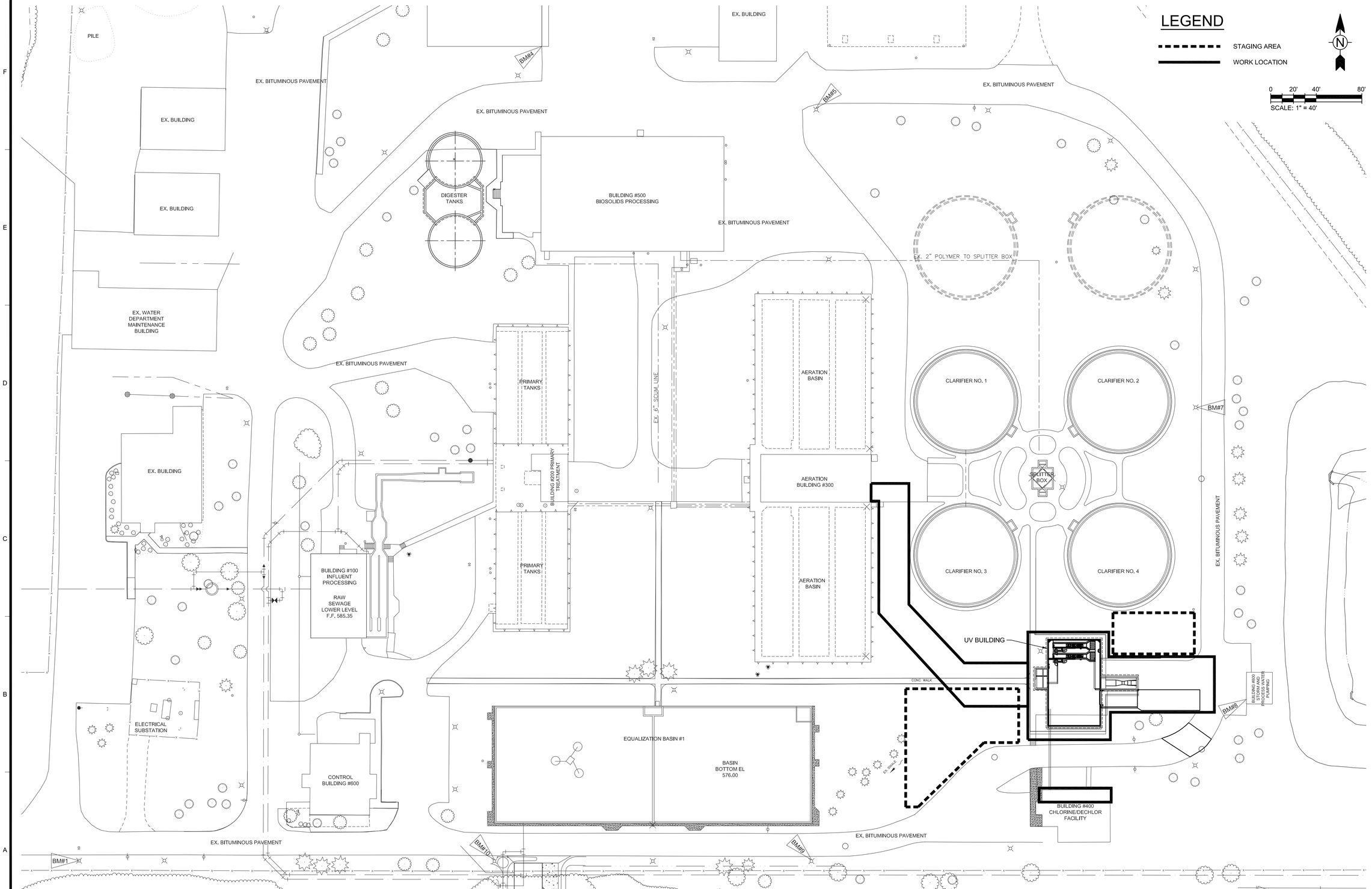

PROPOSED SITE PLAN

SCALE: 1" = 40'

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ANN ARBOR, MI 48108
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1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN

WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION

PROPOSED OVERALL SITE PLAN

PROJ: 200-325577-22001
DESN: MAT
DRWN:
CHKD:

G-102
Sheet #####

Bar Measures 1 inch, otherwise drawing not to scale

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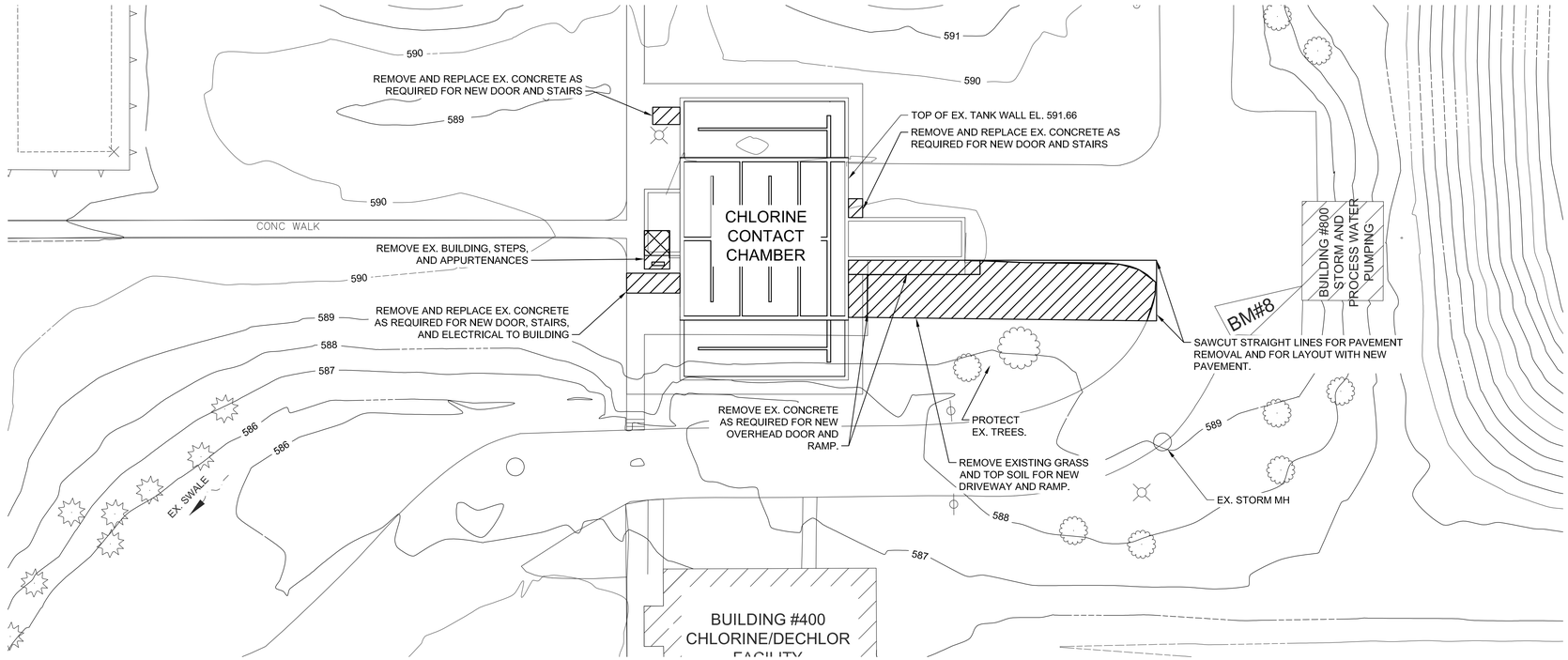
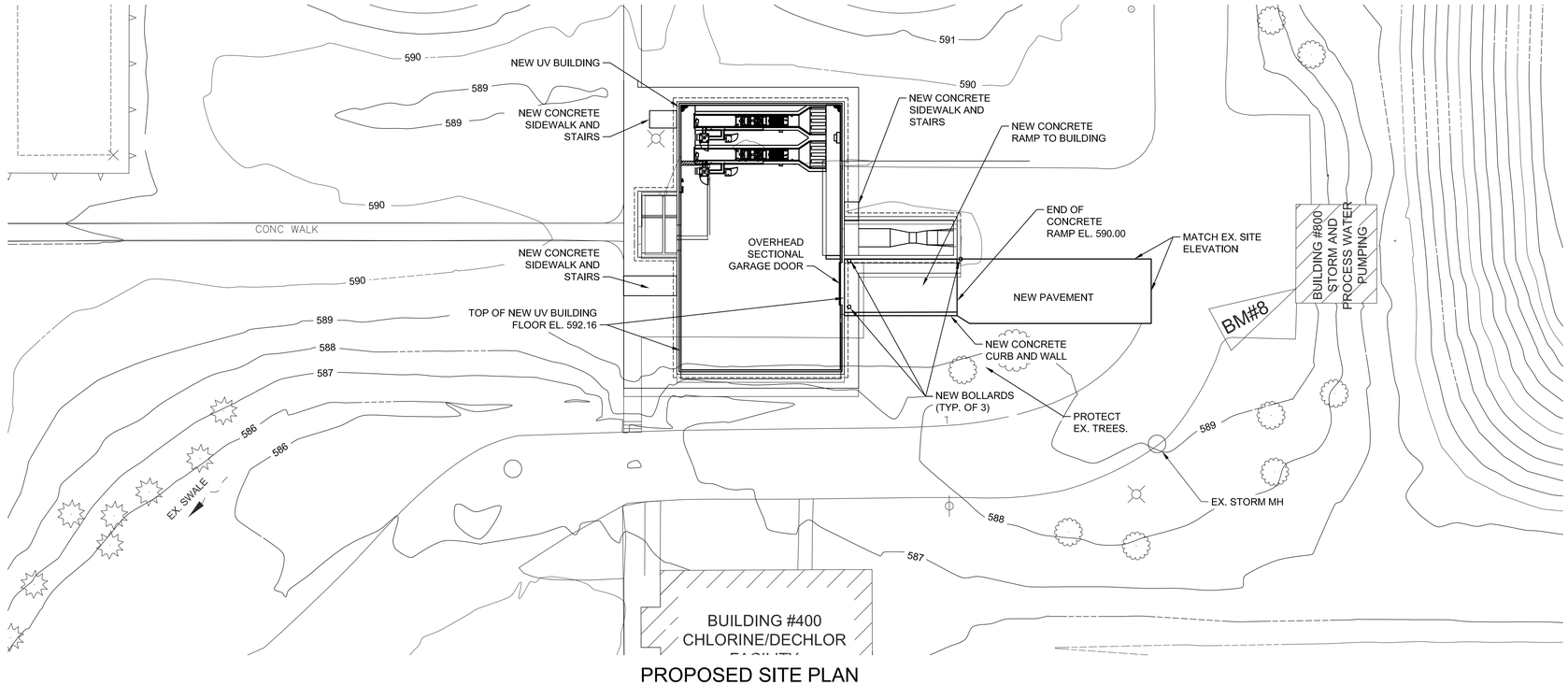


EXISTING SITE PLAN

SCALE: 1" = 20'



PROPOSED SITE PLAN

SCALE: 1" = 20'

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1	9/15/23	ISSUED FOR BIDS	

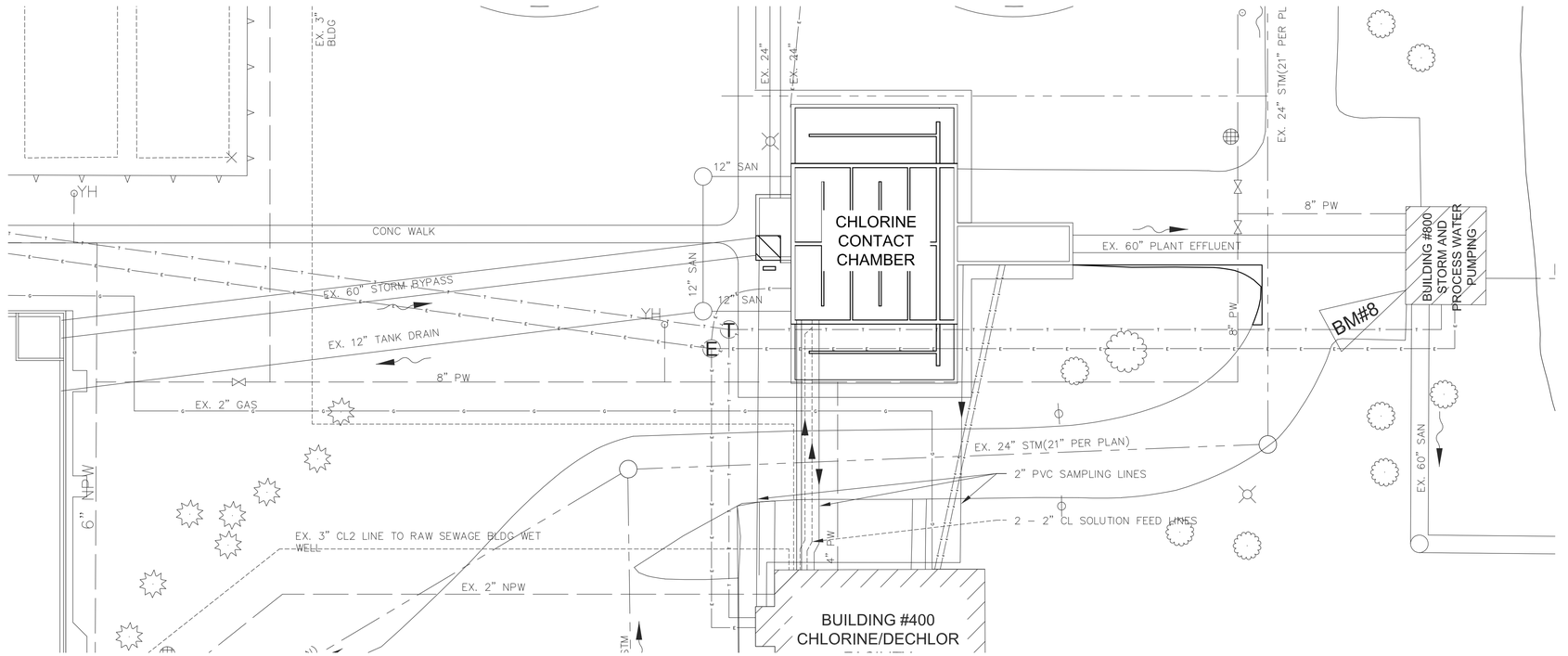
BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION

EXISTING AND PROPOSED PARTIAL SITE PLAN

PROJ:	200-325577-22001
DESN:	MAT
DRWN:	___
CHKD:	___

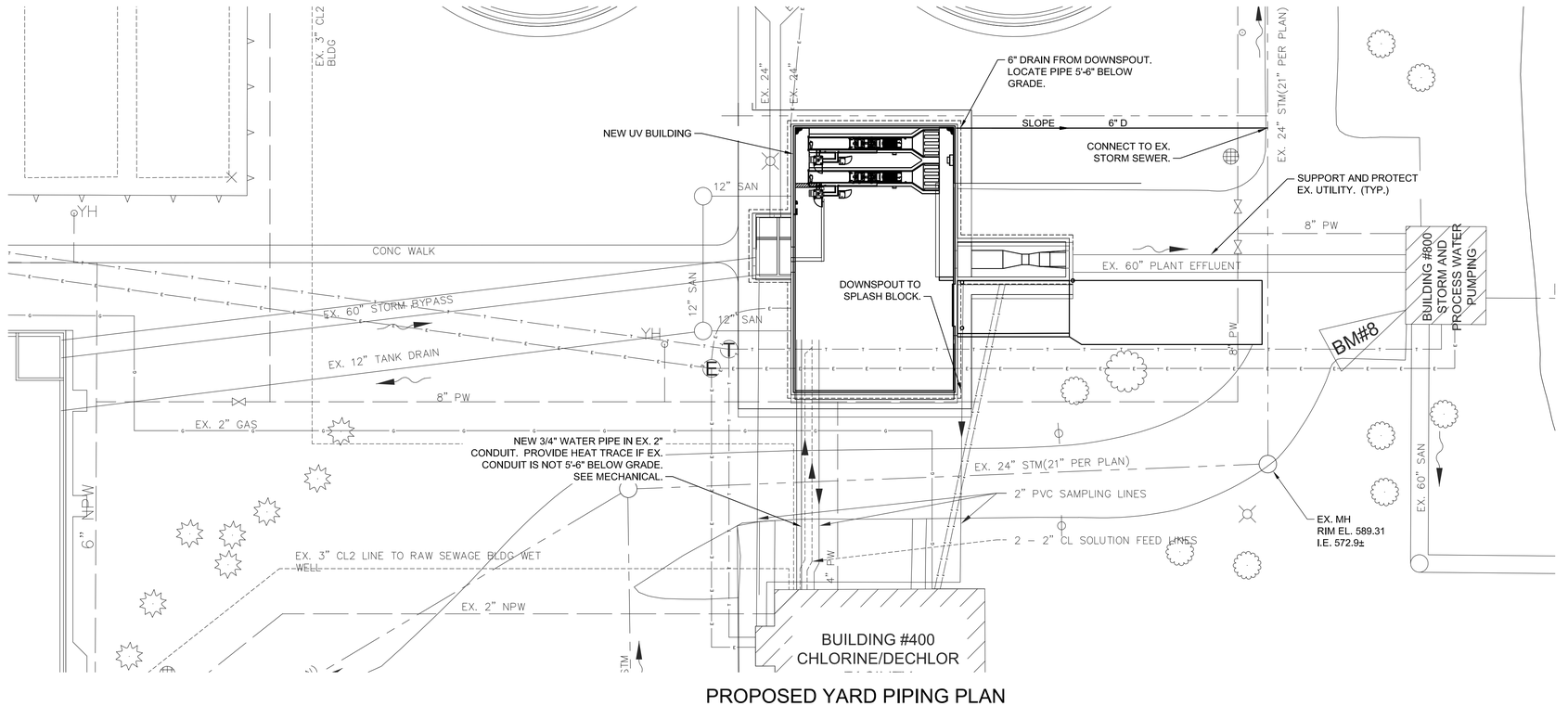
C-101
Sheet #####

Bar Measures 1 inch, otherwise drawing not to scale



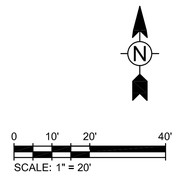
EXISTING YARD PIPING PLAN

SCALE: 1" = 20'



PROPOSED YARD PIPING PLAN

SCALE: 1" = 20'



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MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN

WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION

EXISTING AND PROPOSED PARTIAL YARD PIPING PLAN

PROJ:	200-325577-22001
DESN:	MAT
DRWN:	___
CHKD:	___

C-102

Sheet ####

Bar Measures 1 inch, otherwise drawing not to scale

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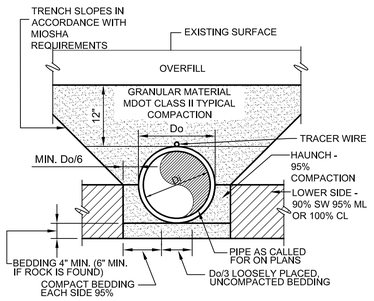
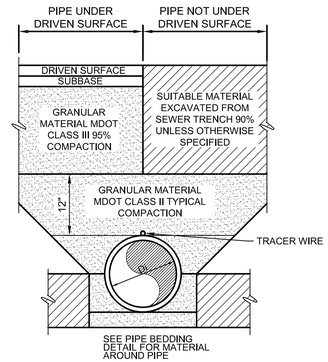
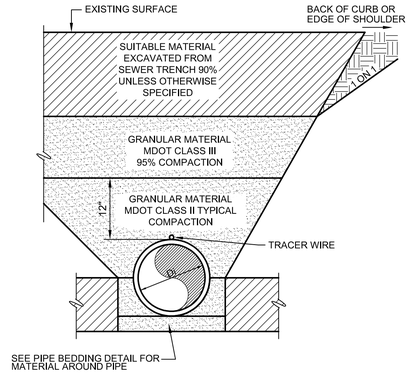
NOTES:
1. COMPACTION PRESENTED AS MINIMUM STANDARD PROCTOR VALUES.
2. MATERIALS AROUND THERMOPLASTIC PIPE WITH DIAMETER < 6 INCHES SHALL PASS 0.5 INCH SIEVE, MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SIEVE.
3. DRIVEN SURFACE IS DRIVEWAY, PARKING AREA, ROAD BED OR SHOULDER.
4. UTILITY TRENCHES LOCATED WITHIN A MDOT ROW SHALL CONFORM TO MDOT STANDARD DETAIL R-83.
5. FOR ALL EXCAVATION WITHIN THE WETLAND LIMITS THE TOP TWO FEET OF TOP SOIL SHOULD BE STOCKPILED ON SITE AND SHALL BE REPLACED IN THE SAME LOCATION.
6. 12-INCHES WITHIN WATER MAIN SHALL BE BEDDED WITH MDOT CLASS IIIA GRANULAR MATERIAL
7. MDOT 6A TO BE USED FOR PIPE BEDDING FOR PVC SEWER PIPES AND IN AREAS WITH HIGH WATER TABLE



PIPE BEDDING

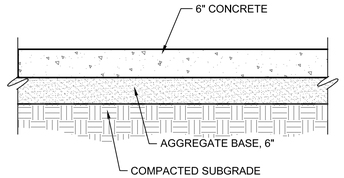


PIPE UNDER/NOT UNDER DRIVEN SURFACE

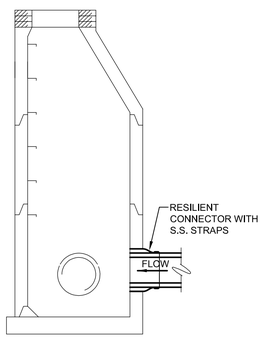


PIPE WITHIN INFLUENCE OF DRIVEN SURFACE

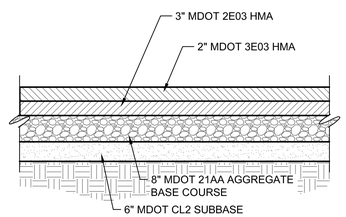
TRENCH EXCAVATION & PIPE BEDDING



TYPICAL CONCRETE DRIVE SECTION
NO SCALE



PIPE BOOT ON EX. STORM MANHOLE
NO SCALE



HEAVY DUTY HMA PAVEMENT SECTION
NO SCALE

TETRA TECH
www.tetratech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
PHONE: 734.665.6000, FAX: 734.213.3003

MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
DETAILS

PROJ:	200-325577-22001
DESN:	MAT
DRWN:	___
CHKD:	___

C-501

Bar Measures 1 inch, otherwise drawing not to scale

ABBREVIATIONS

A	--------------------
A LABEL	A LABEL CLASS DOOR
A/C	AIR CONDITIONING UNIT
AB	ANCHOR BOLT
ABDN	ABANDON
ACC	ACCESSIBLE
ACI	AMERICAN CONCRETE INSTITUTE
ACOUST	ACOUSTIC(AL)
ACP	ACOUSTICAL CEILING PANEL
ACS	AUTOMATIC CONTROL SYSTEM
ACT	ACOUSTICAL CEILING TILE
ACU	AIR CONDITIONING UNIT
ADA	AMERICANS WITH DISABILITIES ACT
ADD	ADDITIONAL
ADMIN	ADMINISTRATION
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHU	AIR HANDLING UNIT
AIB	AIR INFILTRATION BARRIER
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZE
APPROX	APPROXIMATE(LY)
APVD	APPROVED
AR	AS REQUIRED
ARCH	ARCHITECT(URAL)
ASC	ABOVE SUSPENDED CEILING
ASSY	ASSEMBLY
ATFP	ANTI-TERRORISM / FORCE PROTECTION
AVG	AVERAGE
AW	ARCHITECTURAL WOODWORK
AWT	ACOUSTICAL WALL TREATMENT
B	--------------------
B LABEL	B LABEL CLASS DOOR
BALC	BALCONY
BB	BASEBOARD
BD	BOARD
BFF	BELOW FINISH FLOOR
BHMA	BUILDER'S HARDWARE MANUFACTURER'S ASSOCIATION
BL	BASELINE
BLDG	BUILDING
BLKG	BLOCKING
BLT IN	BUILT-IN
BM	BEAM
BN	BULLNOSE
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BP	BUILDING PAPER
BRG	BEARING
BRKT	BRACKET
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT UP ROOF
C	--------------------
C	CENTER POINT
C CONC	CAST CONCRETE
C LABLE	C LABEL CLASS DOOR
C-C	CENTER TO CENTER
CAB	CABLE
CATW	CATWALK
CAV	CAVITY
CB	CEMENTITIOUS (BACKER) BOARD
CBB	CEMENTITIOUS BACKER BOARD
CD	CONSTRUCTION DOCUMENT(S)
CDW	CHILLED DRINKING WATER
CEM PLAS	CEMENT PLASTER
CER	CERAMIC
CF	CONTRACTOR FURNISHED
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED
CFE	CONTRACTOR FURNISHED EQUIPMENT
CFLG	COUNTER FLASHING
CFM	CUBIC FEET PER MINUTE
CFMF	COLD FORM METAL FRAMING
CFS	CUBIC FEET PER SECOND
CFT	CERAMIC FLOOR TILE
CG	CORNER GUARD
CI	CAST IRON
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLG DIFF	CEILING DIFFUSER
CLG HT	CEILING HEIGHT
CLL	COLUMN LINE
CLO	CLOSET
CLR	CLEAR
CLRM	CLASSROOM
CMU	CONCRETE MASONRY UNIT
CNDS	CONDENSATE
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATIONS
CONC	CONCRETE
CONC FLR	CONCRETE FLOOR
CONF	CONFERENCE
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CORR	CORRIDOR
CP	CONCRETE PIPE
CPT	CARPET
CR	CONTROL ROOM
CS	CAST STONE
CSWK	CASEWORK
CT	CERAMIC TILE
CTB	CERAMIC TILE - BASE
CTF	CERAMIC TILE - FLOOR
CTR	CENTER
CTW	CERAMIC TILE - WALL
CU FT	CUBIC FEET
CW	CASEMENT WINDOW
CWT	CERAMIC WALL TILE
D	--------------------
D	DEPTH
D LABEL	D LABEL CLASS DOOR
DBL	DOUBLE
DEMO	DEMOLISH
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DK	DECK
DN	DOWN
DOC	DOCUMENT
DR	DOOR
DS	DOWNSPOUT
DWG(S)	DRAWING(S)
E	--------------------
E	EAST
E LABEL	E LABEL CLASS DOOR
EA	EACH
EF	EACH FACE
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATOR
ELEC	ELECTRIC(AL)
ELEV	ELEVATION
ENGR	ENGINEER
ENTR	ENTRY
EOG	EDGE OF GUTTER
EP	EXPLOSION PROOF
EPS	EXPANDED POLYSTYRENE BOARD
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP	EXPOSED
EXP AB	EXPANSION ANCHOR BOLT
EXPN	EXPANSION
EXPT	EXTERIOR PAINT
EXT	EXTERIOR
EXT GR	EXTERIOR GRADE
F	--------------------
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FAS BD	FASCIA BOARD
FC BRK	FACE BRICK
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDTN	FOUNDATION
FEC	FIRE EXTINGUISHER CABINET
FED	FEDERAL
FF	FINISH FLOOR
FF INSUL	FOIL FACED INSULAITON
FFE	FINISH FLOOR ELEVATION
FG	FINISH GRADE
FGL	FIBERGLASS
FH	FIRE HOSE
FIG	FIGURE
FIN	FINISH (ED)
FIXT	FIXTURE
FL	FLOOR
FLDG	FOLDING
FLEX	FLEXIBLE
FLMT	FLUSH MOUNTED
FLR	FLOOR
FLUOR	FLUORESCENT
FM	FACTORY MUTUAL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STEEL
FR	FIRE RESISTANT
FRG	FIBER REINFORCED GYPSUM
FRMG	FRAMING
FRP	FIBERGLASS REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED
FT	FOOT
FTG	FOOTING
FUR	FURRING
FWC	FABRIC WALLCOVERING
G	--------------------
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GFCI	GOVERNMENT FURNISHED / CONTRACTOR INSTALLED
GFCMU	GROUND FACE CONCRETE MASONRY UNIT
GL	GRID LINE
GLZ	GLAZING
GR FL	GROUND FLOOR
GRTG	GRATING
GS	GRATING SUPPORT
GV	GRAVEL
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
H	--------------------
H	HORN
HB	HOSE BIB
HC	HOLLOW CORE
HDPE	HIGH DENSITY POLYETHYLENE
HDW	HARDWARE
HDWD	HARDWOOD
HEPA	HIGH EFFICIENCY PARTICULATE AIR FILTER
HGT	HEIGHT
HK	HOOK
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HT	HEIGHT
HVAC	HEATING VENTILATION AND AIR CONDITIONING
HW, HDWR	HARDWARE
HYD	HYDRAULIC
I	--------------------
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORM
IF	INSIDE FACE
IG	INSULATING GLASS
IJ	ISOLATION JOINT
ILO	IN LIEU OF
IN	INCH
INCAND	INCANDESCENT
INSUL	INSULATION
IRP	INSULATED ROOF PANEL
ITG	INSULATED TEMPERED GLASS
IWP	INSULATED WALL PANEL
J	--------------------
J	JUNCTION BOX
JAN	JANITOR
JST	JOIST
JT	JOINT
K	--------------------
KIT	KITCHEN
KPD	KEYPAD
KPL	KICKPLATE
L	--------------------
LAM	LAMINATE
LAV	LAVATORY
LBR	LUMBER
LBS	POUNDS
LDG	LANDING
LF	LINEAR FOOT (FEET)
LG	LONG
LIB	LIBRARY
LIN	LINEAR
LKR	LOCKER
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LNT	LINTEL
LOC	LOCATION
LP	LIGHT POLE
LS	LABORATORY SINK
LT	LIGHT
LVDR	LOUVER DOOR
LVR	LOUVER
M	--------------------
M	METERS
MATL	MATERIAL
MAX	MAXIMUM
MB	MOISTURE BARRIER
MC	MOISTURE CONTENT
MD	METAL DECK
MECH	MECHANICAL (ROOM)
MEMB	MEMBRANE
MF	MILL FINISH
MFR	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MIRR	MIRROR
MO	MASONRY OPENING
MOD	MODIFY
MRGWB	MOISTURE RESISTANT GYPSUM WALLBOARD
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MWP	MEMBRANE WATERPROOFING
N	--------------------
N	NORTH
NA	NOT APPLICABLE
ND	NAPKIN DISPOSAL
NDS	NAPKIN DISPENSER
NE	NORTH EAST
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NP	NO PAINT
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
NW	NORTHWEST
O	--------------------
O TO O	OUT TO OUT
OA	OVERALL
OC	ON CENTER
OCC	OCCUPANCY
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFD	OVERFLOW DRAIN
OFF	OFFICE
OFOI	OWNER FURNISHED OWNER INSTALLED
OGL	OBSCURE GLASS
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OPQ	OPAQUE
OPR	OPERABLE
ORIG	ORIGINAL
OSB	ORIENTED STRAND BOARD
OTS	OPEN TO STRUCTURE
OWSJ	OPEN WEB STEEL JOINT
OZ	OUNCE
P	--------------------
PA	PUBLIC ADDRESS
PAR	PARAPET
PAT	PATTERN
PB	PULL BOX
PBD	PARTICLE BOARD
PCC	PRECAST CONCRETE
PCF	POUND PER CUBIC FOOT
PCT	PERCENT
PEMB	PRE-ENGINEERED METAL BUILDING
PERF	PERFORATED
PERM	PERIMETER
PERP	PERPENDICULAR
PH	PHASE
PIL	PILASTER
PL	PROPERTY LINE
PL GL	PLATE GLASS
PLAM	PLASTIC LAMINATE
PLAS	PLASTIC
PLBG	PLUMBING
PLG	PILING
PLYWD	PLYWOOD
PNL	PANEL
POC	POINT OF CONTACT
POLY	POLYSTYRENE
PP PL	PUSH/PULL PLATE
PR	PAIR
PRCST	PRECAST
PREFAB	PREFABRICATED
PRKG	PARKING
PS CONC	PRESTRESSED CONCRETE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTD	PAPER TOWEL DISPENSER
PTDR	PAPER TOWEL DISPENSER AND RECEPTACLE
PTN	PARTITION
PWR	POWER
Q	--------------------
QT	QUARRY TILE
QTY	QUANTITY
R	--------------------
R	RISER
RB	RUBBER BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REC	RECESSED
REF	REFERENCE
REFR	REFRIGERATOR
REM	REMOVABLE
REP	REPAIR
REQ	REQUIRE
REQ'D	REQUIRED
RESIL	RESILIENT
REV	REVISION
RF	RESILIENT FLOORING
RH	RIGHT HAND
RHR	RIGHT HAND REVERSE
RL	ROOF LEADER
RLG	RAILING
RM	ROOM
RO	ROUGH OPENING
RR	RESTROOM
RSD	ROLLING STEEL DOOR
RV	ROOF VENT
RVL	REVEAL
S	--------------------
S	SOUTH
S2S	SURFACE TWO SIDES
S4S	SURFACE FOUR SIDES
SAPC	SUSPENDED ACOUSTICAL PANEL CEILING
SATC	SUSPENDED ACOUSTICAL TILE CEILING
SB	SPLASH BLOCK
SC	SHOWER CURTAIN
SCHED	SCHEDULE
SCR	SHOWER CURTAIN ROD
SCW	SOLID CORE WOOD
SCWD	SOLID CORE WOOD DOOR
SD	SMOKE DETECTOR
SE	SOUTH EAST
SF	SQUARE FOOT
SF	SQUARE FEET
SFTWD	SOFT WOOD
SGL	SINGLE
SH	SOAP HOLDER
SHR	SHOWER
SHT MTL	SHEET METAL
SHTHG	SHEATHING
SHV	SHELVING
SIM	SIMILAR
SJ	SCORED JOINT
SKLT	SKYLIGHT
SLNT	SEALANT
SLR	SEALER
SM	SQUARE METER
SMHD	SHELF METAL HEAVY DUTY
SMK	SMOKE
SMLS	SEAMLESS
SND	SANITARY NAPKIN AND TAMPON DISPENSER
SP EL	SPOT ELEVATION
SPEC	SPECIFICATIONS
SPF	SPRAY APPLIED POLYURETHANE FOAM INSULATION
SQ	SQUARE
SQ FT	SQUARE FOOT (FEET)
SQ IN	SQUARE INCH
SQ M	SQUARE METER
SQ YD	SQUARE YARD
SS	STAINLESS STEEL
SSMR	STANDING SEAM METAL ROOF
ST	STAIRS
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STL JST	STEEL JOIST
STL RF DK	STEEL ROOF DECK
STOR	STORAGE
STR	STRINGER
STRB/HRN	STROBE / HORN
STRUCT	STRUCTURE(AL)
SUB FL	SUB FLOOR
SUSP	SUSPENDED
SV	SHEET VINYL
SW	SOUTHWEST
SYM	SYMMETRICAL
T	--------------------
T	TREAD
T&G	TONGUE AND GROOVE
T/S	TUB / SHOWER
TB	TOWEL BAR
TC	TERRA COTTA
TD	TRAVEL DISTANCE
TEL	TELEPHONE
TEMP	TEMPORARY
TER	TERRAZZO
TFF	TOP OF FINISH FLOOR
THK	THCKNESS
TK BD	TACK BOARD
TLT	TOILET
TMPD GL	TEMPERED GLASS
TN	TRUE NORTH
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOP	TOP OF PARAPET
TOPO	TOPOGRAPHY
TOS	TOP OF SLAB
TRANS	TRANSOM
TRTD	TREATED
TS	TUBE STEEL
TV	TELEVISION
TYP	TYPICAL
U	--------------------
UNF	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
V	--------------------
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VR	VAPOR RETARDER
VTC	VIDEO TELECONFERENCE
VTR	VENT THROUGH ROOF
W	--------------------
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WG	WIRE GLASS
WOM	WALK OFF MAT
WR	WASTE RECEPTACLE
WRB	WEATHER RESISTANT BARRIER
WRGWB	WATER RESISTANT GYPSUM WALLBOARD
WS	WATER STOP
WTP	WATER TREATMENT PLANT
WWTP	WASTE WATER TREATMENT PLANT

GENERAL NOTES

1. THE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK. THE DRAWINGS ARE NOT INTENDED TO INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. REPETITIVE FEATURES NOT NOTED ON THE DRAWINGS SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.

2. GRID LINES INDICATE THE CENTER LINE OF PRIMARY COLUMNS ONLY, SEE STRUCTURAL PLANS FOR EXACT LOCATION AND SIZES OF INDIVIDUAL COLUMNS.

3. ROOM AND DOOR NUMBERS SHOWN ON DRAWINGS ARE FOR CONSTRUCTION PURPOSES ONLY.

4. DIMENSIONS ON DRAWINGS ARE TAKEN FROM THE LOCATIONS LISTED BELOW:

   ROUGH OPENING OF DOORS

   GRID LINES

5. ALL WORK SHALL COMPLY WITH APPLICABLE BUILDING CODES, ORDINANCES AND REGULATORY AGENCIES.

6. NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, AND ALTERATION OPERATIONS SHALL BE APPLIED TO THIS PROJECT.

7. BUILDING HEIGHTS AND ELEVATIONS ARE BASED UPON PROJECT FINISH ELEVATION OF 592.16' AT THE FIRST FLOOR. REFERENCE CIVIL DRAWINGS FOR FIRST FLOOR ELEVATIONS RELATIVE TO SEA LEVEL.

8. CONFIRM QUANTITY, TYPE AND PLACEMENT OF ALL FIRE EXTINGUISHERS WITH THE FIRE MARSHAL OR USACE JURISDICTION REPRESENTATIVE. COORDINATE FINAL LOCATIONS WITH THE ARCHITECT PRIOR TO PLACEMENT. FIRE EXTINGUISHER BASIS OF DESIGN: LARSEN SURFACE MOUNTED OR APPROVED EQUAL.

9. REFER TO LIFE SAFETY DRAWINGS FOR FIRE-RATED FLOOR, WALL, CEILING AND ROOF LOCATIONS. INSTALL FIRESTOPPING AT PENETRATIONS IN RATED CONSTRUCTION AND AT TOPS OF RATED WALLS.

10. MECHANICAL, ELECTRICAL, CIVIL, STRUCTURAL AND PROCESS INFORMATION ON THE ARCHITECTURAL DRAWINGS IS PROVIDED FOR CLARITY AND / OR LOCATION COORDINATION PURPOSES ONLY, SEE RELEVANT DISCIPLINE DRAWINGS FOR SPECIFIC INFORMATION.

11. DO NOT BEGIN WORK THAT MAY REQUIRE COORDINATION PRIOR TO FINAL SUBMITTAL OF MECHANICAL AND ELECTRICAL COORDINATION DRAWINGS TO ARCHITECT NOR PRIOR TO RESOLUTION AND APPROVAL OF COORDINATION ISSUES.

12. ROOF PITCHES INDICATED ARE NOMINAL. SEE STRUCTURAL DRAWINGS FOR BEARING HEIGHTS.

13. WORK SHALL CONFORM TO APPLICABLE INDUSTRY AND MANUFACTURER'S PUBLISHED STANDARDS FOR QUALITY OF MATERIALS AND WORKMANSHIP, AS WELL AS REQUIREMENTS IN THESE DRAWINGS AND SPECIFICATIONS. ANY CONFLICTING REQUIREMENTS OF THE SOURCES LISTED ABOVE SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION PRIOR TO PROCEEDING WITH THE WORK.

14. PROTECT EXISTING, IN-PLACE AND NEW WORK.

15. VERIFY DIMENSIONS AND SHALL VERIFY EXISTING CONDITIONS, SHOWN ON THESE DRAWINGS AND, AT THE SITE, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES, OMISSIONS AND OR CONFLICTS BEFORE COMMENCEMENT OF WORK. COMMENCEMENT OF WORK SHALL CONSTITUTE CONTRACTOR'S ACCEPTANCE OF ALL NEW OR EXISTING CONDITIONS.

16. PIPE DUCTS AND BUSS DUCTS THAT PENETRATE FLOOR SLABS OR WALL PARTITIONS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE MOISTURE RESISTANCE, FIRE RATING, AIR AND/OR VAPOR BARRIER, AND STRUCTURAL INTEGRITY OF THE BUILDING.

17. VERIFY MOUNTING HEIGHTS OF ACCESSORIES, EQUIPMENT, DOOR HARDWARE, ETC., AND PROVIDE SOLID BLOCKING BEHIND ITEMS REQUIRING ANCHORAGE. PROVIDE FIRE-TREATED WOOD BLOCKING OR METAL STRAPS BETWEEN FRAMING MEMBERS AS REQUIRED TO SUPPORT WEIGHT AND USE OF ITEMS TO BE SUPPORTED. WHERE MOUNTING HEIGHTS ARE NOT INDICATED, MOUNT ITEMS IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS, COORDINATE LOCATIONS WITH MANUFACTURER OR SUPPLIER AND REFER MOUNTING HEIGHT QUESTIONS TO ARCHITECT FOR INTERPRETATION.

18. PROVIDE SEALANT BETWEEN HOLLOW METAL FRAME PERIMETERS AND SURROUNDING WALL CONSTRUCTION UNLESS OTHERWISE INDICATED.

19. PROVIDE SEALANT BETWEEN DISSIMILAR MATERIALS SUCH AS GYPSUM BOARD AND MASONRY, MASONRY AND CONCRETE, COUNTERTOPS AND WALLS, ETC.

20. MANUFACTURERS ARE REFERENCED TO ESTABLISH STYLE, SIZE, COLOR AND MATERIAL CHARACTERISTICS AND ARE NOT INTENDED TO LIMIT SELECTIONS FROM OTHER MANUFACTURERS. WHEN AN ALTERNATE SELECTION IS SUBMITTED, SUBMITTALS SHALL HAVE INCLUDED THE MATERIAL LISTED FOR COMPARISION.

21. FLASHING COLOR TO MATCH ADJACENT WALL COLOR UNLESS NOTED OTHERWISE.

22. PROVIDE EXPANSION AND CONTROL JOINTS IN ALL WORK AS PER PRODUCT MANUFACTURER'S STANDARDS.

23. ALL DISSIMILAR MATERIALS SHALL BE ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.

24. "ALIGN" AS USED IN THESE DOCUMENTS SHALL MEAN TO ACCURATELY LOCATE FINISHED FACES IN THE SAME PLAN AND/OR TO INSTALL NEW CONSTRUCTION ADJACENT TO EXISTING CONSTRUCTION WITHOUT ANY VISIBLE JOINTS OR SURFACE IRREGULARITIES.

25. "CLEAR" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS NOT ADJUSTABLE WITHOUT APPROVAL OF THE ARCHITECT. CLEAR DIMENSIONS ARE TYPICAL.

26. "MAXIMUM" OR "MAX" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS SLIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUANTITY GREATER THAN THAT SHOWN WITHOUT APPROVAL OF THE ARCHITECT.

27. "MINIMUM" OR "MIN" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS SLIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUANTITY LESS THAN THAT SHOWN WITHOUT APPROVAL OF THE ARCHITECT.

28. "TYPICAL" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.

29. "+/-" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE DIMENSION OR QUALITY IS SLIGHTLY ADJUSTABLE TO ACCOMMODATE ACTUAL CONDITIONS, FIELD VERIFICATION AND COORDINATION WITH OTHER ELEMENTS AS MIGHT BE NECESSARY.

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MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION

ARCHITECTURAL ABBREVIATIONS AND GENERAL NOTES

PROJ:	200-325577-22001
DESN:	MS
DRWN:	MS
CHKD:	DG

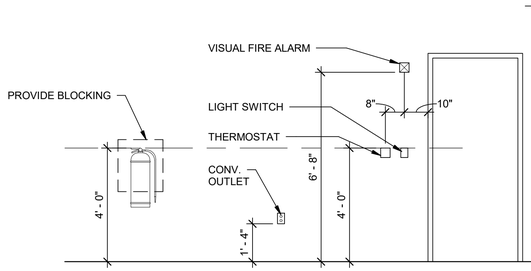
A-001

Bar measures 1 inch, otherwise drawing is not to scale

GENERAL NOTES:

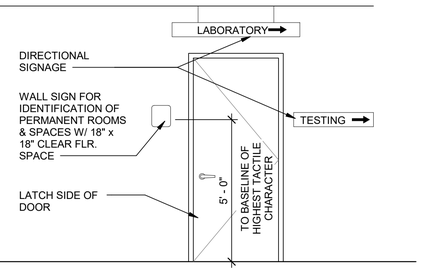
1. IT IS THE INTENT OF THE DESIGN THAT ALL ITEMS SHOWN MOUNTED AT TYPICAL HEIGHTS FOR COMPLIANCE WITH GOVERNING AUTHORITY OF ADAAG, ABA, AND/OR ANSI 117.1 CURRENT EDITIONS

2. THE PURPOSE OF THIS SHEET IS TO ILLUSTRATE TYPICAL MOUNTING HEIGHTS AND CLEARANCES - WHERE APPLICABLE - CAUTION: THIS SHEET MAY ILLLUSTRATE ITEMS OR CONFIGURATIONS WHICH DO NOT OCCUR AS PART OF THE WORK. REFER TO PLANS, ELEVATIONS, SECTIONS AND SCHEDULES TO DETERMINE WHICH ITEMS AND CONFIGURATIONS APPLY TO THE WORK OF THIS PROJECT.

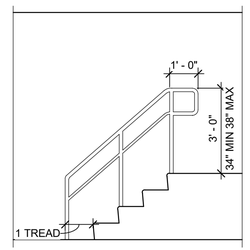


BRACKET MOUNTED F.E.

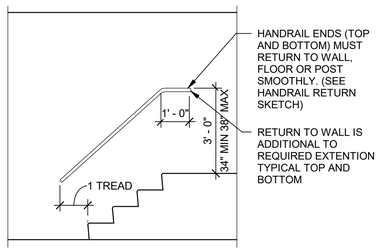
SWITCHES / DEVICES



SIGNAGE LOCATION & MOUNTING HEIGHT



STAIR HANDRAIL EXTENSION FOR FREESTANDING HANDRAIL

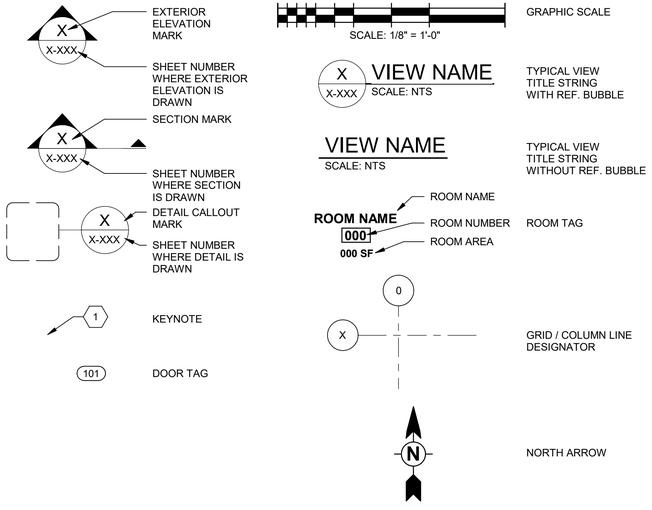


STAIR HANDRAIL EXTENTIONS

MOUNTING HEIGHTS

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

ANNOTATION CALLOUTS/DRAWING SYMBOLS



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ARCHITECTURAL STANDARDS

PROJ:	200-325577-22001
DESN:	MS
DRWN:	MS
CHKD:	DG

A-002

9/8/2023 11:02:12 AM BIM 360://200-325577-22001 BCDWS UV DESIGN\A-325577-22001-21.rvt

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BUILDING CODE AND LIFE SAFETY ANALYSIS

SUMMARY		
"F-2" GROUP USE OCCUPANCY		(MBC 304.1)
SINGLE OCCUPANCY, NON-SPRINKLERED, ONE-STORY, UNOCCUPIED (SERVICE PERSONNEL ONLY)		
SPECIAL REQUIREMENTS BASED ON OCCUPANCY	N/A	
GENERAL BUILDING DESCRIPTION		
NEW CONSTRUCTION OF A ONE STORY, 3,699 GSF PRE-ENGINEERED METAL STORAGE BUILDING OVER AN EXISTING CONCRETE STRUCTURE. THE BUILDING STRUCTURE WILL CONSIST OF NON-COMBUSTIBLE, PRE-ENGINEERED STEEL STRUCTURE WITH PRE-INSULATED METAL WALL AND ROOF PANELS.		
BUILDING OCCUPANCY LOAD		
0 OCCUPANTS - NO FULL TIME OCCUPANTS IN THE FACILITY, 2-3 SERVICE PERSONNEL ON AN OCCASIONAL BASIS FOR MAINTENANCE AND REPAIRS. TOTAL DESIGN OCCUPANTS LISTED ON LIFE SAFETY PLAN FOR PURPOSES OF CALCULATING EGRESS WIDTH SIZING REQUIRMENTS ONLY.		
GENERAL BUILDING LIMITATIONS		
AREAS BASED ON USE GROUP "F-2" LOW HAZARD FACTORY INDUSTRIAL, NON-SPRINKLERED		(MBC TABLE 306.3)
NUMBER OF STORIES PERMITTED	3 STORIES	(MBC TABLE 504.4)
PLANNED BUILDING STORIES	1 STORY	
TOTAL AREA PERMITTED	23,000 SF	(MBC TABLE 506.2)
PLANNED BUILDING AREA	3,699 SF	
BUILDING HEIGHT PERMITTED	55 FT	(MBC TABLE 504.4)
PLANNED BUILDING HEIGHT	18 FT 6 IN	
SEPARATION OF OCCUPANCIES	N/A	(MBC TABLE 508.4)
INCIDENTAL USE	N/A	(MBC 509)
TYPE OF CONSTRUCTION		
TYPE "IIB" NON-COMBUSTIBLE		(MBC 601)
FIRE-RESISTANT CONSTRUCTION		
BUILDING ELEMENTS - FIRE-RESISTANCE RATING		(MBC TABLE 601)
PRIMARY STRUCTURAL FRAMING	0 HR	
BEARING WALLS - EXTERIOR	0 HR	
BEARING WALLS - INTERIOR	0 HR	
NON-BEARING WALLS AND PARTITIONS - INTERIOR	0 HR	
FLOOR CONSTRUCTION AND ASS. SECONDARY	0 HR	
ROOF CONSTRUCTION AND ASS. SECONDARY	0 HR	
FIRE SEPARATION DISTANCE	10 ≤ X < 30 FT	(MBC TABLE 602)
MAX AREA OF EXTERIOR OPENINGS	NOT REQUIRED	(MBC TABLE 705.8)
FIRE WALLS	N/A	(MBC TABLE 706.4)
FIRE BARRIERS	N/A	(MBC TABLE 707.3.10)
FIRE PARTITIONS	N/A	(MBC 708)
SMOKE BARRIERS	N/A	(MBC 709)
SMOKE PARTITIONS	N/A	(MBC 710)
SHAFT ENCLOSURES	N/A	(MBC 713.4)
INTERIOR FLOOR FINISHES	CLASS II	(MBC 804)
FIRE PROTECTION SYSTEMS		
AUTOMATIC SPRINKLER SYSTEM - FULLY SPRINKLED THROUGHOUT	N/A	(MBC 903.2)
STANDPIPE SYSTEM	N/A	(MBC 905.3, NFPA 14)
FIRE EXTINGUISHERS	CLASS A, 4A-60B-C	(MBC 906.3, NFPA 10)
FIRE ALARM & DETECTION SYSTEM	REQUIRED, PROVIDED MANUAL	(MBC 907.2.2, NFPA 101)
MEANS OF EGRESS / EXITS		
REQUIRED EXIT WIDTH / OCCUPANTS - DOORS, OTHER (#OCC. X .2 INCHES) (13 X .2")	2.6 INCHES	(MBC 1005)
MIN. REQUIRED EXIT WIDTH	32 INCHES	(MBC 1010.1.1)
MAX. EXIT ACCESS TRAVEL DISTANCE	75 FEET	(MBC TABLE 1017.2)
EXITS	2 REQUIRED / 3 PROVIDED	(MBC TABLE 1006.3.2 (2)

APPLICABLE BUILDING CODES

2015 MICHIGAN BUILDING CODE (MBC)

2018 MICHIGAN PLUMBING CODE

2015 MICHIGAN MECHANICAL CODE

2015 MICHIGAN ENERGY CODE

NFPA 1 FIRE CODE

NFPA 70 (2017) NATIONAL ELECTRICAL CODE

NFPA 72 (2013) NATIONAL FIRE ALARM & SIGNALING CODE

NFPA 80 STANDARD FOR FIRE DOORS & OTHER OPENING PROTECTIVES

NFPA 101 (2021) LIFE SAFETY CODE

NFPA 241 STANDARD FOR SAFEGUARDING CONSTRUCTION, AND ALTERATION OPERATIONS SHALL BE APPLIED TO THIS PROJECT.

29 CFR (OSHA) 1910 GENERAL INDUSTRY

2010 ADA STANDARDS / ICC A117.1

ANSI/ASHRAE/IESNA STANDARDS 90.1 - 2007 ENERGY STANDARD

ASME A17.1

ANSI A17.1 - 1993

BUILDING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE 2015 MICHIGAN BUILDING CODE (2015 IBC WITH MICHIGAN AMENDMENTS)

LIFE SAFETY LEGEND

C.P.E. = XX' — COMMON PATH OF EGRESS = __ FEET
PATH OF TRAVEL SYMBOL

T.D. = XX' — TRAVEL DISTANCE = __ FEET
PATH OF TRAVEL SYMBOL

FE — FIRE EXTINGUISHER - BRACKET MOUNTED (SEE DETAIL 10/A-601)

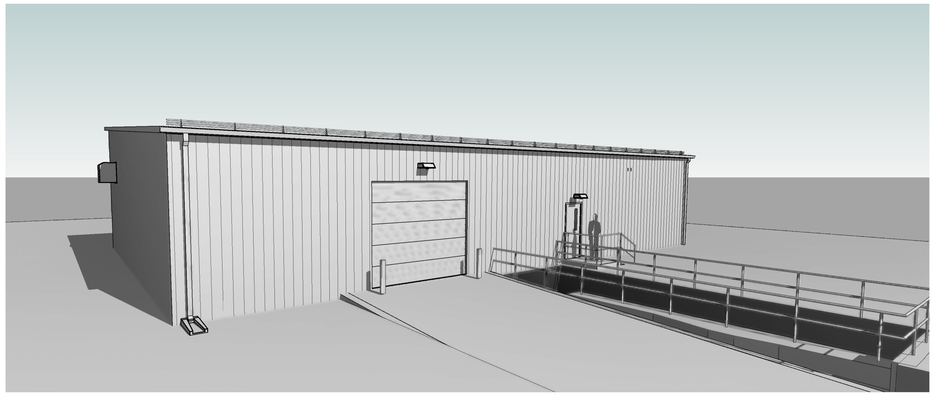
EXIT
EGRESS EXIT — EXIT
EGRESS DOORWAY

OCCUPANCY - USE CLASSIFICATION (MBC 304.1) — OCCUPANT LOAD FACTOR (MBC 304.1)

SQUARE FOOT AREA OF SPACE — NUMBER OF OCCUPANTS PER SPACE

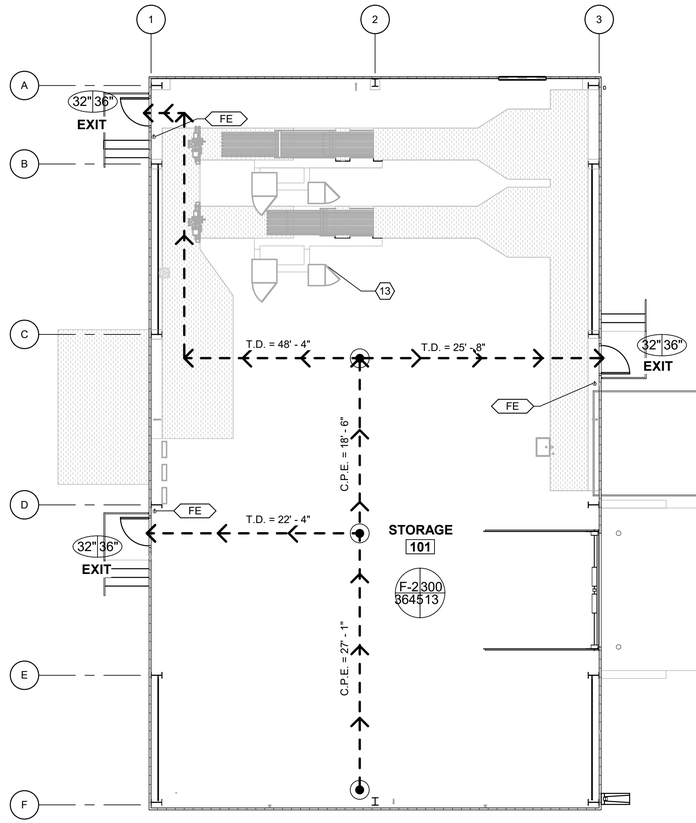
0" 0" — EXITING WIDTH REQUIRED / EXITING WIDTH PROVIDED

EXIT — EXIT



PERSPECTIVE

SCALE:



LIFE SAFETY PLAN

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

N

8' 0' 8' 16'

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

TETRA TECH
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TEL: 734.665.6000 FAX: 734.213.3003

MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN

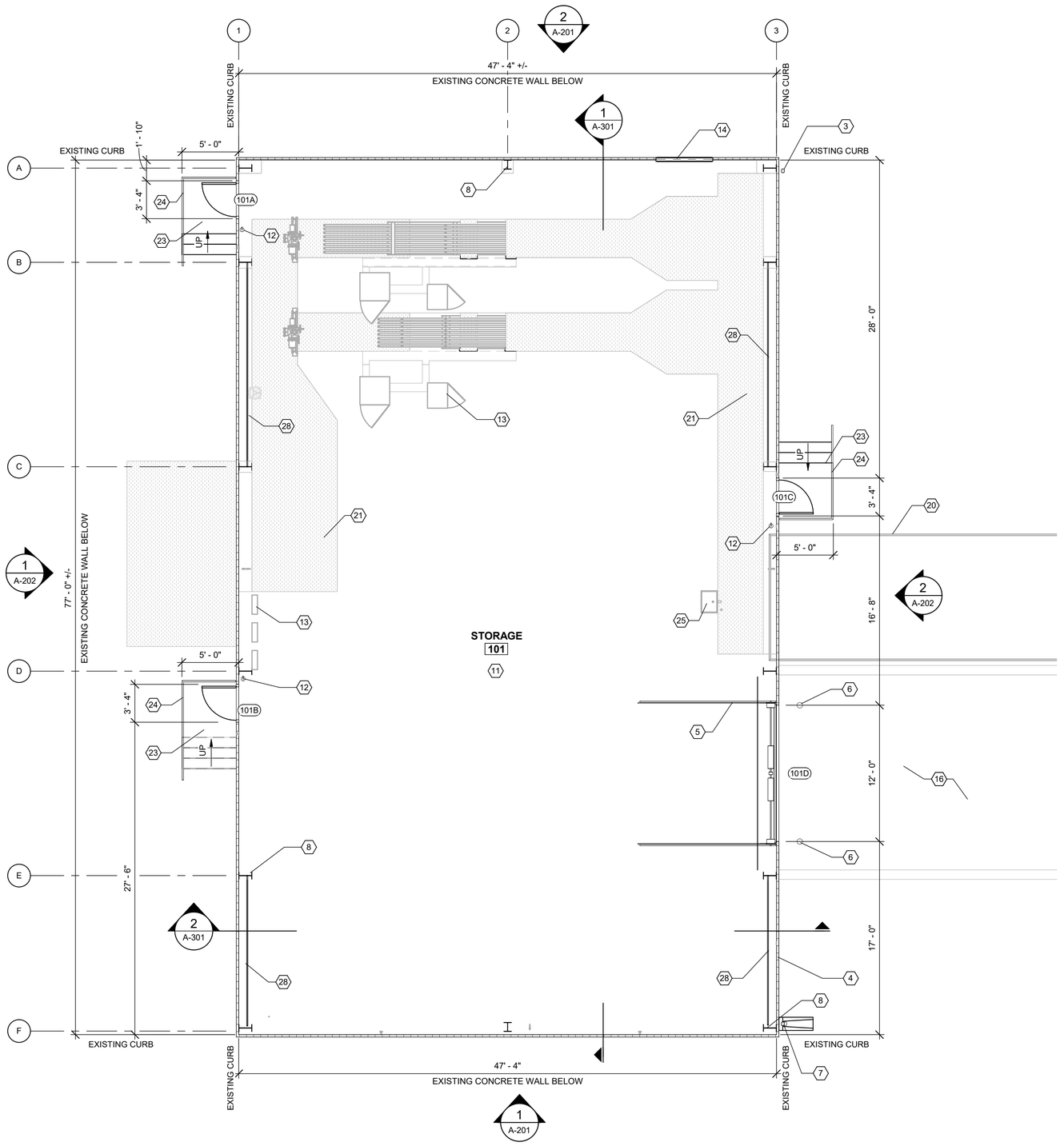
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION

UV BUILDING LIFE SAFETY PLAN AND CODE REVIEW

PROJ:	200-325577-22001
DESN:	MS
DRWN:	MS
CHKD:	DG

A-003

Bar measures 1 inch, otherwise drawing is not to scale



1 A-101 **FLOOR PLAN**
SCALE: 3/16" = 1'-0"

GENERAL NOTES - FLOOR PLAN

1. REFER TO SHEETS A-001 AND A-002 FOR GENERAL NOTES, SYMBOLS, LEGENDS AND STANDARDS AND TYPICAL MOUNTING HEIGHTS.
2. REFER TO SHEET A-601 FOR DOOR TYPES, FRAME TYPES, AND DOOR SCHEDULE.

KEYNOTES

3 PRE-FINISHED 5"X5" ALUMINUM DOWNSPOUT TO TIE INTO UNDERDRAIN PIPE SYSTEM. REFER TO CIVIL DRAWINGS FOR CONTINUATION. REFER TO TYPICAL DETAIL 4/A-501.

4 PRE-INSULATED METAL WALL PANEL SYSTEM BY PEMB MANUFACTURER (R-20) TO MATCH EXISTING ADJACENT BUILDING TYPE AND COLOR. (BASIS OF DESIGN: METL SPAN CF LIGHT MESA WALL PANELS).

5 INSULATED OVERHEAD SECTIONAL DOOR.

6 BOLLARD SAFETY YELLOW. REFER TO DETAIL 9/S-501 FOR TYP. MOUNTING DETAIL.

7 PRE-FINISHED 5"X5" ALUMINUM DOWNSPOUT TO DISCHARGE TO CONCRETE SPLASHBLOCK BELOW. REFER TO TYPICAL DETAIL 7/A-501.

8 PEMB STRUCTURAL SYSTEM BY PEMB MANUFACTURER

11 OPEN TO DECK ABOVE.

12 BRACKET-MOUNTED FIRE EXTINGUISHER. REFER TO DETAIL 10/A-601

13 REFER TO MECHANICAL, PLUMBING, ELECTRICAL, AND PROCESS DRAWINGS FOR EQUIPMENT AND LOUVER LOCATIONS AND EXTENT OF WORK REQUIRED (TYP.).

14 ALUMINUM LOUVER WITH BIRD SCREEN. REFER TO MECHANICAL DRAWINGS FOR SIZE, TYPE, AND LOCATION.

16 REFER TO STRUCTURAL AND CIVIL DRAWINGS FOR CONCRETE SIDEWALK, DRIVE, AND PADS (TYP.)

20 EXISTING RAILING TO REMAIN.

21 FRP PANELS OVER FLOOR GRATING. REFER TO STRUCTURAL DRAWINGS.

23 CONCRETE STAIRS. REFER TO STRUCTURAL DRAWINGS.

24 42" HIGH ALUMINUM SIDE-MOUNT GUARDRAIL. REFER TO STRUCTURAL DRAWINGS.

25 SINK. REFER TO MEP DRAWINGS.

28 CROSS BRACING. REFER TO STRUCTURAL DRAWINGS.

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MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

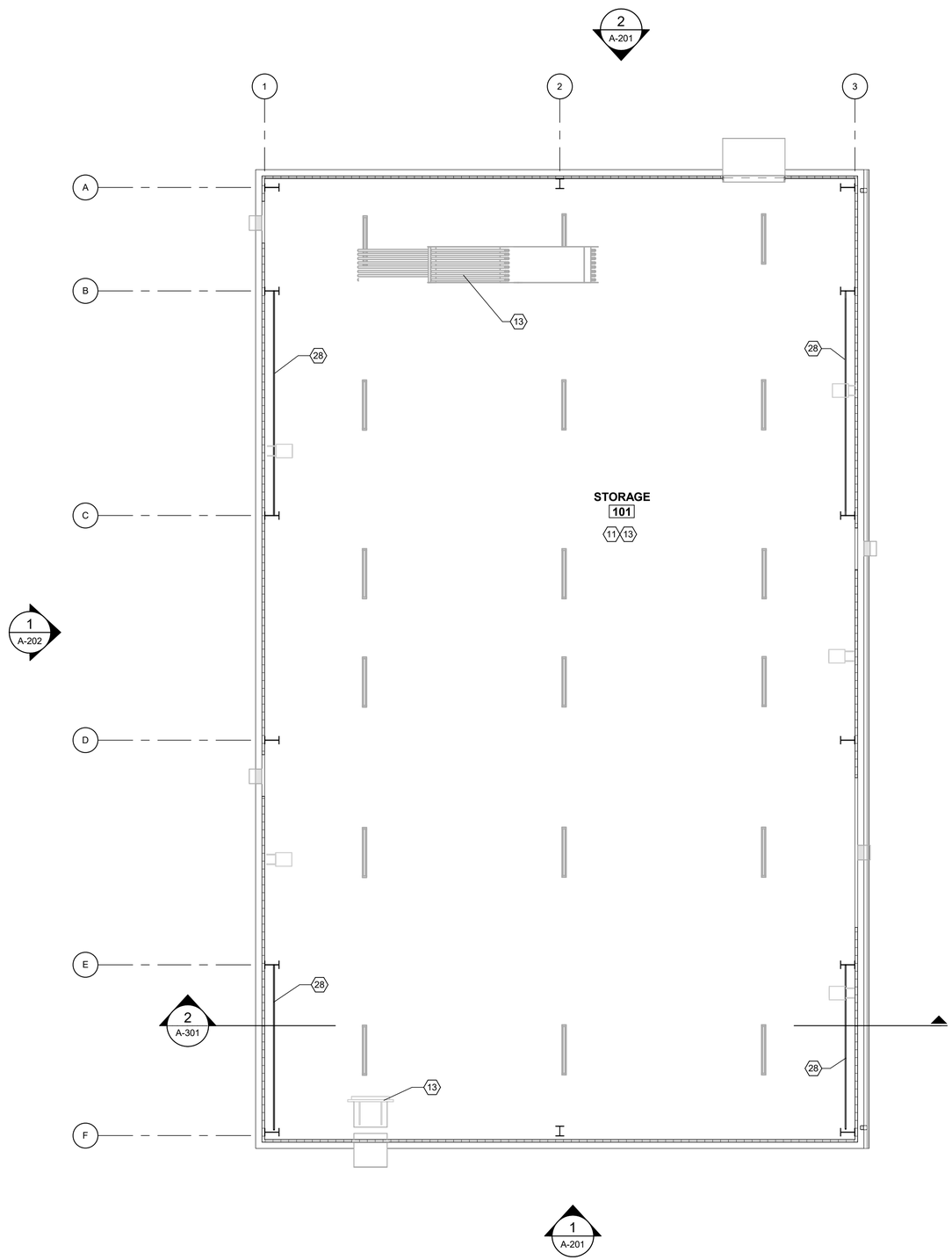
BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
UV BUILDING FLOOR PLAN

PROJ:	200-325577-22001
DESN:	MS
DRWN:	MS
CHKD:	DG

A-101

SCALE: 3/16" = 1'-0"

Bar measures 1 inch, otherwise drawing is not to scale



GENERAL NOTES - RCP

3. THE INFORMATION ON THE REFLECTED CEILING PLAN IS PROVIDED ONLY AS A LOCATIONAL GUIDE FOR THE CONTRACTOR. REFER TO MECHANICAL, ELECTRICAL, AND FIRE SAFETY PLANS FOR EXACT TYPE, AND LOCATIONS OF FIXTURES, REGISTERS, AND EQUIPMENT

4. NOTIFY THE ARCHITECT OR ARCHITECT'S REPRESENTATIVE IN WRITING, PRIOR TO CONSTRUCTION, OF ANY CONFLICTS BETWEEN PROPOSED REFLECTED CEILING ASSEMBLIES AND OTHER WORK.

(#) KEYNOTES

11 OPEN TO DECK ABOVE.

13 REFER TO MECHANICAL, PLUMBING, ELECTRICAL, AND PROCESS DRAWINGS FOR EQUIPMENT AND LOUVER LOCATIONS AND EXTENT OF WORK REQUIRED (TYP.).

28 CROSS BRACING. REFER TO STRUCTURAL DRAWINGS.

CEILING LEGEND

SUSP. FLUORESCENT LIGHT

1 A-102 REFLECTED CEILING PLAN
SCALE: 3/16" = 1'-0"

4' 0' 4' 8' 12'
SCALE: 3/16" = 1'-0"

Bar measures 1 inch, otherwise drawing is not to scale

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1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
UV BUILDING REFLECTIVE CEILING PLAN

PROJ:	200-325577-22001
DESN:	MS
DRWN:	MS
CHKD:	DG

A-102

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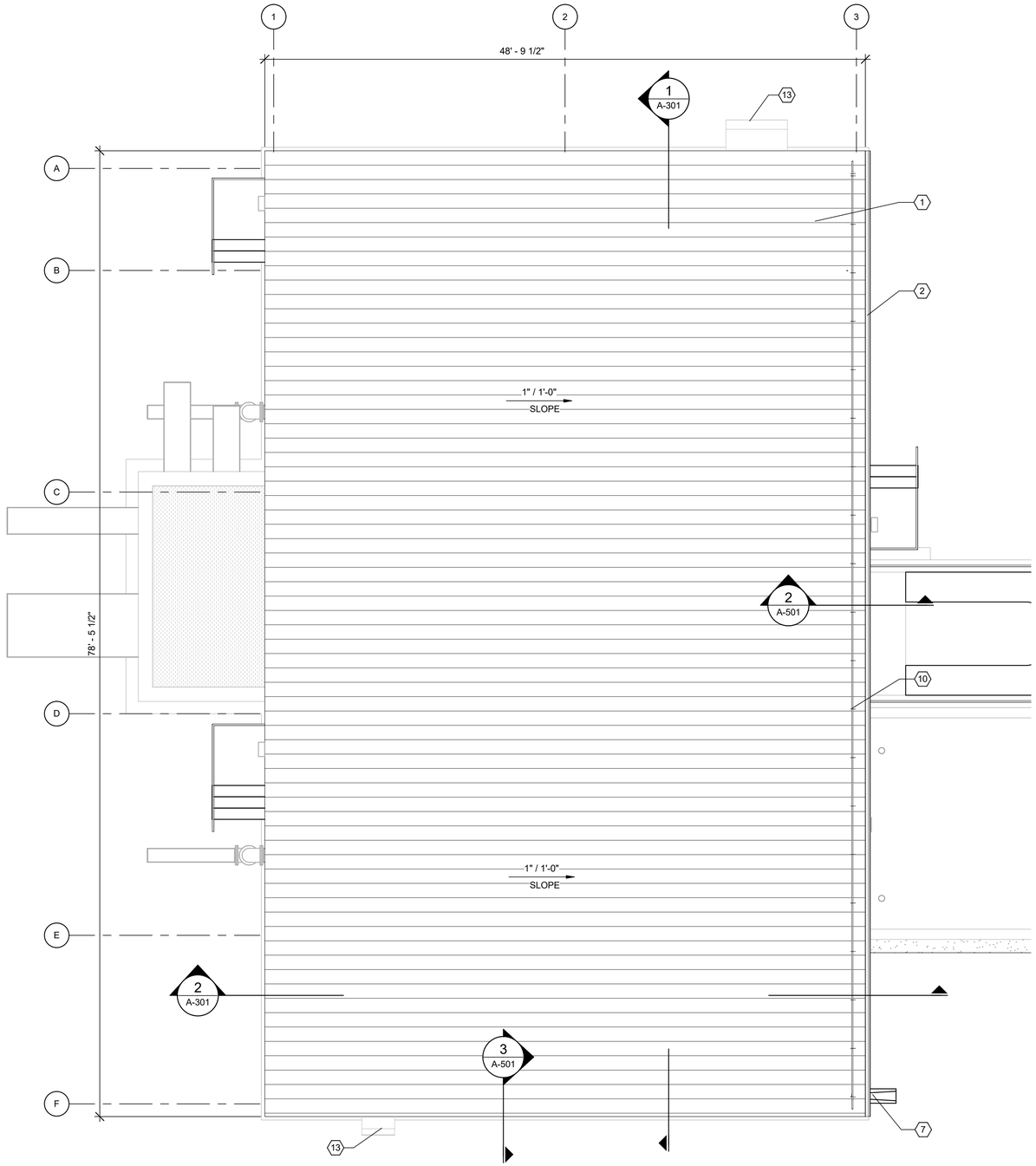

1 A-103 ROOF PLAN
SCALE: 3/16" = 1'-0"

ROOF PLAN GENERAL NOTES

1. VERIFY SIZE, LOCATION AND NUMBER OF ROOF PENETRATIONS INCLUDING VENTS, PIPES, CURBS, ROOF DRAINS, CONDUITS, ETC PRIOR TO PLACEMENT OF ROOFING SYSTEM.
2. REFER TO MECHANICAL DRAWINGS FOR EQUIPMENT AND ROOF PENETRATION LOCATIONS.
3. REFER TO ROOFING DETAILS ON A-501.

(#) KEYNOTES

1 STANDING SEAM 26GA PVDF METAL PANEL ROOF SYSTEM (R-30) BY PEMB MANUF., PRE-INSULATED, PRE-FINISHED (KYNAR COATED), STRIATED PROFILE, EXPOSED FASTENER, PANELS, (COLOR AS SELECTED BY OWNER FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS). BASIS OF DESIGN: NUCOR ROOF PANEL. ST-40

2 PRE-FINISHED METAL GUTTER (6"X6")

7 PRE-FINISHED 5"X5" ALUMINUM DOWNSPOUT TO DISCHARGE TO CONCRETE SPLASHBLOCK BELOW. REFER TO TYPICAL DETAIL 7/A-501.

10 SNOW GUARDS TO CLAMP AROUND THE SEAMS ON STANDING SEAM METAL ROOF.

13 REFER TO MECHANICAL, PLUMBING, ELECTRICAL, AND PROCESS DRAWINGS FOR EQUIPMENT AND LOUVER LOCATIONS AND EXTENT OF WORK REQUIRED (TYP.).

RAINWATER DESIGN CALCULATION

LOCATION:	BAY COUNTY, MICHIGAN
RAINFALL INTENSITY (10 YR)	6.4 INCH / HOUR
RAINFALL INTENSITY (100 YR)	8.9 INCH / HOUR
DRAINABLE AREA (10 YR)	190 SQUARE FEET
DRAINABLE AREA (100 YR)	140 SQUARE FEET
YEAR SETTING	10 YEAR
GUTTER LENGTH	78 FT
MAX GUTTER SERVED BY EACH DOWNSPOUT	39 FT
DESIGN AREA	3,744 SF
MINIMUM NUMBER OF DOWNSPOUTS	2
ACTUAL NUMBER OF DOWNSPOUTS PROVIDED	2
MAXIMUM ROOF AREA SERVED BY EACH DOWNSPOUT	1,596 SF
MIN GUTTER WIDTH	6 INCHES
MIN GUTTER DEPTH	6 INCHES
GUTTER WIDTH PROVIDE	6 INCHES
GUTTER DEPTH PROVIDE	6 INCHES
MINIMUM DOWNSPOUT SIZE	3" X 4"
DOWNSPOUT SIZE PROVIDE	5" X 5"

N

4' 0' 4' 8' 12'
SCALE: 3/16" = 1'-0"

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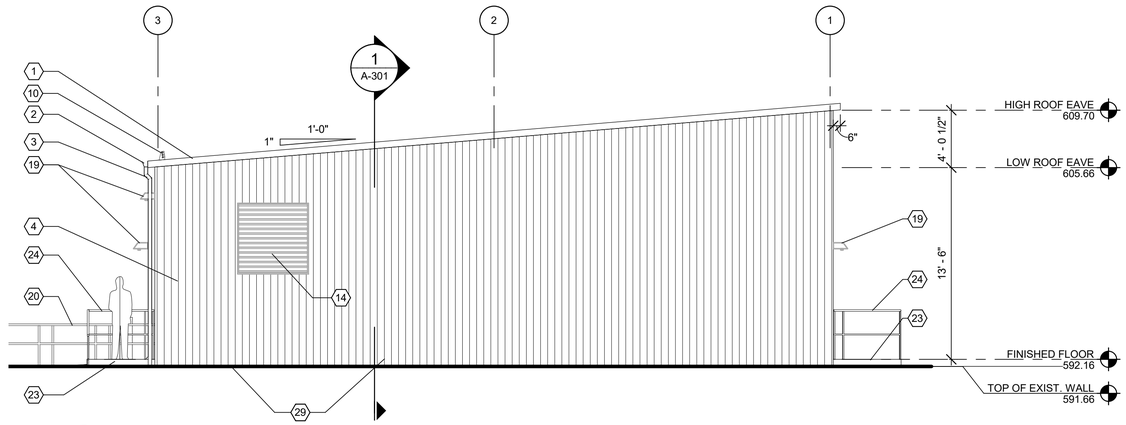
MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
UV BUILDING ROOF PLAN

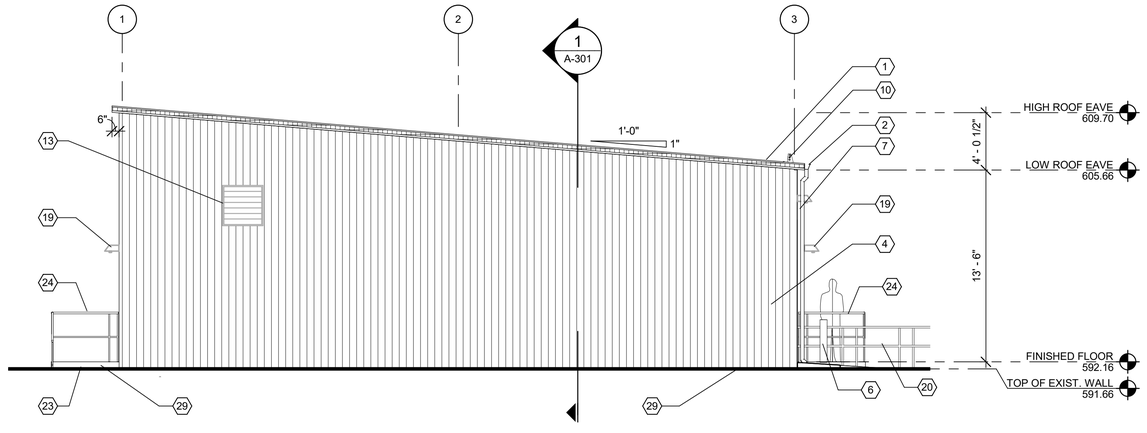
PROJ:	200-325577-22001
DESN:	MS
DRWN:	MS
CHKD:	DG

A-103

Bar measures 1 inch, otherwise drawing is not to scale



2 NORTH ELEVATION
A-201 SCALE: 3/16" = 1'-0"



1 SOUTH ELEVATION
A-201 SCALE: 3/16" = 1'-0"

KEYNOTES

#	
1	STANDING SEAM 26GA PVDF METAL PANEL ROOF SYSTEM (R-30) BY PEMB MANUF., PRE-INSULATED, PRE-FINISHED (KYNAR COATED), STRIATED PROFILE, EXPOSED FASTENER, PANELS, (COLOR AS SELECTED BY OWNER FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS). BASIS OF DESIGN: NUCOR ROOF PANEL. ST-40
2	PRE-FINISHED METAL GUTTER (6"X6")
3	PRE-FINISHED 5"X5" ALUMINUM DOWNSPOUT TO TIE INTO UNDERDRAIN PIPE SYSTEM. REFER TO CIVIL DRAWINGS FOR CONTINUATION. REFER TO TYPICAL DETAIL 4/A-501.
4	PRE-INSULATED METAL WALL PANEL SYSTEM BY PEMB MANUFACTURER (R-20) TO MATCH EXISTING ADJACENT BUILDING TYPE AND COLOR. (BASIS OF DESIGN: METL SPAN CF LIGHT MESA WALL PANELS).
6	BOLLARD SAFETY YELLOW. REFER TO DETAIL 9/S-501 FOR TYP. MOUNTING DETAIL.
7	PRE-FINISHED 5"X5" ALUMINUM DOWNSPOUT TO DISCHARGE TO CONCRETE SPLASHBLOCK BELOW. REFER TO TYPICAL DETAIL 7/A-501.
10	SNOW GUARDS TO CLAMP AROUND THE SEAMS ON STANDING SEAM METAL ROOF.
13	REFER TO MECHANICAL, PLUMBING, ELECTRICAL, AND PROCESS DRAWINGS FOR EQUIPMENT AND LOUVER LOCATIONS AND EXTENT OF WORK REQUIRED (TYP.).
14	ALUMINUM LOUVER WITH BIRD SCREEN. REFER TO MECHANICAL DRAWINGS FOR SIZE, TYPE, AND LOCATION.
19	EXTERIOR WALL MOUNTED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS FOR LOCATION AND TYPE.
20	EXISTING RAILING TO REMAIN.
23	CONCRETE STAIRS. REFER TO STRUCTURAL DRAWINGS.
24	42" HIGH ALUMINUM SIDE-MOUNT GUARDRAIL. REFER TO STRUCTURAL DRAWINGS.
29	REFER TO STRUCTURAL DRAWINGS FOR EXPOSED CONCRETE FINISH BELOW METAL PANEL AND AT EXTERIOR STAIRS. (TYP. ALL SIDES).

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MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN

WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION

UV BUILDING EXTERIOR ELEVATIONS

PROJ:	200-325577-22001
DESN:	MS
DRWN:	MS
CHKD:	DG

A-201

4' 0' 4' 8' 12'
SCALE: 3/16" = 1'-0"

Bar measures 1 inch, otherwise drawing is not to scale

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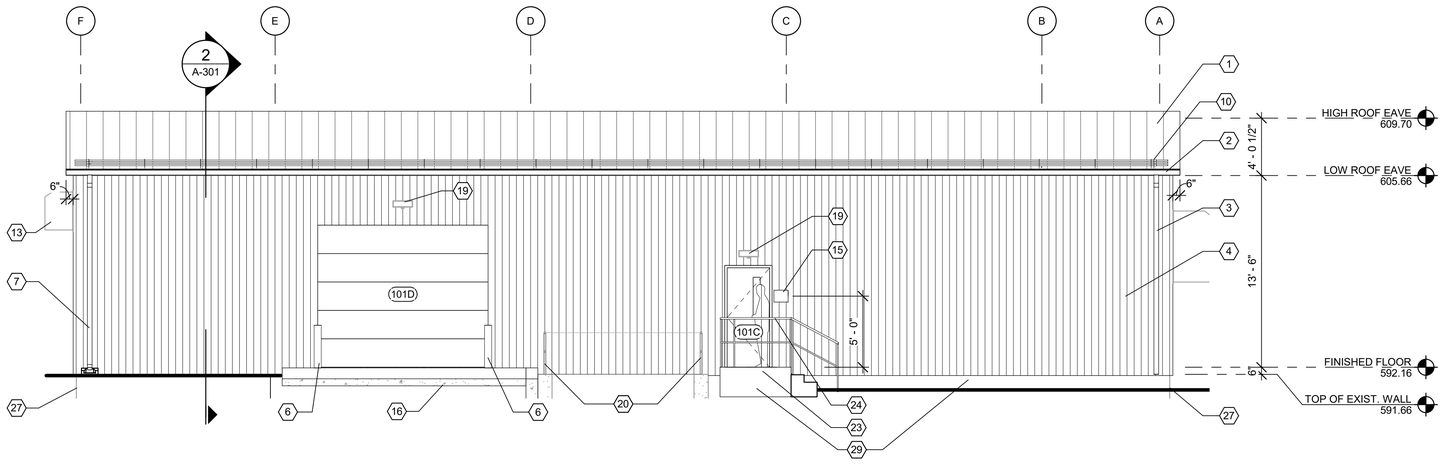
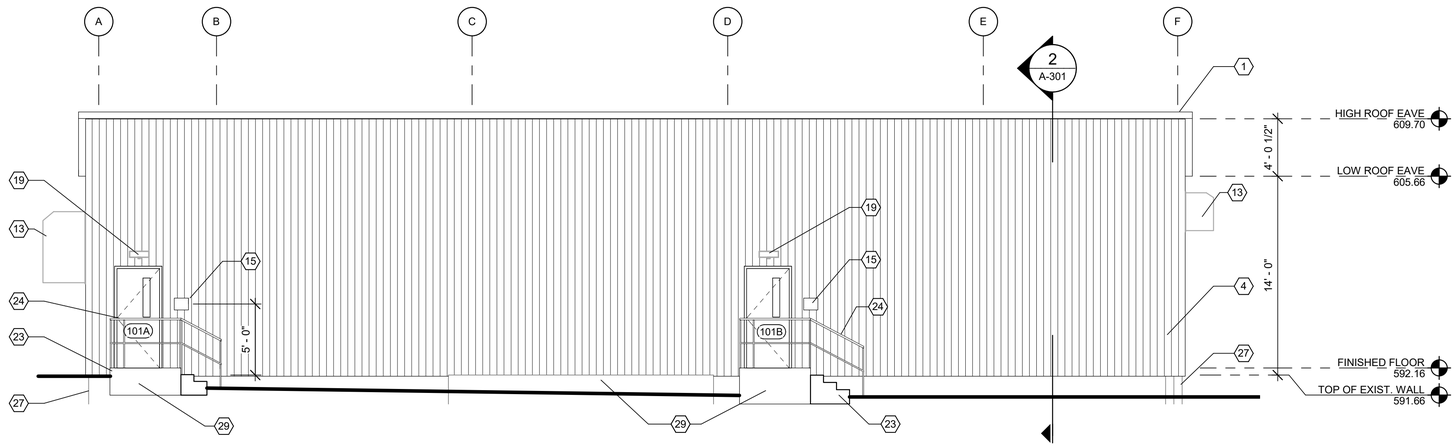


2 A-202 EAST ELEVATION
SCALE: 3/16" = 1'-0"



1 A-202 WEST ELEVATION
SCALE: 3/16" = 1'-0"

KEYNOTES

1 STANDING SEAM 26GA PVDF METAL PANEL ROOF SYSTEM (R-30) BY PEMB MANUF., PRE-INSULATED, PRE-FINISHED (KYNAR COATED), STRIATED PROFILE, EXPOSED FASTENER, PANELS, (COLOR AS SELECTED BY OWNER FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS). BASIS OF DESIGN: NUCOR ROOF PANEL. ST-40

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4 PRE-INSULATED METAL WALL PANEL SYSTEM BY PEMB MANUFACTURER (R-20) TO MATCH EXISTING ADJACENT BUILDING TYPE AND COLOR. (BASIS OF DESIGN: METL SPAN CF LIGHT MESA WALL PANELS).

6 BOLLARD SAFETY YELLOW. REFER TO DETAIL 9/S-501 FOR TYP. MOUNTING DETAIL.

7 PRE-FINISHED 5"X5" ALUMINUM DOWNSPOUT TO DISCHARGE TO CONCRETE SPLASHBLOCK BELOW. REFER TO TYPICAL DETAIL 7/A-501.

10 SNOW GUARDS TO CLAMP AROUND THE SEAMS ON STANDING SEAM METAL ROOF.

13 REFER TO MECHANICAL, PLUMBING, ELECTRICAL, AND PROCESS DRAWINGS FOR EQUIPMENT AND LOUVER LOCATIONS AND EXTENT OF WORK REQUIRED (TYP.).

15 10"H. X 12"W. WALL MOUNTED FRP EXTERIOR IDENTIFICATION SIGN: "NOTICE: AUTHORIZED PERSONNEL ONLY" BLACK BLOCK WITH WHITE LETTERS. MEET OSHA REQUIREMENTS FOR SIZE AND STYLE OF LETTERS.

16 REFER TO STRUCTURAL AND CIVIL DRAWINGS FOR CONCRETE SIDEWALK, DRIVE, AND PADS (TYP.)

19 EXTERIOR WALL MOUNTED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS FOR LOCATION AND TYPE.

20 EXISTING RAILING TO REMAIN.

23 CONCRETE STAIRS. REFER TO STRUCTURAL DRAWINGS.

24 42" HIGH ALUMINUM SIDE-MOUNT GUARDRAIL. REFER TO STRUCTURAL DRAWINGS.

27 EXISTING CONCRETE WALL BELOW TO REMAIN. REFER TO STRUCTURAL DRAWINGS.

29 REFER TO STRUCTURAL DRAWINGS FOR EXPOSED CONCRETE FINISH BELOW METAL PANEL AND AT EXTERIOR STAIRS. (TYP. ALL SIDES).

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MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

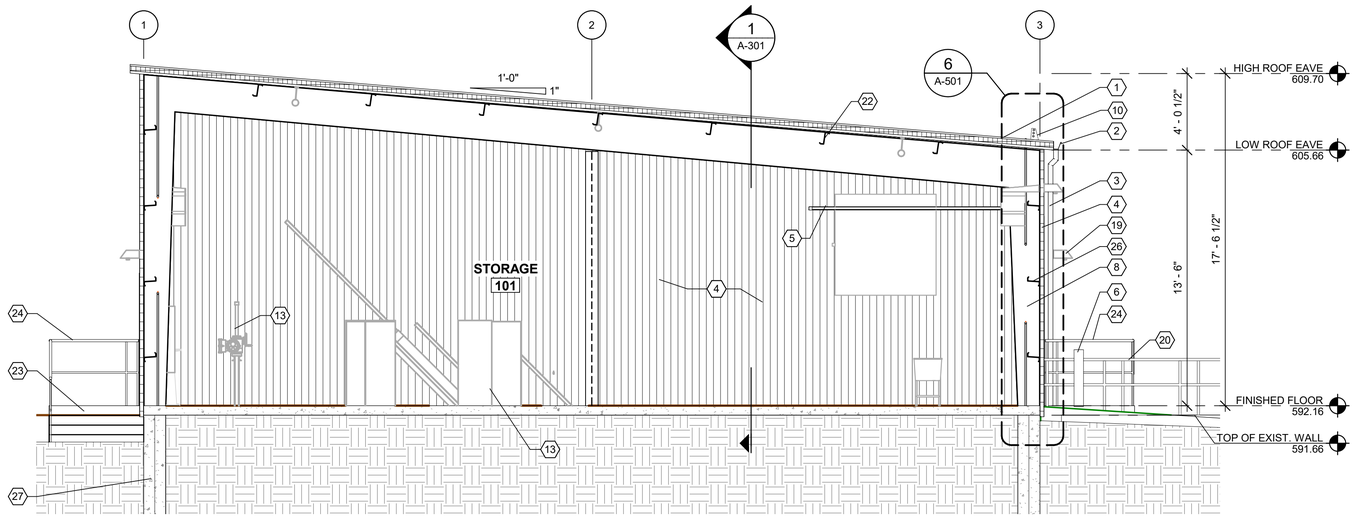
BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
UV BUILDING EXTERIOR ELEVATIONS

PROJ:	200-325577-22001
DESN:	MS
DRWN:	MS
CHKD:	DG

A-202

4' 0' 4' 8' 12'
SCALE: 3/16" = 1'-0"

Bar measures 1 inch, otherwise drawing is not to scale



2 A-301 BUILDING SECTION
SCALE: 1/4" = 1'-0"

KEYNOTES

1 STANDING SEAM 26GA PVDF METAL PANEL ROOF SYSTEM (R-30) BY PEMB MANUF., PRE-INSULATED, PRE-FINISHED (KYNAR COATED), STRIATED PROFILE, EXPOSED FASTENER, PANELS, (COLOR AS SELECTED BY OWNER FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS). BASIS OF DESIGN: NUCOR ROOF PANEL. ST-40

2 PRE-FINISHED METAL GUTTER (6"X6")

3 PRE-FINISHED 5"X5" ALUMINUM DOWNSPOUT TO TIE INTO UNDERDRAIN PIPE SYSTEM. REFER TO CIVIL DRAWINGS FOR CONTINUATION. REFER TO TYPICAL DETAIL 4/A-501.

4 PRE-INSULATED METAL WALL PANEL SYSTEM BY PEMB MANUFACTURER (R-20) TO MATCH EXISTING ADJACENT BUILDING TYPE AND COLOR. (BASIS OF DESIGN: METL SPAN CF LIGHT MESA WALL PANELS).

5 INSULATED OVERHEAD SECTIONAL DOOR.

6 BOLLARD SAFETY YELLOW. REFER TO DETAIL 9/S-501 FOR TYP. MOUNTING DETAIL.

8 PEMB STRUCTURAL SYSTEM BY PEMB MANUFACTURER

10 SNOW GUARDS TO CLAMP AROUND THE SEAMS ON STANDING SEAM METAL ROOF.

12 BRACKET-MOUNTED FIRE EXTINGUISHER. REFER TO DETAIL 10/A-601

13 REFER TO MECHANICAL, PLUMBING, ELECTRICAL, AND PROCESS DRAWINGS FOR EQUIPMENT AND LOUVER LOCATIONS AND EXTENT OF WORK REQUIRED (TYP.).

19 EXTERIOR WALL MOUNTED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS FOR LOCATION AND TYPE.

20 EXISTING RAILING TO REMAIN.

22 PEMB ROOF PURLINS BY PEMB MANUFACTURER.

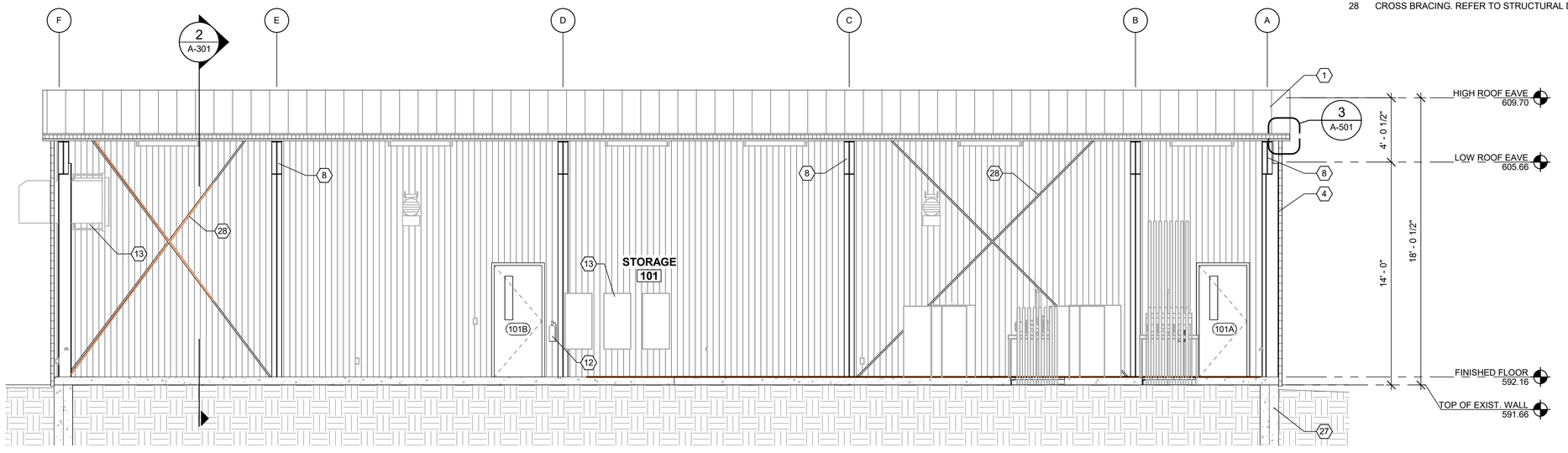
23 CONCRETE STAIRS. REFER TO STRUCTURAL DRAWINGS.

24 42" HIGH ALUMINUM SIDE-MOUNT GUARDRAIL. REFER TO STRUCTURAL DRAWINGS.

26 HORIZONTAL INSET Z-GIRTS. REFER TO STRUCTURAL DRAWINGS.

27 EXISTING CONCRETE WALL BELOW TO REMAIN. REFER TO STRUCTURAL DRAWINGS.

28 CROSS BRACING. REFER TO STRUCTURAL DRAWINGS.



1 A-301 BUILDING SECTION
SCALE: 1/4" = 1'-0"

4' 0' 4' 8'
SCALE: 1/4" = 1'-0"

Bar measures 1 inch, otherwise drawing is not to scale

TETRA TECH
www.tetratech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
TEL: 734.665.6000 FAX: 734.213.3003

MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION
UV BUILDING SECTIONS

PROJ:	200-325577-22001
DESN:	MS
DRWN:	MS
CHKD:	DG

A-301

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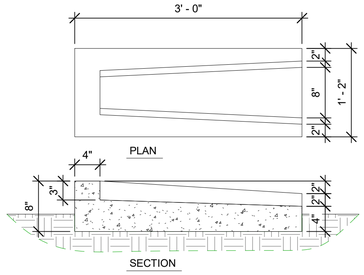
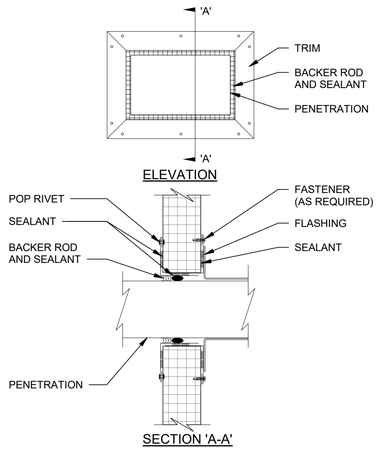


CONCRETE SPLASH BLOCK DETAIL

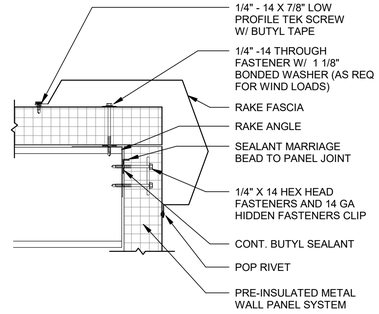
7 / A-501 SCALE: 1" = 1'-0"



NOTES:
1. DO NOT ALIGN PENETRATIONS AT PANEL JOINT LOCATIONS.
2. FLASHING AT PENETRATIONS TO BE FIELD FABRICATED FROM FLATSTOCK SHEETS AS NECESSARY

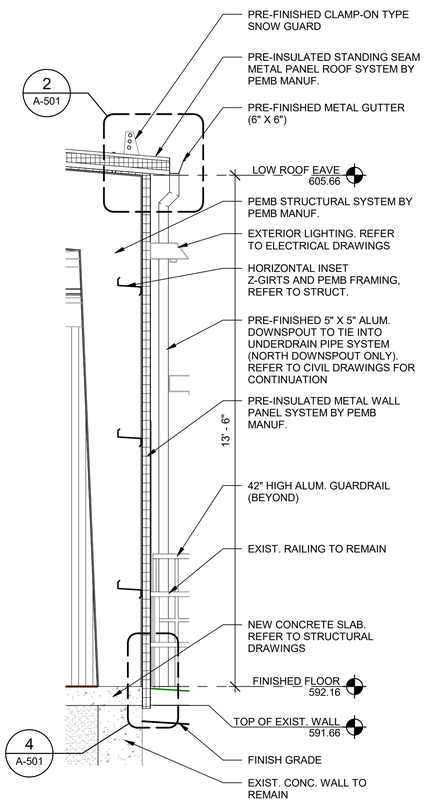
PENETRATION AT METAL PANEL

5 / A-501 SCALE: 3" = 1'-0"



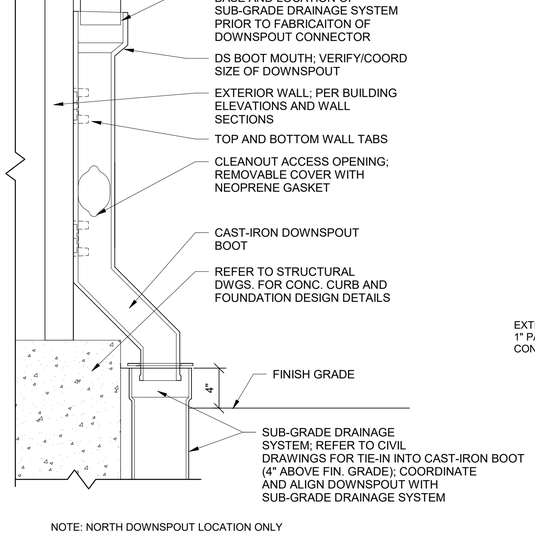
RAKE DETAIL

3 / A-501 SCALE: 1/2" = 1'-0"



WALL SECTION

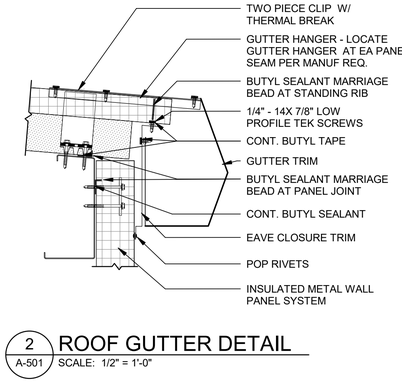
6 / A-501 SCALE: 1/2" = 1'-0"



NOTE: NORTH DOWNSPOUT LOCATION ONLY

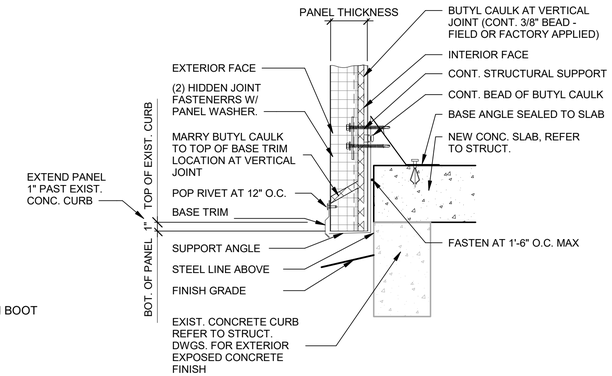
DOWNSPOUT BASE

4 / A-501 SCALE: 1 1/2" = 1'-0"



ROOF GUTTER DETAIL

2 / A-501 SCALE: 1/2" = 1'-0"



METAL PANEL BASE TRIM

1 / A-501 SCALE: 1 1/2" = 1'-0"

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

1' 0' 1' SCALE: 1 1/2" = 1'-0"

1' 0' 1' 2' SCALE: 1" = 1'-0"

2' 0' 2' 4' SCALE: 1/2" = 1'-0"

Bar measures 1 inch, otherwise drawing is not to scale

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BAY COUNTY, MICHIGAN

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ULTRAVIOLET DISINFECTION

ARCHITECTURAL WALL SECTION AND DETAILS

PROJ:	200-325577-22001
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A-501

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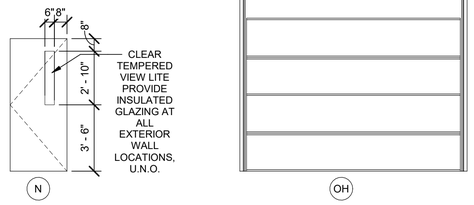
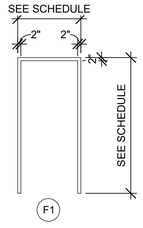
DOOR SCHEDULE

NO.	PANIC DEVICE	DOOR SIZE TYPE	WIDTH	HEIGHT	THICKNESS	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	DETAILS HEAD	JAMB	SILL	HARDWARE SET	COMMENTS
101A	Yes	N	3' - 0"	7' - 0"	1 3/4"	ALUM.	PRE-FINISHED	F1	ALUM.	PRE-FINISHED	6/A-601	5/A-601	4/A-601	1.0	VIEW LITE, INSULATED
101B	Yes	N	3' - 0"	7' - 0"	1 3/4"	ALUM.	PRE-FINISHED	F1	ALUM.	PRE-FINISHED	6/A-601	5/A-601	4/A-601	1.0	VIEW LITE, INSULATED
101C	Yes	N	3' - 0"	7' - 0"	1 3/4"	ALUM.	PRE-FINISHED	F1	ALUM.	PRE-FINISHED	6/A-601	5/A-601	4/A-601	1.0	VIEW LITE, INSULATED
101D		OH	12' - 0"	10' - 0"	2"	STEEL	PRE-FINISHED	OH	STEEL	PRE-FINISHED	3/A-601	2/A-601	1/A-601	-	INSULATED

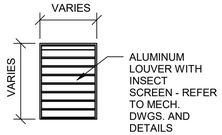
NOTE: FOR DOOR WIDTH AND HEIGHT SEE DOOR SCHEDULE



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



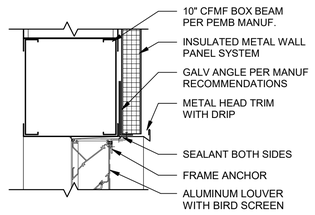
FRAME TYPES
SCALE: 1/4" = 1'-0"



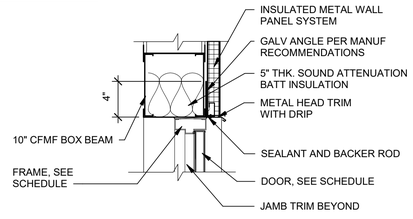
LOUVER TYPE
SCALE: 1/4" = 1'-0"

INTERIOR FINISH SCHEDULE

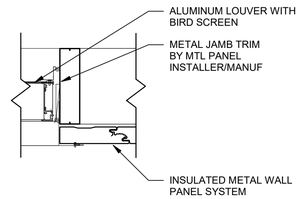
ROOM NO	ROOM NAME	FLOOR MAT.	FLOOR FINISH	WALLS (MATERIAL/FINISH) NORTH	EAST	SOUTH	WEST	CEILING MAT.	CEILING FINISH	CEILING HEIGHT	COMMENTS
101	STORAGE	CONC.	SEALED CONCRETE	PAINT	PAINT	PAINT	PAINT	-	PAINT	OTS	



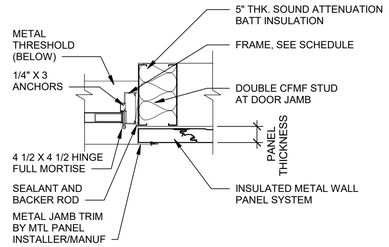
9 LOUVER HEAD
A-601 SCALE: 1 1/2" = 1'-0"



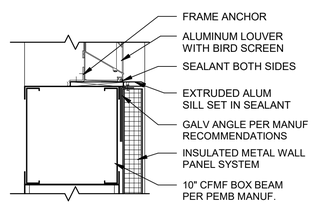
6 DOOR HEAD
A-601 SCALE: 1/4" = 1'-0"



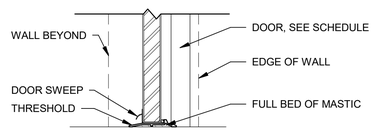
8 LOUVER JAMB
A-601 SCALE: 1 1/2" = 1'-0"



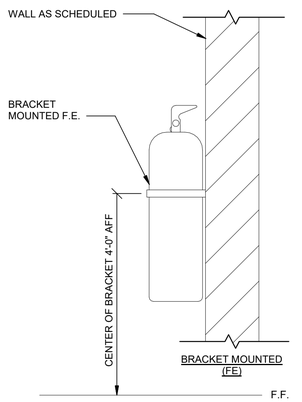
5 DOOR JAMB
A-601 SCALE: 1/4" = 1'-0"



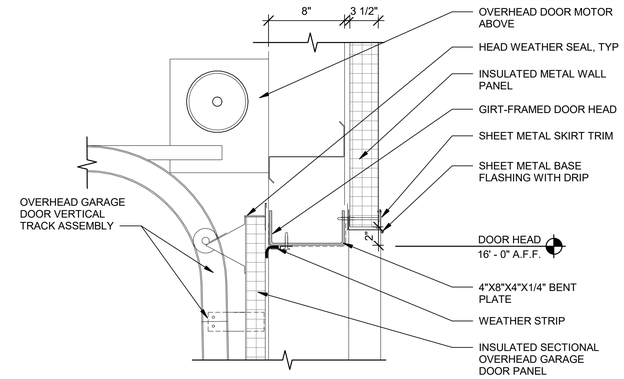
7 LOUVER SILL
A-601 SCALE: 1 1/2" = 1'-0"



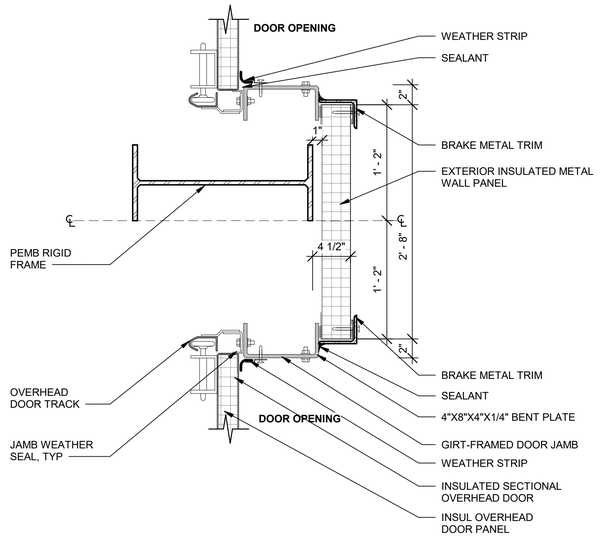
4 TYPICAL DOOR SILL
A-601 SCALE: 1 1/2" = 1'-0"



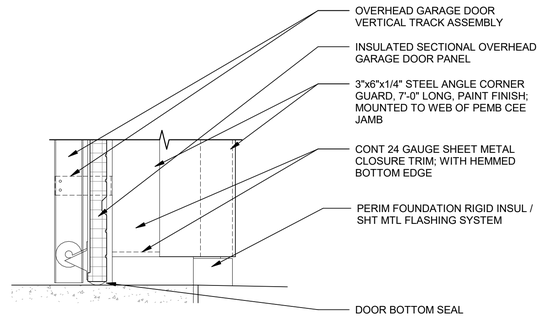
10 FIRE EXTINGUISHER
A-601 SCALE: 1 1/2" = 1'-0"



3 SECTIONAL OH DOOR - HEAD
A-601 SCALE: 1 1/2" = 1'-0"



2 SECTIONAL OH DOOR - JAMB
A-601 SCALE: 1 1/2" = 1'-0"



1 SECTIONAL OH DOOR SILL
A-601 SCALE: 1 1/2" = 1'-0"

1' 0' 1' — SCALE: 1 1/2" = 1'-0"

4' 0' 4' 8' — SCALE: 1/4" = 1'-0"

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1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN

WEST BAY COUNTY REGIONAL WWTP
ULTRAVIOLET DISINFECTION

ARCHITECTURAL
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PROJ:	200-325577-22001
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CHKD:	DG

A-601

Bar measures 1 inch, otherwise drawing is not to scale

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STRUCTURAL GENERAL NOTES

1. THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE DRAWING READER'S CONVENIENCE. SEE ALSO INDIVIDUAL DRAWING NOTES AND PROJECT SPECIFICATIONS FOR FURTHER DETAILS AND REQUIREMENTS.
2. ALL REFERENCED STANDARDS HEREIN ARE TO MOST RECENT ISSUE IN EFFECT AS OF THE DATE OF THESE DOCUMENTS, UNLESS NOTED OTHERWISE IN PROJECT SPECIFICATIONS OR ON THE DRAWING.
3. ALL EXISTING DIMENSIONS SHOWN WITH THE ± SYMBOL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.
4. DIMENSIONS MARKED WITH A "X" SHALL BE DETERMINED BY EQUIPMENT MANUFACTURER AND COORDINATED BY CONTRACTOR
5. SUBMIT SHOP DRAWINGS, PROJECT DATA AND SAMPLES AS SPECIFIED IN PROJECT SPECIFICATIONS.
6. ABBREVIATIONS

ADD'L	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
APPROX.	APPROXIMATE
ARCH.	ARCHITECT(URAL)
B.O.F	BOTTOM OF FOOTING
B.O.S.	BOTTOM OF STEEL
BLDG.	BUILDING
BOT.	BOTTOM
BTWN	BETWEEN
CCJ	CRACK CONTROL JOINT
CFS	COLD FORMED STEEL
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CTR	CENTER
DEMO	DEMOLISH
DIA	DIAMETER
DIM	DIMENSION
DIST	DISTANCE
DTL.	DETAIL
DWG(S)	DRAWING(S)
DWL	DOWEL
E/EXIST.	EXISTING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL / ELEV.	ELEVATION
ELEC	ELECTRIC(AL)
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
F.S.	FAR SIDE
F.V.	FIELD VERIFY
FFE	FINISH FLOOR ELEVATION
FIN	FINISH (ED)
FLG.	FLANGE
FND.	FOUNDATION
FRMG	FRAMING
FT	FOOT
GA	GAGE, GAUGE
GALV	GALVANIZED
GR.	GRADE
H.P.	HIGH POINT
H.R.	HAND RAIL
HORIZ	HORIZONTAL
HVAC	HEATING VENTILATION AND AIR CONDITIONING
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
I.J.	ISOLATION JOINT
IN.	INCH
INSUL	INSULATION
L	ANGLE
L.P.	LOW POINT
LBS	POUNDS
LF	LINEAR FOOT (FEET)
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MID	MIDDLE / MIDPOINT
MIN	MINIMUM, MINUTE
MISC.	MISCELLANEOUS
N	NEW
N.S.	NEAR SIDE
N.T.S.	NOT TO SCALE
NA	NOT APPLICABLE
NO	NUMBER
NOM	NOMINAL
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
PEMB	PRE-ENGINEERED METAL BUILDING
PERP	PERPENDICULAR
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
QTY	QUANTITY
RAD.	RADIUS
REF	REFERENCE
REINF.	REINFORCEMENT
REQ/REQ'D	REQUIRED
REV	REVISION
SCHED	SCHEDULE
SF	SQUARE FOOT
SHT.	SHEET
SIM.	SIMILAR
SPEC	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
SYM	SYMMETRICAL
T/	TOP OF
TEMP	TEMPORARY
THK	THICKNESS
TOF	TOP OF FOOTING
TOS	TOP OF SLAB
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WS	WATER STOP.
WWF	WELDED WIRE FABRIC

DESIGN CRITERIA

1. REFERENCES:
   - A. ICC INTERNATIONAL BUILDING CODE, 2015 EDITION, RISK CATEGORY III IN ACCORDANCE WITH TABLE 1604.5
   - B. STATE BUILDING CODE: MICHIGAN
   - C. ASCE/SEI 7-10 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
2. DEAD LOADS:

ROOF DEAD LOAD	= 20 PSF
DEAD LOAD AVAILABLE TO RESIST UPLIFT	= SELF WEIGHT OF STRUCTURAL FRAMING ONLY
FLOOR DEAD LOAD	= SELF WEIGHT

3. LIVE LOADS (U.N.O.):

ROOF	= 20 PSF
TYPICAL GROUND FLOORS	= 100 PSF
ELECTRICAL EQUIPMENT FLOOR	= 300 PSF

4. FROST DEPTH = 3'-6"
5. ROOF SNOW LOAD:

GROUND SNOW LOAD, Pg	= 35.0 PSF	
BALANCED SNOW LOAD, Pb	= 30.1 PSF	(Pf OR Ps)
MINIMUM SNOW LOAD, Pm	= 22.0 PSF	(LOW SLOPE ROOFS)
UNIFORM ROOF DESIGN SNOW LOAD	= 30.1 PSF	
SNOW EXPOSURE FACTOR, Ce	= 1.2	
SNOW LOAD IMPORTANCE FACTOR, I	= III	
THERMAL FACTOR, Ct	= 1.0	

6. WIND LOAD:

BASIC DESIGN WIND SPEED, V	= 120 MPH
NOMINAL DESIGN WIND SPEED, Vasd	= 93 (Vult* √0.6) MPH
RISK CATEGORY	= III
WIND EXPOSURE CATEGORY	= C
DIRECTIONALITY FACTOR, Kd	= 0.85
TOPOGRAPHIC FACTOR, Kzt	= 1.0
INTERNAL PRESSURE COEFFICIENT, GCpi	= ± 0.18
BUILDING ENCLOSURE CLASSIFICATION	= ENCLOSED

7. SEISMIC DESIGN DATA:

RISK CATEGORY	= III
SEISMIC IMPORTANCE FACTOR, Ie	= 1.25
SDS	= 0.065
SD1	= 0.061
SS	= 0.061
S1	= 0.038
SITE CLASS	= D
SEISMIC DESIGN CATEGORY	= A
RESPONSE MODIFICATION FACTOR, R	= 3
BASIC SEISMIC FORCE RESISTING SYSTEM	= STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
SEISMIC RESPONSE COEFFICIENT, Cs	= 0.01
DESIGN BASE SHEAR:	= TBD BY PEMB DESIGNER
ANALYSIS PROCEDURE:	= EQUIVALENT LATERAL FORCE

FOUNDATIONS

1. ALLOWABLE BEARING PRESSURES AS FOLLOWS:
   - A. EXISTING MAT FOUNDATIONS: 2000 PSF
2. GEOTECHNICAL ENGINEER SHALL BE RETAINED BY THE CONTRACTOR TO PROVIDE OBSERVATION AND TESTING SERVICES DURING THE GRADING AND FOUNDATION PHASE OF CONSTRUCTION. INSPECTION AND TESTING REPORTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER.
3. PRIOR TO PLACING ENGINEERED FILL, THE SITE SHALL BE STRIPPED AND PROOF ROLLED. ANY SOFT SPOTS ENCOUNTERED SHALL BE REMOVED AND REPLACED WITH ENGINEERED FILL. REFER TO EARTHWORK SPECIFICATION FOR ADDITIONAL INFORMATION.
4. FOR STRUCTURES WITH CONCRETE TOP SLABS, THERE SHALL BE NO BACKFILLING OPERATIONS UNTIL THE TOP SLAB IS IN PLACE, HAS BEEN CURED A MINIMUM OF 7 DAYS, AND HAS REACHED 70% OF ITS 28 DAY DESIGN STRENGTH, UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER.
5. THERE SHALL BE NO BACKFILLING OPERATIONS UNTIL THE CONCRETE WALLS HAVE REACHED THEIR 28 DAY DESIGN STRENGTH, UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER IN WRITING.
6. HEAVY EQUIPMENT OR WHEELED/TRACKED VEHICLES EXCEEDING 20 PSF CONTACT PRESSURE ARE NOT ALLOWED ON ELEVATED SLABS, ROOFS, OR WITHIN 10 FT OF EARTH RETAINING WALLS UNLESS NOTED OTHERWISE ON PLANS OR APPROVED BY STRUCTURAL ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

CONCRETE

1. REFERENCES
   - A. ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   - B. ACI 350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES
   - C. ACI SP-66 ACI DETAILING MANUAL
   - D. ACI 301-16 SPECIFICATION FOR STRUCTURAL CONCRETE
   - E. ACI 117-10 SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS
   - F. CRSI MSP-2-01 MANUAL OF STANDARD PRACTICE
   - G. CRSI REINFORCING BAR DETAILING
   - H. CRSI PLACING REINFORCING BARS
2. MATERIALS
   - A. STRUCTURAL CONCRETE
     - a. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (f'c): 4,500 PSI
     - b. UNLESS NOTED OTHERWISE ON THE PLANS, ALL CONCRETE TO HAVE THE FOLLOWING EXPOSURE CLASSIFICATION AS DEFINED IN ACI 318-14, CHAPTER 19: F2, S0, W1, C2
     - c. ALL CONCRETE EXPOSED TO THE ELEMENTS SHALL BE AIR-ENTRAINED IN ACCORDANCE WITH ASTM C260. SEE SPECIFICATIONS.
     - d. ALL CONCRETE IN 8" WALLS OR COLUMNS WITH TWO PLANES OF REINFORCEMENT SHALL HAVE MAXIMUM 3/4" AGGREGATE. IT IS RECOMMENDED THAT THE CONTRACTOR CONSIDER SUPER-PLASTICIZED CONCRETE PER SPECIFICATIONS.
     - e. ALL CONCRETE AGGREGATE SHALL COMPLY WITH ASTM C33 (NORMAL WEIGHT).
     - f. WATER TO CEMENT RATIO (MAX) = 0.42
     - g. AIR CONTENT PERCENT BY VOLUME = 6 +/- 1%
     - h. SLUMP AT POINT OF PLACEMENT
       - WITH WATER REDUCING ADMIXTURE: 2" - 4"
       - WITH HIGH RANGE WATER REDUCING ADMIXTURE: 6" - 8"
     - i. FLY ASH: ASTM C 618, TYPE C OR TYPE F (CORROSIVE ENVIRONMENTS) WITH LOSS ON IGNITION NOT MORE THAN 6 PERCENT. REPLACEMENT QUANTITY OF CEMENT CONTENT BY WEIGHT SHALL BE NOT LESS THAN 15 PERCENT OR MORE THAN 25 PERCENT IN CONCRETE
     - j. WATER-REDUCING ADMIXTURE: ASTM C 494, TYPE A.
     - k. PROHIBITED ADMIXTURES: CALCIUM CHLORIDE THYOCYANATES OR ADMIXTURES CONTAINING MORE THAN 0.1 PERCENT CHLORIDE IONS.
   - B. REINFORCEMENT
     - a. REINFORCING BARS: ASTM A615, GRADE 60
     - b. WELDED SMOOTH WIRE FABRIC - ASTM A185 (SHEETS ONLY, ROLL FABRIC NOT ALLOWED)
   - C. ACCESSORIES
     - a. BAR SUPPORTS CLASS 1, MAXIMUM PROTECTION (CRSI MANUAL OF STANDARD PRACTICE) FOR ALL SLABS AND BEAMS WITH SOFFITS EXPOSED TO VIEW
   - D. CAST-IN-PLACE ANCHOR RODS
     - a. SHALL BE GALVANIZED, FURNISHED WITH CHAMFERED ENDS, AND SHALL MEET STRENGTH AND DUCTILITY REQUIREMENTS EQUIVALENT ASTM F1554, GR 55 WELDABLE MATERIAL.
   - E. GROUT: HIGH STRENGTH, NON-SHRINK STRUCTURAL GROUT. SEE SPECIFICATIONS.
3. REINFORCEMENT DETAILING
   - A. ALL REINFORCING STEEL DETAILS SHALL BE IN ACCORDANCE WITH THE ACI CODE REQUIREMENTS (ACI 318 OR 350 - CURRENT EDITIONS).
   - B. REINFORCING STEEL PLACING DRAWINGS AND BAR LISTS SHALL CONFORM TO THE ACI OR CRSI DETAILING MANUALS. ALL BAR AND MESH SUPPORTS MUST BE CLEARLY DETAILED
   - C. CONCRETE COVER FOR REINFORCING SHALL BE INDICATED ON THE APPLICABLE REINFORCING STEEL SHOP DRAWINGS. HOWEVER, NO REINFORCING IN AREAS EXPOSED TO EARTH, WEATHER ,SEWAGE OR WATER SHALL HAVE COVER LESS THAN TWO INCHES.
   - D. SPECIFIED COVER FOR REINFORCING PER ACI 350 (WATER CONTAINMENT STRUCTURES):

COLUMNS/BEAMS (PRIMARY REINF)	2.5"
COLUMNS/BEAMS (STIRRUPS/ TIES)	2.0"
WALLS	2.0"

   - E. REINFORCEMENT IN WALLS AND SHALL BE CONTINUOUS. HORIZONTAL BAR LAP SPLICES SHALL BE STAGGERED
   - F. PROVIDE CORNER BARS AT ALL WALL AND FOUNDATION CORNERS, AND LAP WITH THE HORIZONTAL BARS. CORNER BARS ARE TO MATCH THE HORIZONTAL BARS IN SIZE, GRADE AND SPACING UNLESS OTHERWISE SHOWN.
   - G. HOOKS AND BENDS SHALL MEET ACI STANDARD UNLESS OTHERWISE INDICATED.
   - H. SPLICES: CONTINUOUS REINFORCING BARS SHALL BE FURNISHED WITH CLASS 'B' TENSION LAPS SPLICES INCLUDING CORNER BARS, UNLESS NOTED OTHERWISE.
   - I. MECHANICAL SPLICES SHALL NOT BE PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER
   - J. REINFORCING STEEL FABRICATION AND PLACEMENT SHALL BE IN ACCORDANCE WITH CRSI MANUAL OF STANDARD PRACTICE AND CRSI PLACING REINFORCING BARS (LATEST EDITIONS).
   - K. REINFORCING STEEL IN FOOTINGS SHALL BE ASSEMBLED IN MAT GRILLES EQUALLY SPACED AND SECURELY WIRED TOGETHER BEFORE THE CONCRETE IS POURED.
   - L. PIER REINFORCEMENT SHALL BE DOWELED TO THE FOOTING. PROVIDE DOWELS EQUAL IN SIZE, NUMBER AND GRADE TO THE PIER REINFORCEMENT UNLESS OTHERWISE INDICATED. DOWELS SHALL BE HOOKED 90 DEGREES AT THE BOTTOM LEVEL OF FOOTING REINFORCEMENT. DOWELS SHALL BE LAPPED WITH THE PIER REINFORCEMENT
   - M. SPREAD BARS AROUND SMALL OPENINGS AND SLEEVES IN SLABS AND WALLS WHERE POSSIBLE AND WHERE BAR SPACING WILL NOT EXCEED 1.5 TIMES THE NORMAL SPACING. DISCONTINUE BARS AT LARGE OPENINGS WHERE NECESSARY AND PROVIDE AN AREA OF REINFORCEMENT EQUAL TO THE INTERRUPTED REINFORCEMENT DISTRIBUTING ONE-HALF OF THIS REINFORCEMENT EACH SIDE OF THE OPENING (TENSION LAP SPLICED). HOLES LARGER THAN 12 INCHES IN ANY DIRECTION SHALL HAVE (2) #6 X 4'-0" DIAGONAL BARS IN BOTH FACES AT EACH CORNER
   - N. ALL REINFORCING SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES IN CONCRETE

CONCRETE - (CONTINUED)

- P. NO REINFORCING STEEL SHALL BE FIELD BENT WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. FIELD BENDING OF PLAIN REINFORCEMENT, IF PERMITTED, SHALL BE PERFORMED USING AN APPROVED AND APPROPRIATE SIZED PORTABLE HYDRAULIC DEVICE THAT MAKES ACI STANDARD RADIUS BENDS. NO OTHER FIELD BENDING METHOD SHALL BE PERMITTED.
- Q. WELDING, INCLUDING TACK WELDING, FOR REINFORCING STEEL IS PROHIBITED. WELDING OF REINFORCING STEEL AND HIGH STRENGTH BOLTS, IE. A36, F1554, WILL BE PERMITTED ONLY BY WRITTEN APPROVAL OF THE ENGINEER.
- R. ALL OPENINGS THROUGH WALLS, SLABS OR OTHER STRUCTURAL ELEMENTS NOT DETAILED ON THE STRUCTURAL DRAWINGS MUST BE LOCATED BY THE CONTRACTOR AND SHOWN ON THE APPLICABLE REINFORCING STEEL SHOP DRAWINGS. THE FINAL LOCATION OF ALL OPENINGS MUST BE REVIEWED BY THE ENGINEER BEFORE THE CONCRETE IS POURED.
- S. MODIFICATION AND REPAIR TO EXISTING CONCRETE:
  - a. SEE CONCRETE SPECIFICATIONS FOR COMPLETE EXPLANATION.
  - b. CONNECTION METHODS:
    1. METHOD B - BONDING BY USING BONDING AGENT
    2. METHOD C - DOWELS USING EPOXY REBAR

4. FORMWORK
   - A. SEE SPECIFICATIONS
   - B. CAMBER: PROVIDE CAMBER TO COMPENSATE FOR DISPLACEMENT OF FORMS (SEE ALSO SPECS.) AND TO PROVIDE AS-CAST MEMBER CAMBER AS NOTED ON DRAWINGS.
   - C. RUSTICATION STRIPS, CHAMFERS, DRIPS, MISC. EMBEDS, ETC. SEE DRAWINGS AND/OR ARCHITECTURAL DRAWINGS.
   - D. PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF BEAMS, WALLS ETC. UNLESS OTHERWISE NOTED.
   - E. OPENINGS FOR MEP TRADES ARE TO BE INCLUDED IN THE BID. ALL HOLES FOR OTHER TRADES WHICH MUST BE CUT OR FORMED AND WHICH ARE NOT SHOWN ON THE STRUCTURAL DESIGN DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. ANY STRENGTHENING OR ADDITIONAL REINFORCEMENT REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.
5. CONCRETE FINISHES: SEE SPECIFICATIONS
   - A. FORMED SURFACES:
     - a. EXPOSED TO VIEW: GROUT CLEANED FINISH.
     - b. COVERED OR AS NOTED ON PLANS: AS-CAST
   - B. FLATWORK:
     - a. EXPOSED TO VIEW: BROOM
     - b. STAIRS OR RAMPS: BROOMED
     - c. SIDEWALKS, DRIVEWAYS: BROOMED
6. CURING AND PROTECTION: SEE SPECIFICATIONS.
7. SEE THE MECHANICAL, ELECTRICAL AND SUPPLIERS DRAWINGS AND THE SPECIFICATIONS FOR THE LOCATIONS OF SPECIAL ANCHORS, CHAMFERS, SLEEVES, PIPES, CONDUITS AND OTHER DETAILS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
8. EMBEDDED PIPES OR CONDUIT. MAXIMUM DIAMETER ONE THIRD x SLAB OR WALL THICKNESS, SPACED MINIMUM OF 3 TIMES DIAMETER ON CENTER. ALL EMBEDDED PIPES OR CONDUITS SHALL BE APPROVED BY ENGINEER OF RECORD PRIOR TO INSTALLING
9. SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE AS REQUIRED BY THE EQUIPMENT MANUFACTURER. ALL CONDUIT PLACED IN SLAB SHALL BE APPROVED BY STRUCTURAL ENGINEER OF RECORD PRIOR TO INSTALLING CONDUIT AND POURING SLAB.
10. ANY CONSTRUCTION JOINTS IN STRUCTURES WHERE WATERSTOPS ARE USED SHALL BE PROTECTED BY WATERSTOP UNLESS OTHERWISE NOTED. CONTRACTOR SHALL SUBMIT A CONSTRUCTION JOINT LAYOUT PLAN FOR APPROVAL BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.
11. SUBMITTALS
    - A. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING THE FOLLOWING DOCUMENTS TO THE ENGINEER OF RECORD:
      - a. CONCRETE MIX DESIGN
      - b. CONCRETE REINFORCING DRAWINGS

CONCRETE POST-INSTALLED ANCHORS

1. MECHANICAL (TORQUE-CONTROLLED) ANCHORS
   - A. APPROVED SYSTEMS INCLUDE HILTI KWIK BOLT TZ (ICC ESR 1917) OR HILTI KWIK HUS-EZ (ICC ESR 3027) OR EQUAL CONSIDERING LOAD RESISTANCE. MECHANICAL ANCHORS SHALL BE APPROVED FOR USE WITH CRACKED CONCRETE PER AC 193. CURRENT ICC-ESR SHALL BE SUBMITTED. ALL PERSONNEL INSTALLING ANCHORS SHALL BE TRAINED BY THE MANUFACTURER ON PROPER INSTALLATION TECHNIQUE. TRAINING DOCUMENTATION FROM THE MANUFACTURER SHALL BE AVAILABLE ON REQUEST
2. ADHESIVE ANCHORS
   - A. APPROVED SYSTEMS INCLUDE HILTI HIT-RE 500 V3 (ICC ESR 3814) OR HILTI HIT-HY 200 ADHESIVE WITH HAS/HIT-V THREADED ROD WITH SAFESET TECHNOLOGY (ICC ESR 3187) OR EQUAL CONSIDERING LOAD RESISTANCE, IN-SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OR COMPREHENSIVE INSTALLATION INSTRUCTIONS, AND CREEP. ADHESIVE ANCHORS SHALL BE APPROVED FOR USE WITH CRACKED CONCRETE PER AC 308. CURRENT ICC-ESR SHALL BE SUBMITTED.
   - B. ALL PERSONNEL INSTALLING ANCHORS SHALL BE TRAINED BY THE MANUFACTURER ON PROPER INSTALLATION TECHNIQUE. TRAINING DOCUMENTATION FROM THE MANUFACTURER SHALL BE AVAILABLE ON REQUEST.
   - C. HOLE SIZES AND INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII)
   - D. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH SHALL BE BASED ON ACI 355.4 TEMPERATURE CATEGORY **A** WITH INSTALLATIONS INTO **WATER SATURATED** HOLES DRILLED USING A CARBIDE DRILL BIT INTO CONCRETE THAT HAS BEEN CURED FOR AT LEAST 21 DAYS.
   - E. ANY ADHESIVE ANCHOR INSTALLED HORIZONTALLY OR IN A VERTICALLY INCLINED PLANE SHALL BE INSTALLED BY CERITIFIED ADHESIVE ANCHOR INSTALLER, PER ACI 318-14 17.8.2.2, AND SHALL BE INSPECTED PER ACI 318-14 17.8.2.4.
   - F. FILL IN ALL ABANDONED HOLES WITHIN 2" OF NEW ANCHOR LOCATIONS.
   - G. WHERE REQUIRED, A PROGRAM FOR ON-SITE PROOF LOADING, THAT IS, PROOF LOADING PROGRAM, TO BE CONDUCTED AS PART OF THE SPECIAL INSPECTION AND SHALL BE ESTABLISHED BY THE ENGINEER OR DESIGN PROFESSIONAL OF RECORD AND SHALL CONFORM TO THE FOLLOWING MINUMUM REQUIREMENTS:
     - a. FREQUENCY OF PROOF LOADING BASED ON ANCHOR TYPE, DIAMETER, AND EMBEDMENT.
     - b. PROOF LOADS BY ANCHOR TYPE, DIAMETER, EMBEDMENT, AND LOCATION.
     - c. ACCEPTABLE DISPLACEMENTS AT PROOF LOAD.
     - d. REMEDIAL ACTION IN THE EVENT OF FAILURE TO ACHIEVE PROOF LOAD OR EXCESSIVE DISPLACMENT.

       UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR DESIGN PROFESSIONAL OF RECORD, PROOF LOADS SHALL BE APPLIED AS CONFINED TENSION TESTS (4.7.2.3). PROOF LOADS LEVELS SHALL NOT EXCEED THE LESSER OF 50 PERCENT OF THE EXPECTED PEAK LOAD BASED ON ADHESIVE BOND STRENGTH, OR 80 PERCENT OF THE ANCHOR YIELD STRENGTH. MAINTAIN THE PROOF LOAD AT THE REQUIRED LOAD LEVEL FOR A MINIMUM OF 10 SECONDS.
3. EQUIPMENT ANCHORS:
   - A. SIZE, LENGTH, AND LOCATION OF EQUIPMENT ANCHORS SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.

TETRA TECH
www.tetratech.com
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ANN ARBOR, MI 48108
TEL: 734.665.6000 FAX: 734.213.3003

MARK	DATE	DESCRIPTION
1	9/15/23	ISSUED FOR BIDS

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRVIOLET DISINFECTION
GENERAL NOTES

PROJ:	200-325577-22001
DESN:	J. THOMAS
DRWN:	J. THOMAS
CHKD:	T. MADDELA

S-001

BIM 360://200-325577-22001 BCDWS UV DESIGN/S-325577-22001-21.rvt
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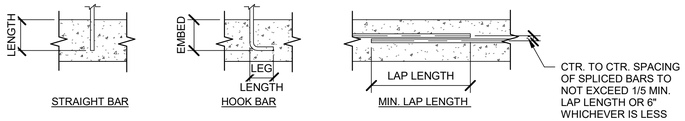
Bar measures 1 inch, otherwise drawing is not to scale

CONCRETE - (CONTINUED)

TENSION DEVELOPMENT / LAP SPLICE SCHEDULE (UNCOATED BARS)							
DEVELOPMENT / LAP SPLICE LENGTH IN CONCRETE (f'c = 4500 PSI)							
BAR SIZE	DEVELOPMENT LENGTH (IN)		CLASS 'B' LAP SPLICE LENGTH (IN)		STD 90 DEG. HOOK (IN)		
	BAR TYPE 1	BAR TYPE 2	BAR TYPE 1	BAR TYPE 2	EMBED	LEG LENGTH	BEND DIA.
4	18	27	24	35	9	8	3
5	23	34	30	44	12	10	3 3/4
6	27	41	35	53	14	12	4 1/2
7	40	59	51	77	16	14	5 1/4
8	45	67	59	88	18	16	6
9	51	76	66	99	21	20	9 1/2
10	57	86	74	111	23	22	10 1/4



STRAIGHT BAR HOOK BAR MIN. LAP LENGTH

BAR TYPE 1 - CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN Db, CLEAR COVER NOT LESS THAN Db, AND STIRRUPS OR TIES THROUGHOUT Ld NOT LESS THAN CODE MINIMUM

OR

CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN 2*Db AND CLEAR COVER NOT LESS THAN Db.

BAR TYPE 2 - TOP BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW **AND** OTHER CASES

PRE-ENGINEERED METAL BUILDING

1. THE STRUCTURAL DRAWINGS FOR THIS PROJECT SPECIFY FOUNDATION REQUIREMENTS TO ACCOMMODATE A PRE-ENGINEERED METAL BUILDING. FOUNDATIONS HAVE BEEN DESIGNED FOR PINNED CONDITIONS, WITHOUT COLUMN BASE MOMENTS. LATERAL BRACING SHALL BE DESIGNED AND PROVIDED BY THE MANUFACTURER WHERE INDICATED ON THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL SUBMIT THE DESIGN REACTIONS FROM THE METAL BUILDING MANUFACTURER TO CONFIRM THE FOUNDATION CAPACITY PRIOR TO FORMING FOUNDATIONS. FOUNDATION SIZES ARE SUBJECT TO CHANGE PENDING REVIEW OF THE SUBMITTAL WITH REACTIONS.
2. ENGINEER IS NOT RESPONSIBLE FOR THE DESIGN OF ANY ASPECTS OF THIS BUILDING OTHER THAN ITS SLAB ON GRADE AND SUPPORT AS SHOWN. OTHER STRUCTURAL ELEMENTS INCLUDING ROOF FRAMING, WIND FRAMES AND BRACING, METAL BUILDING COLUMNS, ANCHOR BOLTS, BRIDGE CRANE SUPPORTS, AND METAL BUILDING COLUMN BASE PLATES ARE TO BE DESIGNED BY THE METAL BUILDING ENGINEER.
3. SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE WHERE THE BUILDING IS INSTALLED. SHOP DRAWING SUBMITTALS SHALL INCLUDE DRAWINGS OF THE FRAMING MEMBERS WITH THE CONNECTIONS, THE ANCHOR BOLT PLAN, AND REACTIONS.
4. THE PRE- ENGINEERED METAL BUILDING SYSTEM SHALL BE DESIGNED AND DETAILED BY THE MANUFACTURER TO SUSTAIN THE LOADS SPECIFIED IN THE DESIGN CRITERIA. THE DESIGN SHALL BE IN ACCORDANCE WITH "AISC" AND "AISI" SPECIFICATIONS AND MBMA "METAL BUILDING SYSTEMS MANUAL" DESIGN PRACTICES, LATEST EDITIONS. THE MANUFACTURER SHALL BE REGULARLY ENGAGED IN METAL BUILDING DESIGN AND MANUFACTURING. CURRENT MBMA MEMBERS ARE APPROVED, OTHER MANUFACTURERS SHALL SUBMIT PRODUCT DATA FOR APPROVAL.
5. THE PRE- ENGINEERED METAL BUILDING SHALL BE DESIGNED FOR THE FOLLOWING DEFLECTIONS:
   A. GRAVITY DEFLECTION:
      a. LIVE LOAD DEFLECTION: L/240.
      b. SNOW LOAD DEFLECTION: L/240.
      c. TOTAL LOAD DEFLECTION: L/180.
   B. HORIZONTAL DRIFT OF RIGID FRAMES MEASURED AT EAVE:
      a. SEISMIC DRIFT LIMITATION: H/120.
      b. WIND DRIFT LIMITATION: H/120.
6. SECONDARY FRAMING SHALL BE DESIGNED FOR THE FOLLOWING DEFLECTIONS:
   A. GRAVITY DEFLECTION:
      a. LIVE LOAD DEFLECTION: L/180.
      b. SNOW LOAD DEFLECTION: L/180.
      c. TOTAL LOAD DEFLECTION: L/150.
   B. HORIZONTAL DEFLECTION: L/120.
   C. DEFLECTION OF ROOF PANELS: SPAN/180
7. DEFLECTION CALCULATIONS SHOULD BE BASED ON THE WIND LOADS PRESENTED IN AISC DESIGN GUIDE 3.
   A. DEFLECTION CALCULATIONS SHOULD BE BASED ON THE UNREDUCED WIND LOADS REQUIRED IN THE BUILDING CODE (50-YEAR REOCCURRENCE INTERVALS).

DEFERRED SUBMITTALS

1. IN ACCORDANCE WITH THE SPECIFICATIONS DESIGNS FOR THE ITEMS LISTED BELOW ARE NOT INCLUDED IN THE CONTRACT DOCUMENTS. DESIGN OF THESE ELEMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MICHIGAN:
   1. ALUM. GUARDRAIL AND HANDRAIL SYSTEMS AND THEIR CONNECTIONS
   2. ALUM. STAIR FRAMING AND PLATFORM DETAILS AND ATTACHMENTS
   3. FRP. GRATING AND CHECKER PLATE SURFACES (DESIGN FOR MINIMUM SIZES PROVIDED)
2. DESIGN OF THE ITEMS LISTED ABOVE SHALL BE IN ACCORDANCE WITH THE ICC INTERNATIONAL BUILDING CODE, 2015 EDITION, MICHIGAN BUILDING CODE, 2015 EDITION, OSHA AND SHALL INCLUDE ALL ATTACHMENTS TO THE STRUCTURE

TANK AND EQUIPMENT ANCHORAGE

1. ANCHORAGE FOR TANKS AND EQUIPMENT NOT SPECIFICALLY DETAILED IN THESE DRAWINGS SHALL DESIGNED AND PROVIDED BY THE TANK OR EQUIPMENT MANUFACTURER. THE CALCULATIONS AND SHOP DRAWINGS FOR THE ANCHORAGE SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
2. THE DESIGN OF THE TANK OR EQUIPMENT ANCHORAGE SHALL BE DONE IN ACCORDANCE TO THE 2015 INTERNATIONAL BUILDING CODE AND THE ASCE 7-10. TANKS OR EQUIPMENT MOUNTED TO A PLATFORM, BUILDING OR OTHER STRUCTURE SHALL BE DESIGNED AS A "NONSTRUCTURAL COMPONENT" PER CHAPTER 13 OF ASCE 7-10. TANKS OR EQUIPMENT MOUNTED TO A CONCRETE FOUNDATION SHALL BE DESIGNED AS A "NONBUILDING STRUCTURE" PER CHAPTER 15 OF ASCE 7-10. REFER TO DESIGN CRITERIA ON THIS SHEET.
3. ANCHORS INSTALLED IN CONCRETE SHALL MEET ALL OF THE REQUIREMENTS OF ACI 318-14, INCLUDING SEISMIC LOADING AND DUCTILE FAILURE REQUIREMENTS. THE EMBEDMENT OF ANCHORS IN CONCRETE SHALL BE AS MEASURED FROM THE TOP OF THE FOUNDATION. THE PORTION OF ANCHORS IN CONCRETE HOUSEKEEPING PADS, WHERE SUCH PADS OCCUR, SHALL NOT BE INCLUDED IN THE EMBEDMENT OF THE ANCHORS UNLESS OTHERWISE NOTED.
4. ANCHORS EMBEDDED IN CONCRETE SHALL BE GALVANIZED CAST-IN-PLACE ANCHOR BOLTS OR POST-INSTALLED ADHESIVE ANCHORS. EXPANSION ANCHORS MAY NOT BE USED FOR EQUIPMENT, PREFABRICATED BUILDING OR TANK ANCHORAGE TO CONCRETE.
5. TEMPLATES SHALL BE USED TO LOCATE ALL TANK ANCHOR BOLTS. ANCHOR BOLTS SHALL BE IN PLACE BEFORE CONCRETE IS PLACED. IF POST INSTALLED ANCHORS ARE USED, FOUNDATION/MAT SLAB REINFORCING MAY BE MOVED SLIGHTLY IF IN CONFLICT WITH THE ANCHORS SO LONG AS THE MINIMUM CODE SPACING REQUIREMENTS BETWEEN ADJACENT BARS IS MAINTAINED AND THERE IS THE SAME QUANTITY OF BARS AS THERE WOULD BE WITHOUT ANY ANCHOR PRESENT.

FIBERGLASS REINFORCED PLASTIC

1. STRUCTURAL SHAPES SHALL HAVE A MINIMUM TENSILE STRESS OF 30 KSI PER A.S.T.M. D638, SHORT BEAM SHEAR STRENGTH OF 4.5 KSI PER A.S.T.M D2344 AND A MINIMUM FLEXURAL MODULUS OF 1,800 KSI PER A.S.T.M. D790. THE COEFFICIENT OF EXPANSION PER A.S.T.M. D696 SHALL BE LESS THAN 0.000009 IN./IN./DEG. F.
2. ALL FINISHED SURFACES OF MATERIAL AND FABRICATIONS SHALL BE SMOOTH, RESIN-FREE, FREE OF VOIDS AND WITHOUT DRY SPOTS, CRACKS, CRAZES OR UNREINFORCED AREAS. ALL GLASS FIBERS SHALL BE WELL COVERED WITH RESIN TO PROTECT AGAINST THEIR EXPOSURE DUE TO WEAR OR WEATHERING.
3. ALL SHOP CUTS OR DRILLING SHALL BE COATED WITH VINYL ESTER RESIN TO PROVIDE CORROSION RESISTANCE. ALL FIELD. FABRICATED CUTS AND DRILLING SHALL BE COATED SIMILARLY BY THE CONTRACTOR IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
4. CONNECTIONS OF FRP MEMBERS SHALL BE WITH STAINLESS STEEL TYPE 316, BOLTS AND NUTS, UNLESS SPECIFICALLY NOTED OTHERWISE.

FIBERGLASS REINFORCED PLASTIC GRATING

1. FRP GRATING SHALL BE "FIBERGRATE", AS MANUFACTURED BY FIBERGRATE COMPOSITE STRUCTURES, INC., OR ENGINEER APPROVED EQUAL.
2. FIBERGLASS REINFORCEMENT SHALL BE CONTINUOUS ROVING IN SUFFICIENT QUANTITIES AS NEEDED BY THE APPLICATION AND/OR PHYSICAL PROPERTIES REQUIRED.
3. RESIN SHALL BE VINYL ESTER, WITH CHEMICAL FORMULATIONS AS NECESSARY TO PROVIDE THE CORROSION RESISTANCE, STRENGTH AND OTHER PHYSICAL PROPERTIES AS REQUIRED. THE RESIN USED IN THE MANUFACTURE OF THE GRATING SHALL BE VI-CORR.
4. GRATING SHALL BE FIRE RETARDANT WITH A FLAME SPREAD RATING OF 25 OR LESS PER ASTM E84 TUNNEL TEST.
5. GRATING SHALL BE OF A ONE PIECE MOLDED CONSTRUCTION WITH TOPS AND BOTTOMS OF BEARING BARS AND CROSS BARS IN THE SAME PLANE. GRATING SHALL HAVE A SQUARE MESH PATTERN PROVIDING BI-DIRECTIONAL STRENGTH.
6. NON-SLIP SURFACING: GRATING SHALL BE MANUFACTURED WITH A CONCAVE, MENISCUS PROFILE ON THE TOP OF EACH BAR PROVIDING MAXIMUM SLIP RESISTANCE.
7. COLOR: ORANGE OR DARK GRAY, TO BE SELECTED BY OWNER.
8. DEPTH: ONE & 1/2 (1 1/2") ±1/16"
9. LOAD/DEFLECTION: FOR THE SPANS SHOWN ON THE DRAWINGS, GRATING SHALL SUPPORT A UNIFORM DISTRIBUTED LOAD OF 100 PSF OR A CONCENTRATED MIDSPAN LINE LOAD OF 300 LB/FT, WITH A MAXIMUM DEFLECTION OF 3/8" OR SPAN (INCHES)/120, WHICHEVER IS LESS.
10. LAYOUT: EACH GRATING SECTION SHALL BE READILY REMOVABLE, UNLESS NOTED OTHERWISE. MANUFACTURER TO PROVIDE OPENINGS AND HOLES WHERE LOCATED ON THE DRAWINGS. GRATING OPENINGS THAT FIT AROUND PROTRUSIONS SHALL BE DISCONTINUOUS AT APPROXIMATELY THE CENTERLINE OF OPENING SO THAT EACH SECTION IS READILY REMOVABLE.
11. ALL MECHANICAL GRATING CLIPS SHALL BE MANUFACTURED OF TYPE 316 STAINLESS STEEL. GRATING CLIPS SHALL BE PROVIDED AT A MAXIMUM SPACING OF 48", WITH A MINIMUM OF FOUR CLIPS PER PIECE OF GRATING.
12. WHEN REQUIRED, FIELD CUT AND DRILL FRP GRATING WITH CARBIDE OR DIAMOND TIPPED BITS AND BLADES. CUT OR DRILLED SURFACES SHALL BE SEALED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

COMPONENTS & CLADDING WIND PRESSURES

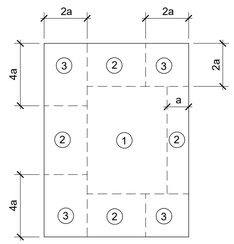
FACTORED (ULTIMATE) COMPONENTS & CLADDING WIND PRESSURES (PSF)			
ROOF			
ROOF ZONES	EFFECTIVE TRIBUTARY AREA*		
	10 SF	50 SF	100 SF
NEGATIVE ZONE 1	-35.8	-35.8	-35.8
NEGATIVE ZONE 2	-41.4	-40.5	-38.6
NEGATIVE ZONE 3	-55.4	-50.3	-38.6
POSITIVE ALL ZONES	16.0	16.0	16.0

WALLS			
WALL ZONES	EFFECTIVE TRIBUTARY AREA*		
	10 SF	100 SF	500 SF
NEGATIVE ZONE 4	-32.7	-28.3	-25.2
NEGATIVE ZONE 5	-40.3	-31.4	-25.2
POSITIVE ZONE 4 & 5	30.2	25.7	22.6

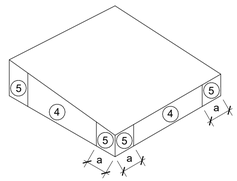
NOTES:

1. EDGE DISTANCE : 'a' = 5'-0"
2. * EFFECTIVE TRIBUTARY AREA: SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN 1/3 THE SPAN LENGTH
3. NEGATIVE VALUE DENOTES PRESSURE ACTING AWAY FROM THE SURFACE
4. UNFACTORED (NOMINAL) COMPONENTS AND CLADDING PRESSURES MAY BE OBTAINED BY MULTIPLYING THE VALUES IN THE TABLE BY 0.60

LOCATION OF WIND PRESSURE ZONES



MONOSLOPE ROOFS 3° < θ ≤ 10°



WALLS

TETRA TECH
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ANN ARBOR, MI 48108
TEL: 734.665.6000 FAX: 734.213.3003

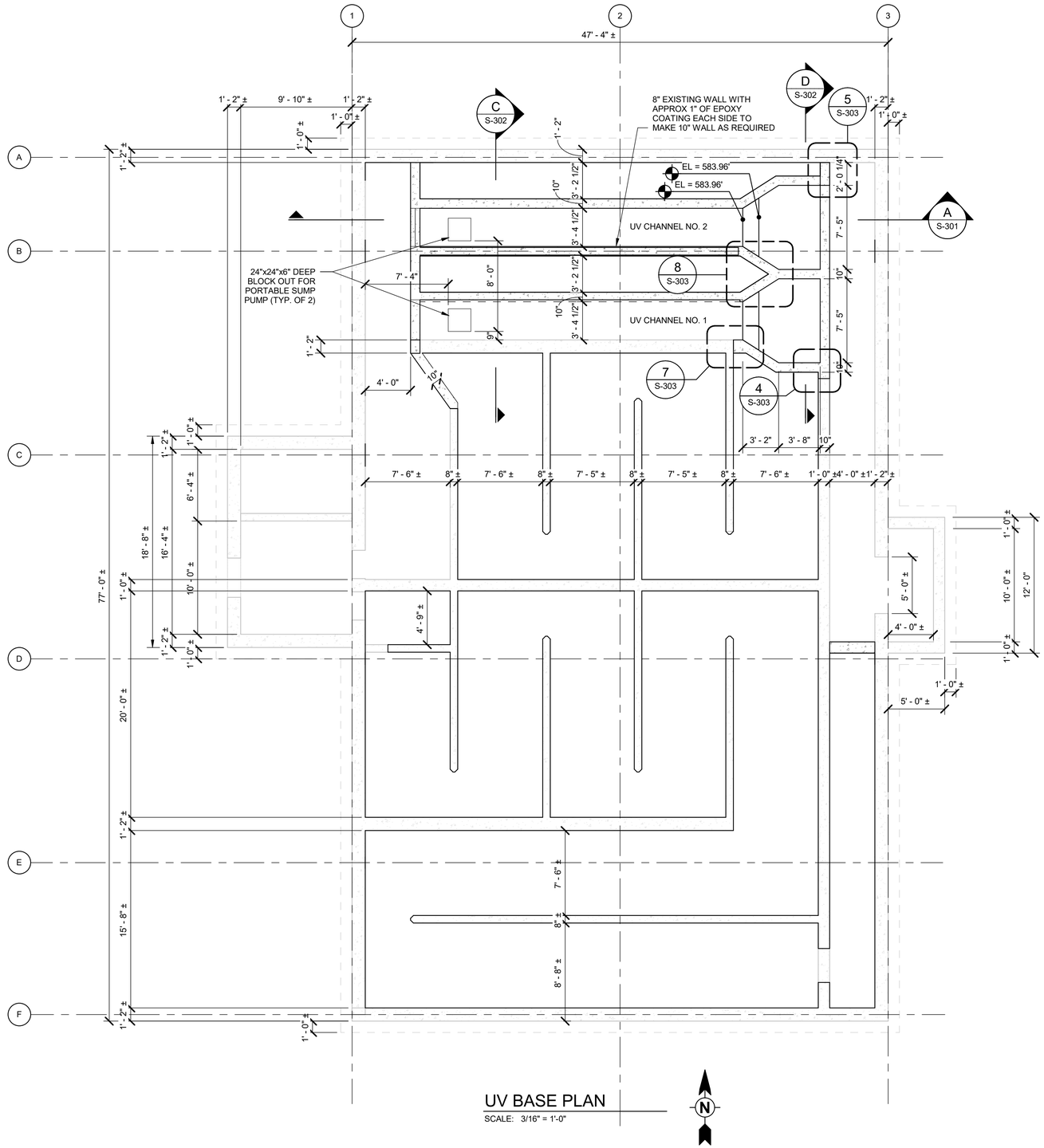
MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRVIOLET DISINFECTION
GENERAL NOTES

PROJ:	200-325577-22001
DESN:	J. THOMAS
DRWN:	J. THOMAS
CHKD:	T. MADDELA

S-002

Bar measures 1 inch, otherwise drawing is not to scale



UV BASE PLAN

SCALE: 3/16" = 1'-0"

PLAN NOTES:

1. REFER TO S-001 AND S-002 FOR STRUCTURAL GENERAL NOTES
2. REFER TO CIVIL DRAWING FOR BUILDING LOCATION ON SITE PLAN
3. COORDINATE FINAL DIMENSIONS AND TOLERANCES WITH UV MANUFACTURER.
4. DO NOT SLOPE CHANNEL FLOOR.
5. CHANNEL WIDTH MUST BE KEPT WITHIN A TOLERANCE OF -/+1/2" AT UV BANK FRAME AND -/+ 1/4" FOR REST OF CHANNEL.
6. ALL CHANNEL ELEVATIONS MUST BE KEPT WITHIN A TOLERANCE OF -/+1/4" AGAINST A COMMON DATUM ELEVATION
7. CONTRACTOR TO COORDINATE FINAL DIMENSIONS AND TOLERANCES WITH UV MANUFACTURER.

LEGEND:

DENOTES NEW CONCRETE STRUCTURES

DENOTES EXISTING CONCRETE STRUCTURES

SCALE: 3/16" = 1'-0"

Bar measures 1 inch, otherwise drawing is not to scale

TETRA TECH
www.tetratech.com
1136 OAK VALLY DRIVE, SUITE 100
ANN ARBOR, MI 48108
TEL: 734.665.6000 FAX: 734.213.3003

MARK	DATE	DESCRIPTION	BY
1	9/15/23	ISSUED FOR BIDS	

BAY COUNTY, MICHIGAN

WEST BAY COUNTY REGIONAL WWTP
ULTRVIOLET DISINFECTION

UV BUILDING BASE PLAN

PROJ:	200-325577-22001
DESN:	J. THOMAS
DRWN:	J. THOMAS
CHKD:	T. MADDELA

S-101

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PLAN NOTES:

1. REFER TO S-001 AND S-002 FOR STRUCTURAL GENERAL NOTES
2. REFER TO CIVIL DRAWING FOR BUILDING LOCATION ON SITE PLAN

LEGEND:

DENOTES LEAN CONCRETE INFILL FROM TOP OF WALL TO BOTTOM OF EXISTING CONCRETE TANK WITH A 6" TOPPING SLAB

DENOTES NEW CONCRETE STRUCTURES

DENOTES EXISTING CONCRETE STRUCTURES

47' - 4" ±

8" EXISTING WALL WITH APPROX 1" OF EPOXY COATING EACH SIDE TO MAKE 10" WALL AS REQUIRED

CONTRACTOR OPTION TO THICKEN WALL TO (E) WALL IF NEEDED DUE TO SPACE RESTRICTIONS

EPOXY DWL INTO (E) WALL TYP.

EPOXY DWL INTO (E) WALL TYP.

4' - 6"

1' - 2 1/4"

2' - 0 1/4"

7' - 5"

10"

11 7/8" / 1'-0"

EL = 583.96'

EL = 587.11'

UV CHANNEL NO. 2

UV CHANNEL NO. 1

4' - 0 1/2"

3' - 4 1/2"

4' - 10 1/2"

3' - 4 1/2"

15' - 8"

1' - 2"

1' - 2"

24"x24"x6" DEEP BLOCK OUT FOR PORTABLE SUMP PUMP (TYP. OF 2)

BRACE FRAME TYP.

BRACE FRAME TYP.

CONTROL WEIR BY UV MFR

31' - 9 13/16" ±

1' - 0" ±

EL = 591.66'

EL = 588.16'

FILL PREVIOUS CHLORINE CONTACT TANK WITH LEAN FILL CONCRETE WITH A 6" TOPPING SLAB

EL = 589.12'

EL = 586.12'

EL = 589.12'

1' - 0" ±

10' - 0" ±

12' - 0" ±

1' - 0" ±

RAMP RETAINING WALLS

8' - 3 1/2"

18' - 0"

75' - 8 1/2"

18' - 0"

18' - 0"

13' - 5"

BRACE FRAME TYP.

BRACE FRAME TYP.

EL = 591.66'

WIND COLUMN TYP.

A S-304 · E S-304 · C S-302 · B S-201 · D S-302 · A S-301 · B S-304 · 3 S-303 · F S-302 · D S-304 · 6 S-303 · A S-201 · G S-304 · B S-301

UV MID LEVEL PLAN

SCALE: 3/16" = 1'-0"

SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"

Bar measures 1 inch, otherwise drawing is not to scale

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BAY COUNTY, MICHIGAN

WEST BAY COUNTY REGIONAL WWTP
ULTRVIOLET DISINFECTION

UV BUILDING MID LEVEL PLAN

PROJ:	200-325577-22001
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S-102

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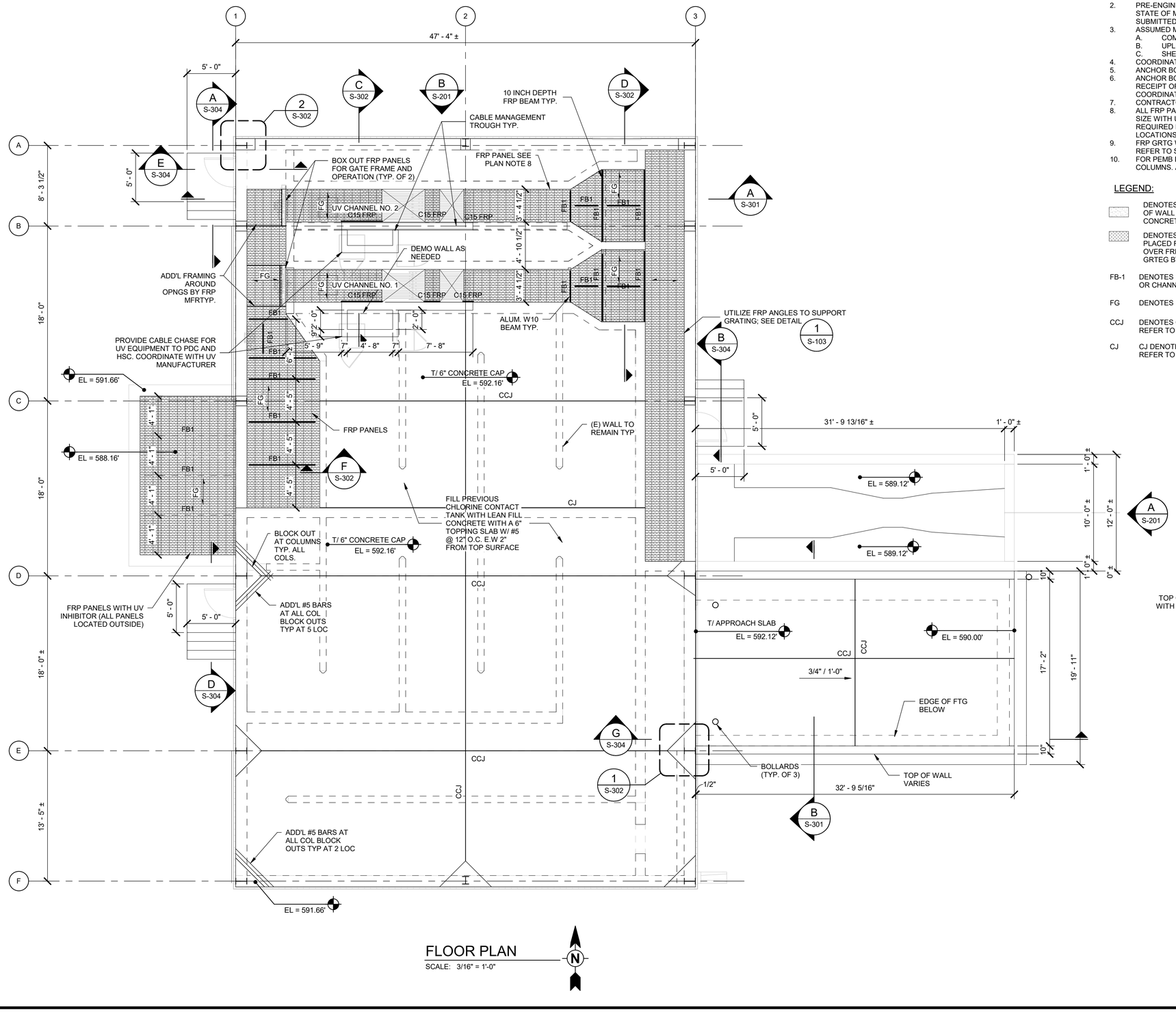


FLOOR PLAN

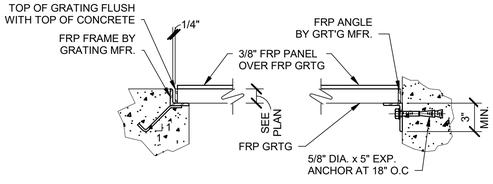
SCALE: 3/16" = 1'-0"

PLAN NOTES:

1. REFER TO S-001 AND S-002 FOR STRUCTURAL GENERAL NOTES
2. PRE-ENGINEERED METAL BUILDING SHALL BE DESIGNED BY REGISTERED ENGINEER IN THE STATE OF MICHIGAN. SIGNED AND SEALED DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION
3. ASSUMED MAXIMUM UNFACTORED PEMB COLUMN REACTIONS:
   A. COMPRESSION = 18 KIPS
   B. UPLIFT = 9.0 KIPS
   C. SHEAR = 4.5 KIPS
4. COORDINATE ALL BRACING WITH MECHANICAL AND ARCHITECTURAL OPENINGS
5. ANCHOR BOLT DIAMETER, LOCATION, SPACING AND GRADE PER METAL BUILDING SUPPLIER
6. ANCHOR BOLT EMBEDMENT TO BE DETERMINED BY THE ENGINEER OF RECORD UPON RECEIPT OF FINAL APPROVED METAL BUILDING DRAWINGS AND CALCULATIONS. COORDINATE WITH ENGINEER PRIOR TO CONSTRUCTION
7. CONTRACTOR COORDINATE COLUMN BASE PLATE AND ANCHOR BOLT SIZE AND QUANTITY
8. ALL FRP PANELS ABOVE UV EQUIPMENT TO BE REMOVABLE. COORDINATE LOCATION AND SIZE WITH UV MANUFACTURER. PANELS TO BE NO WIDER THAN 3 FEET. NOTCH PANELS AS REQUIRED FOR THE NEW EQUIPMENT (TYP). PROVIDE 12" WIDE FRP PANEL SECTIONS AT LOCATIONS WHERE UV BANK WHEN RAISED. COORDINATE WITH UV MANUFACTURER. (TYP.)
9. FRP GRTG WITH COVER PLATE AND SUPPORT BEAM ARE PART OF DELEGATED DESIGN REFER TO S001 FOR DESIGN CRITERIA
10. FOR PEMB BASE PLATE REQUIREMENTS REFER TO DETAIL 2 ON S-302 FOR CORNER COLUMNS. ALL OTHER MUST BE DETAIL 1 ON S-302

LEGEND:

- DENOTES LEAN CONCRETE INFILLFROM TOP OF WALL TO BOTTOM OF EXISTING CONCRETE TANK WITH A 6" TOPPING SLAB
- DENOTES 3/8" FRP CHECKERED PLATE, PLACED FLUSH WITH TOP OF FLOOR OVER FRP GRTG. ATTACHEMENT TO GRTEG BY MFR
- FB-1 DENOTES 10" MAX FRP SUPPORT BEAM OR CHANNEL. DESIGNED BY MFR
- FG DENOTES 1 1/2" FRP GRATING
- CCJ DENOTES CRACK CONTROL JOINT REFER TO DETAIL ON 1 / S-502
- CJ CJ DENOTES CONSTRUCTION JOINT REFER TO DETAIL ON 1 / S-502



GRATING TO SLAB GRATING TO WALL

NOTES:

1. GRATING MATERIAL AND THICKNESS TO BE AS SPECIFIED ON PLANS.
2. ALL FRAMES AND ACCESSORIES TO BE AS SHOWN, UNLESS OTHERWISE SPECIFIED.
3. ALL ANCHORS SHALL SST 316
4. ALL PANELS SHALL BE REMOVABLE AND NO WIDER THAN 4 FEET UNLESS OTHERWISE NOTED.
5. ALL PANELS SHALL HAVE RECESSED OR OPEN HANDLE FOR LIFTING PANELS.
6. ALL PANELS SHALL HAVE SLIP RESISTANT FINISH.

1 / S-103 TYP. FRP PANEL

SCALE: NTS

SCALE: 3/16" = 1'-0"

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BAY COUNTY, MICHIGAN
WEST BAY COUNTY REGIONAL WWTP
ULTRVIOLET DISINFECTION
UV BUILDING MAIN FLOOR PLAN

PROJ:	200-325577-22001
DESN:	J. THOMAS
DRWN:	J. THOMAS
CHKD:	T. MADDELA

S-103

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