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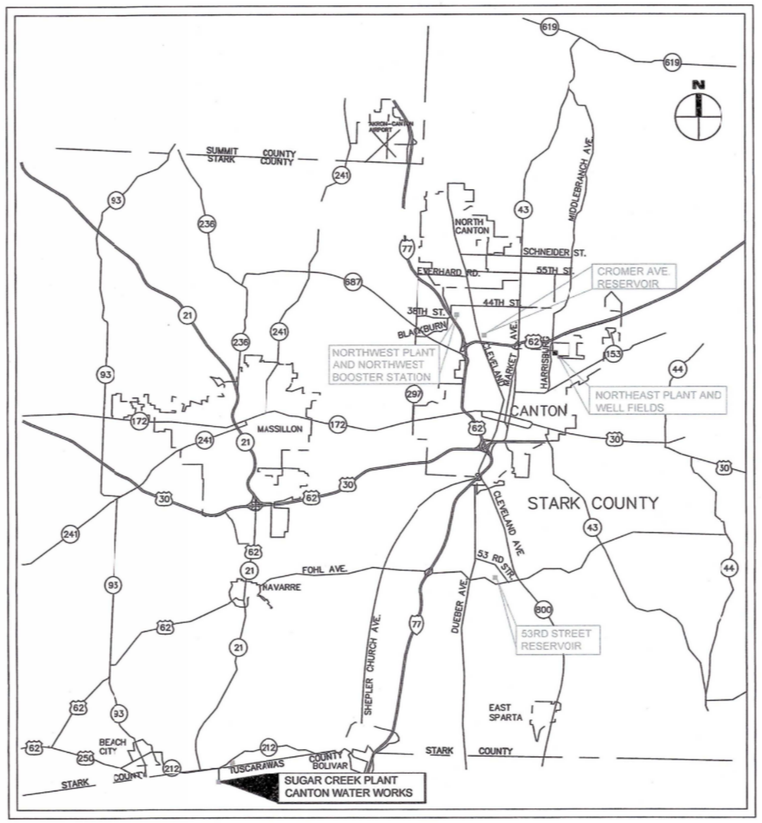
CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK WATER TREATMENT PLANT
& WELLFIELD IMPROVEMENTS

APRIL 2022



LOCATION MAP

SUGAR CREEK WATER TREATMENT PLANT
9520 DOLPHIN STREET
STATE ROUTE 212
STRASBURG, OH
TUSCARAWAS COUNTY

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG
CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: 1-800-925-0988

STATE OF OHIO — Lamonte M. Woodard 8275 — 11-19-2021 — REGISTERED ARCHITECT
Lamonte M. Woodard 8275
Expiraton Date: 12/31/2021
ARCHITECTURE SHEETS

STATE OF OHIO — ALEC BRENT CANTON E-65536 — REGISTERED PROFESSIONAL ENGINEER — 11-24-2021
STRUCTURAL SHEETS

STATE OF OHIO — JOSEPH M. VEROSTKO E-54044 — PETER J. VEROSTKO E-75283 — REGISTERED PROFESSIONAL ENGINEER
HVAC AND PLUMBING SHEETS

STATE OF OHIO — SADGHIEH M. BADVAR E-63558 — REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL & INSTRUMENTATION SHEETS

CANTON CITY OFFICIALS:

MAYOR	THOMAS M. BERNABEI
DIRECTOR OF PUBLIC SERVICE	JOHN HIGHMAN
CANTON WATER DEPT. SUPERINTENDENT	TYLER S. CONVERSE
MEMBERS OF CANTON CITY COUNCIL:	
COUNCIL PRESIDENT	WILLIAM SHERER II
WARD 1	GREG HAWK
WARD 2	BRENDA KIMBROUGH
WARD 3	JASON SCAGLIONE
WARD 4	CHRIS SMITH
WARD 5	ROBERT FISHER
WARD 6	KEVIN HALL
WARD 7	JOHN MARIOL II
WARD 8	PETE FERGUSON
WARD 9	FRANK MORRIS
AT LARGE	BILL SMUCKLER
AT LARGE	JAMES BABCOCK
AT LARGE	CHRISTINE SCHULMAN

PLAN APPROVALS:

THIS PROJECT IS APPROVED BY THE CITY OF CANTON WATER DEPARTMENT THIS 27 DAY OF October, 2021.

TYLER S. CONVERSE,
WATER DEPARTMENT SUPERINTENDENT
P.O. BOX 7904
2664 HARRISBURG ROAD NE
CANTON, OHIO 44705

PLANS PREPARED BY:

STATE OF OHIO — CARL M. SEIFRIED E-38583 — PROFESSIONAL ENGINEER

Carl M. Seifried — 10/27/2021
CARL M. SEIFRIED, P.E. OHIO E-38583 — DATE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO: PR58982
DATE: APR 2022
DESIGNED BY: KAS
DRAWN BY: KAS
CHECKED BY: MMK
APPROVED BY: CMS
SCALE: NONE

TITLE SHEET

G-1

SHEET: OF

P:\PR58982\Cadd\Sheets\G-1 TITLE SHEET.dwg 4/14/2022 5:28:51 PM Matt Kroll

PLOTTED: 4/14/2022 5:31:37 PM

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BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

SHEET INDEX

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SHEET: OF

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E–54	HIGH SERVICE PUMP RM ELECTRICAL RENOVATION LIGHTING PLAN
E–55	FILTER OPERATING ROOM RENOVATION POWER PLAN EL. 984.0
E–56	FILTER OPERATING ROOM RENOVATION LIGHTING PLAN EL. 984.0
E–57	FILTER GALLERY ELECTRICAL RENOVATION POWER PLAN EL. 975
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E–61	CHRLORINE STORAGE – FLUORIDE RM ELECTRICAL RENOVATION POWER PLAN
E–62	CHRLORINE STORAGE – FLUORIDE RM ELECTRICAL RENOVATION LIGHT PLAN
E–63	GARAGE ELECTRICAL RENOVATION POWER PLAN
E–64	GARAGE ELECTRICAL RENOVATION LIGHTING PLAN
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E–66	CONTROL RM & LOBBY ELECTRICAL RENOVATION 2ND FL LIGHTING PLAN
E–67	EAST AERATOR BLDG ELECTRICAL RENOVATION UPPER–LOWER POWER PLAN
E–68	EAST AERATOR BLDG ELECTRICAL RENOVATION UPPER LOWER LIGHTING PLN
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SHEET INDEX

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ABBREVIATIONS

AB	ANCHOR BOLT
ABN	ABANDONED
ADA	AMERICANS WITH DISABILITIES ACT
ADAAG	AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES
ADF	AVERAGE DAILY FLOW
ADHES	ADHESIVE
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
@	AT
AVG	AVERAGE
AWSE	AVERAGE WATER SURFACE ELEVATION
B	BEAM OR BOTTOM
BD	BOARD
BF	BLIND FLANGE
BFLY, BFV	BUTTERFLY VALVE
BH	BOX HYDRANT
℄	BASE LINE
BLDG	BUILDING
BM	BENCH MARK
BRG	BEARING
CB	CATCH BASIN
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CIP	CAST IRON PIPE
CJ	CONSTRUCTION JOINT
℄, C/L	CENTERLINE
C/C	CENTER TO CENTER
CL	CLEAR OR CLASS
CLG	CEILING
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CMS	CONSTRUCTION AND MATERIAL SPECIFICATIONS
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
COP	COPPER
CORB	CORNER OF BUILDING
CONTR JT	CONTRACTION JOINT
CONST	CONSTRUCTION
CONT	CONTINUOUS
CP	HORIZONTAL CONTROL POINT
CT	CERAMIC TILE
CU	COPPER
CY	CUBIC YARD
DBL	DOUBLE
DBS	DEFORMED BAR SUBSTITUTE
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DL	DEAD LOAD
DO	DOOR OPENING, DISSOLVED OXYGEN
DN	DOWN
DR	DRAIN
DS	DOWN SPOUT
DS	DRILLED SHAFT
DWG	DRAWING
DWL	DOWEL

ABBREVIATIONS (CONT)

E	EAST OR EASTING
EA	EACH
EAP	EARLY ACTION PROJECT
ED	EQUIPMENT DRAIN
EF	EACH FACE
EL.,ELEV	ELEVATION
ELEC	ELECTRICAL
EP	EDGE OF PAVEMENT
EQ	EQUAL
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXF, EF	EXHAUST FAN
EX, EXIST	EXISTING
EXL	EXHAUST LOUVER
EXP JT, EJ	EXPANSION JOINT
EXT	EXTERIOR
FA	FRESH AIR
FAF	FRESH AIR FAN
FAL	FIXED AIR LOUVER
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FAR FACE
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FIN	FINISHED
FL, FLG	FLANGE
FLR	FLOOR
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET OR FOOT
FTG	FOOTING
GA	GAUGE OR GAGE
GAL	GALLON
GALV	GALVANIZED
GEN	GENERAL
GFI	GROUND FAULT INTERRUPTER
GLSWR	GLASSWARE
GLZ	GLAZING
GP	GUARD POST
GPM	GALLONS PER MINUTE
GRD	GROUND OR GRADE
GWI	GALVANIZED WROUGHT IRON
GWB	GYPSUM WALL BOARD
GYP	GALVANIZED YOLOY PIPE, OR GYPSUM

ABBREVIATIONS (CONT)

HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HIPT	HIGH POINT
HM	HOLLOW METAL
HP	HORSEPOWER
HS	HIGH SERVICE
HT	HEIGHT
HU	HEATING UNIT
HW	HEADWALL
HWL	HIGH WATER LEVEL
HORIZ	HORIZONTAL
H	HORIZONTAL, HIGH
ID	INSIDE DIAMETER
IF	INSIDE FACE
IJ	ISOLATION JOINT
INFL	INFLUENT
INT	INTERIOR
INV	INVERT
IP	IRON PIN
IPS	IRON PIPE SIZE
LAM	LAMINANT
LB	POUND
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LOPT	LOW POINT
LS	LOW SERVICE
LT	LEFT
LTG	LIGHTING
LWL	LOW WATER LEVEL
MAX	MAXIMUM
MBT	MEMBRANE THICKENER
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM, MINUTE
MJ	MECHANICAL JOINT
MK	MARK
ML	MIXED LIQUOR
MO	MASONRY OPENING OR MOTOR OPERATED
MTL	MATERIAL
MWL	MAXIMUM WATER LEVEL

ABBREVIATIONS (CONT)

N	NORTH OR NORTHING
NC	NORMALLY CLOSED
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NPT	NATIONAL PIPE THREAD
NPW	NON POTABLE WATER
NS	NEAR SIDE
NWL	NORMAL WATER LEVEL
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODOT	OHIO DEPARTMENT OF TRANSPORTATION
OF	OUTSIDE FACE
O/O	OUTSIDE TO OUTSIDE
OPG	OPENING
OPP	OPPOSITE
PC	POINT OF CURVATURE
PCF	POUNDS PER CUBIC FOOT
PCP	PUMP CONTROL PANEL OR PRECAST CONCRETE PLANK
ø	PHASE OR DIAMETER
℄, PL	PLATE OR PROPERTY LINE
P/LAM	PLASTIC LAMINANT
PNL	PANEL
POLY	POLYETHYLENE
PP	POLYPROPYLENE
PROP	PROPOSES
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PW	POTABLE WATER
QUAN	QUANTITY
R	RADIUS OR RISER
RAD	RADIUS
RA	RETURN AIR
RB	ROOF BEAM
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REINF	REINFORCING
REQ'D	REQUIRED
RFRTR	REFRIGERATOR
RT	RIGHT
R/W	RIGHT-OF-WAY

ABBREVIATIONS (CONT)

S	SLAB OR SOUTH
SA	SUPPLY AIR
SAN	SANITARY SEWER
SAS	SANITARY SEWER
SCH, SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FEET
SGP	STEEL GAS PIPE
SGT	STRUCTURAL GLAZED TILE
SHT	SHEET
SIM	SIMILAR
SJ	SAW JOINT
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SNT	SEALANT
SP	SEWER PIPE (EXISTING) – 15" AND SMALLER = CLAY PIPE – LARGER THAN 15" = CONCRETE PIPE
SPA	SPACING
SPC	SPACES
SPEC	SPECIFICATION
SPG	SPACING
SQ	SQUARE
SS, SSTL, SST	STAINLESS STEEL
ST	STRAIGHT
STA	STATION
STD	STANDARD
STL	STEEL
STR	STRUCTURAL
STS	STORM SEWER
SY	SQUARE YARD
SYM	SYMMETRICAL
T	TOP, TREAD OR TANGENT
T&B	TOP AND BOTTOM
TC	TOP OF COVER
TD	TRENCH DRAIN
TEMP	TEMPORARY, TEMPERATURE
T&G	TONGUE AND GROOVE
T&P	TEMPERATURE AND PRESSURE
TOC	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V, VAC	VACUUM
V	VERTICAL
VAR	VARIES
VCP	VITRIFIED CLAY PIPE
VCT	VINYL COMPOSITE TILE
VERT	VERTICAL
W	WEST OR WIDE
W/	WITH
WB	WALL BOARD
W/O	WITHOUT
WC	WATER CLOSET
WH	WATER HEATER
WHYD, WH	WALL HYDRANT
WL	WATER LEVEL OR WATER LINE
WS	WATERSTOP
WWF	WELDED WIRE FABRIC
WM	WATER MAIN
WTP	WATER TREATMENT PLANT
XP	EXPLOSION PROOF

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ABBREVIATIONS

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SITE PLAN SYMBOLS

LINE SYMBOLS

SITE PLANS AND PROFILE

- R/W — RIGHT OF WAY
- T — EXISTING BURIED TELEPHONE CABLE
- G — NATURAL GAS
- EXISTING STORM SEWER
- NEW STORM SEWER, CATCH BASIN, INLET
- UGE — BURIED ELECTRIC
- OHE — OVERHEAD ELECTRIC
- XX — NEW LINE AS NOTED
- PW — PW — NEW LINE AS NOTED
- PW — PW — NEW PLANT WATER
- CTV — BURIED CABLE TV
- STREAM/DITCH
- W — EXISTING WATER
- SS — EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- 12+00 — BL — SURVEY BASELINE
- PL — PROPERTY LINES
- 1025 — EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- 1020 — NEW CONTOUR
- X — EXISTING FENCE
- X — NEW FENCE
- EX. GRAVEL DRIVE
- EX. EDGE OF PVMT (GRAVEL)
- EX. EDGE OF PVMT (CONC/ASPH)
- NEW EDGE OF PVMT

PLANS AND SECTIONS

- EXISTING BUILDING
- NEW BUILDING
- FUTURE
- CENTERLINE
- RAILING
- NEW STUD WALL
- 1–HR FIRE RATED STUD WALL

CONTROL

- PROJECT MARKER
- HORIZONTAL CONTROL POINT
- BRASS CAP FLUSH
- BRASS CAP HANDHOLE
- VERTICAL CONTROL POINT
- HORIZONTAL AND VERTICAL POINT
- BENCHMARK

MONUMENTS

- RIGHT OF WAY MARKER
- RAILROAD SPIKE FOUND
- RAILROAD SPIKE SET
- STUMP
- HUB FOUND
- HUB SET
- IRON PIPE FOUND
- IRON PIPE IN MONUMENT FOUND
- IRON PIN SET
- MONUMENT–CONCRETE
- PK NAIL SET
- PK NAIL FOUND
- STONE
- DRILL HOLE FOUND
- DRILL HOLE SET

FENCES

- GUARDRAIL
- GUARD POST

RAILROAD

- RXR — RAILROAD SIGNAL
- RAILROAD TRACK

VEGETATION/TREES

- BUSH/SHRUB
- WETLANDS
- TREE (DECIDUOUS)
- EVERGREEN

SANITARY SEWER

- MANHOLE
- SANITARY CLEAN OUT

MISCELLANEOUS

- TEST PIT
- MAILBOX
- B–1 — BORE TEST HOLE AND NUMBER
- FLAG POLE
- Ⓑ — BARREL
- GRAVEL
- PAVEMENT DELINEATOR

SIGN/TRAFFIC

- TRAFFIC SIGNAL BOX
- TRAFFIC SIGNAL POLE
- SIGN
- SIGN
- STREET SIGN
- MP — MILE POST MARKER

WATER

- FIRE HYDRANT
- SCB — SPRINKLER CONTROL BOX
- SH — SPRINKLER HEAD
- (IRRIGATION) STANDPIPE
- WATER METER
- W — WATERLINE MARKER
- WATER SHUTOFF VALVE
- WATER VALVE
- YARD HYDRANT
- IRR — IRRIGATION VALVE
- WELL
- VB — VACUUM BREAKER

GAS

- GAS SHUT OFF VALVE
- GT — GAS TEST
- GAS METER
- G — GAS MARKER

STORM SEWER

- HD — HOUSE DRAIN
- CATCH BASIN
- INLET CATCH BASIN
- YD — YARD DRAIN

ELECTRIC/TELEPHONE

- MH / E — ELECTRICAL BOX
- EO — ELECTRIC OUTLET
- POWER/TELEPHONE/LIGHT POLE
- ANCHOR POLE
- POWER TRANSFORMER
- PB / E — PULL BOX
- YARD LIGHT
- POWER POLE
- LIGHT POLE
- LIGHT POWER POLE
- NON–UTILITY POLE

TELEPHONE

- T — TELEPHONE MARKER
- TELEPHONE POLE
- TELEPHONE AND POWER POLE
- PHONE
- T / PED — TELEPHONE SAC BOX
- TELEPHONE AND LIGHT POLE
- TELEPHONE ENCLOSURE

PAVEMENT SYMBOLS

- EXISTING PAVEMENT
- GRAVEL PAVEMENT
- NEW GRAVEL PARKING OR DRIVE AS NOTED
- NEW ASPHALT PAVEMENT
- NEW CONCRETE PAVEMENT
- NEW CONCRETE SIDEWALK

DEMOLITION SYMBOLS

- TO BE REMOVED OR ABANDONED IN PLACE AS NECESSARY
- TO BE ABANDONED IN PLACE
- TO BE REMOVED
- TO BE ABANDONED IN PLACE
- TO BE REMOVED
- DOOR, RAILING WINDOWS, ETC. TO BE REMOVED

TWO LINE PIPING SYMBOLS

- FLANGED JOINT
- MECHANICAL JOINT
- BELL & SPIGOT JOINT
- SCREWED JOINT
- FLEXIBLE COUPLING
- EXPANSION COUPLING
- SLEEVE COUPLING
- FLANGED COUPLING ADAPTER
- WALL PIPE; FLANGE MECHANICAL JOINT
- WALL SLEEVE
- MECHANICAL JOINT SLEEVE (TAPPED FOR STUDS)
- FLANGE (TAPPED FOR STUDS) PLAIN END
- FLANGE–FLANGE (TAPPED FOR STUDS)
- MECHANICAL JOINT–MECHANICAL JOINT (TAPPED FOR STUDS) GATE VALVE
- CHECK VALVE
- BUTTERFLY VALVE
- PLUG VALVE
- BALL VALVE
- WEDGE GATE VALVE
- GLOBE VALVE * REPRESENTS FUNCTION
- M — METER
- BALL CHECK VALVE
- PRESSURE REDUCING VALVE
- END OF PIPE
- TO BE REMOVED
- TO BE ABANDONED IN PLACE

SECTION SYMBOLS

- CUT CONCRETE
- CONCRETE
- CONCRETE BLOCK
- BRICK
- STRUCTURAL GLAZED TILE
- METAL
- INSULATION
- WOOD
- EXISTING GRADE, STRUCTURES
- FINISHED GRADE
- UNDISTURBED SUBGRADE
- ROCK
- POROUS BACKFILL
- COMPACTED GRANULAR BACKFILL OR COMPACTED FOUNDATION
- GRATING
- PRECAST ROOF DECK

SCHEMATIC PIPING SYMBOLS

- LEVER OPERATOR
- PNEUMATIC OPERATOR
- M — MOTOR OPERATOR
- S — SOLENOID OPERATOR
- WRENCH OPERATOR
- FLEXIBLE CONNECTOR
- PRESSURE GAUGE
- SLEEVE
- SV — SOLENOID VALVE
- THERMOMETER
- TRAP
- UNION
- VACUUM BREAKER
- WYE STRAINER
- PRESSURE RELIEF VALVE
- REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY
- REDUCER/INCREASER
- M — METER
- FLOW
- UP
- DOWN
- AIR RELEASE VALVE
- ALTITUDE VALVE
- BP — BACKPRESSURE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- DIAPHRAGM VALVE
- GATE VALVE
- GLOBE VALVE
- GLOBE VALVE (ANGLE)
- HOSE BIBB OR WALL HYDRANT
- CORP STOP
- NEEDLE VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- 3–WAY VALVE
- 4–WAY VALVE
- CHAIN WHEEL OPERATOR
- FLOAT OPERATOR
- HANDWHEEL OPERATOR
- HYDRAULIC OPERATOR
- EXISTING PIPE
- NEW PIPE
- P — PUMP

LABEL SYMBOLS

- D10 — = DOOR NO. 10, SEE SCHEDULE SHEET ___.
- A — = WINDOW TYPE 'A', SEE SHEET ___.
- S–10 — = STAIR NO. 10, SEE SCHEDULES SHEETS ___.
- G–1 / G-1 — = GATE NO. 1, SEE SCHEDULE IN SPECIFICATION SECTION 40 05 24
- M001 — = FLOW METER NO. 1, SEE SCHEDULE IN SPECIFICATION SECTION 40 91 03.04
- V001 — = VALVE NO. 1, SEE SCHEDULE IN SPECIFICATION SECTION 40 05 23
- 00 — = CODED NOTE

SECTION DESIGNATIONS

SECTION CUT AND SHOWN ON DIFFERENT SHEETS

A / ST-3 — SHEET ON WHICH SECTION IS SHOWN OR FIRST CUT.

N — NORTH ARROW

GRADING SYMBOLS

+ 962.0 — FINISHED GRADE POINT ELEVATION

C 962.9 = POINT DESCRIPTION AND ELEVATION
N 1000.0 = GRID NORTHING
E 1000.0 = GRID EASTING

NOTES:

1. ADDITIONAL SYMBOLS WILL BE DESIGNATED AND USED AS NECESSARY.
2. IN GENERAL, BOLD LINE WEIGHT SIGNIFIES DEMOLITION ITEMS OR NEW CONSTRUCTION ITEMS UNLESS OTHERWISE NOTED.

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LEGEND

G-5

SHEET: OF

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GENERAL NOTES AND UTILITIES

1. THE TERM "CONTRACTOR" AS USED IN THESE GENERAL NOTES, SHALL REFER TO THE CONTRACTOR OF CONTRACT, AS APPROPRIATE.

2. THE LOCATION OF KNOWN EXISTING UNDERGROUND UTILITIES ARE SHOWN ON THE PLANS AND ARE BELIEVED TO BE ESSENTIALLY CORRECT. THE LOCATIONS WERE OBTAINED FROM THE OWNERS OF THE UTILITIES AS REQUIRED BY SECTION 153.64 O.R.C. NO GUARANTEE IS MADE RELATIVE TO THE COMPLETENESS OR ACCURACY AND THE CONTRACTOR IS REQUIRED TO CONTACT THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN ON THE PLANS AT LEAST THREE WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION IN ANY AREA.

3. ALL EXISTING UTILITIES, SERVICES, POLES, AND CONNECTIONS SHALL BE PROTECTED AT THE CONTRACTOR'S EXPENSE. IF DAMAGE IS CAUSED BY CONSTRUCTION TO ANY EXISTING UTILITY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR RESTORATION OF SAME AT HIS EXPENSE, IN ACCORDANCE WITH THE DIRECTIONS OF THE ENGINEERS AND FOR ANY RESULTING CONTINGENT DAMAGES. EXISTING UTILITIES INCLUDE, BUT ARE NOT LIMITED TO WATERLINES, STORM SEWERS, SANITARY SEWERS, GAS, ELECTRICAL, TELEPHONE, FIBER OPTIC CABLE, TELEVISION CABLE, AND INDIVIDUAL SERVICE CONNECTIONS AND LATERALS.

4. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES, OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL LOCATION OF THE UTILITY, OR STRUCTURE AND ITS EFFECT ON THE NEW CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE UTILITY OWNER.

5. OSHA PROHIBITS CRANE AND BACKHOE OPERATIONS WITHIN 10 FEET OF ENERGIZED PRIMARY CONDUCTORS. TEMPORARY RELOCATION OF ELECTRICAL UTILITIES, INCLUDING RESTRAINT OF POLES, RELOCATION OF POLES, AND RUBBER COVERING OF ENERGIZED CONDUCTORS MAY BE REQUIRED. THE COORDINATION AND COST OF THESE SERVICES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MAY RESTRAIN POLES IF THE METHOD OF SUPPORT HAS BEEN SUBMITTED TO AND APPROVED BY THE UTILITY OWNER.

6. ANY EXISTING PROPERTY CORNER PINS OR MONUMENTS DAMAGED OR DESTROYED BY CONSTRUCTION SHALL BE RESET BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE UPON COMPLETI OF THE PROJECT AND PRIOR TO FINAL PAYMENT. A CERTIFICATION SHALL BE FURNISHED BY A REGISTERED SURVEYOR, STATING THAT SAID PINS AND MONUMENTS HAVE BEEN RESTORED.

7. ELEVATION BENCHMARKS ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELEVATIONS AND DIMENSIONS AND MAKE ADJUSTMENTS ACCORDINGLY UNDER THE DIRECTION OF THE ENGINEER.

8. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL CONSTRUCTION DEBRIS INCLUDING BUT NOT LIMITED TO EXCESS SOIL, ROCK, OR ANY OTHER TYPE MATERIALS. THE CONTRACTOR SHALL NOT FILL ANY WETLANDS, LOW LANDS, FLOOD PLAINS, OR DRAINAGE WAYS WITH SAID DEBRIS WITHOUT OBTAINING PROPER APPROVALS, PERMITS, LICENSES, ETC. FROM LOCAL, STATE, OR FEDERAL AGENCIES.

9. ALL DISTURBED AREAS OUTSIDE OF THE WALKS, DRIVES, AND STRUCTURES SHALL BE SEEDED AND MULCHED AFTER THE AREAS HAVE BEEN FINISHED GRADED AND TOPSOIL HAS BEEN ADDED. FINAL SEEDING AND MULCHING SHALL BE IN ACCORDANCE WITH SECTION 32 90 02.

10. RESTORE DISTURBED AREAS TO PRECONSTRUCTION CONDITION.

11. CONTRACTOR SHALL PROVIDE ONE MARKUP SET OF AS-BUILT DRAWINGS TO THE OWNER AT THE COMPLETION OF THE PROJECT, THE MARKUP SET MUST BE NEAT AND LEGIBLE AND MUST DOCUMENT ALL DEVIATIONS FROM THE ORIGINAL CONTRACT DOCUMENTS.

12. THE SCALE SHOWN ON THE DRAWINGS IS FOR FULL SIZE SHEETS (22"x34"). UNLESS OTHERWISE NOTED.

13. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY UTILITIES AS REQUIRED FOR COMPLETION OF WORK AT ANY NEW OR EXISTING STRUCTURES.

14. ANY EXCAVATION WITHIN A ZONE OF INFLUENCE BENEATH NEW OR REPLACEMENT PAVEMENT, DRIVE AREAS. OR SIDEWALKS SHALL BE BACKFILLED WITH COMPACTED GRANULAR MATERIAL FROM BOTTOM OF EXCAVATION TO UNDERSIDE OF PAVEMENT OR SIDEWALK OR TOP OF ZONE OF INFLUENCE.

15. ODOT CLASS 'C' CONCRETE MIX IS SIMILAR TO SPECIFICATION SECTION 03 30 00 CLASS 'A' MIX.

16. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AT LEAST TWO (2) WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, PRIOR TO CONSTRUCTION TO HAVE UTILITIES STAKED, MARKED OR OTHERWISE DESIGNATED IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED BY THE CONTRACTOR TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

17. INDIVIDUAL STORM, SANITARY, GAS, WATER, ELECTRIC, TELEPHONE AND CABLE SERVICE CONNECTIONS MAY NOT BE SHOWN. THE CONTRACTOR SHALL LOCATE AND PROTECT SERVICE CONNECTIONS THROUGH THE COURSE OF THE WORK. IN THE EVENT SERVICE CONNECTIONS ARE BROKEN OR DISTURBED, THE CONTRACTOR SHALL REPAIR OR REPLACE THE SERVICE CONNECTIONS TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHOULD EXPECT EACH RESIDENCE/COMMERCIAL PROPERTY ALONG THE ROUTE TO HAVE AT LEAST ONE SERVICE CONNECTION FOR EACH UTILITY.

18. IT IS THE RESPONSIBILITY OF THE BIDDER TO MAKE HIS OWN ADDITIONAL SURFACE AND SUBSURFACE INVESTIGATIONS OF THE SITE CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL IF NECESSARY IN HIS OR HER JUDGMENT. IF THE BIDDER DESIRES TO OBTAIN INFORMATION AS TO SOIL CONDITIONS, THE OWNER WILL PROVIDE HIM AN OPPORTUNITY AT HIS OWN EXPENSE TO MAKE BORINGS OR TO DIG TEST PITS ON THE SITE OF THE WORK.

19. ACCESS TO ALL ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

20. UNLESS MARKED FOR REMOVAL, SPECIAL CARE SHALL BE TAKEN TO AVOID DAMAGE TO TREES AND THEIR ROOT SYSTEM. IN GENERAL, WHERE THE LINE OF TRENCH FALLS WITHIN THE LIMITS OF THE LIMB SPREAD, THE LEAVING OF HEADERS ACROSS TO PROTECT ROOTS WILL BE REQUIRED. THE OPERATION OF ALL EQUIPMENT, PARTICULARLY WHEN EMPLOYING BOOMS, THE STORAGE OF MATERIALS, AND THE DEPOSITION OF EXCAVATION SHALL BE CONDUCTED IN A MANNER WHICH WILL NOT INJURE TREES, TRUNKS, BRANCHES, OR THEIR ROOTS UNLESS SUCH TREES ARE DESIGNATED BY THE OWNER FOR REMOVAL.

21. PRIOR TO CONSTRUCTION, AUDIO-VIDEO COLOR TAPING SHALL BE COMPLETED PER SPECIFICATION SECTION 01 32 34.

22. RIGHT-OF-WAY AND PROPERTY LINES WERE PREPARED FROM RECORD INFORMATION AND DO NOT REPRESENT A BOUNDARY SURVEY.

23. THROUGHOUT THESE DRAWINGS AND THE SPECIFICATIONS, REFERENCES MADE TO THE OWNER, ENGINEER, OR ENGINEER/ARCHITECT SHALL BE INTERPRETED AS THE CITY OF CANTON OR THEIR AUTHORIZED REPRESENTATIVE.

24. THE COST OF RELOCATION, MAKE READY WORK, FEES AND PERMITS, AND/OR SECURING ANY UTILITY POLES AS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE BID PRICE, AND THE CONTRACTOR SHALL COORDINATE ALL PHASES WITH THE POWER COMPANY.

25. THE CONTRACTOR SHALL REMOVE AND REINSTALL CULVERT AND/OR DRAINAGE PIPES AS IS NECESSARY TO FACILITATE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. PROPER DRAINAGE MUST BE MAINTAINED AT ALL TIMES. ANY CULVERT OR DRAINAGE PIPE DAMAGED OR BROKEN DURING CONSTRUCTION BY THE CONTRACTOR SHALL BE REPLACED, COMPLETE IN LENGTH AND KIND BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

26. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE THE LOCATION OF WATER FROM THE CITY OF CANTON.

27. THE STORAGE OF CONSTRUCTION MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AS APPROVED BY THE ENGINEER. MATERIAL STORAGE MUST BE KEPT NEAT AND WELL MAINTAINED AS DIRECTED BY THE ENGINEER. THE MATERIAL STORAGE AREA SHALL BE RESTORED, AT A MINIMUM, TO THE SAME CONDITION AS EXISTED PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING ALL COSTS FOR A CONSTRUCTION STAGING AREA.

28. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE CITY OF CANTON PRIOR TO THE START OF CONSTRUCTION. PERMIT FEES FROM THE CITY OF CANTON WILL BE WAIVED FOR CITY PROJECTS.

29. CONTRACTOR SHALL NOTIFY THE CITY ENGINEER 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY AND SUBMIT A LIST OF ALL SUBCONTRACTORS.

30. THE 100-YEAR FLOOD PLAIN IS APROXIMALETLY ELEVATION 933 BASED ON FEMA MAP NUMBER 39157C0045D, EFFECTIVE JULY 22, 2010.

31. ALL MATERIALS IN CONTACT WITH WATER SHALL MEET NSF STANDARD 61 AS REQUIRED BY OHIO ADMINISTRATIVE CODE (OAC) RULE 3745-83-01(D)

32. WATER MAINS AND SANITARY SEWER LINES OR FORCE MAINS SHALL BE SEPERATED BY A MINIMUM CLEAR VERTICAL DISTANCE OF 18-INCHES AND HORIZONTAL DISTANCE OF 10-FEET WHEN THE ABOVE CANNOT BE MAINTAINED, SEWER LINE SHALL BE CONCRETE ENCASED.

CONSTRUCTION NOISE

1. CONSTRUCTION NOISE ASSOCIATED WITH ANY IMPROVEMENT PROJECT, SHALL BE LIMITED TO LEVELS COMMENSURABLE WITH ADJOINING LAND AND THEIR ASSOCIATED USAGE AS DETERMINED BY THE CITY ENGINEER. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER-OPERATED CONSTRUCTION-TYPE DEVICE SHALL NOT BE OPERATED BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM, UNLESS AUTHORIZED BY THE CITY ENGINEER.

TRENCH CLOSING AND TEMPORARY TOPPING

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE THE NECESSARY LEVELS OF PROTECTION AND SAFEGUARDING OF ALL OPEN TRENCHES, WHEN WORK IS EITHER COMPLETED AT THE END OF THE DAY OR SUSPENDED FOR ANY OTHER REASON.

2. AS A MINIMUM, THE CITY REQUIRES ALL TRENCHES TO BE TOPPED WITH 4" OF ODOT 304 LIMESTONE FOR TRENCHES WITHIN EXISTING ROADWAY PAVEMENTS WHEN THE ROADWAY WILL BE OPENED TO VEHICULAR TRAFFIC PRIOR TO PAVEMENT REPLACEMENT.

3. THE TRENCH TOPPING MATERIAL SHALL BE ROLLED OR OTHERWISE COMPLETED AND BE FINISHED FLUSH WITH THE EXISTING ADJOINING PAVEMENT.

4. THE COST OF ALL TRENCH GRANULAR BACKFILL IS TO BE INCLUDED IN THE PRICE FOR WATERLINE REPLACEMENT.

5. ALL APPLICABLE WATERLINES SHALL BE TESTED AS SPECIFIED IN SPECIFICATION SECTION 01 89 19.

6. ALL WATERLINES AND APPURTENCANCES SHALL BE CONSTRUCTED ACCORDING TO CITY SPECIFICATIONS AND ODOT 603 SPECIFICATION EFFECTIVE AT THE TIME OF CONSTRUCTION.

7. BEDDING SHALL BE AASHTO M 43, NUMBERS 56, 57, OR 67 LIMESTONE OR ANGULAR CRUSHED GRAVEL STONE. BEDDING SHALL EXTEND THE FULL WIDTH OF THE TRENCH. TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF PIPE PLUS 12" ON BOTH SIDES OF THE PIPE. FOR ALL OTHER WATERLINES THE BEDDING SHALL EXTEND 6" BELOW THE BOTTOM OF PIPE AND 12" ABOVE THE PIPE.

8. BACKFILL MATERIAL WITHIN THE RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH ODOT 703.11, TYPE '1' GRANULAR MATERIAL (304 AGGREGATE GRADATION ONLY); DEVIATIONS FROM THIS ARE AS FOLLOWS:

   A. NO FOUNDRY SAND, AIR COOLED BLAST FURNACE SLAG, GRANULATED SLAG, OR OPEN HEARTH SLAG SHALL BE PERMITTED.

   B. ANY EXCEPTION TO THE TYPE '1' GRANULAR MATERIAL SHALL BE WITH THE SUPPLEMENTAL APPROVAL OF THE CITY ENGINEER. FOR SUCH SUPPLEMENTAL APPROVAL THE CONTRACTOR SHALL SUBMIT IN WRITING THE FOLLOWING:

      - SOURCE FOR THE ALTERNATE BACKFILL MATERIAL.
      - GRADATION REPORT IN ACCORDANCE WITH AASHTO T III AND T 27.
      - PROCTOR CURVE ANALYSIS IN ACCORDANCE WITH ASTM D 698.
      - PROPOSED COMPACTION METHOD.

      THE CITY RESERVES THE RIGHT TO REFUSE ANY ALTERNATE BACKFILL MATERIAL THE CITY FINDS NOT CONSISTENT WITH THE MATERIAL PREVIOUSLY APPROVED BY THE CITY ENGINEER.

9. BACKFILL METHODS WITHIN THE RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH ODOT 603; DEVIATION FROM THIS ARE AS FOLLOWS:

   A. CONTRACTOR MAY REQUEST TO EXCEED 8" PLACEMENT LIFTS DURING BACKFILL PROCEDURE. GREATER LIFT SIZE IS SUBJECT TO THE CITY ENGINEER'S APPROVAL BASED ON THE CONTRACTOR'S PROPOSED COMPACTION METHOD AND THE BACKFILL MATERIAL.

10. BACKFILL MATERIAL AND COMPACTION OUTSIDE THE RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH ODOT 603.

DEWATERING OPERATIONS

1. WHEN DEEMED NECESSARY, THE CONTRACTOR MAY INSTALL DEWATERING EQUIPMENT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

2. THE PROPOSED LOCATION OF WELL POINTS, HEADER PIPE, ELECTRICAL DISTRIBUTION, GENERATORS AND DISCHARGE PIPES, ETC. SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS FOR THE INSTALLATION AND SUBSEQUENT REMOVAL OF DEWATERING EQUIPMENT AS MAY BE NECESSARY PER STATE AND LOCAL GOVERNING AGENCIES.

4. INSTALLATION OF ALL ELECTRICAL EQUIPMENT, INCLUDING GROUNDING AND PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

5. CONTRACTOR SHALL PROVIDE ALL COMBUSTIBLE ENGINE DRIVEN GENERATORS WITH "HOSPITAL GRADE" MUFFLERS. MUFFLERS SHALL BE RATED, AT A MAXIMUM OF 67 dB AT 23 FEET AWAY RUNNING FULL LOAD.

DEMOLITION GENERAL NOTES

1. OWNER HAS FIRST RIGHT OF REFUSAL ON ALL MATERIAL AND EQUIPMENT REMOVED. SEE SPECIFICATION SECTION 02 41 00.

2. ALL ABANDONED ELECTRICAL WIRING AND CONDUITS SHALL BE REMOVED UNLESS OTHERWISE NOTED.

3. SEE SPECIFICATIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS

4. ALL CONCRETE TO BE DEMOLISHED SHALL BE ASSUMED TO BE STEEL REINFORCED THROUGHOUT.

5. CONTRACTOR SHALL FIELD VERIFY LOCATIONS, DIMENSIONS, AND SIZES OF ALL ITEMS BEFORE BEGINNING WORK.

PAVEMENT

1. ROADWAYS, DRIVES AND SIDEWALKS DISTURBED BY CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIAL, SEE DETAIL ON PLANS AND SPECIFICATION SECTION 32 10 01.01. THE PAY LIMITS FOR REPLACEMENT ARE DESCRIBED IN THE DETAIL. ANY REPLACEMENT NEEDED OUTSIDE THE PAY LIMITS SHALL BE PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL USE WHITE SPRAY PAINT TO FIELD MARK ALL EXISTING CRACKS AND DAMAGED AREAS PRIOR TO STARTING ANY WORK.

2. WHERE NECESSARY TO DISTURB ASPHALT OR CONCRETE ROADWAYS OR DRIVES, PAVEMENT SHALL BE SAW CUT IN NEAT STRAIGHT LINES.

3. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN VEHICULAR TRAFFIC ACCESSIBILITY THROUGHOUT THE ENTIRE SITE DURING CONSTRUCTION.

4. ALL CONCRETE USED FOR ROADWAYS AND DRIVEWAYS INCLUDING APRONS SHALL BE CLASS MS IN ACCORDANCE WITH ODOT 499.

5. THE CONTRACTOR SHALL NOTIFY EACH RESIDENT BY LETTER A MINIMUM OF 48 HOURS IN ADVANCE OF WORK WHICH SHALL LIMIT ACCESS TO THEIR DRIVEWAY.

6. THERE SHALL BE NO ASPHALT BINDER ADJUSTMENT AS STATED IN ODOT 401.20.

7. ANY PAVEMENT STRIPING DISTURBED AS A RESULT OF CONSTRUCTION SHALL BE RESTORED TO MATCH ORIGINAL STRIPING. NEW PAVEMENT STRIPING SHALL BE AS SHOWN ON PLANS.

8. CONTRACTOR SHALL FURNISH AND APPLY WATER AND/OR CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL

1. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE CITY OF CANTON STANDARDS, AND THESE PLANS AND SPECIFICATIONS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE (IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES) FOR ALL SIGNING AND TRAFFIC CONTROL DEVICES WITHIN THE WORK AREA.

3. TWO LANES OF TRAFFIC SHALL BE MAINTAINED DURING NON-WORKING HOURS (NIGHTS AND WEEKENDS) AND ALL OPEN EXCAVATIONS SHALL BE COVERED AND/OR BACKFILLED AT THE END OF EACH WORK DAY. ONE LANE OF TRAFFIC SHALL BE MAINTAINED DURING WORK HOURS.

4. ANY TEMPORARY ROADWAY CLOSING MUST BE APPROVED IN WRITING BY THE CITY TRAFFIC ENGINEER AND ANY OTHER PUBLIC AGENCY HAVING JURISDICTION. THE CONTRACTOR SHALL NOTIFY THE TRAFFIC ENGINEER AT LEAST 72 HOURS IN ADVANCE OF ANY SUCH CLOSINGS FOR PUBLICATION AND EMERGENCY AGENCY NOTIFICATION.

PROJECT SAFETY

1. THE CONTRACTOR SHALL MAINTAIN A SAFE WORKING ENVIRONMENT AT THE PROJECT SITE AT ALL TIMES. THE CONTRACTOR SHALL PROPERLY SUPPORT AND/OR MAINTAIN ALL EXCAVATIONS PER APPLICABLE SAFETY REQUIREMENTS AND COMPLY WITH ALL OSHA REGULATIONS. ADEQUATE BARRICADES, WARNING LIGHTS, SIGNS, FENCING, ETC. SHALL BE ERECTED AROUND THE CONSTRUCTION AREA DURING ALL NON-WORKING HOURS TO ALERT PERSONS OF THE POTENTIAL DANGER ASSOCIATED WITH THE AREA UNDER CONSTRUCTION AS WELL AS TO PREVENT ACCESS BY UNAUTHORIZED PERSONNEL TO THE CONSTRUCTION SITE/AREA. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THE GENERAL PUBLIC AS WELL AS ALL CONSTRUCTION PERSONNEL. PUBLIC STREETS SHALL BE KEPT CLEAN AND FREE OF DEBRIS (MUD, STONE, ETC.) AT ALL TIMES. THE CONTRACTOR SHALL ALERT ALL LOCAL EMERGENCY AGENCIES (FIRE, POLICE, AMBULANCE, ETC.) OF THE NATURE OF THE PROPOSED PROJECT PRIOR TO BEGINNING AND CONSTRUCTION ACTIVITY. ACCESS FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.

GENERAL & SUB-CONTRACTOR COORDINATION

1. FOR MECHANICAL OPENINGS 12" WIDE AND SMALLER THRU NEW AND EXISTING WALLS, HVAC CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF MECHANICAL WORK. SUCH CUTTING AND PATCHING SHALL BE BY SKILLED MECHANICS IN THE TRADE. TYPICAL FOR FLOOR OPENINGS.

2. FOR MECHANICAL OPENINGS GREATER THAN 12" WIDE IN NEW AND EXISTING WALLS, GENERAL CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF MECHANICAL WORK. HVAC CONTRACTOR TO PROVIDE A SHOP DRAWING TO THE GENERAL CONTRACTOR INDICATING SIZE AND LOCATION OF ALL OPENINGS FOR INSTALLATION OF LINTELS IN WALLS. TYPICAL FOR FLOOR OPENINGS.

3. MECHANICAL OPENING IS DEFINED AS THE DUCTWORK DIMENSION PLUS INSULATION, THICKNESS AS SPECIFIED.

4. UNLESS OTHERWISE NOTED, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR WORK INVOLVING THE REMOVAL OF EXISTING ELECTRICAL VAULTS FOR BURIED ELECTRICAL CONDUIT AS SHOWN ON PLANS. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF BURIED ELECTRICAL CONDUIT AS SHOWN ON PLANS. GENERAL TO COORDINATE WITH ELECTRICAL REGARDING PHASING OF ELECTRICAL VAULT REMOVAL.

5. NEW FIELD MOUNTED INSTRUMENTS ARE TO BE FURNISHED AND INSTALLED BY SYSTEM INTEGRATOR, WIRED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. ALL INSTRUMENTATION PIPING AND SUPPORTS BY GENERAL CONTRACTOR.

6. MAGNETIC FLOW METERS SHALL BE SUPPLIED BY THE SYSTEM INTEGRATOR, WIRED BY THE ELECTRICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

GENERAL NOTES

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PLOTTED: 4/14/2022 5:32:21 PM

UTILITY CONTACT INFORMATION

1. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST TWO (2) WORKING DAYS PRIOR TO WORK IN THE VICINITY OF THEIR UNDERGROUND AND/OR OVERHEAD LINES. CONTACT OHIO UTILITIES PROTECTION SERVICE, 1–800–362–2764, AND OIL AND GAS PRODUCERS UNDERGROUND PROTECTION SERVICE, 1–800–925–0988. NON–MEMBER UTILITIES MUST BE CONTACTED DIRECTLY.

STORM SEWERS – CITY ENGINEER'S OFFICE	(330)489–3381
SANITARY SEWERS – CITY ENGINEER'S OFFICE	(330)489–3381
CITY OF CANTON WATER DEPARTMENT	(330)489–3310
DOMINION EAST OHIO GAS	(330)478–3140
SBC	(330)384–8057
SPECTRUM	(330)494–9200
AMERICAN ELECTRIC POWER	(330)438–7762
TRAFFIC INERCONNECT – CITY ENGINEER'S OFFICE	(330)489–3370
BP US PIPELINES	(216)912–2573
WHEELING AND LAKE ERIE RAILWAY	(330)767–7279

2. TEMPORARY POWER. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY REQUIRED CONNECTIONS TO THE EXISTING SERVICE FOR TEMPORARY POWER. THE GENERAL CONTRACTOR SHALL PAY FOR ALL UTILITY COSTS, REFER TO SPECIFICATION SECTION 01 50 00 "TEMPORARY CONSTRUCTION SERVICES AND FACILITIES" AND 00 24 01 "SCOPE OF BIDS" FOR PRICES TO INCLUDE, REQUIREMENTS, AND PAYMENT PROVISIONS.

DEMOLITION GENERAL NOTES

1. OWNER HAS FIRST RIGHT OF REFUSAL ON ALL MATERIAL AND EQUIPMENT REMOVED.
2. FOR ELECTRICAL GENERAL DEMOLITION NOTES, SEE KEY NOTES ON ELECTRICAL DEMO SHEETS.
3. EXISTING YARD PIPING DESIGNATED TO BE ABANDONED SHALL BE REMOVED AS NECESSARY AND DISPOSED OF OFF SITE. YARD PIPING ABANDONED IN PLACE SHALL BE SEVERED AND PLUGGED WITH CLASS C FILL CONCRETE TO PREVENT SETTLEMENT, UNLESS NOTED OTHERWISE. UNDERGROUND UTILITIES DESIGNATED FOR REMOVAL ON THE PLANS THAT DO NOT INTERFERE WITH THE NEW WORK MAY BE ABANDONED IN PLACE AS DIRECTED BY THE OWNER.
4. SEE SPECIFICATIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
5. ALL CONCRETE TO BE DEMOLISHED SHALL BE ASSUMED TO BE STEEL REINFORCED THROUGHOUT. WHERE CONCRETE EQUIPMENT BASES ARE TO BE REMOVED, RESULTING EXPOSED CONCRETE SHALL BE GROUND SMOOTH AND RESURFACED TO MATCH EXISTING.
6. A LEAD PAINT SURVEY HAS BEEN COMPLETED AND IS ATTACHED AS APPENDIX B. THE CONTRACTOR SHALL REFER TO THIS STUDY FOR DETERMINING LEAD CONTAINING MATERIALS IN THE WORK. CONTRACTOR TO FOLLOW OSHA REGULATIONS (29 CFR 1926.62) FOR ABATEMENT AND DISPOSAL OF LEAD CONTAINING MATERIALS.
7. FLUORESCENT LAMPS CONTAIN A SMALL AMOUNT OF MERCURY VAPOR PARTICULATE. DEPENDING ON THE QUANTITY OF LAMPS, THE DISPOSAL OF THESE MATERIALS MAY BE REGULATED AS HAZARDOUS WASTE. THE EPA RECOMMENDS APPROPRIATE MANAGEMENT AND RECYCLING OF THESE LAMPS.
8. DUE TO THE QUANTITY IDENTIFIED WITHIN THE BUILDING, B&N RECOMMENDS THAT THESE MATERIALS BE REMOVED FROM THE BUILDING PRIOR TO DEMOLITION AND TAKEN TO A LICENSED LAMP AND BALLAST DISPOSAL/RECYCLING FACILITY.
9. ALL MATERIALS AND EQUIPMENT IDENTIFIED FOR REMOVAL SHALL BE REMOVED, DISPOSED AND/OR RECYCLED ACCORDING TO CURRENT REGULATORY REQUIREMENTS.
10. SAFEGUARDS ARE REQUIRED DURING CONSTRUCTION OR DEMOLITION PER OBC 3301.1. EXITS, FIRE PROTECTION, STRUCTURAL ELEMENTS, FIRE DETECTION, AND SANITARY SAFEGUARDS SHALL BE MAINTAINED DURING CONSTRUCTION OR DEMOLITION ACTIVITIES.

PROHIBITED CONSTRUCTION ACTIVITIES

1. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOOD PLAINS EVEN WITH THE PERMISSION OF THE PROPERTY OWNER;
2. LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS;
3. INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAMS OR STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS;
4. PUMPING OF SEDIMENT–LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM SEWERS; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE;
5. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS, OR INTO NATURAL OR MAN–MADE CHANNELS LEADING THERETO;
6. PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF ANY STREAM;
7. DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA;
8. DISPOSAL OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS;
9. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT;
10. DISCHARGING INJURIOUS SILICA DUST CONCENTRATIONS INTO THE ATMOSPHERE RESULTING FROM BREAKING, CUTTING, CHIPPING, DRILLING, BUFFING, GRINDING, POLISHING, SHAPING OR SURFACING CLOSER THAN 200 FEET TO PLACES OF RESIDENCES OR COMMERCIAL, PROFESSIONAL, QUASI–PUBLIC OR PUBLIC PLACES OF HUMAN OCCUPATION;
11. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED ON THE PLANS BY THE ENGINEER FOR SUCH PURPOSES;
12. RUNNING PUMP DISCHARGE LINES THROUGH PRIVATE PROPERTY ^R PUBLIC PROPERTY AND RIGHTS–OF–WAY WITHOUT THE WRITTEN PERMISSION OF THE PROPERTY OWNER AND THE CONSENT OF THE ENGINEER.
13. OPERATIONS ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE THE HOURS OF 8:00 AM AND 5:00 PM OR OUTSIDE THE HOURS ALLOWED FOR CONSTRUCTION BY LOCAL ORDINANCES OR REGULATIONS; AND
14. CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE, OR BOULEVARD WITHOUT THE PRIOR CONSENT OF MUNICIPAL OFFICIALS AND THE ENGINEER, AND CLOSING CLEAR ACCESS:
    – BY FIRE PROTECTION EQUIPMENT AND EMERGENCY VEHICLES;
    – BY THE PUBLIC TO ANY COMMERCIAL OR PROFESSIONAL PLACE OF BUSINESS, QUASI–PUBLIC OR PUBLIC ESTABLISHMENT, OR PLACE OF RESIDENCE; OR
    – BY VEHICLES TO DRIVEWAYS WITHOUT THE PROVISION OF ALTERNATIVE MEANS OF BUILDING INGRESS AND EGRESS.

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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

GENERAL NOTES

G-7

SHEET: OF

P:\PR58982\Cadd\Sheets\G-7 GENERAL NOTES.dwg 3/30/2022 1:52:12 PM Matt Kroll

PLOTTED: 4/14/2022 5:32:30 PM

MAIN BUILDING, CHLORINE BUILDING, AND FLUORIDE BUILDING

APPLICABLE BUILDING CODES:

OHIO BUILDING CODE 2017

INTERNATIONAL BUILDING CODE (IBC) AND THE INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2015 AS ADOPTED BY THE OHIO BUILDING CODE.

OHIO FIRE CODE (OFC) CURRENT

INTERNATIONAL MECHANICAL CODE (IMC) 2015

INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2015

INTERNATIONAL PLUMBING CODE (IPC) 2015

ASHRAE 90.1 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDING 2013

THE WORK CONSISTS OF A LEVEL 2 ALTERATION, AND AN ADDITION, TO THE EXISTING BUILDING . NO CHANGE OF USE OF OCCUPANCY ARE PROPOSED.

THE EXISTING BUILDING IS CLASSIFIED AS USE GROUP:

U UTILITY

NOTE: THE SECOND FLOOR CONTAINS A B BUSINESS USE.

CONSTRUCTION TYPE: IIB - ABOVE GRADE CONSTRUCTION IS BRICK AND CMU BEARING WALL, AND PRECAST CONCRETE ROOF DECKING ON STEEL BEAMS AND COLUMNS. BELOW GRADE CONSTRUCTION IS CAST IN PLACE CONCRETE. (1957)

ALLOWABLE BUILDING AREA & HEIGHT: (IBC TABLE 503)

8,500 SQUARE FEET PER FLOOR

3 STORY ABOVE GRADE PLANE - 55' FEET

ACTUAL BUILDING AREA: 19,370 MAX SF PER STORY

ACTUAL BUILDING HEIGHT: 24' FEET (2 STORY ABOVE GRADE)

OCCUPANCY:

FIRST FLOOR U: 19,370 SF/300 SF PER PERSON = 64 OCCUPANTS

SECOND FLOOR U: 2,400 SF / 300 SF PER PERSON = 8 OCCUPANTS

SECOND FLOOR B: 2,960 SF / 100 SF PER PERSON = 30 OCCUPANTS

TOTAL OCCUPANT LOAD = 102 OCCUPANTS

EXISTING MEANS OF EGRESS:

TWO, OPEN STAIR TOWERS ARE PRESENT IN THE EXISTING BUILDING, THAT EXTEND THROUGH TWO LEVELS OF THE BUILDING.

NOTE THAT THE OHIO FIRE CODE, SECTION 1103.1, EXCLUDES REQUIREMENTS FOR MEANS OF EGRESS IN EXISTING GROUP U OCCUPANCIES.

IT IS PRESUMED THAT THE OPEN STAIRS WERE COMPLIANT WITH THE OBC OR THE OFC AT THE TIME OF CONSTRUCTION.

A MINIMUM OF TWO MEANS OF EGRESS ARE PROVIDED AT THE LEVEL OF DISCHARGE, AND AT THE OTHER LEVELS.

BUILDING PROTECTION: NA

OCCUPANCY SEPARATION: NON REQUIRED

HAZARDS: EXISTING CHEMICAL HAZARDS HAVE NOT BEEN MODIFIED BY THE WORK. EXISTING COMPLIANT CONDITIONS SHALL BE MAINTAINED.

ACCESSIBILITY:

NOT REQUIRED PER IBC SECTION 1103.2.4, AND ADA 2010 SECTION 203.

IT IS ANTICIPATED THAT HAZARDOUS MATERIALS ARE PRESENT IN THE EXISTING CONSTRUCTION. A REPORT WILL BE PROVIDED BY THE OWNER. FOLLOW FEDERAL, STATE, AND LOCAL REGULATIONS REGARDING HAZARDOUS MATERIALS.

NOTE: SEE ARCHITECTURAL FLOOR PLAN SHEET FOR EGRESS INFORMATION.

WEST AERATOR BUILDING

APPLICABLE BUILDING CODES:

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OHIO FIRE CODE (OFC) CURRENT

INTERNATIONAL MECHANICAL CODE (IMC) 2015

ASHRAE 90.1 ENERGY STANDARD FOR BUILDING EXCEPT LOW-RISE RESIDENTIAL BUILDINGS 2013

INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2015

INTERNATIONAL PLUMBING CODE (IPC) 2015

THE WORK CONSISTS OF A LEVEL 2 ALTERATION TO THE EXISTING BUILDING . NO CHANGE OF USE OF OCCUPANCY ARE PROPOSED. NO INCREASE IN BUILDING AREA IS PROPOSED.

THE EXISTING BUILDING IS CLASSIFIED AS USE GROUP:

U UTILITY

CONSTRUCTION TYPE: IB (ASSUMED) - CAST IN PLACE CONCRETE STRUCTURE (1957)

EXISTING MEANS OF EGRESS:

CHANGES DO NOT NEGATIVELY IMPACT EXISTING MEANS OF EGRESS.

NOTE THAT THE OHIO FIRE CODE, SECTION 1103.1, EXCLUDES REQUIREMENTS FOR MEANS OF EGRESS IN EXISTING GROUP U OCCUPANCIES.

EAST AERATOR BUILDING

APPLICABLE BUILDING CODES:

OHIO BUILDING CODE 2017

INTERNATIONAL BUILDING CODE (IBC) AND THE INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2015 AS ADOPTED BY THE OHIO BUILDING CODE.

OHIO FIRE CODE (OFC) CURRENT

INTERNATIONAL MECHANICAL CODE (IMC) 2015

ASHRAE 90.1 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS 2013

INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2015

INTERNATIONAL PLUMBING CODE (IPC) 2015

THE WORK CONSISTS OF A LEVEL 2 ALTERATION TO THE EXISTING BUILDING . NO CHANGE OF USE OF OCCUPANCY ARE PROPOSED. NO INCREASE IN BUILDING AREA IS PROPOSED.

THE EXISTING BUILDING IS CLASSIFIED AS USE GROUP:

U UTILITY

CONSTRUCTION TYPE: IB (ASSUMED) - CAST IN PLACE CONCRETE STRUCTURE (1957)

EXISTING MEANS OF EGRESS:

CHANGES DO NOT NEGATIVELY IMPACT EXISTING MEANS OF EGRESS.

NOTE THAT THE OHIO FIRE CODE, SECTION 1103.1, EXCLUDES REQUIREMENTS FOR MEANS OF EGRESS IN EXISTING GROUP U OCCUPANCIES.

MAINTENANCE GARAGE

APPLICABLE BUILDING CODES:

OHIO BUILDING CODE 2017

INTERNATIONAL BUILDING CODE (IBC) AND THE INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2017 AS ADOPTED BY THE OHIO BUILDING CODE.

OHIO FIRE CODE (OFC) CURRENT

INTERNATIONAL MECHANICAL CODE (IMC) 2015

INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2015

INTERNATIONAL PLUMBING CODE (IPC) 2015

THE WORK CONSISTS OF A LEVEL 2 ALTERATION TO THE EXISTING BUILDING . NO CHANGE OF USE OF OCCUPANCY ARE PROPOSED. NO INCREASE IN BUILDING AREA IS PROPOSED.

THE EXISTING BUILDING IS CLASSIFIED AS USE GROUP:

U UTILITY

CONSTRUCTION TYPE: IB (ASSUMED) - CAST IN PLACE CONCRETE STRUCTURE (1957)

EXISTING MEANS OF EGRESS:

CHANGES DO NOT NEGATIVELY IMPACT EXISTING MEANS OF EGRESS.

NOTE THAT THE OHIO FIRE CODE, SECTION 1103.1, EXCLUDES REQUIREMENTS FOR MEANS OF EGRESS IN EXISTING GROUP U OCCUPANCIES.

DECHLORINATION BUILDING

APPLICABLE BUILDING CODES:

OHIO BUILDING CODE 2017

INTERNATIONAL BUILDING CODE (IBC) AND THE INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2017 AS ADOPTED BY THE OHIO BUILDING CODE.

OHIO FIRE CODE (OFC) CURRENT

INTERNATIONAL MECHANICAL CODE (IMC) 2015

ASHRAE 90.1 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS 2013

INTERNATIONAL PLUMBING CODE (IPC) 2015

THE WORK CONSISTS OF THE CONSTRUCTION OF THE NEW, PRE-ENGINEERED METAL BUILDING STRUCTURE ON NEW CAST IN PLACE CONCRETE FOUNDATIONS AND SLAB ON GRADE.

THE BUILDING IS CLASSIFIED AS USE GROUP:

U - UTILITY

CONSTRUCTION TYPE: IB

ALLOWABLE BUILDING AREA: 8,500 SF

ACTUAL BUILDING AREA: 384 SF

ALLOWABLE HEIGHT: 2 STORIES, 55 FEET

ACTUAL HEIGHT: 1 STORY, 12 FEET

NUMBER OF MEANS OF EGRESS REQUIRED: 1

NUMBER OF MEANS OF EGRESS PROVIDED: 1

MAXIMUM TRAVEL DISTANCE ALLOWED: 100 FEET

MAXIMUM TRAVEL DISTANCE PROVIDED: 31 FEET

WELLFIELD BUILDING

APPLICABLE BUILDING CODES:

OHIO BUILDING CODE 2017

INTERNATIONAL BUILDING CODE (IBC) AND THE INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2015 AS ADOPTED BY THE OHIO BUILDING CODE.

OHIO FIRE CODE (OFC) CURRENT

INTERNATIONAL MECHANICAL CODE (IMC) 2015

ASHRAE 90.1 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS 2013

INTERNATIONAL PLUMBING CODE (IPC) 2015

THE WORK CONSISTS THE CONSTRUCTION OF 10 NEW, PRE-ENGINEERED METAL BUILDING STRUCTURES ON EXISTING CAST IN PLACE CONCRETE STRUCTURES.

THE BUILDING IS CLASSIFIED AS USE GROUP:

U - UTILITY

CONSTRUCTION TYPE: IB

ALLOWABLE BUILDING AREA: 8,500 SF

ACTUAL BUILDING AREA: 360 SF

ALLOWABLE HEIGHT: 2 STORIES, 55 FEET

ACTUAL HEIGHT: 1 STORY, 12 FEET

NUMBER OF MEANS OF EGRESS REQUIRED: 1

NUMBER OF MEANS OF EGRESS PROVIDED: 1

MAXIMUM TRAVEL DISTANCE ALLOWED: 100 FEET

MAXIMUM TRAVEL DISTANCE PROVIDED: 35 FEET

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

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REVISIONS

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DRAWN BY:	KAS
CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	NONE

CODE REQUIREMENTS

G-8

SHEET: OF

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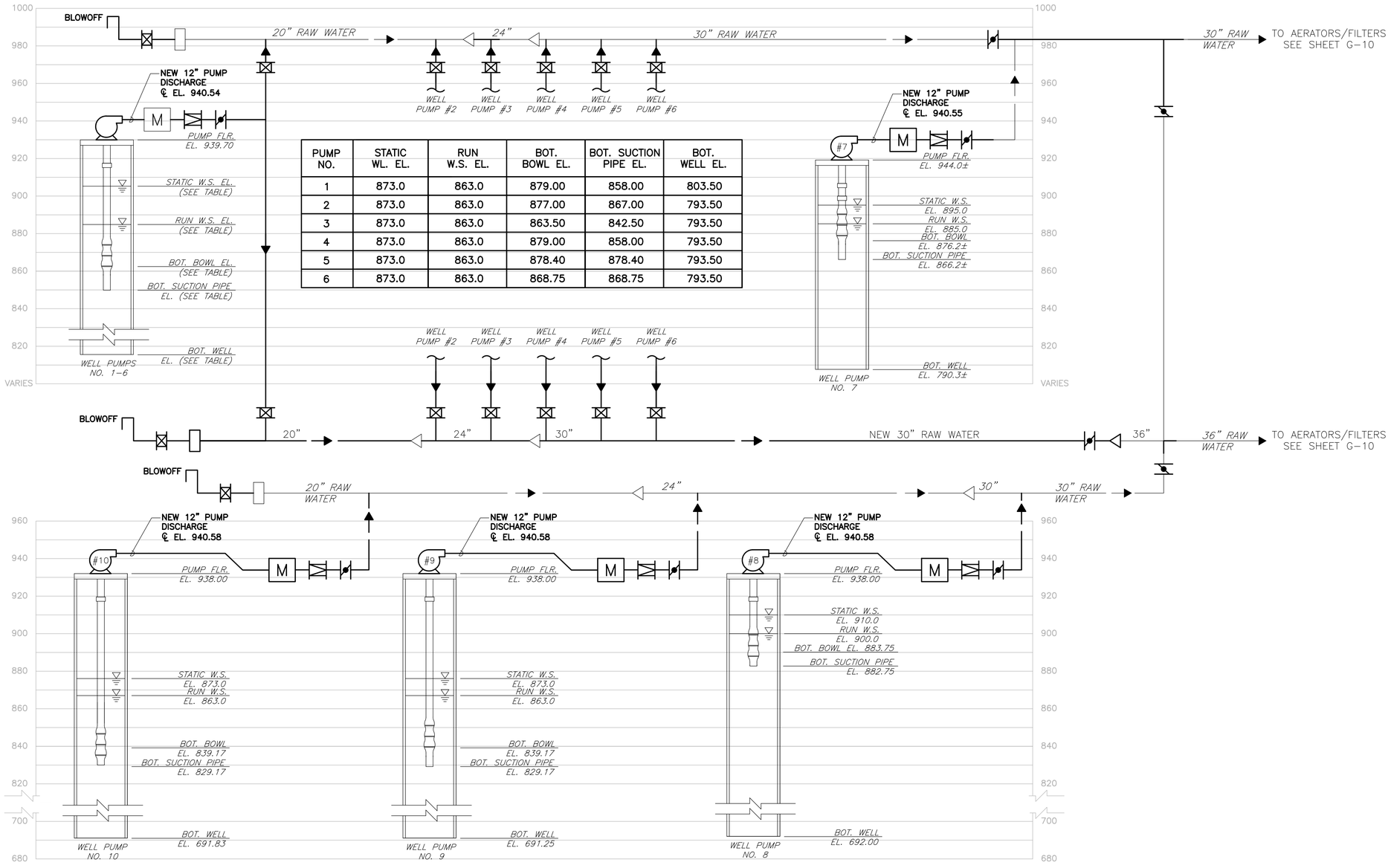

PUMP NO.	STATIC WL. EL.	RUN W.S. EL.	BOT. BOWL EL.	BOT. SUCTION PIPE EL.	BOT. WELL EL.
1	873.0	863.0	879.00	858.00	803.50
2	873.0	863.0	877.00	867.00	793.50
3	873.0	863.0	863.50	842.50	793.50
4	873.0	863.0	879.00	858.00	793.50
5	873.0	863.0	878.40	878.40	793.50
6	873.0	863.0	868.75	868.75	793.50

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APPROVED BY:	CMS
SCALE:	NONE

WELLFIELD HYDRAULIC PROFILE

G-9

SHEET: OF

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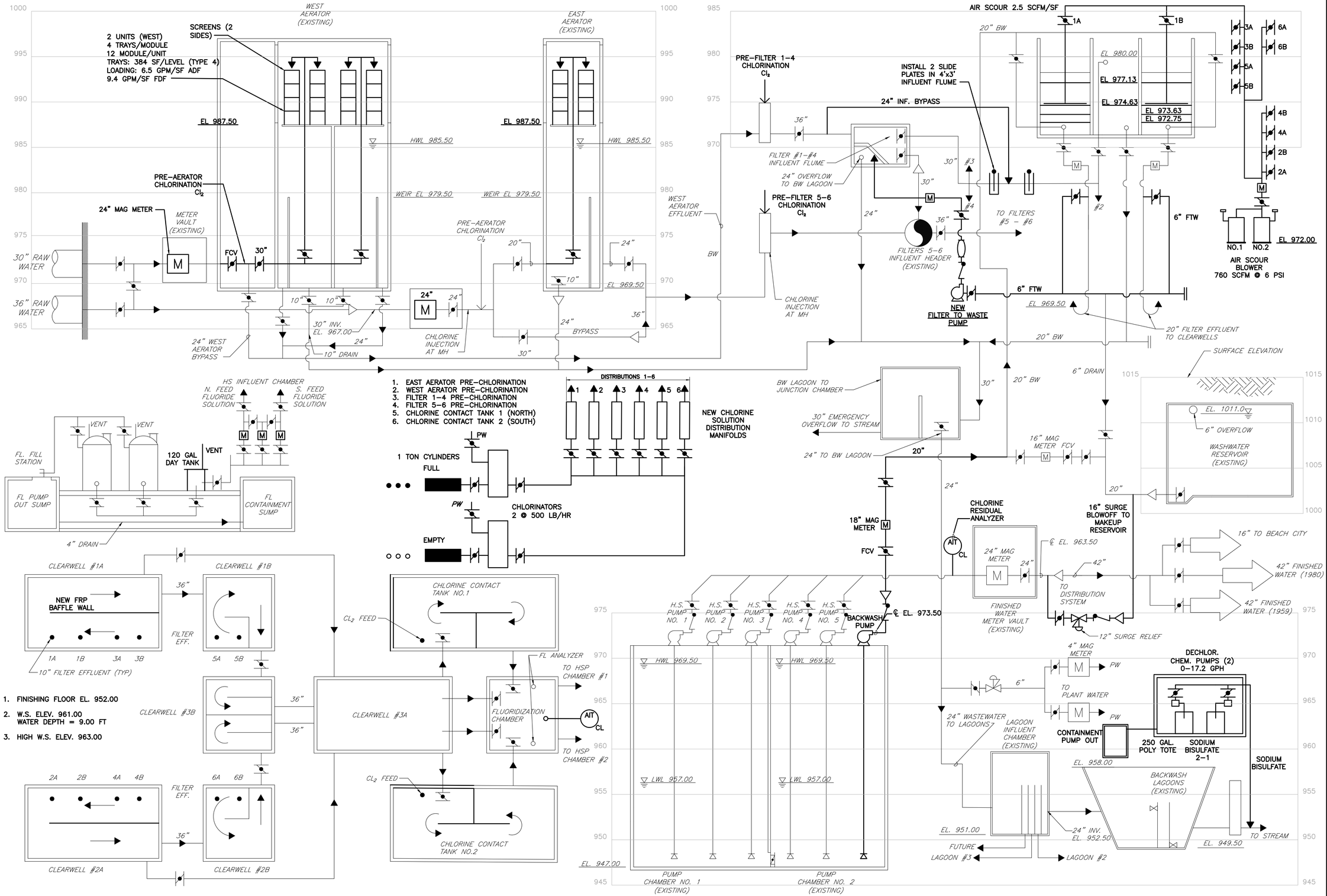
PLOTTED: 4/14/2022 5:32:47 PM



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BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
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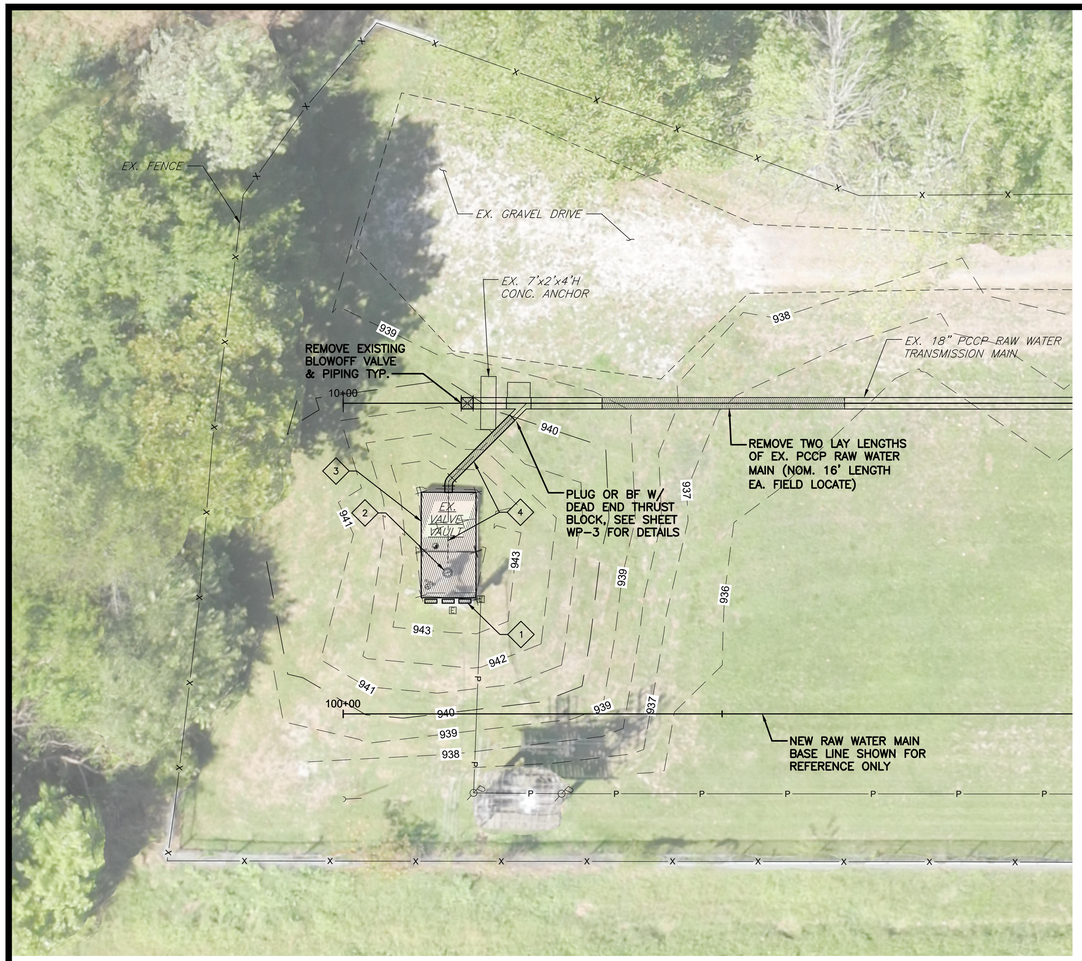
APPROVED BY:	CMS
SCALE:	NONE

WTP HYDRAULIC PROFILE

G-10

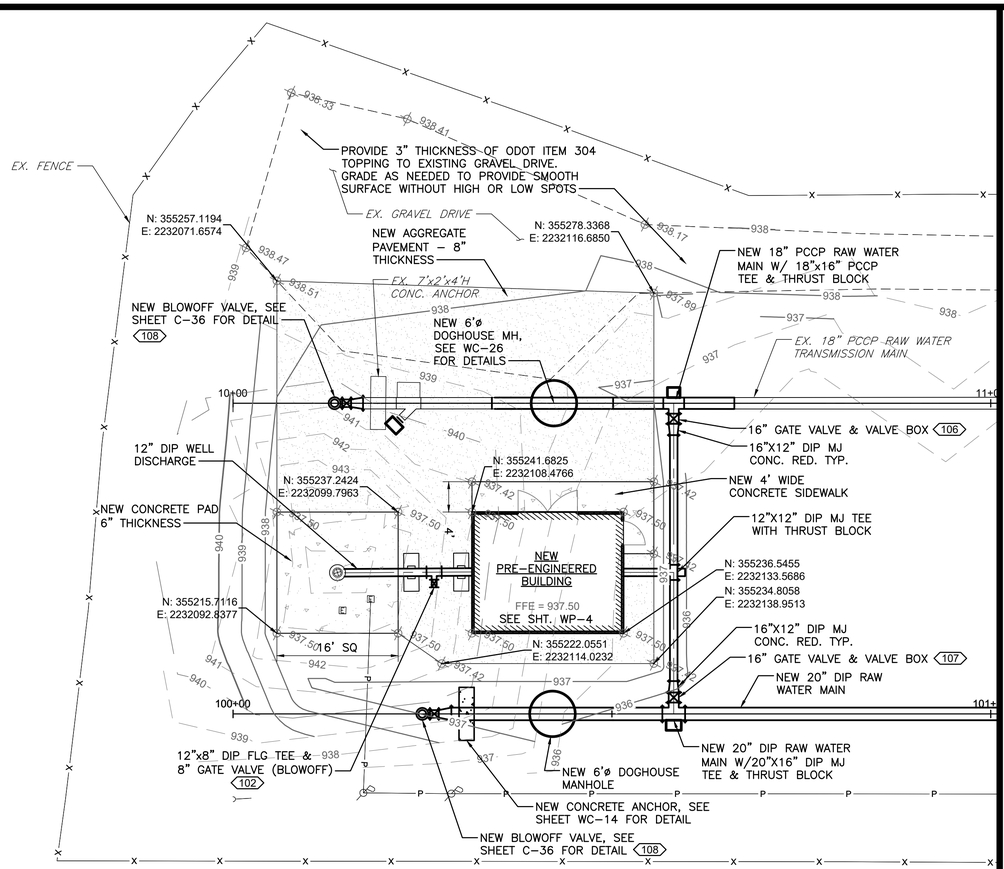
SHEET: OF

PLOTTED: 4/14/2022 4:57:26 PM



WELL #1 DEMOLITION PLAN

SCALE: 1" = 10'



WELL #1 NEW SITE PLAN

SCALE: 1" = 10'

CODED NOTES:

1. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP-10
3. REMOVE EX. CONCRETE VALVE VAULT (WELLS 1-6 ONLY). SEE SHEET WP-3 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN

100 YEAR FLOOD EL. 933.00

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
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DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

WELL #1
CIVIL SITE
PLAN

WC-1

SHEET: OF

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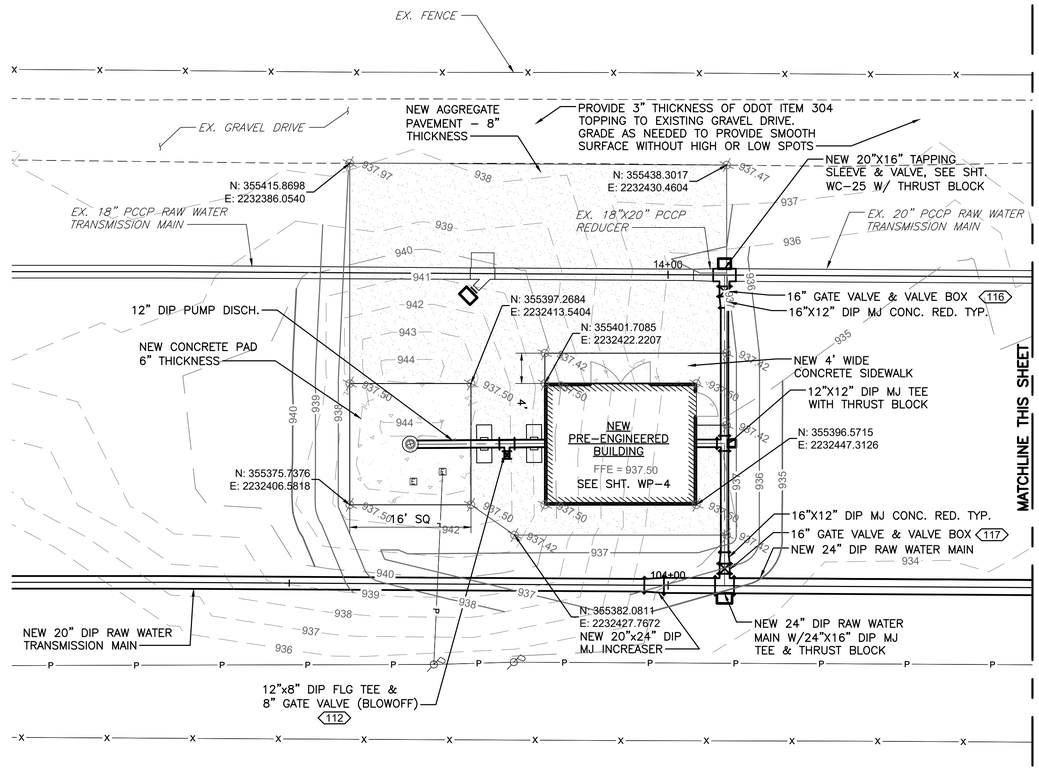
PLOTTED: 4/14/2022 5:00:04 PM

WELL #2 DEMOLITION PLAN

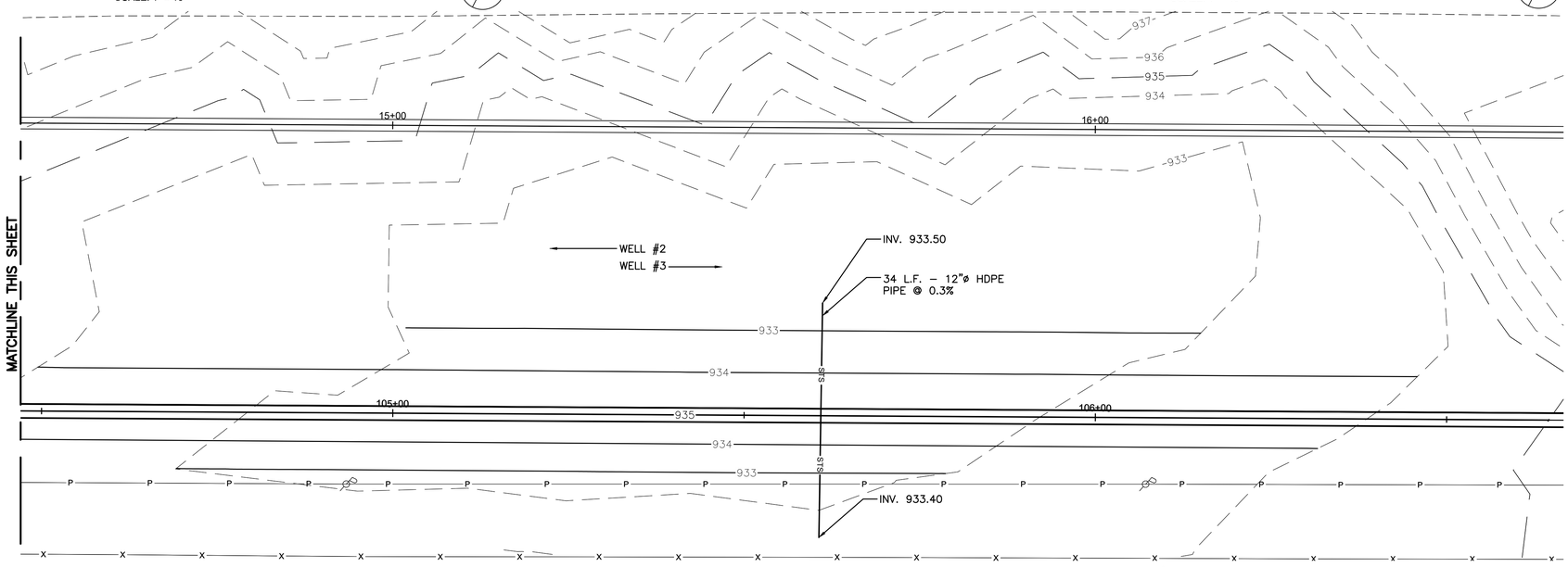
SCALE: 1" = 10'



WELL #2 NEW SITE PLAN

SCALE: 1" = 10'

100 YEAR FLOOD EL. 933.00



WELL #2 NEW SITE PLAN (CONTINUED)

SCALE: 1" = 10'

CODED NOTES:

1. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP–10
3. REMOVE EX. CONCRETE VALVE VAULT (WELLS 1–6 ONLY). SEE SHEET WP–3 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN

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100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

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SCALE:	AS NOTED

WELL #2
CIVIL SITE
PLAN

WC-2

SHEET: OF

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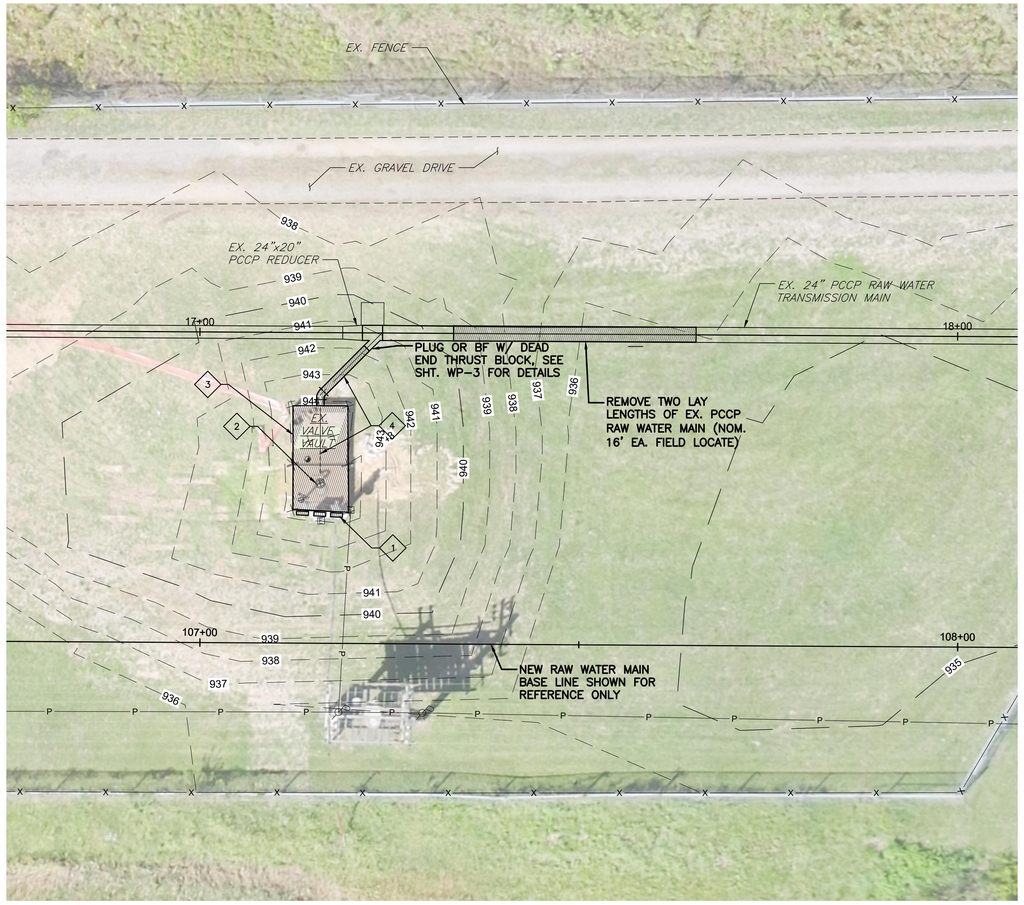
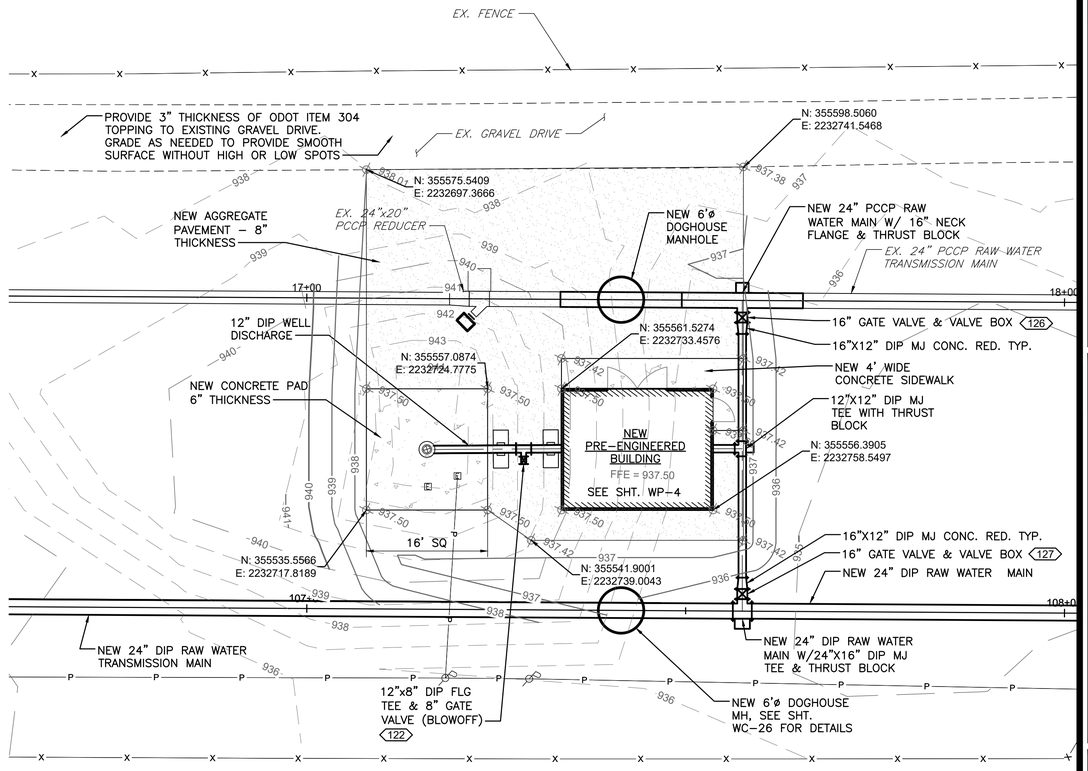
PLOTTED: 4/14/2022 5:02:21 PM



WELL #3 DEMOLITION PLAN

SCALE: 1" = 10'



WELL #3 NEW SITE PLAN

SCALE: 1" = 10'

CODED NOTES:

1. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP-10
3. REMOVE EX. CONCRETE VALVE VAULT (WELLS 1-6 ONLY). SEE SHEET WP-3 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN

100 YEAR FLOOD EL. 933.00

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
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WELL #3
CIVIL SITE
PLAN

WC-3

SHEET: OF

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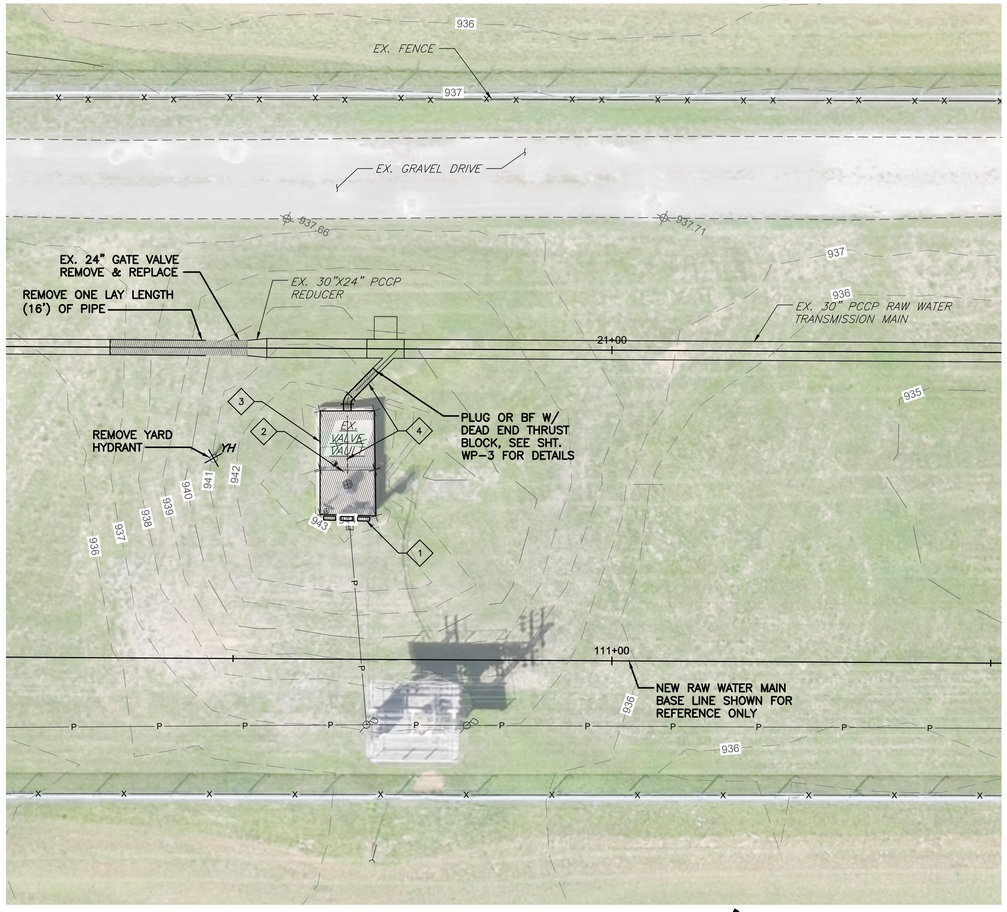
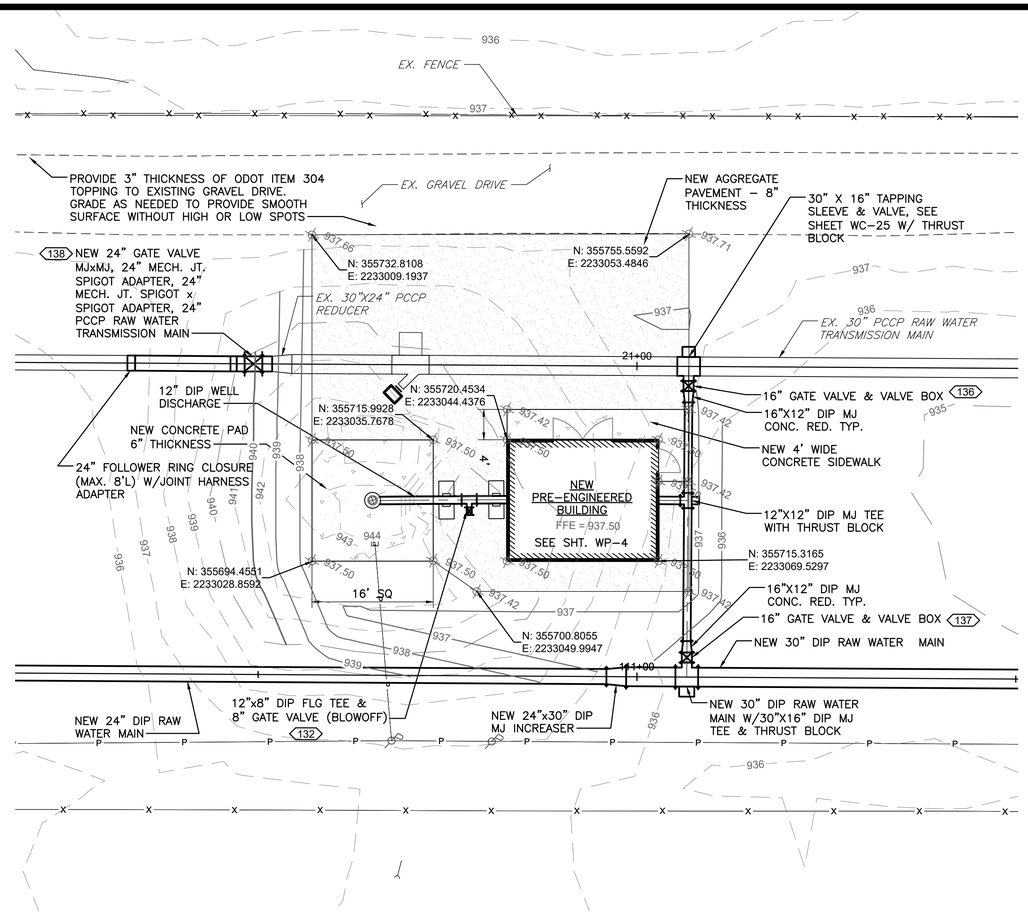
PLOTTED: 4/14/2022 5:04:40 PM



WELL #4 DEMOLITION PLAN

SCALE: 1" = 10'



WELL #4 NEW SITE PLAN

SCALE: 1" = 10'

NOTE: CONTRACTOR SHALL FURNISH TWO (2) CARBON STEEL 8"Ø RAISED FACE ANSI 150 FLANGE x ALUMINUM 5"Ø STORZ FITTING WITH EIGHT (8) STAINLESS STEEL 3/4"Ø NUTS AND BOLTS AND GASKET, ONE (1) ALUMINUM 5" STORZ x 2-1/2" MALE MH THREAD ADAPTER, AND ONE (1) ALUMINUM 2-1/2" FEMALE NH TO 1-1/2" MALE NH ADAPTER TO THE OWNER. THE FITTING AND ADAPTERS SHALL BE USED FOR PROVIDING WATER FOR CLEANING OPERATIONS DURING CONSTRUCTION AT THE BLOWOFF CONNECTION OF THE NEAREST WELL PUMP IN SERVICE. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE CLEANING OPERATIONS WITH THE ENGINEER/OWNER.

(X) CODED NOTES:

1. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP–10
3. REMOVE EX. CONCRETE VALVE VAULT (WELLS 1–6 ONLY). SEE SHEET WP–3 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN

100 YEAR FLOOD EL. 933.00

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PAINESVILLE, OHIO 44077

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APPROVED BY:	CMS
SCALE:	AS NOTED

WELL #4
CIVIL SITE
PLAN

WC-4

SHEET: OF

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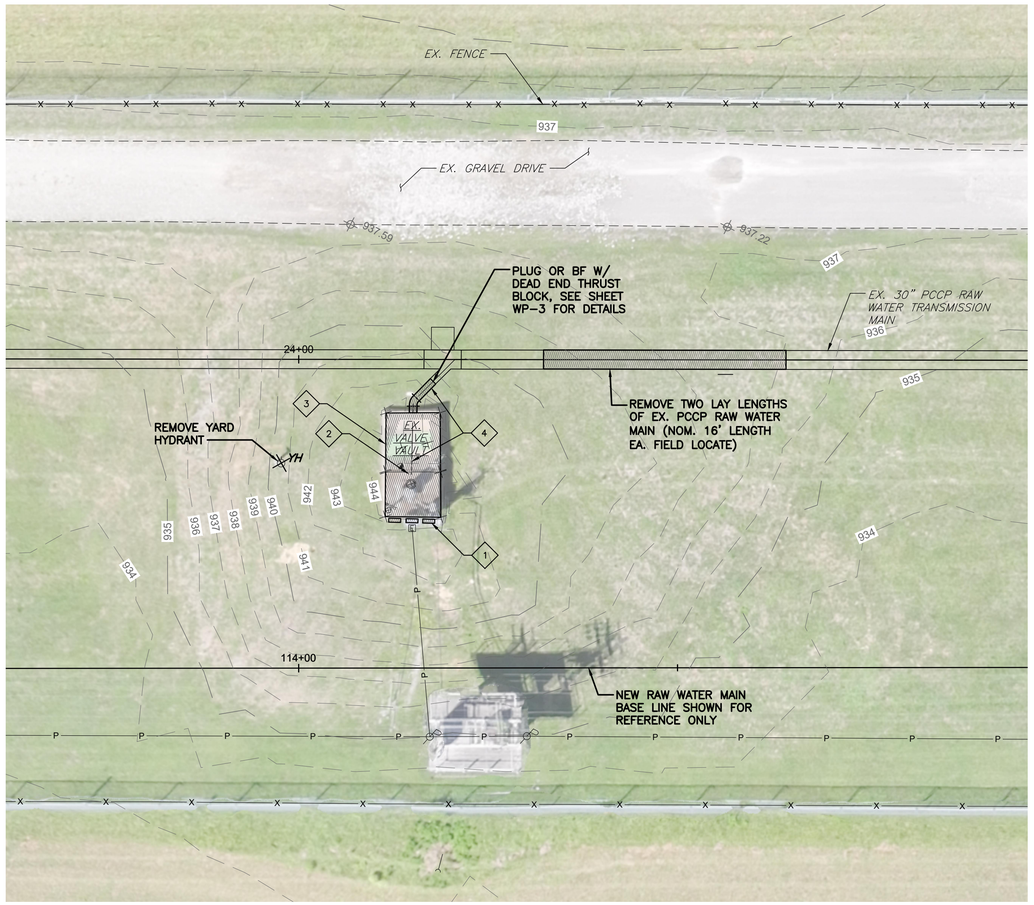
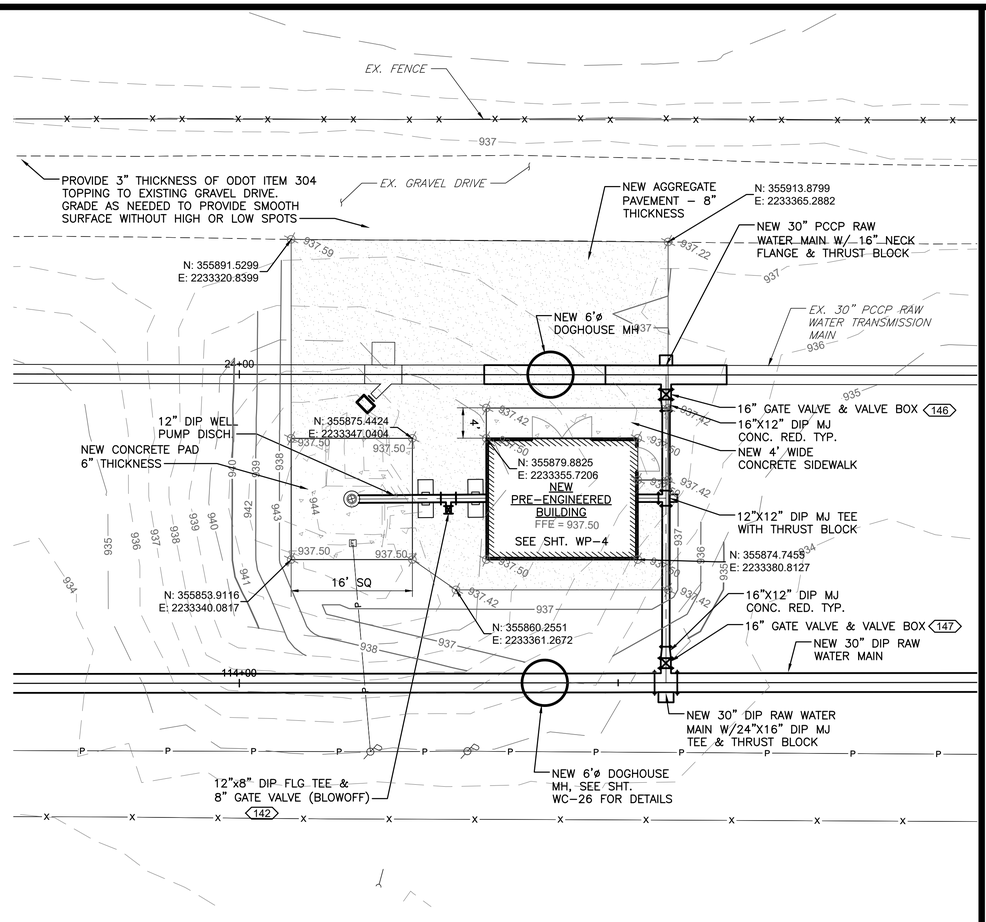


WELL #5 DEMOLITION PLAN

SCALE: 1" = 10'



WELL #5 NEW SITE PLAN

SCALE: 1" = 10'

X CODED NOTES:

1. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP-10
3. REMOVE EX. CONCRETE VALVE VAULT (WELLS 1-6 ONLY). SEE SHEET WP-3 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN

100 YEAR FLOOD EL. 933.00

BURGESS & NIPLE
100 WEST ERIE STREET
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SCALE:	AS NOTED

WELL #5
CIVIL SITE
PLAN

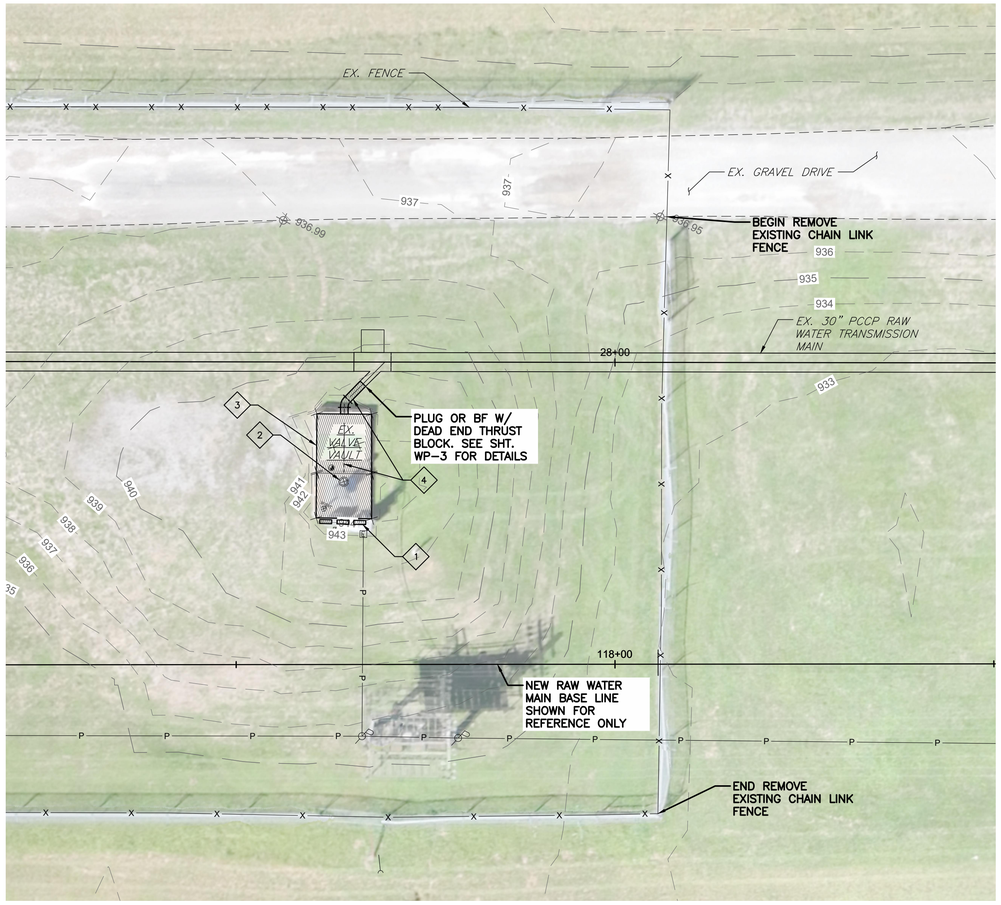
WC-5

SHEET: OF

PLOTTED: 4/14/2022 5:06:47 PM

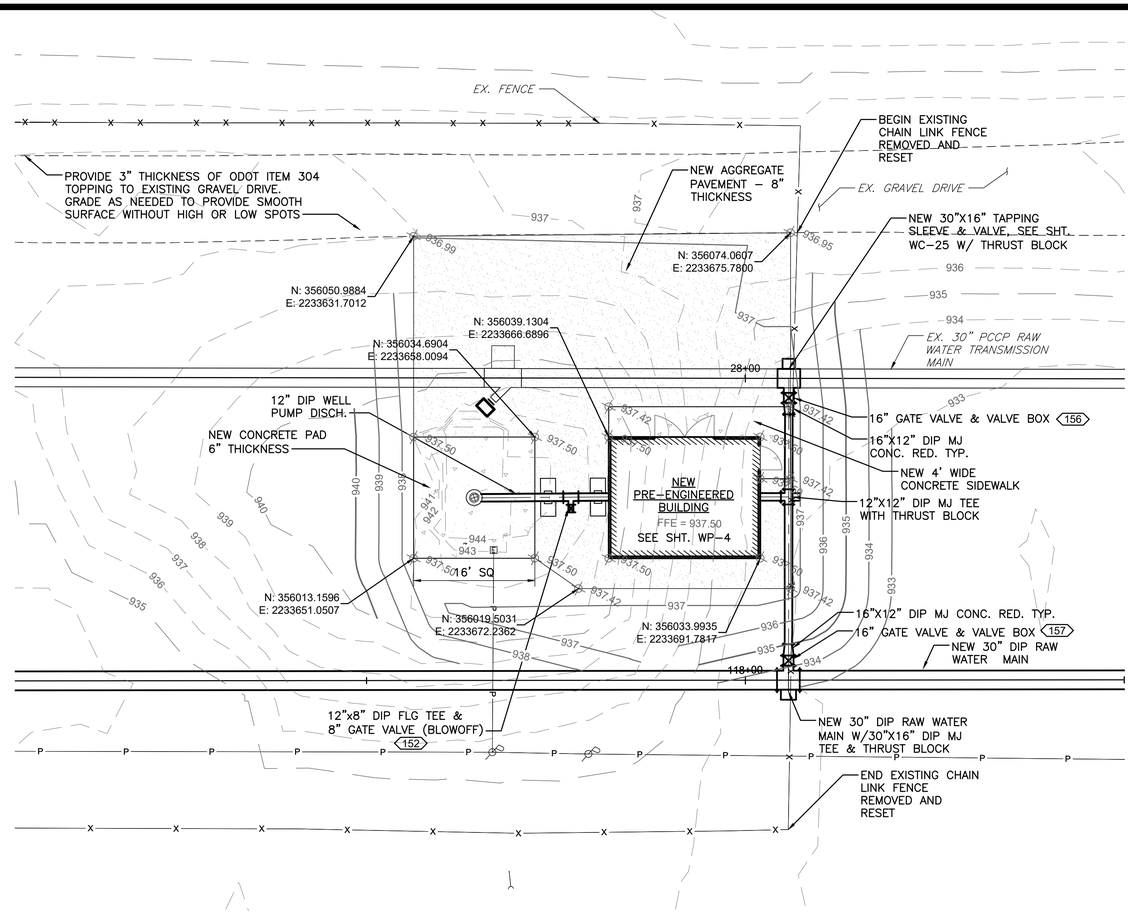
P:\PR58982\Cadd\Sheets\WC-5 WELL 5 SITE PLAN.dwg 2/21/2022 2:22:20 PM Paul Emerson

PLOTTED: 4/14/2022 5:08:54 PM



WELL #6 DEMOLITION PLAN

SCALE: 1" = 10'



WELL #6 NEW SITE PLAN

SCALE: 1" = 10'

CODED NOTES:

1. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP-10
3. REMOVE EX. CONCRETE VALVE VAULT (WELLS 1-6 ONLY). SEE SHEET WP-3 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN

100 YEAR FLOOD EL. 933.00

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SDS
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

WELL #6
CIVIL SITE
PLAN

WC-6

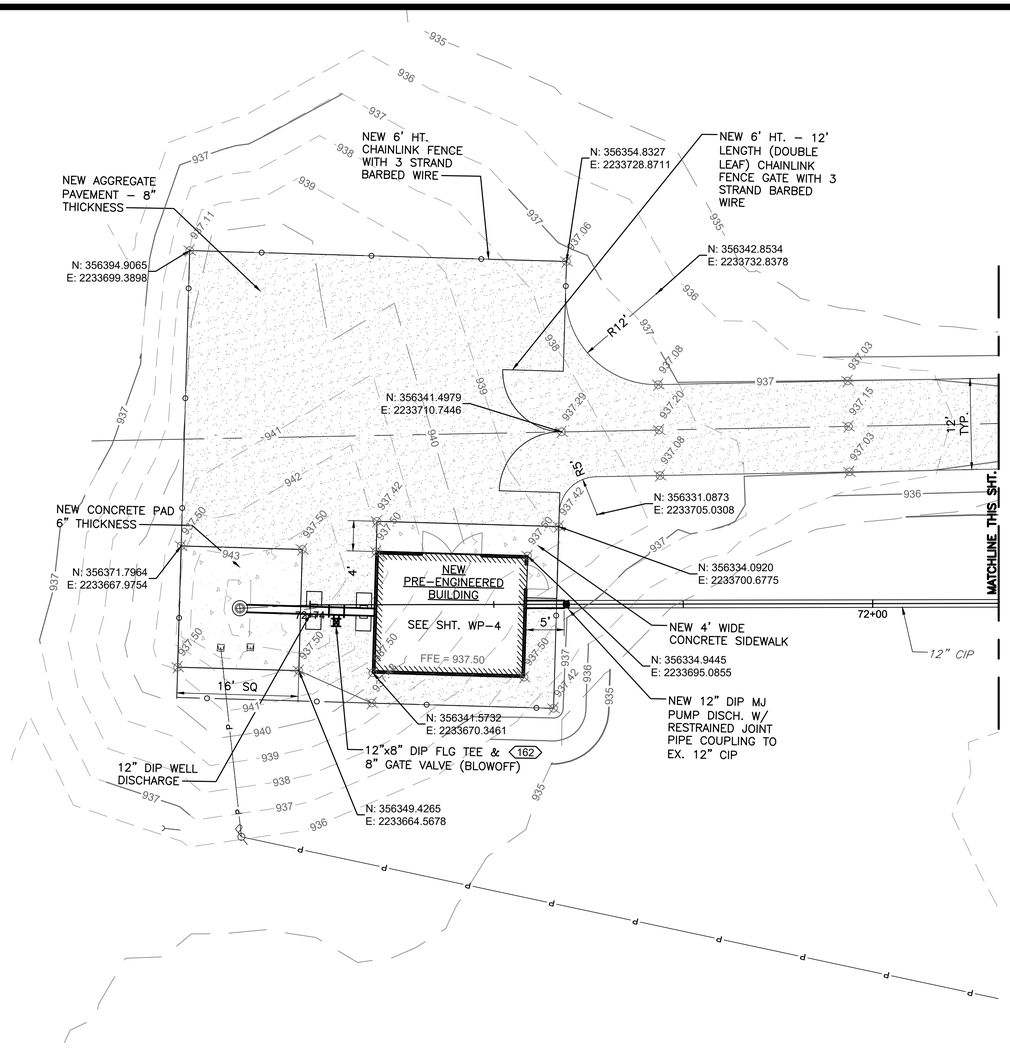
SHEET: OF

P:\PR58982\Cadd\Sheets\WC-6 WELL 6 SITE PLAN.dwg 2/21/2022 4:52:10 PM Paul Emerson

PLOTTED: 4/14/2022 5:11:06 PM

WELL #7 SITE DEMOLITION PLAN

SCALE: 1" = 10'



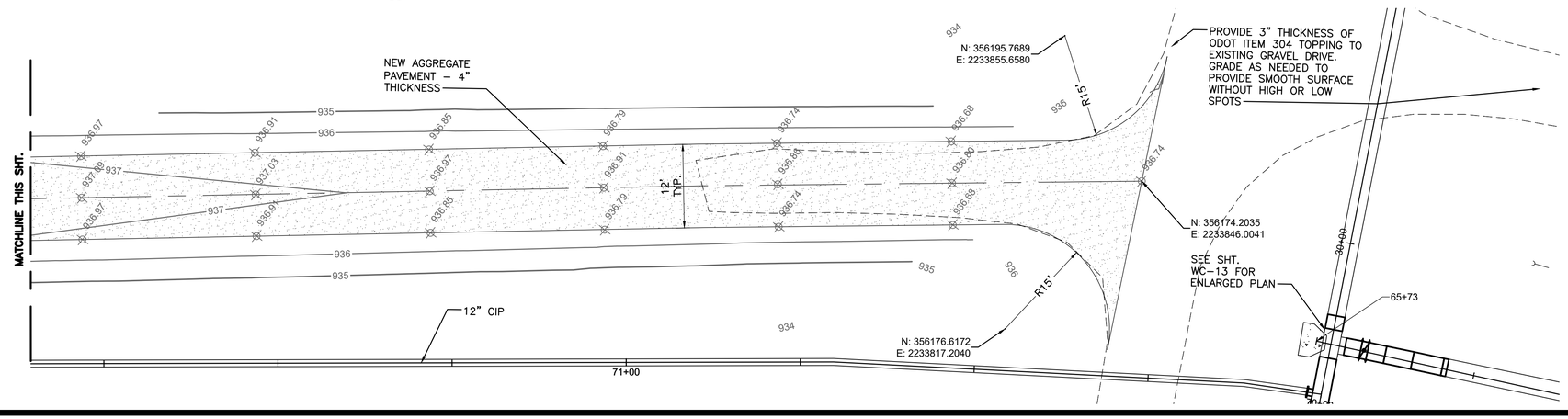
WELL #7 NEW SITE PLAN

SCALE: 1" = 10'

100 YEAR FLOOD EL. 933.00

X CODED NOTES:

1. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP-10
3. REMOVE EX. CONCRETE VALVE VAULT (WELLS 1-6 ONLY). SEE SHEET WP-3 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN



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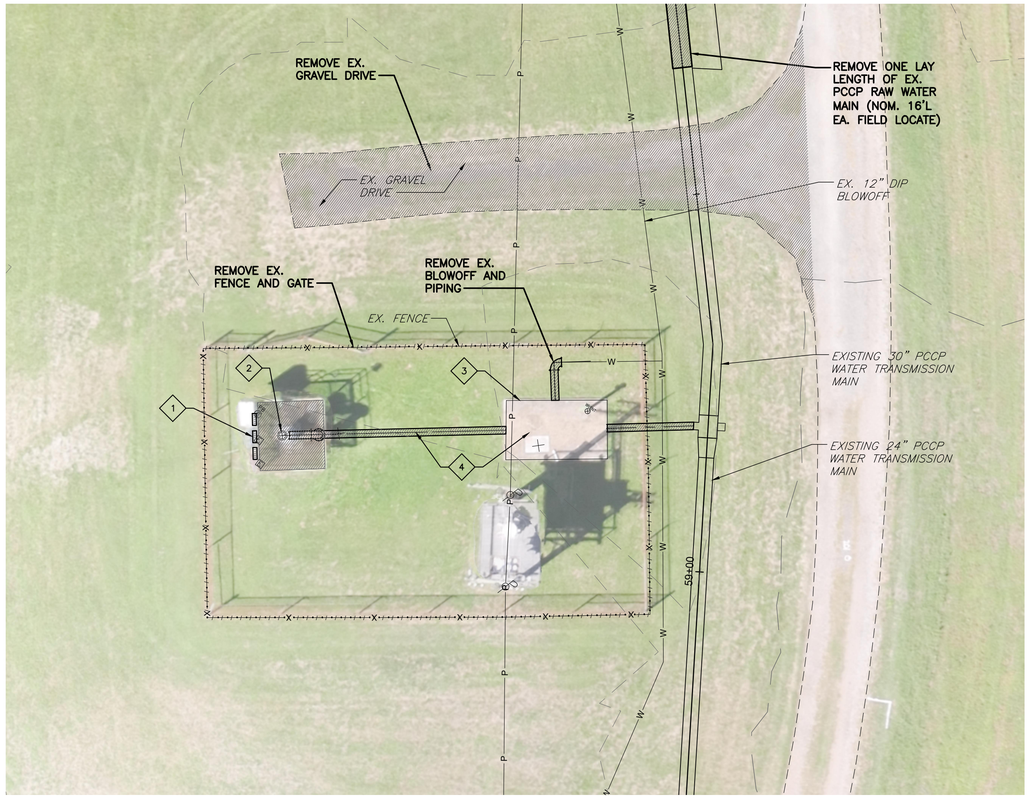
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

WELL #7
CIVIL SITE
PLAN

WC-7

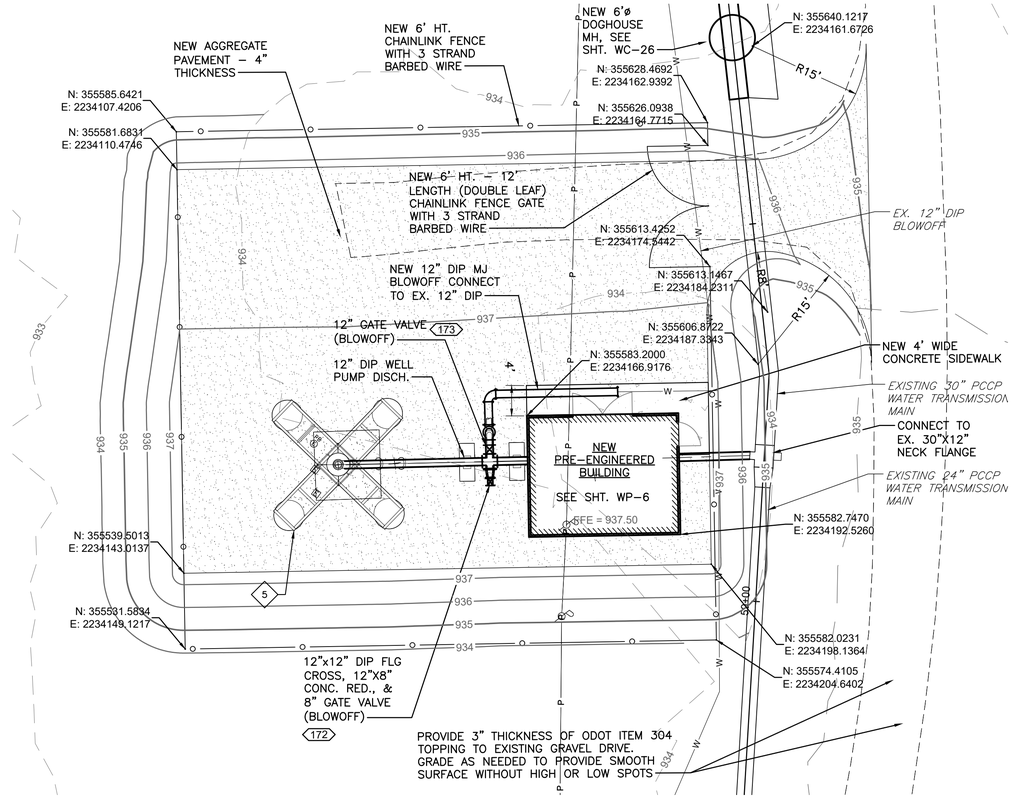
SHEET: OF

P:\PR58982\Cadd\Sheets\WC-7 WELL 7 SITE PLAN.dwg 2/21/2022 5:56:12 PM Paul Emerson



WELL #8 DEMOLITION PLAN

SCALE: 1" = 10'



WELL #8 NEW SITE PLAN

SCALE: 1" = 10'

X CODED NOTES:

1. REMOVE ELEVATED PUMP PLATFORM. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP–10
3. REMOVE EX. CONCRETE VALVE VAULT. COVER AND BACKFILL (WELLS 8–10 ONLY). SEE SHEET WP–5 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN
5. FURNISH AND INSTALL NEW CASING SUPPORT SYSTEM (TYP. WELL 8 AND 9). SEE SHT. WP–6 FOR DETAIL

100 YEAR FLOOD EL. 933.00

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NO.	DESCRIPTION	DATE
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DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

WELL #8
CIVIL SITE
PLAN

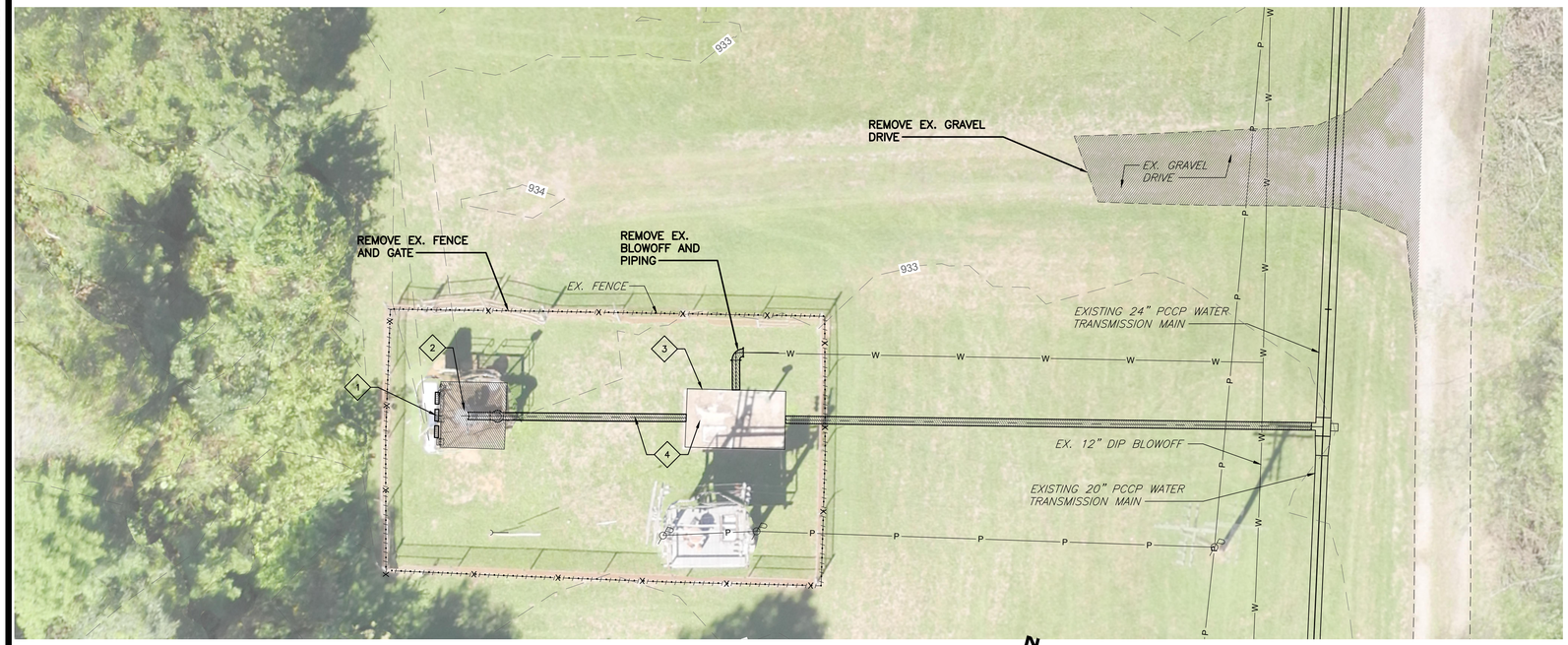
WC-8

SHEET: OF

PLOTTED: 4/14/2022 5:13:31 PM

P:\PR58982\Cadd\Sheets\WC-8 WELL 8 SITE PLAN.dwg 2/21/2022 4:47:19 PM Paul Emerson

PLOTTED: 4/14/2022 5:15:55 PM



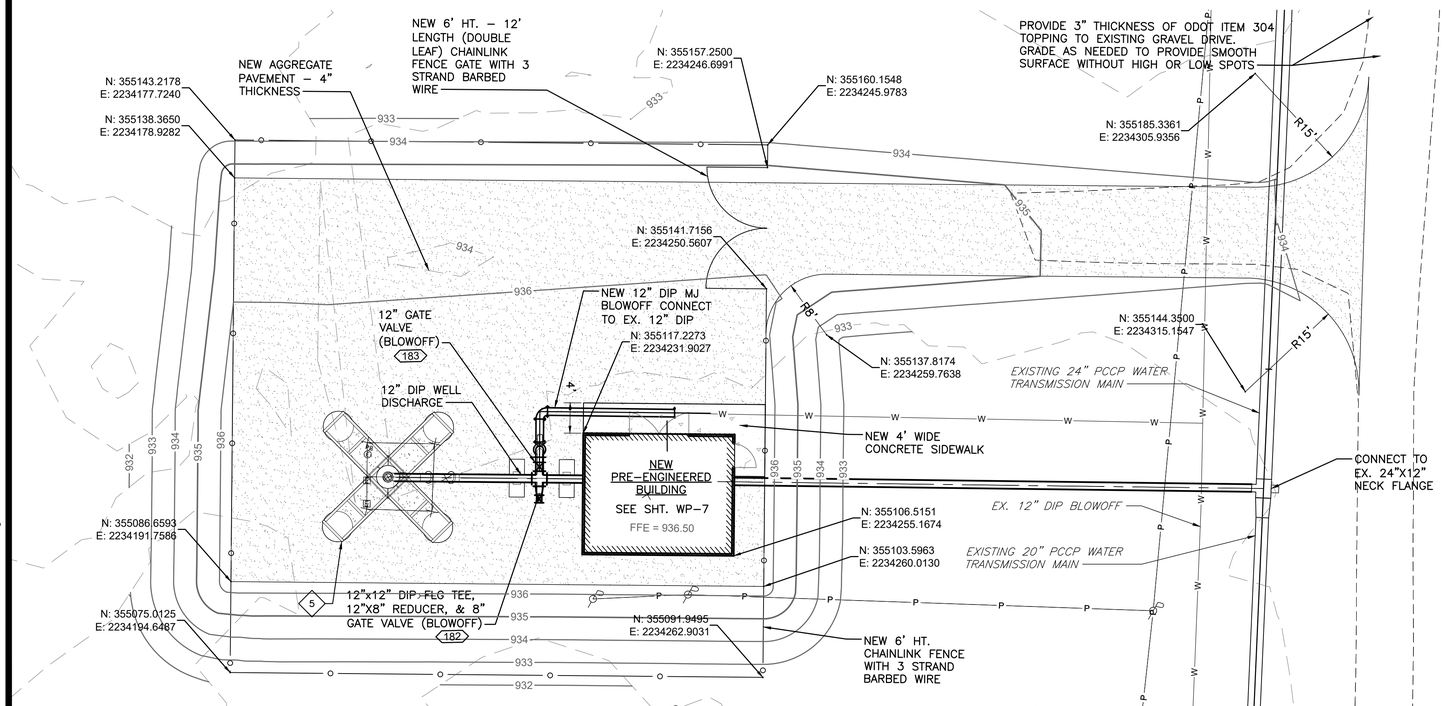
WELL #9 DEMOLITION PLAN

SCALE: 1" = 10'

X CODED NOTES:

1. REMOVE ELEVATED PUMP PLATFORM. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP-10
3. REMOVE EX. CONCRETE VALVE VAULT. COVER AND BACKFILL (WELLS 8-10 ONLY). SEE SHEET WP-5 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN
5. FURNISH AND INSTALL NEW CASING SUPPORT SYSTEM (TYP. WELL 8 AND 9). SEE SHT. WP-7 FOR DETAIL

100 YEAR FLOOD EL. 933.00



WELL #9 NEW SITE PLAN

SCALE: 1" = 10'

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

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REVISIONS

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DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

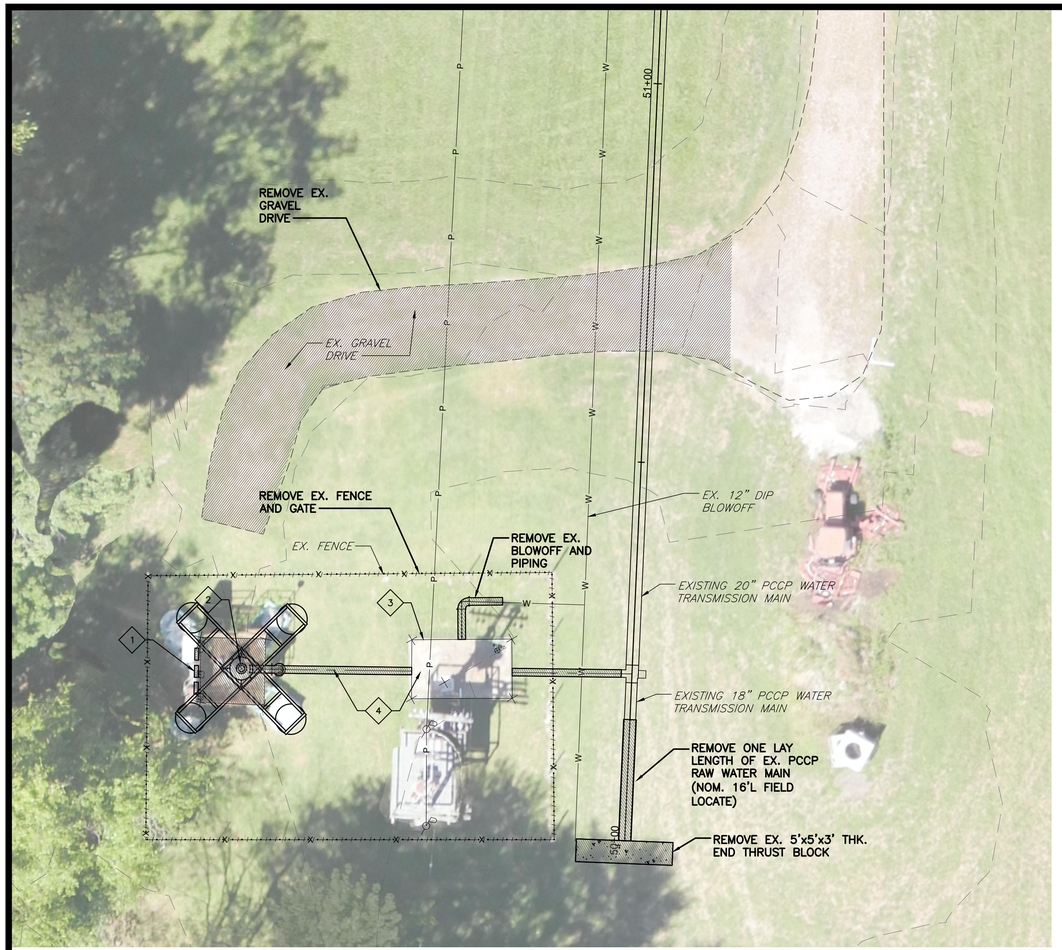
WELL #9
CIVIL SITE
PLAN

WC-9

SHEET: OF

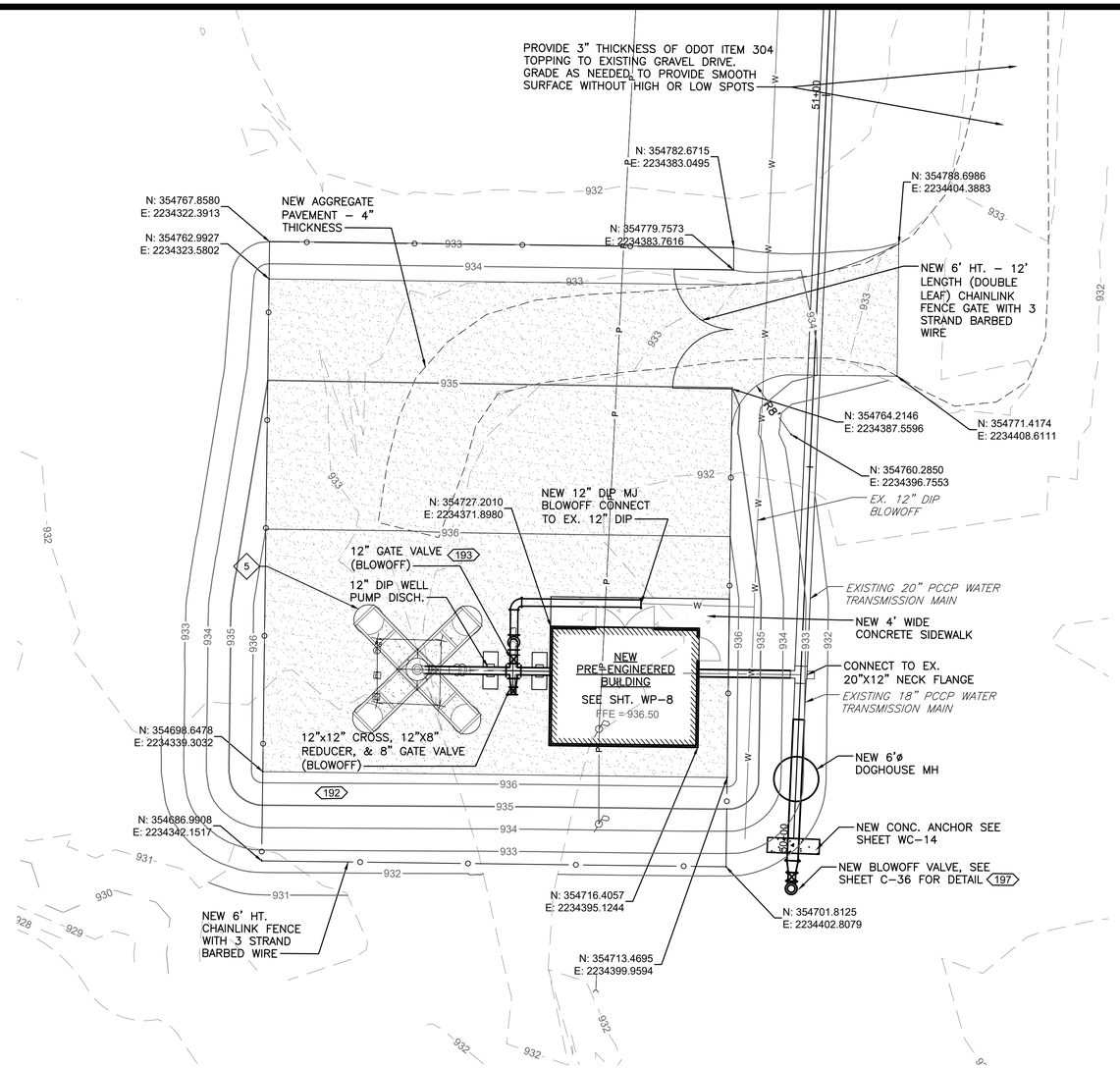
P:\PR58982\Cadd\Sheets\WC-9 WELL 9 SITE PLAN.dwg 2/21/2022 4:47:08 PM Paul Emerson

PLOTTED: 4/14/2022 5:18:29 PM



WELL #10 DEMOLITION PLAN

SCALE: 1" = 10'



WELL #10 NEW SITE PLAN

SCALE: 1" = 10'

CODED NOTES:

1. REMOVE EX. STEEL PLATFORM AND CASING X-BRACING SUPPORT SYSTEM. REMOVE OR RELOCATE EX. PANELS TO OPERATE REFURBISHED PUMP UNTIL UNTIL NEW WORK IS FULLY OPERATIONAL (SEE ELECTRICAL DWGS FOR DETAILS)
2. REMOVE WELL PUMP AND LOWER PUMP OUTER AND INNER CASING PER DETAIL SHEET WP-10
3. REMOVE EX. CONCRETE VALVE VAULT. COVER AND BACKFILL (WELLS 8-10 ONLY). SEE SHEET WP-5 FOR DETAILS
4. REMOVE PUMP, PIPING, AND VALVES IN VALVE VAULT AND DISCHARGE PIPE TO EX. RAW WATER TRANSMISSION MAIN
5. RELOCATE EXISTING CASING SUPPORT SYSTEM. SEE SHEET WP-8

100 YEAR FLOOD EL. 933.00

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100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SDS
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

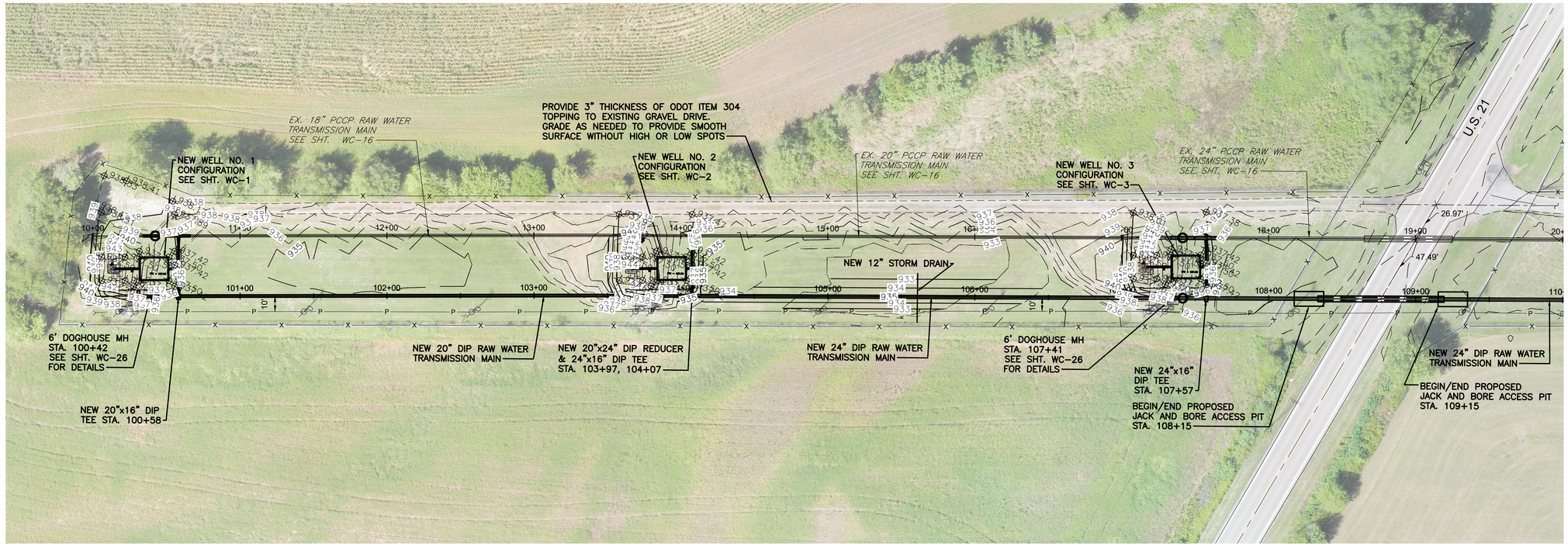
WELL #10
CIVIL SITE
PLAN

WC-10

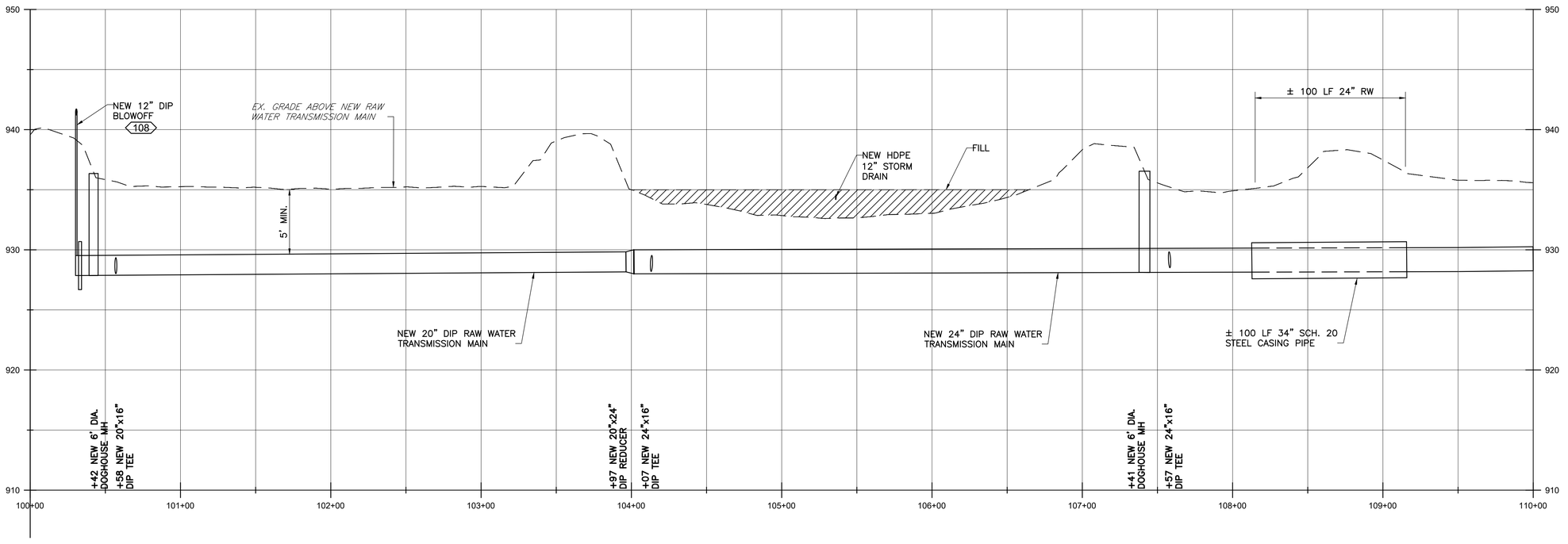
SHEET: OF

P:\PR58982\Cadd\Sheets\WC-10 WELL 10 SITE PLAN.dwg 3/31/2022 4:44:48 PM Paul Emerson

PLOTTED: 4/14/2022 5:21:06 PM



SCALE:
1" = 40' (HORIZ.)
1" = 5' (VERT.)



BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
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NO.	DESCRIPTION	DATE
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REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	MMK
DRAWN BY:	PJE/RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

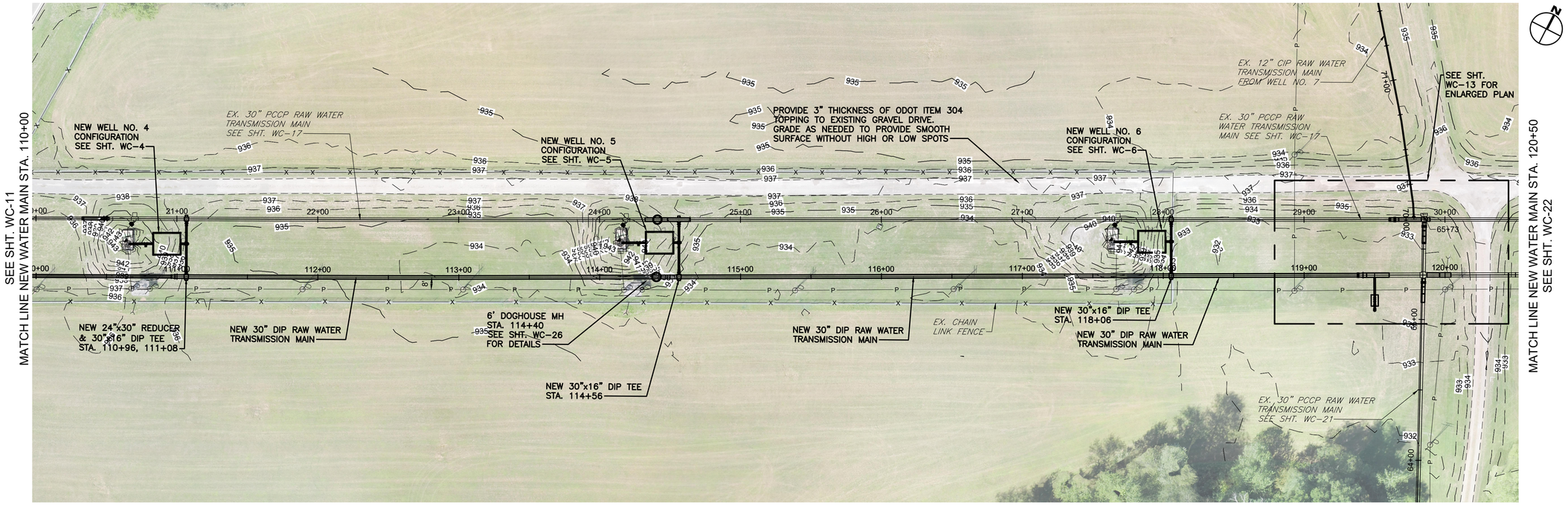
NEW RAW WATER MAIN PLAN AND PROFILE STA 100+00 TO 110+00

WC-11

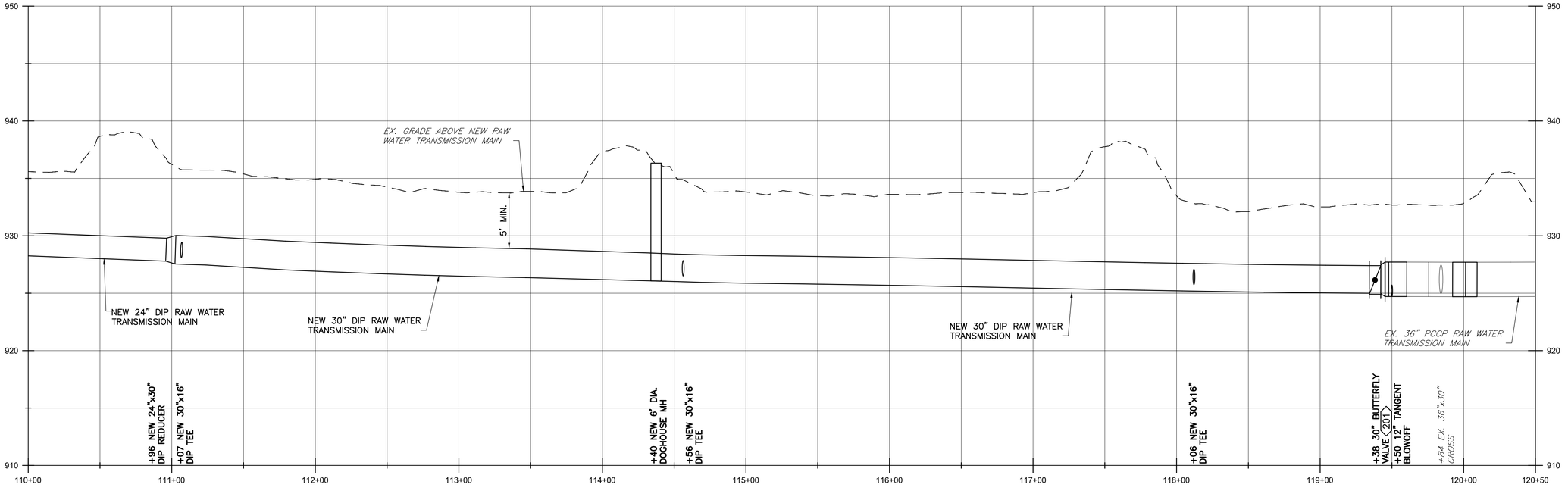
SHEET: OF

P:\PR58982\Cadd\Sheets\WC-11 NEW RAW WATER MAIN PLAN AND PROFILE STA 100+00 TO 110+00.dwg 4/14/2022 3:39:53 PM Paul Emerson

PLOTTED: 4/14/2022 5:23:18 PM



SCALE:
1" = 40' (HORIZ.)
1" = 5' (VERT.)



BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	MMK
DRAWN BY:	PJE/RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

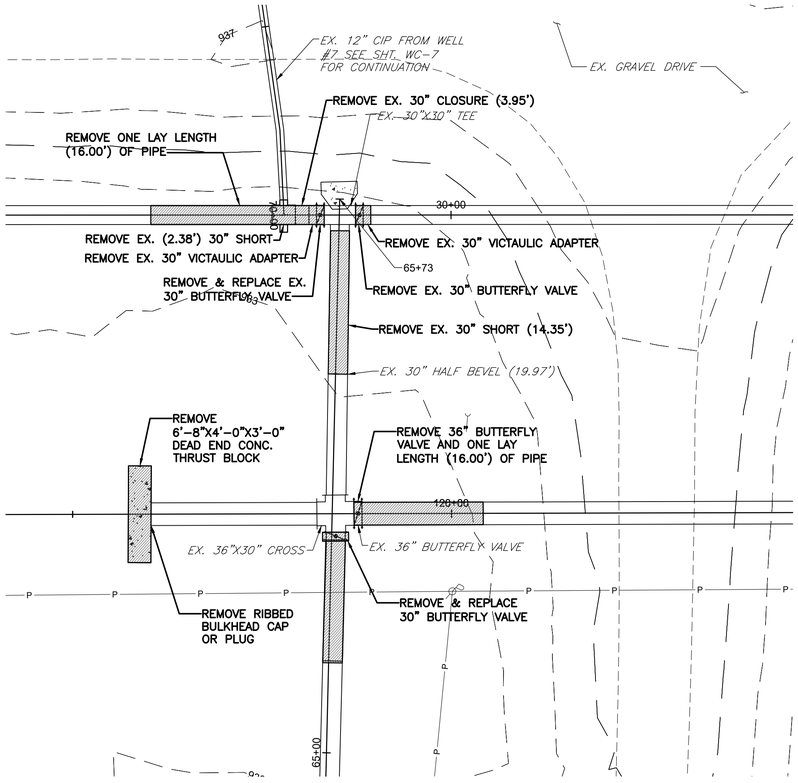
NEW RAW WATER MAIN PLAN AND PROFILE STA 110+00 TO 120+50

WC-12

SHEET: OF

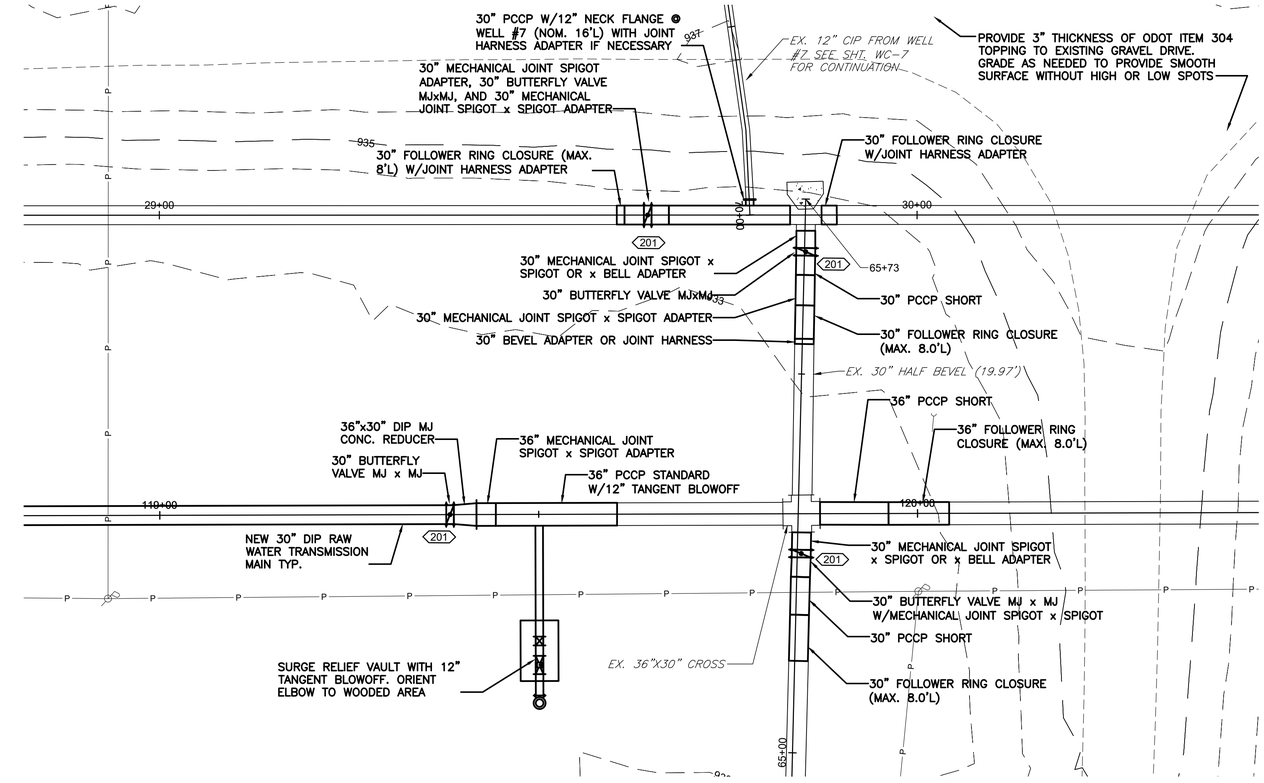
P:\PR58982\Cadd\Sheets\WC-12 NEW RAW WATER MAIN PLAN AND PROFILE STA 110+00 TO 120+50.dwg 4/14/2022 3:44:43 PM Paul Emerson

PLOTTED: 4/14/2022 5:23:42 PM



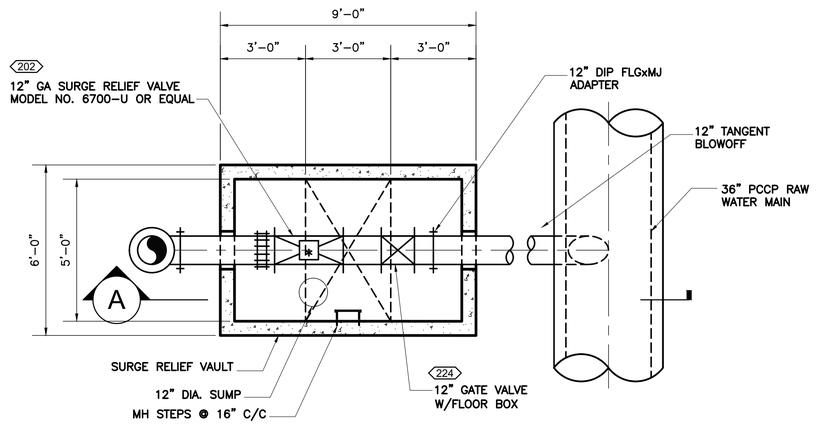
CONNECTION B DEMOLITION PLAN

SCALE: 1" = 10'



CONNECTION B RENOVATION PLAN

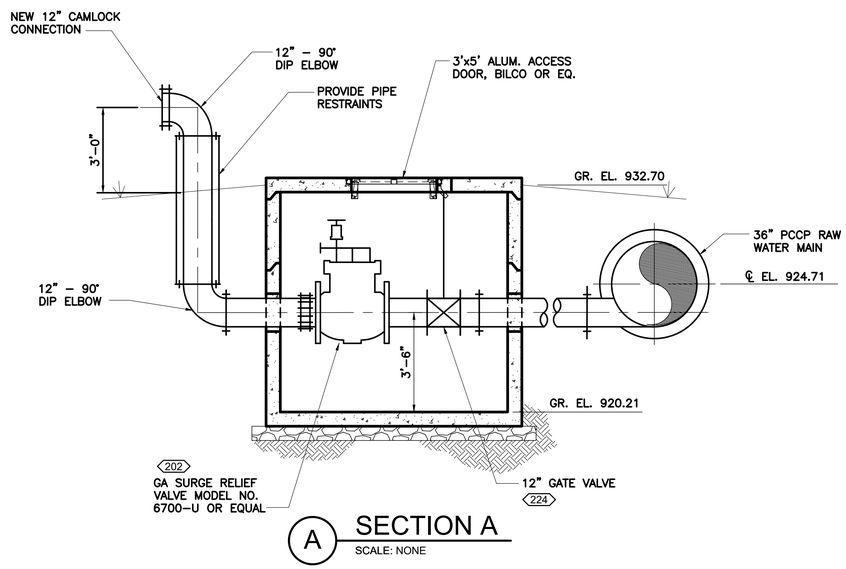
SCALE: 1" = 10'



SURGE RELIEF VAULT LOWER PLAN

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

NOTE: TOP PLAN SIMILAR TO FINISHED WATER SURGE VAULT. REFER TO SHT. C-14 FOR DETAILS.



A SECTION A

SCALE: NONE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
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DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

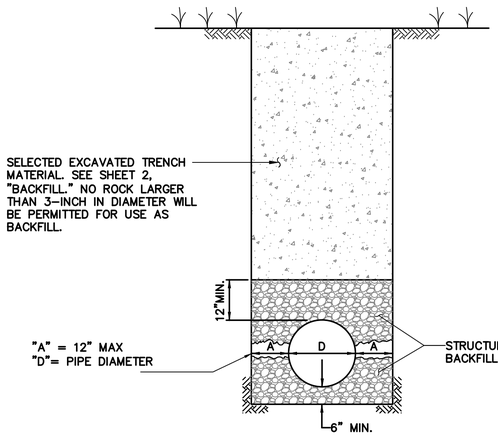
NEW RAW WATER MAIN
CONNECTION B
CIVIL SITE PLAN

WC-13

SHEET: OF

P:\PR58982\Cadd\Sheets\WC-13 NEW RAW WATER MAIN CONNECTION B CIVIL SITE PLAN.dwg 4/14/2022 3:44:59 PM Paul Emerson

PLOTTED: 4/14/2022 5:23:51 PM



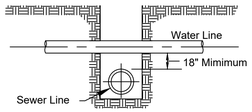
NOTE: THE SPECIFICATIONS REQUIRE THE CONTRACTOR TO REMOVE GROUND WATER FROM THE TRENCH. THIS CAN USUALLY BE DONE BY USING PUMPS, DEEP WELLS, DIVERSION DITCHES, OR PIPES. IN SOME CASES, PUMPING OPERATIONS WILL NOT REMOVE SUFFICIENT GROUND WATER TO CONSTRUCT THE PROJECT. AS A LAST RESORT, THE ENGINEER MAY ALLOW CONTRACTOR TO PLACE STRUCTURAL BACKFILL TYPE 3 (703.11) BELOW PIPE TO HELP RELIEVE WATER FLOW. WHEN PERMITTED, THE STRUCTURAL BACKFILL TYPE 3 IS ONLY PLACED BELOW THE BOTTOM OF THE PIPE. THIS MATERIAL IS VERY POROUS AND SHOULD RELIEVE THE WATER PROBLEMS IN MOST CASES. THE MATERIAL ON TOP OF TYPE 3 SHALL BE STRUCTURAL TYPE 1 (703.11) TO PREVENT FINE PORTION OF THE SURROUNDING SOILS OR BACKFILL FROM MIGRATING INTO THE VOID SPACE IN THE TYPE 3 BACKFILL FOLLOWING CONSTRUCTION. THIS WORK SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER AND SHALL BE INCLUDED IN THE PRICE OF THE PIPE.

ANOTHER ALTERNATIVE TO RELIEVING THE WATER TO CONSTRUCT THE PIPE AS SHOWN IS TO USE ODOT ITEM 613 LOW STRENGTH MORTAR (LSM) BACKFILL TO CUT THE WATER OFF. SHEET PILING MAY ALSO BE USED TO CUT THE WATER OFF. THE EXPENSE OF THESE METHODS SHOULD BE CAREFULLY EVALUATED WITH ENGINEER AND OWNER. THE COST OF THE LSM OR SHEET PILING IS INCLUDED AS UNIT PRICE ITEM IN BID FORMS.

PAY LIMITS - TRENCH DETAIL FOR D.I.P.

(C175)

REV 9/30/2020



SECTION

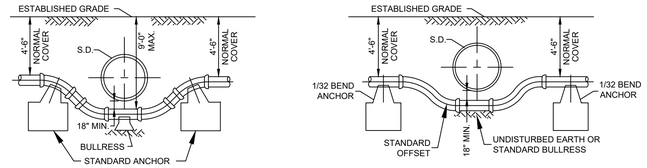
NOTES:
1. If joint on water main is within limits of sewer trench, install mechanical bell joint clamp
2. If clearance is less than 18":
   - For Storm sewers, concrete encase the storm sewer pipe, 6 ft. on each side of water main.
   - For Sanitary sewers, replace the sanitary sewer pipe with PVC C900 pipe, 10 ft. on each side of water main. Approved couplings shall be used to tie onto the existing sewer.

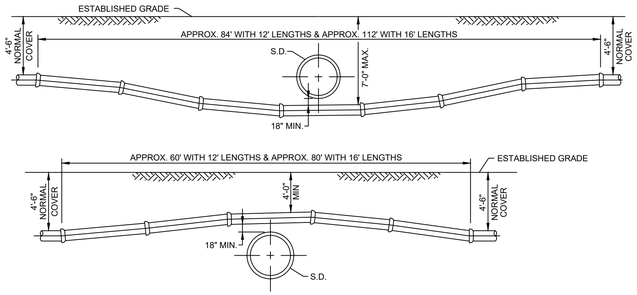
   Cost for the above shall be included in the unit prices bid for all items in the proposal.
3. In no case shall the sewer pipe contact any water main, service line or appurtenance.

VERTICAL WATER MAIN CLEARANCE

(C186)

REV 5/26/1994



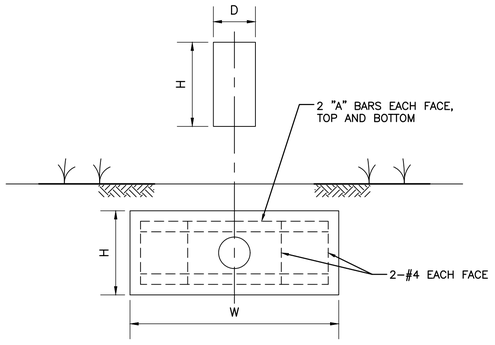


WATER MAIN CROSSING STORM DRAIN

(C187)

REV 10/22/2013

SIZE OF PIPE	DEGREE OF BEND									RUN	BRANCH											
	11 1/4°		22 1/2°		45°		90°			6"		8"		12"		16"		20"		24"	
	L"	D"	L"	D"	L"	D"	L"	D"		L"	D"	L"	D"	L"	D"	L"	D"	L"	D"	L"	D"
6"	12	6	12	8	20	12	18	13	6"	18	13										
8"	12	9	16	16	24	13	25	18	8"	18	13	23	18								
12"	15	13	22	18	36	30	32	30	12"	18	13	23	18	38	24						
16"	18	21	32	27	36	39	41	39	16"	14	16	20	20	36	25	49	32				
20"	25	24	30	32	49	45	50	50	20"	11	21	18	22	35	26	46	34	60	42		
24"	27	30	39	42	60	54	58	61	24"	9	25	15	27	30	30	42	38	54	46	68	52
30"					52	76	88	93	30"					24	34	43	34	50	52	64	59
36"					82	77	105	111	36"											60	63



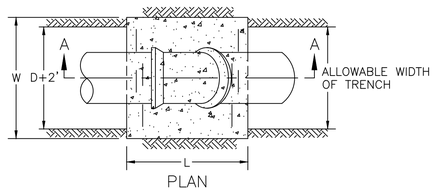
CONCRETE ANCHOR DETAIL

SCALE: NONE

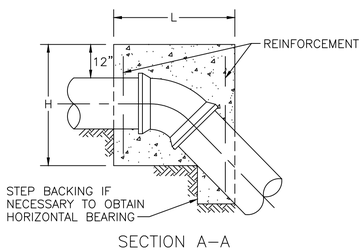
DESIGNATION	W	H	D	PIPE I.D.	A BARS
WELL #1	7'-0"	4'-0"	2'-0"	20"	#8
WELL #10	7'-0"	4'-0"	2'-0"	18"	#8

ANCHORAGE SCHEDULE

SCALE: NONE



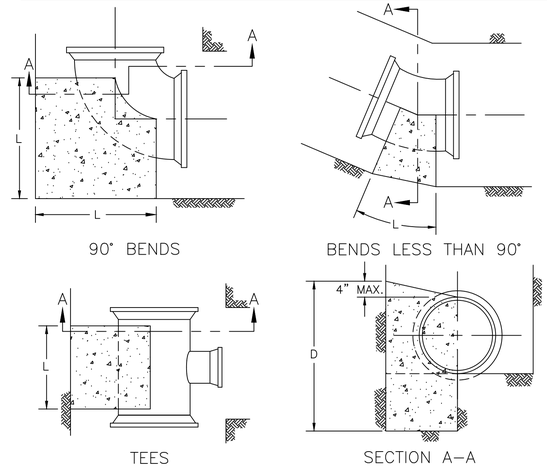
PLAN



SECTION A-A

CONCRETE BACKING FOR VERTICAL BENDS

1. BACKING DESIGNED FOR 3000 POUNDS PER SQUARE FOOT SOIL BEARING AND 150 POUNDS PER SQUARE INCH INTERNAL PRESSURE.
2. PROVIDE MINIMUM CONCRETE REINFORCEMENT OF 2 PAIR OF TWO #5 "U" BARS AT 12" C/C.
3. CENTER BACKING ON BEND.
4. THESE SAME DIMENSIONS WILL BE USED FOR SHORT BODY FITTINGS.
5. IF RESTRAINED PIPE JOINTS ARE INSTALLED, BACKING OR THRUST BLOCKING IS REQUIRED.



CONCRETE BACKING FOR HORIZONTAL BENDS AND TEES

1. BACKING DESIGNED FOR 3000 POUNDS PER SQUARE FOOT SOIL BEARING AND 150 POUNDS PER SQUARE INCH INTERNAL PRESSURE.
2. PROVIDE CONCRETE REINFORCEMENT AS DIRECTED BY THE ENGINEER.
3. THESE SAME DIMENSIONS WILL BE USED FOR SHORT BODY FITTINGS.
4. IF RESTRAINED PIPE JOINTS ARE INSTALLED, BACKING OR THRUST BLOCKING IS REQUIRED.

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1.	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	MMK
DRAWN BY:	PJE
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

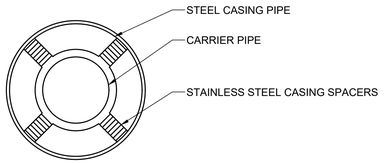
NEW RAW WATER MAIN CIVIL DETAILS

WC-14

SHEET: OF

P:\PR58982\Cadd\Sheets\WC-14 NEW RAW WATER MAIN CIVIL DETAILS.dwg 4/14/2022 3:04:17 PM Paul Emerson

PLOTTED: 4/14/2022 5:23:59 PM



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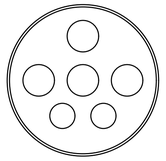

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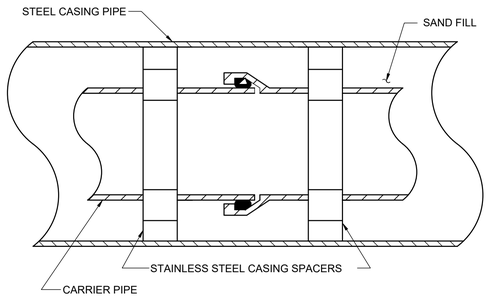

PROFILE

NOTES:

1. THREE STAINLESS STEEL CASING SPACERS (RESTRAINED) SHALL BE USED ON EACH LENGTH OF CARRIER PIPE. PLACE ONE AT EACH END AND ONE IN THE MIDDLE.
2. CASING SPACERS SHALL BE STAINLESS STEEL BY ADVANCE PRODUCTS AND SYSTEMS INC., OR EQUAL.
3. THE INSIDE DIAMETER OF THE STEEL CASING PIPE SHALL BE AT LEAST 4 INCHES GREATER THAN THE LARGEST OUTSIDE DIAMETER OF THE CARRIER PIPE JOINTS OR COUPLINGS.
4. ALL PVC PIPE JOINTS INSIDE OF CASING PIPE SHALL BE THERMAL BUTT-FUSION TYPE.
5. CASING END SEALS SHALL BE BY CASCADE WATERWORKS OR EQUAL.

BORING/CASING PIPE DETAIL

SCALE: NONE

	PIPE DATA 24" CARRIER PIPE			PIPE DATA ELEC DUCT BANK
	CARRIER PIPE	CASING PIPE	CARRIER PIPE	CASING PIPE
CONTENTS TO BE HANDLED	WATER	N/A	WATER	N/A
NORMAL OPERATING PRESSURE	60 - 85 PSI	N/A	60 - 85 PSI	N/A
NOMINAL SIZE OF PIPE	24-INCH	34-INCH	24-INCH	24-INCH
OUTSIDE DIAMETER	28.75 IN	34.0 IN	25.80 IN	24.0 IN
INSIDE DIAMETER	24.0 IN	33.0 IN	24.0 IN	23.3 IN
WALL THICKNESS	2.375 IN	0.5 IN	0.44 IN	0.375 IN
WEIGHT PER FOOT	240 LBS/FT	178.89 LBS/FT	112.25 LBS/FT	141.12 LBS/FT
MATERIAL	PCCP	STEEL	DIP	STEEL
PROCESS OF MANUFACTURE	N/A	N/A	N/A	N/A
SPECIFICATION	AWWA C301	ASTM A53	ASTM A536	ASTM A53
GRADE OF CLASS	100	SCH. 20	52	SCH. 20
TEST PRESSURE	100 PSI	N/A	350 PSI	N/A
TYPE OF JOINING	JOINT	WELDED	MECH. JT.	WELDED
TYPE OF COATING	NONE	NONE	CEMENT MORTAR	NONE
DETAILS OF CATHODIC PROTECTION	N/A	N/A	PE ENCASEMENT	N/A
DETAILS OF SEALS OR PROTECTION AT ENDS OF CASING	N/A	CASING END SEAL	N/A	CASING END SEAL
METHOD IN INSTALLATION	STAINLESS STEEL CASING SPACERS	BORE AND JACK	STAINLESS STEEL CASING SPACERS	BORE AND JACK
CHARACTER OF SUBSURFACE MATERIAL AT THE CROSSING LOCATION	SEE BORING LOGS	SEE BORING LOGS	SEE BORING LOGS	SEE BORING LOGS
APPROXIMATE GROUND WATER LEVEL	SEE BORING LOGS	SEE BORING LOGS	SEE BORING LOGS	SEE BORING LOGS
SOURCE OF INFORMATION ON SUBSURFACE CONDITIONS (BORINGS, TEST PITS OR OTHER)	SEE BORING LOGS	SEE BORING LOGS	SEE BORING LOGS	SEE BORING LOGS

TYP. PIPE INFORMATION TABLE

SCALE: NONE

HORIZONTAL DIRECTIONAL DRILL NOTES:

(A) DESCRIPTION OF WORK:

DIRECTIONAL DRILLING INCLUDING ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY FOR THE DIRECTIONAL DRILLING INSTALLATION OF PRESSURE PIPE. PROVIDE SERVICES IN ACCORDANCE WITH THE BEST INDUSTRY PRACTICE AND THESE SPECIFICATIONS. FURNISH ALL LABOR, AND MATERIALS NECESSARY TO ACCOMPLISH THE WORK.

(B) QUALITY ASSURANCE:

PRIOR TO COMMENCING DIRECTIONAL DRILLING, SUBMIT DETAILS OF EQUIPMENT, MATERIAL, AND DETAILED WORKING DRAWINGS/PLAN DESCRIBING THE PROPOSED METHOD OF DIRECTIONAL DRILLING, AND RELATED CALCULATIONS OF PULL–BACK LOADS AND EXTERNAL SERVICE LOADS. THIS SHALL INCLUDE ARRANGEMENT OF EQUIPMENT, LOCATION, AND SIZE OF DRILLING AND RECEIVING PITS, PROPOSED DRILLING ALIGNMENT (HORIZONTAL AND VERTICAL), METHOD OF DEWATERING, METHOD OF REMOVING AND DISPOSING OF SOILS AND DRILLING MUD MATERIAL, SIZE AND CAPACITY OF EQUIPMENT, METHOD OF INSTALLING CASING AND CARRIER PIPE, METHOD OF FUSING PIPE SEGMENTS, TYPE OF CUTTING HEAD, METHOD OF INSTALLING CARRIER PIPE END SEALS, SUPPORT SEGMENTS, METHOD OF MONITORING AND CONTROLLING LINE AND GRADE, AND METHOD OF ABANDONMENT OF PILOT HOLE. SUFFICIENT MATERIAL SHALL BE SUBMITTED TO SHOW COMPLIANCE WITH THE CONTRACT DOCUMENTS AND TO SHOW THAT ARTICLES PROPOSED FOR USE IN THE WORK ARE ACCEPTABLE.

ALL DRAWINGS, CATALOG CUTS AND OTHER DESCRIPTIVE DATA COVERING SEVERAL RELATED ITEMS IN THE SAME SYSTEM SHALL BE SUBMITTED AT THE SAME TIME IN ORDER THAT THEIR COMPLETE INTEGRATED APPLICABILITY IN THE ENTIRE SYSTEM BE ADEQUATELY REVIEWED.

BENTONITE/DRILLING MUD: SUBMIT PRODUCT INFORMATION, MATERIAL SPECIFICATIONS, HANDLING PROCEDURES, SPECIAL PRECAUTIONS REQUIRED, AND METHOD OF MIXING AND INSTALLATION.

AT ALL TIMES PROVIDE AND MAINTAIN INSTRUMENTATION WHICH WILL ACCURATELY LOCATE THE PILOT HOLE AND MEASURE DRILLING FLUID FLOW DISCHARGE RATE AND PRESSURE.

PROVIDE HYDRAULIC PRESSURE REGULATIONS OF LOAD SENSOR BETWEEN PULLING EQUIPMENT AND PIPE.

ENGINEER SHALL HAVE ACCESS TO INSTRUMENTS, GAUGES AND READINGS AT ALL TIMES.

(C) EXECUTION:

ACCESS AREAS: DIRECTIONAL DRILL ACCESS AREAS AND MISCELLANEOUS EXCAVATION AREAS SHALL BE COORDINATED WITH THE OWNER/ENGINEER. THESE AREAS SHALL BE RESTORED TO THEIR PRE–EXISTING CONDITIONS BY THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL INCLUDE, BUT NOT BE LIMITED TO, EXISTING UTILITIES, SIGNAGE, CURB AND GUTTER, GUARDRAILS, FENCES, AND LANDSCAPING AS REQUIRED BY THE OWNER.

SOIL CONDITIONS: A COPY OF THE SOILS REPORT CAN BE MADE AVAILABLE AT THE CONTRACTOR'S REQUEST.

DIRECTIONAL TOLERANCE: DRILL PILOT HOLE ALONG THE PATH SHOWN ON THE PLAN AND PROFILE DRAWINGS TO THE FOLLOWING TOLERANCES:

1.) HORIZONTAL AND VERTICAL ALIGNMENT: PLUS OR MINUS 12 INCHES
2.) CURVE RADIUS: CONTRACTOR SHALL CONFIRM RADIUS CURVATURES REQUIRED TO ACCOMPLISH THE INSTALLATION PRIOR TO INITIATION OF WORK.

REAM AND PULL BACK:

1.) PREREAMING: PREREAMING OPERATIONS SHALL BE CONDUCTED AT THE DISCRETION OF THE HORIZONTAL DRILLING CONTRACTOR. ALL PROVISIONS OF THIS SPECIFICATION RELATED TO THE SIMULTANEOUS REAMING AND PULLING BACK OPERATIONS SHALL ALSO PERTAIN TO PREREAMING OPERATIONS.
2.) PULLING LOADS: THE MAXIMUM ALLOWABLE TENSILE LOAD IMPOSED ON THE PIPELINE PULL SECTION SHALL NOT EXCEED THAT RECOMMENDED BY THE PIPE MANUFACTURER.
3.) TORSIONAL STRESS: PROVIDE A SWIVEL TO CONNECT THE PULL SECTION TO THE REAMING ASSEMBLY TO MINIMIZE TORSIONAL STRESS IMPOSED ON THE SECTION.
4.) PULL SECTION SUPPORT: SUPPORT THE PULL SECTION AS IT PROCEEDS DURING PULL BACK SO THAT IT MOVES FREELY.
5.) PULL BACK IN ONE CONTINUOUS OPERATION. NOTIFY ENGINEER OF ANY PULL BACK WHICH IS RESUMED.
6.) ONCE DIRECTIONAL DRILL IS COMPLETED, CONTRACTOR SHALL WAIT A MINIMUM OF TWO (2) DAYS, OR RECOMMENDED BY THE PIPE MANUFACTURER, BEFORE MAKING FINAL CONNECTIONS TO ENDS OF THE HDPE PIPE.

DEPTH: REFER TO THE PLAN AND PROFILE DRAWINGS FOR THE MINIMUM ALLOWABLE DEPTHS.

DRILLING FLUIDS:

1.) DISPOSAL: DISPOSAL OF DRILLING FLUIDS AND CUTTINGS SHALL BE IN COMPLIANCE WITH ALL RELATIVE ENVIRONMENTAL REGULATIONS, RIGHT–OF–WAY AND WORK SPACE AGREEMENTS. THE SLURRY SHALL BE CONTAINED BY MEANS APPROVED BY THE ENGINEER. THE SLURRY SHALL NOT BE PERMITTED TO BE DUMPED ON THE GROUND, IN DITCHES, STREAMS, OR WETLANDS.
2.) INADVERTENT RETURNS: MINIMIZE DRILLING FLUIDS RETURNS AT LOCATIONS OTHER THAN THE ENTRY AND EXIT POINTS. CLEAN UP ANY INADVERTENT RETURNS.

COMPLETION OF INSTALLATION: AFTER INSTALLATION OF THE PRESSURE PIPE IS COMPLETE, RESTORE DRILLING AND RECEIVING PITS TO EQUAL OR BETTER CONDITION THAN ORIGINALLY FOUND.

(D) TESTING AND DISINFECTION:

PRESSURE TESTING OF THE WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C600.

DISINFECTION OF THE WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C651

(E) MEASUREMENT AND PAYMENT:

PAYMENT WILL BE MADE ON A LINEAL FOOT BASIS AS MEASURED THROUGH FITTINGS AND VALVES FROM CENTER TO CENTER OF FITTING AND VALVE ALONG THE CENTERLINE OF THE DIRECTIONALLY DRILLED WATER MAIN, COMPLETE, TESTED, DISINFECTED, AND READY FOR SERVICE.

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SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO: PR58982
DATE: APR 2022
DESIGNED BY: MMK
DRAWN BY: PJE
CHECKED BY: MMK
APPROVED BY: CMS
SCALE: NONE

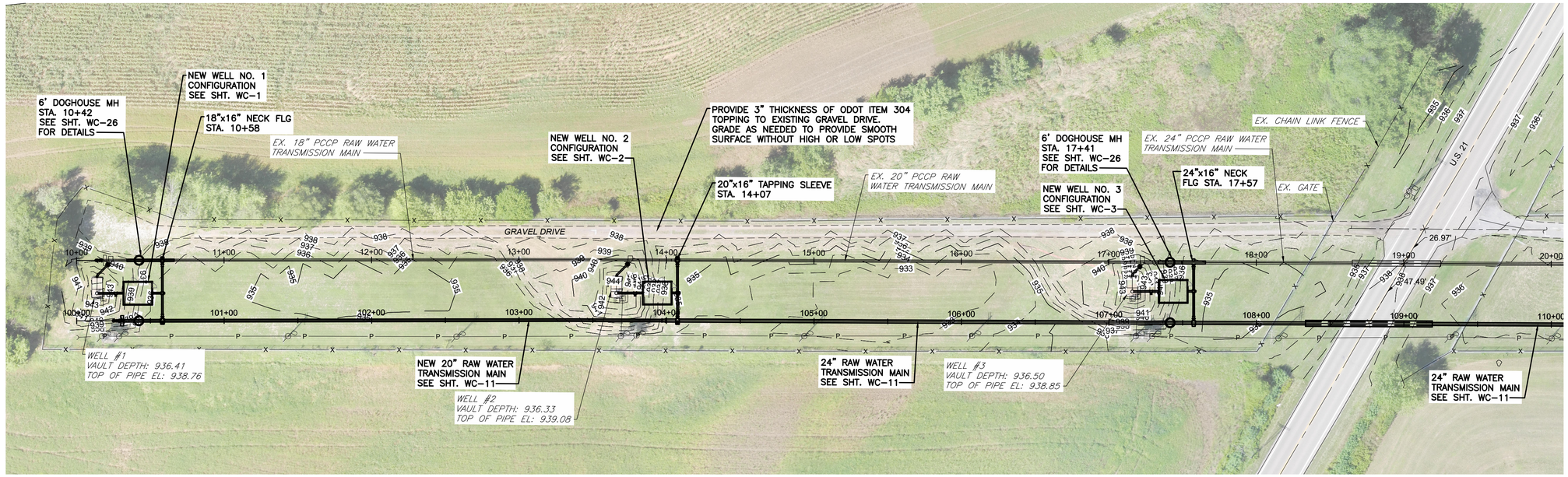
NEW RAW WATER MAIN CIVIL JACK AND BORE DETAILS

WC-15

SHEET: OF

P:\PR58982\Cadd\Sheets\WC-15 NEW RAW WATER MAIN CIVIL JACK AND BORE DETAILS.dwg 4/14/2022 1:43:12 PM Paul Emerson

PLOTTED: 4/14/2022 5:25:49 PM



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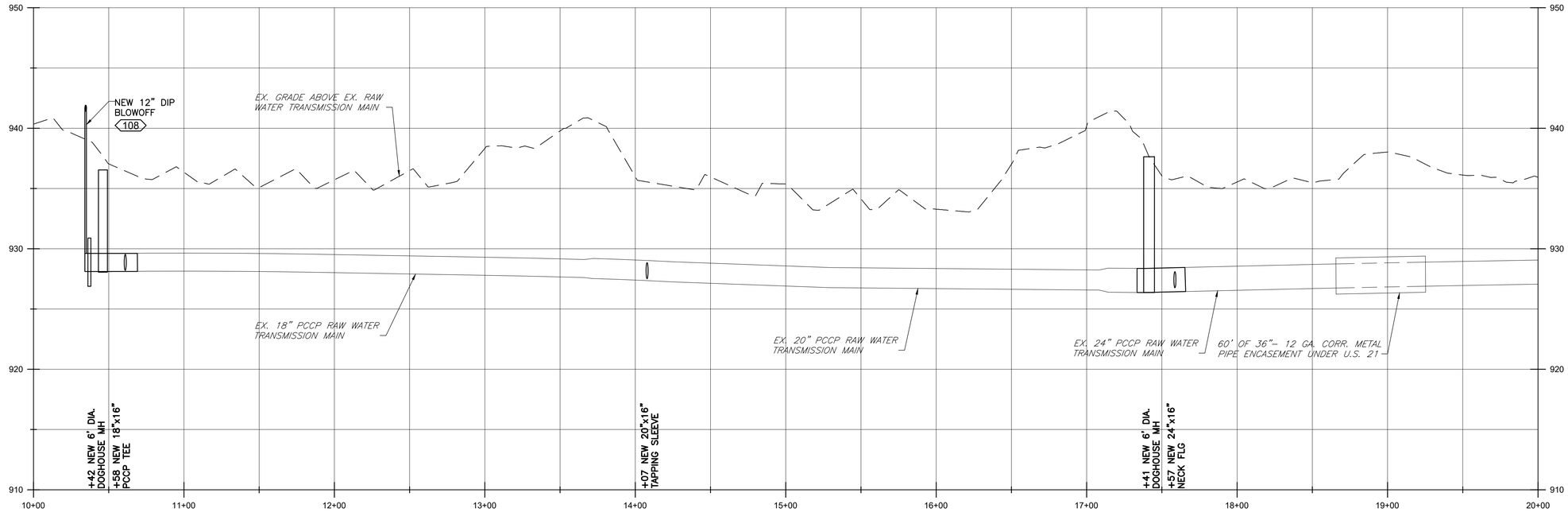

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

EX. RAW WATER MAIN PLAN AND PROFILE STA 10+00 TO 20+00

WC-16

SHEET: OF

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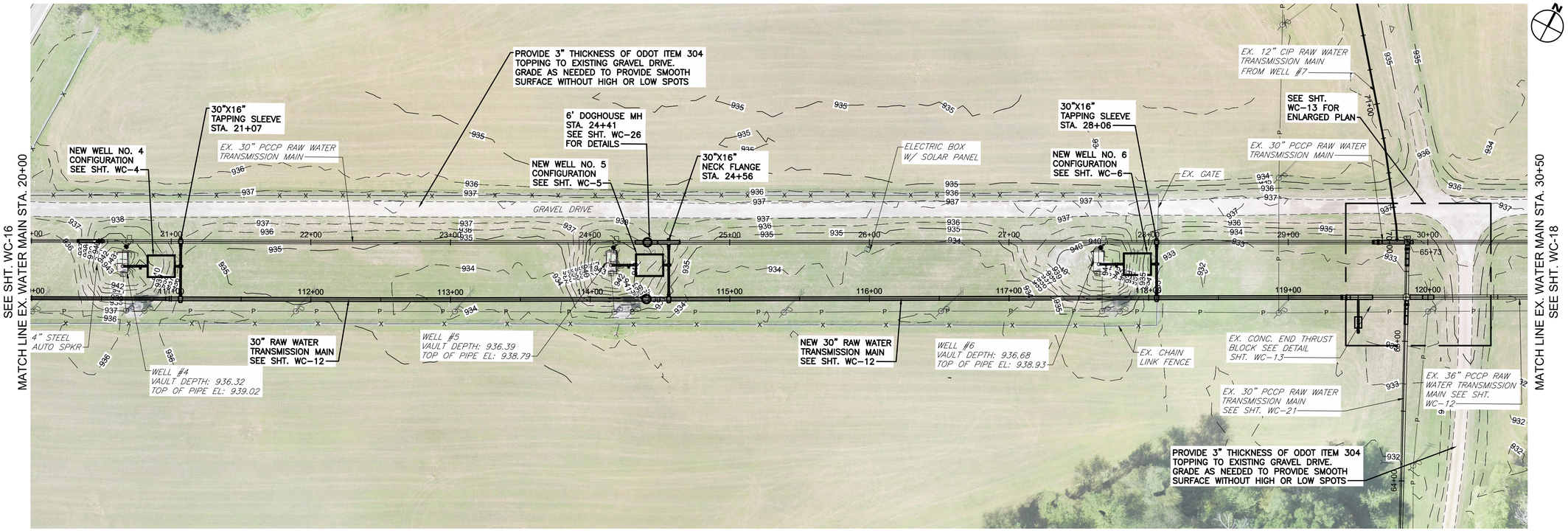

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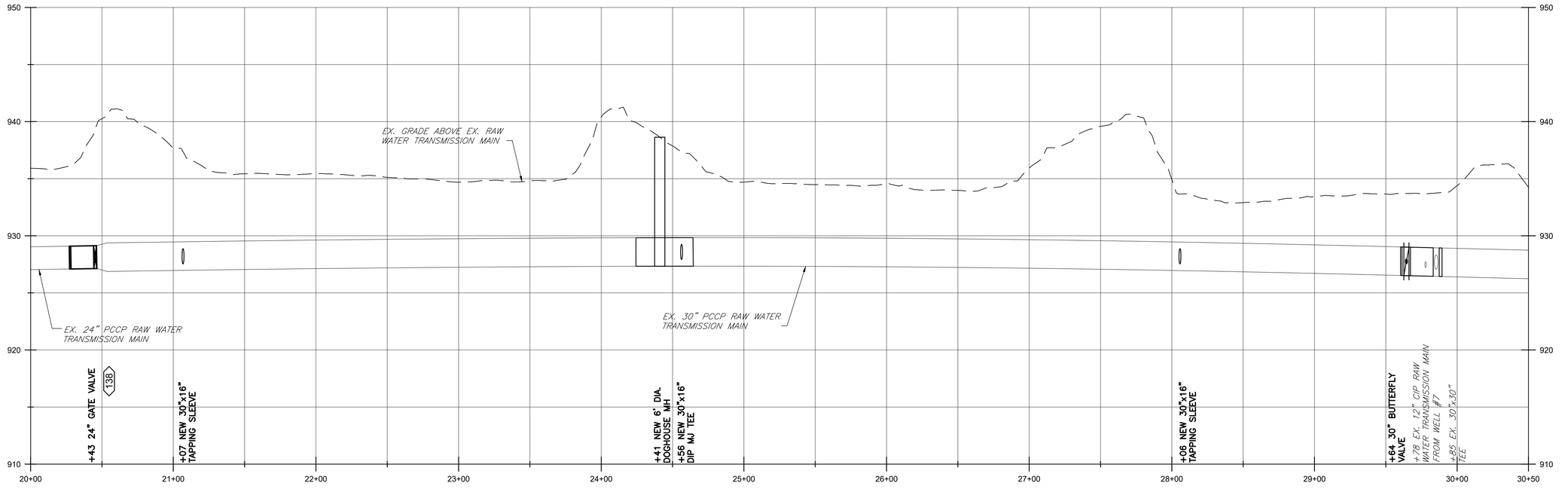

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REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	MMK
DRAWN BY:	PJE/RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

EX. RAW WATER MAIN PLAN AND PROFILE STA 20+00 TO 30+50

WC-17

SHEET: OF

P:\PR58982\Cadd\Sheets\WC-17 EX. RAW WATER MAIN PLAN AND PROFILE STA 20+00 TO 30+50.dwg 4/14/2022 3:54:57 PM Paul Emerson

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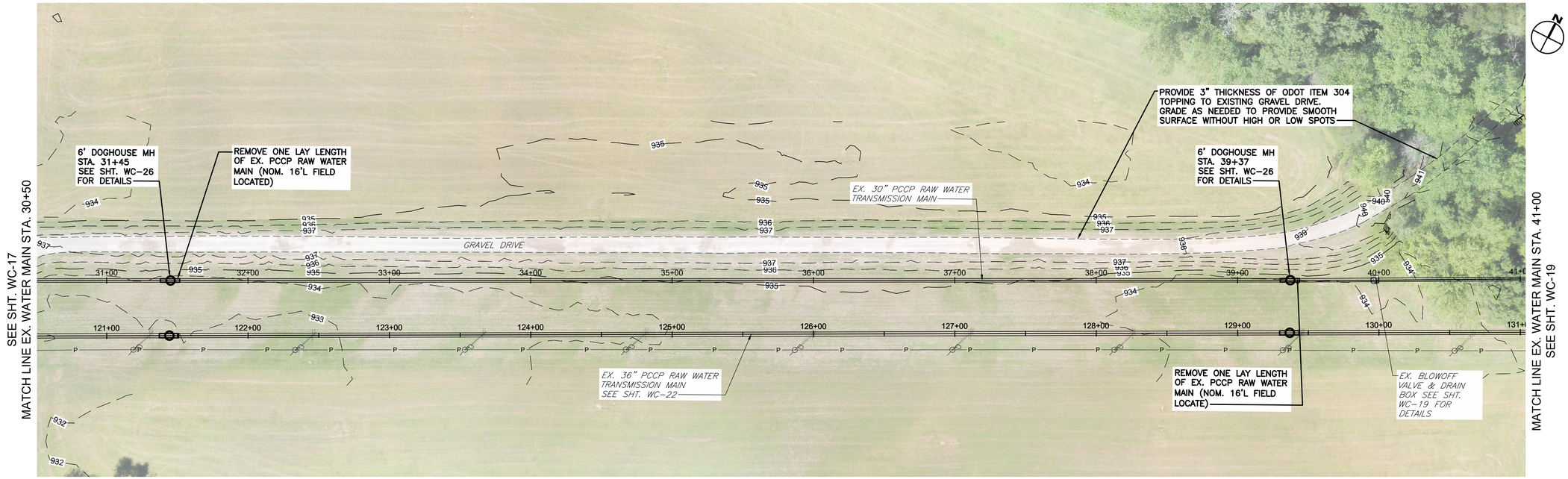

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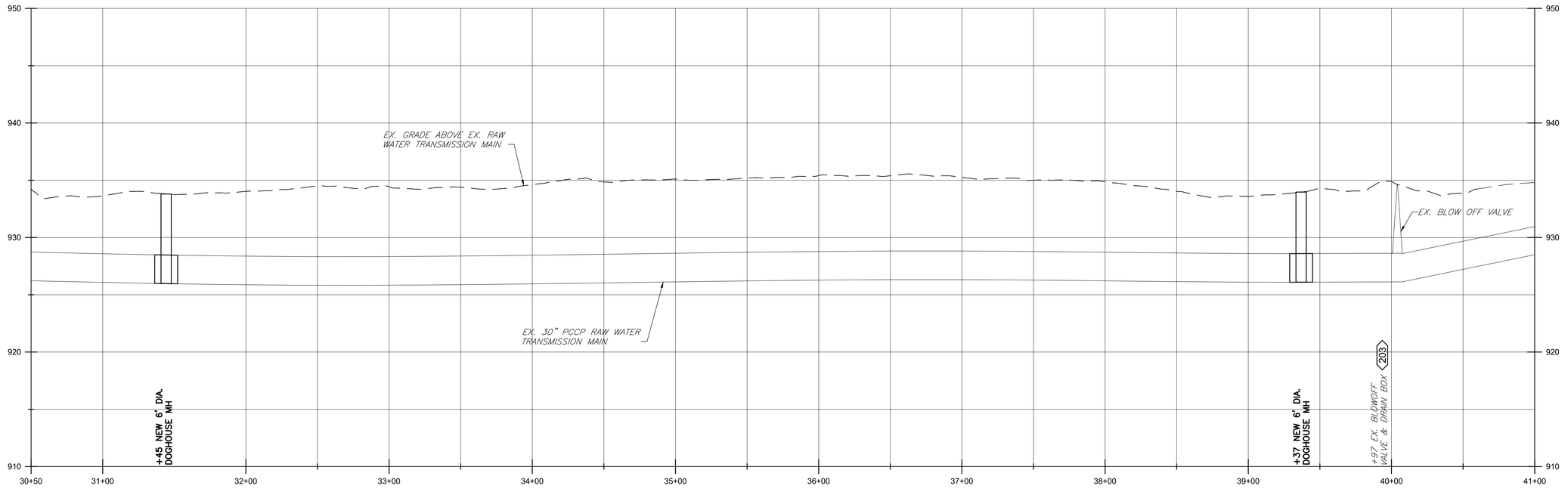

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APPROVED BY:	CMS
SCALE:	AS NOTED

EX. RAW WATER MAIN PLAN AND PROFILE STA 30+50 TO 41+00

WC-18

SHEET: OF

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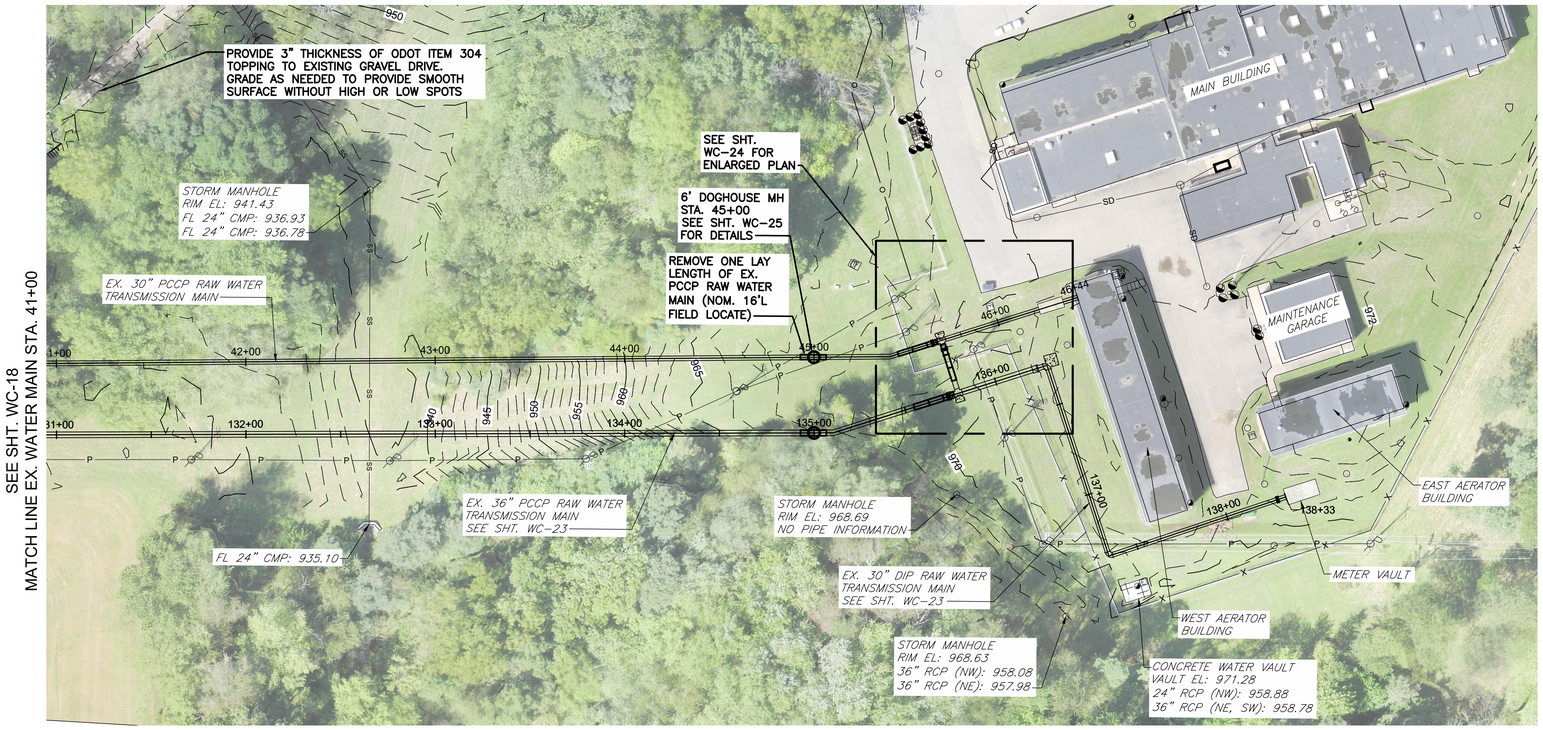

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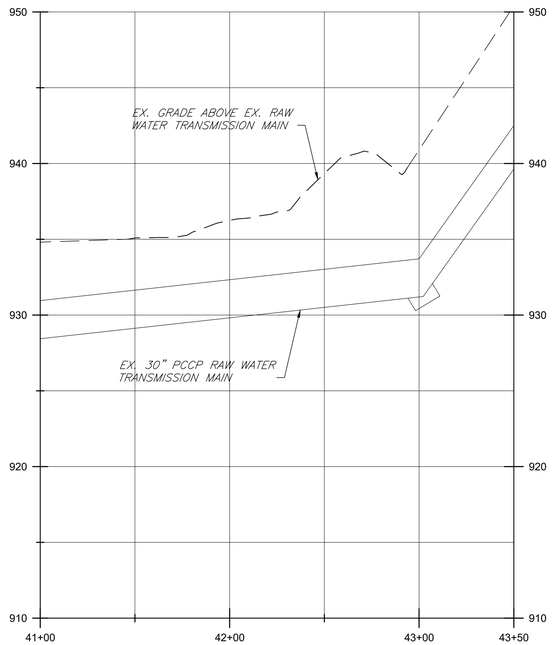
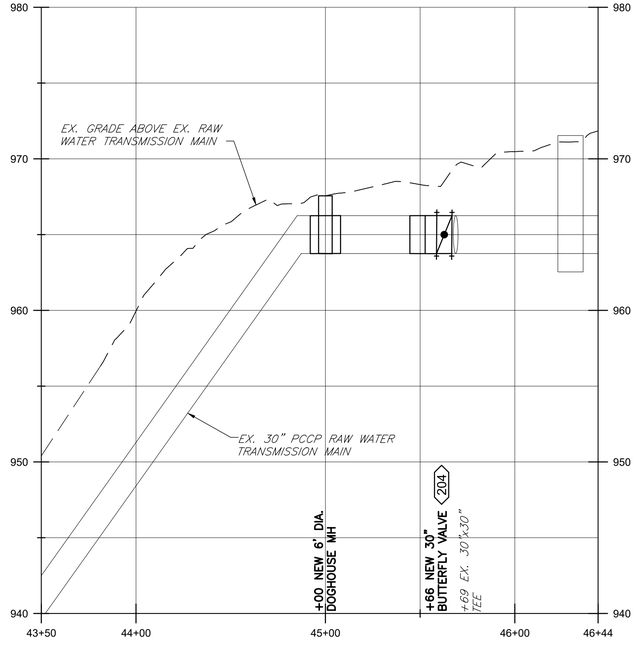
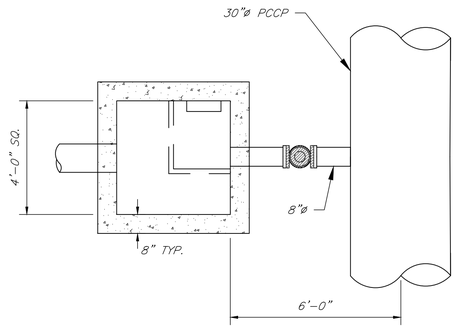
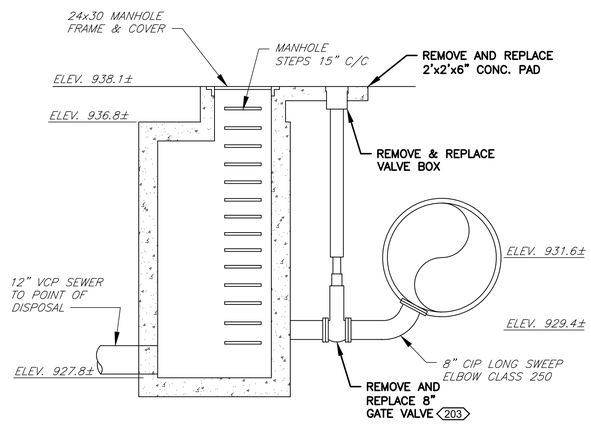






PLAN



TYPICAL SECTION

BLOWOFF VALVE & DRAIN BOX

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

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

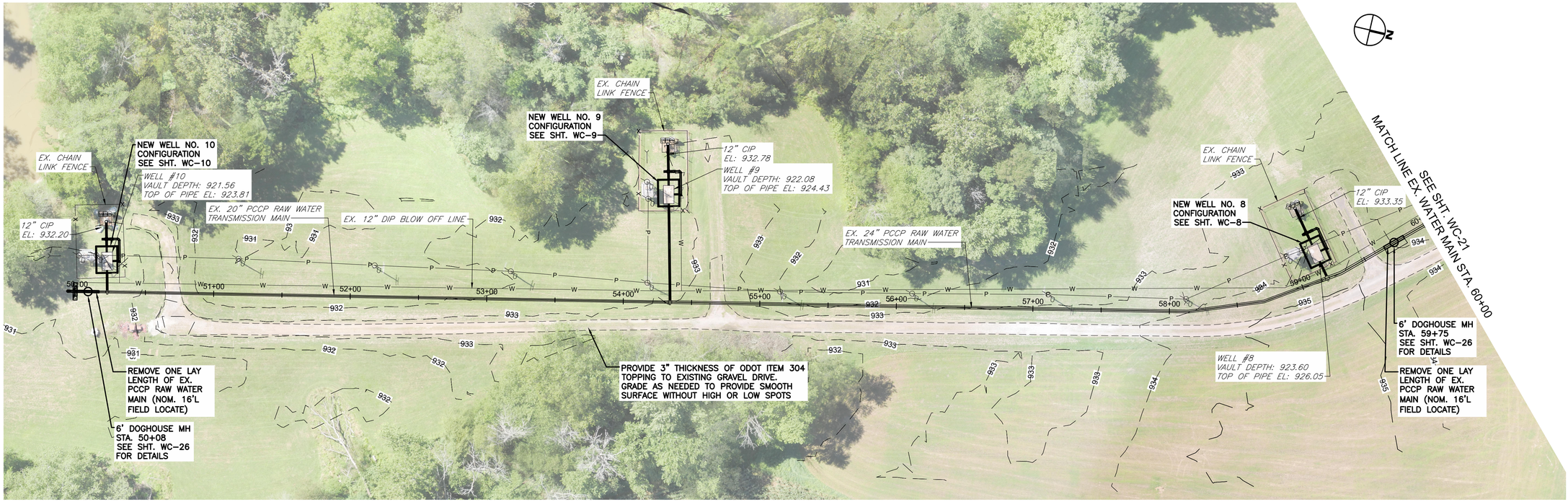
EX. RAW WATER MAIN PLAN AND PROFILE STA 41+00 TO 46+44

WC-19

SHEET: OF

P:\PR58982\Cadd\Sheets\WC-19 EX. RAW WATER MAIN PLAN AND PROFILE STA 41+00 TO 46+44.dwg 4/14/2022 4:02:45 PM Paul Emerson

PLOTTED: 4/14/2022 5:34:34 PM



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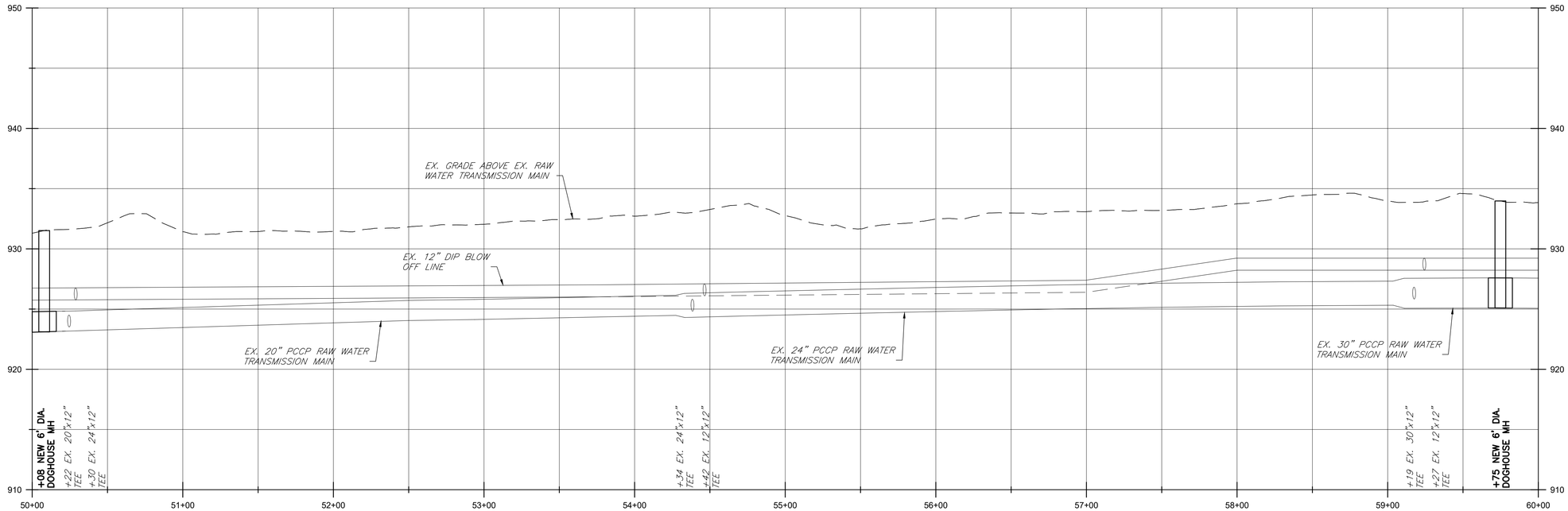

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APPROVED BY:	CMS
SCALE:	AS NOTED

EX. RAW WATER MAIN PLAN AND PROFILE STA 50+00 TO 60+00

WC-20

SHEET: OF

P:\PR58982\Cadd\Sheets\WC-20 EX. RAW WATER MAIN PLAN AND PROFILE STA 50+00 TO 60+00.dwg 4/14/2022 4:05:50 PM Paul Emerson

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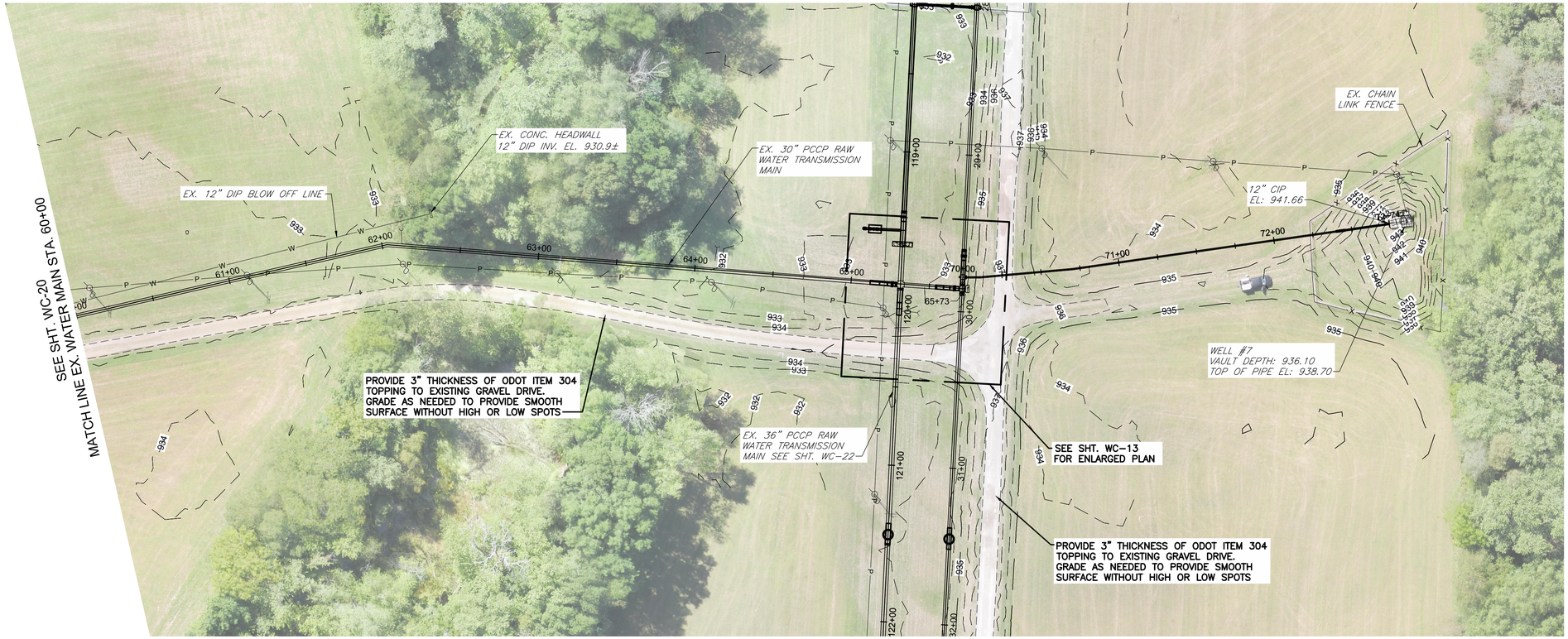

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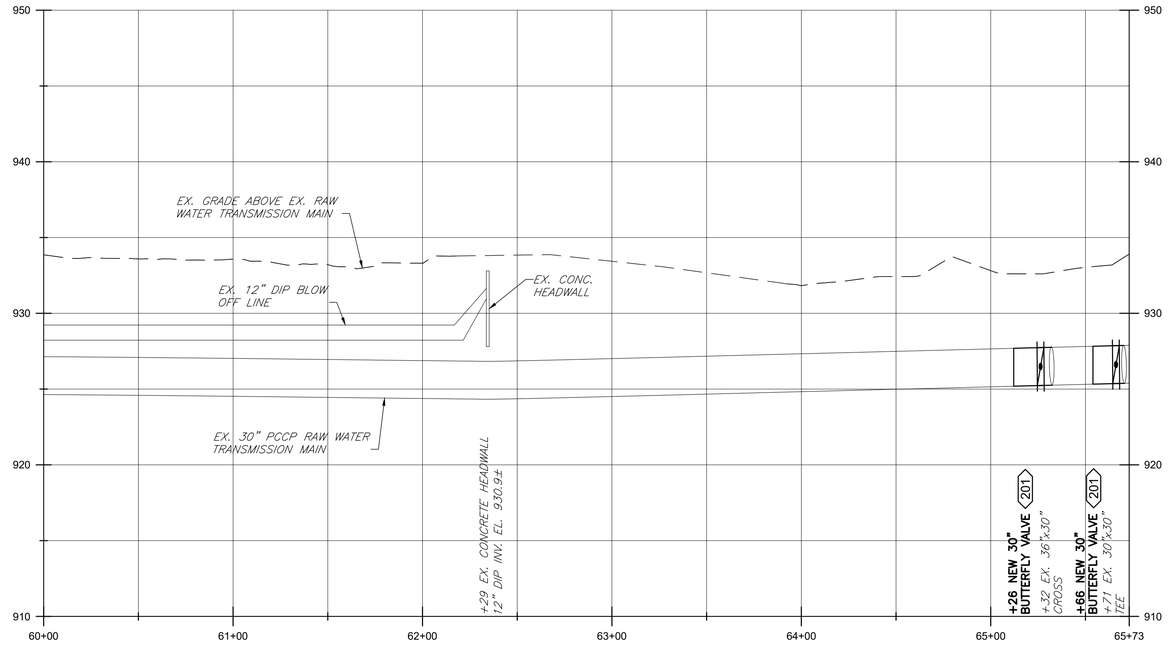

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100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	MMK
DRAWN BY:	PJE/RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

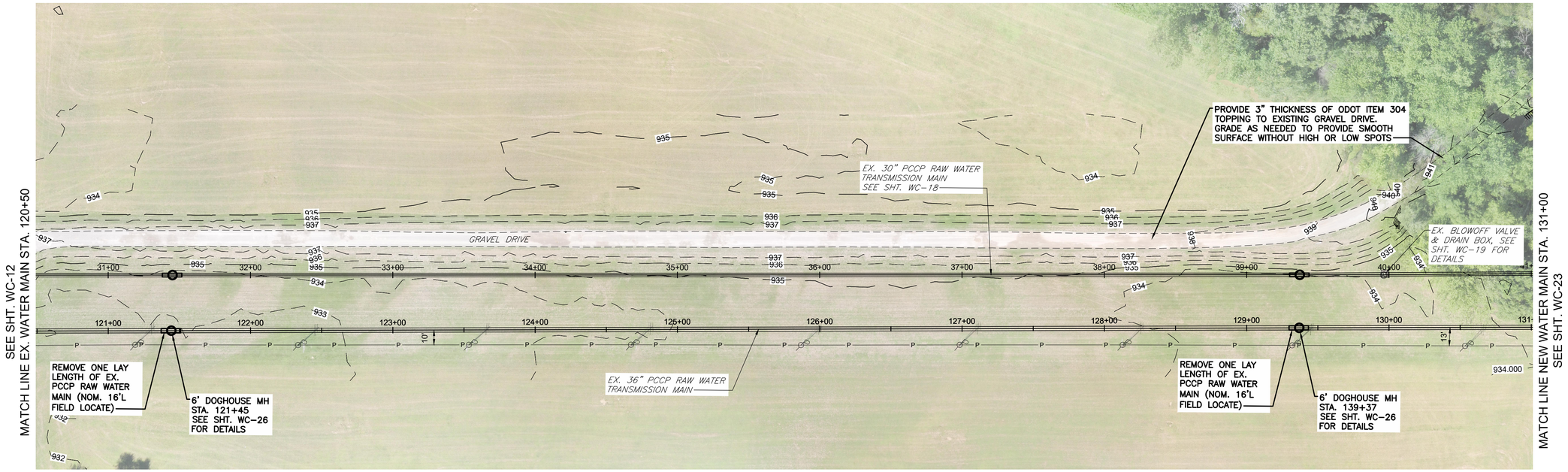
EX. RAW WATER MAIN PLAN AND PROFILE STA 60+00 TO 65+73

WC-21

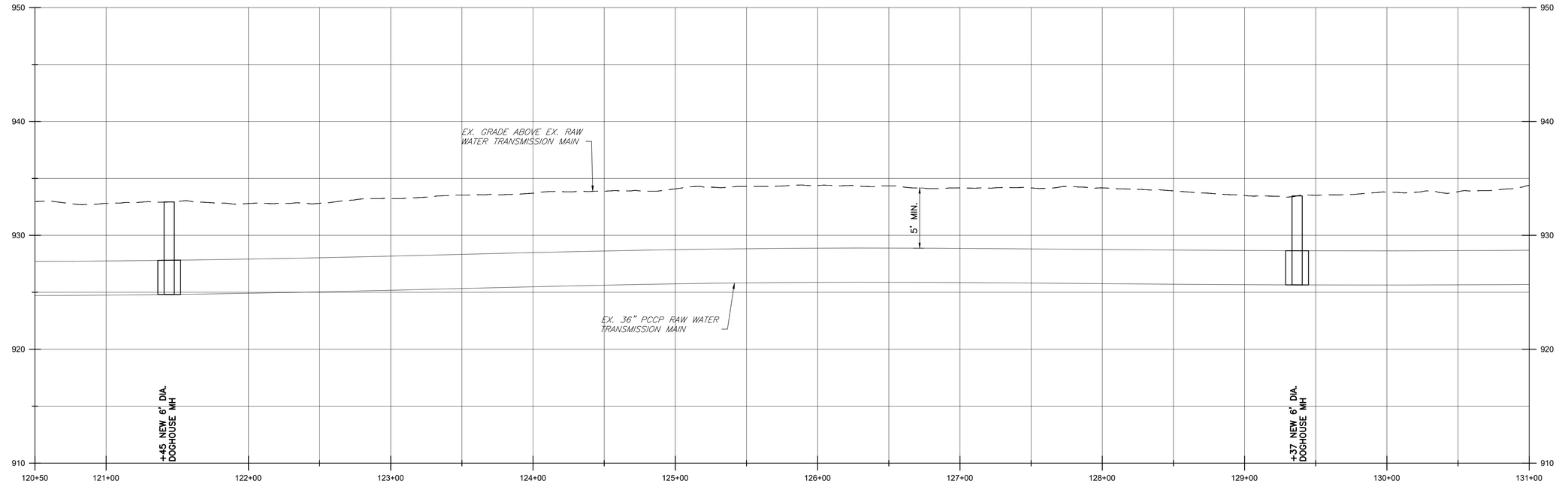
SHEET: OF

P:\PR58982\Cadd\Sheets\WC-21 EX. RAW WATER MAIN PLAN AND PROFILE STA 60+00 TO 65+73.dwg 4/14/2022 4:54:31 PM Paul Emerson

PLOTTED: 4/14/2022 5:36:49 PM



SCALE:
1" = 40' (HORIZ.)
1" = 5' (VERT.)



BURGESS & NIPLE
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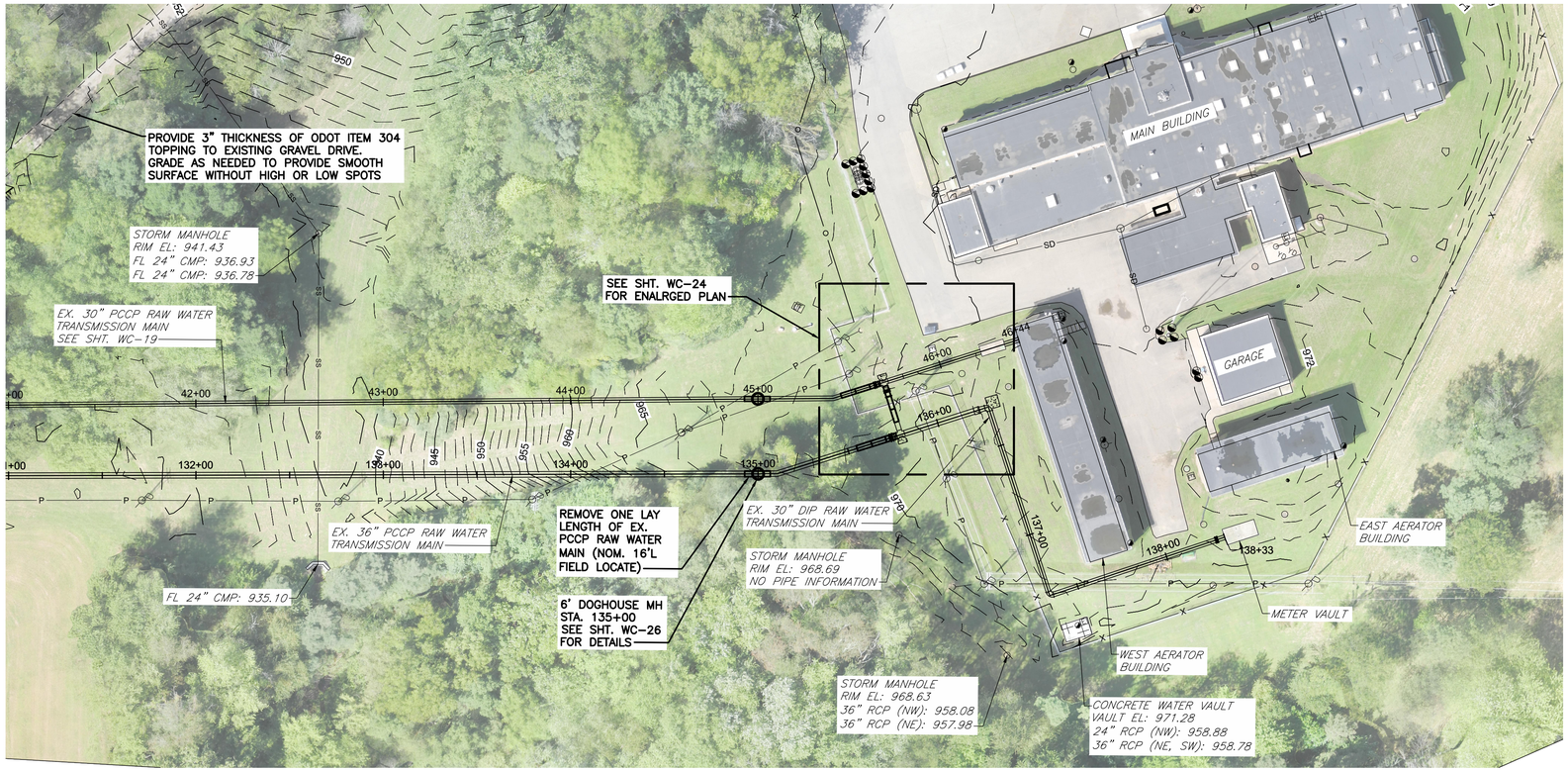
EX. RAW WATER MAIN PLAN AND PROFILE STA 120+50 TO 131+00

WC-22

SHEET: OF

P:\PR58982\Cadd\Sheets\WC-22 EX. RAW WATER MAIN PLAN AND PROFILE STA 120+50 TO 131+00.dwg 4/14/2022 4:50:46 PM Paul Emerson

PLOTTED: 4/14/2022 5:38:47 PM



SCALE:
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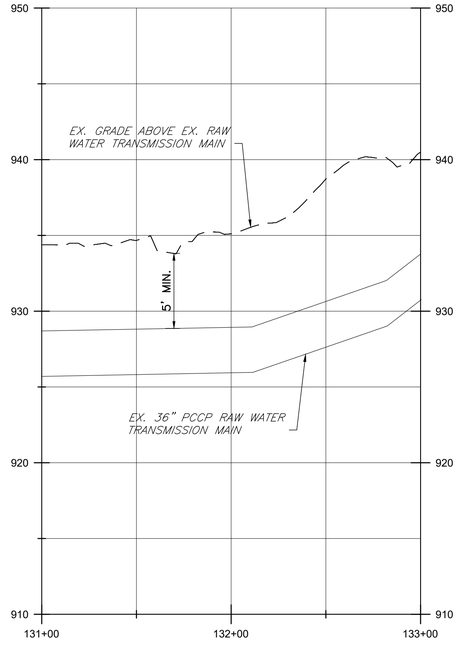
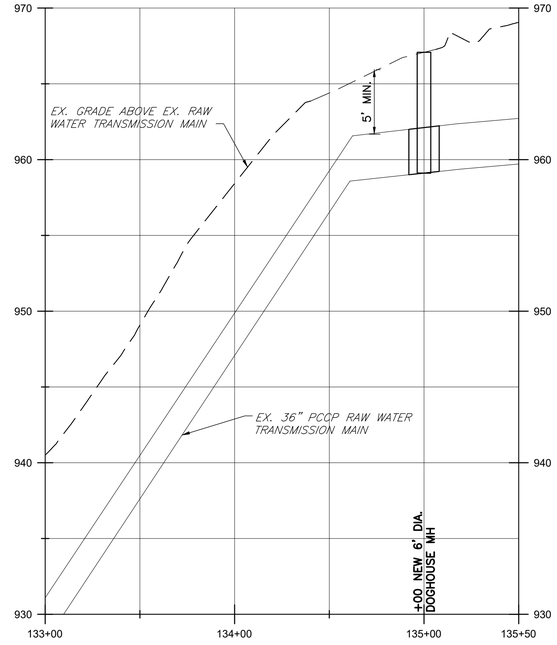
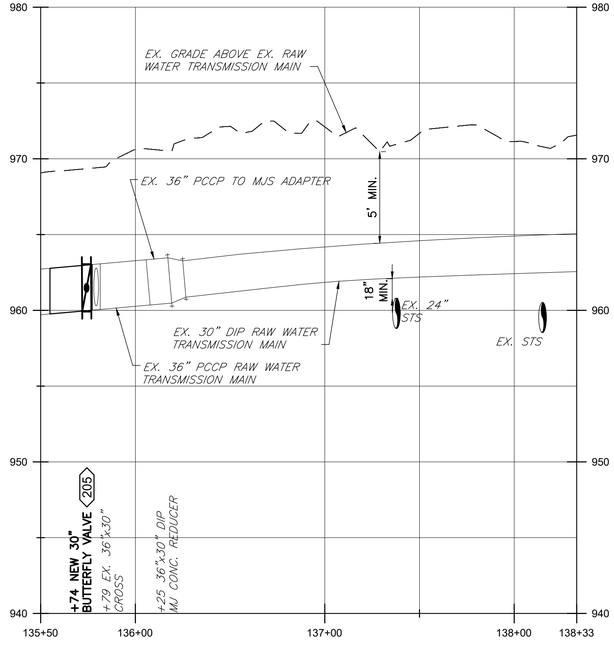
1" = 5' (VERT.)







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SCALE:	AS NOTED

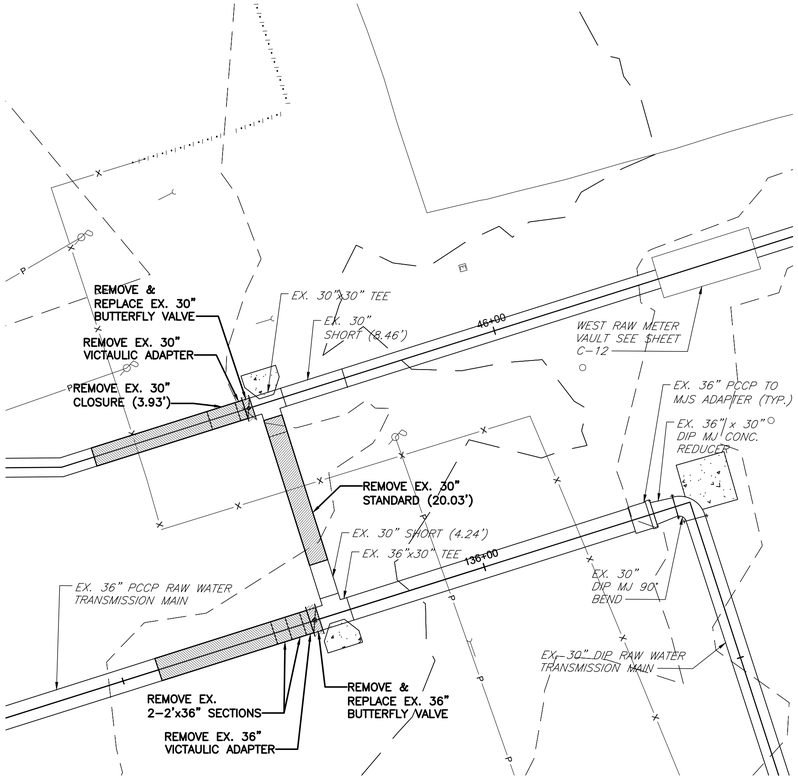
EX. RAW WATER MAIN PLAN AND PROFILE STA 131+00 TO 138+33

WC-23

SHEET: OF

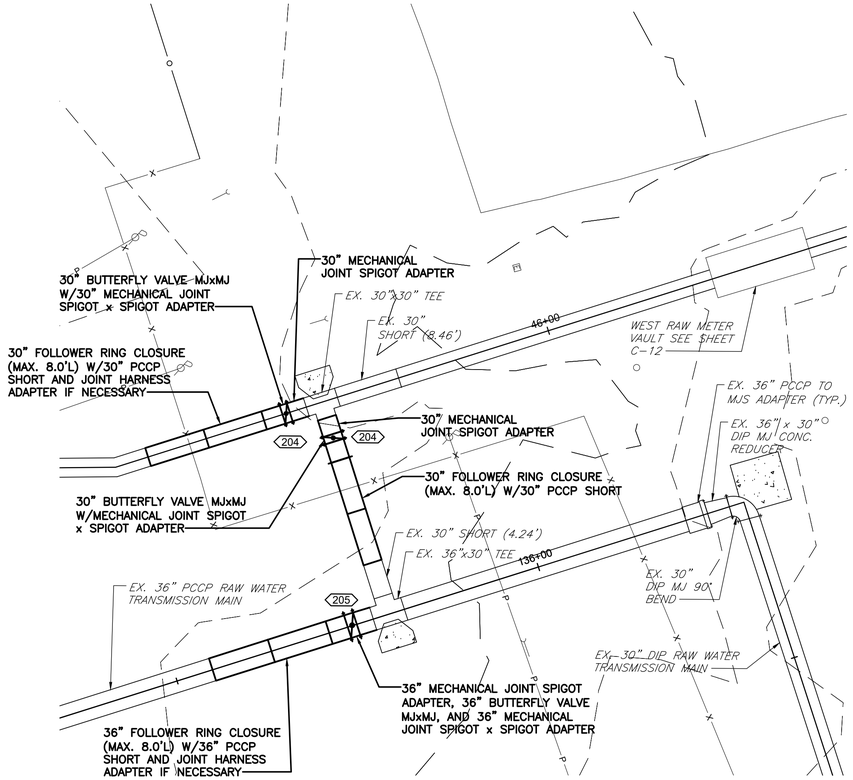
P:\PR58982\Cadd\Sheets\WC-23 EX. RAW WATER MAIN PLAN AND PROFILE 131+00 TO 138+33.dwg 4/14/2022 4:53:19 PM Paul Emerson

PLOTTED: 4/14/2022 5:39:05 PM



CONNECTION A DEMOLITION PLAN

SCALE: 1" = 10'



CONNECTION A RENOVATION PLAN

SCALE: 1" = 10'

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

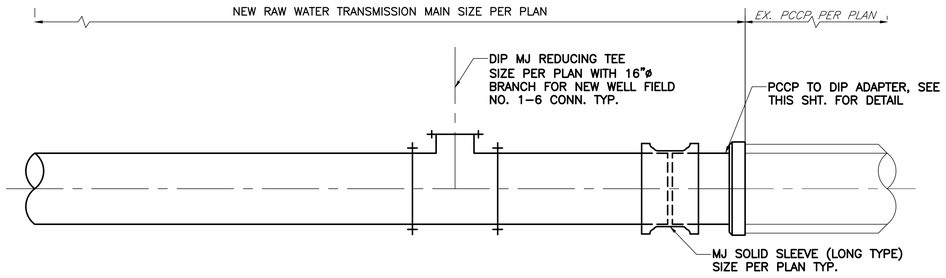
EX. RAW WATER MAIN CONNECTION A CIVIL SITE PLAN

WC-24

SHEET: OF

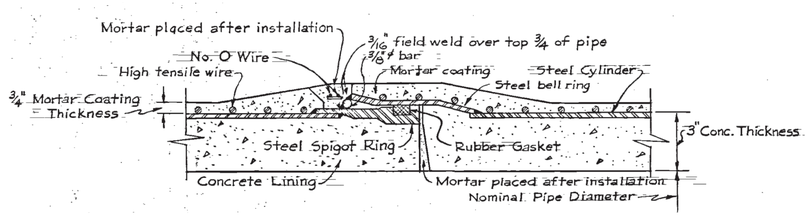
P:\PR58982\Cadd\Sheets\WC-24 EX. RAW WATER MAIN CONNECTION A CIVIL SITE PLAN.dwg 2/18/2022 12:29:50 PM Paul Emerson

PLOTTED: 4/14/2022 5:39:15 PM



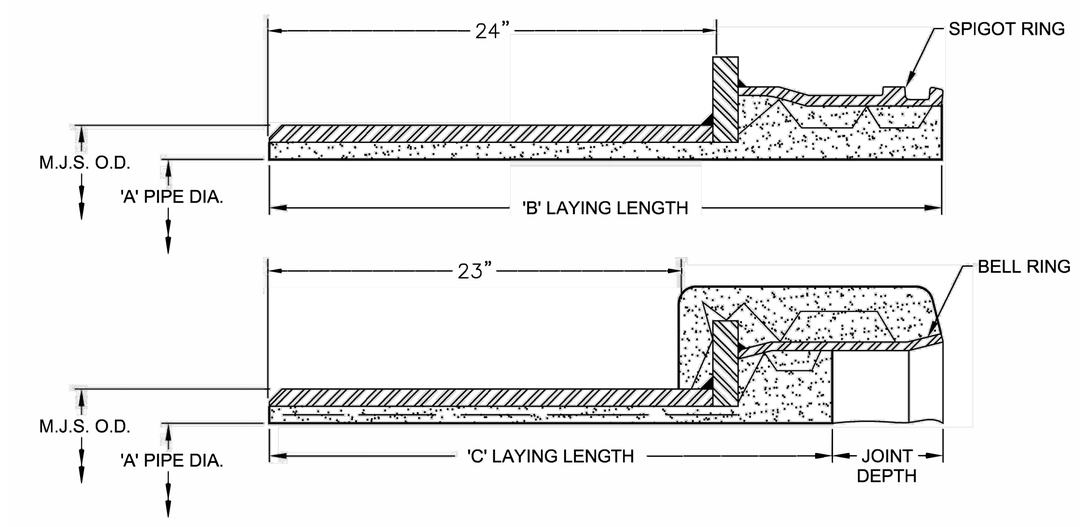
TYPICAL DIP WELL CONNECTION DETAIL

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



EX. PCCP LCP TIED JOINT DETAIL

SCALE: 3" = 1'-0"



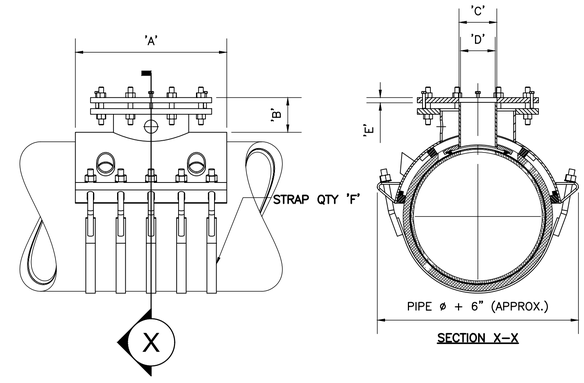
A	JOINT DEPTH	LAYING LENGTH B	LAYING LENGTH C	M.J.S. O.D.
16"	3 1/4"	2.54'	2.27'	17.40"
18"	3 1/4"	2.54'	2.27'	19.50"
20"	3 1/4"	2.54'	2.27'	21.60"
24"	3 1/4"	2.54'	2.27'	25.80"
30"	3 1/4"	2.56'	2.29'	32.00"
36"	3 3/8"	2.56'	2.28'	38.30"

NOTES:

1. APPLY WELDED WIRE REINFORCED MORTAR AS SHOWN.
2. ALL EXPOSED STEEL PAINTED WITH PROTECTIVE COATING.

PCCP STANDARD JOINT TO MJS ADAPTER

SCALE: 3" = 1'-0"



20"x16" & 30"x16" PCCP TAPPING SLEEVE

SCALE: NONE

WELL NO.	STA.	'A'	'B'	'C'	'D'	'E'	'F'	ID	OD	OUTLET
2	14+07	32.00"	5.25"	13.09"	12.50"	0.31"	8	20.00"	27.50"	16"
4	21+07	32.00"	5.25"	13.09"	12.50"	0.31"	8	30.00"	37.50"	16"
6	28+07	32.00"	5.25"	13.09"	12.50"	0.31"	8	30.00"	37.50"	16"

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APPROVED BY: CMS
SCALE: AS NOTED

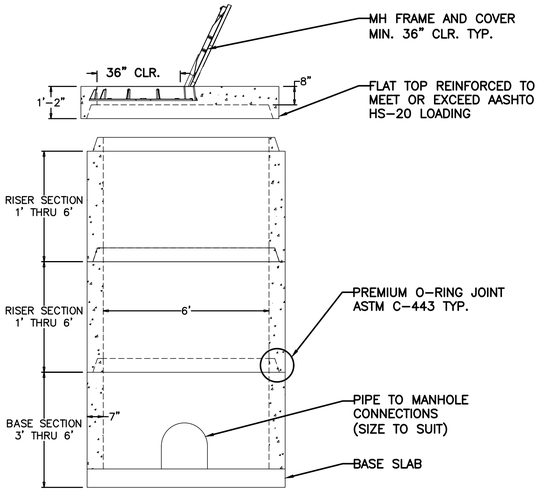
NEW RAW WATER MAIN MISCELLANEOUS DETAILS

WC-25

SHEET: OF

P:\PR58982\Cadd\Sheets\WC-25 NEW RAW WATER MAIN MISCELLANEOUS DETAILS.dwg 3/31/2022 6:03:28 PM Paul Emerson

PLOTTED: 4/14/2022 5:39:24 PM

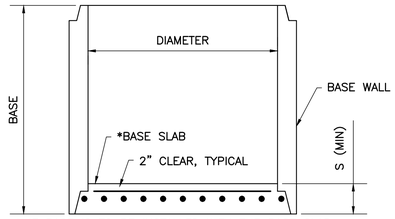


	FLOOR	VERT. FT	FLAT TOP
WEIGHT		1,800 lbs.	4,200 lbs.
VOLUME		211.5 gal.	

DESIGN NOTES:
1. MANUFACTURED TO MEET OR EXCEED: ASTM C-478 & AASHTO M 199 SPECS.
2. CONCRETE = 5,000 PSI. MINIMUM CEMENT PER ASTM C-478 (6.1)
3. REINFORCED STEEL COMFORMS TO LATEST ASTM A 185 SPECIFICATIONS. 0.18 SQ. IN / LINEAL FT. AND 0.18 SQ. IN (BOTH WAYS) BASE BOTTOM
4. STEEL REINFORCEMENT TO MEET OR EXCEED AASHTO HS-20 LOADING
5. MANHOLE STEPS MEET LATEST OSHA REGULATION 29 CFR1910.27, SECTION 16 OF ASTM SPECIFICATION C478 AND SECTION 10 OF ASTM SPECIFICATION C497
6. BUTYL RUBBER JOINT SEALANT PER ASTM C-990 & ASHTO M-198
7. ONE POUR MONOLITHIC BASE

DOGHOUSE MANHOLE DETAIL

SCALE: NONE



* IF BASE IS TO BE INSTALLED WITH THE BASE SLAB ATTACHED, PRECAUTIONS SHALL BE TAKEN TO PREVENT THE SEPARATION OF THE BASE SLAB FROM THE BASE WALL.

M.H. TYPE	DIA	S		
		M.H. DEPTH		
		0'-40'	41'-50'	51'-60'
"A"	48"	7"	7"	8"
"B"	60"	8"	9"	9"
"C"	72"	9"	10"	11"
"D"	84"	10"	11"	12"
"E"	96"	11"	12"	13"

REINFORCEMENT BASED ON METAL BARS, IF WELDED WIRE FABRIC IS USED AREAS MAY BE REDUCED BY 1/3.

M.H. DEPTH	REINFORCEMENT SQ.IN./FT. E.W.				
	"A"	"B"	"C"	"D"	"E"
0'-10'	0.31	0.27	0.24	0.23	0.25
11'-20'	0.39	0.44	0.47	0.52	0.55
21'-30'	0.48	0.59	0.68	0.79	0.85
31'-40'	0.56	0.75	0.89	1.05	1.15
41'-50'	0.64	0.73	0.93	1.14	1.28
51'-60'	0.56	0.86	0.97	1.21	1.38

ALTERNATE BASE SLAB DETAIL

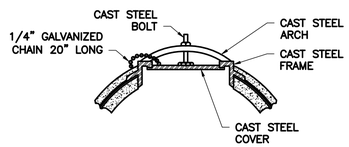
SCALE: NONE

DOGHOUSE MH SCHEDULE

STA.	ELEVATION		PIPE ID.	CENTER OF MANHOLE	
	RIM	INV.		NORTHING	EASTING
10+42	938.28'	928.10'	18"	355259.39	2232111.57
17+41	937.64'	926.38'	24"	355575.57	2232735.11
24+41	938.64'	927.33'	30"	355891.22	2233359.44
31+45	933.80'	925.97'	30"	356211.04	2233986.77
39+37	933.97'	926.10'	30"	356570.82	2234692.49
45+00	967.56'	963.75'	30"	356829.95	2235191.87
50+08	931.52'	923.11'	18"	354715.59	2234409.01
59+75	933.97'	925.09'	30"	355639.42	2234158.87
100+42	936.35'	927.86'	20"	355222.80	2232130.07
107+41	936.54'	928.12'	24"	355539.07	2232753.78
114+40	936.33'	926.06'	30"	355854.67	2233377.29
121+45	932.93'	924.81'	36"	356175.88	2234003.76
129+37	933.46'	925.65'	36"	356537.47	2234709.03
135+00	967.08'	959.11'	36"	356794.38	2235210.11

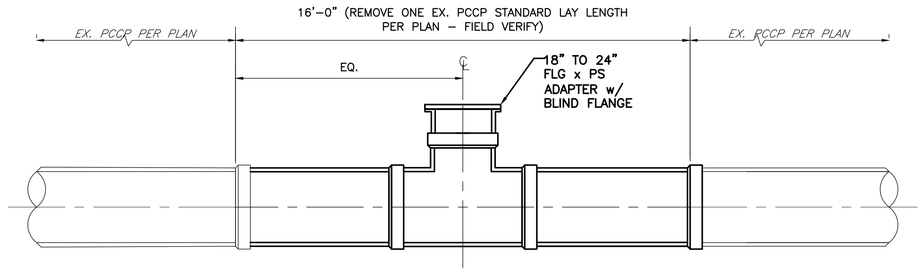
PCCP NECK FLG/ TEE SCHEDULE

STA.	PIPE RUN (1) & BRANCH (2)		NOTES
	1	2	
10+58	18"	16"	WELL #1
17+57	24"	16"	WELL #3
24+56	30"	16"	WELL #5
100+58	20"	16"	WELL #1
104+07	24"	16"	WELL #2
107+57	24"	16"	WELL #3
111+08	30"	16"	WELL #4
114+56	30"	16"	WELL #5
118+06	30"	16"	WELL #6



ELLIPTICAL MANWAY CROSS SECTION

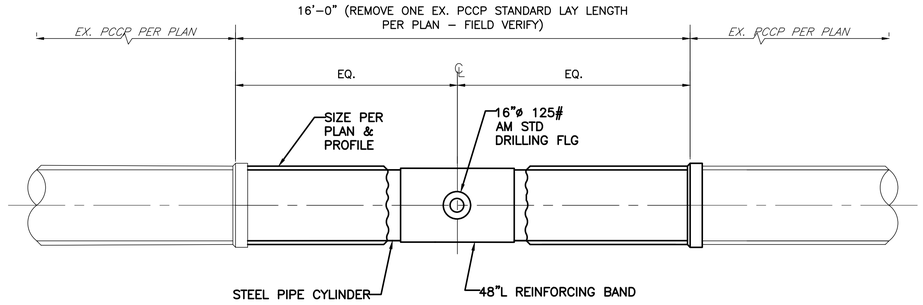
SCALE: NONE



PCCP SPIGOT(PS) x BELL(PB) x BELL(PB) DETAIL

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

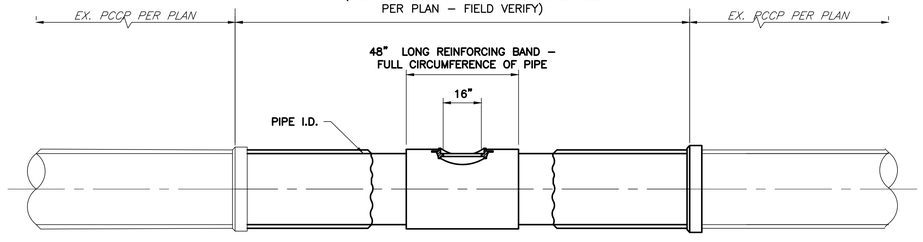
ALTERNATE FOR CLEANING ACCESS AT RAW WATER MAINS <30"Ø TYP. FOR DOGHOUSE MANHOLES (PCCP). BRANCH Ø MATCHES PIPE Ø OF RUN OR MAXIMUM OF 24".



TYPICAL NECK FLANGE DETAIL

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

CLEANING ACCESS AT WELL NO. 1, 3, AND 5 (PCCP) & EX. RAW WATER TRANSMISSION MAIN (PCCP).



ELLIPTICAL MANWAY DETAIL

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

ALTERNATE FOR CLEANING ACCESS AT RAW WATER MAINS 30"Ø AND LARGER TYP. FOR DOGHOUSE MANHOLES (PCCP).

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EX. RAW WATER MAIN MISCELLANEOUS DETAILS

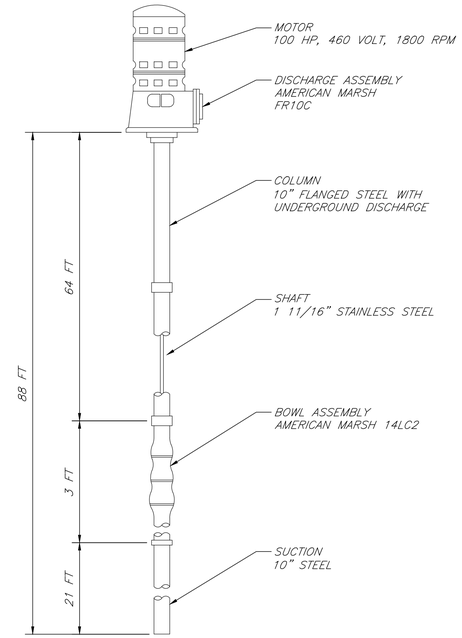
WC-26

SHEET: OF

P:\PR58982\Cadd\Sheets\WC-26 EX. RAW WATER MAIN MISCELLANEOUS DETAILS.dwg 3/31/2022 6:12:31 PM Paul Emerson

PLOTTED: 4/14/2022 5:39:32 PM

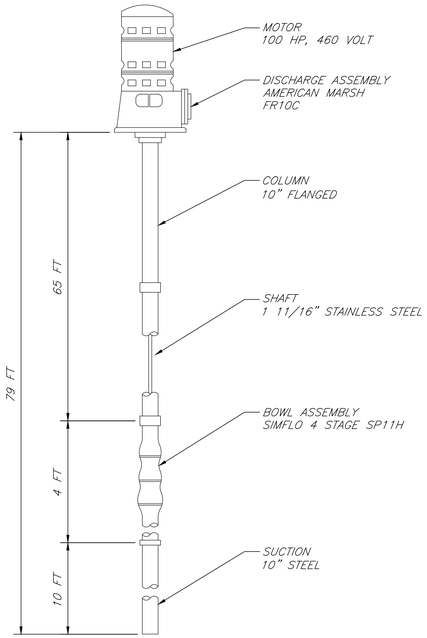
PUMP RATED 1800 GPM AT 163' TDH



WELL NO. 1 PUMP SECTION

SCALE: NONE

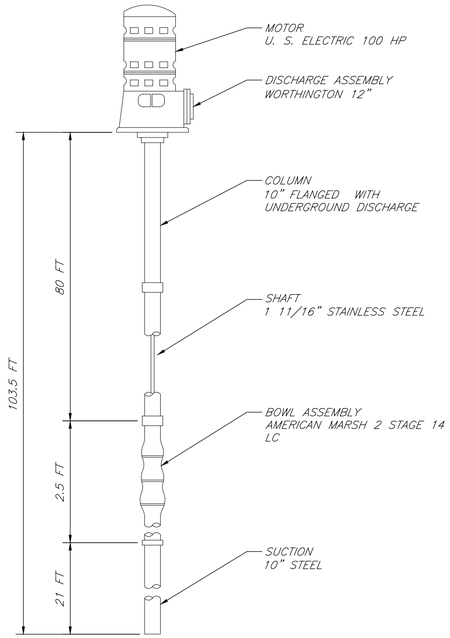
PUMP RATED 1800 GPM AT 171' TDH



WELL NO. 2 PUMP SECTION

SCALE: NONE

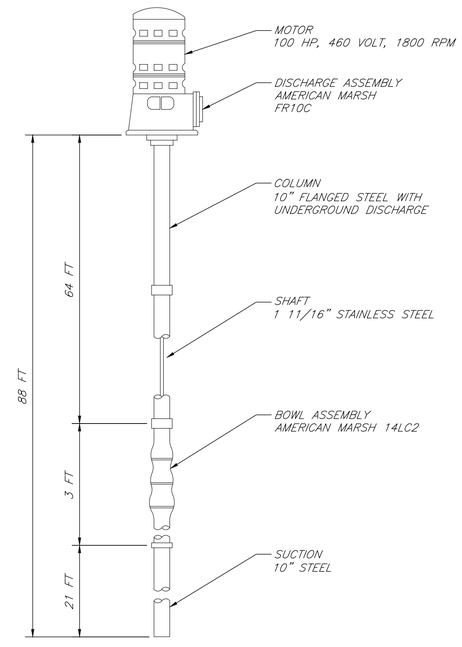
PUMP RATED 1800 GPM AT 171' TDH



WELL NO. 3 PUMP SECTION

SCALE: NONE

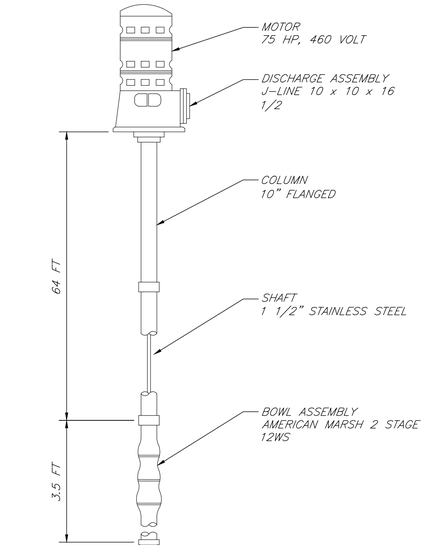
PUMP RATED 2000 GPM AT 153' TDH



WELL NO. 4 PUMP SECTION

SCALE: NONE

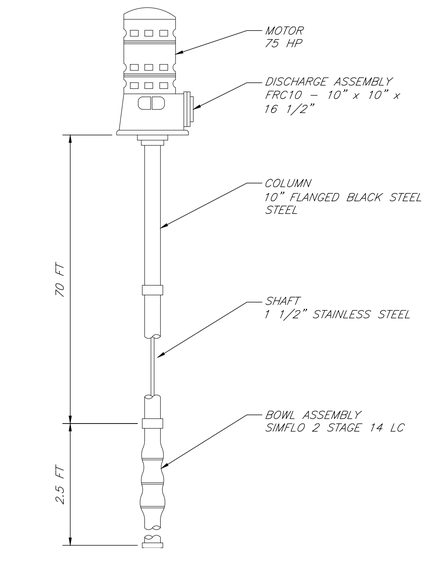
PUMP RATED 2100 GPM AT 120' TDH



WELL NO. 5 PUMP SECTION

SCALE: NONE

PUMP RATED 1800 GPM AT 132' TDH



WELL NO. 6 PUMP SECTION

SCALE: NONE

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APPROVED BY:	CMS
SCALE:	NONE

WELLFIELDS EX.
WELL PUMP #1-6
SECTIONS

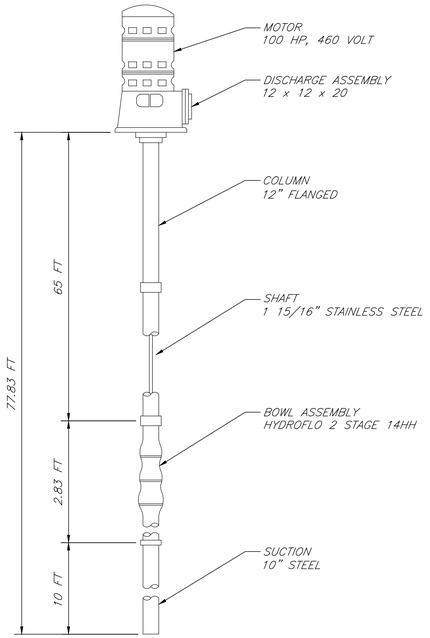
WP-1

SHEET: OF

P:\PR58982\Cadd\Sheets\WP-1 WELLFIELDS EX. WELL PUMP 1-6 SECTIONS.dwg 11/30/2021 9:59:01 AM Paul Emerson

PLOTTED: 4/14/2022 5:39:40 PM

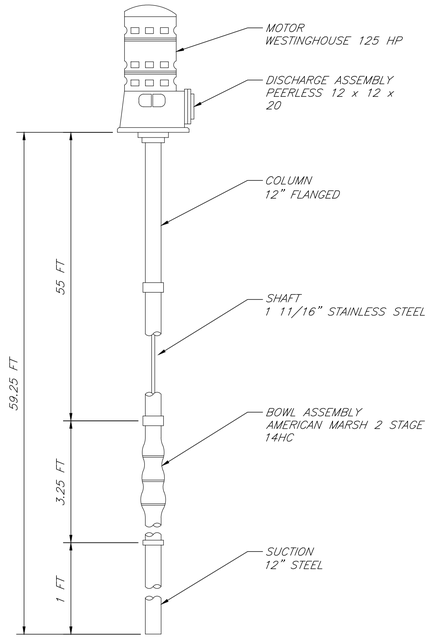
PUMP RATED 2800 GPM AT 110' TDH



WELL NO. 7 PUMP SECTION

SCALE: NONE

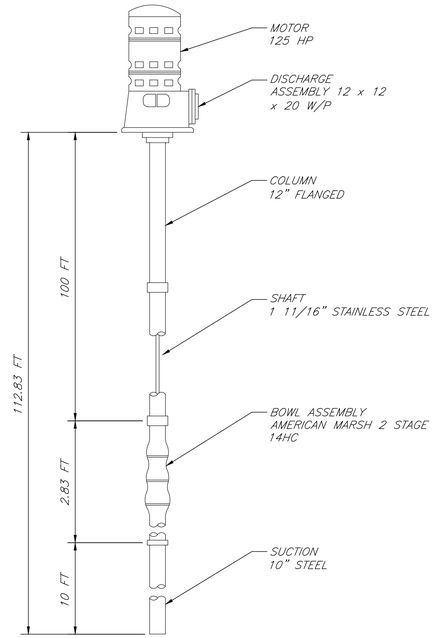
PUMP RATED 2450 GPM AT 160' TDH



WELL NO. 8 PUMP SECTION

SCALE: NONE

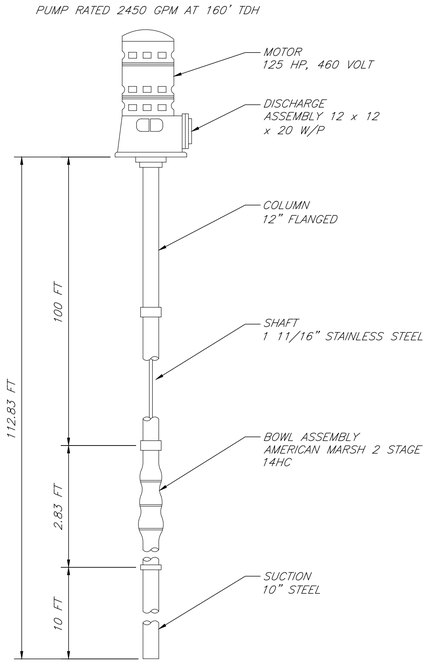
PUMP RATED 2450 GPM AT 160' TDH



WELL NO. 9 PUMP SECTION

SCALE: NONE

PUMP RATED 2450 GPM AT 160' TDH



WELL NO. 10 PUMP SECTION

SCALE: NONE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1.	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	MMK
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

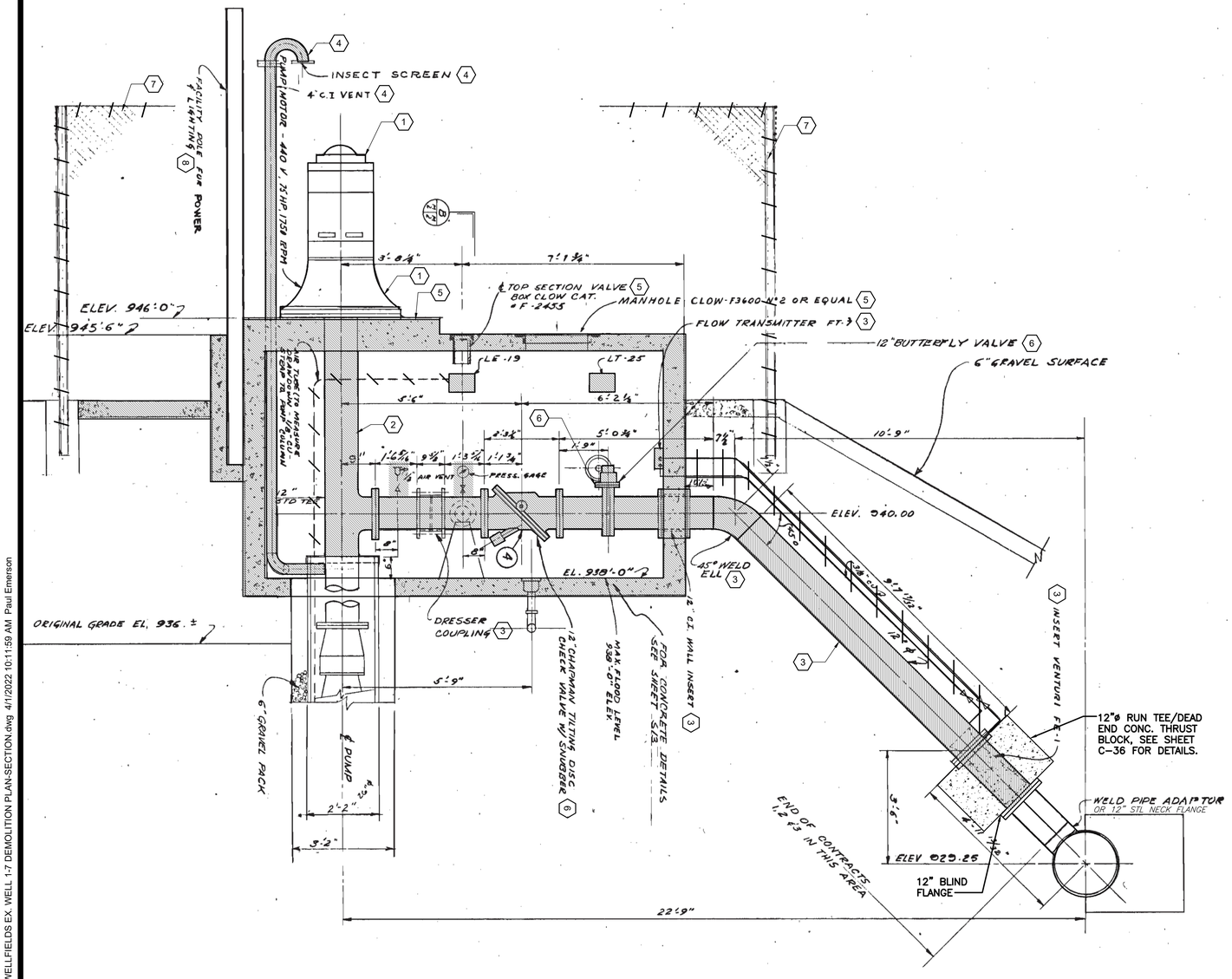
WELLFIELDS EX.
WELL PUMP #7-10
SECTIONS

WP-2

SHEET: OF

P:\PR58982\Cadd\Sheets\WP-2 WELLFIELDS EX. WELL PUMP 7-10 SECTIONS.dwg 11/4/2021 11:45:13 AM Paul Emerson

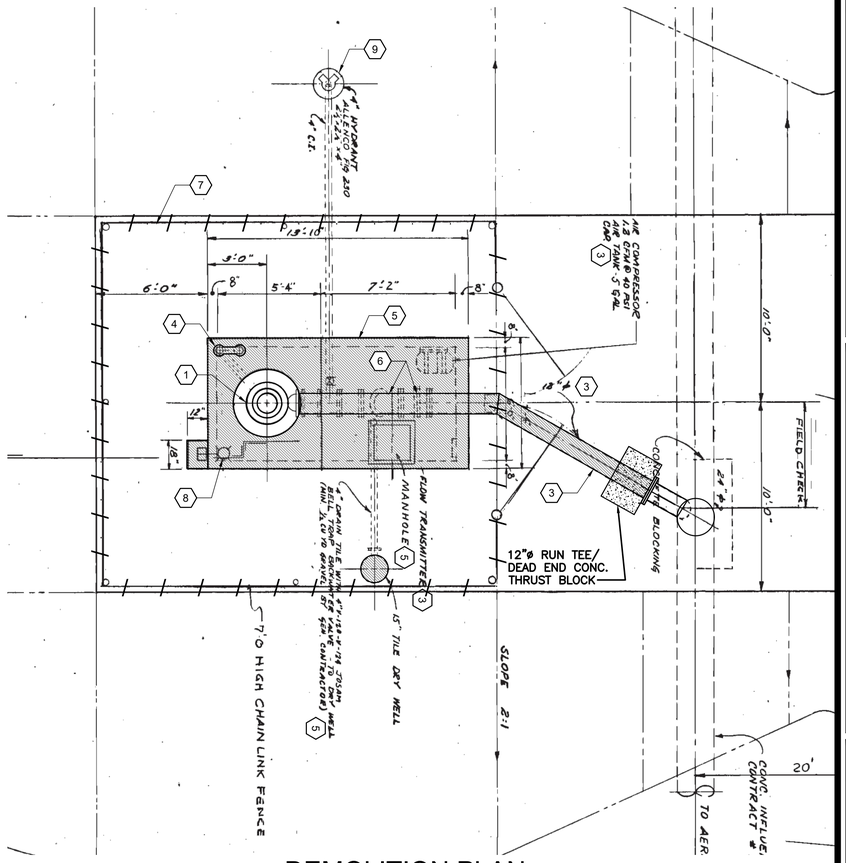
PLOTTED: 4/14/2022 5:39:55 PM



DEMOLITION SECTION

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

TYPICAL FOR WELL NO.1
SIMILAR FOR WELL NOS. 2–7



DEMOLITION PLAN

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

TYPICAL FOR WELL NO.1
SIMILAR FOR WELL NOS. 2–7

(X) CODED NOTES:

1. REMOVE EXISTING PUMP AND REBUILD
2. CUT EXISTING PUMP COLUMN TO APPROXIMATELY 6" ABOVE THE BOTTOM OF EXISTING VALVE VAULT.
3. REMOVE EXISTING 12" STL PUMP DISCHARGE, FITTINGS, AND APPURTENANCES UP TO THE EXISTING 12" STL NECK FLANGE (NOT SHOWN) AT WELL PUMP DISCHARGE TO EXISTING RAW WATER MAIN.
4. REMOVE EXISTING 4" CIP VENT PIPING AND INSECT SCREEN TO WELL PUMP COLUMN.
5. REMOVE EXISTING CONCRETE VALVE VAULT AND APPURTENANCES.
6. REMOVE EXISTING 12" VALVES. SALVAGE VALVES FOR RE-INSTALL AS DIRECTED BY OWNER/ENGINEER.
7. REMOVE EXISTING 7' CHAIN LINK FENCE AND GATE.
8. SEE ELECTRICAL FOR DEMOLITION.
9. REMOVE EXISTING YARD HYDRANT (IRRIGATION STANDPIPE), 4" CIP, AND APPURTENANCES TYP. 2 PLA. (WELL #4 & #5)

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PAINESVILLE, OHIO 44077

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WATER DEPARTMENT
SUGAR CREEK
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WELLFIELD IMPROVEMENTS

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

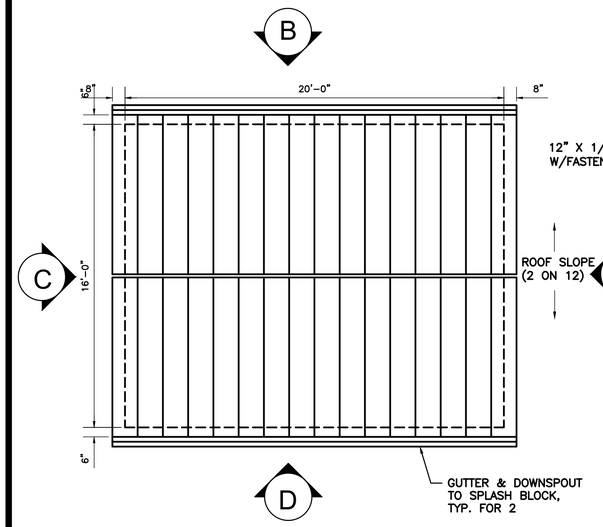
WELLFIELDS
EX. WELL 1-7
DEMOLITION
PLAN-SECTION

WP-3

SHEET: OF

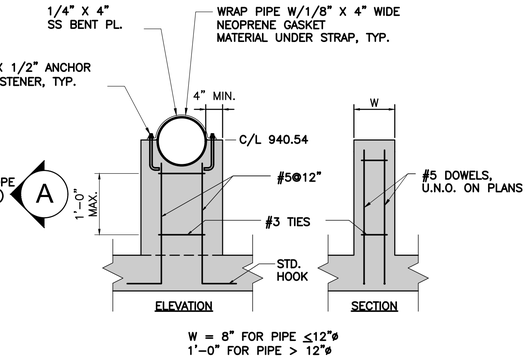
P:\PR58982\Cadd\Sheets\WP-3 WELLFIELDS EX. WELL 1-7 DEMOLITION PLAN-SECTION.dwg 4/1/2022 10:11:59 AM Paul Emerson

PLOTTED: 4/14/2022 5:40:09 PM



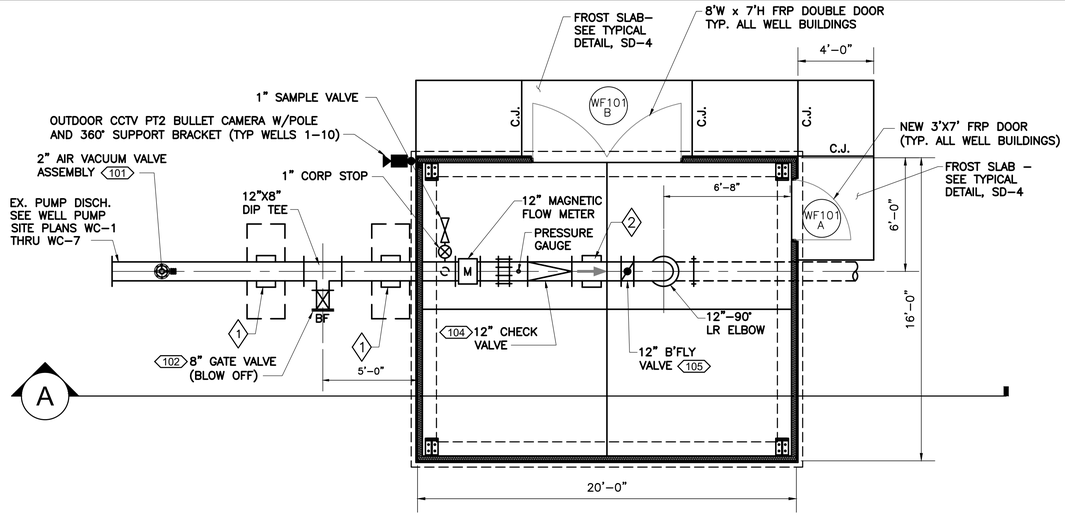
ROOF PLAN

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



EXTERIOR PIPE SUPPORT DETAIL

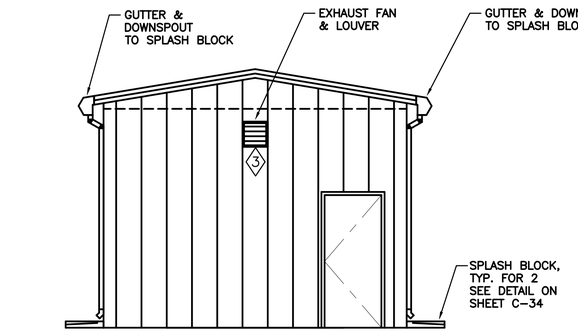
SCALE: NONE



WELL HOUSE NO.1 PLAN

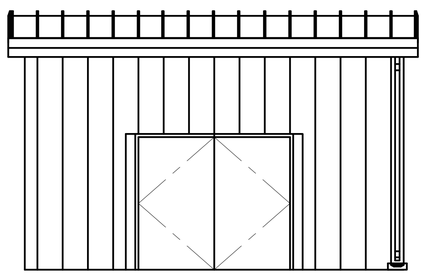
SCALE: 1/4" = 1'-0"

TYPICAL FOR WELL NO.1
SIMILAR FOR WELL NOS. 2-7



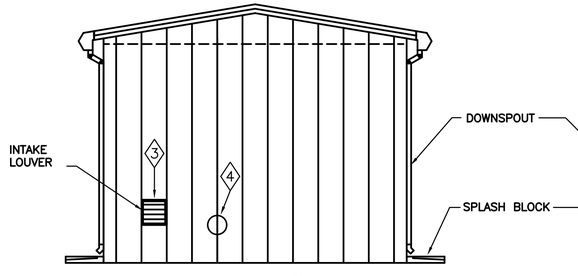
ELEVATION A

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



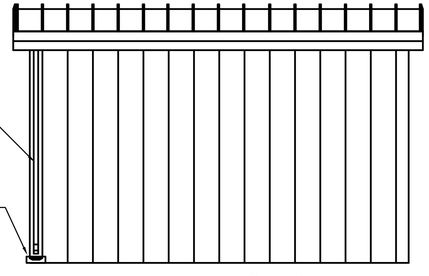
ELEVATION B

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



ELEVATION C

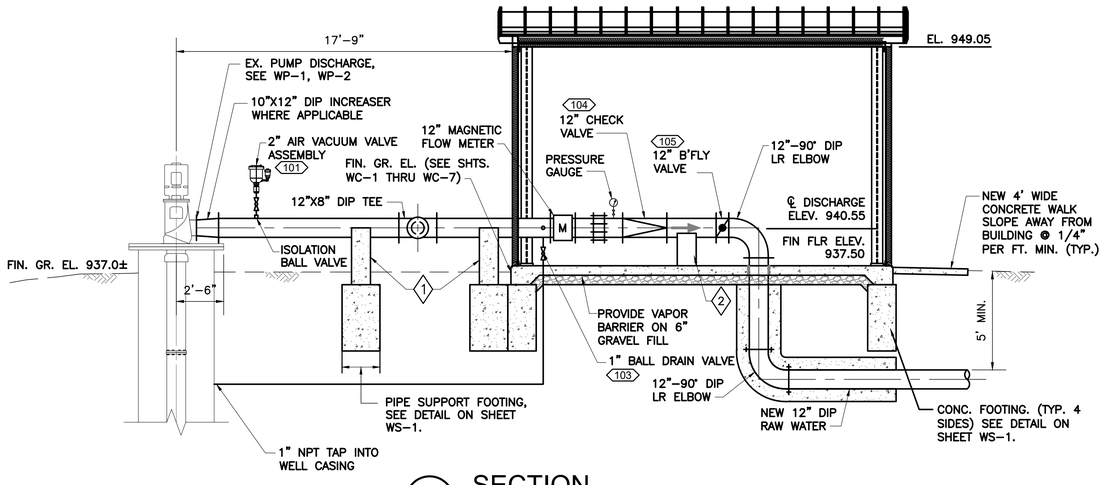
SCALE: 1/4" = 1'-0"



ELEVATION D

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

100 YEAR FLOOD EL. 933.00



A SECTION

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

TYPICAL FOR WELL NO.1
SIMILAR FOR WELL NOS. 2-7

1. NEW EXTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON THIS SHEET.
2. NEW INTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON SHEET SD-3.
3. GC SHALL PROVIDE AND INSTALL SUPPORTS @ WALL PANEL PENETRATIONS PER METAL BUILDING MFR. RECOMMENDATIONS. COORDINATE WITH MECHANICAL.
4. PROVIDE A WATER & AIRTIGHT SEAL AROUND PIPE PENETRATION W/EDPM PIPE BOOT WITH ALUMINUM FLASHING. SIZE PIPE BOOT TO SUIT.

NOTE ALL EXPOSED (NON SUBMERGED) EXIST. STEEL PIPING SHALL BE BLAST CLEANED PER SSPC-SP6, PRIMED, PAINTED, INSULATED, THEN PRIME AND PAINT INSULATION ACCORDING TO SPECIFICATIONS.

NOTE WITHIN THE LIMITS OF THE BUILDING, THE CHLORINE SOLUTION, FINISHED WATER, AND RAW WATER LINES AND INSULATION SHALL BE PAINTED ACCORDING TO THE PIPE INSULATION DETAIL ON SHEET SD-11.

NOTE CONTRACTOR SHALL FURNISH TWO (2) CARBON STEEL 8"ø RAISED FACE ANSI 150 FLANGE x ALUMINUM 5"ø STORZ FITTING WITH EIGHT (8) STAINLESS STEEL 3/4"ø NUTS AND BOLTS AND GASKET, ONE (1) ALUMINUM 5" STORZ x 2-1/2" MALE MH THREAD ADAPTER, AND ONE (1) ALUMINUM 2-1/2" FEMALE NH TO 1-1/2" MALE NH ADAPTER TO THE OWNER. THE FITTING AND ADAPTERS SHALL BE USED FOR PROVIDING WATER FOR CLEANING OPERATIONS DURING CONSTRUCTION AT THE BLOWOFF CONNECTION OF THE NEAREST WELL PUMP IN SERVICE. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE CLEANING OPERATIONS WITH THE ENGINEER/OWNER.

NOTE SEE SHT. DC-4 FOR TYPICAL RIGID FRAME SECTION FOR WELL BUILDING

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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

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DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

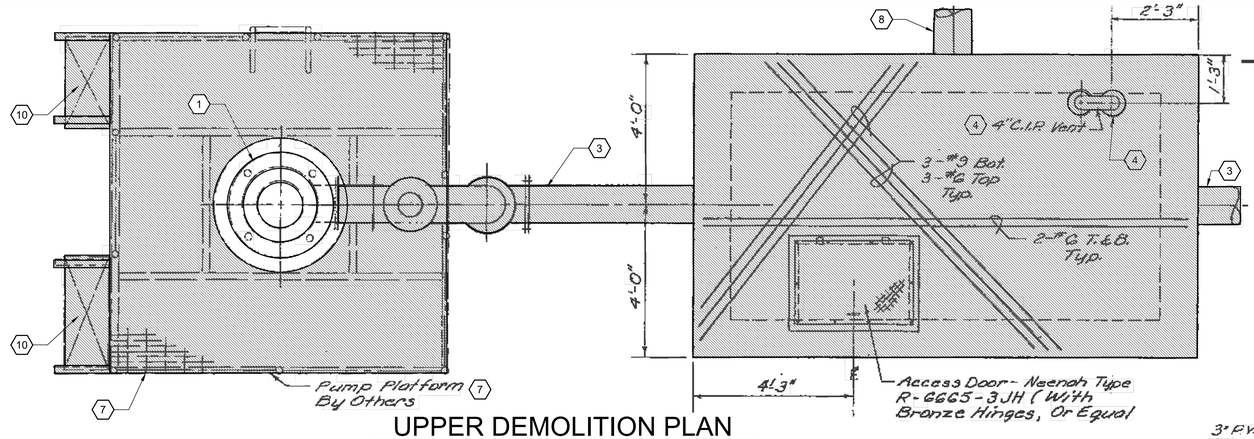
WELLFIELDS EX. WELL #1-7 RENOVATION PLAN-SECTION-ELEVATION

WP-4

SHEET: OF

P:\PR58982\Cadd\Sheets\WP-4 WELLFIELDS EX. WELL 1-7 RENOVATION PLAN-SECTION- ELEVATION.dwg 4/14/2022 9:09:59 AM Paul Emerson

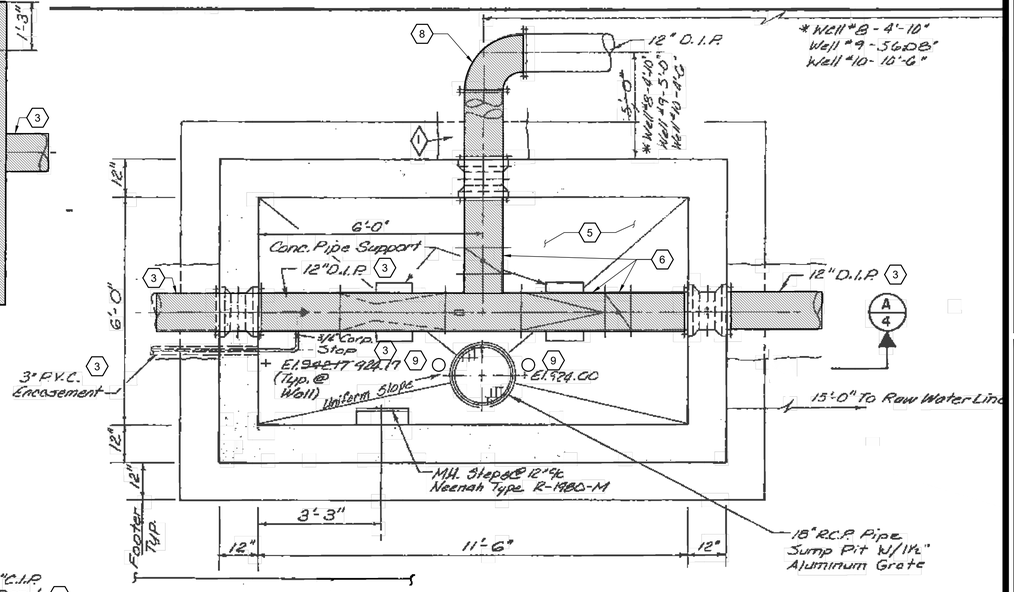
PLOTTED: 4/14/2022 5:40:23 PM



UPPER DEMOLITION PLAN

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

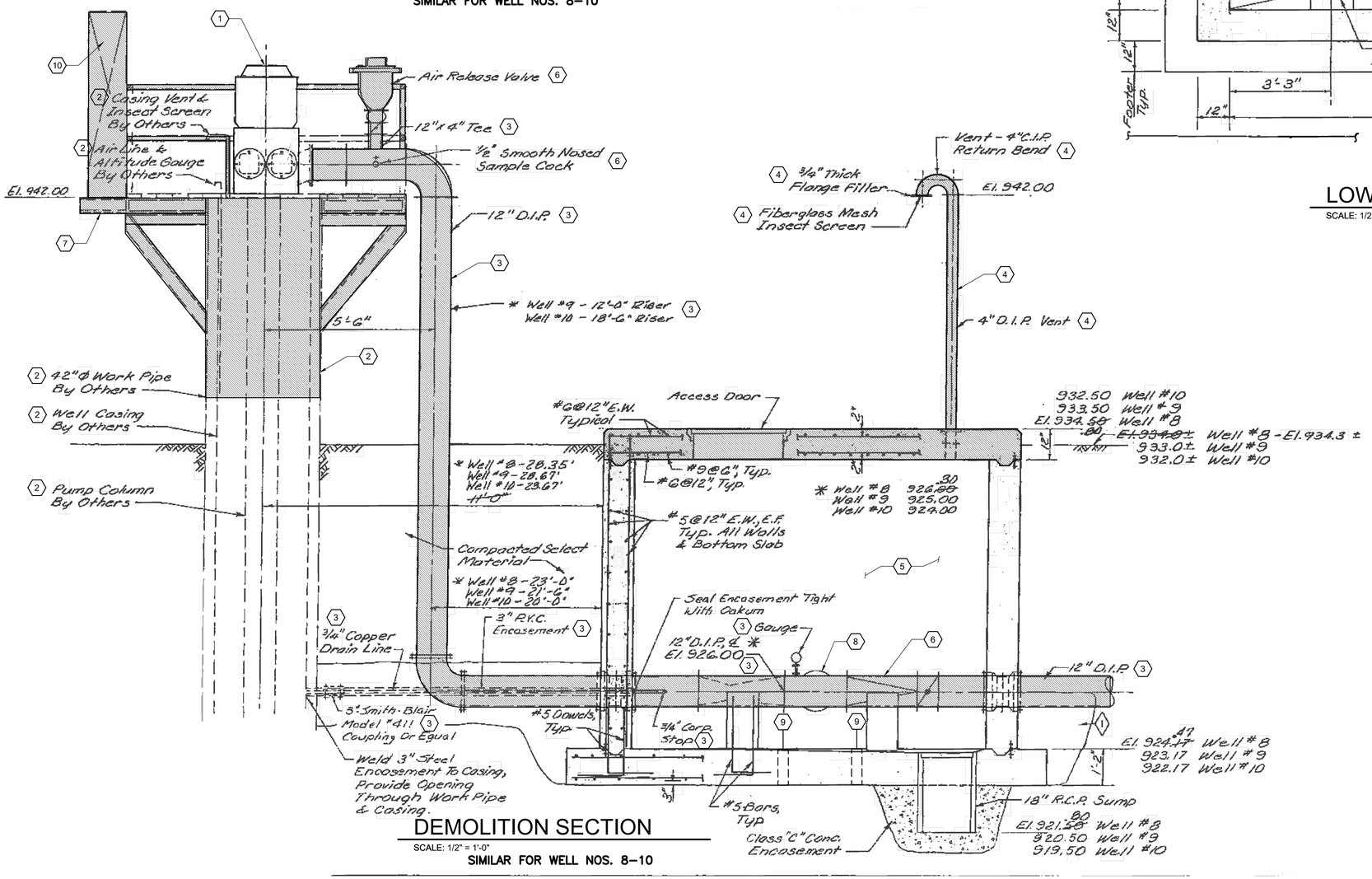
SIMILAR FOR WELL NOS. 8–10



LOWER DEMOLITION PLAN

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

SIMILAR FOR WELL NOS. 8–10



DEMOLITION SECTION

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

SIMILAR FOR WELL NOS. 8–10

(X) CODED NOTES:

1. REMOVE PUMP AND REBUILD.
2. CUT EXISTING CASING PIPE TO EL. 938.00 AND PUMP COLUMN TO EL. 938.50.
3. REMOVE EX. 12" DIP PUMP DISCHARGE, FITTINGS, AND APPURTENANCES UP TO THE EXISTING 12" NECK FLANGE AT EXISTING RAW WATER MAIN.
4. REMOVE 4" CIP/DIP VENT PIPING AND INSECT SCREEN.
5. FILL EXISTING VALVE VAULT WITH COMPACTED GRANULAR BACKFILL.
6. REMOVE EXISTING VALVES.
7. REMOVE PUMP PLATFORM.
8. REMOVE 12" DIP BLOWOFF TO MJ DIP ELBOW.
9. CORE DRILL DRAIN HOLES THRU BASE SLAB NEAR EXISTING SUMP.
10. SEE ELECTRICAL FOR DEMOLITION.

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APPROVED BY:	CMS
SCALE:	AS NOTED

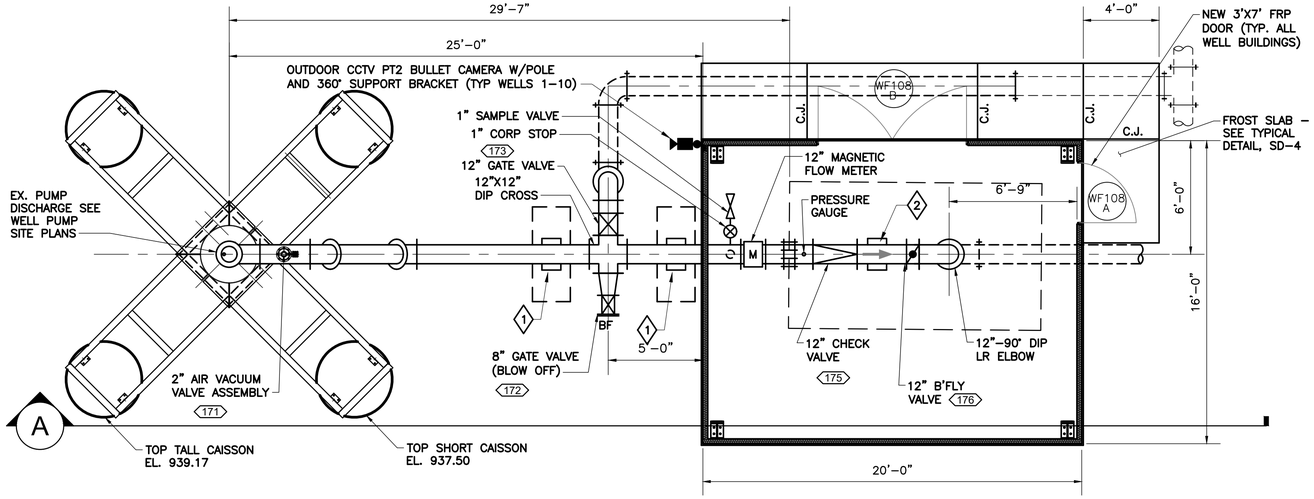
WELLFIELDS EX.
WELL #8-10
DEMOLITION
PLANS-SECTION

WP-5

SHEET: OF

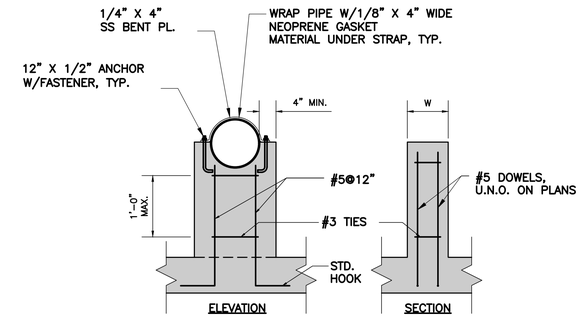
P:\PR58982\Cadd\Sheets\WP-5 WELLFIELDS EX. WELL 8-10 DEMOLITION PLANS-SECTION.dwg 1/12/2022 1:45:01 PM Paul Emerson

PLOTTED: 4/14/2022 5:40:36 PM



WELL HOUSE NO.8 PLAN

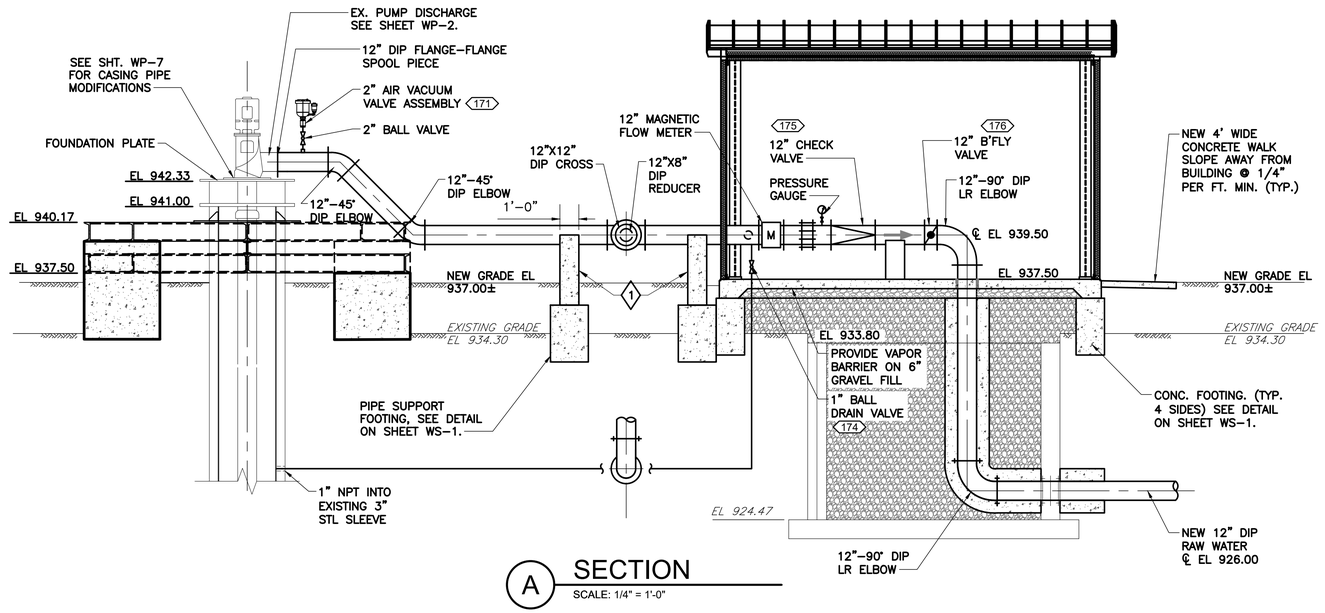
SCALE: 1/4" = 1'-0"



W = 8" FOR PIPE ≤12"ø
1'-0" FOR PIPE > 12"ø

EXTERIOR PIPE SUPPORT DETAIL

SCALE: NONE



SECTION

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

100 YEAR FLOOD EL. 933.00

NOTE WITHIN THE LIMITS OF THE BUILDING, THE CHLORINE SOLUTION, FINISHED WATER, AND RAW WATER LINES AND INSULATION SHALL BE PAINTED ACCORDING TO THE PIPE INSULATION DETAIL ON SHEET SD-11.

NOTE SEE SHT. DC-4 FOR TYPICAL RIGID FRAME SECTION FOR WELL BUILDING

1. NEW EXTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON THIS SHEET.
2. NEW INTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON SHEET SD-3.
3. GC SHALL PROVIDE AND INSTALL SUPPORTS @ WALL PANEL PENETRATIONS PER METAL BUILDING MFR. RECOMMENDATIONS. COORDINATE WITH MECHANICAL.
4. PROVIDE A WATER & AIRTIGHT SEAL AROUND PIPE PENETRATION W/EDPM PIPE BOOT WITH ALUMINUM FLASHING. SIZE PIPE BOOT TO SUIT.

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100 WEST ERIE STREET
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APPROVED BY:	CMS
SCALE:	AS NOTED

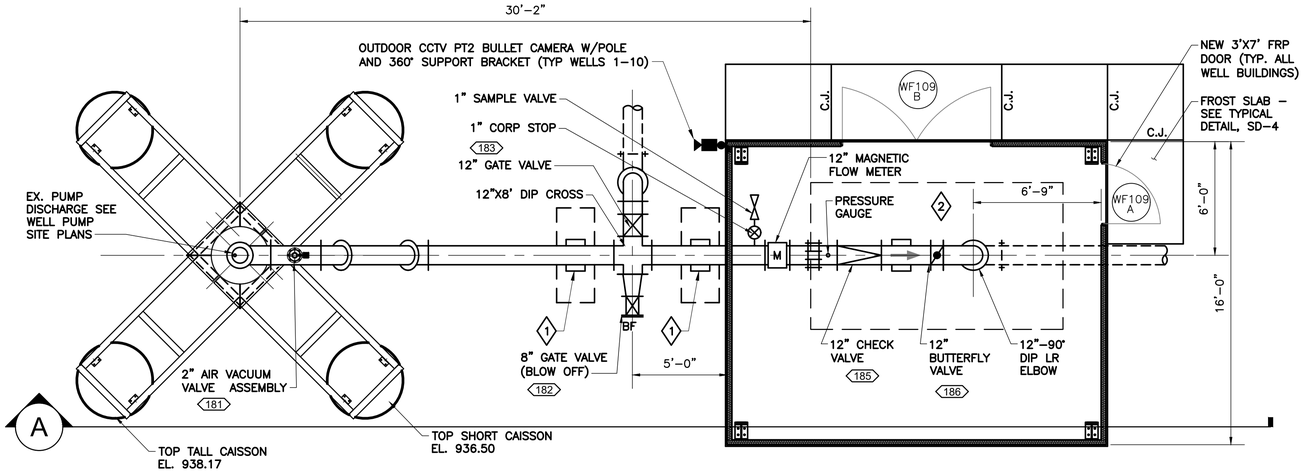
WELLFIELDS EX. WELL #8 RENOVATION PLAN-SECTION-DETAIL

WP-6

SHEET: OF

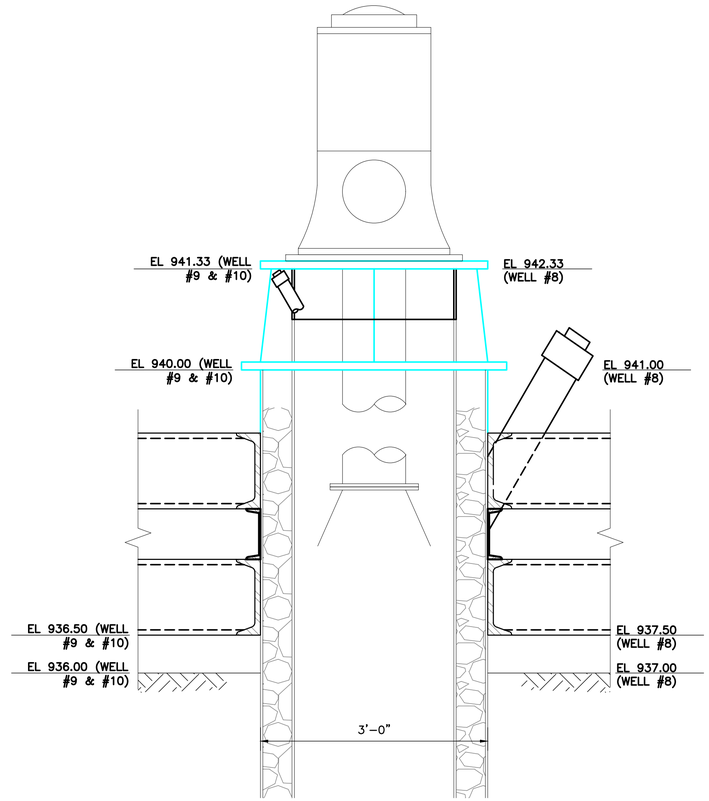
P:\PR58982\Cadd\Sheets\WP-6 WELLFIELDS EX. WELL 8 RENOVATION PLAN-SECTION- DETAIL.dwg 4/14/2022 9:10:51 AM Paul Emerson

PLOTTED: 4/14/2022 5:40:50 PM



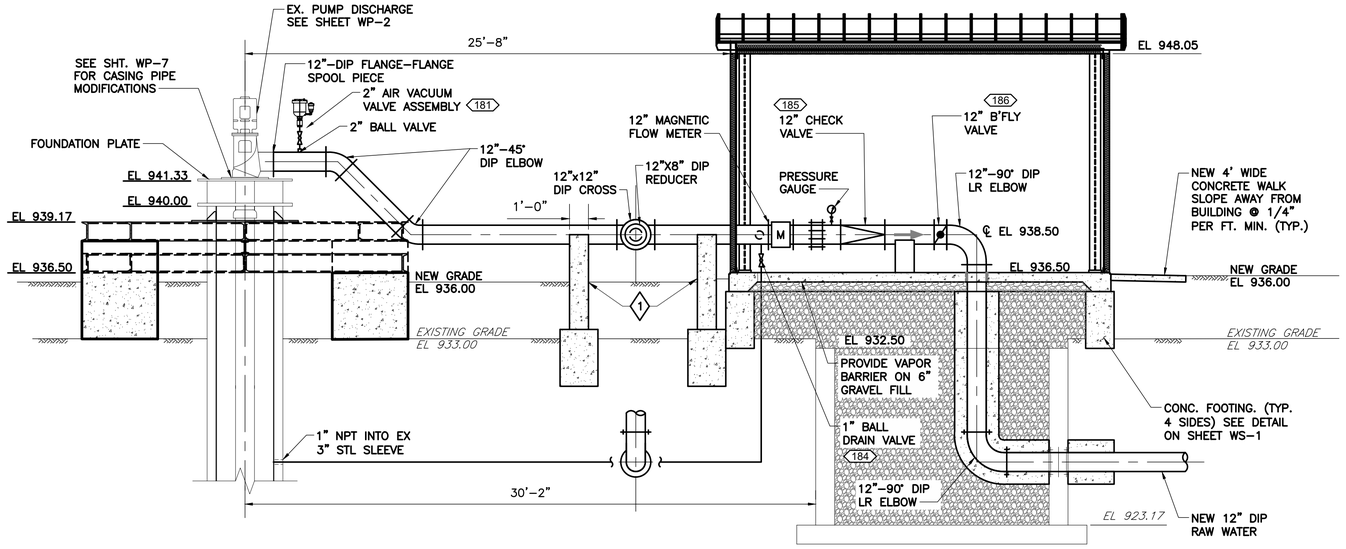
WELL HOUSE NO.9 PLAN

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



WELL CASING MODIFICATIONS (WELLS #8 - #10)

SCALE: 1" = 1'-0"



A SECTION

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

100 YEAR FLOOD EL. 933.00

NOTE WITHIN THE LIMITS OF THE BUILDING, THE CHLORINE SOLUTION, FINISHED WATER, AND RAW WATER LINES AND INSULATION SHALL BE PAINTED ACCORDING TO THE PIPE INSULATION DETAIL ON SHEET SD-11.

NOTE SEE SHT. DC-4 FOR TYPICAL RIGID FRAME SECTION FOR WELL BUILDING

1. NEW EXTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON SHEET WP-6.
2. NEW INTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON SHEET SD-3.
3. GC SHALL PROVIDE AND INSTALL SUPPORTS @ WALL PANEL PENETRATIONS PER METAL BUILDING MFR. RECOMMENDATIONS. COORDINATE WITH MECHANICAL.
4. PROVIDE A WATER & AIRTIGHT SEAL AROUND PIPE PENETRATION W/EDPM PIPE BOOT WITH ALUMINUM FLASHING. SIZE PIPE BOOT TO SUIT.

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

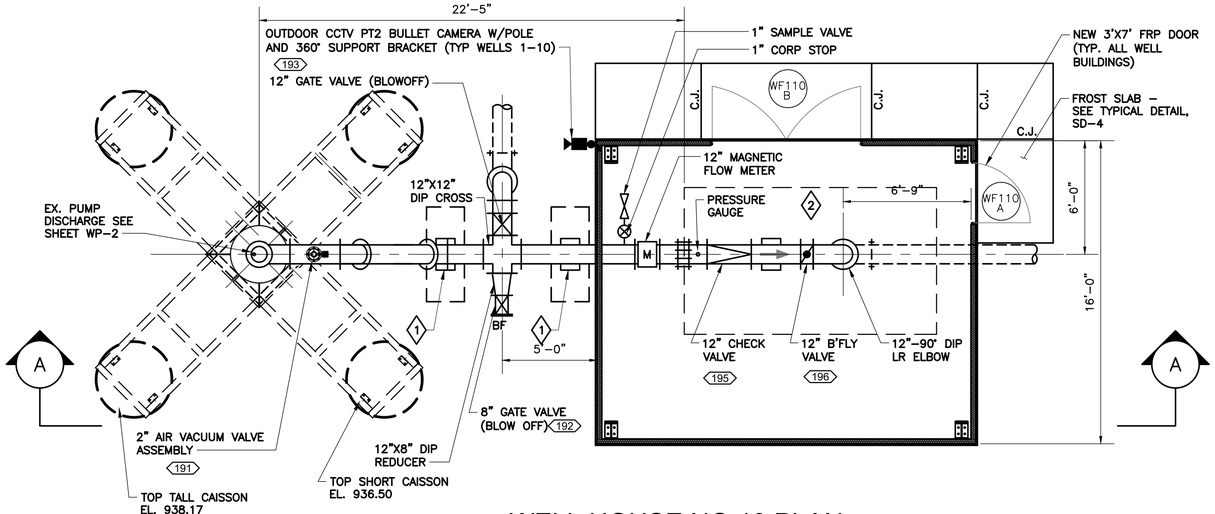
WELLFIELDS EX. WELL #9 RENOVATION PLAN-SECTION

WP-7

SHEET: OF

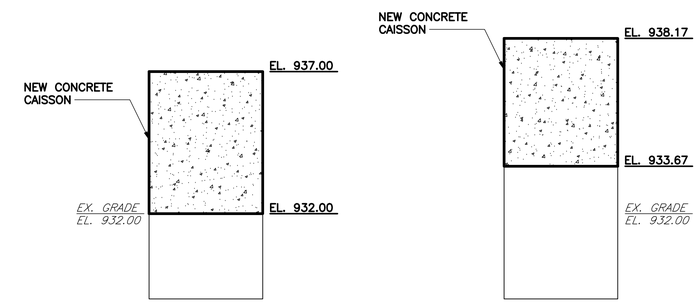
P:\PR58982\Cadd\Sheets\WP-7 WELLFIELDS EX. WELL 9 RENOVATION PLAN-SECTION.dwg 4/13/2022 4:02:54 PM Paul Emerson

PLOTTED: 4/14/2022 5:41:05 PM



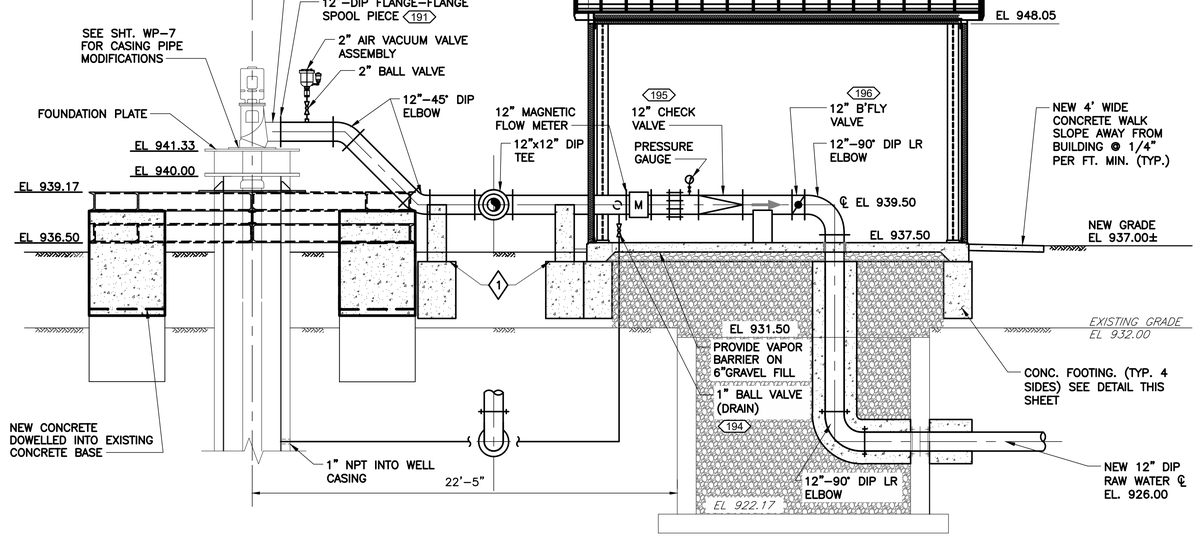
WELL HOUSE NO.10 PLAN

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



EX. SHORT AND TALL CAISSON (WELL #10 ONLY)

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



A SECTION

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

100 YEAR FLOOD EL. 933.00

NOTE WITHIN THE LIMITS OF THE BUILDING, THE CHLORINE SOLUTION, FINISHED WATER, AND RAW WATER LINES AND INSULATION SHALL BE PAINTED ACCORDING TO THE PIPE INSULATION DETAIL ON SHEET SD-11.

NOTE SEE SHT. DC-4 FOR TYPICAL RIGID FRAME SECTION FOR WELL BUILDING

1. NEW EXTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON SHEET WP-6.
2. NEW INTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON SHEET SD-3.
3. GC SHALL PROVIDE AND INSTALL SUPPORTS @ WALL PANEL PENETRATIONS PER METAL BUILDING MFR. RECOMMENDATIONS. COORDINATE WITH MECHANICAL.
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SCALE:	AS NOTED

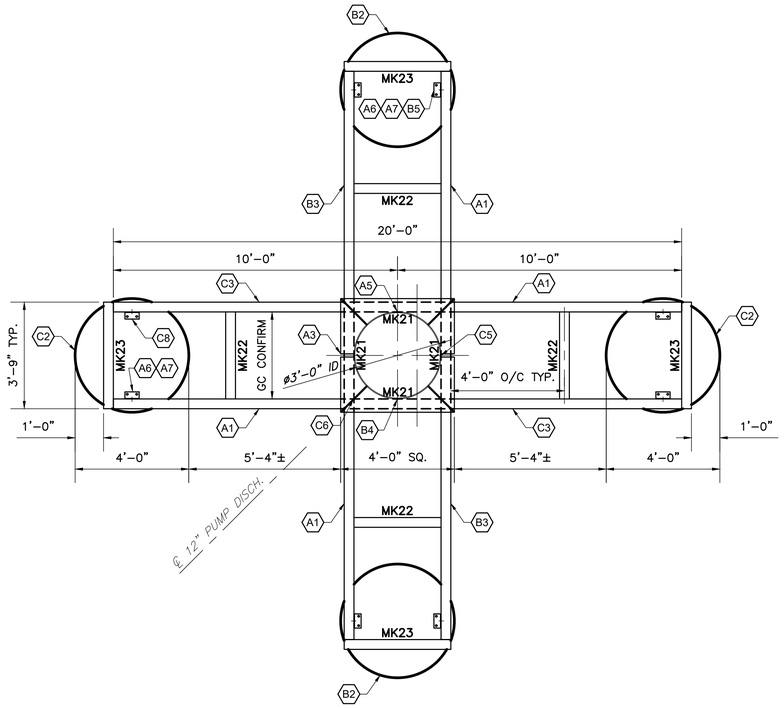
WELLFIELDS EX. WELL #10 RENOVATION PLAN-SECTION

WP-8

SHEET: OF

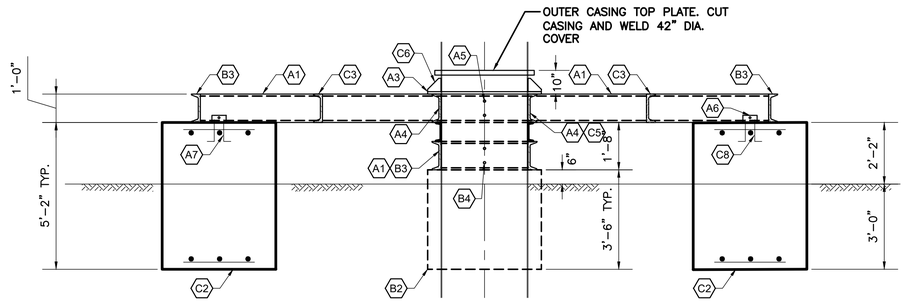
P:\PR58982\Cadd\Sheets\WP-8 WELLFIELDS EX. WELL 10 RENOVATION PLAN-SECTION.dwg 4/14/2022 9:07:22 AM Paul Emerson

PLOTTED: 4/14/2022 5:41:15 PM



WELLS 8-9 SUPPORT SYSTEM PLAN

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



WELLS 8-9 SUPPORT SYSTEM SECTION

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

	GRADE	TOP SHORT CAISSON	DEPTH	TOP TALL CAISSON	DEPTH	TOP INNER CASING PIPE
WELL #8	936.00	936.50	3'-6"	939.17	5'-2"	941.00
WELL #9	937.00	937.50	3'-6"	939.17	5'-2"	940.00
WELL #10	937.00	937.50	5'-0"	938.67	5'-0"	940.00
	EX. GRADE	932.00	SEE NOTE D		SEE NOTE D	

NOTES:

I. CONSTRUCTION SEQUENCE

THE PROPOSED WELL #8 AND #9 CASING SUPPORT SYSTEM SHALL BE INSTALLED PER ATTACHED PLANS. THE SUPPORTS SHALL BE FABRICATED AND WELDED IN ACCORDANCE AS NOTED. ANY DEVIATIONS SHALL BE APPROVED BY THE ENGINEER. ALL SURFACES WHERE FIELD WELDS ARE REQUIRED WILL BE CLEANED PRIOR TO ANY WELDING.

A. FACTORY WORK

1. PROVIDE FOUR (4) MC12X50 CHANNELS EACH 20 FEET IN LENGTH, AND 4 OF EACH TYPE OF TIE CHANNELS (MK 21. MK22, M23) TO MATCH OUTER DIAMETER OF 36" CASING PIPE PER ATTACHED SKETCH OF FABRICATED SUPPORT SYSTEM. PROVIDE 2 –1" HOLES IN MK 21 AND FOUR MC12X50 CHANNELS FOR WELDING TO CASING PIPE.
2. EPOXY COAT CHANNELS AND PLATES AFTER FABRICATION.
3. CUT. OPENING IN A 48" DIA. X 1.25" STEEL PLATE TO MATCH CIRCUMFERENCE OF THE EXISTING 36" CASING PIPE. CUT THE PLATE IN HALF TO CREATE 2 EQUAL HALVES.
4. WELD THE TOP OF CHANNEL C TO THE BOTTOM SIDE OF THE 24" X 48" PLATE SO THE BACK OF THE CHANNEL IS FLUSH WITH THE BACK OF THE OPENING. REPEAT FOR CHANNEL D. USE 3/16" FILLET WELDS.
5. DRILL TWO 1–INCH DIAMETER HOLDS AT CENTER OF CHANNELS TO USE TO WELD CHANNEL TO SIDES OF CASING PIPE WITH PUDDLE WELDS.
6. WELD 6 X 6" X 3/8" STEEL CLIP ANGLES WITH 7/8" HOLES AT THE ENDS OF EACH CHANNEL TO MOUNT BEAMS TO CONCRETE SUPPORT PADS.
7. PROVIDE 8 – 3/4" DIAMETER X 8" LONG HOOK BOLTS AND FASTENERS.

B. INSTALLATION OF LOWER SUPPORT CHANNELS.

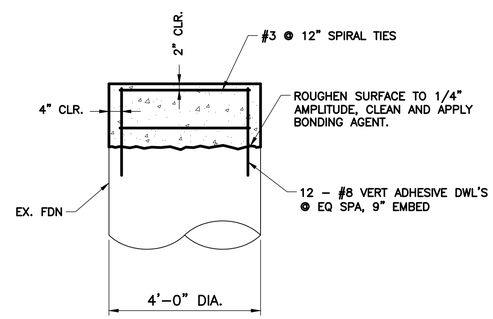
1. LOCATE ENDS OF TWO LEGS ORIENTED AT 45–DEGREE FROM PUMP DISCHARGE PIPE. EXCAVATE FOR FOUNDATION PADS, AND CONSTRUCT FORMWORK TO POUR CONCRETE PADS.
2. EXCAVATE TO 5 FEET BELOW GRADE TO CONSTRUCT FORMWORK FOR TWO (2) 3' X 5' BY 12" THICK CONCRETE PADS. INSTALL #5@12" CC REBARS EWEF IN TOP AND BOTTOM OF CONCRETE PAD WITH 3" CLEARANCE FROM TOP OF CONCRETE PAD.
3. POSITION LOWER MC 12X50 CHANNEL A AND CHANNEL B ON EACH SIDE OF 36" CASING PIPE WITH FLANGES FACING OUTWARD. CENTER CHANNELS ON RISER AND LEVEL. INSTALL TIE CHANNEL (MK21) BETWEEN CHANNELS A AND B ON EACH SIDE OF CASING PIPE. INSTALL INTERMEDIATE TIE CHANNEL (MK22) AT LOCATION SHOW ON SKETCH. FINALLY, INSTALL TIE CHANNEL (MK23) AT END OF BOTH AT EACH END OF CHANNELS.
4. LEVEL CHANNELS AND FASTEN SUPPORT CHANNEL A, B, AND MK21 CHANNELS USING 2 –1" PUDDLE WELDS PER CHANNEL. WELD TOP EDGE OF CHANNELS TO RISER COLUMN USING MIN. USE 3/16" FILLET WELDS.
5. INSTALL ANCHOR BOLTS. POUR 3' X 5' X 12" THICK CONCRETE PAD AT EACH END.

C. INSTALLATION OF UPPER SUPPORT CHANNELS.

1. LOCATE ENDS OF TWO LEGS ORIENTED AT 45–DEGREE FROM PUMP DISCHARGE PIPE. EXCAVATE FOR FOUNDATION PADS, AND CONSTRUCT FORMWORK TO POUR CONCRETE PADS.
2. EXCAVATE TO 5 FEET BELOW GRADE TO CONSTRUCT FORMWORK FOR TWO (2) 3' X 5' BY 24" THICK CONCRETE PADS. (ALL CONCRETE PADS TO BE SET TO SAME ELEVATION). INSTALL #5@ 12" CC REBARS EWEF IN TOP OF AND BOTTOM OF CONCRETE PAD WITH 3" CLEARANCE FROM TOP OF CONCRETE PAD.
3. POSITION UPPER MC 12X50 CHANNEL C AND CHANNEL D ON EACH SIDE OF 36" CASING PIPE WITH FLANGES FACING OUTWARD. THE 24" X 48" STEEL PLATE SHALL BE POSITIONED ON THE CASING PIPE SO THAT THE LEGS ARE 90–DGEGREES FROM THE LOWER LEGS (FORMING AN X–SHAPED PATTERN) AND ENSURE CONTACT WITH LOWER CHANNELS.
4. INSTALL TIE CHANNEL (MK21) BETWEEN CHANNELS C AND D ON EACH SIDE OF CASING PIPE. INSTALL INTERMEDIATE TIE CHANNEL (MK22) AT LOCATION SHOW ON SKETCH. FINALLY, INSTALL TIE CHANNEL (MK23) AT END OF BOTH AT EACH END OF CHANNELS AND ENSURE CONTACT WITH LOWER CHANNELS.
5. LEVEL CHANNELS C AND D AND FASTEN SUPPORT CHANNEL C, D, AND MK21 CHANNELS USING 2 –1" PUDDLE WELDS PER CHANNEL. WELD TOP EDGE OF 24" X 48" PLATE TO 36" CASING PIPE. BUTTWELD TWO 24" X 48" PLATES TO FORM SINGLE PLATE.
6. WELD FOUR GUSSET PLATES AT FOUR CORNERS OF 48" X 48" STEEL AND PROVIDE CONTINUOUS 3/16" FILLET WELD EACH SIDE TO FASTEN EDGES OF GUSSET PLATE BEARING IN CONTACT WITH PLATE AND 36" CASING PIPE.
7. WELD ALONG EDGES OF TOP CHANNEL WHERE IT CROSSES LOWER CHANNELS USING MIN. USE 3/16" FILLET WELDS.
8. INSTALL ANCHOR BOLTS IN CLIP ANGLES AT ENDS OF SUPPORT CHANNELS C AND D. POUR 3' X 5' X 24" THICK CONCRETE PAD AT EACH END.

D. EXTEND EXISTING CAISSON,

1. REMOVE EXISTING STEEL PLATFORM AND WELL #10 CASING SUPPORT SYSTEM.
2. DRILL HOLES AND INSTALL #8 DOWEL PER DWG THIS SHT.
3. FORM AND POUR 5'–0"x48" DIA. CONC. CAISSON EXTENSION.
4. SEE SHT. WP–9 FOR DETAILS.



WELL 10 FOUNDATION DETAIL

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

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

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DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	3/8" = 1'-0"

WELLFIELDS EX. WELL #8-9 RENOVATION SUPPORT SYSTEM

WP-9

SHEET: OF

P:\PR58982\Cadd\Sheets\WP-9 WELLFIELDS EX. WELL 8-9 RENOVATION SUPPORT SYSTEM.dwg 4/1/2022 2:20:27 PM Paul Emerson

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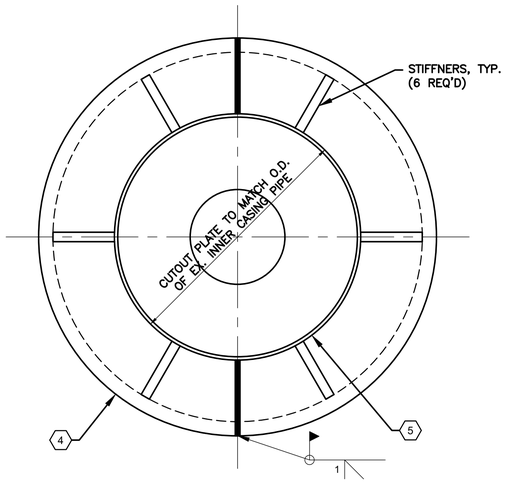
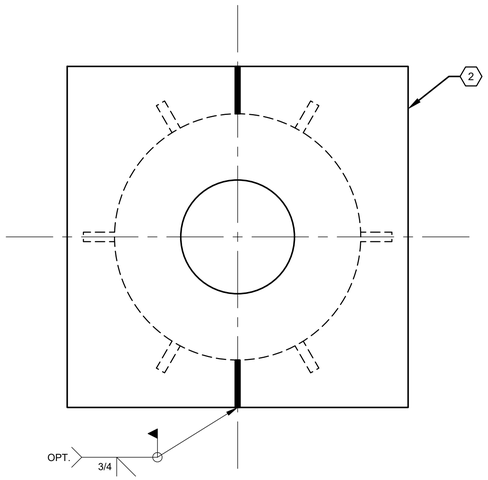


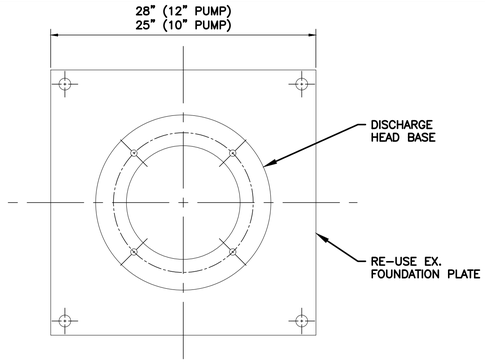
OUTER CASING - TOP PLATE

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



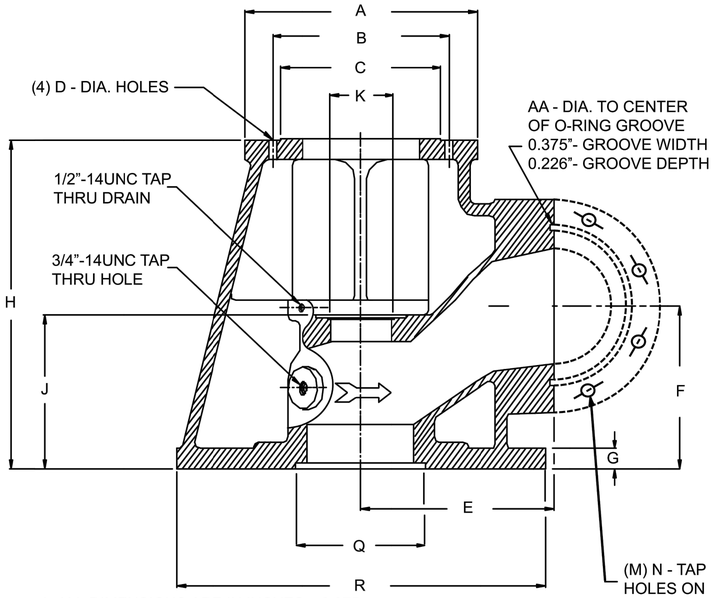
INNER CASING - TOP PLATE

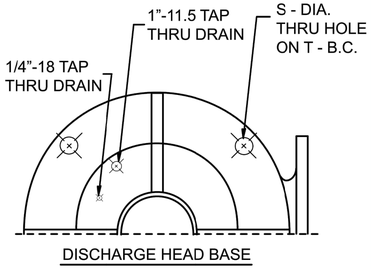
SCALE: 1 1/2" = 1'-0"



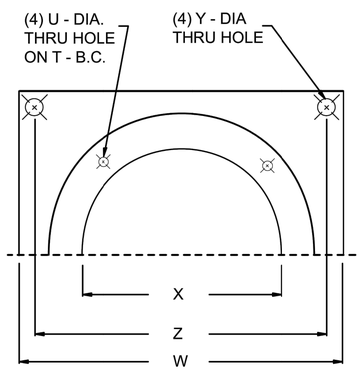
FOUNDATION PLATE & PUMP MOUNTING DETAIL

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





DISCHARGE HEAD BASE



FOUNDATION PLATE

EXISTING FOUNDATION
PLATE TO BE RE-USED

1. ALL DIMENSIONS ARE IN INCHES ± 0.375
2. NOT FOR CONSTRUCTION UNLESS CERTIFIED BY ENGINEERING.

DISCHARGE HEAD MODEL	ANSI SIZE 125# FLANGE	WEIGHT	A	B	C	D	E	F	G	H
FR4A	4 in	155 lbs	10.000	9.125	8.250	0.438	8.750	6.750	1.125	15.875
FR6B	6 in	185 lbs	12.000	9.125	8.250	0.438	11.500	8.375	1.000	16.875
FR6C	6 in	225 lbs	16.500	14.750	13.500	0.688	11.500	8.375	1.000	16.750
FR8C	8 in	265 lbs	16.500	14.750	13.500	0.688	12.500	10.688	1.000	20.438
FR8HD	8 in	400 lbs	20.000	14.750	13.500	0.688	12.500	10.688	1.688	22.063
FR10C	10 in	315 lbs	16.500	14.750	13.500	0.688	12.500	10.688	1.000	21.438
FR10HD	10 in	445 lbs	20.000	14.750	13.500	0.688	13.750	11.313	1.688	22.375
FR12HD	12 in	550 lbs	20.000	14.750	13.500	0.688	14.000	11.938	2.188	23.000
FR14HD	14 in	650 lbs	20.000	14.750	13.500	0.688	19.000	14.000	1.500	31.000
FR16HD	16 in	675 lbs	20.000	14.750	13.500	0.688	19.000	16.000	1.500	31.000

MODEL	J	K	M	N	P	Q	R	S	T	U	W	X	Y	Z	AA	PLATE HEIGHT
FR4A	6.875	3.125	8	5/8-11UNC	7.500	7.188	16.000	1.000	14.250	7/8-9UNC	24.000	12.500	1.125	21.000	5.438	1.000
FR6B	7.750	3.125	8	3/4-10UNC	9.500	7.188	19.000	1.000	17.000	7/8-9UNC	24.000	13.000	1.125	21.000	7.375	1.000
FR6C	7.750	3.750	8	3/4-10UNC	9.500	7.188	19.000	1.000	17.000	7/8-9UNC	24.000	13.000	1.125	21.000	7.375	1.000
FR8C	8.344	3.750	8	3/4-10UNC	11.750	11.313	21.000	1.125	18.750	1-8UNC	24.000	16.500	1.125	21.000	9.500	1.000
FR8HD	9.938	5.000	8	3/4-10UNC	11.750	11.313	23.500	1.125	21.250	1-8UNC	26.000	17.500	1.125	23.000	9.500	1.000
FR10C	10.563	3.750	12	7/8-9UNC	14.250	11.313	21.000	1.125	18.750	1-8UNC	24.000	16.750	1.125	21.000	11.688	1.000
FR10HD	11.312	5.000	12	7/8-9UNC	14.250	11.313	23.500	1.125	21.250	1-8UNC	26.000	17.500	1.125	23.000	11.688	1.000
FR12HD	12.000	5.000	12	7/8-9UNC	17.000	13.250	25.000	1.250	22.750	1-1/8-7UNC	28.000	18.500	1.250	25.000	14.063	1.250
FR14HD	15.500	5.000	12	1-8UNC	18.750	16.500	32.000	1.375	29.500	1-1/4-7UNC	36.000	27.500	1.250	33.000	15.000	1.500
FR16HD	15.500	5.000	16	1-8UNC	21.250	16.500	32.000	1.375	29.500	1-1/4-7UNC	36.000	27.500	1.250	33.000	17.250	1.500

WELL CASING MODIFICATIONS

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

KEY NOTES:

1. EX. PUMP FOUNDATION STEEL PLATE BOLTED TO WELDED TO INNER PUMP CASING BASE PLATE W/ 4 THREADED STUDS TO MATCH PUMP BASE MOUNTING HOLES.
2. 36" X 36" X 1" THICK INNER CASING TOP PLATE DRILLED TO MATCH PUMP COLUMN CUTOUT AND BOLT HOLE PATTERN (OPTIONAL: FURNISH IN 2 PCS. & WELD).
3. 2" SCH 40 STEEL PIPE WELDED TO PUMP CASING. PROVIDE 2" NPT HALF-COUPLING W/ GIP PLUG.
4. 42" DIA. X 1.25" THICK STEEL PLATE IN 2 PCS. WELD TO OUTER CASING PIPE
5. WELD TOP PLATE TO SIDE WALL OF INNER CASING PIPE EXTENSION
6. WELD INNER CASING EXTENSION WITH SAME DIAMETER AND THICKNESS AS EX. INNER CASING PIPE
7. 6" SCH 40 STEEL PIPE W/ NPT THREAD WELDED TO BASE PLATE. PROVIDE 6" NPT HALF-COUPLING W/ GIP PLUG

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APPROVED BY:	CMS
SCALE:	AS NOTED

WELLFIELDS EX.
WELL RENOVATION
CASING DETAILS

WP-10

SHEET: OF

P:\PR58982\Cadd\Sheets\WP-10 WELLFIELDS EX. WELL RENOVATION CASING DETAILS.dwg 4/1/2022 2:20:47 PM Paul Emerson

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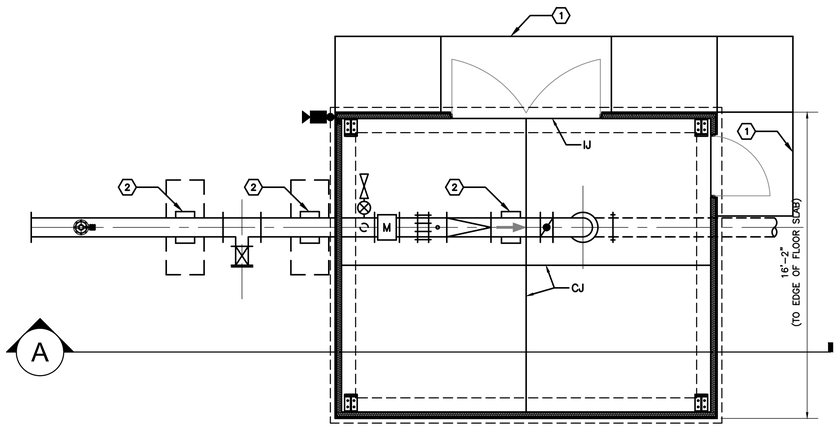
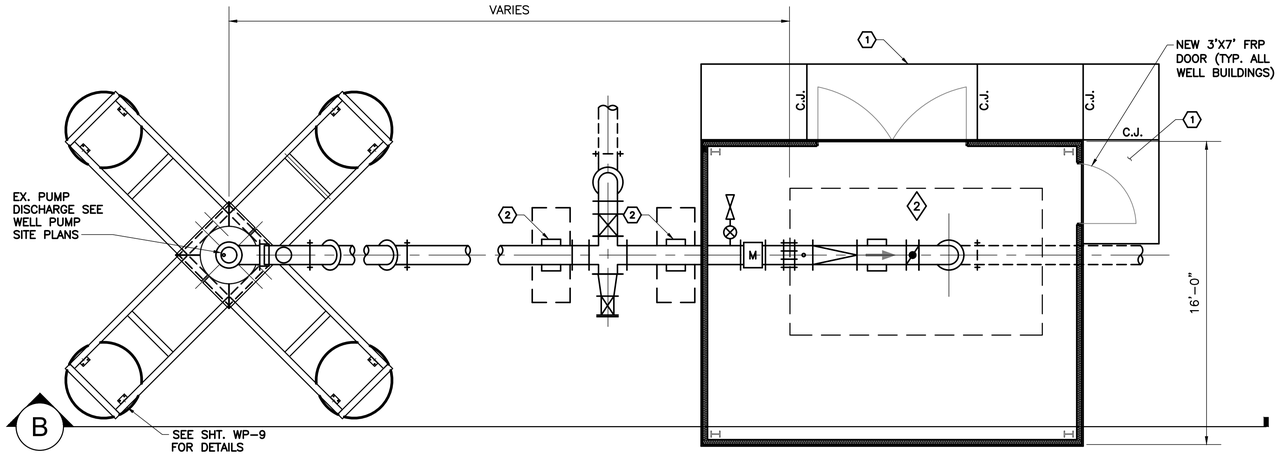


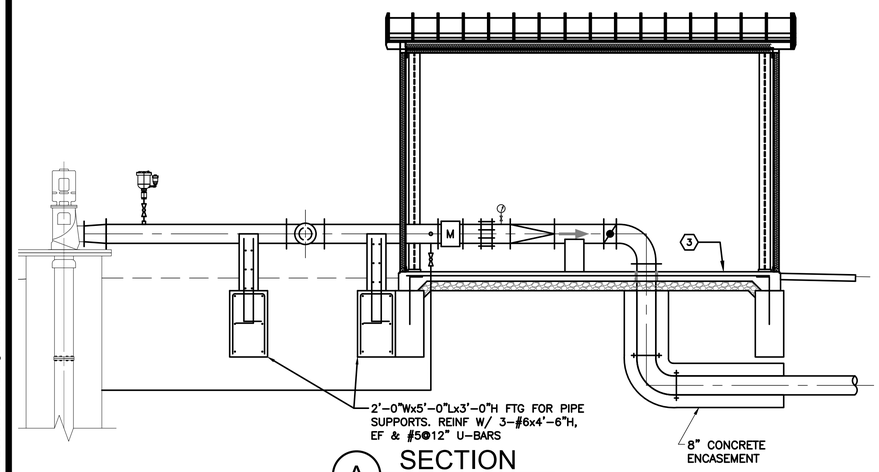
WELLS 1-7 TYPICAL PLAN

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



WELLS 8-9 TYPICAL PLAN

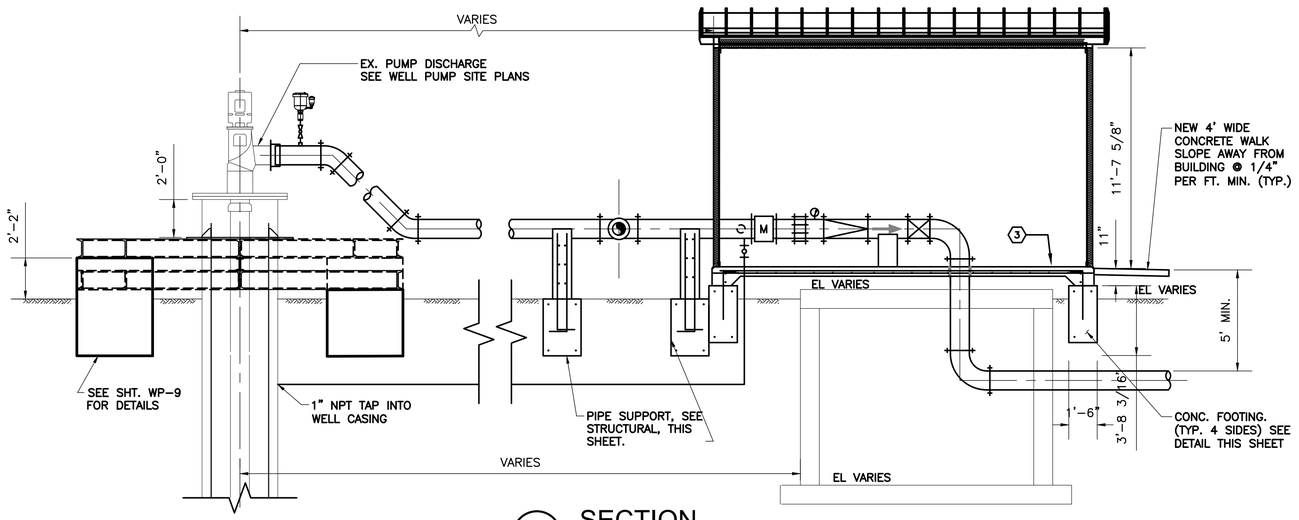
SCALE: 1/4" = 1'-0"



SECTION

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

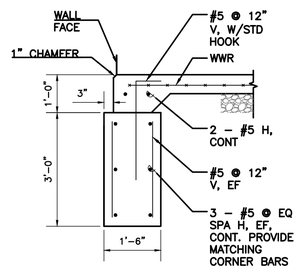
NOTE: REFER TO SHT. WP-4 FOR ELEVATIONS



SECTION

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

NOTE: REFER TO SHT. WP-4,WP-6,AND WP-7 FOR ELEVATIONS



FOUNDATION DETAIL

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

NOTES:

1. FINISHED FLOOR ELEVATION IS:
   WELL NOS. 1-8 = 937.50
   WELL NOS. 9-10 = 936.50
2. FLOOR CONSTRUCTION SHALL BE A 6" THICK CONCRETE SLAB ON GRADE WITH 6x6-W2.9xW2.9 WWR, FURNISHED IN FLAT SHEETS. UNDER SLAB PLACE 6" OF DRAINAGE BASE. ON TOP OF BASE PLACE 10MIL VAPOR RETARDER. EDGES SHALL BE OVERLAPPED AND SEALED.
3. COORDINATE ALL FLOOR PENETRATIONS WITH PROCESS, MECHANICAL, AND ELECTRICAL SHEETS.

CODED NOTES: (#)

1. FROST SLAB, SEE STRUCTURAL DETAILS.
2. PIPE SUPPORT, SEE STRUCTURAL DETAILS, SHT. WP-4 OR WP-6.
3. THE FINISHED FLOOR ELEVATION SHALL BE AT LEAST 6-INCHES ABOVE THE FINAL GRADE ELEVATION.

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DESIGNED BY:	DD
DRAWN BY:	ABP
CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	AS NOTED

WELLFIELDS
STRUCURAL
WELL HOUSE #1-9
PLAN-SECTION-
DETAIL

WS-1

SHEET: OF

P:\PR58982\Cadd\Sheets\WS-1 WELLFIELDS STRUCTURAL WELL HOUSE 1-9 PLAN-SECTION-DETAIL.dwg 4/1/2022 2:29:45 PM Paul Emerson

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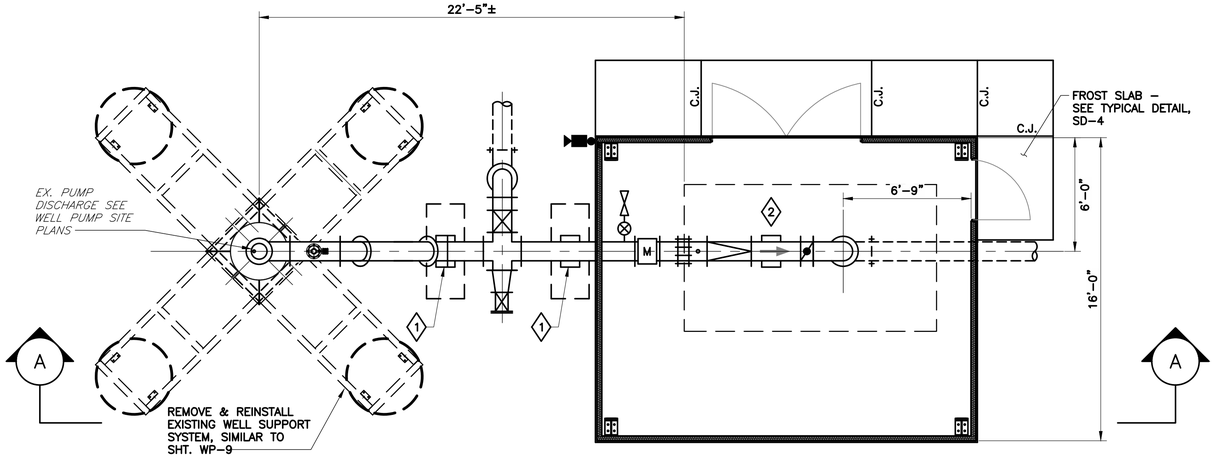
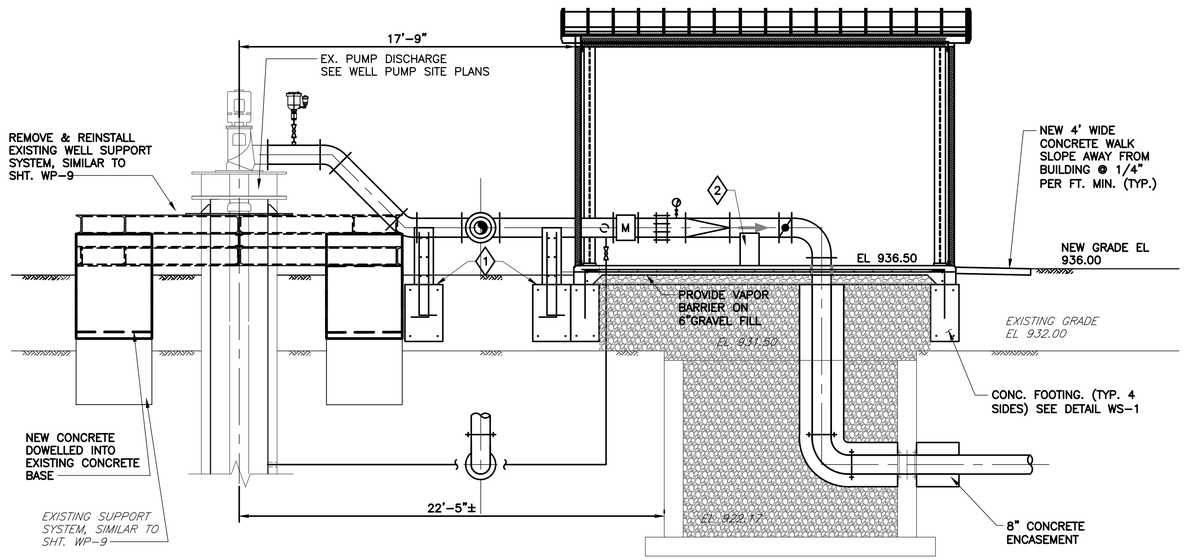


WELL 10 PLAN

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



A SECTION

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

NOTE WITHIN THE LIMITS OF THE BUILDING, THE CHLORINE SOLUTION, FINISHED WATER, AND RAW WATER LINES AND INSULATION SHALL BE PAINTED ACCORDING TO THE PIPE INSULATION DETAIL ON SHEET SD-11.

1. NEW EXTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON SHEET WP-6.
2. NEW INTERIOR CONCRETE PIPE SUPPORT. SEE DETAIL ON SHEET SD-3.
3. GC SHALL PROVIDE AND INSTALL SUPPORTS @ WALL PANEL PENETRATIONS PER METAL BUILDING MFR. RECOMMENDATIONS. COORDINATE WITH MECHANICAL.
4. PROVIDE A WATER & AIRTIGHT SEAL AROUND PIPE PENETRATION W/EDPM PIPE BOOT WITH ALUMINUM FLASHING. SIZE PIPE BOOT TO SUIT.

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DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

WELLFIELDS STRUCTURAL WELL HOUSE #10 PLAN-SECTION-DETAIL

WS-2

SHEET: OF

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MATCHLINE SHT. D-2

REMOVE EXISTING ASPHALT PAVEMENT

REMOVE & RESET EXISTING CHAIN LINK FENCE

24" CMP STS TO BE REMOVED

REFER TO GENERAL NOTE #1

REMOVE EXISTING CHAIN LINK FENCE

REMOVE EXISTING ASPHALT PAVEMENT

PLANT WATER EXPANSION TANK TO BE REMOVED OR ABANDONED

3 D-3

REMOVE, SALVAGE AND RESET FIRE HYDRANT

REFER TO GENERAL NOTE #1

REMOVE & RESET EXISTING CHAIN LINK FENCE

REMOVE EXISTING CONCRETE PAVEMENT

REMOVE EXISTING FUEL STORAGE TANK SEE SHT. D-4

1/2" DRAIN (ABAND.)

PLUG W/ CONC.

REFER TO GENERAL NOTE #1

EXISTING CONC. CURB TO BE REMOVED

4 D-3

REMOVE 2" FUEL OIL SUPPLY AND OVERFLOW

2" CIP PLANT WATER TO BE REMOVED

2 D-3

MAIN BUILDING

REMOVE PLANTER

REMOVE EX. WEST CLEARWELL ACCESS HATCH, TYP.

REMOVE 16" PCCP BLOWOFF TO NEAREST JOINT

REMOVE EXISTING CONCRETE SIDEWALK

REFER TO GENERAL NOTE #1

REMOVE EXISTING CONCRETE SIDEWALK

RESERVE TILE FIELD AREA

LEACH FIELD

REMOVE EXISTING CHAIN LINK FENCE

REMOVE EXISTING CONCRETE PAVEMENT

2" CIP PLANT WATER TO BE REMOVED

CONTROL AIR CONDUIT TO BE ABANDONED

CHLORINE LINE AND AIR SUPPLY (CONC. ENCASED) TO BE ABANDONED

UNDERGROUND ELECTRIC SEE SHEET E-3.

REMOVE U/G ELEC. SEE SHEET E-3.

GENERATOR BUILDING

FILTER BUILDING

EAST CLEARWELL ACCESS HATCH

LOWER EXISTING STORM SEWER MANHOLE RIM & LID SEE SHT. C-6 AND C-16

SEPTIC TANK AND DISTRIBUTION TANK

19'-50"x24"D DUCT BANK (ABAND.)

12" RCP STS TO BE ABANDONED

CHLORINATION BUILDING

FLUORIDE BUILDING

REMOVE EX. ASPHALT PVMT

8" PVC STS TO BE ABANDONED

REMOVE U/G 5KV FEEDER, SEE SHEET E-3

REMOVE RISER POLE AND OVERHEAD PRIMARY FEEDERS, SEE SHEET E-3

30" PCCP TO BE REMOVED SEE SHEET WC-24

1 D-3

REMOVE BOLLARDS AND ANTENNA POLE

6" VCP SAN. (ABAND.)

36" PCCP TO BE REMOVED CONNECTION A - SEE SHT. WC-24

2" CIP PLANT WATER TO BE REMOVED

WEST AERATOR BUILDING

2" CIP PLANT WATER TO BE REMOVED

RECONNECT TO EX. 2" PVC PLANT WATER

MAINTENANCE GARAGE

REMOVE EX. ASPHALT PVMT

6" DIP DRAIN AND CLEANOUT TO BE REMOVED

REMOVE & RESET EXISTING CHAIN LINK FENCE

EAST AERATOR BUILDING

REMOVE EXISTING ASPHALT PAVEMENT

TO BE REMOVED OR ABANDONED IN PLACE AS NECESSARY

TO BE REMOVED

TO BE ABANDONED IN PLACE

TO BE REMOVED

DEMOLITION PLAN

SCALE: 1" = 20'

GENERAL NOTES:

1. EXISTING LAWN IRRIGATION SYSTEM: WHEN ANY PROPOSED IMPROVEMENTS COME IN CONTACT WITH THE EXISTING LAWN IRRIGATION SYSTEM THE EXISTING WATER SUPPLY PIPES SHALL BE CUT AND REMOVED ALONG WITH THE EXISTING IRRIGATION HEADS. THE EXISTING WATER SUPPLY LINES OUTSIDE THE PROPOSED IMPROVEMENTS SHALL BE CAPPED AND LEFT IN PLACE ALONG WITH THE EXISTING IRRIGATION HEADS.

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DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1"=20'

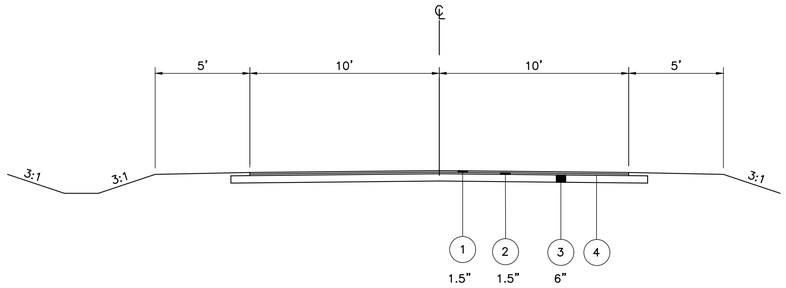
WTP DEMOLITION SITE PLAN

D-1

SHEET: OF

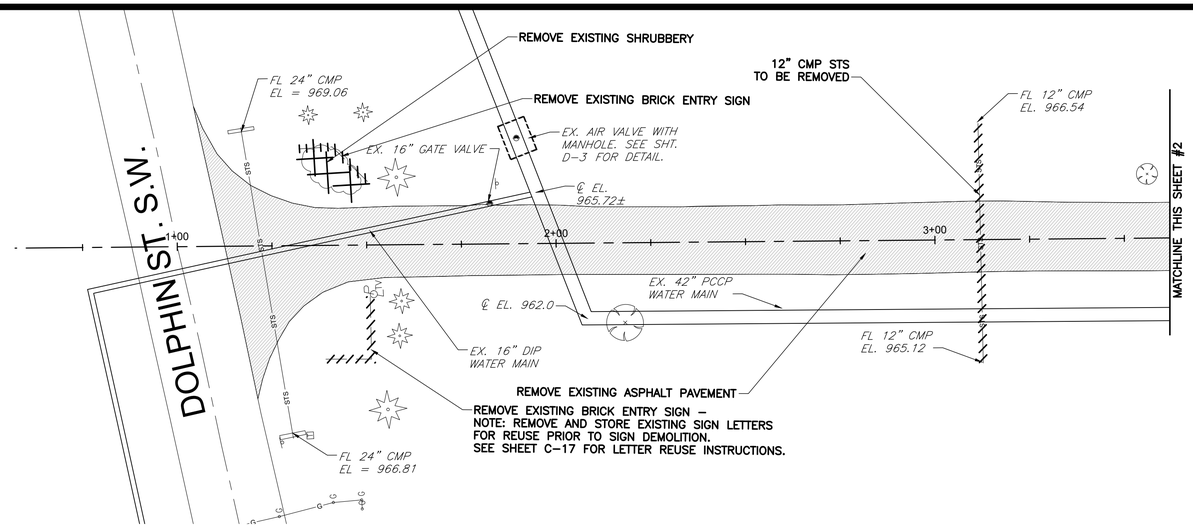
P:\PR58982\Cadd\Sheets\D-1 WTP DEMOLITION SITE PLAN.dwg 4/15/2022 2:02:17 PM Matt Kroll

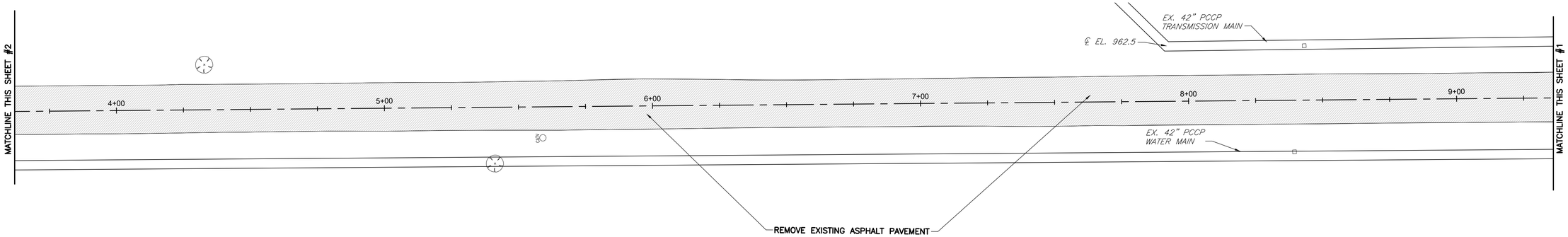
PLOTTED: 4/16/2022 1:05:44 PM

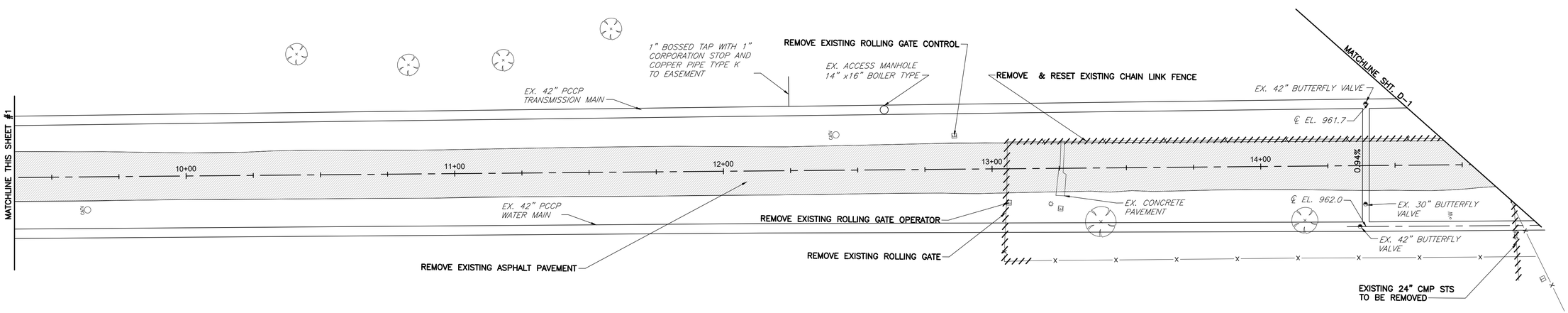


EXISTING ACCESS ROAD SECTION

1. T–35 1 1/2" ASPHALTIC CONCRETE SURFACE COURSE
2. B–35 1 1/2" ASPHALTIC CONCRETE LEVELING COURSE
3. B–19 6" CRUSHED AGGREGATE BASE COURSE
4. T–30 BITUMINOUS PRIME COAT







DEMOLITION PLAN

SCALE: 1" = 20'

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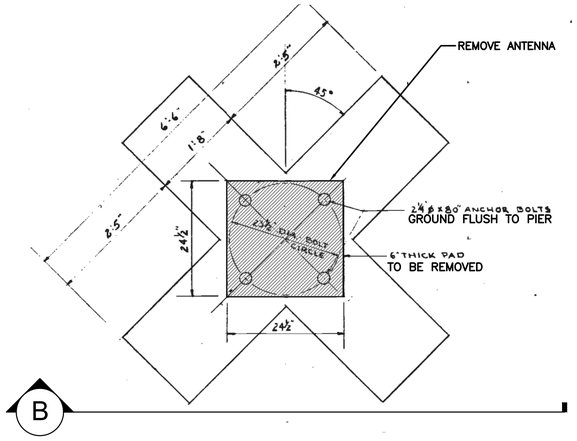
WTP
MAIN DRIVE
DEMOLITION
PLAN-SECTION

D-2

SHEET: OF

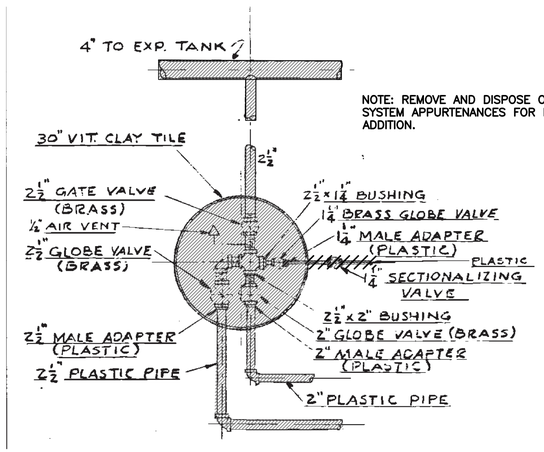
P:\PR58982\Cadd\Sheets\D-2 WTP MAIN DRIVE DEMOLITION PLAN-SECTION.dwg 4/15/2022 2:03:59 PM Matt Kroll

PLOTTED: 4/16/2022 1:05:58 PM



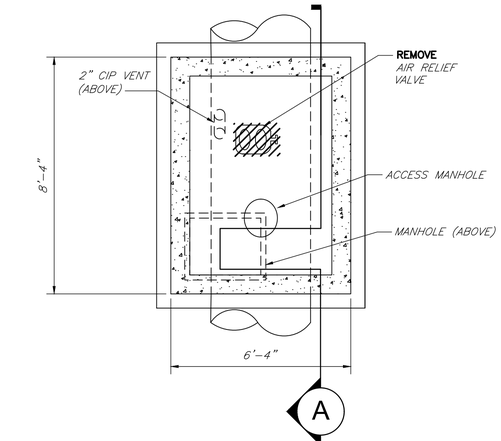
1 D-1 PLAN OF ANTENNA SUPPORT

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



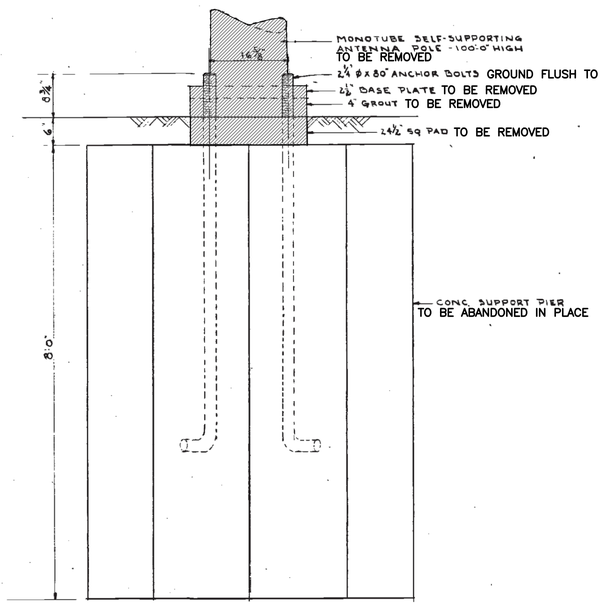
2 D-1 ENLARGED SPRINKLER SYSTEM DETAIL

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



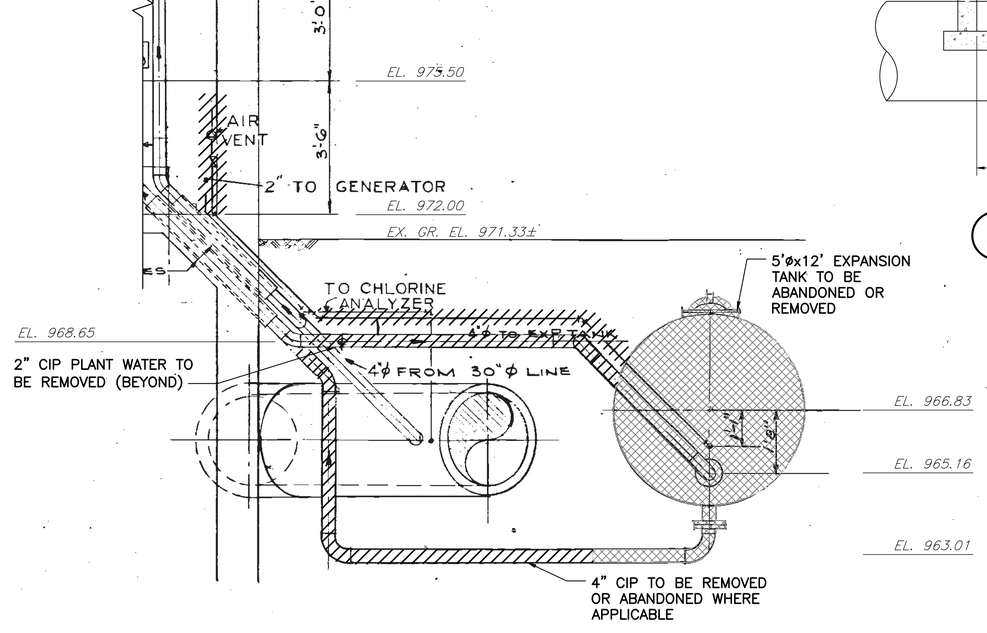
COMBINATION AIR VALVE AND MANHOLE DETAIL

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



B ELEVATION

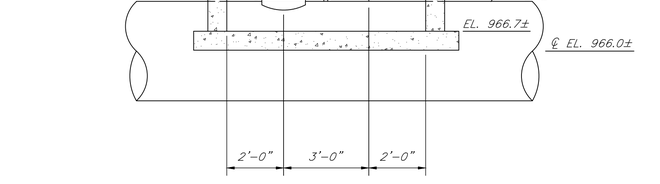
SCALE: 3/4" = 1'-0"



3 D-1 PLANT WATER DETAIL

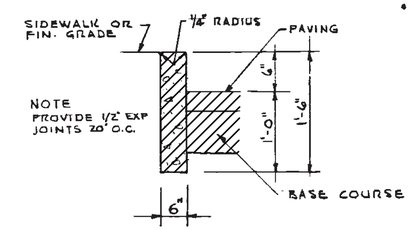
SCALE: 1/2" = 1'-0"

NOTE: FINISHED WATER TRANSMISSION MAIN CHAMBER AT WTP MAIN DRIVE



A SECTION

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



4 D-1 CONCRETE CURB DETAIL

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

NOTE: CONC. CURB TO BE REMOVED AND DISPOSED OF PROPERLY OFF SITE

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WTP DEMOLITION SITE DETAILS

D-3

SHEET: OF

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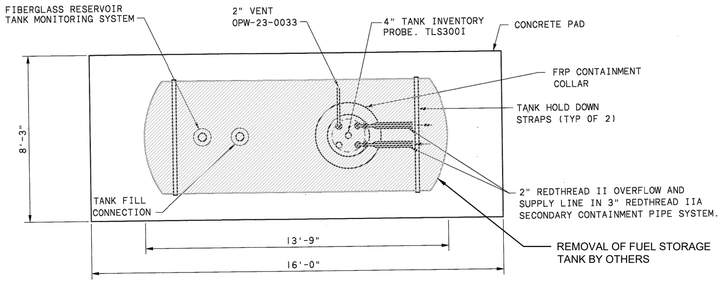
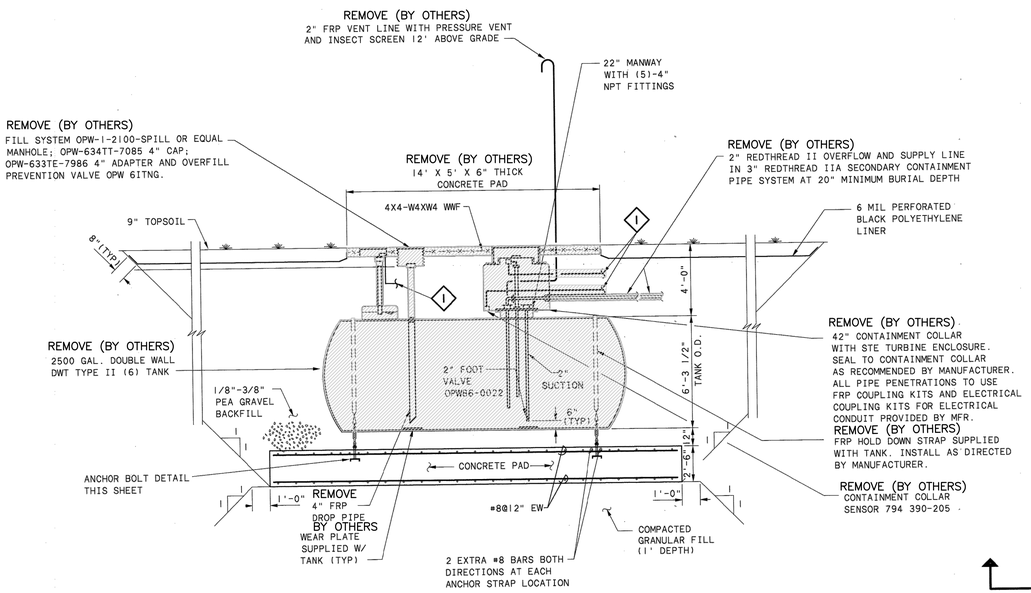
PLOTTED: 4/16/2022 1:06:08 PM



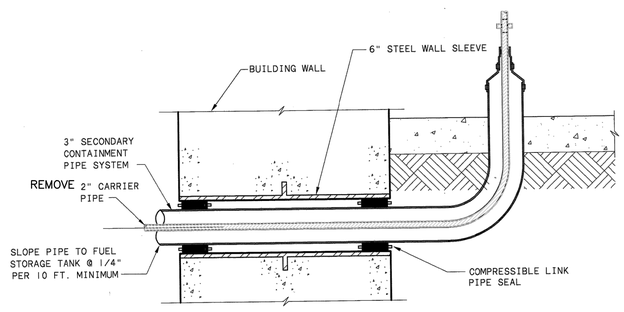
FUEL STORAGE TANK PLAN

NO SCALE



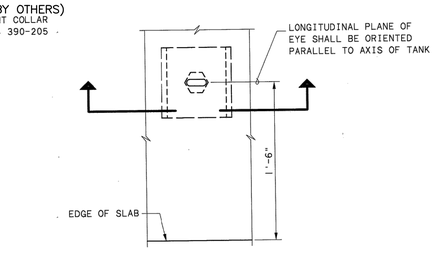
FUEL STORAGE TANK SECTION

NO SCALE

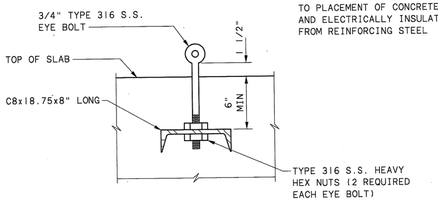


BUILDING WALL ENTRANCE DETAIL

NO SCALE



PLAN



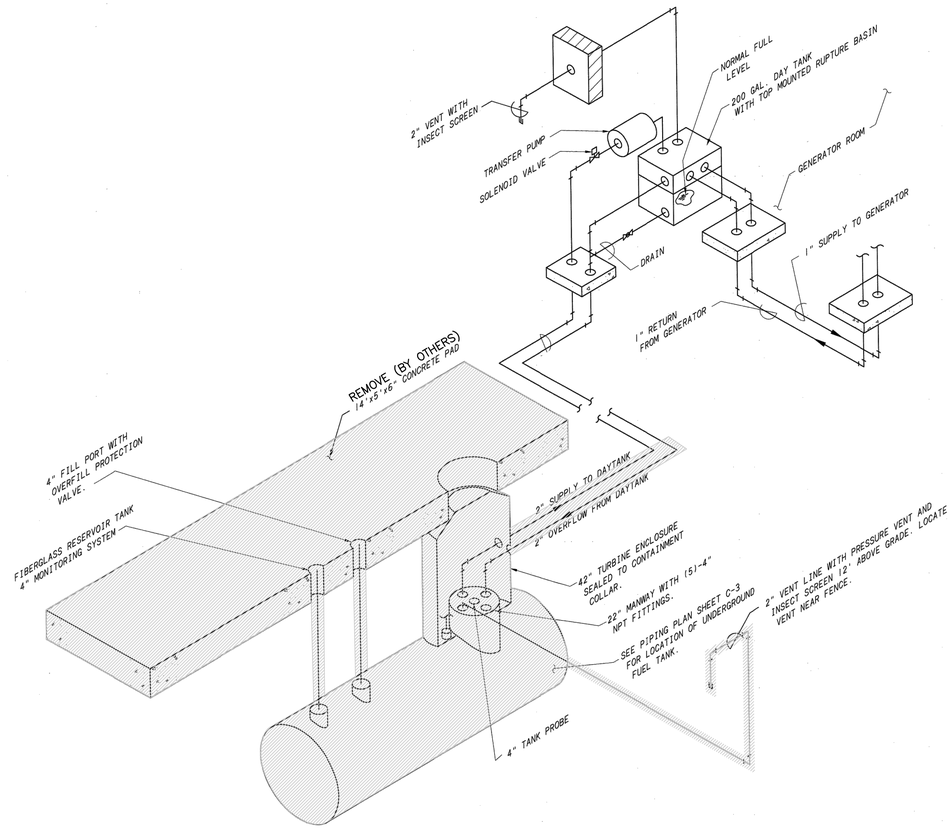
SECTION

NOTE

ANCHOR BOLT ASSEMBLY SHALL BE SECURELY LOCATED PRIOR TO PLACEMENT OF CONCRETE AND ELECTRICALLY INSULATED FROM REINFORCING STEEL

ANCHOR BOLT DETAIL

NO SCALE



FUEL OIL SYSTEM PIPING

NO SCALE

DEMOLITION BY OTHERS

GENERAL NOTES:

1. THE EXISTING 2,500 GALLON UNDERGROUND STORAGE TANK (UST) WILL BE REMOVED BY A UST REMOVAL CONTRACTOR UNDER A SEPERATE CONTRACT BY THE OWNER/ENGINEER. THE EXISTING UST IS REGULATED BY THE BUREAU OF UNDERGROUND STORAGE TANK REGULATIONS (BUSTR).
2. OWNER WILL EMPTY ALL UST CONTENTS (DIESEL FUEL) PRIOR TO REMOVAL.
3. REMOVAL OF THE EXISTING UST SHALL OCCUR AFTER THE CONTRACTOR COMPLETES INSTALLATION OF THE NEW ABOVEGROUND STORAGE TANK. COORDINATION WILL BE REQUIRED WITH THE UST REMOVAL CONTRACTOR TO SCHEDULE THEIR WORK
4. CONTRACTOR SHALL PROVIDE ADDITIONAL BACKFILL TO THE UST REMOVAL CONTRACTOR FOR THEM TO PROPERLY BACKFILL THE VOID LEFT FROM THE UST. BACKFILL PROVIDED SHALL CONFORM TO SPECIFICATIONS. THE LOCATION OF A TEMPORARY STOCKPILE SHALL BE COORDINATED BY THE CONTRACTOR.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING FINAL GRADING, RESEEDING, PAVING OF THE AREA PER SPECIFICATIONS.
6. REFER TO SPECIFICATION SECTION 33 56 13 FOR ADDITIONAL DETAILS.

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APPROVED BY:	CMS
SCALE:	NONE

FUEL STORAGE SYSTEM DEMOLITION PLAN-SECTION-DETAILS

D-4

SHEET: OF

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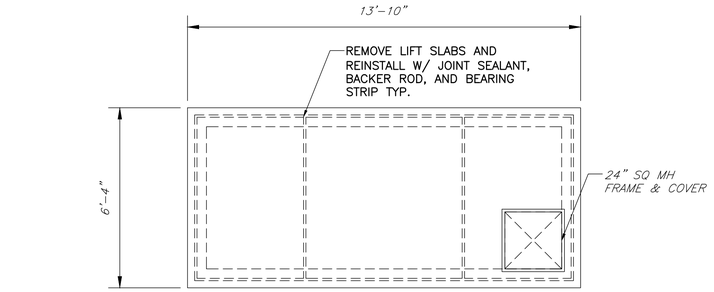
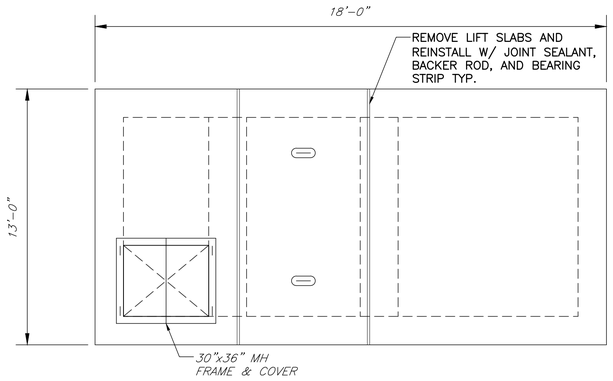
PLOTTED: 4/16/2022 1:06:14 PM



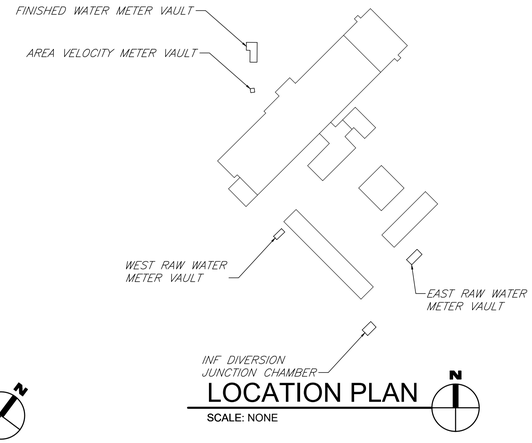
WEST RAW WATER METER VAULT UPPER PLAN

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



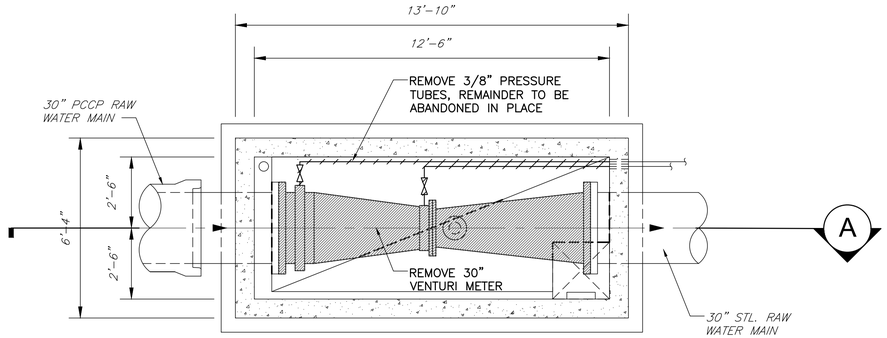
EAST RAW WATER METER VAULT UPPER PLAN

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



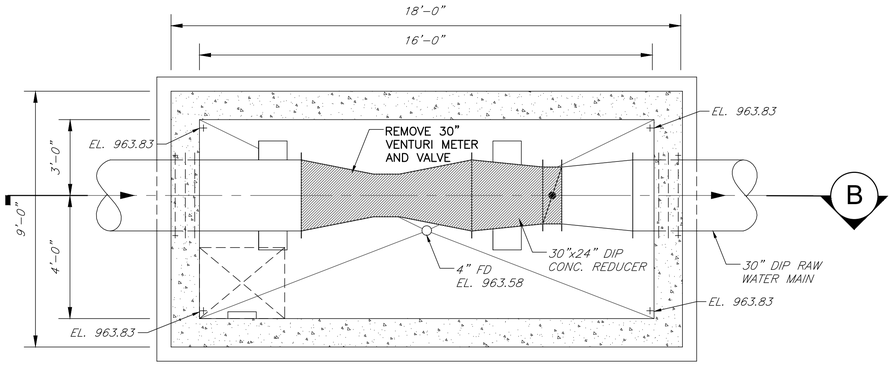
LOCATION PLAN

SCALE: NONE



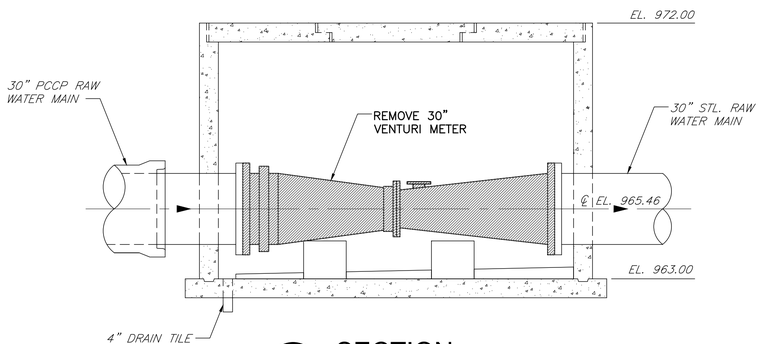
LOWER PLAN

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



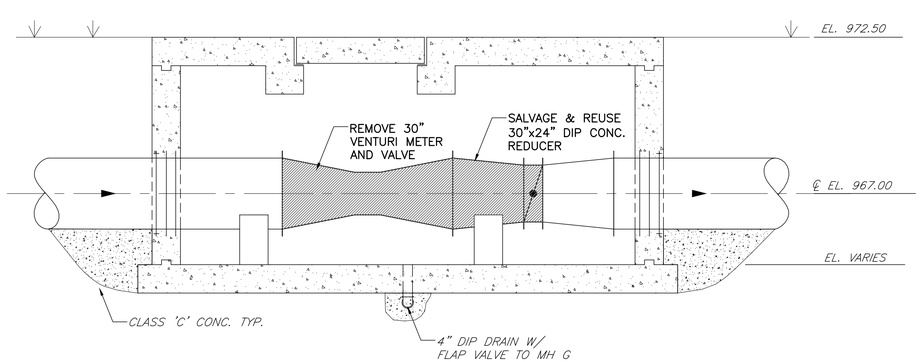
LOWER PLAN

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



A SECTION

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



B SECTION

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

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APPROVED BY:	CMS
SCALE:	AS NOTED

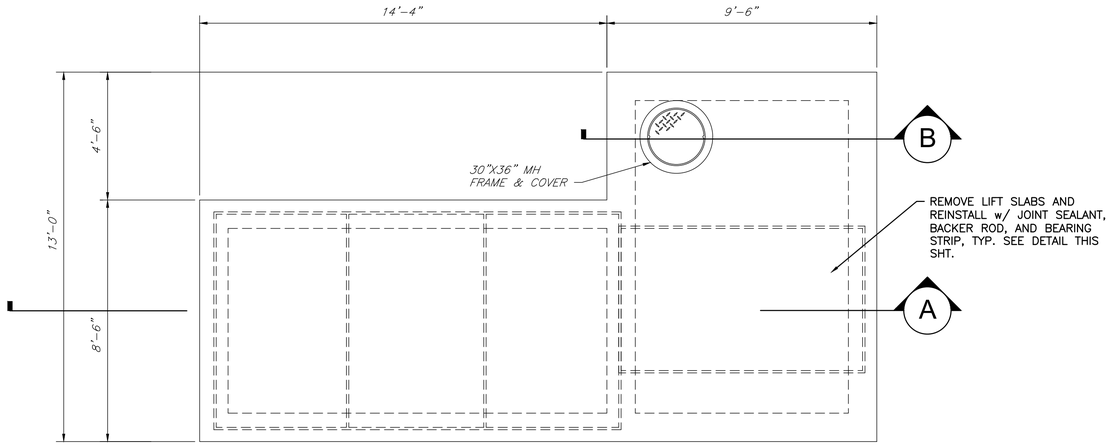
RAW WATER METER VAULTS DEMOLITION PLAN-SECTION

D-5

SHEET: OF

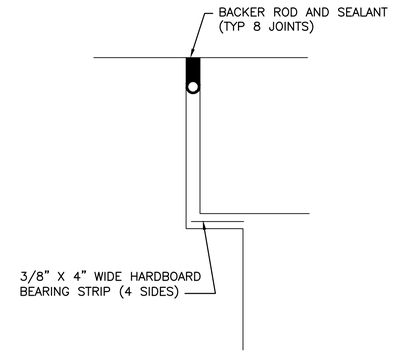
P:\PR58982\Cadd\Sheets\D-5 RAW WATER METER VAULTS DEMOLITION PLAN-SECTION.dwg 4/15/2022 3:42:26 PM Matt Kroll

PLOTTED: 4/16/2022 1:06:20 PM



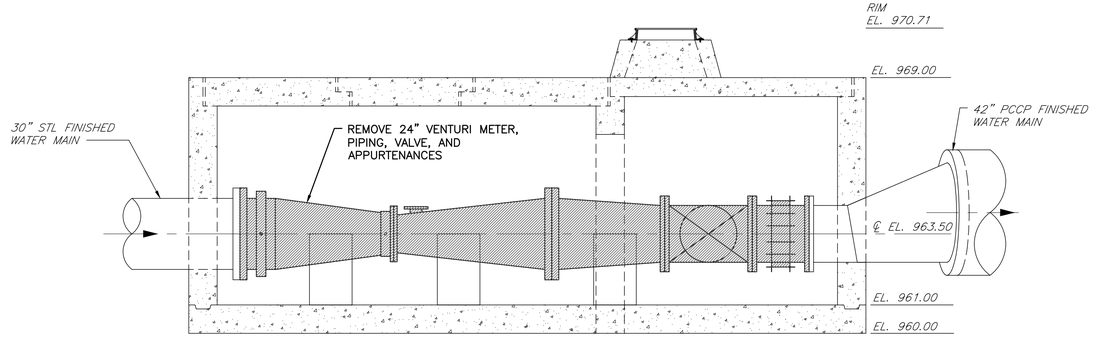
FINISHED WATER METER VAULT UPPER PLAN

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



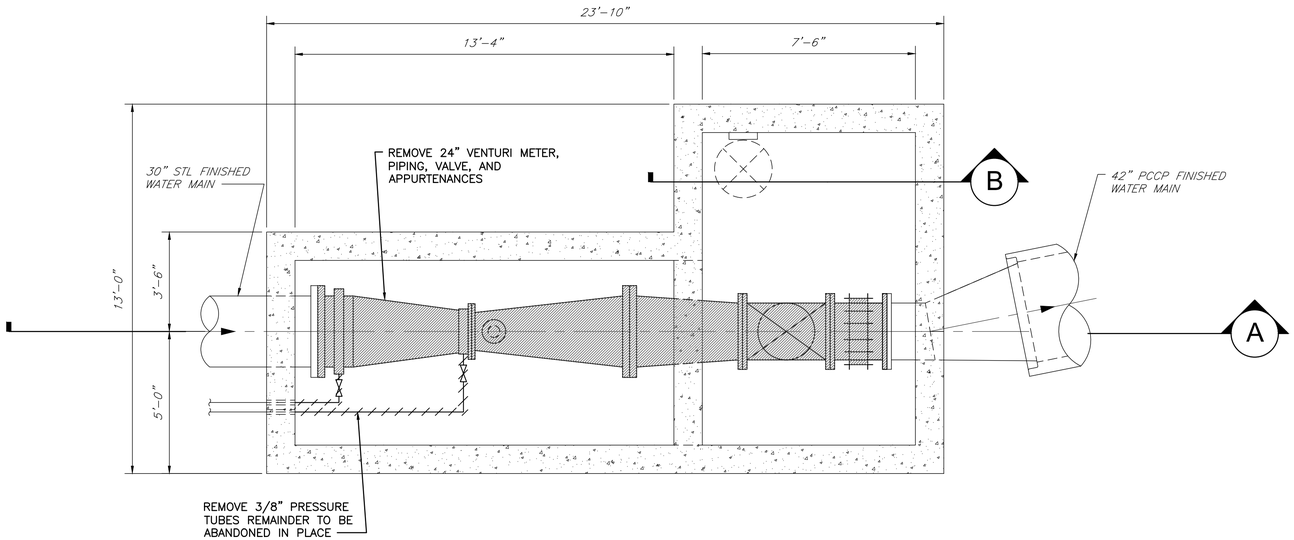
LIFT SLAB REINSTALL DETAIL

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



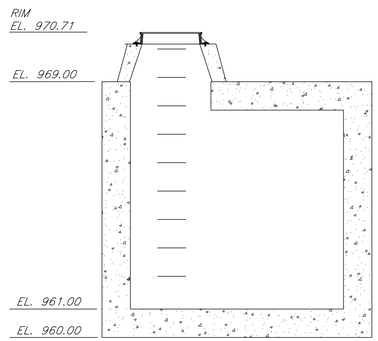
A SECTION

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



LOWER PLAN

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



B SECTION

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

BURGESS & NIPLE

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SCALE:	AS NOTED

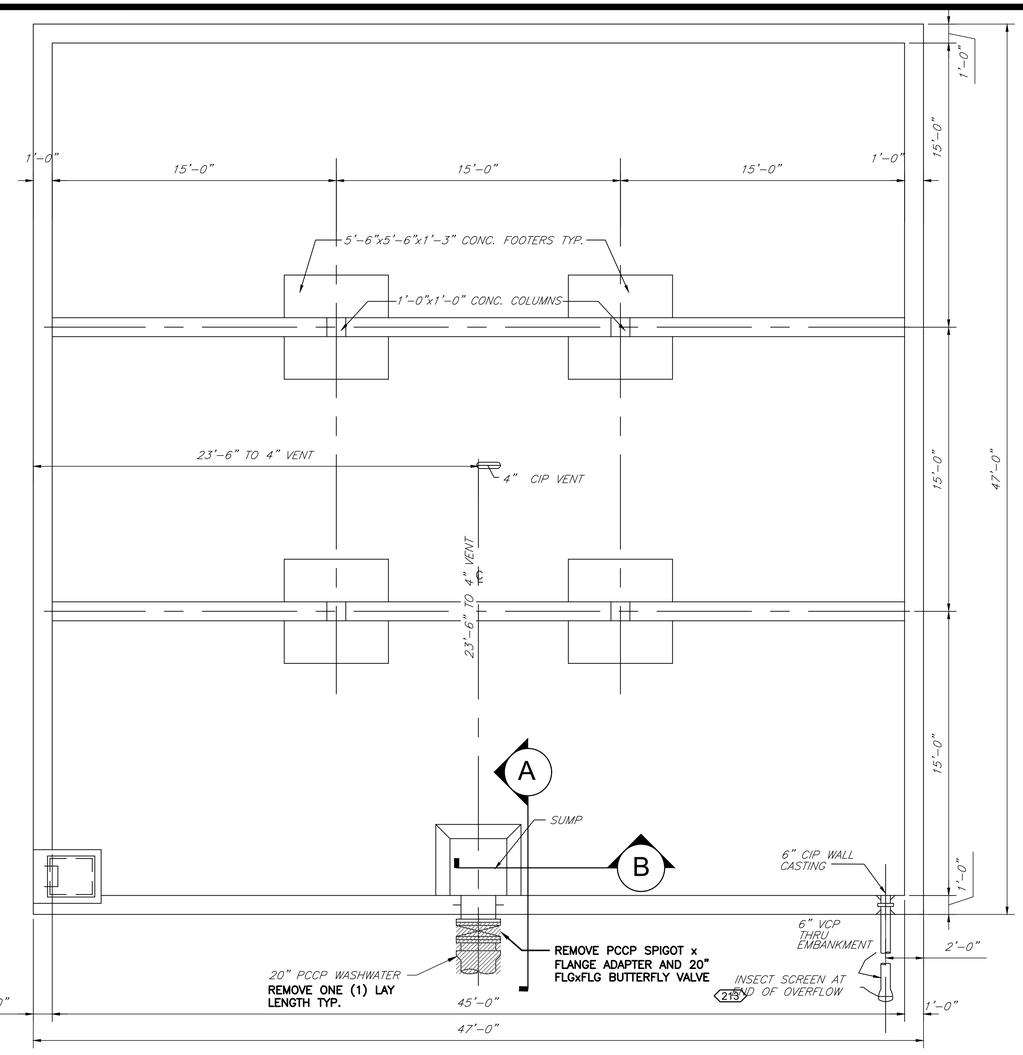
FINISHED WATER METER VAULT DEMOLITION PLAN-SECTION-DETAIL

D-6

SHEET: OF

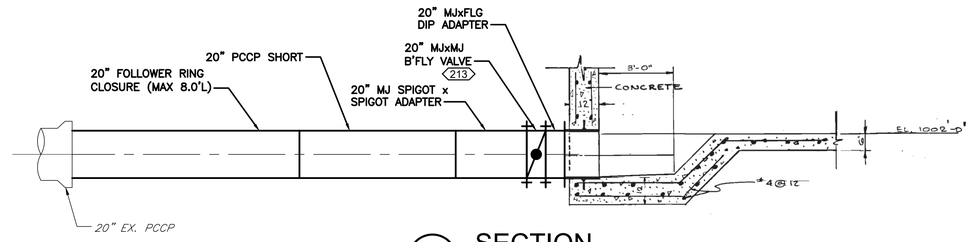
P:\PR58982\Cadd\Sheets\D-6 FINISHED WATER METER VAULT DEMOLITION PLAN-SECTION-DETAIL.dwg 4/15/2022 2:21:47 PM Matt Kroll

PLOTTED: 4/16/2022 1:06:29 PM



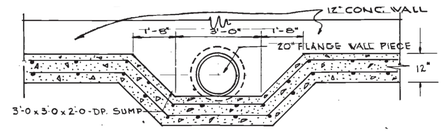
PLAN VIEW

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



A SECTION

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



B SECTION

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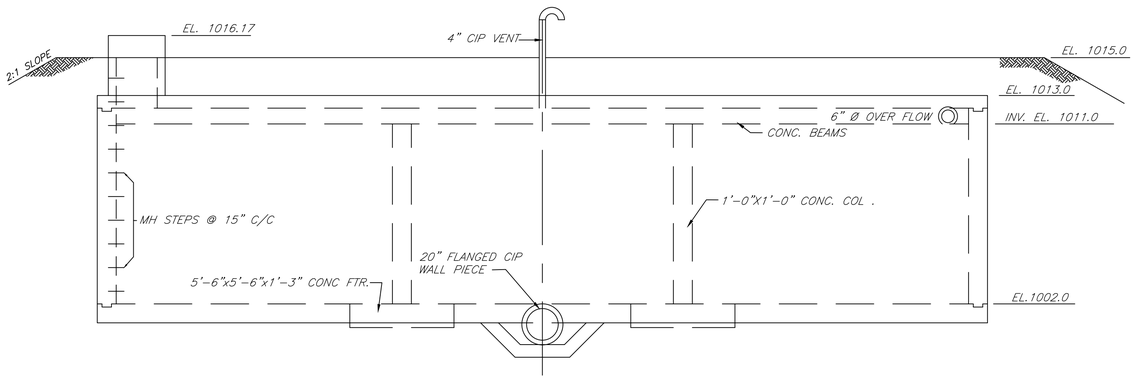
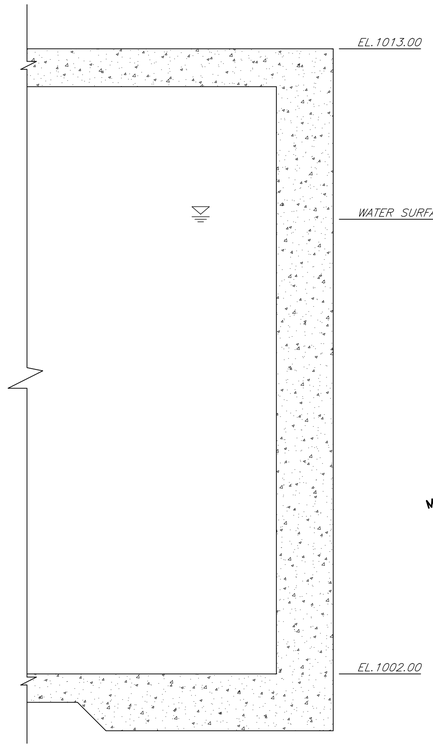


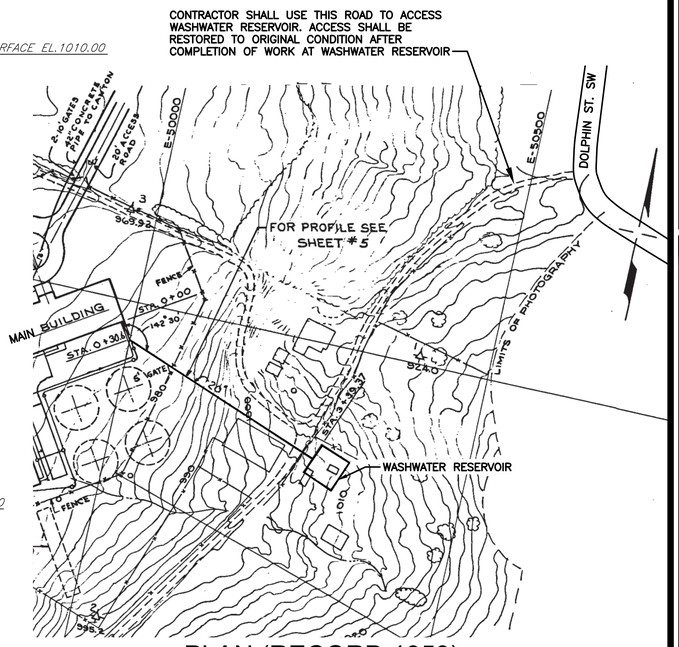
SIDE ELEVATION

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



TYPICAL WALL SECTION

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



PLAN (RECORD 1959)

SCALE: NONE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

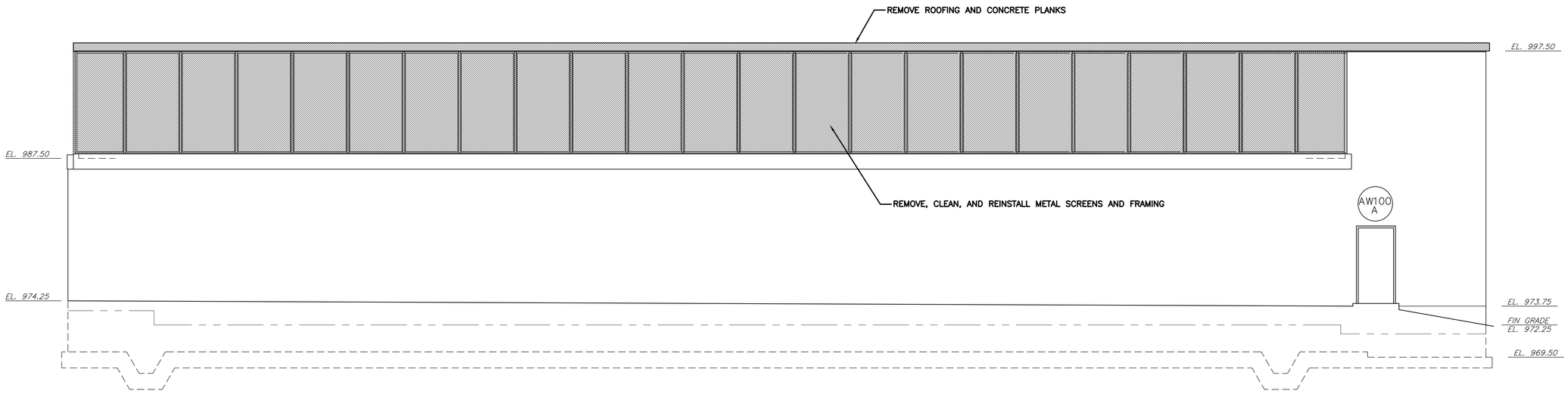
WASHWATER RESERVOIR DEMOLITION PLAN-SECTION-DETAIL

D-7

SHEET: OF

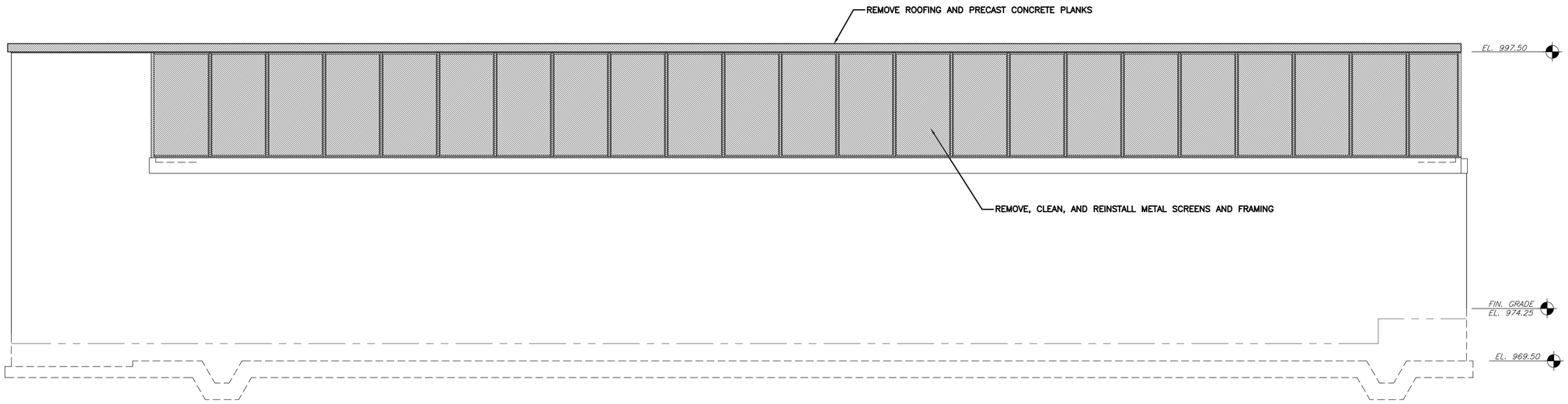
P:\PR58982\Cadd\Sheets\D-7 WASHWATER RESERVOIR DEMOLITION PLAN-SECTION-DETAIL.dwg 4/15/2022 2:30:13 PM Matt Kroll

PLOTTED: 4/16/2022 1:06:36 PM



A / D-10 EAST ELEVATION DEMOLITION

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



B / D-10 WEST ELEVATION DEMOLITION

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

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APPROVED BY:	CMS
SCALE:	AS NOTED

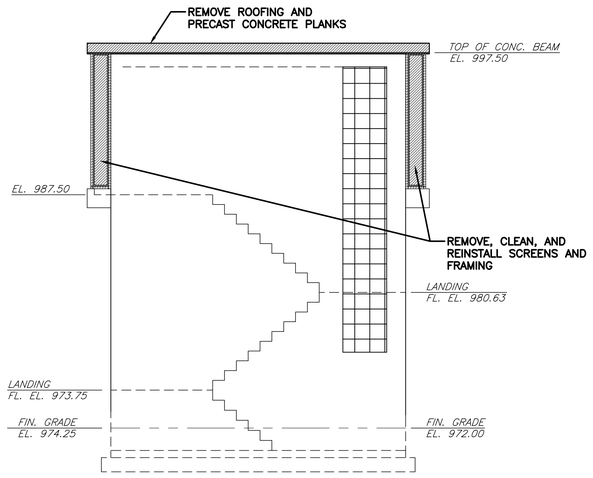
WEST AERATOR BUILDING DEMOLITION ELEVATIONS

D-8

SHEET: OF

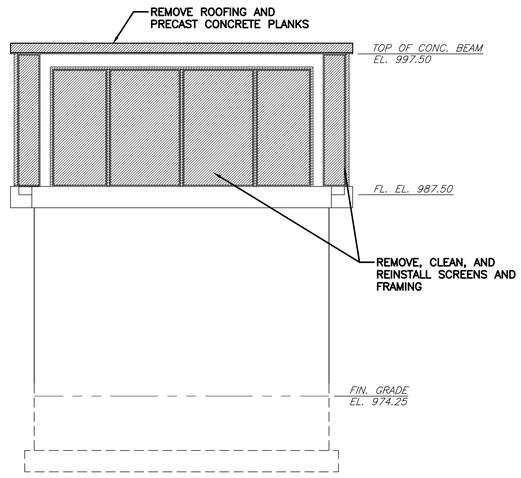
P:\PR58982\Cadd\Sheets\D-8 WEST AERATOR BUILDING DEMOLITION ELEVATIONS.dwg 4/15/2022 2:31:14 PM Matt Kroll

PLOTTED: 4/16/2022 1:06:44 PM



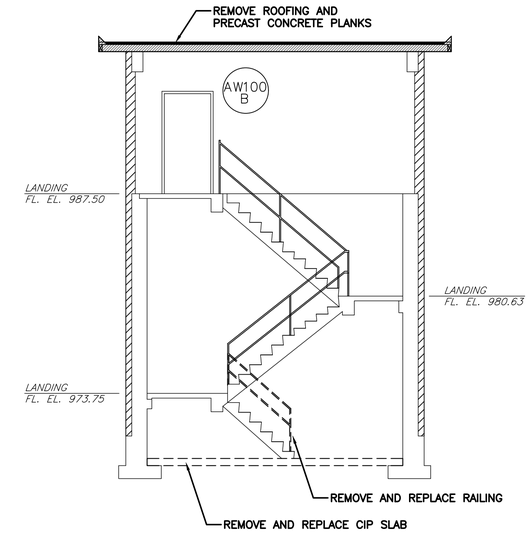
C / D-10 NORTH ELEVATION DEMOLITION

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



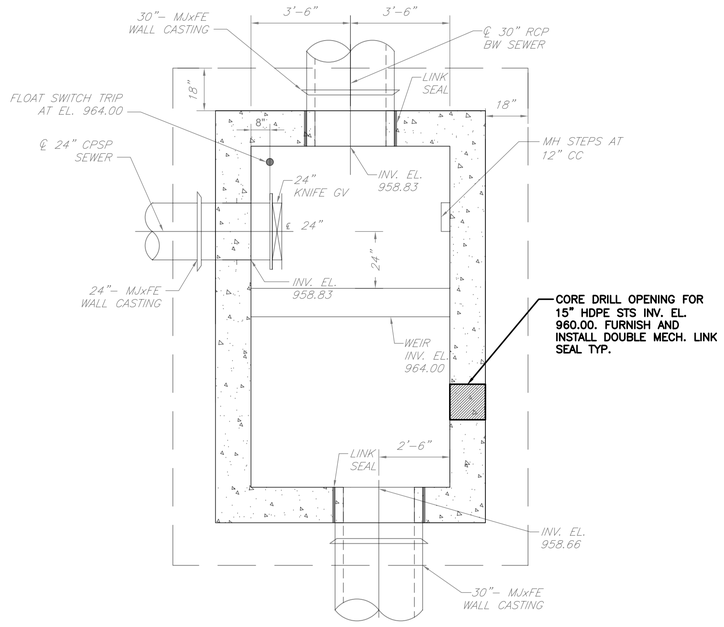
D / D-10 SOUTH ELEVATION DEMOLITION

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



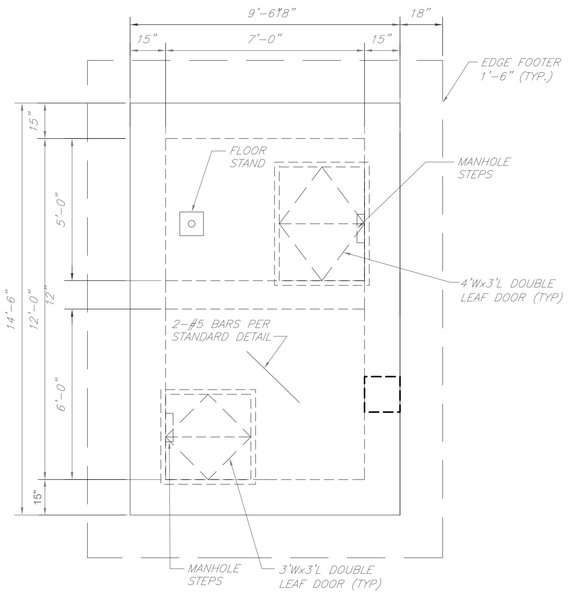
E / D-10 STAIR SECTION DEMOLITION

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



INF. DIVERSION JUNCTION CHAMBER LOWER PLAN

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



INF. DIVERSION JUNCTION CHAMBER UPPER PLAN

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

P:\PR58982\Cadd\Sheets\D-9 WEST AERATOR BUILDING DEMOLITION ELEVATIONS-SECTION.dwg 4/15/2022 4:01:27 PM Matt Kroll

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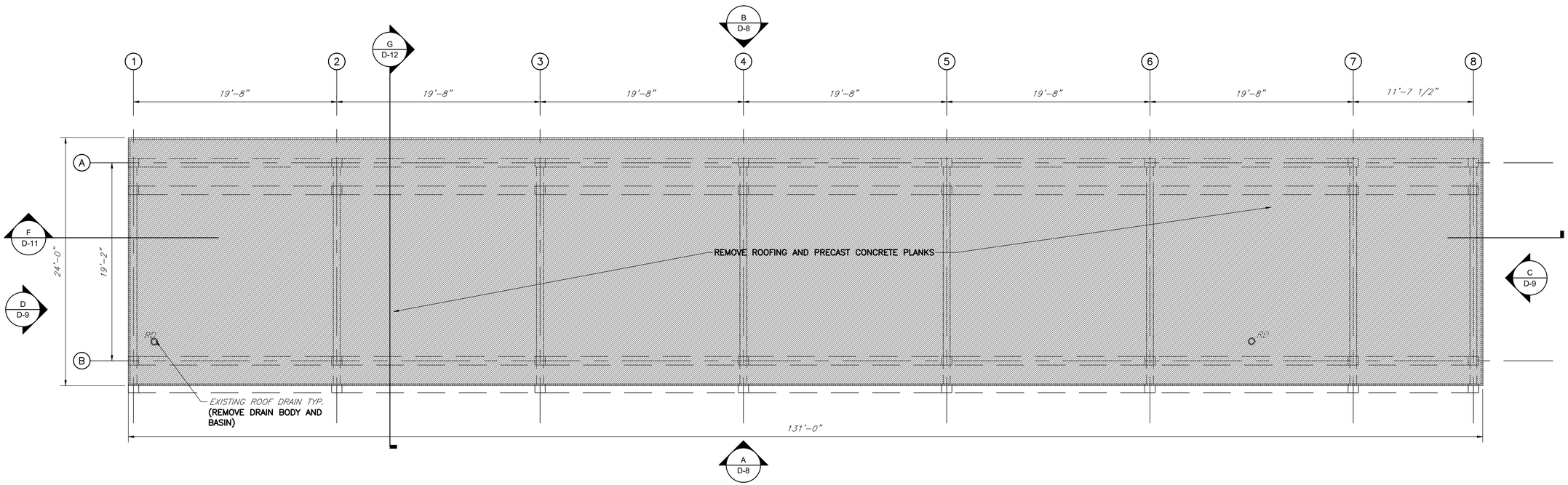
APPROVED BY:	CMS
SCALE:	AS NOTED

WEST AERATOR BUILDING DEMOLITION ELEVATIONS-SECTION

D-9

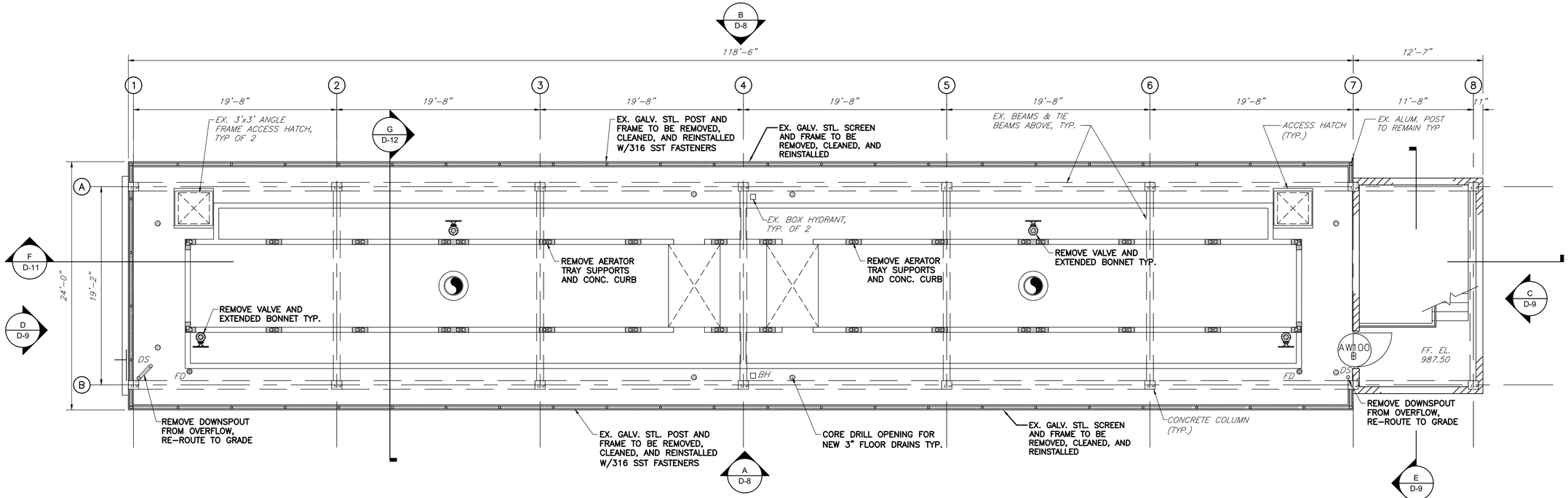
SHEET: OF

PLOTTED: 4/16/2022 1:06:54 PM



ROOF DEMOLITION PLAN

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



UPPER DEMOLITION PLAN

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

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APPROVED BY:	CMS
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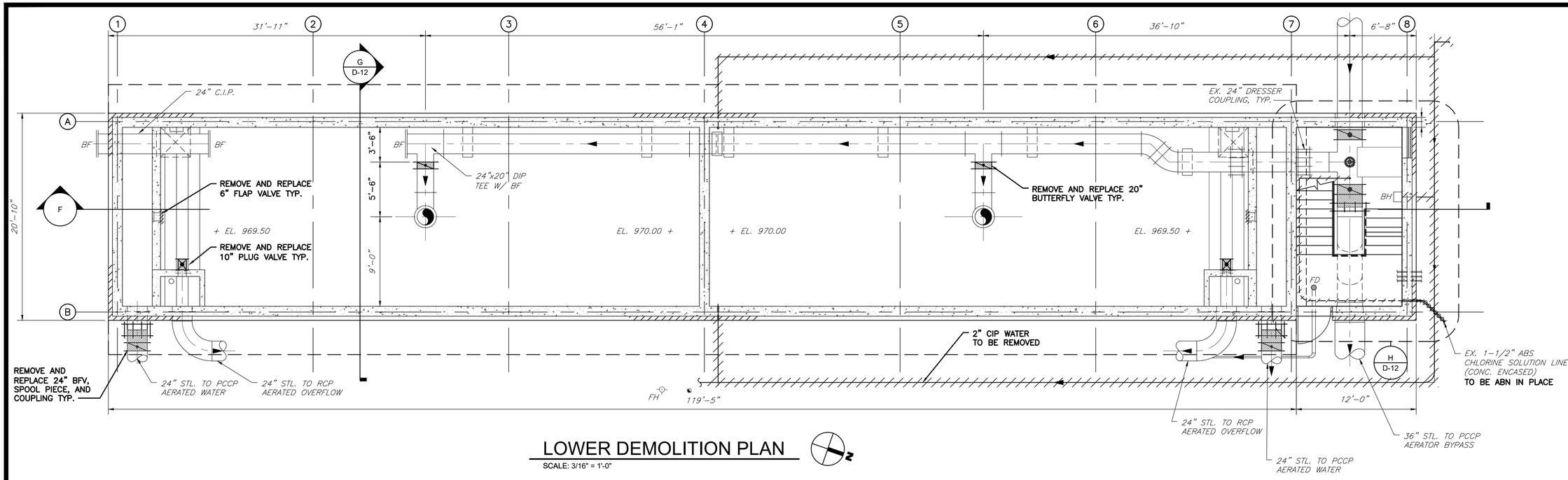
WEST AERATOR BUILDING DEMOLITION ROOF PLAN-UPPER PLAN

D-10

SHEET: OF

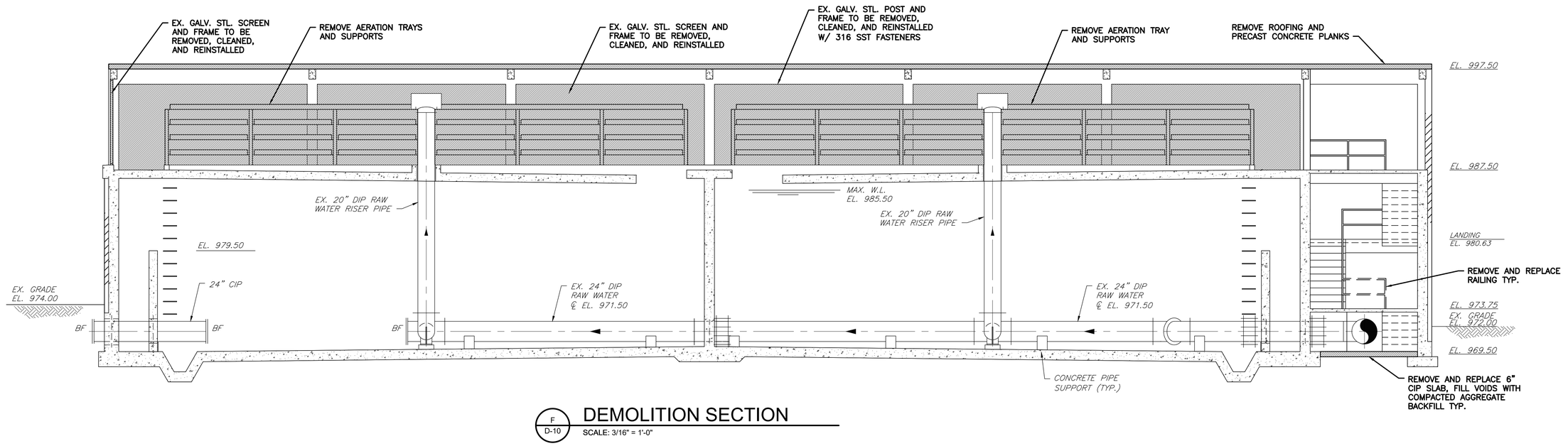
P:\PR58982\Cadd\Sheets\D-10 WEST AERATOR BUILDING DEMOLITION ROOF PLAN-UPPER PLAN.dwg 4/15/2022 2:51:22 PM Matt Kroll

PLOTTED: 4/16/2022 1:07:04 PM



LOWER DEMOLITION PLAN

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



DEMOLITION SECTION

F / D-10

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

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CITY OF CANTON, OHIO
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DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

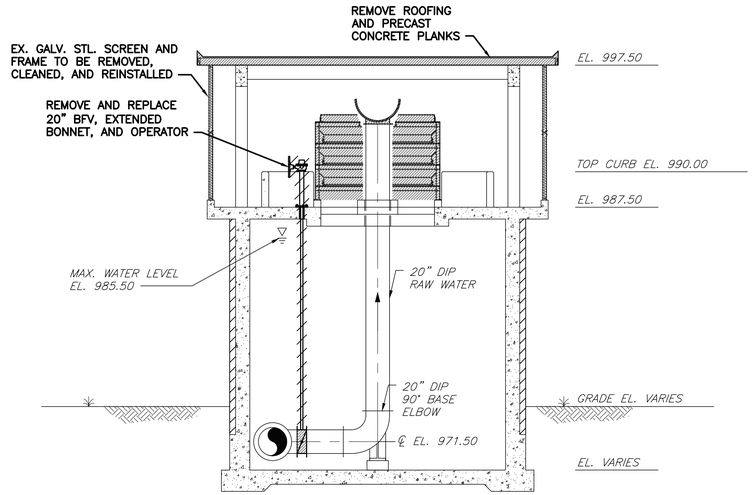
WEST AERATOR BUILDING DEMOLITION PLAN-SECTION

D-11

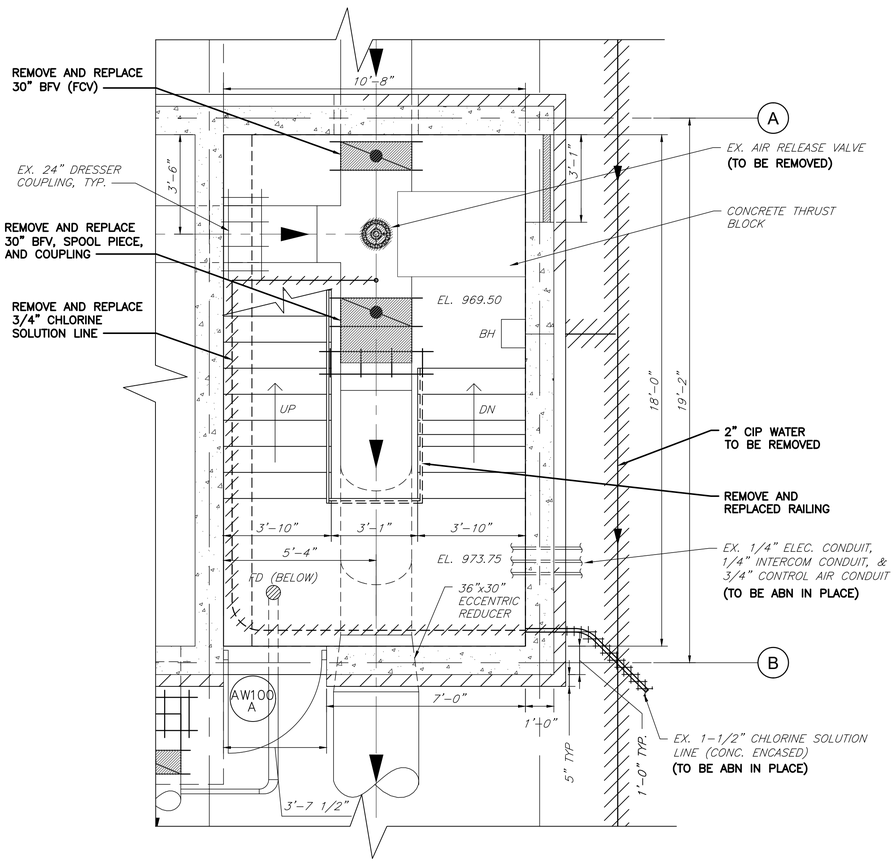
SHEET: OF

P:\PR58982\Cadd\Sheets\D-11 WEST AERATOR BUILDING DEMOLITION PLAN-SECTION.dwg 4/15/2022 2:40:47 PM Matt Kroll

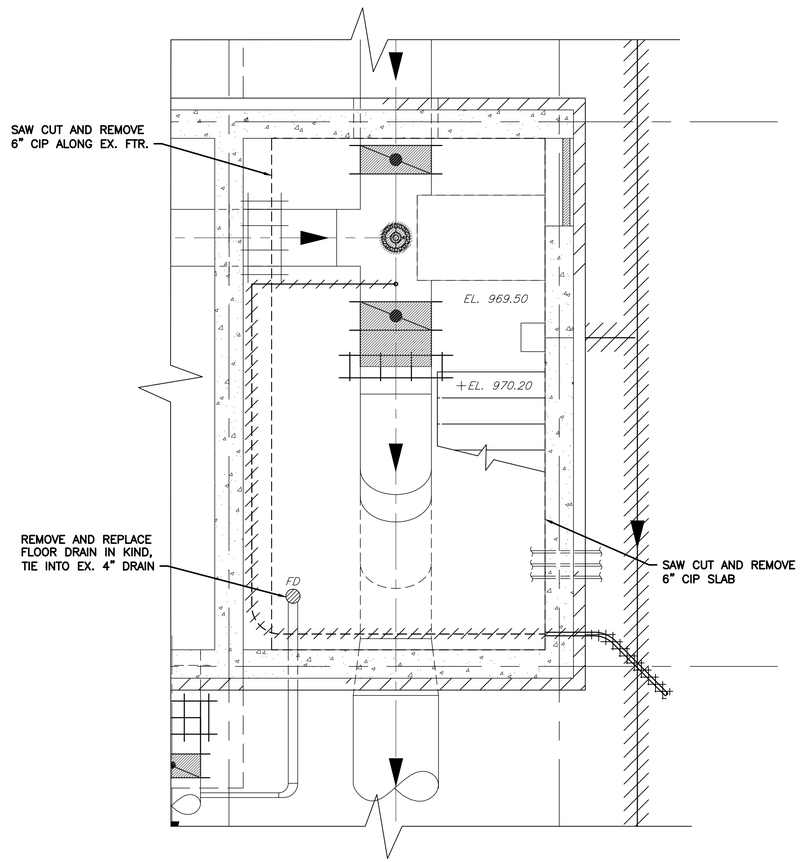
PLOTTED: 4/16/2022 1:07:13 PM



G / D-10 SECTION
SCALE: 3/16" = 1'-0"



MAIN FLOOR PLAN



BASEMENT PLAN

H / D-11 ENLARGED PLAN
SCALE: 3/8" = 1'-0"

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SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

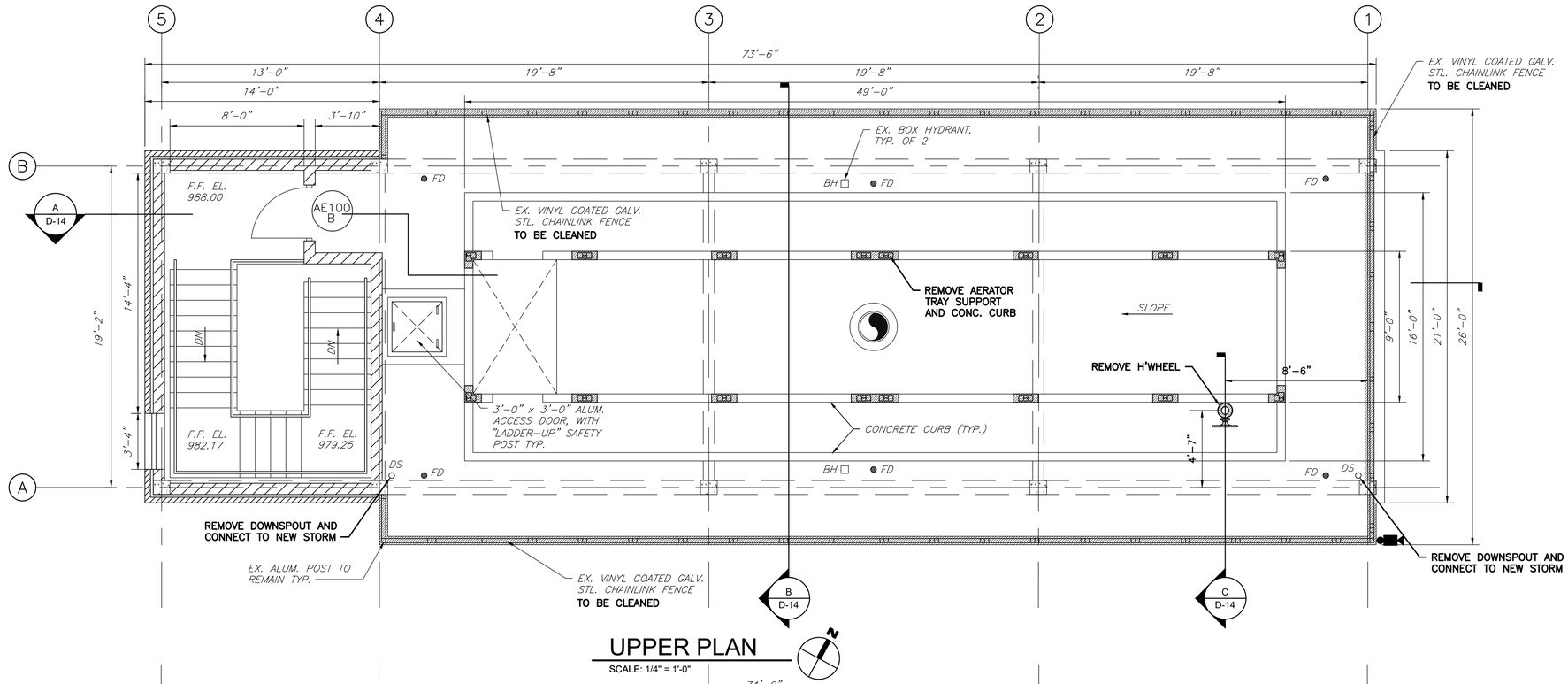
WEST AERATOR BUILDING DEMOLITION ENLARGED PLAN-SECTION

D-12

SHEET: OF

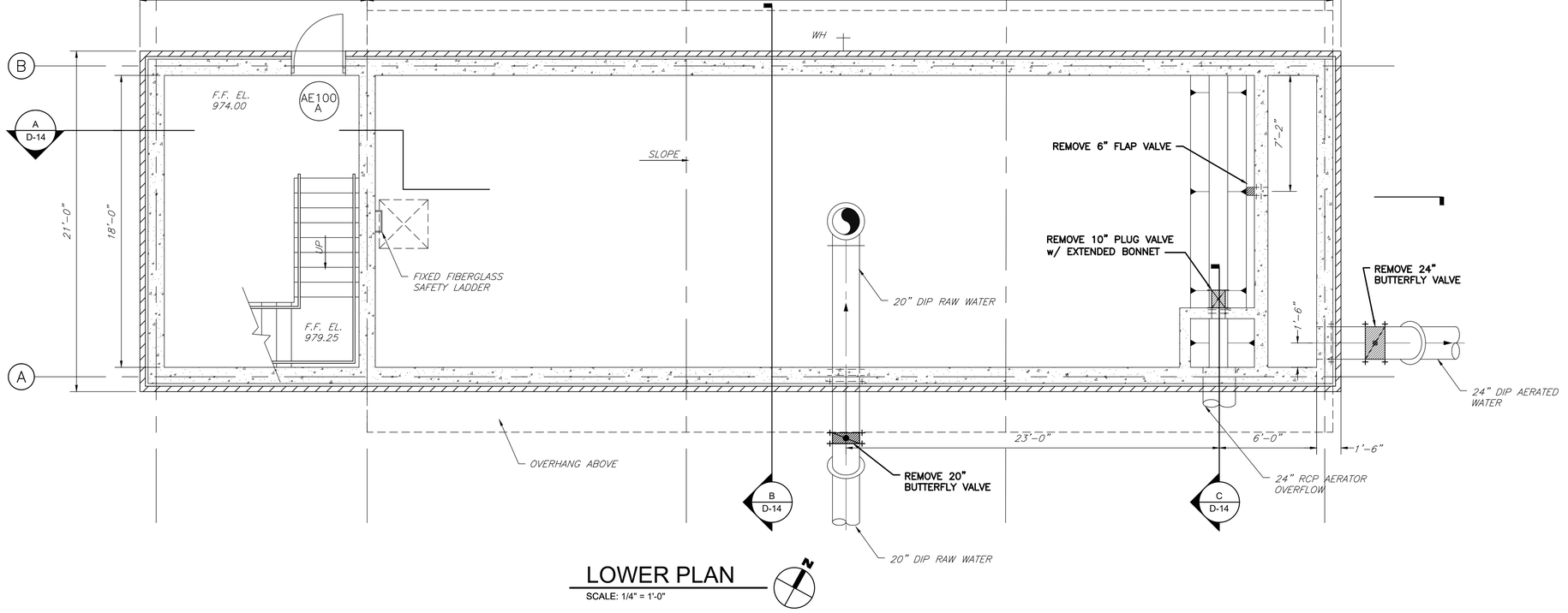
P:\PR58982\Cadd\Sheets\D-12 WEST AERATOR BUILDING DEMOLITION ENLARGED PLAN-SECTION.dwg 4/15/2022 2:59:49 PM Matt Kroll

PLOTTED: 4/16/2022 1:07:24 PM



UPPER PLAN

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



LOWER PLAN

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

P:\PR58982\Cadd\Sheets\D-13 EAST AERATOR BUILDING DEMOLITION PLANS.dwg 4/15/2022 3:00:52 PM Matt Kroll

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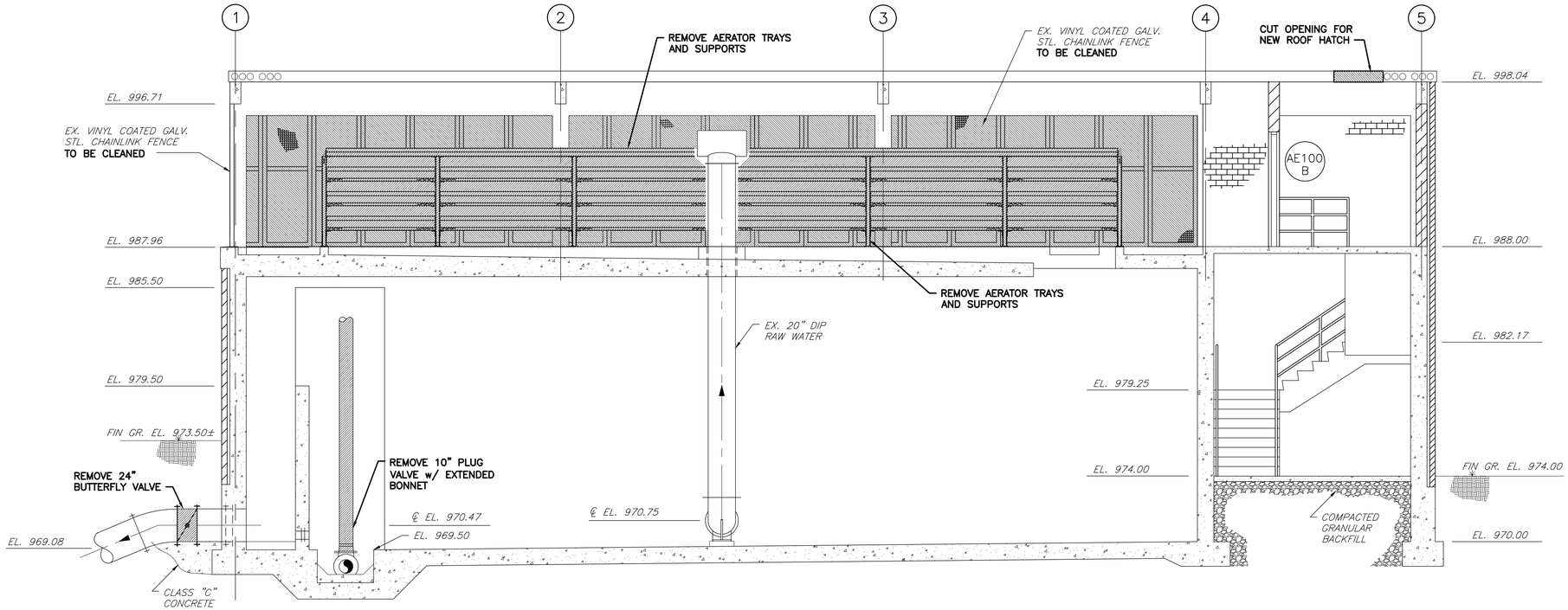
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

EAST AERATOR BUILDING DEMOLITION PLANS

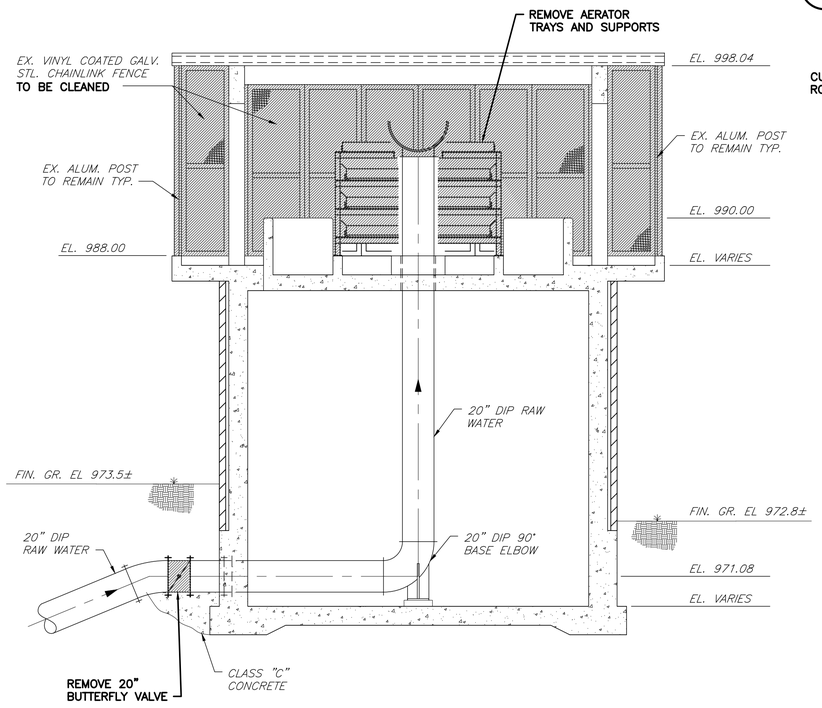
D-13

SHEET: OF

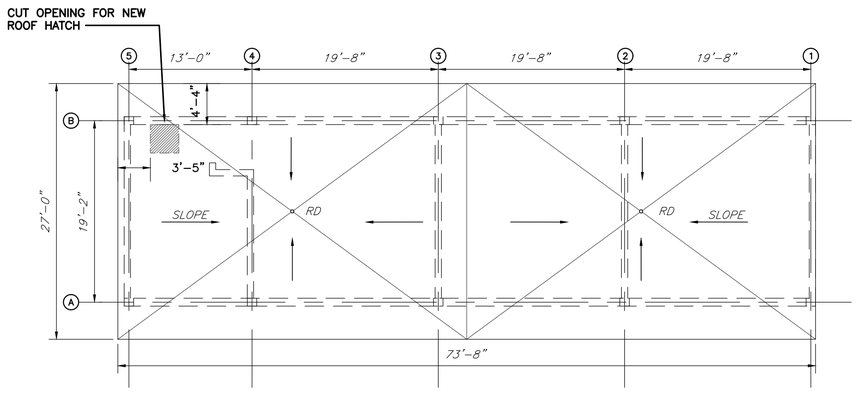
PLOTTED: 4/16/2022 1:07:38 PM



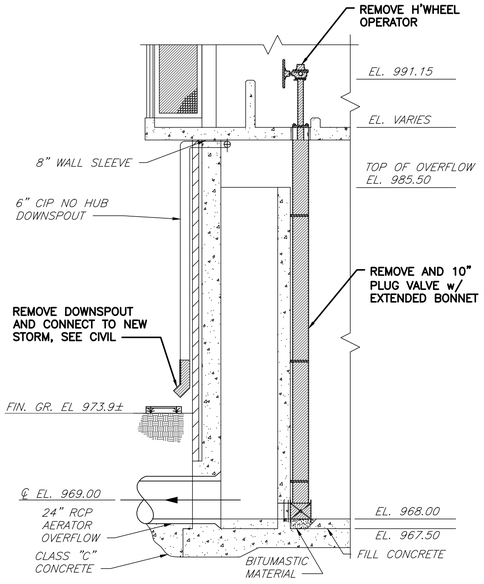
A D-13 **SECTION**
SCALE: 1/4" = 1'-0"



B D-13 **SECTION**
SCALE: 1/4" = 1'-0"



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



C D-13 **SECTION**
SCALE: 1/4" = 1'-0"

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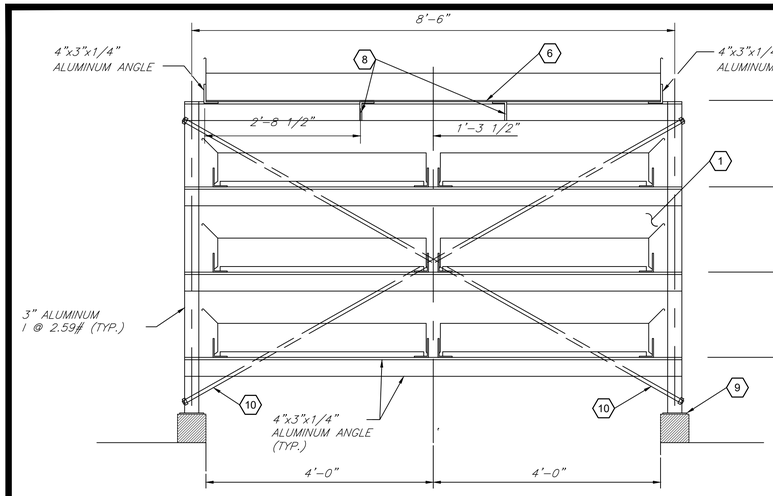
EAST AERATOR BUILDING DEMOLITION ROOF PLAN-SECTIONS

D-14

SHEET: OF

P:\PR58982\Cadd\Sheets\D-14 EAST AERATOR BUILDING DEMOLITION ROOF PLAN-SECTIONS.dwg 4/15/2022 3:01:58 PM Matt Kroll

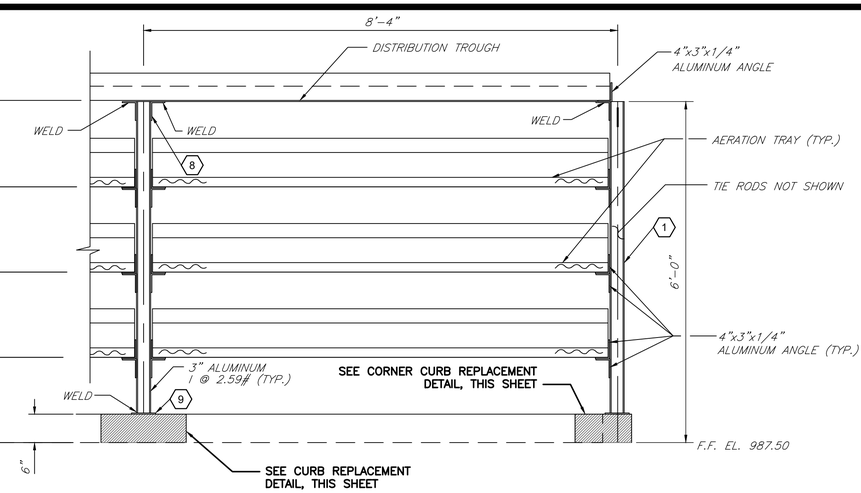
PLOTTED: 4/16/2022 1:07:44 PM



EX. AERATION TRAY SUPPORTS - CROSS SECTION (TYP.)

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

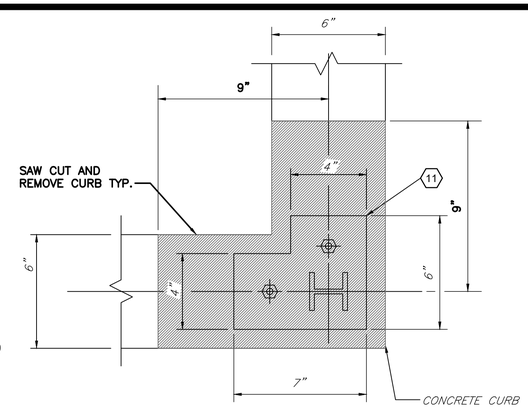
NOTE: FOR CONTRACTOR INFORMATION



EX. AERATION TRAY SUPPORTS - LONG. SECTION (TYP.)

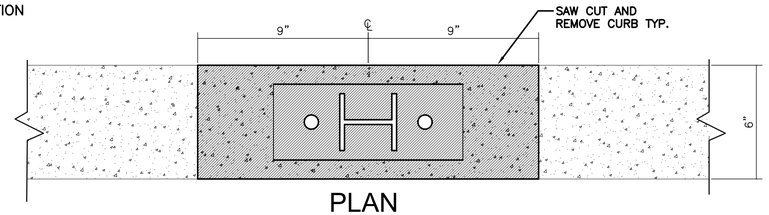
SCALE: 3/4" = 1'-0"

NOTE: FOR CONTRACTOR INFORMATION

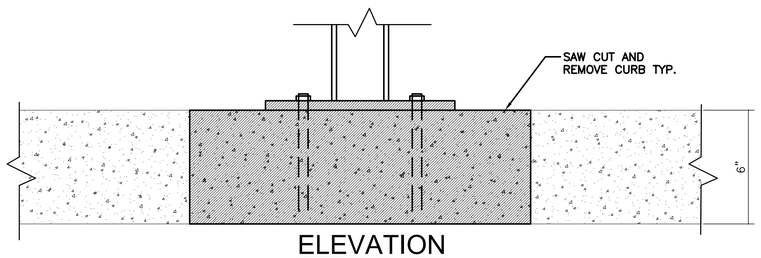


CORNER CURB REPLACEMENT DETAIL

SCALE: 3" = 1'-0"



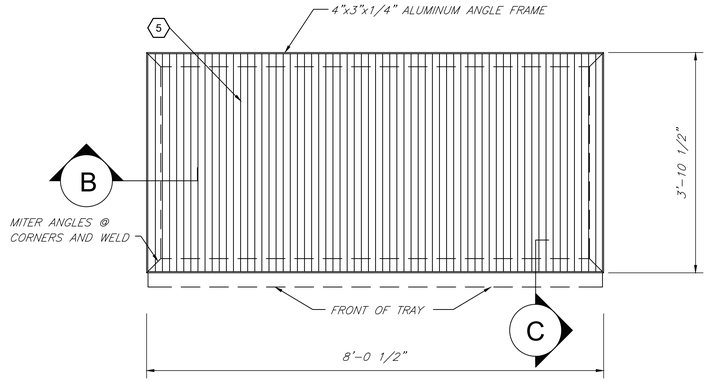
PLAN

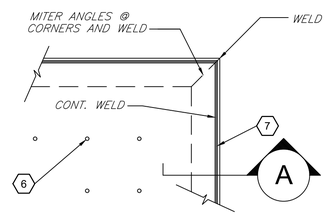


ELEVATION

CURB REPLACEMENT DETAIL

SCALE: 3" = 1'-0"





DISTRIBUTION TROUGH PLAN

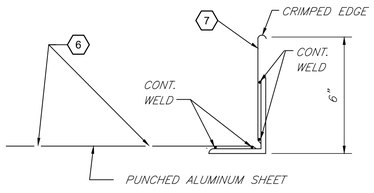
SCALE: 1 1/2" = 1'-0"

NOTE: FOR CONTRACTOR INFORMATION

TYPICAL DEMO PLAN VIEW - EX. AERATION TRAYS

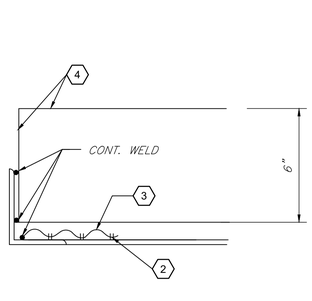
SCALE: 3/4" = 1'-0"

NOTE: FOR CONTRACTOR INFORMATION



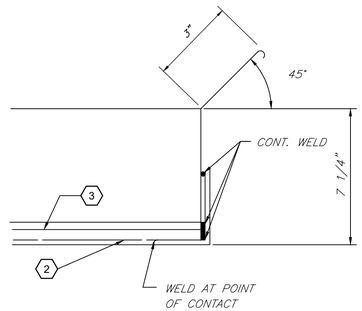
A SECTION

SCALE: 3" = 1'-0"



B SECTION

SCALE: 3" = 1'-0"



C SECTION

SCALE: 3" = 1'-0"

1. FLAT UNPUNCHED ALUMINUM SHEET .063" THICK. WELD TO 3" I BEAMS AND ANGLES ON EXPOSED ENDS OF TRAYS. 4 TOTAL REQUIRED FOR THE EXISTING AND PROPOSED AERATORS.
2. 1/4" DIA. HOLES AT BOTTOM OF CORRUGATIONS 5 1/2" C/C.
3. CORRUGATED AND PERFORATED ALUMINUM BOTTOM .032" THICK – 2.67" PITCH – 7/8" DEEP.
4. 6" HIGH x .032" ALUMINUM @ BACK AND SIDES.
5. CORRUGATED ALUMINUM BOTTOM .032" THICK LAP 1 1/2" CORRUGATIONS AND RIVET.
6. FLAT PUNCHED ALUMINUM SHEET BOTTOM .063" THICK WITH 3/8" DIA. HOLES 3" O.C.
7. .032" ALUMINUM SHEET ALL SIDES.
8. 4"x3"x1/4" ALUMINUM STIFFNER ANGLES CUT ANGLES @ CROSS ANGLES
9. 10"x1/2"x4" ALUMINUM PLATE WITH 2–12"x1/2" STAINLESS STEEL ANCHOR BOLTS WITH 2" HOOK.
10. 3/8" DIA. STAINLESS STEEL TIE RODS WITH THREADED ENDS – STAINLESS STEEL BEVELED WASHER AND TAKE–UP NUTS AT INTERMEDIATE ENDS OF EACH SECTION OF TRAY. 8 TOTAL REQUIRED FOR THE EXISTING AND PROPOSED AERATORS.
11. 3/4" THICK ALUMINUM PLATE WITH 2–12"x1/2" STAINLESS STEEL ANCHOR BOLTS WITH 2" HOOK.

BURGESS & NIPLE
100 WEST ERIE STREET
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JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

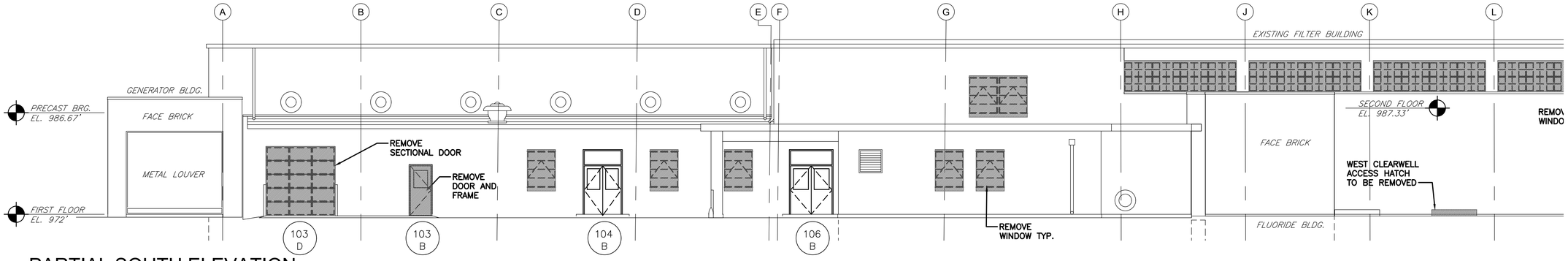
AERATOR TRAYS DEMOLITION SECTION-DETAILS

D-15

SHEET: OF

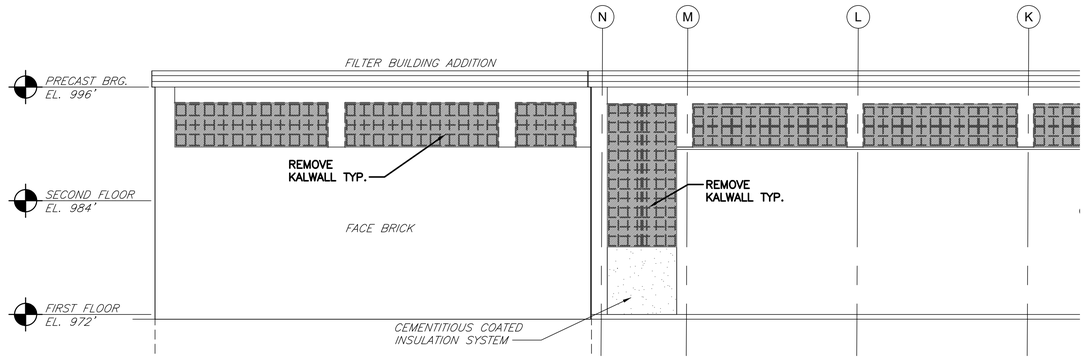
P:\PR58982\Cadd\Sheets\D-15 AERATOR TRAYS DEMOLITION SECTIONS-DETAILS.dwg 4/15/2022 3:02:38 PM Matt Kroll

PLOTTED: 4/16/2022 1:07:49 PM



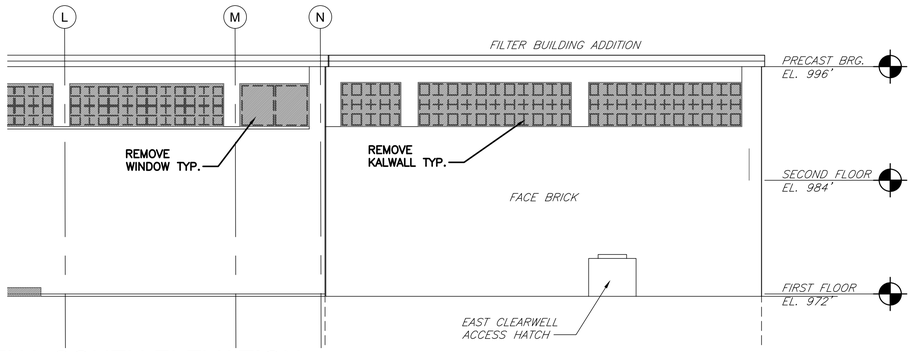
PARTIAL SOUTH ELEVATION

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



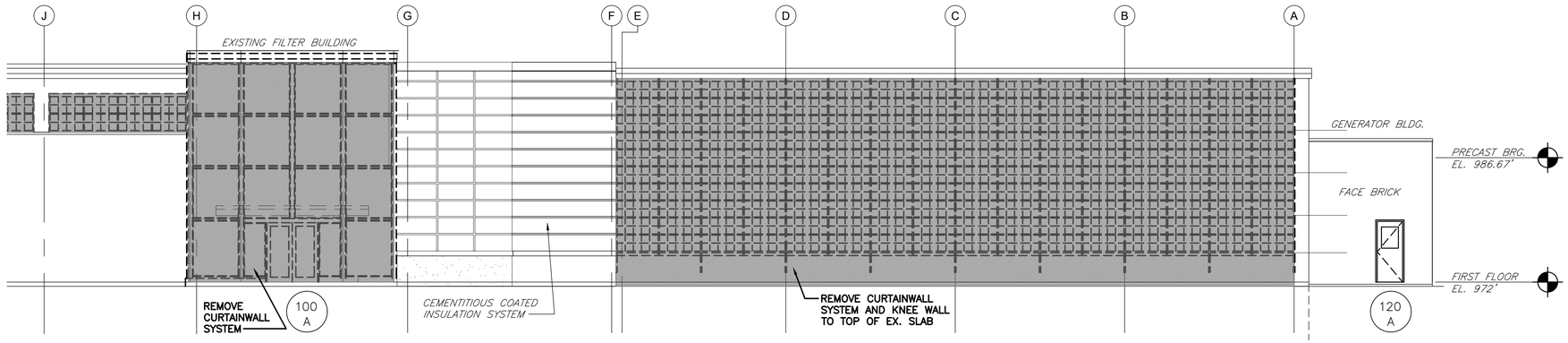
PARTIAL NORTH ELEVATION

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



PARTIAL SOUTH ELEVATION

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



PARTIAL NORTH ELEVATION

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

BURGESS & NIPLE
100 WEST ERIE STREET
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SCALE:	1/8" = 1'-0"

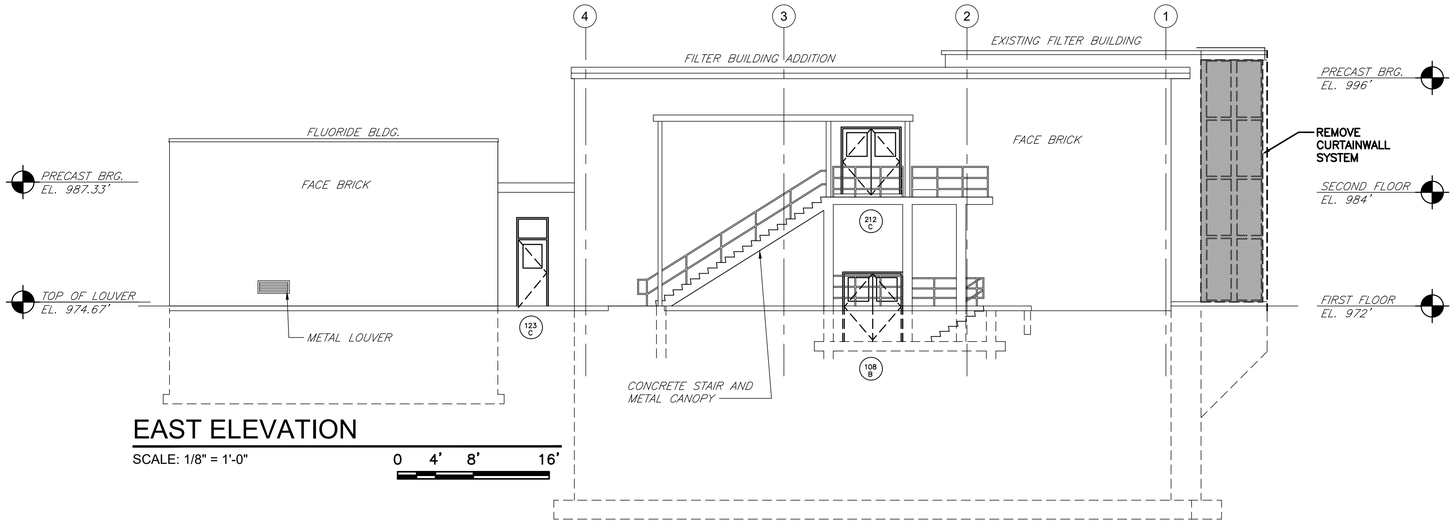
MAIN BUILDING
DEMOLITION
N-S ELEVATIONS

D-16

SHEET: OF

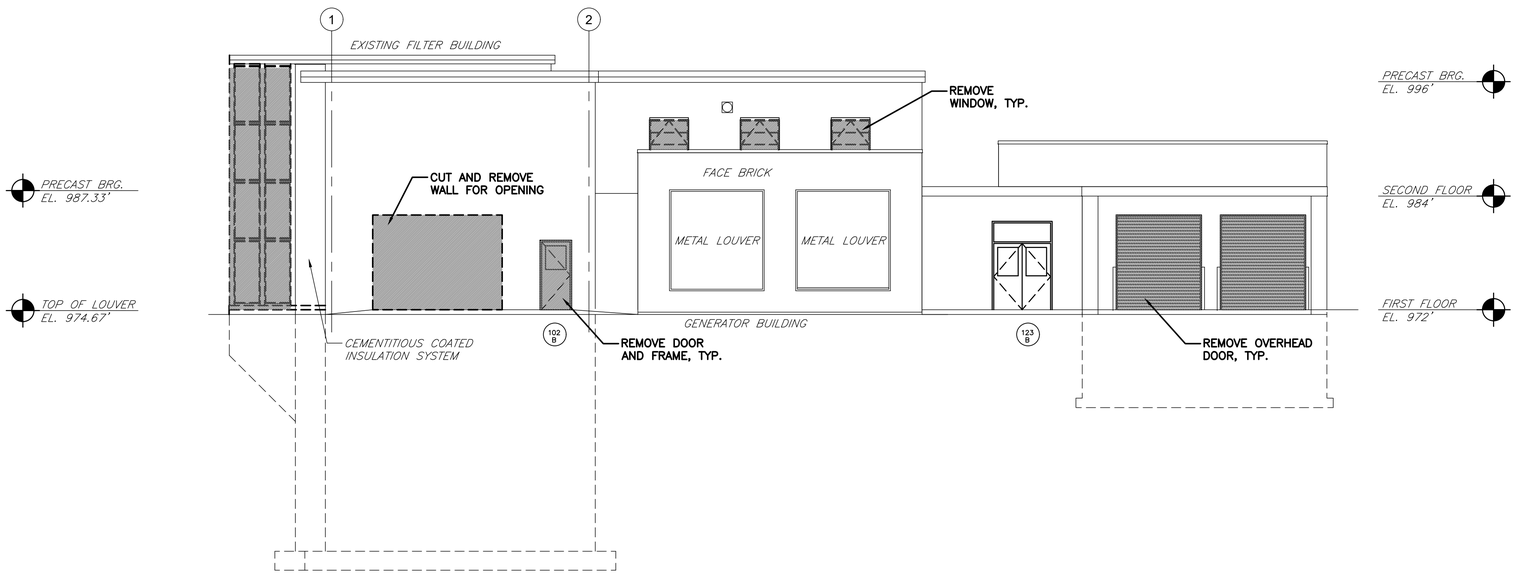
P:\PR58982\Cadd\Sheets\D-16 MAIN BUILDING DEMOLITION N-S ELEVATIONS.dwg 4/15/2022 3:03:56 PM Matt Kroll

PLOTTED: 4/16/2022 1:07:54 PM



EAST ELEVATION

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



WEST ELEVATION

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

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APPROVED BY:	CMS
SCALE:	1/8" = 1'-0"

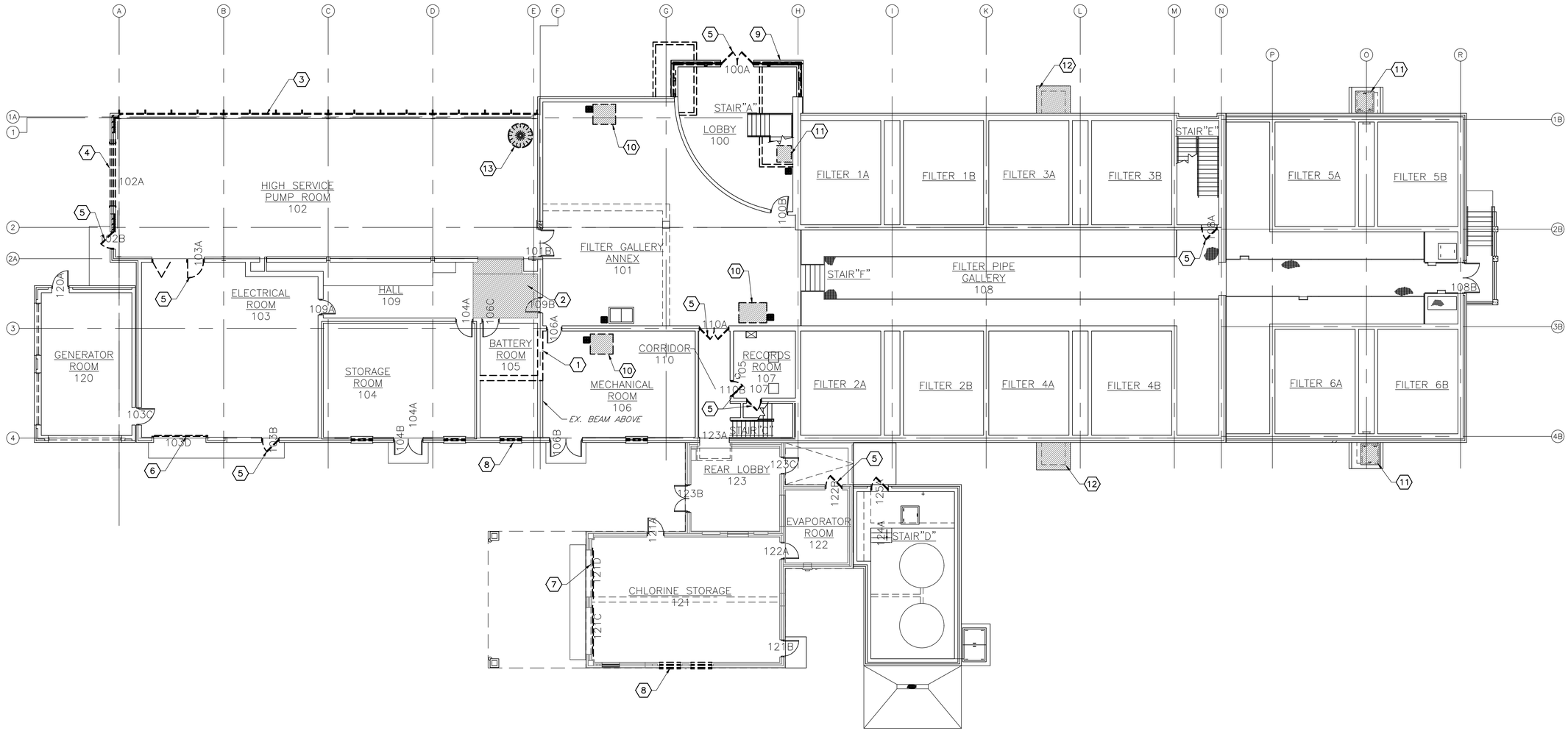
MAIN BUILDING
DEMOLITION
E-W ELEVATIONS

D-17

SHEET: OF

P:\PR58982\Cadd\Sheets\D-17 MAIN BUILDING DEMOLITION E-W ELEVATIONS.dwg 4/15/2022 3:06:48 PM Matt Kroll

PLOTTED: 4/16/2022 1:08:06 PM



FIRST FLOOR DEMOLITION PLAN

SCALE: 3/32" = 1'-0"

0 5' 10' 20'

(X) CODED NOTES:

1. REMOVE SOUTH CMU WALL OF BATTERY ROOM, INSTALL TEMPORARY STRUCTURAL SUPPORTS FOR SECOND FLOOR (SEE SHEET S-6 FOR DETAILS). REMOVE EAST CMU WALL OF EX. BATTERY ROOM AND INSTALL NEW COLUMN AND BEAM TO SECOND FLOOR.
2. REMOVE EX. 6" CONC. FLOOR THIS AREA.
3. REMOVE CURTAIN WALL SYSTEMS AND KNEE WALL
4. SAW CUT AND REMOVE CAVITY WALL TYP.
5. REMOVE DOOR AND FRAME TYP.
6. REMOVE SECTIONAL DOOR.
7. REMOVE ROLLING DOOR TYP.
8. REMOVE WINDOW TYP.
9. REMOVE CURTAIN WALL SYSTEM.
10. SAW CUT AND REMOVE CIP SLAB TYP.
11. REMOVE ACCESS HATCH TYP.
12. REMOVE WEST CLEARWELL ACCESS HATCH TYP.
13. REMOVE SPIRAL STAIRCASE

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SCALE:	3/32" = 1'-0"

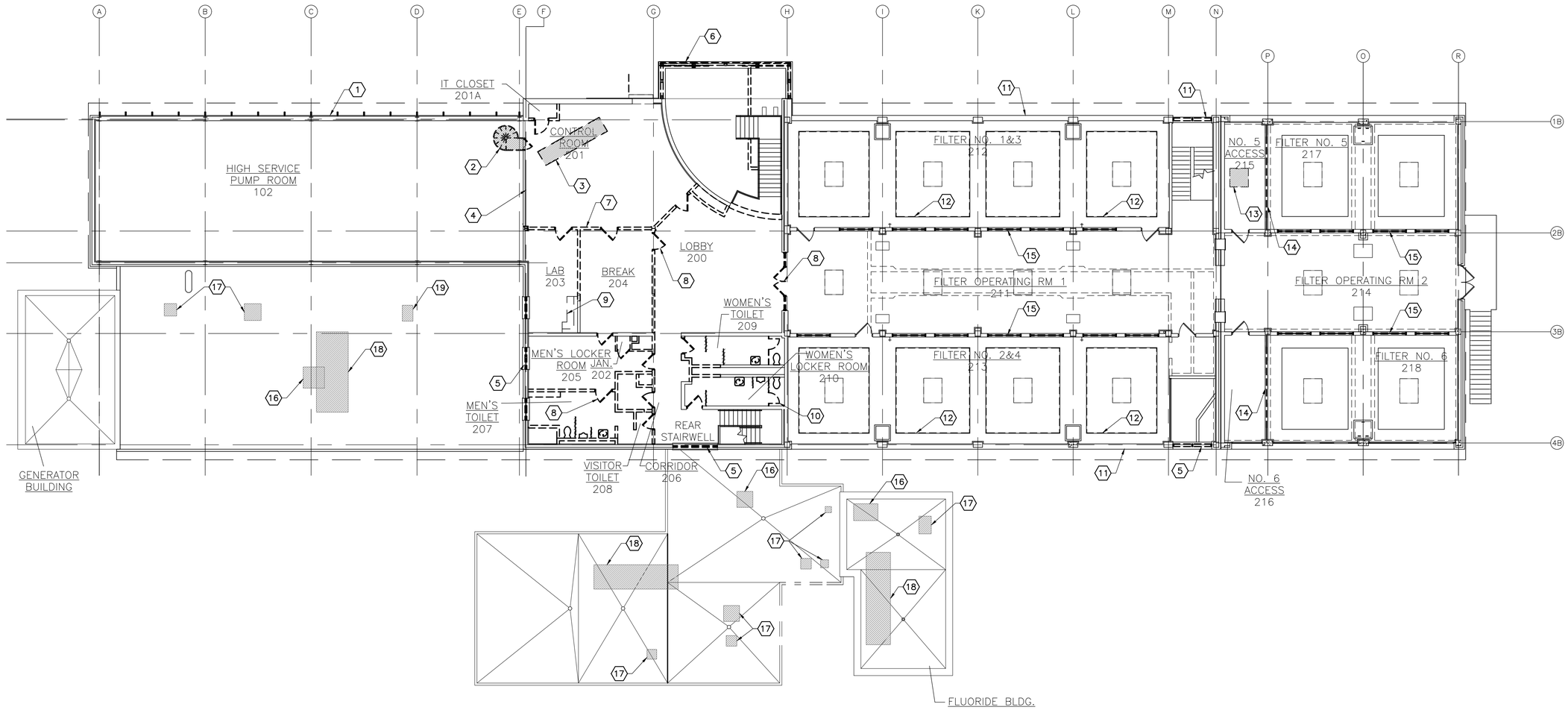
MAIN BUILDING DEMOLITION FIRST FLOOR PLAN

D-18

SHEET: OF

P:\PR58982\Cadd\Sheets\D-18 MAIN BUILDING DEMOLITION FIRST FLOOR PLAN.dwg 4/15/2022 3:25:07 PM Matt Kroll

PLOTTED: 4/16/2022 1:08:16 PM



SECOND FLOOR DEMOLITION PLAN

SCALE: 3/32" = 1'-0"

NOTE: REFER TO SHT. H-3 FOR MECHANICAL DEMOLITION.

(X) CODED NOTES:

1. REMOVE CURTAINWALL SYSTEM, AND MASONRY KNEE WALL BELOW TO TOP OF FLOOR SLAB.
2. REMOVE STEEL SPIRAL STAIRCASE.
3. SAW CUT EXISTING TERRAZO 1" BEYOND CONCRETE INFILL. REMOVE CUT TERRAZZO AND CONCRETE INFILL AS REQUIRED TO ALLOW NEW TERRAZZO INSTALLATION.
4. REMOVE GLAZED TILE PARTITION.
5. REMOVE WINDOW TYP.
6. REMOVE CURTAINWALL SYSTEM.
7. REMOVE METAL PARTITION.
8. REMOVE DOOR AND FRAME TYP.
9. REMOVE EXISTING BASE AND WALL CABINETS.
10. REMOVE STALL DOOR TYP.
11. REMOVE KALWALL TYP.
12. REMOVE CHAINS SURROUNDING FILTER TYP.
13. SAW CUT AND REMOVE CIP SLAB.
14. REMOVE HANDRAIL TYP.
15. REMOVE ALUMINUM WINDOW TYP.
16. REMOVE CURB, INFILL EX. ROOF OPENING, AND ROOF PATCH.
17. REMOVE EX. ROOF SYSTEM AND METAL DECKING AS REQUIRED FOR NEW DUCTWORK.
18. REMOVE EX. ROOF SYSTEM AS REQUIRED FOR NEW EQUIPMENT CURB.
19. REMOVE EX. ROOF SYSTEM AND METAL DECKING AS REQUIRED FOR NEW ROOF HATCH.

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JOB NO:	PR58982
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

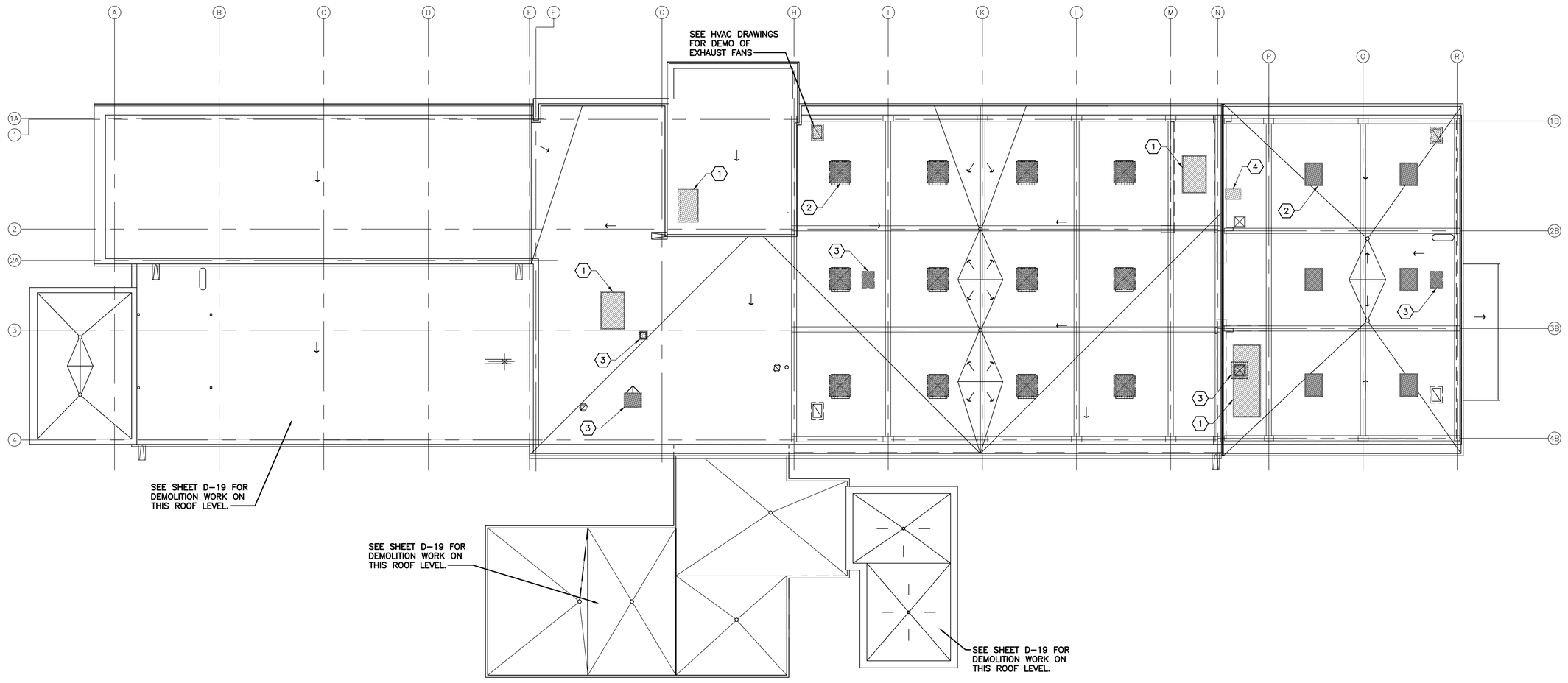
MAIN BUILDING DEMOLITION SECOND FLOOR PLAN

D-19

SHEET: OF

P:\PR58982\Cadd\Sheets\D-19 MAIN BUILDING DEMOLITION SECOND FLOOR PLAN.dwg 4/15/2022 3:26:15 PM Matt Kroll

PLOTTED: 4/16/2022 1:08:26 PM



ROOF DEMOLITION PLAN

SCALE: 3/32" = 1'-0"

NOTE: REFER TO SHT. H-4 FOR MECHANICAL DEMOLITION.

X CODED NOTES:

1. REMOVE EX. ROOF SYSTEM AS REQUIRED FOR NEW EQUIPMENT CURB.
2. REMOVE SKYLIGHT TYP.
3. REMOVE CURB, INFILL EX. ROOF OPENING, AND PATCH ROOF.
4. REMOVE EX. ROOF SYSTEM AND METAL DECKING AS REQUIRED FOR NEW ROOF HATCH.

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

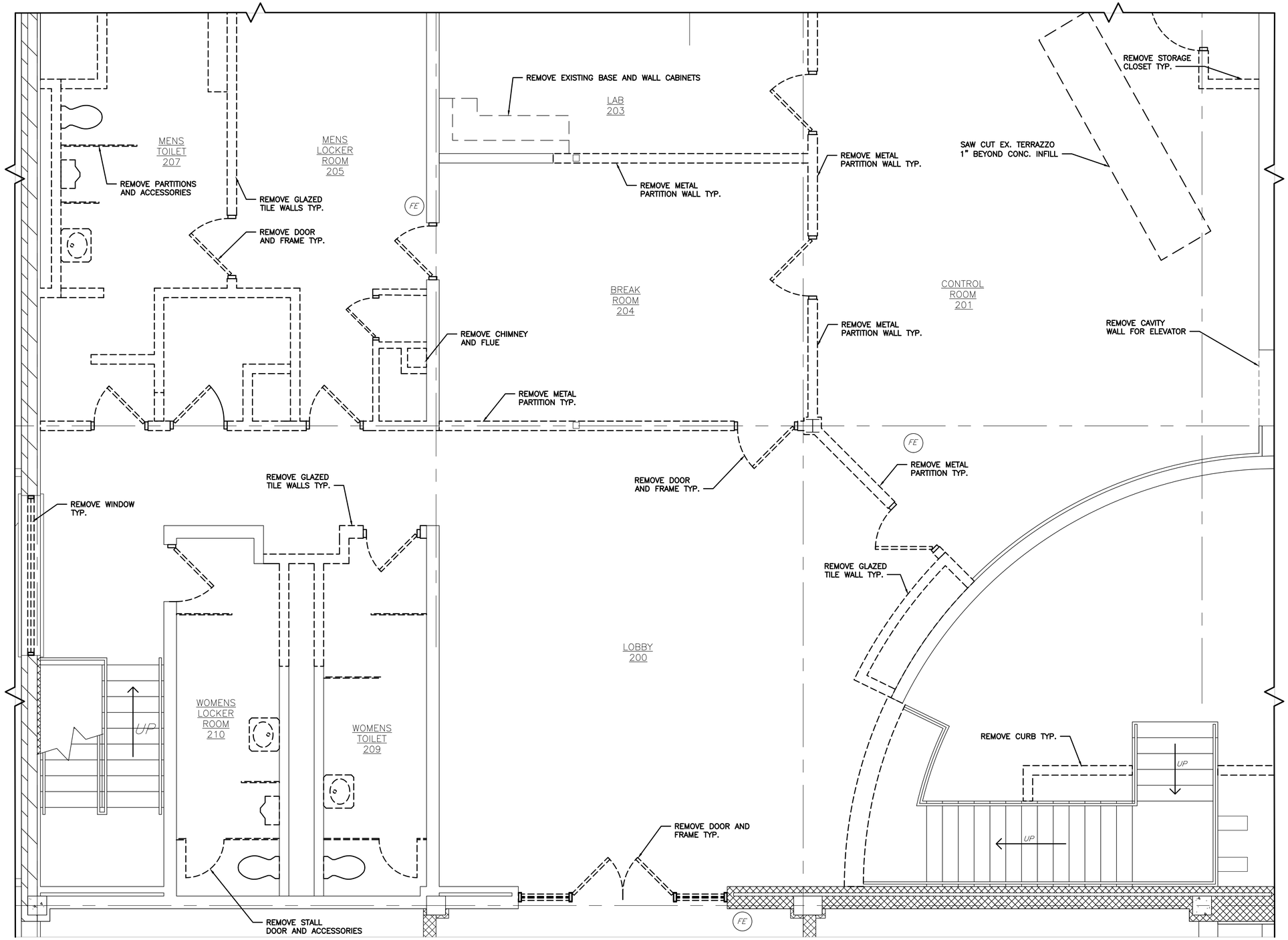
MAIN BUILDING
DEMOLITION
ROOF PLAN

D-20

SHEET: OF

P:\PR58982\Cadd\Sheets\D-20 MAIN BUILDING DEMOLITION ROOF PLAN.dwg 4/15/2022 3:28:01 PM Matt Kroll

PLOTTED: 4/16/2022 1:09:50 PM



SECOND FLOOR

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

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DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

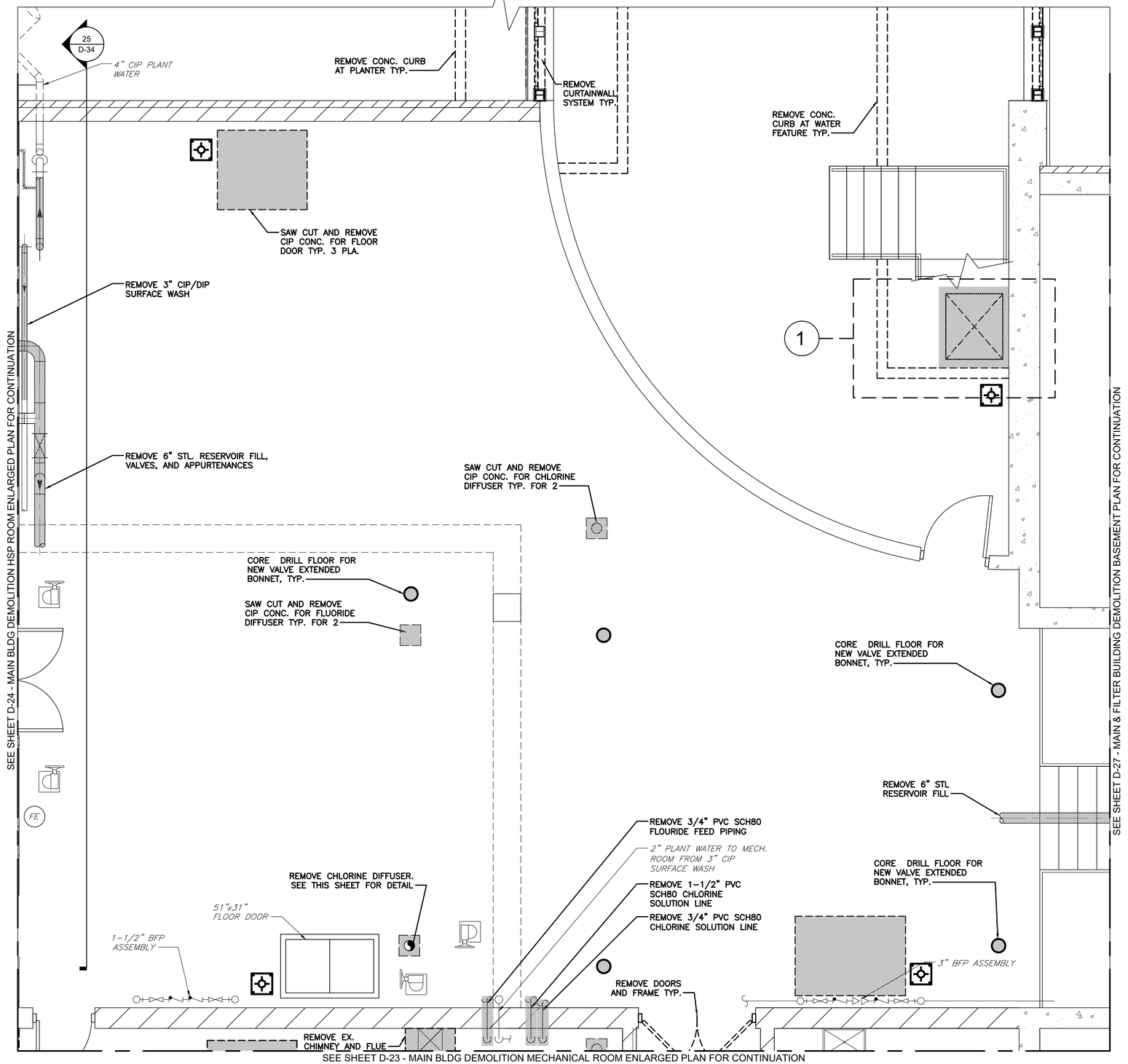
MAIN BUILDING
DEMOLITION
SECOND FLOOR
ENLARGED PLAN

D-21

SHEET: OF

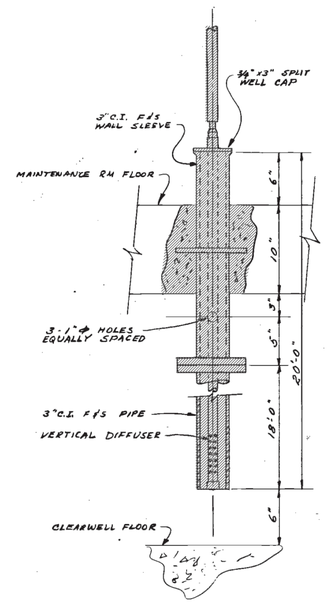
P:\PR58982\Cadd\Sheets\D-21 MAIN BUILDING DEMOLITION SECOND FLOOR ENLARGED PLAN.dwg 4/15/2022 3:29:24 PM Matt Kroll

PLOTTED: 4/16/2022 1:12:53 PM



FILTER GALLERY ANNEX PLAN

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



DIFFUSER DETAIL

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

1 EX. ACCESS HATCH PHOTO

SCALE: NONE

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APPROVED BY:	CMS
SCALE:	AS NOTED

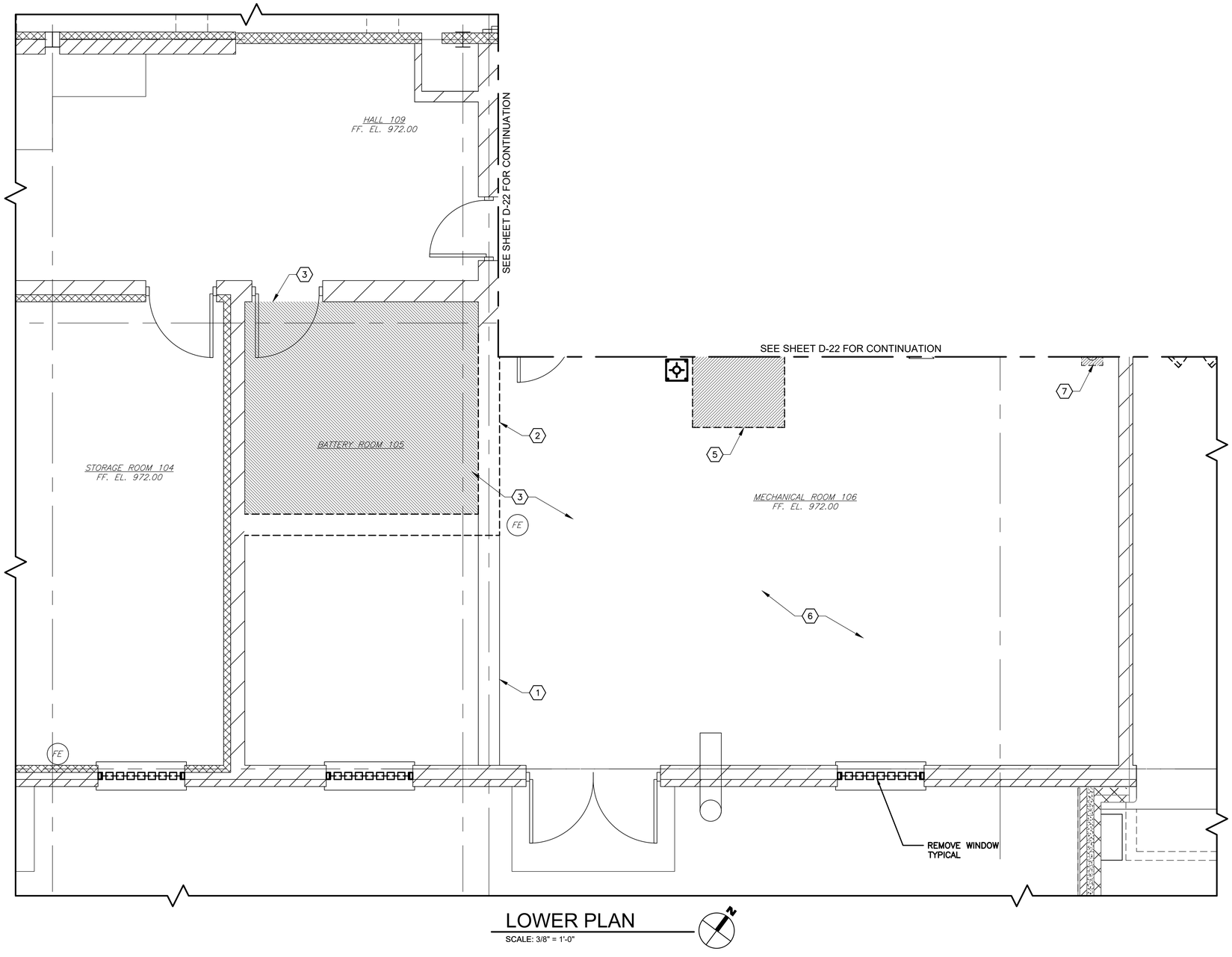
MAIN BLDG DEMOLITION FILTER ANNEX ENLARGED PLAN

D-22

SHEET: OF

P:\PR58982\Cadd\Sheets\D-21 MAIN BUILDING DEMOLITION FILTER ANNEX ENLARGED PLAN.dwg 4/15/2022 3:31:41 PM Matt Kroll

PLOTTED: 4/16/2022 1:14:14 PM



LOWER PLAN

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

X CODED NOTES:

1. EXISTING CONCRETE BEAM INTEGRAL WITH CONCRETE 2ND FLOOR TO REMAIN.
2. SEE STRUCTURAL SHEET S-6 FOR TEMPORARY BRACING OF SECOND FLOOR AND DEMOLITION OF EXISTING LOAD BEARING EAST WALL OF EX. BATTERY ROOM 105.
3. REMOVE QUARRY TILE FLOOR AND COVE IN EX. BATTERY ROOM. REPAIR CONCRETE FLOOR AND EPOXY COAT NEW MECHANICAL ROOM.
4. REMOVE CMU WALL TYP..
5. SAW CUT AND REMOVE CIP CONC. FOR FLOOR DOOR.
6. EXISTING CONC. EQUIPMENT PADS FOR BOILER, HEATER AND DEHUMIDIFIER NOT SHOWN (SEE MECHANICAL SHEET FOR DETAILS).
7. SAW CUT AND REMOVE CIP CONC. FOR CHLORINE DIFFUSER TYP.

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APPROVED BY:	CMS
SCALE:	AS NOTED

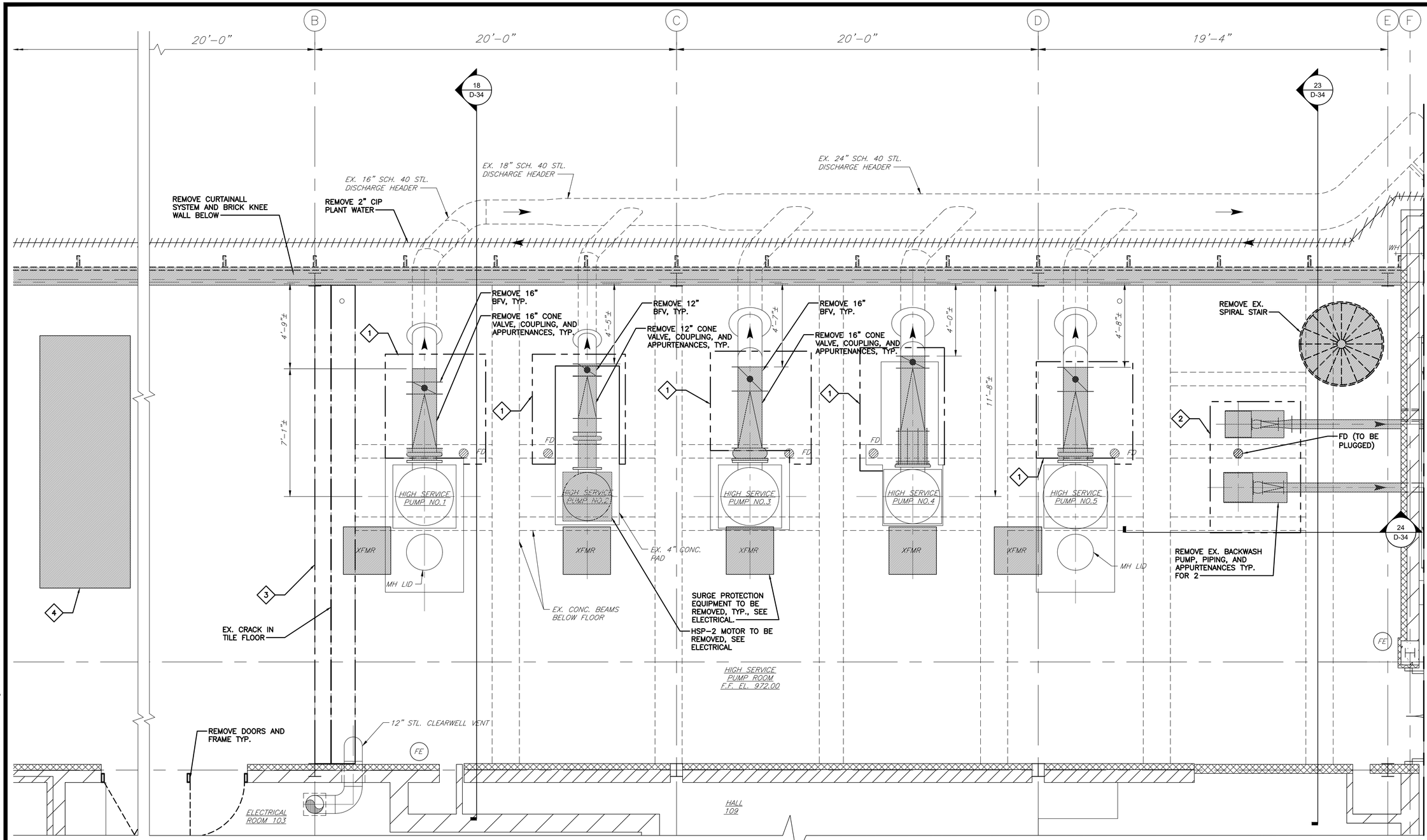
MAIN BLDG
DEMOLITION
MECHANICAL ROOM
ENLARGED PLAN

D-23

SHEET: OF

P:\PR58982\Cadd\Sheets\D-23 MAIN BUILDING DEMOLITION MECHANICAL ROOM ENLARGED PLAN.dwg 4/15/2022 3:33:19 PM Matt Kroll

PLOTTED: 4/16/2022 1:17:37 PM



1. SAW CUT AND REMOVE CLAY FLOOR TILE AND GROUT. REPAIR TILE FLOOR TO MATCH EXISTING.
2. REMOVE EX. PUMP, SAW CUT FLOOR AND REMOVE CLAY FLOOR TILE FOR NEW PUMP BASE AND REPAIR TILE FLOOR TO MATCH EXISTING.
3. SAW CUT AND REMOVE CLAY FLOOR TILE AND GROUT. REPAIR TILE FLOOR TO MATCH EXISTING AND CAULK NEW EXPANSION JOINT.
4. REMOVE CONC. EQUIPMENT PAD. REPAIR TILE FLOOR TO MATCH EXISTING.

HIGH SERVICE PUMP ROOM PLAN

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

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

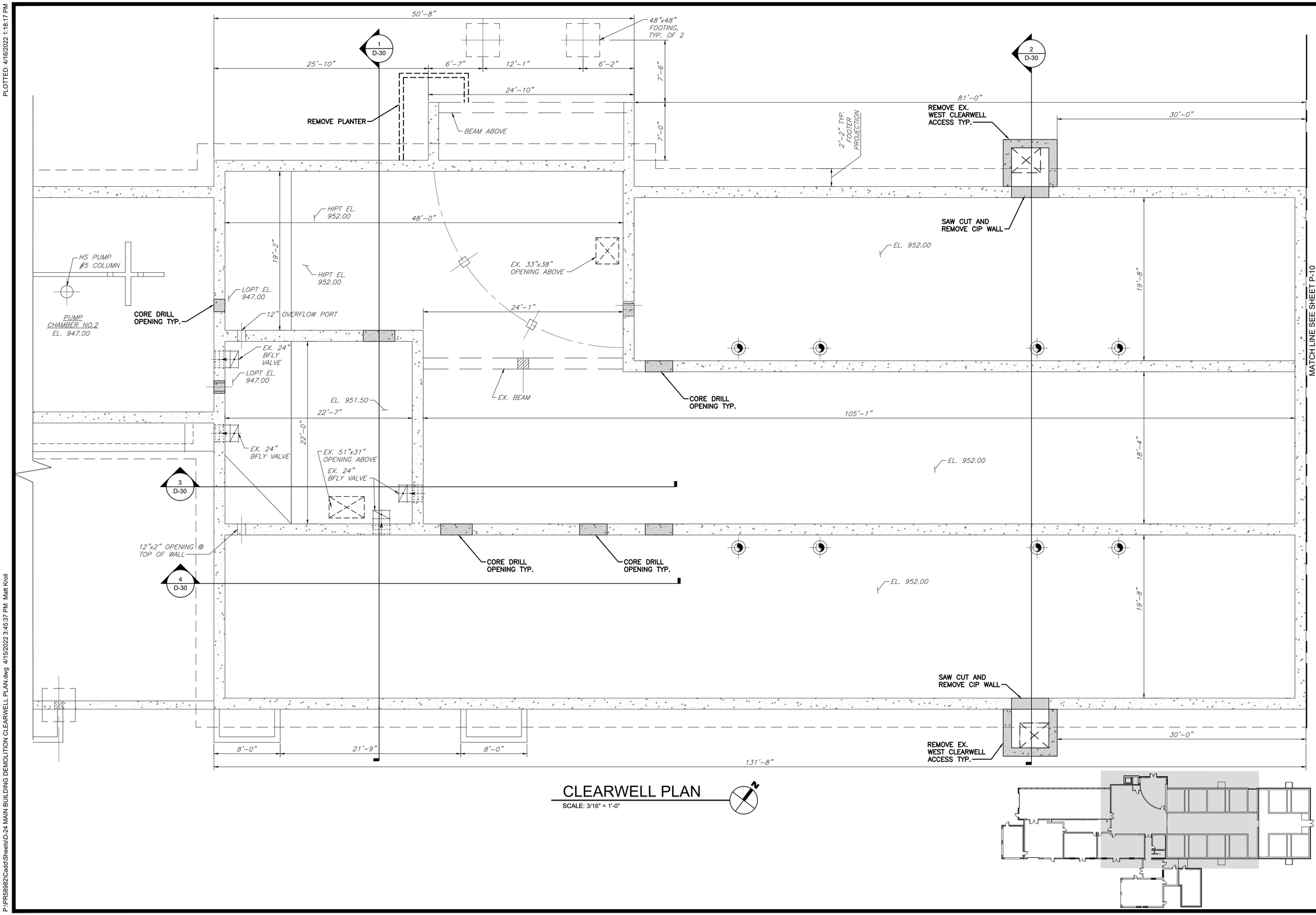
MAIN BLDG DEMOLITION HSP ROOM ENLARGED PLAN

D-24

SHEET: OF

P:\PR58982\Cadd\Sheets\D-22 MAIN BUILDING DEMOLITION HSP ROOM ENLARGED PLAN.dwg 4/15/2022 3:42:06 PM Matt Kroll

PLOTTED: 4/16/2022 1:18:17 PM



CLEARWELL PLAN

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

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APPROVED BY:	CMS
SCALE:	AS NOTED

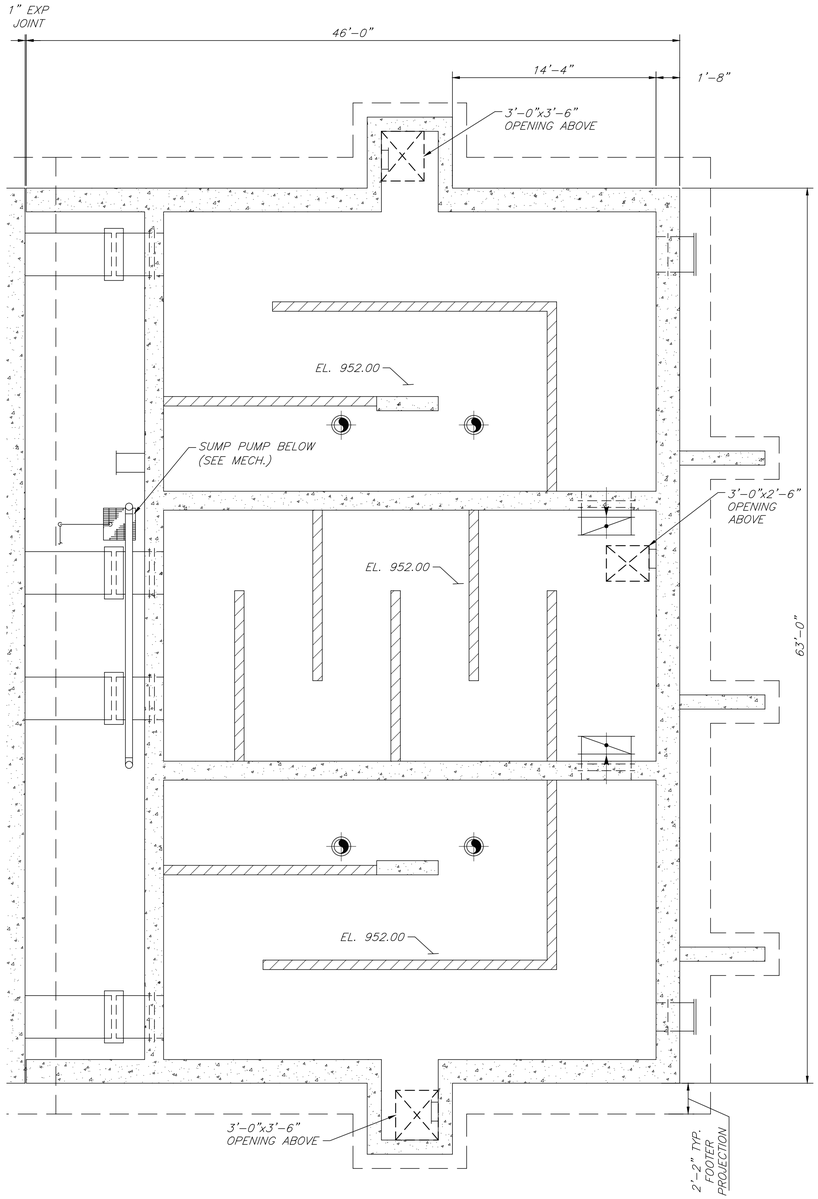
MAIN BUILDING DEMOLITION CLEARWELL PLAN

D-25

SHEET: OF

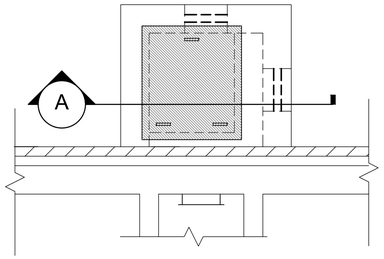
P:\PR58982\Cadd\Sheets\D-24 MAIN BUILDING DEMOLITION CLEARWELL PLAN.dwg 4/15/2022 3:45:37 PM Matt Kroll

PLOTTED: 4/16/2022 1:18:57 PM



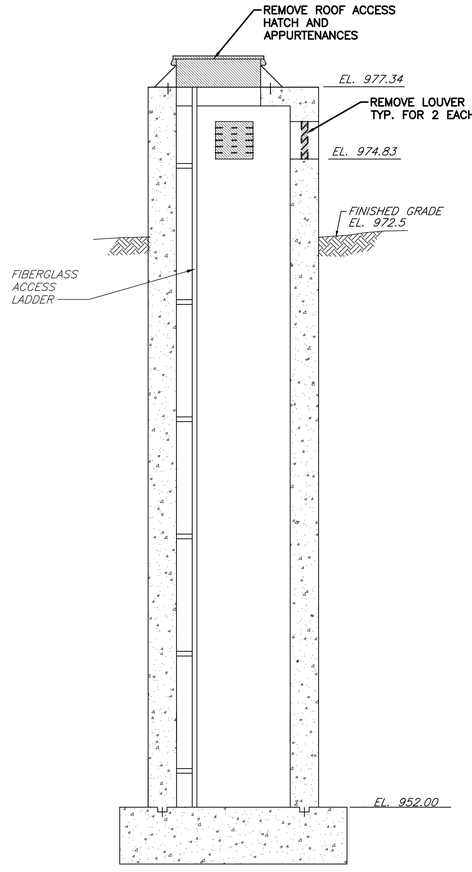
CLEARWELL PLAN

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



UPPER PLAN

LOWER PLAN

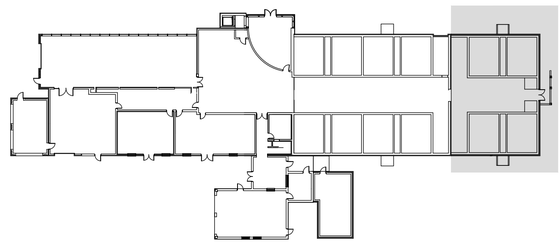


A SECTION

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

EAST CLEARWELL ACCESS HATCH DETAILS

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



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APPROVED BY:	CMS
SCALE:	AS NOTED

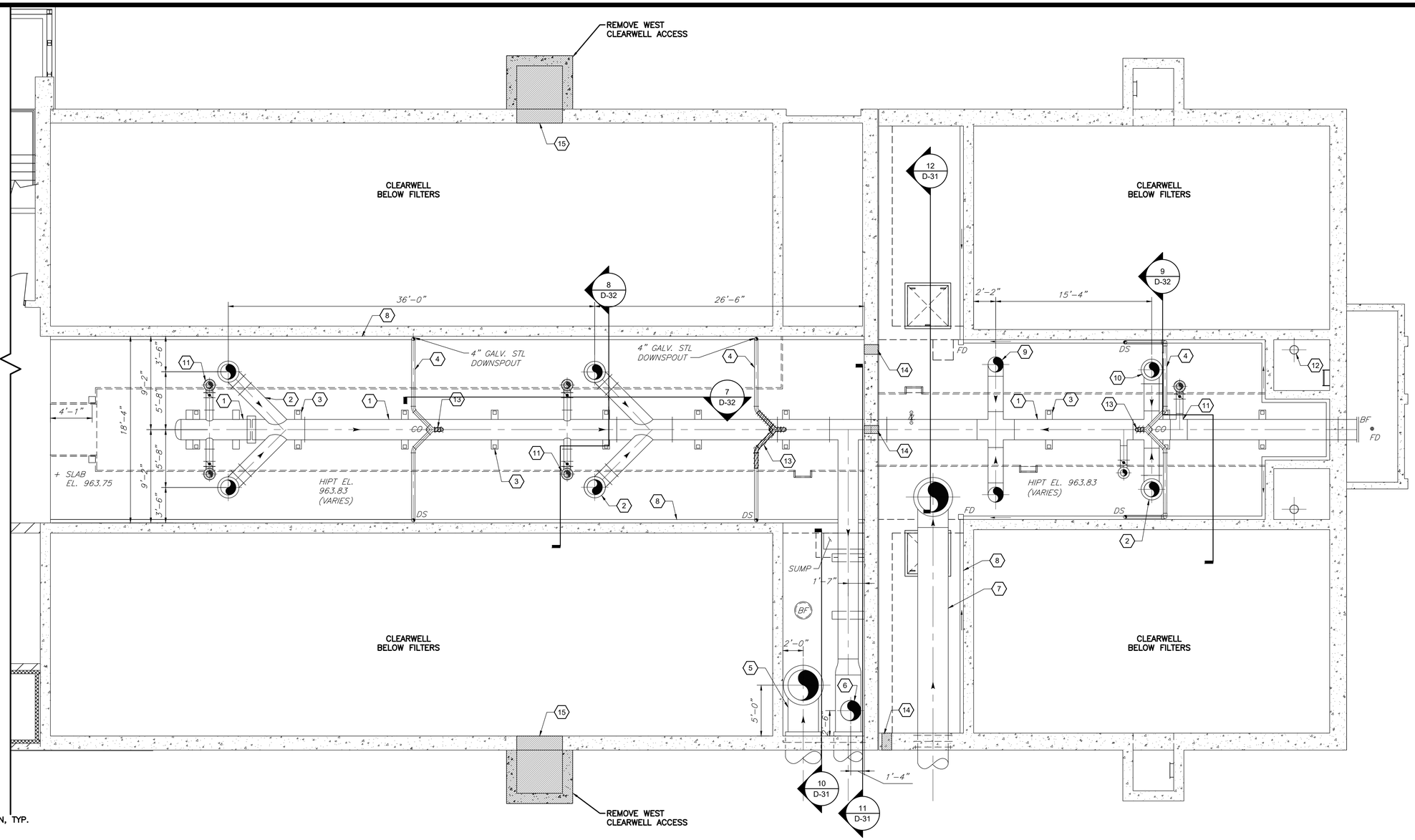
FILTER BUILDING
DEMOLITION
CLEARWELL
PLAN

D-26

SHEET: OF

P:\PR58982\Cadd\Sheets\D-25 FILTER BUILDING DEMOLITION CLEARWELL PLAN.dwg 4/15/2022 3:46:27 PM Matt Kroll

PLOTTED: 4/17/2022 9:04:45 PM



DEMOLITION PLAN AT EL. 967.25

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

NOTE: ALUM. GRATING PLATFORM SHOWN FOR REFERENCE ONLY.

CODED NOTES:

1. EX. 24" STL. WASTEWATER
2. EX. 18" STL WASTEWATER DRAIN, TYP.
3. EX. 8" CONC. SUPPORTS, TYP.
4. EX. 4" GALV. STL
5. EX. 36" STL. INLET
6. EX. 24" STL. OVERFLOW
7. EX. 36" STL. FILTER INFLUENT
8. EX. 4"x4" TROUGH DRAIN
9. EX. 18" STL. FILTER OVERFLOW, TYP. FOR 2.
10. EX. 18" STL. WASTEWATER
11. REMOVE 8" FILTER TO WASTE
12. EX. EXTENSION BONNET FOR 42" BFLY VALVE, TYP FOR 2.
13. REMOVE 4" GALV. STL. FITTINGS AND PLUG ROOF DRAIN CONNECTION
14. CORE DRILL OPENING TYP.
15. SAW CUT AND REMOVE CIP WALL TYP.

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SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	3/16" = 1'-0"

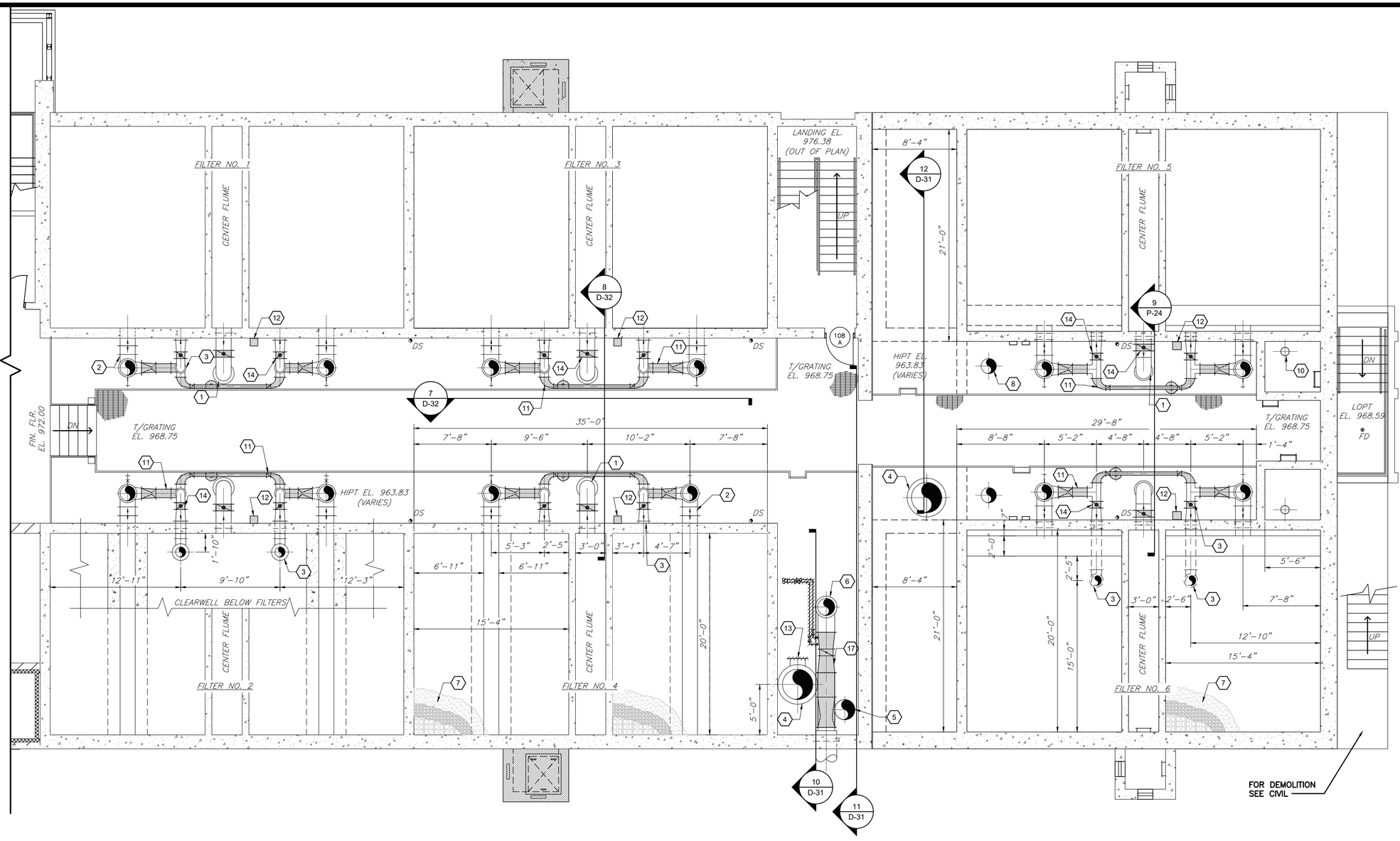
MAIN & FILTER
BUILDING
DEMOLITION
BASEMENT PLAN

D-27

SHEET: OF

P:\PR58982\Cadd\Sheets\D-26 MAIN & FILTER BUILDING DEMOLITION BASEMENT PLAN.dwg 4/16/2022 1:23:31 PM Matt Kroll

PLOTTED: 4/16/2022 11:50:06 PM



DEMOLITION PLAN AT EL. 975.00

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

(X) CODED NOTES:

1. EX. 18" STL WASTEWATER DRAIN, TYP.
2. EX. 18" STL. WASHWATER, TYP.
3. EX. 12" FILTER EFFLUENT, TYP.
4. EX. 36" STL. INLET
5. EX. 24" STL. OVERFLOW
6. EX. 20" STL WASHWATER
7. REMOVE AND REPLACE FILTER MEDIA
8. EX. 18" STL. FILTER OVERFLOW, TYP. FOR 2
9. REMOVE AND REPLACE FILTER MEDIA
10. EX. EXTENSION BONNET FOR 42" BFLY VALVE, TYP FOR 2.
11. REMOVE EX.FILTER TO WASTE PIPING, TYP., EACH FILTER.
12. REMOVE EX. TURBIDITY METERS.
13. REMOVE EX. 20" BLIND FLANGE.
14. REMOVE EX. FLOW CONTROL VALVES, TYP.
15. REMOVE 20" STL. WASHWATER METER VALVE, AND APPURT.

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
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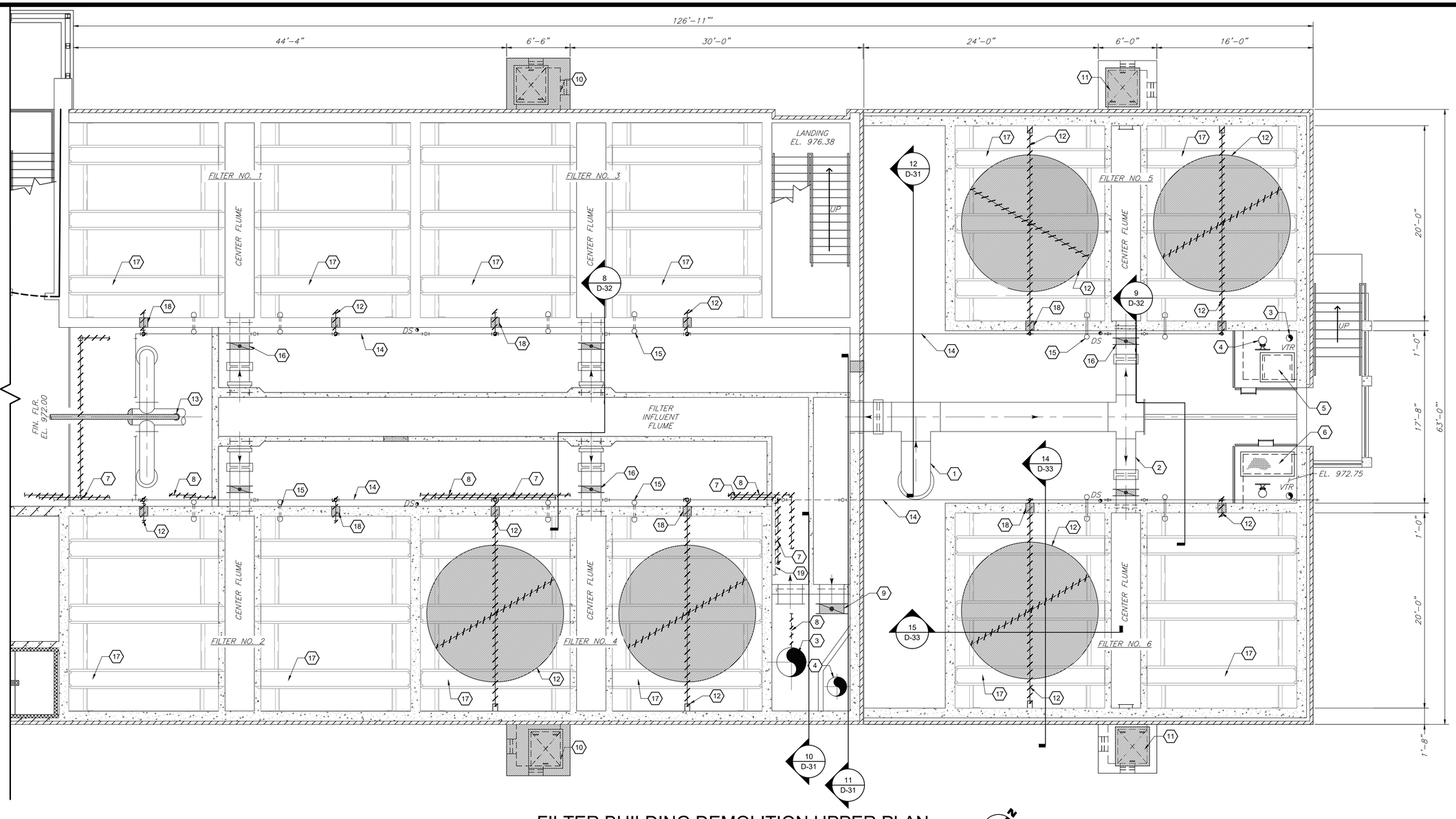
MAIN & FILTER BLDG DEMOLITION FILTER PIPE GALLERY PLAN

D-28

SHEET: OF

P:\PR58982\Cadd\Sheets\D-27 MAIN & FILTER BLDG DEMOLITION FILTER PIPE GALLERY PLAN.dwg 4/15/2022 3:50:28 PM Matt Kroll

PLOTTED: 4/16/2022 11:54:03 PM



FILTER BUILDING DEMOLITION UPPER PLAN

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

X CODED NOTES:

1. EX. 36" STL. INLET
2. EX. 24" STL. FILTER INF.
3. EX. 8" STL. VENT
4. EX. FLOOR STAND AND EXTENSION STEM FOR 42"ø BFLY VALVE, TYP. FOR 2.
5. EX. 2'-6"x3'-0" ALUM. ACCESS DOOR WITH SAFETY POST AND LOCK.
6. EX. 1/4" ALUM. CHECKERED PLATE.
7. REMOVE 1" STL AIR
8. REMOVE 1-1/2" CHLORINE SOLUTION LINE TO 36" FILTER INFLUENT PIPE.
9. REMOVE EX. 30" BFV
10. REMOVE WEST CLEARWELL ACCESS
11. REMOVE EX. ACCESS HATCH
12. REMOVE SURFACE WASH, TYP EACH FILTER.
13. REMOVE 6" STL. RESERVOIR FILL LINE AND PLUG
14. EX. 3" CIP SURFACE WASH
15. EX. LOSS OF HEAD STRAINER ASSEMBLY
16. REMOVE EX. 24" BFV
17. EX. WASHWATER TROUGH TO BE CLEANED
18. SAW CUT OR CORE DRILL OPENING TYP.
19. EX. 3/4" GALV. STL. WATER

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

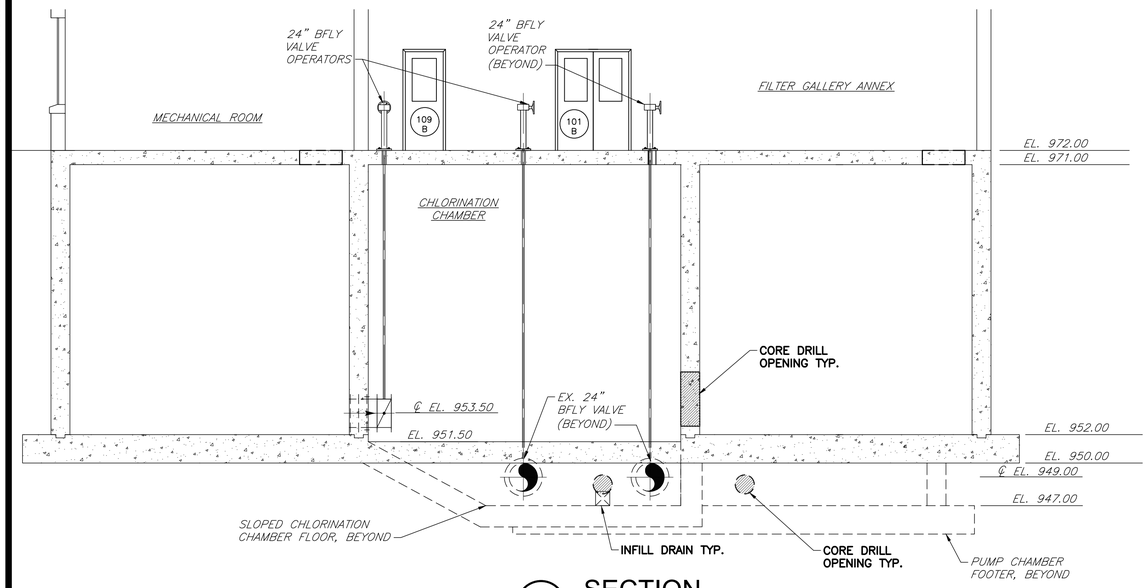
MAIN & FILTER BUILDING DEMOLITION UPPER PLAN

D-29

SHEET: OF

P:\PR58982\Cadd\Sheets\D-28 MAIN & FILTER BUILDING DEMOLITION UPPER PLAN.dwg 4/15/2022 3:51:31 PM Matt Kroll

PLOTTED: 4/16/2022 11:57:21 PM



1 D-25 **SECTION**
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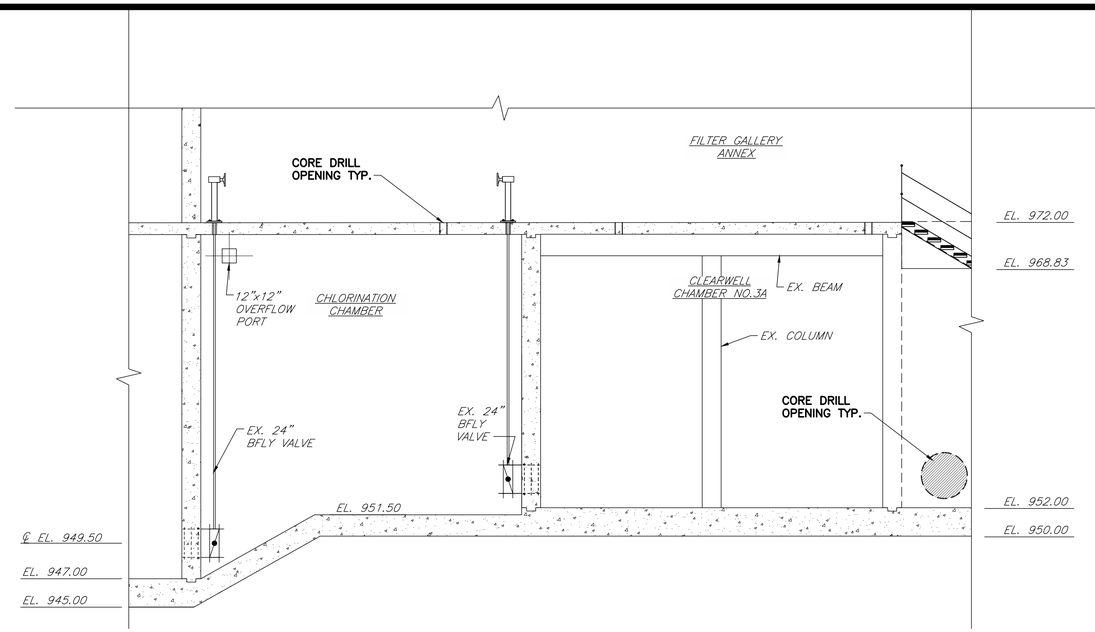

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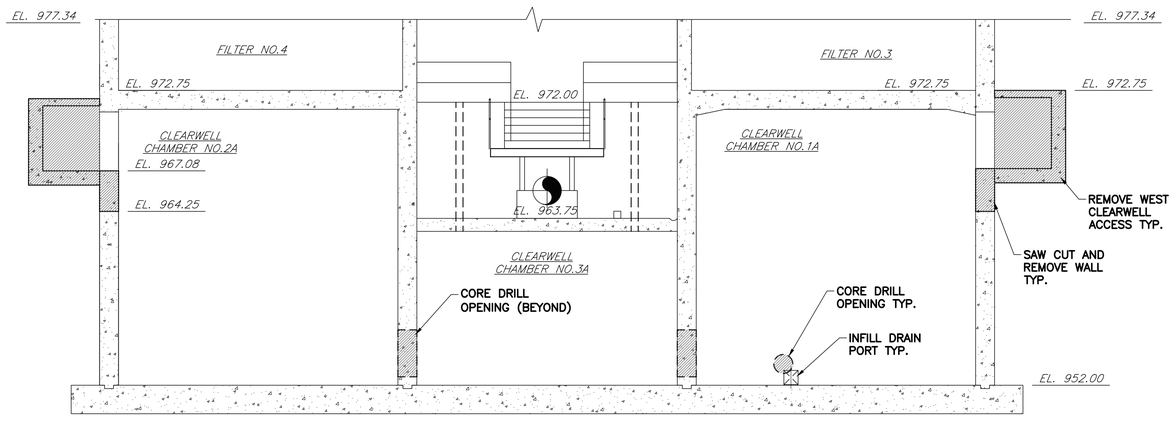

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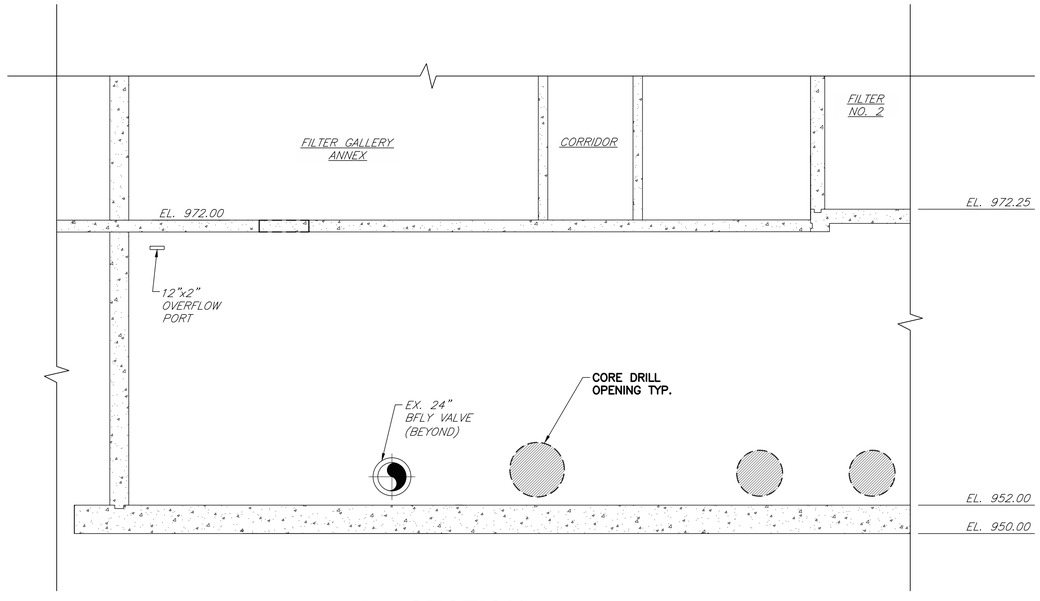

4 D-25 **SECTION**
SCALE: 3/16" = 1'-0"

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PAINESVILLE, OHIO 44077

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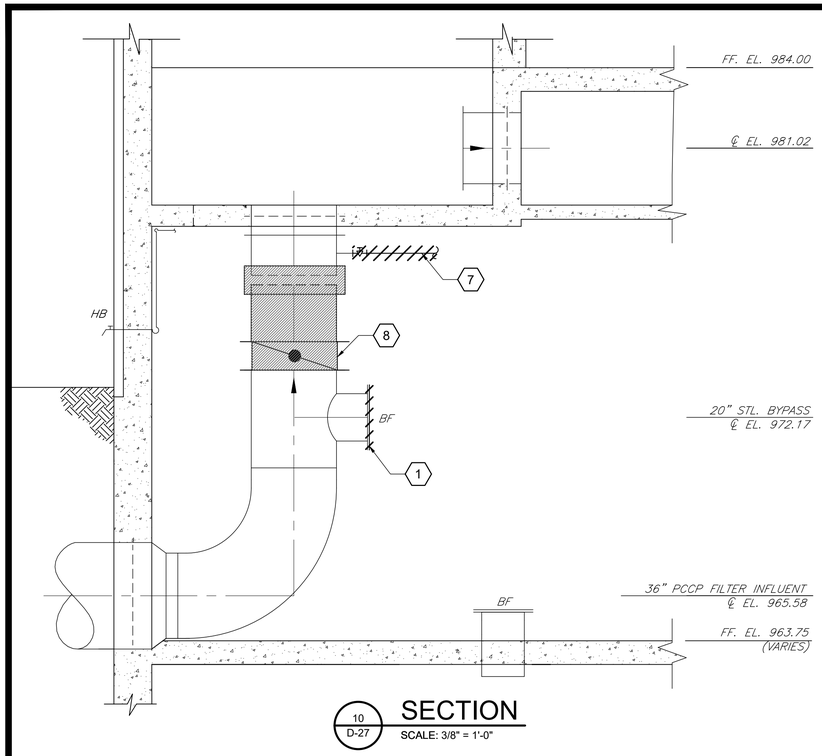
CLEARWELL DEMOLITION SECTIONS-DETAILS

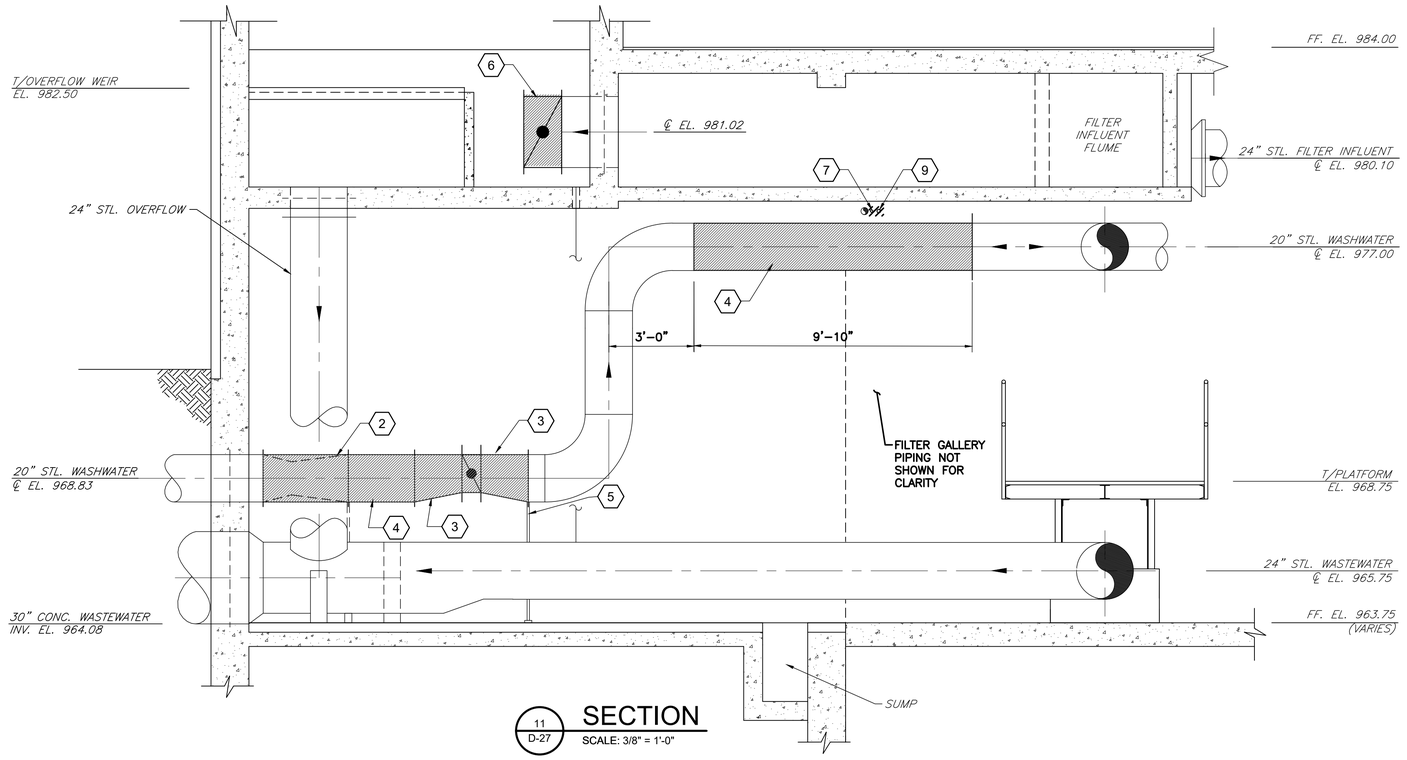
D-30

SHEET: OF

P:\PR58982\Cadd\Sheets\D-30 CLEARWELL DEMOLITION SECTIONS-DETAILS.dwg 4/15/2022 3:58:54 PM Matt Kroll



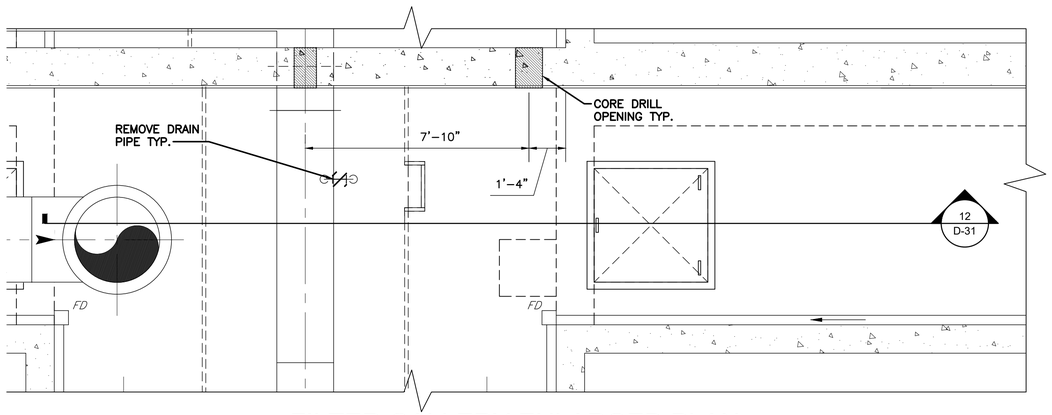
10 D-27 SECTION
SCALE: 3/8" = 1'-0"



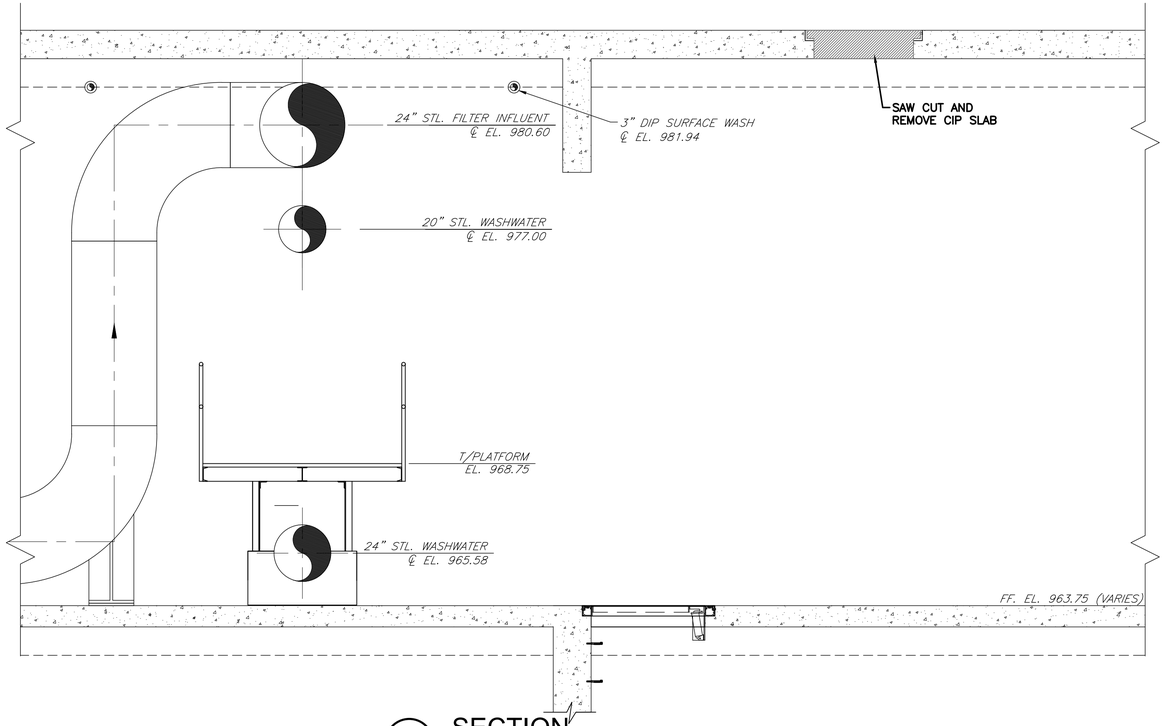
11 D-27 SECTION
SCALE: 3/8" = 1'-0"

(X) CODED NOTES:

1. REMOVE 20" BLIND FLANGE.
2. REMOVE 20" VENTURI METER.
3. REMOVE 20"X16" STL. REDUCER.
4. REMOVE 20" STL. WASHWATER.
5. EX. STEEL CHANNEL PIPE SUPPORT.
6. REMOVE 30" BFV.
7. REMOVE 1" STL AIR.
8. REMOVE 36" BFV, SPOOL PIECE, AND COUPLING.
9. REMOVE 1–1/2" CHLORINE SOLUTION PIPE.



FILTER GALLERY ENLARGED PLAN
SCALE: 3/8" = 1'-0"



12 D-31 SECTION
SCALE: 3/8" = 1'-0"

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MAIN BLDG
DEMOLITION
FILTER PIPE
GALLERY SECTIONS

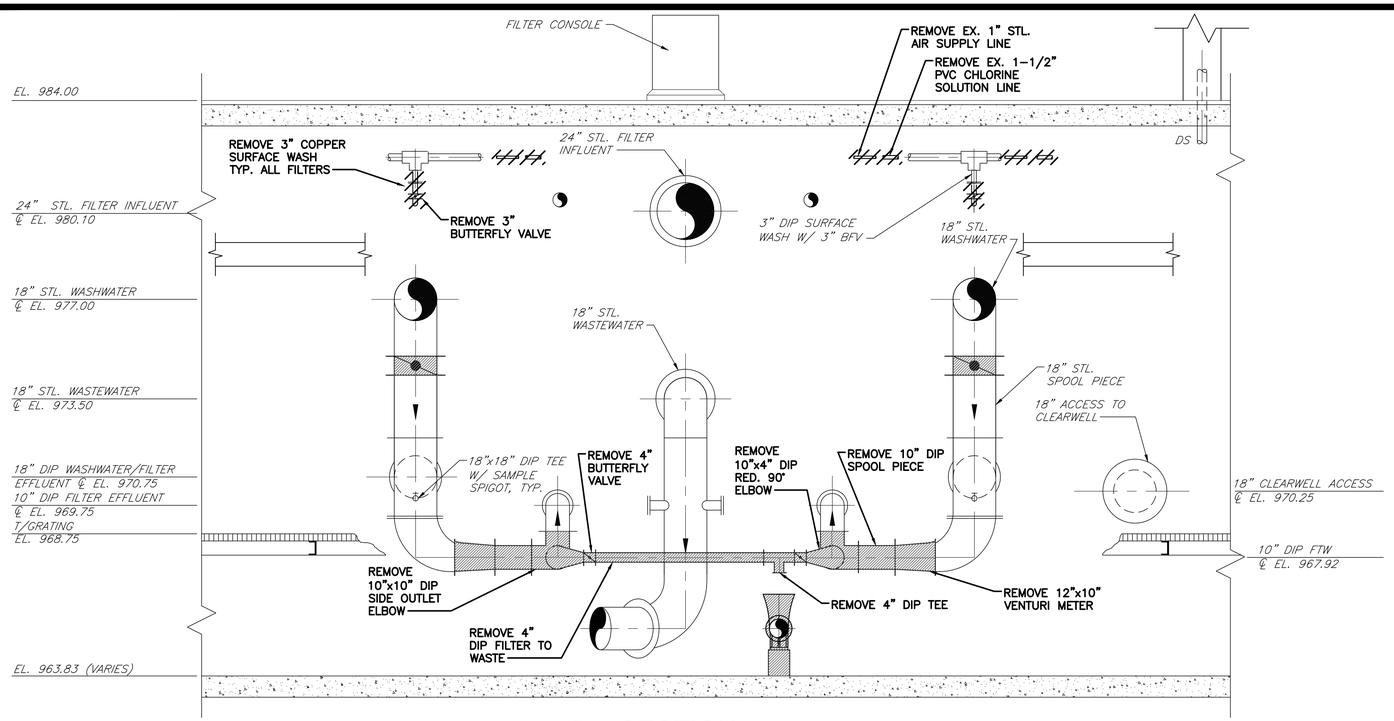
D-31

SHEET: OF

PLOTTED: 4/17/2022 12:04:25 AM

P:\PR58982\Cadd\Sheets\D-31 MAIN BLDG DEMOLITION FILTER PIPE GALLERY SECTIONS.dwg 4/15/2022 3:57:48 PM Matt Kroll

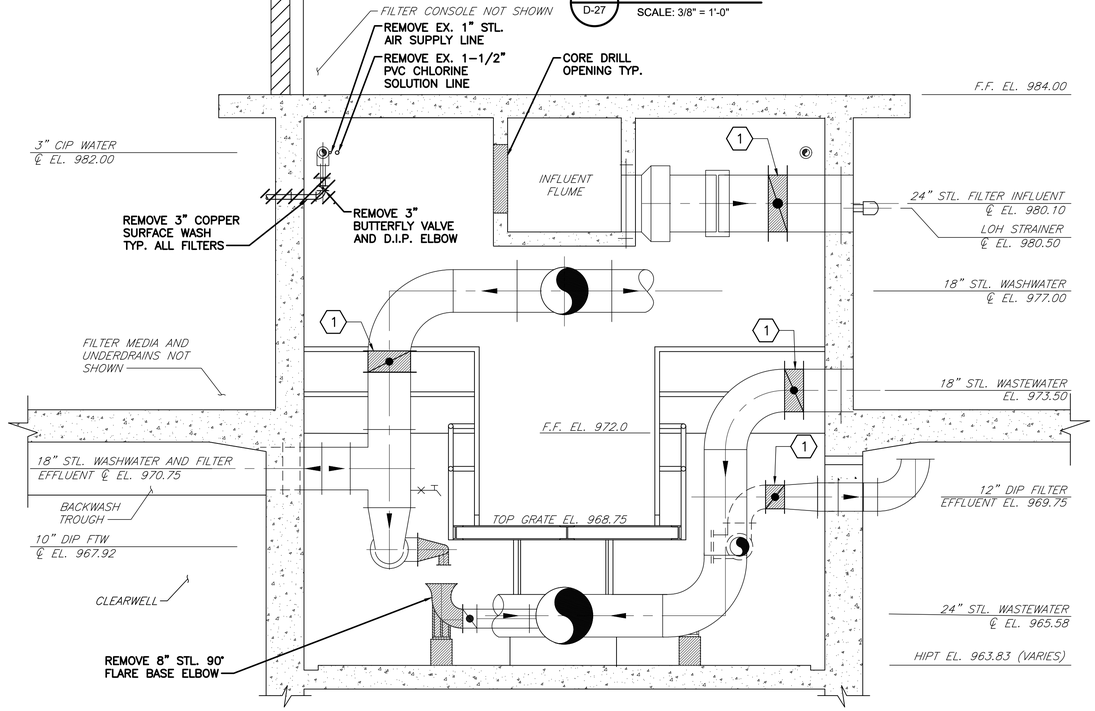
PLOTTED: 4/16/2022 9:40:05 PM



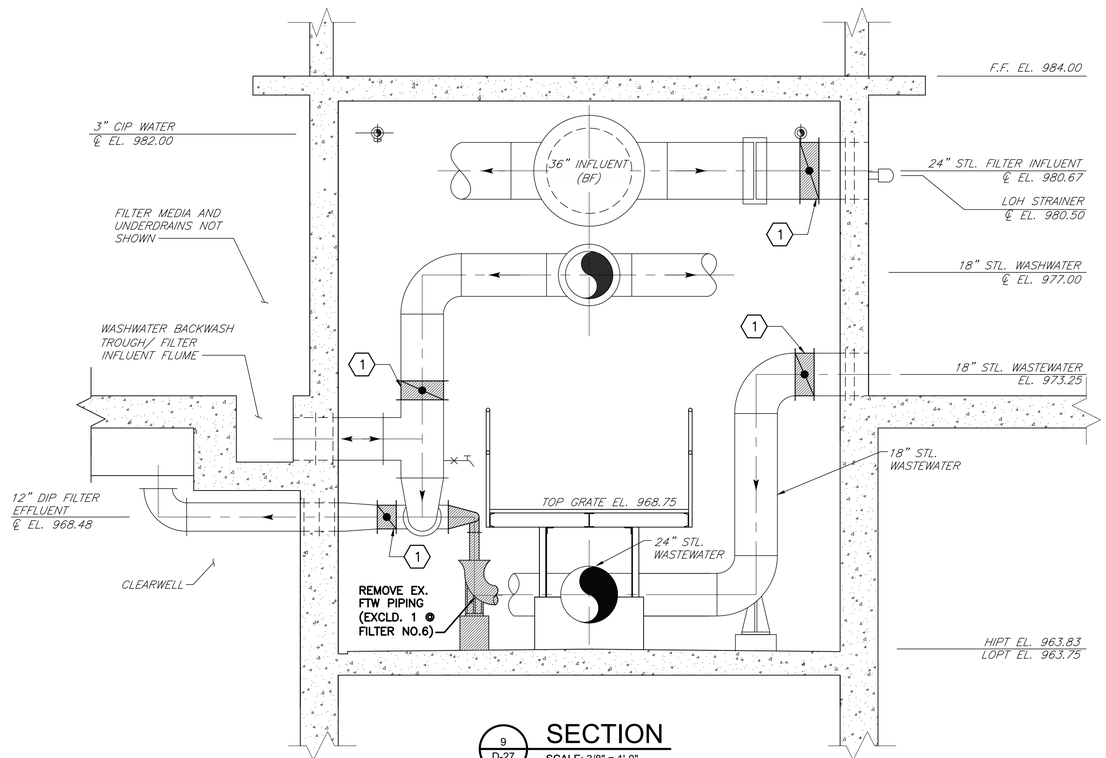
7 D-27 **SECTION**
SCALE: 3/8" = 1'-0"

CODED NOTES

1 REMOVE EX. FLOW CONTROL VALVE.



8 D-27 **SECTION**
SCALE: 3/8" = 1'-0"



9 D-27 **SECTION**
SCALE: 3/8" = 1'-0"

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SCALE:	AS NOTED

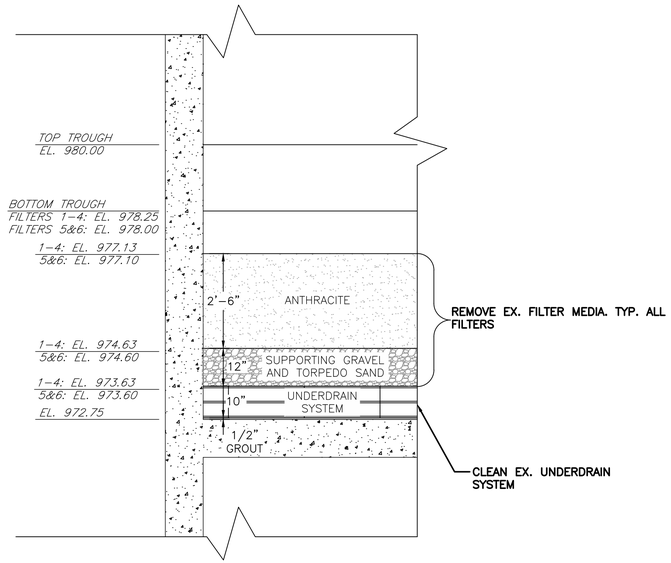
MAIN & FILTER BLDG DEMOLITION FILTER PIPE GALLERY SECTIONS

D-32

SHEET: OF

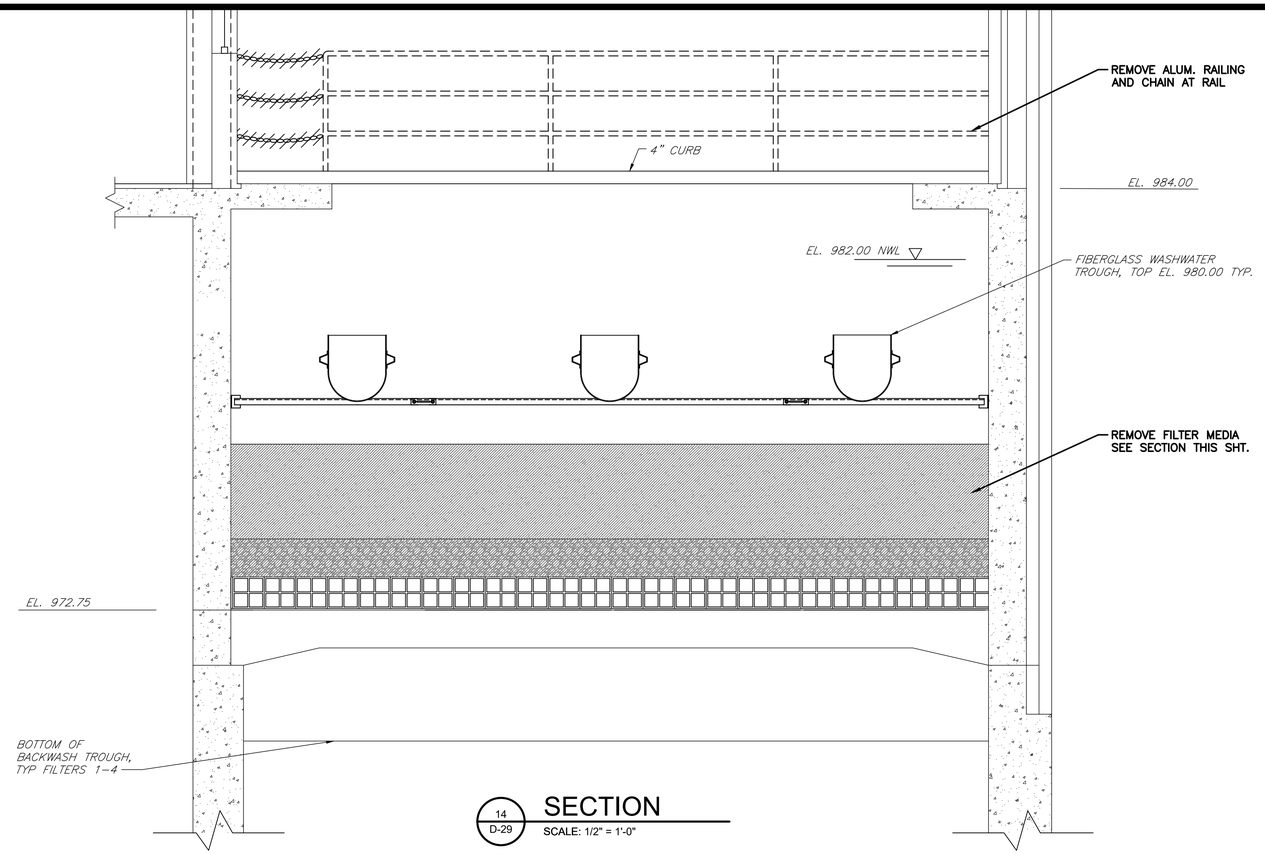
P:\PR58982\Cadd\Sheets\D-32 MAIN & FILTER BLDG DEMOLITION FILTER PIPE GALLERY SECTIONS.dwg 4/15/2022 4:02:20 PM Matt Kroll

PLOTTED: 4/16/2022 9:46:41 PM



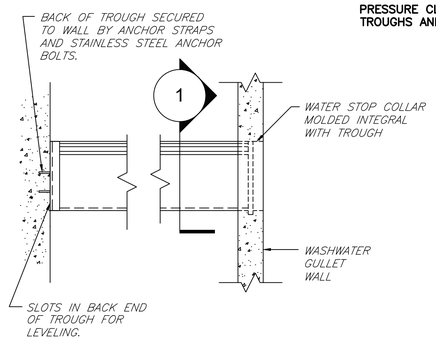
FILTER MEDIA SECTION

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



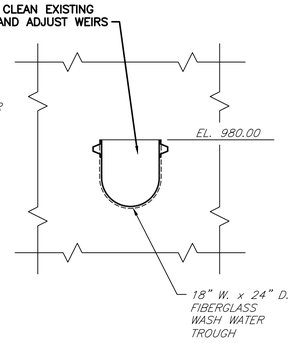
14 / D-29 SECTION

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



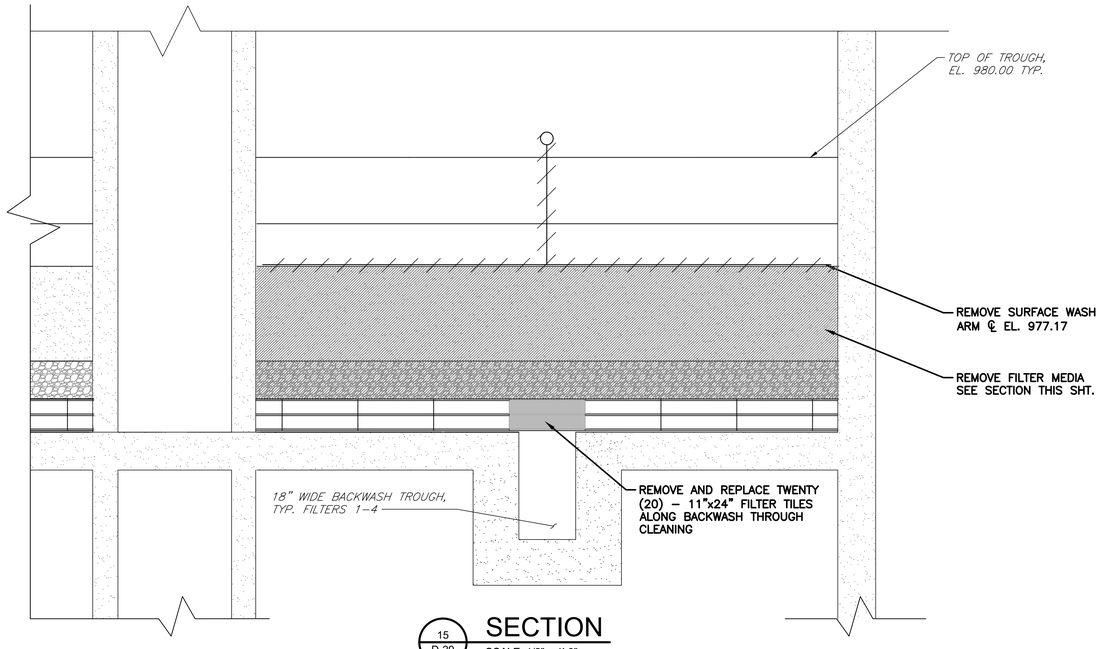
FILTER THROUGH DETAIL

SCALE: NONE



1 SECTION

SCALE: NONE



15 / D-29 SECTION

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

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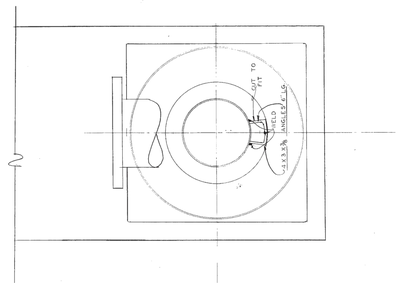
MAIN & FILTER BLDG DEMOLITION FILTER SECTIONS

D-33

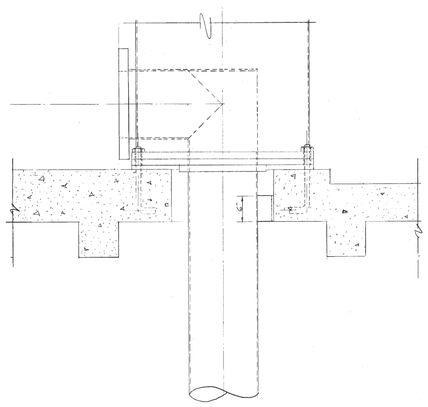
SHEET: OF

P:\PR58982\Cadd\Sheets\D-33 MAIN & FILTER BLDG DEMOLITION FILTER SECTIONS.dwg 4/15/2022 4:03:47 PM Matt Kroll

PLOTTED: 4/16/2022 9:51:48 PM



PLAN

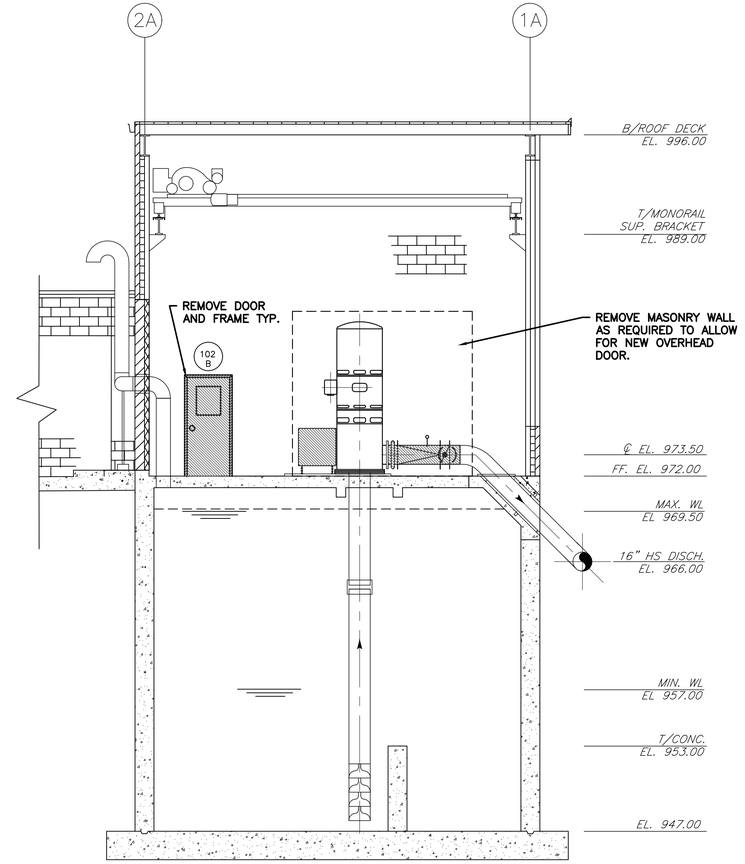


SECTION

PUMP THRUST ANCHOR DETAIL

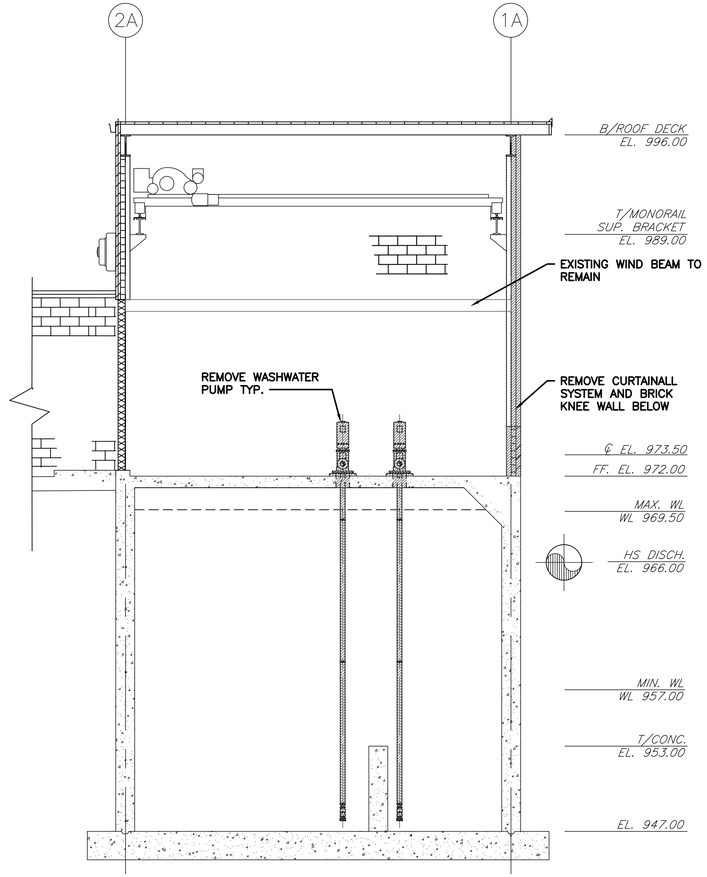
SCALE: 3/8" = 1'-0"

NOTE: FOR CONTRACTOR INFORMATION



18 D-24 SECTION

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



23 D-24 SECTION

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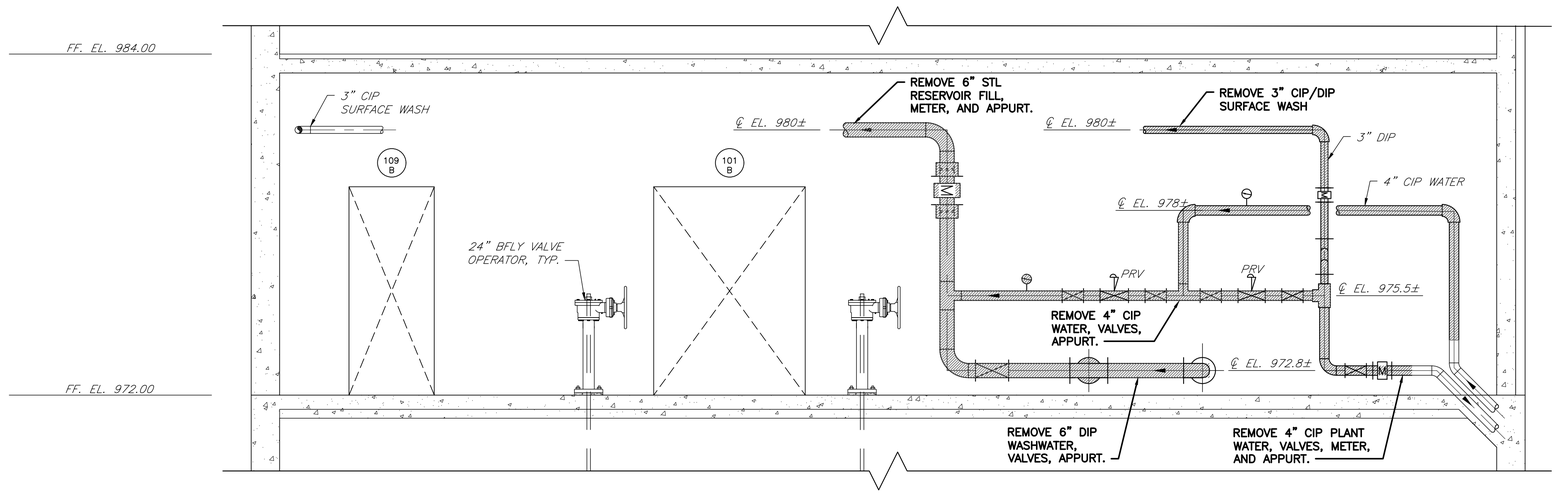

25 D-22 SECTION

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

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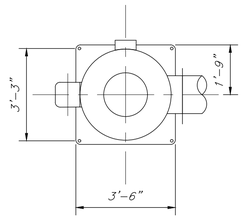
MAIN BLDG
DEMOLITION
FILTER ANNEX &
HS PUMP ROOM
SECTIONS

D-34

SHEET: OF

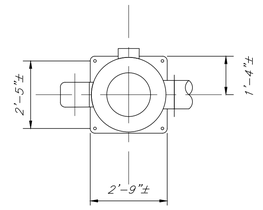
P:\PR58982\Caddd\Sheets\D-34 MAIN BLDG DEMOLITION FILTER ANNEX & HS PUMP ROOM SECTIONS.dwg 4/15/2022 4:05:00 PM Matt Kroll

PLOTTED: 4/16/2022 9:52:03 PM



HS PUMP #1 PLAN

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



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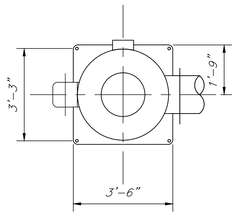
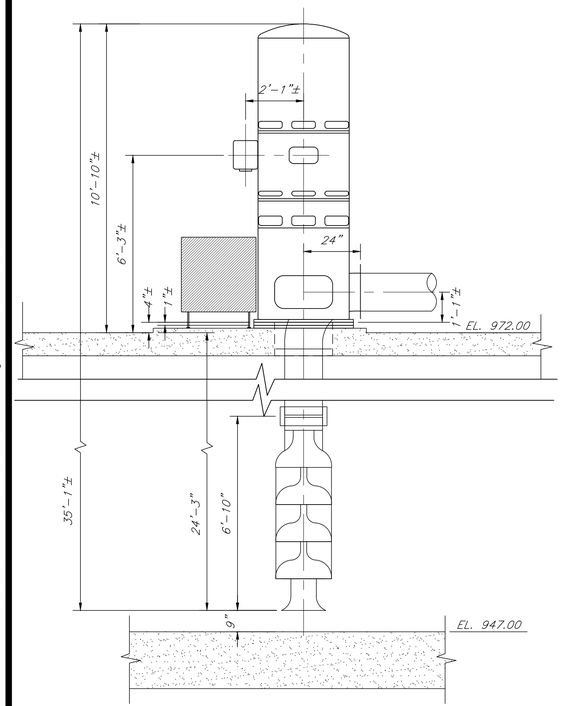


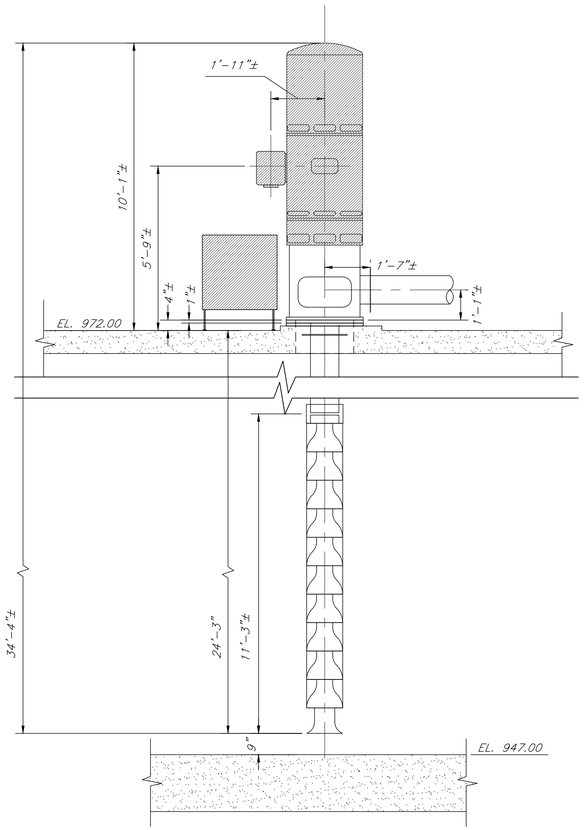
HS PUMP #3 PLAN

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



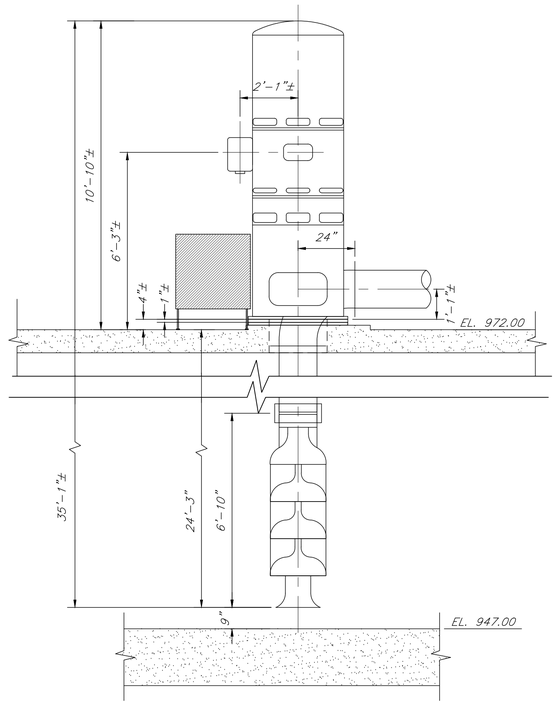
HS PUMP #1 SECTION

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



HS PUMP #2 SECTION

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



HS PUMP #3 SECTION

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

BURGESS & NIPLE
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PAINESVILLE, OHIO 44077

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APPROVED BY:	CMS
SCALE:	AS NOTED

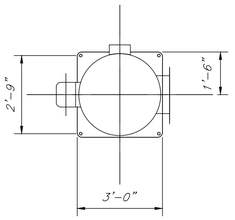
MAIN BLDG
DEMOLITION
HS PUMP ROOM
PUMPS 1-3
PLAN-SECTION

D-35

SHEET: OF

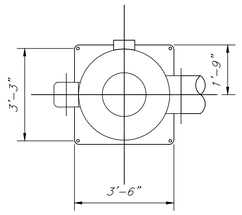
P:\PR58982\Cadd\Sheets\D-35 MAIN BLDG DEMOLITION HS PUMP ROOM PUMPS 1-3 PLAN-SECTION.dwg 4/15/2022 4:12:09 PM Matt Kroll

PLOTTED: 4/16/2022 9:52:08 PM



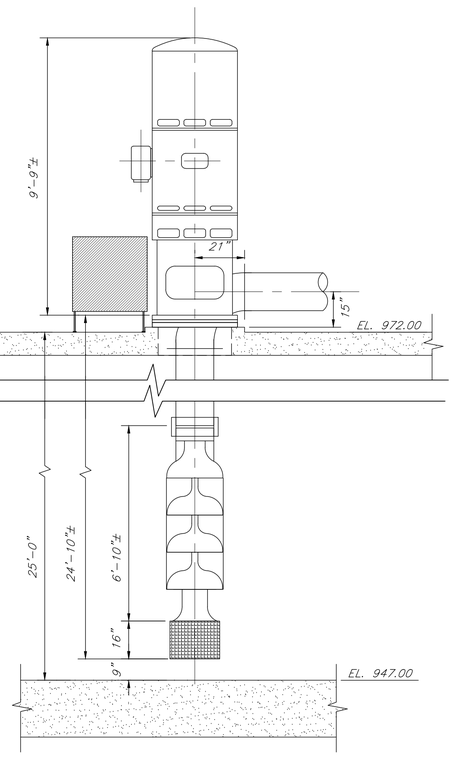
HS PUMP #4 PLAN

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



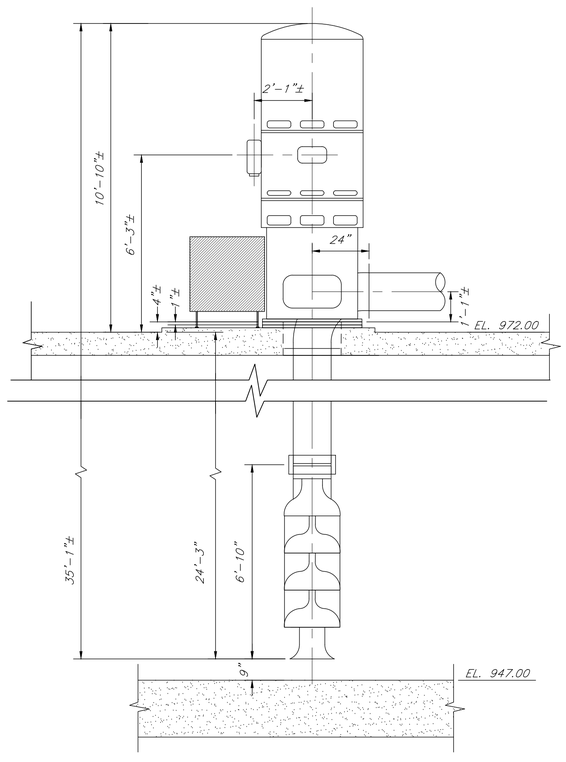
HS PUMP #5 PLAN

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



HS PUMP #4 SECTION

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



HS PUMP #5 SECTION

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

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

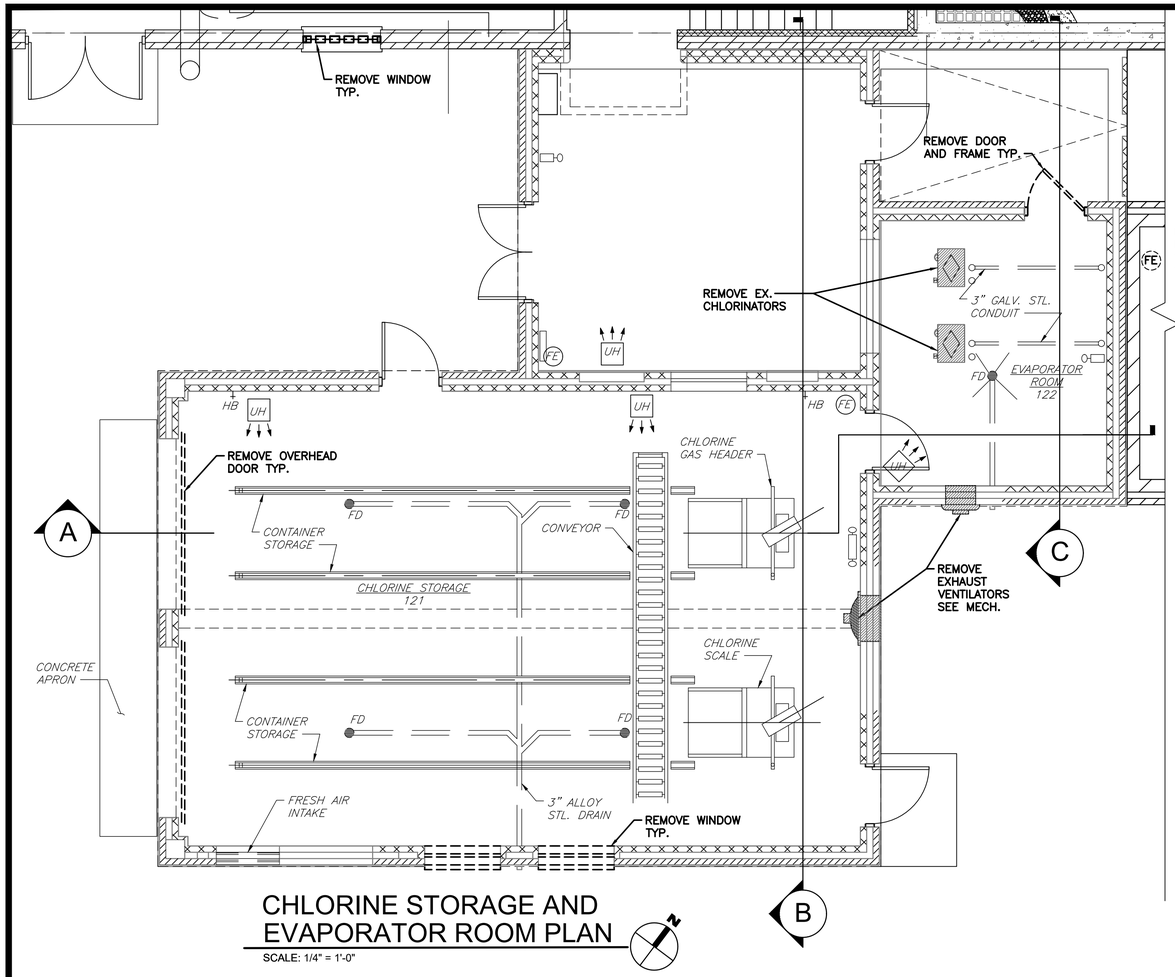
MAIN BLDG
DEMOLITION
HS PUMP RM
PUMPS 4-5 PLAN-
SECTION-DETAIL

D-36

SHEET: OF

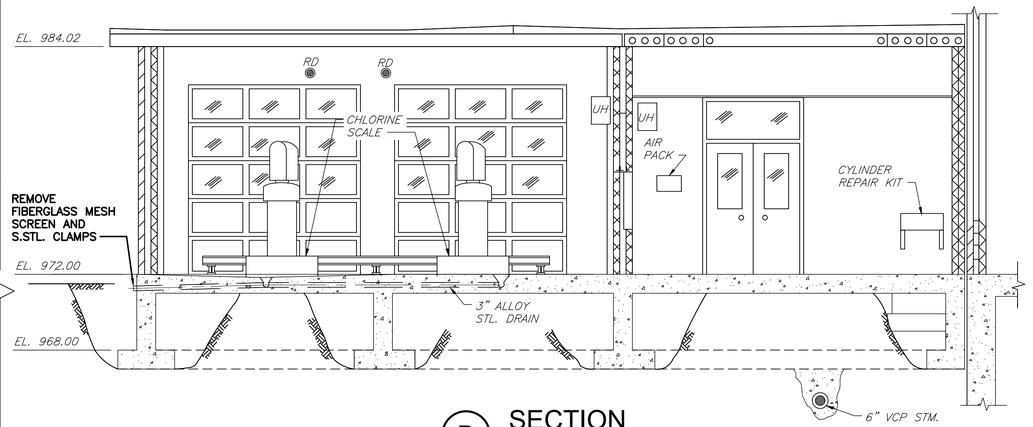
P:\PR58982\Cadd\Sheets\D-35 MAIN BLDG DEMOLITION HS PUMP ROOM PUMPS 1-3 PLAN-SECTION.dwg 4/15/2022 4:12:09 PM Matt Kroll

PLOTTED: 4/16/2022 9:59:32 PM



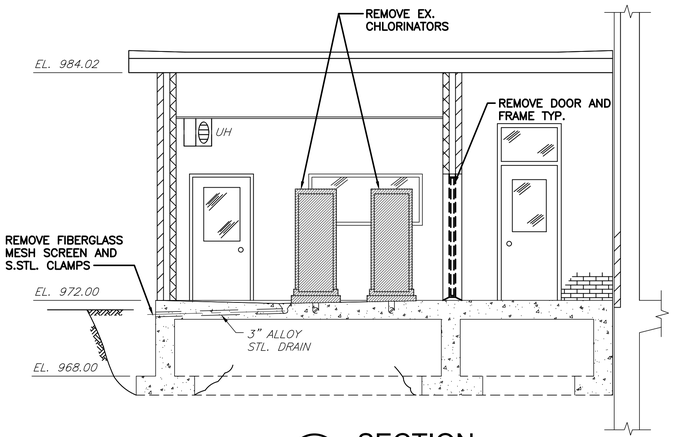
CHLORINE STORAGE AND EVAPORATOR ROOM PLAN

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



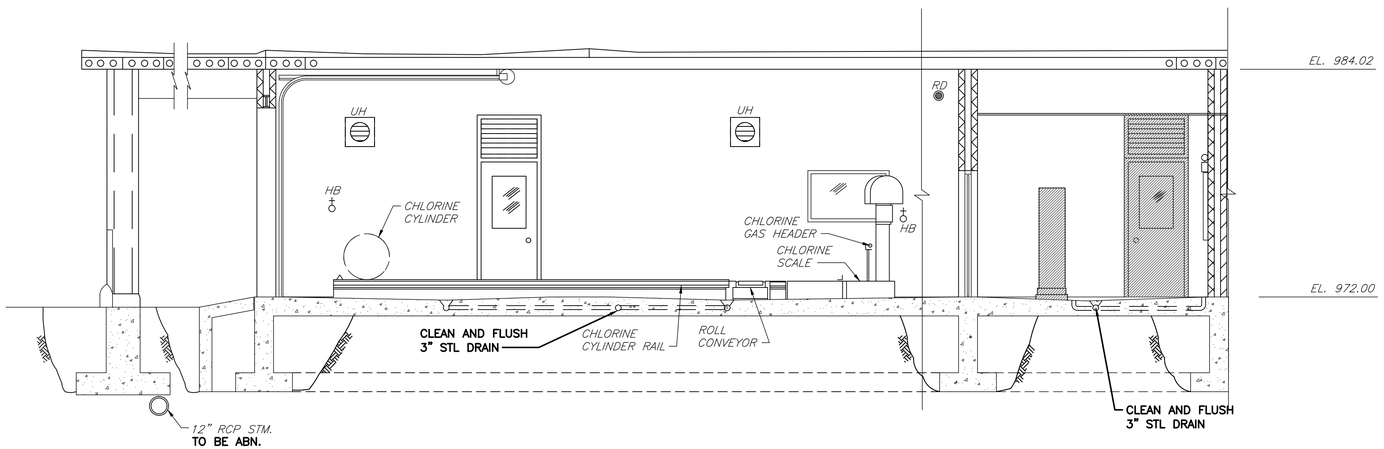
B SECTION

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



C SECTION

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



A SECTION

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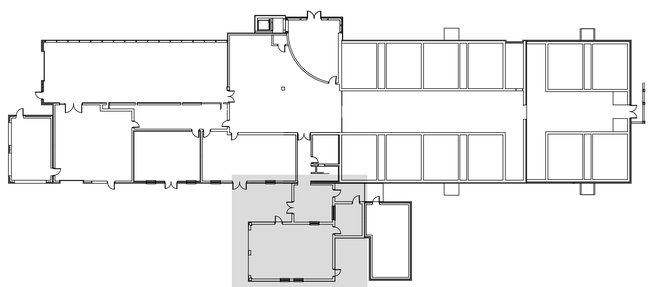

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APPROVED BY:	CMS
SCALE:	AS NOTED

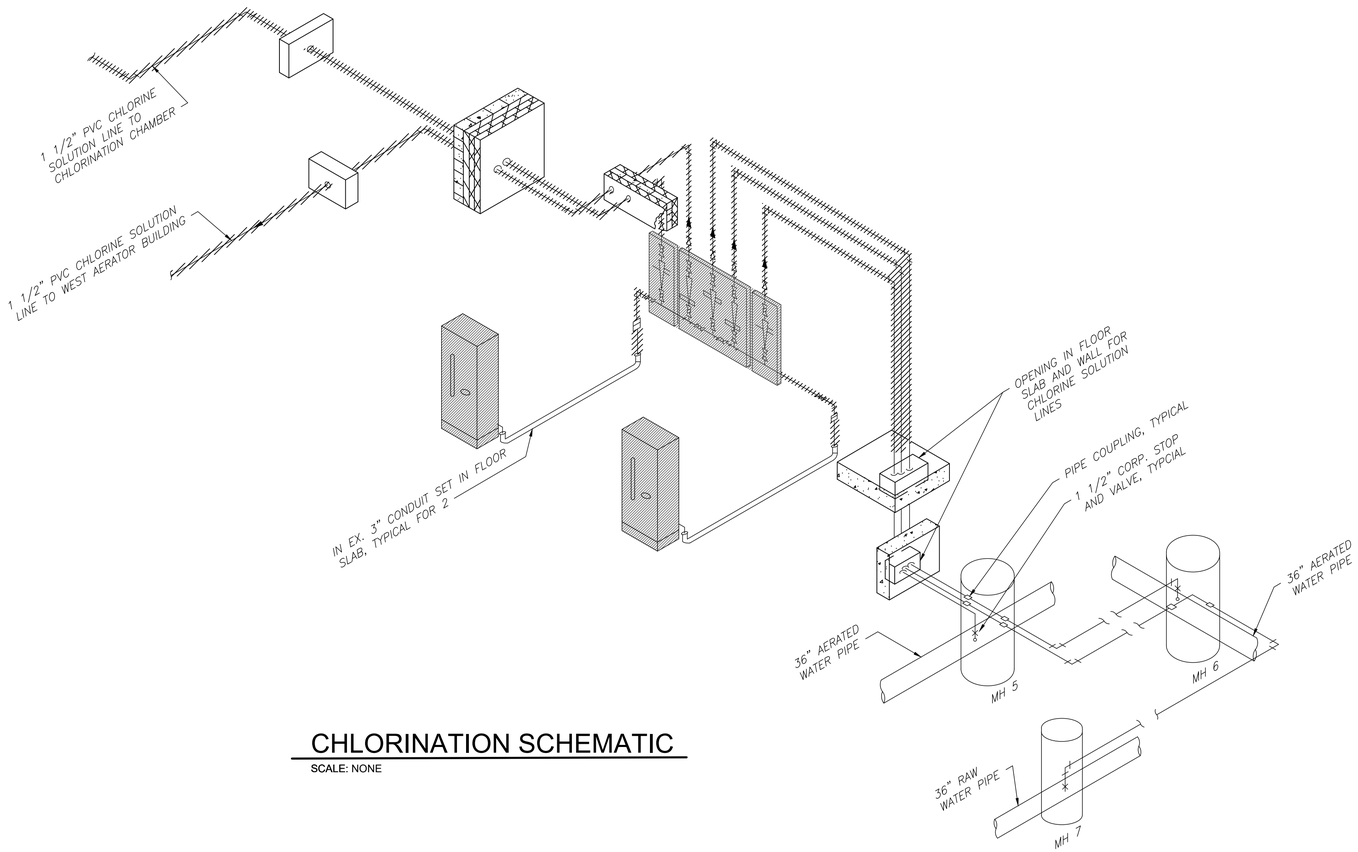
CHLORINE BUILDING DEMOLITION PLAN-SECTIONS

D-37

SHEET: OF

P:\PR58982\Cadd\Sheets\D-37 CHLORINE BUILDING DEMOLITION PLAN-SECTIONS.dwg 4/15/2022 4:13:15 PM Matt Kroll

PLOTTED: 4/16/2022 9:59:40 PM



CHLORINATION SCHEMATIC

SCALE: NONE

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

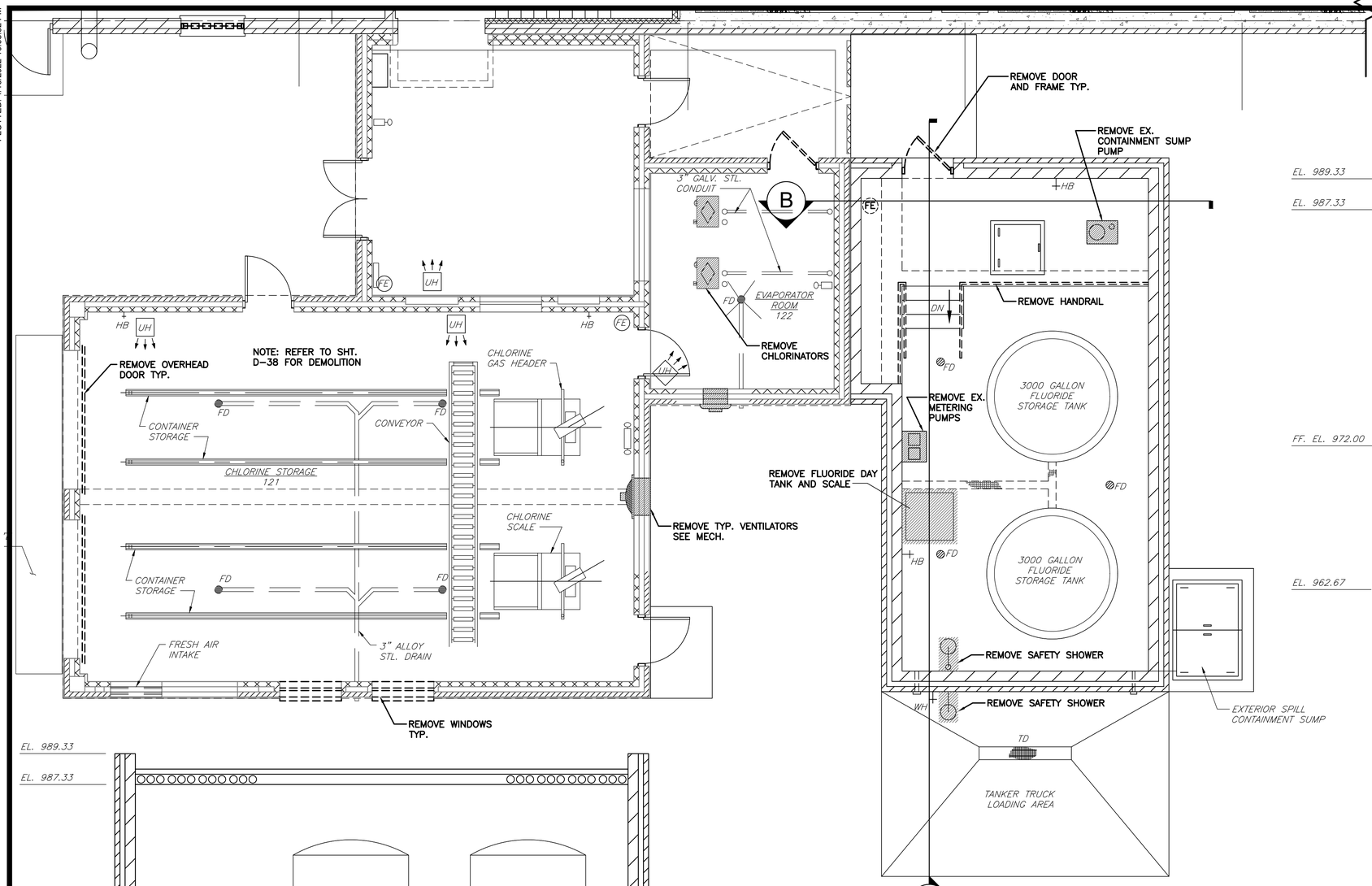
CHLORINE BUILDING DEMOLITION SCHEMATIC

D-38

SHEET: OF

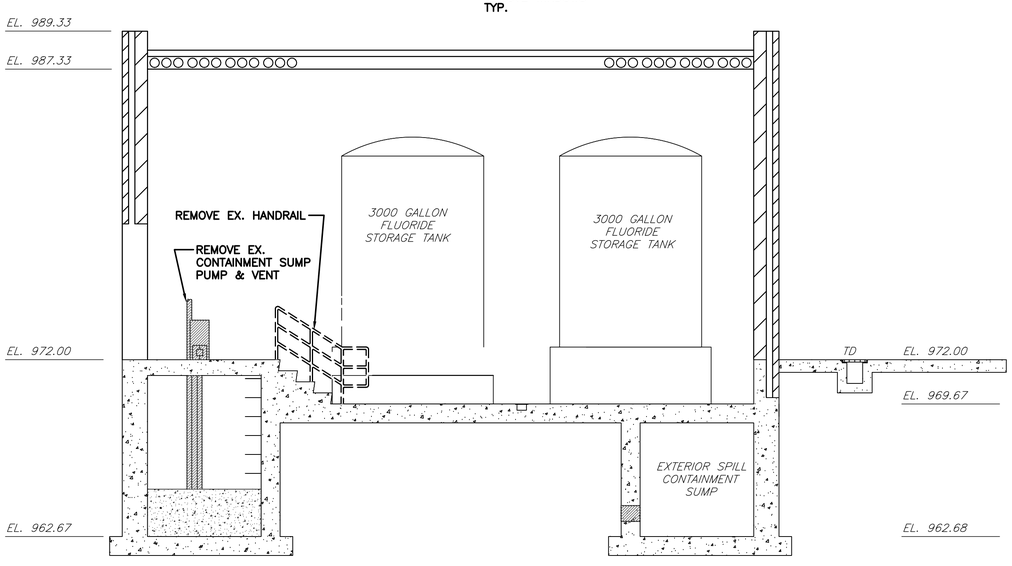
P:\PR58982\Cadd\Sheets\D-38 CHLORINE BUILDING DEMOLITION SCHEMATIC.dwg 4/15/2022 4:13:50 PM Matt Kroll

PLOTTED: 4/16/2022 10:05:52 PM



FLUORIDE ROOM PLAN

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



A SECTION

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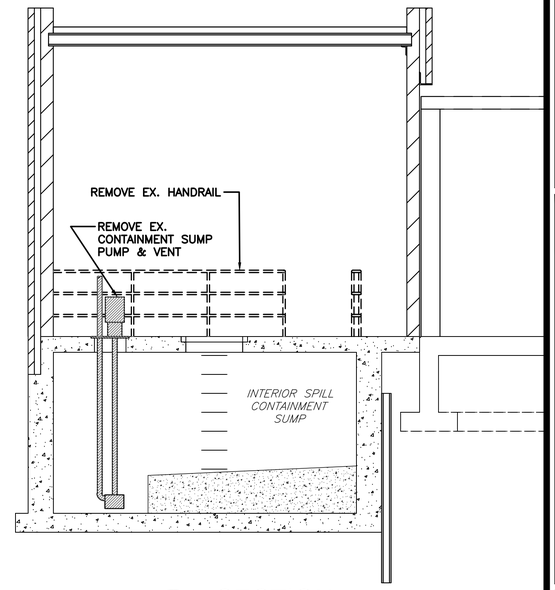
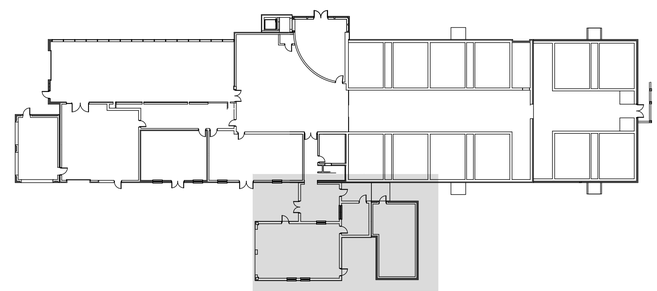


B SECTION

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



BURGESS & NIPLE

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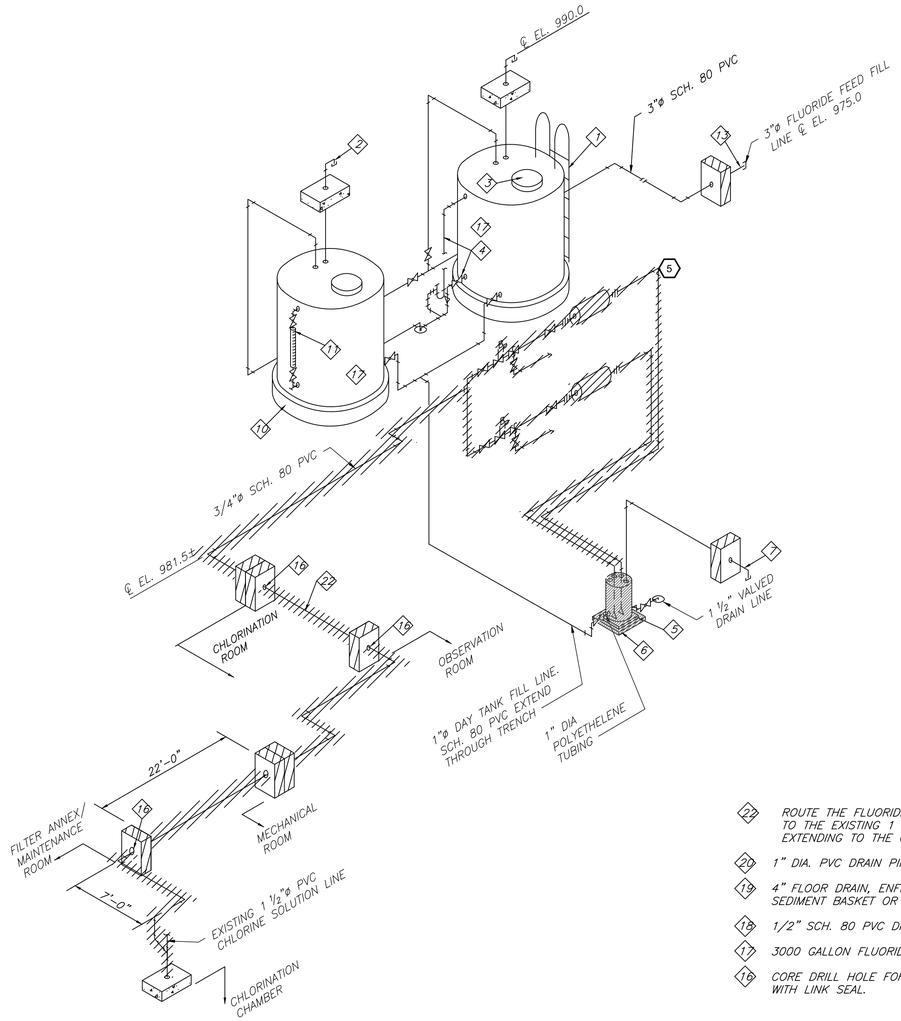
SCALE:	AS NOTED

FLUORIDE BUILDING DEMOLITION PLAN-SECTIONS

D-39

SHEET: OF

PLOTTED: 4/16/2022, 10:06:01 PM



FLUORIDE FEED PIPING
NO SCALE

FLUORIDE FEED SCHEMATIC

SCALE: NONE

22 ROUTE THE FLUORIDE FEED PIPING ALONG AND ADJACENT TO THE EXISTING 1 1/2" PVC CHLORINE SOLUTION LINE EXTENDING TO THE CHLORINATION CHAMBER.

20 1" DIA. PVC DRAIN PIPE WITH WASTE SCREEN IN END OF FLOOR TRENCH.

19 4" FLOOR DRAIN, ENFIELD INDUSTRIAL CORP. MODEL F4402 P WITH SEDIMENT BASKET OR EQUAL (TYP. OF 3).

18 1/2" SCH. 80 PVC DRAIN TO DAY TANK (TYP. OF 2).

17 3000 GALLON FLUORIDE STORAGE TANK.

16 CORE DRILL HOLE FOR 3/4" DIA. FLUORIDE FEED PIPING. SEAL WITH LINK SEAL.

14 OPW KAMLOK 633D-0750 COUPLER WITH VITON-A GASKETS AND 634B-0750 DUST CAP.

13 OPW KAMLOK 633D-0770 COUPLER WITH VITON-A GASKETS AND 634B-0770 DUST CAP.

12 CONTAINMENT SUMP PUMP AND ASSOCIATED PIPING SHALL BE SUPPLIED AND INSTALLED BY THE GENERAL CONTRACTOR.

11 1" DIA. PVC SIGHT TUBE (TYP. OF 2).

10 18" HIGH CONCRETE EQUIPMENT PAD (TYP. OF 2).

9 CALIBRATION CHAMBER (TYP. OF 2).

8 CHEMICAL METERING PUMP (TYP. OF 2).

7 3" DIA. VENT THROUGH WALL WITH DOWNTURNED OUTLET AND BIRD SCREEN. SCH. 80 PVC.

6 4" HIGH CONCRETE EQUIPMENT PAD.

5 LOW PROFILE TANK SCALE, 1000 LB. CAPACITY.

4 4" DIA. SCH. 80 PVC SIPHON DRAIN AND OVERFLOW (TYP. EACH TANK).

3 24" DIA. FLANGED MANWAY ACCESS (TYP. OF 2).

2 4" DIA. VENT THROUGH ROOF WITH DOWNTURNED OUTLET AND BIRD SCREEN. SCH. 80 PVC (TYP. OF 2).

1 STEEL TANK ACCESS LADDER, EPOXY COATED (TYP. OF 2).

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APPROVED BY:	CMS
SCALE:	NONE

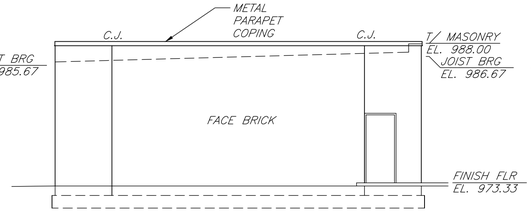
FLUORIDE BUILDING DEMOLITION SCHEMATIC

D-40

SHEET: OF

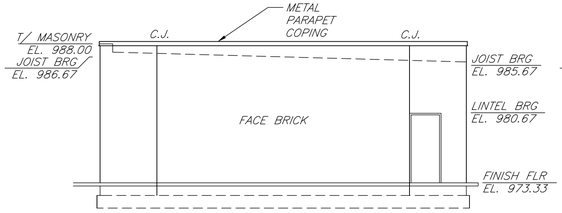
P:\PR58982\Cadd\Sheets\D-40 FLUORIDE BUILDING DEMOLITION SCHEMATIC.dwg 4/15/2022 4:16:13 PM Matt Kroll

PLOTTED: 4/16/2022 10:06:10 PM



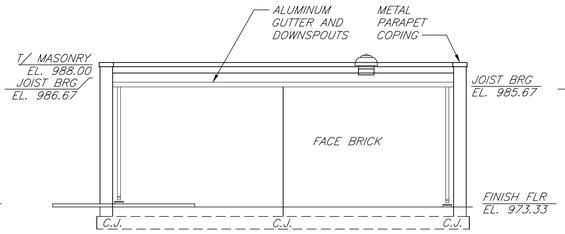
NORTH ELEVATION

1/8"=1'-0" 0 4' 8' 16'



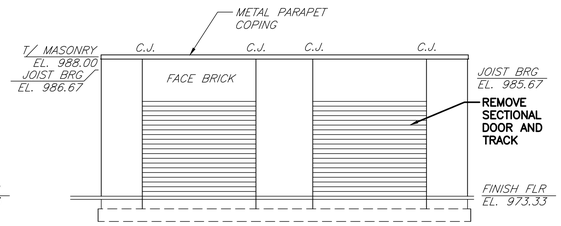
SOUTH ELEVATION

1/8"=1'-0" 0 4' 8' 16'



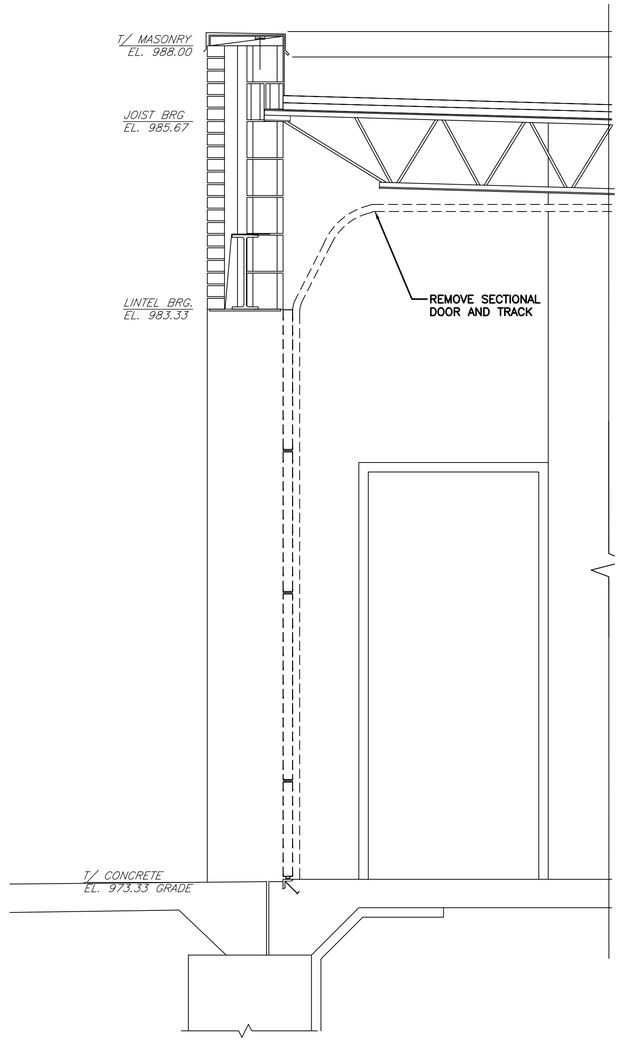
EAST ELEVATION

1/8"=1'-0" 0 4' 8' 16'



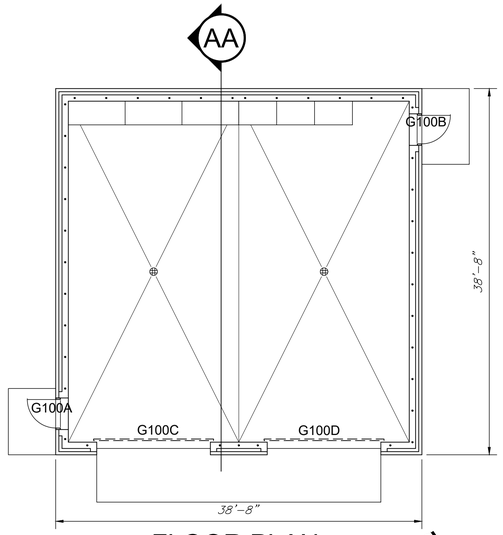
WEST ELEVATION

1/8"=1'-0" 0 4' 8' 16'



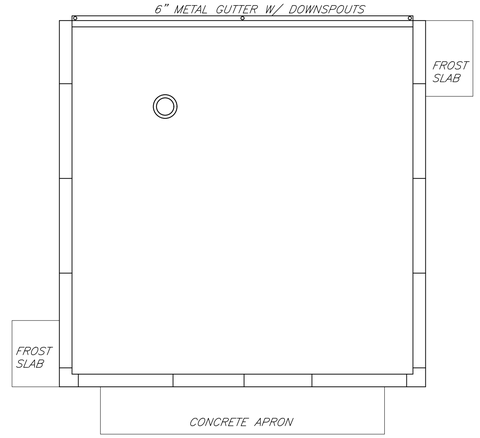
A SECTION

3/4"=1'-0"



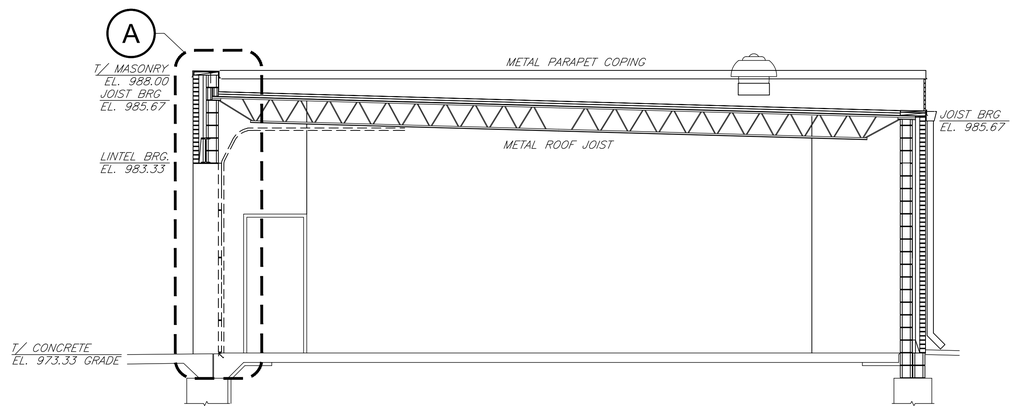
FLOOR PLAN

1/8"=1'-0" 0 4' 8' 16'



ROOF PLAN

1/8"=1'-0" 0 4' 8' 16'



AA BUILDING SECTION

1/4"=1'-0" 0 2' 4' 8'

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
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APPROVED BY:	CMS
SCALE:	AS NOTED

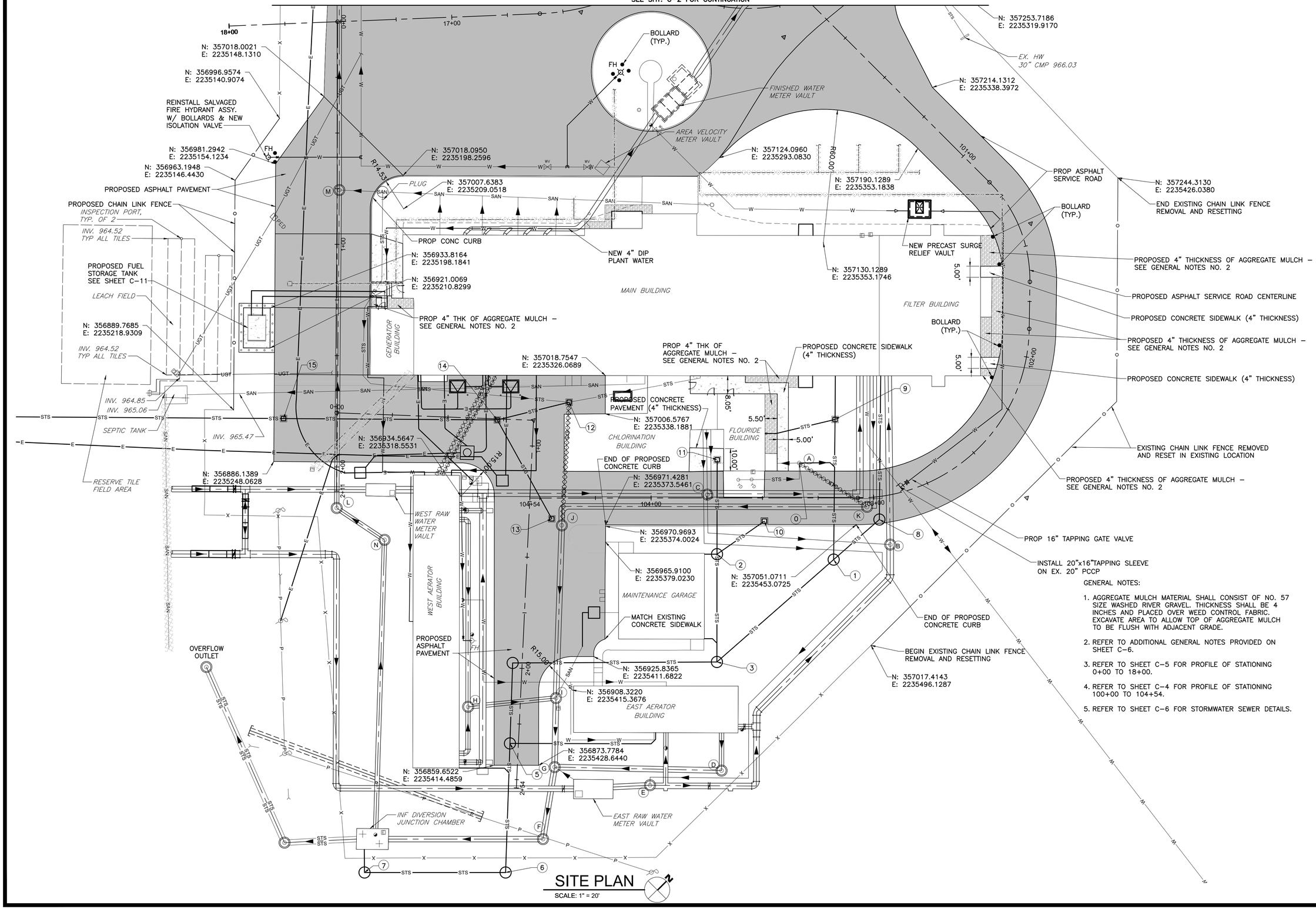
MAINTENANCE GARAGE DEMOLITION PLANS-SECTIONS-ELEVATIONS

D-41

SHEET: OF

P:\PR58982\Cadd\Sheets\D-41 MAINTENANCE GARAGE DEMOLITION PLANS-SECTIONS-ELEVATIONS.dwg 4/15/2022 4:16:54 PM Matt Kroll

SEE SHT. C–2 FOR CONTINUATION



SITE PLAN

SCALE: 1" = 20'

GENERAL NOTES:

1. AGGREGATE MULCH MATERIAL SHALL CONSIST OF NO. 57 SIZE WASHED RIVER GRAVEL. THICKNESS SHALL BE 4 INCHES AND PLACED OVER WEED CONTROL FABRIC. EXCAVATE AREA TO ALLOW TOP OF AGGREGATE MULCH TO BE FLUSH WITH ADJACENT GRADE.
2. REFER TO ADDITIONAL GENERAL NOTES PROVIDED ON SHEET C–6.
3. REFER TO SHEET C–5 FOR PROFILE OF STATIONING 0+00 TO 18+00.
4. REFER TO SHEET C–4 FOR PROFILE OF STATIONING 100+00 TO 104+54.
5. REFER TO SHEET C–6 FOR STORMWATER SEWER DETAILS.

BURGESS & NIPLE
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DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1"=20'

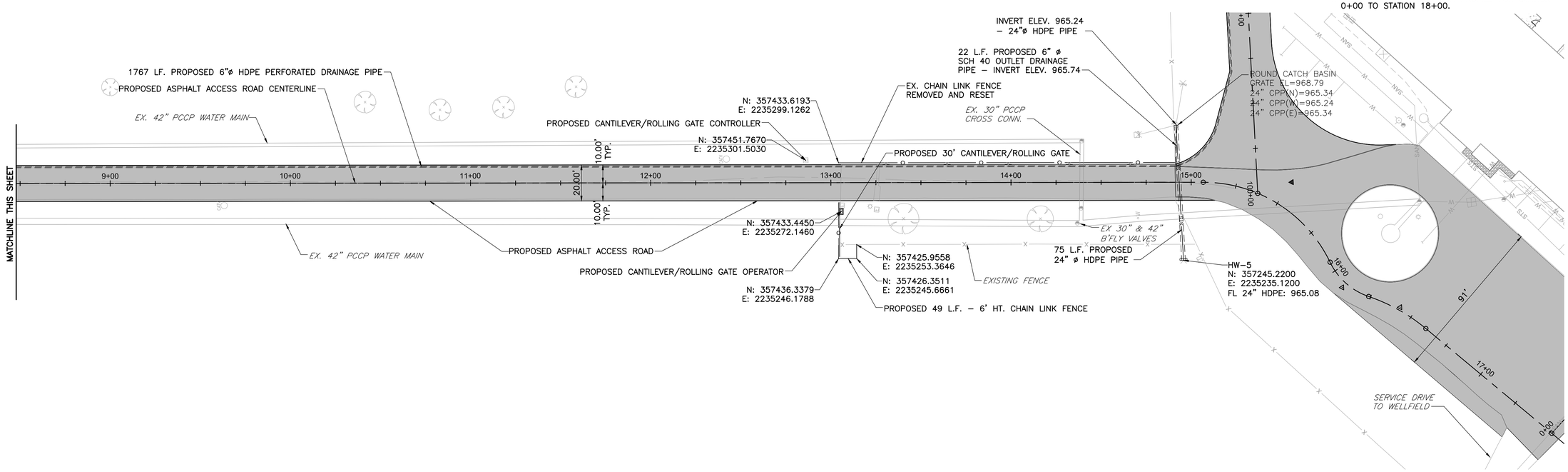
WTP
CIVIL
OVERALL SITE
PLAN

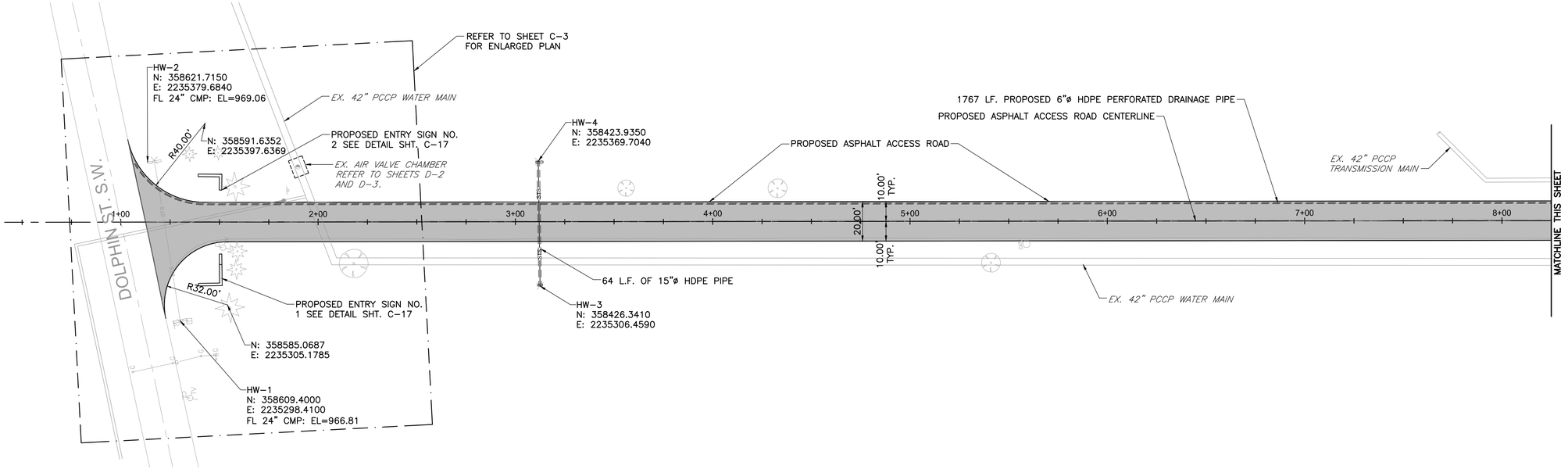
C-1

SHEET: OF

GENERAL NOTES:

1. REFER TO SHEET C-5 FOR PROFILE FOR STATION 0+00 TO STATION 18+00.





LAYOUT PLAN

SCALE: 1" = 30'

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
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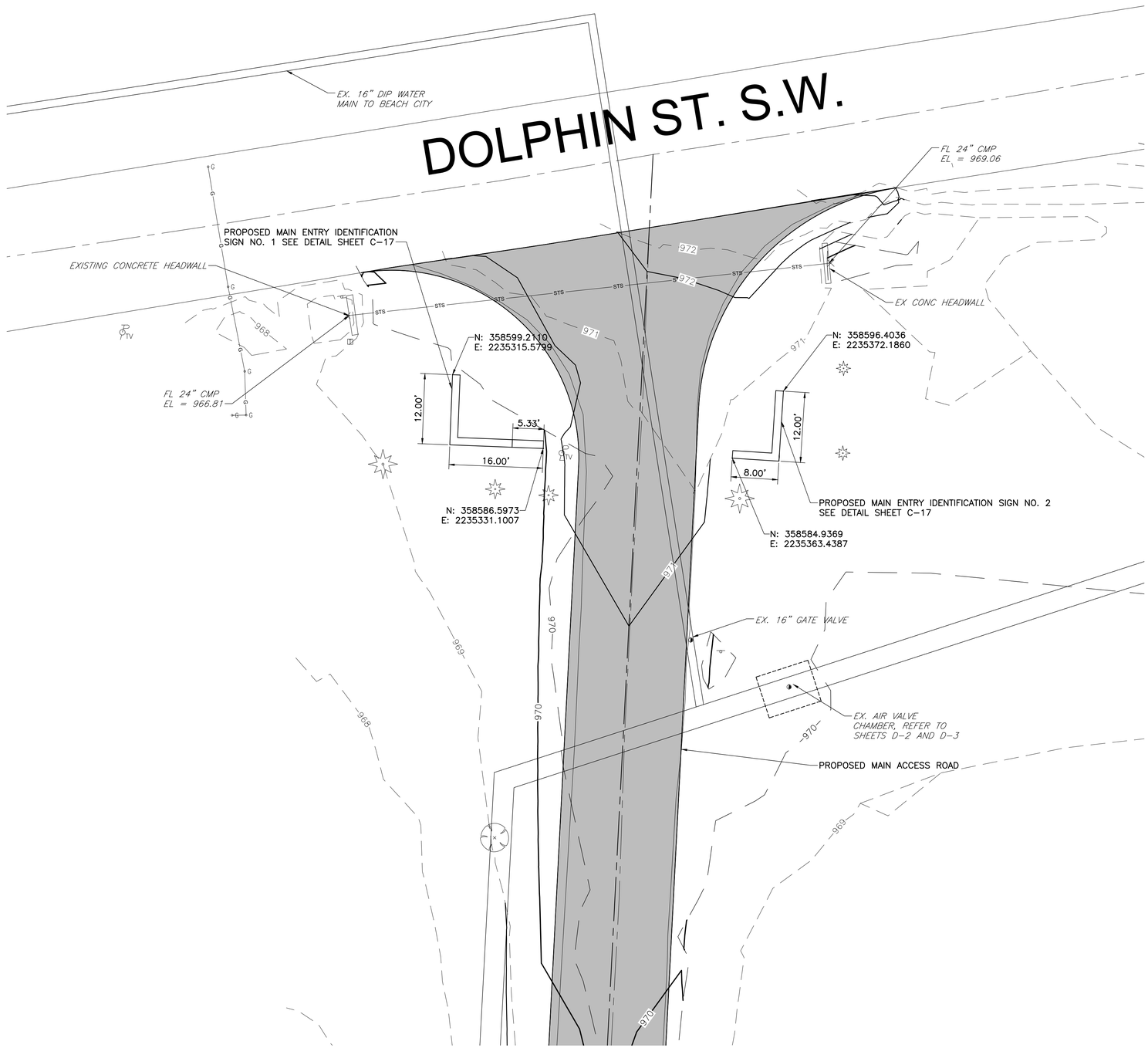
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1"=30'

WTP
MAIN ACCESS DRIVE
CIVIL
LAYOUT PLAN

C-2

SHEET: OF



ENLARGED PLAN

SCALE: 1" = 10'

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &

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1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SDS
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1"=10'

WTP
MAIN ENTRANCE
CIVIL
ENLARGED PLAN

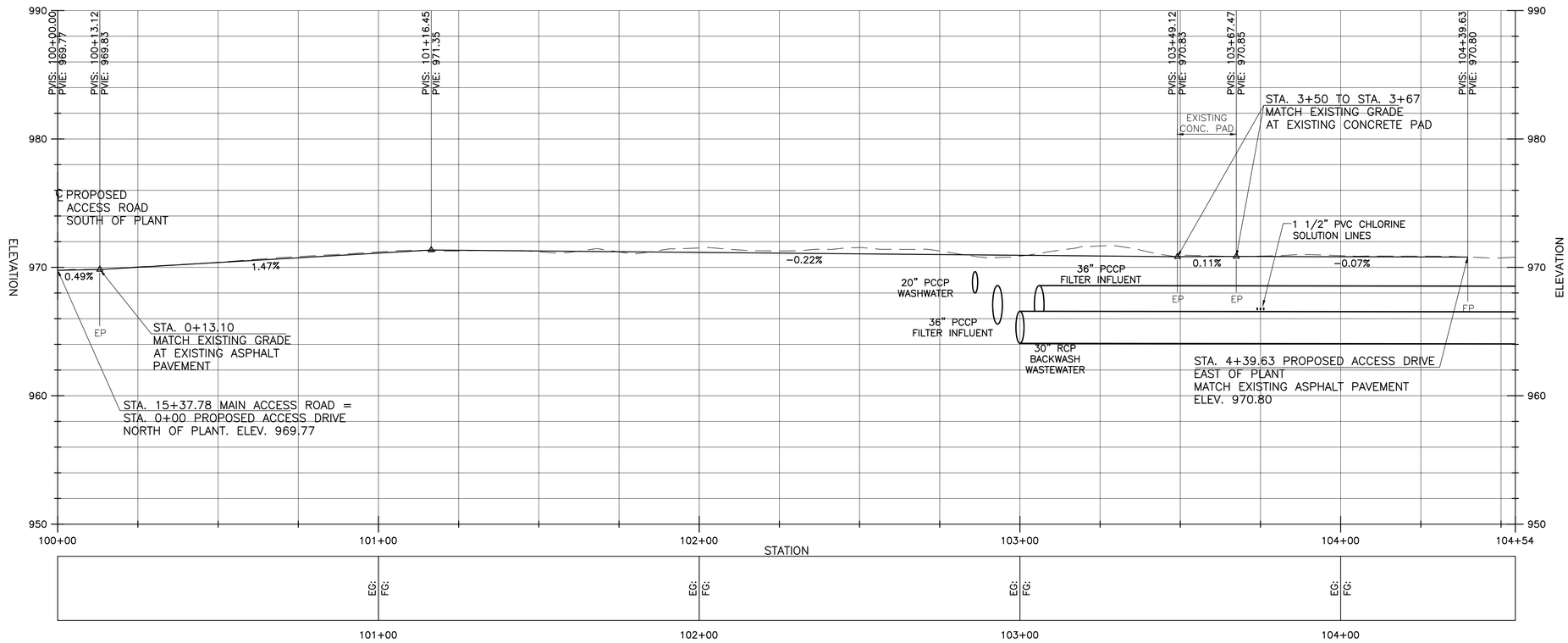
C-3

SHEET: OF

GENERAL NOTES:

1. REFER TO SHEET C–1 FOR THE PLAN VIEW ASSOCIATED WITH THE PROFILE SHOWN ON THIS SHEET.

Proposed NE Access Around Plant PROFILE



BURGESS & NIPLE
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	H: 1"=20' V: 1"=5'

WTP
SERVICE DRIVE
CIVIL
PROFILE

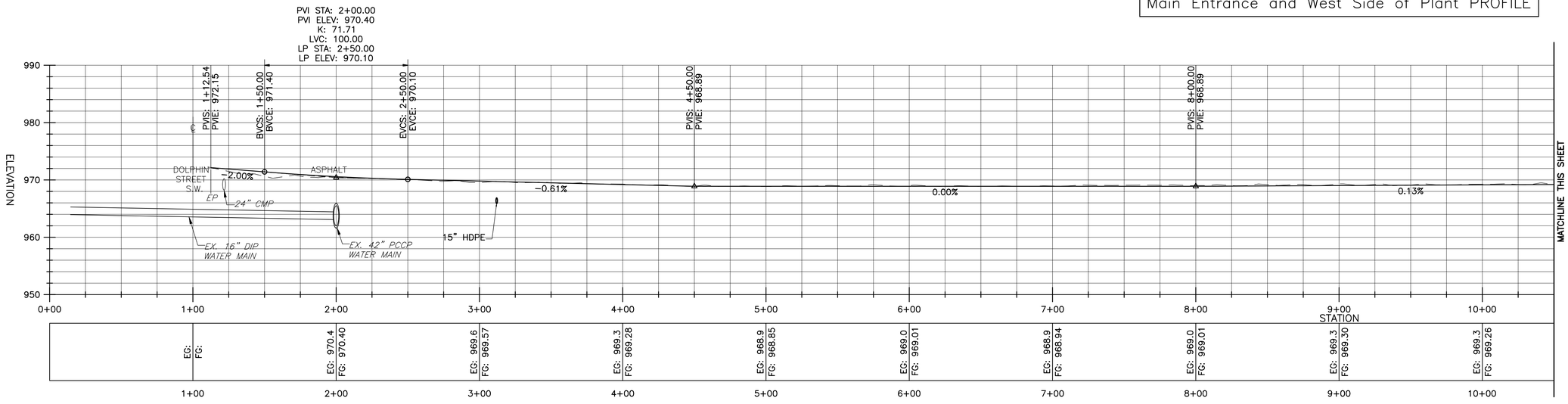
C-4

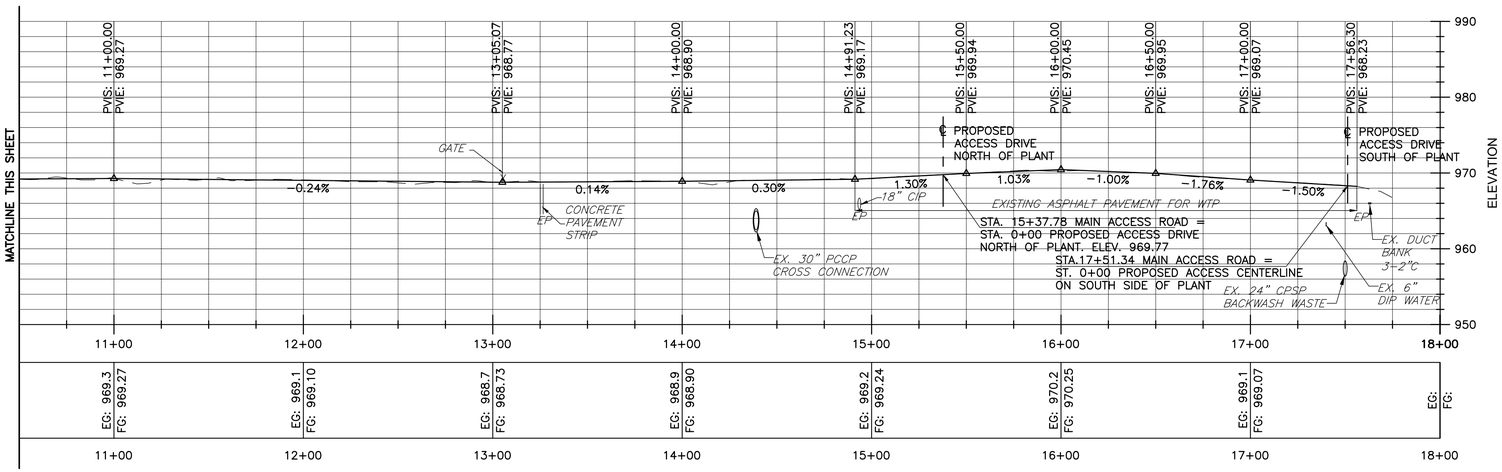
SHEET: OF

GENERAL NOTES:

1. REFER TO SHEET C-2 FOR PLAN VIEW ASSOCIATED WITH PROFILES SHOWN ON THIS SHEET.

Main Entrance and West Side of Plant PROFILE





BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SDS
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	H: 1"=40' V: 1"=10

WTP
MAIN ACCESS DRIVE
CIVIL
PROFILE

C-5

SHEET: OF

STORM STRUCTURES

0 **EXISTING MANHOLE (MODIFIED)**
RIM ELEV. 970.95 **(LOWERED)**
INV. OUT 8" 968.73
PLUG EXISTING 8" PVC PIPE

1 **PROPOSED MH 1**
RIM: 970.43
INV. IN 10" 967.75
INV. IN 10" 966.27
INV. OUT 15" 966.27

2 **PROPOSED MH 2**
RIM: 971.52
INV. IN 6" 968.07
INV. IN 6" 968.07
INV. IN 8" 966.62
INV. OUT 8" 966.62

3 **PROPOSED MH 3**
RIM: 971.96
INV. IN 6" GARAGE ROOF DOWNSPOUT 966.60
INV. IN 8" 965.85
INV. IN 15" 965.85
INV. OUT 15" 965.85

4 **PROPOSED MH 4**
RIM: 971.54
INV. IN 15" 964.43
INV. OUT 15" 964.43

5 **PROPOSED MH 5**
RIM: 971.17
INV. IN 6" 966.56
INV. IN 964.06
INV. OUT 963.60

6 **PROPOSED MH 6**
RIM: 969.69
INV. IN 15" 963.09
INV. OUT 15" 963.09

7 **PROPOSED MH 7**
RIM: 969.81
INV. IN 15" 960.43
OUT 15" 960.43

8 **PROPOSED MH 8**
RIM ELEV: 970.74
INV. IN 10" 966.43
INV. OUT 10" 966.43

9 **PROPOSED INLET 2**
RIM ELEV: 970.28
INV. IN 6" 968.81 (FLUORIDE BLDG)
INV. IN 6" 968.81 (INLET 9)
INV. IN 10" 968.48
INV. OUT 10" 968.48

10 **PROPOSED INLET 3**
RIM ELEV: 970.62
INV OUT 8" 967.40

11 **PROPOSED INLET 4**
RIM ELEV: 970.66
INV. OUT 6" 968.28

12 **EXISTING INLET 5 (MODIFIED)**
RIM: 970.67 **(LOWERED)**
4" RCP (NE) INV. 965.05
6" RCP (SW) INV. 964.95
12" HDPE INV. OUT 964.95
12" RCP (SE) INV. 963.70 **(PLUG)**
FILL BOTTOM WITH CONCRETE TO ELEVATION: 964.95

13 **PROPOSED INLET 6**
RIM: 970.73
INV. OUT 8" 962.61

14 **PROPOSED INLET 7**
RIM: 970.45
INV. IN 8" 962.34
INV. IN 12" 962.34
INV. OUT 12" 962.34

15 **PROPOSED INLET 8**
RIM: 968.79
INV. IN 12" 961.55
INV. OUT 12" 961.55

PIPE PROFILE REFERENCE TABLE

PIPE SEGMENT	SHEET
INLET 5 TO INLET 7	C-18
INLET 6 TO INLET 7	C-18
INLET 7 TO INLET 8 TO OUTLET	C-19
MANHOLE 7 TO VAULT	C-20
MANHOLE 7 TO MANHOLE 6	C-20
MANHOLE 5 TO EAST AERATOR DOWNSPOUT	C-20
MANHOLE 4 TO MANHOLE 3	C-20
WEST AERATOR DOWNSPOUT TO 15" HDPE PIPE	C-20
ROOF AREA 4 TO MANHOLE 1	C-21
FLUORIDE BUILDING TO INLET 2	C-21
INLET 4 TO MANHOLE 2	C-21
INLET 3 TO MANHOLE 2	C-21
MANHOLE 6 TO MANHOLE 4	C-22
MANHOLE 8 TO MANHOLE 3	C-22
ROOF AREA 5 TO MANHOLE 8	C-22

GENERAL NOTES

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT, BACK OF CURB, AND FACE OF BUILDINGS, UNLESS OTHERWISE NOTED.

HEADWALL NORTHINGS AND EASTINGS CALLED OUT ON THE "NEW STORM STRUCTURE SCHEDULE" REFER TO THE CENTER OF PIPE ON THE DISCHARGE FACE OF THE HEADWALL.

SEE ARCHITECTURAL PLANS FOR DETAILED DIMENSIONS OF BUILDING.

GRADING SURROUNDING DRAINAGE STRUCTURES SHALL HAVE A UNIFORM SLOPE FROM THE LAST GIVEN ELEVATION TO THE CATCH BASIN OR DRAIN INLET.

CONTRACTOR SHALL BLEND NEW EARTHWORK WITH EXISTING CONTOURS.

CONTRACTOR SHALL ENSURE THAT ALL SURFACES POSITIVELY DRAIN TO PROPOSED STRUCTURES AND SURFACE DRAINAGE OF ADJACENT PARCELS ARE NOT IMPACTED.

SITE PAVEMENT SHALL SLOPE UNIFORMLY FROM LAST GIVEN GRADE AT BUILDING TO PAVEMENT UNLESS NOTED OTHERWISE.

ALL FIELD TILE OR STORM PIPE ENCOUNTERED SHALL BE TIED INTO STORM SEWER.

ANY FIELD TILE OR STORM PIPE INTERCEPTED BY OTHER EXCAVATIONS SHALL BE RECONNECTED.

FOR ORIGINAL STORM STRUCTURES AND MANHOLE DATA, REFER TO SHEET C-31.

ALL AERATED WATER AND WASHWATER STRUCTURES SHOWN ON C-15 FOR REFERENCE.

ALL BURIED PROCESS PIPING SHOWN ON SHT. C-16 FOR REFERENCE.

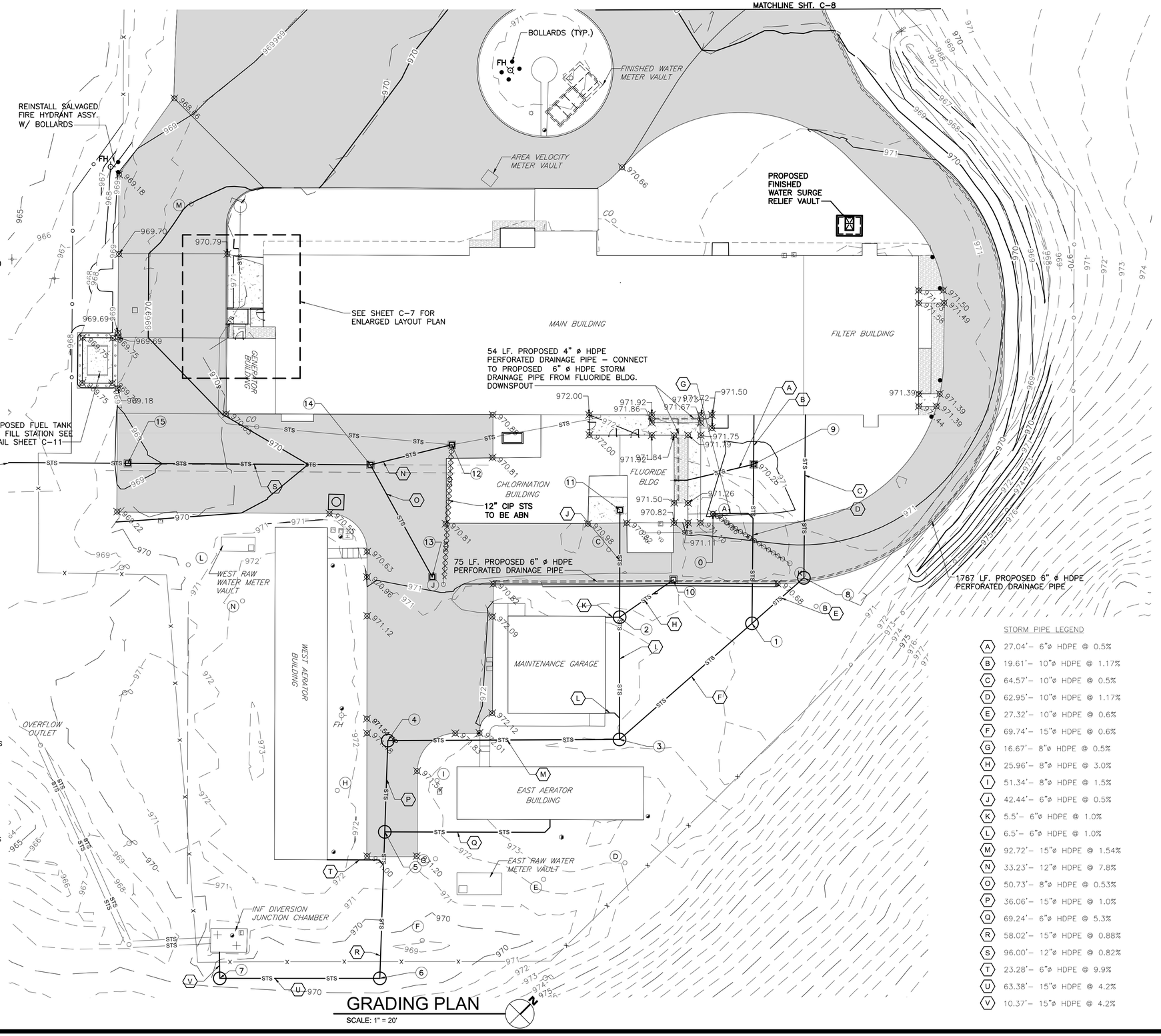
ALL STORMWATER PROFILES SHOWN ON SHTS. C-18 THRU C-22 FOR REFERENCE.

MATERIAL SPECIFICATIONS

STORM SEWERS:

STORM SEWER 12" TO 15" SHALL BE HDPE ASTM D3350

STORM SEWER 10" AND UNDER SHALL BE HDPE ASTM D3350



GRADING PLAN
SCALE: 1" = 20'

STORM PIPE LEGEND

A 27.04'– 6"ø HDPE @ 0.5%
B 19.61'– 10"ø HDPE @ 1.17%
C 64.57'– 10"ø HDPE @ 0.5%
D 62.95'– 10"ø HDPE @ 1.17%
E 27.32'– 10"ø HDPE @ 0.6%
F 69.74'– 15"ø HDPE @ 0.6%
G 16.67'– 8"ø HDPE @ 0.5%
H 25.96'– 8"ø HDPE @ 3.0%
I 51.34'– 8"ø HDPE @ 1.5%
J 42.44'– 6"ø HDPE @ 0.5%
K 5.5'– 6"ø HDPE @ 1.0%
L 6.5'– 6"ø HDPE @ 1.0%
M 92.72'– 15"ø HDPE @ 1.54%
N 33.23'– 12"ø HDPE @ 7.8%
O 50.73'– 8"ø HDPE @ 0.53%
P 36.06'– 15"ø HDPE @ 1.0%
Q 69.24'– 6"ø HDPE @ 5.3%
R 58.02'– 15"ø HDPE @ 0.88%
S 96.00'– 12"ø HDPE @ 0.82%
T 23.28'– 6"ø HDPE @ 9.9%
U 63.38'– 15"ø HDPE @ 4.2%
V 10.37'– 15"ø HDPE @ 4.2%

BURGESS & NIPLE
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SUGAR CREEK
WATER TREATMENT PLANT &

NO.	DESCRIPTION	DATE
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DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1"=20'

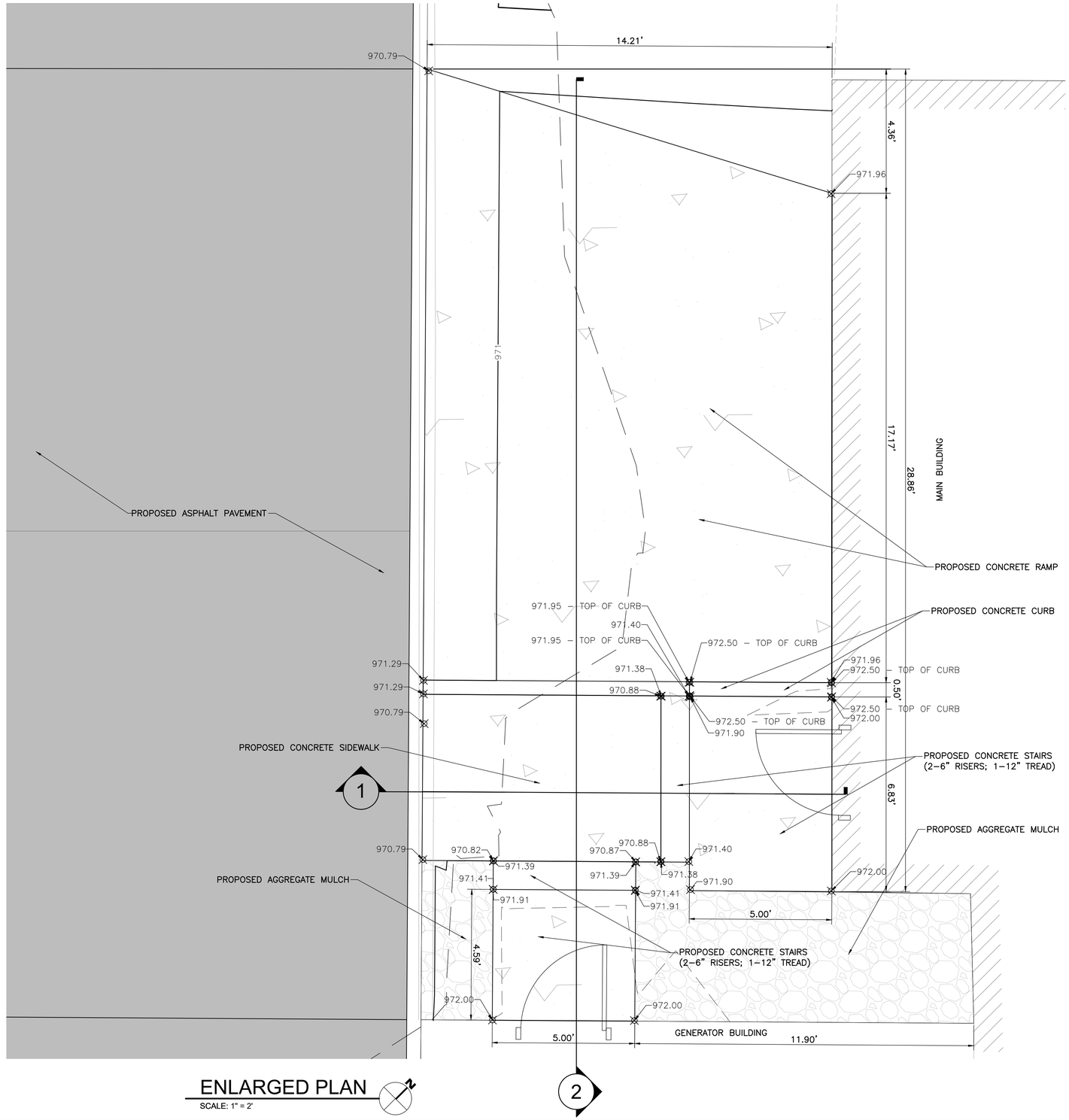
WTP
CIVIL
YARD GRADING
& STORM
PLAN

C-6

SHEET: OF

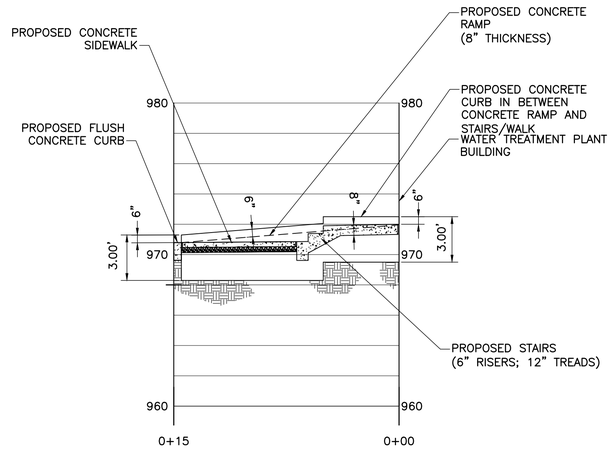
GENERAL NOTES:

1. REFER TO SHEET C-6 FOR OVERALL PLAN VIEW.



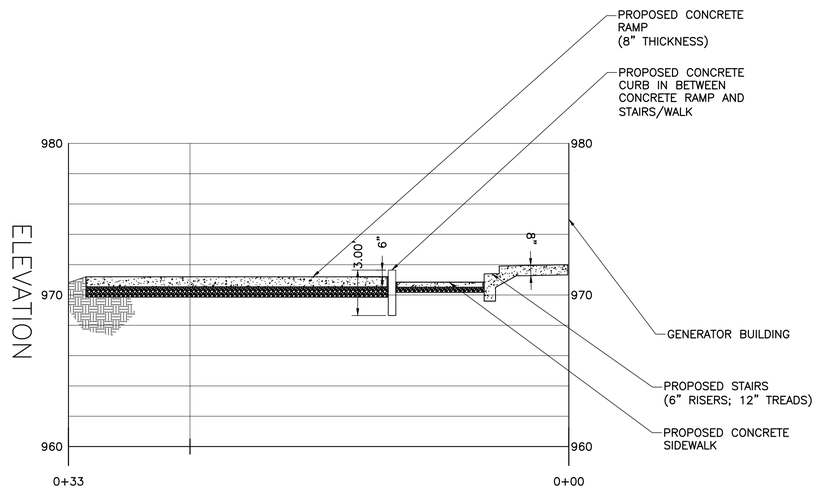
ENLARGED PLAN

SCALE: 1" = 2'



1 SECTION

SCALE: 1" = 5'



2 SECTION

SCALE: 1" = 5'

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &

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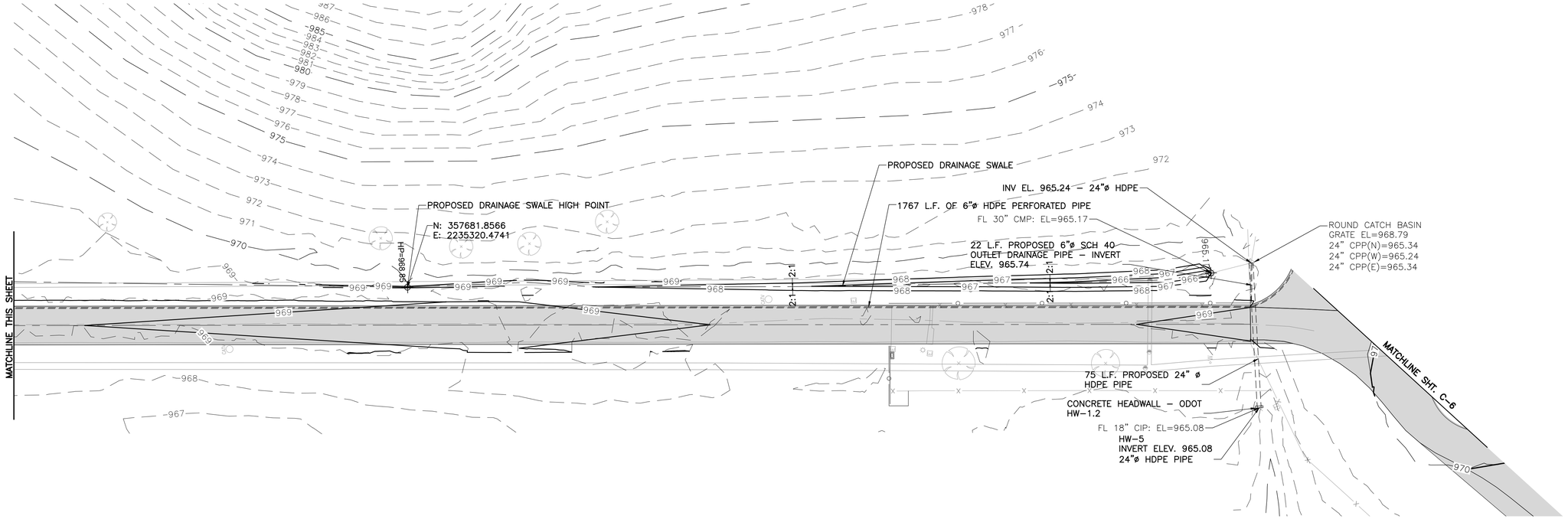
APPROVED BY:	CMS
SCALE:	AS NOTED

WTP
CIVIL
MAIN BLDG WEST
ENLARGED PLAN-
SECTIONS

C-7

SHEET: OF



GRADING PLAN

SCALE: 1" = 30'

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &

NO.	DESCRIPTION	DATE
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JOB NO:	PR58982
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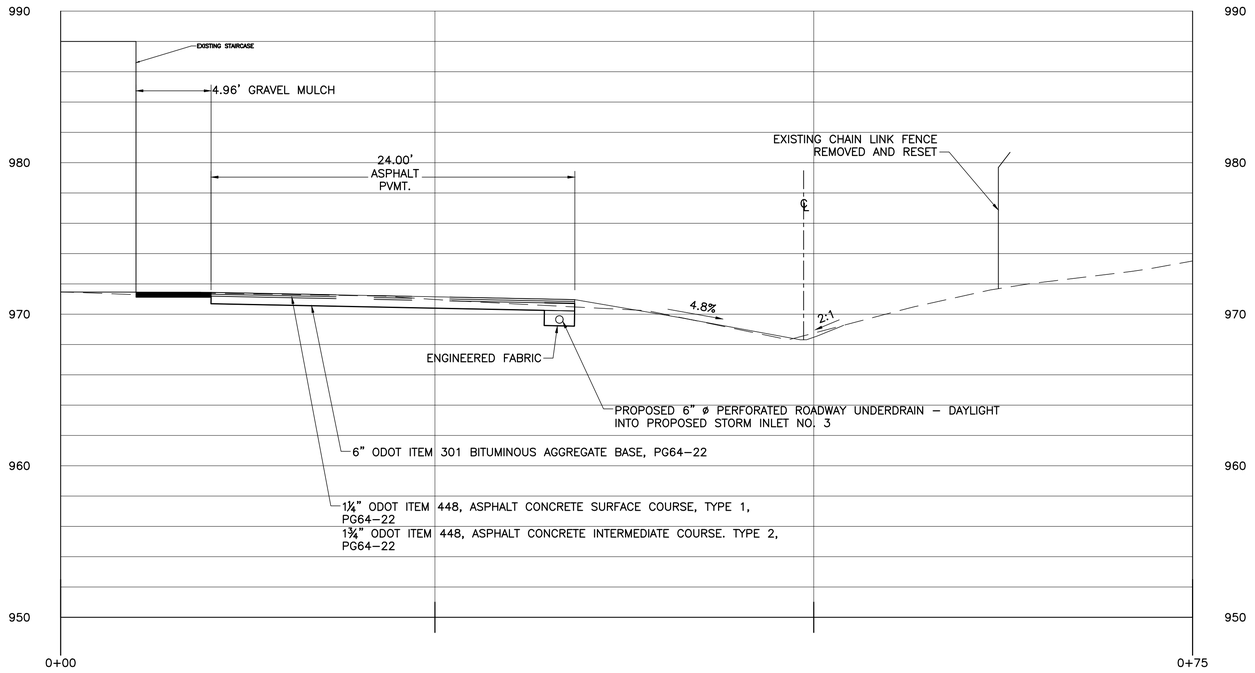
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1"=30'

WTP
MAIN ACCESS DRIVE
CIVIL
YARD GRADING
PLAN

C-8

SHEET: OF

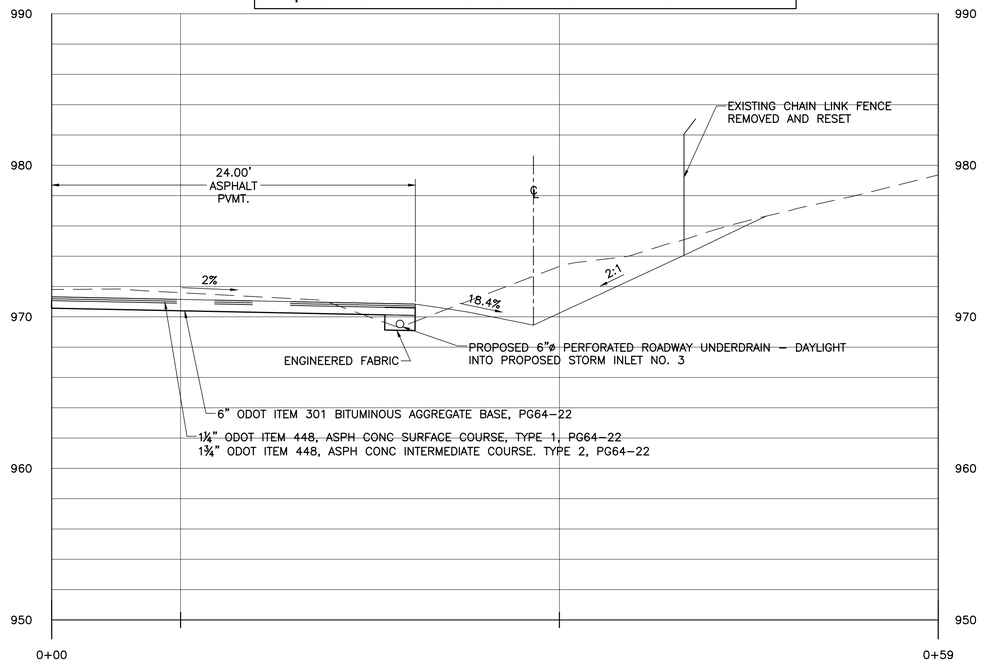
Proposed Service Road Cross Section - Sta. 101+83.05



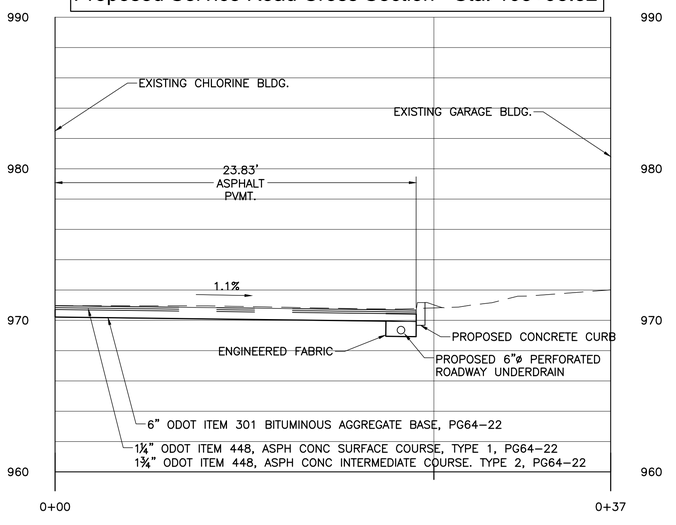
NEW STORM STRUCTURE SCHEDULE

LABEL	TYPE	NORTHING	EASTING	RIM	INLET SIZE (IN)	INLET INVERT	INLET FROM	OUTLET SIZE (IN)	OUTLET INVERT	OUTLET TO
HW–1	HW–1.2	358609.40	2235298.41	––	24	966.81	HW–2	––	––	ENTRANCE DRIVE HWs
HW–2	HW–1.2	358618.21	2235379.57	––	24	969.06	HW–1	––	––	ENTRANCE DRIVE HWs
HW–3	HW–1.2	358426.34	2235306.46	––	15	965.12	HW–4	––	––	ENTRANCE DRIVE HWs
HW–4	HW–1.2	358423.93	2235369.71	––	15	966.54	HW–3	––	––	ENTRANCE DRIVE HWs
HW–5	HW–1.2	357245.22	2235235.12	––	24	965.08	CB–1	––	––	ENTRANCE DRIVE HWs
HW–6	HW–1.2	356844.1716	2235108.39	––	12	960.00	INLET 8	––	––	––
INLET 2	CB–2–2B	357077.75	2235412.95	970.28	6,6,10	968.81, 968.81, 968.48	ROOF AREA 4, FLUORIDE BLDG	10	968.48	MH 1
INLET 3	CB–2–2B	357023.02	2235422.80	970.62	––	––	––	8	967.40	MH 2
INLET 4	CB–2–2B	357027.53	2235388.35	970.66	––	––	––	6	968.28	MH 2
INLET 5	MH–B	356998.79	2235323.02	970.67	4,6,12	965.05, 964.95, 963.70 (PLUG)	DOWNSPOUTS	12	964.95	INLET 7
INLET 6	CB–2–2B	356956.24	2235354.57	970.73	––	––	––	8	962.61	INLET 7
INLET 7	CB–2–2B	356970.34	2235305.84	970.45	8,12	962.34	INLET 5, INLET 6	12	962.34	INLET 8
INLET 8	CB–2–2B	356902.90	2235237.52	968.79	12	961.55	INLET 7	12	961.55	W
MH 0	MH–B	357052.52	2235415.43	970.95	––	––	––	8	968.73	MH 1
MH 1	MH–B	357032.78	2235457.02	970.43	10,10	967.75,966.27	MH 0,MH 8	15	966.27	MH 3
MH 2	MH–B	356997.46	2235418.26	971.52	6,6,8	968.07, 968.07, 966.62	INLET 3, INLET 4, MAINT. GARAGE	8	966.62	MH 3
MH 3	MH–B	356963.19	2235452.45	971.96	6,8,15	966.60, 965.85, 965.85	MAINT.GAR., MH 2,MH 1	15	965.85	MH 4
MH 4	MH–B	356898.03	2235387.91	971.54	15	964.43	MH 3	15	964.43	MH 5
MH 5	MH–B	356871.61	2235412.60	971.17	15,15	966.56,964.06	MH 4, EAST AERATOR	15	963.60	MH 6
MH 6	MH–B	356829.23	2235452.22	969.69	15	963.09	MH 5	15	963.09	MH 7
MH 7	MH–B	356784.42	2235407.41	969.81	15	960.43	MH 6	15	960.43	VAULT
MH 8	MH–B	357060.04	2235458.81	970.74	10	966.43	FILTER BLDG	10	966.43	MH 1

Proposed Service Road Cross Section - Sta. 102+37.05



Proposed Service Road Cross Section - Sta. 103+98.82



BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &

NO.	DESCRIPTION	DATE
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JOB NO:	PR58982
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DESIGNED BY:	SDS
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

WTP
SERVICE DRIVE
CIVIL
CROSS SECTIONS-
SCHEDULE

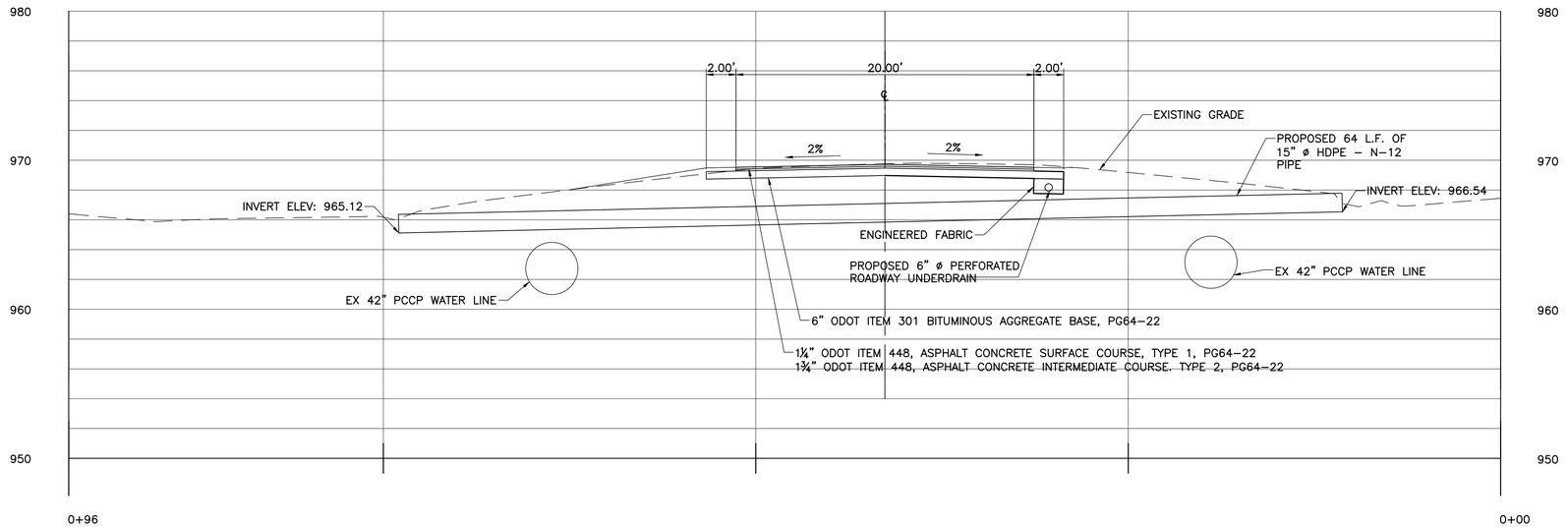
C-9

SHEET: OF

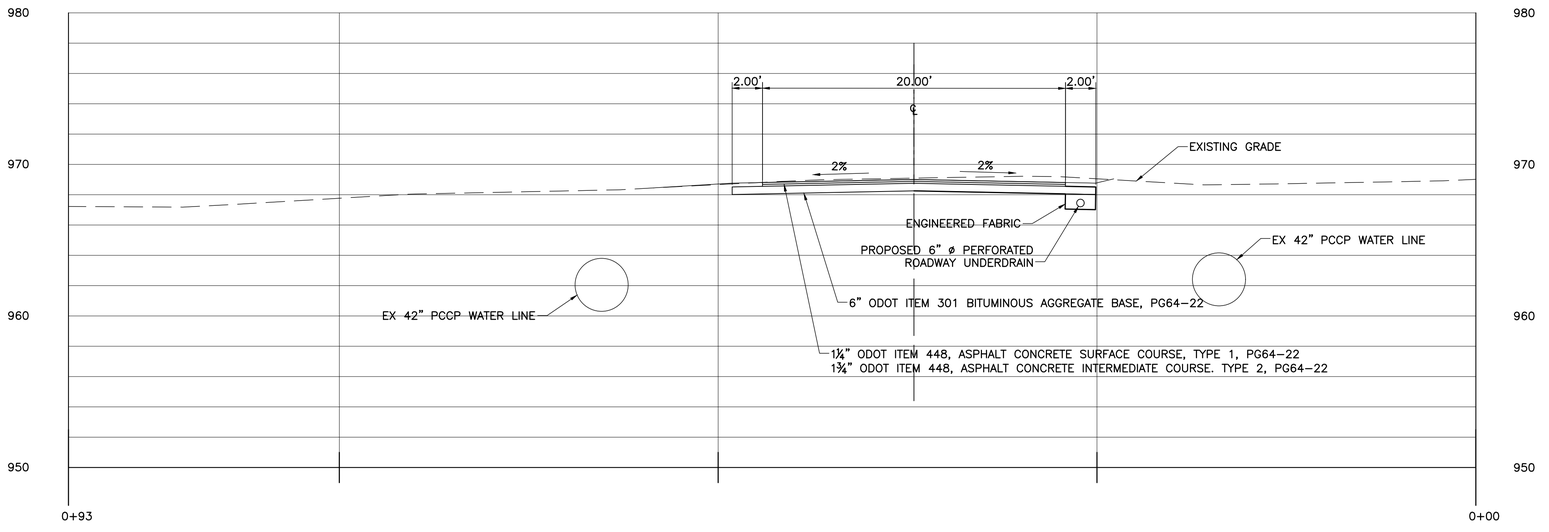
GENERAL NOTES:

1. REFER TO SHEET C–2 FOR PLAN VIEW ON THE LOCATION OF THE CROSS SECTIONS.

Main Access Rd - Cross Section - Sta. 3+11.64



Main Access Rd - Cross Section - Sta. 8+91.23



BURGESS & NIPLE
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PAINESVILLE, OHIO 44077

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SUGAR CREEK
WATER TREATMENT PLANT &

NO.	DESCRIPTION	DATE
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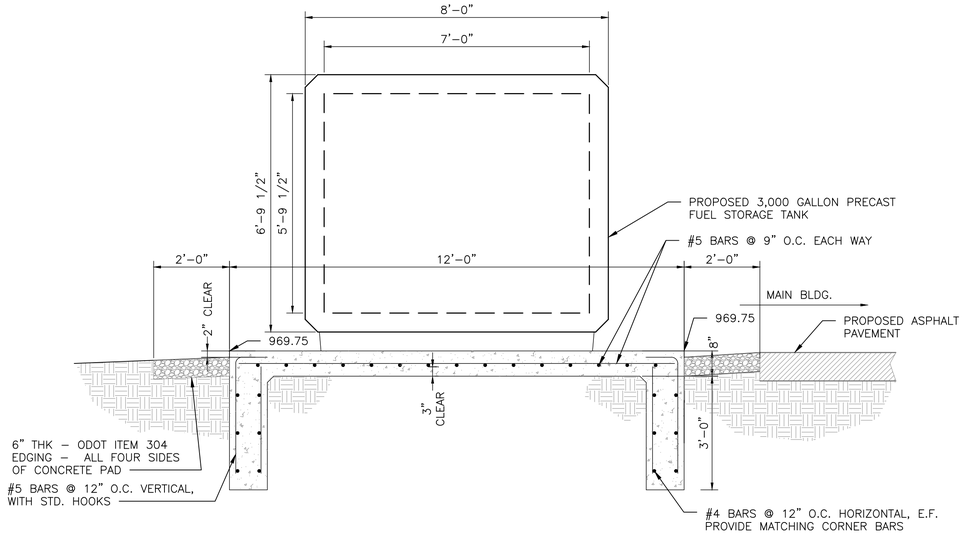
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1"=5'

WTP
MAIN ACCESS DRIVE
CIVIL
CROSS SECTIONS

C-10

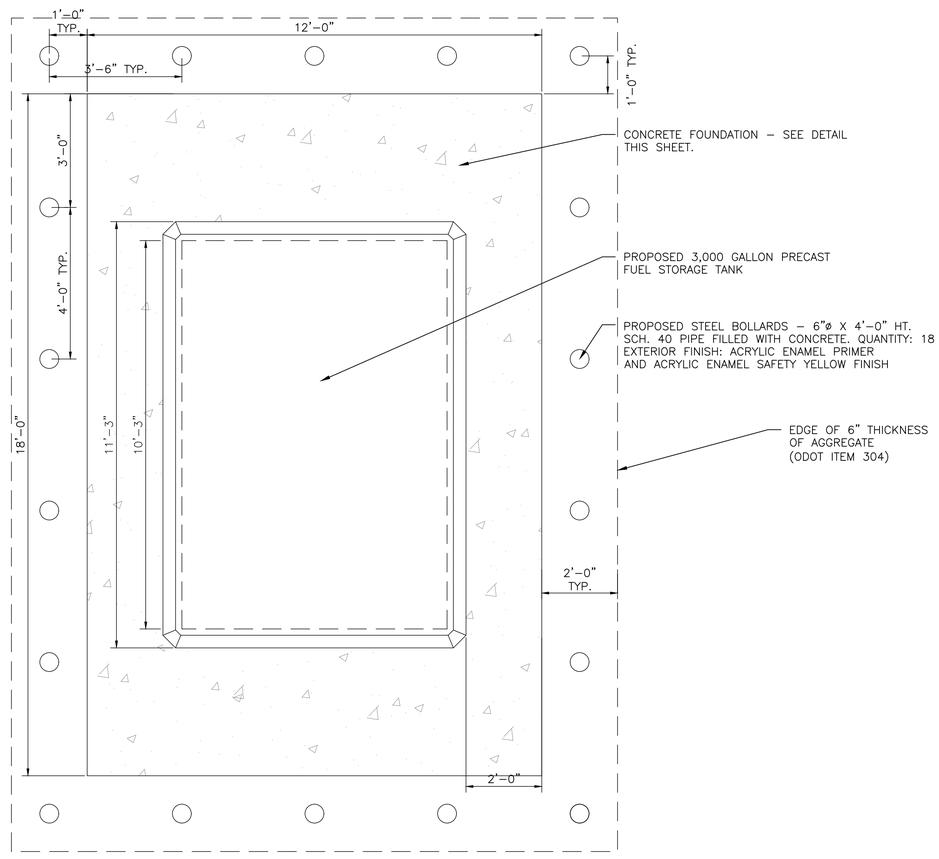
SHEET: OF

PLOTTED: 4/15/2022 4:57:01 PM



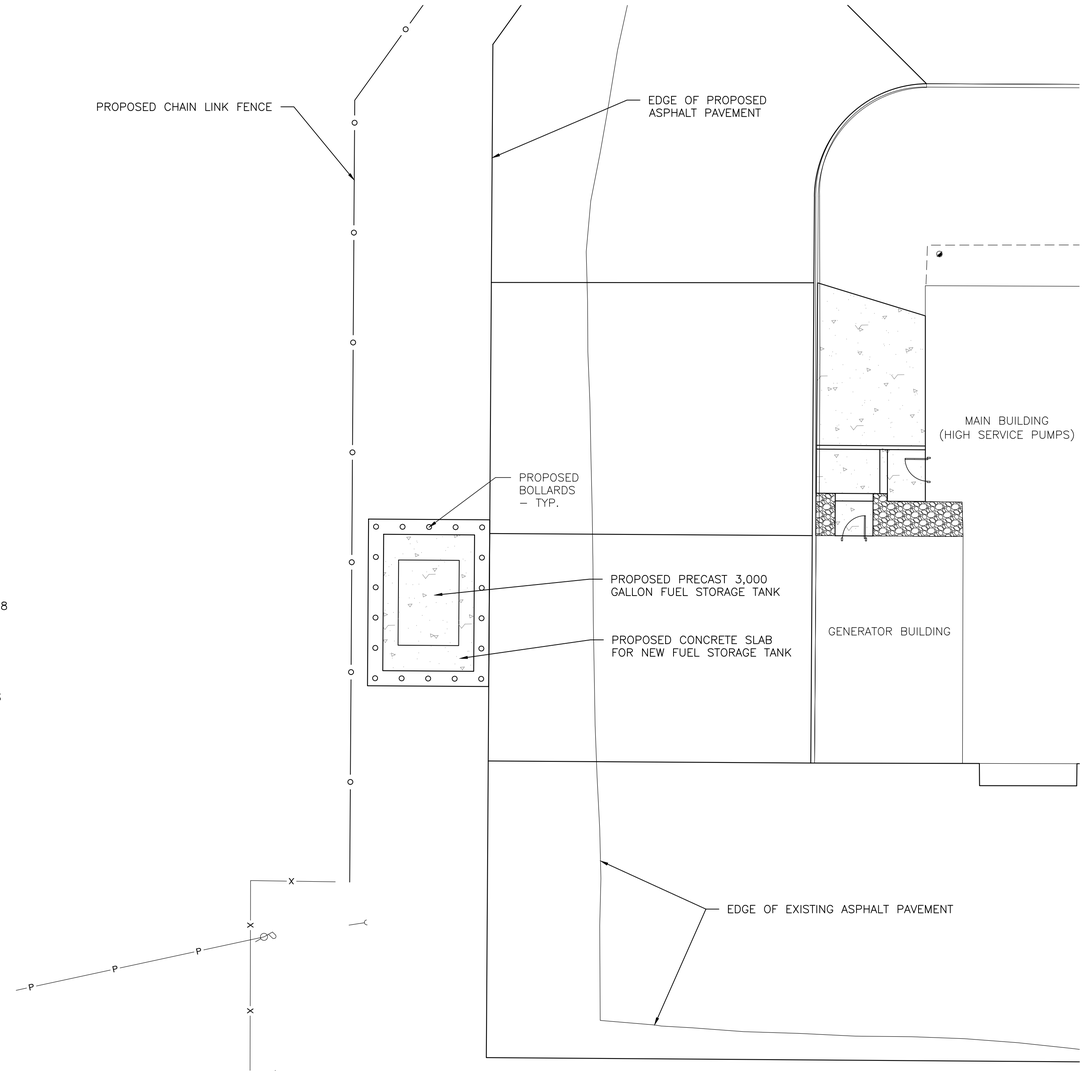
PROPOSED FUEL TANK FOUNDATION SECTION

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



PROPOSED FUEL TANK PLAN

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



PROPOSED FUEL TANK LOCATION

SCALE: 1" = 10'

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

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DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

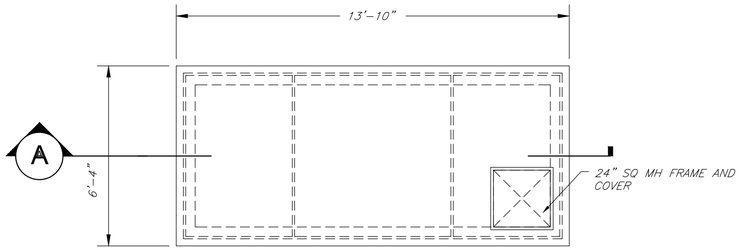
FUEL STORAGE TANK CIVIL ENLARGED PLAN-SECTION

C-11

SHEET: OF

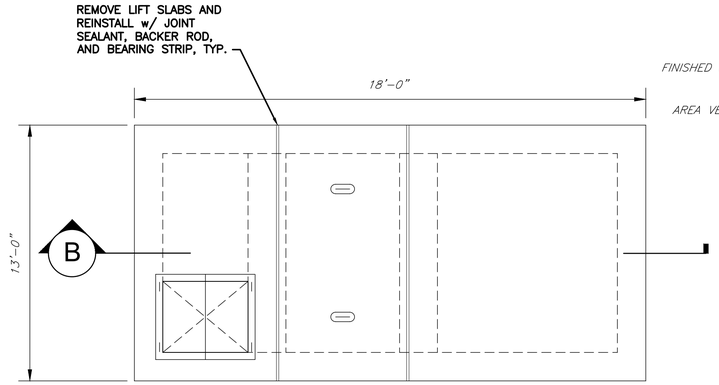
P:\PR58982\Cadd\Sheets\C-11 FUEL STORAGE TANK CIVIL ENLARGED PLAN-SECTION.dwg 4/12/2022 1:04:48 PM Paul Emerson

PLOTTED: 4/15/2022 4:57:11 PM



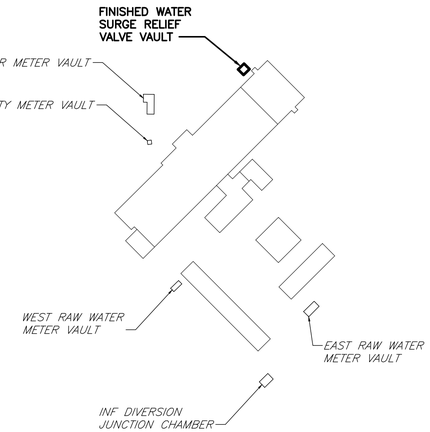
WEST RAW WATER METER VAULT UPPER PLAN

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



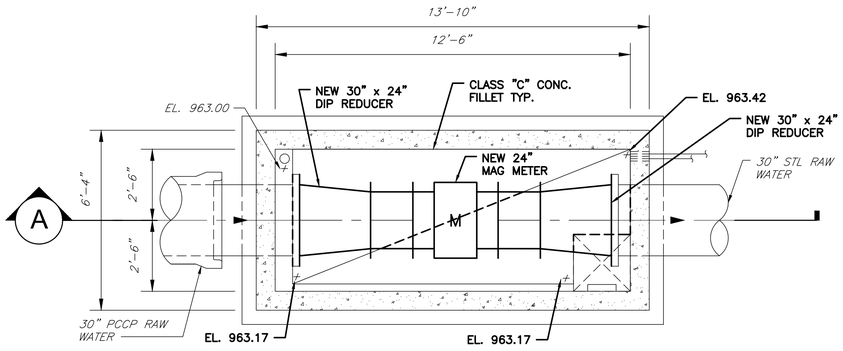
EAST RAW WATER METER VAULT UPPER PLAN

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



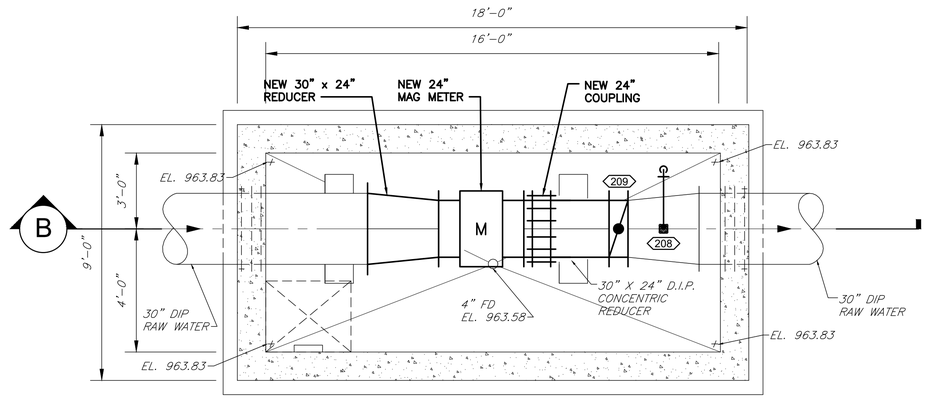
LOCATION PLAN

SCALE: NONE



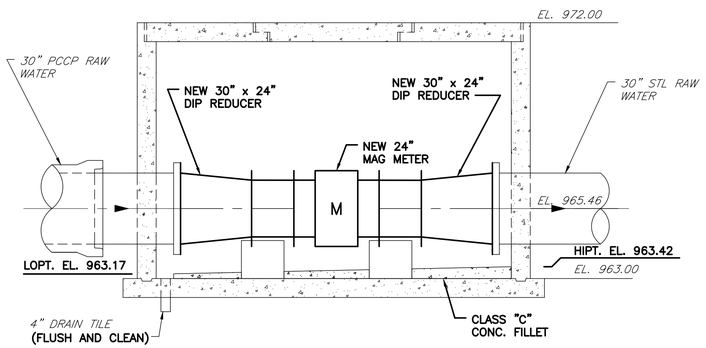
LOWER PLAN

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



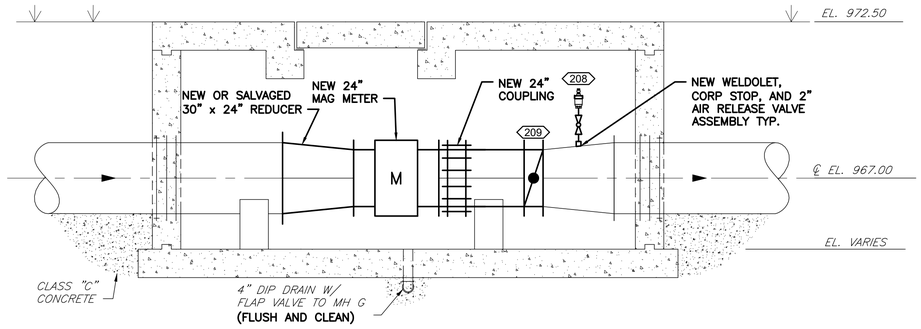
LOWER PLAN

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



A SECTION

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



B SECTION

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

GENERAL NOTES:

1. REFER TO SHEET D-5 FOR DEMOLITION DETAILS.

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SDS
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

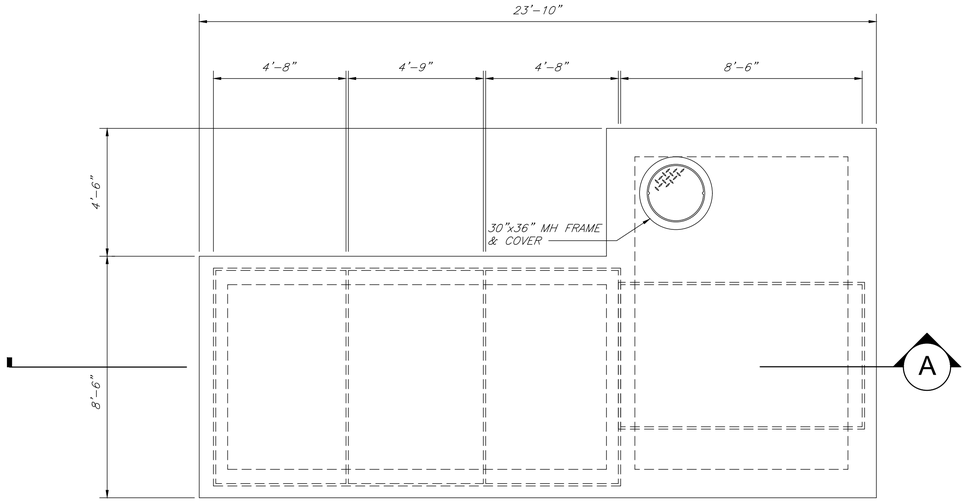
RAW WATER METER VAULTS RENOVATION PLAN-SECTION

C-12

SHEET: OF

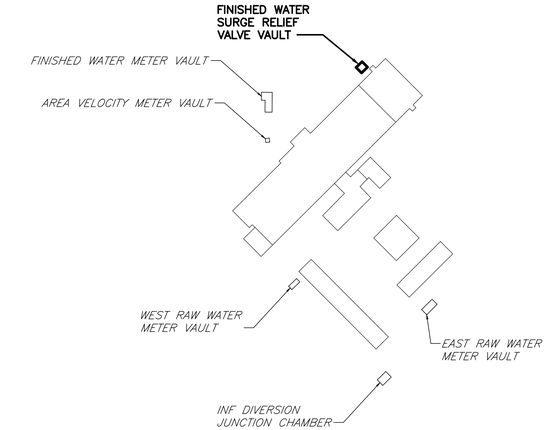
P:\PR58982\Cadd\Sheets\C-12 RAW WATER METER VAULTS RENOVATION PLAN-SECTION.dwg 4/12/2022 2:12:22 PM Paul Emerson

PLOTTED: 4/15/2022 4:57:20 PM



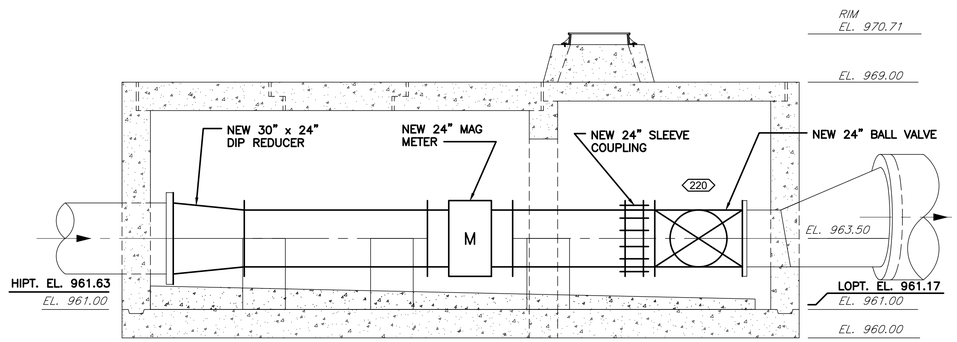
FINISHED WATER METER VAULT UPPER PLAN

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



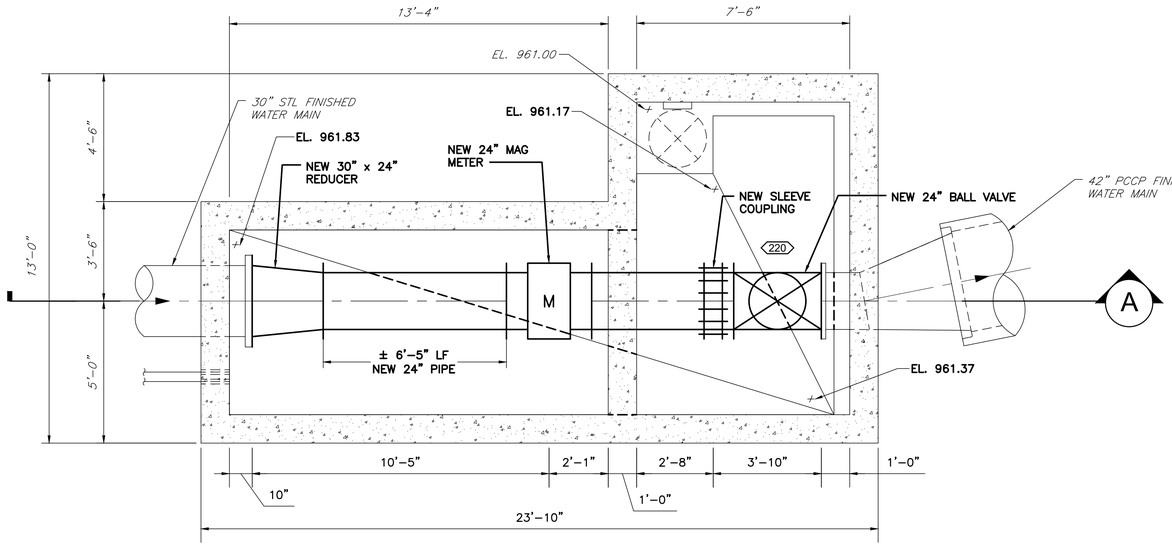
LOCATION PLAN

SCALE: NONE



A SECTION

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



LOWER PLAN

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

GENERAL NOTES:

1. REFER TO SHEET D-6 FOR DEMOLITION DETAILS.

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
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DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

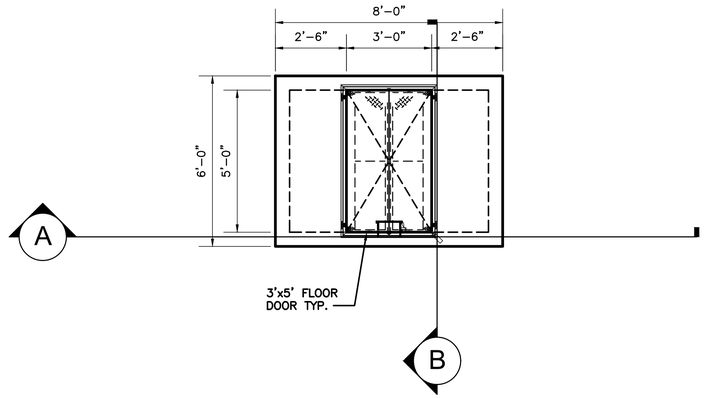
FINISHED WATER METER VAULT RENOVATION PLAN-SECTION

C-13

SHEET: OF

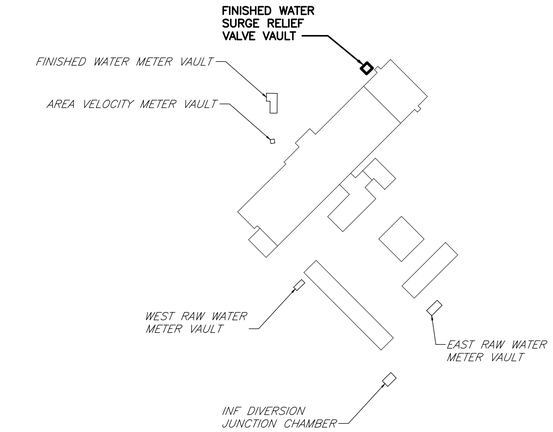
P:\PR58982\Cadd\Sheets\C-13 FINISHED WATER METER VAULT RENOVATION PLAN-SECTION.dwg 4/15/2022 2:17:36 PM Paul Emerson

PLOTTED: 4/15/2022 4:57:29 PM



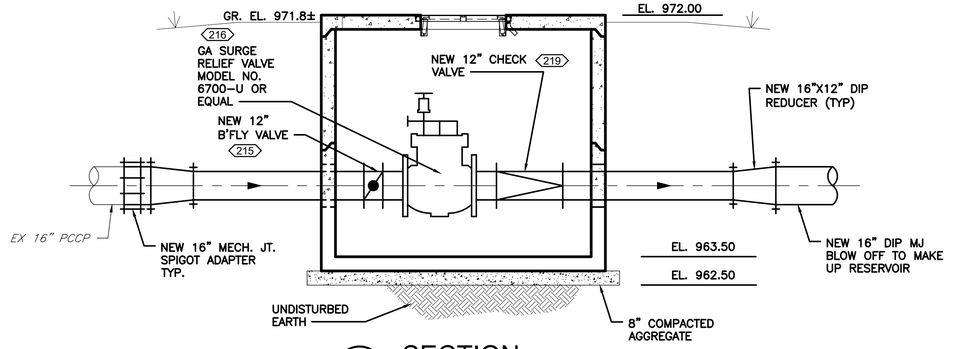
FINISHED WATER SURGE RELIEF VALVE VAULT PLAN

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



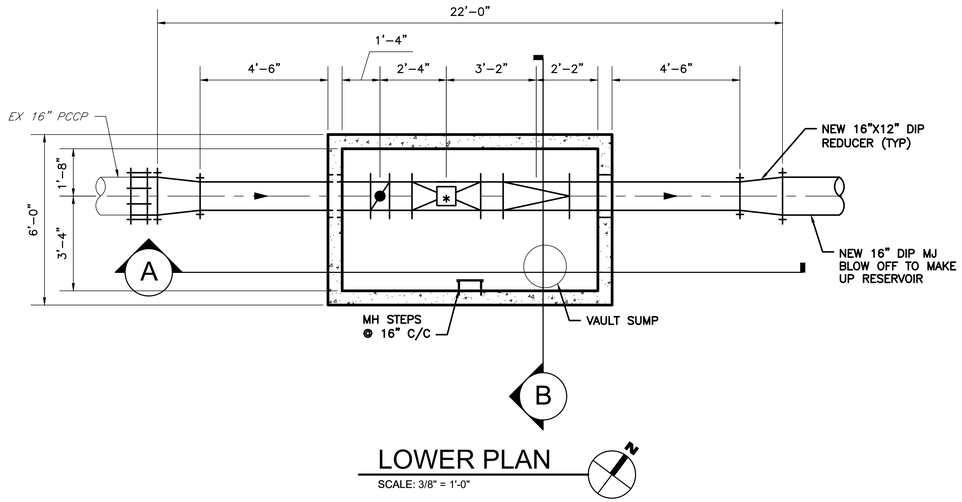
LOCATION PLAN

SCALE: NONE



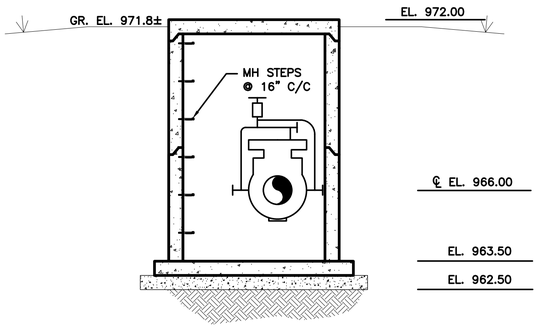
A SECTION

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



LOWER PLAN

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



B SECTION

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

BURGESS & NIPLE

100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

FINISHED WATER SURGE RELIEF VALVE VAULT PROCESS PLAN-SECTION

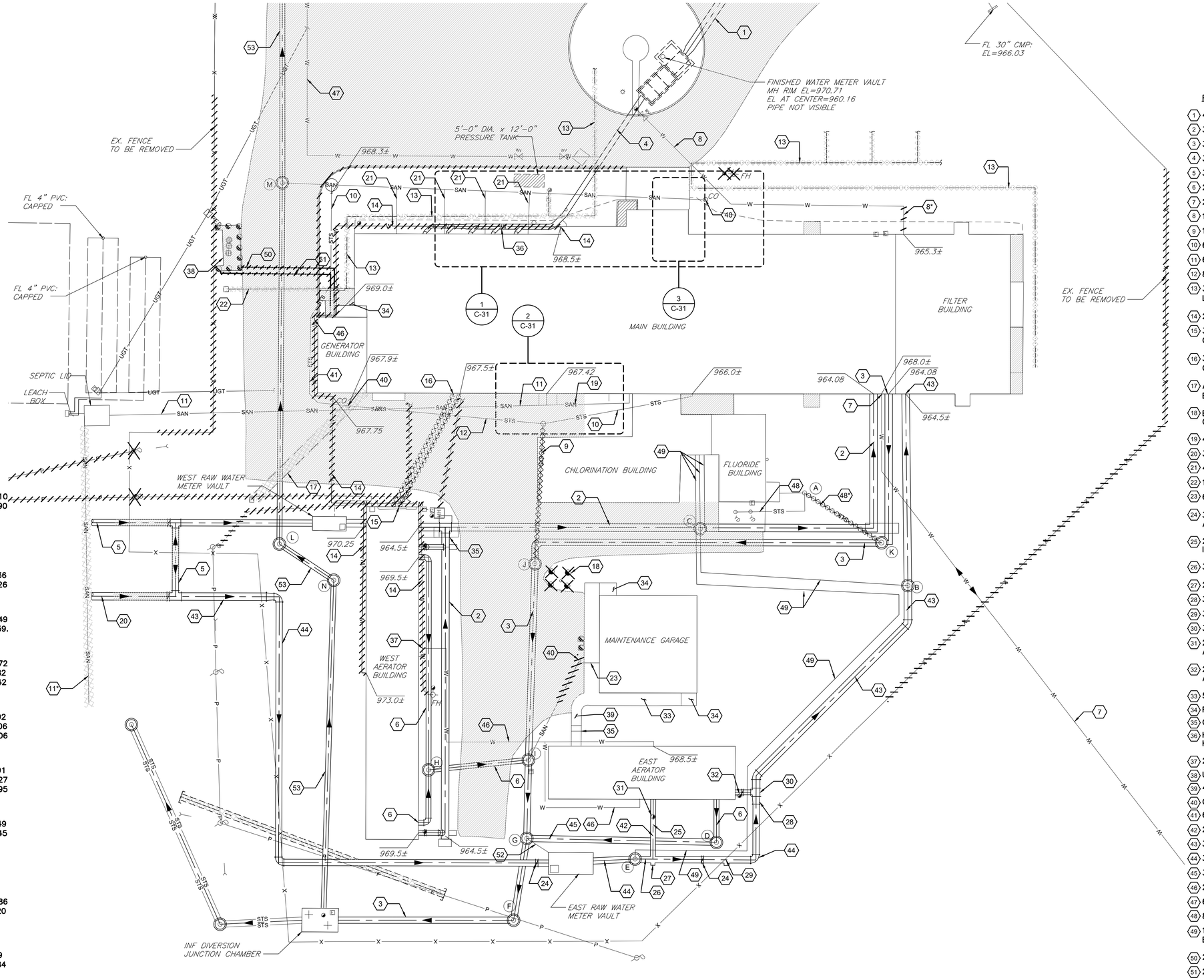
C-14

SHEET: OF

P:\PR58982\Cadd\Sheets\C-14 SURGE RELIEF VALVE VAULT PROCESS PLAN-SECTION.dwg 4/12/2022 2:38:26 PM Paul Emerson

PLOTTED: 4/15/2022 4:57:48 PM

P:\PR58982\Cadd\Sheets\C-15 WTP CIVIL EXISTING YARD PIPING PLAN.dwg 4/15/2022 4:49:33 PM Paul Emerson



EXISTING YARD PIPING

SCALE: 1" = 20'

STRUCTURE LEGEND

- (A) BOLTED 30" MH
  RIM EL=972.96
  NO FL INFORMATION
- (B) BOLTED 30" MH
  RIM EL=970.75
  NO FL INFORMATION
- (C) BOLTED 36" MH
  RIM EL=970.90
  NO FL INFORMATION
- (D) OVERFLOW MH
  RIM EL=973.50
  FL 12" RCP(NW)=959.10
  FL 30" RCP(SW)=959.90
- (E) BOLTED 30" MH
  RIM EL=972.22
  NO FL INFORMATION
- (F) WASHWATER MH
  RIM EL=969.86
  FL 30" RCP(NE)=959.36
  FL 30" RCP(SW)=959.26
- (G) WASHWATER MH
  RIM EL=971.79
  FL 30" RCP(NW)=959.49
  FL 30" RCP(NE,SE)=959.
- (H) OVERFLOW MH
  RIM EL=972.92
  FL 24" RCP(NW)=963.72
  FL 24" RCP(SE)=963.82
  FL 24" RCP(NE)=960.42
- (I) WASHWATER MH
  RIM EL=972.64
  FL 30" RCP(SE)=960.92
  FL 24" RCP(SW)=960.06
  FL 30" RCP(NW)=960.06
- (J) BOLTED MH
  RIM EL=970.75
  FL 30" RCP(SE)=960.91
  FL 12" RCP(NW)=962.27
  FL 30" RCP(NW)=960.95
- (K) WASHWATER MH
  RIM EL=970.98
  FL 30" RCP(NE)=962.49
  FL 30" RCP(SW)=962.45
- (L) WASHWATER MH
  RIM EL=970.28
  NO FL INFORMATION
- (M) WASHWATER MH
  RIM EL=969.50
  FL 24" RCP(NW)=956.86
  FL 24" RCP(SE)=957.20
  FL 6" PVC(E)=964.20
- (N) WASHWATER MH
  RIM EL=972.39
  FL 24" RCP(W)=957.79
  FL 24" RCP(SE)=957.84

PIPE LEGEND

1. 42" PCCP FINISHED WATER
2. 36" PCCP AERATED WATER
3. 30" RCP BACKWASH WASTEWATER
4. 30" PCCP FINISHED WATER
5. 30" PCCP RAW WATER
6. 24" RCP AERATOR OVERFLOW
7. 20" PCCP WASHWATER TO/FROM RESERVOIR
8. 16" PCCP BLOWOFF (* TO BE REMOVED)
9. 12" RCP STORM SEWER (TO BE ABN)
10. 6" VIT STORM SEWER
11. 6" VIT SANITARY SEWER (* ABN)
12. 8" VIT STORM SEWER
13. 3/4" TO 2 1/2" PVC WATER LINE (ABN LAWN SPRINKLER SYSTEM)
14. 2" CIP PLANT WATER
15. 3/4" PVC CHLORINE LINE ENCASED IN CONCRETE, 1 1/2" CONDUIT (TO BE ABN)
16. 3/4" PVC AIR SUPPLY ENCASED IN CONCRETE, 1" CONDUIT (TO BE ABN)
17. ABN ELEC DUCT BANK: 12-4" CONC. ENCASED DUCTS APPROX 19"x50"x2' DEEP
18. BURIED GROUND CONDUIT ENCASED IN CONCRETE
19. 4" VIT SANITARY SEWER (FIELD VERIFY)
20. 36" PCCP RAW WATER
21. 4" CIP DRAIN PIPING
22. 1/2" COOLING WATER DRAIN (ABN)
23. 6" DIP SANITARY SEWER
24. 30" BUTTERFLY VALVE WITH OPERATING NUT AND VALVE BOX
25. 22.5° BENDS TO GAIN VERTICAL ALIGNMENT INTO AERATOR BUILDING
26. 30"x20" DIP CROSS
27. 20" DIP W/ RESTRAINED PLUG
28. 36"x30" DIP REDUCER
29. 30"x24" DIP TEE W/ 24" RESTRAINED PLUG
30. 36"x24" DIP TEE
31. 20" BUTTERFLY VALVE W/ OPERATING NUT AND VALVE BOX
32. 24" BUTTERFLY VALVE W/ OPERATING NUT AND VALVE BOX
33. 5' WIDE CONCRETE SIDEWALK
34. FROST SLAB
35. CONCRETE YARD STEPS
36. HIGH SERVICE PUMP DISCHARGE AND HEADER PIPING
37. 2" CURB STOP
38. UNDERGROUND FUEL STORAGE TANK
39. 4' WIDE CONCRETE SIDEWALK
40. CLEANOUT
41. 6" DIP STORM SEWER
42. 20" DIP RAW WATER
43. 36" DIP RAW OR AERATED WATER
44. 30" DIP RAW WATER
45. 30" RCP AERATED OVERFLOW
46. 2" PVC PLANT WATER
47. 6" DIP WATER
48. 8" PVC STORM DRAIN (* TO BE ABN)
49. 1 1/2" PVC CHLORINE SOLUTION LINES ENCASED IN CONCRETE UNDER PAVEMENT
50. 2"/3" FRP (II/IIA) FUEL OIL SUPPLY
51. 2"/3" FRP (II/IIA) FUEL OIL OVERFLOW
52. 4" DIP VALVE VAULT DRAIN W/ FLAP VALVE
53. 24" CPSP SEWER W/ 6" CONC ENCASE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SDS
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1" = 20'

WTP
CIVIL
EXISTING YARD
PIPING PLAN

C-15

SHEET: OF

PLOTTED: 4/15/2022 4:58:06 PM

P:\PR58982\Cadd\Sheets\C-16 WTP CIVIL PROPOSED YARD PIPING PLAN.dwg 4/15/2022 4:51:06 PM Paul Emerson

PIPE LEGEND

1. 42" PCCP FINISHED WATER
2. 36" PCCP AERATED WATER
3. 30" RCP BACKWASH WASTEWATER
4. 30" PCCP FINISHED WATER
5. 30" PCCP RAW WATER
6. 24" RCP AERATOR OVERFLOW
7. 20" PCCP WASHWATER TO/FROM RESERVOIR
8. 16" PCCP BLOWOFF
9. 16" DIP BLOWOFF
10. 6" VCP STORM SEWER
11. 6" VCP SANITARY SEWER (* ABN)
12. 8" VCP STORM SEWER
13. 3/4" TO 2 1/2" PVC WATER LINE (ABN LAWN SPRINKLER SYSTEM)
14. 2" HDPE PLANT WATER
15. 3/4" PVC CHLORINE LINE ENCASED IN CONC, 1-1/2" CONDUIT (TO BE ABN)
16. 3/4" PVC AIR SUPPLY ENCASED IN CONC, 1" CONDUIT (TO BE ABN)
17. ABN ELEC DUCT BANK: 12-4" CONC. ENCASED CONDUITS APPROX 19"x50"x2'D
18. 4" DIP PLANT WATER
19. 4" VCP SANITARY SEWER (FIELD VERIFY)
20. 36" PCCP RAW WATER
21. 4" CIP DRAIN PIPING
22. 1/2" COOLING WATER DRAIN (ABN)
23. 6" DIP SANITARY SEWER
24. 30" BUTTERFLY VALVE WITH OPERATING NUT AND VALVE BOX 207
25. 22.5° BENDS TO GAIN VERTICAL ALIGNMENT INTO AERATOR BUILDING
26. 30"x20" DIP CROSS
27. 20" DIP W/ RESTRAINED PLUG
28. 36"x30" DIP REDUCER
29. 30"x24" DIP TEE W/ 24" RESTRAINED PLUG
30. 36"x24" DIP TEE
31. 20" BUTTERFLY VALVE W/ OPERATING NUT AND VALVE BOX 211
32. 24" BUTTERFLY VALVE W/ OPERATING NUT AND VALVE BOX 212
33. 24" BUTTERFLY VALVE W/ OPERATING NUT AND VALVE BOX 210
34. 4" GATE VALVE 223
35. EX. 16" GATE VALVE 221
36. HIGH SERVICE PUMP DISCH AND HEADER PIPING
37. 12" CIP STS (TO BE ABN)
38. 3/4" PVC SCH80 CHLORINE SOLUTION IN 1-1/2" PVC SCH80 CONDUIT W/ CONC. ENCASEMENT
39. 20"x16" TAPPING SLEEVE SMITH BLAIR 625 OR EQ W/ 16" TAPPING GATE VALVE 222
40. CUT IN 6"x4" DIP TEE
41. 6" DIP STORM SEWER
42. 20" DIP RAW WATER
43. 36" DIP RAW OR AERATED WATER
44. 30" DIP RAW WATER
45. 30" RCP AERATED OVERFLOW
46. 2" PVC PLANT WATER
47. 6" DIP WATER
48. 8" PVC STORM (* TO BE ABN)
49. 1-1/2" PVC CL2 SOLUTION LINES ENCASED IN CONC UNDER PVMT
50. 2"/3" FRP (II/IIA) FUEL OIL SUPPLY
51. 2"/3" FRP (II/IIA) FUEL OIL OVERFLOW
52. 4" DIP VAULT DRAIN W/ FLAP VALVE
53. 24" CPSP SEWER W/ 6" CONC ENCASEMENT

HW-6
INVERT 960.00

181.46'± 12"ø
HDPE @ 0.85%

WASHWATER RESERVOIR

MATCHLINE THIS SHEET

LEACH FIELD

ABOVEGROUND FUEL STORAGE TANK SEE SHT. C-11

FINISHED WATER METER VAULT

AREA VELOCITY METER VAULT

FINISHED WATER SURGE VAULT

968.5±

CONC. ENCASE EX. UTILITIES W/I 10 FT OF MAIN BLDG.

MAIN BUILDING

FILTER BUILDING

GENERATOR BUILDING

967.5±

967.5±

966.7±

CHLORINATION BUILDING

FLUORIDE BUILDING

WEST RAW WATER METER VAULT

970.5±

970.0±

973.0±

WEST AERATOR BUILDING

CONNECT TO EX. FH ASSY.

PRECAST OIL SEPARATOR

MAINTENANCE GARAGE

EAST AERATOR BUILDING

EAST RAW WATER METER VAULT

OVERFLOW OUTFALL

INF. DISTRIBUTION JUNCTION CHAMBER

MATCHLINE THIS SHEET

PROPOSED PIPING PLAN

SCALE: 1" = 20'

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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REVISIONS

JOB NO:	PR58982
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1" = 20'

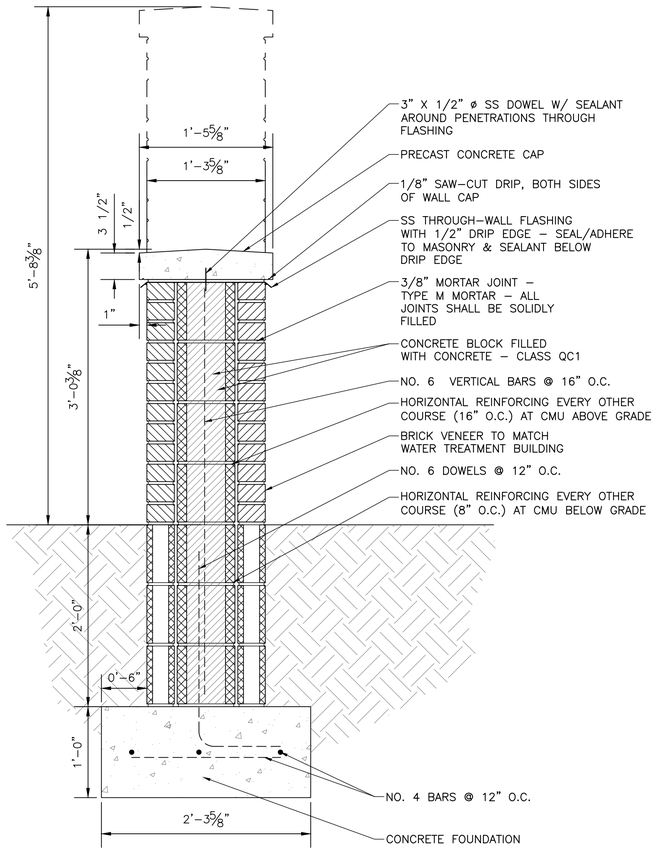
WTP
CIVIL PROPOSED
YARD
PIPING PLAN

C-16

SHEET: OF

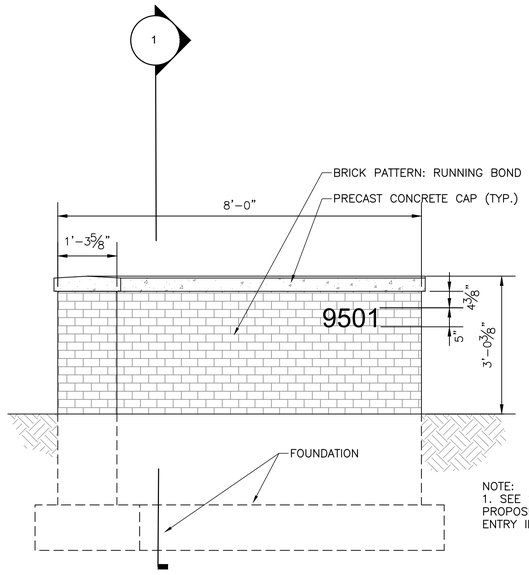
GENERAL NOTES:

1. REFER TO SHEET C-3 FOR ADDITIONAL DETAILS FOR LOCATION OF THE SIGNS.



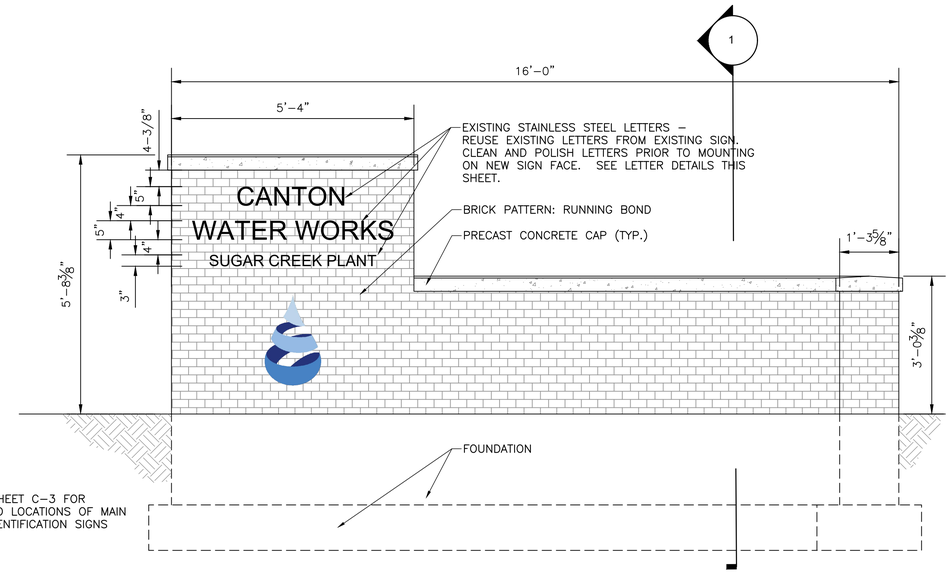
1 SECTION-MAIN ENTRY IDENTIFICATION SIGN

NTS



MAIN ENTRY IDENTIFICATION SIGN NO. 2

NOTE:
1. SEE SHEET C-3 FOR PROPOSED LOCATIONS OF MAIN ENTRY IDENTIFICATION SIGNS



MAIN ENTRY IDENTIFICATION SIGN NO. 1

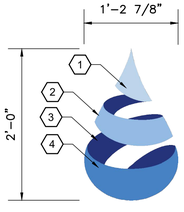
MAIN ENTRY IDENTIFICATION SIGN ELEVATIONS

NTS

NOTES: COMPLETE S/F NON-ILLUMINATED ROUTED ACRYLIC LOGO WITH FIRST SURFACE DIGITAL PRINT DECORATION, WITH OVERLAMINATE. 1/2" THICK WHITE ACRYLIC. FLUSH MOUNTED WITH EXTERIOR WALL WITH 316 SS EXPANSION ANCHORS AND FASTENER HARDWARE

COLORS
ACRYLIC: WHITE
LOGO: DIGITAL PRINT

1. PANTONE 2707C
2. PANTONE 278C
3. PANTONE 2758C
4. PANTONE 2718C

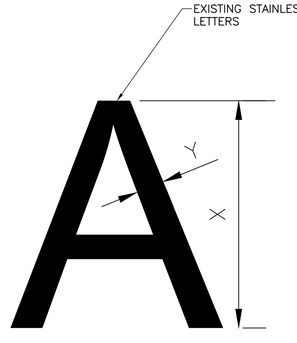


NEW LOGO SIGN DETAIL

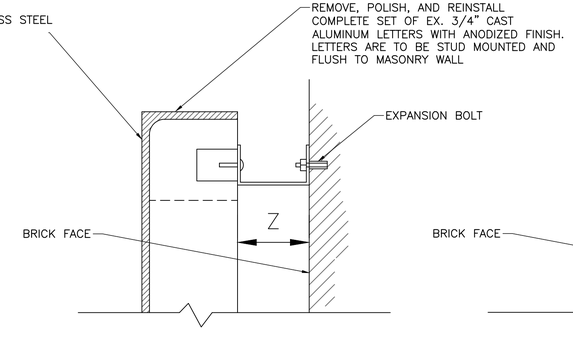
SCALE: NONE

LETTER SCHEDULE

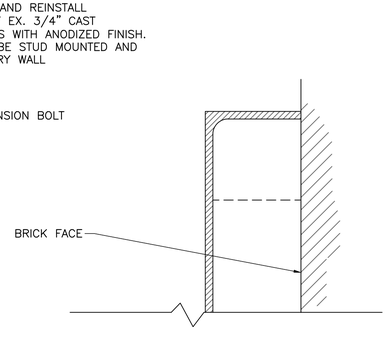
X	Y	Z
5"	7/8"	1"
3"	5/8"	1"



LETTER SIZE



EXISTING MOUNTING DETAIL



FLUSH MOUNTING DETAIL

LETTER DETAILS

NTS

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SDS
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

WTP
MAIN ENTRANCE
SIGN
RENOVATION
ELEVATION-
SECTION-DETAIL

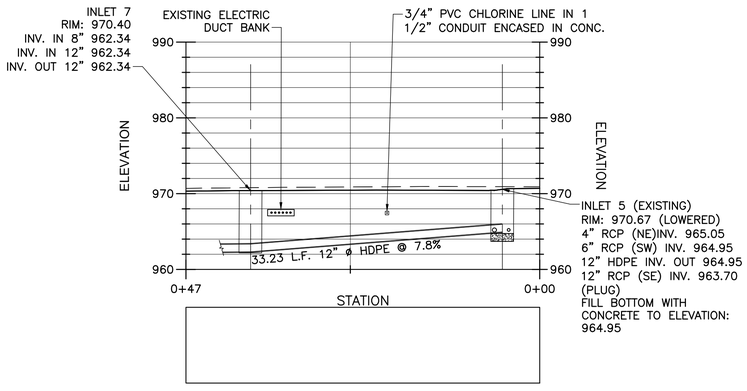
C-17

SHEET: OF

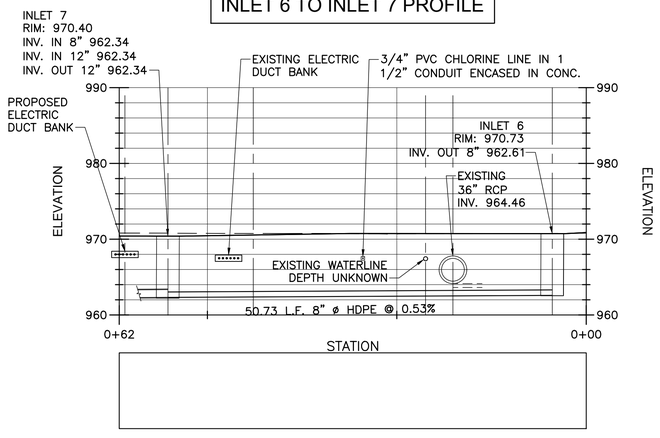
GENERAL NOTES:

1. REFER TO SHEET C-1 AND SHEET C-16 FOR PLAN VIEWS OF PROFILES SHOWN ON THIS SHEET.

INLET 5 TO INLET 7 PROFILE



INLET 6 TO INLET 7 PROFILE



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NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SDS
DRAWN BY:	SDS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	H:1"=10'; V:1"=10'

WTP
CIVIL STORM
SEWER
PROFILES1

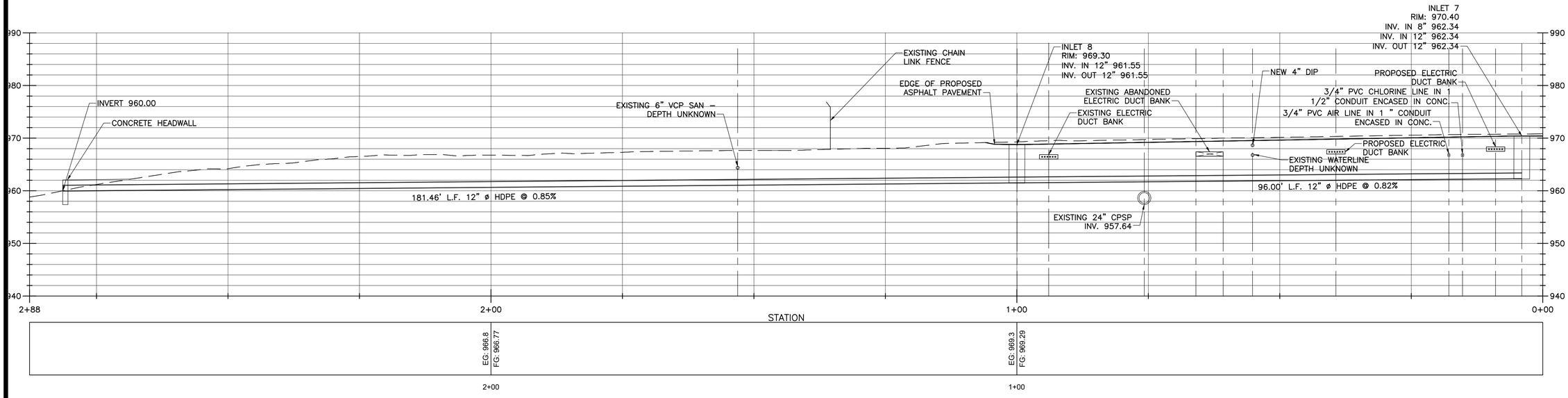
C-18

SHEET: OF

GENERAL NOTES:

1. REFER TO SHEET C-1 AND SHEET C-16 FOR PLAN VIEWS OF PROFILES SHOWN ON THIS SHEET.

INLET 7 TO INLET 8 TO OUTLET PROFILE



BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &

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WTP
CIVIL
STORM SEWER
PROFILES2

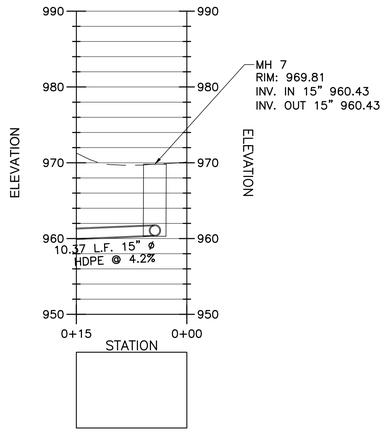
C-19

SHEET: OF

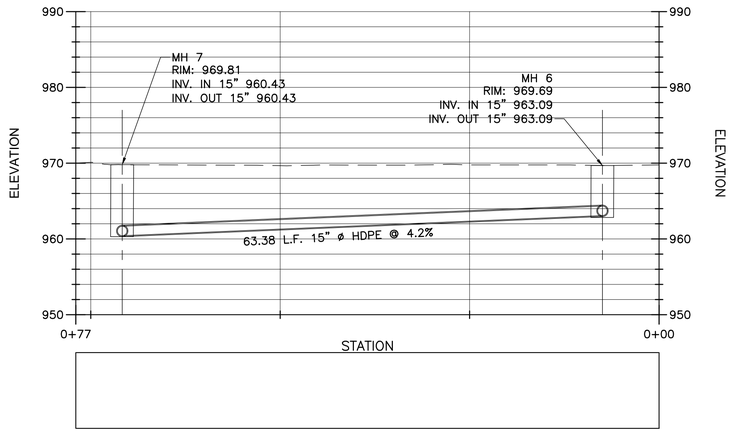
GENERAL NOTES:

1. REFER TO SHEET C-1 AND SHEET C-16 FOR PLAN VIEWS OF PROFILES SHOWN ON THIS SHEET.

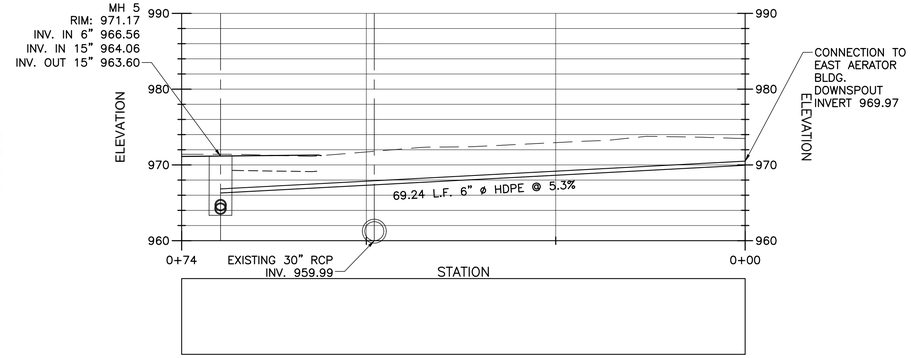
MANHOLE 7 TO VAULT PROFILE



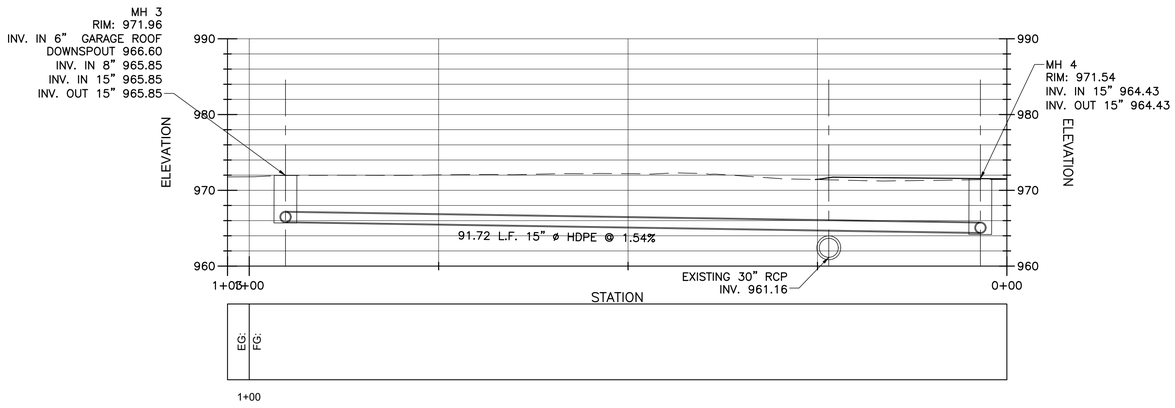
MANHOLE 7 TO MANHOLE 6 PROFILE



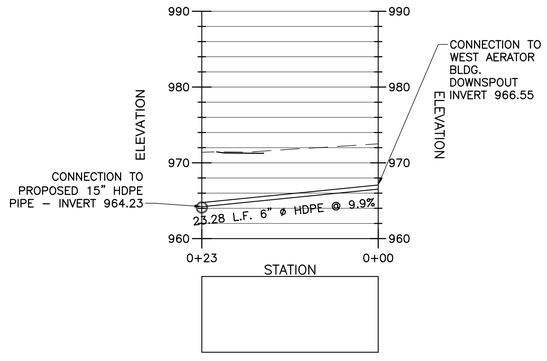
MANHOLE 5 TO EAST AERATOR BLDG DOWNSPOUT PROFILE



MANHOLE 4 TO MANHOLE 3 PROFILE



WEST AERATOR BLDG DOWNSPOUT TO 15 INCH HDPE PIPE PROFILE



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WTP
CIVIL
STORM SEWER
PROFILES3

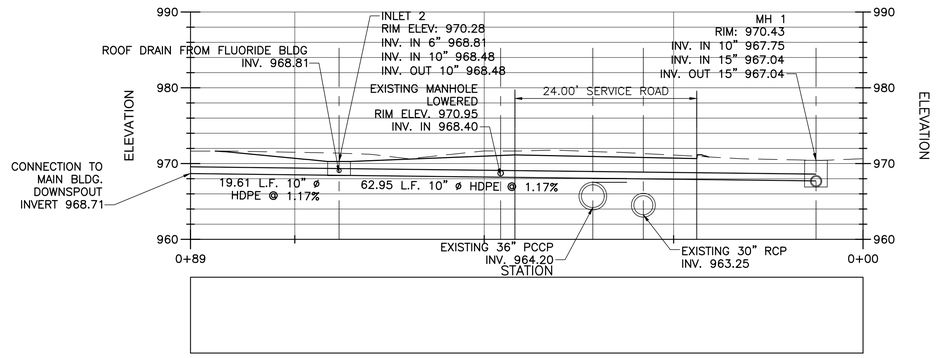
C-20

SHEET: OF

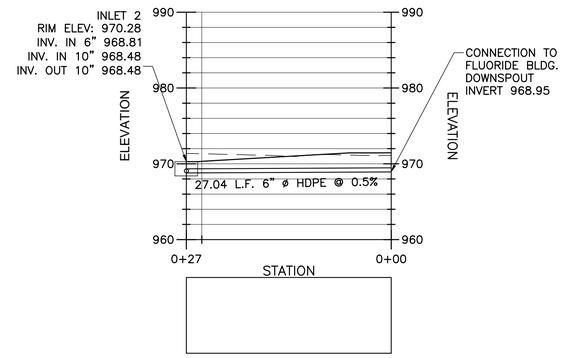
GENERAL NOTES:

1. REFER TO SHEET C-1 AND SHEET C-16 FOR PLAN VIEWS OF PROFILES SHOWN ON THIS SHEET.

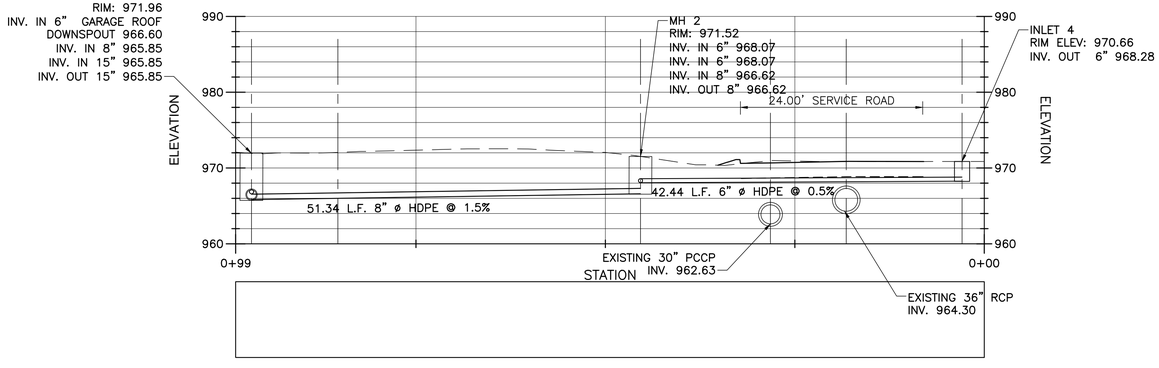
ROOF AREA 4 TO MANHOLE 1 PROFILE



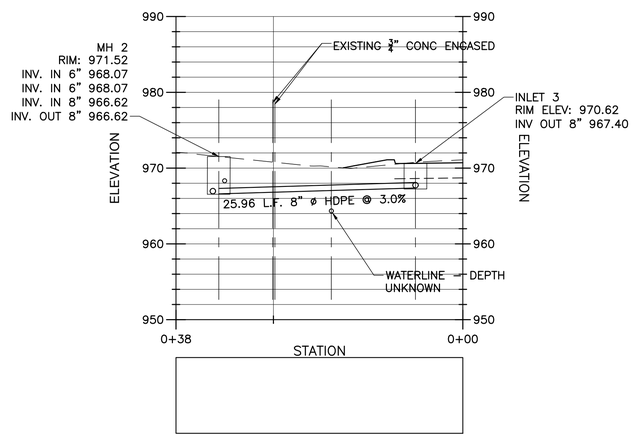
FLUORIDE BLDG DOWNSPOUT TO INLET 2 PROFILE



INLET 4 TO MANHOLE 2 TO MANHOLE 3 PROFILE



ROOF AREA 4 TO MANHOLE 1 PROFILE



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WTP
CIVIL
STORM SEWER
PROFILES4

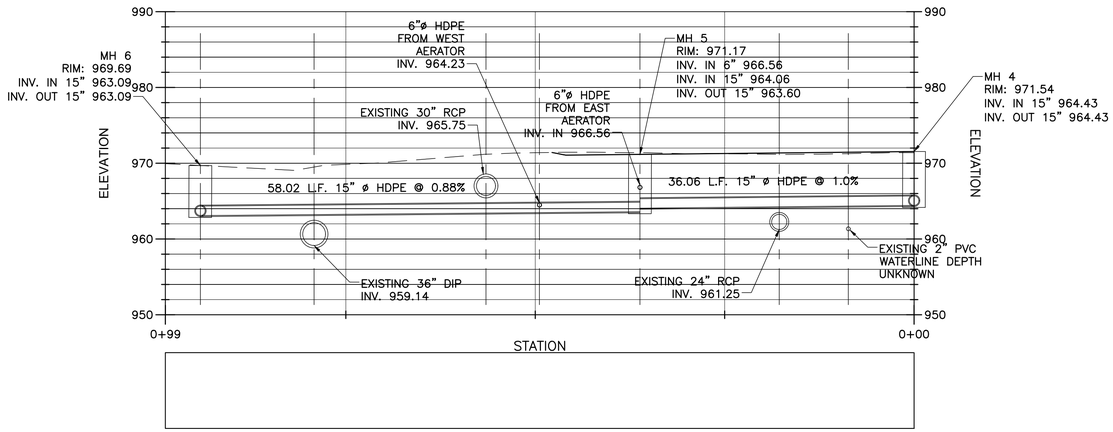
C-21

SHEET: OF

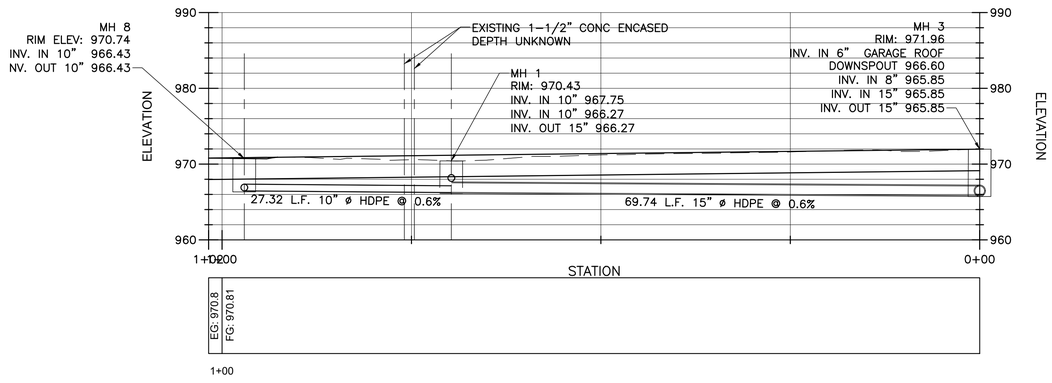
GENERAL NOTES:

1. REFER TO SHEET C-1 AND SHEET C-16 FOR PLAN VIEWS OF PROFILES SHOWN ON THIS SHEET.

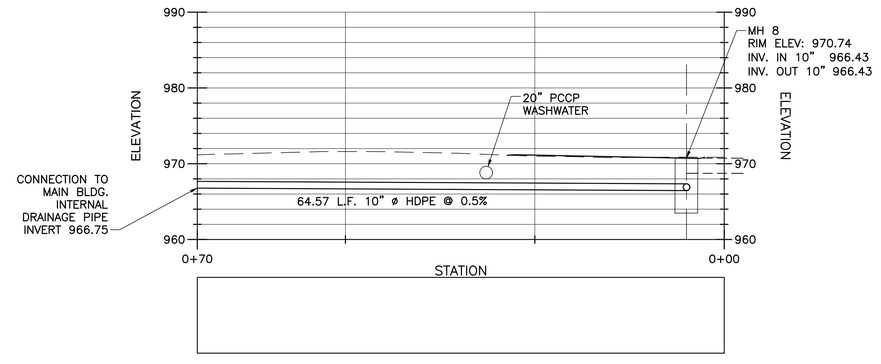
MANHOLE 4 TO MANHOLE 5 TO MANHOLE 6



MANHOLE 8 TO MANHOLE 3 PROFILE



ROOF AREA 5 TO MANHOLE 8 PROFILE



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WTP
CIVIL
STORM SEWER
PROFILES5

C-22

SHEET: OF

PLOTTED: 4/15/2022 4:59:09 PM

CONTRACTOR RESPONSIBILITY

1. THE PROPOSED WORK ITEMS SHOWN ON THESE PLANS DOES NOT NECESSARILY DEPICT ANY AND ALL ITEMS THAT MAY BE REQUIRED TO IMPLEMENT A FINAL BEST MANAGEMENT PRACTICES STORMWATER POLLUTION PREVENTION PLAN. THESE WORK ITEMS DO NOT RELIEVE THE CONTRACTOR OF ENSURING THAT ALL LOCAL, STATE AND FEDERAL REQUIREMENTS FOR STORMWATER POLLUTION PREVENTION, WATER QUALITY AND ILLEGAL POINT SOURCE DISCHARGE ARE STRICTLY ADHERED TO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL ACTIONS THAT ARE NECESSARY TO BE IN COMPLIANCE WITH ALL OF THESE REGULATIONS. THE CONTRACTOR SHALL BEAR ALL EXPENSES RELATED TO IMPLEMENTING THESE MEASURES AND A PROPER BEST MANAGEMENT PRACTICES STORMWATER POLLUTION PREVENTION PLAN IRREGARDLESS OF WHETHER A REQUIRED FACILITY, STRUCTURE, FENCING, SEEDING, MATS, ETC. ARE SHOWN ON THESE PLANS.

2. THE CONTRACTOR SHALL CARE AND BE RESPONSIBLE FOR READING AND IMPLEMENTING ALL NOTES SHOWN ON THESE SHEETS. THE CONTRACTOR SHALL NOT BE RELIEVED OF ANY REQUIREMENTS SET FORTH AS PART OF NOTES SHOWN ON THESE SHEETS OR ANY ADDITIONAL COSTS THAT MAY BE INCURRED FOR FAILURE TO READ SAID NOTES.

SEQUENCING OF SITE WORK

THE CONSTRUCTION PHASE SHOULD BE DIVIDED INTO THREE (3) PHASES OF BEST MANAGEMENT PRACTICES IMPLEMENTATION (BMP). THE FOLLOWING IS A SUGGESTED PHASING PROCESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE CONSTRUCTION PLANS, THE STORMWATER MANAGEMENT PRACTICES OF THE RAINWATER AND LAND DEVELOPMENT STANDARDS FROM THE OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF SOIL AND WATER CONSERVATION, LATEST EDITION AND ANY OTHER INFORMATION THAT MAY BE RELEVANT TO THE IMPLEMENTATION AND PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN BEST SUITED FOR THIS PROJECT:

PHASE I: START UP AND PERIMETER CONTROLS

1. CONTRACTOR SHALL POST ALL SITE AND STORMWATER CONTROL PERMITS AS REQUIRED BY EACH INDIVIDUAL PERMIT.

2. CONTRACTOR SHALL INSTALL PERIMETER CONTROLS. PREFERABLY, THESE SHOULD BE INSTALLED AFTER CLEARING AND PRIOR TO ANY GRUBBING OF THE SITE. FOR LARGER AREAS, CLEARING OF AN AREA THE WIDTH OF A BULLDOZER AND INSTALLING THE PERIMETER CONTROLS SHOULD BE PERFORMED PRIOR TO CLEARING THE INTERIOR PORTIONS OF THE SITE.

3. HOLD PRE-CONSTRUCTION CONFERENCE AT LEAST ONE (1) WEEK PRIOR TO STARTING CONSTRUCTION AND PERFORM WEEKLY REVIEWS OF THE EROSION SEDIMENT AND STORMWATER CONTROL PLAN.

4. REMOVE VEGETATION, UNDERGROWTH AND THE TOP SIX (6) INCHES OF ORGANIC MATERIAL FROM THE SITE AND STOCKPILE TOPSOIL. THE CONTRACTOR SHALL PERFORM STOCKPILE PROTECTION AS REQUIRED TO PREVENT LOOSE DIRT FROM BEING WASHED FROM THE STOCKPILE.

5. PLACE TEMPORARY SANITARY FACILITIES AND DUMPSTERS.

PHASE II: INTERMEDIATE CONTROLS

1. INTERMEDIATE CONTROLS ARE IMPLEMENTED FROM GRUBBING TO FINAL GRADE. THIS INCLUDES INSTALLATION OF SUBSURFACE DRAINAGE, INLETS AND UTILITIES AND BRINGING THE SITE TO FINAL GRADE. DURING THIS PHASE, THE EXTENT AND DURATION OF EXPOSURE OF UN-STABILIZED AREAS IS GREATEST. THE CONTRACTOR SHALL TAKE ANY ADDITIONAL MEASURES REQUIRED TO PREVENT ADDITIONAL STORMWATER OR SEDIMENTATION RUNOFF AT NO ADDITIONAL COST TO THE OWNER.

PHASE III: FINAL CONTROLS

1. THESE CONTROLS ARE IMPLEMENTED TO ACHIEVE FINAL STABILIZATION OF THE SITE. THE CONSTRUCTION OF HARD SURFACES AND FINAL PAVEMENT, STRUCTURES AND UTILITIES ARE INSTALLED. THIS PHASE ESTABLISHES THE PERMANENT VEGETATION, RETENTION / DETENTION POND FACILITIES AND THE INSTALLATION OF ANY OUTLET PROTECTIONS, ENERGY DISSIPATERS ROCK CHECK DAMS, ETC. AT FINAL STABILIZATION, PERMANENT VEGETATION MUST BE UNIFORMLY ESTABLISHED ON AT LEAST 80 PERCENT OF SOIL SURFACES NOT COVERED WITH EROSION- RESISTANT SURFACES (PAVEMENTS, BUILDINGS, ETC.). ALL PERMANENT DRAINAGE IMPROVEMENTS MUST BE INSTALLED AND TESTED TO VERIFY THAT THEY PERFORM AS DESIGNED. THE STORMWATER MANAGEMENT SYSTEM SHOULD BE CHECKED AND CLEANED OF ANY ACCUMULATED SEDIMENTS. TEMPORARY BMP'S NOT REQUIRED AS PART OF THE PERMANENT STABILIZATION OR BMP PLAN SHALL BE REMOVED AND PROPERLY DISPOSED OF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ANY AND ALL SEDIMENT, DEBRIS. ETC. FROM THE STORMWATER INLETS. PIPE SYSTEMS, RETENTION / DETENTION PONDS, ETC. AS MAY BE REQUIRED TO CREATE A FULLY FUNCTIONAL STORMWATER MANAGEMENT SYSTEM AT NO ADDITIONAL COST TO THE OWNER.

STORMWATER POLLUTION PREVENTION

1. STOCKPILE TOPSOIL REMOVED FROM ROADWAY AREAS FOR USE LATER IN PLANTING PERMANENT GRASS ON ALL DISTURBED AREAS NOT USED AS PAVED ROADS, BUILDINGS, ETC. CONTRACTOR SHALL PERFORM STOCKPILE PROTECTION AS REQUIRED TO PREVENT EROSION AND LOOSE DIRT FROM BEING WASHED FROM THE STOCKPILE.

2. CONTRACTOR SHALL STAGE, TIME AND SEQUENCE CONSTRUCTION TO MINIMIZE THE SIZE OF EXPOSED SOIL AREAS AND THE TIME BETWEEN EXPOSING THE SOIL AREA AND FINISHING THE SOIL AREA.

3. AS SOON AS GRADING IS COMPLETE IN AN AREA, THE CONTRACTOR SHALL STABILIZE THE SOIL FOR LONG, NARROW AREAS OR STEEP GRADES (GREATER THAN 3): THE CONTRACTOR SHALL STABILIZE CONTINUOUSLY DURING GRADING OPERATIONS. ROUGH GRADED AREAS SHOULD BE STABILIZED WITH TEMPORARY EROSION CONTROL IF FINAL GRADING AND STABILIZATION WILL NOT BE PERFORMED WITHIN FIVE (5) DAYS. FAILURE TO STABILIZE IN A TIMELY MANNER AFTER GRADING MAY BE CONSIDERED A VIOLATION OF PERMITS OBTAINED FOR SAID ACTIVITY AND MAY BE SUBJECT TO CORRECTIVE ACTION BY THE LOCAL, STATE OR FEDERAL GOVERNING AUTHORITY.

4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING A TASK TO PROVIDE EROSION CONTROL UNLESS ANOTHER PARTY HAS BEEN PREVIOUSLY SPECIFIED AS RESPONSIBLE FOR THE EROSION CONTROL ASSOCIATED WITH THAT TASK. IN THE EVENT ANOTHER PARTY IS RESPONSIBLE FOR EROSION CONTROL, THE CON TRACTOR HALL STILL BE RESPONSIBLE FOR COORDINATION WITH THE PARTY RESPONSIBLE. IN THE EVENT THAT DAMAGE TO THE CONSTRUCTED ITEM RESULTS DUE TO LACK OF EROSION CONTROL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND / OR REPLACEMENT OF SAID EROSION CONTROL ITEMS AT NO CHARGE TO THE OWNER.

STORMWATER POLLUTION PREVENTION CON'T

5. TEMPORARY EROSION CONTROL SHALL CONSIST OF TEMPORARY SEEDING, TEMPORARY MULCH, TEMPORARY SOD, ARTIFICIAL COVERINGS, BALED HAY OR STRAW, SILT FENCES, FILTER SOCKS AND TURBIDITY BARRIERS AS SHOWN ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PRACTICES OF THE RAINWATER AND LAND DEVELOPMENT STANDARDS FROM THE OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF SOIL AND WATER CONSERVATION, LATEST EDITION.

6. TEMPORARY EROSION CONTROL BY ARTIFICIAL COVERINGS SHALL CONSIST OF STRAW BLANKETS, COCONUT FIBER BLANKETS, POLYESTER BLANKETS, JUTE MESH AND DRAINAGE FABRICS. MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. SEEDING SHALL BE INCLUDED IF MATERIAL REQUIRES VEGETATION TO FUNCTION PROPERLY.

7. PERMANENT EROSION CONTROL SHALL CONSIST OF PERMANENT SEEDING, SEED AND MULCH, HYDRO-SEEDING, SOD AND/OR ARTIFICIAL COVERINGS AS SHOWN ON THE CONSTRUCTION PLANS AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PRACTICES OF THE RAINWATER AND LAND DEVELOPMENT STANDARDS FROM THE OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF SOIL AND WATER CONSERVATION, LATEST EDITION.

8. THE CONTRACTOR IS TO PROVIDE EROSION CONTROL/SEDIMENTATION BARRIER (HAY BALES, SILT FENCE, FILTER SOCKS, TURBIDITY BARRIER OR AS SPECIFIED ON THE CONSTRUCTION DRAWINGS) TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS, WATERWAYS AND WETLAND OR JURISDICTION AL AREAS, IF, IN THE OPINION OF THE OWNER AND/OR REGULATORY AU THOR TIES, EXCESSIVE QUANTITIES OF MATERIAL ARE TRANSPORTED OFFSITE BY EROSION OR STORMWATER RUNOFF, THE CONTRACTOR SHALL IMPROVE CONDITIONS TO THE SATISFACTION OF THE OWNER AND / OR LOCAL, STATE OR FEDERAL GOVERNING AUTHORITIES AT NO ADDITIONAL COST TO THE OWNER. IN NO CASE SHALL CONSTRUCTION COMMENCE PRIOR TO INSTALLATION OF EROSION CONTROL / SEDIMENTATION BARRIER.

9. PLACE STONE OR COMPOST SOCK CHECK DAM IN ALL NATURAL OR CREATED DRAINAGE WAYS WHERE PIPES DISCHARGE WATER TO TRAP SEDIMENT ON SITE AND DO NOT ALLOW IT TO GO ONTO ADJACENT PROPERTY. ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHALL BE INSTALLED BY A METHOD ACCEPTABLE TO THE OWNER AND / OR TO THE LOCAL, STATE OR FEDERAL GOVERNING AUTHORITIES AT NO ADDITIONAL COST TO THE OWNER.

10. SEED ALL SWALES AND DITCHES TO SOME TYPE OF PERMANENT GRASS WHERE SLOPE OF LAND DOES NOT EXCEED 2%.

10. IF SUBSURFACE WATER IS ENCOUNTERED, CONTRACTOR SHALL NOTIFY THE OWNER OF RECORD IMMEDIATELY. INSTALLATION OF FRENCH DRAINS SHALL BE UNDER THE SUPERVISION OF A SOILS LABORATORY.

11. ALL SEDIMENT AND EROSION CONTROL STRUCTURES, INCLUDING BASINS, GRAVEL FILTERS, SILT FENCE, FILTER SOCKS, AND TRAPS SHALL BE INSPECTED EVERY SEVEN (7) DAYS AND AFTER ALL RAINFALLS IN EXCESS OF 0.5 INCH. AN INSPECTION REPORT SHALL BE MADE ON EACH OCCASION, NOTING CONDITION OF ALL STRUCTURES AND OUTLINING ANY REQUIRED MAINTENANCE. ALL STRUCTURES SHALL BE CLEANED AND REESTABLISHED WHEN SEDIMENT REACHES 50% OF STORAGE CAPACITY.

12. THE CONTRACTOR SHALL BE FAMILIAR WITH, AND KNOWLEDGEABLE OF, ALL FEDERAL, STATE, AND LOCAL CODES, REQUIREMENTS, REGULATIONS AND SPECIFICATIONS REGARDING THE CONSTRUCTION OF THIS PROJECT. ALL MATERIALS, WORKMANSHIP, INSTALLATION AND RESTORATION SHALL MEET OR EXCEED MINIMUM REQUIREMENTS. LACK OF DETAILS ON THE PLANS OR ABSENCE OF SPECIFIC INFORMATION SHALL NOT RELIEVE THE CONTRACTOR OF COMPLYING WITH ALL APPLICABLE CODES, REQUIREMENTS AND SPECIFICATIONS.

13. PROVIDE A TEMPORARY STONE SPLASH PAD AT ALL FIRE HYDRANTS OR OTHER POINTS OF DISCHARGE DURING TESTING OF THE WATER DISTRIBUTION SYSTEM.

14. PROVIDE SILT FENCE, FILTER SOCKS, OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED TO CONTROL SOIL EROSION DURING ALL UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY CONSTRUCTION.

15. CUT OR FILL SLOPES WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED DAILY UNTIL THE SLOPE IS BROUGHT TO GRADE.

16. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION ACTIVITIES UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED. ANY ADDITIONAL TEMPORARY CONTROL DEVICES THAT MAY BE REQUIRED SHALL BE PROVIDED AS PART OF THIS PROJECT AT NO ADDITIONAL COST TO THE OWNER.

OFF-SITE TRAFFIC

OFF- SITE VEHICLE TRACKING OF SEDIMENTS AND DUST GENERATION SHALL BE MINIMIZED. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.

TRENCH AND GROUND WATER CONTROL (DEWATERING)

THERE SHALL BE NO TURBID DISCHARGES TO SURFACE WATERS OF THE STATE RESULTING FROM DEWATERING ACTIVITIES. IF TRENCH OR GROUND WATERS CONTAIN SEDIMENT, IT MUST PASS THROUGH A SEDIMENT SETTLING POND OR OTHER EQUALLY EFFECTIVE SEDIMENT CONTROL DEVICE, PRIOR TO BEING DISCHARGED FROM THE CONSTRUCTION SITE. ALTERNATIVELY, SEDIMENT MAY BE REMOVED BY SETTLING IN PLACE OR DEWATERING INTO A SUMP PIT, FILTER BAG OR COMPARABLE PRACTICE. GROUND WATER DEWATERING WHICH DOES NOT CONTAIN SEDIMENT OR OTHER POLLUTANTS IS NOT REQUIRED TO BE TREATED PRIOR TO DISCHARGE. HOWEVER, CARE MUST BE TAKEN WHEN DISCHARGING GROUND WATER TO ENSURE THAT IT DOES NOT BECOME POLLUTANT-LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

CLEARING AND GRUBBING

1. LIMITS OF CLEARING AND GRADING SHALL BE CLEARLY MARKED ON THE SITE WITH SIGNAGE, FLAGGING AND/OR CONSTRUCTION FENCING. THE CONTRACTOR SHALL LIMIT THE SURFACE AREA OF ERODABLE EARTH MATERIAL EXPOSED BY EXCAVATION, BORROW, AND FILL OPERATIONS AND PRO VIDE IMMEDIATE PERMANENT OR TEMPORARY CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT STREAMS OR OTHER WATER COURSES, LAKES, PONDS, WETLANDS OR OTHER AREAS OF WATER IMPOUNDMENT.

2. STABILIZATION, PERMANENT AND TEMPORARY STABILIZATION ARE DEFINED IN PART VII OF THE OEPA AUTHORIZATION FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM.

3. AREAS MUST BE STABILIZED AS SPECIFIED IN THE FOLLOWING TABLES BELOW AND SHALL FOLLOW THE MOST CURRENT OHIO EPA PERMIT. THE MORE STRINGENT STANDARD SHALL GOVERN.

4. SEASONAL RESTRICTION ON TREE CUTTING: TREE CLEARING ACTIVITIES SHALL NOT BE PERFORMED FROM APRIL 1 TO SEPTEMBER 30 OF THE CALENDAR YEAR.

PERMANENT STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE (1) YEAR OR MORE	WITHIN SEVEN (7) DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN FIFTY (50) FEET OF A STREAM AND AT FINAL GRADE	WITHIN TWO (2) DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN (7) DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN FIFTY (50) FEET OF A STREAM AND NOT AT FINAL GRADE	WITHIN TWO (2) DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN TWENTY-ONE (21) DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN TWENTY-ONE (21) DAYS BUT LESS THAN ONE (1) YEAR, AND NOT WITHIN FIFTY (50) FEET OF A STREAM	WITHIN SEVEN (7) DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER

WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. THESE TECHNIQUES MAY INCLUDE MULCHING OR EROSION MATTING.

NON-SEDIMENT POLLUTANTS CONTROLS

NO SOLID (OTHER THAN SEDIMENT) OR LIQUID WASTE, INCLUDING BUILDING MATERIALS, SHALL BE DISCHARGED IN STORMWATER RUNOFF. ALL NECESSARY BMP'S MUST BE IMPLEMENTED TO PREVENT THE DISCHARGE OF NON-SEDIMENT POLLUTANTS TO THE DRAINAGE SYSTEM OF THE SITE OR SURFACE WATERS OF THE STATE. UNDER NO CIRCUMSTANCE SHALL CONCRETE TRUCKS WASH OUT DIRECTLY IN TO A DRAINAGE CHANNEL, STORM SEWER OR SURFACE WATERS OF THE STATE. NO EXPOSURE OF STORMWATER TO WASTE MATERIALS IS RECOMMENDED.

MAINTENANCE

ALL TEMPORARY AND PERMANENT CONTROL PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED IN A FUNCTIONAL CONDITION UNTIL ALL UP SLOPE AREAS THEY CONTROL ARE PERMANENTLY STABILIZED. THE CONTRACTOR SHALL COMPLY WITH THE MAINTENANCE SCHEDULE INCLUDED IN THE APPROVED PLANS FOR THE PROPOSED EROSION CONTROLS. A WRITTEN DOCUMENT CONTAINING THE SIGNATURES OF ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED IN THE IMPLEMENTATION OF THE BMPS MUST BE MAINTAINED AS PROOF ACKNOWLEDGING THAT THEY REVIEWED AND UNDERSTAND THE CONDITIONS AND RESPONSIBILITIES OF THE SWPPP.

INSPECTION

ALL STORMWATER CONTROLS ON THE SITE ARE INSPECTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN ONE-HALF INCH OF RAIN PER 24 HOUR PERIOD. A WRITTEN RECORD DOCUMENTING THE RESULTS OF THESE INSPECTIONS MUST BE CREATED AND MAINTAINED WITH THE SWPPP. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF OR THE POTENTIAL FOR POLLUTANTS ENTERING THE EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE SWPPP. THEY SHALL BE OBSERVED TO ENSURE THAT THOSE ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO THE RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFFSITE VEHICLE TRACKING.

1. WHEN PRACTICES REQUIRE REPAIR OR MAINTENANCE
IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE IS IN NEED OF REPAIR OR MAINTENANCE, WITH EXCEPTION OF A SEDIMENT SETTLING POND, IT MUST BE REPAIRED OR MAINTAINED WITHIN THREE DAYS OF INSPECTION. SEDIMENT SETTLING PONDS MUST BE REPAIRED OR MAINTAINED WITHIN TEN (10) DAYS OF THE INSPECTION.

2. WHEN PRACTICES FAIL TO PROVIDE THEIR INTENDED FUNCTION
IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE FAILS TO PERFORM ITS INTENDED FUNCTION AND THAT ANOTHER, MORE APPROPRIATE CONTROL PRACTICE IS REQUIRED, THE SWPPP MUST BE AMENDED AND THE NEW CONTROL PRACTICE MUST BE INSTALLED WITHIN TEN (10) DAYS OF INSPECTION.

3. WHEN PRACTICES DEPICTED ON THE SWPPP ARE NOT INSTALLED
IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE HAS NOT BEEN IMPLEMENTED IN ACCORDANCE WITH THE SWPPP. THE SWPPP MUST BE AMENDED AND THE NEW CONTROL PRACTICE MUST BE INSTALLED WITHIN TEN (10) DAYS OF THE INSPECTION. IF THE INSPECTION REVEALS THAT THE PLANNED CONTROL

WASTE DISPOSAL

CONTAINERS (e.g. DUMPSTER S, DRUMS) SHALL BE AVAILABLE FOR DISPOSAL OF DEBRIS, TRASH, HAZARDOUS OR PETROLEUM WASTES. ALL CONTAINERS MUST BE COVERED AND LEAK-PROOF. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THE PERTINENT MATERIAL.

CLEAN HARD FILL

BRICKS, HARDENING CONCRETE, AND SOIL WASTE SHALL BE FREE FROM CONTAMINATION WHICH MAY LEACH CONSTITUENTS TO WATERS OF THE STATE. CLEAN CONSTRUCTION WASTES THAT WILL BE DISPOSED INTO THE PROPERTY, SHALL BE SUBJECT TO ANY LOCAL PROHIBITIONS FROM THIS TYPE OF DISPOSAL.

CONSTRUCTION & DEMOLITION DEBRIS

ALL CONSTRUCTION A DEMOLITION DEBRIS (CADD) WASTE SHALL BE DISPOSED OF IN AN OHIO EPA APPROVED CADD LANDFILL AS REQUIRED BY OHIO REVISED CODE (ORC) 3714. CONSTRUCTION DEBRIS MAY BE DISPOSED OF ONSITE, BUT DEMOLITION DEBRIS MUST BE DISPOSED IN AN OHIO EPA APPROVED LANDFILL. ALSO, MATERIALS WHICH CONTAIN ASBESTOS MUST COMPLY WITH AIR POLLUTION REGULATIONS, SEE OHIO ADMINISTRATIVE CODE (OAC) 3745-20.

CONSTRUCTION CHEMICAL COMPOUNDS

AREA SHALL BE DESIGNATED FOR MIXING OR STORAGE OF COMPOUNDS SUCH AS FERTILIZERS, LIME, ASPHALT, OR CONCRETE. THESE DESIGNATED AREAS SHALL BE LOCATED AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS, OR OTHER STORMWATER DRAINAGE AREA.

EQUIPMENT FUELING & MAINTENANCE

EQUIPMENT FUELING AND MAINTENANCE SHALL BE IN DESIGNATED AREAS ONLY. SEE ONSITE FUEL STORAGE DETAIL.

CONCRETE WASH WATER

ALL DESIGNATED CONCRETE WASH OUT AREAS SHALL BE LOCATED AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS, OR OTHER STORMWATER DRAINAGE AREAS. SEE CONCRETE WASHOUT AREA DETAIL.

CONTAMINATED SOILS

ALL CONTAMINATED SOIL MUST BE TREATED AND/OR DISPOSED IN OHIO EPA APPROVED SOLID WASTE MANAGEMENT FACILITIES OR HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITIES.

SPILL REPORTING REQUIREMENTS

THE CONTRACTOR SHALL CONTACT THE OHIO EPA AT 800-282-9378, THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE (330-672-6602) IN THE EVENT OF A PETROLEUM SPILL (>25 GALLONS) OR THE PRESENCE OF SHEEN.

OPEN BURNING

OPEN BURNING IS NOT PERMITTED.

DUST CONTROLS /SUPPRESSANTS

USED OIL MAY NOT BE USED AS A DUST SUPPRESSANT. NO DUST SUPPRESSANT SHALL BE APPLIED NEAR CATCH BASINS, STORM SEWERS OR OTHER DRAINAGE WAYS.

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
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WATER TREATMENT PLANT &
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NO.	DESCRIPTION	DATE
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REVISIONS

JOB NO: PR58982
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APPROVED BY: CMS
SCALE: NONE

CIVIL SWPPP GENERAL NOTES

C-23

SHEET: OF

P:\PR58982\Cadd\Sheets\C-23 CIVIL SWPPP GENERAL NOTES.dwg 11/5/2021 12:13:13 PM Paul Emerson

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TEMPORARY SEEDING

1. STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.

2. TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR TWENTY–ONE (21) DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN SEVEN (7) DAYS AFTER GRADING.

3. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHOULD NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.

4. SOIL AMENDMENTS – TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.

5. SEEDING METHOD – SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ONSITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

MULCHING TEMPORARY SEEDING

1. APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH, WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES ON FAVORABLE, VERY FLAT SOIL CONDITIONS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.
2. MATERIALS:

   STRAW – IF STRAW IS USED, IT SHALL BE UN–ROTTED SMALL GRAIN STRAW APPLIED AT A RATE OF TWO (2) TONS PER ACRE OR 90 LBS./ 1,000 SQ. FT. (2–3 BALES)

   HYDROSEEDERS – IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2000 LBS./AC. OR 46 LB./ 1,000– SQ.– FT.

   OTHER – OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT SIX (6) TON/ AC.

3. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:

   MECHANICAL: A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT LEFT TO A LENGTH OF APPROXIMATELY SIX (6) INCHES.

   MULCH NETTING: NETTING SHALL BE USED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.

   SYNTHETIC BINDERS: SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI–TAC), DCA–70, PETROSET, TERRA TRACK OR EQUIVALENT MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.

   WOOD: CELLULOSE FIBER – WOOD– CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WT. OF 750 LB./AC. THE WOOD– CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB. / 100 GAL.

SITE PREPARATION

1. SUBSOILER, PLOW, OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM IN FILTRATION. MAXIMIZING IN FILTRATION WILL HELP CONTROL BOTH RUNOFF RATE AND WATER QUALITY. SUBSOILING SHOULD BE DONE WHEN THE SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING SHALL NOT BE DONE ON SLIP PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION.

2. THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.

3. TOPSOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION.

SEEDBED PREPARATION

1. LIME: AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 POUNDS PER 1,000 SQ. FT. OR TWO (2) TONS PER ACRE.

2. FERTILIZER: SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN PLACE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 25 POUNDS PER 1,000 SQ. FT. OR 1000 POUNDS PER ACRE OF A 10–10–10 OR 12–12–12 ANALYSIS.

3. THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING– TOOTH HARROW, OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF THREE (3) INCHES. ON SLOPING LAND, THE SOIL SHALL BE WORKED ON THE CONTOUR.

SEEDING DATES AND SOIL CONDITIONS

1. SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. IF SEEDING OCCURS OUTSIDE OF THE ABOVE SPECIFIED DATES, ADDITIONAL MULCH AND IRRIGATION MAY BE REQUIRED TO ENSURE A MINIMUM OF 80A GERMINATION. TIP \ AGE FOR SEEDBED PREPARATION SHOULD BE DONE WHEN SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. FOR WINTER SEEDING, SEE THE FOLLOWING SECTION ON DORMANT DEEDING.

DORMANT SEEDING

1. SEEDING SHOULD NOT BE MADE FROM OCTOBER 1 THROUGH NOVEMBER 20. DURING THIS PERIOD, THE SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT ABLE TO SURVIVE THE WINTER.

2. THE FOLLOWING METHODS MAY BE USED FOR "DORMANT SEEDING":

   FROM OCTOBER 1 THROUGH NOVEMBER 20, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20, AND BEFORE MARCH 15, BROADCAST THE SELECTED SEED MIXTURE. INCREASE THE SEEDING RATES BY 50A FOR THIS TYPE OF SEEDING.

   FROM NOVEMBER 20 THROUGH MARCH 15, WHEN SOIL CONDITIONS PERMIT, PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED SEED MIXTURE, MULCH AND ANCHOR. INCREASE THE SEEDING RATE BY 50A FOR THIS TYPE OF SEEDING.

   APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED.

   WHERE FEASIBLE, EXCEPT WHEN A CULTIPACKER TYPE SEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A CULTIPACKER, ROLLER, OR HIGH I DRAG. ON SLOPING LAND, SEEDING OPERATIONS SHOULD BE ON THE CONTOUR WHERE FEASIBLE.

MULCHING

1. MULCHING MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. DORMANT SEEDING SHALL BE MULCHED. 100A OF THE GROUND SURFACE SHALL BE COVERED WITH AN APPROVED MATERIAL.

PERMANENT SEEDING CON'T

2. MATERIALS

   STRAW: IF STRAW IS USED IT SHALL BE UNROTTED SMALL–GRAIN STRAW APPLIED AT THE RATE OF TWO (2) TONS PER ACRE OR 90 POUNDS (TWO TO THREE BALES) PER 1,000 SQ. FT. THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANIC ALLY APPLIED SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND–SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQ. FT. SECTIONS AND SPREAD TWO (2) 45 LB. BALES OF STRAW IN EACH SECTION.

   HYDROSEEDERS: IF WOOD CELLULOSE FIBER IS USED, IT SHAFT BE APPLIED AT 2,000 LB./AC. OR 46 LB./1,000 SQ. FT.

   OTHER: OTHER ACCEPTABLE MULCHES INCLUDE ROLLED EROSION CONTROL MATTINGS OR BLANKETS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS PER ACRE.

3. STRAW AND MULCH ANCHORING METHOD

   STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER.

   MECHANICAL: A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY, BE LEFT LONGER THAN 6 INCHES.

   MULCH NETTING: NETTING SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.

   ASPHALT EMULSION: ASPHALT SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURER OR AT A RATE OF 160 GALLONS PER ACRE.

   SYNTHETIC BINDER: SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI–TAC), DCA–70, PETROSET, TERRA TACK OR EQUIVALENT MAY BE USED AT RATES SPECIFIED BY THE MANUFACTURER.

   WOOD CELLULOSE FIBER: WOOD CELLULOSE FIBER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER WITH THE MIXTURE CONTAINING A MAXIMUM OF 50 POUNDS CELLULOSE PER 100 GALLONS OF WATER.

IRRIGATION

1. PERMANENT SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY WEATHER OR ON ADVERSE SITE CONDITIONS, WHICH REQUIRE ADEQUATE MOISTURE FOR SEED GERMINATION AND PLANT GROWTH.

2. IRRIGATION RATES SHALL BE MONITORED TO PREVENT EROSION AND DAMAGE TO SEEDING AREAS FROM EXCESSIVE RUNOFF.

TEMPORARY ROLLED EROSION CONTROL PRODUCT CON'T

1. CHANNEL /SLOPE SOIL PREPARATION GRADE AND COMPACT AREA OF INSTALLATION, PREPARING SEEDBED BY LOOSENING 2"–3" OF TOPSOIL ABOVE FINAL GRADE. INCORPORATE AMENDMENTS SUCH AS LIME AND FERTILIZER INTO SOIL. REMOVE ALL ROCKS, CLODS, VEGETATION OR OTHER DEBRIS SO THAT INSTALLED RECP WILL HAVE DIRECT CONTACT WITH THE SOIL SURFACE.
2. CHANNEL/SLOPE SEEDING APPLY SEED TO SOIL SURFACE PRIOR TO INSTALLATION. ALL CHECK SLOTS, ANCHOR TRENCHES, AND OTHER DISTURBED AREAS MUST BE RESEEDED. REFER TO THE PERMANENT SEEDING SPECIFICATION FOR SEEDING RECOMMENDATIONS.

SLOPE INSTALLATION

1. EXCAVATE TOP AND BOTTOM TRENCHES (12"X6"). INTERMITTENT EROSION CHECK SLOTS (6"X6") MAY BE REQUIRED BASED ON SLOPE LENGTH. EXCAVATE TOP ANCHOR TRENCH 2' X 3' OVER CREST OF SLOPE.
2. IF INTERMITTENT EROSION CHECK SLOTS ARE REQUIRED, INSTALL RECP IN 6"X6" SLOT AT A MAXIMUM OF 30' CENTERS OR THE MID POINT OF THE SLOPE. RECP SHOULD BE STAPLED INTO TRENCH ON 12 INCH CENTERS.
3. INSTALL RECP IN TOP ANCHOR TRENCH, ANCHOR ON 12 INCH SPACINGS, BACKFILL AND COMPACT SOIL.
4. UNROLL RECP DOWN STOP E WITH ADJACENT ROLLS OVERLAPPED A MINIMUM OF 3'. ANCHOR THE SEAM EVERY 18'. LAY THE RECP LOOSE TO MAINTAIN DIRECT SOIL CONTACT, DO NOT PULL TAUGHT.
5. OVERLAP ROLL ENDS A MINIMUM OF 12" WITH UP SLOPE RECP ON TOP FOR A SHINGLE EFFECT. BEGIN ALL NEW ROLLS IN AN EROSION CHECK SLOT IF REQUIRED, DOUBLE ANCHOR ACROSS ROLL EVERY 12'.

   INSTALL RECP IN BOTTOM ANCHOR TRENCH (12"X6"), ANCHOR EVERY 12". PLACE ALL OTHER STAPLES THROUGHOUT SLOPE AT 1 TO 2.5 PER SQUARE YARD DEPENDANT ON SLOPE. REFER TO MANUFACTURER'S ANCHOR GUIDE CHANNEL INSTALLATION.

6. EXCAVATE INITIAL ANCHOR TRENCH (12"X 6") ACROSS THE LOWER END OF THE PROJECT AREA.
7. EXCAVATE INTERMITTENT CHECK SLOTS (6" X 6") ACROSS THE CHANNEL AT 30' INTERVALS AT ON THE CHANNEL.
8. EXCAVATE LONGITUDINAL CHANNEL ANCHOR SLOTS (4" X 4") ALONG BOTH SIDES OF CHANNEL TO BURY THE EDGES. WHENEVER POSSIBLE EXTEND THE RECP 2"–3" ABOVE THE CREST OF THE CHANNEL SIDE SLOPES.
9. INSTALL RECP IN INITIAL ANCHOR TRENCH (DOWNSTREAM). ANCHOR EVERY 12", BACKFILL AND COMPACT SOIL.
10. ROLL OUT RECP BEGINNING IN THE CENTER OF THE CHANNEL TOWARD THE INTERMITTENT CHECK SLOT. DO NOT PULL TAUGHT. UNROLL ADJACENT ROLLS UPSTREAM WITH A THREE (3) INCHES MINIMUM OVERLAP (ANCHOR EVERY 18') AND UP EACH CHANNEL SLOPE.
11. AT TOP OF CHANNEL SIDE SLOPES INSTALL RECP IN THE LONGITUDINAL ANCHOR SLOTS, ANCHOR EVERY 18 INCH.
12. INSTALL RECP IN INTERMITTENT CHECK SLOTS. LAY IN TO TRENCH AND SECURE WITH ANCHORS EVERY 12 INCH, BACKFILL WITH SOIL AND COMPACT.
13. OVERLAP ROLL ENDS A MINIMUM OF 12 INCH WITH UPSTREAM RECP ON TOP FOR A SHINGLING EFFECT. BEGIN ALL NEW ROLLS IN AN INTERMITTENT CHECK SLOT, DOUBLE ANCHORED EVERY 12 INCH.
14. INSTALL UPSTREAM END IN A TERMINAL ANCHOR TRENCH (12" X 6"); ANCHOR EVERY 12 INCH, BACKFILL AND COMPACT.
15. COMPLETE ANCHORING THROUGHOUT CHANNEL AT 2.5 PER SQUARE YARD USING SUITABLE GROUND ANCHORING DEVICES ("U" SHAPED WIRE STAPLES, METAL GEO–TEXTILE PINS, PLASTIC STAKES, AND TRIANGULAR WOODEN STAKES). ANCHORS SHOULD BE OF SUFFICIENT LENGTH TO RESIST PULLOUT. LONGER ANCHORS MAY BE REQUIRED IN LOOSE, SANDY OR GRAVELLY SOIL.

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

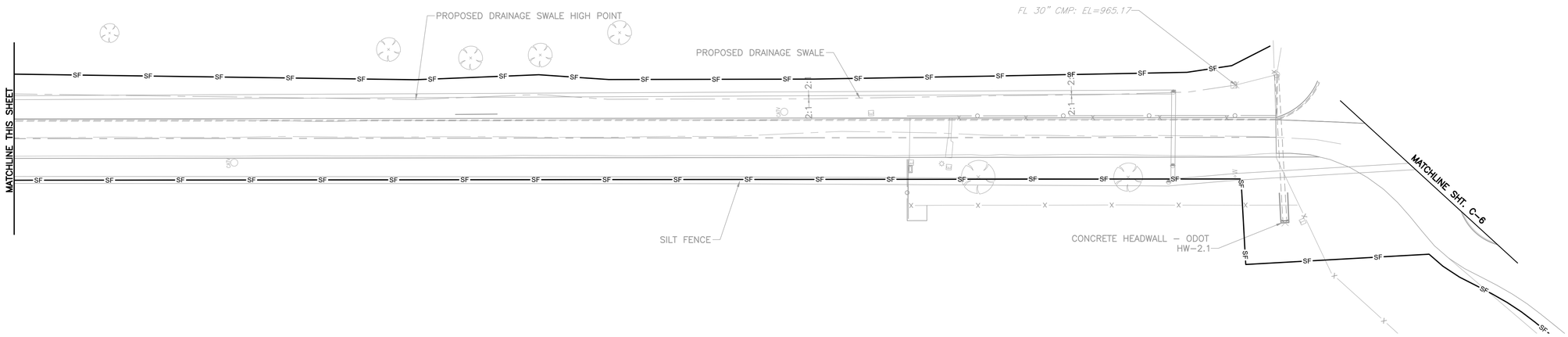
JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

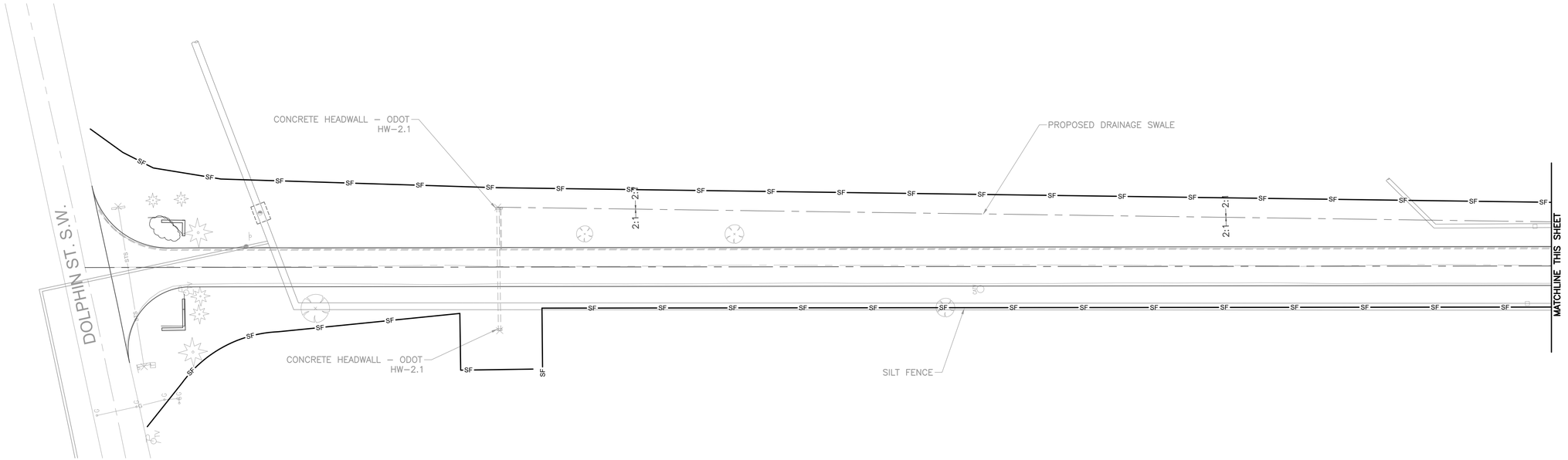
CIVIL SWPPP GENERAL NOTES

C-24

SHEET: OF

P:\PR58982\Cadd\Sheets\C-24 CIVIL SWPPP GENERAL NOTES.dwg 11/5/2021 1:55:40 PM Paul Emerson





SWPP PLAN - MAIN ROAD

SCALE: 1" = 30'

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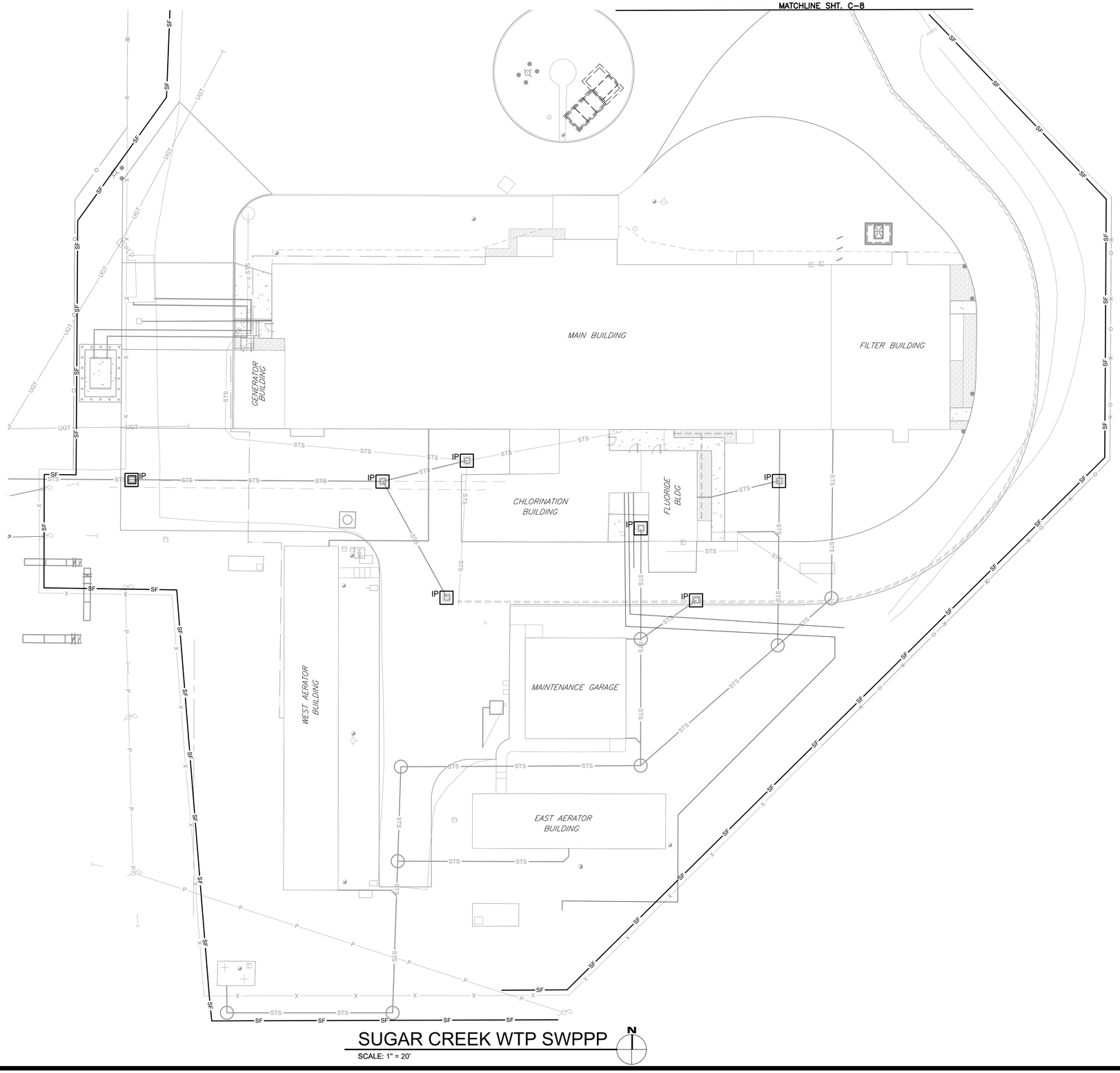
SCALE:	1"=30'

WTP
CIVIL
SWPPP
MAIN ACCESS DRIVE
AREA PLAN

C-25

SHEET: OF



SITE LOCATION

CITY OF CANTON TUSCARAWAS COUNTY, OHIO

NAME OF WATERSHED / SUBSEQUENT RECEIVING WATER(S):
RECEIVING STREAM: SUGAR CREEK

OWNER
CITY OF CANTON
306 2nd STREET SE
CANTON, OH 44702

PHONE: (330) 649-8100

PROJECT DESCRIPTION:
A NEW BUILDING WILL BE CONSTRUCTED AT ALL TEN (10) WELLS AND THE TOP ELEVATION OF EACH PUMP CASING WILL BE LOWERED TO GRADE. APPROXIMATELY 3,900 LF OF NEW 36" RAW WATER TRANSMISSION MAIN WILL BE INSTALLED PARALLEL TO THE EXISTING RAW WATER TRANSMISSION MAIN THAT CARRIES RAW WATER FROM THE WELLS TO THE AERATOR BUILDING(S). THE NEW AND EXISTING MAINS WILL BE INTERCONNECTED WITH VALVES WITH REPLACEMENT EXISTING AND SECTIONS OF THE EXISTING CAST IRON MAIN REMOVED FOR INSTALLATION OF MANWAYS FOR FUTURE CLEANING. WATER TREATMENT PLAN UPGRADES WILL INCLUDES UPGRADES TO THE EXISTING AERATORS, FILTERS, FILTER BACKWASH OPERATION, HIGH SERVICE PUMPS, CLEARWELL, AND CHEMICAL FEED SYSTEMS TO MEET CURRENT AND PROJECTED PERMIT REQUIREMENTS ESTABLISHED AND ENFORCED BY THE U.S. AND OHIO EPA.

LEGEND

IP INLET PROTECTION

SF SILT FENCE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	1"=20'

WTP
CIVIL SWPPP
AREA PLAN

C-26

SHEET: OF

1	BID SET	04/2022
NO.	DESCRIPTION	DATE
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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

WELLFIELDS
CIVIL SWPPP
AREA PLAN

SHEET: C-27 OF

1	BID SET	04/2022
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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
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BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

SHEET:	C-28
OF	
	WELLFIELDS CIVIL SWPPP AREA PLAN
SCALE:	NONE
APPROVED BY:	CMS
CHECKED BY:	MMK
DRAWN BY:	KAS
DESIGNED BY:	KAS
DATE:	APR 2022
JOB NO:	PR58982

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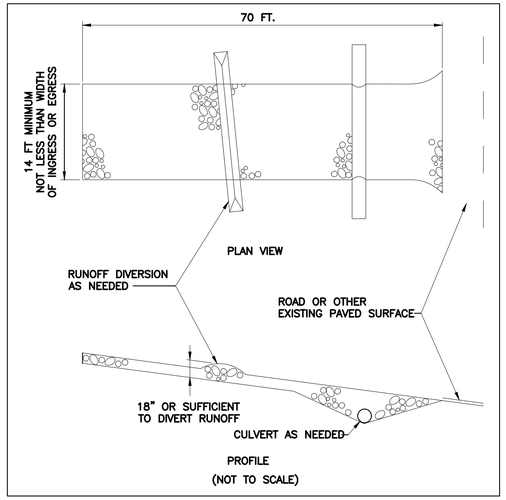


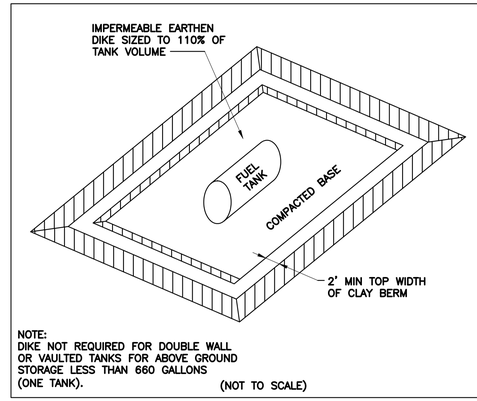
CONSTRUCTION ENTRANCE DETAIL

SCALE: NONE

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

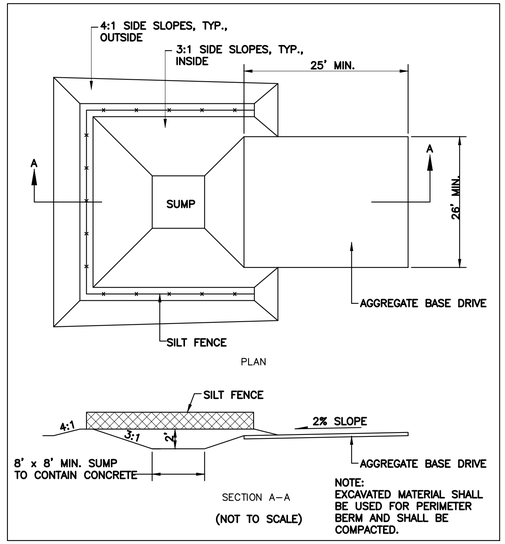
GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE	
MINIMUM TENSILE STRENGTH	200 LBS
MINIMUM PUNCTURE STRENGTH	80 PSI
MINIMUM TEAR STRENGTH	50 LBS
MINIMUM BURST STRENGTH	320 PSI
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS<0.6 MM
PERMITTIVITY	1x10–3 CM/SEC.

6. TIMING – THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT– A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
8. WATER BAR – A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ON TO PAVED SURFACES.
9. MAINTENANCE – TOP DRESSING OF ADDITION AT STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC ROADS, OR ANY SURFACE WHERE RUN OFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
10. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFFSITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
11. REMOVAL – THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.



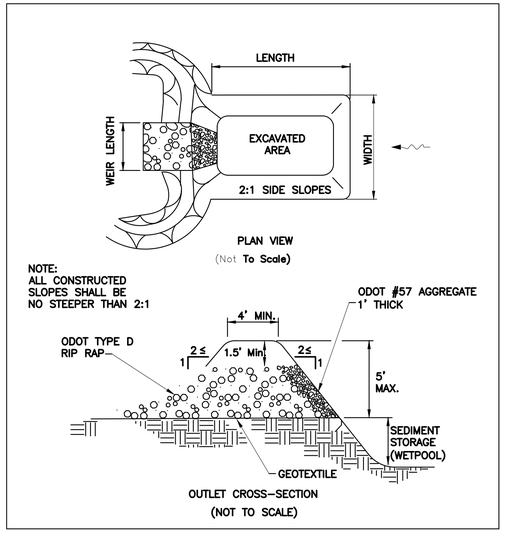
ON-SITE FUEL STORAGE DETAIL

SCALE: NONE



CONCRETE WASH OUT AREA DETAIL

SCALE: NONE

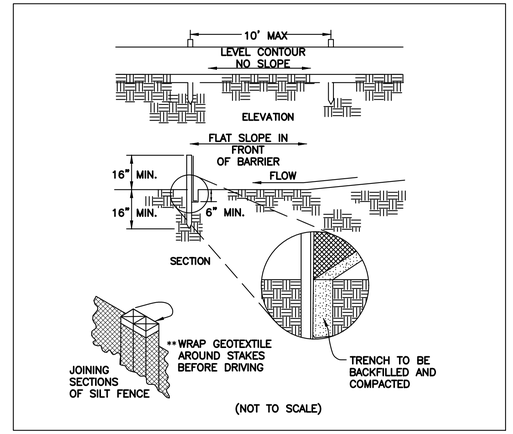


SEDIMENT TRAP DETAIL

SCALE: NONE

1. WORK SHALL CONSIST OF THE INSTALLATION, MAINTENANCE AND REMOVAL OF ALL SEDIMENT TRAPS AT THE LOCATIONS DESIGNATED ON THE DRAWINGS.
2. SEDIMENT TRAPS SHALL BE CONSTRUCTED TO THE DIMENSIONS SPECIFIED ON THE DRAWINGS AND OPERATIONAL PRIOR TO UPSLOPE LAND DISTURBANCE.
3. THE AREA BENEATH THE EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF VEGETATION TO A MINIMUM DEPTH OF SIX (6) INCHES. THE POOL SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT CLEAN OUT.
4. FILL USED FOR THE EMBANKMENT SHALL BE EVALUATED TO ASSURE ITS SUITABILITY AND IT MUST BE FREE OF ROOTS OR OTHER WOODY VEGETATION, LARGE ROCKS, ORGANICS OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL SHALL BE PLACED IN SIX (6) INCH LIFTS AND SHALL BE COMPACTED BY TRAVERSING WITH A SHEEP FOOT OR OTHER APPROVED COMPACTION EQUIPMENT. FILL HEIGHT SHALL BE INCREASED FIVE (5) PERCENT TO ALLOW FOR STRUCTURE / FOUNDATION SETTLEMENT. CONSTRUCTION SHALL NOT BE PERMITTED IF EITHER THE EARTH FILL OR COMPACTION SURFACE IS FROZEN.
5. THE MAXIMUM HEIGHT OF EMBANKMENT SHALL BE FIVE (5) FEET. ALL CUT AND FILL SLOPES SHALL BE 2:1 (H:V) OR FLATTER.
6. A MINIMUM STORAGE VOLUME BELOW THE CREST OF THE OUTLET OF 67 yd3. FOR EVERY ACRE OF CONTRIBUTING DRAINAGE AREA SHALL BE ACHIEVED AT EACH LOCATION NOTED ON THE DRAWINGS WITH ADDITIONAL SEDIMENT STORAGE VOLUME PROVIDED BELOW THIS ELEVATION.
7. TEMPORARY SEEDING SHALL BE ESTABLISHED AND MAINTAINED OVER THE USEFUL LIFE OF THE PRACTICE.
8. THE OUTLET FOR THE SEDIMENT TRAP STRUCTURE SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN ON THE DRAWINGS.
9. THE OUTLET SHALL BE CONSTRUCTED USING THE MATERIALS SPECIFIED ON THE DRAWINGS. WHERE GEOTEXTILE IS USED, ALL OVERLAPS SHALL BE A MINIMUM OF TWO (2) FEET OR AS SPECIFIED BY THE MANUFACTURER, WHICHEVER IS GREATER. ALL OVERLAPS SHALL BE MADE WITH THE UPPER MOST LAYER PLACED LAST. GEOTEXTILE SHALL BE KEYED IN AT LEAST SIX (6) INCHES ON THE UPSTREAM SIDE OF THE OUTLET.
10. WARNING SIGNS AND SAFETY FENCE SHALL BE PLACED AROUND THE TRAPS AND MAINTAINED OVER THE LIFE OF THE PRACTICE.
11. AFTER ALL SEDIMENT – PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, THE STRUCTURE AND ALL ASSOCIATED SEDIMENT SHALL BE REMOVED. STABILE EARTH MATERIALS SHALL BE PLACED IN THE SEDIMENT TRAP AREA AND COMPACTED. THE AREA SHALL BE GRADED TO BLEND IN WITH ADJOINING LAND SURFACES AND HAVE POSITIVE DRAINAGE. THE AREA SHALL BE IMMEDIATELY SEEDED.

DRAINAGE AREA (ACRES)	WEIR LENGTH (FEET)
1	4.0
2	6.0
3	8.0
4	10.0
5	12.0



SILT FENCE DETAIL

SCALE: NONE

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

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

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

CRITERIA FOR SILT FENCE MATERIALS

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

SILT FENCE FABRIC PROPERTIES	VALUES	TEST METHODS
MINIMUM TENSILE STRENGTH	120 LBS (535 N)	ASTM D 4632
MAXIMUM ELONGATION AT 60 LBS	50%	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS. (220 N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS. (180 N)	ASTM D 4533
APPARENT OPENING SIZE	< = 0.84 MM	ASTM D 4751
MINIMUM PERMITTIVITY	1x10–2 SEC.–1	ASTM D 4491
UV EXPOSURE STRENGTH RETENTION	70%	ASTM D 4355

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WELLFIELD IMPROVEMENTS

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JOB NO:	PR58982
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

CIVIL SWPPP DETAILS

C-29

SHEET: OF

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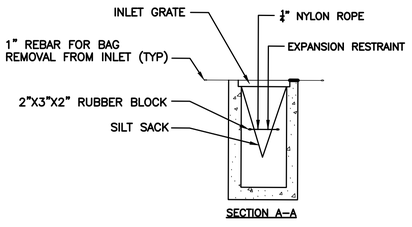
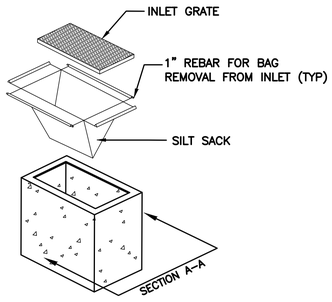


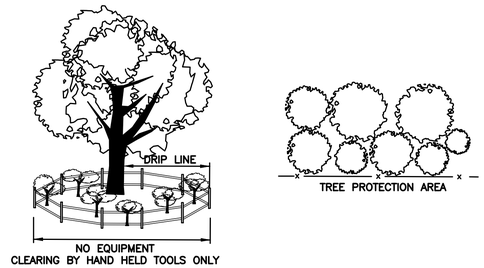


NOTES

1. EXACT DIMENSIONS SHALL BE DETERMINED IN THE FIELD BASED ON THE ACTUAL INLET DIMENSIONS. SILTSACK BY ATLANTIC CONSTRUCTION FABRICS OR APPROVED EQUAL.
2. SEDIMENT MUST BE REMOVED AFTER EACH STORM EVENT.
3. STORM DRAIN INLET PROTECTION CONSISTS OF A GEOTEXTILE BARRIER SUPPORTED AROUND OR ACROSS A STORM DRAIN INLET. IT IS USED TO PREVENT SEDIMENT–LADEN WATER FROM ENTERING A STORM DRAIN SYSTEM. IT REDUCES THE RATE AT WHICH SEDIMENT–LADEN WATER MAY ENTER AN INLET, THEREBY CAUSING PONDING AND SETTLING OF SEDIMENT.

INLET PROTECTION INSERT DETAIL

SCALE: NONE

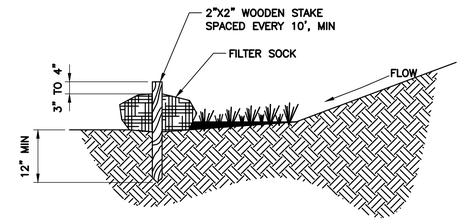


NOTES

1. TREES THAT EXIST ONSITE PRIOR TO DEVELOPMENT MAY BE PROTECTED SO THAT WILL CONTINUE TO SURVIVE AFTER CONSTRUCTION. TREE PRESERVATION MAY BE USED TO PROTECT AREAS OF FORE3ST SUCH AS BUFFERS STRIPS ALONG STREAMS OR TO PROTECT INDIVIDUAL SPECIMEN TREES.

TREE PRESERVATION AREA DETAIL

SCALE: NONE



NOTES

1. MATERIALS: COMPOST USED FOR FILTER BERMS SHALL BE WEED, PATHOGEN, AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS, OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL–COMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF A PARTICLE RANGIBN FROM 3/8" TO 2".
2. FILTER SOCKS SHALL BE THREE (3) OR FIVE (5) MIL CONTINUOUS, TUBULAR, HDPE ⅜" KNITTED MESH NETTING MATERIAL. FILLED WITH COMPOST PASSING ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.

INSTALLATION

1. FILTER SOCKS SHALL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GERNALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1. ADDITIONAL BERMS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID–SLOPE.
2. FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS.

MAINTENANCE

1. ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
2. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH ½ OF THE EXPOSED HEIGHT OF THE PRACTICE.
3. WHERE THE FILTER SOCK DETERIORATES OR FAILS, REPAIR OR REPLACE WITH A MORE EFFECTIVE ALTERNATIVE.

REMOVAL

1. FILTER BERMS NO LONGER NEEDED SHALL BE REMOVED. FILTER FILLER MATERIAL MAY BE DISPERSED ONSITE IN A MANNER THAT WILL FACILITATE SEEDING.

FILTER SOCK DETAIL

SCALE: NONE

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APPROVED BY:	CMS
SCALE:	NONE

CIVIL SWPPP DETAILS

C-30

SHEET: OF

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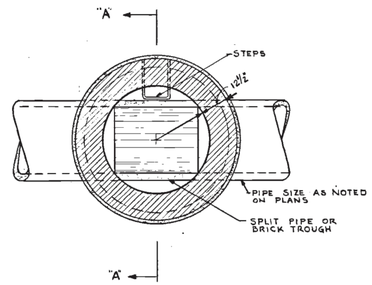
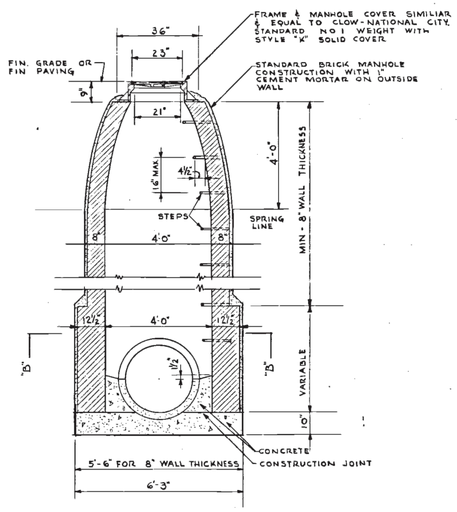
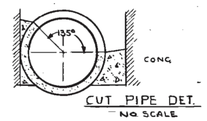


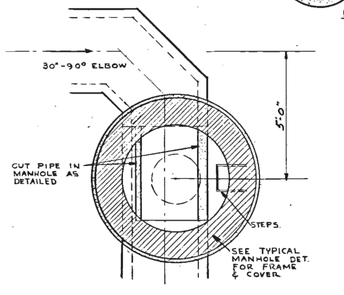
PLAN AT SECTION "B"-"B"



SECTION "A-A"
TYPICAL MANHOLE DETAIL
NO SCALE



CUT PIPE DET.
NO SCALE



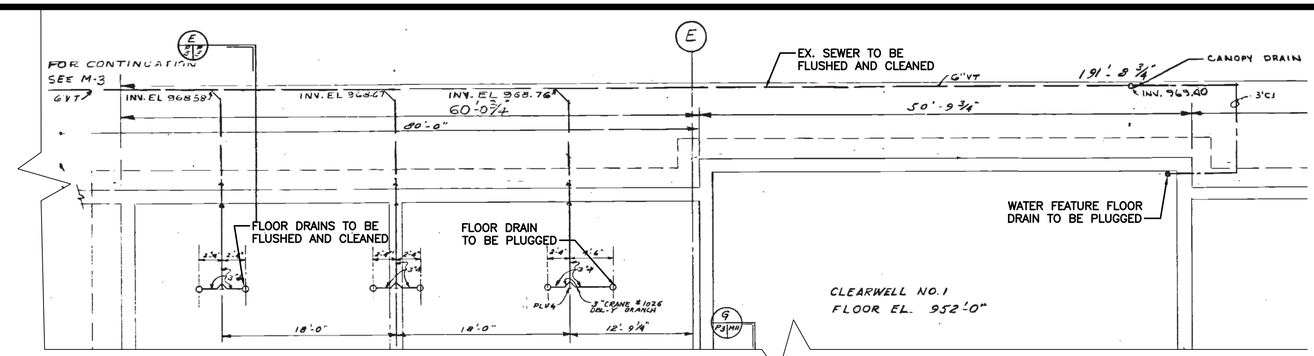
DETAIL - MANHOLES "1&2
NO SCALE

NOTE: MANHOLES "J & K". SIMILAR TO MANHOLES "H & I"

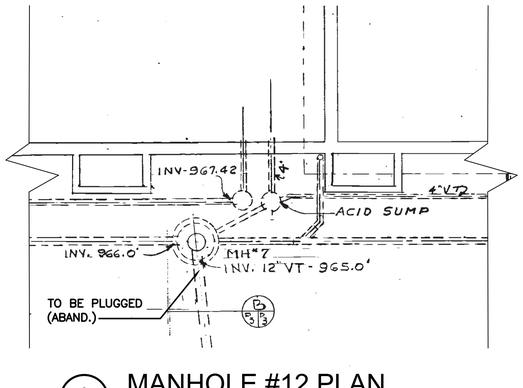
EXISTING MANHOLE DETAILS

SCALE: NONE

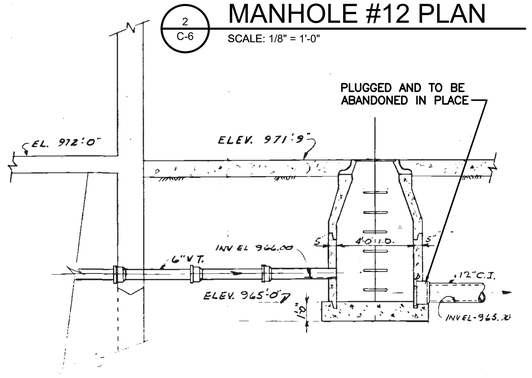
NOTE: FOR CONTRACTOR INFORMATION ONLY



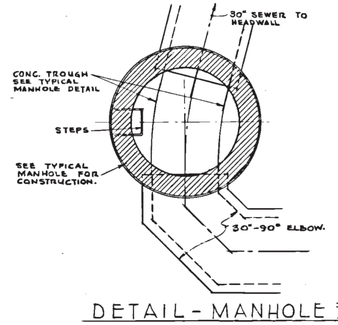
1 / C-6 PUMP ROOM & FOOTER DRAIN PIPING
SCALE: 1/8" = 1'-0"



2 / C-6 MANHOLE #12 PLAN
SCALE: 1/8" = 1'-0"

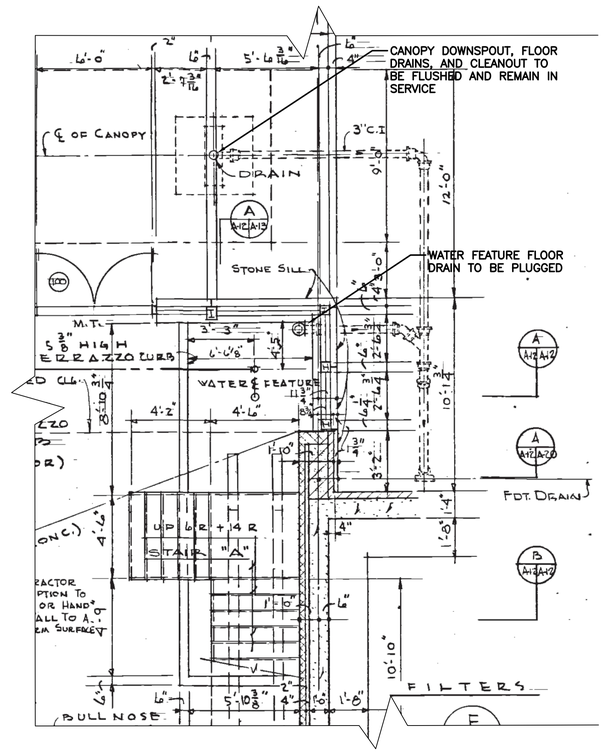


B MANHOLE #12 TYP. SECTION
SCALE: 1/4" = 1'-0"



DETAIL - MANHOLE #4
NO SCALE

NOTE: MANHOLE "F" REFER TO SITE DRAWINGS



3 / C-15 VESTIBULE PARTIAL PLAN
SCALE: 1/4" = 1'-0"

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APPROVED BY:	CMS
SCALE:	NONE

CIVIL MISCELLANEOUS DETAILS

C-31

SHEET: OF

P:\PR58982\Cadd\Sheets\C-31 CIVIL MISCELLANEOUS DETAILS.dwg 4/14/2022 9:33:18 AM Paul Emerson

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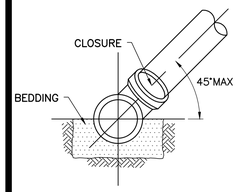
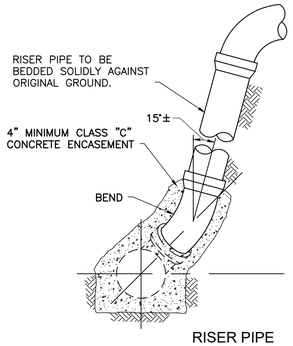


WYE BRANCH

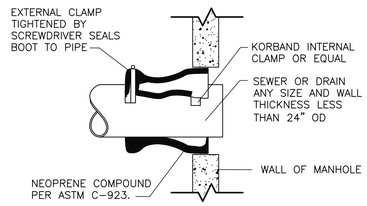
NOTES:
1. THIS DETAIL APPLIES TO THE STORM AND SANITARY CONNECTIONS INTO EAST AND WEST SITE DRAINAGE SYSTEMS.
2. USE A WYE BRANCH FOR CONNECTIONS BETWEEN SIMILAR PIPE MATERIALS.
3. USE A KOR N TEE FOR CONNECTIONS INTO DISSIMILAR PIPE MATERIALS.
4. USE RISER DETAIL FOR PIPES CONNECTING AT SLOPES GREATER THAN 1:1.



RISER PIPE

SANITARY WYE BRANCH AND RISER DETAIL

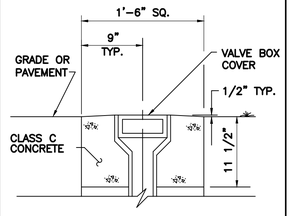
SCALE: NONE



NOTE:
1. GASKET SHALL BE KOR-N-SEAL, OR EQUAL.

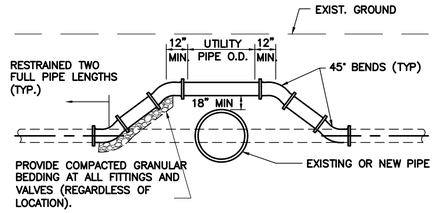
SANITARY SEWER FLEXIBLE GASKET DETAIL

SCALE: NONE



VALVE BOX DETAIL

SCALE: NONE



TYPICAL UTILITY LINE RAISING

SCALE: NONE

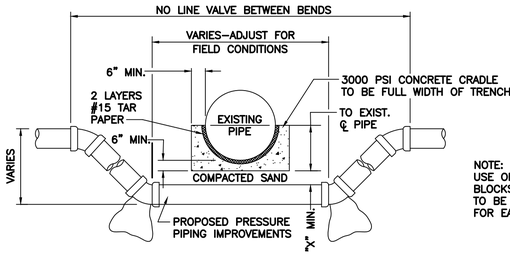
MISCELLANEOUS NOTES

1. PIPE JOINTS SHALL BE DEFLECTED OR FITTINGS SHALL BE PROVIDED TO MAINTAIN HORIZONTAL ALIGNMENT AND VERTICAL ELEVATIONS SHOWN. DEFLECTIONS ARE TO BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS OR AS NOTED ON THE DETAILED PLANS. IF THE CONTRACTOR CHOOSES TO USE FITTINGS TO OBTAIN THE ALIGNMENT SHOWN, IT SHALL BE DONE AT THE CONTRACTORS EXPENSE.
2. RESTRAINED JOINTS SHALL BE USED AT ALL MECHANICAL JOINT FITTINGS INCLUDING BUT NOT LIMITED TO BENDS, TEES, AND CROSSES. RESTRAINED JOINTS SHALL BE MEGALUG OR APPROVED EQUAL. THE COST FOR RESTRAINED JOINTS SHALL BE INCLUDED IN THE BASE BID PRICE. CONCRETE BACKING SHALL ALSO BE USED AT ALL BENDS AND TEES.
3. NO OPEN TRENCHES WILL BE PERMITTED OVERNIGHT. FENCES MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER TO PROTECT PEDESTRIAN TRAFFIC.
4. WHERE PRESSURE PIPE CHANGES IN MATERIAL, THE TRANSITION COUPLING PLUS THE NEXT JOINT IN BOTH DIRECTIONS SHALL BE RESTRAINED.
5. CUTTING, CAPPING, AND ABANDONING EXISTING PIPES. PIPE ENDS TO BE ABANDONED SHALL BE CUT, FILLED WITH CONCRETE, AND BLOCKED WITH CONCRETE AS NECESSARY. PIPE ENDS TO REMAIN IN-SERVICE SHALL BE CUT, CAPPED, AND BLOCKED WITH CONCRETE.
6. NUTS, BOLTS, AND WASHERS ON ALL BELOW GRADE WATERLINE VALVES, MECHANICAL JOINTS, AND RESTRAINED JOINTS SHALL BE 316 STAINLESS STEEL.
7. CONTRACTOR SHALL GRADE & RESLOPE ALL DITCHES DISTURBED DURING CONSTRUCTION.
8. PRIOR TO CONSTRUCTION, AUDIO-VIDEO COLOR TAPING SHALL BE COMPLETED ALONG ALL AREAS WHERE WORK WILL BE PERFORMED. A DUPLICATE COPY OF ALL MEDIA SHALL BE SUBMITTED TO THE OWNER. SEE SPECIFICATION SECTION 01 32 34.
9. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL CONSTRUCTION DEBRIS INCLUDING BUT NOT LIMITED TO EXCESS SOIL, ROCK, OR ANY OTHER TYPE MATERIALS. THE CONTRACTOR SHALL NOT FILL ANY WETLANDS, LOW LANDS, FLOOD PLAINS, OR DRAINAGE WAYS WITH SAID DEBRIS WITHOUT OBTAINING PROPER APPROVALS, PERMITS, LICENSES, ETC. FROM LOCAL, STATE, OR FEDERAL AGENCIES.
10. THE CONTRACTOR SHALL REMOVE AND REINSTALL CULVERT AND/OR DRAINAGE PIPES AS IS NECESSARY TO FACILITATE CONSTRUCTION OF THE IMPROVEMENTS. PROPER DRAINAGE MUST BE MAINTAINED AT ALL TIMES. ANY CULVERT OR DRAINAGE PIPE DAMAGED OR BROKEN DURING CONSTRUCTION BY THE CONTRACTOR SHALL BE REPLACED, COMPLETE IN LENGTH AND KIND BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL CLEAN THE ROADWAY AT THE END OF EACH DAY OF OPERATION. CLEANING SHALL BE PERFORMED USING A POWER BROOM OR HYDROSPRAYER, OR AS DIRECTED BY THE ENGINEER.
12. CONTRACTOR SHALL PERFORM ALL CLEAN-UP, ROCK REMOVAL, FINAL GRADING, AND SEEDING TO AREAS DISTURBED BY WORK ASSOCIATED WITH THE IMPROVEMENTS IMMEDIATELY UPON COMPLETING SUCH WORK.
13. CONTRACTOR SHALL MAINTAIN ACCESS AND SAFETY IN PARKING LOTS FOR EMPLOYEES AND MOTORISTS. TRAFFIC CONTROL AND SAFETY ACCESSING PARKING LOTS AND WITHIN PARKING LOTS SHALL BE COORDINATED WITH THE OWNER.
14. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE INSURANCE LISTING THE NORTHEAST OHIO REGIONAL SEWER DISTRICT AND BURGESS & NIPLE, INC. AS ADDITIONAL INSURED.
15. FOR SHOP DRAWING SUBMITTALS SEE SPECIFICATION SECTION 01 33 00.
16. CONCRETE BACKING DETAILS APPLY FOR BURIED HDPE PRESSURE PIPE AS WELL AS DIP

CONCRETE CRADLE CONDITIONS:
A) IF SANITARY OR STORM SEWER PIPE JOINT IS WITHIN PROPOSED IMPROVEMENT TRENCH LIMITS
B) IF CROSSING A WATER LINE AT ANY POINT
C) IF CROSSING SPACE IS LESS THAN MIN. SPACE OF CRADLE BELOW PIPE BOTTOM PLUS "X" DIM. THEN OMIT SAND FILL AND USE CONCRETE

"X" DIMENSION REQUIREMENTS:
A) 6" FOR WATER LINE CROSSING (ALSO FOR GAS AND TELEPHONE LINES W/NO CRADLE NEEDED)
B) 18" FOR SANITARY OR STORM SEWER PIPE
C) SEE "X" NOTE

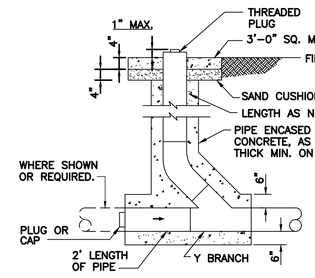
"X" NOTE:
A) IF CROSSING SPACE IS MORE THAN MIN. SPACE OF CRADLE BELOW PIPE BOTTOM PLUS A FOREMENTIONED "X" DIM. THEN EXTEND "X" DIM. TO MAKE UP DIFFERENCE



NOTE:
USE OF BENDS AND THRUST BLOCKS OR JOINT DEFLECTION TO BE DETERMINED IN FIELD FOR EACH X-ING

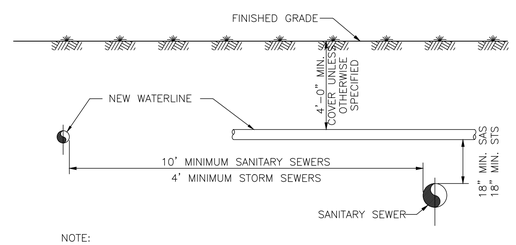
PIPE LOWERING DETAIL

SCALE: NONE



SEWER CLEANOUT DETAIL

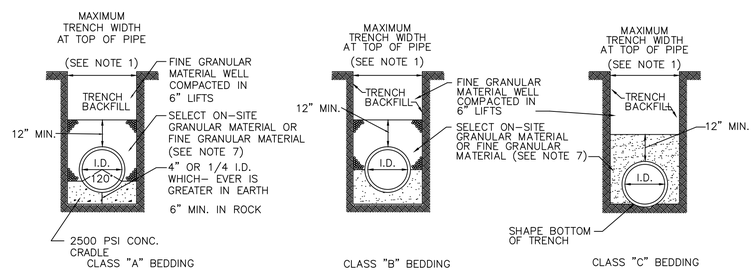
SCALE: NONE



NOTE:
1. WATERLINES AND SANITARY SEWER LINES OR FORCE MAINS SHALL BE SEPARATED BY MINIMUM CLEAR VERTICAL DISTANCE OF 18" AND HORIZONTAL DISTANCE OF 10'-0".
2. WATERLINES AND STORM SEWERS SHALL BE SEPARATED BY MINIMUM CLEAR VERTICAL DISTANCE OF 18" AND A HORIZONTAL DISTANCE OF 4'-0"

CROSS OVER DETAIL

SCALE: NONE



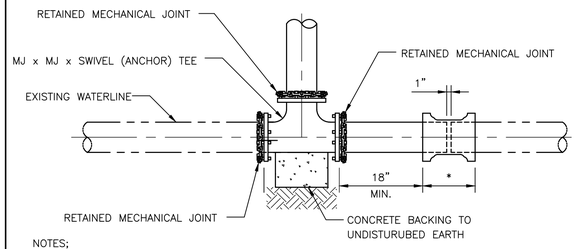
1. MAXIMUM TRENCH AT TOP OF PIPE SHALL BE O.D. + 24" FOR ALL PIPE SIZES UP TO AND INCLUDING 24" I.D. AND O.D. + 30" FOR PIPE LARGER THAN 24" I.D.
2. PIPE BACKFILL UNDER NEW OR EXISTING PAVEMENT AND STRUCTURES SHALL BE TRENCH GRANULAR BACKFILL AS SPECIFIED IN SECTION 31 23 23.14 TRENCH GRANULAR BACKFILL, COMPACTED TO THE TOP OF TRENCH. ALL PIPING INSTALLED SHALL HAVE TRENCH GRANULAR BACKFILL IN ALL AREAS UNDER PAVEMENT AND STRUCTURES.
3. ALL BEDDING SHALL BE CLASS "B" UNLESS OTHERWISE NOTED ON THE PLANS OR AUTHORIZED BY THE ENGINEER.
4. SLAG BEDDING SHALL NOT BE USED.
5. PRESSURE PIPE BEDDING SHALL BE CLASS "C"
6. CLAY DAMS SHALL BE REQUIRED WHEN AND WHERE NECESSARY AS DIRECTED BY THE ENGINEER.
7. PIPE SIZE AND BEDDING

NOMINAL PIPE SIZE	AASHTO M43 LIMESTONE SIZE
< 16"	7, 78, 8 OR 89
> 16"	6, 67, OR 68

TRENCH AND BEDDING DETAILS

SCALE: NONE

* CONNECTION SHALL BE MADE WITH RESTRAINED MECHANICAL JOINT SOLID SLEEVES (LONG PATTERN) DUCTILE IRON CLASS 350.



NOTES;
THE SIZE AND TYPE OF THE EXISTING WATERLINE SHALL BE FIELD VERIFIED PRIOR TO CUTTING INTO THE EXISTING MAIN TO ENSURE CORRECT SOLID SLEEVE SIZE.
NO CAST IRON FITTINGS SHALL BE PERMITTED.

CUT-IN-TEE DETAIL

SCALE: NONE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

CIVIL MISCELLANEOUS DETAILS

C-32

SHEET: OF

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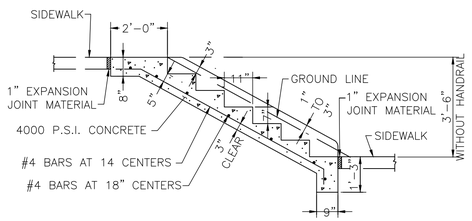
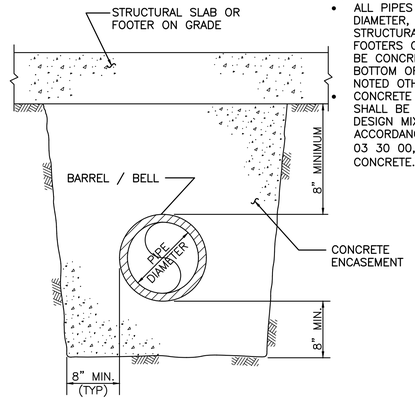
PLOTTED: 4/15/2022 5:05:34 PM



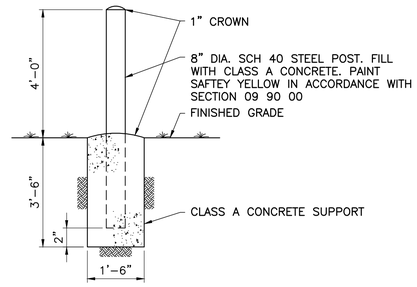
NOTES:
1. ALL RISERS SHALL BE OF EQUAL HEIGHT AND ALL TREADS TO BE OF EQUAL WIDTH ON ANY ONE SET OF STAIRS.
2. EACH STEP OR LANDING SHALL HAVE STAIR NOSINGS ANCHORED IN PLACE PER SPECIFICATIONS.

CONC. STEPS ON GRADE
SCALE: NONE

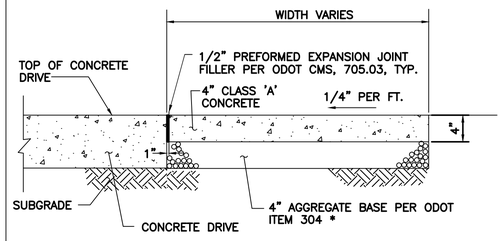


NOTES:
- ALL PIPES OVER 2" IN DIAMETER, UNDER STRUCTURAL SLABS AND FOOTERS ON GRADE, SHALL BE CONCRETE ENCASED TO BOTTOM OF SLAB UNLESS NOTED OTHERWISE.
- CONCRETE ENCASEMENT SHALL BE A CLASS C DESIGN MIX IN ACCORDANCE WITH SECTION 03 30 00, "CAST-IN-PLACE CONCRETE."

PIPE ENCASEMENT, CONCRETE
SCALE: NONE

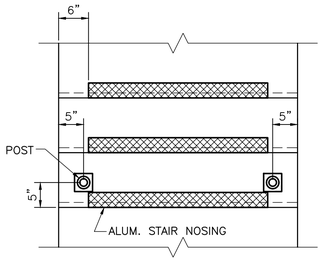


HEAVY DUTY BOLLARD
SCALE: NONE

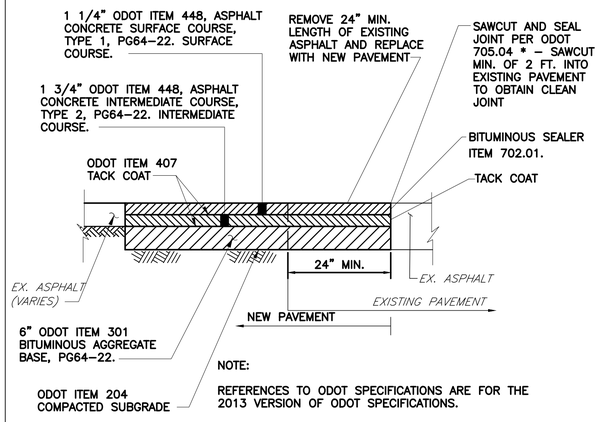


* AS PER 2013 ODOT SPECIFICATIONS.

CONCRETE SIDEWALK ABUTTING PAVEMENT
SCALE: NONE

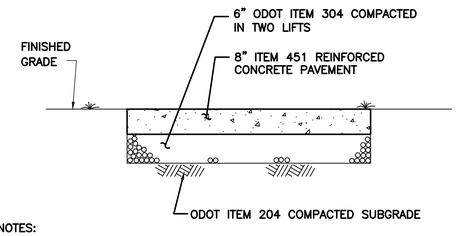


CONCRETE STAIR NOSING
SCALE: NONE



NOTE:
REFERENCES TO ODOT SPECIFICATIONS ARE FOR THE 2013 VERSION OF ODOT SPECIFICATIONS.

ASPHALT PAVEMENT
SCALE: NONE

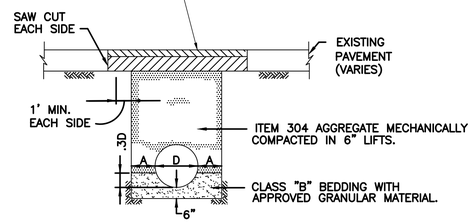


NOTES:

1. THE LIMITS OF CONCRETE PAVEMENT REPLACEMENT OVER PIPE TRENCHES SHALL EXTEND A MINIMUM OF 1' BEYOND THE EDGE OF TRENCH ON EACH SIDE. PROVIDE NEAT SAW CUT AT BOTH SIDES AND REPLACE TO JOINT.
2. PROVIDE PAVEMENT JOINTS PER ODOT ITEM 451 AND STANDARD CONSTRUCTION DRAWINGS BP-2.1 AND BP-2.2.
3. NEW PAVEMENT ADJOINING EXISTING SHALL BE DOWELED PER ODOT ITEM 451.
4. SUBMIT PAVEMENT JOINT LAYOUT FOR APPROVAL BY ENGINEER PRIOR TO CONSTRUCTION.

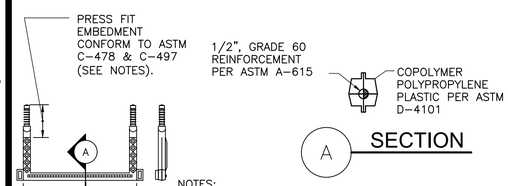
CONCRETE PAVEMENT
SCALE: NONE

NOTE: SEE C-37 FOR CITY DETAIL FOR PAY LIMITS BASIS UNLESS NOTED OTHERWISE.



A TO BE A MAXIMUM OF 12"
D=PIPE DIAMETER

ASPHALT PAVEMENT REPLACEMENT (OVER TRENCH)
SCALE: NONE



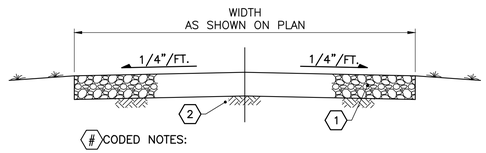
NOTES:

USE TYPE I STEP FOR MANHOLES OR CIRCULAR STRUCTURES OF 5'-0" DIA. OR LESS - USE 16" C/C SPACING.

USE TYPE II STEP FOR FLAT WALL STRUCTURES SUCH AS VAULTS, WELLS, ETC. OR CIRCULAR STRUCTURES OVER 5'-0" DIA. - USE 12" C/C SPACING.

MOUNTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

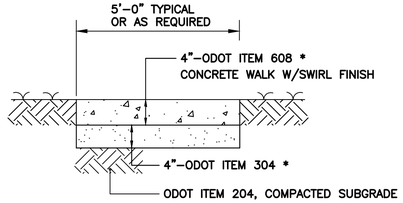
MANHOLE STEPS
SCALE: NONE



#CODED NOTES:
1. 10" COMPACTED AGGREGATE
2. COMPACTED SUBGRADE PER ODOT ITEM 204

NOTE: SLOPE PAVEMENT AWAY FROM ABUTTING STRUCTURES.

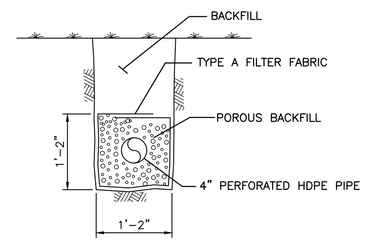
DRIVEWAY AND PARKING AREA AGGREGATE
SCALE: NONE



NOTE: SLOPE SIDEWALKS AWAY FROM BUILDINGS @ 2.08%; SLOPE MOW STRIP APRON AWAY FROM BUILDINGS @ 5.00%

* AS PER 2013 ODOT SPECIFICATIONS.

CONCRETE SIDEWALK
SCALE: NONE



SPECIFICATION REFERENCES:
- PERFORATED HDPE PIPE IS FLEXABLE, CORROGATED, HEAVY DUTY MEETING ASTM F405, ADS OR EQUAL.
- FILTER FABRIC, POROUS BACKFILL AND BACKFILL IS IN SECTION 31 23 00.

FRENCH DRAIN
SCALE: NONE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

CIVIL MISCELLANEOUS DETAILS

C-33

SHEET: OF

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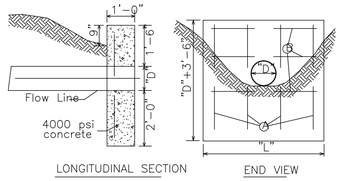
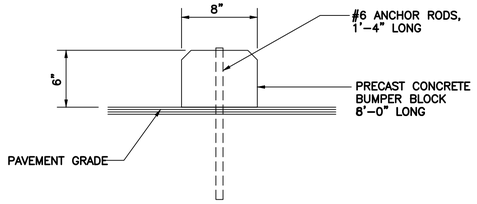


"D" DIAM OF PIPE	"L" LENGTH OF HEADWALL	QUANTITIES IN ONE (1) HEADWALL "A" BARS NO.	"A" BARS LENGTH	"B" BARS NO.	"B" BARS LENGTH	STEEL LBS.	CONCRETE C.Y.
6"–8"	3'–0"	4	3'–8"	4	2'–6"	20	0.6
12"	4'–0"	4	4'–0"	4	3'–6"	20	0.7
15"	5'–0"	4	4'–3"	4	4'–6"	24	0.9
18"	5'–9"	4	4'–6"	4	5'–3"	26	1.0
21"	6'–9"	4	4'–9"	4	6'–3"	30	1.2
24"	7'–6"	4	5'–0"	4	7'–0"	32	1.4
27"	8'–6"	4	5'–3"	4	8'–0"	36	1.7
30"	9'–3"	4	5'–6"	4	8'–9"	38	1.9
33"	10'–3"	4	5'–9"	4	9'–9"	42	2.2
36"	11'–0"	4	6'–0"	4	10'–6"	44	2.4

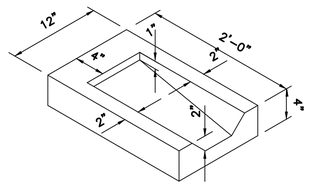
ODOT HW-1.2 HEADWALL DETAIL

SCALE: NONE



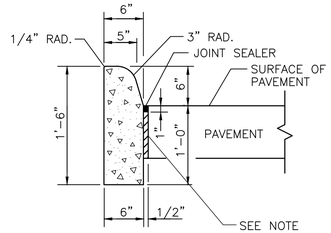
BUMPER BLOCK DETAIL

SCALE: NONE



CONCRETE SPLASH BLOCK DETAIL

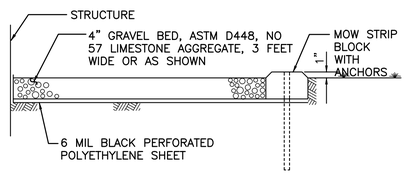
SCALE: NONE



NOTE:
PREFORMED JOINT MATERIAL ITEM 705.03. EXPANSION JOINT MATERIAL AND JOINT SEALER IS NOT REQUIRED FOR THAT PORTION OF THE CURB WHICH IS ADJACENT TO A FLEXIBLE TYPE PAVEMENT. BOTH MATERIALS ARE REQUIRED AS DETAILED FOR THE FULL HEIGHT OF RIGID PAVEMENT AND CONCRETE BASES.

TYPE 6 - CURB DETAIL

SCALE: NONE



NOTES:
- PROVIDE AGGREGATE MOW STRIP WHERE SHOWN.
- MOW STRIP BLOCKS ARE SPECIFIED IN SECTION 32 90 02, "GRADING AND SEEDING."

MOW STRIP, AGGREGATE

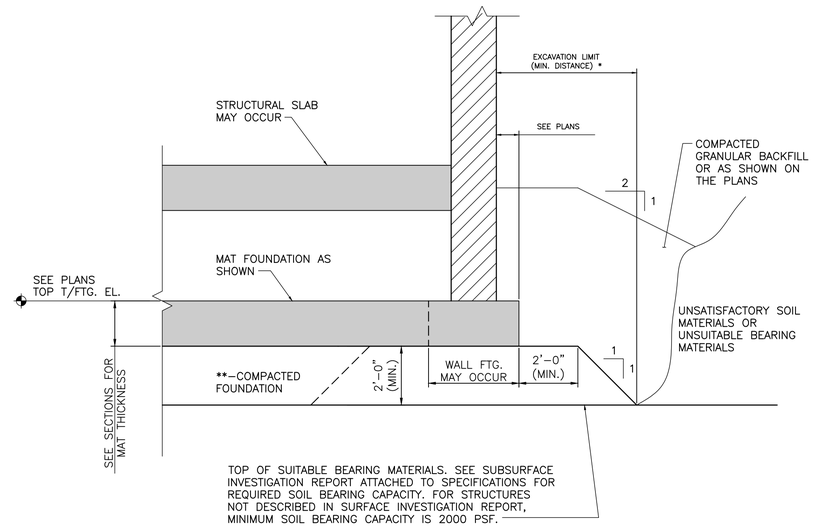
SCALE: NONE

NOTE:
PRECAST MANHOLES > 48" DIAMETER SHALL CONFORM TO OHIO DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD CONSTRUCTION DRAWING NO. MH–1.2, MANHOLE NO. 3 IN ADDITION TO THE REQUIREMENTS OF SPECIFICATION SECTION 33 05 13.

M.H. DEPTH	BASE SLAB REINFORCEMENT SQ. IN./FT. E.W.
0'–10'	0.17
11'–20'	0.22
21'–30'	0.27
31'–40'	0.32
41'–50'	0.36
51'–60'	0.32

TYPE "B" PRECAST CONCRETE MANHOLE

SCALE: NONE



* IN ALL AREAS DESIGNATED TO RECEIVE FOUNDATION MATERIAL, NO EXCAVATION OF EXISTING MATERIAL SHALL BE MADE UNTIL THE EXISTING MATERIAL HAS BEEN INSPECTED AND AUTHORIZED FOR REMOVAL BY THE ENGINEER/ARCHITECT. DEPTH OF REMOVAL SHALL BE AS DIRECTED AND AUTHORIZED BY THE ENGINEER/ARCHITECT.

** COMPACTED FOUNDATION IS NOT REQUIRED IF SUITABLE BEARING MATERIALS ARE ENCOUNTERED AT BOTTOM OF FOUNDATION ELEVATION.

TYPICAL WELL AND DECHLORINATION BUILDING EXCAVATION AND FILL DETAIL

SCALE: NONE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

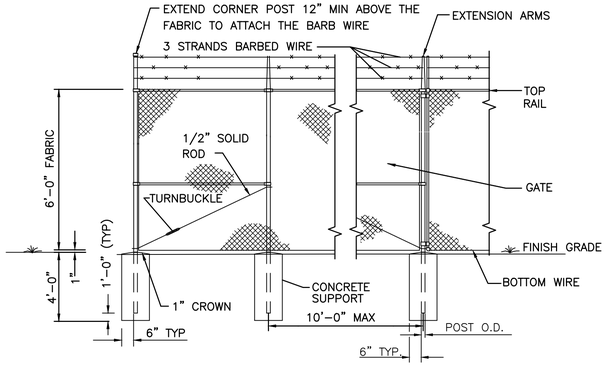
CIVIL MISCELLANEOUS DETAILS

C-34

SHEET: OF

P:\PR58982\Cadd\Sheets\C-34 CIVIL MISCELLANEOUS DETAILS.dwg 1/27/2022 4:19:03 PM Paul Emerson

PLOTTED: 4/15/2022 5:07:48 PM

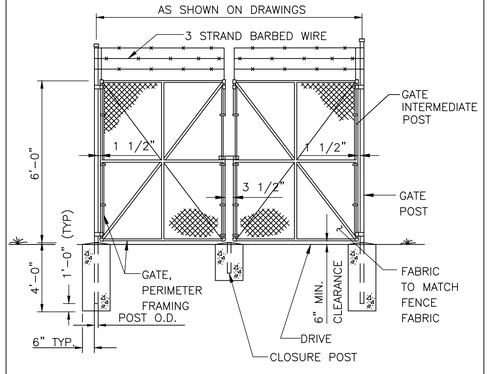


NOTE: SEE SPECIFICATION 32 31 14

CHAIN LINK FENCE DETAIL

SCALE: NONE

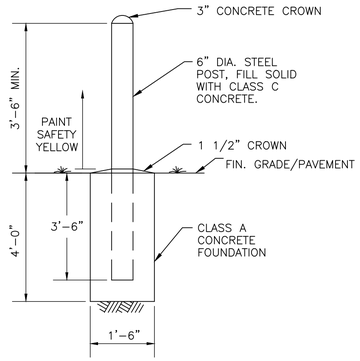
1



DOUBLE SWING GATE DETAIL

SCALE: NONE

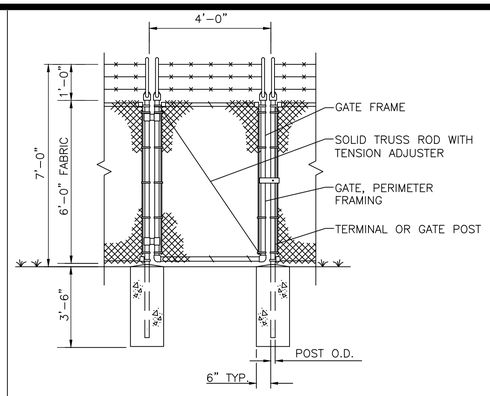
2



GUARD POST DETAIL

SCALE: NONE

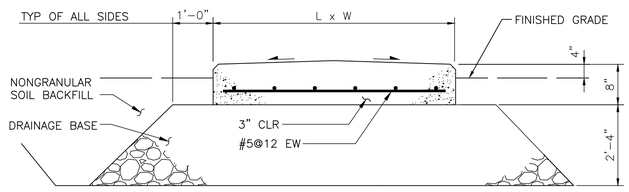
3



SINGLE SWING GATE DETAIL

SCALE: NONE

4

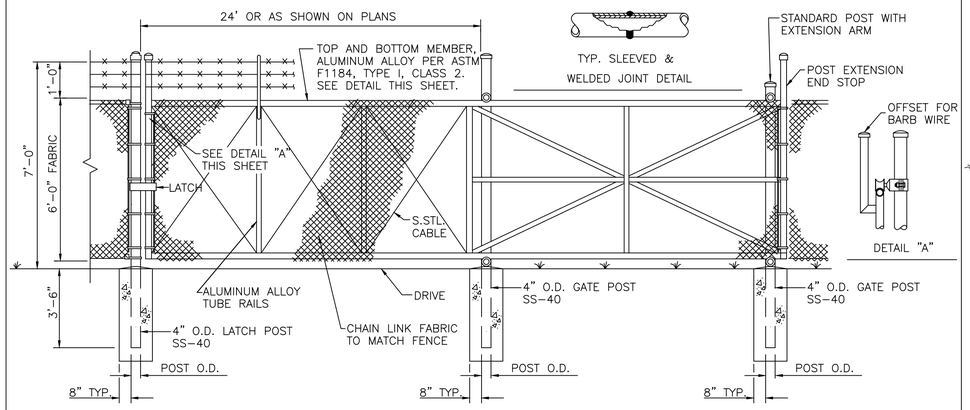


NOTES:
1. CROWN AT 1/8" PER FOOT FOR DRAINAGE, BUT USE MONOSLOPE PERPENDICULAR TO ADJACENT WALL IF BASE IS SET AGAINST A BUILDING.
2. COORDINATE LENGTH (L) AND WIDTH (W) WITH EQUIPMENT MANUFACTURER.
3. USE NONSHRINK GROUT TO SET EQUIPMENT.
4. BACKFILL EXCAVATION AROUND AND OVER THE DRAINAGE BASE WITH NONGRANULAR SOIL BACKFILL.

TYPICAL EXTERIOR EQUIPMENT BASE

SCALE: NONE

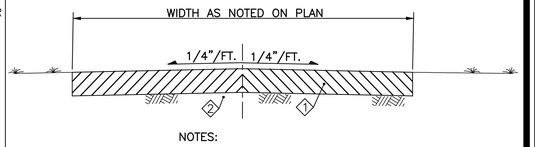
5



SINGLE CANTILEVER AUTOMATIC AND MANUAL GATE DETAIL

SCALE: NONE

6



NOTES:

1 ODOT ITEM 304, 8" COMPACTED AGGREGATE (CRUSHED LIMESTONE)

2 ODOT ITEM 204, COMPACTED SUBGRADE

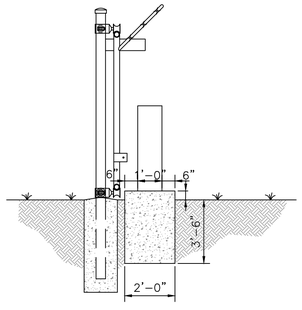
NOTE:

SLOPE PAVEMENT AWAY FROM ABUTTING STRUCTURES.

GRAVEL DRIVE

SCALE: NONE

7



NOTES:

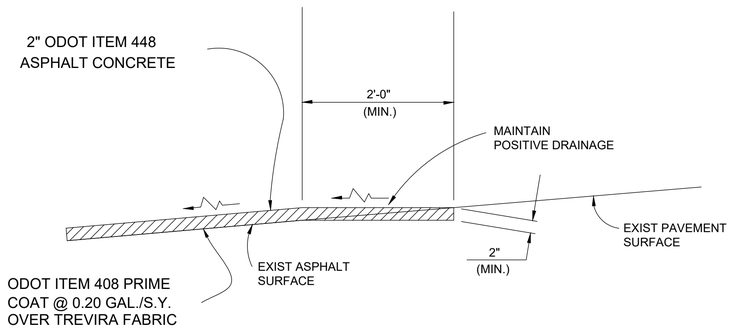
1. CANTILEVER/SLIDE GATE OPERATOR SHALL BE VARIABLE SPEED, 1/2 HP, 115V, SINGLE PHASE, WITH A WEATHER-RESISTANT GALVANIZED STEEL CABINET WITH LOCKABLE, GASKETED, HINGED AND REMOVEABLE FRONT COVER FOR ACCESS. OPERATOR SHALL INCLUDE TWO DETECTORS (FREE EXIT/REVERSE), SURGE PROTECTOR, HEATER, AND CONTACT EDGE WITH TRANSMITTER AND RECEIVER. THE CANTILEVER/SLIDE GATE OPERATOR SHALL BE LINEAR/OSCO MODEL VS-GSLG-211 OR APPROVED EQUAL.

2. CANTILEVER/SLIDE GATE OPERATOR CONTROL SHALL BE AN EXTERIOR DIGITAL KEYPAD PROGRAMMABLE WITH UP TO 480, 1 TO 6-DIGIT LENGTH ENTRY CODES. THE ENCLOSER SHALL BE RUGGED, AST ALUMINUM FOR PEDESTAL MOUNTING. CONTROLLER SHALL BE LINEAR MODEL AK-1, OR APPROVED EQUAL.

CANTILEVER/SLIDE GATE OPERATOR

SCALE: NONE

8



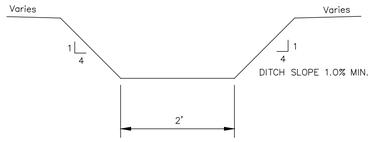
PAVEMENT OVERLAY TRANSITION DETAIL*

SCALE: NONE

PER ODOT ITEM 250 (PAVEMENT REPAIRS)

*TO BE USED AT TRANSITION W/EXIST. PAVEMENT

9



NEW DITCH SECTION

SCALE: NONE

10

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
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WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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APPROVED BY:	CMS
SCALE:	NONE

CIVIL MISCELLANEOUS DETAILS

C-35

SHEET: OF

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PLOTTED: 4/15/2022 5:07:56 PM

WATERLINE

1. DUCTILE IRON PIPE: ALL PIPE 12" IN DIAMETER AND SMALLER SHALL BE CEMENT LINED DUCTILE, MINIMUM CLASS 53 "PUSH ON" OR RESTRAINED JOINT PIPE. ALL PIPE LARGER THAN 12" IN DIAMETER SHALL BE CEMENT LINED DUCTILE IRON, MINIMUM CLASS 54 "PUSH ON" OR RESTRAINED JOINT PIPE. ALL WATERLINE SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C151/A21.51.
2. ALL NEW VALVES SHALL OPEN BY TURNING CLOCKWISE. VALVES SHALL BE SAME SIZE AS THE WATERLINE. ALL VALVE BOXES SHALL BE INSTALLED FLUSH WITH GRADE.
3. THE MAXIMUM TRENCH OPENING SHALL NOT EXCEED 200 LINEAL FEET USING TRADITIONAL EXCAVATION METHODS OR 500 FEET USING A TRENCHER. WHERE ACCESS TO DRIVES AND PARKING LOTS IS HINDERED OR BLOCKED FOR AN EXTENDED PERIOD OF TIME, THE CONTRACTOR SHALL PROVIDE TEMPORARY ACCESS USING COMPACTED GRAVEL. AT NO TIME SHALL THE CONTRACTOR USE PLATING AS A SOLE MEANS OF PROVIDING ACCESS IN ANY PAVED OR NON-PAVED AREA. CONTRACTOR SHALL KEEP ALL WORK WITHIN THE RIGHT-OF- WAYS, EASEMENTS AND CONSTRUCTION LIMITS SHOWN ON THE PLANS.
4. PIPE JOINTS SHALL BE DEFLECTED OR FITTINGS SHALL BE PROVIDED TO MAINTAIN HORIZONTAL ALIGNMENT AND VERTICAL ELEVATIONS SHOWN. DEFLECTIONS ARE TO BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS OR AS NOTED ON THE DETAILED PLANS. IF THE CONTRACTOR CHOOSES TO USE FITTINGS TO OBTAIN THE ALIGNMENT SHOWN, IT SHALL BE DONE AT THE CONTRACTORS EXPENSE.
5. RESTRAINED JOINTS SHALL BE USED AT ALL MECHANICAL JOINT FITTINGS INCLUDING BUT NOT LIMITED TO BENDS, TEES, CROSSES, VALVES, AND HYDRANTS. RESTRAINED JOINTS SHALL BE MEGALUG OR APPROVED EQUAL. THE COST FOR RESTRAINED JOINTS SHALL BE INCLUDED IN THE BASE BID PRICE. CONCRETE BACKING SHALL ALSO BE USED AT ALL BENDS, TEES, AND WATER MAIN ENDS.
6. GRAY IRON PIPE AND FITTINGS WILL NOT BE PERMITTED.
7. NO OPEN TRENCHES WILL BE PERMITTED OVERNIGHT. FENCES MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER TO PROTECT PEDESTRIAN TRAFFIC.
8. WHERE WATERLINE PIPE CHANGES IN MATERIAL, THE TRANSITION COUPLING PLUS THE NEXT JOINT IN BOTH DIRECTIONS SHALL BE RESTRAINED.
9. UNLESS OTHERWISE NOTED, THE PROPOSED WATERLINE SHALL HAVE 5'-0" MINIMUM COVER.
10. CUTTING, CAPPING, AND ABANDONING EXISTING WATERLINES. WATERLINE ENDS TO BE ABANDONED SHALL BE CUT, FILLED WITH CONCRETE, AND BLOCKED WITH CONCRETE AS NECESSARY. WATERLINE ENDS TO REMAIN IN-SERVICE SHALL BE CUT, CAPPED, AND BLOCKED WITH CONCRETE. SEE WATERLINE DETAIL SHEETS.
11. THE CONTRACTOR SHALL INSTALL TRENCH TAPE IN ALL OPEN CUT TRENCHES FOR ALL WATERLINES. NO. 6 WIRE WILL BE CONNECTED TO VALVE BOXES, SERVICE METER PITS, AND HYDRANTS AT A MAXIMUM SPACING OF 5,000 FEET. THE COST OF THE WIRE SHALL BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF WATERLINE.
12. INSTALLATION AND PRESSURE TESTING OF THE WATER MAIN SHALL CONFORM TO AWWA C600.
13. DISINFECTION OF THE WATER MAIN SHALL CONFORM TO AWWA C651.
14. THE FOLLOWING DISTANCES SHALL BE MAINTAINED FROM THE WATER MAIN:
    10-FEET MINIMUM HORIZONTAL SEPARATION FROM SANITARY SEWER, OUT-TO-OUT
    18-INCH MINIMUM VERTICAL SEPARATION FROM SANITARY SEWER (CROSSINGS), OUT-TO-OUT
    4-FEET MINIMUM HORIZONTAL SEPARATION FROM STORM SEWER, OUT-TO-OUT
    12-INCH MINIMUM VERTICAL SEPARATION FROM STORM SEWER (CROSSINGS), OUT-TO-OUT
15. ALL WATERLINES CROSSING BELOW EXISTING UTILITIES SHALL BE ENCASED IN CONCRETE. SEE ENCASEMENT DETAIL.
16. NUTS, BOLTS, AND WASHERS ON ALL BELOW GRADE WATERLINE VALVES, MECHANICAL JOINTS, AND RESTRAINED JOINTS SHALL BE 316 STAINLESS STEEL.
17. CONTRACTOR SHALL ESTABLISH AND STAKE OUT THE WATERLINE ALIGNMENT FOR CONSTRUCTION FROM THE HORIZONTAL CONTROL AS NOTED ON THE PLAN SHEETS.

RESTRAINED JOINTS

RESTRAINED JOINTS SHALL BE USED AT ALL BENDS OR DIRECTIONAL CHANGES IN PIPE ALIGNMENT EQUAL TO OR GREATER THAN 11-1/4 DEGREES. JOINTS SHALL BE RESTRAINED TO THE FIRST JOINT PAST THE LENGTH SPECIFIED IN THE FOLLOWING TABLE. MECHANICAL JOINT RESTRAINT SHALL BE SERIES 2000PV BY EBAA IRON. PIPE BELL RESTRAINT ON ALL C-900 PVC SHALL BE SERIES 1600 BY EBAA IRON. PIPE BELL RESTRAINT ON ALL C-905 PVC SHALL BE SERIES 2800 BE EBAA IRON. FIELD INSTALLED RESTRAINED JOINTS ON DUCTILE OR CAST IRON PIPE SHALL BE MEGALUG. THE CONTRACTOR SHALL DEVELOP THE RESTRAINED JOINT PIPING SYSTEM TO MINIMIZE MAKE-UP AND CLOSURES. MAKE-UP AND CLOSURE JOINTS SHALL BE PLACED AS FAR FROM THE BEND OR FITTING AS POSSIBLE. COST FOR RESTRAINED JOINTS SHALL BE INCLUDED IN THE BID PRICE PER LINEAL FOOT OF WATERLINE. MECHANICAL JOINT RESTRAINT ON HDPE PIPE SHALL BE SERIES 2000PV WITH TYPE 304 STAINLESS STEEL STIFFENING INSERTS BY EBAA IRON.

JOINT TYPE	RESTRAINED LENGTH (FT)					REMARKS
	4" DIA.	6" DIA.	8" DIA.	12" DIA.	16" DIA.	
TOP VERT. BENDS						
22.5	10	15	19	28	36	EACH SIDE OF BEND
45	21	30	40	56	75	"
BOT. VERT. BENDS						
22.5	3	4	5	8	10	EACH SIDE OF BEND
45	6	9	11	16	21	"
HOR. BENDS						
11.25	2	3	3	5	6	EACH SIDE OF BEND
22.5	4	5	7	10	13	"
45	8	11	14	20	26	"
90	19	26	34	49	63	"
TEES						BRANCH
16x12				42		"
12x12				56		"
REDUCERS						
16x12					54	LARGE SIDE
DEAD ENDS	36	51	67	97	126	

RESTRAINED JOINT NOTES

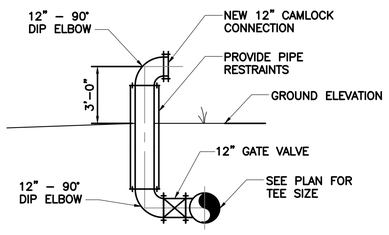
1. FOR ALL FITTINGS, INSTALL CONCRETE BLOCKING ACCORDING TO SPECIFICATION SECTION 33 05 30 AND THE THRUST BLOCK DETAILS THIS SHEET. COST OF CONCRETE BLOCKING SHALL BE INCLUDED IN THE BASE BID PRICE.
2. ALL VALVES SHALL BE RESTRAINED.
3. COST FOR THRUST BLOCKING AND RESTRAINED JOINTS, WHERE REQUIRED, SHALL BE INCLUDED IN THE BID PRICE PER LINEAL FOOT OF WATERLINE.

BACKFILL

1. COMPACTED TRENCH GRANULAR BACKFILL SHALL BE USED UNDER ANY EXISTING OR FUTURE SIDEWALK OR DRIVEWAY; UNDER ALL ROADWAYS; IN ANY EXCAVATION THAT LIES WITHIN THE 1:1 INFLUENCE LINE FROM ANY EXISTING EDGE OF SIDEWALKS, DRIVEWAYS OR ROADWAYS; AND AS DIRECTED BY THE ENGINEER ACCORDING TO SPECIFICATION SECTION 31 23 23.14. ALL OTHER BACKFILL SHALL CONFORM WITH SPECIFICATION SECTION 31 23 00 AND OTHER DETAILS ON THESE PLANS.

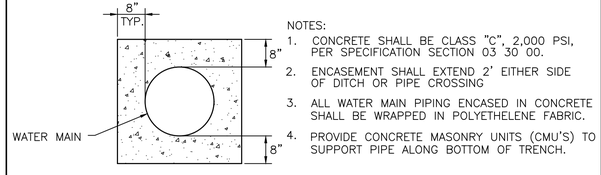
MISCELLANEOUS

1. THE CONTRACTOR SHALL REMOVE AND REINSTALL ALL GUARD RAIL AND FENCE AS NECESSARY TO FACILITATE CONSTRUCTION OF THE PROPOSED WATERLINE. ANY GUARD RAIL OR FENCE DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR SHALL BE REPLACED COMPLETE IN LENGTH AND KIND BY THE CONTRACTOR AT NOT ADDITIONAL COST TO THE OWNER.
2. CONTRACTOR SHALL GRADE & RESLOPE ALL DITCHES DISTURBED DURING CONSTRUCTION. THE COST SHALL BE INCLUDED IN THE BASE BID PRICE.
3. MAIL SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING MAIL SERVICE IN THE CONSTRUCTION AREA. PRIOR TO DISTURBING ANY MAIL BOXES, THE CONTRACTOR SHALL CONTACT THE POSTAL AUTHORITIES AND SHALL TEMPORARILY RELOCATE MAIL BOXES IN ACCORDANCE WITH THEIR REQUIREMENTS. THE CONTRACTOR SHALL RESTORE MAIL BOXES TO THEIR ORIGINAL CONDITION AND LOCATION. COST OF SAME SHALL BE INCLUDED IN THE BASE BID PRICE.
4. PRIOR TO CONSTRUCTION, AUDIO-VIDEO COLOR TAPING SHALL BE COMPLETED ALONG ALL STREETS/EASEMENTS WHERE WORK WILL BE PERFORMED. A DUPLICATE COPY OF ALL MEDIA SHALL BE SUBMITTED TO THE CITY OF CANTON. SEE SPECIFICATION SECTION 01 32 34.
5. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL CONSTRUCTION DEBRIS INCLUDING BUT NOT LIMITED TO EXCESS SOIL, ROCK, OR ANY OTHER TYPE MATERIALS. THE CONTRACTOR SHALL NOT FILL ANY WETLANDS, LOW LANDS, FLOOD PLAINS, OR DRAINAGE WAYS WITH SAID DEBRIS WITHOUT OBTAINING PROPER APPROVALS, PERMITS, LICENSES, ETC. FROM LOCAL, STATE, OR FEDERAL AGENCIES.
6. THE CONTRACTOR SHALL REMOVE AND REINSTALL CULVERT AND/OR DRAINAGE PIPES AS IS NECESSARY TO FACILITATE CONSTRUCTION OF THE PROPOSED WATERLINE. PROPER DRAINAGE MUST BE MAINTAINED AT ALL TIMES. ANY CULVERT OR DRAINAGE PIPE DAMAGED OR BROKEN DURING CONSTRUCTION BY THE CONTRACTOR SHALL BE REPLACED, COMPLETE IN LENGTH AND KIND BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
7. CONTRACTOR SHALL CLEAN THE ROADWAY AT THE END OF EACH DAY OF OPERATION OR EVERY 500 FEET OF INSTALLED WATERLINE. CLEANING SHALL BE PERFORMED USING A POWER BROOM OR HYDROSPRAYER, OR AS DIRECTED BY THE ENGINEER.
8. CONTRACTOR SHALL PRESSURE TEST AND DISINFECTION TEST WITHIN 15 DAYS OF WATERLINE INSTALLATION.
9. CONTRACTOR SHALL PERFORM ALL CLEAN-UP, ROCK REMOVAL, FINAL GRADING, AND SEEDING TO AREAS DISTURBED BY WORK ASSOCIATED WITH INSTALLATION OF NEW WATERLINE, AND MAKING SERVICE CONNECTIONS IMMEDIATELY UPON COMPLETING SUCH WORK.
10. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION WITH PROPERTY OWNERS.
11. CONTRACTOR SHALL NOT BE PERMITTED TO STORE MATERIALS, EQUIPMENT, OR VEHICLES ON PROPERTY WITHOUT FIRST ASKING FOR AND THEN RECEIVING PERMISSION FROM THE PROPERTY OWNER.
12. CONTRACTOR SHALL MAINTAIN ACCESS AND SAFETY IN PARKING LOTS FOR EMPLOYEES AND MOTORISTS OF PROPERTY OWNERS. TRAFFIC CONTROL AND SAFETY ACCESSING PARKING LOTS AND WITHIN PARKING LOTS SHALL BE COORDINATED WITH THE PROPERTY OWNERS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING LANDSCAPE ITEMS SUCH AS SHRUBBERY, RAILROAD TIES, ETC. IN A MANNER SUITABLE FOR REPLANTING OR RELOCATION BY THE CONTRACTOR, OR AT THE OPTION OF THE PROPERTY OWNER, SHALL REMOVE AND DISPOSE OF THE LANDSCAPE ITEMS. THE COST FOR THE ABOVE RESTORATION SHALL BE INCLUDED IN THE BID PRICE PER LINEAL FOOT OF WATERLINE.
14. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE INSURANCE LISTING THE CITY OF CANTON AND BURGESS & NIPLE, INC. AS ADDITIONAL INSURED.
15. FOR SHOP DRAWING SUBMITTALS SEE SPECIFICATION SECTION 01 33 01.
16. CONTRACTOR SHALL RESTORE YARDS, DRIVEWAYS, SWALES, ROADS, ETC., BACK TO THE ORIGINAL CONDITION WITHIN FOURTY-FIVE (45) DAYS OF DISTRUBANCE, WEATHER PERMITTING.



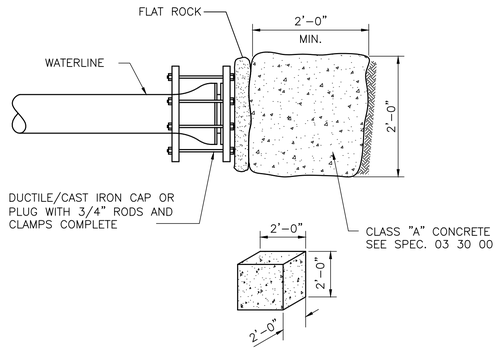
BLOWOFF ASSEMBLY DETAIL

SCALE: NONE



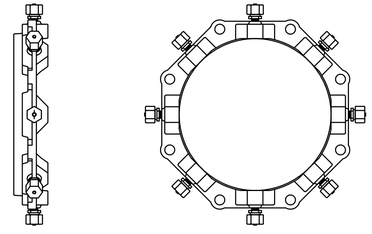
ENCASEMENT DETAIL

SCALE: NONE



WATERLINE END/CAP/PLUG DETAIL

SCALE: NONE



HDPE PIPE TO DUCTILE IRON FITTINGS RESTRAINT GLAND EBAA IRON SALES, INC., SERIES 2000 OR EQUAL

RESTRAINT SYSTEM DETAIL

SCALE: NONE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

CIVIL
SITE PIPING
DETAILS

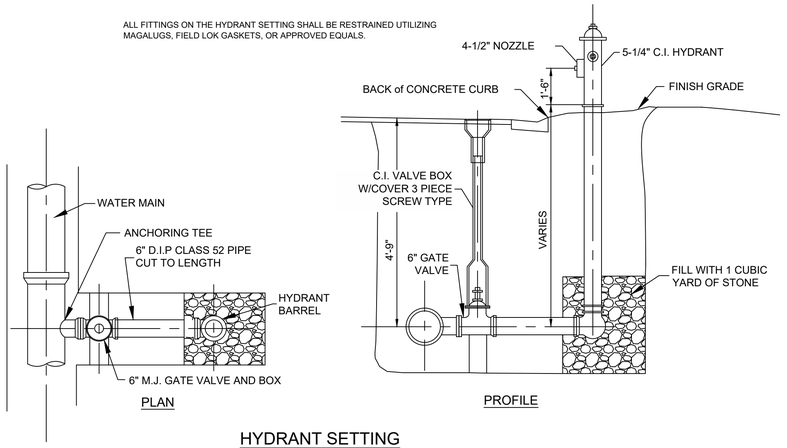
C-36

SHEET: OF

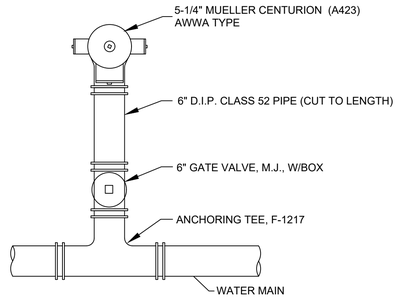
P:\PR58982\Cadd\Sheets\C-36 CIVIL SITE PIPING DETAILS.dwg 11/5/2021 2:16:17 PM Paul Emerson

PLOTTED: 4/15/2022 5:08:06 PM

ALL FITTINGS ON THE HYDRANT SETTING SHALL BE RESTRAINED UTILIZING MAGALUGS, FIELD LOK GASKETS, OR APPROVED EQUALS.



HYDRANT SETTING
(C71)
REV 4/6/1989



HYDRANT SETTINGS CONSIST OF HYDRANT, VALVE, VALVE BOX, FITTINGS AND MATERIALS SHOWN OR SPECIFIED WHICH ARE NEEDED FOR PROPER INSTALLATION.

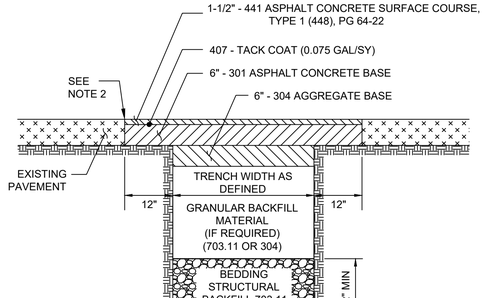
SEE SPECIFICATIONS FOR MORE INFORMATION ABOUT MATERIALS, SETTING HYDRANTS AND DRAINAGE REQUIREMENTS.

IF RESTRAINED JOINT FITTINGS CANNOT BE USED, (2) TIE RODS AND (4) EYE BOLTS WITH NUTS AND WASHERS MUST BE USED.

FIGURES SUCH AS F-1217 INDICATE CLOW CORPORATION STYLES. USE THIS BRAND OR APPROVED EQUAL.

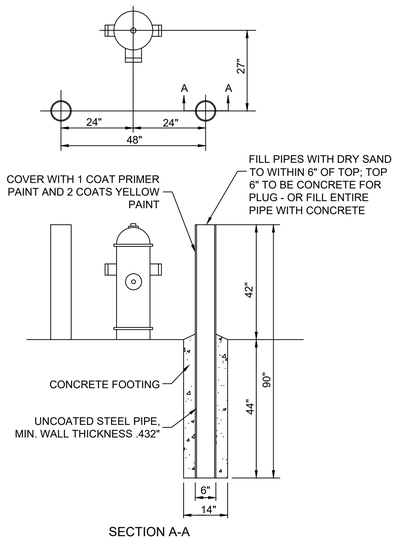
ALL HYDRANTS ARE TO BE INSTALLED WITH THE PUMPER NOZZLE FACING THE STREET.

HYDRANT CONNECTION
(C70)
REV 4/5/1989



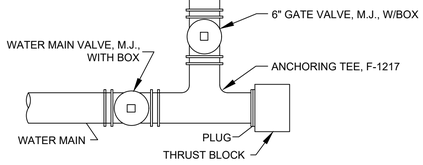
NOTES:
1. NO FOUNDRY SAND OR SLAG IS PERMITTED. ALTERNATE BACKFILL MATERIAL PERMITTED ONLY IF APPROVED BY CITY ENGINEER.
2. SAW CUT EXISTING PAVEMENT, SEAL JOINT PER ODOT ITEM 423 - CRACK SEALING, TYPE IV. INCLUDE COST IN BID PRICE FOR THE PROPOSED PAVEMENT.
3. IF ADJACENT PAVEMENT IS DAMAGED OR UNDERMINED DURING CONSTRUCTION, ADDITIONAL PAVEMENT SHALL BE SAW CUT AND REMOVED OR MILLED IN ORDER TO PROVIDE A SOUND PAVEMENT EDGE AT NO ADDITIONAL COST TO THE PROJECT.
4. IN THE EVENT THAT THE SAW CUT WOULD LIE WITHIN 3 FEET OF THE EDGE OF PAVEMENT OR FACE OF CURB, THE PAVEMENT REPLACEMENT SHALL EXTEND TO THE EDGE OF PAVEMENT OF FACE OF CURB.

PAY LIMITS - TRENCH & ROADWAY DETAIL FOR D.I.P.
(C175)
REV 9/30/2020



SECTION A-A

HYDRANT POST GUARDS
IF REQUIRED
(C67)
REV 4/5/1989



THRUST AT FITTINGS AT 100 PSI	
MAIN SIZE	TOTAL POUNDS
6	3,739
8	6,433
10	9,677
12	13,685
14	18,385
16	23,779
18	29,865
20	36,644
24	52,279

HYDRANT SETTINGS CONSIST OF HYDRANT, VALVE, VALVE BOX, FITTINGS AND MATERIALS SHOWN OR SPECIFIED WHICH ARE NEEDED FOR PROPER INSTALLATION.

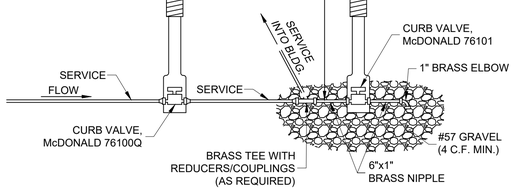
SEE SPECIFICATIONS FOR MORE INFORMATION ABOUT MATERIALS, SETTING HYDRANTS AND DRAINAGE REQUIREMENTS.

IF RESTRAINED JOINT FITTINGS CANNOT BE USED, (2) TIE RODS AND (4) EYE BOLTS WITH NUTS AND WASHERS MUST BE USED.

FIGURES SUCH AS F-1217 INDICATE CLOW CORPORATION STYLES. USE THIS BRAND OR APPROVED EQUAL.

ALL HYDRANTS ARE TO BE INSTALLED WITH THE PUMPER NOZZLE FACING THE STREET.

HYDRANT CONNECTION AT END OF MAIN
(C383)
REV 3/23/2006

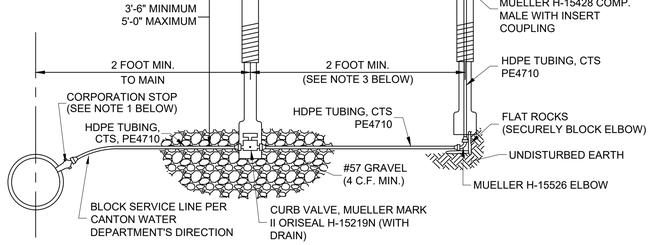


NOTES:
1.) REFER TO SITE PLAN FOR THE WATER SERVICE SIZE AND MATERIAL. THE FITTINGS SHALL BE SIZED ACCORDINGLY.

2.) HEAVY DUTY VALVE BOXES, COMPLETE, MUST BE USED IN PLACE OF ROADWAY BOXES WHEN LOCATED IN ROADWAYS OR ASPHALT DRIVES.

3.) APPROVED EQUALS MAY BE USED IN PLACE OF SPECIFIED ITEMS.

STANDARD DRAIN DETAIL
(C400)
REV 8/15/2019



NOTES:
1.) CORPORATION STOP AND ASSEMBLY SHALL BE AS FOLLOWS:

2" CORP. STOP: INSTALL AT A 45° ANGLE, A MUELLER H-10003 CORPORATION STOP WITH 2" IRON TOP, A STANDARD NO LEAD BRASS 45° ELBOW AND A MUELLER H-15428 COMPRESSION MALE WITH INSERT COUPLING. ASSEMBLY SHALL ALSO CONSIST OF A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).

2.) HEAVY DUTY VALVE BOXES, COMPLETE, MUST BE USED IN PLACE OF ROADWAY BOXES WHEN THE CURB VALVE IS LOCATED IN ROADWAYS OR ASPHALT DRIVES.

3.) BRASS REDUCING BUSHINGS OR SWIVEL ELLS WILL NOT BE ALLOWED.

4.) APPROVED EQUALS MAY BE USED IN PLACE OF SPECIFIED ITEMS.

STANDARD 2" BLOW-OFF ASSEMBLY
(C135)
REV 11/25/2020

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	PJE
DRAWN BY:	PJE
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

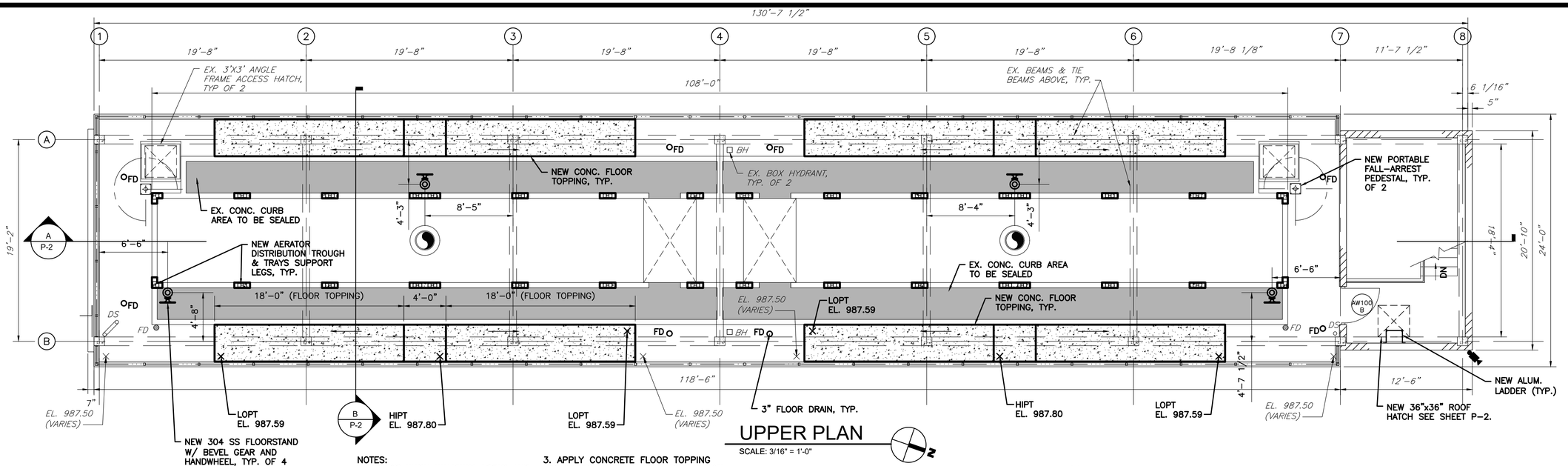
CIVIL MISCELLANEOUS DETAILS

C-37

SHEET: OF

P:\PR58982\Cadd\Sheets\C-37 CIVIL MISCELLANEOUS DETAILS.dwg 4/15/2022 8:57:03 AM Paul Emerson

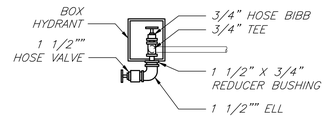
PLOTTED: 4/15/2022 12:33:57 PM



UPPER PLAN

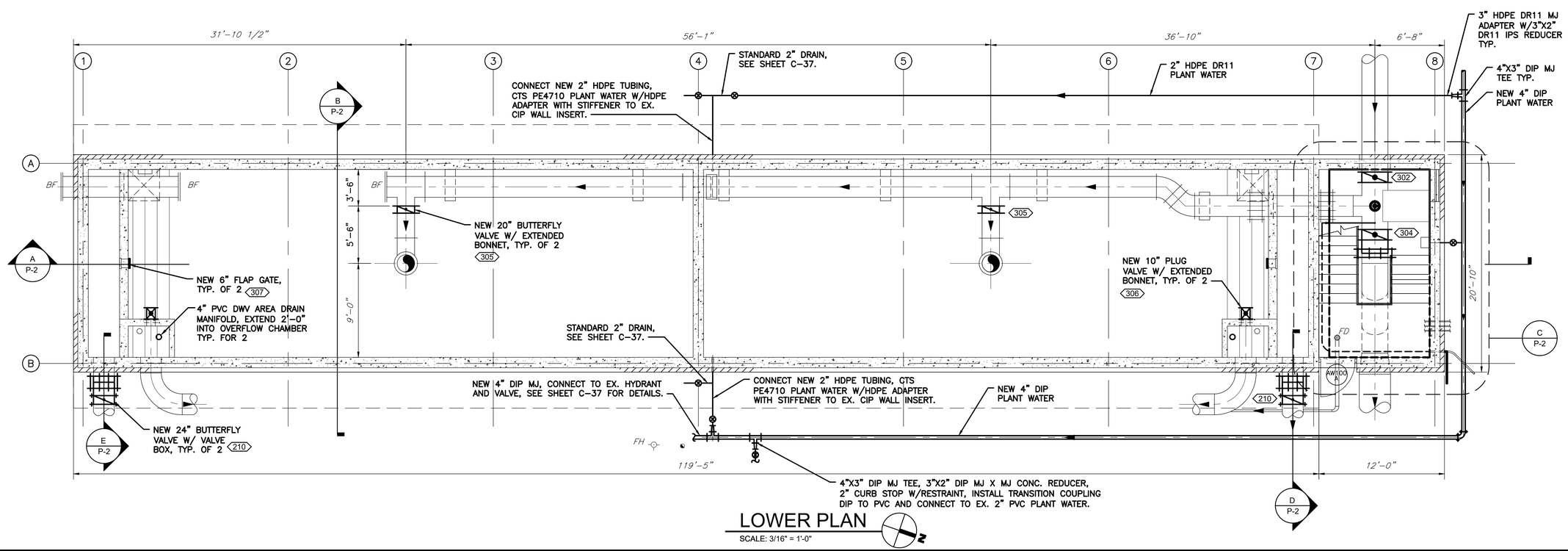
SCALE: 3/16" = 1'-0"

NOTES:
1. POWER WASH WALKWAY AREAS AND COMPLETE SURFACE PREPARATION PER MFR. RECOMMENDATIONS.
2. APPLY BONDING AGENT EUCOWELD 2.0 BY EUCLID CHEMICAL OR EQ. PER MFR. INSTALLATION RECOMMENDATIONS.
3. APPLY CONCRETE FLOOR TOPPING VERASPEED LS100 BY EUCLID CHEMICAL OR EQ. PER MFR. INSTALLATION RECOMMENDATIONS.
4. APPLY CONCRETE TOPPING AND EX. WALKWAY SEALANT W/ GRIT MATERIAL SUPER DIAMOND CLEAR VOX BY EUCLID CHEMICAL OR EQ. PER MFR. INSTALLATION RECOMMENDATIONS



EX. BOX HYDRANT DETAIL

SCALE: 1" = 1'-0"



LOWER PLAN

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

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

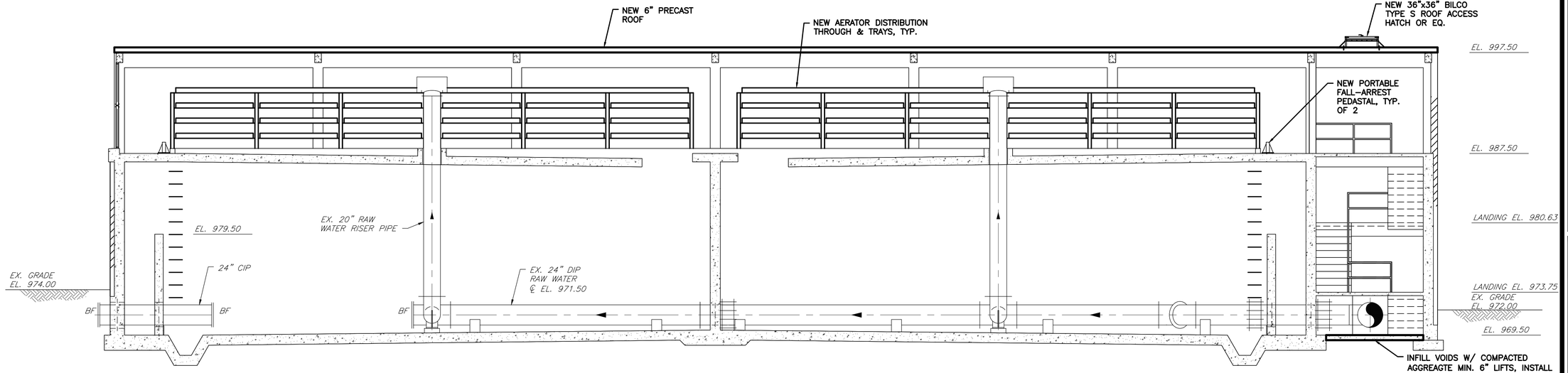
WEST AERATOR BLDG RENOVATION PLANS

P-1

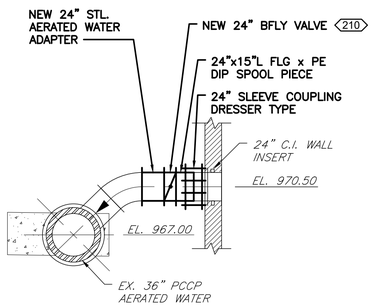
SHEET: OF

P:\PR58982\Cadd\Sheets\P-1 WEST AERATOR BLDG RENOVATION PLANS.dwg 4/15/2022 12:30:27 PM Paul Emerson

PLOTTED: 4/15/2022 12:34:08 PM



A / P-1 SECTION
SCALE: 3/16" = 1'-0"



E / P-1 SECTION
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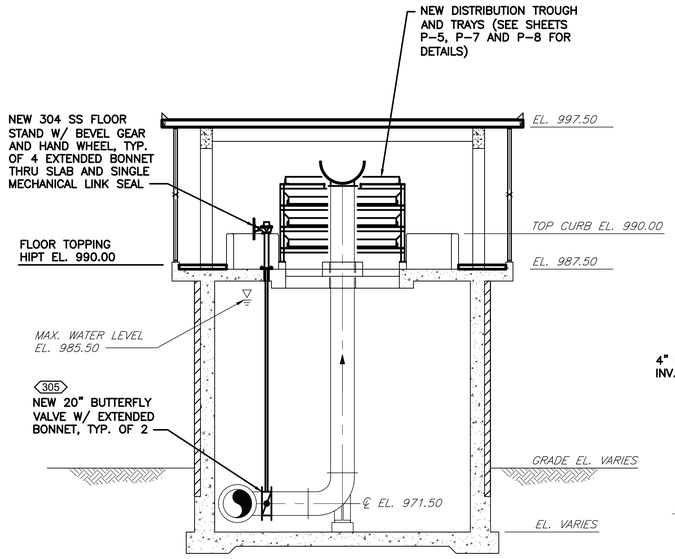
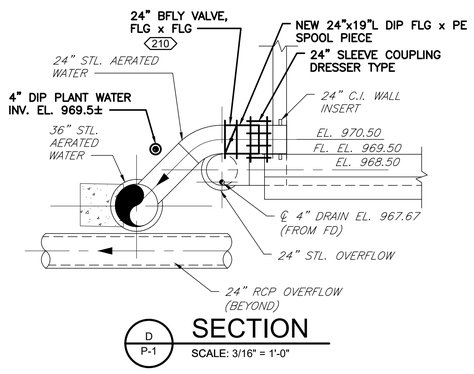
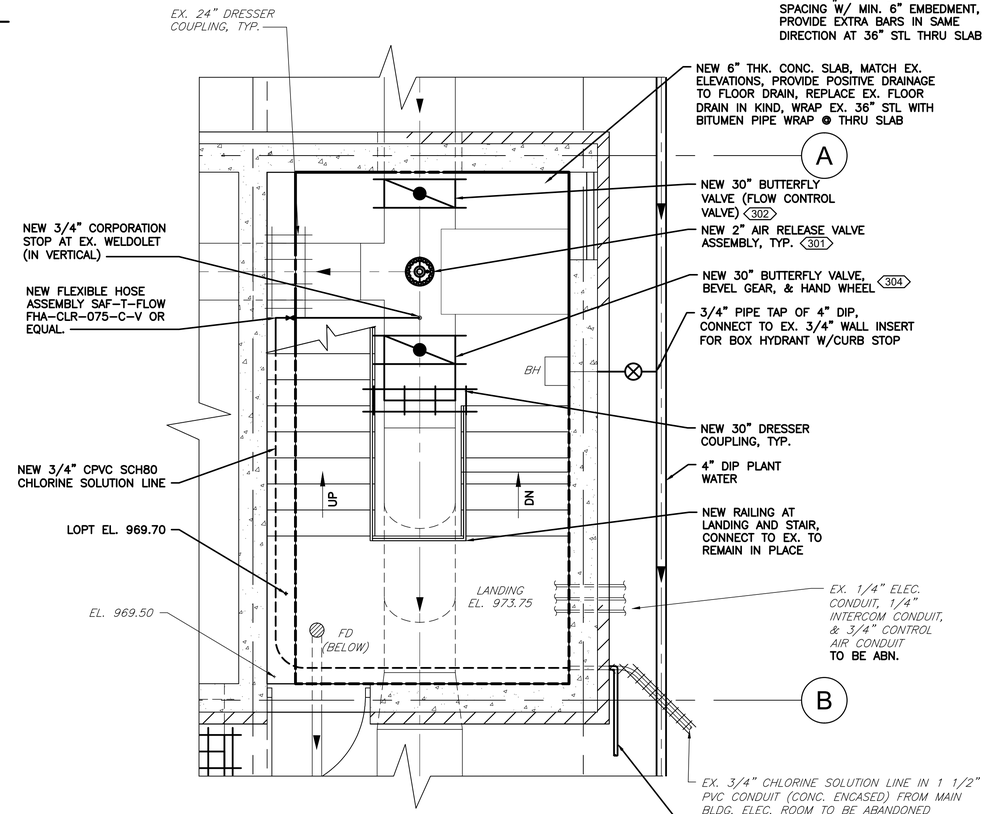


B / P-1 SECTION
SCALE: 3/16" = 1'-0"



D / P-1 SECTION
SCALE: 3/16" = 1'-0"



C / P-1 ENLARGED PLAN
SCALE: 3/8" = 1'-0"

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

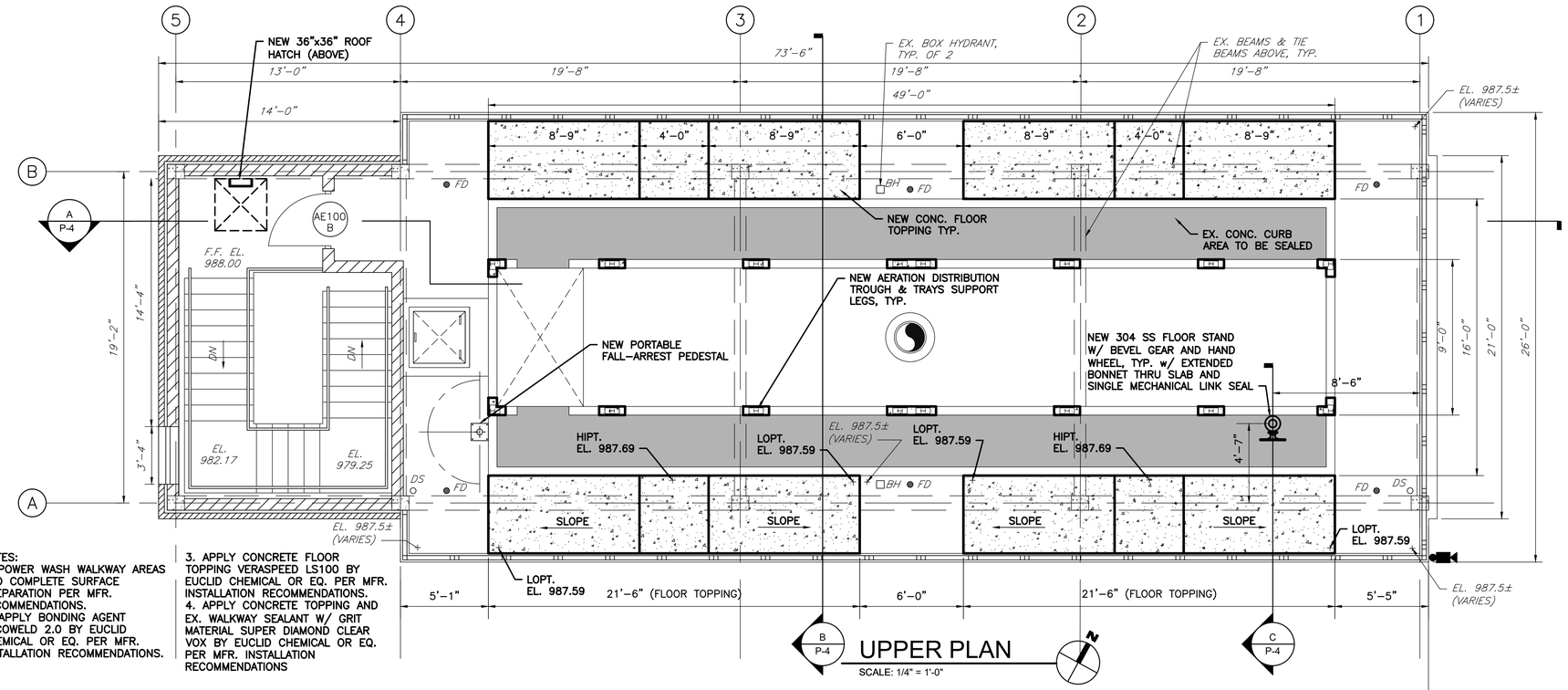
WEST AERATOR BLDG RENOVATION SECTIONS

P-2

SHEET: OF

P:\PR58982\Cadd\Sheets\P-2 WEST AERATOR BLDG RENOVATION SECTIONS.dwg 4/15/2022 12:25:39 PM Paul Emerson

PLOTTED: 4/15/2022 12:34:18 PM



NOTES:
1. POWER WASH WALKWAY AREAS AND COMPLETE SURFACE PREPARATION PER MFR. RECOMMENDATIONS.
2. APPLY BONDING AGENT EUCOWELD 2.0 BY EUCLID CHEMICAL OR EQ. PER MFR. INSTALLATION RECOMMENDATIONS.
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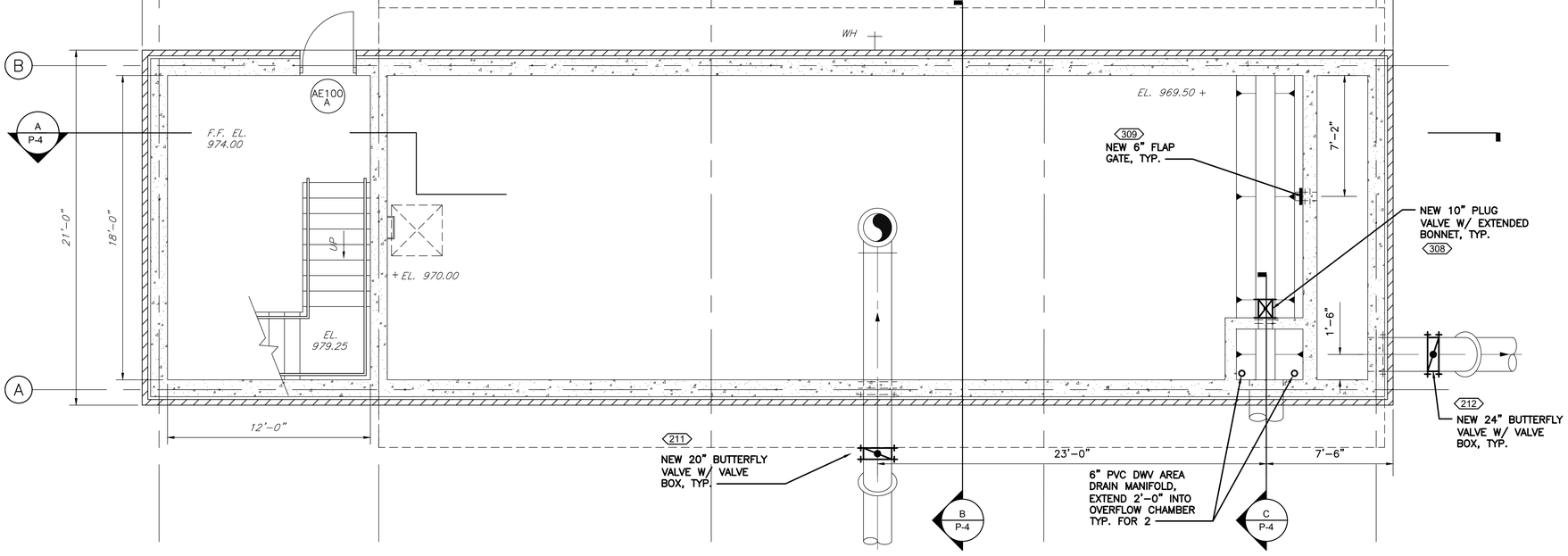


LOWER PLAN
SCALE: 1/4" = 1'-0"

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

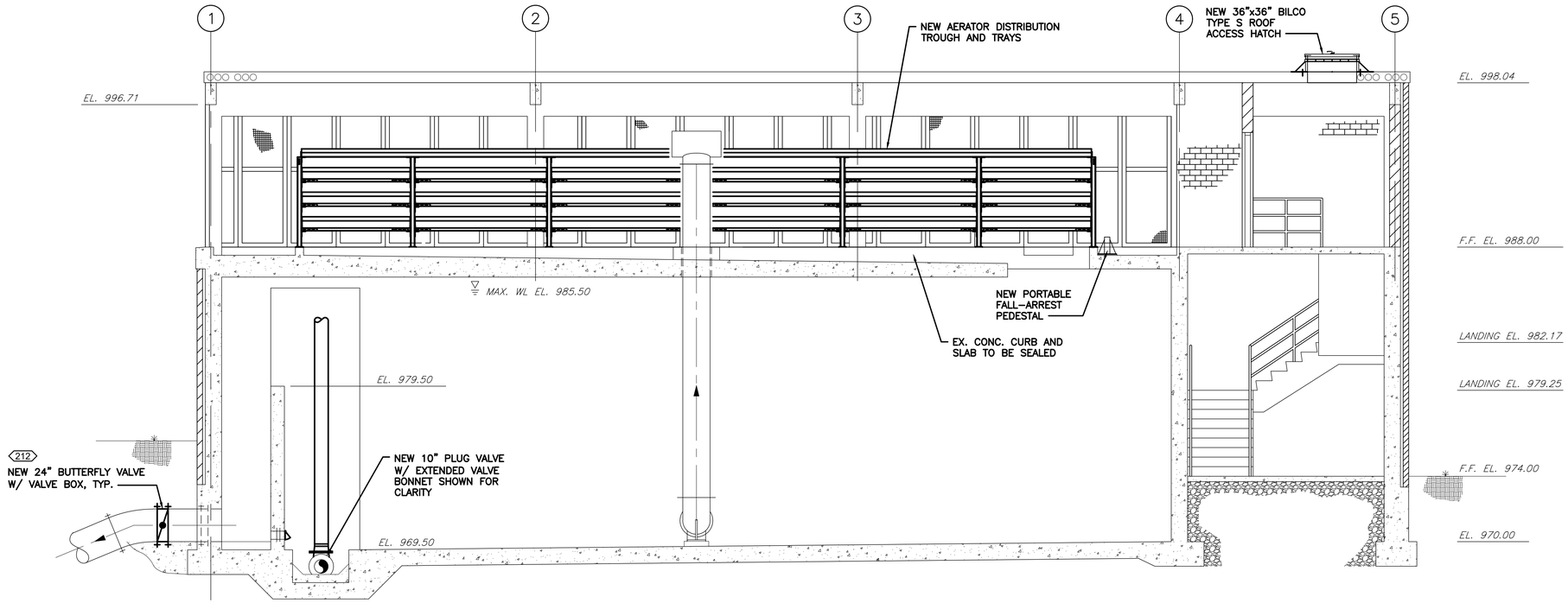
EAST AERATOR BLDG RENOVATION PLANS

P-3

SHEET: OF

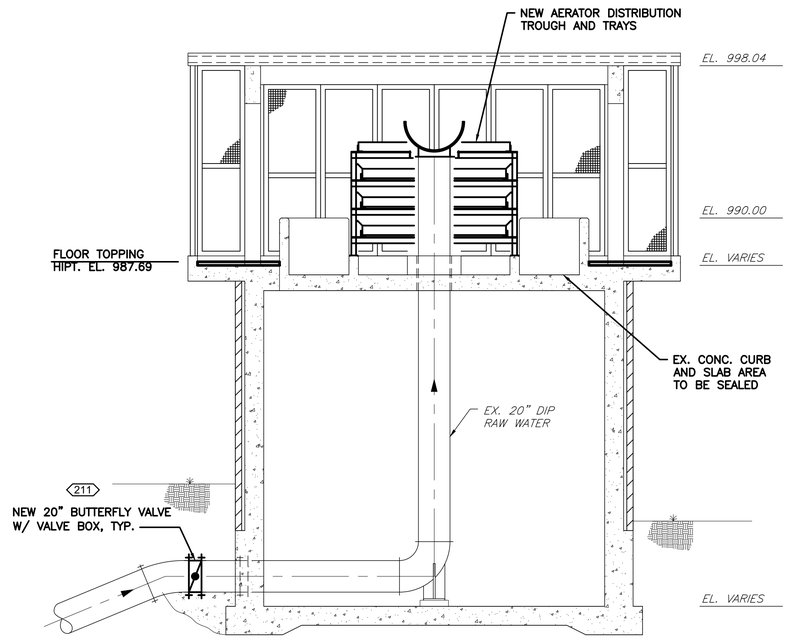
P:\PR58982\Cadd\Sheets\P-3 EAST AERATOR BLDG RENOVATION PLANS.dwg 4/15/2022 11:38:17 AM Paul Emerson

PLOTTED: 4/15/2022, 12:34:27 PM



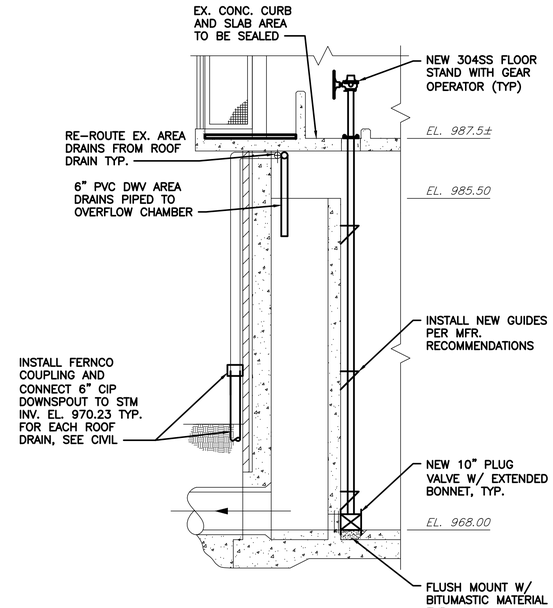
A P-3 SECTION

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



B P-3 SECTION

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



C P-3 SECTION

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

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

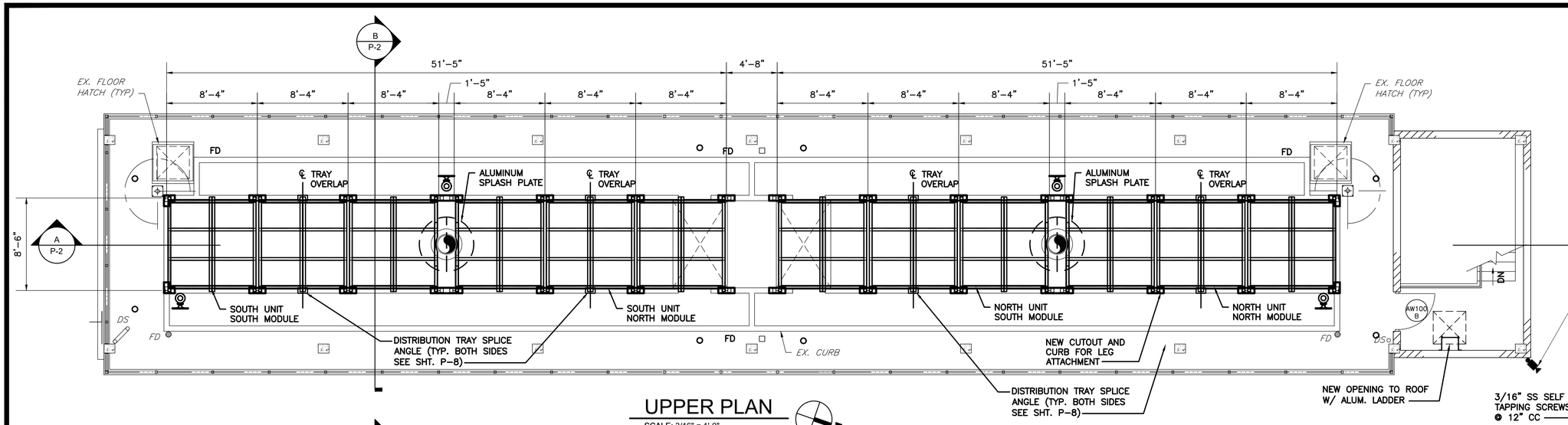
EAST AERATOR BLDG RENOVATION

P-4

SHEET: OF

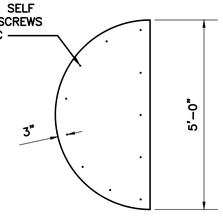
P:\PR58982\Cadd\Sheets\P-4 EAST AERATOR BLDG RENOVATION SECTIONS.dwg 4/14/2022 10:26:52 AM Paul Emerson

PLOTTED: 4/15/2022 12:34:42 PM



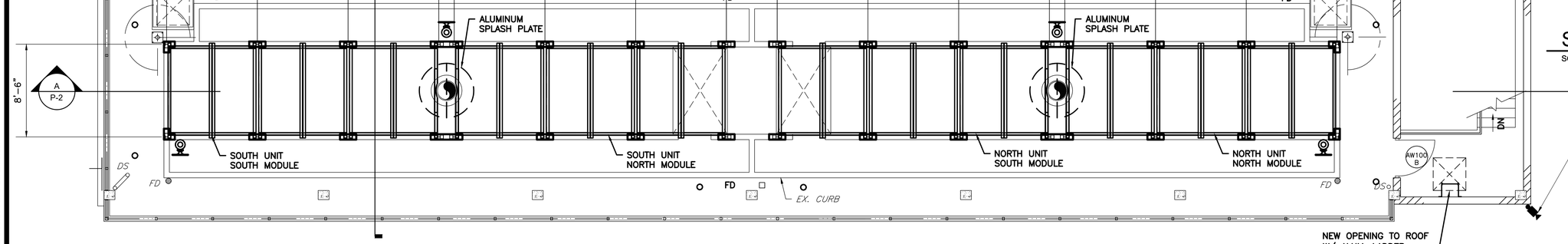
UPPER PLAN

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



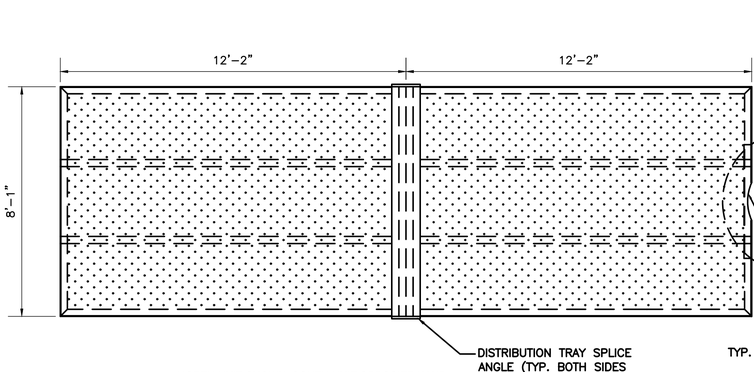
ALUMINUM SPLASH PLATE

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



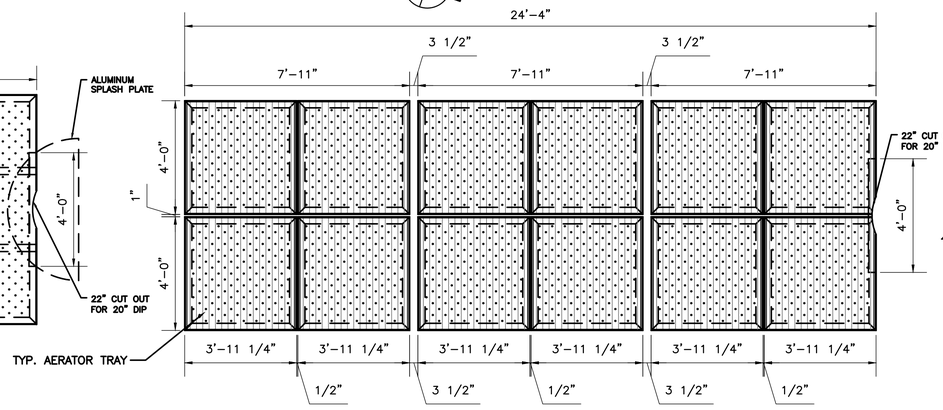
TRAY SUPPORT PLAN

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



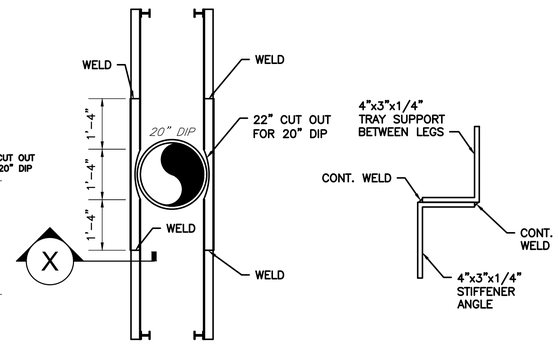
TOP DISTRIBUTION TRAY DETAIL PLAN

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



AERATOR TRAY DETAIL PLAN

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



TRAY SUPPORT CUTOUT DETAIL

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

SECTION X

SCALE: 3" = 1'-0"

NOTE: CUTOUT SHOWN NORTH UNIT. SOUTH UNIT OPPOSITE HAND

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

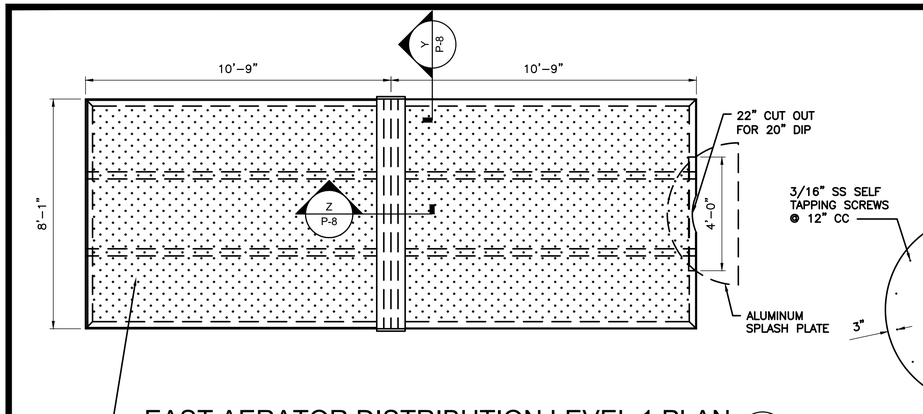
WEST AERATOR PROCESS TRAY SUPPORT PLAN-DETAILS

P-5

SHEET: OF

P:\PR58982\Cadd\Sheets\P-5 WEST AERATOR PROCESS TRAY SUPPORT PLAN-DETAILS.dwg 4/14/2022 3:08:31 PM Paul Emerson

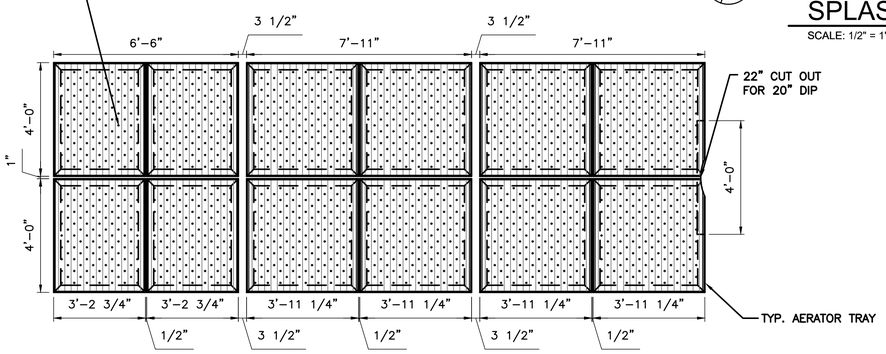
PLOTTED: 4/15/2022 12:34:55 PM



EAST AERATOR DISTRIBUTION LEVEL 1 PLAN

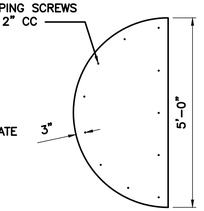
SCALE: 3/8" = 1'-0"

SEE NOTE 1



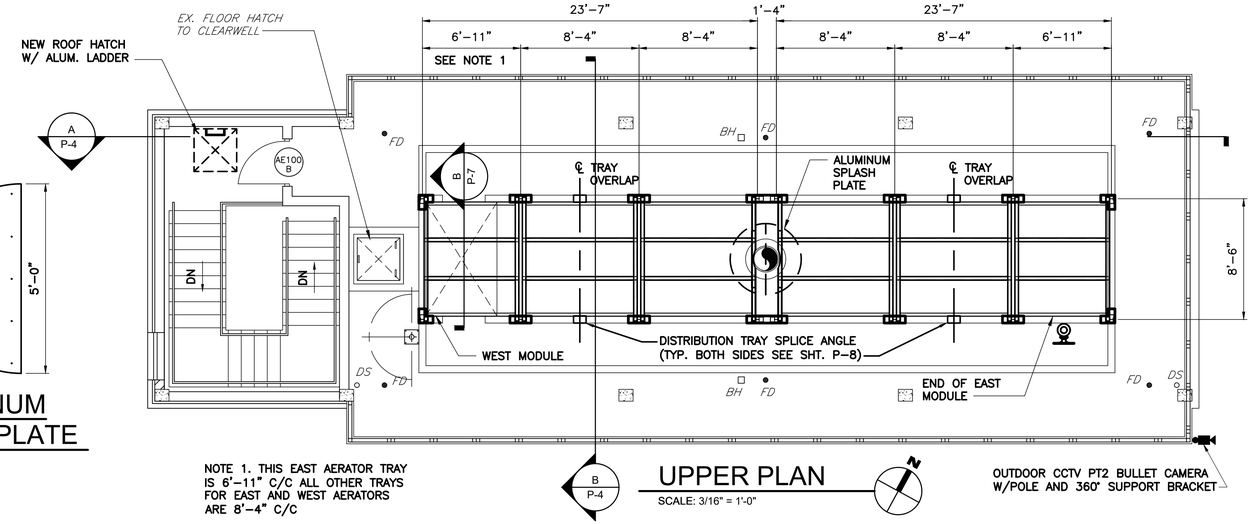
EAST AERATOR TRAY LEVEL 2,3, & 4 DETAIL PLAN

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



ALUMINUM SPLASH PLATE

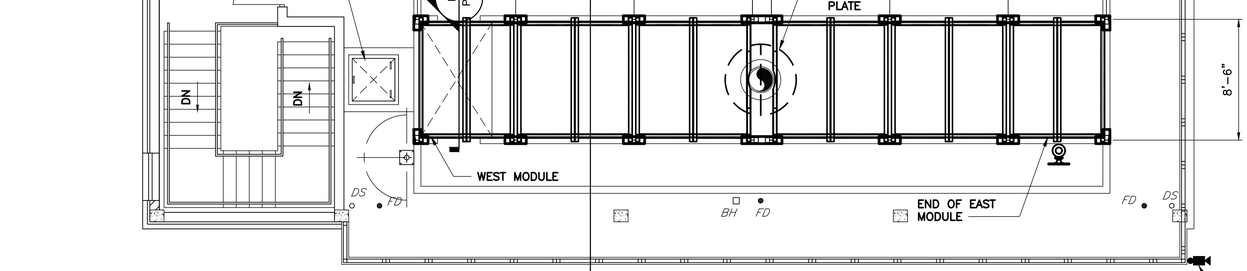
SCALE: 1/2" = 1'-0"



NOTE 1. THIS EAST AERATOR TRAY IS 6'-11" C/C ALL OTHER TRAYS FOR EAST AND WEST AERATORS ARE 8'-4" C/C

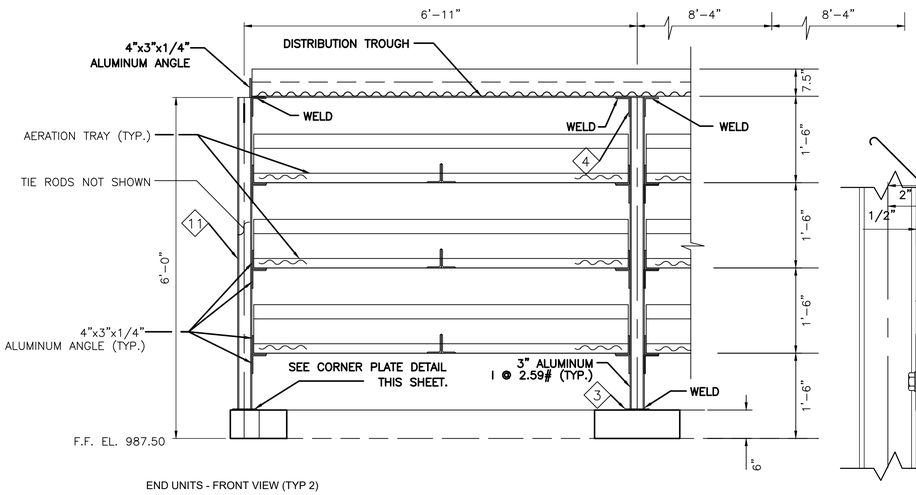
UPPER PLAN

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



TRAY SUPPORT PLAN

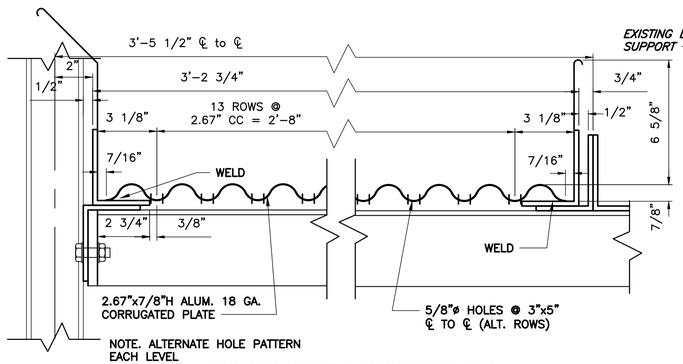
SCALE: 3/16" = 1'-0"



END UNITS - FRONT VIEW (TYP 2)

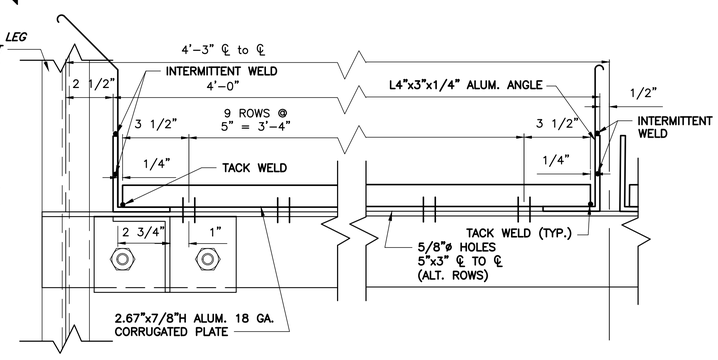
AERATION TRAY SUPPORTS - LONGITUDINAL SECTION (TYP.)

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



EAST AERATOR TRAY SOUTH TRAY UNIT ONLY FRONT VIEW

SCALE: 3" = 1'-0"



EAST AERATOR TRAY SOUTH TRAY UNIT ONLY SIDE VIEW

SCALE: 3" = 1'-0"

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

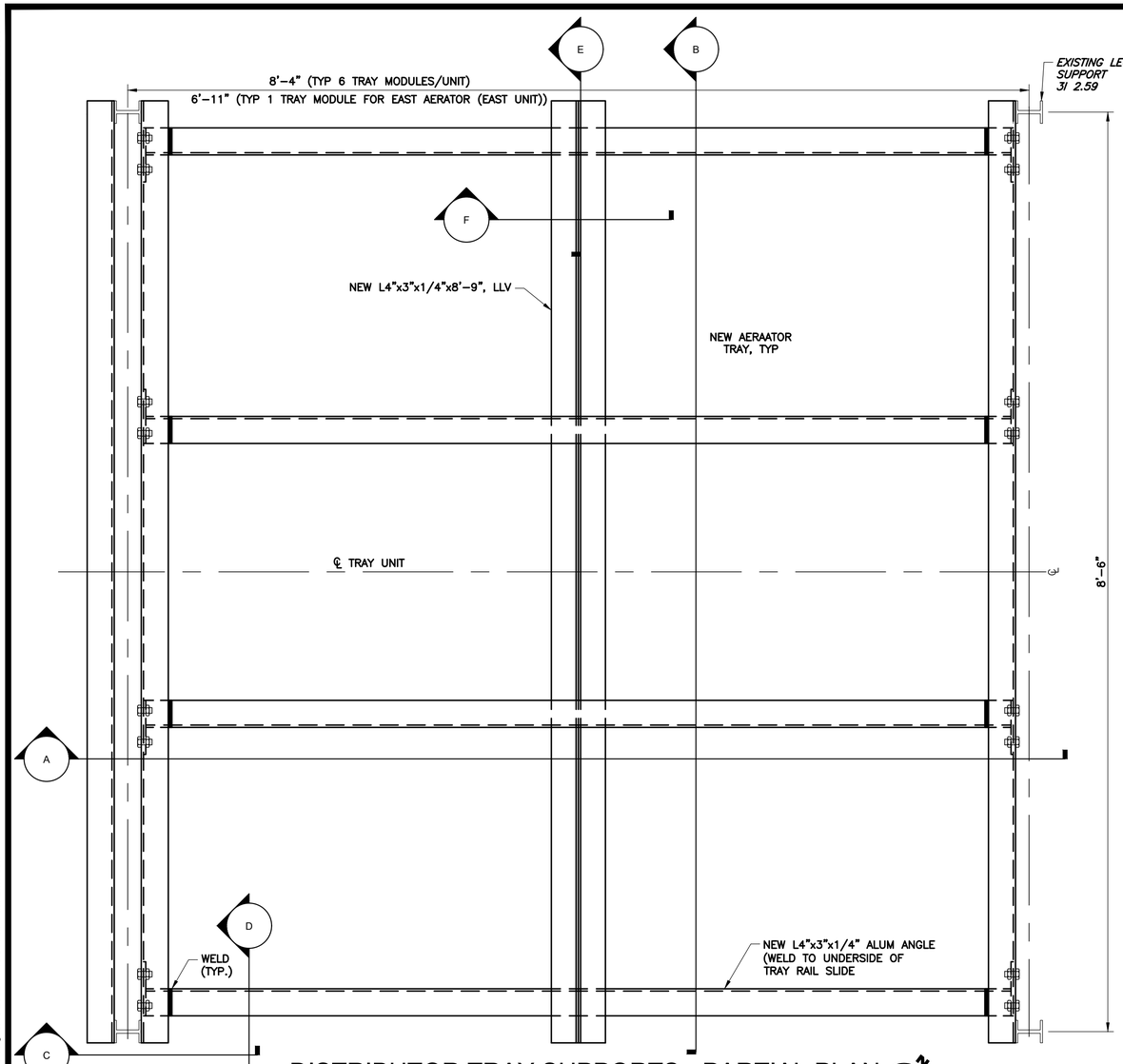
EAST AERATOR PROCESS TRAY SUPPORT PLAN-DETAILS

P-6

SHEET: OF

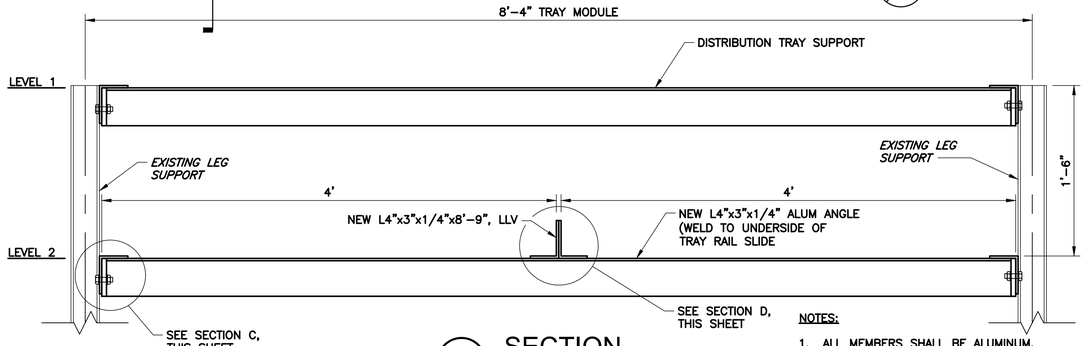
P:\PR58982\Cadd\Sheets\P-6 EAST AERATOR PROCESS TRAY SUPPORT PLAN-DETAILS.dwg 4/14/2022 3:08:44 PM Paul Emerson

PLOTTED: 4/15/2022 12:35:04 PM



DISTRIBUTOR TRAY SUPPORTS - PARTIAL PLAN

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

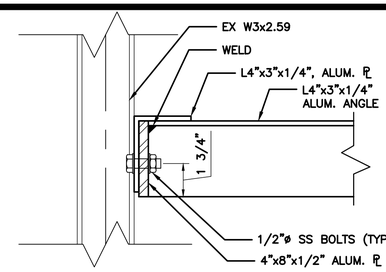


A SECTION

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

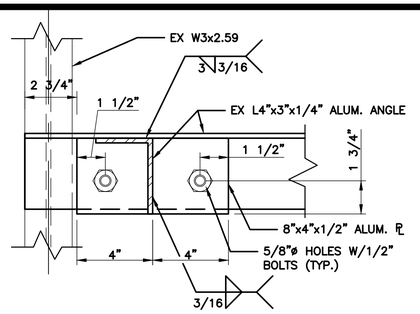
NOTES:

1. ALL MEMBERS SHALL BE ALUMINUM.
2. FIELD VERIFY EXISTING DIMENSIONS BEFORE FABRICATION.



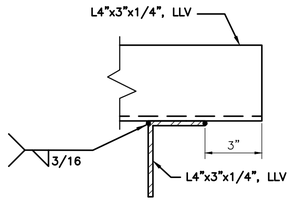
C SECTION

SCALE: 3" = 1'-0"



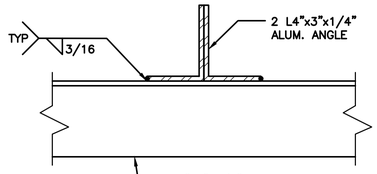
D SECTION

SCALE: 3" = 1'-0"



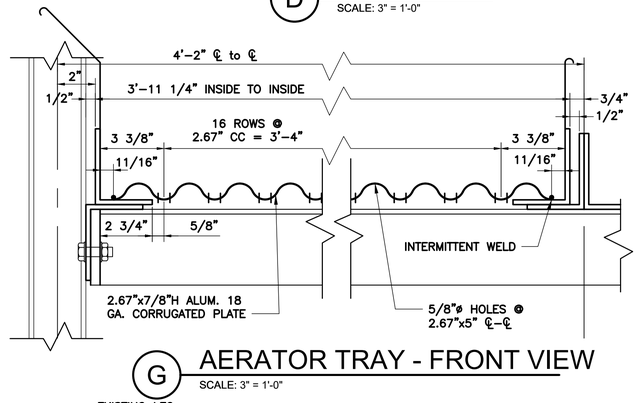
E SECTION

SCALE: 3" = 1'-0"



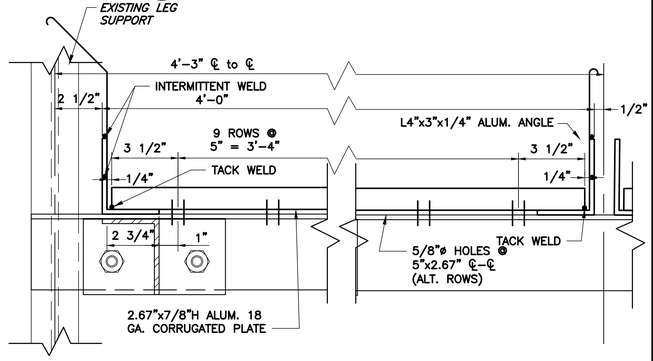
F SECTION

SCALE: 3" = 1'-0"



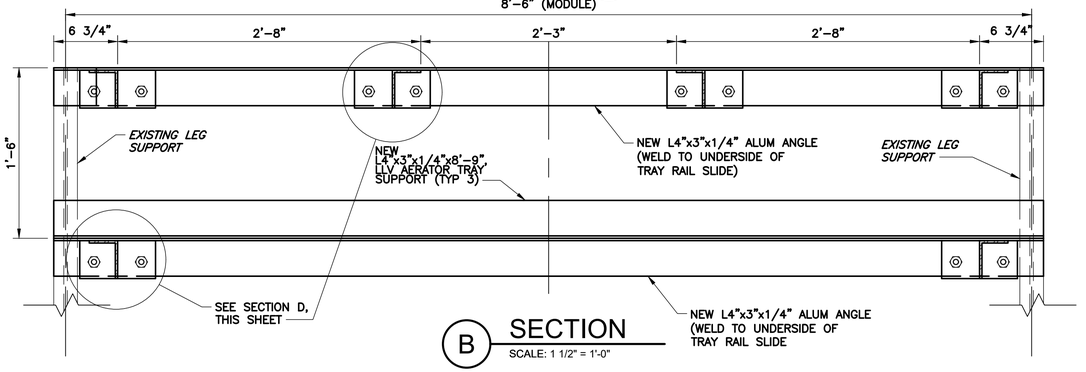
G AERATOR TRAY - FRONT VIEW

SCALE: 3" = 1'-0"



H AERATOR TRAY - SIDE VIEW

SCALE: 3" = 1'-0"



B SECTION

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

BURGESS & NIPLE
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WATER DEPARTMENT
SUGAR CREEK
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DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

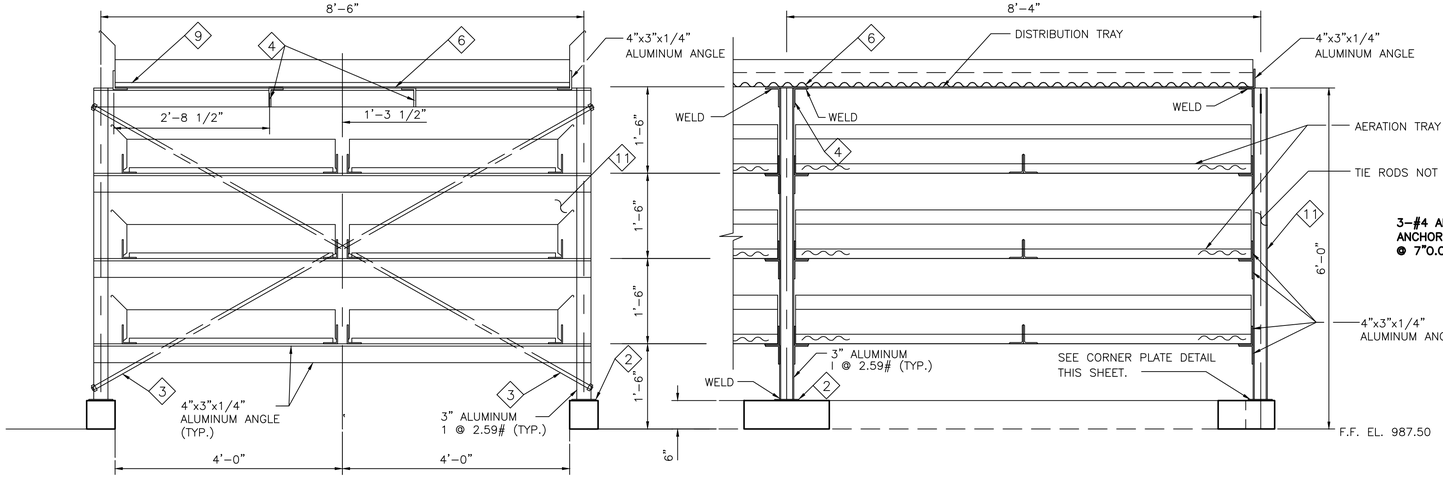
AERATOR TRAYS PROCESS TYP. PLAN-SECTIONS-DETAILS

P-7

SHEET: OF

P:\PR58982\Cadd\Sheets\P-7 AERATOR TRAYS PROCESS TYP. PLAN-SECTIONS-DETAILS.dwg 3/10/2022 11:49:34 AM Paul Emerson

PLOTTED: 4/15/2022 12:35:14 PM



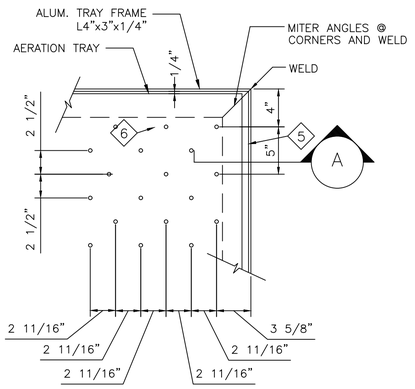
NOTE: 8'–6" WIDE x 8'–4" MODULE – TYPICAL EXCEPT FOR 2 END SECTIONS ON EAST AERATOR

AERATION TRAY SUPPORTS - CROSS SECTION (TYP.)

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

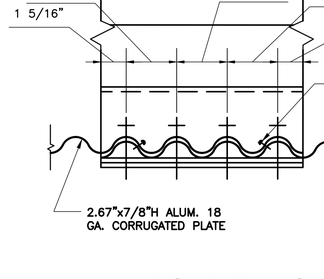
AERATION TRAY SUPPORTS - LONGITUDINAL SECTION (TYP.)

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



AERATOR TRAY AND DISTRIBUTION TRAY ORIFICE SPACING PLAN

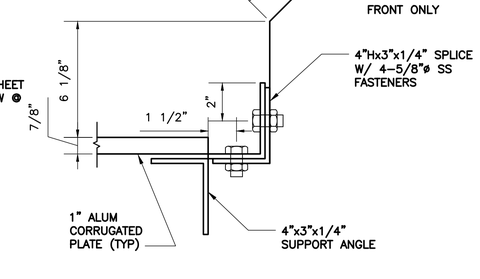
SCALE: 1 1/2" = 1'-0"



DISTRIBUTION TRAY OVERLAP DETAIL

Z / P-6

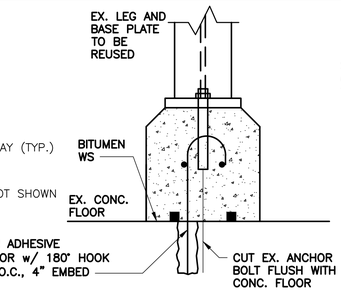
SCALE: 3" = 1'-0"



TYP. DISTRIBUTION TRAY SPLICE

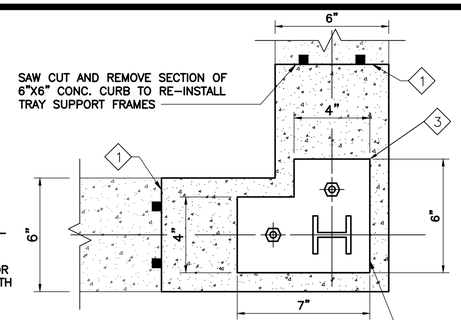
Y / P-6

SCALE: 3" = 1'-0"



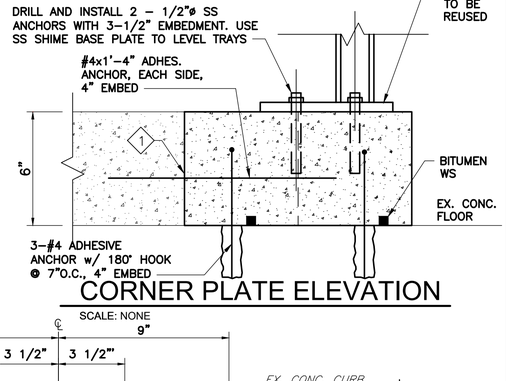
TYP. SECTION

SCALE: 3" = 1'-0"



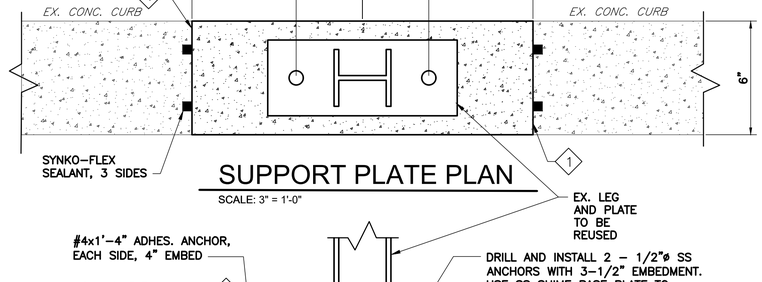
CORNER PLATE PLAN

SCALE: NONE



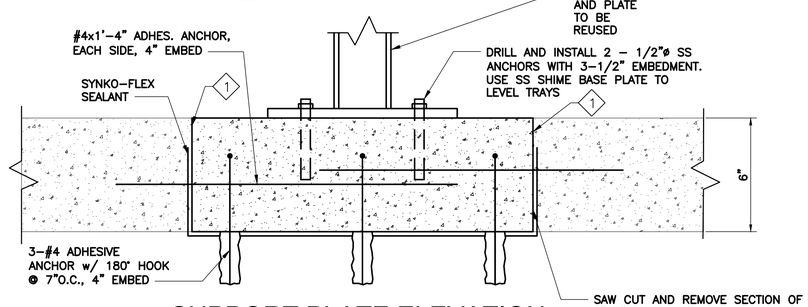
CORNER PLATE ELEVATION

SCALE: NONE



SUPPORT PLATE PLAN

SCALE: 3" = 1'-0"

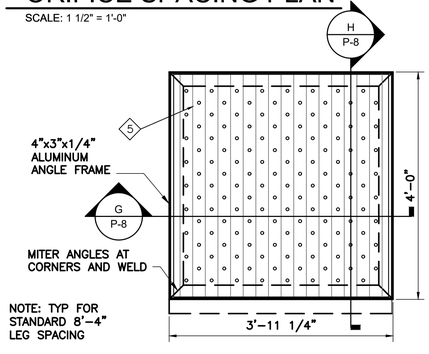


SUPPORT PLATE ELEVATION

SCALE: NONE

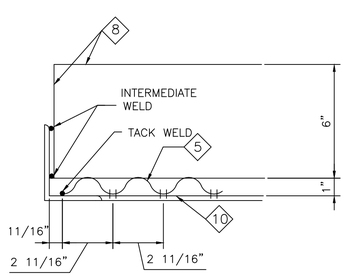
CURB REPLACEMENT DETAILS

SCALE: 3" = 1'-0"



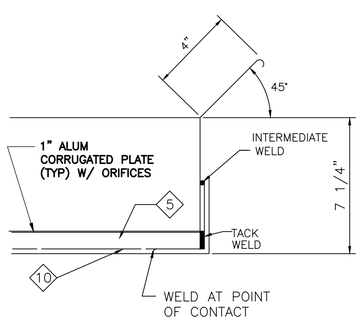
TYP. AERATOR TRAY PLAN

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



B SECTION (3 SIDES)

SCALE: 3" = 1'-0"



C SECTION @ FRONT

SCALE: 3" = 1'-0"

11 FLAT UNPUNCHED ALUMINUM SHEET .063" THICK. WELD TO 3" I BEAMS AND ANGLES ON EXPOSED ENDS OF TRAYS. 4 TOTAL REQUIRED FOR THE EXISTING AND PROPOSED AERATORS.

10 5/8" DIA. HOLES AT BOTTOM OF CORRUGATIONS 3"x5" CC (ALTERNATE ROWS)

9 TOP DISTRIBUTION TRAY FABRICATED IN 2 SECTION W/ CONTINUOUS 1" ALUM. CORRUGATED PERFORATED PLATE. (SEE SHEETS P–5 AND P–6 FOR DETAILS)

8 SPLASH GUARD 6" HIGH x .032" ALUMINUM @ BACK AND SIDES

7 CORRUGATED ALUMINUM BOTTOM 18 GA. LAP 7/8" CORRUGATIONS WELDED TO FRAME

6 DISTRIBUTION TRAY. SEE SHEETS P–6 AND P–7 FOR DETAILS

5 AERATOR TRAY; CORRUGATED 18 GA. ALUM. PLATE 2.67"x7/8"

4 4"x3"x1/4" ALUMINUM STIFFNER ANGLES CUT ANGLES @ CROSS ANGLES

3 3/8"ø SS TIE RODS WITH THREADED ENDS – SS BEVELED WASHER AND TAKE–UP NUTS AT INTERMEDIATE ENDS OF EACH SECTION OF TRAY. 24 TOTAL REQUIRED FOR THE EXISTING AND PROPOSED AERATORS

2 REINSTALL EX. SUPPORT LEG W/ 10"x1/2"x4" ALUMINUM PLATE WITH 2–8x1/2" STAINLESS STEEL ANCHOR BOLTS WITH 3–1/2" EMBEDMENT AND SS FASTENERS.

1 SAW CUT AND REMOVE EXISTING CURB. DRILL AND INSTALL HOOK BOLT ANCHORS AND DOWELS W/ EPOXY ADHESIVE AND POUR NEW CURB.

BURGESS & NIPLE
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DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

AERATOR TRAYS PROCESS TRAY SUPPORT PLAN-SECTIONS-DETAILS

P-8

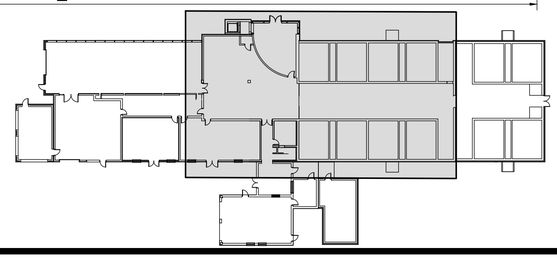
SHEET: OF

P:\PR58982\Cadd\Sheets\P-8 AERATOR TRAYS PROCESS TRAY SUPPORT PLAN-SECTIONS-DETAILS.dwg 3/10/2022 1:36:22 PM Paul Emerson

PLOTTED: 4/15/2022 12:35:26 PM

CLEARWELL PLAN

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



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CITY OF CANTON, OHIO
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	3/16" = 1'-0"

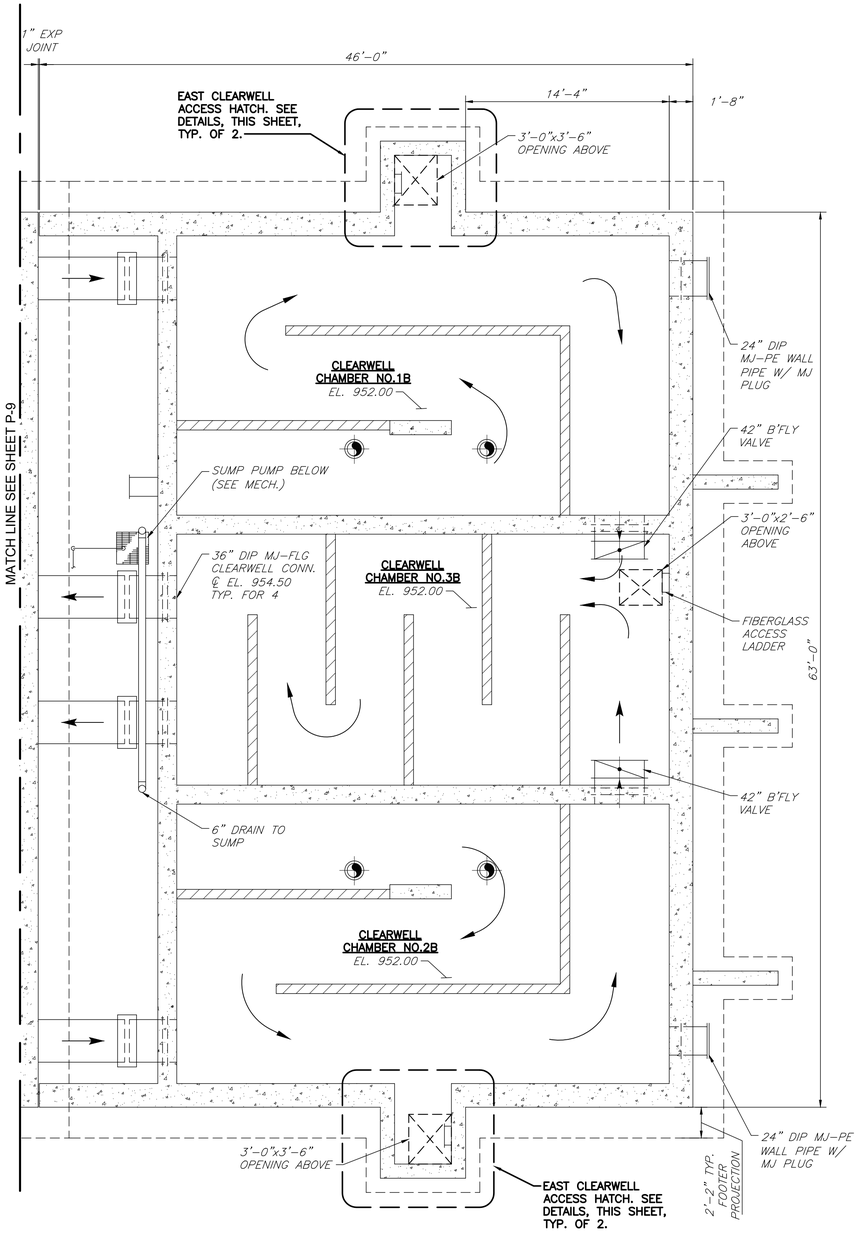
MAIN BUILDING PROCESS CLEARWELL PLAN

P-9

SHEET: OF

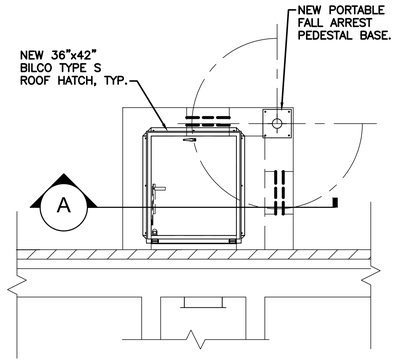
P:\PR58982\Cadd\Sheets\P-9 MAIN BUILDING PROCESS CLEARWELL PLAN.dwg 4/14/2022 10:34:14 AM Paul Emerson

PLOTTED: 4/15/2022 12:35:39 PM

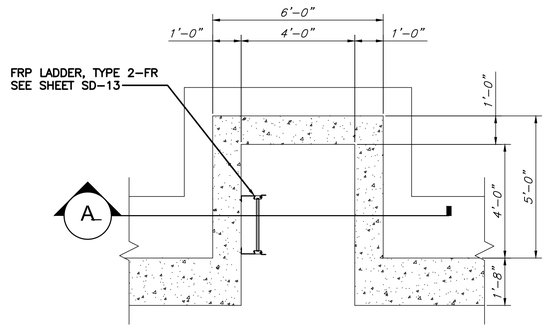


CLEARWELL PLAN

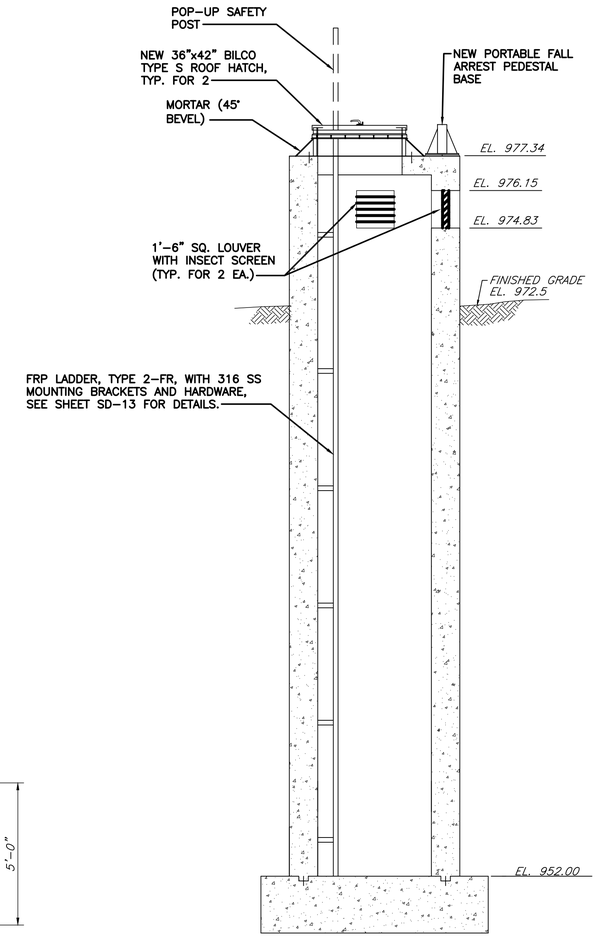
SCALE: 3/16" = 1'-0"



UPPER PLAN



LOWER PLAN

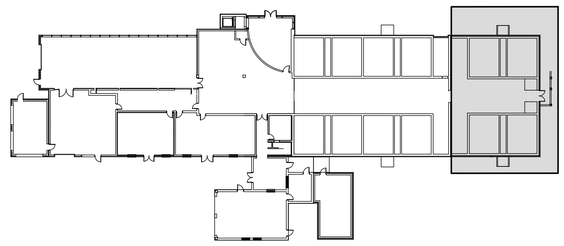


A SECTION

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

EAST CLEARWELL ACCESS HATCH DETAILS

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



BURGESS & NIPLE
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DRAWN BY:	KAS
CHECKED BY:	CMS
APPROVED BY:	CMS
SCALE:	AS NOTED

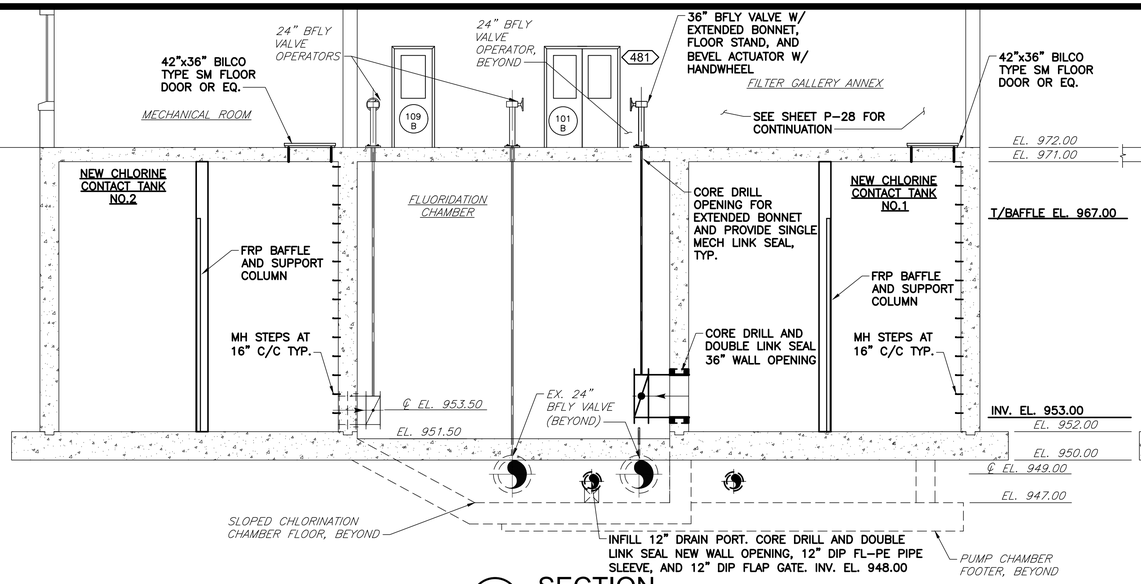
FILTER BUILDING PROCESS CLEARWELL PLAN

P-10

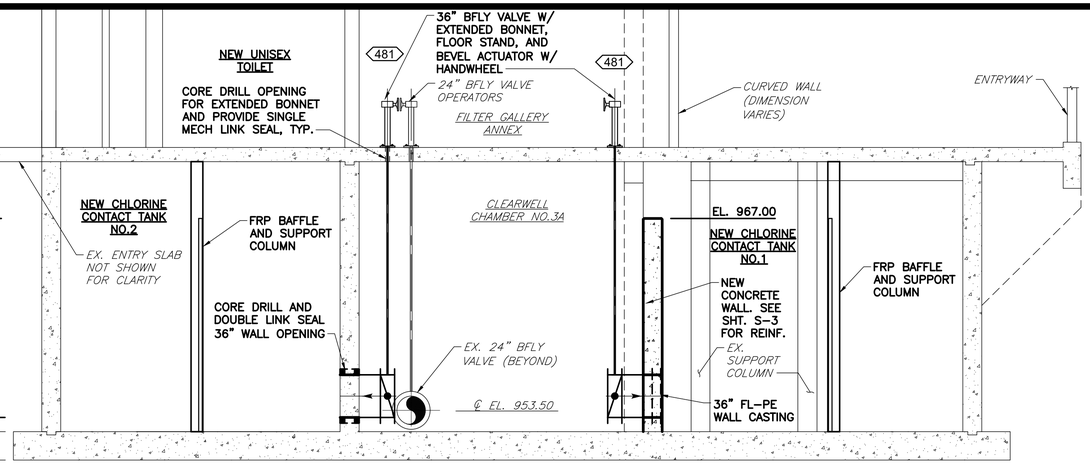
SHEET: OF

P:\PR58982\Cadd\Sheets\P-10 FILTER BUILDING PROCESS CLEARWELL PLAN.dwg 4/15/2022 10:44:04 AM Paul Emerson

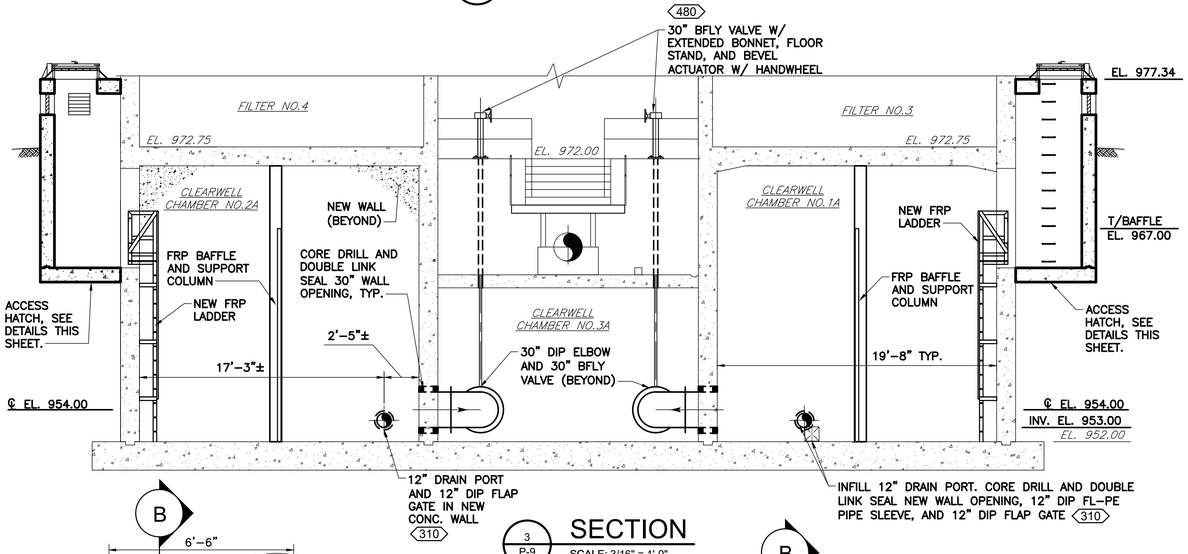
PLOTTED: 4/15/2022 12:36:02 PM



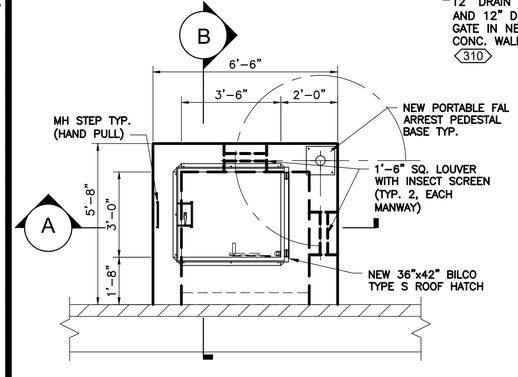
1 P-9 **SECTION**
SCALE: 3/16" = 1'-0"



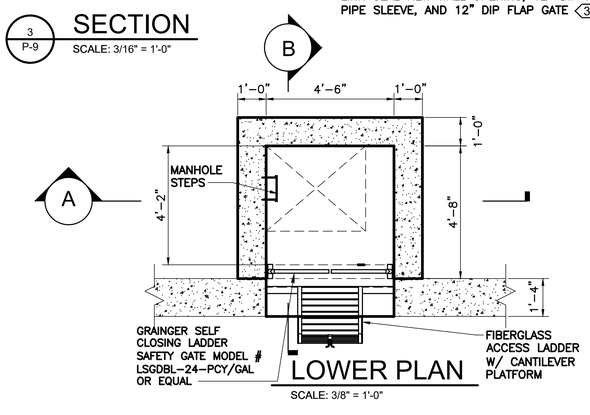
2 P-9 **SECTION**
SCALE: 3/16" = 1'-0"



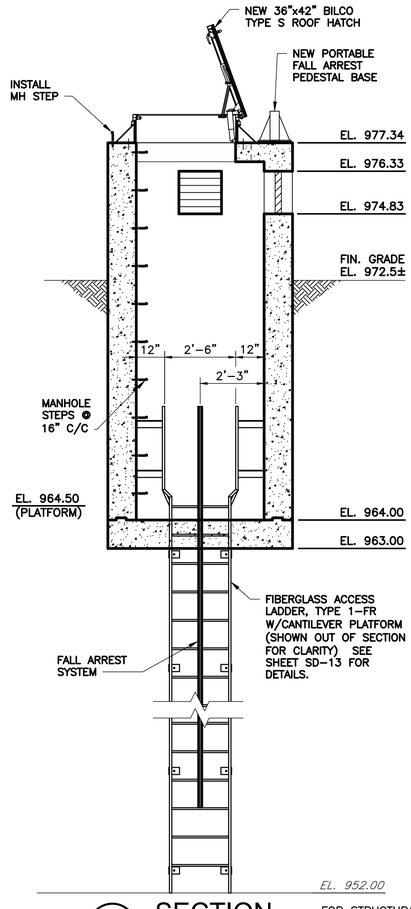
3 P-9 **SECTION**
SCALE: 3/16" = 1'-0"



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

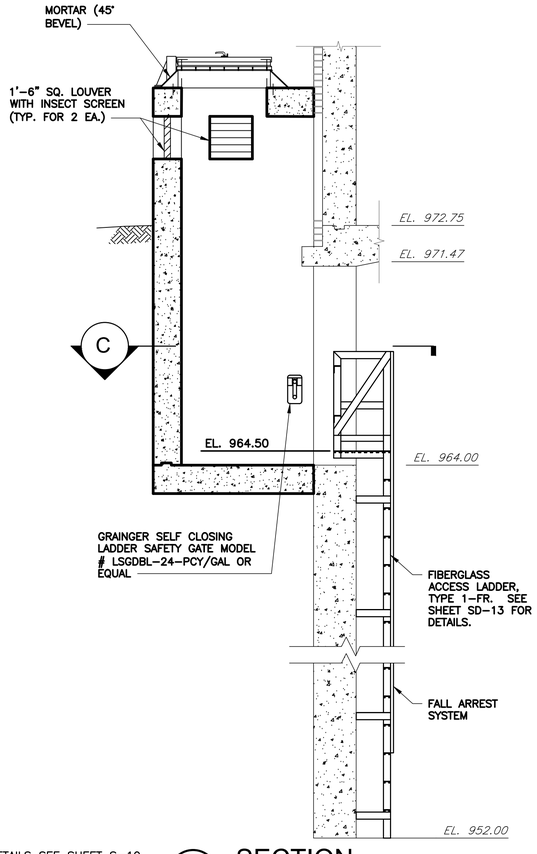


LOWER PLAN
SCALE: 3/8" = 1'-0"



A **SECTION**
SCALE: 3/8" = 1'-0"

FOR STRUCTURAL DETAILS SEE SHEET S-10.



B **SECTION**
SCALE: 3/8" = 1'-0"

WEST CLEARWELL ACCESS HATCH DETAILS
SCALE: 3/8" = 1'-0"

BURGESS & NIPLE
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

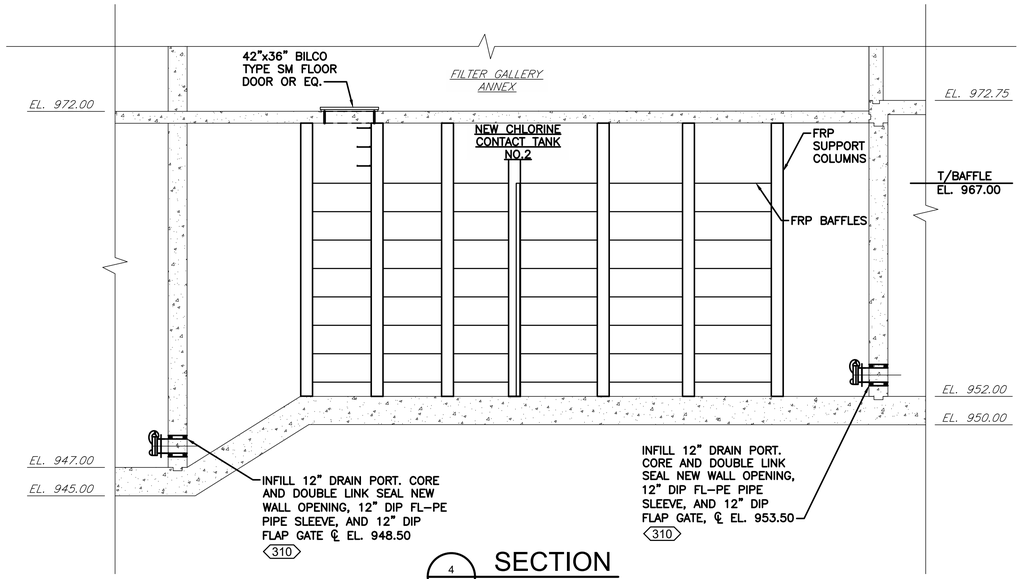
MAIN BUILDING PROCESS CLEARWELL PLAN-SECTIONS

P-11

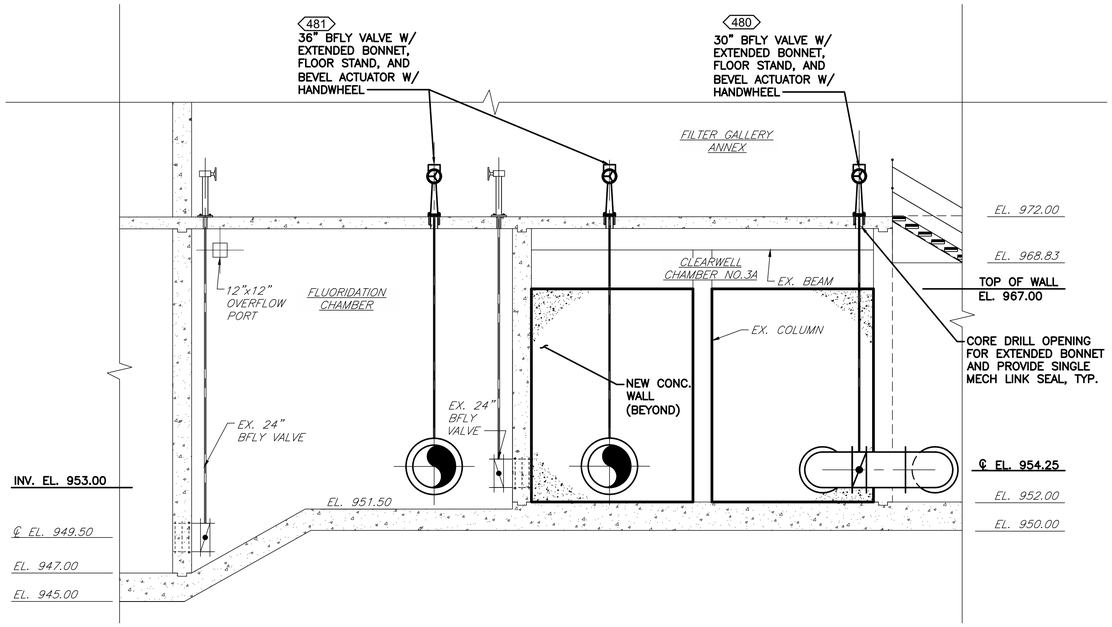
SHEET: OF

P:\PR58982\Cadd\Sheets\P-11 MAIN BUILDING PROCESS CLEARWELL PLAN-SECTIONS.dwg 4/15/2022 11:24:45 AM Paul Emerson

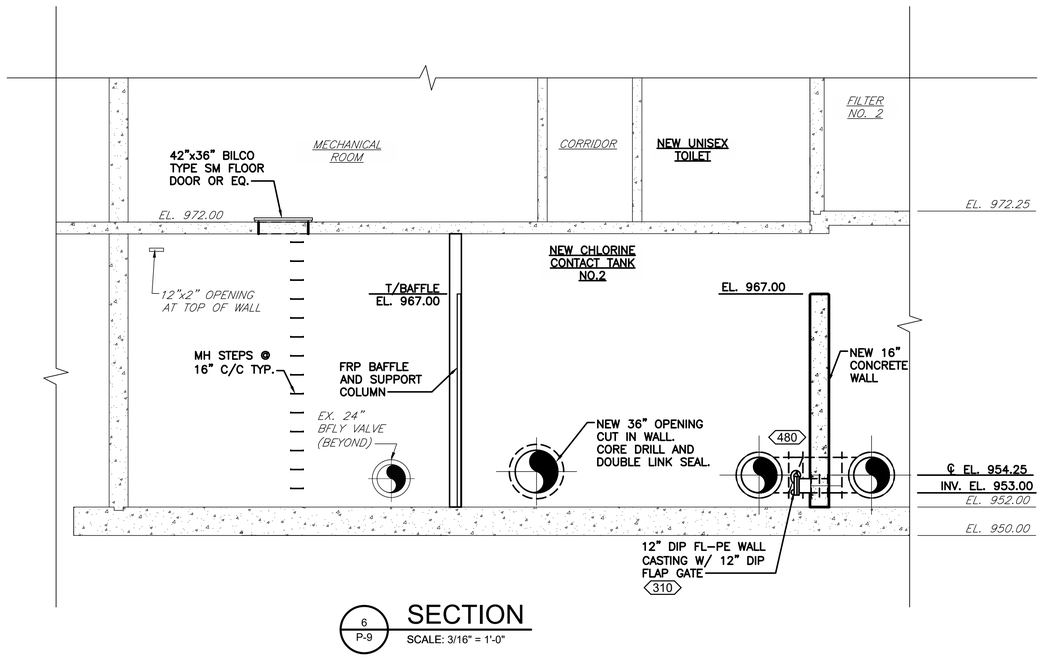
PLOTTED: 4/15/2022 12:36:17 PM



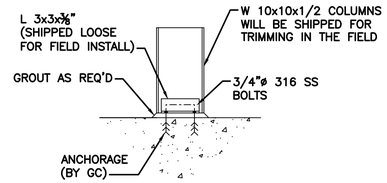
4 P-9 SECTION
SCALE: 3/16" = 1'-0"



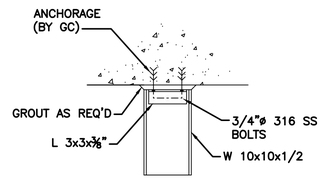
5 P-9 SECTION
SCALE: 3/16" = 1'-0"



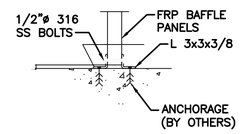
6 P-9 SECTION
SCALE: 3/16" = 1'-0"



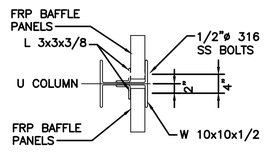
BOTTOM OF COLUMN CONNECTION



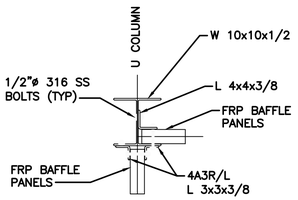
TOP OF COLUMN CONNECTION



DETAIL "1"
TYP. FRP BAFFLE TO CONCRETE CONNECTION



DETAIL "2"
(TYPICAL AT FRP COLUMN)



DETAIL "3"

BAFFLE WALL DETAILS
SCALE: 3/4" = 1'-0"

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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

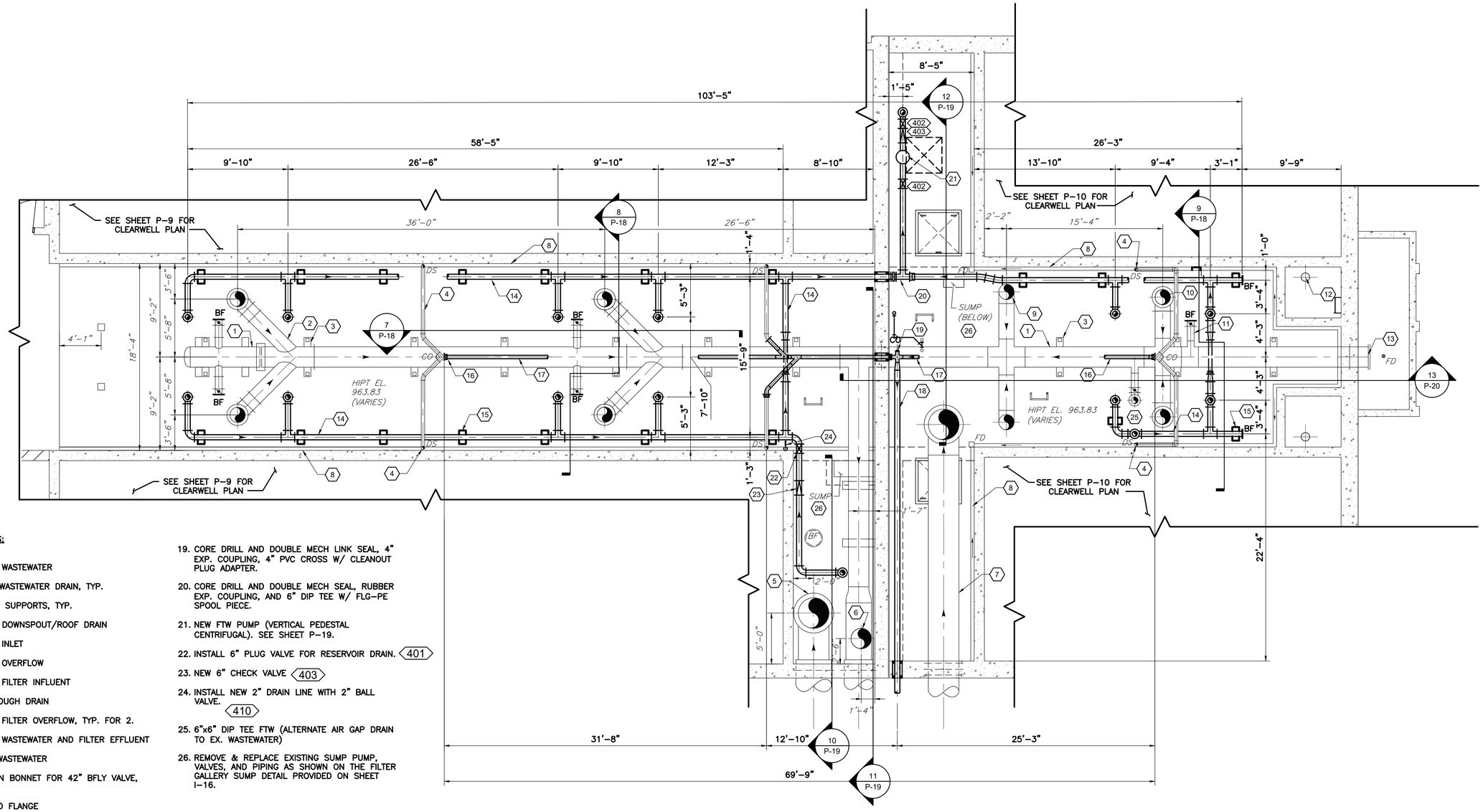
MAIN BUILDING PROCESS BAFFLE WALL SECTIONS-DETAILS

P-12

SHEET: OF

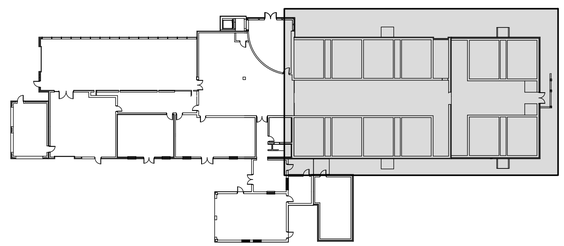
P:\PR58982\Cadd\Sheets\P-12 MAIN BUILDING PROCESS BAFFLE WALL SECTIONS-DETAILS.dwg 4/14/2022 11:44:20 AM Paul Emerson

PLOTTED: 4/15/2022 12:36:50 PM



FILTER GALLERY AT EL. 967.25

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



X **CODED NOTES:**

1. EX. 24" STL. WASTEWATER
2. EX. 18" STL WASTEWATER DRAIN, TYP.
3. EX. 8" CONC. SUPPORTS, TYP.
4. EX. 4" GALV. DOWNSPOUT/ROOF DRAIN
5. EX. 36" STL. INLET
6. EX. 24" STL. OVERFLOW
7. EX. 36" STL. FILTER INFLUENT
8. EX. 4"x4" TROUGH DRAIN
9. EX. 18" STL. FILTER OVERFLOW, TYP. FOR 2.
10. EX. 18" STL. WASTEWATER AND FILTER EFFLUENT
11. EX. 8" STL. WASTEWATER
12. EX. EXTENSION BONNET FOR 42" BFLY VALVE, TYP FOR 2.
13. EX. 24" BLIND FLANGE
14. NEW 6" DIP FILTER TO WASTE (FTW)
15. NEW CONCRETE PIPE SUPPORTS, TYP. SEE PIPE SUPPORT DETAILS SHEET SD-3.
16. INTERCEPT EX. ROOF DRAIN AT EX. WYE.
17. NEW 4" PVC DWV ROOF DRAIN
18. NEW 6" PVC DWV ROOF DRAIN
19. CORE DRILL AND DOUBLE MECH LINK SEAL, 4" EXP. COUPLING, 4" PVC CROSS W/ CLEANOUT PLUG ADAPTER.
20. CORE DRILL AND DOUBLE MECH SEAL, RUBBER EXP. COUPLING, AND 6" DIP TEE W/ FLG-PE SPOOL PIECE.
21. NEW FTW PUMP (VERTICAL PEDESTAL CENTRIFUGAL). SEE SHEET P-19.
22. INSTALL 6" PLUG VALVE FOR RESERVOIR DRAIN. 401
23. NEW 6" CHECK VALVE 403
24. INSTALL NEW 2" DRAIN LINE WITH 2" BALL VALVE. 410
25. 6"x6" DIP TEE FTW (ALTERNATE AIR GAP DRAIN TO EX. WASTEWATER)
26. REMOVE & REPLACE EXISTING SUMP PUMP, VALVES, AND PIPING AS SHOWN ON THE FILTER GALLERY SUMP DETAIL PROVIDED ON SHEET I-16.

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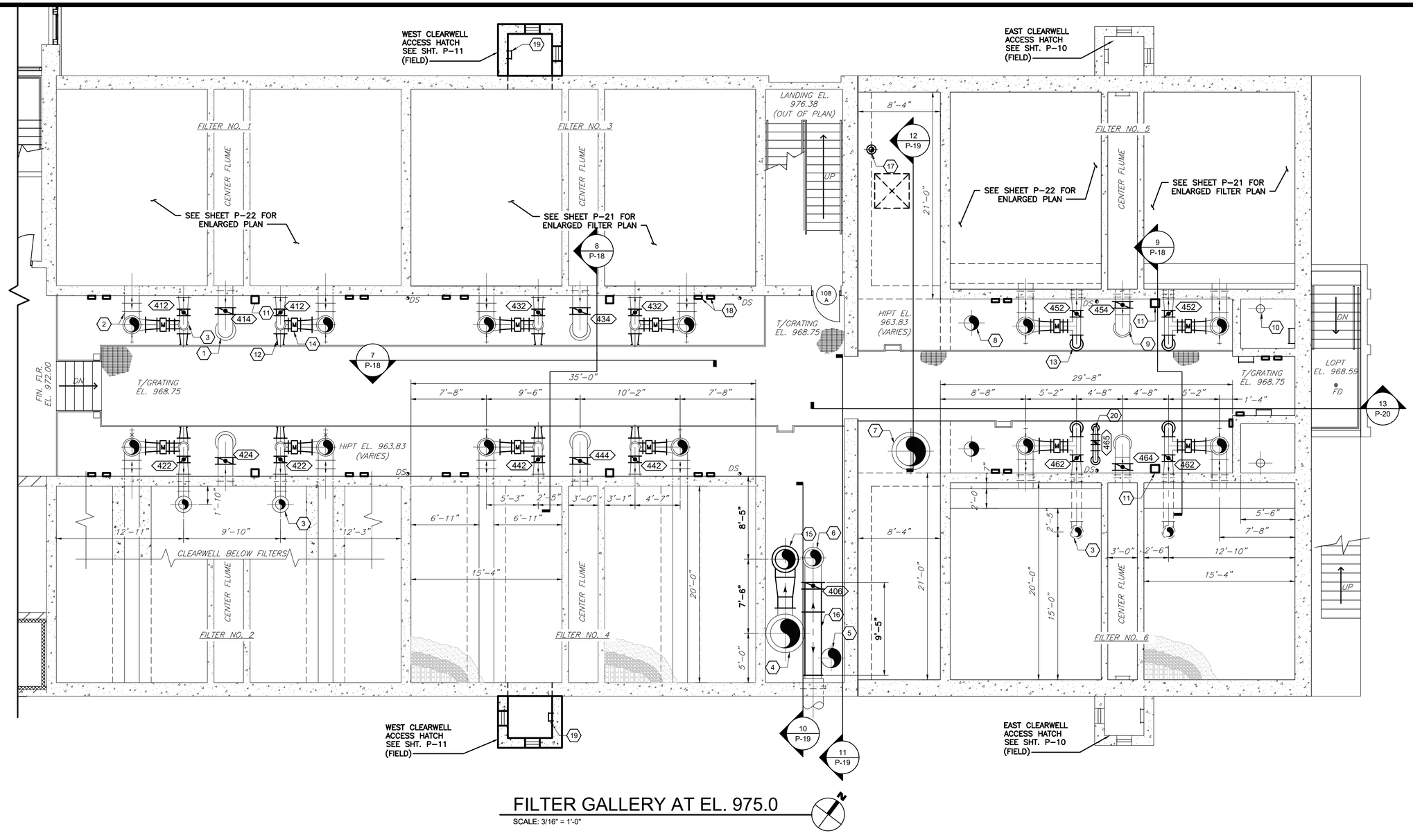
MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY BASEMENT PLAN

P-13

SHEET: OF

P:\PR58982\Cadd\Sheets\P-13 MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY BASEMENT PLAN.dwg 4/14/2022 11:57:44 AM Paul Emerson

PLOTTED: 4/15/2022, 12:37:20 PM

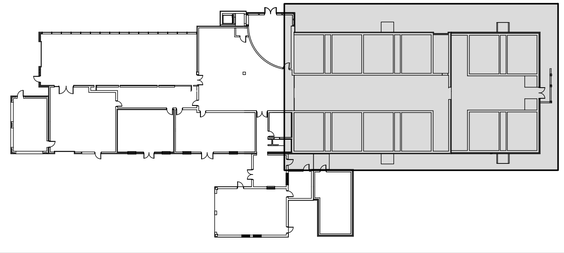


FILTER GALLERY AT EL. 975.0

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

(X) CODED NOTES:

1. EX. 18" STL WASTEWATER DRAIN, TYP.
2. EX. 18" STL. WASHWATER, TYP.
3. EX. 12" FILTER EFFLUENT, TYP.
4. EX. 36" STL. INLET
5. EX. 24" STL. OVERFLOW
6. EX. 20" STL WASHWATER
7. EX. 36" STL. FILTER INFLUENT
8. EX. 18" STL. FILTER OVERFLOW, TYP. FOR 2
9. EX. 18" STL. WASTEWATER AND FILTER EFFLUENT, TYP. FOR 2.
10. EX. EXTENSION BONNET FOR 42" BFLY VALVE, TYP FOR 2.
11. NEW TURBIDIMETER TO FILTER EFFLUENT, TYP. 1 PER FILTER.
12. NEW 10"x6" RED. ELBOW TO FILTER TO WASTE (FTW) BELOW, TYP FILTERS 1 – 4.
13. NEW 10" ELBOW TO FTW BELOW, TYP. FILTERS 5 AND 6.
14. NEW 10" MAG METER, 12"x10" DIP CONC. REDUCER, TYP. ALL FILTERS.
15. NEW 24" STL BYPASS, 24"x20" STL. INCREASER, 20" STL. FLG–PE SPOOL PIECE.
16. NEW 20" FLG–FLG STL PIPE.
17. NEW 6" DIP FTW EFFLUENT
18. NEW FLOW AND PRESSURE TRANSMITTERS, TYP EACH PER FILTER COMPARTMENT.
19. NEW MH STEPS @ 16" C/C
20. 6"x4" DIP REDUCING ELBOW @ EL. 968.48 (AIR GAP FTW TO WASTEWATER)



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MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY LOWER PLAN

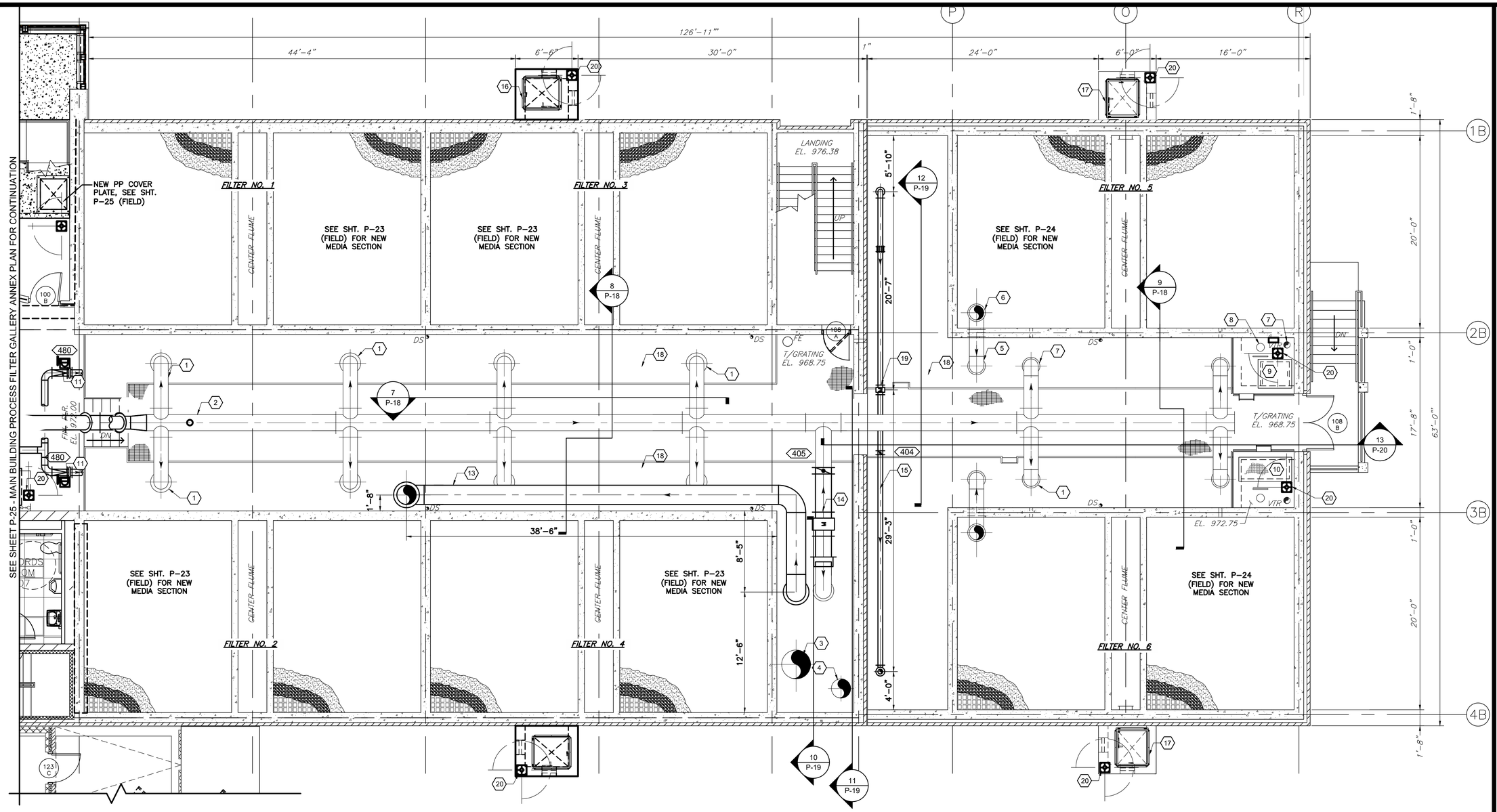
P-14

SHEET: OF

P:\PR58982\Cadd\Sheets\P-14 MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY LOWER PLAN.dwg 4/14/2022 1:50:48 PM Paul Emerson

PLOTTED: 4/15/2022 12:37:53 PM

P:\PR58982\Cadd\Sheets\P-15 MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY INTERMEDIATE PLAN.dwg 4/14/2022 2:24:11 PM Paul Emerson

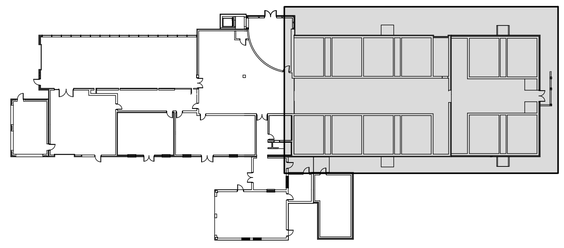


FILTER GALLERY AT EL. 978.50

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

X CODED NOTES:

1. EX. 18" STL WASHWATER, TYP.
2. EX. 18" STL. WASHWATER, TYP.
3. EX. 36" STL. INLET
4. EX. 24" STL. OVERFLOW
5. EX. 18" STL. FILTER OVERFLOW, TYP. FOR 2
6. EX. 18" DIP FLANGE FLARE ELBOW, TYP. FOR 2.
7. EX. 8" STL. VENT
8. EX. FLOOR STAND AND EXTENSION STEM FOR 42"ø BFLY VALVE, TYP. FOR 2.
9. EX. 2'-6"x3'-0" ALUM. ACCESS DOOR WITH SAFETY POST AND LOCK.
10. EX. 1/4" ALUM. CHECKERED PLATE.
11. NEW 30" BFLY VALVE W/ EXTENDED BONNET, FLOOR STAND AND ELEC. ACTUATOR, TYP.
12. NEW 18"x16" STL. REDUCER AND 16" STL. 45° BEND WASHWATER C/L 977.00
13. NEW 24" STL. BYPASS TO FILTER FLUME C/L EL. 982.04
14. NEW 24" BI-DIRECTIONAL MAGNETIC FLOW METER
15. NEW 6" DIP FTW.
16. WEST CLEARWELL ACCESS HATCH, TYP. FOR 2. SEE DETAILS SHEET P-11.
17. EAST CLEARWELL ACCESS, TYP. FOR 2, SEE DETAILS SHEET P-10.
18. NEW HVAC DUCT. SEE MECHANICAL SHEETS FOR DETAILS.
19. NEW 6" MAGNETIC FLOW METER
20. NEW PORTABLE FALL-ARREST PEDESTAL TYP.



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REVISIONS

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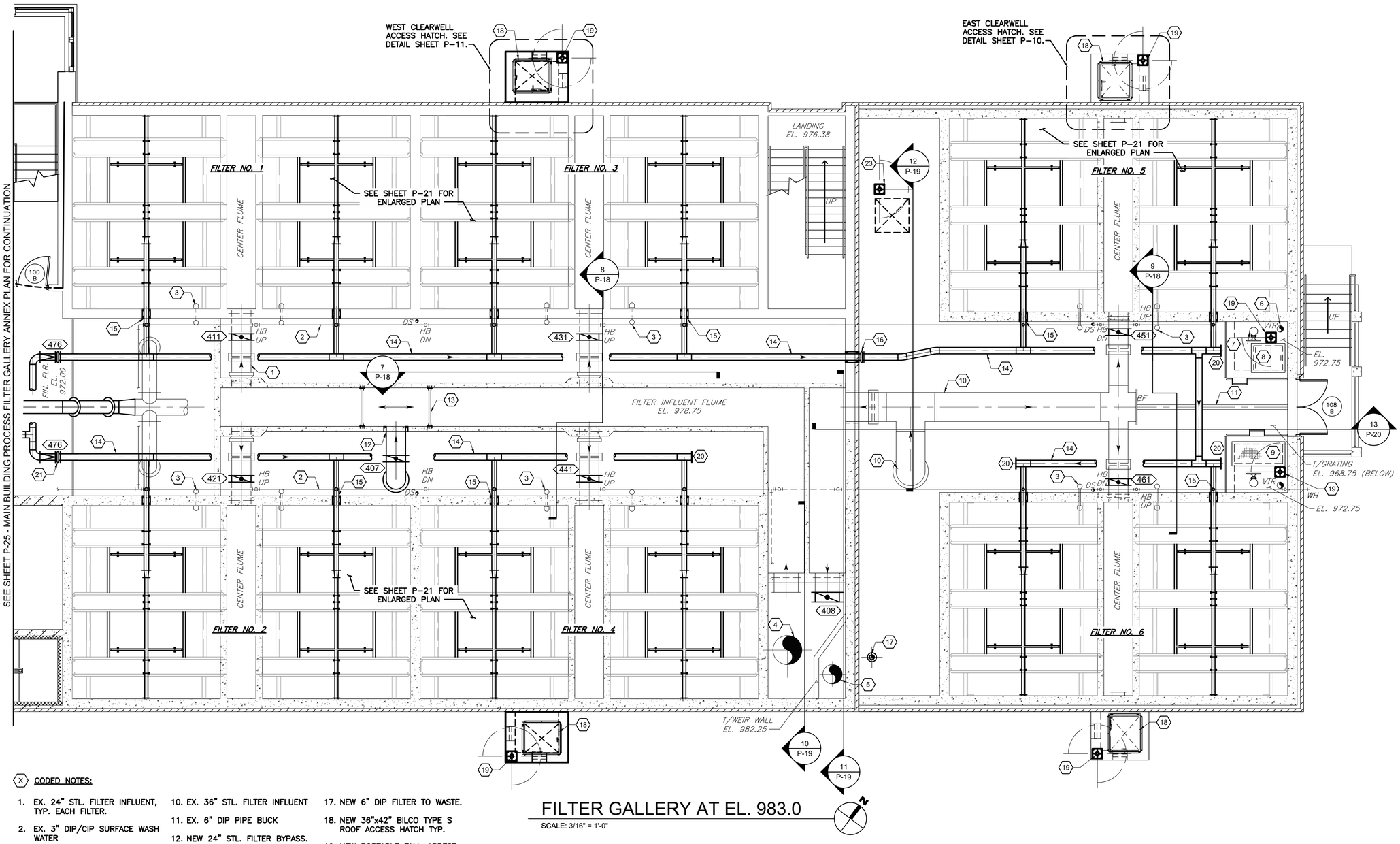
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	3/16" =1'-0"

MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY INTERMEDIATE PLAN

P-15

SHEET: OF

PLOTTED: 4/17/2022 9:21:43 PM

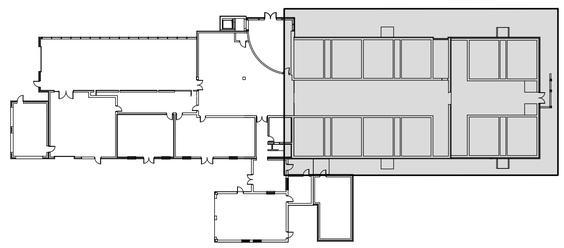


FILTER GALLERY AT EL. 983.0

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

X CODED NOTES:

1. EX. 24" STL. FILTER INFLUENT, TYP. EACH FILTER.
2. EX. 3" DIP/CIP SURFACE WASH WATER
3. EX. LOSS OF HEAD STRAINER, TYP. 2 PER FILTER.
4. EX. 36" STL. INLET
5. EX. 24" STL. OVERFLOW
6. EX. 8" STL. VENT
7. EX. FLOOR STAND AND EXTENSION STEM FOR 42"ø BFLY VALVE, TYP. FOR 2.
8. EX. 2'-6"x3'-0" ALUM. ACCESS DOOR WITH SAFETY POST AND LOCK.
9. EX. 1/4" ALUM. CHECKERED PLATE.
10. EX. 36" STL. FILTER INFLUENT
11. EX. 6" DIP PIPE BUCK
12. NEW 24" STL. FILTER BYPASS. CORE DRILL AND SINGLE MECH. LINK SEAL.
13. NEW SURFACE MOUNTED STOP LOGS.
14. NEW 8" S.STL. SCH. 5 AIR SCOUR C/L EL. 982.53
15. NEW 6" S.STL. SCH. 5 AIR SCOUR. ℄ EL. 980.50 CORE DRILL AND DOUBLE MECH. LINK SEAL, TYP. TWO PER FILTER.
16. CORE DRILL AND DOUBLE MECH. LINK SEAL AND VICTAULIC STYLE 240S BELLOWS EXP. JOINT AGSxAGS OR EQ.
17. NEW 6" DIP FILTER TO WASTE.
18. NEW 36"x42" BILCO TYPE S ROOF ACCESS HATCH TYP.
19. NEW PORTABLE FALL-ARREST PEDESTAL TYP.
20. NEW S.STL. SCH. 5 END CAP
21. NEW 8" VICTAULIC STYLE 240S BELLOWS EXP. JOINT AGSxAGS OR EQ., TYP.
22. NEW 18"x16" STL. REDUCER AND 16" STL. 45° BEND WASHWATER ℄ EL. 977.00
23. NEW DAVIT CRANE PEDESTAL



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SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	3/16" = 1'-0"

MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY UPPER PLAN

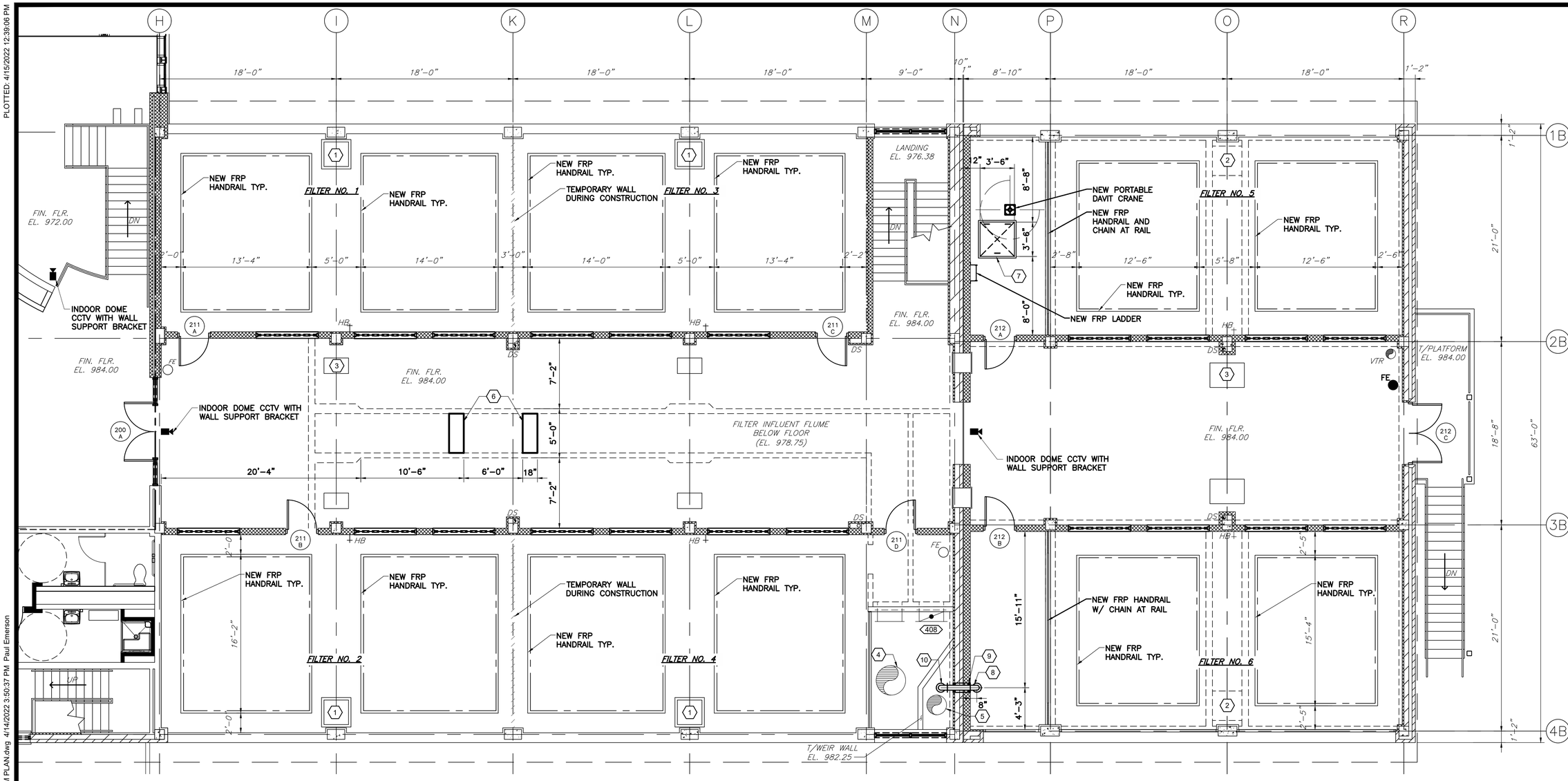
P-16

SHEET: OF

P:\PR58982\Cadd\Sheets\P-16 MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY UPPER PLAN.dwg 4/14/2022 2:38:59 PM Matt Kroll

PLOTTED: 4/15/2022 12:39:06 PM

P:\PR58982\Cadd\Sheets\P-17 MAIN & FILTER BLDG PROCESS FILTER OPERATING RM PLAN.dwg 4/14/2022 3:50:37 PM Paul Emerson

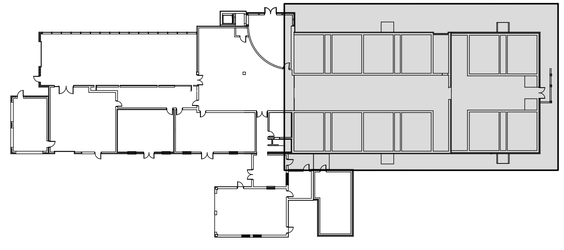


FILTER BUILDING OPERATING FLOOR PLAN

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

CODED NOTES:

1. EX. 2'-6" SQ. INSPECTION MANHOLE, TYP. FILTERS 1-4.
2. EX. 3'-0" SQ. ALUM ACCESS DOOR, TYP. FILTERS 5&6.
3. EX. FILTER CONSOLE, TYP.
4. EX. 36" STL. INLET
5. EX. 24" STL. OVERFLOW
6. CUT TWO 18"x5'-0" OPENINGS IN FLOOR TO ACCOMMODATE STOP LOGS BELOW.
7. NEW 42"x42" FLOOR DOOR, SEE STRUCTURAL SHEETS FOR DETAILS
8. NEW 6" DIP FTW DISCHARGE C/L EL. 984.67
9. CUT OPENING, CLEAN SUBSTRATE, INSTALL POLYURETHANE FOAM, BACKER ROD, AND SEAL JOINT.
10. NEW 6" DIP 90° FLARE, TYP.



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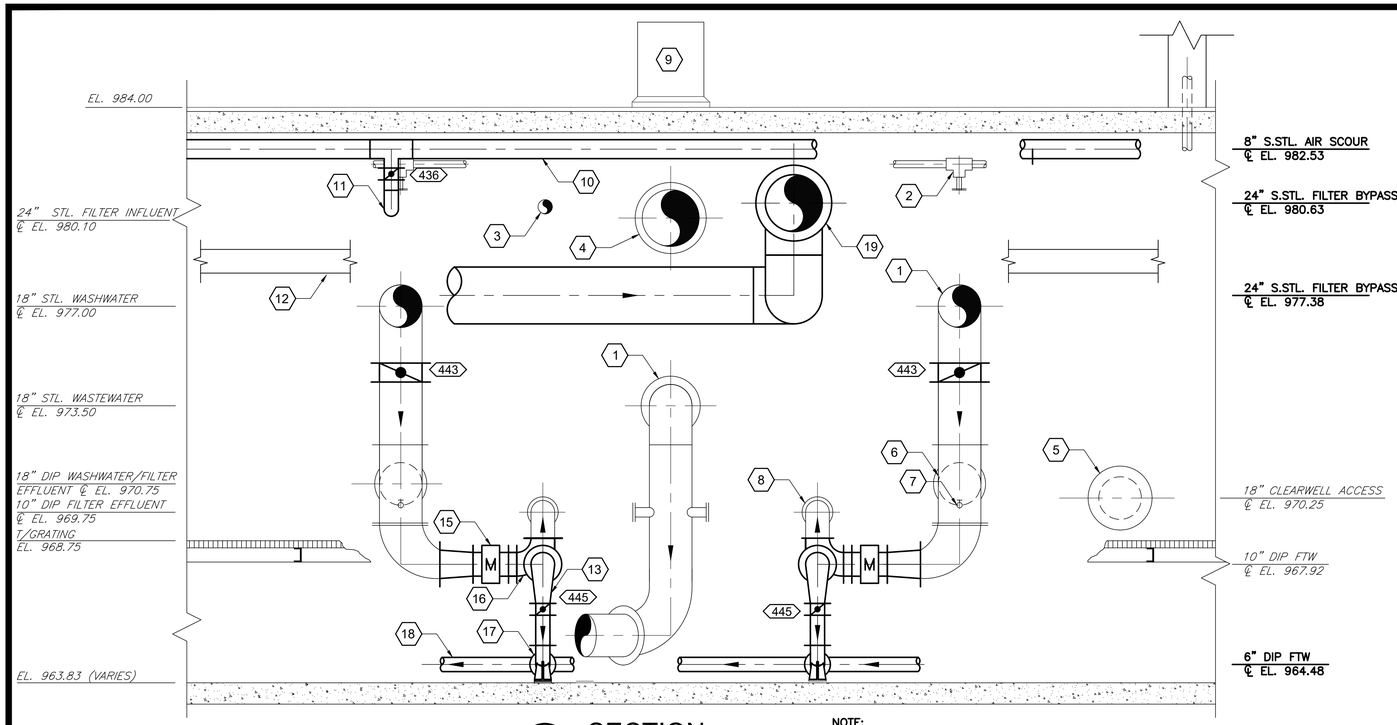
APPROVED BY:	CMS
SCALE:	3/16" = 1'-0"

MAIN & FILTER BLDG PROCESS FILTER OPERATING RM PLAN

P-17

SHEET: OF

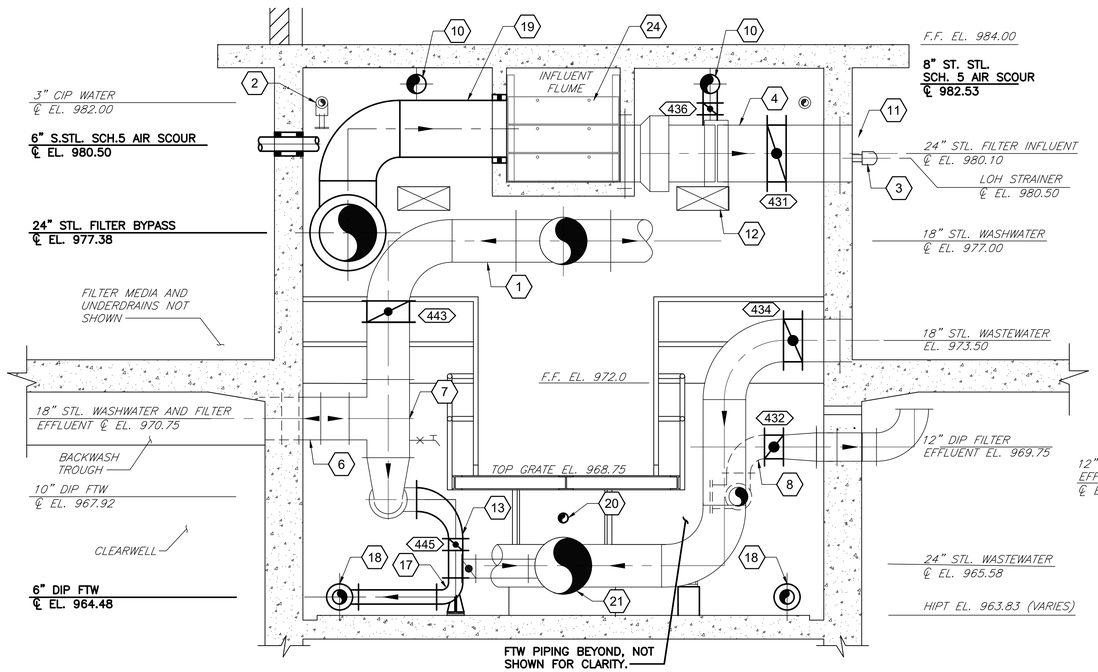
PLOTTED: 4/15/2022 12:39:43 PM



7 P-13 **SECTION**
SCALE: 3/8" = 1'-0"

NOTE:

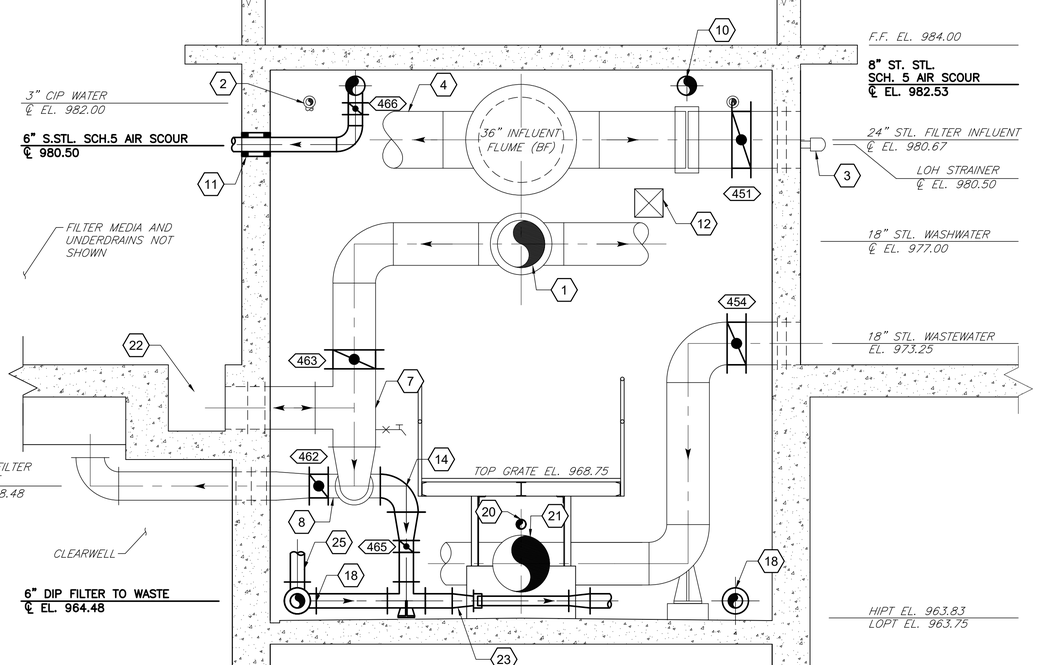
TYP. FOR FILTER NO. 4, SIMILAR FOR FILTERS 1–6



8 P-13 **SECTION**
SCALE: 3/8" = 1'-0"

NOTE:

TYP. FOR FILTERS 1–4



9 P-13 **SECTION**
SCALE: 3/8" = 1'-0"

NOTE:

TYP. FOR FILTERS 5–6

X **CODED NOTES:**

1. EX. 18" STL. WASHWATER, TYP.
2. EX. 3"x3" CIP TEE, TYP. 2 PER FILTER AND 3" CIP WATER C/L EL. 982.00
3. EX. LOSS OF HEAD STRAINER, C/L EL. 980.50
4. EX. 24" STL. FILTER INFLUENT
5. EX. 18" ACCESS TO CLEARWELL, TYP 2 PLACES.
6. EX. 18" DIP WASHWATER/FILTER EFFLUENT
7. EX. 18"x18" DIP TEE WITH SAMPLE SPIGOT
8. EX. 10" DIP FILTER EFFLUENT
9. EX. FILTER CONSOLE
10. NEW 8" S.STL. SCH. 5 AIR SCOUR
11. NEW 6" S.STL. SCH. 5 TEE, 6" BFLY VALVE, AND 6" ELBOW, CORE DRILL AND DOUBLE MECH. LINK SEAL INTO FILTER, TYP. TWO PER FILTER.
12. NEW HVAC DUCT, SEE MECHANICAL FOR DETAILS
13. NEW 10"x6" REDUCING ELBOW, 6" BFLY VALVE, TYP. FILTERS 1–4, TWO LOCATIONS PER FILTER.
14. NEW 10" DIP ELBOW, 10"x6" REDUCER, AND 6" BFLY VALVE, TYP. FILTERS 5 & 6, TWO LOCATIONS PER FILTER.
15. NEW 12"x10" REDUCER AND 10" MAG METER, TYP. ALL FILTERS.
16. NEW 10"x10" DIP SIDE OUTLET BEND, TYP.
17. NEW 6" DIP BASE 90° BEND
18. NEW 6" DIP FILTER TO WASTE
19. NEW 24" FILTER BYPASS, C/L EL. 980.63. CORE DRILL AND SINGLE MECH. LINK SEAL INTO INFLUENT FLUME WALL
20. NEW 4" PVC DWV
21. EX. 24" STL. WASTEWATER
22. EX. WASHWATER BACKWASH TROUGH AND FILTER INFLUENT FLUME
23. REDUCE FTW TO 4" UNDER EX. 24" STL. WASTEWATER. FURNISH AND INSTALL NEW DRAIN TAP AND VALVE TO EX. TROUGH.
24. STOP LOGS, SURFACED MOUNTED FRAMES AND GUIDES FOR CONSTR. SEQUENCING
25. 6"x6" DIP TEE, 6" DIP FTW RISER TO ℄ EL. 968.48 (AIR GAP DRAIN TO EX. WASTEWATER BEYOND)

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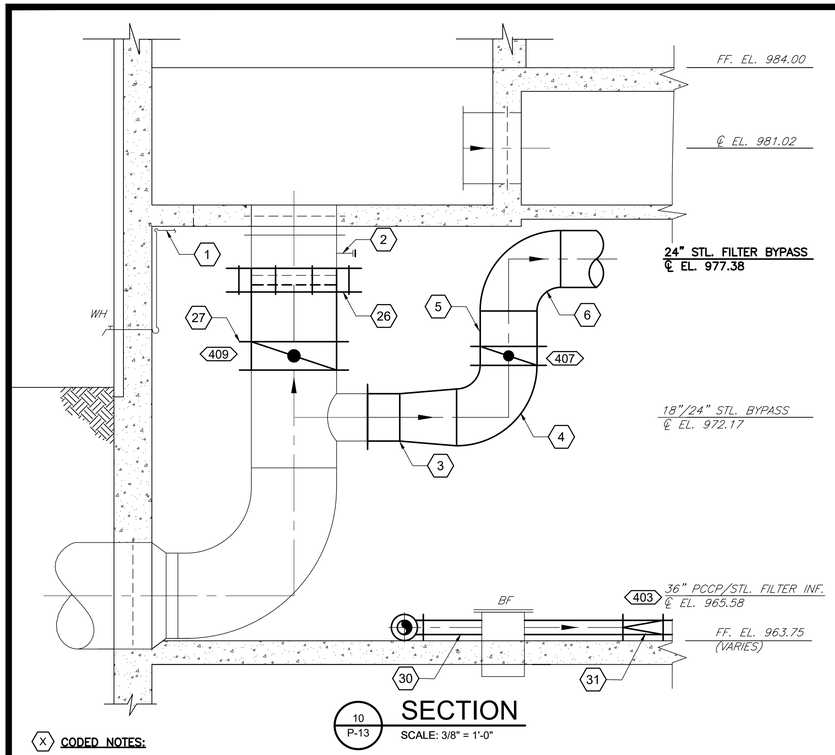
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY SECTIONS

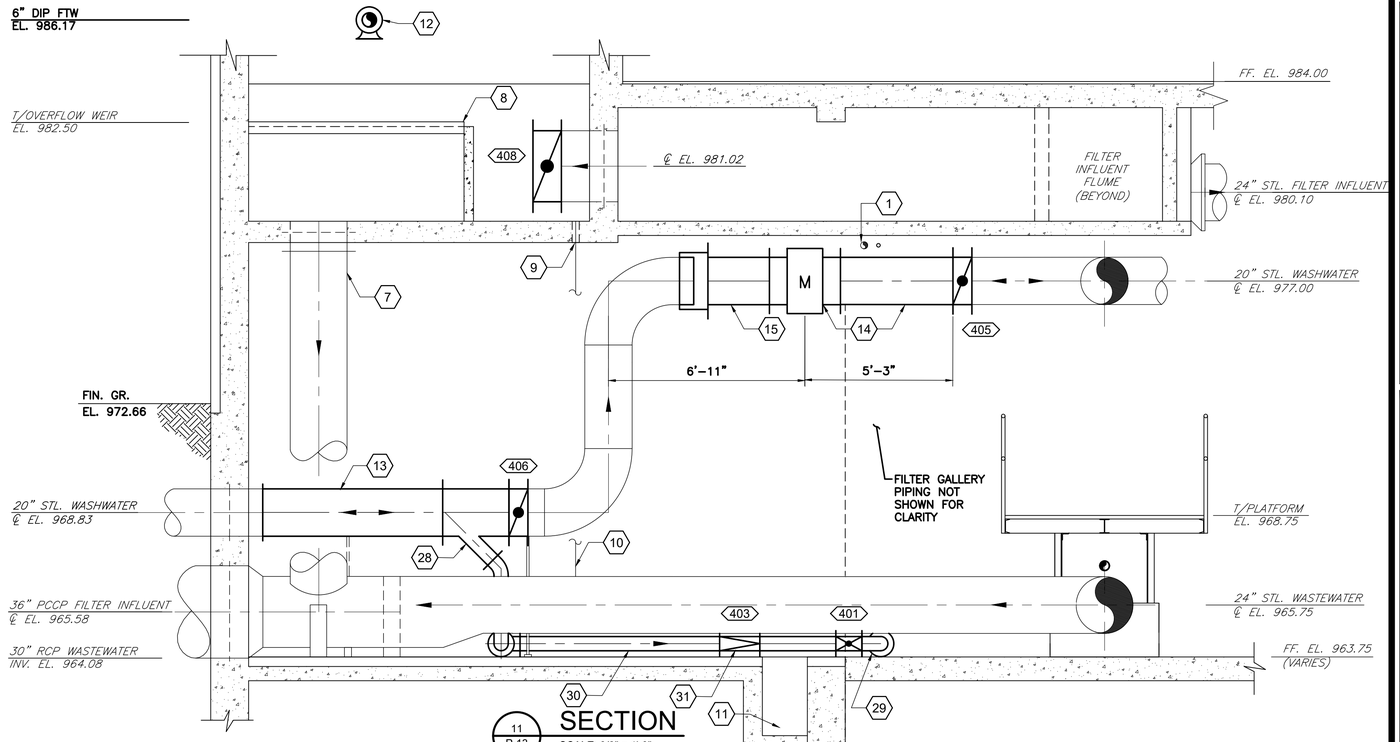
P-18

SHEET: OF

P:\PR58982\Cadd\Sheets\P-18 MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY SECTIONS.dwg 4/15/2022 10:44:59 AM Paul Emerson



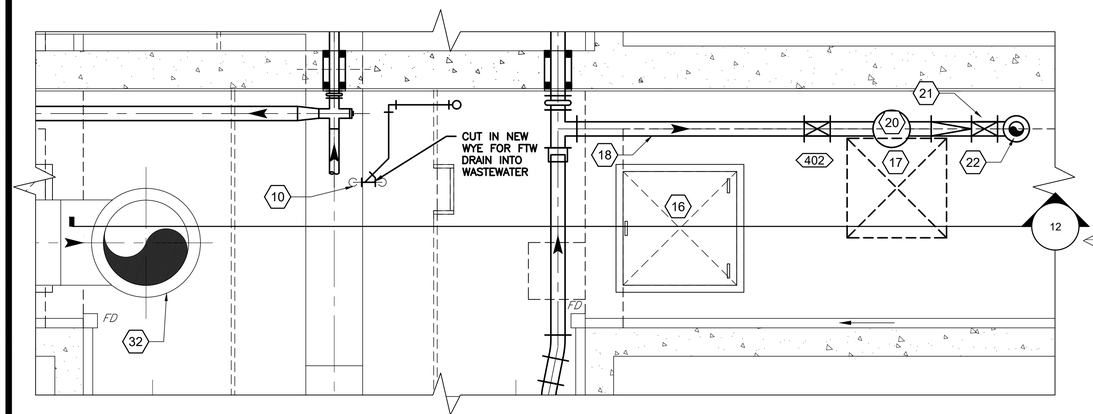
10 P-13 SECTION
SCALE: 3/8" = 1'-0"



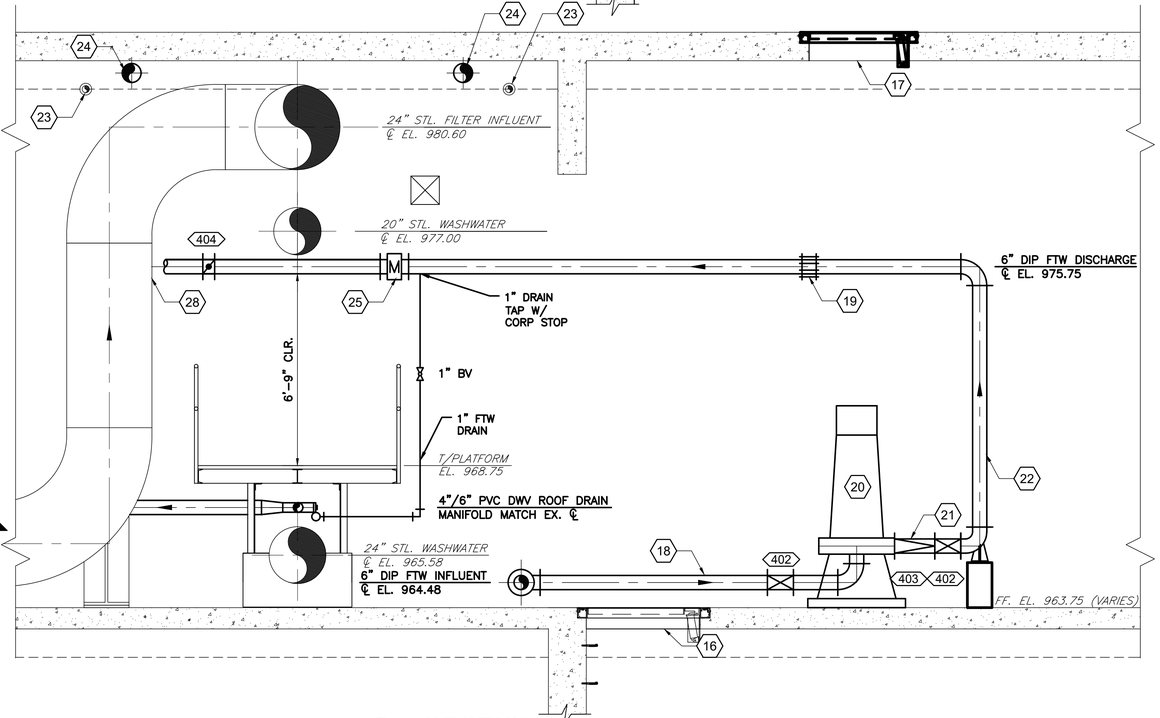
11 P-13 SECTION
SCALE: 3/8" = 1'-0"

X CODED NOTES:

1. EX. 3/4" CIP WATER
2. EX. 3/4" CHLORINE (TO BE ABANDONED)
3. CONNECT TO EX. 20" FLANGE WITH NEW 20"x24" INCREASER, 20"x1'-2"L STL. FLxPE SPOOL PIECE
4. NEW 20" STL FLxPE 90° BEND
5. NEW 24"x1'-3" STL FLxPE SPOOL PIECE
6. NEW 24" STL. PExPE 90° BEND
7. EX. 24" STL. OVERFLOW
8. EX. OVERFLOW WEIR PLATE
9. EX. 3" INSERT FOR FLUME LEVEL CONTROL
10. EX. DRAIN LINE TO WASTEWATER
11. EX. 1'-7"x4'-0" SUMP
12. NEW 6" DIP FTW 90° FLARE BEND, TYP.
13. NEW 20"x6'-4"L STL. FLxFL TYP. REUSE EX. SUPPORTS.
14. NEW BI-DIRECTIONAL MAG METER AND 24"x4'-0"L FLxFL SPOOL PIECE.
15. NEW 24"x2'-2"L FLxFL SPOOL PIECE W/ FLG. COUPLING ADAPTER.
16. EX. FLOOR DOOR TO SUMP
17. NEW 42"x42" FLOOR DOOR (ABOVE). SEE STRUCTURAL SHEETS FOR DETAILS.
18. NEW 6" DIP FILTER TO WASTE PUMP SUCTION
19. NEW 6" SLEEVE COUPLING AT THRU WAY
20. NEW FTW PUMP (VERTICAL PEDESTAL CENTRIFUGAL)
21. NEW 6" CHECK VALVE AND 6" BUTTERFLY VALVE
22. NEW 6" DIP FTW DISCHARGE
23. EX. 3" CIP WATER, TYP.
24. NEW 8" S.STL. SCH. 5 AIR SCOUR LINE, TYP.
25. NEW 6" MAG METER
26. NEW 36" DRESSER COUPLING/SLEEVE COUPLING
27. NEW 36" BUTTERFLY VALVE WITH NEW FLG-PE SPOOL PIECE
28. NEW 20" STL. FLxFL WYE WITH 6" BRANCH
29. NEW 2" DRAIN LINE WITH 2" BALL VALVE
30. NEW 6" DRAIN TO FILTER-TO-WASTE MANIFOLD (WASHWATER RESERVOIR DRAIN) ℄ EL. 964.48
31. NEW 6" CHECK VALVE
32. EX. 24" STL. FILTER INF.



FILTER TO WASTE PUMP PLAN
SCALE: 3/8" = 1'-0"



12 P-13 SECTION
SCALE: 3/8" = 1'-0"

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY SECTIONS

P-19

SHEET: OF

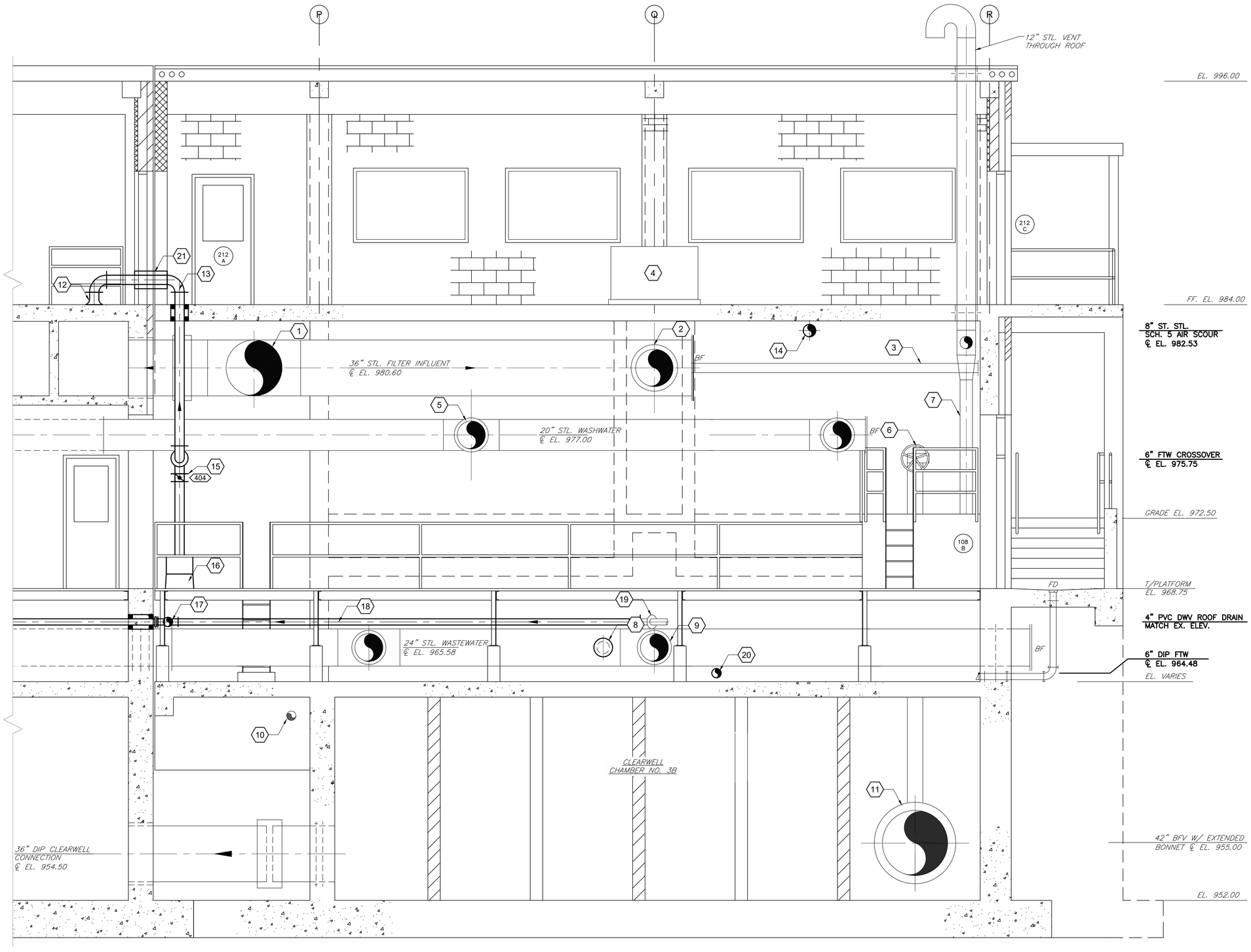
PLOTTED: 4/15/2022 12:40:29 PM

P:\PR58982\Cadd\Sheets\P-19 MAIN & FILTER BLDG PROCESS FILTER PIPE GALLERY SECTIONS.dwg 4/15/2022 10:38:25 AM Paul Emerson

PLOTTED: 4/15/2022 12:40:59 PM

(X) CODED NOTES:

1. EX. 36" STL. INLET
2. EX. 24" STL. FILTER INFLUENT
3. EX. 6" DIP PIPE BUCK
4. EX. FILTER CONSOLE
5. EX. 18" STL. WASHWATER
6. EX. FLOOR STAND AND EXTENSION BONNET FOR 42" ø BFLY VALVE, TYP. FOR 2.
7. EX. 8" STL VENT
8. EX. 8" STL WASTEWATER. INSTALL NEW BLIND FLANGE
9. EX. 18" STL. WASTEWATER AND FILTER INFLUENT
10. EX. 6" DRAIN PIPING TO SUMP BEYOND
11. EX. 42"ø BFLY VALVE CONNECTION TO CLEARWELL CHAMBER 1B.
12. NEW 6" DIP 90° BEND W/FLARE (SHOWN OUT OF SECTION FOR CLARITY)
13. NEW 6" DIP FTW DISCHARGE C/L EL. 986.17. CORE DRILL AND DOUBLE MECH. LINK SEAL FLOOR OPENING (SHOWN OUT OF SECTION FOR CLARITY)
14. NEW 8" S.STL. SCH.5 AIR SCOUR CROSS CONNECTION
15. NEW 6" DIP FTW PIPING AND 6" GATE VALVE
16. NEW FTW PUMP, BEYOND, SEE SHEET P-19
17. NEW 6" PVC DWV ROOF DRAIN
18. NEW 4" PVC DDWV ROOF DRAIN
19. INSTALL FLG COUPLING ADAPTER AT EX. ROOF DRAIN AT EX. WYE
20. NEW 4" DIP FTW CROSS CONNECTION
21. CUT OPENING, CLEAN SUBSTRATE, INSTALL POLYURETHANE FOAM, BACKER ROD, AND SEAL JOINT (SHOWN OUT OF SECTION FOR CLARITY)



13 / P-13 SECTION
SCALE: 3/8" = 1'-0"

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

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DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	3/8" = 1'-0"

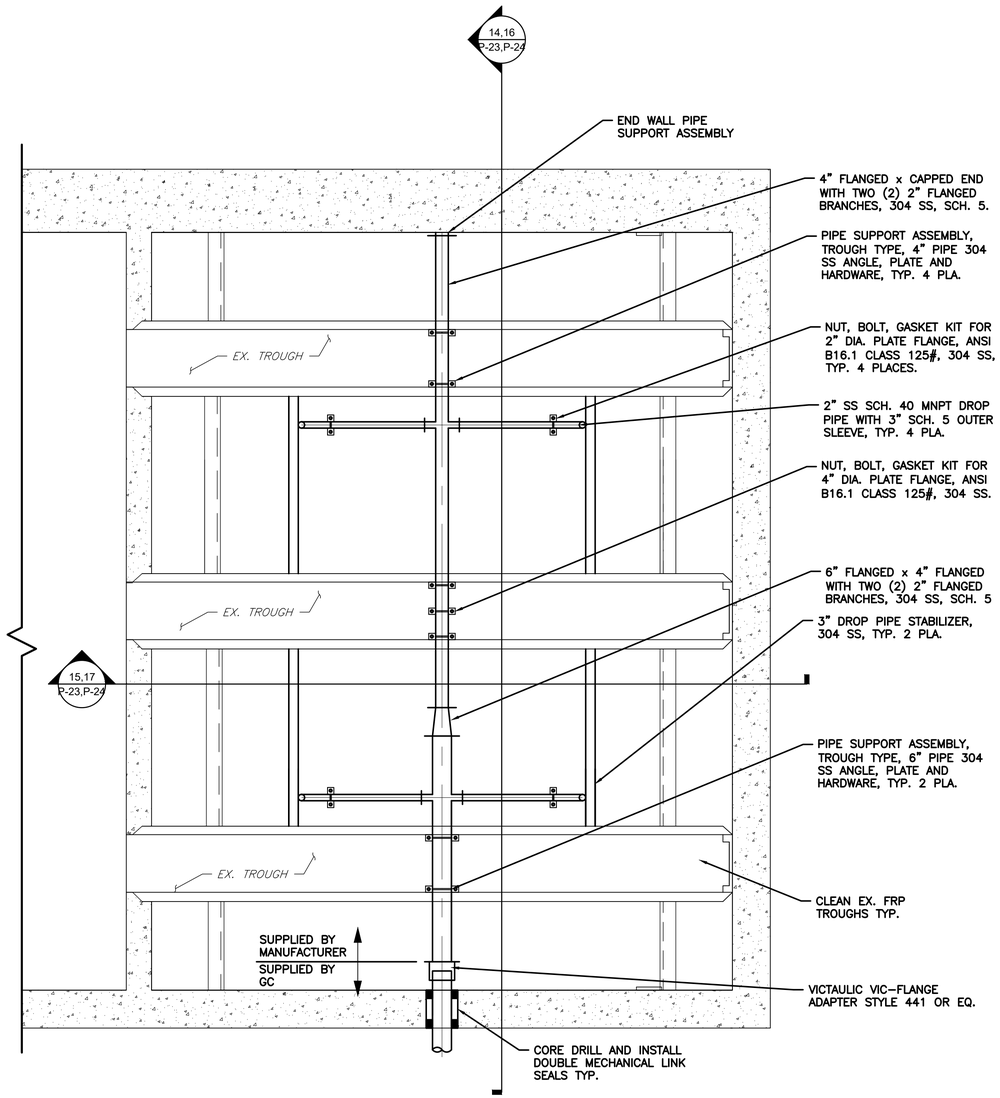
FILTER BUILDING PROCESS
FILTER PIPE GALLERY
SECTION

P-20

SHEET: OF

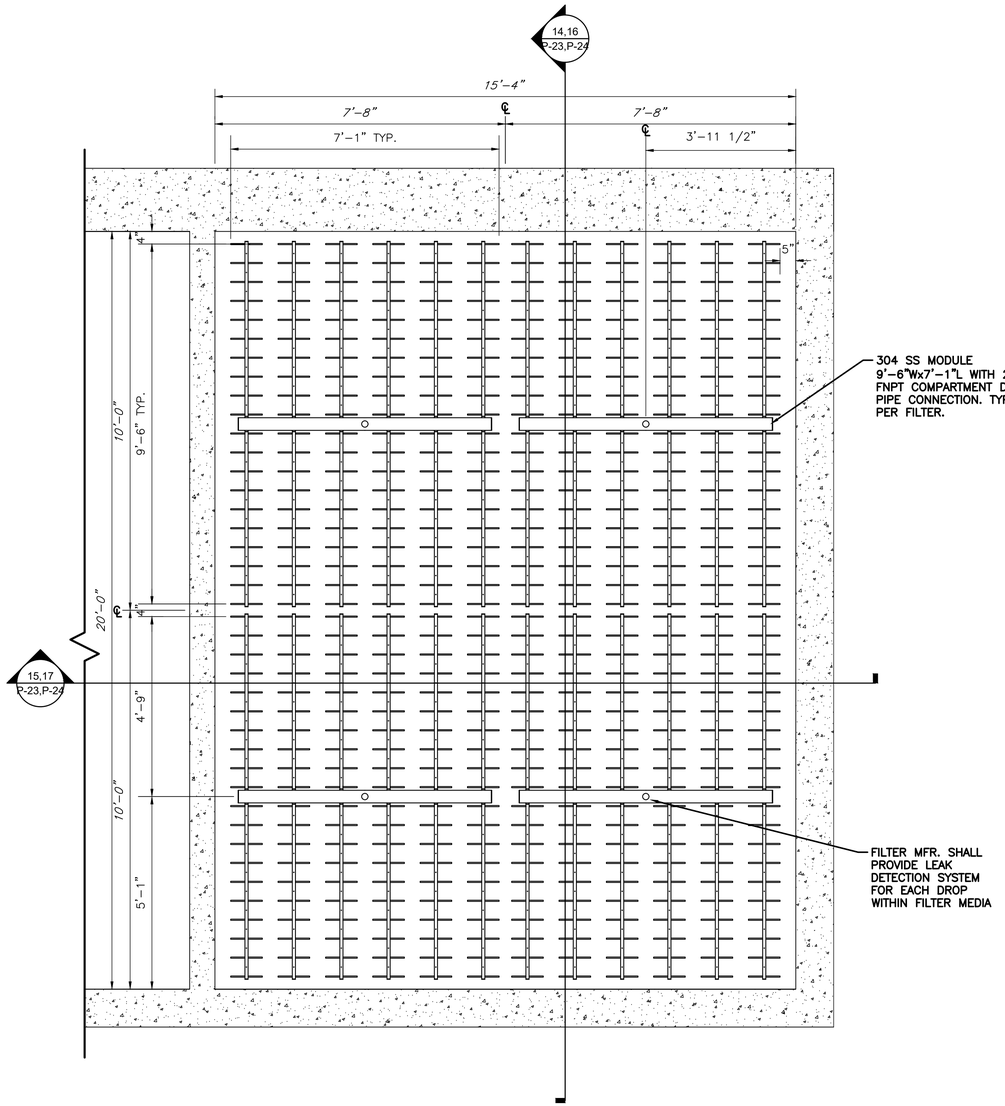
P:\PR58982\Cadd\Sheets\P-20 FILTER BUILDING PROCESS FILTER PIPE GALLERY SECTION.dwg 4/14/2022 4:03:19 PM Paul Emerson

PLOTTED: 4/15/2022 12:41:30 PM



UPPER FILTER AIR SCOUR PLAN

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



LOWER FILTER AIR SCOUR PLAN

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

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SUGAR CREEK
WATER TREATMENT PLANT &
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

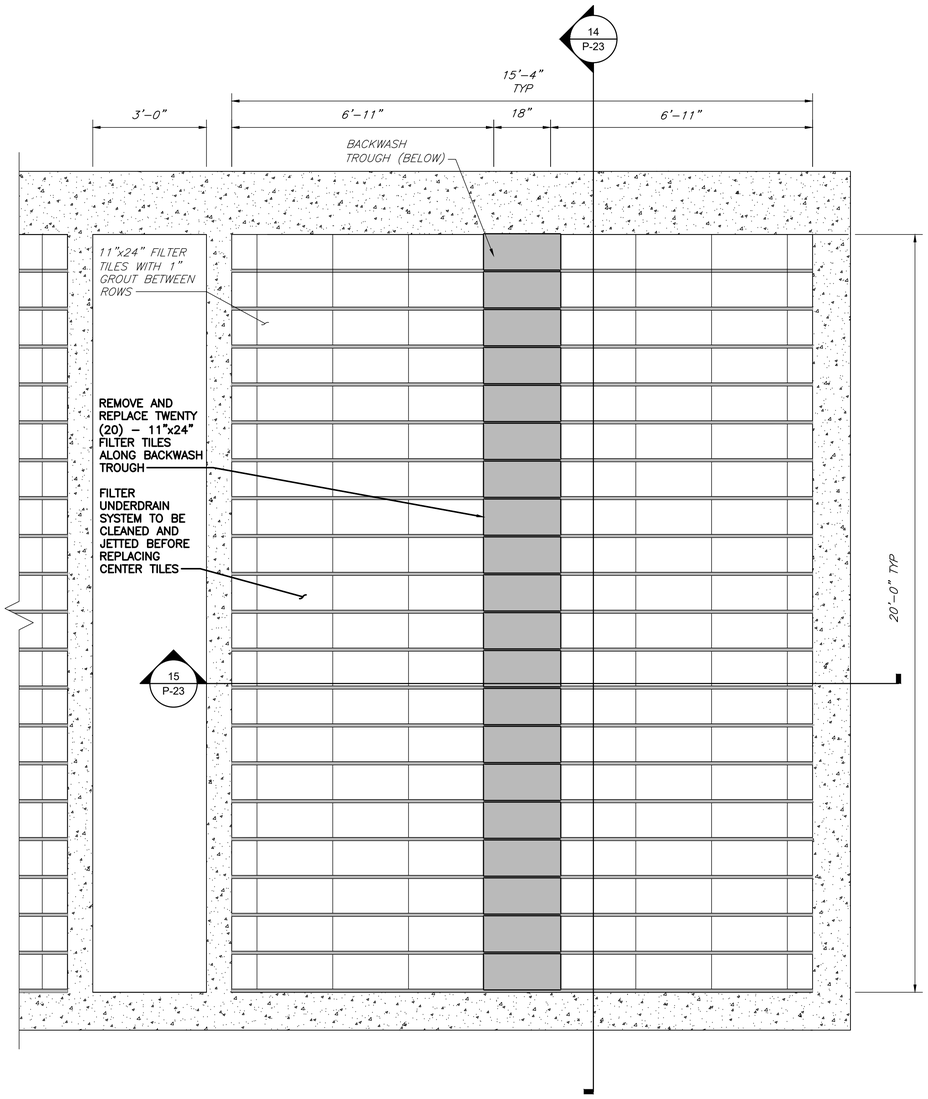
MAIN & FILTER BLDG PROCESS FILTER AIR SCOUR PLAN

P-21

SHEET: OF

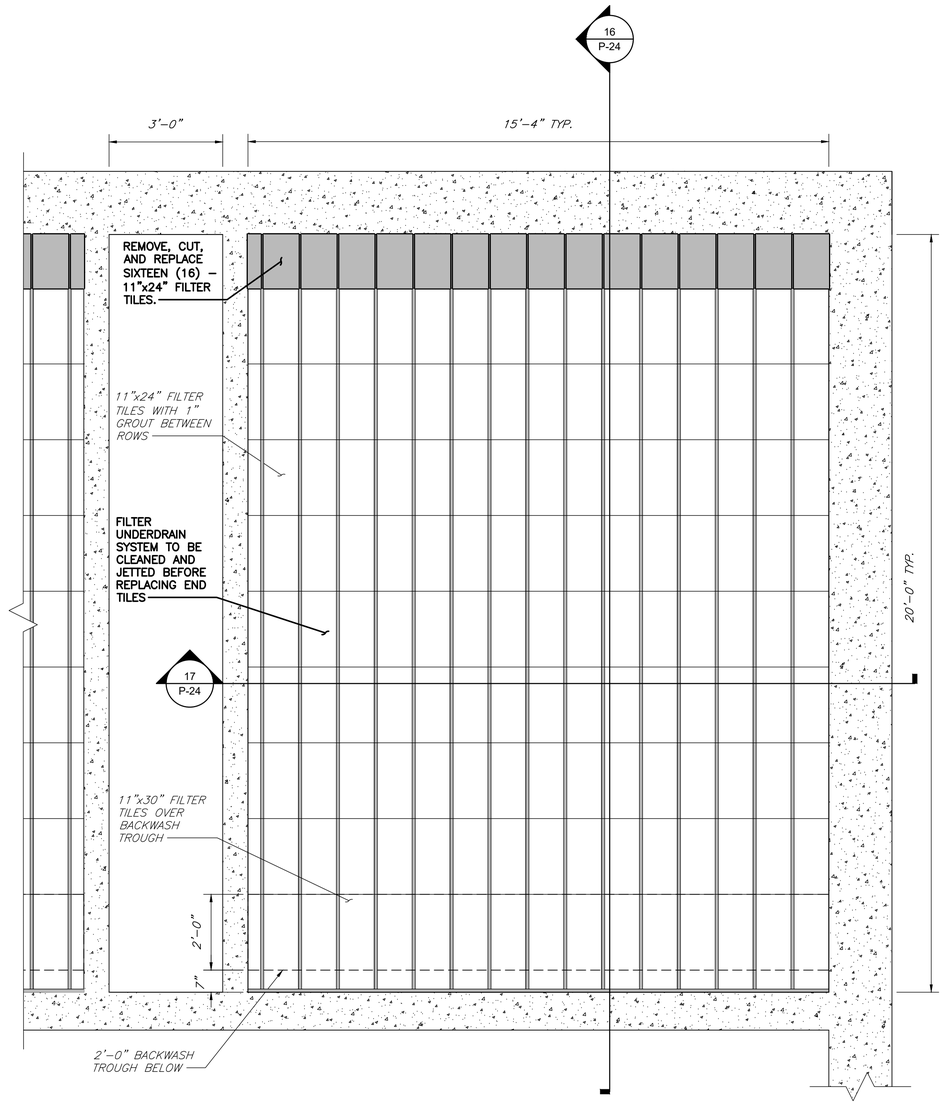
P:\PR58982\Cadd\Sheets\P-21 MAIN & FILTER BLDG PROCESS FILTER AIR SCOUR PLANS.dwg 2/2/2022 9:43:54 AM Paul Emerson

PLOTTED: 4/15/2022 12:42:01 PM



FILTER UNDERDRAIN PLAN (FILTERS 1-4)

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



FILTER UNDERDRAIN PLAN (FILTERS 5 & 6)

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

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

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SUGAR CREEK
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

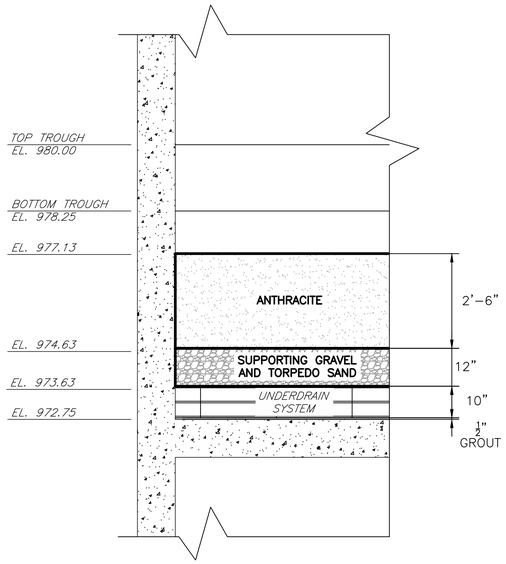
MAIN & FILTER BLDG PROCESS FILTER UNDERDRAIN PLANS

P-22

SHEET: OF

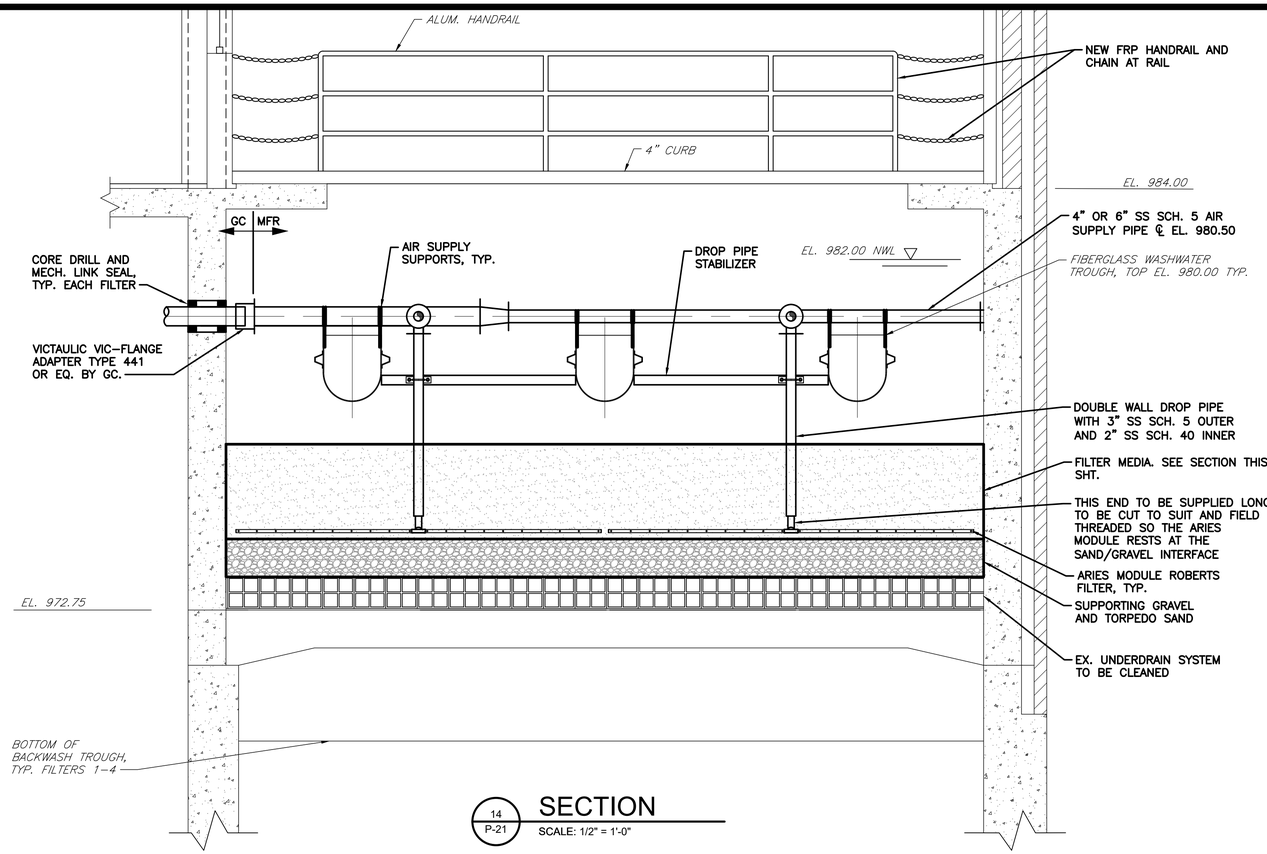
P:\PR58982\Cadd\Sheets\P-22 MAIN & FILTER BLDG PROCESS FILTER UNDERDRAIN PLANS.dwg 2/2/2022 9:23:58 AM Paul Emerson

PLOTTED: 4/15/2022 12:42:36 PM



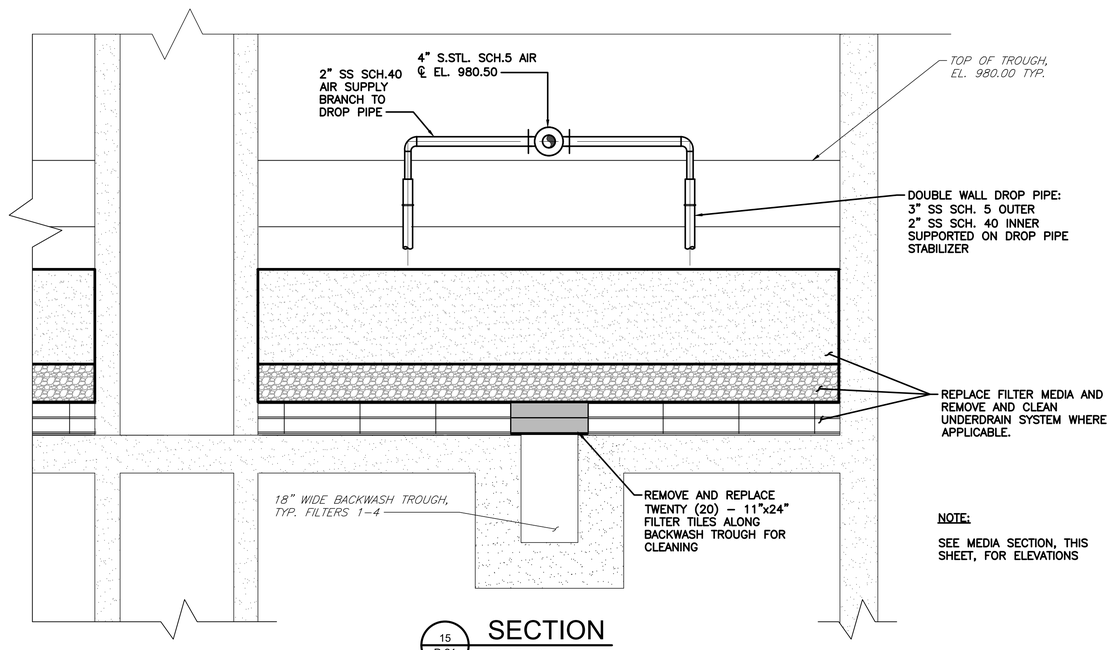
FILTER MEDIA SECTION (FILTERS 1-4)

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



14 / P-21 SECTION

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



15 / P-21 SECTION

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

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100 WEST ERIE STREET
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

MAIN BUILDING
PROCESS
FILTER
SECTIONS

P-23

SHEET: OF

P:\PR58982\Cadd\Sheets\P-23 MAIN BUILDING PROCESS FILTER SECTIONS.dwg 2/2/2022 10:14:42 AM Paul Emerson

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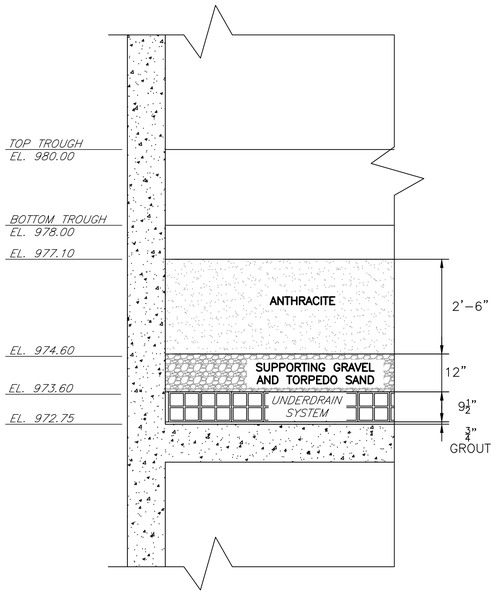
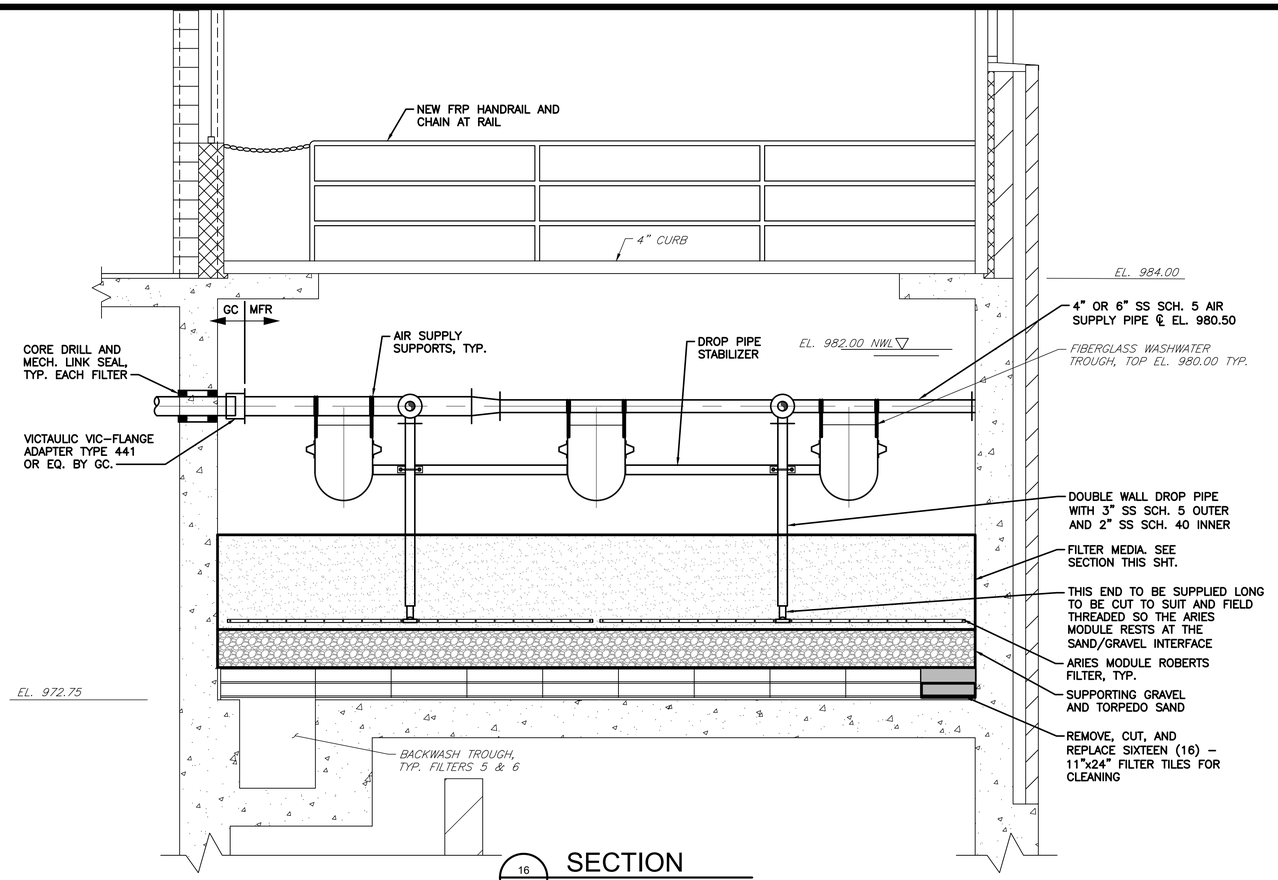


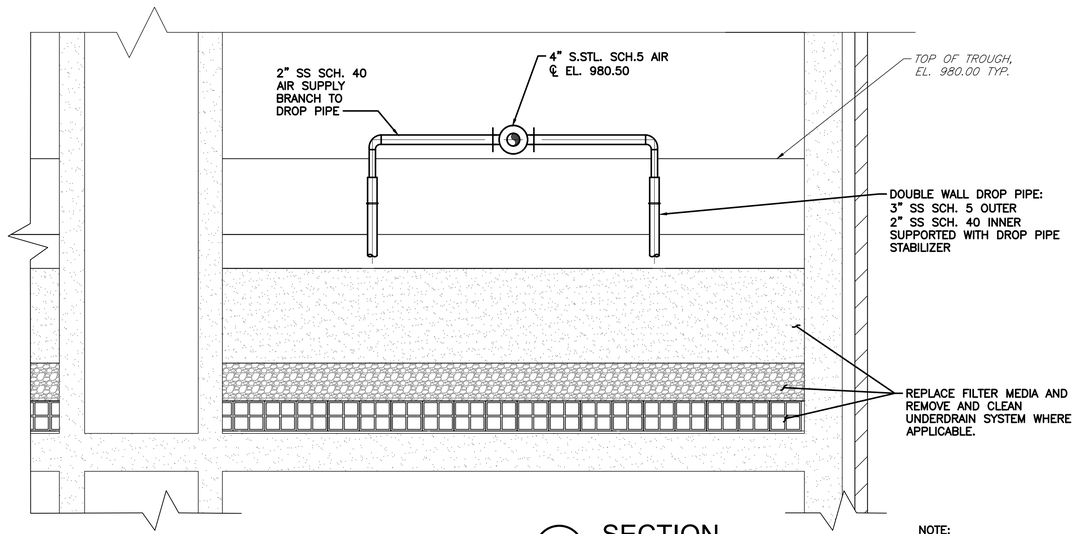
FILTER MEDIA SECTION (FILTERS 5 & 6)

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



16 / P-21 SECTION

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



17 / P-21 SECTION

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

NOTE:

SEE MEDIA SECTION, THIS SHEET, FOR ELEVATIONS

BURGESS & NIPLE
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APPROVED BY:	CMS
SCALE:	AS NOTED

FILTER BUILDING
PROCESS
FILTER
SECTIONS

P-24

SHEET: OF

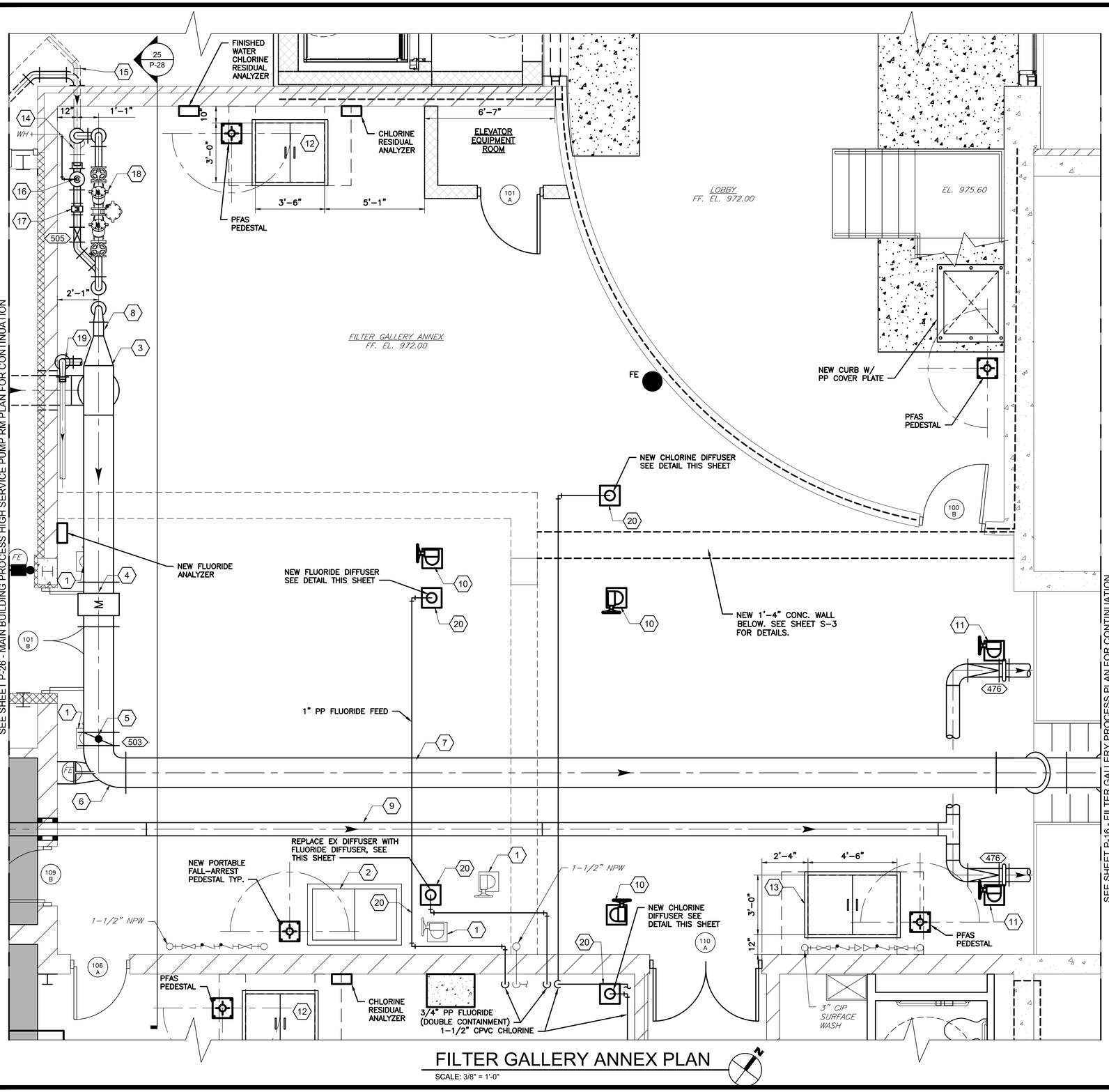
P:\PR58982\Cadd\Sheets\P-24 FILTER BUILDING PROCESS FILTER SECTIONS.dwg 2/16/2022 2:45:03 PM Paul Emerson

PLOTTED: 4/15/2022 12:43:47 PM

SEE SHEET P-26 - MAIN BUILDING PROCESS HIGH SERVICE PUMP RM PLAN FOR CONTINUATION

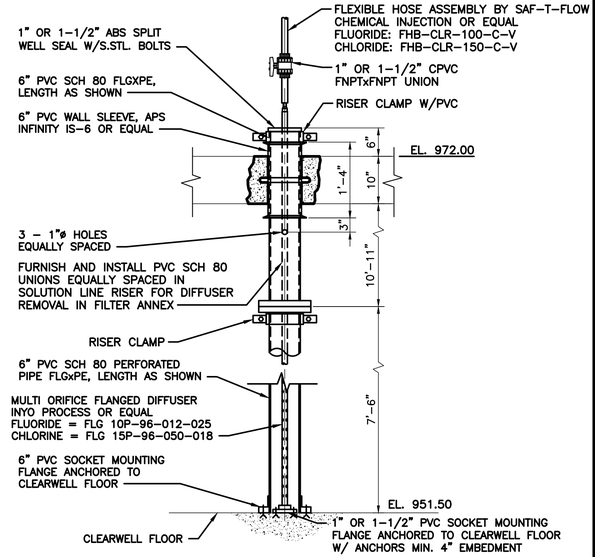
SEE SHEET P-16 - FILTER GALLERY PROCESS PLAN FOR CONTINUATION

P:\PR58982\Cadd\Sheets\P-25 MAIN BUILDING PROCESS FILTER GALLERY ANNEX PLAN.dwg 4/14/2022 4:12:56 PM Paul Emerson



FILTER GALLERY ANNEX PLAN

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



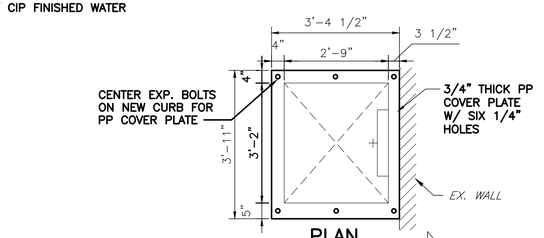
FLUORIDE AND CHLORINE DIFFUSER DETAIL

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

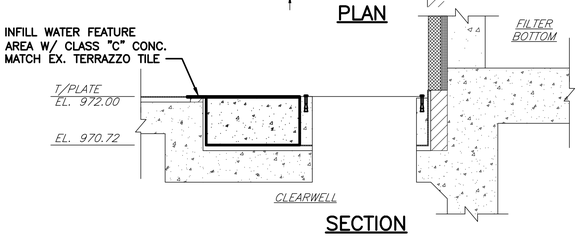
NOTE: ALL HARDWARE SHALL BE CORROSION RESISTANT FOR SUBMERGED SERVICE IN CHLORINATED WATER. TITANIUM OR APPROVED EQUAL RESISTANCE SHALL BE PROVIDED. NON SUBMERGED SHALL BE ST.STL.

(X) CODED NOTES:

1. EX. 24" BFLY VALVE OPERATOR
2. EX. 51"x31" CLEARWELL ACCESS HATCH
3. NEW 18" STL. TEE, 18"x6" REDUCER, AND 6"X4" RED. ELBOW TO CONNECT TO PLANT WATER
4. NEW 18" MAG METER
5. NEW 18" BFLY VALVE
6. NEW 18" STL. 90° BEND FLxPE
7. NEW 18" STL. WASHWATER. C/L EL.981.50
8. NEW 4" STL. WATER
9. NEW 8" S.STL. SCH.5 AIR SCOUR, C/L EL. 982.53
10. NEW 36" BFLY VALVE FLOOR STAND AND BEVEL GEAR W/ HANDWHEEL
11. NEW 30" BFLY VALVE FLOOR STAND AND BEVEL GEAR W/ HANDWHEEL
12. NEW 42"x36" BILCO TYPE SM FLOOR DOOR OR EQ. SEE STRUCTURAL SHEETS FOR DETAILS.
13. NEW 54"x36" BILCO TYPE SM FLOOR DOOR OR EQ. SEE STRUCTURAL SHEETS FOR DETAILS.
14. EX. 4" CIP PLANT WATER
15. EX. 4" CIP FINISHED WATER
16. CONNEXT TO EX. HOSE BIBB
17. NEW 4" MAG METER
18. NEW 4" WATTS SERIES 909 REDUCED PRESSURE ZONE ASSEMBLY BACKFLOW PREVENTOR, OR EQUAL, TYP. FOR 4. SEE SECTION FOR DETAILS.
19. CONNECT NEW 4" DIP WATER TO EX. 3" CIP SURFACE WASH WITH 4"x3" DIP RED. BEND W/FLANGED COUPLING ADAPTER.
20. INSTALLL INJECTION QUILL WITH FLEXIBL HOSE BY SAF-T-FLOW CHEMICAL INJECTION OR EQUAL.
    FLEXIBLE HOSE: FTA-PP-050-C-V
    QUILL: EB-145-B-CPVC-2-CV-V



PLAN



SECTION

POLYPROPYLENE COVER FOR ACCESS HATCH FRAME

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

BURGESS & NIPLE
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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	3/8" = 1'-0"

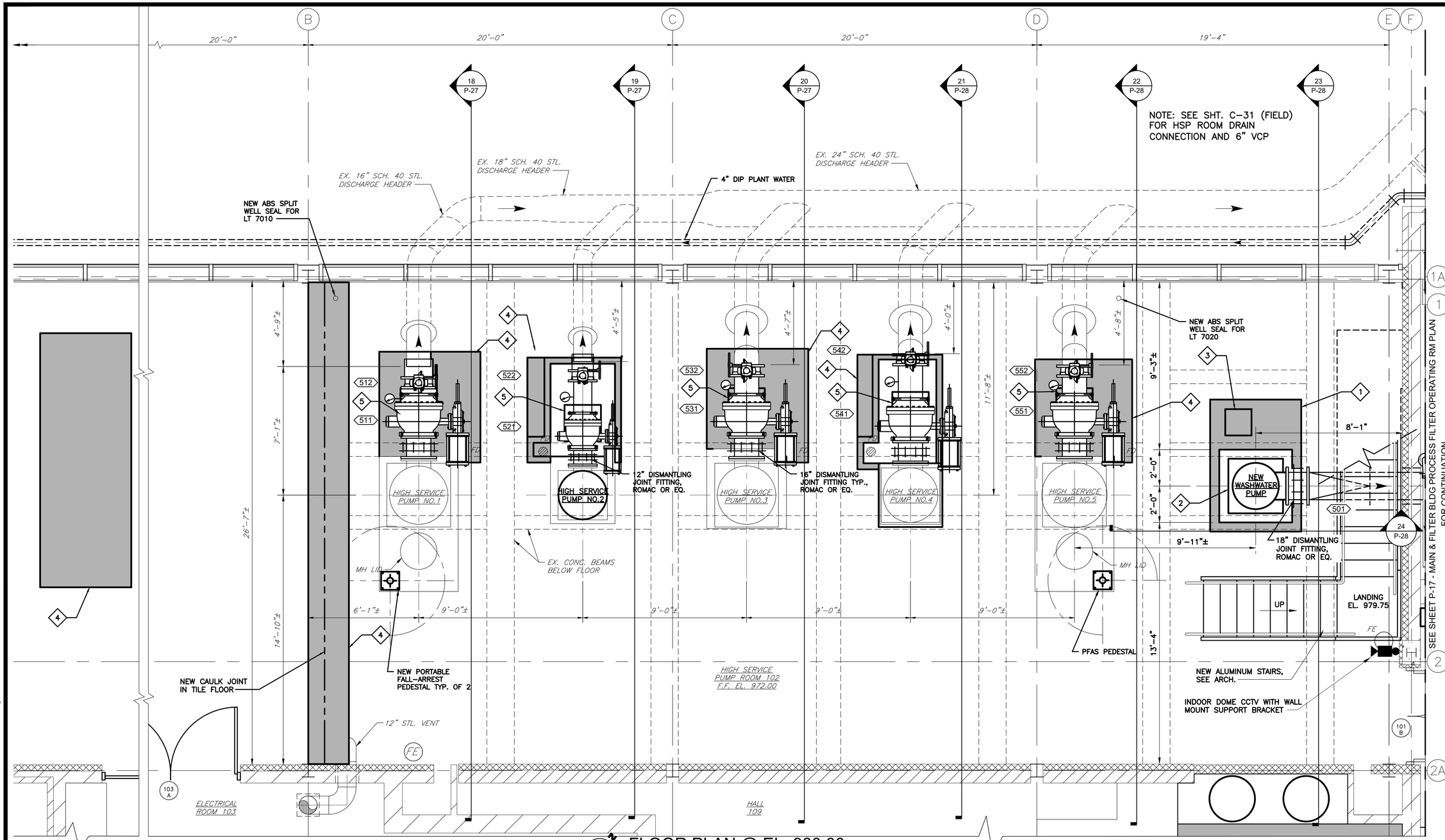
MAIN BUILDING PROCESS FILTER GALLERY ANNEX PLAN

P-25

SHEET: OF

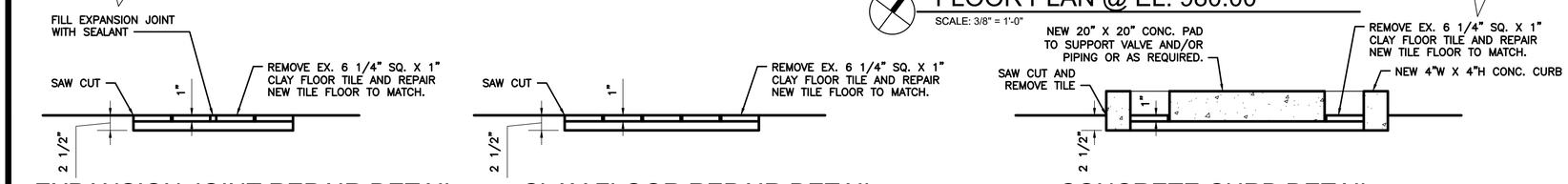
PLOTTED: 4/15/2022 12:44:33 PM

P:\PR58982\Cadd\Sheets\P-26 MAIN BUILDING PROCESS HIGH SERVICE PUMP RM PLAN.dwg 4/14/2022 4:18:11 PM Paul Emerson



FLOOR PLAN @ EL. 980.00

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



EXPANSION JOINT REPAIR DETAIL

SCALE: 1" = 1'-0"

CLAY FLOOR REPAIR DETAIL

SCALE: 1" = 1'-0"

CONCRETE CURB DETAIL

SCALE: 1" = 1'-0"

1. PLUG CONCRETE FLOOR OPENING AND REPAIR CLAY TILE FLOOR TO MATCH EXISTING TERRAZZO TILE.
2. CORE DRILL NEW OPENING IN FLOOR FOR BACKWASH PUMPS. SAW CUT AND REMOVE CLAY TILE TO INSTALL NEW PUMP BASES.
3. FILL OPENING IN EXISTING SLAB, SEE STRUCTURAL DETAILS. MATCH EX. TERRAZZO TILE.
4. SAW CUT CLAY TILE FLOOR AND REMOVE TILE. INSTALL NEW TILE TO MATCH EX. FLOOR.
5. NEW 20" X 20" CONC. PAD TO SUPPORT VALVE AND/OR PIPING OR AS REQUIRED (TYP EACH PUMP)

BURGESS & NIPLE
100 WEST ERIE STREET
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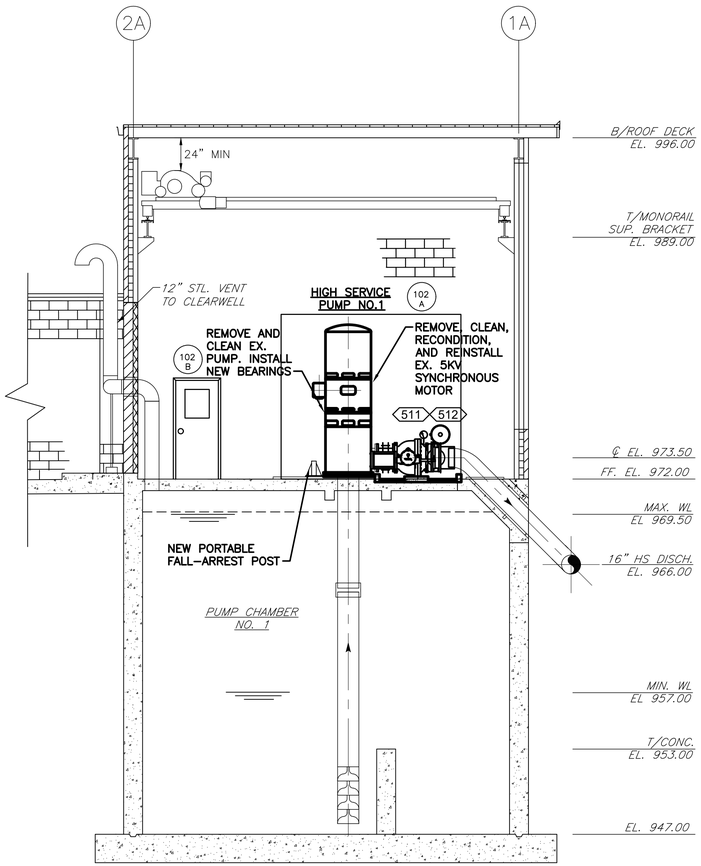
SCALE:	3/8"=1'-0"

MAIN BUILDING PROCESS HIGH SERVICE PUMP RM PLAN

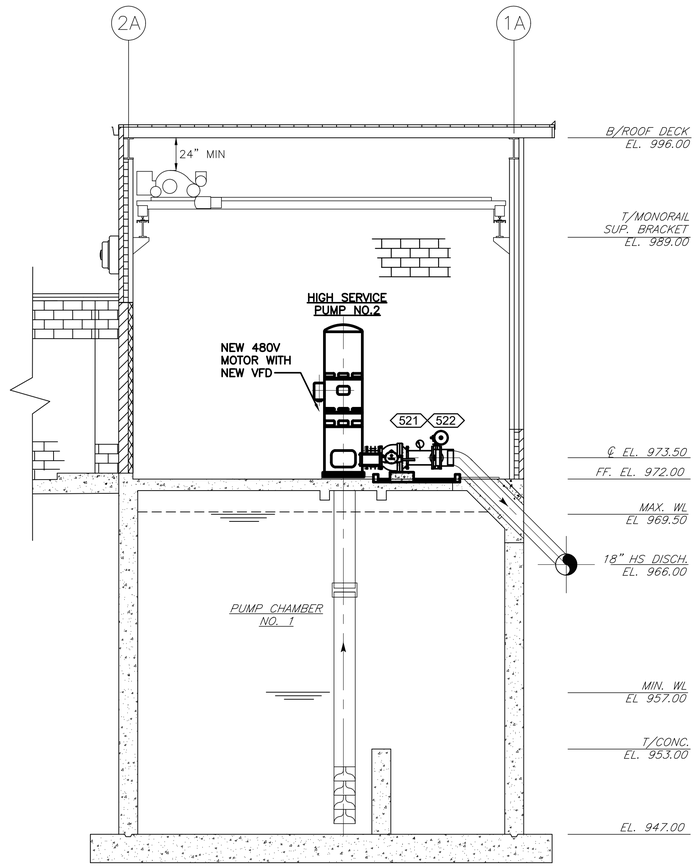
P-26

SHEET: OF

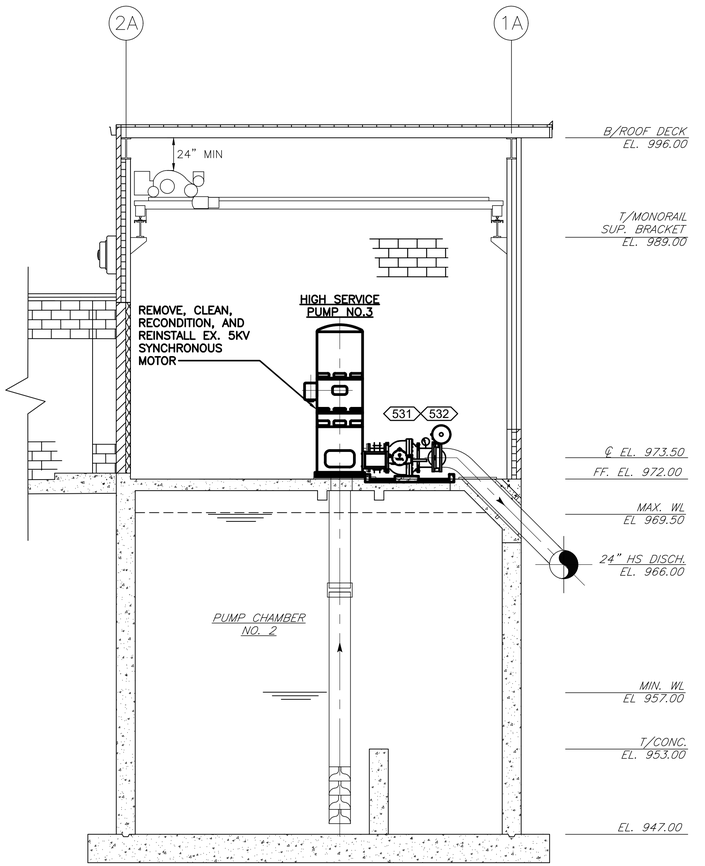
PLOTTED: 4/15/2022 12:45:08 PM



18 P-26 SECTION
SCALE: 3/16" = 1'-0"



19 P-26 SECTION
SCALE: 3/16" = 1'-0"



20 P-26 SECTION
SCALE: 3/16" = 1'-0"

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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JOB NO:	PR58982
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DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	AS NOTED

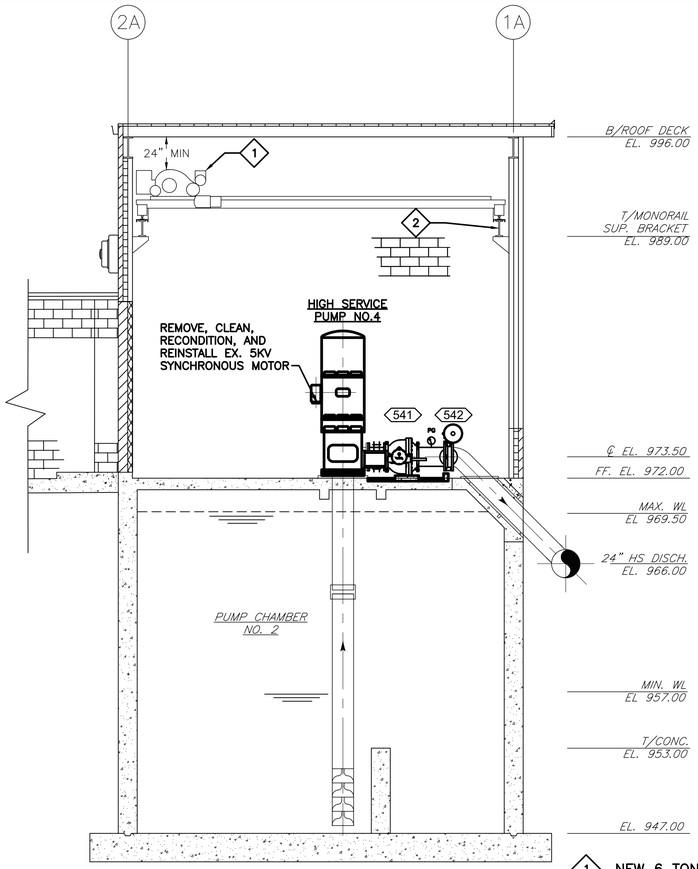
MAIN BUILDING
PROCESS
HIGH SERVICE
PUMP RM
SECTIONS

P-27

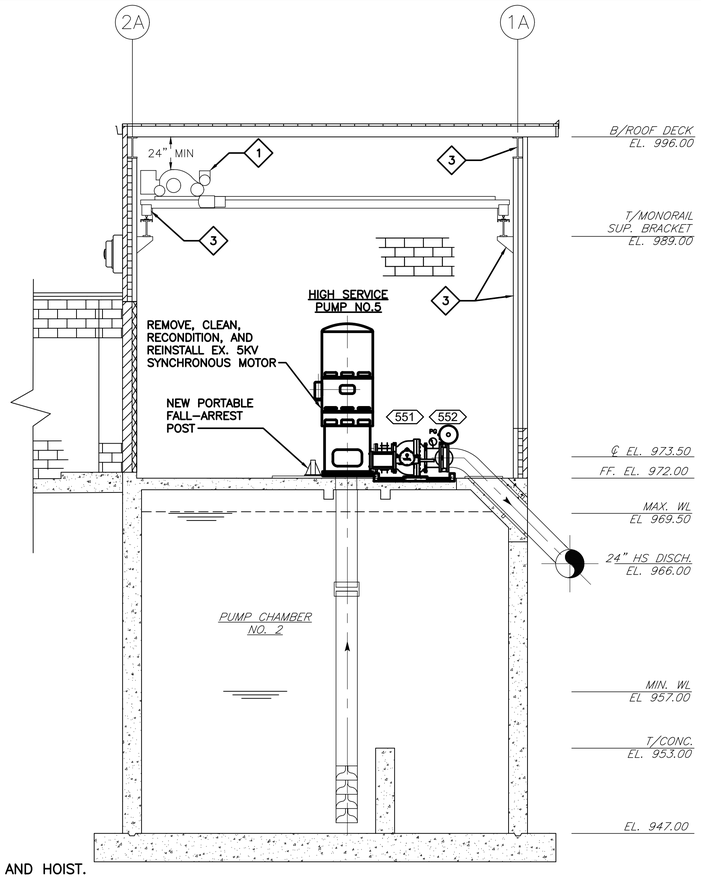
SHEET: OF

P:\PR58982\Cadd\Sheets\P-27 MAIN BUILDING PROCESS HIGH SERVICE PUMP RM SECTIONS.dwg 4/13/2022 12:32:55 PM Paul Emerson

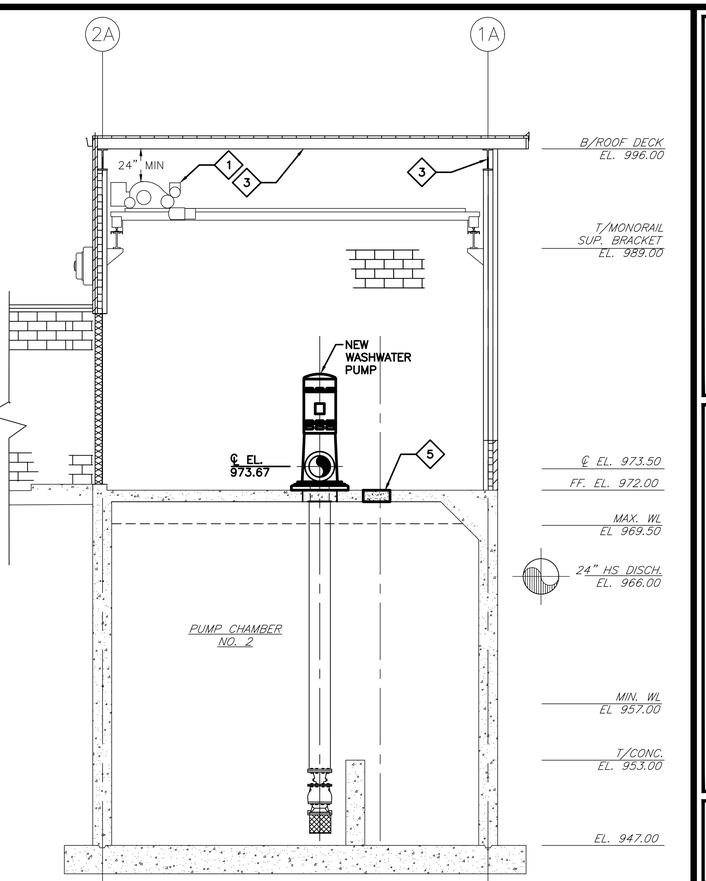
PLOTTED: 4/15/2022 12:45:53 PM



21 P-26 SECTION
SCALE: 3/16" = 1'-0"

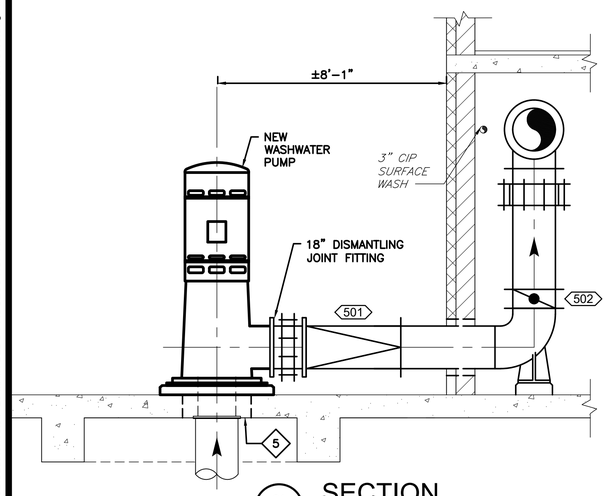


22 P-26 SECTION
SCALE: 3/16" = 1'-0"

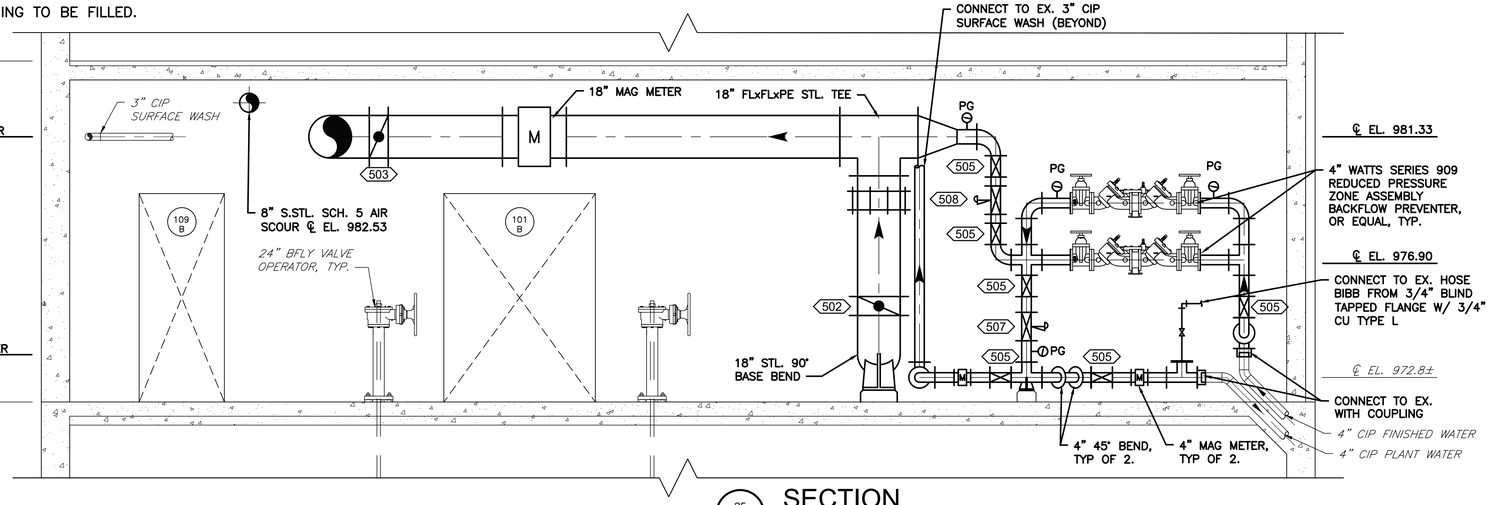


23 P-26 SECTION
SCALE: 3/16" = 1'-0"

1. NEW 6 TON BRIDGE AND HOIST.
2. NEW ASCE RAILS BY BRIDGE CRANE SUPPLIER.
3. CLEAN AND PAINT NEW AND EXISTING STRUCTURAL STEEL FRAMING
4. PAINT CEILING PER SPEC. 09 90 00 PAINTING
5. EXISTING OPENING TO BE FILLED.



24 P-26 SECTION
SCALE: 3/8" = 1'-0"



25 P-25 SECTION
SCALE: 3/8" = 1'-0"

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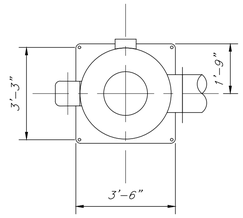
MAIN BLDG
PROCESS
HSP RM & FILTER
GALLERY ANNEX
SECTIONS

P-28

SHEET: OF

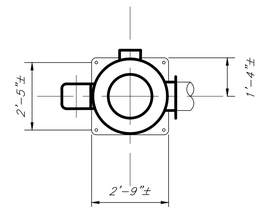
P:\PR58982\Cadd\Sheets\P-28 MAIN BLDG PROCESS HSP RM & FILTER GALLERY ANNEX SECTIONS.dwg 4/14/2022 4:24:05 PM Paul Emerson

PLOTTED: 4/15/2022 12:46:06 PM



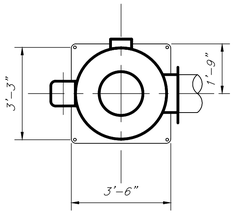
HS PUMP #1 PLAN

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



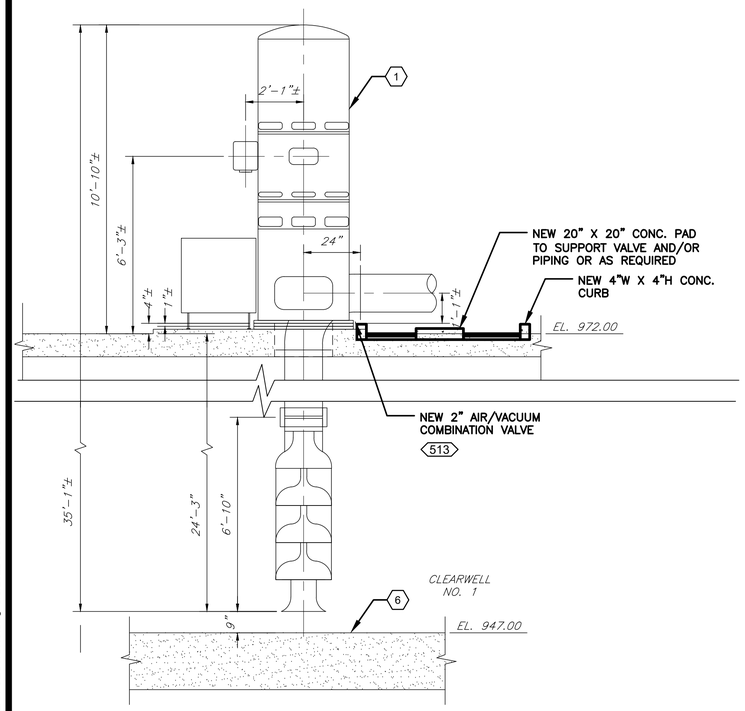
HS PUMP #2 PLAN

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



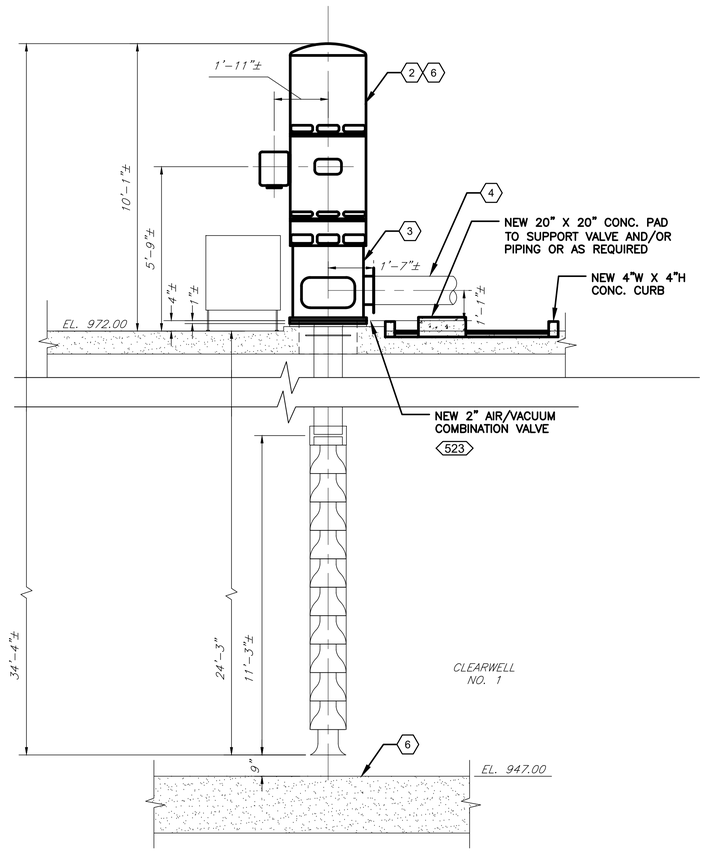
HS PUMP #3 PLAN

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



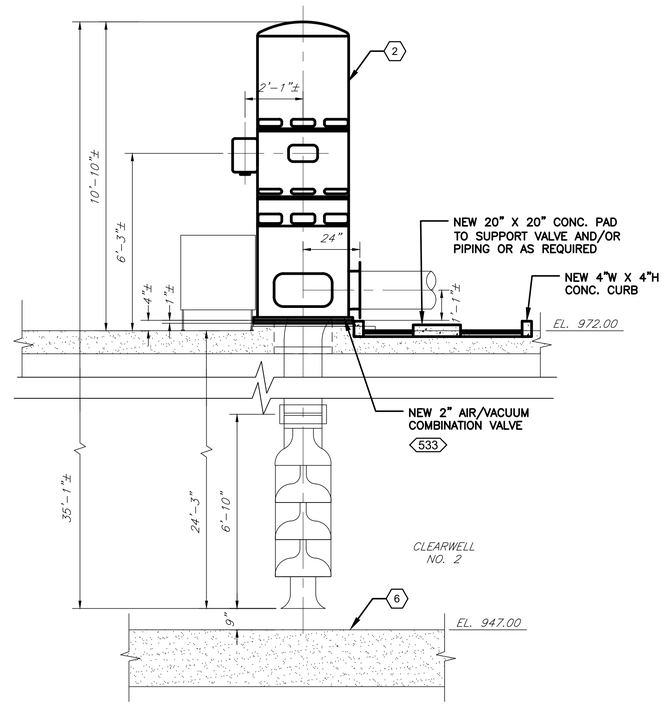
HS PUMP #1 SECTION

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



HS PUMP #2 SECTION

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



HS PUMP #3 SECTION

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

(#) CODED NOTES:

1. NO NEW TO BE PERFORMED ON HIGH SERVICE PUMP #1. MOTOR HAS BEEN RECONDITIONED. NEW PUMP BASE/HEAD HAVE BEEN REPLACED.
2. POWER TO PUMP MOTOR SHALL BE DISCONNECTED BY GC, AND PUMP MOTOR REMOVED BY PUMP SERVICES COMPANY, LOADED, AND TRANSPORTED TO MOTOR REPAIR FACILITY FOR CLEANING, INSPECTION, AND REFURBISHING, AND RETURNED TO PLANT, UNLOADED AND INSTALLED BY PUMP SERVICE COMPANY AND RE-POWERED BY GC.
3. PUMP SERVICES COMPANY TO REMOVE PUMP COLUMN, SHAFTING, BOWL ASSEMBLY, AND PUMP BASE/HEAD MOTOR STAND. TO BE REPLACED WITH NEW PUMP BASE AND MOTOR STAND TO MATCH EXISTING UNIT, AND REINSTALLED USING EX. PUMP COLUMN AND SHAFTING.
4. FOR HIGH SERVICE PUMP #1-#5, PIPE COUPLINGS, SURGE RELIEF VALVES, BUTTERFLY VALVE, PIPING, AND FITTINGS SHALL BE REMOVED BY GC AND REPLACED. ADJUST PIPING AND CONNECTORS TO MATCH LAYING DIMENSIONS FROM EXISTING PUMP DISCHARGED FLANGE TO DISCHARGE FITTING EMBEDDED IN CONC. FLOOR.
5. HIGH SERVICE PUMP MOTOR NO. 2 TO BE REMOVED AND REPLACED WITH NEW 250 HP, 480 V., 3 PHASE, 60 HZ MOTORS. PROVIDED BY BY GC AND REINSTALLED BY PUMP SERVICE COMPANY. GC TO PROVIDE NEW VFD, CONDUIT, AND CABLE, AND RE-ENERGIZE MOTOR.
6. GC TO DRAIN CLEARWELL, REMOVE APPROX. 1" AVG. DEPTH OF SILT, PRESSURE WASH WALLS, CEILING FLOOR, AND PROVIDE ACCESS FOR ENGINEER TO INSPECT CONDITIONS OF CONCRETE.
7. REMOVE CLAY FLOOR TILE AND GROUT AND CUT 24" DIA. OPENING IN CONC. FLOOR TO INSTALL NEW BACKWASH PUMP.
8. GC TO FURNISH AND INSTALL NEW BACKWASH PUMP.

NOTE: AIR/VACUUM COMBINATION VALVES IN MITER PIPE FROM PUMP COLUMN IN PEDASTAL BASE. MITER PIPE NOT SHOWN.

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SCALE:	AS NOTED

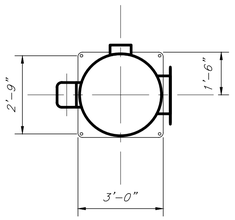
MAIN BUILDING
PROCESS
HIGH SERVICE
PUMP 1-3
PLAN-SECTIONS

P-29

SHEET: OF

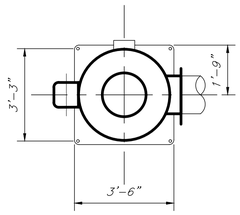
P:\PR58982\Cadd\Sheets\P-29 MAIN BUILDING PROCESS HIGH SERVICE PUMP 2-3 PLAN-SECTIONS.dwg 3/9/2022 5:15:06 PM Paul Emerson

PLOTTED: 4/15/2022 12:46:16 PM



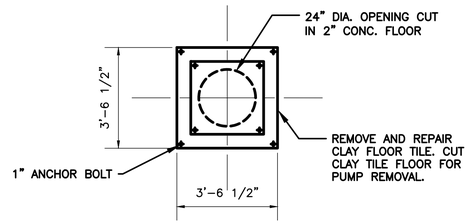
HS PUMP #4 PLAN

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



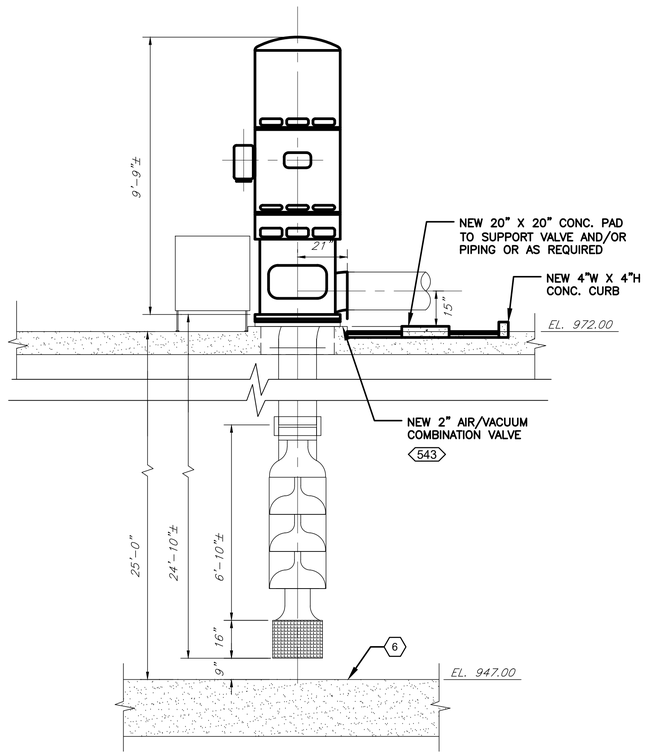
HS PUMP #5 PLAN

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



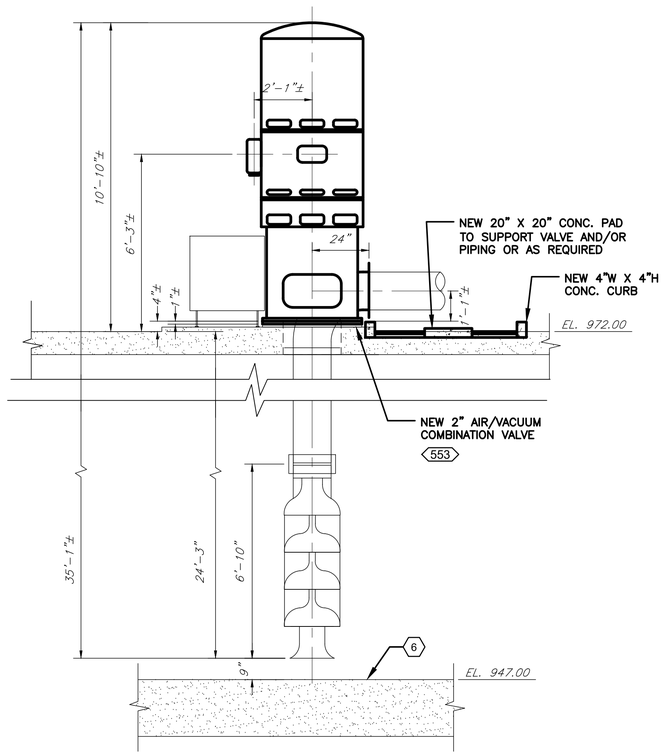
NEW BACKWASH PUMP PLAN

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



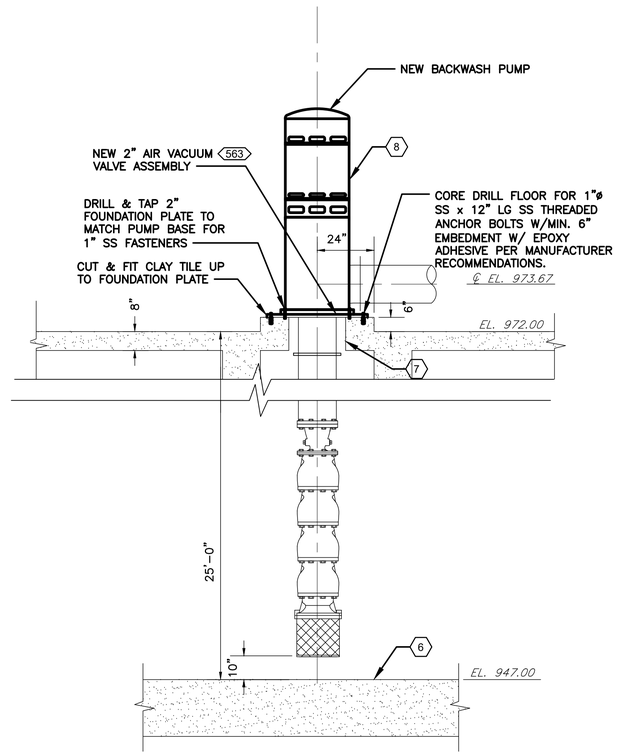
HS PUMP #4 SECTION

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



HS PUMP #5 SECTION

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



NEW BACKWASH PUMP SECTION

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

(#) CODED NOTES:

SEE SHEET P-29 FOR CODED NOTES.

NOTE: AIR/VACUUM COMBINATION VALVES IN MITER PIPE FROM PUMP COLUMN IN PEDASTAL BASE. MITER PIPE NOT SHOWN.

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APPROVED BY:	CMS
SCALE:	AS NOTED

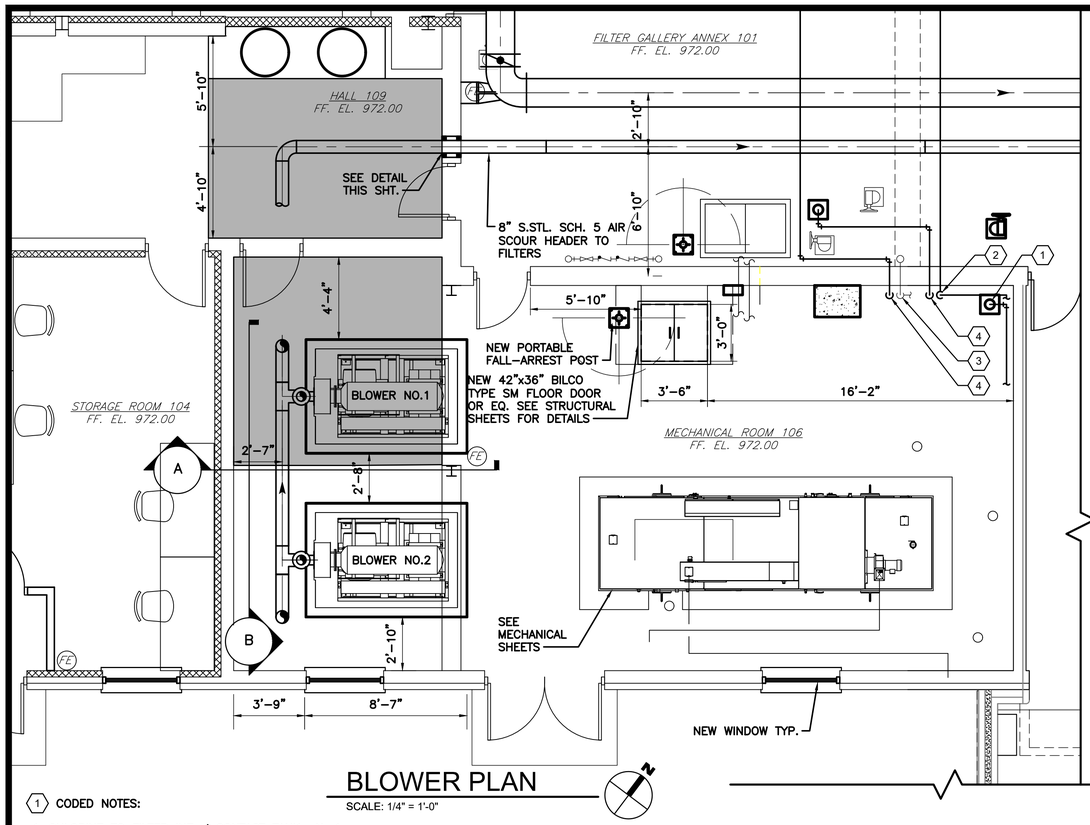
MAIN BUILDING PROCESS
HSP 4-5 & BW PUMP PLAN-SECTIONS

P-30

SHEET: OF

P:\PR58982\Cadd\Sheets\P-30 MAIN BUILDING PROCESS HSP 4-5 & BW PUMP PLAN-SECTIONS.dwg 3/9/2022 4:25:09 PM Paul Emerson

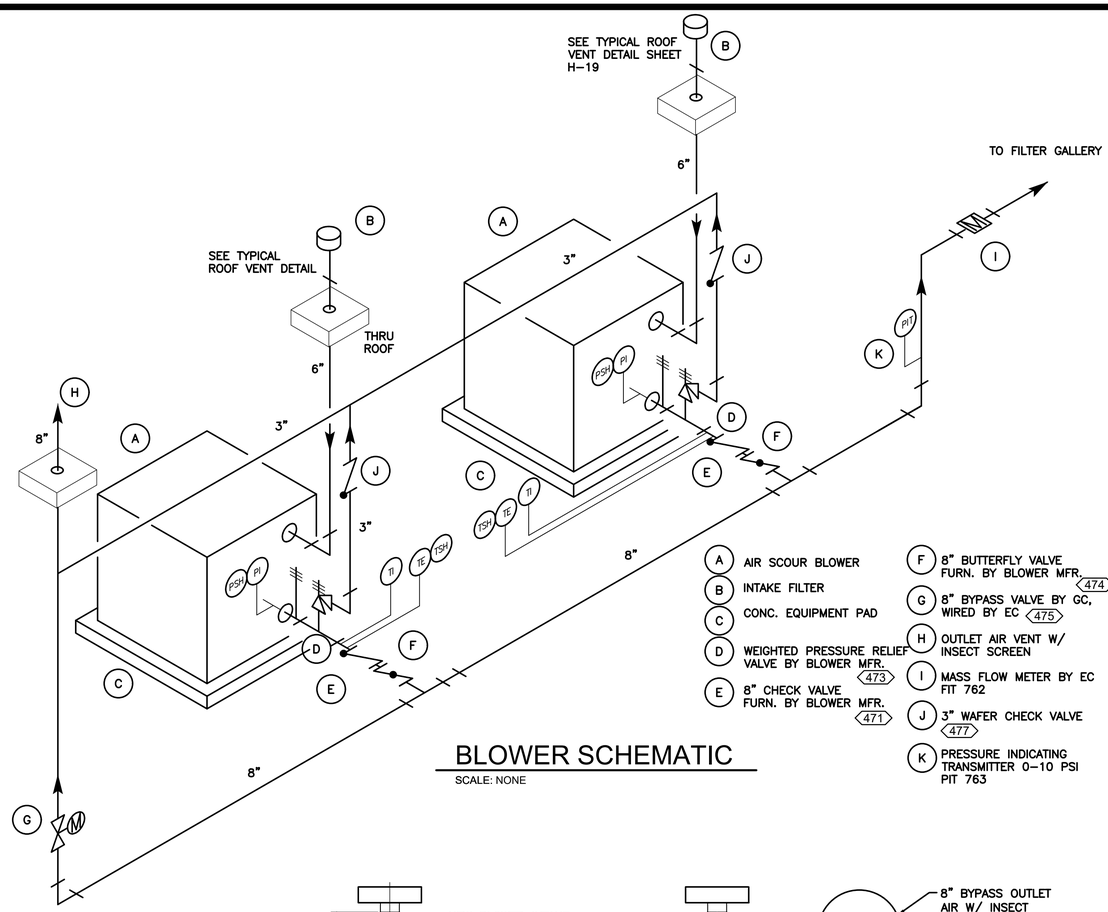
PLOTTED: 4/15/2022 12:46:59 PM



BLOWER PLAN

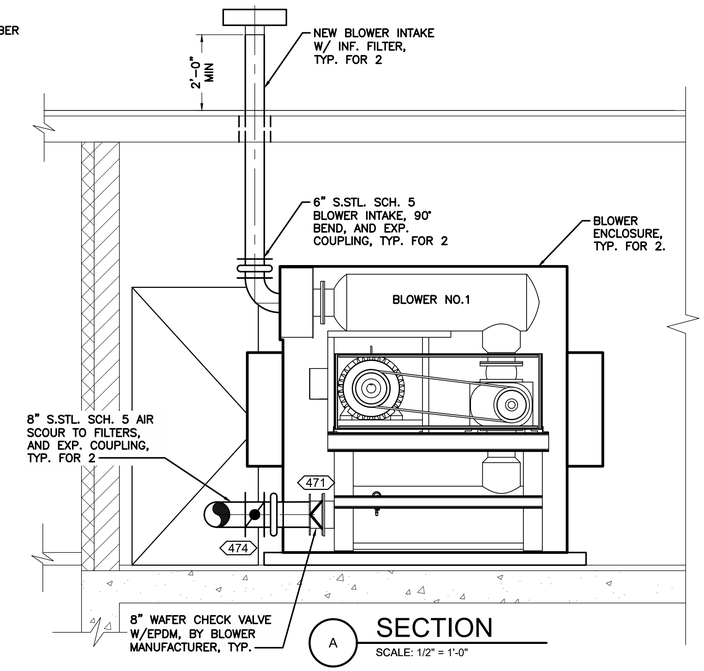
SCALE: 1/4" = 1'-0"

1. CODED NOTES:
1. CHLORINE TO FILTER INF / CONTACT TANK No.1
2. CHLORINE TO CONTACT TANK No. 2
3. PLANT WATER/ SURFACE WASH
4. FLUORIDE TO EX. CHLORINATION CHAMBER



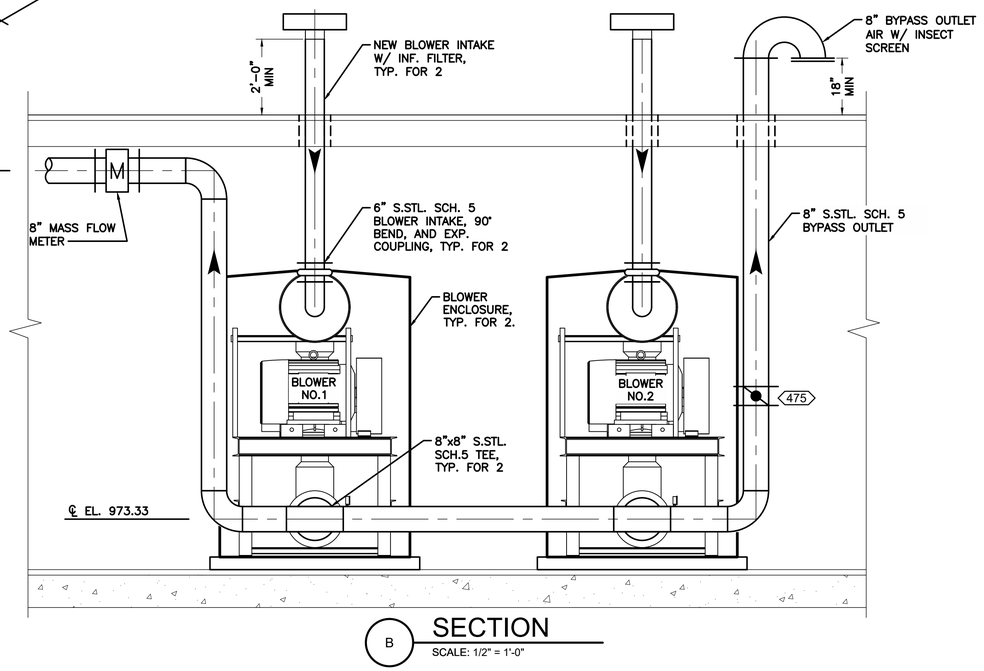
BLOWER SCHEMATIC

SCALE: NONE



SECTION A

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



SECTION B

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

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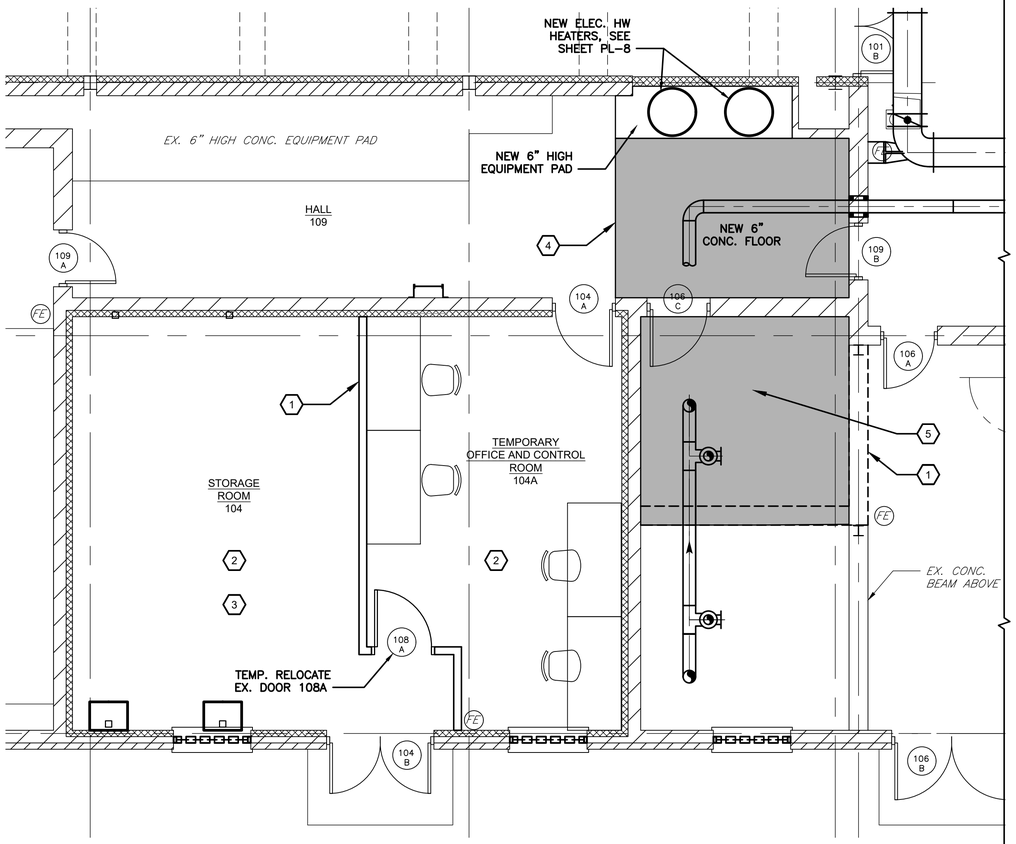
MAIN BUILDING PROCESS MECHANICAL RM PLAN-SECTION-SCHEMATIC

P-31

SHEET: OF

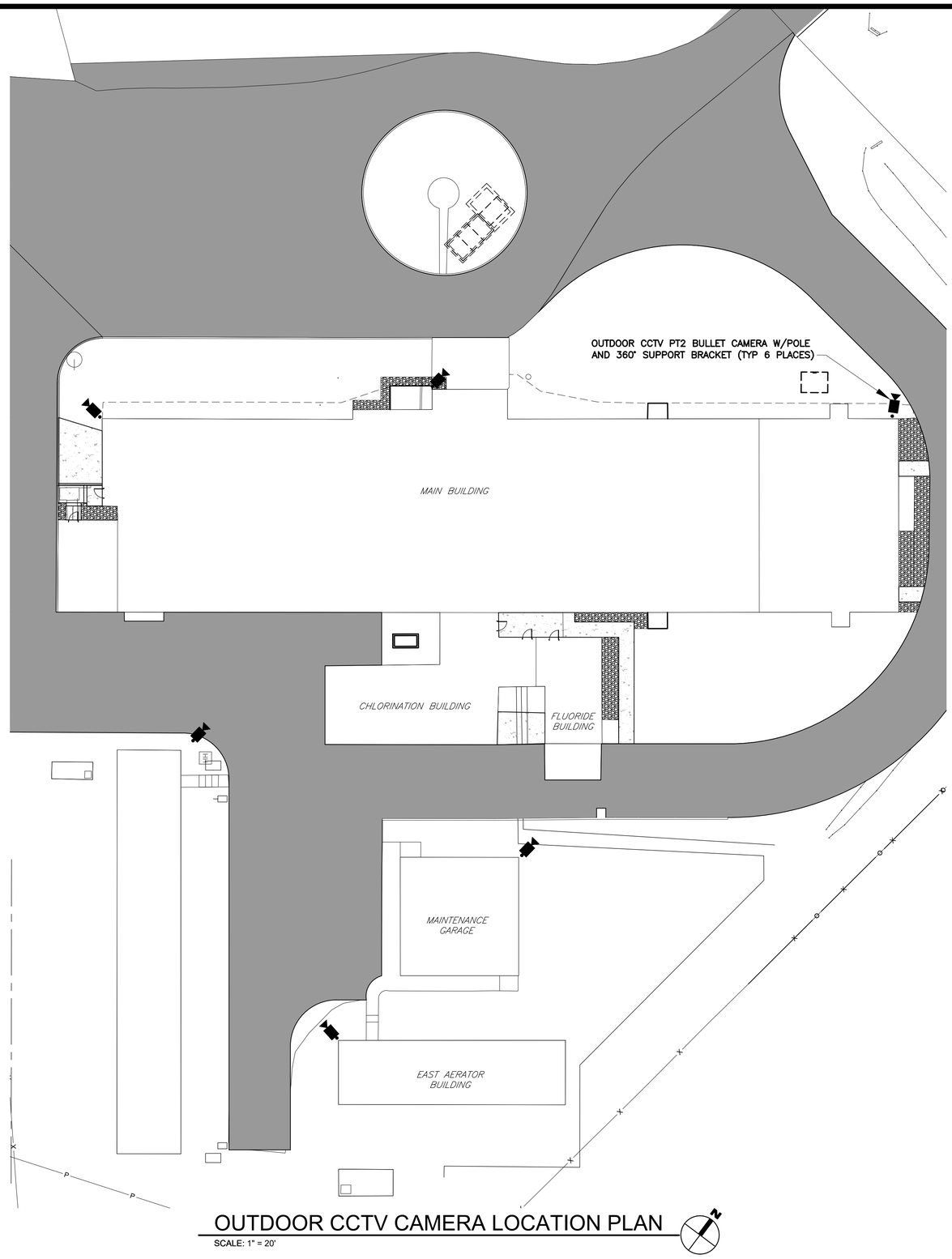
P:\PR58982\Cadd\Sheets\P-31 MAIN BUILDING PROCESS MECHANICAL RM PLAN-SECTION- SCHEMATIC.dwg 4/14/2022 4:56:08 PM Paul Emerson

PLOTTED: 4/15/2022 12:47:35 PM



TEMPORARY SCADA CONTROL ROOM PLAN

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



OUTDOOR CCTV CAMERA LOCATION PLAN

SCALE: 1" = 20'

(#) CODED NOTES:

1. NEW TEMPORARY WALL FOR CONTROL ROOM.
2. REMOVE GYPSUM CEILING IN STORAGE ROOM 104.
3. REPAIR CRACKS IN CONC. FLOOR AND EPOXY COAT AFTER TEMP. CONTROL ROOM REMOVED.
4. SAW CUT EX. 6" CONC. FLOOR AND INSTALL NEW 6" CONC. FLOOR TO MATCH ELEVATIONS AT DOORS.
5. REMOVE CLAY TILE BLOCK FLOOR AND COVE IN EX. BATTERY ROOM. REPAIR CONCRETE FLOOR AND EPOXY COAT NEW MECHANICAL ROOM.

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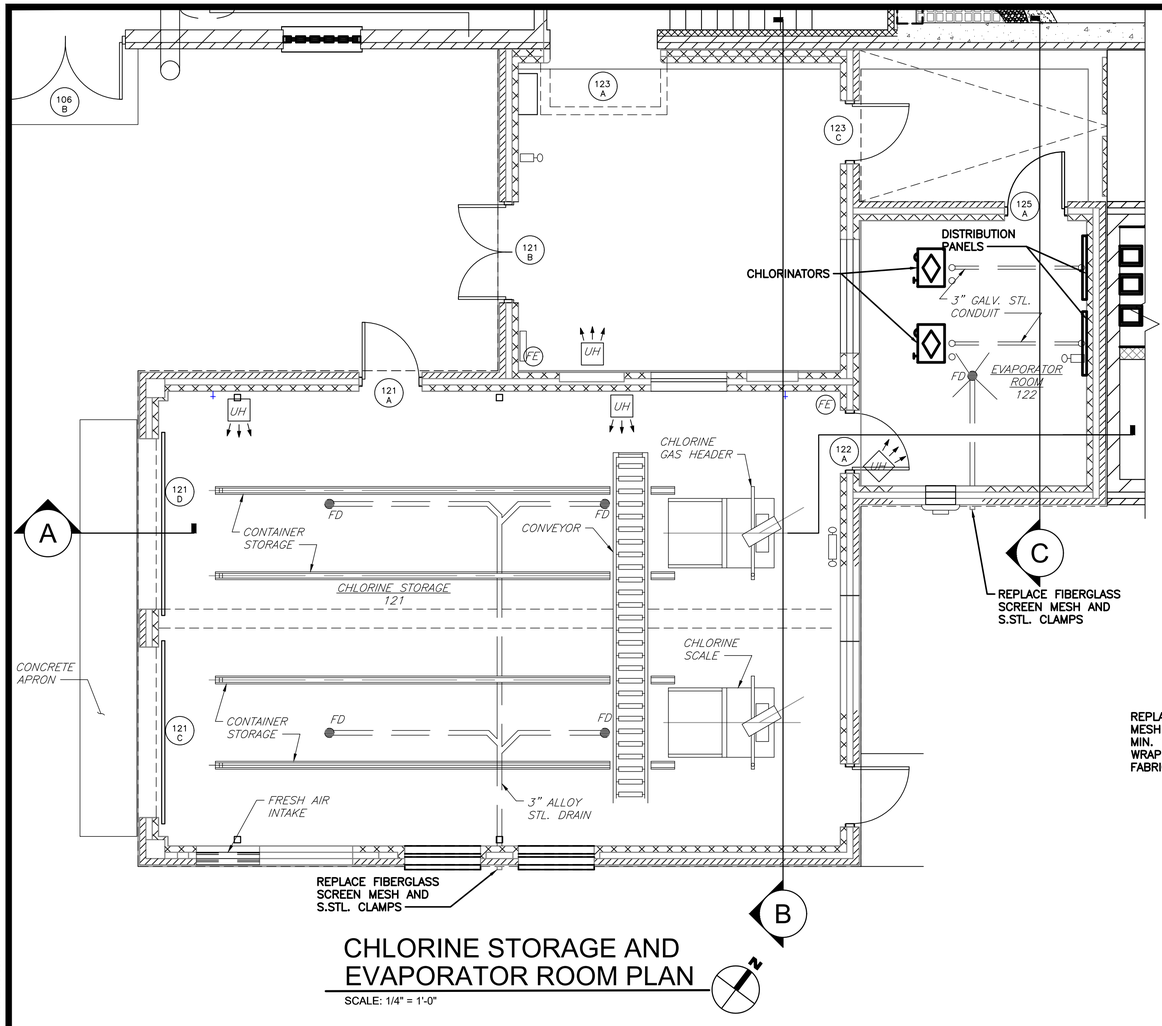
MAIN BUILDING PROCESS STORAGE RM PHASING PLAN

P-32

SHEET: OF

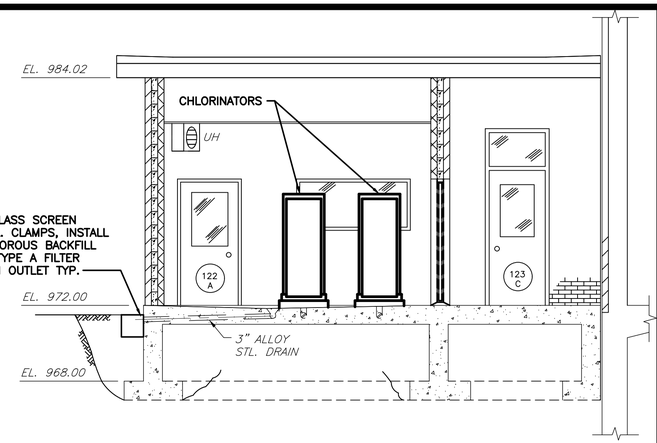
P:\PR58982\Cadd\Sheets\P-32 MAIN BUILDING PROCESS STORAGE RM PHASING PLAN.dwg 4/14/2022 5:10:45 PM Paul Emerson

PLOTTED: 4/15/2022 12:48:12 PM



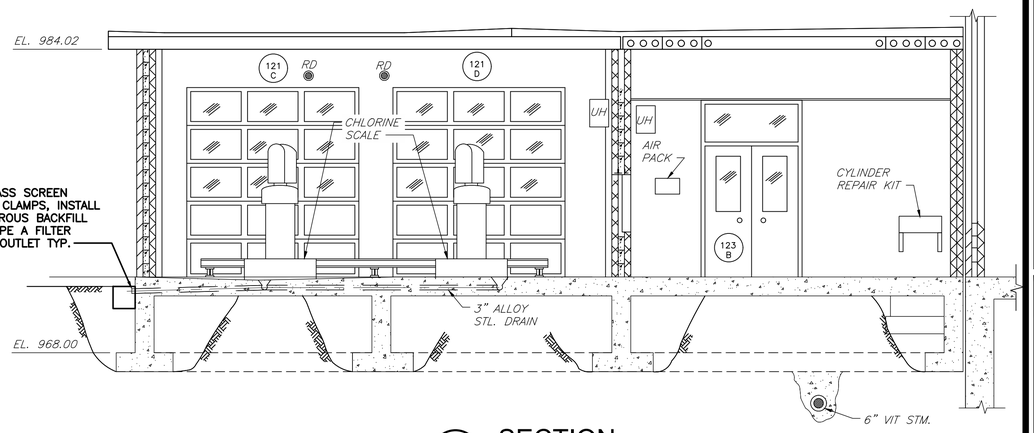
CHLORINE STORAGE AND EVAPORATOR ROOM PLAN

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



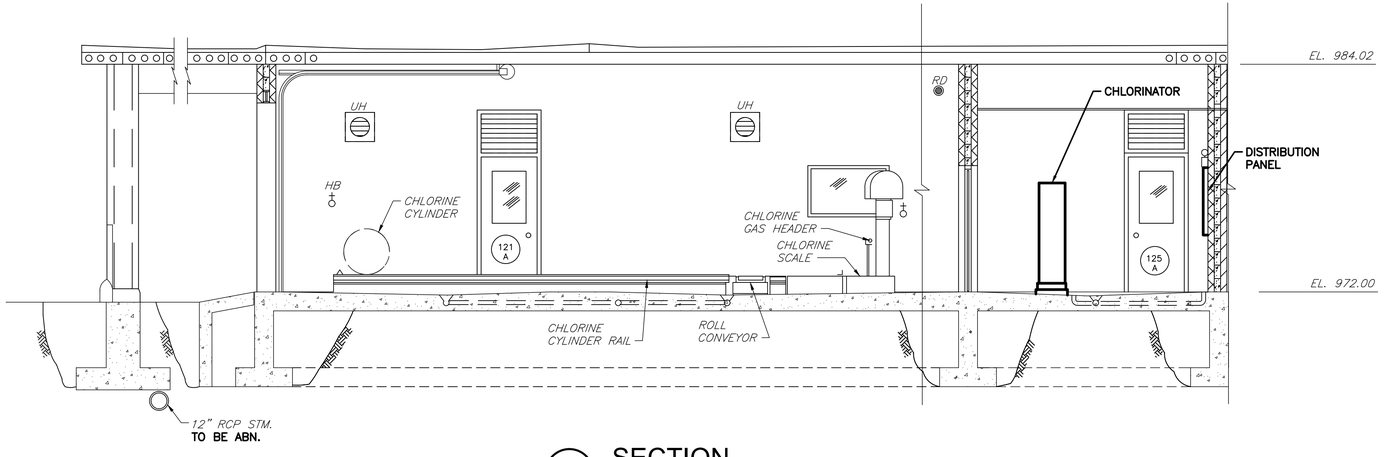
C SECTION

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



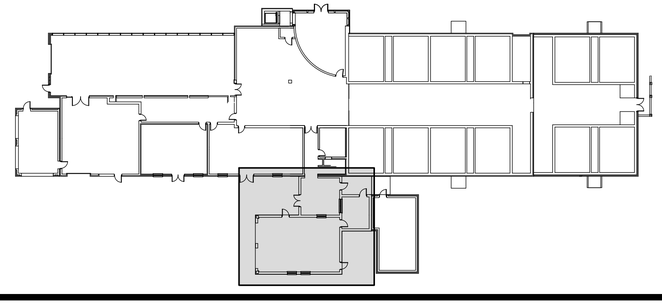
B SECTION

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



A SECTION

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



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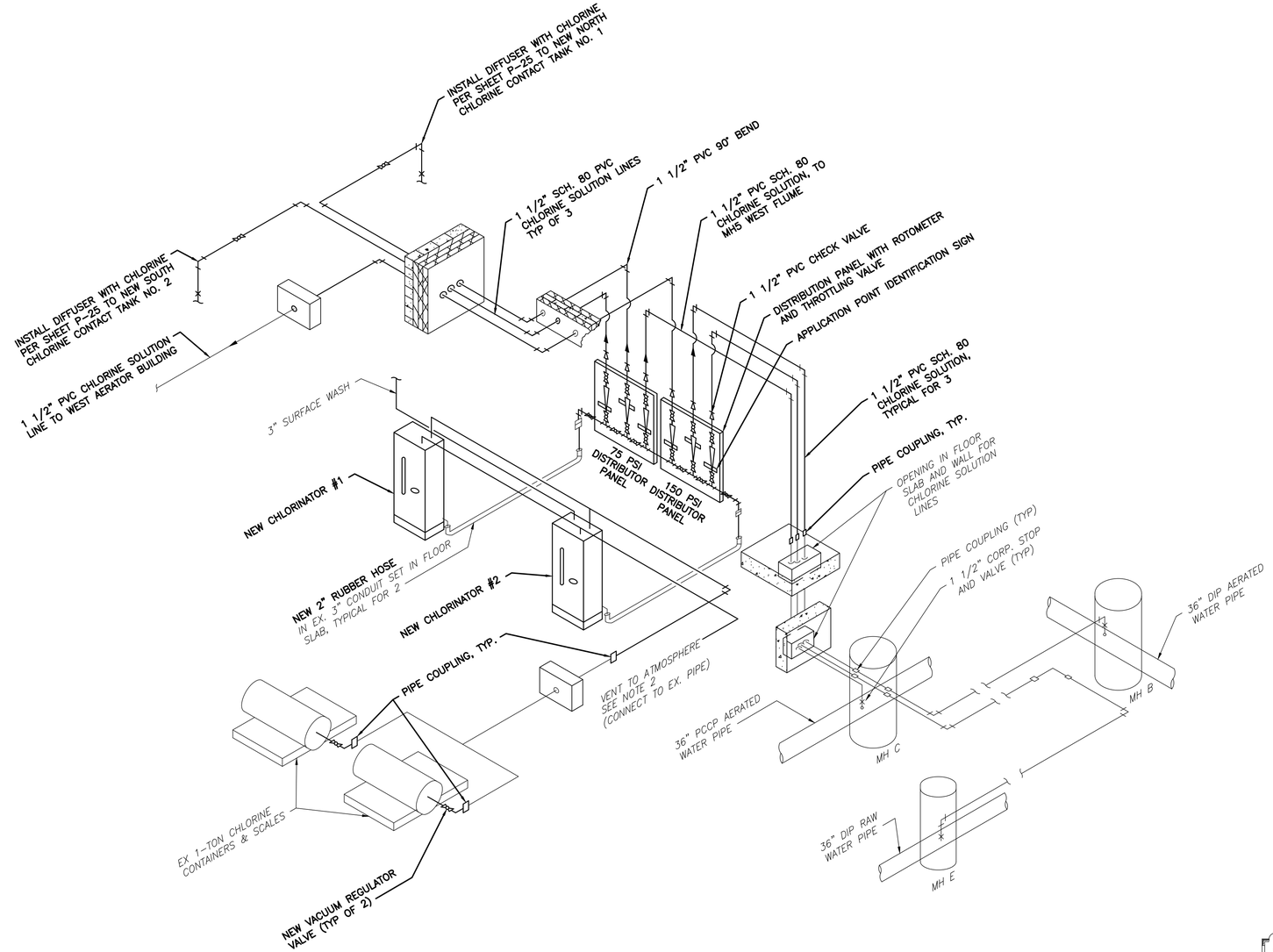
CHLORINE BUILDING PROCESS PLAN-SECTIONS

P-33

SHEET: OF

P:\PR58982\Cadd\Sheets\P-33 CHLORINE BUILDING PROCESS PLAN-SECTIONS.dwg 3/11/2022 2:39:48 PM Paul Emerson

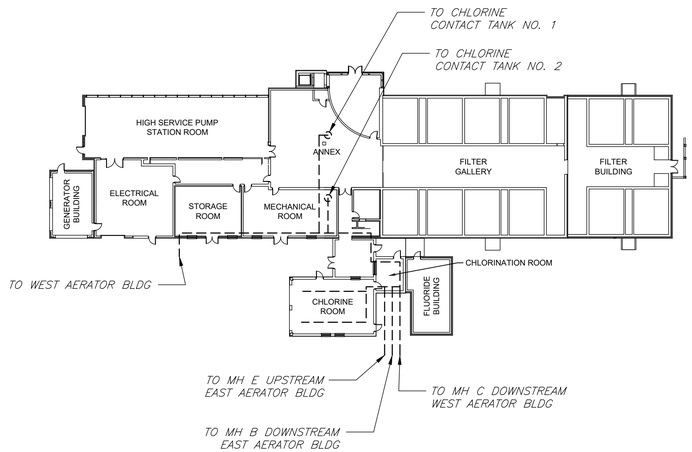
PLOTTED: 4/15/2022 12:48:22 PM



CHLORINATION SCHEMATIC

SCALE: NONE

NOTE:
1. REFER TO SHT. C-15 FOR STRUCTURE LEGEND.
2. REPLACE EXISTING FIBERGLASS MESH INSECT SCREEN IN-KIND.
3. INSPECT EXISTING PIPING BETWEEN THE 1-TON CHLORINE CONTAINERS AND NEW CHLORINATORS AND PROVIDE REPORT TO OWNER. OWNER SHALL DETERMINE THE LIMITS OF REPLACEMENT. BASE BID SHALL ASSUME REPLACEMENT OF THE ENTIRE LENGTH.
4. INSTALL TWO (2) CHLORINE DETECTORS IN BOTH THE CHLORINE ROOM AND CHLORINATION ROOM PER SPECIFICATIONS. LOCATION SHALL BE COORDINATED PER MANUFACTURER'S RECOMMENDATIONS AND AS APPROVED BY THE OWNER.



CHLORINATION PLAN SCHEMATIC

SCALE: NONE

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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

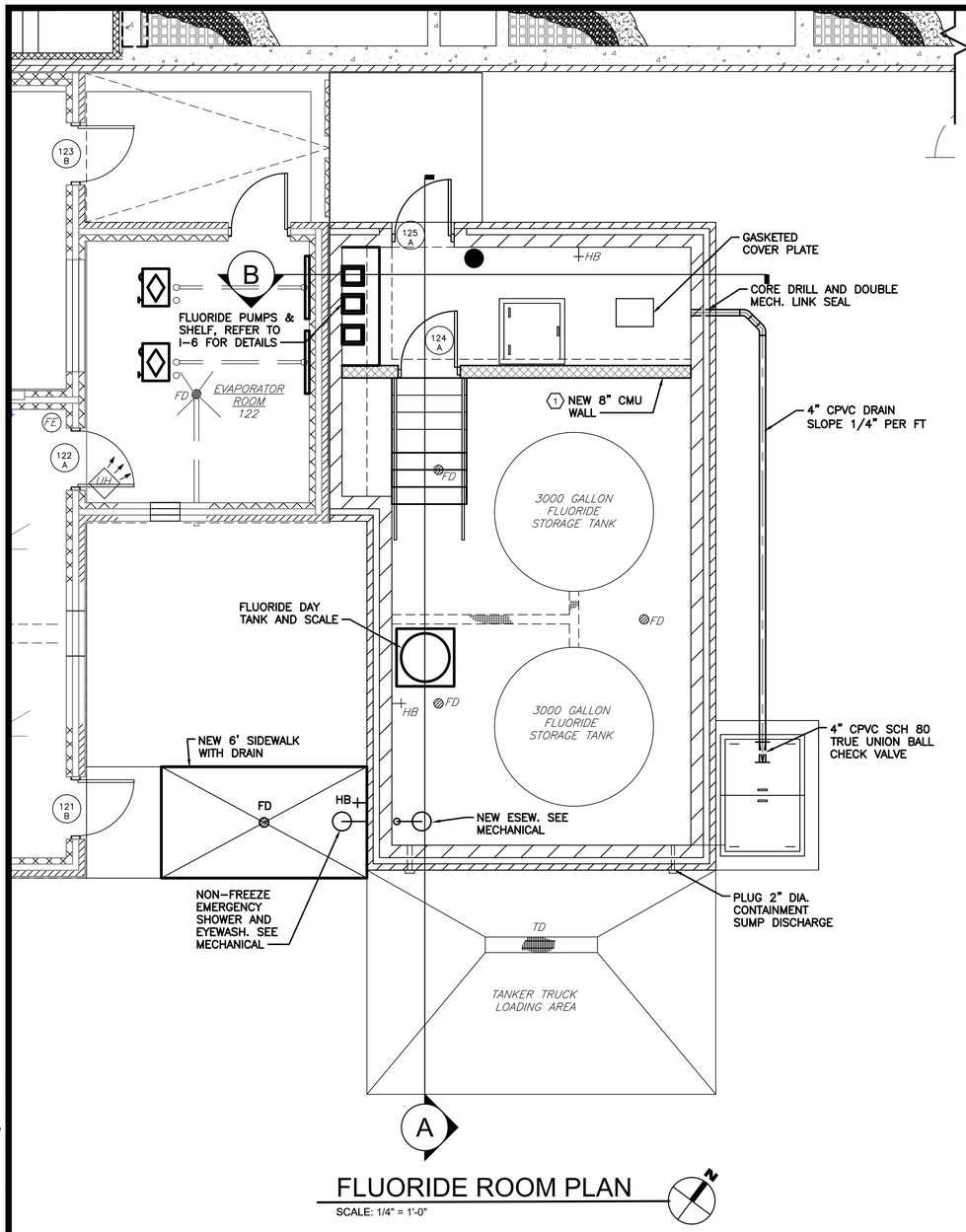
CHLORINE BUILDING PROCESS SCHEMATICS

P-34

SHEET: OF

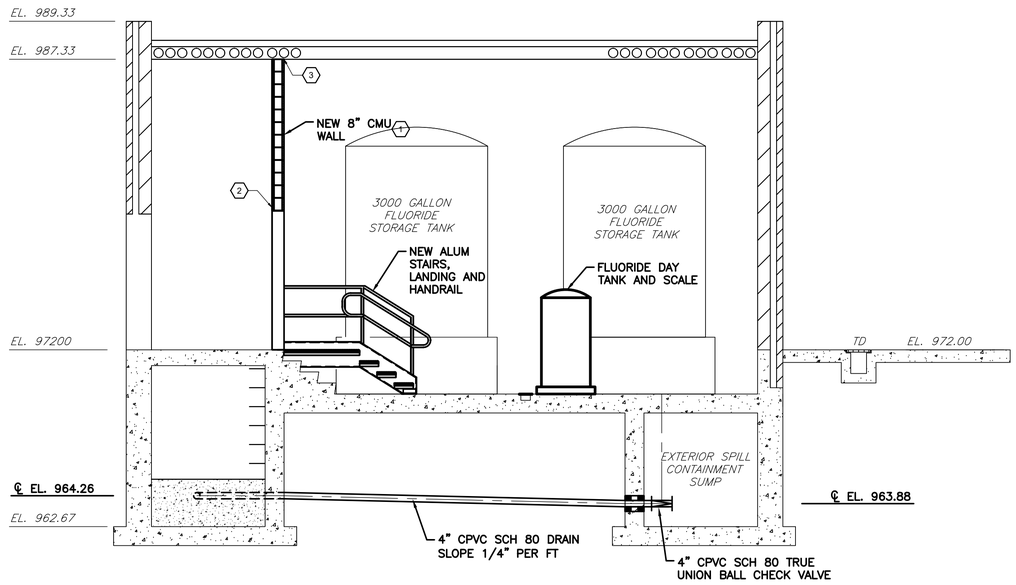
P:\PR58982\Cadd\Sheets\P-34 CHLORINE BUILDING PROCESS SCHEMATICS.dwg 2/16/2022 4:06:23 PM Paul Emerson

PLOTTED: 4/15/2022 12:49:02 PM



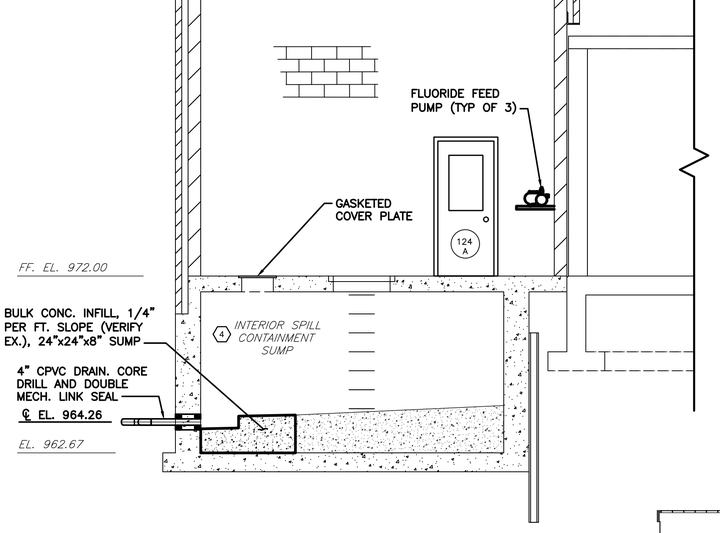
FLUORIDE ROOM PLAN

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



A SECTION

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

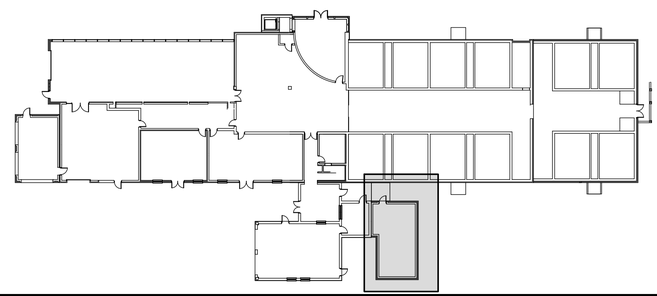


B SECTION

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

X CODED NOTES:

1. REINFORCE VERTICALLY WITH #5 @ 48" O.C. PROVIDE MATCHING #5 x 3'-2" ADHESIVE DWL'S AT BASE OF WALL, 8" EMBEDMENT. SEE SHEET SD-5 FOR ADDITIONAL MASONRY REQUIREMENTS.
2. PROVIDE LINTEL LI OVER DOOR OPENING. SEE LINTEL SCHEDULE, SHEET SD-6.
3. LATERALLY BRACE TOP OF WALL PER DETAIL 8, SHEET SD-7. LOCATE EXPANSION ANCHORS SO PRESTRESSING STRAND IN EXISTING HOLLOW CORE PLANK IS NOT SEVERED.
4. THE VOLUME OF THE INTERIOR SPILL CONTAINMENT SUMP IS SIZED TO HOLD 4,500 GALLONS.



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APPROVED BY:	CMS
SCALE:	NONE

FLUORIDE BUILDING PROCESS PLAN-SECTIONS

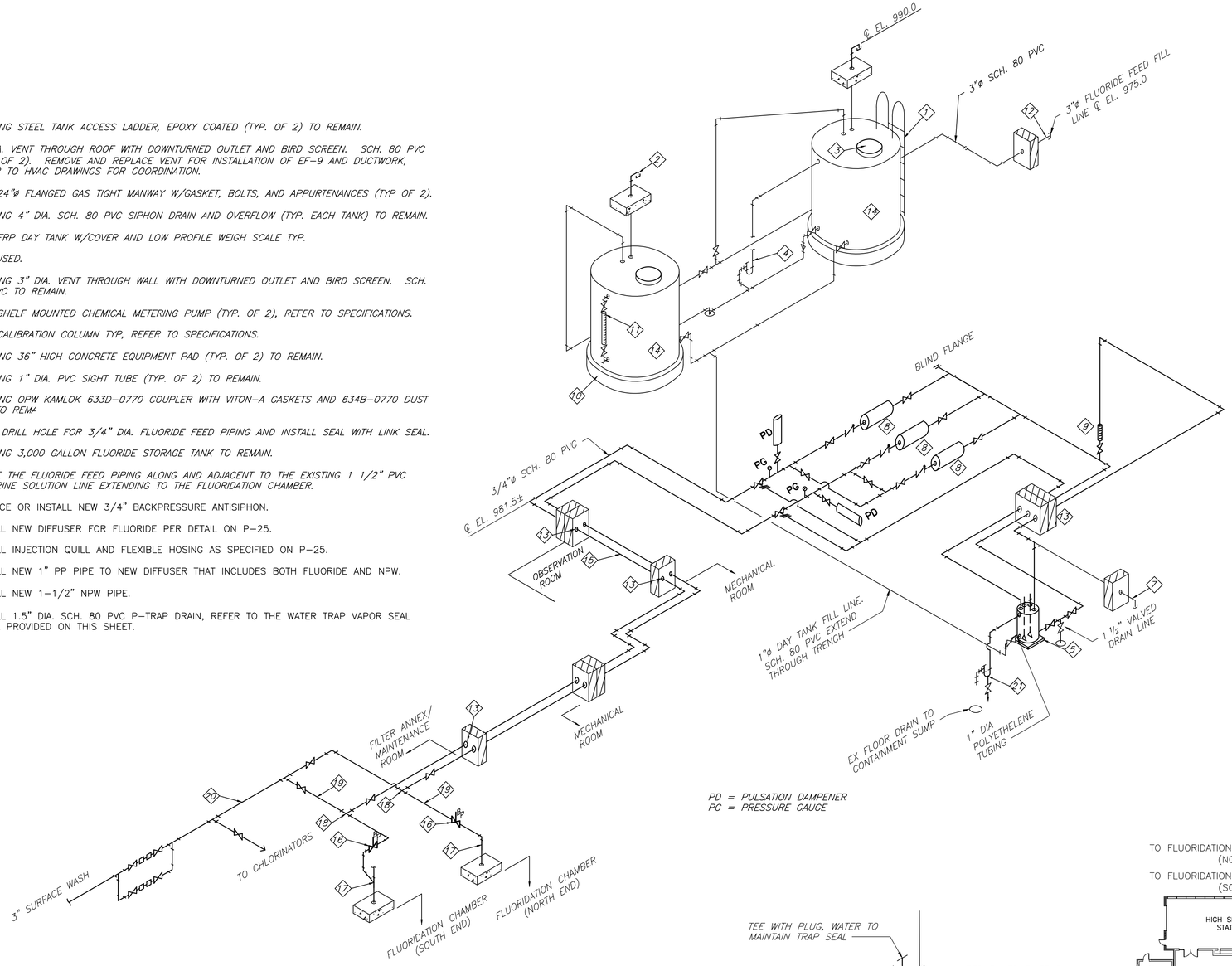
P-35

SHEET: OF

P:\PR58982\Cadd\Sheets\P-35 FLUORIDE BUILDING PROCESS PLAN-SECTIONS.dwg 3/11/2022 2:43:47 PM Paul Emerson

PLOTTED: 4/15/2022 12:49:11 PM

1. EXISTING STEEL TANK ACCESS LADDER, EPOXY COATED (TYP. OF 2) TO REMAIN.
2. 4" DIA. VENT THROUGH ROOF WITH DOWNTURNED OUTLET AND BIRD SCREEN. SCH. 80 PVC (TYP. OF 2). REMOVE AND REPLACE VENT FOR INSTALLATION OF EF-9 AND DUCTWORK, REFER TO HVAC DRAWINGS FOR COORDINATION.
3. NEW 24"ø FLANGED GAS TIGHT MANWAY W/GASKET, BOLTS, AND APPURTENANCES (TYP OF 2).
4. EXISTING 4" DIA. SCH. 80 PVC SIPHON DRAIN AND OVERFLOW (TYP. EACH TANK) TO REMAIN.
5. NEW FRP DAY TANK W/COVER AND LOW PROFILE WEIGH SCALE TYP.
6. NOT USED.
7. EXISTING 3" DIA. VENT THROUGH WALL WITH DOWNTURNED OUTLET AND BIRD SCREEN. SCH. 80 PVC TO REMAIN.
8. NEW SHELF MOUNTED CHEMICAL METERING PUMP (TYP. OF 2), REFER TO SPECIFICATIONS.
9. NEW CALIBRATION COLUMN TYP, REFER TO SPECIFICATIONS.
10. EXISTING 36" HIGH CONCRETE EQUIPMENT PAD (TYP. OF 2) TO REMAIN.
11. EXISTING 1" DIA. PVC SIGHT TUBE (TYP. OF 2) TO REMAIN.
12. EXISTING OPW KAMLOK 633D-0770 COUPLER WITH VITON-A GASKETS AND 634B-0770 DUST CAP TO REM-
13. CORE DRILL HOLE FOR 3/4" DIA. FLUORIDE FEED PIPING AND INSTALL SEAL WITH LINK SEAL.
14. EXISTING 3,000 GALLON FLUORIDE STORAGE TANK TO REMAIN.
15. ROUTE THE FLUORIDE FEED PIPING ALONG AND ADJACENT TO THE EXISTING 1 1/2" PVC CHLORINE SOLUTION LINE EXTENDING TO THE FLUORIDATION CHAMBER.
16. REPLACE OR INSTALL NEW 3/4" BACKPRESSURE ANTISIPHON.
17. INSTALL NEW DIFFUSER FOR FLUORIDE PER DETAIL ON P-25.
18. INSTALL INJECTION QUILL AND FLEXIBLE HOSING AS SPECIFIED ON P-25.
19. INSTALL NEW 1" PP PIPE TO NEW DIFFUSER THAT INCLUDES BOTH FLUORIDE AND NPW.
20. INSTALL NEW 1-1/2" NPW PIPE.
21. INSTALL 1.5" DIA. SCH. 80 PVC P-TRAP DRAIN, REFER TO THE WATER TRAP VAPOR SEAL DETAIL PROVIDED ON THIS SHEET.



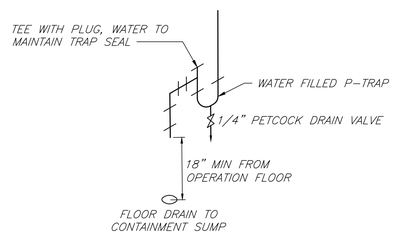
PD = PULSATION DAMPENER
PG = PRESSURE GAUGE

FLUORIDE FEED SCHEMATIC

SCALE: NONE

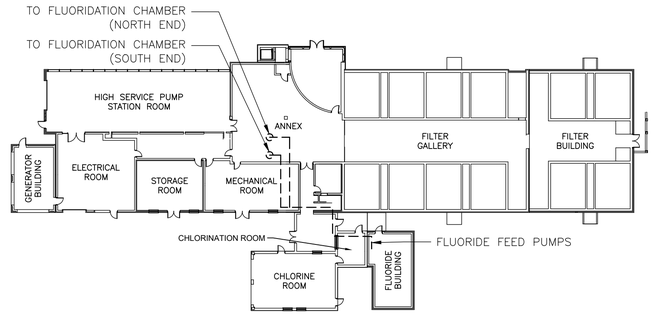
GENERAL NOTES FOR CHEMICAL PIPING

1. PIPING MATERIALS. CHEMICAL SUCTION AND DISCHARGE PIPING SHALL BE RIGID, TYPE 1, SCHEDULE 80 PVC PIPING UNLESS NOTED OTHERWISE. PVC FITTINGS SHALL BE SOLVENT WELDED WITH SOLVENT AS RECOMMENDED FOR THE APPLICATION BY THE PIPE MANUFACTURER. PROVIDE FLANGES WHERE SHOWN, WITH 316 S.STL. BOLTS, NUTS, AND WASHERS. WHERE SHOWN, FLEXIBLE PIPING SHALL BE POLYETHYLENE TUBING RECOMMENDED FOR THE APPLICATION BY THE TUBING MANUFACTURER. TYPE 316 STAINLESS STEEL HARDWARE IS NOT ACCEPTABLE WITHIN THE FLUORIDE ROOM WITH THE STORAGE AND DAY TANKS AND SHALL UTILIZE HARDWARE RESISTANT TO FLUOROSILICIC ACID.
2. UNION AND ADAPTERS. PROVIDE UNIONS OR TRUE UNION VALVES AT EQUIPMENT TO FACILITATE DISASSEMBLY FOR ROUTINE MAINTENANCE. PROVIDE ADAPTERS AS REQUIRED BETWEEN EQUIPMENT AND PIPING AND BETWEEN RIGID AND FLEXIBLE PIPING.
3. HANGERS AND SUPPORTS. PROVIDE HANGERS AND SUPPORTS RESISTANT TO CORROSION OF THE APPLICATION CHEMICAL, SPACED AT MINIMUM 4-FEET, AND AS RECOMMENDED BY THE PIPING MANUFACTURER. PROVIDE FOR EXPANSION AND CONTRACTION OF THE PIPING BETWEEN FIXED POINTS BY USING ELBOWS AND SLIDING SUPPORTS.
4. BALL VALVES. BALL VALVES SHALL BE TRUE UNION FULL PORT WITH SCHEDULE 80 PVC, VITON SEALS, AND TEFLON SEATS.
5. SPECIAL VALVES. PRESSURE RELIEF AND BACK PRESSURE VALVES SHALL BE PVC BODY WITH SEALS AND SEATS COMPATIBLE WITH THE APPLICATION CHEMICAL.
6. STOPPERS. PROVIDE LABORATORY TYPE RUBBER STOPERS TO SEAL FLEXIBLE TUBING WHERE IT PASSES THROUGH DAY TANK COVERS AND DRUMS.
7. INJECTION POINTS. PROVIDE INSERTION TYPE NOZZLES AT CHEMICAL INJECTION POINTS. TAP HORIZONTAL PIPES AT 120° FROM VERTICAL AND EXTEND NOZZLE INTO PIPE BY 1/3 PIPE DIAMETER.
8. CONTRACTOR IS RESPONSIBLE FOR ROUTING PIPING BETWEEN THE PROPOSED DAY TANK TO THE PUMP SKIDS AND FROM THE PUMP SKIDS TO THE DIFFUSER LOCATIONS SHOWN ON PROCESS DRAWINGS.
9. ALL TANKS AND TANK REFILLING ENTRY POINTS SHALL BE CLEARLY LABELED WITH THE NAME OF THE CHEMICAL CONTAINED IN ADDITION TO THE DIRECTION FLOW IS CONVEYED.



WATER TRAP VAPOR SEAL DETAIL

SCALE: NONE



FLUORIDE PLAN SCHEMATIC

SCALE: NONE

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APPROVED BY:	CMS
SCALE:	NONE

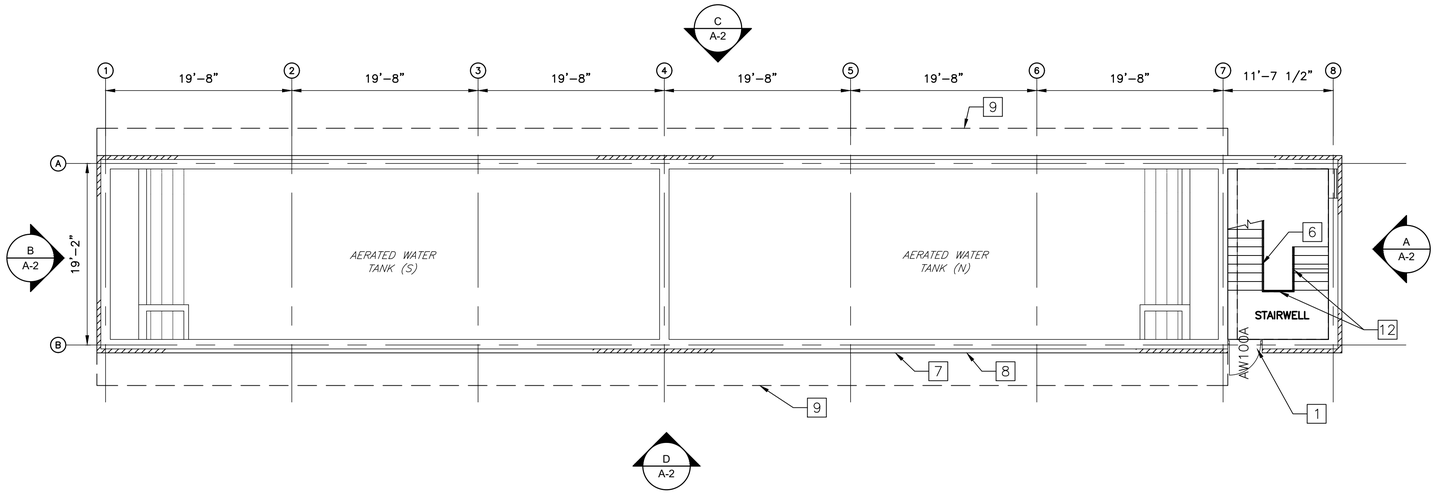
FLUORIDE BUILDING PROCESS SCHEMATIC

P-36

SHEET: OF

P:\PR58982\Cadd\Sheets\P-36 FLUORIDE BUILDING PROCESS SCHEMATICS.dwg 3/23/2022 2:43:04 PM Paul Emerson

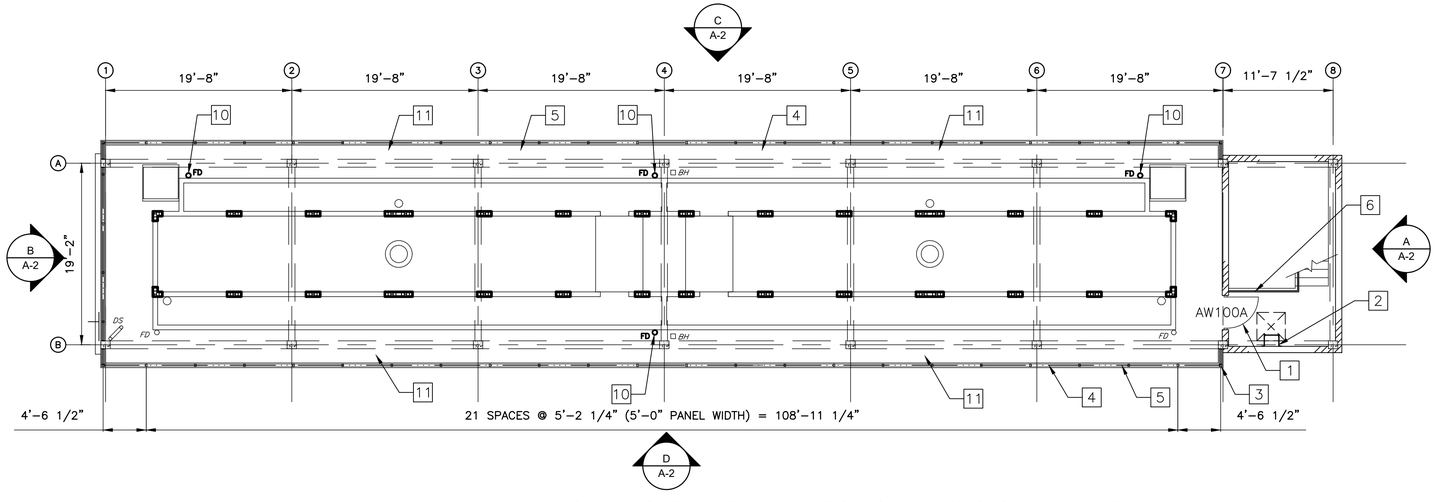
PLOTTED: 4/15/2022 12:52:31 PM



WEST AERATOR BUILDING LOWER FLOOR PLAN

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

0 4' 8' 16'



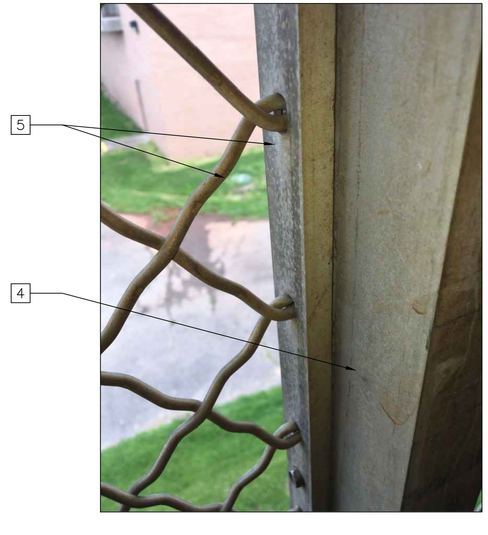
WEST AERATOR BUILDING UPPER FLOOR PLAN

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

0 4' 8' 16'

NEW WORK NOTES:

1. REMOVE EXISTING DOOR LOCKSET AND STRIKE PLATE AND PREP DOOR AND FRAME AS NEEDED FOR NEW LOCKSET AND STRIKE PLATE.
2. LADDER. SEE STANDARD DETAILS, SHEET SD–13. CENTER UNDER NEW ROOF HATCH.
3. EXISTING ALUMINUM POST TO REMAIN – TYPICAL.
4. EXISTING GALVANIZED STEEL POST AND FRAME TO BE REMOVED, CLEANED AND REINSTALLED W/ 316 SS FASTENERS. SEE A–2 FOR DETAIL.
5. EXISTING GALVANIZED STEEL CHAINLINK MESH SCREEN AND FRAME TO BE REMOVED, IRON RESIDUE TO BE REMOVED WITH CLEANING SOLUTION, AND REINSTALLED. SEE A–2 FOR DETAIL.
6. EXISTING ALUMINUM HANDRAIL IN STAIRWELL TO BE CLEANED.
7. MASONRY TO BE INSPECTED AND LOOSE MORTON JOINTS REPAIRED.
8. PRESSURE WASH AND SEAL EXISTING MASONRY WALLS.
9. EXISTING FLOOR OVERHANG ABOVE.
10. SEE PLUMBING PLAN FOR NEW FLOOR DRAINS, SHEET PL–12.
11. SEE NEW PROCESS PLANS FOR CONCRETE FLOOR TOPPING, SHEET P–1.
12. EXISTING ALUMINUM HANDRAIL IN STAIRWELL TO BE REMOVED AND REPLACED.



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DRAWN BY:	LMW
CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	AS NOTED

WEST AERATOR BUILDING ARCHITECTURAL FLOOR PLANS

A-1

SHEET: OF

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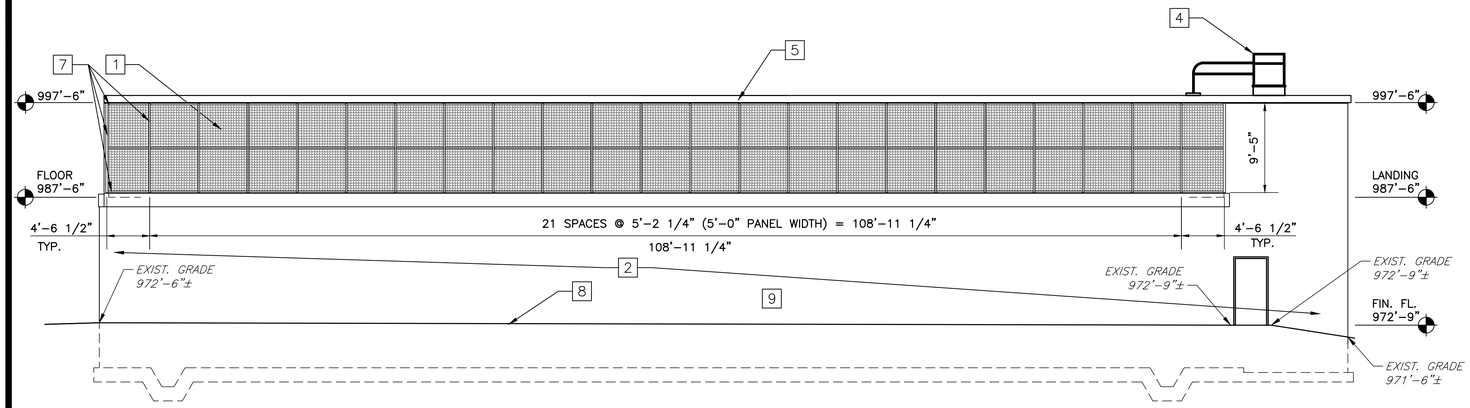
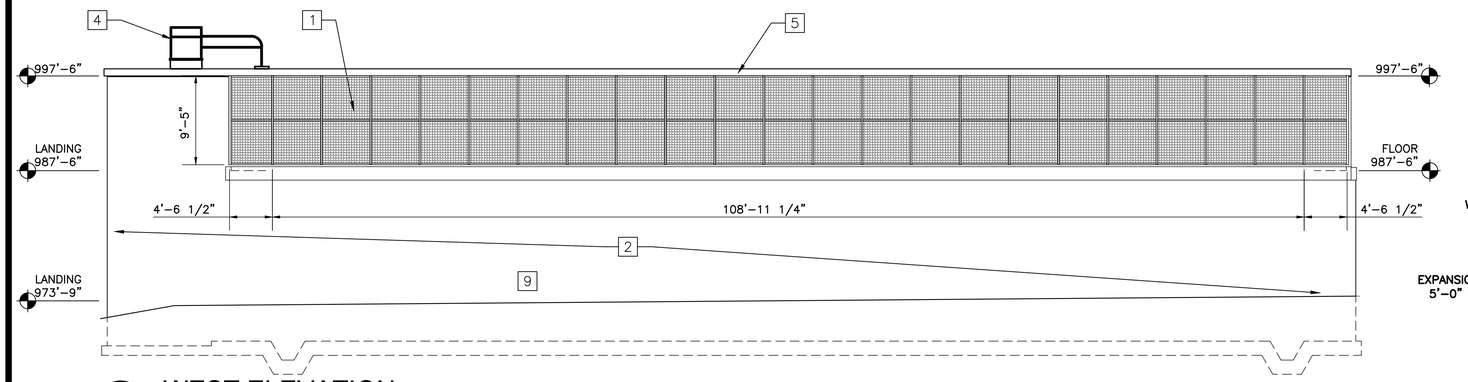


EAST ELEVATION

D / A-1

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

0 4' 8' 16'

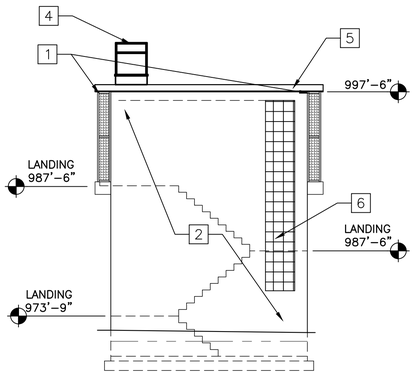


WEST ELEVATION

C / A-1

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

0 4' 8' 16'

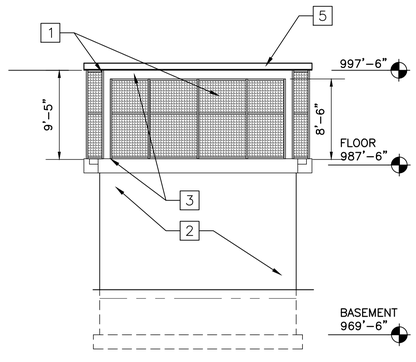


NORTH ELEVATION

A / A-1

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

0 4' 8' 16'

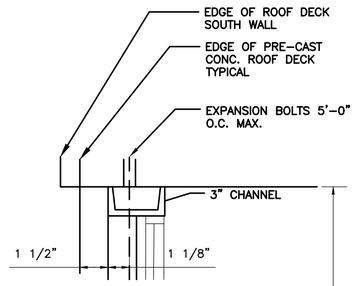


SOUTH ELEVATION

B / A-1

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

0 4' 8' 16'



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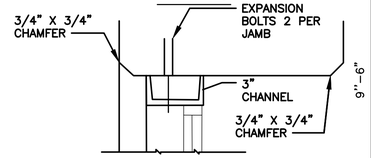
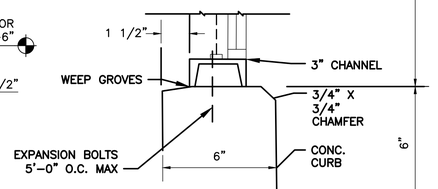
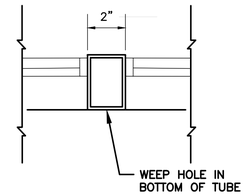


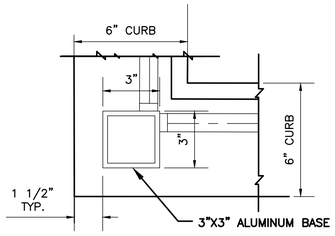
JAMB



SILL



PLAN @ INTERIOR MULLION



PLAN @ CORNER MULLION

TYPICAL SCREEN FENCE DETAILS

SCALE: 3" = 1'-0"

GENERAL NOTES

1. EXISTING GALVANIZED STEEL SCREEN AND EXISTING ALUMINUM POSTS TO BE REMOVE, IRON RESIDUE TO BE REMOVED WITH CLEANING SOLUTION, AND REINSTALLED.
2. PRESSURE WASH AND SEAL BRICK.
3. EXISTING CONCRETE BEAM AND POSTS.
4. ROOF HATCH WITH SAFETY RAILS. SEE SHEET A-22 FOR DETAILS.
5. NEW PRE-FINISHED METAL FASCIA.
6. NEW TRANSLUCENT WALL PANELS.
7. MULLION, HEAD AND SILL FRAMING TO REMAIN.
8. CLEAN EXISTING WEEP HOLES IN MASONRY WALLS
9. MASONRY TO BE INSPECTED AND LOOSE MORTAR JOINTS REPAIRED ALL FOUR SIDES OF BUILDING

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SCALE:	AS NOTED

WEST AERATOR BUILDING ARCHITECTURAL ELEVATIONS

A-2

SHEET: OF

P:\PR58982\Cadd\Sheets\A-2 WEST AERATOR BUILDING ARCHITECTURAL ELEVATIONS.dwg 4/14/2022 9:12:15 AM Paul Emerson

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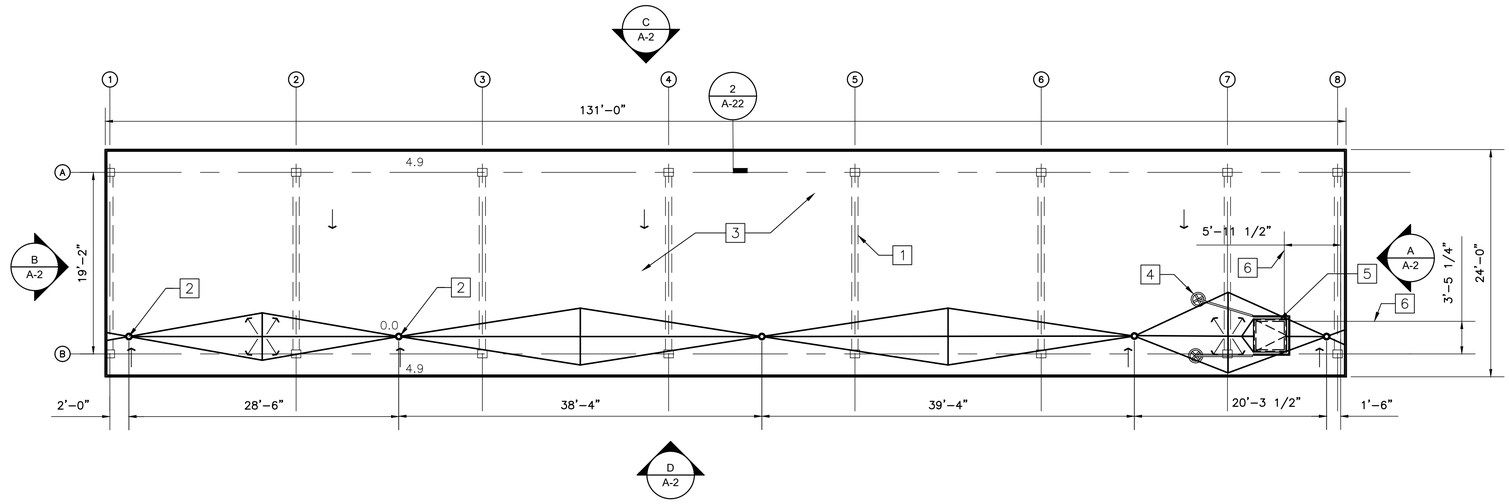

WEST AERATOR BUILDING ROOF PLAN

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

0 4' 8' 16'

NEW WORK NOTES

1. EX. TIE BEAMS, TYP.
2. NEW ROOF DRAIN TYP. SEE TYPICAL DETAIL ON SHEET A–22.
3. NEW MEMBRANE ROOFING ON TAPERED RIGID INSULATION SLOPED AT 1/4"MINIMUM.
4. 6'–0" NON–PENETRATING GUARDRAIL SECURED TO HATCH RAIL.
5. NEW 3' X 3' ROOF HATCH, CURB AND RAIL COORDINATION INSTALLATION WITH EXISTING ROOF OPENING. REFER TO TYPICAL DETAIL ON SHEET A–22.
6. DIMENSION TO INSIDE OF ROOF CURB/ROOF OPENING.
7. NUMBER INDICATES ELEVATION OF TAPERED INSULATION ABOVE RIM OF ROOF DRAIN. TYP.

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CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	1/8" = 1'-0"

WEST AERATOR BUILDING ARCHITECTURAL ROOF PLAN

A-3

SHEET: OF

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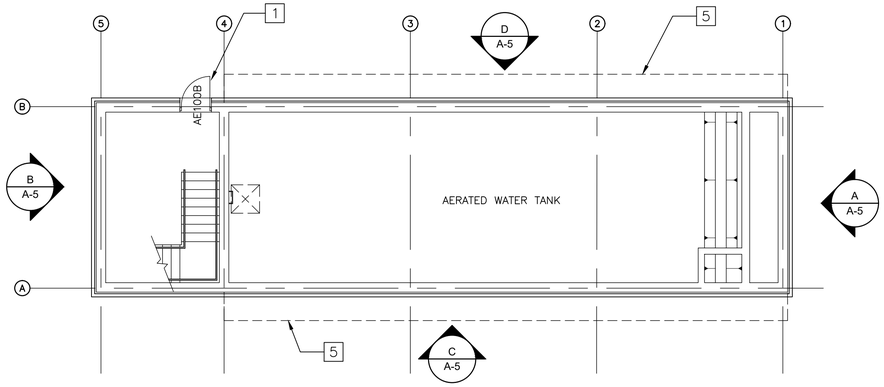
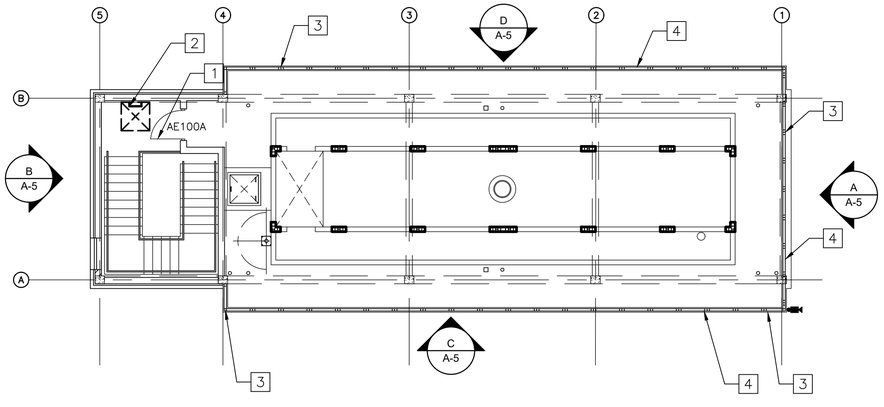


EAST AERATOR BUILDING LOWER LEVEL

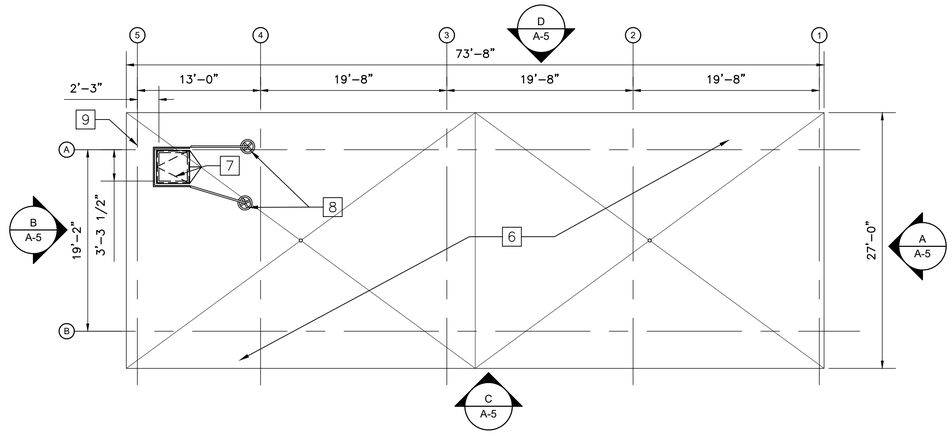
SCALE: 1/8" = 1'-0"

0 4' 8' 16'



EAST AERATOR BUILDING UPPER LEVEL

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



EAST AERATOR BUILDING ROOF PLAN

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

NEW WORK NOTES:

1. REMOVE EXISTING DOOR LOCKSET AND STRIKE PLATE AND PREP DOOR AND FRAME AS NEEDED FOR NEW LOCKSET AND STRIKE PLATE.
2. LADDER. SEE STANDARD DETAILS. CENTER UNDER THE ROOF HATCH.
3. EXISTING ALUMINUM POST TO REMAIN – TYPICAL.
4. VINYL COATED, GALVANIZED STEEL CHAINLINK MESH. EXISTING GALVANIZED STEEL SCREEN AND EXISTING ALUMINUM POSTS TO BE REMOVE, IRON RESIDUE TO BE REMOVED WITH CLEANING SOLUTION, AND REINSTALLED.
5. EXISTING FLOOR OVERHANG ABOVE.
6. EXISTING ROOFING TO REMAIN.
7. NEW 3' X 3' ROOF HATCH AND CURB. REFER TO TYPICAL DETAIL SHEET A–22.
8. 6' NON PENETRATING ROOF SAFETY RAILS ATTACHED TO ROOF HATCH RAILS.
9. DIMENSION TO INSIDE OF ROOF CURB/ROOF OPENING.

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WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

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CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	AS NOTED

EAST AERATOR BLDG ARCHITECTURAL FLOOR & ROOF PLANS

A-4

SHEET: OF

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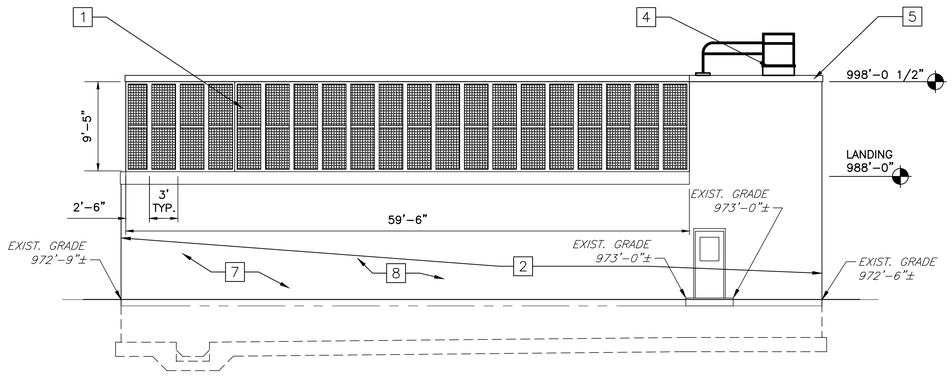
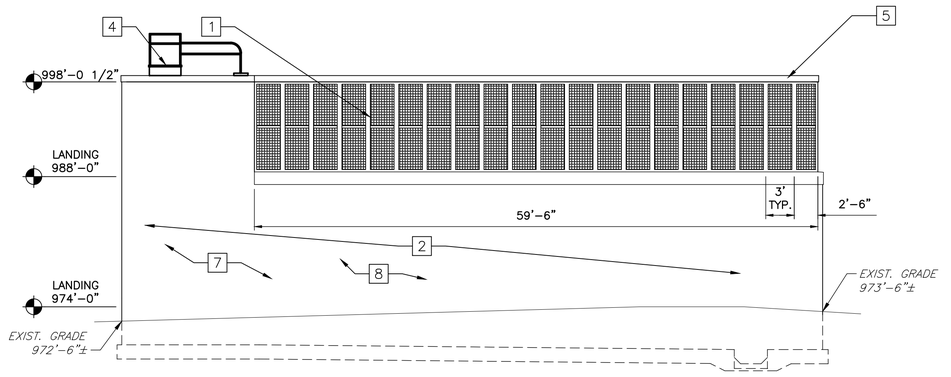


D A-4 **NORTH ELEVATION**

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

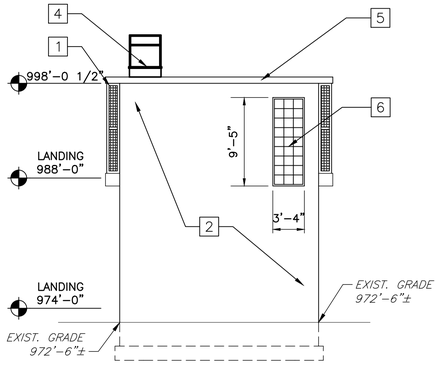
0 4' 8' 16'



C A-4 **SOUTH ELEVATION**

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

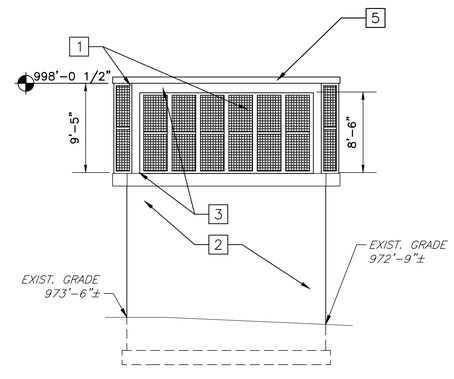
0 4' 8' 16'



B A-4 **WEST ELEVATION**

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

0 4' 8' 16'



A A-4 **EAST ELEVATION**

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

0 4' 8' 16'

NEW WORK NOTES:

1. EXISTING GALVANIZED STEEL SCREEN AND EXISTING ALUMINUM POSTS TO BE REMOVE, IRON RESIDUE TO BE REMOVED WITH CLEANING SOLUTION, AND REINSTALLED.
2. PRESSURE WASH AND SEAL BRICK.
3. EXISTING CONCRETE BEAM AND POSTS.
4. ROOF HATCH WITH SAFETY RAILS. SEE SHEET A–22 FOR DETAILS.
5. EXISTING METAL FASCIA.
6. TRANSLUCENT INSULATED PANEL WINDOW.
7. MASONRY TO BE INSPECTED AND LOOSE MORTAR JOINTS REPAIRED (TYPICAL: FOUR SIDES OF BUILDING)
8. CLEAN EXTERIOR WEEP HOLES IN MASONRY WALLS.

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EAST AERATOR BLDG ARCHITECTURAL ELEVATIONS

A-5

SHEET: OF

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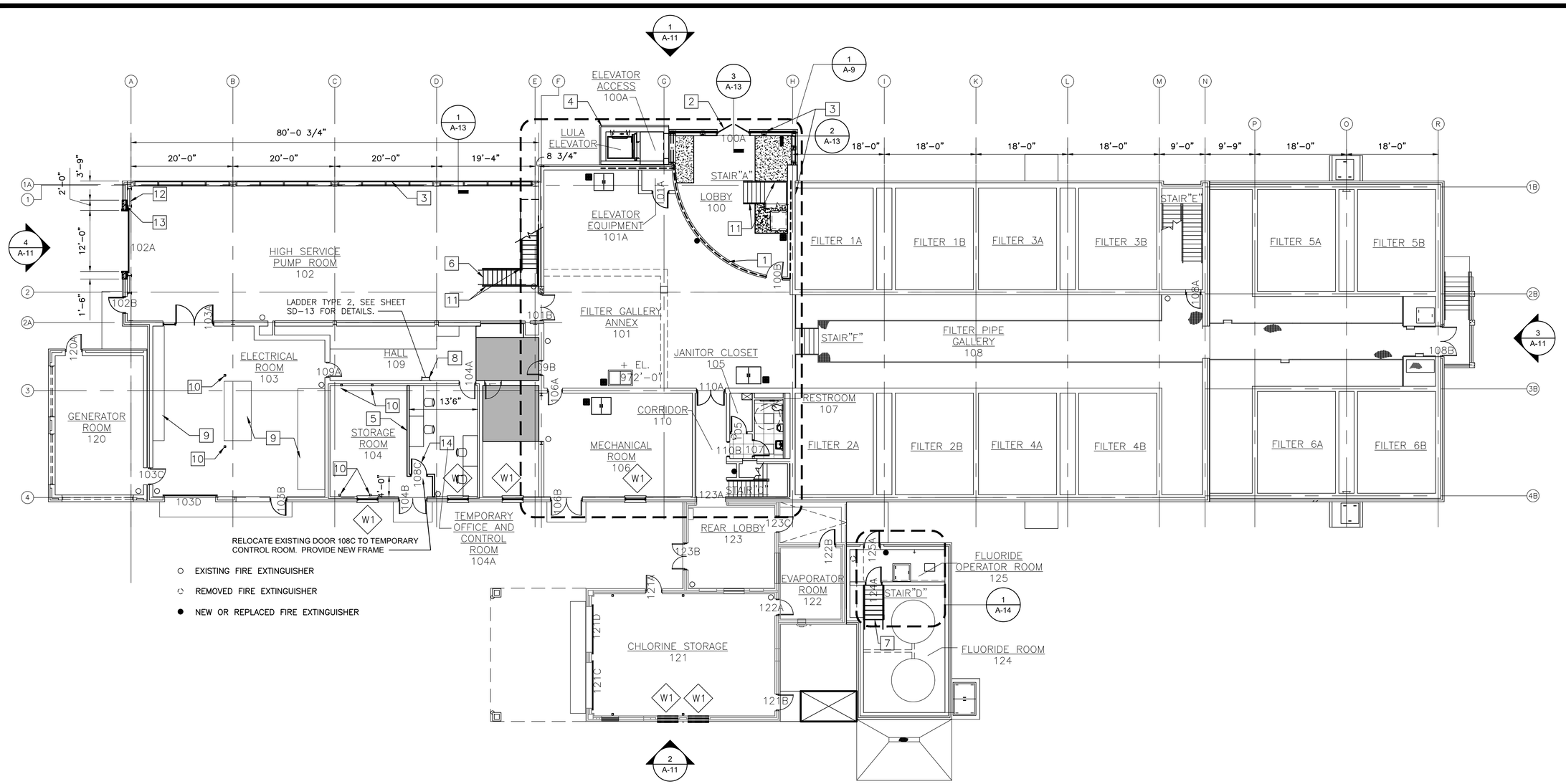

EXISTING FIRE EXTINGUISHER

REMOVED FIRE EXTINGUISHER

NEW OR REPLACED FIRE EXTINGUISHER

FIRE EXTINGUISHER LOCATIONS	
ROOM #	NOTES
101	2, REMAIN, NEW
102	2, REMAIN
103	2, REMAIN
104A	1, REMAIN
106	1, REMAIN
108	1, REMAIN
110	1, RELOCATE
120	2, REMAIN
121	1, REMAIN
123	1, REMAIN
125	1, RELOCATE

FIRST FLOOR NEW WORK PLAN

SCALE: 3/32" = 1'-0"

0 5' 10' 20'

NEW WORK NOTES

1. DASHED LINE INDICATES ONE HOUR RATED PARTITION FROM FINISHED FLOOR TO UNDERSIDE OF STRUCTURAL DECK ABOVE.
2. NEW ONE HOUR FIRE-RATED HALF -LITE DOOR AND FRAME AND SIDELIGHTS.
3. NEW ALUMINUM CURTAINWALL SYSTEM WITH INSULATED GLASS.
4. NEW 12" CMU WALL, WITH EXTERIOR INSULATION AND FINISH SYSTEM TO MATCH EXISTING.
5. NEW GWB AND METAL STUD PARTITION. TYPICAL.
6. NEW ALUMINUM STAIR.
7. NEW FRP STAIR.
8. ALUMINUM LADDER, TYPE 2. SEE SHEET SD-13 FOR DETAILS.
9. ELECTRICAL EQUIPMENT. SEE ELECTRICAL DRAWINGS.
10. STEEL COLUMN. SEE STRUCTURAL DRAWINGS.
11. NEW ADA/BUIDLING CODE COMPLIANT GUARDRAIL AND HANDRAIL.
12. SEE STRUCTURAL DRAWINGS FOR NEW STEEL BRACING.
13. BRICK AND CMU INFILL AT NEW WALL OPENING.
14. RELOCATE HALL DOOR FOR TEMPORARY OFFICE. REINSTALL IN EXISTING LOCATION AT CONCLUSION OF SECOND FLOOR IMPROVEMENTS.

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MAIN & FILTER BLDG
ARCHITECTURAL
FIRST FLOOR PLAN

A-6

SHEET: OF

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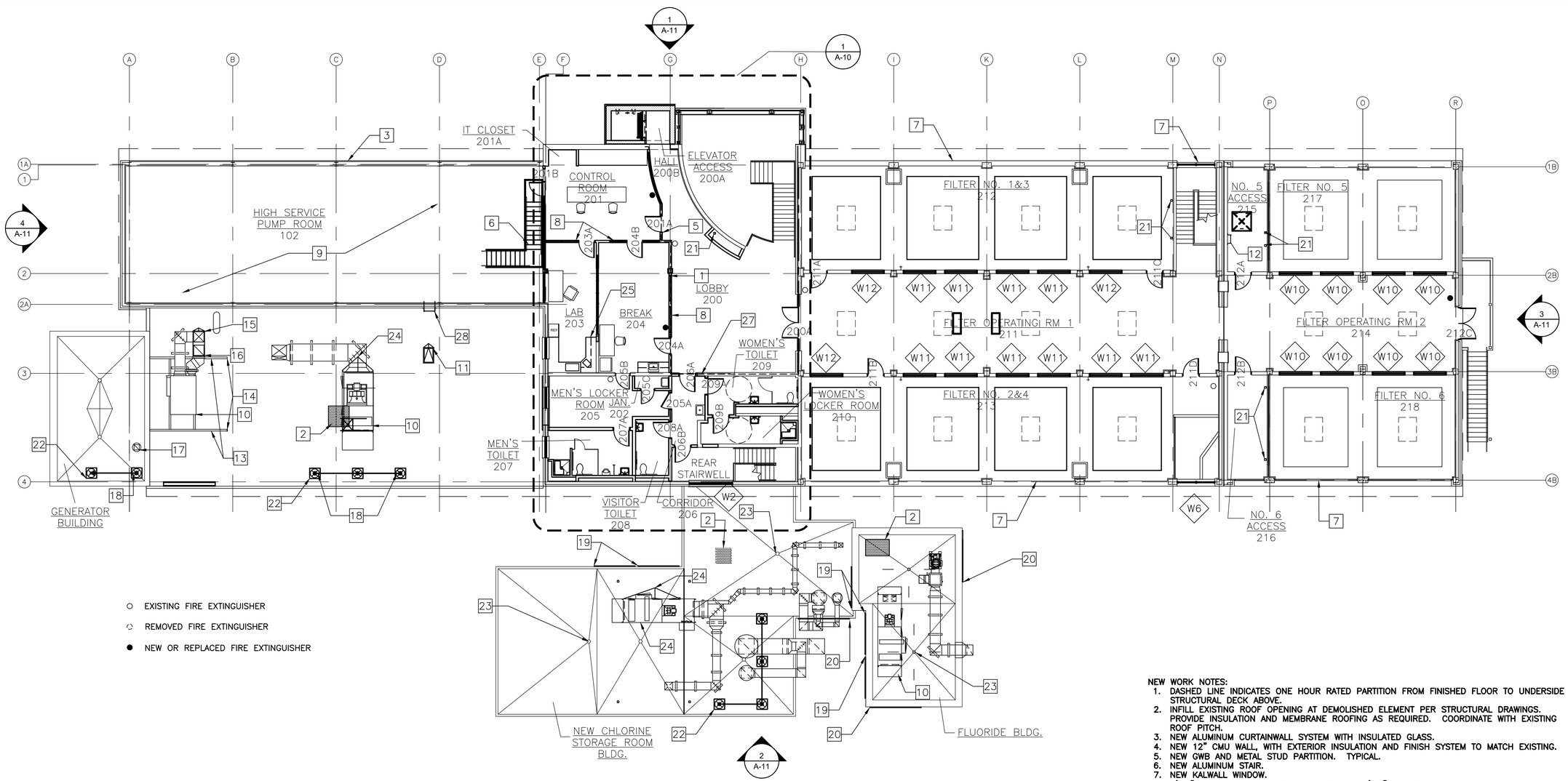

○ EXISTING FIRE EXTINGUISHER

↺ REMOVED FIRE EXTINGUISHER

● NEW OR REPLACED FIRE EXTINGUISHER

FIRE EXTINGUISHER LOCATIONS	
ROOM #	NOTES
200	1, REMAIN
201	1, NEW
204	1, NEW
205	1, REMAIN
211	2, REMAIN
214	1, NEW

SECOND FLOOR NEW WORK PLAN

SCALE: 3/32" = 1'-0"

0 5' 10' 20'

NEW WORK NOTES:
1. DASHED LINE INDICATES ONE HOUR RATED PARTITION FROM FINISHED FLOOR TO UNDERSIDE OF STRUCTURAL DECK ABOVE.
2. INFILL EXISTING ROOF OPENING AT DEMOLISHED ELEMENT PER STRUCTURAL DRAWINGS. PROVIDE INSULATION AND MEMBRANE ROOFING AS REQUIRED. COORDINATE WITH EXISTING ROOF PITCH.
3. NEW ALUMINUM CURTAINWALL SYSTEM WITH INSULATED GLASS.
4. NEW 12" CMU WALL, WITH EXTERIOR INSULATION AND FINISH SYSTEM TO MATCH EXISTING.
5. NEW GWB AND METAL STUD PARTITION. TYPICAL.
6. NEW ALUMINUM STAIR.
7. NEW KALWALL WINDOW.
8. 4'-0" HIGH INTERIOR WINDOW WITH SILL AT 3'-0" AFF. TYPICAL.
9. OPEN TO BELOW.
10. HVAC UNIT SEE MECHANICAL DRAWINGS.
11. 36"X36" ROOF HATCH WITH SAFETY RAILS AND GATE.
12. NEW LADDER SHALL BE ALUM., TYPE 2A. SEE SHEET SD-13 FOR DETAILS.
13. GALVANIZED STEEL BEAM ABOVE ROOF LEVEL. SEE STRUCTURAL DRAWINGS.
14. GALVANIZED STEEL COLUMN PENETRATING EXISTING ROOF DECK AND MEMBRANE. PROVIDE FLASHING.
15. DUCTWORK PENETRATION ON EXISTING CURB. SEE MECHANICAL DRAWINGS.
16. DUCTWORK PENETRATION ON NEW CURB. SEE MECHANICAL DRAWINGS AND TYPICAL ROOF CURB DETAIL.
17. EXHAUST FAN ON EXISTING CURB. SEE MECHANICAL DRAWINGS.
18. 8' NON PENETRATING ROOF SAFETY RAIL.
19. 8' WALL MOUNTED ROOF SAFETY RAIL.
20. 10' WALL MOUNTED ROOF SAFETY RAIL.
21. STEEL COLUMN. SEE STRUCTURAL DRAWINGS.
22. RUBBER GUARDRAIL BASE PLATE PADS.
23. EXISTING ROOF DRAINS TO REMAIN. TYPICAL.
24. 4" HIGH CRICKET OVER EXISTING INSULATION. REWORK EXISTING ROOF MEMBRANE AS REQUIRED TO INSTALL TAPERED CRICKET. INSTALL NEW MEMBRANE OVER CRICKET AND FLASH ONTO EXISTING MEMBRANE PER MEMBRANE MANUFACTURER'S RECOMMENDATIONS.
25. REMOVE EXISTING CORNER CABINET AND COUNTER. INSTALL NEW CORNER CABINET AND COUNTER.
26. SEE A-9 FOR NEW ELEVATOR.
27. DASHED LINE INDICATES EXISTING ONE HOUR RATED PARTITION.
28. NEW LADDER SHALL BE ALUM., TYPE 3. SEE SHEET SD-13 FOR DETAILS.

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MAIN & FILTER BLDG
ARCHITECTURAL
SECOND FLOOR
PLAN

A-7

SHEET: OF

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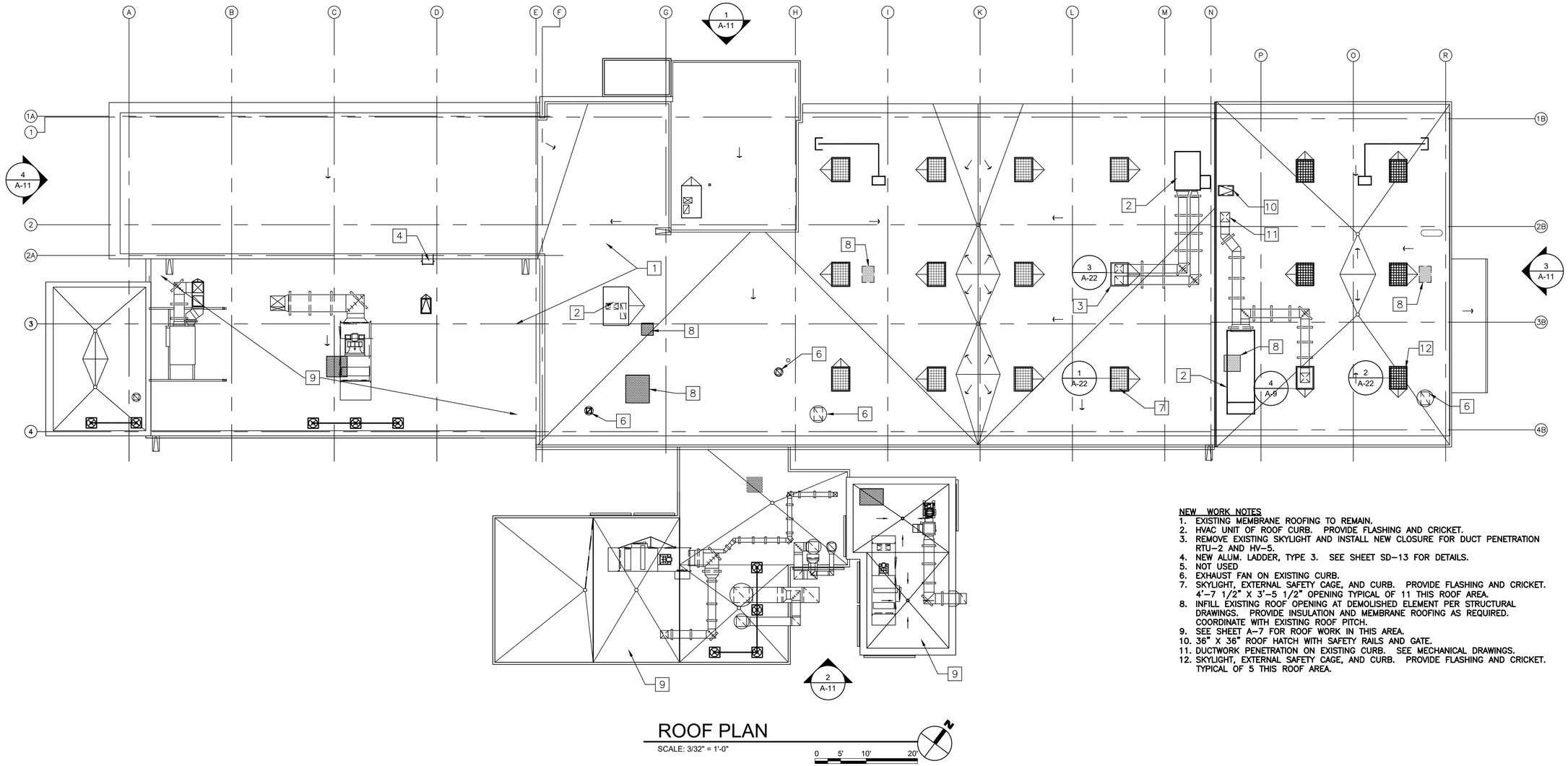

ROOF PLAN

SCALE: 3/32" = 1'-0"

0 5' 10' 20'

NEW WORK NOTES

1. EXISTING MEMBRANE ROOFING TO REMAIN.
2. HVAC UNIT OF ROOF CURB. PROVIDE FLASHING AND CRICKET.
3. REMOVE EXISTING SKYLIGHT AND INSTALL NEW CLOSURE FOR DUCT PENETRATION RTU-2 AND HV-5.
4. NEW ALUM. LADDER, TYPE 3. SEE SHEET SD-13 FOR DETAILS.
5. NOT USED
6. EXHAUST FAN ON EXISTING CURB.
7. SKYLIGHT, EXTERNAL SAFETY CAGE, AND CURB. PROVIDE FLASHING AND CRICKET. 4'-7 1/2" X 3'-5 1/2" OPENING TYPICAL OF 11 THIS ROOF AREA.
8. INFILL EXISTING ROOF OPENING AT DEMOLISHED ELEMENT PER STRUCTURAL DRAWINGS. PROVIDE INSULATION AND MEMBRANE ROOFING AS REQUIRED. COORDINATE WITH EXISTING ROOF PITCH.
9. SEE SHEET A-7 FOR ROOF WORK IN THIS AREA.
10. 36" X 36" ROOF HATCH WITH SAFETY RAILS AND GATE.
11. DUCTWORK PENETRATION ON EXISTING CURB. SEE MECHANICAL DRAWINGS.
12. SKYLIGHT, EXTERNAL SAFETY CAGE, AND CURB. PROVIDE FLASHING AND CRICKET. TYPICAL OF 5 THIS ROOF AREA.

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CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	AS NOTED

MAIN BUILDING & FILTER BLDG ARCHITECTURAL ROOF PLAN

A-8

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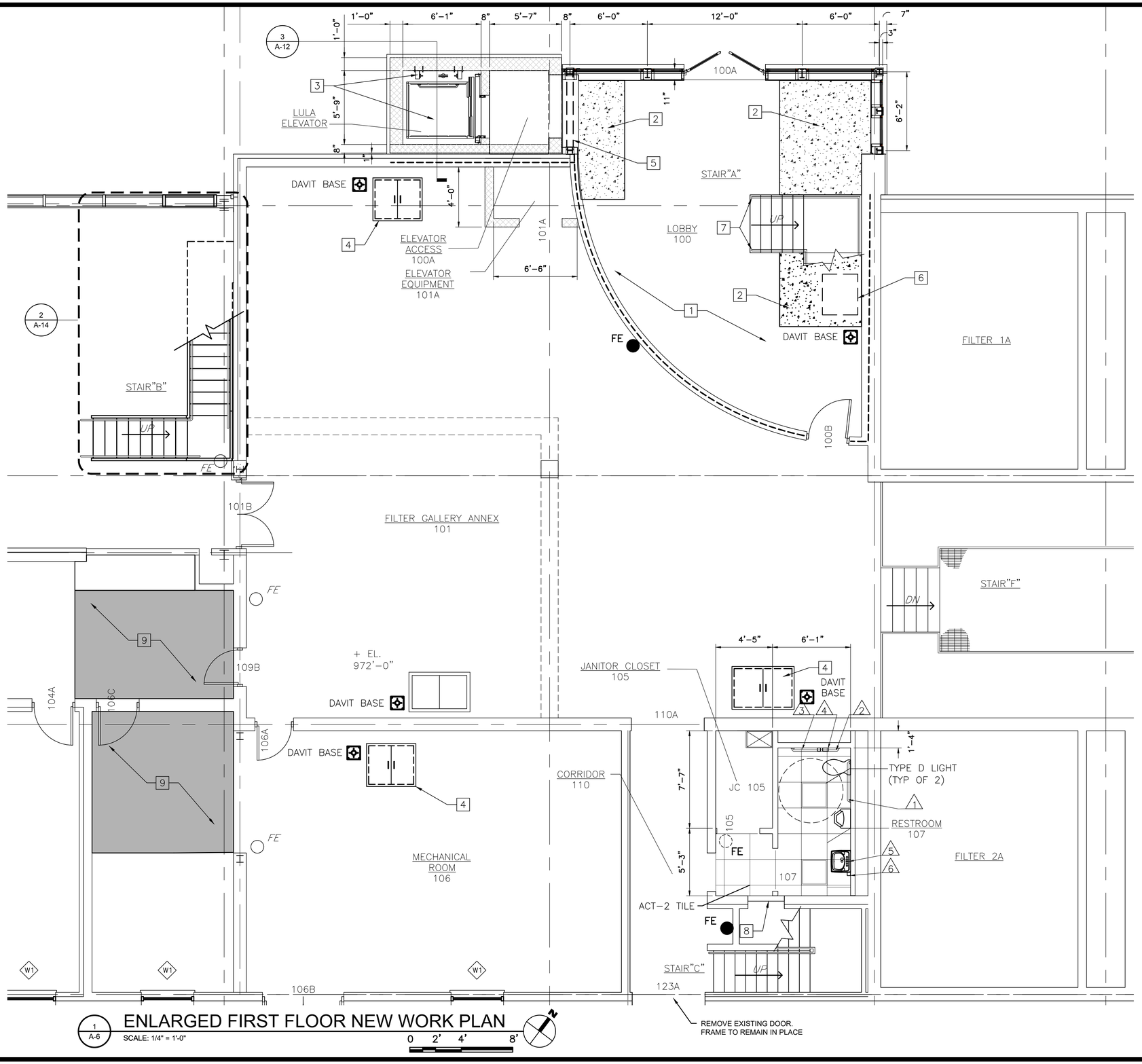

1 A-6 ENLARGED FIRST FLOOR NEW WORK PLAN

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

0 2' 4' 8'

N

#	TOILET ACCESSORY SCHEDULE
1	36" GRAB BAR
2	42" GRAB BAR
3	18" GRAB BAR
4	SURFACE MOUNTED TOILET TISSUE DISPENSER
5	24"x36" MIRROR UNIT
6	SOAP DISPENSER

NEW WORK NOTES

1. EXISTING TERRAZZO FLOOR TO REMAIN. CLEAN PER INDUSTRY STANDARDS FOR PROFESSIONAL CLEANING. FILL ALL CRACKS AND VOIDS WITH MATERIAL RECOMMEND BY TERRAZZO INSTALLER.
2. CONCRETE AND TERRAZZO INFILL AREA EXISTING WATER FEATURE AND PLANTER. TERRAZZO TO MATCH EXISTING.
3. ELEVATOR CAB AND RAILS.
4. FLOOR DOOR. SEE PROCESS DRAWINGS.
5. NEW BEAM ABOVE SEE STRUCTURAL DRAWINGS.
6. EXISTING HATCH TO BE REMOVED AND COVER PLATE INSTALLED. SEE SHEETS D–22 AND P–25.
7. CLEAN EXISTING HANDRAILS.
8. DRYWALL EXISTING OPENING.
9. PROVIDE CEMENTIOUS FLOOR PATCH AT DEMOLISHED TILE FLOORING.

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MAIN BUILDING ARCHITECTURAL FILTER GALLERY ANNEX PLAN

A-9

SHEET: OF

P:\PR58982\Cadd\Sheets\A-9 MAIN BUILDING ARCHITECTURAL FILTER GALLERY ANNEX PLAN.dwg 4/15/2022 8:31:37 AM Paul Emerson

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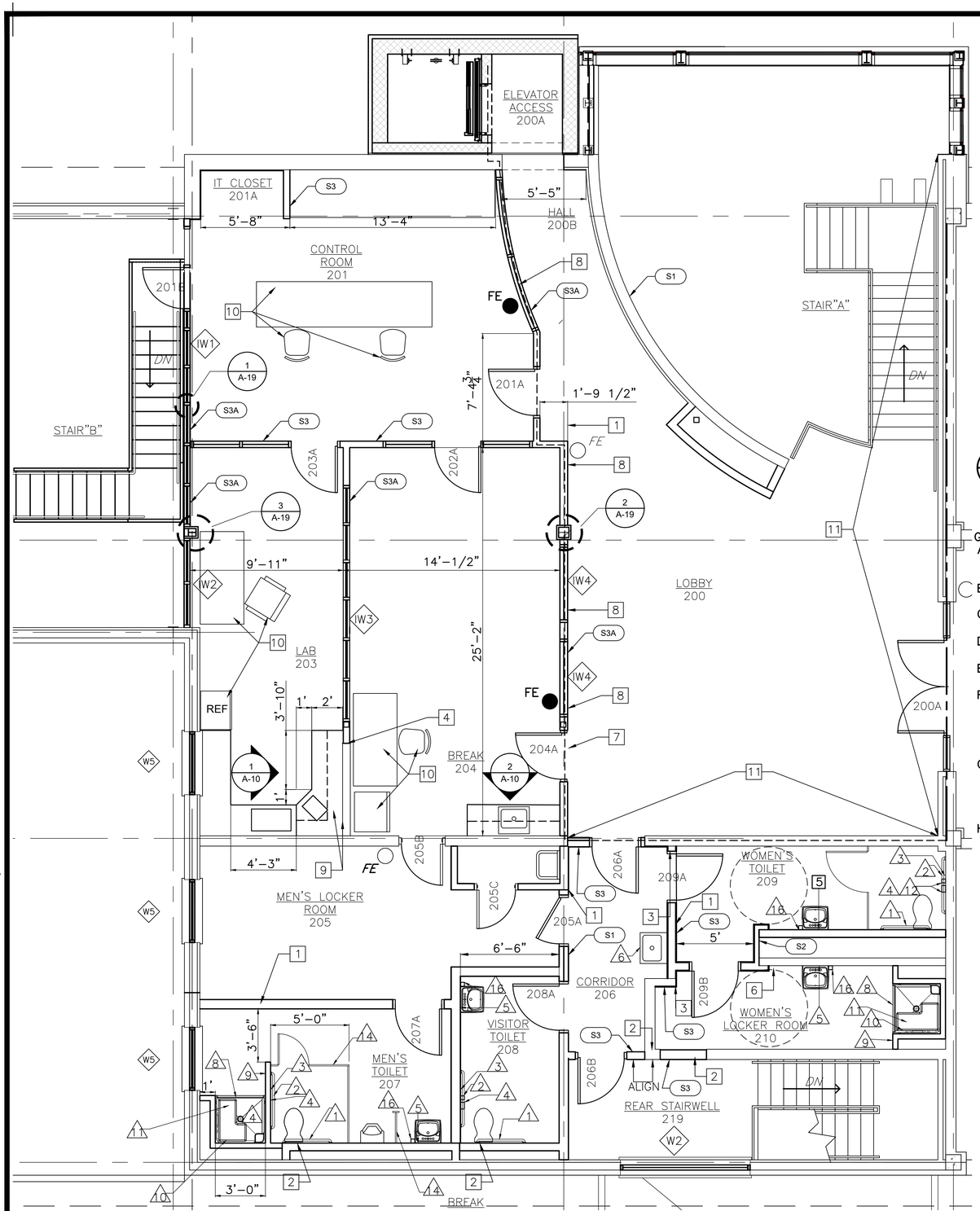


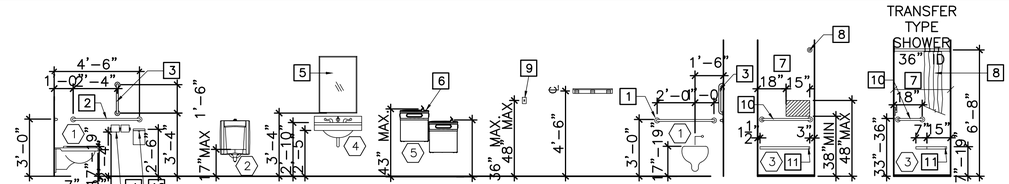
ENLARGED SECOND FLOOR NEW WORK PLAN

1 / A-7 — SCALE: 1/4" = 1'-0"

0 2' 4' 8'

GENERAL PLAN NOTES:

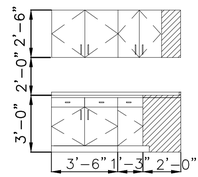
A. ROOM 200, 200B, 201, 201A, 203, 204, AND 211 FLOOR FINISHES SHALL BE EXISTING TERRAZZO. CLEAN FLOOR AND BASE.
B. ROOM 205 FLOOR FINISH SHALL BE EXISTING CERAMIC TILE. CLEAN TILE AND GROUT.
C. ROOMS 206, 207, 208, 209, AND 210 FLOOR FINISHES SHALL BE NEW CERAMIC/PORCELAIN TILE.
D. ROOM 200A FLOOR FINISH SHALL BE NEW CERAMIC/PORCELAIN TILE.
E. CLEAN EXISTING WALL TILE AND GROUT THAT WILL REMAIN IN ALL ROOMS AS OCCURS.
F. NEW PARTITIONS: 6" METAL STUDS W/ 5/8" GYP. DRYWALL, ONE LAYER EACH FACE. 7" NOMINAL DIMENSION. 3-5/8" METAL STUDS W/ 5/8" GYP. DRYWALL, ONE LAYER ON EACH FACE. 5" NOMINAL DIMENSION.
G. PROVIDE FIRE RETARDANT TREATED WOOD BLOCKING AT ALL OPENING JAMBS AND SILLS. ALSO PROVE BLOCKING FOR GRAB BARS, HANDRAILS AND TOILET ACCESSORIES.
H. (S#) DENOTES WALL SECTION PER DETAILS ON SHEET A-19.



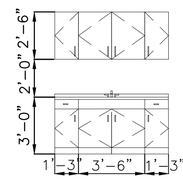
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

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

0 2' 4' 8'



1 / A-10 — LAB CABINETS — SCALE: 1/4" = 1'-0"



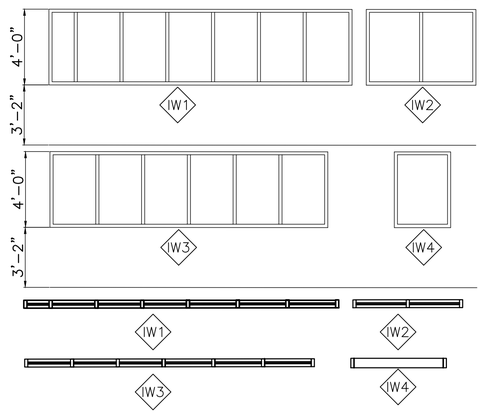
2 / A-10 — BREAK CABINETS — SCALE: 1/4" = 1'-0"

#	FIXTURE FLOOR CLEARANCE SCHEDULE	
1	WALL HUNG WATER CLOSET	60" FROM SIDE WALL 56" FROM REAR WALL
2	WALL HUNG URINAL	30"x48" FRONT APPROACH
3	TRANSFER TYPE SHOWER	36"W x 48"L MEASURED FROM CONTROL WALL
4	LAVATORY	30"x48" FRONT APPROACH
5	TURNING SPACE	60" DIAMETER MIN.
	FLOOR CLEARANCE	SHOWN DASHED ON PLAN

CLEARANCES SHOWN ON SCHEDULE ARE BASIC FLOOR CLEARANCES. FIXTURES REQUIRED TO BE ACCESSIBLE SHALL MEET ALL CLEARANCES AS REQUIRED BY THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN.

#	TOILET ACCESSORY SCHEDULE	MANUFACTURER BASIS OF DESIGN
1	36" GRAB BAR	BOBRICK: B-6806 x 36
2	42" GRAB BAR	BOBRICK: B-6806 x 42
3	18" GRAB BAR	BOBRICK: B-6806 x 18
4	SURFACE MOUNTED TOILET TISSUE DISPENSER	BOBRICK: B-686
5	24"x36" MIRROR UNIT	BOBRICK: B-290 2436
6	ACCESSIBLE WATER COOLER	SEE PLUMBING DRAWINGS
7	36" x 36" TRANSFER TYPE SHOWER	AQUATIC BATH 3636BFS
8	SHOWER CURTAIN AND ROD	BOBRICK: CURTAIN 204-3 BOBRICK: ROD B-207x48
9	TOWEL HOOK	BOBRICK: B-677
10	SHOWER GRAB BAR	SHOWER MANUF. STAN.
11	"L" SHAPED SHOWER SEAT	SHOWER MANUF. STAN
12	SURFACE MOUNTED SANITARY NAPKIN DISPOSAL	BOBRICK: B-270
13	SOLID PLASTIC OVERHEAD BRACED TOILET PARTITIONS	HADRIAN
14	SOLID PLASTIC FLOOR MOUNTED PRIVACY SCREEN	HADRIAN
15	MOP AND BROOM HOLDER	BOBRICK: B-223 X 24
16	SOAP DISPENSER	SEE PLUMBING FIXTURES

REFER TO SPEC SECTION 10 80 00 "TOILET AND BATH ACCESSORIES". CONTRACTOR VERIFY WITH OWNER MANUFACTURER MODEL NUMBERS FOR ALL ACCESSORIES PRIOR TO ORDERING. PAPER TOWEL DISPENSERS AND DISPOSAL TO BE SUPPLIED BY OWNER.



NEW WORK NOTES:

1. LOCATE NEW PARTITION IN LOCATION OF DEMOLISHED WALL.
2. ALIGN NEW PARTITION WITH EXISTING WALL.
3. LAMINATE GYP. DRYWALL TO EXISTING GLAZED TILE WALL.
4. CENTER NEW PARTITION ON END OF EXISTING.
5. LOCATE NEW PARTITION IN LOCATION OF DEMOLISHED DOOR FRAME.
6. WRAP ENDS OF THE GLAZED TILE PIPE CHASE WALLS WITH 5/8" GYP. DRYWALL ON 3-5/8" METAL STUD FRAMING.
7. 1HR. RATED FIRE PARTITION. ONE LAYER OF 5/8" FIRE RATED GYPSUM DRYWALL ON EACH FACE OF 6" METAL STUDS 16" O.C. MAX. RUN PARTITION CONTINUOUS FROM FLOOR SLAB TO BOTTOM OF ROOF DECK ABOVE.
8. 1HR. FIRE RATED ALUMINUM FRAME WINDOW ASSEMBLY.
9. NEW CORNER CABINET AND BASE CABINET WITH NEW COUNTERTOP TO MATCH EXISTING TOP.
10. REFER TO ALLOWANCE FOR FURNITURE AND APPLIANCES.
11. CLEAN ALL GLAZED TILE BLOCK AND MORTAR.

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	TB
DRAWN BY:	LMW
CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	AS NOTED

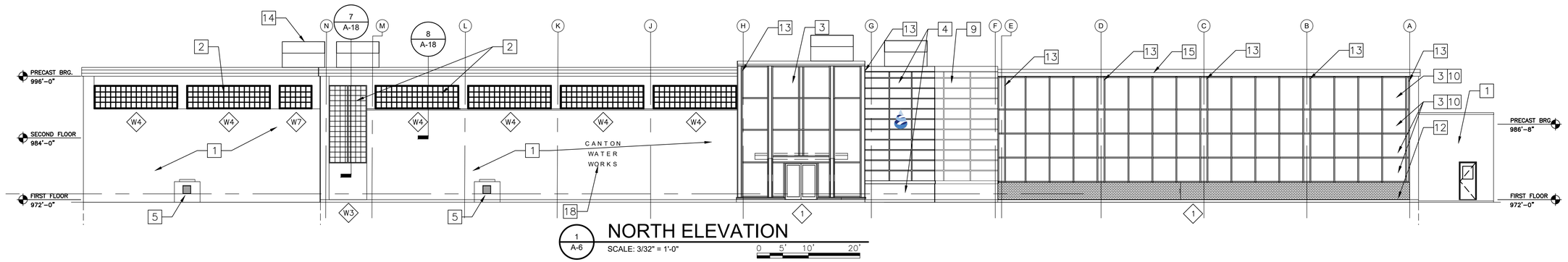
MAIN BLDG ARCHITECTURAL SECOND FLOOR ENLARGED PLAN

A-10

SHEET: OF

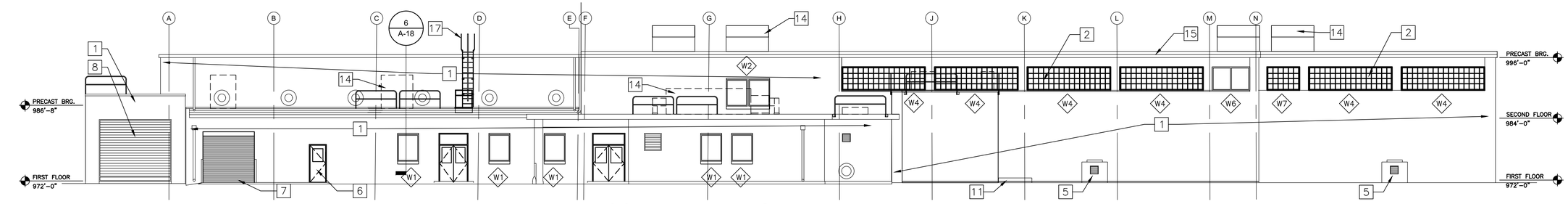
P:\PR58982\Cadd\Sheets\A-10 MAIN BLDG ARCHITECTURAL SECOND FLOOR ENLARGED PLAN.dwg 4/14/2022 4:55:28 PM Paul Emerson

PLOTTED: 4/15/2022 12:55:08 PM



1 A-6 NORTH ELEVATION

SCALE: 3/32" = 1'-0"



2 A-6 SOUTH ELEVATION

SCALE: 3/32" = 1'-0"

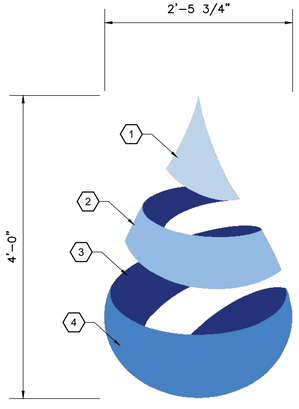
NEW WORK NOTES

1. PRESSURE WASH AND SEAL ALL EXISTING BRICK EXTERIOR WALLS.
2. NEW TRANSLUCENT WALL PANEL. TYPICAL. (SEE WINDOW DETAILS ON SHEET A-18).
3. NEW ALUMINUM CURTAINWALL SYSTEM. (SEE DETAILS ON SHEET A-18)
4. NEW EXTERIOR INSULATION AND FINISH SYSTEM ON 12" CMU WALL AT ELEVATOR HOISTWAY.
5. CLEARWELL ACCESS HATCH.
6. REPLACE EXISTING DOOR GLASS LITE WITH NEW INSULATED GLASS. TYPICAL (SEE DOOR SCHEDULE)
7. NEW ALUMINUM COILING OVERHEAD DOOR.(SEE DOOR SCHEDULE)
8. EXISTING LOUVER TO REMAIN.
9. EXISTING EXTERIOR INSULATION AND FINISH SYSTEM TO REMAIN. PROVIDE NEW FINISH COAT.
10. BLUE TINTED GLASS.
11. EXTERIOR SPILL CONTAINMENT SUMP.
12. NEW BRICK VENEER ON CMU BACK UP.
13. ALUMINUM COLUMN SURROUND.
14. HVAC UNIT. SEE MECHANICAL DRAWINGS.
15. UNDERSIDE OF 24" SLAB OVERHANG TO BE SAND BLASTED AND SEALED NORTH AND SOUTH WALL.
16. EIFS SURROUND. SEE DOOR DETAILS.
17. NEW ALUM. LADDER, TYPE 3. SEE SHEET SD-13 FOR DETAILS.
18. REMOVE, POLISH, AND REINSTALL COMPLETE SET OF EX. 3/4" CAST ALUMINUM LETTERS WITH ANODIZED FINISH. LETTERS ARE TO BE STUD MOUNTED AND FLUSH TO MASONRY WALL.

NOTES: COMPLETE S/F NON-ILLUMINATED ROUTED ACRYLIC LOGO WITH FIRST SURFACE DIGITAL PRINT DECORATION, WITH OVERLAMINATE. 1/2" THICK WHITE ACRYLIC. FLUSH MOUNTED WITH EXTERIOR WALL WITH 316 SS EXPANSION ANCHORS AND FASTENER HARDWARE

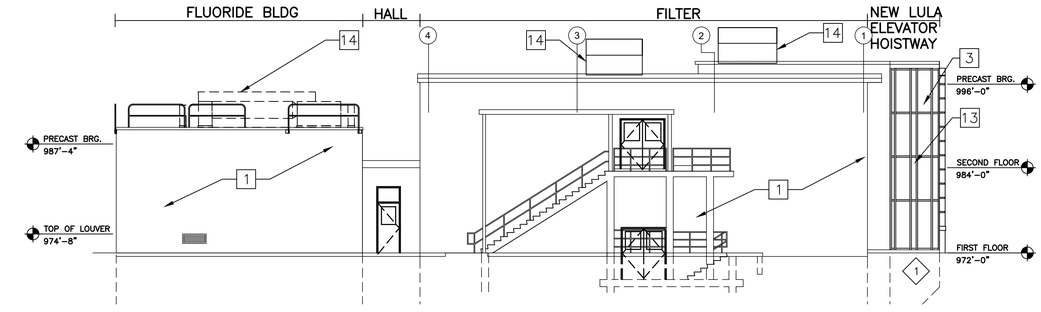
COLORS
ACRYLIC: WHITE
LOGO: DIGITAL PRINT

1. PANTONE 2707C
2. PANTONE 278C
3. PANTONE 2758C
4. PANTONE 2718C



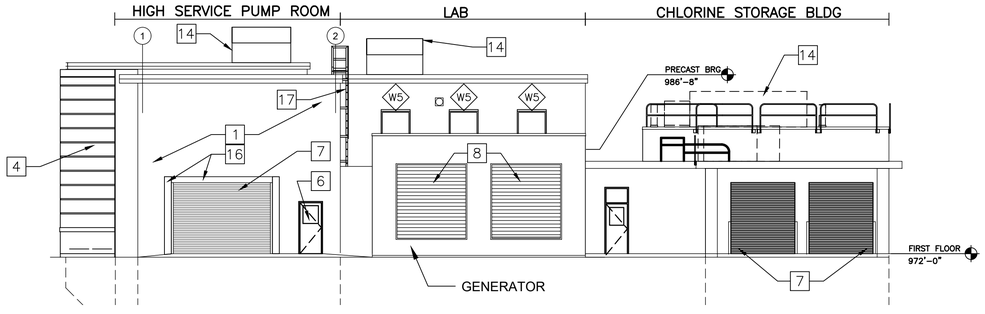
NEW LOGO SIGN DETAIL

SCALE: NONE



3 A-6 EAST ELEVATION

SCALE: 3/32" = 1'-0"



4 A-6 WEST ELEVATION

SCALE: 3/32" = 1'-0"

BURGESS & NIPLE
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CITY OF CANTON, OHIO
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SCALE:	AS NOTED

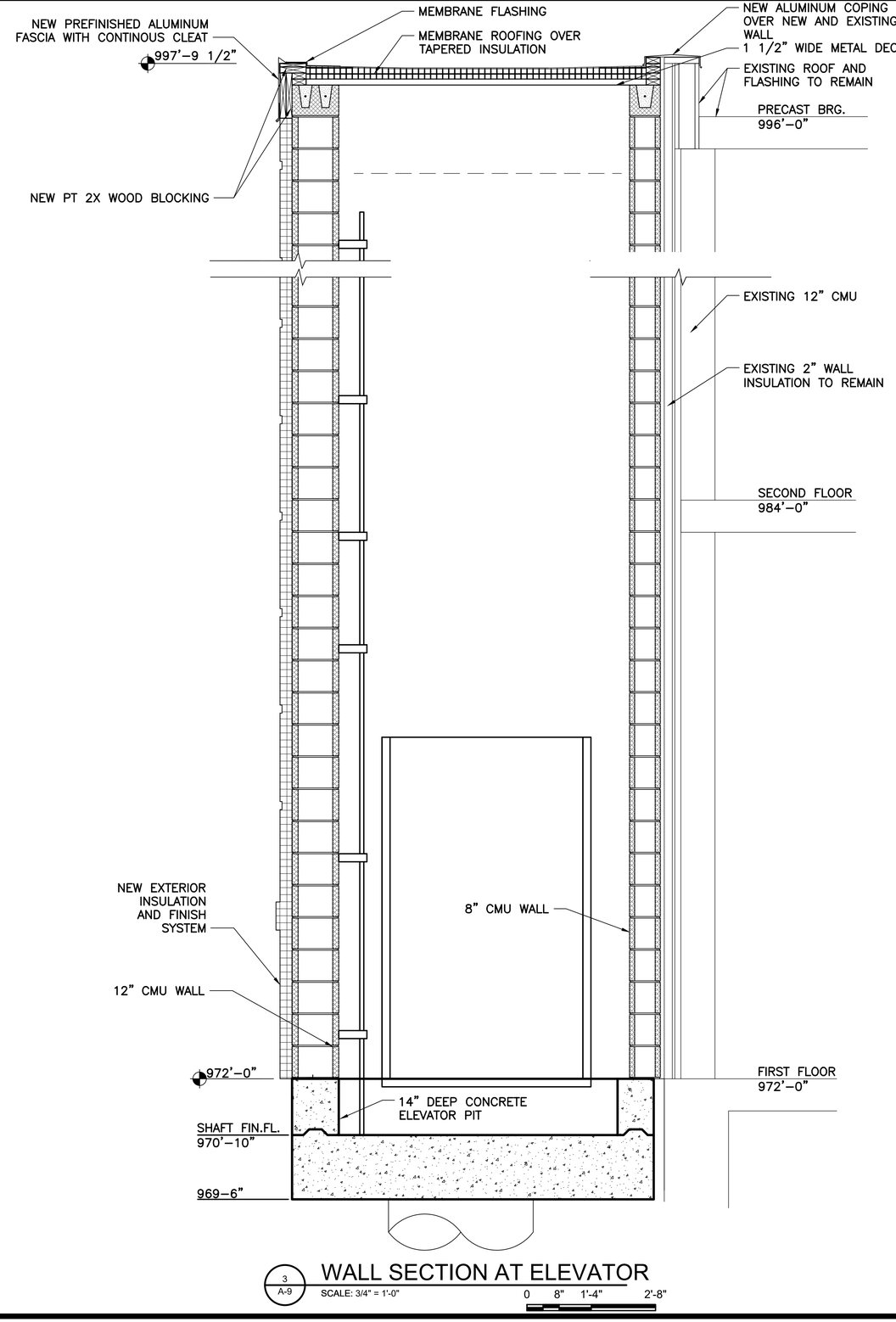
MAIN & FILTER BLDG
ARCHITECTURAL
ELEVATIONS

A-11

SHEET: OF

P:\PR58982\Cadd\Sheets\A-11 MAIN & FILTER BLDG aRCHITECTURAL ELEVATIONS.dwg 4/15/2022 11:18:33 AM Paul Emerson

PLOTTED: 4/15/2022 12:55:17 PM



3 / A-9 WALL SECTION AT ELEVATOR

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

0 8" 1'-4" 2'-8"

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APPROVED BY:	CMS
SCALE:	3/4" = 1'-0"

MAIN BUILDING ARCHITECTURAL ELEVATOR WALL SECTION

A-12

SHEET: OF

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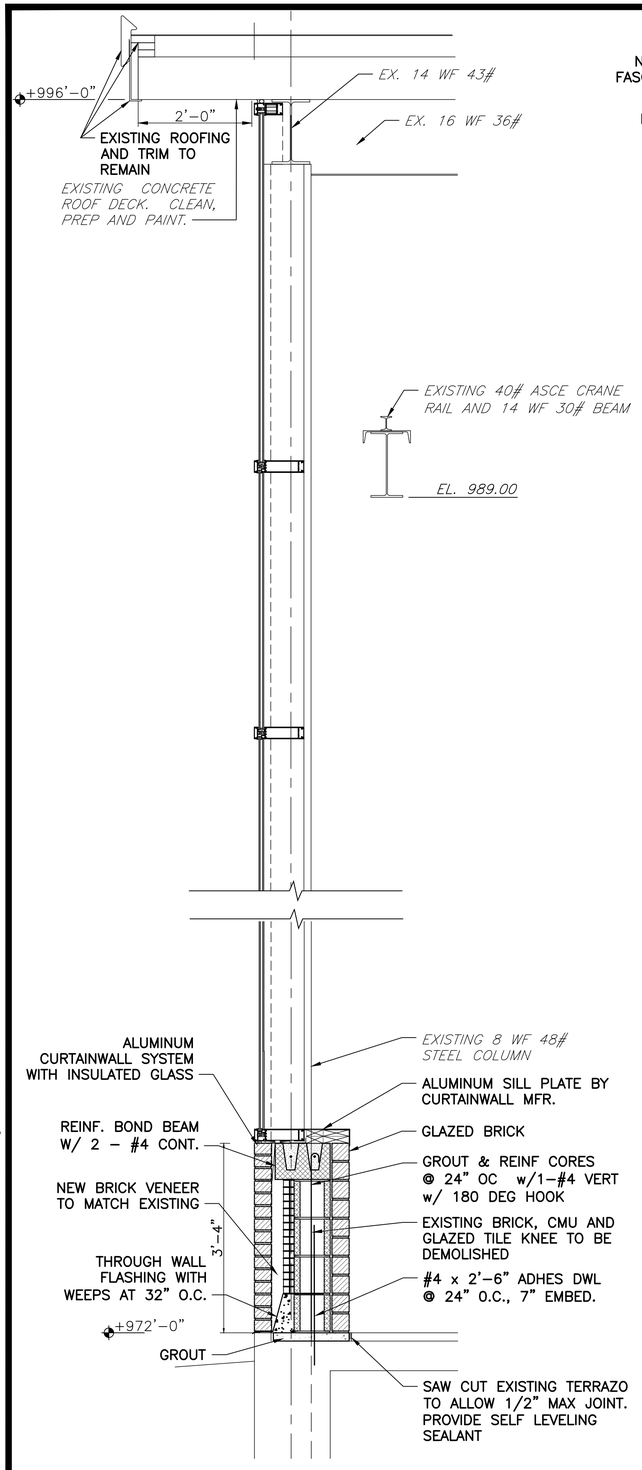
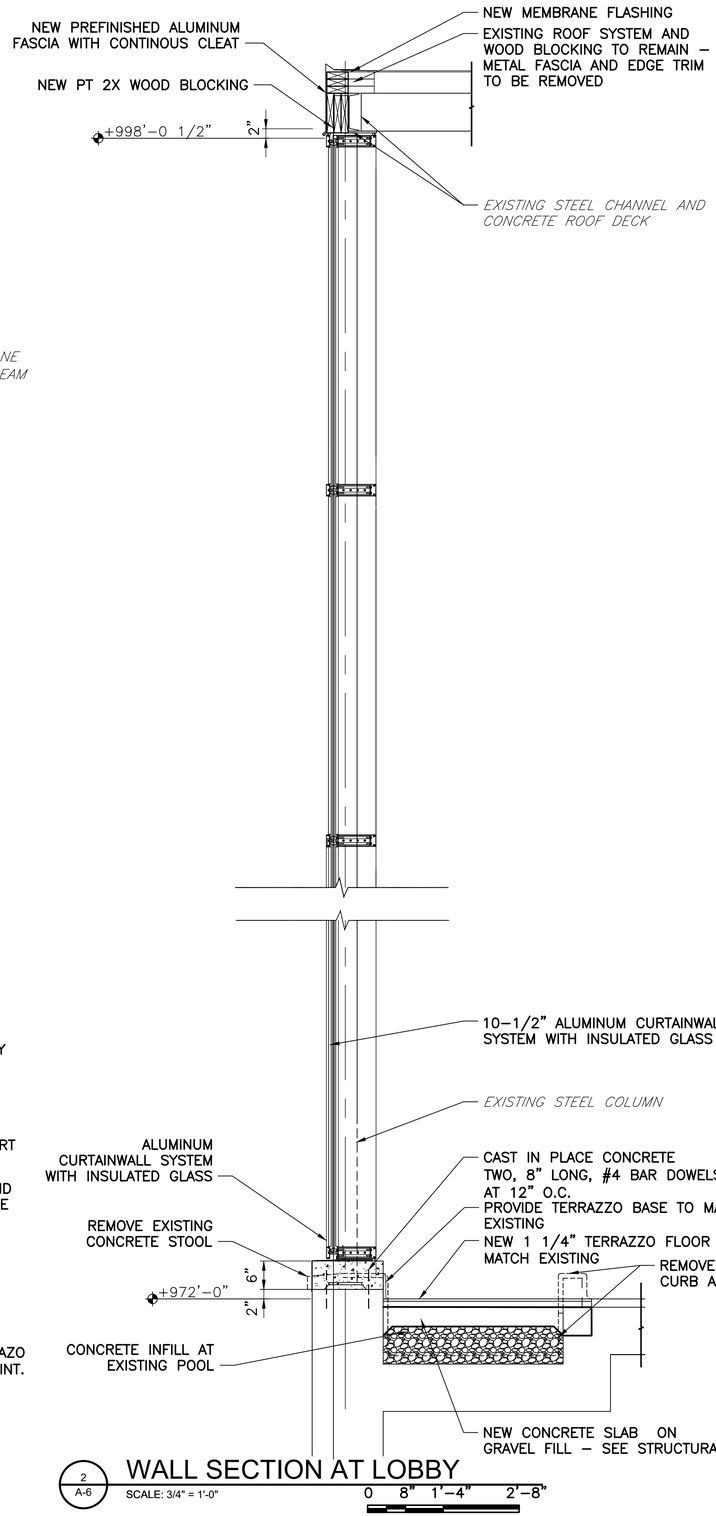
PLOTTED: 4/15/2022 12:55:29 PM



1 A-6 WALL SECTION AT PUMP ROOM

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

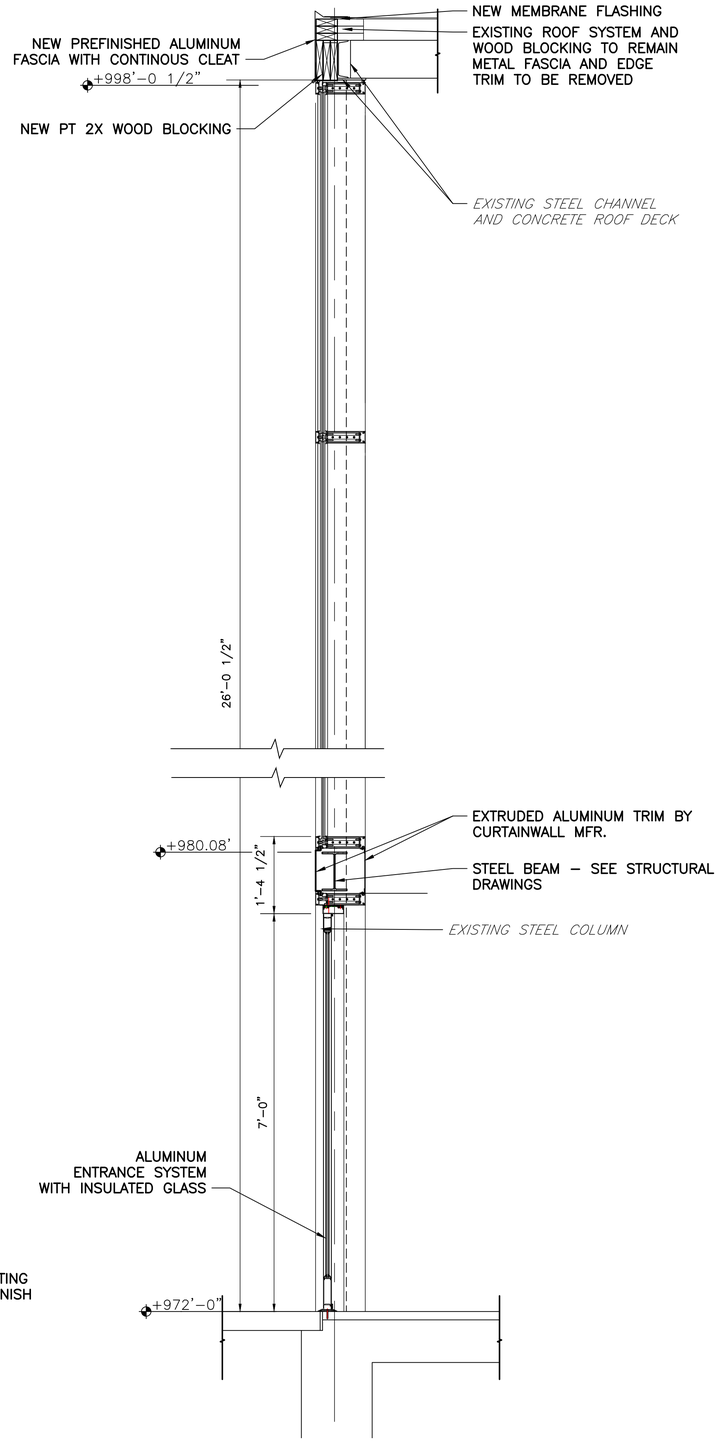
0 8" 1'-4" 2'-8"



2 A-6 WALL SECTION AT LOBBY

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

0 8" 1'-4" 2'-8"



3 A-6 WALL SECTION AT LOBBY DOORS

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

0 8" 1'-4" 2'-8"

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APPROVED BY:	CMS
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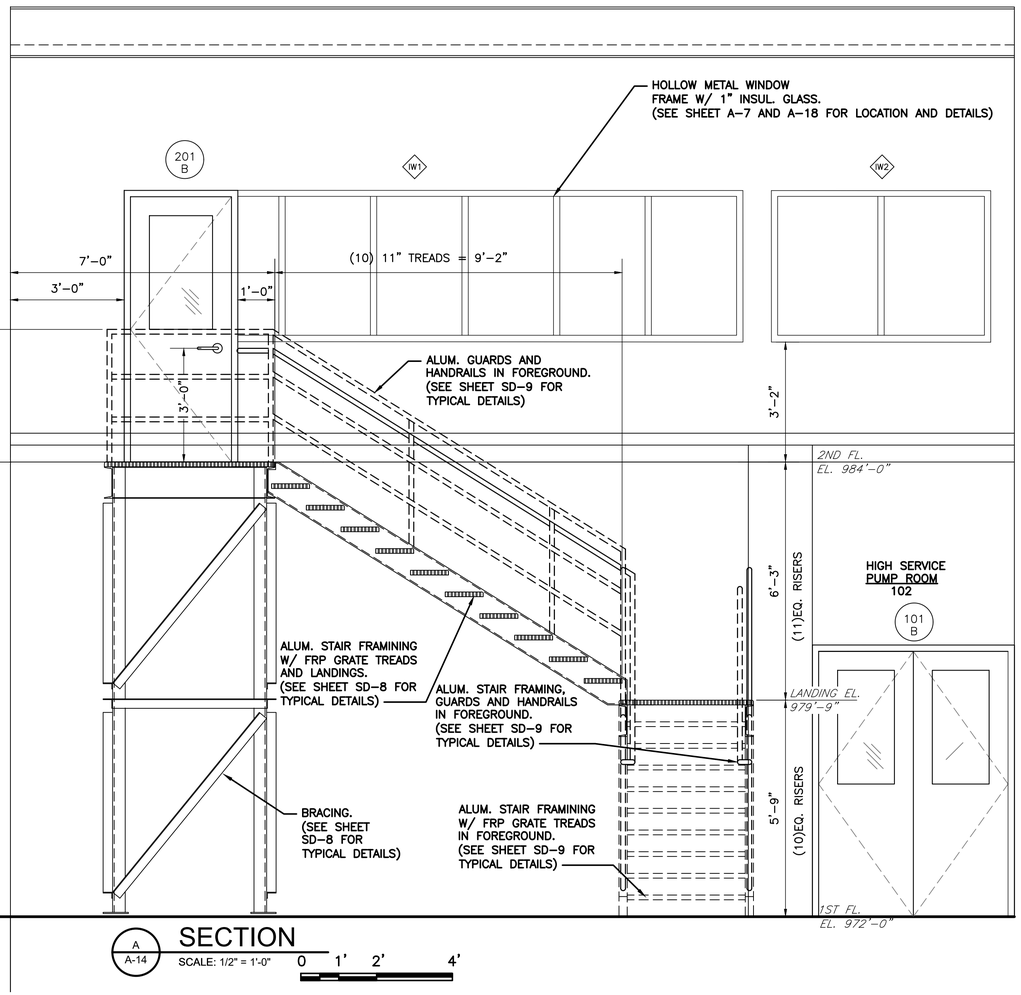
MAIN BUILDING ARCHITECTURAL WALL SECTIONS

A-13

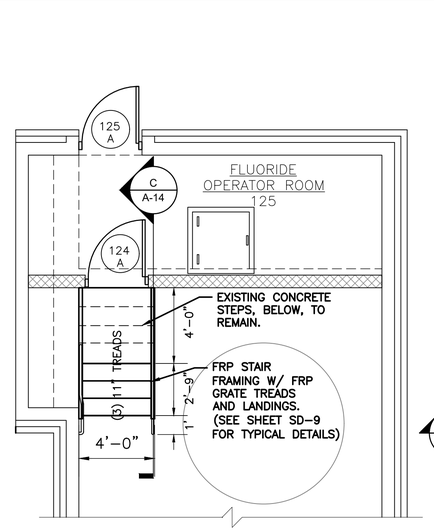
SHEET: OF

P:\PR58982\Cadd\Sheets\A-13 MAIN BUILDING ARCHITECTURAL WALL SECTIONS.dwg 1/18/2022 2:06:38 PM Paul Emerson

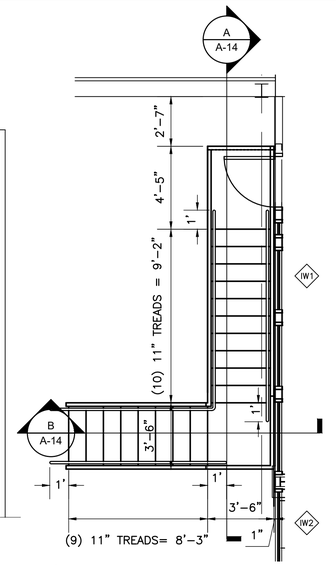
PLOTTED: 4/15/2022 12:55:39 PM



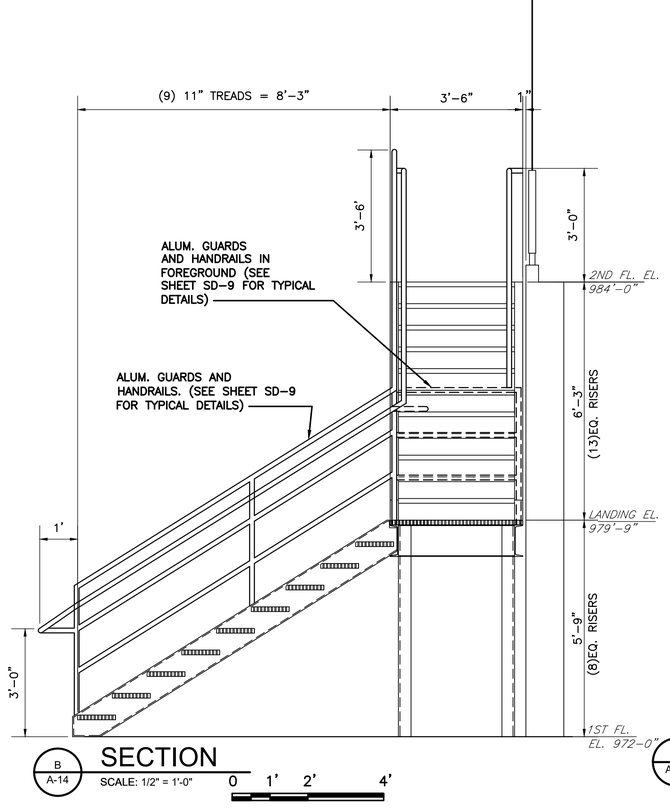
A A-14 SECTION
SCALE: 1/2" = 1'-0" 0 1' 2' 4'



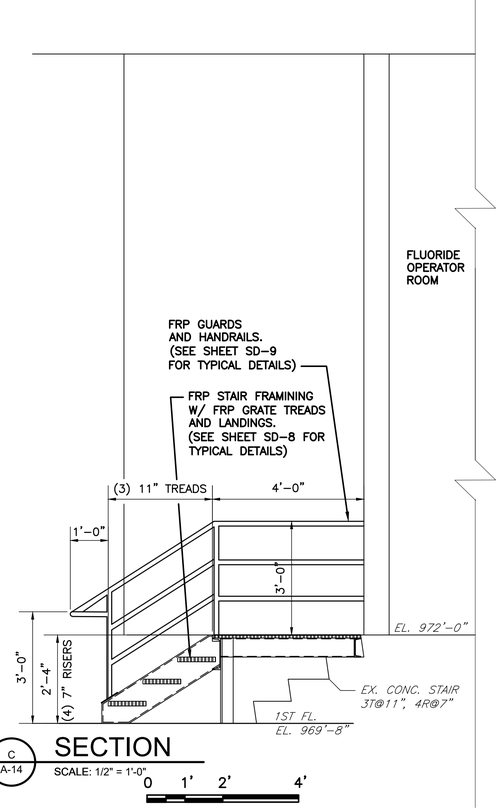
1 A-6 STAIR "D" PLAN
SCALE: 1/4" = 1'-0" 0 2' 4' 8'



2 A-9 STAIR "B" PLAN
SCALE: 1/4" = 1'-0" 0 2' 4' 8'



B A-14 SECTION
SCALE: 1/2" = 1'-0" 0 1' 2' 4'



C A-14 SECTION
SCALE: 1/2" = 1'-0" 0 1' 2' 4'

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MAIN BUILDING
ARCHITECTURAL
STAIR
PLAN-SECTIONS

A-14

SHEET: OF

P:\PR58982\Cadd\Sheets\A-14 MAIN BUILDING ARCHITECTURAL STAIR PLAN-SECTIONS.dwg 4/13/2022 4:51:02 PM Paul Emerson

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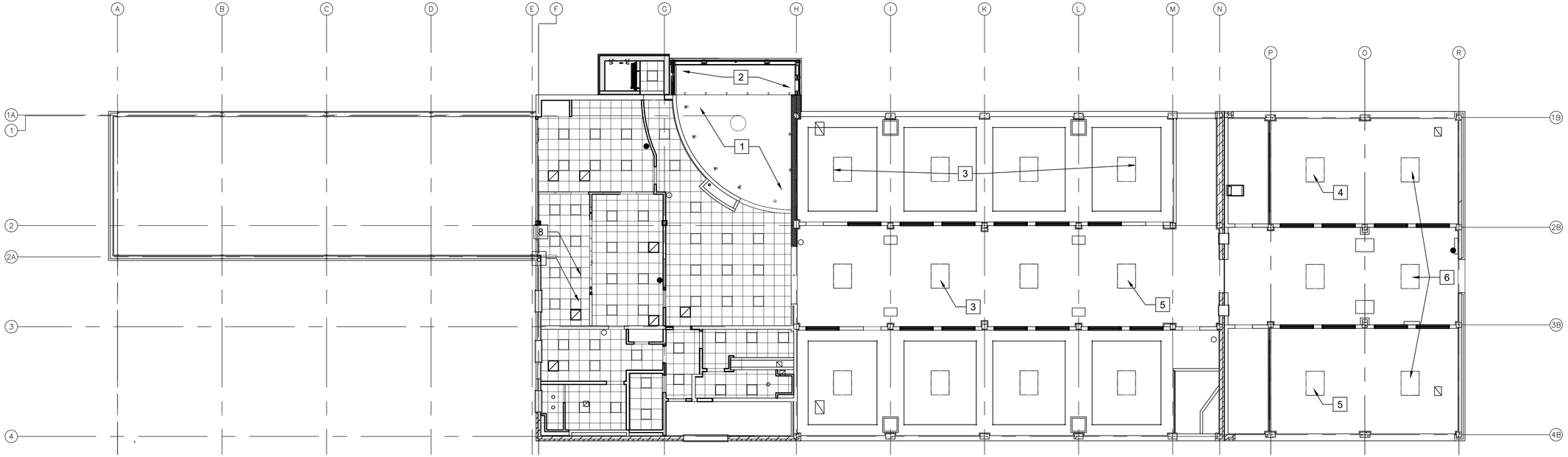
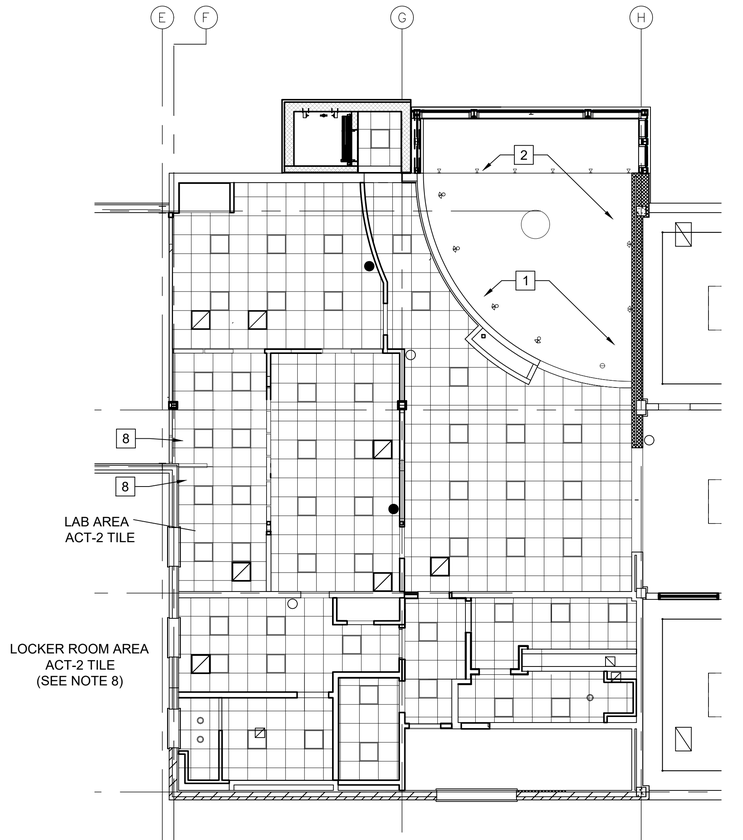


SECOND FLOOR REFLECTED CEILING PLAN

SCALE: 3/32" = 1'-0"

0 5' 10' 20'



ENLARGED REFLECTED CEILING PLAN

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

0 4' 8' 16'

NEW WORK NOTES

1. EXISTING PLASTER CEILING ON SUSPENDED LATH TO REMAIN. DAMAGED AREA DUE TO WINDOW AND /OR ELEVATOR INSTALLATION SHALL BE REPLACED AND SURFACES RESTORED AND REFINISHED TO MATCH EXISTING CEILING.
2. EXISTING CEILING FINISH ON METAL FURRING DIRECTLY ATTACHED TO CONCRETE ROOF PLANKS TO REMAIN.
3. EXISTING SKYLIGHT OPENING FOR 3'-7 1/2" x 4'-7 1/2" FOR FILTER 1-4 TO BE REMOVED AND REPLACED WITH NEW SKYLIGHT WITH PROTECTION SCREEN.
4. EXISTING 40" x 61" SKYLIGHT OPENING FOR FILTER 5-6 TO BE REMOVED AND REPLACED WITH NEW SKYLIGHT WITH PROTECTION SCREEN.
5. EXISTING SKYLIGHT TO BE REMOVED AND NEW CLOSURE FOR OPENING CONSTRUCTED FOR HVAC DUCTWORK. SEE DETAIL C/A-22.
6. EXISTING SKYLIGHT FOR 3'-0" X 5'-9" OPENING TO BE REMOVED AND REPLACED WITH NEW SKYLIGHT WITH PROTECTION SCREEN. TYPICAL FOR FILTER 5 & 6.
7. ALL ACOUSTICAL CEILING TILE SHALL BE ACT-1 WHERE NOTED OTHERWISE.
8. PROVIDE ACT-2 ARMSTRONG CERAMIC COATING TILE (OR EQUAL) FOR DAMP OR HUMID AREAS SUCH AS THE LOCKER ROOMS, RESTROOMS, AND LABORATORY.

LEGEND

- ACOUSTICAL TILE CEILING (ATC)
- RECESSED LIGHT FIXTURE - SEE ELECTRICAL
- WALL MOUTNED LIGHT FIXTURE - SEE ELECTRICAL
- PENDANT LIGHT FIXTURE - SEE ELECTRICAL
- RECESSED LIGHT FIXTURE - SEE ELECTRICAL
- RECESSED LIGHT FIXTURE - SEE ELECTRICAL
- DIFFUSER SUPPLY/RETURN - SEE MECHANICAL
- SEE MECHANICAL
- DIFFUSER SUPPLY/RETURN - SEE MECHANICAL

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SCALE:	3/32"=1'-0"

MAIN & FILTER BLDG
ARCHITECTURAL
REFLECTED CEILING
PLAN

A-15

SHEET: OF

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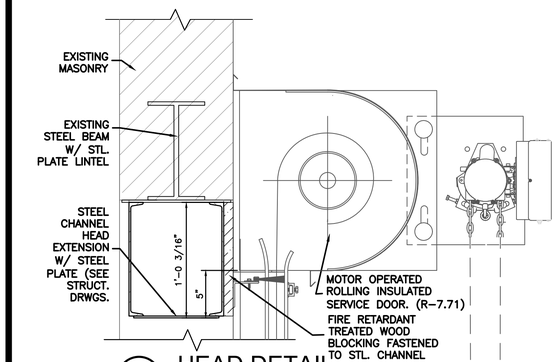
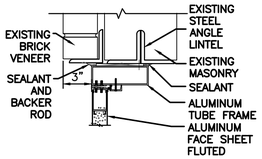
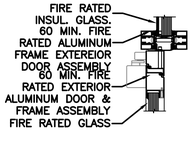


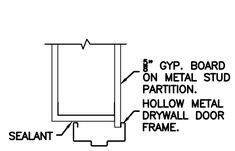
7H A-16 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



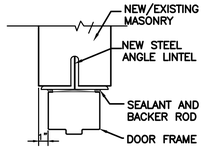
4H A-16 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



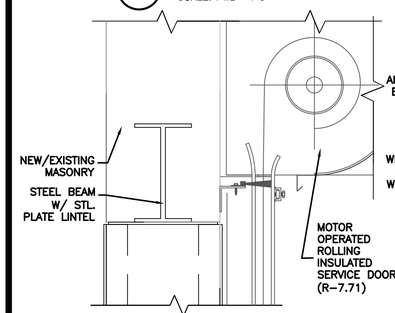
3H A-16 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



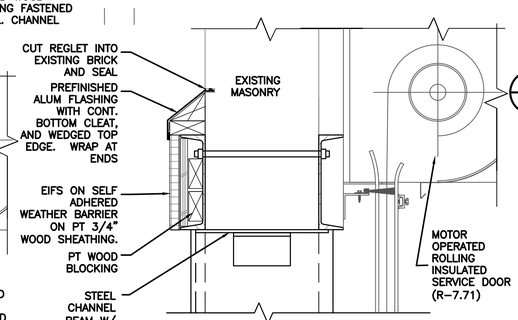
2H A-16 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



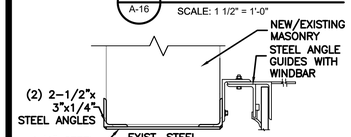
1H A-16 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



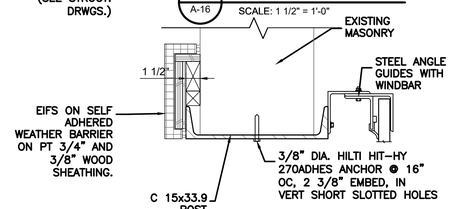
8H A-16 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



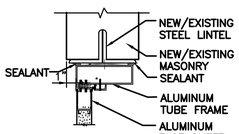
6H A-16 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



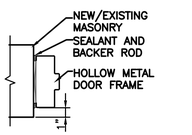
7J A-16 JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



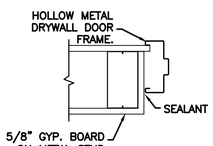
6J A-16 JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



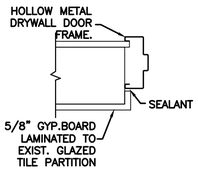
5H A-16 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



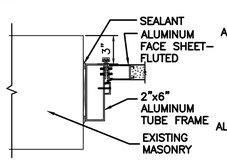
2J A-16 JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



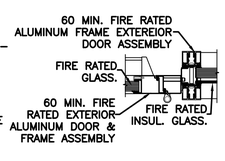
1J A-16 JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



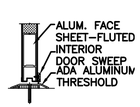
5J A-16 JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



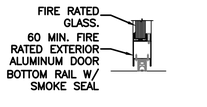
4J A-16 JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



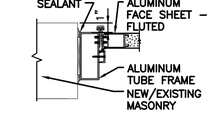
3J A-16 JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



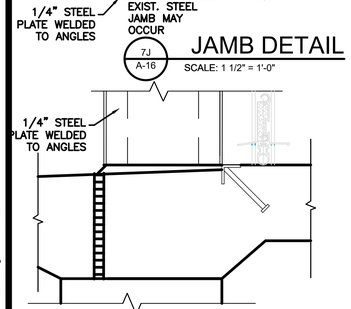
2S A-16 SILL DETAIL
SCALE: 1 1/2" = 1'-0"



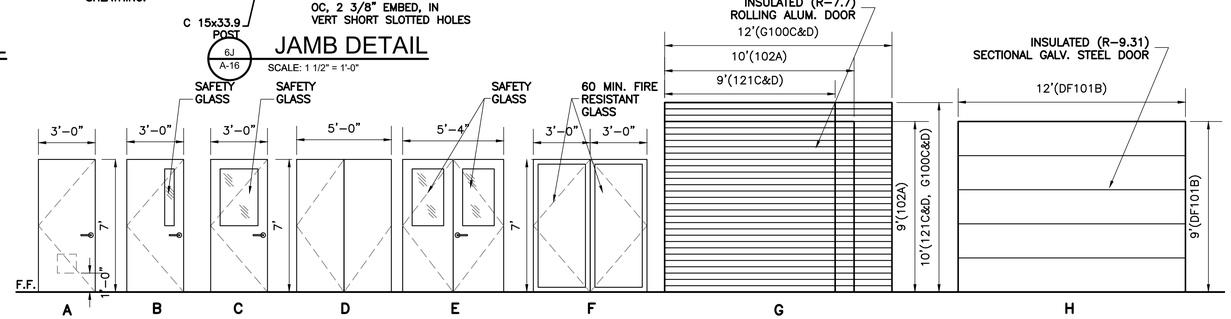
1S A-16 SILL DETAIL
SCALE: 1 1/2" = 1'-0"



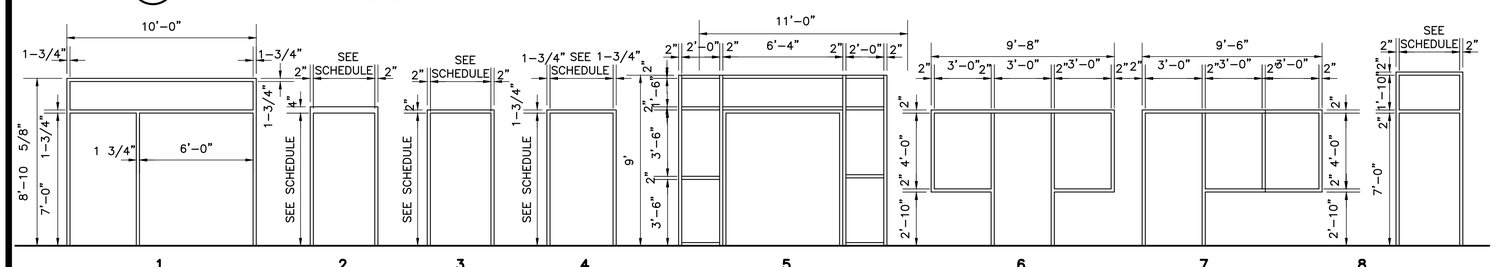
6J A-16 JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



3S A-16 SILL DETAIL
SCALE: 1 1/2" = 1'-0"



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



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

DOOR & FRAME SCHEDULE

MARK	LOCATION	DOOR DIMENSIONS W	H	T	MATL	TYPE	GLAZING	FRAME MATL	TYPE	DETAILS HEAD	JAMB	SILL	HDWR SETS	FIRE RATING LABEL	MARK
	WTP BLDG. 1ST FL.														
100A	LOBBY 100	PR.3'-0"	7'-0"	1-3/4"	ALUM	F		ALUM	4				1.0		100A
100B	LOBBY 100	2'-8"	7'-0"	1-3/4"	HM	EX		HM	EX	–	–	–	20.0		100B
101A	ELEV. EQUIP. 101A	3'-0"	7'-0"	1-3/4"	HM	A		HM	3	1H	1J	–	14.0		101A
101B	FLTR. GALL. ANX. 101	PR.2'-6"	6'-11"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	24.0		101B
102A	PUMP ROOM 102	12'-0"	10'-0"	1/8"	ALUM	G		–	–	6H	6J	3S	30.0		102A
102B	PUMP ROOM 102	3'-0"	7'-0"	1-3/4"	ALUM	C		ALUM	4	4H	4J	2S	2.0		102B
103A	ELECT. ROOM 103	PR.3'-0"	7'-0"	1-3/4"	ALUM	D		ALUM	1	5H	5J	–	5.0		103A
103B	ELECT. ROOM 103	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	4	4H	4J	2S	2.0		103B
103C	ELECT. ROOM 103	3'-0"	7'-2"	1-3/4"	HM	EX		HM	EX	–	–	–	8.0	2 HR.	103C
103D	ELECT. ROOM 103	9'-0"	10'-0"	1/8"	ALUM	G		–	–	7H	–	–	30.0		103D
104A	STORAGE ROOM 104	3'-0"	6'-11"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	12.0		104A
104B	STORAGE ROOM 104	PR.2'-8"	7'-0"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	3.0		104B
104C	TEMP. OFFICE 104A	3'-0"	6'-11"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	12.0		104C
105A	JANITOR CLOSET 105	3'-0"	7'-0"	1-3/4"	HM	A		HM	3	1H	2J	–	22.0		105
106A	MECH. ROOM 106	3'-0"	7'-2"	1-3/4"	HM	EX		HM	EX	–	–	–	15.0	1 HR.	106A
106B	MECH. ROOM 106	PR.3'-0"	7'-0"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	3.0		106B
106C	MECH. ROOM 106	3'-0"	7'-0"	1-3/4"	HM	A		HM	3	1H	2J	–	13.0		106C
107A	RESTROOM 107	3'-0"	7'-0"	1-3/4"	HM	A		HM	3	1H	2J	–	22.0		107
108A	FLTR. PIPE GALL. 108	2'-8"	7'-0"	1-3/4"	ALUM	C		ALUM	4	5H	5J	–	20.0		108A
108B	FLTR. PIPE GALL. 108	PR.3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	3.0		108B
108C	TEMP. CONTROL ROOM	PR.3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	3.0		108B
109A	HALL 109	3'-0"	7'-2"	1-3/4"	HM	EX		HM	EX	–	–	–	6.0	1 HR.	109A
109B	HALL 109	2'-8"	7'-0"	1-3/4"	HM	EX		HM	EX	–	–	–	7.0		109B
110A	CORRIDOR 110	PR.2'-8"	7'-0"	1-3/4"	HM	EX		HM	3	1H	2J	–	9.0		110A
110B	CORRIDOR 110	2'-8"	7'-0"	–	–	–		HM	2	5H	4J	–	9.0	26	110B
120A	GENERATOR RM. 120	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	28.0		120A
121A	CHLORINE STOR. 121	3'-0"	7'-0"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	4.0		121A
121B	CHLORINE STOR. 121	3'-0"	7'-0"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	4.0		121B
121C	CHLORINE STOR. 121	9'-0"	10'-0"	1/8"	ALUM	G		STL	EX	8H	7J	3S	30.0		121C
121D	CHLORINE STOR. 121	9'-0"	10'-0"	1/8"	ALUM	G		STL	EX	8H	7J	3S	30.0		121D
122A	EVAP. RM. 122	3'-0"	7'-0"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	19.0		122A
122B	EVAP. RM. 122	3'-0"	7'-0"	1-3/4"	ALUM	C		ALUM	4	4H	4J	2S	2.0		122B
123A	REAR LOBBY 123	3'-0"	2'-0"	REMOVE DOOR				MO	EX	–	–	–	–		123A
123B	REAR LOBBY 123	PR.2'-6"	7'-0"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	3.0		123B
123C	REAR LOBBY 123	3'-0"	7'-0"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	4.0		123C
124A	FLUOR. OP. RM. 125	3'-0"	7'-2"	1-3/4"	ALUM	C		ALUM	4	5H	5J	–	11.0		124A
125A	FLUOR. OP. RM. 125	3'-0"	7'-2"	1-3/4"	ALUM	C		ALUM	4	4H	4J	2S	2.0		125A
	WTP BLDG. 2ND FL.														
200A	LOBBY 200	PR.3'-0"	7'-0"	1-3/4"	ALUM	F		ALUM	5	3H	3J	1S	10.0	1 HR.	200A
201A	CONTROLL RM. 201	3'-0"	7'-0"	1-3/4"	WD	C		HM	8	2H	1J	–	17.0	1 HR.	201A
201B	CONTROLL RM. 201	2'-8"	7'-0"	1-3/4"	WD	C		HM	3				16.0		201B
202A	BREAK RM 204	3'-0"	7'-0"	1-3/4"	WD	A		HM	6				19.0		202A
203A	LAB 203	3'-0"	7'-0"	1-3/4"	WD	A		HM	7				19.0		203A
204A	BREAK RM. 204	3'-0"	7'-0	1-3/4"	WD	B		HM	3				21.0	1 HR.	204A
205A	MEN'S LKR. RM. 205	3'-0"	7'-0	1-3/4"	WD	A		HM	3	2H	1J	–	19.0		205A
205B	MEN'S LKR. RM. 205	2'-8"	7'-0	1-3/4"	WD	A		HM	3	1H	2J	–	19.0		205B
205C	MEN'S LKR. RM. 205	2'-0"	7'-0	1-3/4"	WD	A		HM	3	2H	1J	–	18.0		205C
206A	CORRIDOR 206	3'-0"	7'-0	1-3/4"	WD	B		HM	3	2H	1J	–	21.0	1 HR.	206A
206B	CORRIDOR 206	3'-0"	7'-0	1-3/4"	WD	B		HM	3	2H	1J	–	19.0		206B
207A	MEN'S TOILET 207	3'-0"	7'-0"	1-3/4"	WD	A		HM	3	2H	1J	–	22.0		207A
208A	VISITOR TOILET 208	3'-0"	7'-0"	1-3/4"	WD	A		HM	3	2H	1J	–	22.0		208A
209A	WOMEN'S TOILET 209	3'-0"	7'-0"	1-3/4"	WD	A		HM	3	2H	1J	–	22.0		209A
209B	WOMEN'S TOILET 209	3'-0"	7'-0"	1-3/4"	WD	A		HM	3	2H	1J	–	23.0		209B
211A	FILTER OP. RM. 211	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	26.0		211A
211B	FILTER OP. RM. 211	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	26.0		211B
211C	FILTER OP. RM. 211	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	26.0		211C
211D	FILTER OP. RM. 211	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	26.0		211D
212A	FILTER OP. RM. 212	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	26.0		212A
212B	FILTER OP. RM. 212	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	26.0		212B
212C	FILTER OP. RM. 212	PR.3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	27.0		212C
	GARAGE														
G100A	GARAGE G100	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	29.0		G100A
G100B	GARAGE G100	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	29.0		G100B
G100C	GARAGE G100	12'-0"	10'-0"	1/8"	ALUM	G		STL.	EX	8H	7J	3S	30.0		G100C
G100D	GARAGE G100	12'-0"	10'-0"	1/8"	ALUM	G		STL.	EX	8H	7J	3S	30.0		G100D
	AERATOR WEST														
AW100A	AERATOR AW100	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	29.0		AW100A
AW100B	AERATOR AW200	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	5H	4J	–	25.0		AW100B
	AERATOR EAST														
AE100A	AERATOR AE100	3'-0"	7'-2"	1-3/4"	ALUM	EX		ALUM	EX	–	–	–	29.0		AE100A
AE100B	AERATOR AE100	3'-0"	7'-2"	1-3/4"	ALUM	C		ALUM	EX	5H	4J	–	25.0		AE100B
	DECHLORINATION FACILITY														
DF101A		3'-0"	7'-0"	1-3/4"	FRP	A		FRP					29.0		
DF101B		12'-0"	9'-0"	2"	STL.	H		STL					30.0		
	WELL FIELD														
WF101-107A		3'-0"	7'-0"	1-3/4"	FRP	A		FRP					29.0		
WF101-107B		PR4'-0"	7'-0"	1-3/4"	FRP	D		FRP					3.0		
WF108A		3'-0"	7'-0"	1-3/4"	FRP	A		FRP					29.0		
WF108B		PR4'-0"	7'-0"	1-3/4"	FRP	D		FRP					3.0		
WF109A		3'-0"	7'-0"	1-3/4"	FRP	A		FRP					29.0		
WF109B		PR4'-0"	7'-0"	1-3/4"	FRP	D		FRP					3.0		
WF110A		3'-0"	7'-0"	1-3/4"	FRP	A		FRP					29.0		
WF110B		PR4'-0"	7'-0"	1-3/4"	FRP	D		FRP					3.0		

LEGEND:
EX = EXISTING TO REMAIN.
HM = HOLLOW METAL
ALUM= ALUMINUM
PR = PAIR OF DOORS
MO = MASONRY OPENING
STL = GALVANIZED STEEL
FRP = FIBRE REINF. PLASTIC

NOTES:
1. FIELD VERIFY ALL ROUGH OPENING DIMENSIONS BEFORE MANUFACTURING NEW DOORS AND FRAMES.
2. ALL DOORS DESIGNATED TO RECEIVE NEW LOCKSETS WILL BE EQUIPPED WITH THE EXISTING CYLINDERS FROM THE LOCKSETS BEING REPLACED.

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO: PR58982
DATE: APR 2022
DESIGNED BY: TB
DRAWN BY: LMW
CHECKED BY: LMW
APPROVED BY: CMS
SCALE: AS NOTED

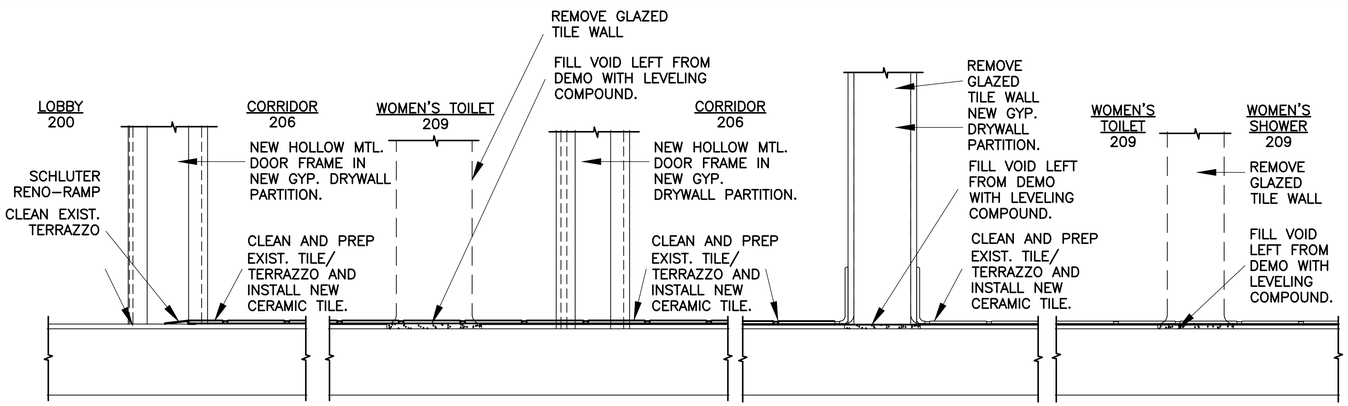
ARCHITECTURAL DOOR SCHEDULE AND DETAILS

A-16

SHEET: OF

P:\PR58982\Cadd\Sheets\A-16 ARCHITECTURAL DOOR SCHEDULE AND DETAILS.dwg 4/13/2022 4:47:18 PM Paul Emerson

PLOTTED: 4/15/2022 12:56:31 PM

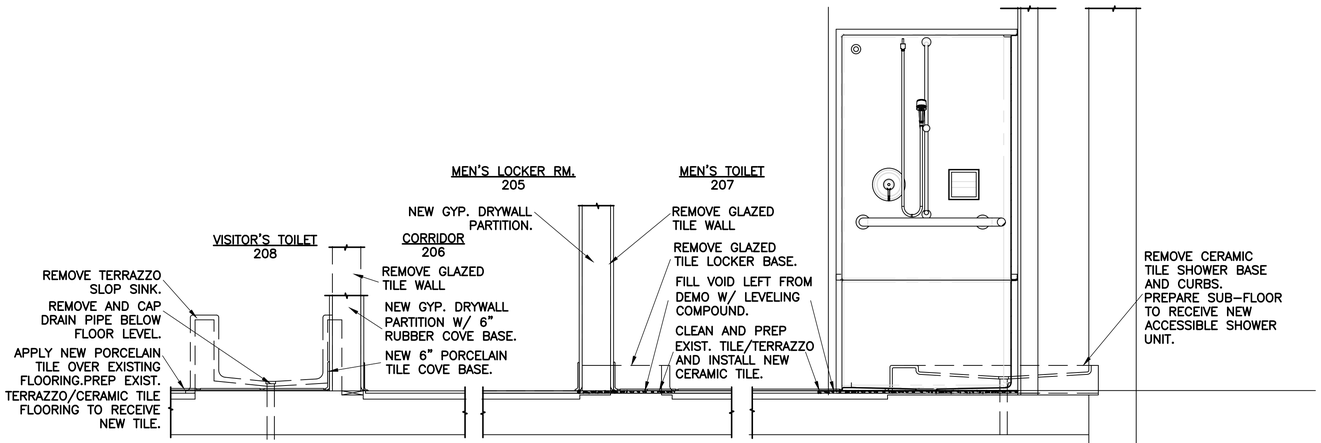


4 A-17 FLOOR DETAIL
SCALE: 1 1/2" = 1'-0" 0 4" 8" 1'-4"

3 A-17 FLOOR DETAIL
SCALE: 1 1/2" = 1'-0"

2 A-17 FLOOR DETAIL
SCALE: 1 1/2" = 1'-0"

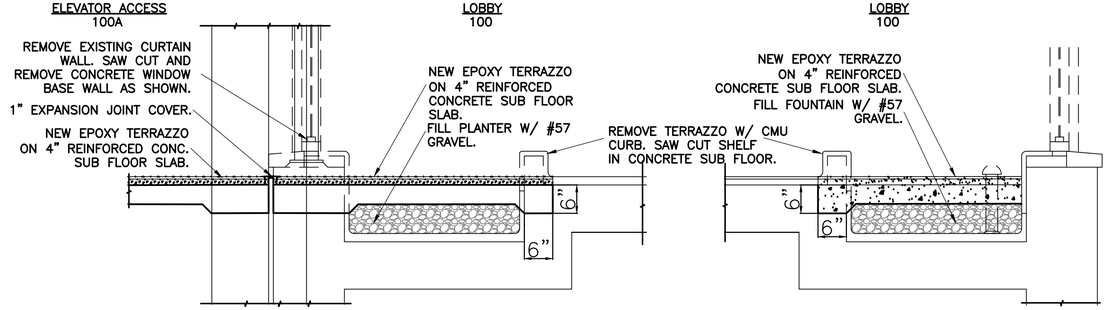
1 A-17 FLOOR DETAIL
SCALE: 1 1/2" = 1'-0"



E A-17 PARTIAL SECTION
SCALE: 3/4" = 1'-0"

D A-17 PARTIAL SECTION
SCALE: 3/4" = 1'-0"

C A-17 PARTIAL SECTION
SCALE: 3/4" = 1'-0"



B A-17 PARTIAL SECTION
SCALE: 3/4" = 1'-0" 0 1' 2' 3'

A A-17 PARTIAL SECTION
SCALE: 3/4" = 1'-0"

ROOM FINISH SCHEDULE

MARK	ROOM NUMBER	ROOM DESCRIPTION	SURFACE PREPARATION & CLEANING	FLOORS: PATCH EXISTING TERRAZZO	FLOORS: NEW C.T. OVER EXISTING	FLOORS: EPOXY TERRAZZO	FLOORS: SEALED CONCRETE	FLOORS: EXISTING TO REMAIN	BASE: EXISTING TO REMAIN	BASE: RUBBER COVE BASE	BASE: 6" TILE COVE BASE	WALLS: PAINT CMU/CONCRETE	WALLS: PAINT GYP.DRYWALL	WALLS: PAINT EXISTING	WALLS: EXISTING TO REMAIN	WALLS: PAINT EXPOSED STRUCTURE	WALLS: CLEAN EXISTING GL. TILE	CEILING: PAINT CONCRETE	CEILING: PAINT EXPOSED STRUCTURE	CEILING: PAINT EXISTING	CEILING: ACT-1	CEILING: ACT-2	CEILING: EXISTING TO REMAIN	REMARKS
FILTER/CHLORINE/FLUORIDE BUILDING																								
	100	LOBBY	X	X					X			X		X							X		X	PATCH GL. TILE BASE/SEE PART. SECTION A
	100A	ELEVATOR ACCESS	X		X					X		X										X		SEE PARTIAL SECTION B
	101	FILTER GALLERY ANNEX	X						X				X										X	
	101A	ELEVATOR EQUIPMENT	X						X														X	
	102	HIGH SERVICE PUMP RM.	X						X							X							X	
	103	ELECTRICAL ROOM	X						X				X										X	
	104	STORAGE ROOM	X						X								X						X	
	104A	TEMPORARY OFFICE	X			X			X				X										X	SEE CONSTRUCTION PHASING PLAN
	105	JANITOR CLOSET	X																					
	106	MECHANICAL ROOM	X																				X	
	107	RESTROOM, FIRST FLOOR	X			X			X				X									X		
	108	FILTER PIPE GALLERY	X																			X		
	109	HALL	X						X				X									X		
	110	CORRIDOR	X						X				X											
	111-	NOT USED																						
	120	NOT USED																						
	121	CHLORINE STORAGE	X						X								X						X	
	122	EVAPORATOR ROOM	X						X								X				X			
	123	REAR LOBBY	X						X								X				X			
	124	FLUORIDE ROOM	X						X				X											
	125	FLUORIDE OPERATOR RM.	X						X				X						X					
	200	LOBBY	X						X				X		X							X		SEE FL. DET. NO.4
	200A	ELEVATOR ACCESS	X		X				X													X		
	200B	HALL	X						X													X		
	201	CONTROL ROOM	X	X					X													X		
	202	JAN. CLOSET	X		X				X													X		
	203	LAB	X	X					X													X		
	204	BREAK	X		X				X													X		
	205	MEN'S LOCKER ROOM	X			X			X													X		SEE PARTIAL SECTION D
	206	CORRIDOR	X			X			X													X		SEE FL. DET. NO.2,3&4/PARTIAL SECTION E
	207	MEN'S TOILET	X			X			X													X		SEE PARTIAL SECTION C&D
	208	VISITOR TOILET	X			X			X													X		SEE FL. DET. NO.2/PARTIAL SECTION E
	209	WOMEN'S TOILET	X			X			X													X		SEE FL. DET. NO.1&3
	210	WOMEN'S LOCKER RM.	X			X			X													X		SEE FL. DET. NO.1
	211	FILTER OP. RM. 1	X																					
	212	FILTER NO. 1 & 3	X											X										PAINT ALL RAILINGS
	213	FILTER NO. 2 & 4	X											X										PAINT ALL RAILINGS
	214	FILTER OP. RM. 2	X																					
	215	NO.5 ACCESS	X											X										PAINT ALL RAILINGS
	216	NO.6 ACCESS	X											X										PAINT ALL RAILINGS
	217	FILTER NO. 5	X											X										PAINT ALL RAILINGS
	218	FILTER NO. 6	X											X										PAINT ALL RAILINGS
		LOBBY STAIRS	X				X								X									
	219	REAR STAIRWELL	X												X									
		FILTER STAIRWELL	X																					
AERATOR WEST BUILDING																								
	AW100	STAIRWELL	X						X					X										
	AW200	AERATOR ROOM	X						X					X										CLEAN SCREEN PANELS, SEAL CONCRETE
AERATOR EAST BUILDING																								
	AE100	STAIRWELL	X						X					X										
	AE200	AERATOR ROOM	X						X					X										CLEAN SCREEN PANELS, SEAL CONCRETE
GARAGE																								
	G100	GARAGE	X							X				X										

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

ARCHITECTURAL ROOM FINISH SCHEDULE

A-17

SHEET: OF

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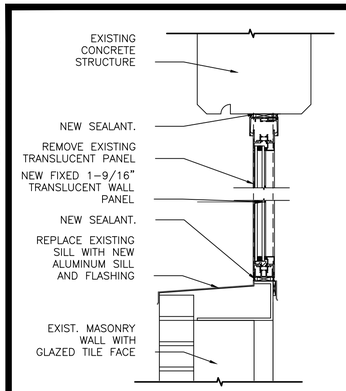
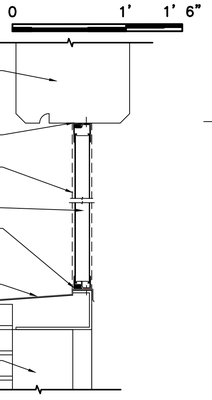
PLOTTED: 4/15/2022 12:56:46 PM

P:\PR58982\Cadd\Sheets\A-18 ARCHITECTURAL WINDOW ELEVATIONS-DETAILS.dwg 1/5/2022 12:26:56 PM Paul Emerson



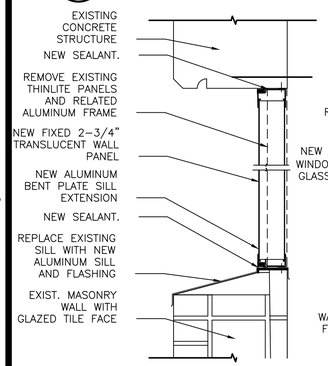
9 WINDOW DET.

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



8 WINDOW DET.

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

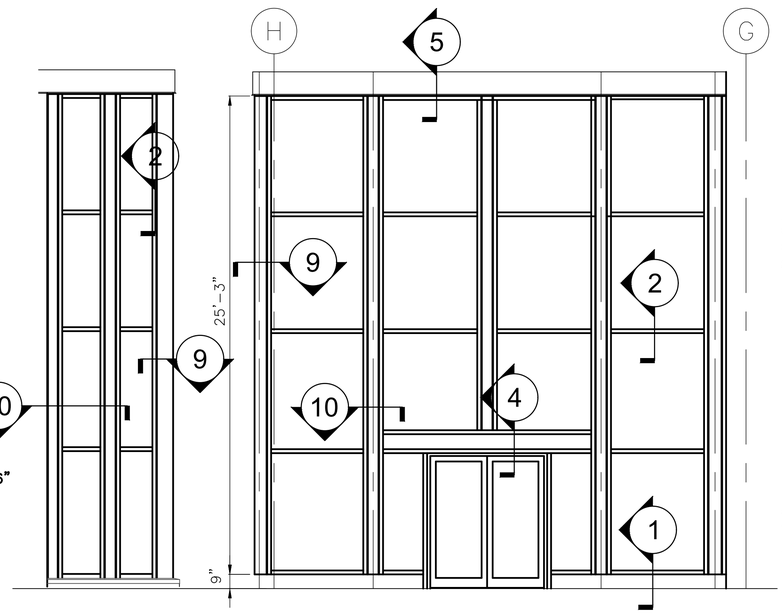


7 WINDOW DET.

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

6 WINDOW DET.

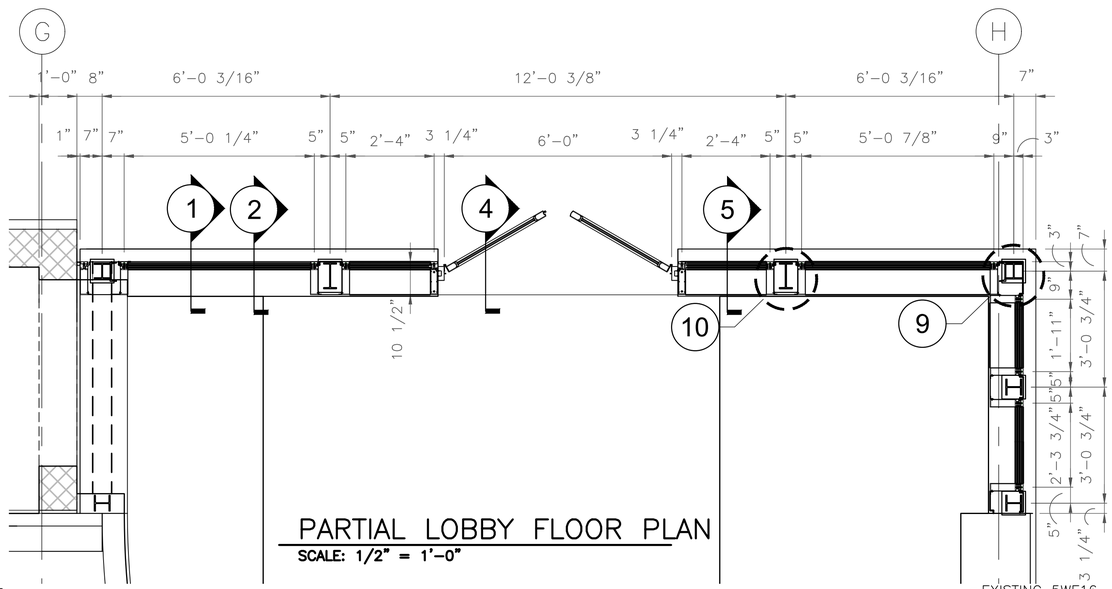
SCALE: 1 1/2" = 1'-0"



EAST NORTH

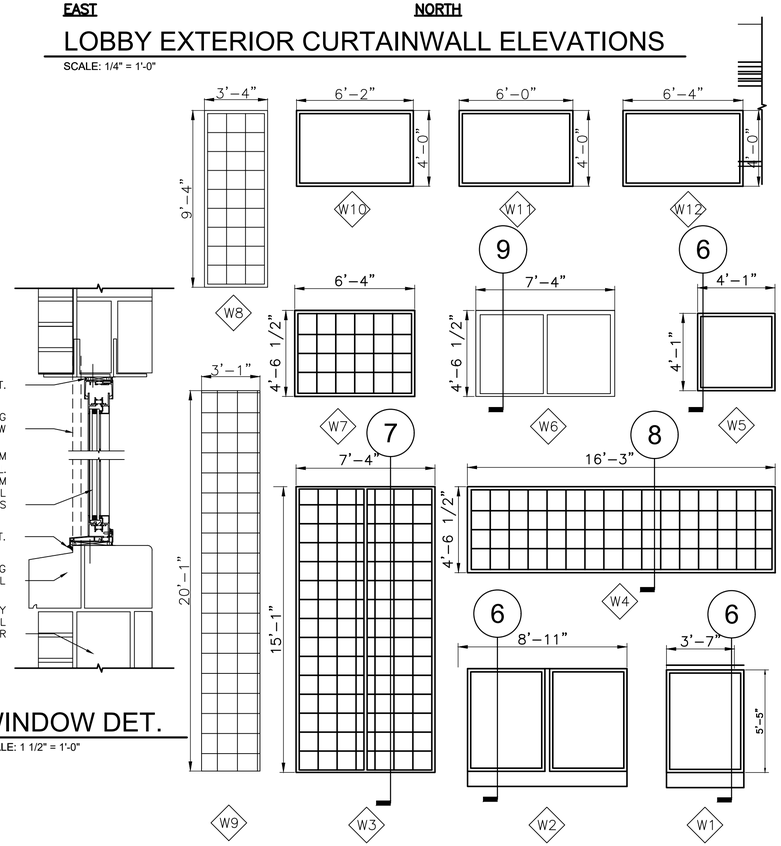
LOBBY EXTERIOR CURTAINWALL ELEVATIONS

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



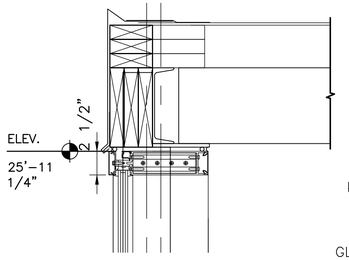
PARTIAL LOBBY FLOOR PLAN

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



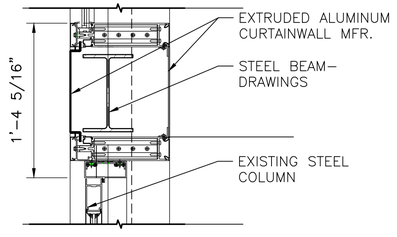
WINDOW ELEVATIONS

SCALE: 1/4" = 1'-0" (SEE EXTERIOR ELEVATIONS FOR WINDOW LOCATIONS)



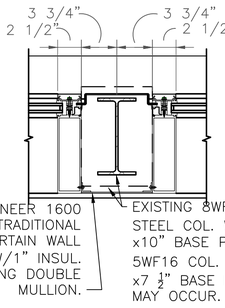
5 CURTAIN WALL DET.

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



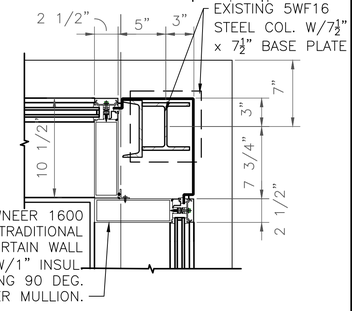
4 CURTAIN WALL DET.

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



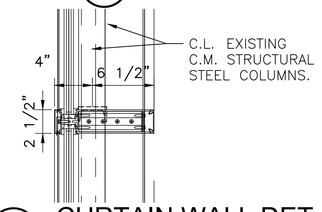
10 PLAN DETAIL

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



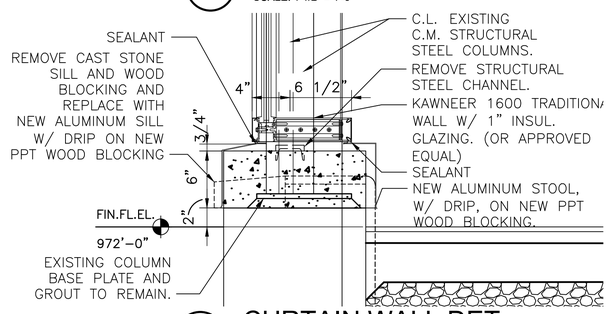
9 PLAN DETAIL

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



2 CURTAIN WALL DET.

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



1 CURTAIN WALL DET.

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

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

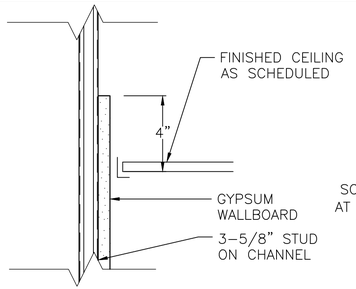
JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	TB
DRAWN BY:	LMW
CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	AS NOTED

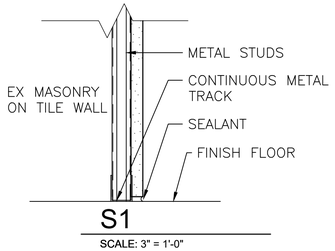
ARCHITECTURAL WINDOW ELEVATIONS-DETAILS

A-18

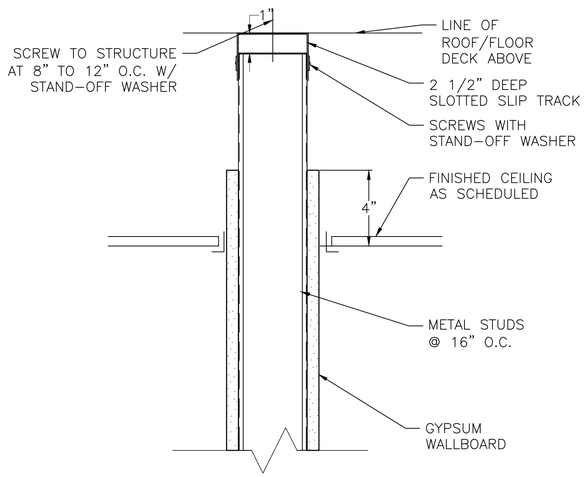
SHEET: OF

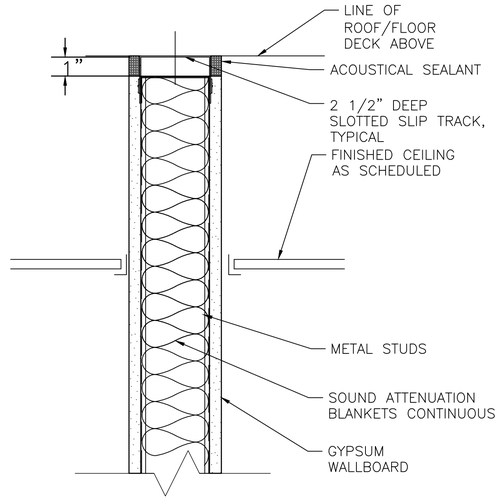
PLOTTED: 4/15/2022 12:56:57 PM



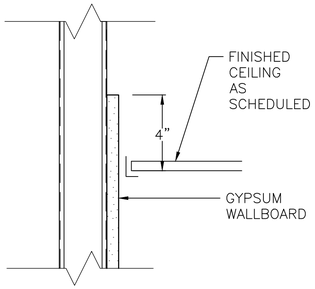


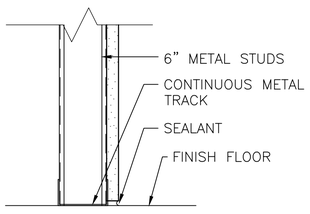
S1
SCALE: 3" = 1'-0"



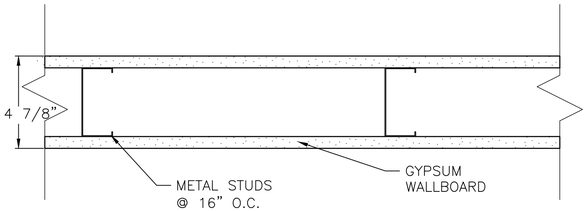


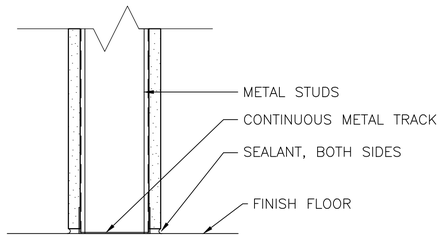
INTERIOR PARTITION SCHEDULE					
TAG	DESCRIPTION	WIDTH	FIRE	SOUND	REMARKS
S1	7/8" STEEL FURRING @ 24" OC VERTICALLY, 5/8" GWB. EXTEND TO 4" ABOVE FINISHED CEILING.	1 1/2"	--	--	--
S2B	2–1/2" STEEL STUDS @ 16" O.C. WITH 5/8" GWB ON ONE SIDE. EXTEND STEEL STUDS AND GWB 4" ABOVE FINISHED CEILING. BRACE STUDS TO STRUCTURE ABOVE	3 1/8"	--	--	--
S3	3 5/8" STEEL STUDS @ 16" O.C. WITH 5/8" GWB ON BOTH SIDES. EXTEND GWB 4" ABOVE FINISHED CEILING. BRACE STUDS AT 4'–0" O.C. MAX	4 7/8"	--	--	--
S32	3 5/8" STEEL STUDS, 16" OC 5/8" GWB BOTH SIDES WITH 3 5/8" SAFB INSULATION. EXTEND TO UNDERSIDE OF DECK ABOVE.	4 7/8"	--	--	--
S3A	3 5/8" STEEL STUDS @ 16" O.C. WITH 5/8" GWB ON BOTH SIDES. EXTEND METAL STUDS AND GWB TO UNDERSIDE OF DECK ABOVE. PROVIDE 3 1/2" SOUND ATTENUATION BLANKETS CONTINUOUS	4 7/8"	--	--	--
S3A1	3 5/8" STEEL STUDS @ 16" O.C. WITH 5/8" GWB ON BOTH SIDES. EXTEND METAL STUDS AND GWB TO UNDERSIDE OF DECK ABOVE. PROVIDE 3 1/2" SOUND ATTENUATION BLANKETS CONTINUOUS	4 7/8"	1 HR	--	--



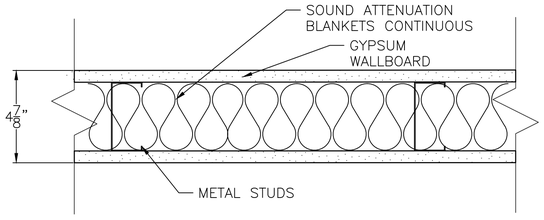


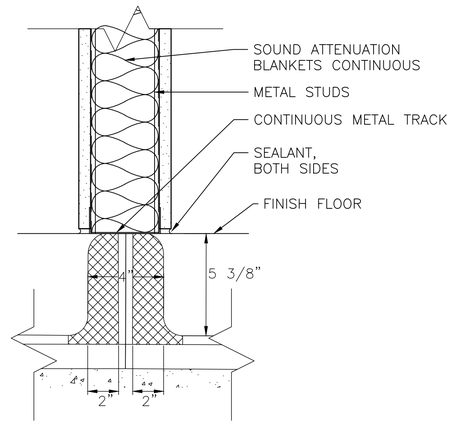
S2
SCALE: 3" = 1'-0"



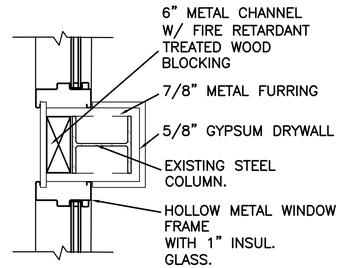


S3
SCALE: 3" = 1'-0"

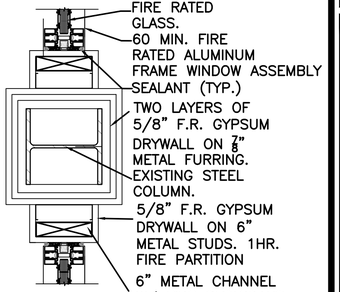




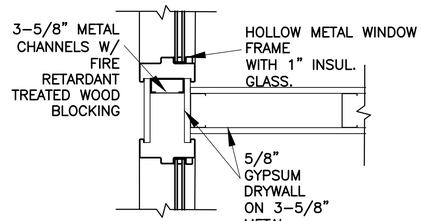
S3A (ON EXISTING CURB)
SCALE: 3" = 1'-0"



3 / A-10 DETAIL
SCALE: 1 1/2" = 1'-0"



2 / A-10 DETAIL
SCALE: 1 1/2" = 1'-0"



1 / A-10 DETAIL
SCALE: 1 1/2" = 1'-0"

BURGESS & NIPLE
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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

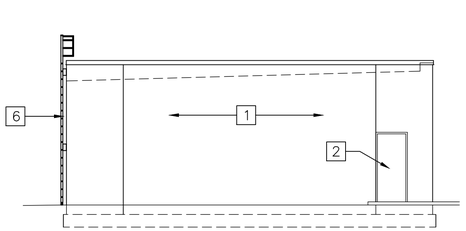
ARCHITECTURAL PARTITION SCHEDULE-DETAILS

A-19

SHEET: OF

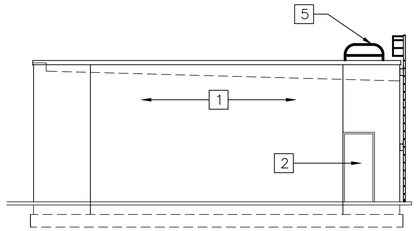
P:\PR58982\Cadd\Sheets\A-19 ARCHITECTURAL PARTITION SCHEDULE-DETAILS.dwg 4/14/2022 3:49:15 PM Paul Emerson

PLOTTED: 4/15/2022 12:57:08 PM



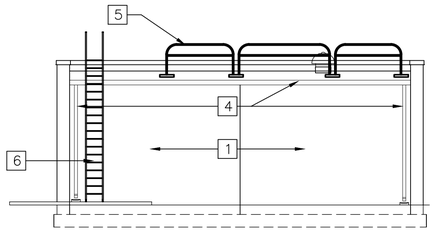
SOUTH ELEVATION

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



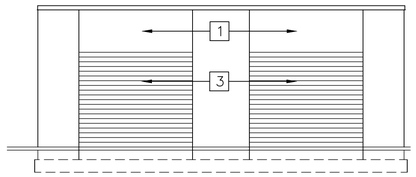
NORTH ELEVATION

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



EAST ELEVATION

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

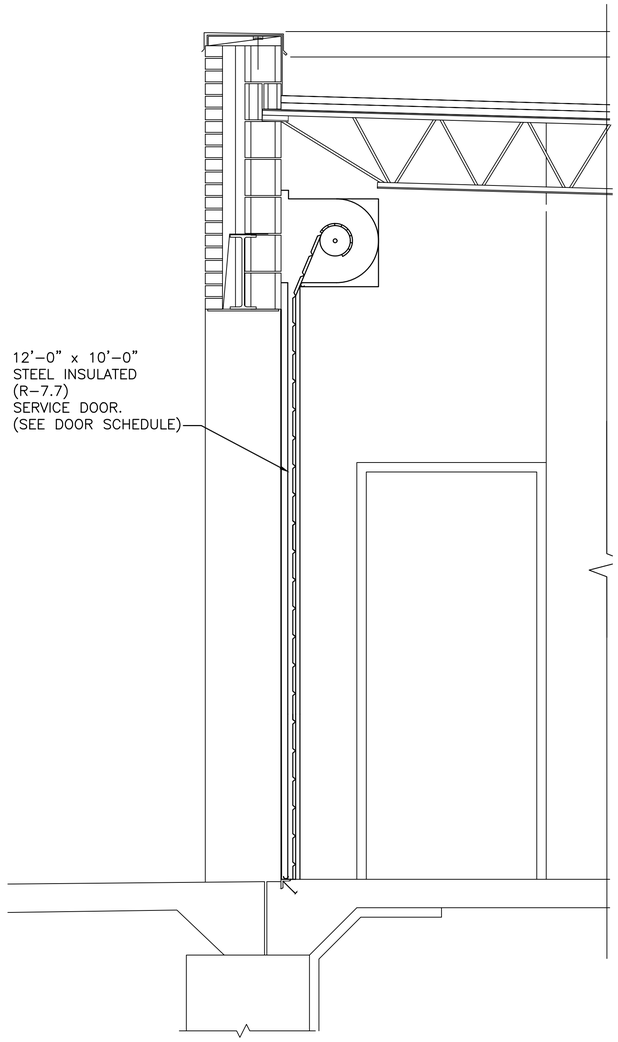


WEST ELEVATION

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

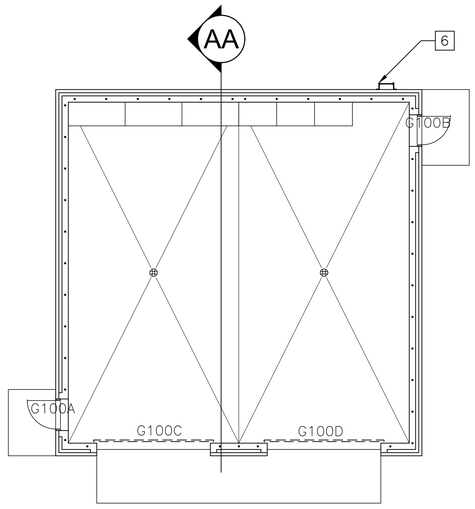
NEW WORK NOTES

1. PRESSURE WASH AND SEAL ALL EXISTING BRICK EXTERIOR WALLS.
2. PAINT EXISTING HOLLOW METAL DOORS AND FRAMES AND REPLACE HARDWARE. (SEE DOOR SCHEDULE)
3. NEW ALUMINUM COILING OVERHEAD DOOR.(SEE DOOR SCHEDULE)
4. REPLACE GUTTER AND DOWNSPOUTS WITH NEW ALUMINUM GUTTER AND DOWNSPOUTS.
5. 10' NON PENETRATING GUARDRAILS.
6. NEW ALUMINUM LADDER. SEE SHEET SD-15 FOR DETAILS
7. EXHAUST FAN.



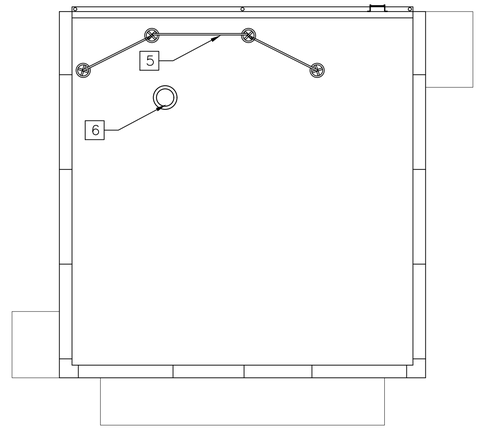
A SECTION

SCALE: 3/4" = 1'-0" 0 1' 2' 3'



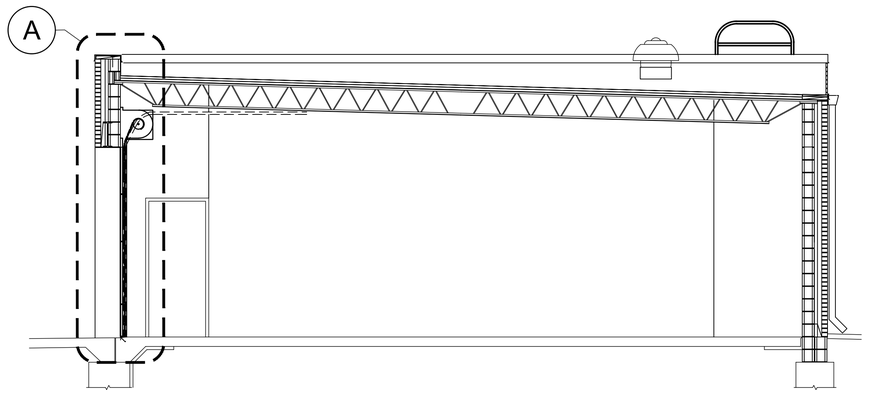
FLOOR PLAN

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



ROOF PLAN

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



AA BUILDING SECTION

SCALE: 1/4" = 1'-0" 0 2' 4' 8'

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	TB
DRAWN BY:	LMW
CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	AS NOTED

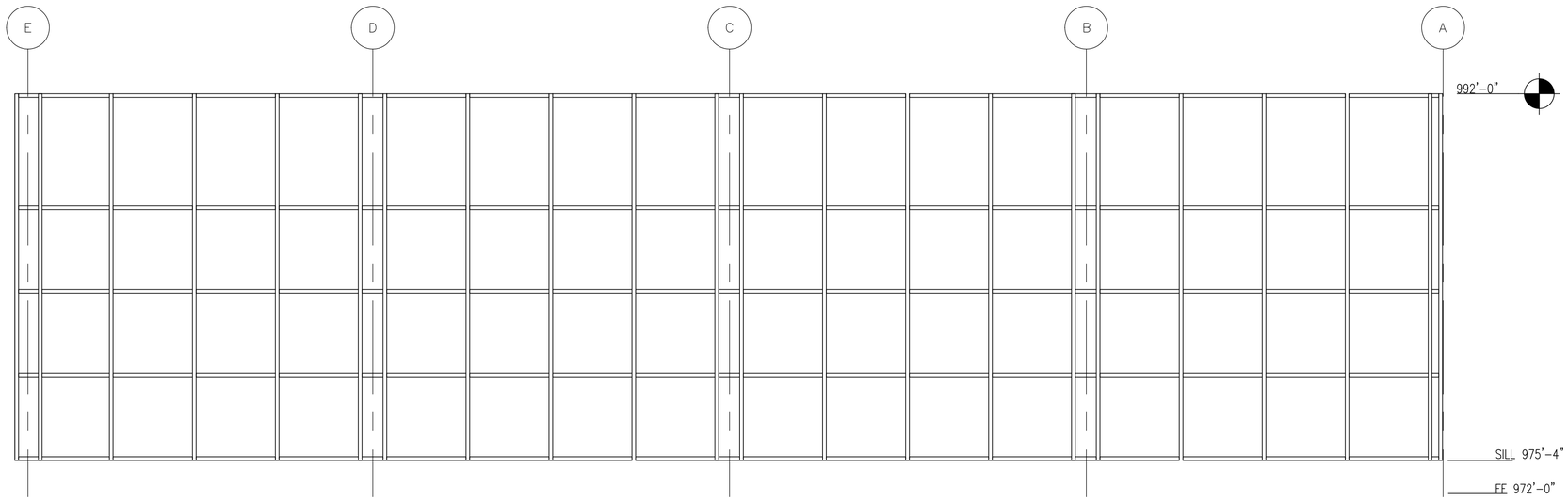
MAINTENANCE GARAGE ARCHITECTURAL PLAN-SECTION-ELEVATIONS

A-20

SHEET: OF

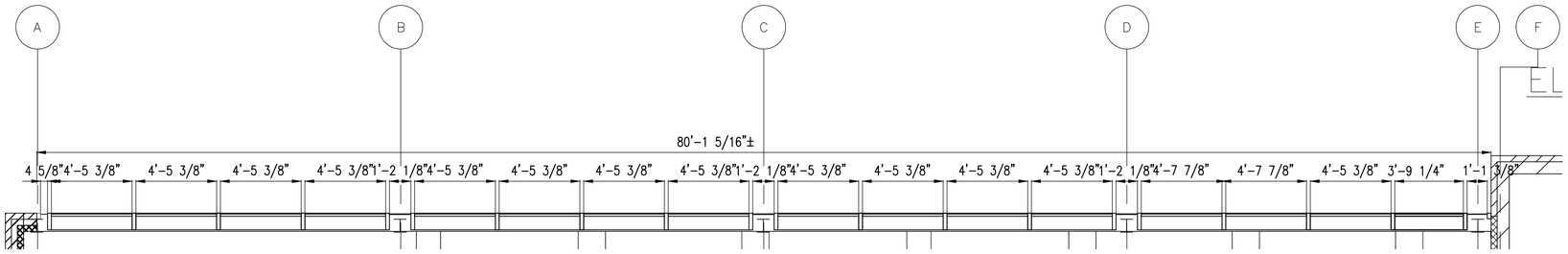
P:\PR58982\Cadd\Sheets\A-20 MAINTENANCE GARAGE ARCHITECTURAL PLAN-SECTION-ELEVATIONS.dwg 2/18/2022 1:29:10 PM Paul Emerson

PLOTTED: 4/15/2022, 12:57:26 PM



PUMP ROOM CURTAINWALL ELEVATION

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



PUMP ROOM CURTAINWALL PLAN

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

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	LMW
DRAWN BY:	LMW
CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	NONE

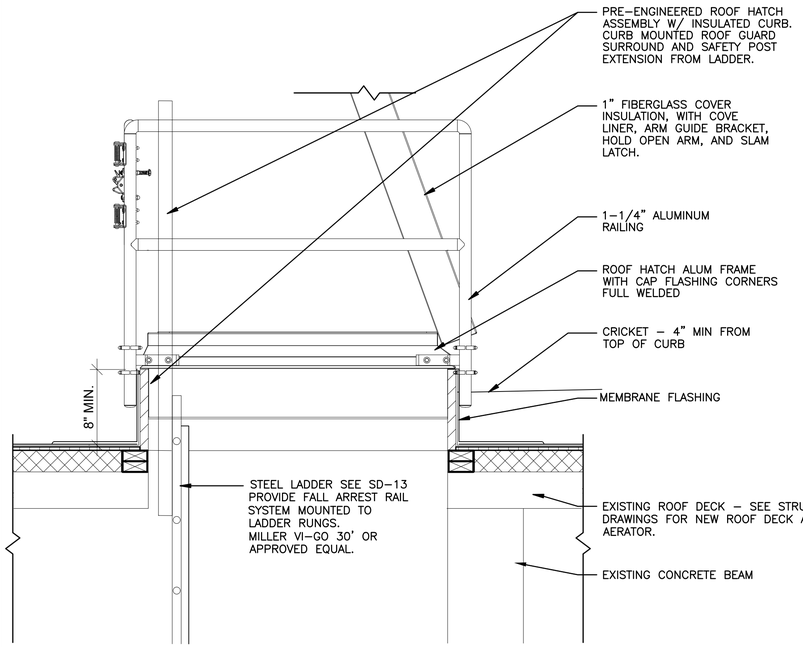
MAIN BLDG
ARCHITECTURAL
HSP RM
CURTAINWALL
PLAN-ELEVATION

A-21

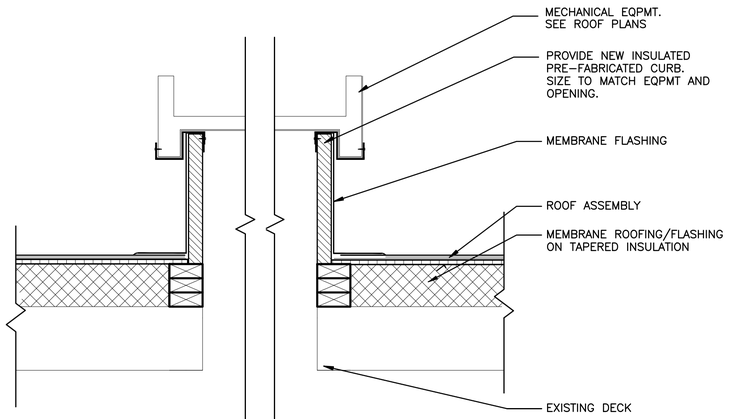
SHEET: OF

P:\PR58982\Cadd\Sheets\A-21 MAIN BLDG ARCHITECTURAL HSP RM CURTAINWALL PLAN-ELEVATION.dwg 2/15/2022 3:53:20 PM Paul Emerson

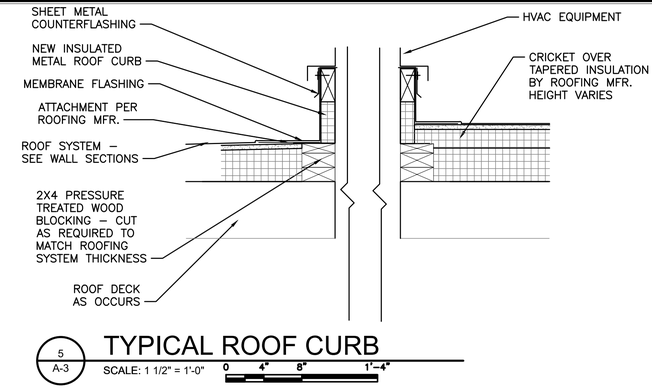
PLOTTED: 4/15/2022 12:57:36 PM



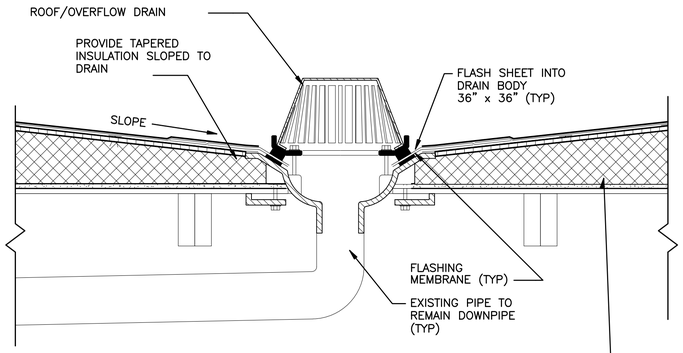
1 A-3 TYPICAL ROOF HATCH
SCALE: 1 1/2" = 1'-0" 0 4" 8" 1'-4"



3 A-3 TYPICAL ROOF CURB
SCALE: 1 1/2" = 1'-0" 0 4" 8" 1'-4"

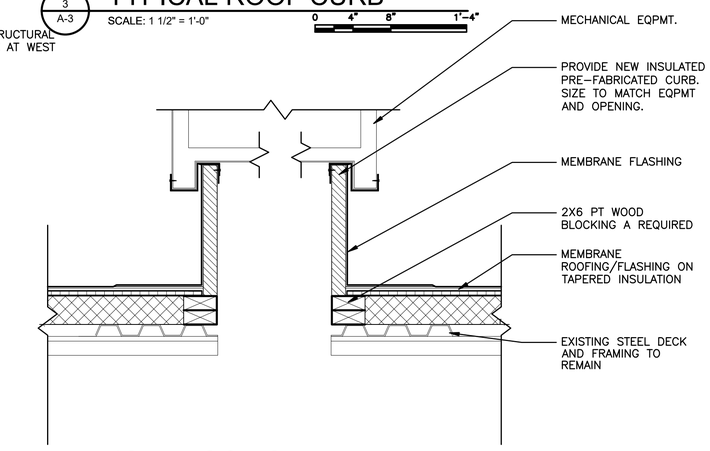


5 A-3 TYPICAL ROOF CURB
SCALE: 1 1/2" = 1'-0" 0 4" 8" 1'-4"

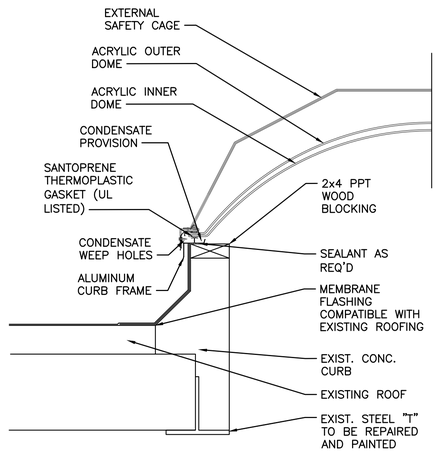


5 A-3 TYPICAL ROOF CURB
SCALE: 1 1/2" = 1'-0" 0 4" 8" 1'-4"

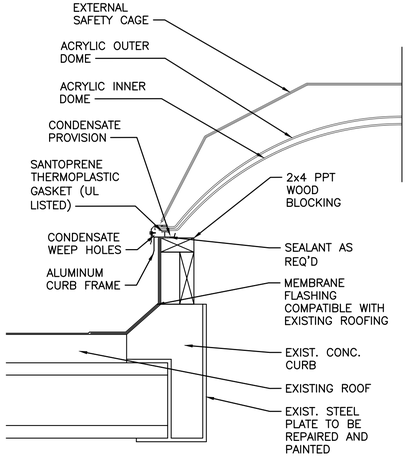
2 A-3 TYPICAL ROOF CURB
SCALE: 1 1/2" = 1'-0" 0 4" 8" 1'-4"



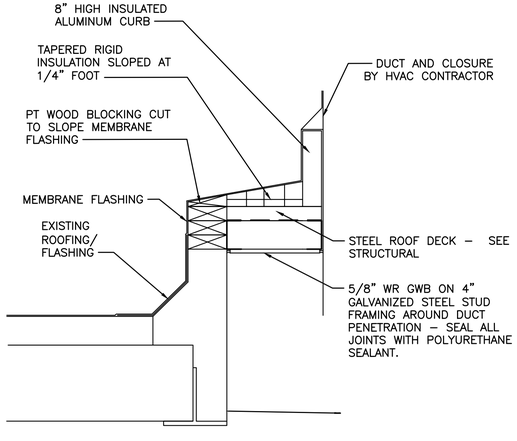
3 A-3 TYPICAL ROOF CURB
SCALE: 1 1/2" = 1'-0" 0 4" 8" 1'-4"



1 A-8 DETAIL
SCALE: 1 1/2" = 1'-0"



2 A-8 DETAIL
SCALE: 1 1/2" = 1'-0"



3 A-8 DETAIL
SCALE: 1 1/2" = 1'-0"

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	LMW
DRAWN BY:	JRH
CHECKED BY:	LMW
APPROVED BY:	CMS
SCALE:	NONE

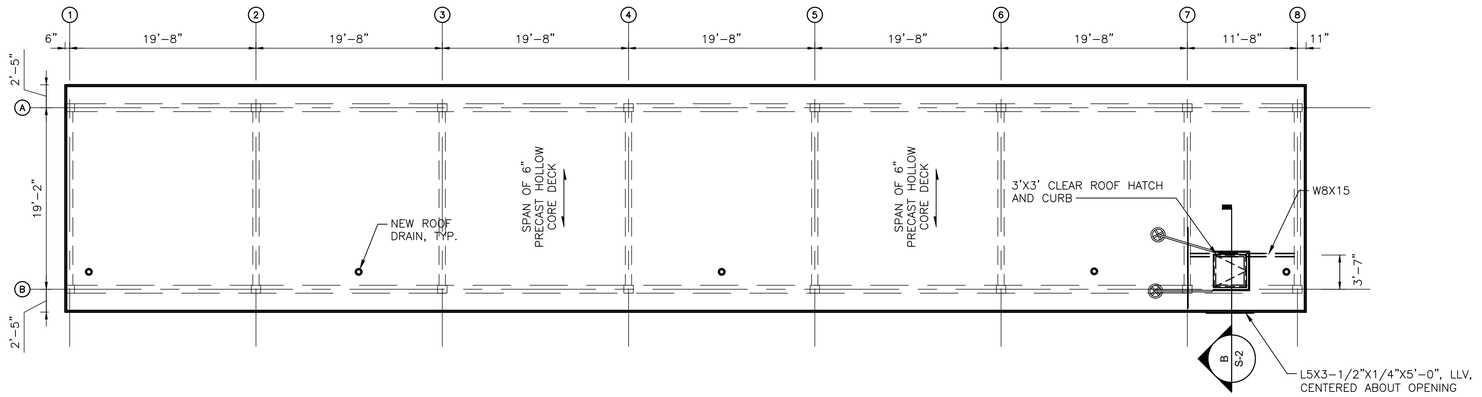
MAIN & FILTER BLDG ARCHITECTURAL ROOF DETAILS

A-22

SHEET: OF

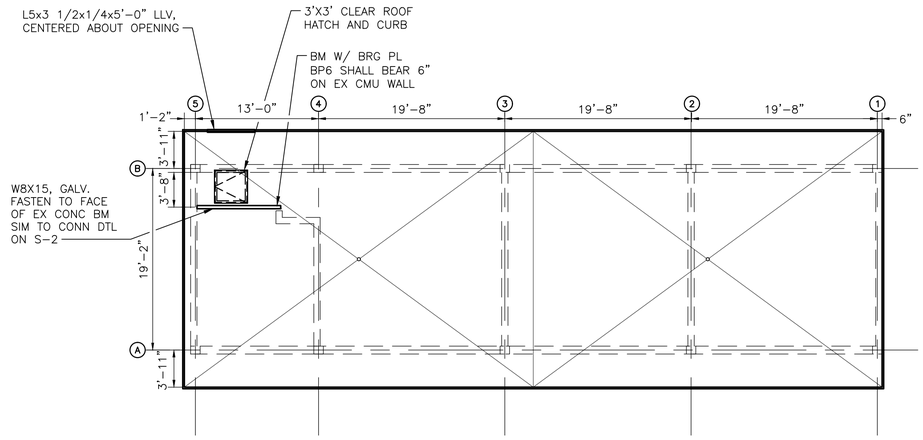
P:\PR58982\Cadd\Sheets\A-22 MAIN & FILTER BLDG ARCHITECTURAL ROOF DETAILS.dwg 4/15/2022 9:21:53 AM Paul Emerson

PLOTTED: 4/14/2022 6:04:12 PM



WEST AERATOR ROOF PLAN

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



EAST AERATOR ROOF PLAN

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

NOTES:
1. SEE ARCHITECTURAL AND PROCESS SHEETS FOR DIMENSIONS NOT SHOWN.
2. SEE SHEETS SD–1 AND SD–2 FOR STRUCTURAL NOTES.
3. COORDINATE ALL ROOF PENETRATIONS WITH ARCHITECTURAL AND PROCESS SHEETS.
4. ROOF CONSTRUCTION FOR WEST AERATOR SHALL CONSIST OF 6" DEEP PRECAST PRE–STRESSED HOLLOW CORE PLANK.
5. PLANK SHALL BE DESIGNED FOR A SUPERIMPOSED LOAD OF 20 PSF DEAD, 25 PSF LIVE/SNOW.

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REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	DD
DRAWN BY:	ABP
CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	1/4" = 1'-0"

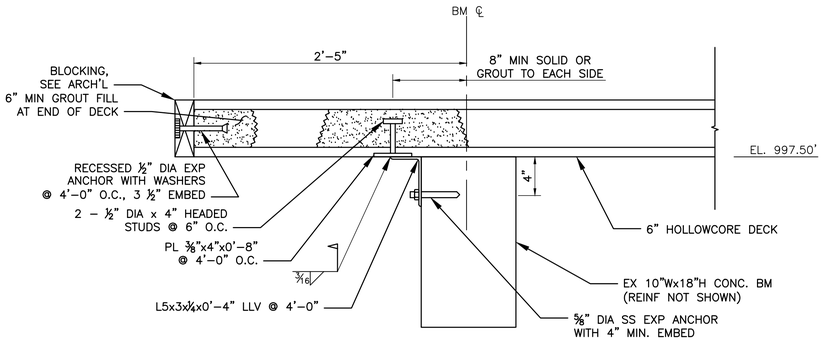
AERATOR BUILDINGS STRUCTURAL ROOF PLANS

S-1

SHEET: OF

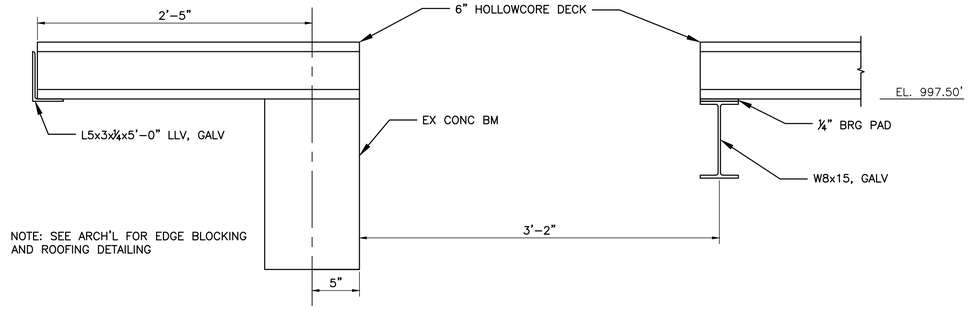
P:\PR58982\Cadd\Sheets\S-1 AERATOR BUILDINGS STRUCTURAL ROOF PLANS.dwg 2/17/2022 3:04:23 PM Matt Kroll

PLOTTED: 4/14/2022 6:04:23 PM



SECTION THRU REPLACEMENT DECK

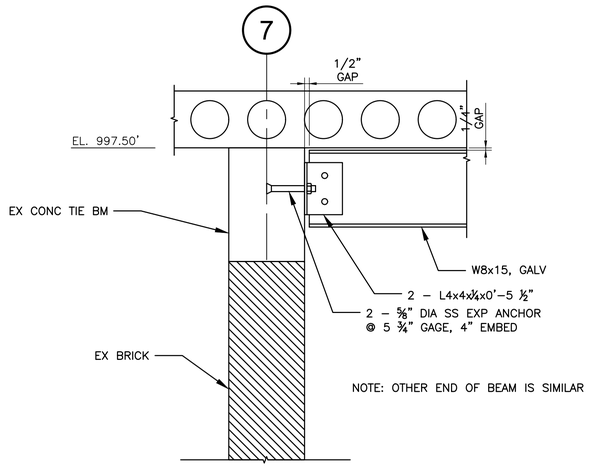
SCALE: 1 1/2" = 1'-0"



B / S-1

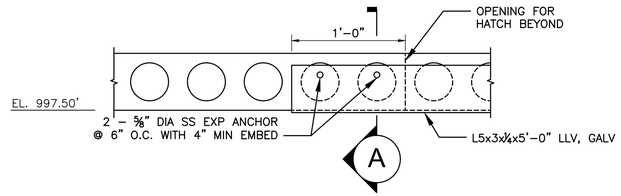
SECTION THRU ROOF HATCH, WEST AERATOR

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



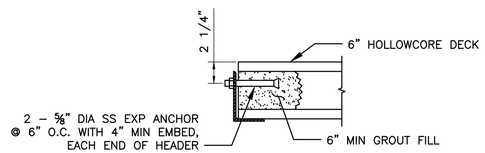
CONNECTION DETAIL, WEST AERATOR

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



HEADER CONNECTION DETAIL

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



NOTE: BLOCKING ALONG PERIMETER NOT SHOWN.

A

SECTION

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

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CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	AS NOTED

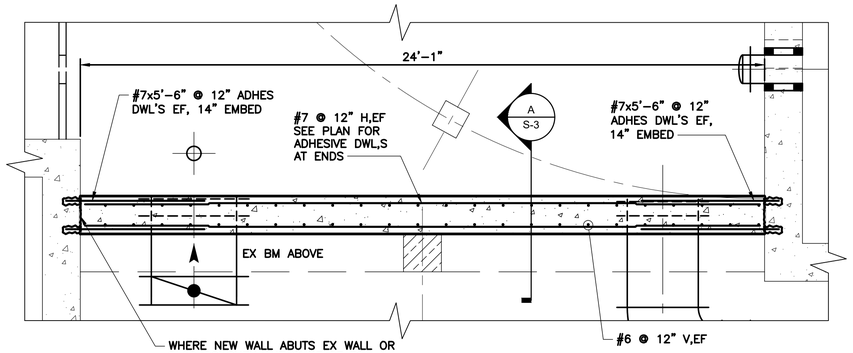
AERATOR BUILDING
STRUCTURAL
ROOF DETAILS

S-2

SHEET: OF

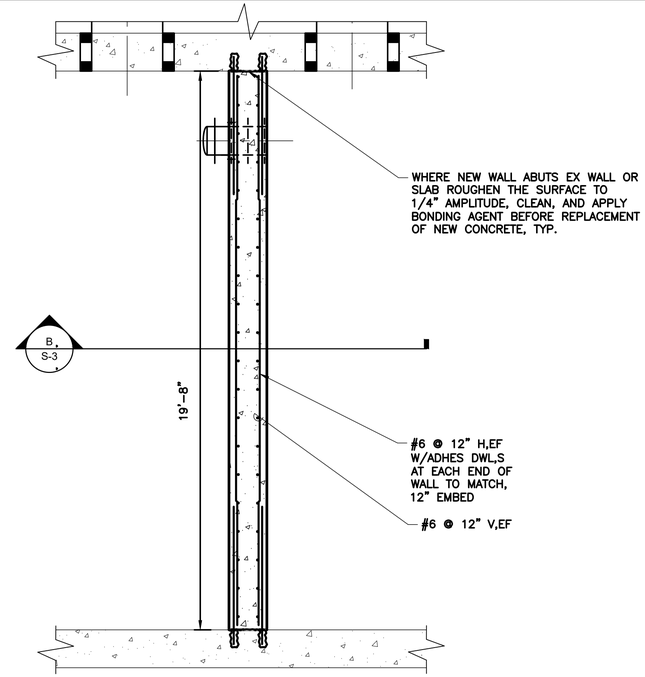
P:\PR58982\Cadd\Sheets\S-2 AERATOR BUILDING STRUCTURAL ROOF DETAILS.dwg 4/12/2022 3:54:53 PM Matt Kroll

PLOTTED: 4/14/2022 6:07:52 PM



PARTIAL PLAN

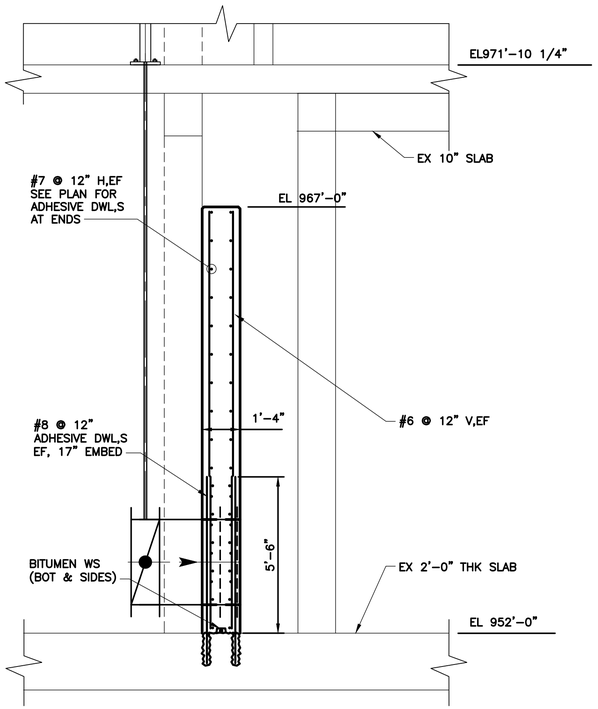
SCALE: 3/8" = 1'-0"



NOTE: REINFORCEMENT NOT SHOWN; SEE SECTION B.

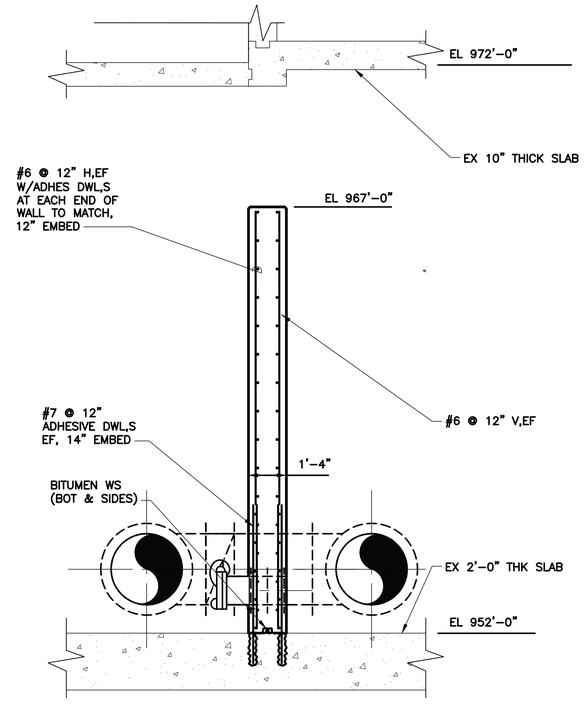
PARTIAL PLAN

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



A S-3 SECTION

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



B S-3 SECTION

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

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WATER TREATMENT PLANT &
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REVISIONS

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DESIGNED BY:	DD
DRAWN BY:	ABP
CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	3/8" = 1'-0"

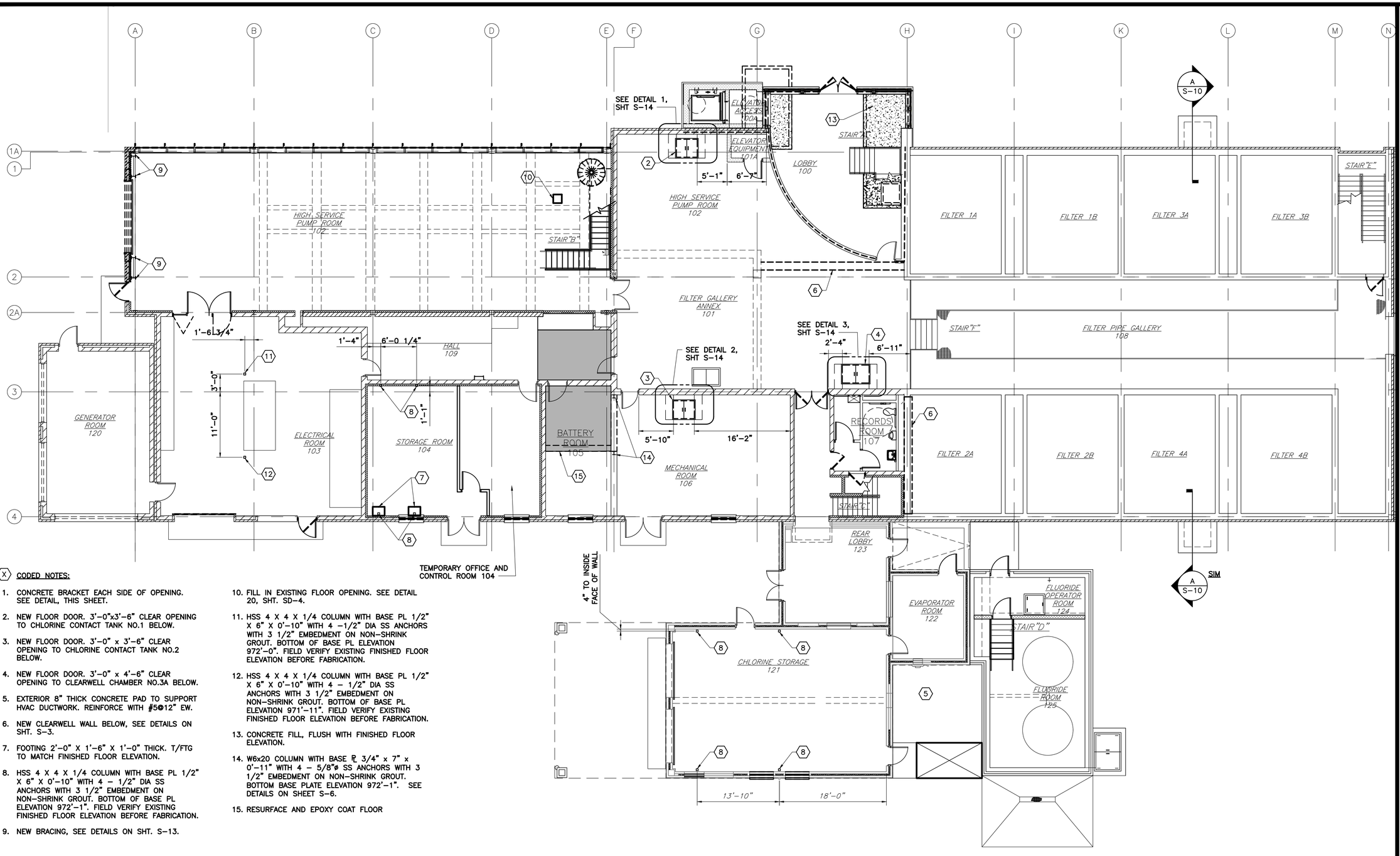
MAIN BLDG
STRUCTURAL
CLEARWELL
PLAN-SECTIONS

S-3

SHEET: OF

P:\PR58982\Cadd\Sheets\S-3 MAIN BLDG STRUCTURAL CLEARWELL PLAN-SECTIONS.dwg 4/13/2022 10:22:35 AM Matt Kroll

PLOTTED: 4/14/2022 6:08:48 PM



MAIN BUILDING FIRST FLOOR PLAN

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

X CODED NOTES:

1. CONCRETE BRACKET EACH SIDE OF OPENING. SEE DETAIL, THIS SHEET.
2. NEW FLOOR DOOR. 3'-0"x3'-6" CLEAR OPENING TO CHLORINE CONTACT TANK NO.1 BELOW.
3. NEW FLOOR DOOR. 3'-0" x 3'-6" CLEAR OPENING TO CHLORINE CONTACT TANK NO.2 BELOW.
4. NEW FLOOR DOOR. 3'-0" x 4'-6" CLEAR OPENING TO CLEARWELL CHAMBER NO.3A BELOW.
5. EXTERIOR 8" THICK CONCRETE PAD TO SUPPORT HVAC DUCTWORK. REINFORCE WITH #5@12" EW.
6. NEW CLEARWELL WALL BELOW, SEE DETAILS ON SHT. S-3.
7. FOOTING 2'-0" X 1'-6" X 1'-0" THICK. T/FTG TO MATCH FINISHED FLOOR ELEVATION.
8. HSS 4 X 4 X 1/4 COLUMN WITH BASE PL 1/2" X 6" X 0'-10" WITH 4 – 1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON NON-SHRINK GROUT. BOTTOM OF BASE PL ELEVATION 972'-1". FIELD VERIFY EXISTING FINISHED FLOOR ELEVATION BEFORE FABRICATION.
9. NEW BRACING, SEE DETAILS ON SHT. S-13.
10. FILL IN EXISTING FLOOR OPENING. SEE DETAIL 20, SHT. SD-4.
11. HSS 4 X 4 X 1/4 COLUMN WITH BASE PL 1/2" X 6" X 0'-10" WITH 4 -1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON NON-SHRINK GROUT. BOTTOM OF BASE PL ELEVATION 972'-0". FIELD VERIFY EXISTING FINISHED FLOOR ELEVATION BEFORE FABRICATION.
12. HSS 4 X 4 X 1/4 COLUMN WITH BASE PL 1/2" X 6" X 0'-10" WITH 4 – 1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON NON-SHRINK GROUT. BOTTOM OF BASE PL ELEVATION 971'-11". FIELD VERIFY EXISTING FINISHED FLOOR ELEVATION BEFORE FABRICATION.
13. CONCRETE FILL, FLUSH WITH FINISHED FLOOR ELEVATION.
14. W6x20 COLUMN WITH BASE PL 3/4" x 7" x 0'-11" WITH 4 – 5/8"ø SS ANCHORS WITH 3 1/2" EMBEDMENT ON NON-SHRINK GROUT. BOTTOM BASE PLATE ELEVATION 972'-1". SEE DETAILS ON SHEET S-6.
15. RESURFACE AND EPOXY COAT FLOOR

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DESIGNED BY:	DD
DRAWN BY:	ABP
CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	AS NOTED

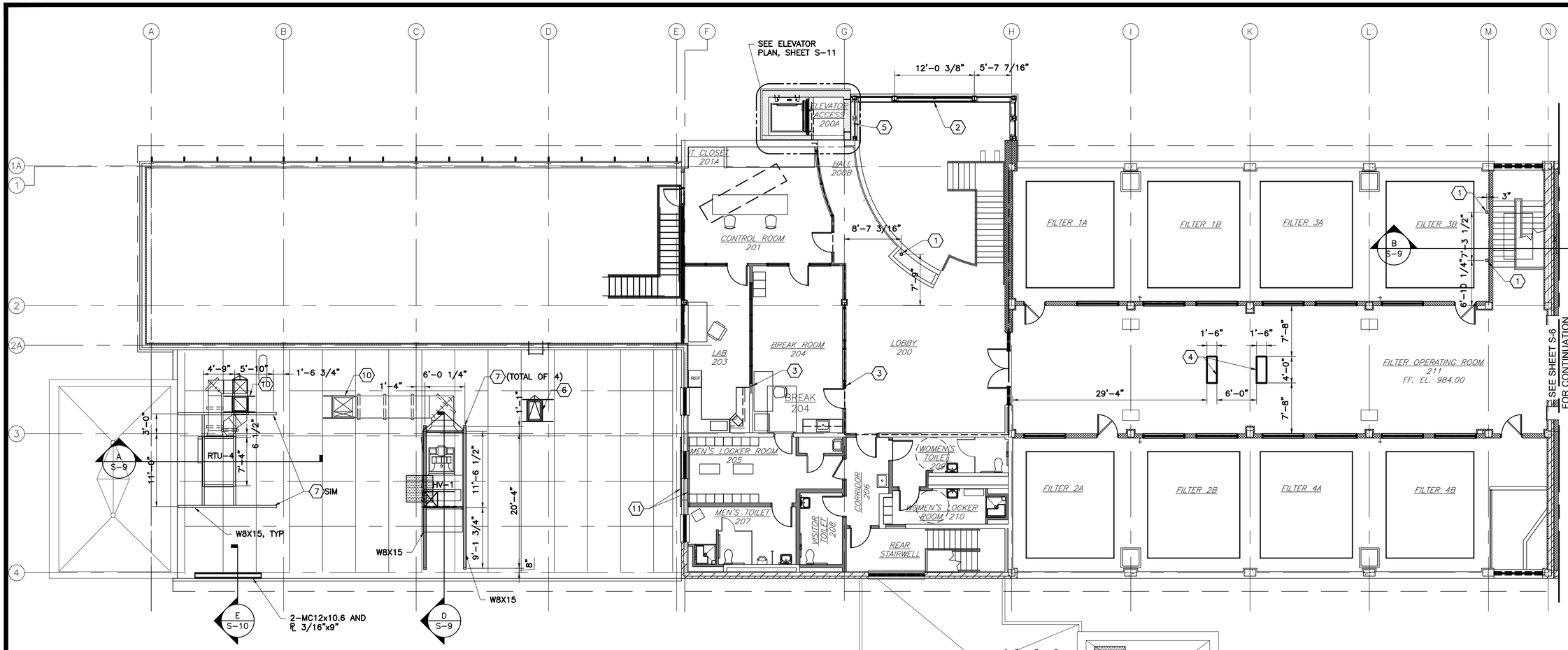
MAIN BUILDING STRUCTURAL FIRST FLOOR PLAN

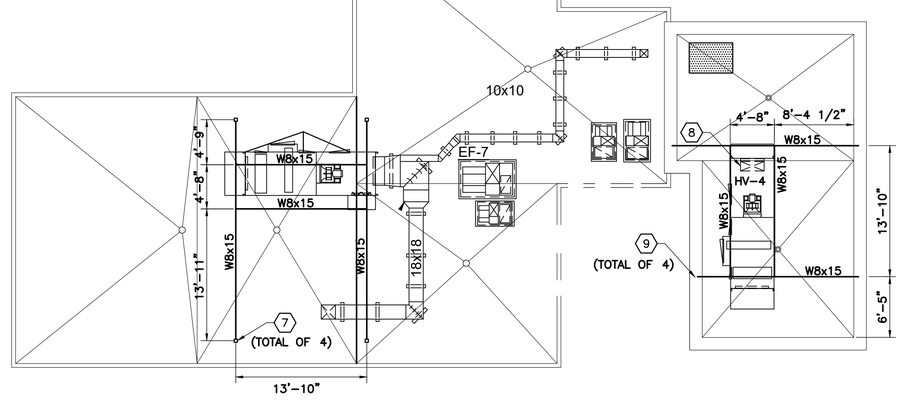
S-4

SHEET: OF

P:\PR58982\Cadd\Sheets\S-4 MAIN BUILDING STRUCTURAL FIRST FLOOR PLAN.dwg 4/13/2022 4:47:33 PM Matt Kroll

PLOTTED: 4/14/2022 6:08:54 PM





MAIN BUILDING SECOND FLOOR PLAN/LOWER ROOF

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

X CODED NOTES:

1. HSS4 X 4 X ¼ COLUMN WITH BASE PL 1/2" X 6" X 0'–10" WITH 4 – 1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON 1" NON–SHRINK GROUT. BOTTOM OF BASE PLATE ELEVATION 984'–1".
2. W8x18 SPANNING TO EXISTING W8x17 COLUMNS. ATTACH WITH FIELD WELDED PL 3/8" X 4" X 0'–5 1/2" SHEAR TABS AND 2– 3/4" DIA BOLTS AT 3" GAUGE, EACH END. TOP OF STEEL EL. 980'–1".
3. HSS4 X 4 X 1/4 COLUMN WITH BASE PL 1/2" X 6" X 0'–10" WITH 4 – 1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON 1/2" NON–SHRINK GROUT. BOTTOM OF BASE PLATE ELEVATION 983'–11 1/2". REMOVE AS LITTLE OF EXISTING TERRAZZO FLOORING AS POSSIBLE.
4. 12" x 5'–0" OPENINGS IN CONC. FLOOR FOR STOP LOGS BELOW, TYP. FOR 2.
5. W8X18 SPANNING TO EXISTING W5X16 COLUMNS. ATTACHED WITH FIELD–WELDED PL 3/8" X 3 1/2" X 0'–5 1/2" SHEAR TABS AND 2 – 3/4" DIA BOLTS AT 3" GAUGE, EACH END. TOP OF STEEL ELEVATION 980'–10". EX W5 COLUMNS ABOVE SHALL BE CUT AND FITTED WITH NEW B. PL 1/2" X 6" X 0'–9", SEE DETAILS ON SHT S–11.
6. ANGLE FRAMING AROUND OPENING FOR NEW ROOF HATCH. SEE DETAIL 6, SHT S–14.
7. HSS4 X 4 X 1/4 COLUMN WITH BASE PL 1/2" X 6" X 0'–10" WITH 4 1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON 1" NON–SHRINK GROUT. BOTTOM OF BASE PLATE ELEVATION 972'–1".
8. NEW OPENING THROUGH DECK.
9. BEAM SHALL BEAR ON BEARING PLATE BP6. SEE BEARING PLATE SCHEDULE AND BEAM BEARING DETAILS ON SHEET SD–7.
10. ANGLE FRAMING AROUND OPENING FOR NEW DUCT PENETRATION. SEE DETAIL 6, SHT S–14.
11. 2–C8x13.75 SUPPORTED BY W6x20 COLUMNS PER DETAILS ON SHEET S–6, TOP OF STEEL ELEVATION 983'–2 3/4".

NOTES:

1. TOP OF STEEL ELEVATION FOR CHLORINE BUILDING IS EL 984'–0 ¼".
2. TOP OF STEEL ELEVATION FOR FLUORIDE BUILDING IS EL 987'–4".

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REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	DD
DRAWN BY:	ABP
CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	AS NOTED

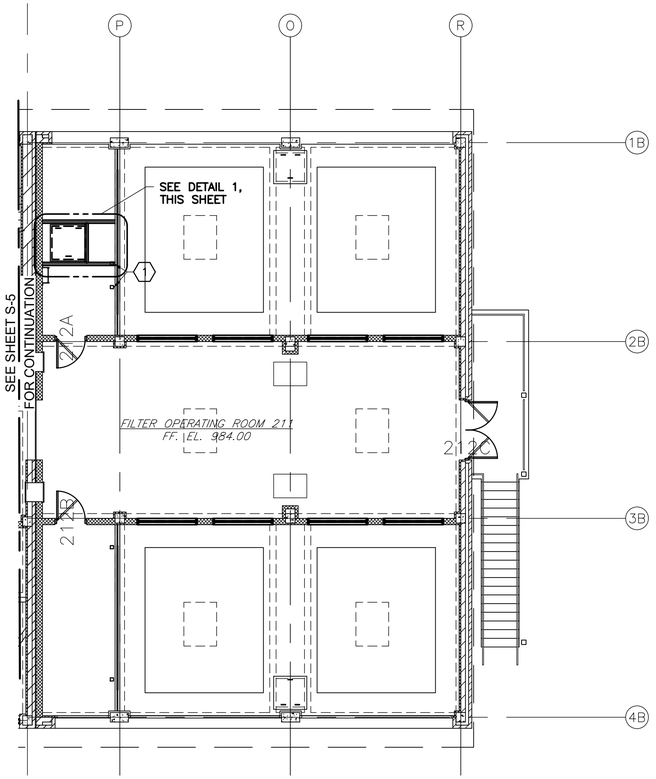
MAIN BUILDING STRUCTURAL SECOND FLOOR PLAN

S-5

SHEET: OF

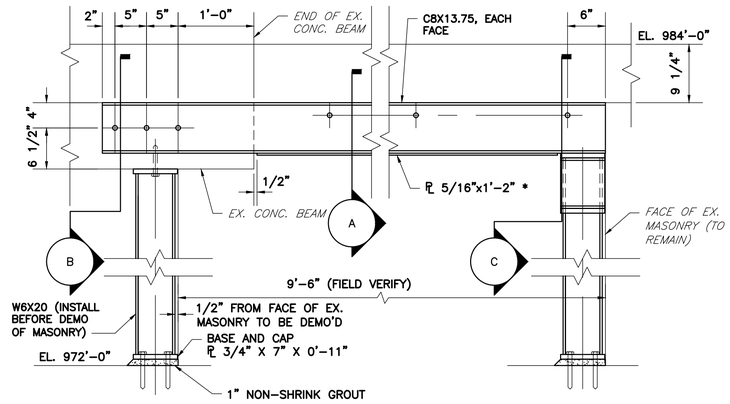
P:\PR58982\Cadd\Sheets\S-4 MAIN BUILDING STRUCTURAL FIRST FLOOR PLAN.dwg 4/13/2022 4:47:33 PM Matt Kroll

PLOTTED: 4/14/2022 6:09:23 PM



MAIN BUILDING SECOND FLOOR PLAN

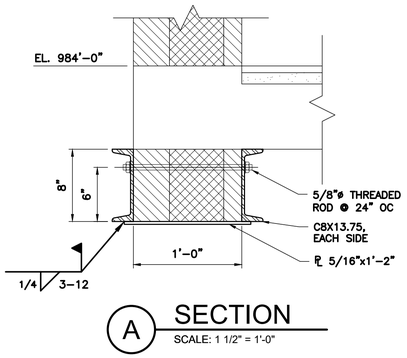
SCALE: 1/8" = 1'-0"



FRAMING ELEVATION

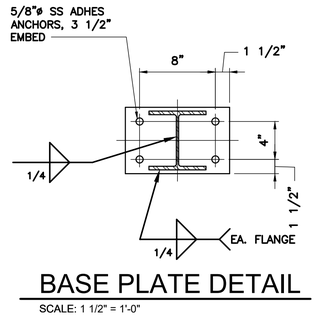
SCALE: 1" = 1'-0"

* NOTE: PROVIDE BOTTOM PL IN MAXIMUM 2'–0" LONG SECTIONS. DEMO 2'–0" LENGTH OF EXISTING WALL, THEN FIELD WELD BOTTOM PL TO CHANNELS. THEN PROCEED TO ADJACENT WALL SECTION.



A SECTION

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

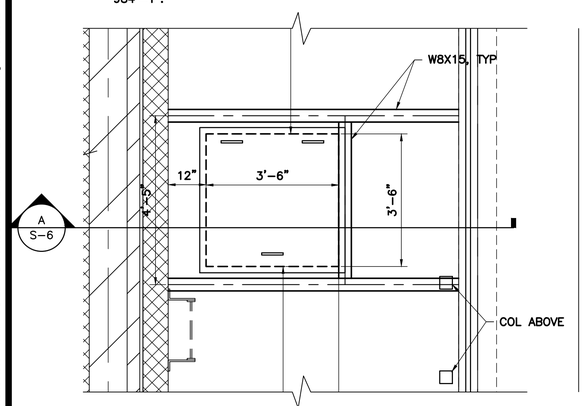


BASE PLATE DETAIL

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

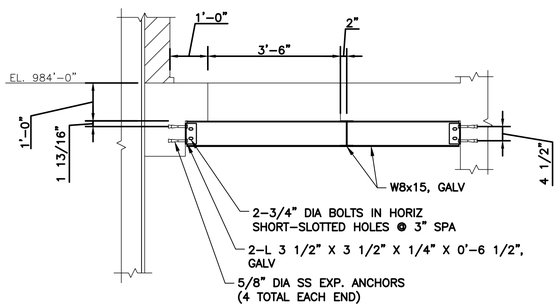
X CODED NOTES:

1. HSS4 X 4 X 1/4 COLUMN WITH BASE PL 1/2"X6"X0'–10" WITH 4 – 1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON 1" NON–SHRINK GROUT. BOTTOM OF BASE PLATE ELEVATION 984'–1".



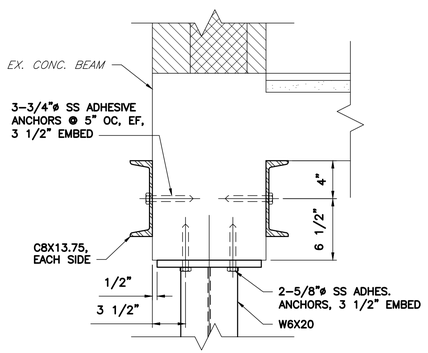
1 DETAIL

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



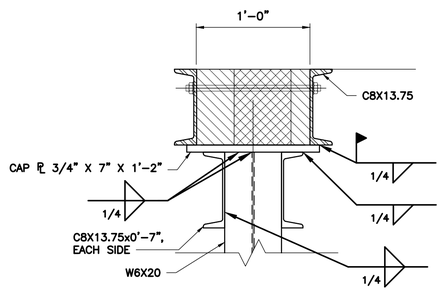
A SECTION

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



B SECTION

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



C SECTION

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

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REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	DD
DRAWN BY:	ABP
CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	1/8" = 1'-0"

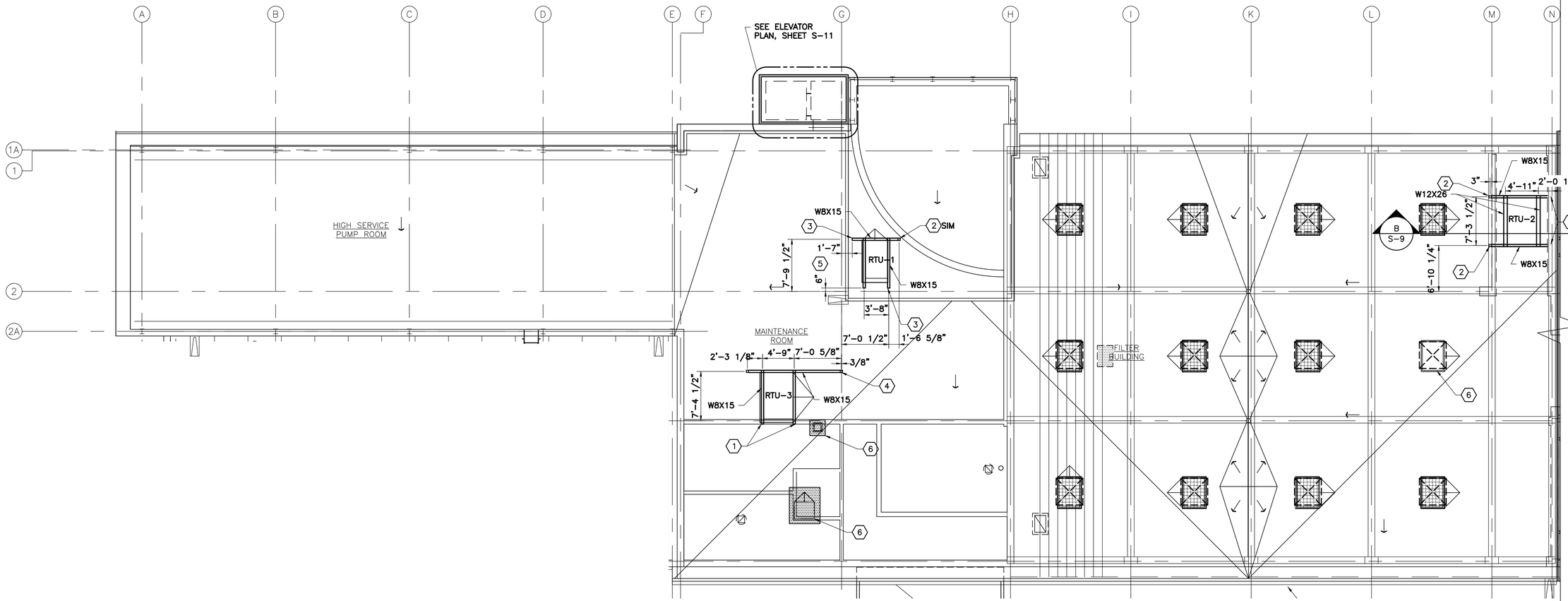
FILTER BUILDING STRUCTURAL SECOND FLOOR PLAN

S-6

SHEET: OF

P:\PR58982\Cadd\Sheets\S-4 MAIN BUILDING STRUCTURAL FIRST FLOOR PLAN.dwg 4/13/2022 4:47:33 PM Matt Kroll

PLOTTED: 4/14/2022 6:09:27 PM



X CODED NOTES:

1. CREATE POCKET SO BEAM AND BEARING PL BP6 CAN BEAR ON EXISTING MASONRY WALL. TOP OF BEAM ELEVATION IS 994'–11 3/4". SEE BEARING PLATE SCHEDULE AND BEAM BEARING DETAILS ON SHEET SD–7
2. HSS4 X 4 X 1/4 COLUMN WITH BASE PL 1/2" X 6" X 0'–10" WITH 4 – 1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON 1" NON–SHRINK GROUT. BOTTOM OF BASE PLATE ELEVATION 984'–1".
3. CONNECT TO EXISTING STEEL FRAMING WITH FIELD WELDED L 3 1/2 X 3 1/2 X 1/4 X 0'–5 1/2" AND 2– 3/4" DIA A325 BOLTS THRU WEB OF NEW W8'S.
4. HSS4 X 4 X 1/4 COLUMN WITH BASE PL 1/2" X 6" X 0'–10" WITH 4 – 1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON 1/2" NON–SHRINK GROUT. BOTTOM OF BASE PL ELEVATION 983'–11 1/2". REMOVE AS LITTLE OF EXISTING TERRAZZO FLOORING AS POSSIBLE.
5. DIMENSIONS TO CENTERLINE OF EXISTING STEEL BEAM.
6. INFILL EXISTING ROOF OPENING PER DETAIL 5, SHEET S–14

MAIN BUILDING ROOF PLAN

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

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

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DRAWN BY:	ABP
CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	1/4" = 1'-0"

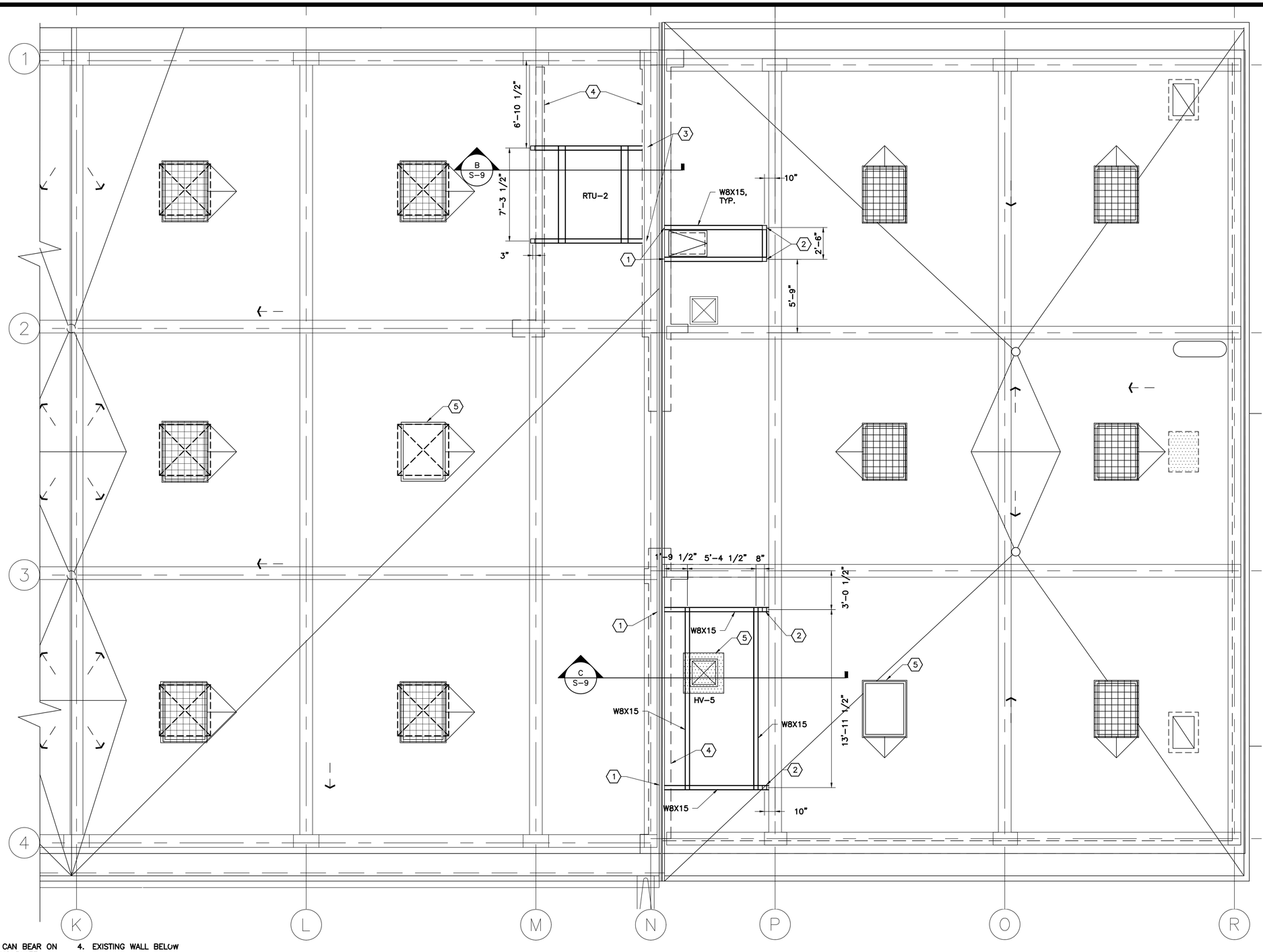
MAIN BUILDING STRUCTURAL ROOF PLAN

S-7

SHEET: OF

P:\PR58982\Cadd\Sheets\S-4 MAIN BUILDING STRUCTURAL FIRST FLOOR PLAN.dwg 4/13/2022 4:47:33 PM Matt Kroll

PLOTTED: 4/14/2022 6:09:50 PM



FILTER BUILDING ROOF PLAN

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

X CODED NOTES:

1. CREATE POCKET SO BEAM AND BEARING PLATE BP6 CAN BEAR ON EXISTING STRUCTURAL GLAZED TILE WALL. SEE BEARING PLATE SCHEDULE AND BEARING DETAILS ON SHEET SD-6.
2. HSS4 X 4 X 1/4 COLUMN WITH BASE PL 1/2" X 6"X 0'-10" WITH (4)-1/2" DIA SS ANCHORS WITH 3 1/2" EMBEDMENT ON 1" NON-SHRINK GROUT. BOTTOM OF BASE PLATE ELEVATION 984'-1".
3. CREATE POCKET SO BEAM AND BEARING PLATE BP6 CAN BEAR ON EXISTING CMU WALL. SEE BEARING PLATE SCHEDULE AND BEARING DETAILS ON SHEET SD-6.
4. EXISTING WALL BELOW
5. INFILL EXISTING ROOF OPENING PER DETAIL 5, SHEET S-14.

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APPROVED BY:	CMS
SCALE:	AS NOTED

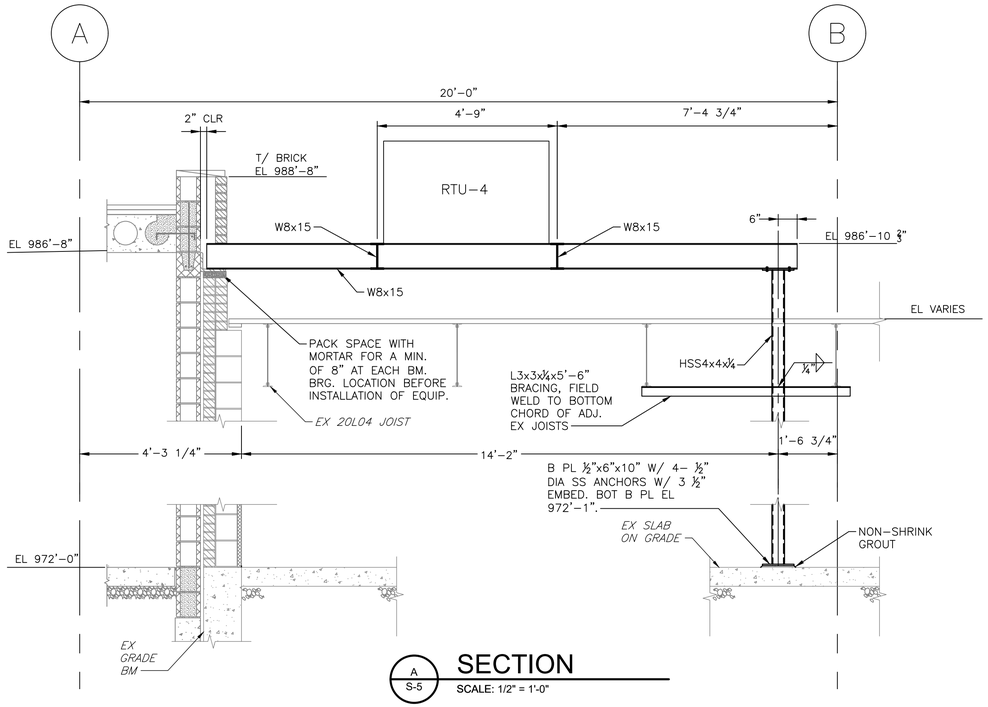
FILTER BUILDING STRUCTURAL ROOF PLAN

S-8

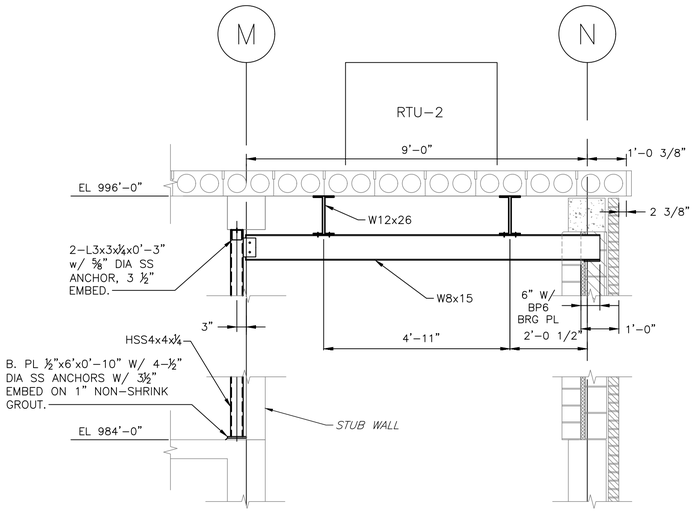
SHEET: OF

P:\PR58982\Cadd\Sheets\S-4 MAIN BUILDING STRUCTURAL FIRST FLOOR PLAN.dwg 4/13/2022 4:47:33 PM Matt Kroll

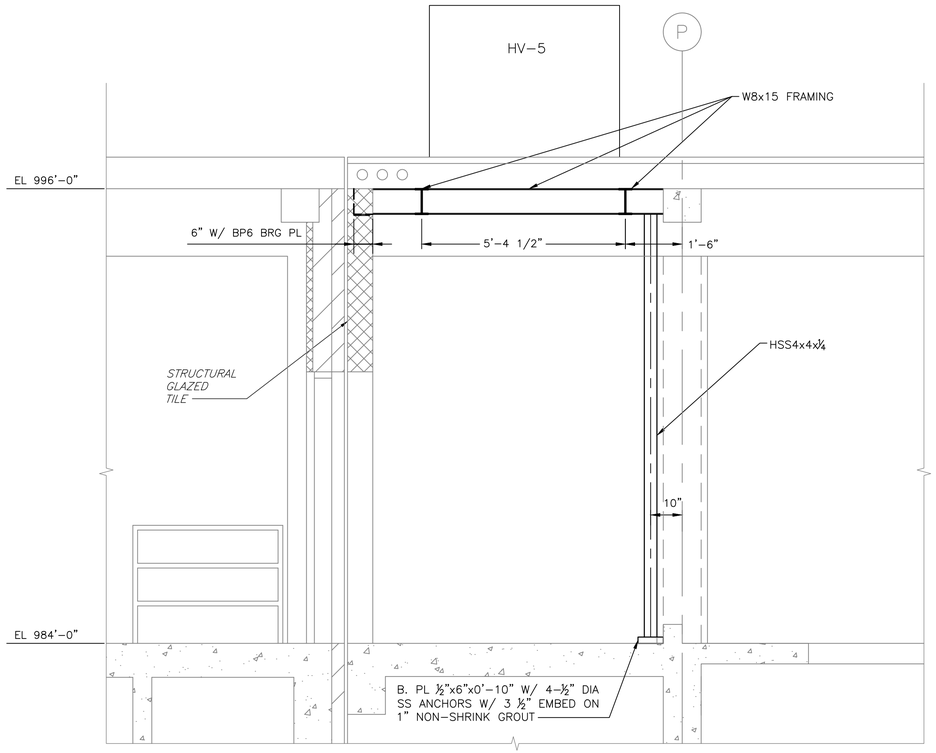
PLOTTED: 4/14/2022 6:11:07 PM



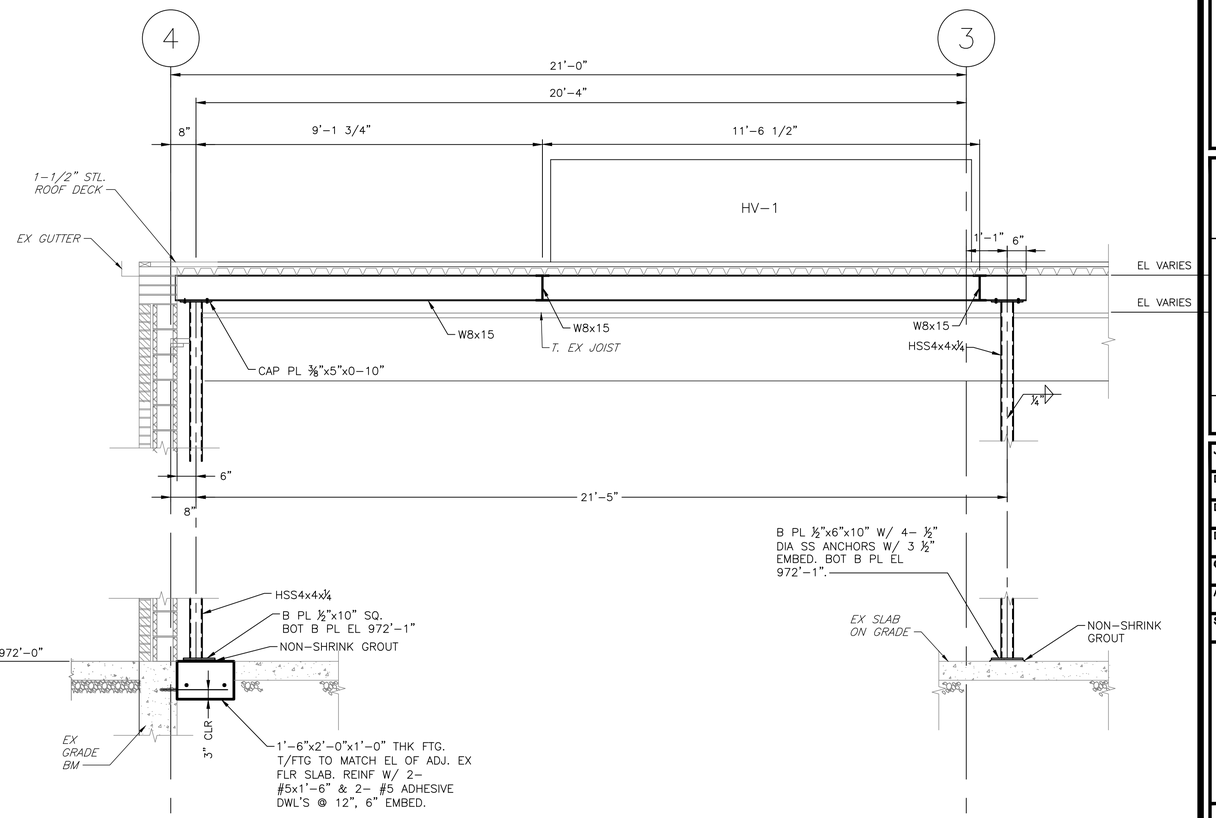
A S-5 **SECTION**
SCALE: 1/2" = 1'-0"



B S-7 **SECTION**
SCALE: 1/2" = 1'-0"



C S-8 **SECTION**
SCALE: 1/2" = 1'-0"



D S-5 **SECTION**
SCALE: 1/2" = 1'-0"

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
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DESIGNED BY:	DD
DRAWN BY:	ABP
CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	AS NOTED

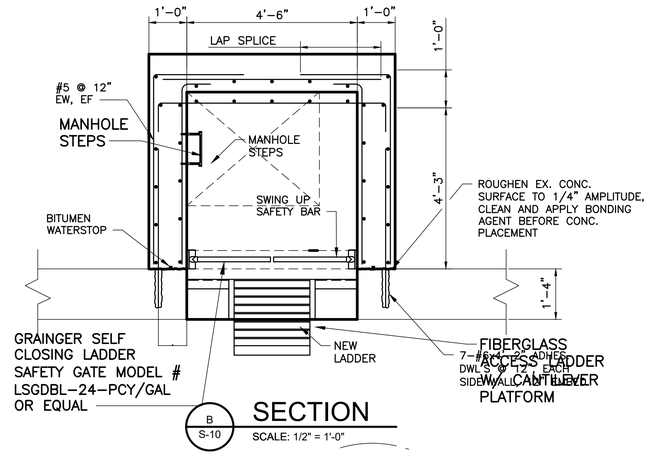
FILTER BUILDING STRUCTURAL SECTIONS

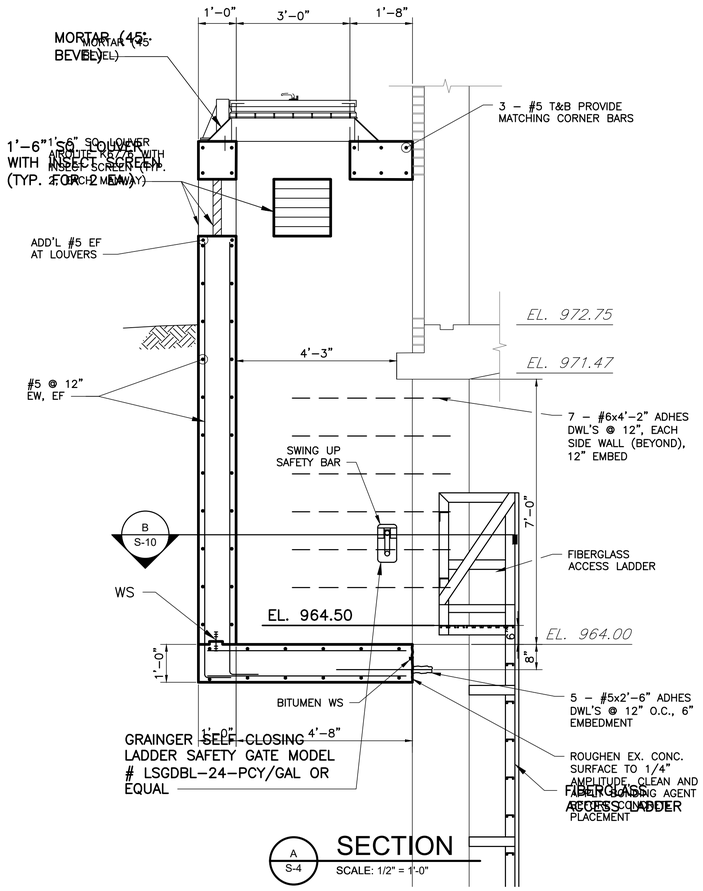
S-9

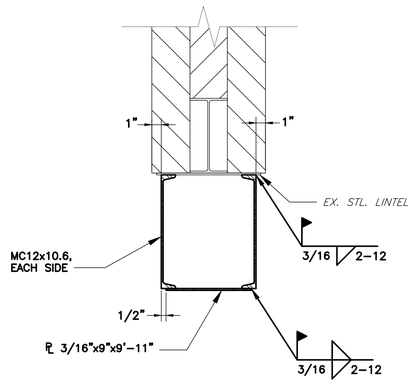
SHEET: OF

P:\PR58982\Cadd\Sheets\S-9 FILTER BUILDING STRUCTURAL SECTIONS.dwg 11/9/2021 11:05:31 AM Matt Kroll

PLOTTED: 4/14/2022 6:13:49 PM







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SUGAR CREEK
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WELLFIELD IMPROVEMENTS

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REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

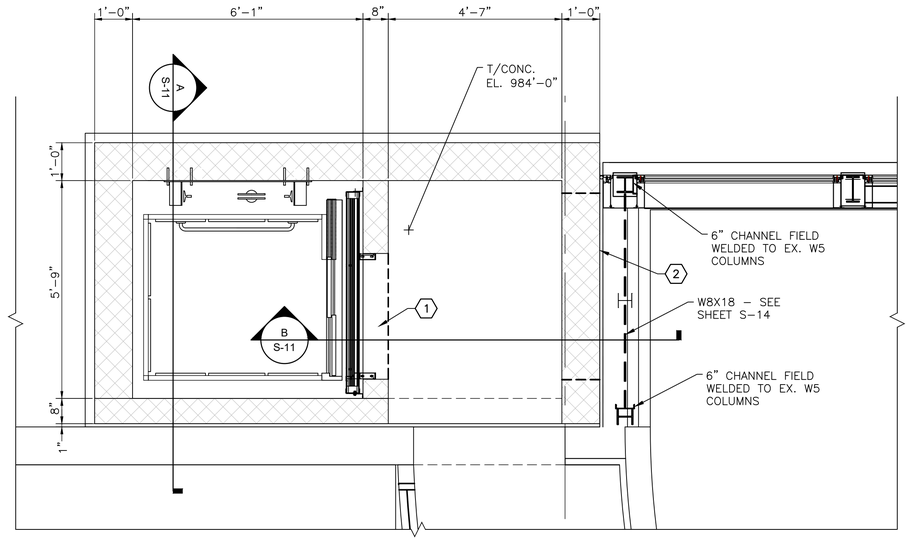
MAIN BLDG
STRUCTURAL
WEST CLEARWELL
ACESS
PLAN-SECTIONS

S-10

SHEET: OF

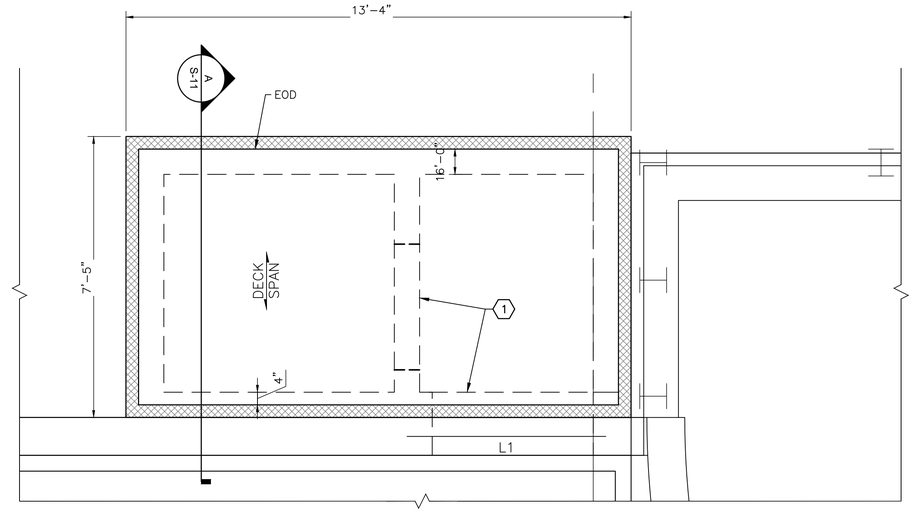
P:\PR58982\Cadd\Sheets\S-10 MAIN BLDG STRUCTURAL WEST CLEARWELL ACCESS PLAN-SECTIONS.dwg 11/9/2021 11:03:30 AM Matt Kroll

PLOTTED: 4/14/2022 6:15:09 PM



SECOND FLOOR ELEVATOR PLAN

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

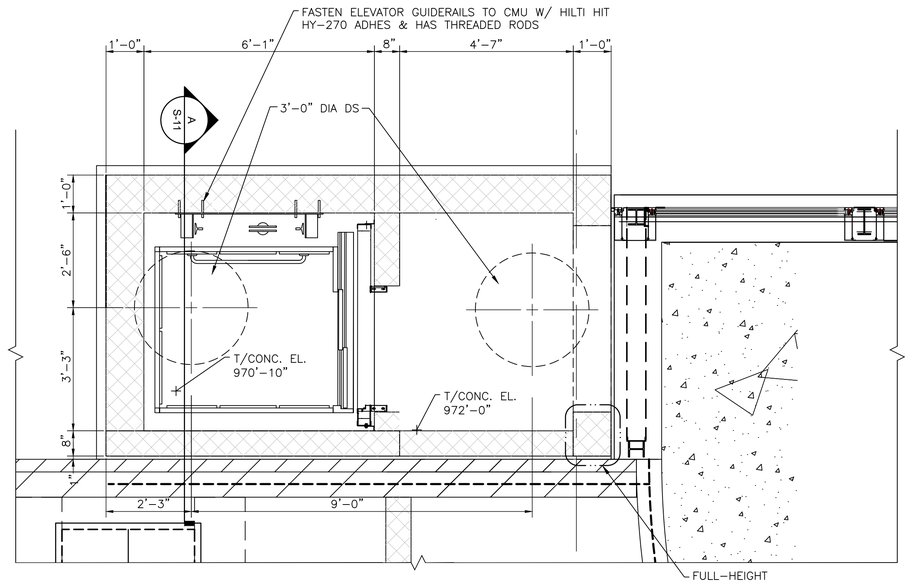


ELEVATOR ROOF PLAN

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

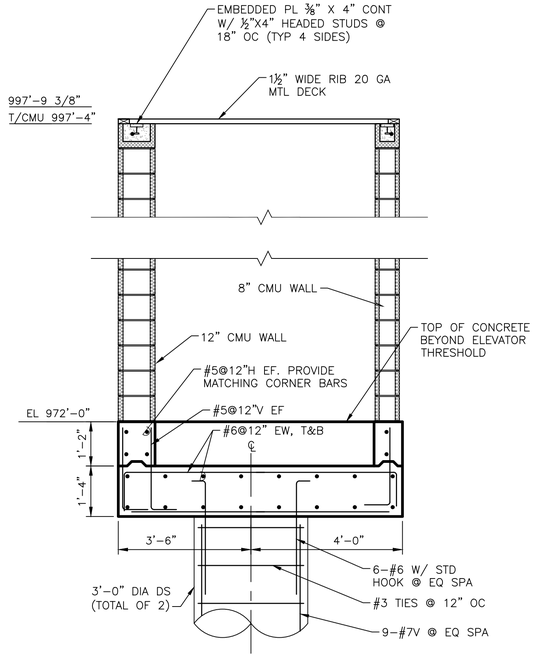
CODED NOTES

1. CMU LINTEL, 8" DEEP, GROUTED AND REINFORCED WITH 2 - #5 BARS
2. CMU LINTEL, 16" DEEP, GROUTED AND REINFORCED WITH 2 - #5 BARS



FIRST FLOOR ELEVATOR PLAN

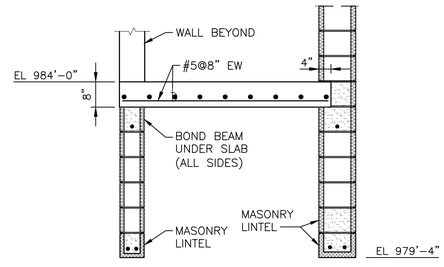
SCALE: 1/2" = 1'-0"



SECTION THRU ELEVATOR SHAFT

A S-11

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



SECTION THRU ELEVATOR SHAFT

B S-11

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

NOTES

1. UNLESS NOTED OTHERWISE, CMU SHALL BE REINFORCED WITH VERTICAL #6 BARS @ 40" OC. SEE MASONRY NOTES ON SHEET SD-5 FOR ADDITIONAL REQUIREMENTS.
2. COORDINATE ALL OPENINGS AND PENETRATIONS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL SHEETS.
3. LX=LINTEL. SEE SHEET SD-6 FOR STEEL LINTEL SCHEDULE.
4. BUILDING DIMENSIONS ARE TO FACE OF MASONRY.
5. PROVIDE DOWELS FOR CMU WALLS OUT OF FOUNDATION TO MATCH VERTICAL WALL REINFORCING.

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SCALE:	AS NOTED

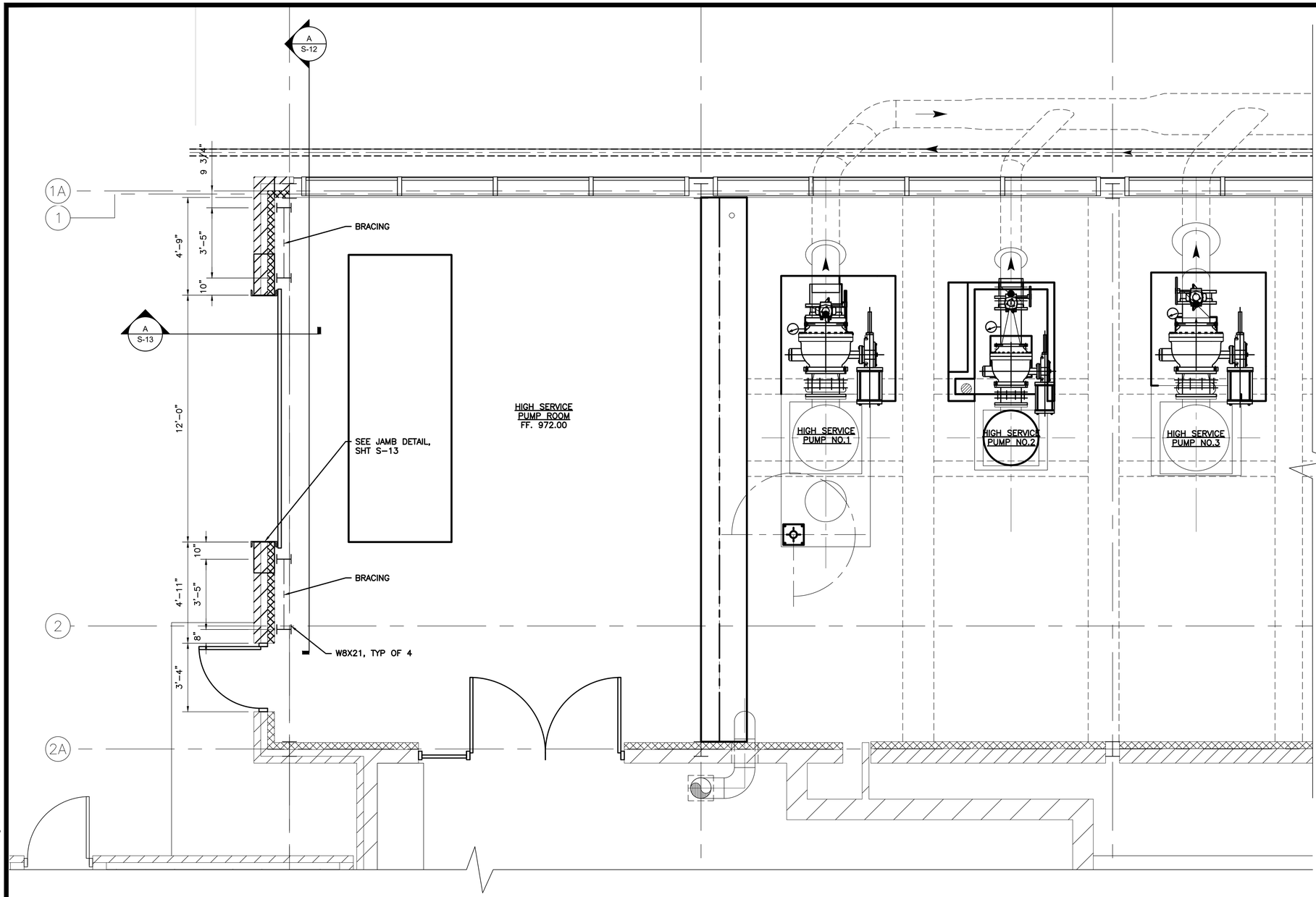
MAIN BUILDING
STRUCTURAL
ELEVATOR
PLAN-SECTIONS

S-11

SHEET: OF

P:\PR58982\Cadd\Sheets\S-9 FILTER BUILDING STRUCTURAL SECTIONS.dwg 11/9/2021 11:05:31 AM Matt Kroll

PLOTTED: 4/14/2022 6:17:31 PM



PUMP ROOM PLAN

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

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CHECKED BY:	ABP
APPROVED BY:	CMS
SCALE:	3/8" = 1'-0"

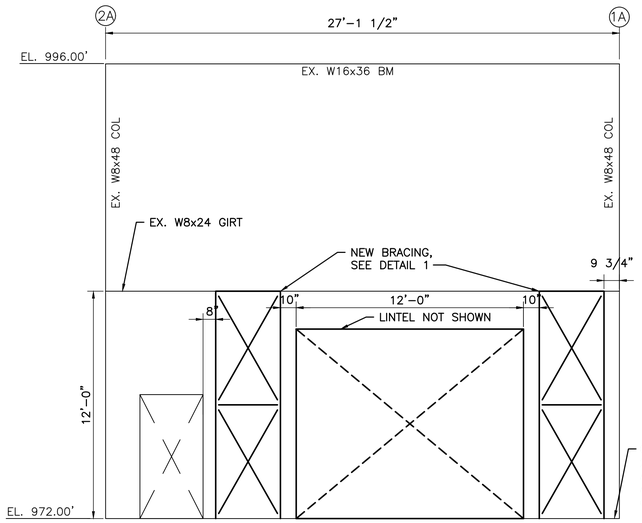
MAIN BUILDING
STRUCTURAL
HSP ROOM
PLAN

S-12

SHEET: OF

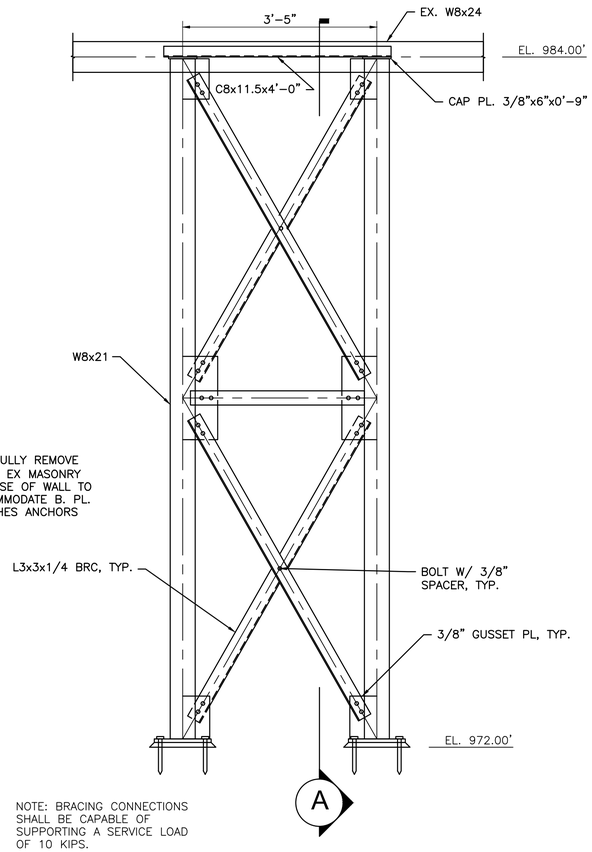
P:\PR58982\Cadd\Sheets\S-12 MAIN BUILDING STRUCTURAL HSP ROOM PLAN.dwg 3/11/2022 4:02:17 PM Matt Kroll

PLOTTED: 4/14/2022 6:17:43 PM



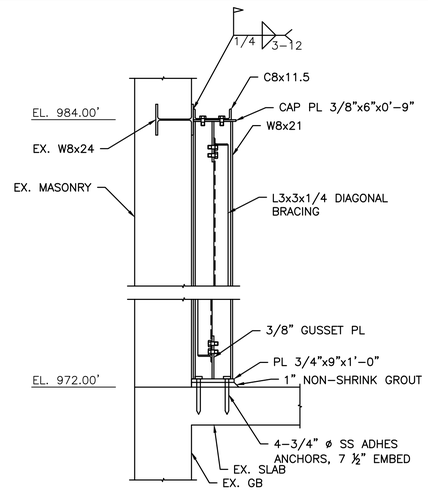
A S-12 WEST WALL SECTION

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



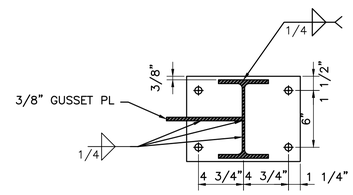
1 BRACING DETAIL (TYPICAL OF 2)

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



A SECTION

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

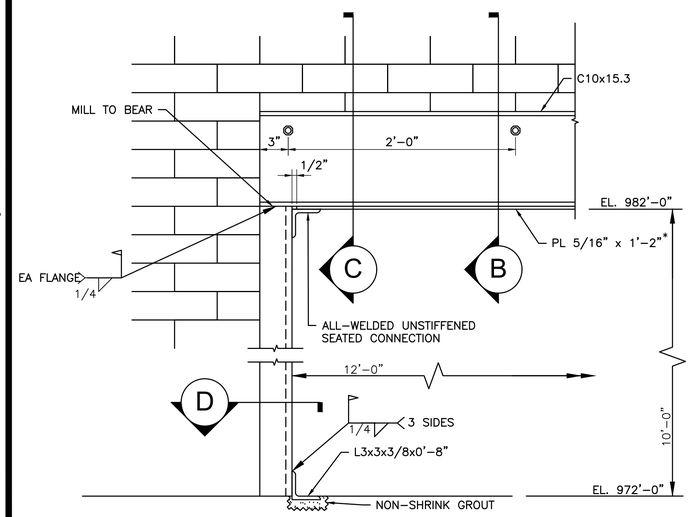


BASE PLATE DETAIL

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

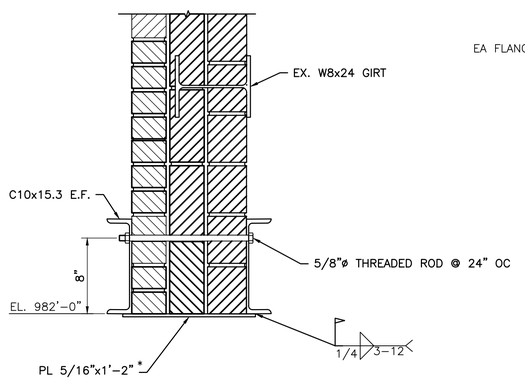
* NOTE: PROVIDE BOTTOM PLATE IN MAXIMUM 2'–0" LENGTHS. RECOMMENDED SEQUENCE OF CONSTRUCTION:

1. INSTALL CHANNEL LINTELS AND THREADED ROD.
2. DEMO 2'–0" LONG PORTION OF MASONRY AT JAMBS OF OPENING.
3. INSTALL JAMB POSTS AND SECTION OF BOTTOM PLATE.
4. INSTALL UNSTIFFENED SEATED CONNECTIONS.
5. DEMO ADJACENT 2'–0" SECTION OF MASONRY, INSTALL CORRESPONDING BOTTOM PLATE, AND SO ON.



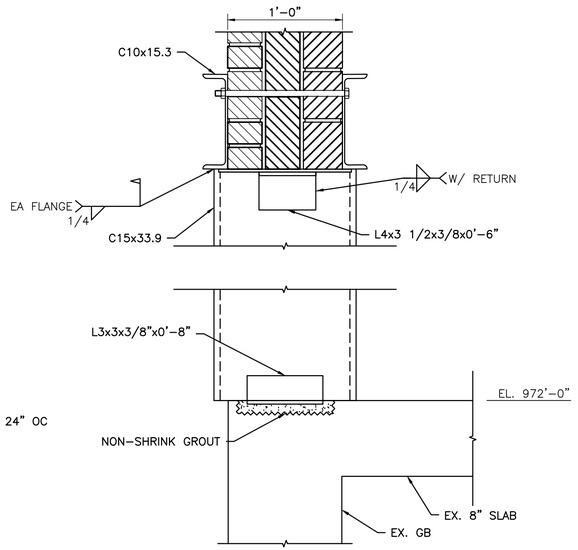
OH DOOR LINTEL ELEVATION

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



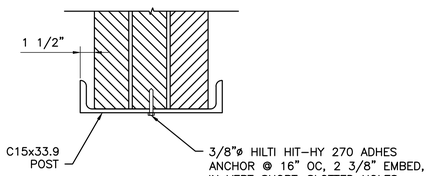
B SECTION

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



C SECTION

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



D JAMB DETAIL

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

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SCALE:	AS NOTED

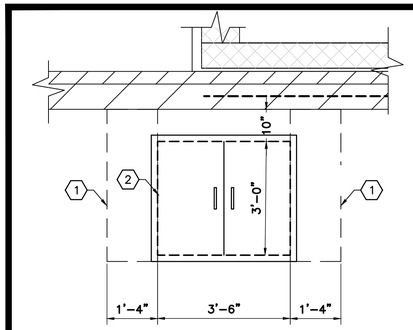
MAIN BUILDING STRUCTURAL HSP ROOM SECTION-DETAILS

S-13

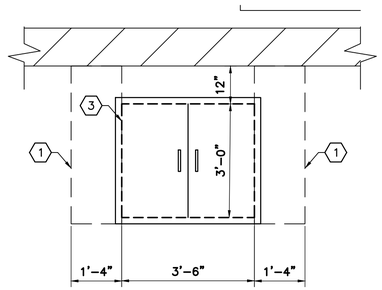
SHEET: OF

P:\PR58982\Cadd\Sheets\S-2 AEATOR BUILDING STRUCTURAL ROOF DETAILS.dwg 4/12/2022 3:54:53 PM Matt Kroll

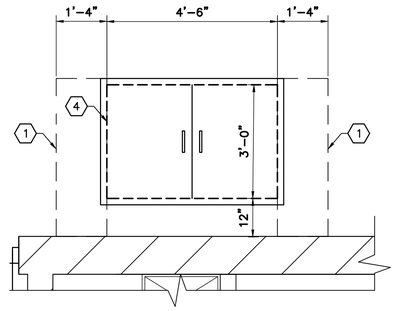
PLOTTED: 4/14/2022 6:19:09 PM



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



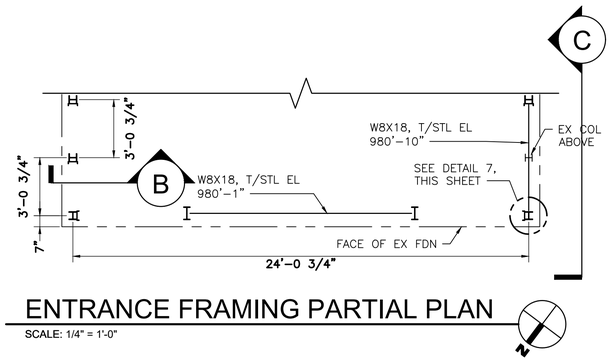
2 S-4 DETAIL
SCALE: 1/2" = 1'-0"



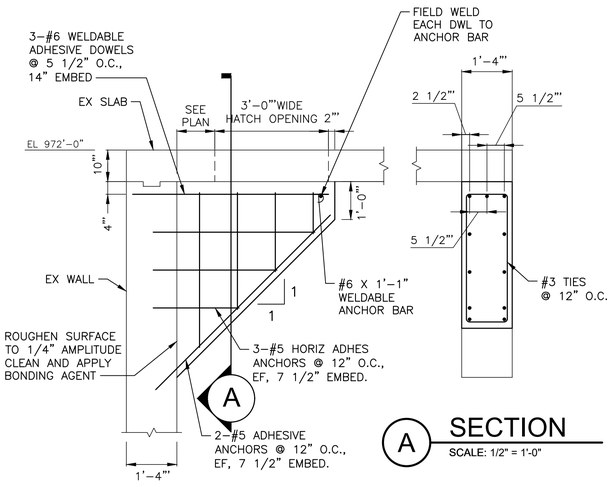
3 S-4 DETAIL
SCALE: 1/2" = 1'-0"

X **CODED NOTES:**

1. CONCRETE BRACKET EACH SIDE OF OPENING. SEE DETAIL 4, THIS SHEET.
2. NEW FLOOR DOOR. 3'-0"x3'-6" CLEAR OPENING TO CHLORINE CONTACT TANK NO.1 BELOW.
3. NEW FLOOR DOOR. 3'-0" x 3'-6" CLEAR OPENING TO CHLORINE CONTACT TANK NO.2 BELOW.
4. NEW FLOOR DOOR. 3'-0" x 4'-6" CLEAR OPENING TO CLEARWELL CHAMBER NO.3A BELOW.

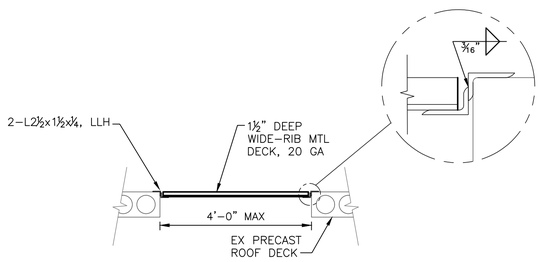


ENTRANCE FRAMING PARTIAL PLAN
SCALE: 1/4" = 1'-0"

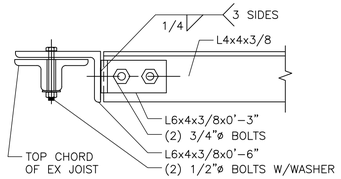


A SECTION
SCALE: 1/2" = 1'-0"

4 BRACKET BOARDERING FLOOR HATCH OPENINGS
SCALE: 1/2" = 1'-0"



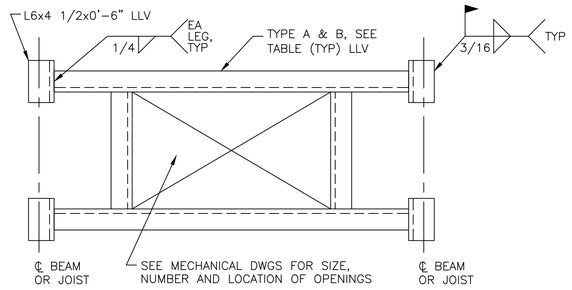
5 FILL DETAIL FOR EXISTING ROOF OPENING
SCALE: 1/2" = 1'-0"



NOTE: BOLTS SHALL BE FULLY PRE-TENSION.

NOTE:
FOR INSTALATION IN AN EXISTING BUILDING:
a. FIELD WELD THE END ANGLES TO THE FRAMES,
b. WELDS CONNECTING THE METAL DECK TO THE BEAM OR JOIST MAY BE BROKEN.
c. WELD VERTICAL LEG OF END ANGLE TO THE EXISTING BEAM OR JOIST.

ALTERNATE BEARING ANGLE CONNECTION

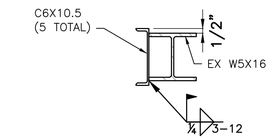


NOTES:
1. REQUIRED FOR OPENINGS 12" AND LARGER.
2. TYPE A FRAME: ALL MEMBERS L4x4x3/8.
3. TYPE B FRAME: ALL MEMBERS L7x4x3/8 EXCEPT FOR BEARING WHICH SHALL BE L6x4x1/2.
4. USE TYPE B FRAME UNLESS NOTED OTHERWISE.
5. THE MAXIMUM DISTANCE BETWEEN THE BEARING ANGLE VERTICAL ANGLE & THE EDGE OF THE JOIST SHALL NOT EXCEED 1/2". REPLACE BEARING ANGLE WITH U-SHAPED BENT 3/8" BENT PLATE WHERE FR ALIGN ON OPPOSITE SIDES OF THE JOIST.
6. FOR FRAMES SUPPORTED BY JOISTS PROVIDE L2x2x1/4 JOIST WEB REINFORCING, SEE "JOIST REINFORCING DETAIL", WHERE BEARING ANGLE IS NOT AT A TOP CHORD PANEL POINT.

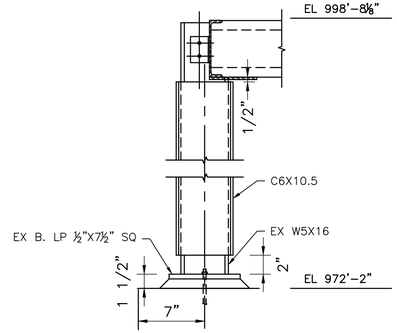
FRAME CAPACITY (LB):

MAX SPAN	TYPE A	TYPE B
2'	9,600	12,400
3'	6,400	12,400
4'	4,800	10,800
5'	3,900	8,600
6'	3,200	7,200

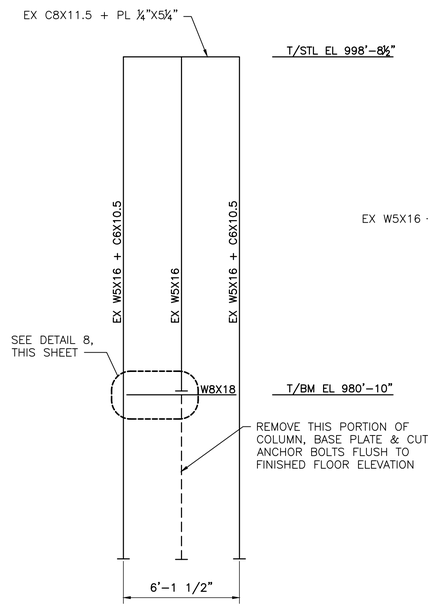
6 TYP. FLOOR/ROOF OPENING FRAME DETAIL
SCALE: NONE



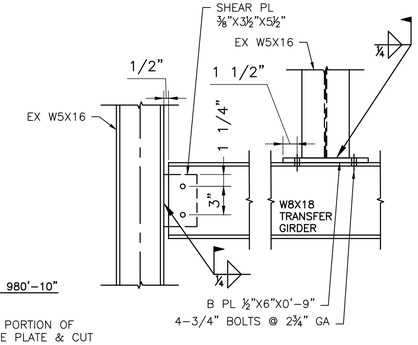
7 S-14 DETAIL
SCALE: 1 1/2" = 1'-0"



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



C ENTRANCE FRAMING ELEVATION
SCALE: 1/4" = 1'-0"



8 S-14 DETAIL
SCALE: 1 1/2" = 1'-0"

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

STRUCTURAL MISCELLANEOUS DETAILS

S-14

SHEET: OF

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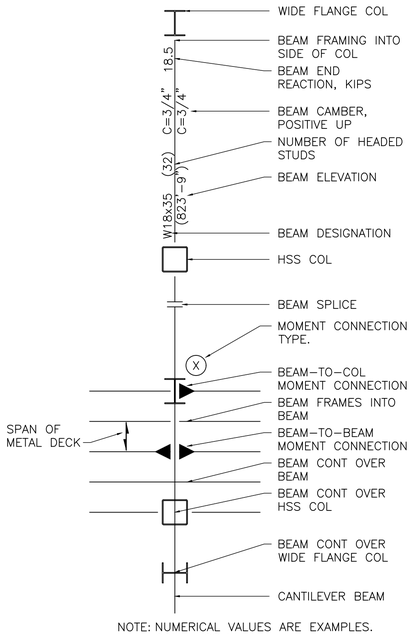
PLOTTED: 4/14/2022 5:59:56 PM



NOTE: NUMERICAL VALUES ARE EXAMPLES.
COL = COLUMN
CONT = CONTINUOUS
ELEV = ELEVATION
HSS = HOLLOW STRUCTURAL SHAPE
TYP = TYPICAL

FRAMING PLAN LEGEND

DESIGN CRITERIA: GENERAL

SOILS INVESTIGATION & REPORT:
GEOTECHNICAL ENGINEERING CO.: TERRACON
REPORT OF SUBSURFACE EXPLORATION DATED: JUNE 10, 2021
NET ALLOWABLE SOIL BEARING PRESSURES:
FOOTINGS – 2,000 PSF ON NATURAL SOILS OR ENGINEERED FILL
DRILLED SHAFTS: 8,000 PSF (EL 959 – 954), 13,000 PSF (EL 954 – 939)
LATERAL EARTH PRESSURES

CANTILEVERED RETAINING WALLS	50 PCF EFP (ABOVE WATER TABLE)
RESTRAINED RETAINING WALLS	
ABOVE WATER TABLE	70 PCF EFP
BELOW WATER TABLE	95 PCF EFP

DESIGN STRENGTHS:

MATERIAL	ITEM	STRENGTH	ASTM SPECIFICATIONS
CONCRETE	CIP	4,500 PSI@28 DAYS	C150, C330, C260, C494, C94
	REBAR	Fy = 60,000 PSI	A615
	WWF	Fy = 60,000 PSI	A185
PRECAST	PLANK	5,000 PSI@28 DAYS	C150, C330, C260, C494
	TOPPING	4,000 PSI@28 DAYS	C150, C330, C260, C494
	WWF	Fy = 60,000 PSI	A185
	REBAR	Fy = 60,000 PSI	A615
	STRAND	Fy = 270,000 PSI	A416
MASONRY	BLOCK	F'm = 2,000 PSI	C90 (GRADE N, TYPE 1)
	BRICK	F'm = 2,400 PSI	C216 (GRADE SW, TYPE FBS)
	MORTAR	TYPE S	C270, (PROPORTION SPEC.)
	GROUT	F'm = 2,000 PSI	A476
	JT. REINF.	Fy = 60,000 PSI	A82
	REBAR	Fy = 60,000 PSI	A615
STEEL	WF & I	Fy = 50,000 PSI	A992
& LINTELS	OTHERS	Fy = 36,000 PSI	A36
	PL & BAR	Fy = 36,000 PSI	A36
	PIPE	Fy = 35,000 PSI	A53 GRADE B, TYPE E OR S
	BOLTS		A325 (N) – SNUG TIGHT
	ANC. ROD	Fy = 36,000 PSI	F1554
ALUMINUM	SHAPES		ALLOY 6061–T6
	GRATING		ALLOY 6063

DESIGN LOADS:
MIN. FLOOR DESIGN LIVE LOAD
FLOORS 300 PSF

MIN. ROOF DESIGN LIVE LOAD
FLAT ROOFS (≤ 0.5/12) 25 PSF

MIN. ROOF DESIGN SUPERIMPOSED DEAD LOAD
FLAT ROOFS 18 PSF

ROOF SNOW LOAD: PER OBC 1608

GROUND SNOW LOAD	20 PSF
BASIC FLAT ROOF SNOW LOAD	22 PSF
EXPOSURE COEFFICIENT, Ce	1.0
IMPORTANCE FACTOR, Is	1.1
THERMAL FACTOR, Ct	1.0
RAIN ON SNOW PER ASCE 7–10	5 PSF

WIND LOADS:

BASIC WIND SPEED Vult	120 MPH
INTERNAL PRESSURE COEFF:	+0.18, –0.18
EXPOSURE CATEGORY	C

MAIN WIND FORCE RESISTING SYSTEM PRESSURE (MWFRS):	POSITIVE INTERNAL PRESSURE	NEGATIVE INTERNAL PRESSURE
– WINDWARD WALL	13.5 PSF	22.9 PSF
– LEEWARD WALL	–16.0 PSF	–6.6 PSF
– SIDE WALL	–20.7 PSF	–11.0 PSF
– ROOF – WINDWARD	–34.2 PSF	–24.8 PSF
– ROOF – LEEWARD	–20.7 PSF	–11.0 PSF

COMPONENTS AND CLADDING:

ROOF: AREA, SQ. FT.		
10 (ZONE 2)	15.4 PSF	–47.3 PSF
10 (ZONE 3)	15.4 PSF	–82.1 PSF
100 (ZONE 2)	12.8 PSF	–44.8 PSF

WALLS: AREA, SQ. FT.		
10 (ZONE 4)	31.3 PSF	–34.2 PSF
500 (ZONE 4)	23.5 PSF	–26.0 PSF
10 (ZONE 5)	31.3 PSF	–42.0 PSF
500 (ZONE 5)	23.5 PSF	–26.0 PSF

SEISMIC CRITERIA: PER OBC 1604, 1615 – 1617	MAIN PUMP STATION PUMP ROOM AREA	SCREEN BUILDING
IMPORTANCE FACTOR, Ie	1.25	1.25
SEISMIC USE GROUP	III	III
0.2 SEC. SPECTRAL RESPONSE ACCELERATION (Ss)	0.179	0.177
1.0 SEC. SPECTRAL RESPONSE ACCELERATION (S1)	0.058	0.058
SITE CLASS	D	D
SPECTRAL RESPONSE COEFFICIENT SDS	0.189	0.189
SPECTRAL RESPONSE COEFFICIENT SD1	0.093	0.093
SEISMIC DESIGN CATEGORY	B	B
SEISMIC FORCE RESISTING SYSTEM	ORDINARY PLAIN MAS. SHEAR WALLS	REINF. ORDINARY MAS. SHEAR WALLS
SEISMIC RESPONSE COEFFICIENT, Cs	0.158	0.118
RESPONSE MODIFICATION FACTOR, R	1.5	2
ANALYSIS PROCEDURE	EQUIV. LAT. FORCE	EQUIV. LAT. FORCE
DESIGN BASE SHEAR, V	72.3 KIPS	76.1 KIPS

DESIGN CRITERIA: DECHLORINATION FACILITY

SOILS INVESTIGATION & REPORT:
GEOTECHNICAL ENGINEERING CO.: INTERTEK – PSI
REPORT OF SUBSURFACE EXPLORATION DATED: JUNE 12, 2019
NET ALLOWABLE SOIL BEARING PRESSURES:
FOOTINGS – 2,500 PSF ON NATURAL SOILS OR ENGINEERED FILL
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INTERNAL PRESSURE COEFF:	+0.18, –0.18
EXPOSURE CATEGORY	C

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NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

STRUCTURAL STANDARD DETAILS DESIGN CRITERIA

SD-1

SHEET: OF

P:\PR58982\Cadd\Sheets\SD-1 STRUCTURAL STANDARD DETAILS DESIGN CRITERIA.dwg 11/22/2021 2:07:24 PM Matt Kroll

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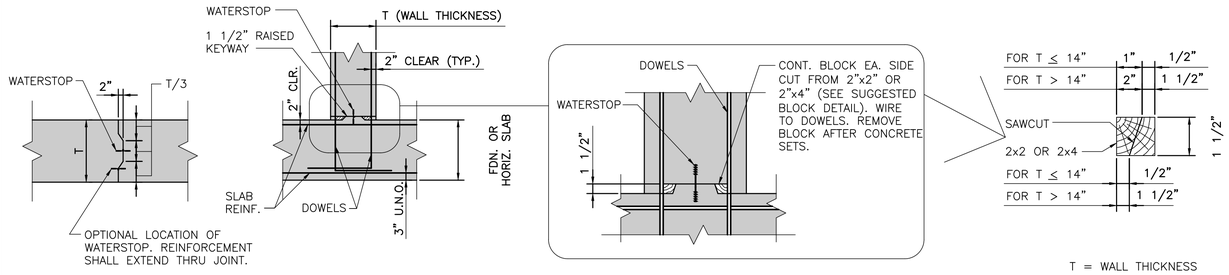
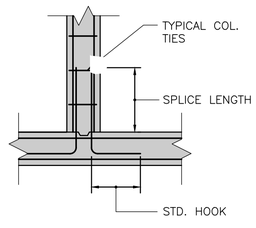


TYPICAL CONSTRUCTION JOINT

WATERSTOP REQUIRED IN ALL CONSTRUCTION JOINTS.
ALLOW 12 HOURS TO LAPSE BETWEEN ADJACENT CONCRETE POURS.

SUGGESTED BLOCK DETAIL

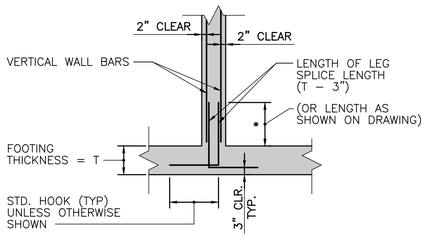
18



* SEE NOTE 8 ON THIS SHEET FOR REQUIRED LAP SPLICE

TYPICAL COLUMN/FOOTING DOWEL DETAIL

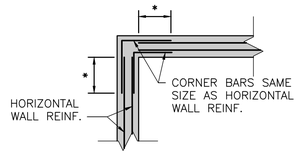
15



* SEE NOTE 8 ON THIS SHEET FOR REQUIRED LAP SPLICE

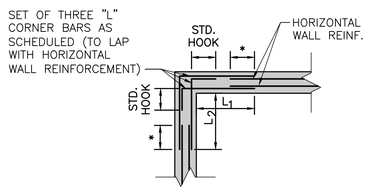
TYPICAL WALL/FOOTING DOWEL DETAIL

10



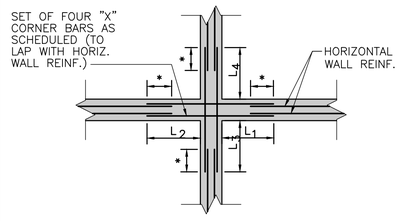
(WHEN SCHEDULED OR SHOWN)

TYPICAL "ELL" CORNER BARS HORIZONTAL WALL BARS, EACH FACE



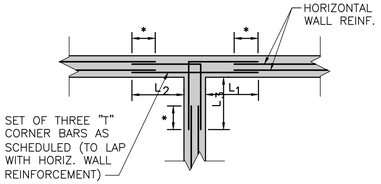
(REQUIRED WHEN NOT OTHERWISE SHOWN OR SCHEDULED)

TYPICAL "ELL–TYPE A" CORNER



(REQUIRED WHEN NOT OTHERWISE SHOWN OR SCHEDULED)

TYPICAL "CROSS–TYPE C" CORNER



(REQUIRED WHEN NOT OTHERWISE SHOWN OR SCHEDULED)

TYPICAL "TEE TYPE B" CORNER

(VERTICAL REINFORCING NOT SHOWN)

* SEE NOTE 8 ON THIS SHEET FOR REQUIRED LAP SPLICE
L1, L2, L3 AND L4 = SPLICE LENGTH + 12"

TYPICAL HORIZONTAL CORNER BAR DETAILS

08

MINIMUM LAP SPLICE AND ANCHORAGE DIMENSION TABLE

(4500 PSI CONCRETE)

TOP BARS		
BAR SIZE	SPLICE	ANCHORAGE
#3	23"	18"
#4	31"	24"
#5	38"	29"
#6	46"	35"
#7	66"	51"
#8	76"	58"
#9	85"	66"
#10	95"	73"
#11	104"	80"

OTHER BARS		
BAR SIZE	SPLICE	ANCHORAGE
#3	18"	14"
#4	23"	18"
#5	29"	23"
#6	35"	27"
#7	51"	39"
#8	58"	45"
#9	66"	51"
#10	73"	56"
#11	80"	66"

NOTES:

1. THIS TABLE IS FOR "LAP CLASS B" AND "CATEGORY 3."
2. THIS TABLE SHALL NOT BE USED WHERE CLEAR COVER IS LESS THAN 2" OR WHERE CENTER TO CENTER SPACING IS LESS THAN 6".
3. TOP BARS SHALL BE BEAM AND/OR SLAB HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE TOP REINFORCEMENT.
4. MODIFY THE REQUIRED LENGTH BY THE FOLLOWING FACTOR, WHEN APPLICABLE:
   - LIGHTWEIGHT CONCRETE AGGREGATE x 1.30
   - EPOXY COATED REINFORCEMENT x 1.50
   - BUNDLED BARS: 3 BAR BUNDLE x 1.20
     4 BAR BUNDLE x 1.33
5. WHEN LAPPING TWO DIFFERENT SIZE BARS, USE THE SPLICE DIMENSION OF THE SMALLER BAR OR THE ANCHORAGE DIMENSION OF THE LARGER BAR. USE WHICHEVER DIMENSION IS LARGER.
6. WHERE CADWELD IS NOTED IN THE TABLE, PROVIDE WELDED OR MECHANICAL CONNECTION CAPABLE OF DEVELOPING 125 PERCENT OF YIELD STRENGTH, Fy, OF THE BAR IN TENSION OR COMPRESSION (ACI 318, 12.14.3.2 OR 12.14.3.4).

04

GENERAL NOTES

1. ALL CONCRETE SCHEDULED FOR DEMOLITION SHALL BE ASSUMED TO BE REINFORCED.
2. MISCELLANEOUS DETAILS AND NOTES APPLY TO ALL STRUCTURES AND BUILDINGS UNLESS NOTED OTHERWISE.
3. DURING CONSTRUCTION, TANKS, BASEMENTS, AND OTHER STRUCTURES, WHETHER THEY BE CONCRETE OR OTHER MATERIAL, CAN BE BUOYANT PRIOR TO BEING LOADED WITH BACKFILL AND SUPERSTRUCTURE. IN THE EVENT THAT THE EXCAVATION OR OTHER AREA AROUND THE STRUCTURE IS IN DANGER OF BEING FLOODED OR THE SURROUNDING GROUND AROUND THE EXCAVATION BECOMES SATURATED, THE CONTRACTOR SHALL PROVIDE SUFFICIENT OPENINGS OR OTHER DEVICES THAT WILL MAINTAIN THE WATER LEVEL ON THE INSIDE AT THE SAME ELEVATION AS THE OUTSIDE AND TAKE OTHER APPROPRIATE MEASURES THAT ENSURES THAT THE STRUCTURES DO NOT FLOAT. THE MEASURES TAKEN SHALL NOT DAMAGE THE STRUCTURES. MEASURES SHALL BE PROVIDED THAT WILL ENSURE PROTECTION OF THE STRUCTURES AGAINST FLOATATION WHEN THE CONSTRUCTION SITE IS UNATTENDED. THE CONTRACTOR WILL BE RESPONSIBLE FOR DESIGN OF A PLAN TO PREVENT ANY DAMAGE DUE TO FLOATATION AND SHALL SUBMIT THE PLAN TO THE OWNER PRIOR TO INITIATION OF CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE TO IMPLEMENT THE PLAN FOR PROTECTION, AND WILL BE RESPONSIBLE FOR ALL DAMAGES TO STRUCTURES THAT BECOME BUOYANT.
4. ALL OUTSIDE EXPOSED CORNERS, INCLUDING CONCRETE COLUMNS, EQUIPMENT PADS, BEAMS, PIER WALLS, AND SLABS SHALL HAVE A 1" X 45° CHAMFER, UNLESS NOTED OTHERWISE.
5. REINFORCEMENT STEEL COVER SHALL BE AS GIVEN IN "CONCRETE COVER FOR REINFORCEMENT TABLE".
6. IN TWO WAY SOLID SLABS, PLACE SHORT SPAN BARS NEAREST TO THE SURFACE OF THE CONCRETE, UNLESS OTHERWISE SHOWN.
7. TEMPERATURE STEEL SHALL BE PLACED FURTHER FROM THE SURFACE OF THE CONCRETE THAN THE MAIN REINFORCING.
8. ALL REINFORCING STEEL LAP SPLICES SHALL CONFORM TO THE "MINIMUM LAP SPLICE AND ANCHORAGE DIMENSION TABLE" UNLESS SHOWN OR NOTED OTHERWISE.
9. HOOKS, BENDS, SUPPORTS, AND SPACERS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
10. REINFORCING BARS SHALL NOT BE BENT IN THE FIELD BY HEATING.
11. REINFORCING STEEL NOT SPECIFICALLY SHOWN OR NOTED SHALL BE A MINIMUM OF #5 @ 12" O.C., E.W., E.F.
12. CONCRETE BEAMS, GIRDERS, BRACKETS, COLUMN CAPITALS, AND HAUNCHES SHALL BE CONSIDERED AS PART OF THE FLOOR SYSTEM AND SHALL BE PLACED MONOLITHICALLY UNLESS NOTED OTHERWISE.
13. VERTICAL BARS IN WALLS AND COLUMNS SHALL EXTEND TO WITHIN 3" OF THE TOP SURFACE OF THE CONCRETE SLAB OR BEAM WHICH RESTS UPON IT, UNLESS NOTED OTHERWISE.
14. NO HORIZONTAL JOINTS SHALL BE MADE IN SLABS OR BEAMS. NOT ALL CONSTRUCTION JOINTS THAT ARE REQUIRED HAVE BEEN SHOWN ON THE DRAWINGS. CONSTRUCTION JOINTS ARE REQUIRED AT THE BOTTOM AND TOP OF ALL COLUMNS, ALL TANK, FLUME, BUILDING, AND FOOTER WALLS, WHERE SPECIFICALLY SHOWN ON THE DRAWINGS, AND WHERE CALLED FOR IN THE SPECIFICATIONS. UNLESS SHOWN OTHERWISE, THE MAXIMUM LENGTH OF WALL POURS SHALL NOT EXCEED 40 FEET AND SLAB POURS SHALL NOT EXCEED 40 FEET IN LENGTH OR WIDTH. THE CONTRACTOR MUST SUBMIT TO THE ENGINEER FOR APPROVAL, PRIOR TO ANY REINFORCING STEEL SHOP DRAWINGS SUBMITTALS, A CONSTRUCTION JOINT LAYOUT SHOWING ALL PLANNED CONSTRUCTION JOINTS. ANY MODIFICATIONS TO THE CONCRETE OR REINFORCING STEEL SHOWN ON THE PLANS THAT BECOME NECESSARY TO ACCOMMODATE THE CONTRACTOR'S NEW JOINT LOCATIONS SHALL BE PAID FOR BY THE CONTRACTOR. CONSTRUCTION JOINTS SHALL BE AS DETAILED ON THE STANDARD STRUCTURAL DETAIL SHEET, COMPLETE WITH WATERSTOP AS NOTED.
15. WATERSTOP FOR CONSTRUCTION JOINTS SHALL BE PVC SERRATED TYPE WITHOUT CENTER BULB, NOT LESS THAN 6" WIDTH AND 3/8" THICK, WIRESTOP, PAUL MURPHY PLASTIC COMPANY, OR EQUAL WITH ALL JOINTS SPLICED.
16. WATERSTOP FOR EXPANSION JOINTS SHALL BE PVC SERRATED TYPE, WITH CENTER BULB NOT LESS THAN 9" WIDE AND 3/8" THICK, WIRESTOP, PAUL MURPHY PLASTIC COMPANY, OR EQUAL WITH ALL JOINTS SPLICED.
17. WATERSTOP SHALL BE PROPERLY MITERED AND WELDED AT ALL INTERSECTIONS. LAP JOINTS WILL NOT BE PERMITTED.
18. ALL WATERSTOPS SHALL BE PROPERLY SUPPORTED AND WIRED TO REINFORCING TO REMAIN STRAIGHT AND TRUE.
19. PROVIDE MOIST CURING BY KEEPING CONCRETE SURFACES CONTINUOUSLY WET FOR A MINIMUM OF SEVEN DAYS.
20. SEE SPECIFICATIONS FOR GROUT FILL OR TOPPING (CLASS "D" CONCRETE) FOR TANK BOTTOMS AND FLUMES. GROUT SHALL BE SCREEDED BY PROCESS EQUIPMENT WHERE AND WHEN APPLICABLE.
21. ALL TANK LEAKS DURING CONSTRUCTION SHALL BE REPAIRED BY INJECTION. NO WATER PLUGS WILL BE ALLOWED.
22. PROVIDE SOLID OR NON–CORED MASONRY BEARING FOR ALL STRUCTURAL STEEL BEAMS & ALL CONCRETE BEAMS & SLABS (INCLUDING PRECAST SLABS) BEARING ON MASONRY. TWO COURSES UNDER THE LINE OF BEARING OF ALL STEEL & CONCRETE BEAMS, A MIN. OF 1'–4" EACH SIDE OF THE CENTERLINE OF BEARING.
23. WHERE NEW UNIT MASONRY REPLACEMENT OR PATCHING IS REQUIRED WITHIN BOUNDARIES OF EXISTING MASONRY, BRICK SHALL BE TOOTHED IN; AND GLAZED STRUCTURAL TILE AND CONCRETE BLOCK SHALL HAVE CUT VERTICAL JOINTS.
24. ALL WELDS SHALL CONFORM TO THE STANDARDS SET FORTH BY THE AMERICAN WELDING SOCIETY (AWS), THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND THE ALUMINUM ASSOCIATION.
25. ALL ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED WITH TWO COATS OF COAL TAR EPOXY, APPROVED BY THE ENGINEER.
26. ALL ANCHORS SHALL BE STAINLESS STEEL.
27. BEARING PADS SHALL BE DUROMETER 60 UNLESS NOTED OTHERWISE.
28. GENERAL CONTRACTOR TO SUPPLY PADS FOR ALL EQUIPMENT IN ALL SECTIONS.
29. FOR STRUCTURAL INSPECTION REQUIREMENTS, SEE DRAWING D–11.

07

CONCRETE COVER FOR REINFORCEMENT TABLE

SUPPORTED SLABS AND JOISTS:	
FOR DRY CONDITIONS (TOP AND BOTTOM BARS):	
#14 AND #18 BARS	1 1/2 IN.
#11 BARS AND SMALLER	1 1/2 IN.
EXPOSED TO EARTH, WATER, SEWAGE OR WEATHER, OR OVER SEWAGE:	
#5 BARS AND SMALLER	1 1/2 IN.
#6 THROUGH #18 BARS	2 IN.
BEAMS AND COLUMNS:	
FOR DRY CONDITIONS:	
STIRRUPS, SPIRALS AND TIES	1 1/2 IN.
PRINCIPAL REINFORCEMENT	2 IN.
EXPOSED TO EARTH, WATER, SEWAGE OR WEATHER	
STIRRUPS AND TIES	2 IN.
PRINCIPAL REINFORCEMENT	2 1/2 IN.
WALLS:	
FOR DRY CONDITIONS:	
#11 BARS AND SMALLER	1 1/2 IN.
#14 AND #18 BARS	1 1/2 IN.
CIRCULAR TANKS WITH RING TENSION	2 IN.
EXPOSED TO EARTH, WATER, SEWAGE OR WEATHER:	2 IN.
FOOTINGS AND BASE SLABS:	
FORMED SURFACES AND BOTTOMS BEARING ON CONCRETE WORK MAT	2 IN.
UNFORMED SURFACES AND BOTTOMS IN CONTACT WITH EARTH	3 IN.
TOP OF FOOTINGS	2 IN.
OVER TOP OF PILES	3 IN.

02

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

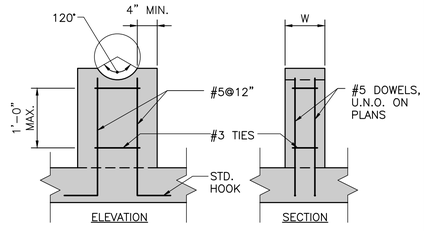
STRUCTURAL STANDARD DETAILS CONCRETE AND GENERAL NOTES

SD-2

SHEET: OF

P:\PR58982\Cadd\Sheets\SD-2 STRUCTURAL STANDARD DETAILS CONCRETE AND GENERAL NOTES.dwg 11/8/2021 1:52:48 PM Matt Kroll

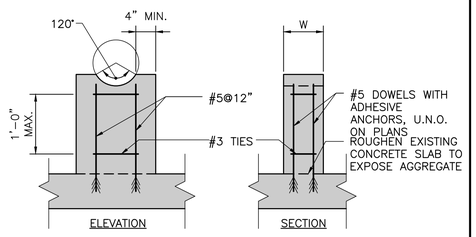
PLOTTED: 4/14/2022 6:00:15 PM



W = 8" FOR PIPE ≤12"ø
1'-0" FOR PIPE > 12"ø

TYPICAL PIPE SUPPORT DETAIL

20

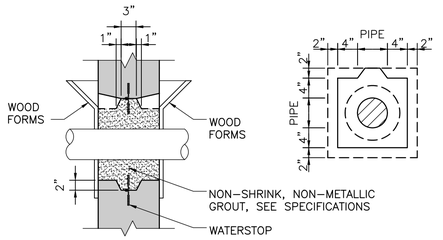


W = 8" FOR PIPE ≤8"ø
1'-0" FOR PIPE > 8"ø

(TO EXISTING CONCRETE)

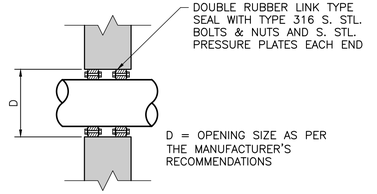
TYPICAL PIPE SUPPORT DETAIL

19



STANDARD BOX-OUT DETAIL

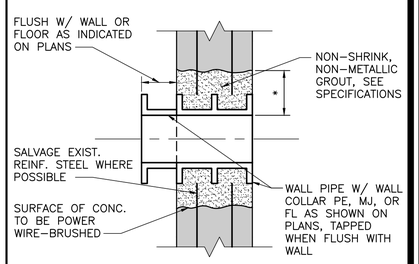
18



(FOR PIPES < 24" DIAMETER)

TYPICAL PIPE CLOSURE EXISTING WALLS AND SLABS

17



(FOR PIPES > 24" DIAMETER)

TYPICAL PIPE CLOSURE EXISTING WALLS AND SLABS

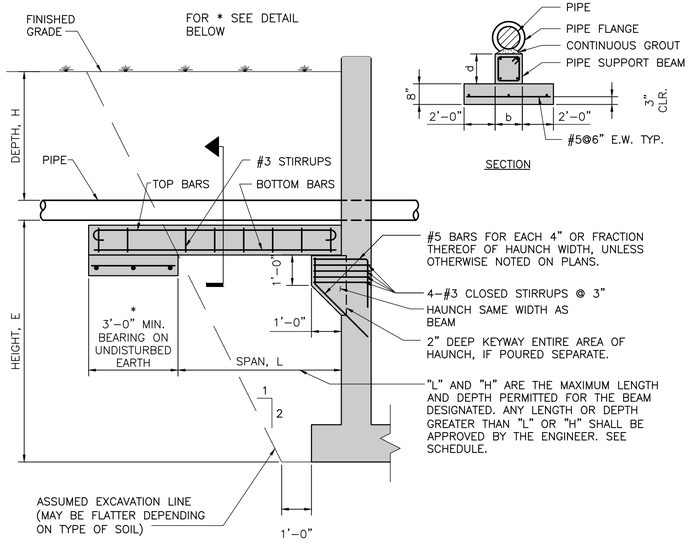
16

PIPE SIZES AND DEPTH OF FILL (H)	BEAM SIZE			REINFORCING		
	b	d	MAX. LG. L	TOP NO. SIZE	BOTTOM NO. SIZE	#3 CLOSED STIRRUPS SPACED CONTINUOUS ALONG LENGTH OF BEAM
1"-12"ø ,0-5'	12"	12"	0-10'	2-#5	4-#5	12"
1"-12"ø ,0-5'	12"	12"	10'-15'	2-#5	4-#7	12"
1"-12"ø ,5'-10'	12"	14"	0-10'	2-#5	4-#6	12"
1"-12"ø ,5'-10'	12"	14"	10'-15'	2-#5	4-#9	12"
1"-12"ø ,10'-15'*	12"	14"	0-10'	2-#5	4-#8	12"
1"-12"ø ,10'-15'*	12"	14"	10'-15'	2-#5	4-#11	12"
16"ø ,0-5'	16"	14"	0-10'	2-#5	4-#6	12"
16"ø ,0-5'	16"	14"	10'-15'	2-#5	4-#8	12"
16"ø ,5'-10'	16"	16"	0-10'	2-#5	4-#7	12"
16"ø ,5'-10'	16"	16"	10'-15'	2-#5	4-#10	12"
18"ø ,0-5'	18"	14"	0-10'	3-#5	4-#6	12"
18"ø ,0-5'	18"	16"	10'-15'	3-#5	4-#8	12"
18"ø ,5'-10'	18"	16"	0-10'	3-#5	4-#7	12"
18"ø ,5'-10' *	18"	16"	10'-15'	3-#5	4-#11	12"
24"ø ,0-5'	24"	14"	0-10'	3-#5	4-#7	12"
24"ø ,0-5'	24"	16"	10'-15'	3-#5	4-#10	12"
24"ø ,5'-10'	24"	16"	0-10'	3-#5	4-#8	12"
24"ø ,5'-10' *	24"	16"	10'-15'	3-#5	5-#11	12"
30"ø,10'-15'*	30"	28"	10'-15'	4-#5	6-#11	12"
36"ø,5'-10'*	36"	16"	5'-10'	4-#5	6-#8	12"

NOTES: FOR PIPE SIZES NOT LISTED USE THE NEXT AVAILABLE LARGER PIPE SIZE FOR BEAM SIZE AND REINFORCING.

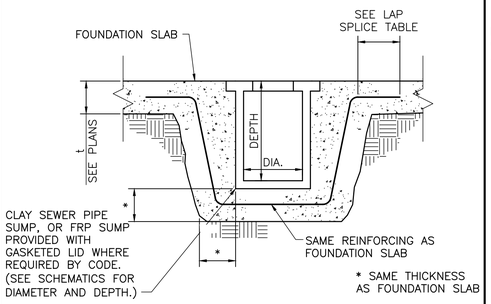
ALL PIPES SHALL BE BEAM SUPPORTED UNLESS SHOWN OTHERWISE.

FOR * SEE DETAIL BELOW



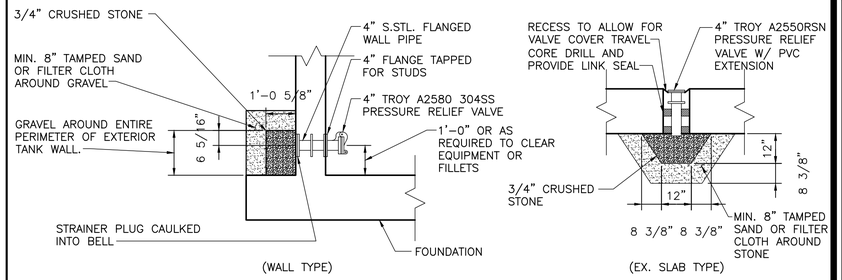
TYPICAL PIPE SUPPORT BEAM

04



TYPICAL SUMP DETAIL

13

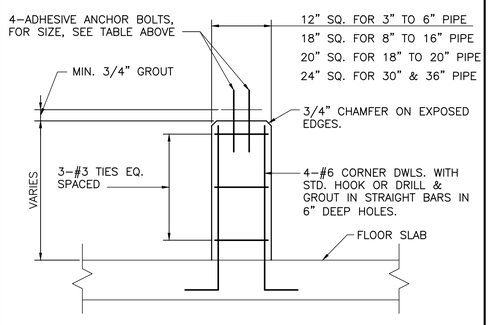


TYPICAL PRESSURE RELIEF VALVE DETAILS

11

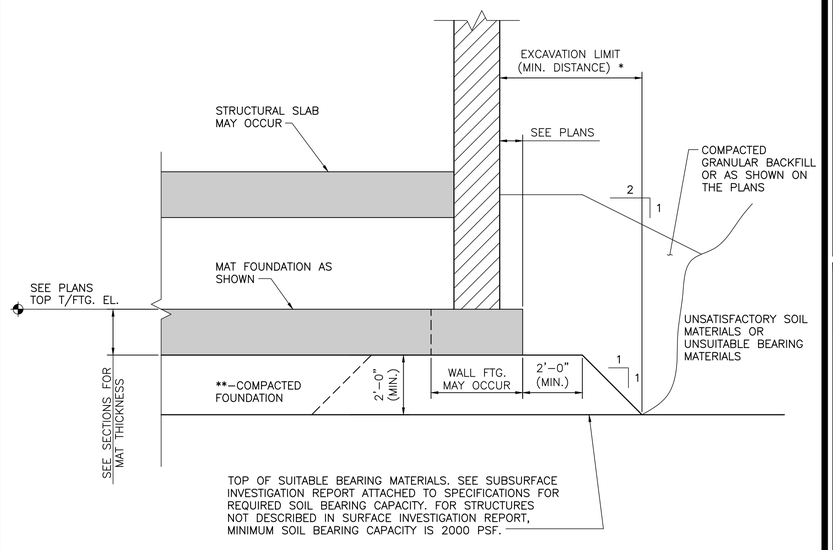
FITTING SIZE	3	4	5	6	8	10	12
ANCHOR BOLT SIZE*	1/2	5/8	5/8	5/8	5/8	5/8	3/4
FITTING SIZE	14	16	18	20	24	30	36
ANCHOR BOLT SIZE*	3/4	3/4	3/4	3/4	3/4	1	1

* USE HVA ADHESIVE ANCHORS BY HILTI OR APPROVED EQUAL.



BASE BEND SUPPORT

03



* IN ALL AREAS DESIGNATED TO RECEIVE FOUNDATION MATERIAL, NO EXCAVATION OF EXISTING MATERIAL SHALL BE MADE UNTIL THE EXISTING MATERIAL HAS BEEN INSPECTED AND AUTHORIZED FOR REMOVAL BY THE ENGINEER/ARCHITECT. DEPTH OF REMOVAL SHALL BE AS DIRECTED AND AUTHORIZED BY THE ENGINEER/ARCHITECT.

** COMPACTED FOUNDATION IS NOT REQUIRED IF SUITABLE BEARING MATERIALS ARE ENCOUNTERED AT BOTTOM OF FOUNDATION ELEVATION.

TYPICAL EXCAVATION AND FILL DETAIL

01

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

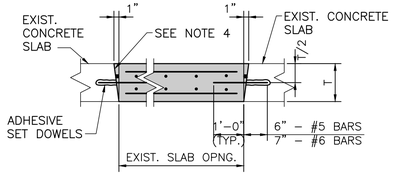
STRUCTURAL STANDARD DETAILS FOUNDATION & PIPE SUPPORT

SD-3

SHEET: OF

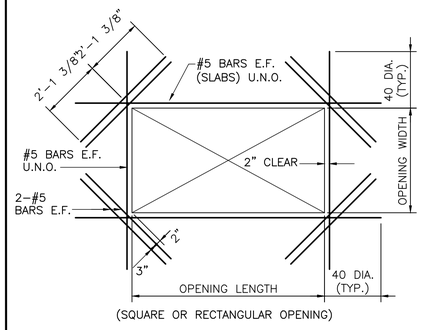
P:\PR58982\Cadd\Sheets\SD-3 STRUCTURAL STANDARD DETAILS FOUNDATION & PIPE SUPPORT.dwg 1/10/2022 10:56:10 AM Matt Kroll

PLOTTED: 4/14/2022 6:00:23 PM



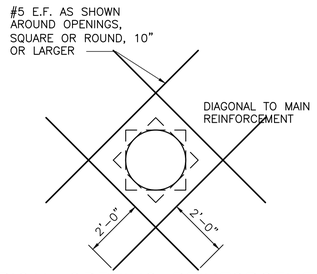
1. UNLESS NOTED OTHERWISE, THE REINFORCING SHALL BE: #5 @ 12" O.C., E.W., T & B WITH #5 DOWELS @ 12" O.C. EACH SIDE.
2. OMIT TOP REINFORCING ONLY WHERE ONE LAYER OF REINFORCING IS NOTED ON THE PLANS.
3. OMIT REINFORCING FOR OPENINGS WITH GREATER DIMENSION LESS THAN 12".
4. ROUGHEN SURFACE OF EXISTING CONCRETE TO 1/4" FULL AMPLITUDE, INSTALL WATERSTOP, AND APPLY BONDING COMPOUND, TYP. ALL SIDES.
5. PROVIDE 3" CLEAR COVER WHERE CONCRETE IS IN CONTACT WITH EARTH, OTHERWISE COVER SHALL BE 2" CLEAR.

FILL OPENING IN EXISTING SLAB DETAIL 20

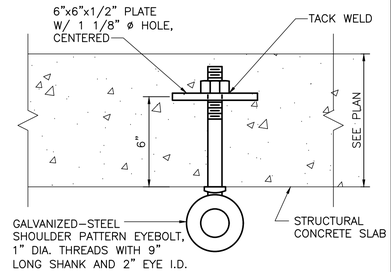


(SQUARE OR RECTANGULAR OPENING)

TYPICAL OPENING REINFORCEMENT 19

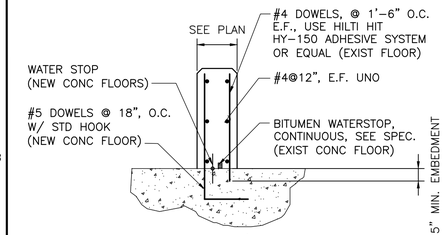


TYPICAL OPENING REINFORCEMENT 18

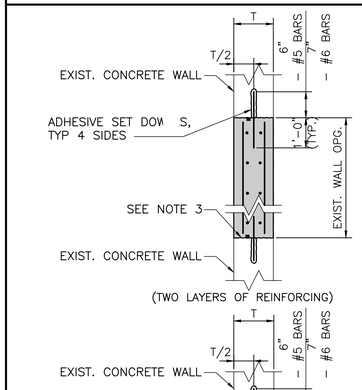


(MAXIMUM CAPACITY 2000 LBS.)

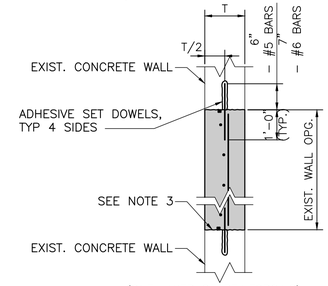
LIFT RING DETAIL 17



CONTAINMENT WALL/CURB DETAIL 16



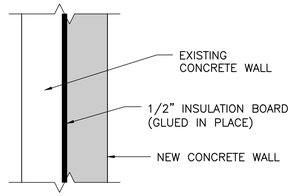
(TWO LAYERS OF REINFORCING)



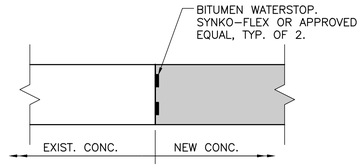
(ONE LAYER OF REINFORCING)

1. UNLESS NOTED OTHERWISE, THE REINFORCING SHALL BE: #5 @ 12" O.C., E.W., W/ #5 DOWELS @ 12" O.C.
2. OMIT DOWEL REINFORCING FOR OPENINGS WITH GREATER DIMENSION LESS THAN 12".
3. ROUGHEN SURFACE OF EXIST. CONC. TO 1/4" FULL AMPLITUDE, INSTALL WATERSTOP, AND APPLY BONDING COMPOUND, TYP. ALL SIDES.
4. FOR FILL–IN SECTIONS THAT HAVE A VERTICAL FREE EDGE (WITH OR WITHOUT GATE FRAME) – PROVIDE 2 ROWS OF DRILLED DOWELS (ONE NEAR EACH FACE) STAGGERED SUCH THAT EVERY 12" THERE IS A DOWEL, BUT ALONG EACH FACE THE SPACING IS 24".

FILL OPENING IN EXISTING WALL DETAIL 10

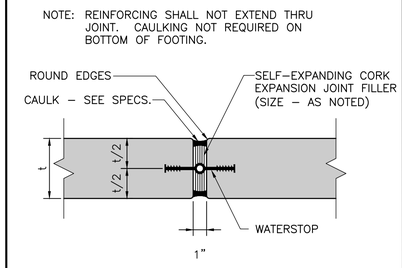


BOND BREAK DETAIL 14



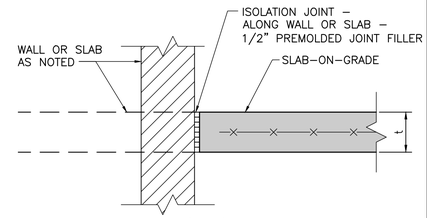
(NEW CONCRETE TO EXISTING CONCRETE)

TYPICAL JOINT DETAIL 13



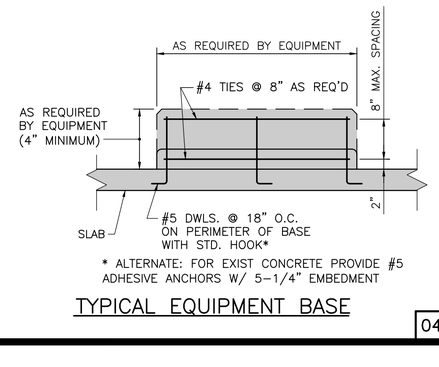
(IN NEW CONCRETE SLABS & WALLS)

TYPICAL EXPANSION JOINT DETAIL 12



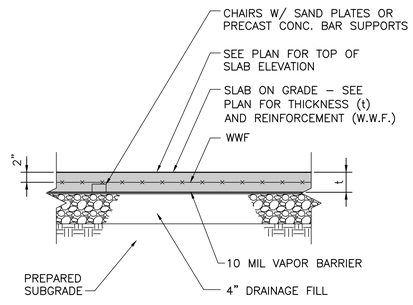
(I.J.)

TYPICAL WALL ISOLATION JOINT DETAIL 09

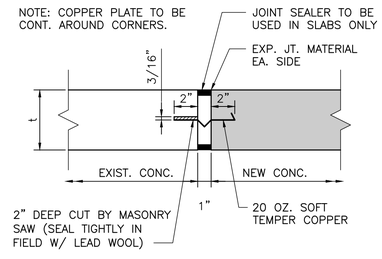


* ALTERNATE: FOR EXIST CONCRETE PROVIDE #5 ADHESIVE ANCHORS W/ 5–1/4" EMBEDMENT

TYPICAL EQUIPMENT BASE 04

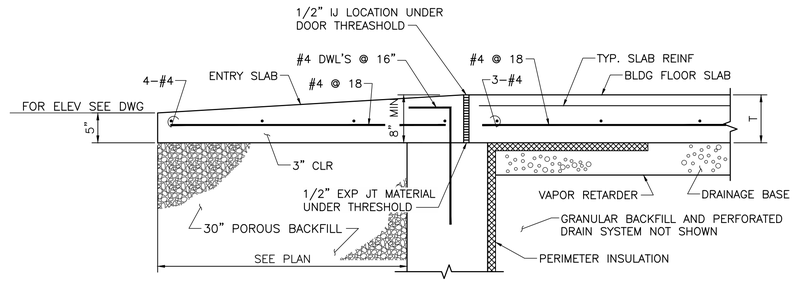


TYP. SLAB–ON–GRADE CONSTRUCTION 03

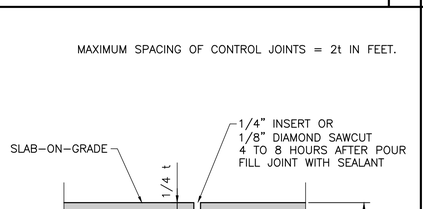


(NEW CONCRETE TO EXISTING CONCRETE)

TYPICAL EXPANSION JOINT DETAIL 02



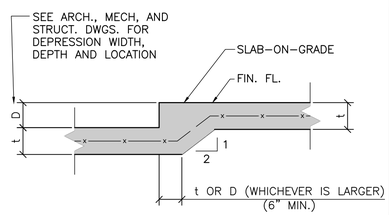
TYPICAL SECTION AT ENTRY DOOR 01



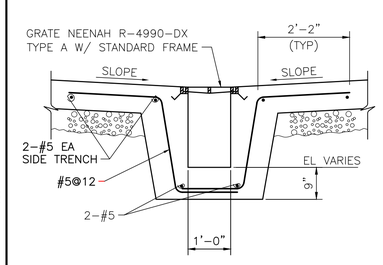
(C.J.)

TYPICAL CONTROL JOINT DETAIL

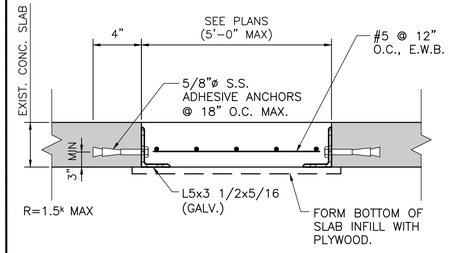
SAWCUT SLAB AS SOON AS CONDITIONS PERMIT ACCESS TO SLAB. 08



TYPICAL SLAB DEPRESSION DETAIL 07



TYPICAL TRENCH DRAIN DETAIL 06



EXISTING GRATING REMOVAL AND INFILL WITH CONCRETE 05

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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	REVISIONS	

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

STRUCTURAL STANDARD DETAILS CONCRETE

SD-4

SHEET: OF

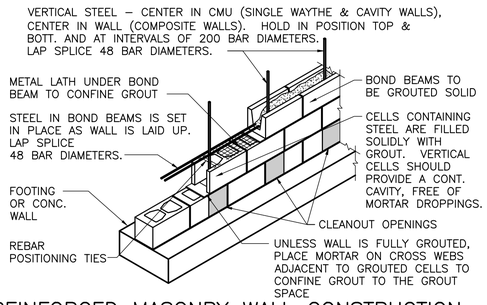
P:\PR58982\Cadd\Sheets\SD-4 STRUCTURAL STANDARD DETAILS CONCRETE.dwg 11/8/2021 2:01:50 PM Matt Kroll

PLOTTED: 4/14/2022 6:00:31 PM

MASONRY NOTES

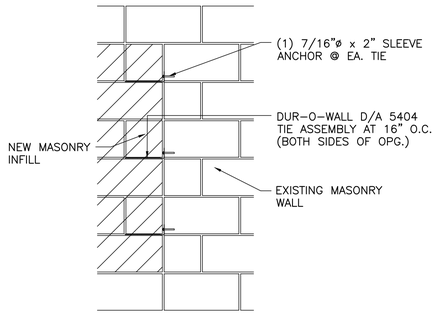
1. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, NORMAL WT, MIN. NET AREA COMPRESSIVE STRENGTH 2,800 PSI (f'm = 2,000 PSI).
2. CONCRETE MASONRY UNITS WHICH CONTAIN VERTICAL REINFORCEMENT SHALL BE TWO CORE UNITS AND CORES AND WEBS MUST BE ALIGNED.
3. CONCRETE MASONRY SHALL BE LAID IN RUNNING BOND WITH HEAD JOINTS OF SUCCESSIVE CORES HORIZONTALLY OFFSET BY ONE HALF UNIT LENGTH.
4. MASONRY WALLS SUPPORTED ON CONCRETE SLABS OR BEAMS SHALL NOT BE CONSTRUCTED UNTIL THE CONCRETE HAS REACHED ITS SPECIFIED 28–DAY STRENGTH AND UNTIL SHORING HAS BEEN REMOVED.
5. PROVIDE A 1/2" ISOLATION JOINT WHERE MASONRY ABUTS STEEL AND CONC. COLUMNS, AND A 1" ISOLATION JOINT BELOW BOTTOM OF BEAMS.
6. GROUT FILL BOND BEAMS, CELLS CONTAINING VERTICAL REINFORCING STEEL, AND WHERE SHOWN ON PLANS AND DETAILS.
7. CLEAN–OUTS SHALL BE PROVIDED AT THE BOTTOM COURSE OF EACH CELL WHEN THE GROUT POUR HEIGHT EXCEEDS 5 FEET. CLEAN–OUTS SIZE SHALL BE 3–INCH X 3–INCH MINIMUM. CLEAN–OUTS SHALL BE ON THE SIDE OF BLOCKS NOT EXPOSED TO VIEW IN COMPLETED CONSTRUCTION. PLACE A FORM OVER THE CLEANOUT BEFORE PLACING THE GROUT.
8. REINFORCING BARS SHALL BE GRADE 60 AND COMPLY WITH ASTM A615, A616 OR A617, AND SHALL BE PLACED PRIOR TO GROUTING.
9. PROVIDE BAR POSITIONERS, SUCH MANUFACTURED BY HECKMANN BUILDING PRODUCTS (800–621–4919), TO ASSURE THAT BAR POSITION IS MAINTAINED DURING CONCRETE PLACEMENT.
10. SPLICE REINFORCING STEEL BY LAPPING A MINIMUM OF 48 BAR DIAMETERS BUT NO LESS THAN 12 INCHES, UNLESS NOTED OTHERWISE.
11. ANCHORAGE OF REINFORCING STEEL INTO CONCRETE SHALL BE 36 BAR DIAMETERS BUT NO LESS THAN 12 INCHES, UNLESS NOTED OTHERWISE.
12. WALLS CONTAINING ONE REINFORCING BARS IN A CELL SHALL HAVE THE BAR CENTERED IN THE CORE UNLESS EXPLICITLY NOTED OTHERWISE. WALLS CONTAINING TWO REINFORCING BARS IN A CELL SHALL HAVE ONE BAR LOCATED 1/2 INCH CLEAR OF EACH FACE SHELL.
13. VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION PER DETAIL 10.
14. VERTICAL REINFORCEMENT SHALL EXTEND THROUGH BOND BEAMS AND TO WITHIN 2 INCHES OF THE TOP OF WALLS.
15. ALL WALLS SHALL HAVE #5 @ 32" OC VERTICAL REINFORCING U.N.O.
16. PROVIDE 1–#5 VERTICAL BAR IN FIRST CORE AT EACH CORNER, END OF WALL, AND ADJACENT TO OPENINGS AND CONTROL JOINTS.
17. REINFORCE BOND BEAMS WITH 2–# 5 UNLESS NOTED OTHERWISE. PROVIDE BAR SUPPORTS TO OBTAIN THE REQUIRED CLEARANCE. PROVIDE CORNER BARS WITH 2'–0" LEGS.
18. BOND BEAMS SHALL BE PROVIDED AT EACH FLOOR LEVEL, ROOF LEVEL, AND AT TOP OF WALL. FILL BOND BEAMS WITH GROUT.
19. BOND BEAMS OCCURRING AT THE SAME ELEVATION IN ADJACENT WALL SHALL HAVE CORNER BARS WITH LEGS 48 BAR DIAMETERS LONG.
20. FOR MECHANICAL DUCT OPENINGS IN MASONRY WALLS: SEE "LOOSE LINTEL SCHEDULE" ON THIS SHEET FOR ALL OPENINGS LESS THAN 6'–0". FOR ALL OPENINGS LESS THAN 12'–0" AND GREATER THAN OR EQUAL TO 6'–0", USE LINTEL L8 FROM "SIZED LINTEL SCHEDULE" ON THIS SHEET. FOR OPENINGS GREATER THAN OR EQUAL TO 12'–0", USE LINTEL L12 FROM "SIZED LINTEL SCHEDULE" ON THIS SHEET. COORDINATE SIZE AND LOCATION OF OPENINGS WITH MECHANICAL DRAWINGS.

1



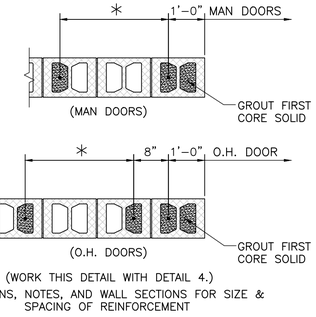
REINFORCED MASONRY WALL CONSTRUCTION

2



TYP. MASONRY INFILL OF WALL OPENINGS

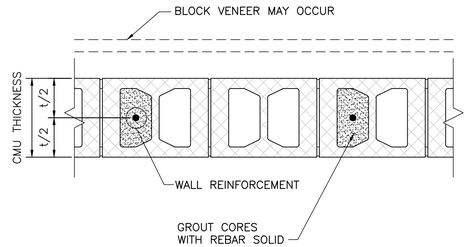
3



(WORK THIS DETAIL WITH DETAIL 4.)
* SEE PLANS, NOTES, AND WALL SECTIONS FOR SIZE & SPACING OF REINFORCEMENT

MASONRY WALL REINFORCEMENT @ DOORS

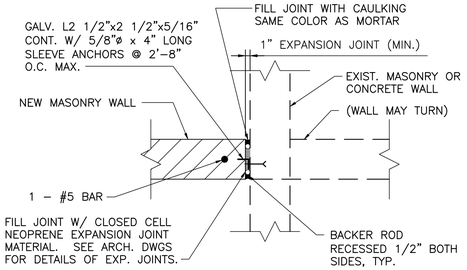
4



(SEE MASONRY NOTES & WALL SECTIONS FOR SIZE & SPACING OF REINFORCEMENT)

TYPICAL MASONRY WALL REINFORCEMENT

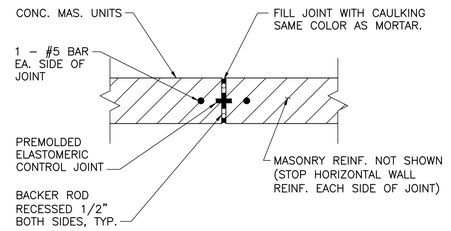
5



(AT EXISTING WALLS & NEW CONCRETE WALLS)

MASONRY WALL EXPANSION JOINT DETAIL

6

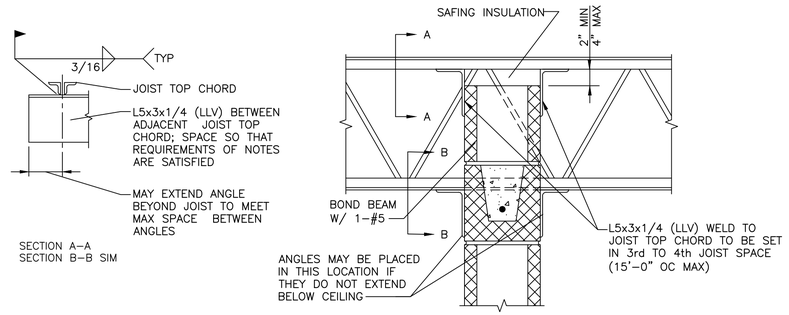


(SINGLE–WYTHE WALLS)

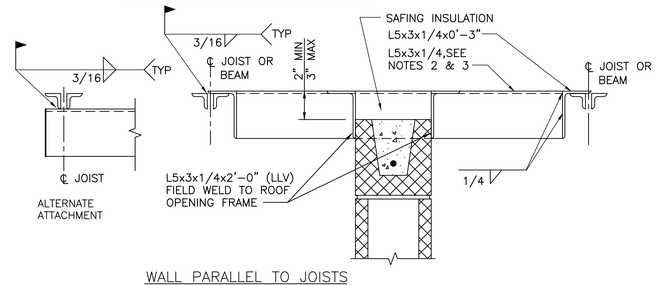
MASONRY WALL CONTROL JOINT (CJ)

MAXIMUM SPACING OF CONTROL JOINTS IN MASONRY WALLS TO BE 24'–0" O.C.

7



WALL PERPENDICULAR TO JOISTS

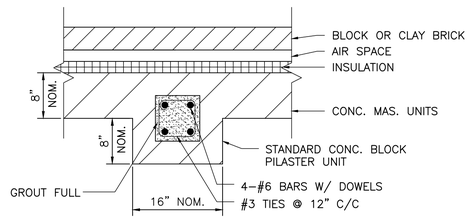


WALL PARALLEL TO JOISTS

NOTES:
1. DETAIL SHOWN FOR JOISTS; DETAIL SIMILAR FOR WIDE FLANGE BEAMS.
2. LOCATE FRAME MAX 15'–0" OC, WITHIN 4'–0" OF END OF WALL NOT SUPPORTED BY CROSS WALL & 8'–0" OF END OF WALL SUPPORTED BY CROSS WALL.
3. ANGLES ARE NOT REQUIRED WHERE CROSSWALLS PROVIDE LATERAL SUPPORT AT 15'–0" OC FOR 8" MASONRY WALLS AND AT 22'–0" OC FOR 12" MASONRY WALLS.
4. SEE ARCHITECTURAL DWGS FOR WALL LOCATIONS.

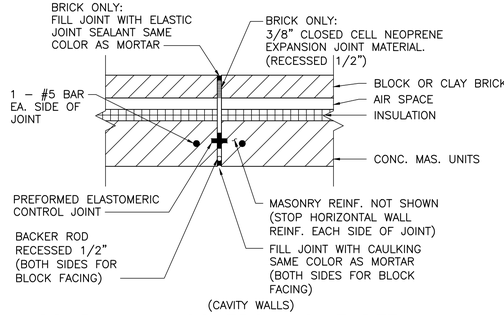
TYPICAL NON–BEARING MASONRY LATERAL SUPPORT

10



CONCRETE BLOCK PILASTER DETAIL

9

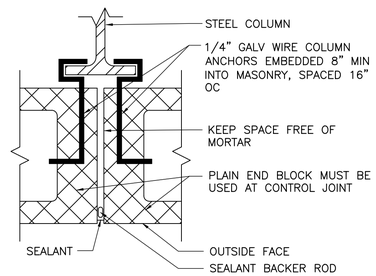


(CAVITY WALLS)

MASONRY WALL CONTROL JOINT DETAIL

MAXIMUM SPACING OF CONTROL JOINTS IN MASONRY WALLS TO BE 24'–0" O.C.

8



NOTE:
USE PREMOLDED COMPRESSIBLE JOINT FILLER OR MAY USE COMPRESSIBLE NEOPRENE COMPRESSION SEAL IN LIEU OF SEALANT & BACKER (MORE EXPENSIVE).

MASONRY WALL CONTROL JOINT

12

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

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DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

ARCHITECTURAL STANDARD DETAILS MASONRY

SD-5

SHEET: OF

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PLOTTED: 4/14/2022 6:00:38 PM

BEARING PLATE SCHEDULE

MARK	SIZE (t x D x W)	REMARKS	DETAILS
BP1	3/8"x3 1/2"x9"	TYP. FOR K-SERIES JOIST BEARING	
BP2	5/8"x5 1/2"x9"	TYP. FOR LH & DLH-SERIES JOIST BRG.	
BP3	3/8"x6 1/2"x9"	TYP. FOR K-SERIES JOIST BEARING ON BOTH SIDES OF 8" WALL	
BP4	3/8"x10 1/2"x9"	TYP. FOR K-SERIES JOIST BEARING ON BOTH SIDES OF 12" WALL	
BP5	5/8"x10 1/2"x9"	TYP. FOR LH & DLH-SERIES JOIST BRG. ON BOTH SIDES OF 12" WALL	
BP6	3/8"x5"x8"	MEMBER PERPENDICULAR TO WALL, END CONCEALED	5,6
BP7	3/8"x6 1/2"x8"	MEMBER PERPENDICULAR TO WALL MIN. BEAM/LINTEL BEARING PLATE	5,6
BP8	3/8"x7 1/2"x7 1/2"	MEMBER PARALLEL TO WALL MIN. BEAM/LINTEL BEARING PLATE	5,7
BP9	1/2"x6 1/2"x8"	SEE PLANS AND SIZED LINTEL SCHEDULE	5,6,7
BP10	1/2"x6 1/2"x10"	SEE PLANS	5,6,7
BP11	5/8"x6 1/2"x10"	SEE PLANS AND SIZED LINTEL SCHEDULE	5,6,7
BP12	3/4"x6 1/2"x1'-0"	SEE PLANS AND SIZED LINTEL SCHEDULE	5,6,7
BP13	1"x6 1/2"x1'-0"	SEE PLANS AND SIZED LINTEL SCHEDULE	5,6,7
BP14	1"x6 1/2"x1'-2"	SEE PLANS	5,6,7
BP15	1 1/4"x6 1/2"x1'-2"	SEE PLANS AND SIZED LINTEL SCHEDULE	5,6,7
BP16	1 1/2"x6 ?"x1'-6"	SEE PLANS	5,6,7
BP17	1 3/4"x6 1/2"x1'-8"	SEE PLANS	5,6,7
BP18	3/8"x7 1/2"x1'-4"	LINTEL L7	5,6,7
BP19	1/2"x10 1/2"x10 1/2"	11" BEARING ON 12" WALL	5,6,7
BP20	1/2"x11 1/2"x6 1/2"	12" BEARING ON 8" WALL	5,6,7
BP21	1/2"x14 1/2"x10"	CONTINUOUS BEARING ON 16" PIER	5,6,7

STANDARD UNLESS OTHERWISE NOTED

1

SIZED LINTEL SCHEDULE

MARK	SIZE	BRG. PLATE	CONFIGURATION	DETAILS	COMMENTS
L1	L3 1/2x3 1/2x5/16	NONE	OR	4,5,7	
L2	L4x3 1/2x5/16 (LLV)	NONE	OR	4,5,7	
L3	L5x3 1/2x5/16 (LLV)	NONE	OR	4,5,7	
L4	L6x3 1/2x5/16 (LLV)	NONE	OR	4,5,7	
L5	(2) L3 1/2x3 1/2x5/16 + 5/16" PLATE	NONE	3 1/2" 3 1/2"	4,5,7	16" CAVITY WALLS
L6	(2) L5x3 1/2x5/16 (LLV) + 5/16" PLATE	NONE	3 1/2" 3 1/2"	4,5,7	16" CAVITY WALLS
L7	(2) C8x11.5 + 5/16" PLATE	BP18	3 1/2" 3 1/2"	4,5,7	20" CAVITY WALLS
L8	W8x10 + 5/16" BOTTOM PLATE	BP7/BP8	OR	4,5,6,7	CENTER IN CMU (U.N.O.)
L9	W8x15 + 5/16" BOTTOM PLATE	BP7/BP8	OR	4,5,6,7	CENTER IN CMU (U.N.O.)
L10	W8x18 + 5/16" BOTTOM PLATE	BP7/BP8	OR	4,5,6,7	CENTER IN CMU (U.N.O.)
L11	W8x24 + 5/16" BOTTOM PLATE	BP7/BP8	OR	4,5,6,7	CENTER IN CMU (U.N.O.)
L12	W16x26 + 3/8" BOTTOM PLATE	BP9	OR	4,5,6,7	W16 SHALL HAVE 1/4" WEB STIFFENER AT 24" O.C., BRICK SIDE ONLY
L13	W16x36+ 5/16" BOTTOM PLATE	BP11	OR	4,5,6,7	CENTER IN CMU (U.N.O.)
L14	W16x45 + 5/16" BOTTOM PLATE	BP12	OR	4,5,6,7	CENTER IN CMU (U.N.O.)
L15	W24x55 + 5/16" BOTTOM PLATE	BP13	OR	4,5,6,7	CENTER IN CMU (U.N.O.)
L16	W24x68 + 5/16" BOTTOM PLATE	BP15	OR	4,5,6,7	CENTER IN CMU (U.N.O.)

NOTES:
- L1 TO L4 – FURNISH 2 L'S IN 8" MASONRY WALLS, 3 L'S IN 12" MASONRY WALLS AND 4 L'S IN 16" MASONRY WALLS.
- L5 TO L17 – BOTTOM PLATE WIDTH TO BE NOMINAL WIDTH OF MASONRY WALLS MINUS 1", (T–1").
- ALL LINTELS (ANGLES, BEAMS, PLATES, BEARING PLATES, AND ANCHOR BOLTS) SHALL BE GALVANIZED.
- PROVIDE 8" END BEARING ON SOLID MASONRY FOR ALL LINTELS (U.N.O. ON PLANS). SEE DETAIL 7 FOR CAVITY WALLS.
- CENTER WIDE FLANGE BEAM IN WALL (U.N.O. ON PLANS).
- PROVIDE CONNECTION TO STRUCTURE, IF MASONRY BEARING IS NOT AVAILABLE.
- SHORE LINTELS AS REQUIRED FOR ROTATIONAL STABILITY DURING CONSTRUCTION OF WALLS.
- PROVIDE LINTEL FROM LOOSE LINTEL SCHEDULE FOR ALL LINTELS NOT SHOWN ON DRAWINGS FOR DOORS, WINDOWS, PASSAGES, RECESSES, LOUVERS, DUCT PENETRATIONS, PIPING, ELECTRICAL CONDUIT, ETC.
- * INSTALL 1/2"ø x 6" LONG STUDS @ 24" O.C. (STAGGERRED) ON BACK FACE OF C8 WEB & ON TOP OF 3/8" PL.

STANDARD LINTELS UNLESS DETAILED OTHERWISE

2

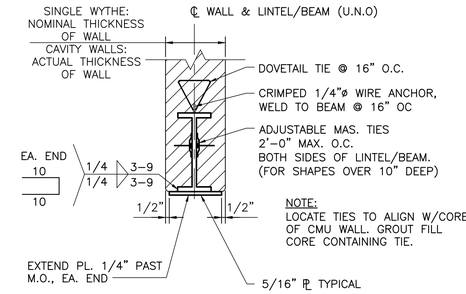
LOOSE LINTEL SCHEDULE

USE FOR LINTELS NOT SHOWN ON DRAWINGS OR SIZED LINTEL SCHEDULE

WALL TYPE	OPENING SIZE	LINTEL
6" (SINGLE WYTHE)	TO 5'-0" 5'-0" TO 7'-0"	WT 4 x 9 WT 5 x 11
8" & 12" (SINGLE WYTHE OR COMPOSITE)	TO 4'-0" 4'-0" TO 5'-0" 5'-0" TO 6'-0" 6'-0" TO 7'-0"	L 3 1/2 x 3 1/2 x 5/16 L 4 x 3 1/2 x 5/16 LLV L 5 x 3 1/2 x 5/16 LLV L 6 x 3 1/2 x 5/16 LLV
14" / 16" (CAVITY)	TO 6'-4"	(2) L5 x3 1/2 x5/16 LLV + 5/16" PL BRICK 8" CMU 4" 4"
4" FACE BRICK (CIP CONRETE)	TO 6'-4"	L 4 x 3 1/2 x 5/16 LLV BRICK CAST CONCRETE

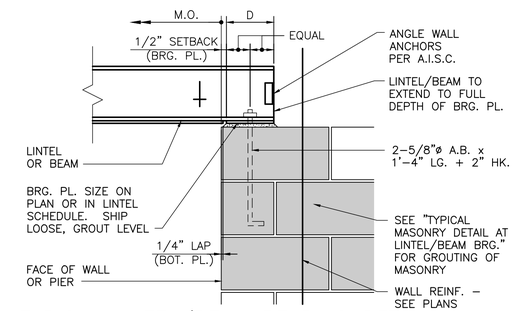
NOTES:
- USE THIS SCHEDULE WHERE LINTEL MARK NOS. ARE NOT PROVIDED.
- FOR SINGLE WYTHE AND COMPOSITE WALLS USE ONE ANGLE FOR EACH 4" WYTHE OF MASONRY.
- MINIMUM BEARING SHALL BE 8" AT EACH END
- ALL LINTELS SHALL BEAR ON SOLID OR GROUTED MASONRY.
- ALL LINTELS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

3



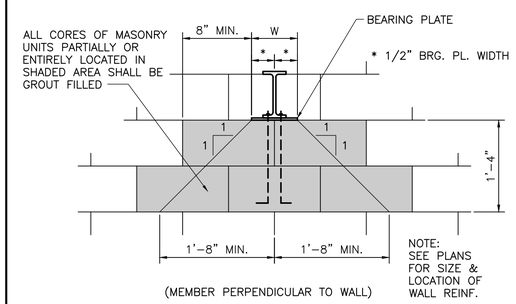
LINTEL/BEAM WALL PL. AND ANCHOR DET.

4



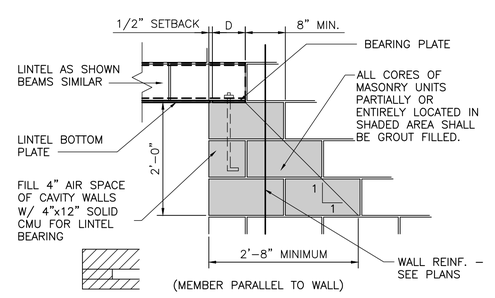
TYPICAL LINTEL/BEAM BEARING DETAIL

5



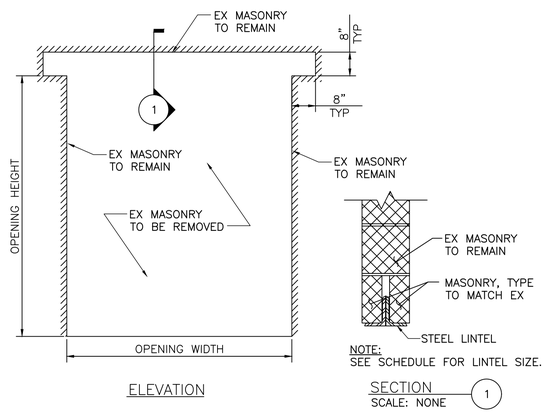
TYP. MASONRY DETAIL AT LINTEL/BEAM BRG.

6



TYP. MASONRY DETAIL AT LINTEL/BEAM BRG.

7



MASONRY DEMOLITION FOR NEW OPENING IN EXISTING WALL

8

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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APPROVED BY:	CMS
SCALE:	NONE

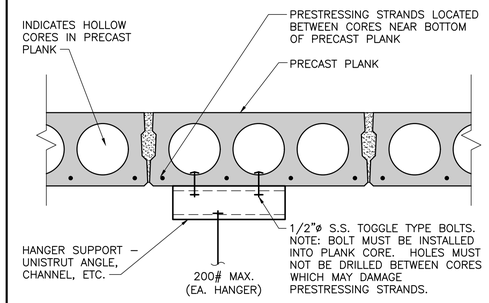
ARCHITECTURAL STANDARD DETAILS MASONRY

SD-6

SHEET: OF

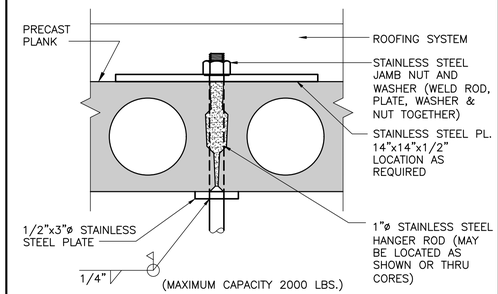
P:\PR58982\Cadd\Sheets\SD-6 ARCHITECTURAL STANDARD DETAILS MASONRY.dwg 11/8/2021 2:03:44 PM Matt Kroll

PLOTTED: 4/14/2022 6:00:47 PM



TYPICAL EQUIPMENT/PIPING SUPPORT DETAIL

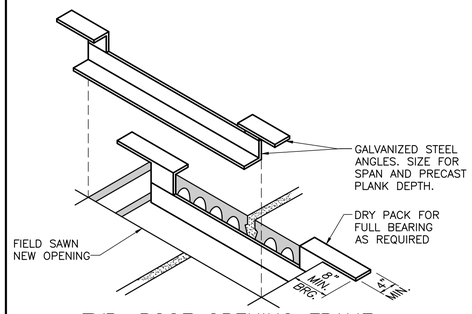
13



SUSPENDED PIPING & EQUIPMENT SUPPORT

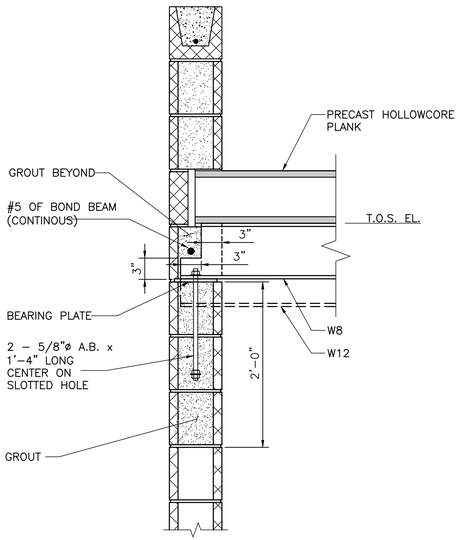
NOTE: ALL MATERIAL TO BE TYPE 304 S. STL.

12



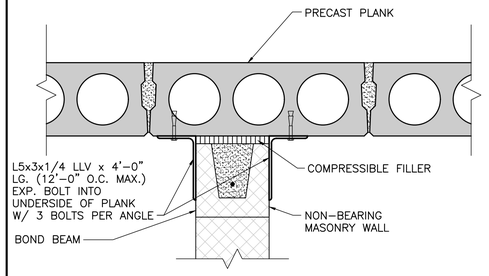
TYP. ROOF OPENING FRAME

16



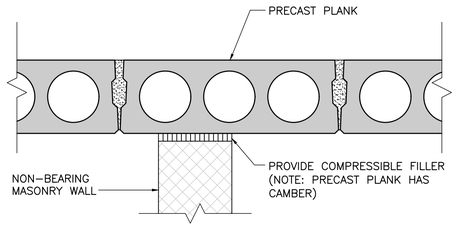
TYP. BEAM BEARING DETAIL

09



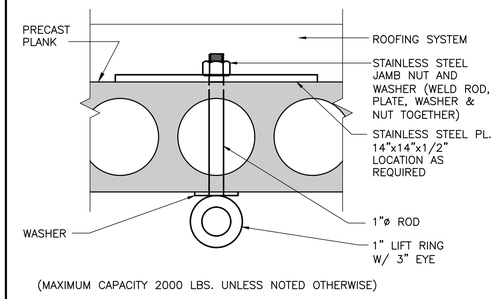
TYP. NON–BEARING MASONRY WALL LATERAL SUPPORT TO PRECAST PLANK

08



TYP. NON–BEARING MASONRY WALL CLOSURE TO PRECAST PLANK

07

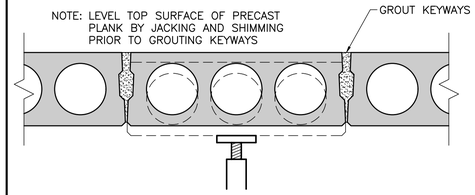


(MAXIMUM CAPACITY 2000 LBS. UNLESS NOTED OTHERWISE)

TYPICAL LIFT RING DETAIL

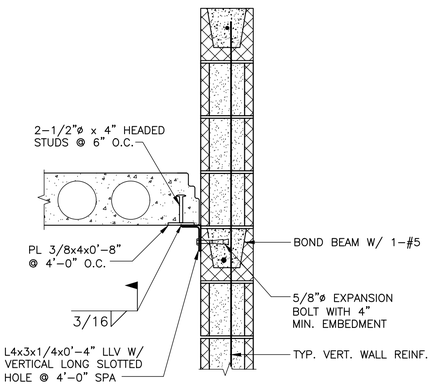
NOTE: ALL MATERIAL TO BE TYPE 304 S. STL.

11



TYP. GROUTING OF PLANK KEYWAYS

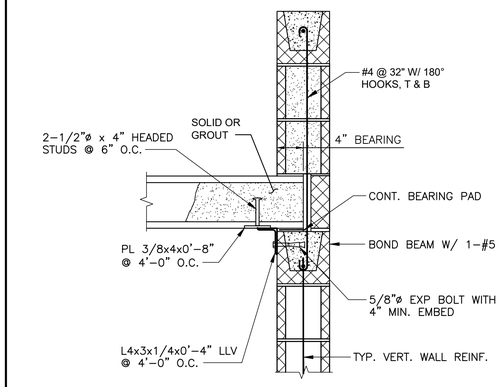
06



NOTE: BRICK VENEER NOT SHOWN.

TYPICAL PLANK/SIDEWALL TIE DETAIL

02

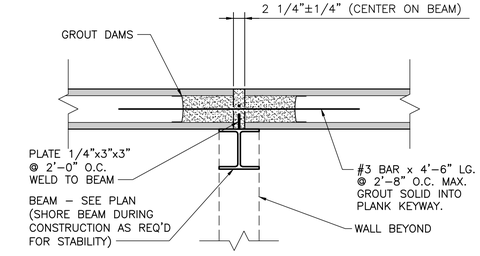


NOTE: BRICK VENEER NOT SHOWN.

TYP. PLANK END BEARING DETAIL

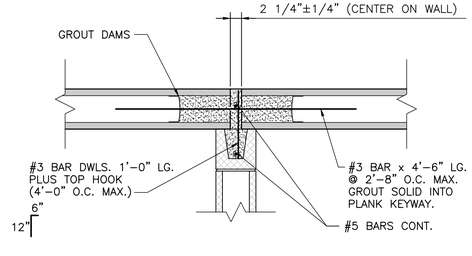
TYPICAL PLANK END BEARING DETAIL

01



TYP. ROOF DETAIL AT INTERIOR BEAMS

04



TYP. ROOF DETAIL AT INTERIOR BRG. WALL

03

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

ARCHITECTURAL STANDARD DETAILS PRECAST CONC ROOF

SD-7

SHEET: OF

P:\PR58982\Cadd\Sheets\SD-7 ARCHITECTURAL STANDARD DETAILS PRECAST CONC ROOF.dwg 11/8/2021 2:07:02 PM Matt Kroll

PLOTTED: 4/14/2022 6:00:55 PM

RAILING, STAIR, GRATING, PLATE & CONNECTION NOTES:

1. REFER TO STRUCTURAL DRAWINGS FOR SCHEDULES AND TABLES OF STRUCTURAL FRAMING COMPONENTS AND GRATING.

2. ALL DETAILS SHOWN ON THIS SHEET FOR ALUMINUM AND STEEL FABRICATIONS ARE SIMILAR FOR STAIRS, PLATFORMS, CATWALKS, AND NOTES 3 THROUGH 10 LISTED BELOW SHALL APPLY TO BOTH FABRICATIONS.

3. DESIGN LOADS:

GRATING & PLATES:	300 PSF LL DEFLECTION ≤ L/160
ALL STAIR FRAMING:	150 PSF LL
STAIR TREADS:	LL ABOVE + 300 LB CONCENTRATED LOAD
GUARDRAILS:	50 PLF ANY DIRECTION @ TOP OR 200# CONC LOAD ANY DIRECTION @ TOP

4. ALL ALUMINUM STRUCTURAL FRAMING SHAPES AND PLATES SHALL BE ALLOY 6061–T6, U.N.O.

5. ALL ALUMINUM GRATING SHALL BE ALLOY 6063 WITH PLAIN TOP SURFACE

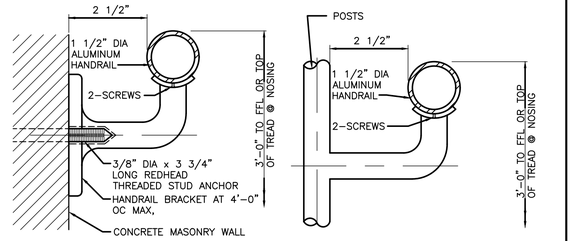
6. ALL ALUMINUM STAIR TREADS SHALL BE ALLOY 6063 GRATING WITH PLAIN TOP SURFACE AND ABRASIVE NOSING.

7. ALL ALUMINUM GUARDRAILS SHALL BE TYPE 6063–T5 OR T6.
ALL ALUMINUM POSTS SHALL BE TYPE 6063–T6.
ALL ALUMINUM HANDRAILS SHALL BE EXTRUDED ALUMINUM.

8. ALL FRAMING CONNECTIONS REQUIRE A MINIMUM OF TWO 5/8" DIA. TYPE 304 S. STL. BOLTS WITH STANDARD HOLES.

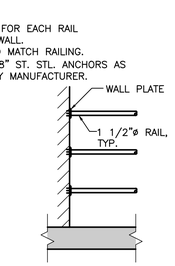
9. ALL CONCRETE ANCHORS SHALL BE 3/4" DIA. TYPE 304 S. STL. WEDGE STYLE EXPANSION ANCHORS WITH 4 3/4" MIN. EMBEDMENT. USE RAWL–STUD OR HILTI KWIK BOLT, U.N.O.

10. ALL MASONRY ANCHORS SHALL BE 3/4" DIA. TYPE 304 S. STL. DROP–IN TYPE EXPANSION ANCHORS. USE RAWL HOLLOW SET DROP–IN, U.N.O.



RAILING DETAIL (MOUNTING TO MASONRY WALL)

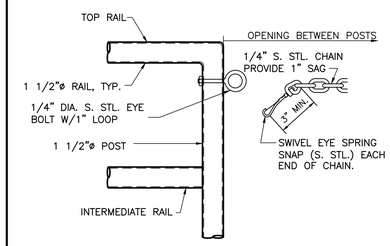
HANDRAIL DETAIL ATTACHED TO POST



(TO WALLS)

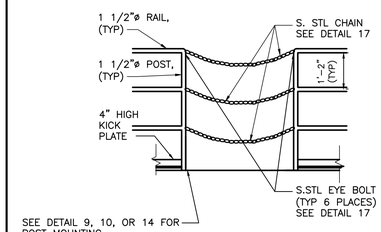
RAILING MOUNTING DETAIL

19 18



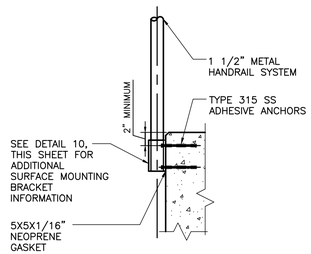
POST AND CHAIN DETAIL

17



CHAIN AT RAIL OPENING

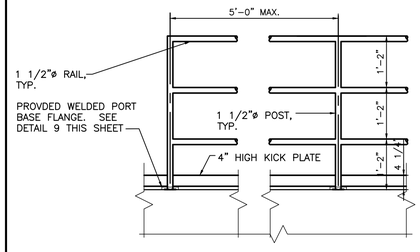
16



(TO FACE OF CONCRETE)

RAILING POST BASE DETAIL

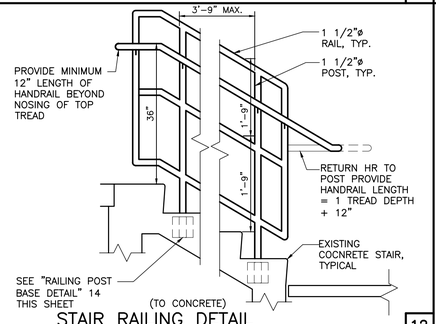
14



(TO CONCRETE)

PLATFORM RAILING DETAIL

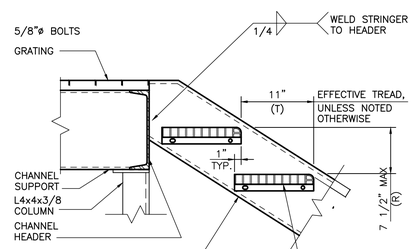
13



(TO CONCRETE)

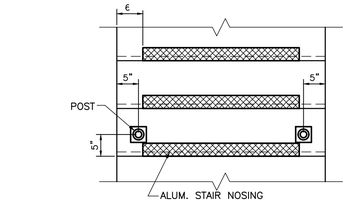
STAIR RAILING DETAIL

12



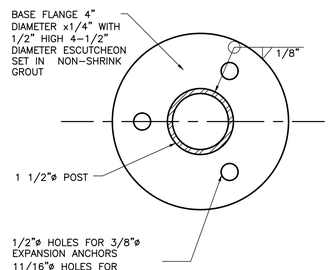
STAIR HEAD CONNECTION TO FRAMING

11



CONCRETE STAIR NOSING DETAIL

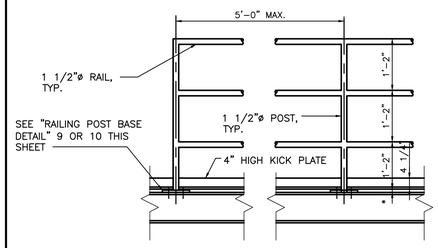
15



(BOLTED CONNECTION)

RAILING POST BASE DETAIL

09

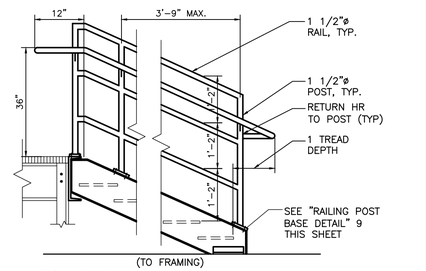


(TO FRAMING)

PLATFORM RAILING DETAIL

* THICKNESS OF GRATING

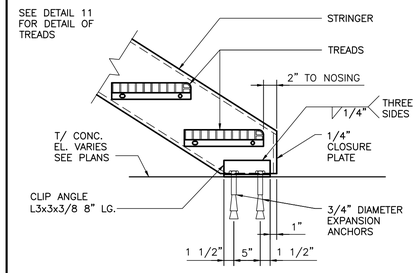
08



(TO FRAMING)

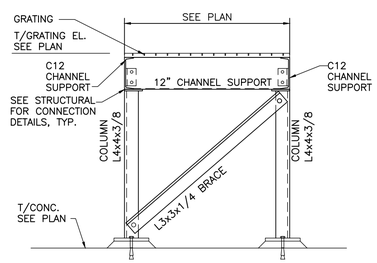
STAIR RAILING DETAIL

07



STAIR BASE CONNECTION TO SLAB

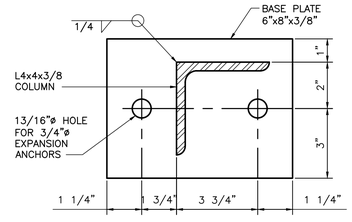
06



TYPICAL BRACING DETAIL

SEE DETAILS 5 & 7 FOR EXTERIOR FOUNDATION

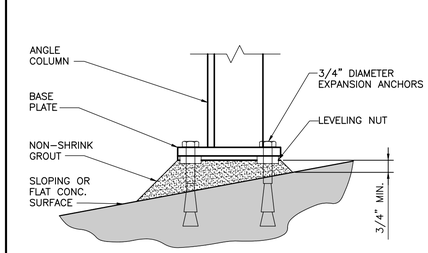
05



BEARING PLATE TO BE SET ON 3/4" GROUT (MIN.)

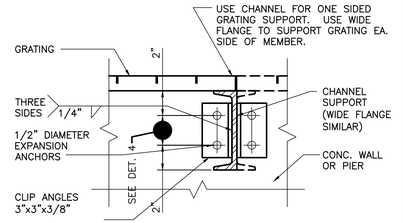
COLUMN BASE PLATE DETAIL

04



TYPICAL COLUMN BASE DETAIL

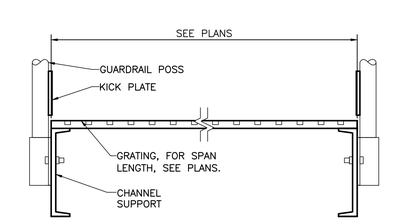
03



GRATING SUPPORT DETAIL

PLATE SUPPORT SIMILAR

02



GRATING SUPPORT DETAIL

01

GRATING SCHEDULE

ALUMINUM			MOLDED OR PULTRUDED FIBERGLASS (FRP)	
BEARING BARS	CROSS BARS	MAXIMUM SPAN	SIZE	MAXIMUM SPAN
1 1/2"x3/16"@1 3/16" O.C.	4" O.C.	4'–2"	2" THICK, 2" SQUARE MESH, MOLDED	3'–0"
1 3/4"x3/16"@1 3/16" O.C.	4" O.C.	5'–0"	1 1/2" THICK, PULTRUDED	4'–0"
2"x3/16"@1 3/16" O.C.	4" O.C.	5'–8"	2" THICK, PULTRUDED	5'–0"
2 1/4"x3/16"@1 3/16" O.C.	4" O.C.	6'–2"	1. PANEL WIDTH SHALL NOT EXCEED 48". 2. ATTACH TO FRAMING MEMBERS WITH STAINLESS STEEL FASTENERS.	
2 1/2"x3/16"@1 3/16" O.C.	4" O.C.	7'–0"		

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

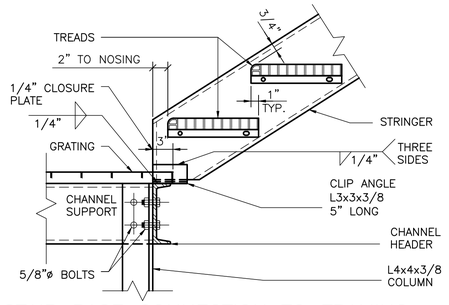
ARCHITECTURAL STANDARD DETAILS STAIR AND RAILING

SD-8

SHEET: OF

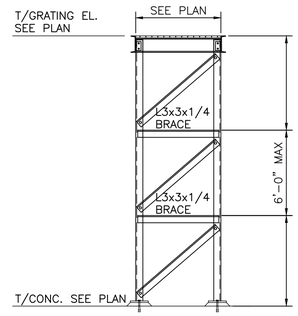
P:\PR58982\Cadd\Sheets\SD-8 ARCHITECTURAL STANDARD DETAILS STAIR AND RAILING.dwg 1/5/2022 3:22:36 PM Matt Kroll

PLOTTED: 4/14/2022 6:01:03 PM



STAIR BASE CONNECTION TO FRAMING

19



ELEVATED PLATFORM BRACING DETAIL

SEE DETAIL 15 FOR REMAINING NOTES
SEE DETAILS 5 & 7 FOR EXTERIOR FOUNDATION

18

STRINGERS, HEADERS, & CHAN. SUPPORTS

MATERIAL	SECTION	MAXIMUM SPAN
ALUMINUM	C12x7.41	12'-6"
FRP	10x2 3/4"x1/2" CHANNEL	9'-0"

PLATFORM SUPPORT CHANNELS AND BEAMS

4'-0" WIDE PLATFORMS ASSUMED

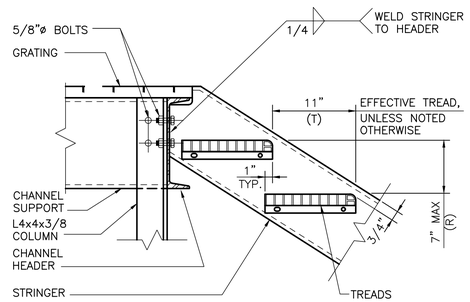
ALUMINUM	C12x7.41	10'-0"
	I 12x11.0	12'-8"
	C10x5.28	8'-6"
	I 10x8.76	11'-3"
	C8x6.48	7'-4"
	I 8x6.35	9'-3"
FRP	10x2 3/4"x1/2" CHANNEL	10'-0" (LAT. BR. @ 5')
	12x12x1/2 WIDE FLANGE	17'-0" (LAT. BR. @ 14')

12

STAIR, GRATING, PLATE & CONNECTION NOTES:

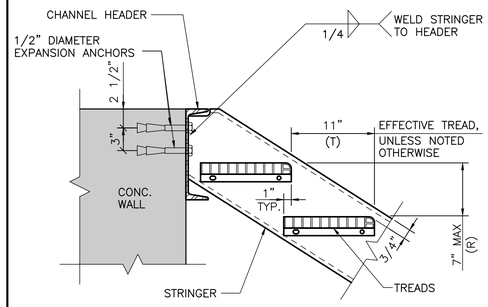
1. ALL DETAILS THIS SHEET ARE SIMILAR FOR ALUMINUM, & FIBER REINFORCED POLYMER COMPOSITE MATERIALS (FRP). ALL FRAMING ELEMENTS SHOWN IN EACH DETAIL MUST BE OF THE SAME MATERIAL.
2. DESIGN LOADS:
   GRATING & PLATES: 250 PSF LL DEFLECTION ≤ L/160
   ALL STAIR FRAMING: 150 PSF LL
   STAIR TREADS: LL ABOVE + 300 LB CONCENTRATED LOAD
   GUARDRAILS: 50 PLF ANY DIRECTION @ TOP OR 200# CONC LOAD ANY DIRECTION @ TOP
3. ALL ALUMINUM STRUCTURAL FRAMING SHAPES AND PLATES SHALL BE ALLOY 6061-T6, U.N.O.
4. ALL FRP STRUCTURAL FRAMING SHAPES AND PLATES SHALL BE DYNAFORM, OR EXTREN, OR APPROVED EQUAL PULTRUDED FIBERGLASS VINYLESTER RESIN AND MOLDED THERMOPLASTIC SHAPES.
5. ALL ALUMINUM GRATING SHALL BE ALLOY 6063 WITH SERRATED TOP SURFACE.
6. ALL FRP GRATING SHALL BE MOLDED OR PULTRUDED FIBERGLASS WITH NON-SKID GRIT TOP SURFACE.
7. ALL ALUMINUM STAIR TREADS SHALL BE ALLOY 6063 GRATING WITH SERRATED TOP SURFACE AND ABRASIVE NOSING.
8. ALL FRP STAIR TREADS SHALL BE MOLDED OR PULTRUDED FIBERGLASS WITH NOSING AND WITH NON-SKID GRIT AFFIXED TO THE TOP SURFACE.
9. ALL ALUMINUM GUARDRAILS SHALL BE TYPE 6063-T5 OR T6.
   ALL ALUMINUM POSTS SHALL BE TYPE 6063-T6.
   ALL ALUMINUM HANDRAILS SHALL BE EXTRUDED ALUMINUM.
10. ALL FRP GUARDRAILS, POSTS, & HANDRAILS SHALL BE PULTRUDED FIBERGLASS VINYLESTER RESIN AND MOLDED THERMOPLASTIC SHAPES.
11. ALL FRAMING CONNECTIONS REQUIRE A MINIMUM OF TWO 5/8" DIA. TYPE 304 S. STL. BOLTS WITH STANDARD HOLES.
12. ALL CONCRETE ANCHORS SHALL BE 3/4" DIA. TYPE 304 S. STL. WEDGE STYLE EXPANSION ANCHORS WITH 4 3/4" MIN. EMBEDMENT. USE RAWL-STUD OR HILTI KWIK BOLT, U.N.O.
13. ALL MASONRY ANCHORS SHALL BE 3/4" DIA. TYPE 304 S. STL. DROP-IN TYPE EXPANSION ANCHORS. USE RAWL HOLLOW SET DROP-IN, U.N.O.
14. ALL ALUMINUM STAIR STRINGERS, PLATFORM BEAMS, HEADERS, AND CHANNEL SUPPORTS SHALL BE C12 x 7.41, U.N.O.
15. ALL FRP STAIR STRINGERS, PLATFORM BEAMS, HEADERS, AND CHANNEL SUPPORTS SHALL BE C14 x 3 1/2 x 3/4, U.N.O.

16



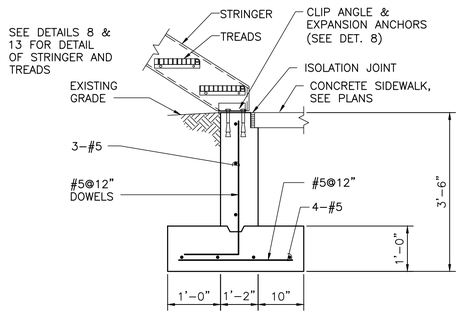
STAIR HEAD CONNECTION TO FRAMING

14



STAIR HEAD CONNECTION TO CONCRETE WALL

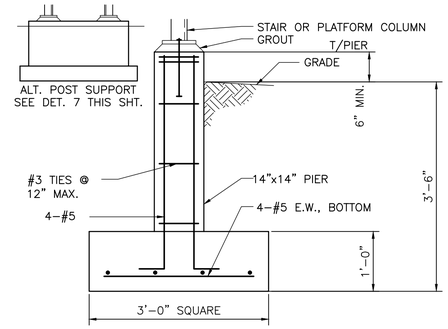
13



STAIR BASE CONNECTION TO FOOTING

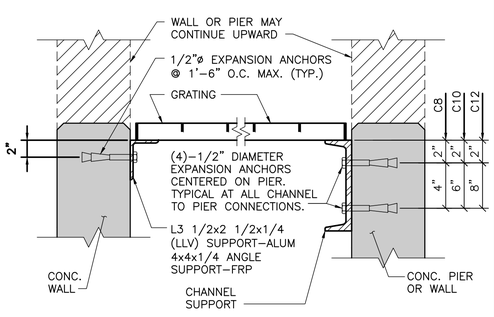
FOOTING AND WALL TO BE 1'-0" WIDER THAN STAIRS

12



EXTERIOR STAIR COLUMN FOOTING

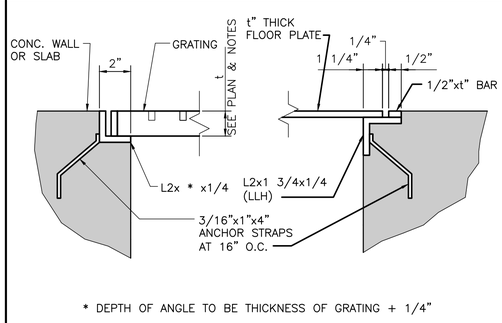
09



GRATING SUPPORT DETAIL

PLATE SUPPORT SIMILAR

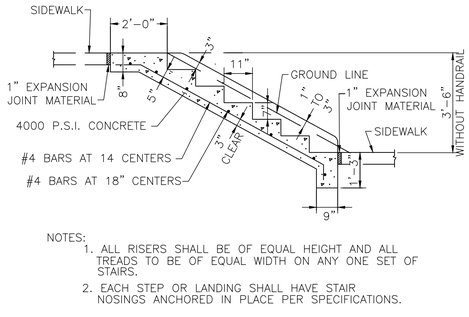
08



* DEPTH OF ANGLE TO BE THICKNESS OF GRATING + 1/4"

GRATING/FLOOR PLATE SUPPORT DETAIL

07



NOTES:
1. ALL RISERS SHALL BE OF EQUAL HEIGHT AND ALL TREADS TO BE OF EQUAL WIDTH ON ANY ONE SET OF STAIRS.
2. EACH STEP OR LANDING SHALL HAVE STAIR NOSINGS ANCHORED IN PLACE PER SPECIFICATIONS.

CONCRETE STEPS ON GRADE

06

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100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

ARCHITECTURAL STANDARD DETAILS STAIR AND GRATING

SD-9

SHEET: OF

P:\PR58982\Cadd\Sheets\SD-9 ARCHITECTURAL STANDARD DETAILS STAIR AND GRATING.dwg 1/5/2022 2:47:52 PM Matt Kroll

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STEEL CONSTRUCTION			
ITEM	**TYPE OF INSPECTION**	**TYPE OF TEST**	**FREQUENCY**
MATERIAL VERIFICATION OF HIGH STRENGTH BOLTS, NUTS, WASHERS AND STRUCTURAL STEEL	VISUAL	IDENTIFY ASTM DESIGNATIONS AND VERIFY COMPLIANCE WITH CONTRACT DOCUMENTS	PERIODIC
BOLTED CONNECTIONS-STEEL TO STEEL, STEEL TO CONCRETE	VISUAL IN ACCORDANCE WITH AISC SPECIFICATIONS	VERIFY CONNECTIONS ARE CONSISTENT WITH CONTRACT DOCUMENTS AND APPROVED SHOP DRAWINGS	CONTINUOUS
MATERIAL VERIFICATION OF WELD FILLER MATERIALS	VISUAL	IDENTIFY AWS DESIGNATIONS AND VERIFY COMPLIANCE WITH CONTRACT DOCUMENTS	PERIODIC
WELDED CONNECTIONS	VISUAL IN ACCORDANCE WITH AWS D1.1	COMPLETE AND PARTIAL PENETRATION GROOVE WELDS MULTIPASS FILLET WELDS AND SINGLE PASS FILLET WELDS >5/16" SINGLE PASS FILLET WELDS <5/16" ROOF DECK WELDS	CONTINUOUS CONTINUOUS PERIODIC PERIODIC
FABRICATORS		VERIFY EACH FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES	

MASONRY CONSTRUCTION			
ITEM	**TYPE OF INSPECTION**	**TYPE OF TEST**	**FREQUENCY**
CONSTRUCTION OF MORTAR JOINTS	VISUAL	INSPECT THICKNESS, FACE SHELLS MORTARED	PERIODIC
INSPECTION OF REINFORCING STEEL	VISUAL	VERIFY SIZE, LOCATION, LAP LENGTH	PERIODIC
ANCHORAGE DEVICES, GROUTED ANCHORS, ADHESIVE ANCHORS	VISUAL	VERIFY TYPE USED AS APPROVED BY ENGINEER, EMBEDMENT DEPTH, LOCATION, SPACING, MANUFACTURER, STRENGTH	PERIODIC
GROUTING	VISUAL	OBSERVE GROUTING TECHNIQUE AND PLACEMENT	CONTINUOUS
PROTECTION OF MASONRY IN COLD WEATHER (<40F) OR HOT WEATHER (>90F)	VISUAL	VERIFY COMPLIANCE WITH CONTRACT DOCUMENTS	PERIODIC

ANCHOR SYSTEMS - POST INSTALLED			
ITEM	**TYPE OF INSPECTION**	**TYPE OF TEST**	**FREQUENCY**
MATERIAL CERTIFICATION	VISUAL	CONFIRMATION ANCHOR AND ADHESIVE TYPE, DIMENSIONS, MATERIAL GRADE, ICC-ESR REPORT	PERIODIC
INSTALLATION	VISUAL	VERIFY COMPLIANCE WITH ICC-ESR AND INSTALLATION WITH MANUFACTURER'S WRITTEN INSTRUCTIONS	CONTINUOUS DURING TASK
TESTING	FIELD TESTING	PERFORM TENSION PULL TEST ON 10 PERCENT OF INSTALLED ADHESIVE ANCHORS	PERIODIC

CONCRETE CONSTRUCTION			
ITEM	**TYPE OF INSPECTION**	**TYPE OF TEST**	**FREQUENCY**
INSPECTION OF REINFORCING STEEL	VISUAL	VERIFY SIZE, COVER, LOCATION, STRENGTH, LAP LENGTHS	PERIODIC
VERIFYING USE OF APPROVED DESIGN MIX	VISUAL	ONSITE REVIEW OF BATCH TICKETS FROM TRUCKS. VERIFY TRUCK TICKETS MATCH APPROVED DESIGN.	PERIODIC
ANCHORS-CAST IN PLACE	VISUAL	VERIFY MATCH WITH CONTRACT DOCUMENTS	PERIODIC
CONCRETE SAMPLING AND TEST STRENGTH	SAMPLING BY TECHNICIAN	SAMPLE PER ASTM C172, MOLD 4 CYLINDERS PER ASTM C31	PERIODIC - SAMPLE EACH DAY OF PLACEMENT AND EVERY 100 CY AFTERWARDS
CONCRETE STRENGTH TESTS	LABORATORY STRENGTH TEST	ASTM C39	CONTINUOUS - TEST 1 CYLINDER AT 7 DAYS AND 2 AT 14 DAYS. TEST ADDITIONAL CYLINDER AS DIRECTED BY ENGINEER
SLUMP, TEMPERATURE, AIR TESTS AND SLUMP FLOW TEST	FIELD TESTING	SLUMP - ASTM C143, TEMPERATURE-ASTM C1064, AIR CONTENT-ASTM C231, C173 OR C138	PERIODIC - TEST EACH DAY OF PLACE-MENT AND EVERY 100 CY AFTERWARD AND AS DIRECTED BY ENGINEER
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TECHNIQUES	VISUAL	VERIFY CURING TECHNIQUES AS SPECIFIED	PERIODIC
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMESNIONS OF CONCRETE MEMBERS BEING FORMED	VISUAL	VERIFY FORMED ITEMS MATCH CONTRACT DOCUMENTS, CONSTRUCTION BULLETINS AND FIELD CHANGES	PERIODIC

SOILS AND FOUNDATIONS			
ITEM	**TYPE OF INSPECTION**	**TYPE OF TEST**	**FREQUENCY**
VERIFY MATERIALS BELOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY	GEOTECHNICAL ENGINEER FIELD OBSERVATIONS AND TESTING	VERIFY REQUIRED BEARING CAPACITY	PERIODIC
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	GEOTECHNICAL ENGINEER FIELD OBSERVATIONS AND TESTING	VERIFY EXPOSED SUBGRADE AS EXPECTED PER GEOTECHNICAL REPORT	PERIODIC - PRIOR TO PLACEMENT OF CONCRETE OR FILL MATERIALS
PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS	GEOTECHNICAL ENGINEER FIELD OBSERVATIONS AND TESTING	ASTM D698 (STD PROCTOR) AND VISUAL OBSERVATIONS	CONTINUOUS DURING TASK
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL	GEOTECHNICAL ENGINEER FIELD OBSERVATIONS AND TESTING	ASTM D698 (STD PROCTOR) AND VISUAL OBSERVATIONS	CONTINUOUS FOR FILL BELOW STRUCTURES. MIN TWO TESTS PER LIFT FOR AREAS UP TO 4,000SF AND ONE ADDITIONAL TEST FOR EACH ADDITIONAL 2,000SF.
PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PROPERLY PREPARED	GEOTECHNICAL ENGINEER FIELD OBSERVATIONS AND TESTING	VERIFY PROOF ROLLING	PERIODIC

DRILLED SHAFTS			
ITEM	**TYPE OF INSPECTION**	**TYPE OF TEST**	**FREQUENCY**
DRILLING OPERATIONS	VISUAL	VERIFY DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	PERIODIC
AUGER CAST PILES INSTALLATION	VISUAL	VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, LENGTHS, EMBEDMENT AND ADEQUATE END-BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES	CONTINUOUS DURING TASK
TESTING	FIELD TESTING	PERFORM TESTS PER SPECIFICATIONS	CONTINUOUS DURING TESTING

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SCALE:	NONE

ARCH-STRUCTURAL STANDARD DETAILS STATEMENT OF SPECIAL INSPECTIONS

SD-10

SHEET: OF

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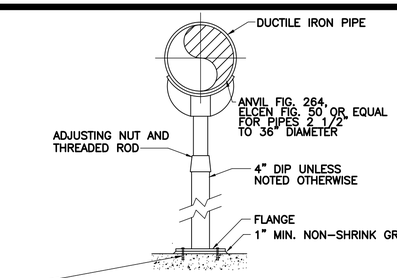
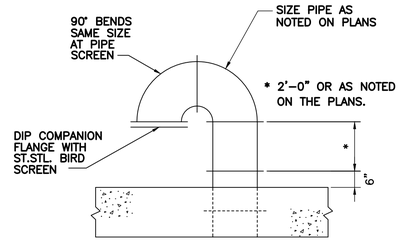


ANCHOR BOLTS SHALL BE HILTI HKB, WEJ-IT OR EQUAL, ANSI 316 STAINLESS STEEL, INCLUDING NUTS AND WASHERS. BOLTS SHALL BE 1/2"ø W/ MIN. 3" EMBEDMENT IN CONCRETE UNLESS NOTED OTHERWISE. ALLOWABLE WORKING LOAD CAPACITY IN 4000 PSI CONCRETE IS 1000 LBS. IN TENSION OR 2000 LBS. IN SHEAR W/ A FACTOR OF SAFETY.

PIPE SUPPORT, STEEL ADJUSTABLE SADDLE TYP

SCALE: NONE

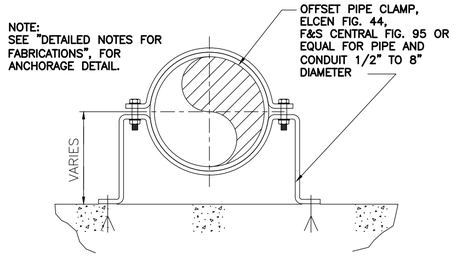
16



AIR VENT, DUCTILE IRON PIPE

SCALE: NONE

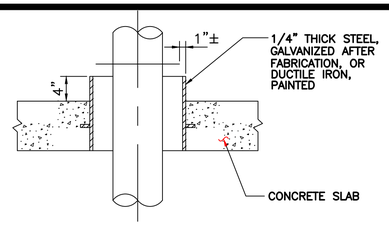
15



PIPE CLAMP, OFFSET TYPE

SCALE: NONE

14



PIPE SUPPORT THRU SLAB

SCALE: NONE

13

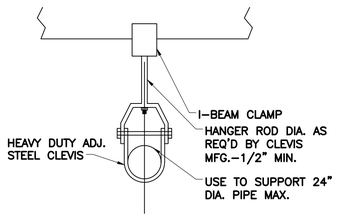
DETAILED NOTES FOR FABRICATIONS:

1. MATERIALS: MISCELLANEOUS METAL FABRICATIONS SHALL BE WELDED CONSTRUCTION, STEEL OR ALUMINUM. 1/4-INCH THICK, UNLESS NOTED OTHERWISE, WITH CONTINUOUS ALL AROUND 1/4-INCH WELDED CONNECTIONS. STEEL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION. ALUMINUM SHALL BE COATED WITH TWO COATS OF EPOXY ON SURFACES IN CONTACT WITH CONCRETE OR MASONRY.
2. ANCHORAGE: ANCHOR BOLTS SHALL BE HILTI HKB, WEJ-IT OR EQUAL, ANSI 316 STAINLESS STEEL INCLUDING NUTS AND WASHERS. ANCHOR BOLTS SHALL BE 1/2-INCH DIAMETER WITH 4-INCH EMBEDMENT IN CONCRETE, UNLESS NOTED OTHERWISE. ALLOWABLE WORKING LOAD CAPACITY IN 4000 PSI CONCRETE IS 1000 POUNDS IN TENSION OR 2000 POUNDS IN SHEAR WITH A FACTOR OF SAFETY.

DETAILED FABRICATION NOTES

SCALE: NONE

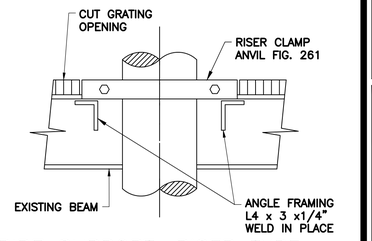
12



TYPICAL HANGER DETAIL

SCALE: NONE

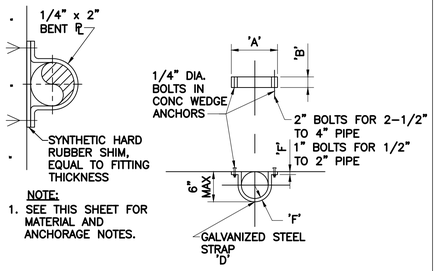
9



PIPE SUPPORT, RISER TYPE

SCALE: NONE

8



NOTE:

1. SEE THIS SHEET FOR MATERIAL AND ANCHORAGE NOTES.

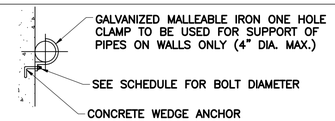
PIPE SIZE	A	B	F
1/2"	3-9/16"	7/8"	3/16"
3/4"	3-7/8"	7/8"	3/16"
1"	4-1/8"	7/8"	3/16"
1-1/4"	4-9/16"	7/8"	3/16"
1-1/2"	5-3/16"	1"	1/4"

PIPE SIZE	A	B	F
2"	5-3/4"	1"	1/4"
2-1/2"	6-1/4"	2"	1/4"
3"	6-7/8"	2"	1/4"
3-1/2"	7-3/8"	2"	1/4"
4"	8"	2"	1/4"
6"-8"	D+4"	3"	1/4"
10"-12"	D+4"	4"	1/4"

TYPICAL CEILING DETAIL

SCALE: NONE

7

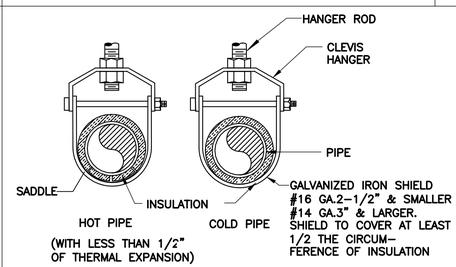


PIPE SIZE	BOLT DIA	PIPE SIZE	BOLT DIA
1/2"	1/4"	2"	5/8"
3/4"	1/4"	2-1/2"	5/8"
1"	1/4"	3"	5/8"
1-1/4"	3/8"	3-1/2"	5/8"
1-1/2"	3/8"	4"	5/8"

TYPICAL WALL CLAMP DETAIL

SCALE: NONE

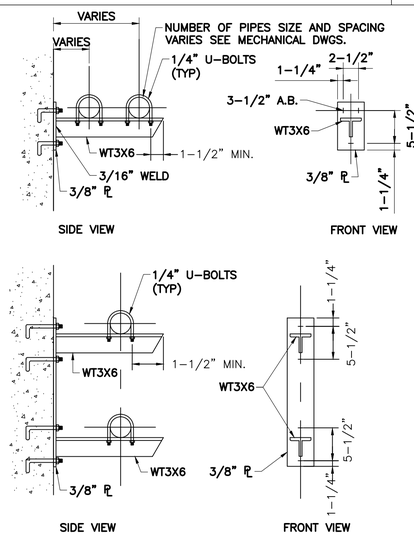
11



TYPICAL HANGER FOR INSULATED PIPE

SCALE: NONE

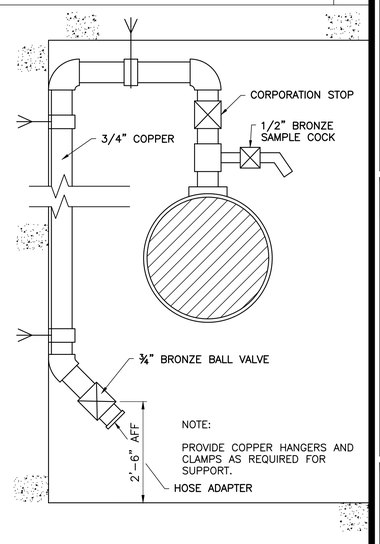
10



TYPICAL BRACKET DETAIL

SCALE: NONE

3



AIR RELEASE, MANUAL

SCALE: NONE

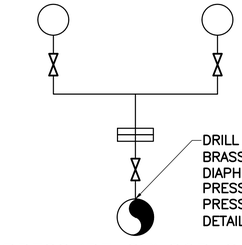
2

MAXIMUM UNSUPPORTED PIPE SPAN SCHEDULE																									
NOMINAL PIPE SIZE	½	¾	1	1¼	1½	2	2½	3	4	5	6	8	10	12	14	16	18	20	24	26	28	30	32	34	36	42	48
MAXIMUM SPAN C.I. (FT.)									8	10	10	10	10	12	12	12	14	14	14	16	16	16	16	16	16	18	18
MAXIMUM SPAN STL. (FT.)	5	6	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32	33	33	34	34	35	35	36	36

DETAILED NOTES FOR FABRICATIONS:

1. MAXIMUM SPACING OF PIPE SUPPORTS SHALL BE AS PER THE ACCOMPANING SCHEDULE UNLESS OTHERWISE NOTED OR SHOWN ON THE PLANS.
2. PIPE SUPPORTS SHALL BE PROVIDED AT ALL CHANGES IN DIRECTIONS AND POINT OF CONCENTRATED LOAD.
3. SPACING OF SUPPORTS SHALL BE CONTROLLED BY THE SMALLEST DIAMETER PIPE RESTING ON THE SUPPORT.
4. ALL BURIED BOLTED CONNECTIONS SHALL BE MADE WITH TYPE 304 STAINLESS STEEL FASTENERS.
5. SUPPORT SPACING FOR OTHER PIPING MATERIALS ARE FOUND IN THE SPECIFICATIONS.

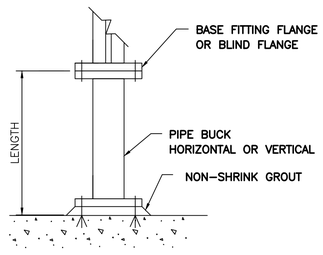
5



PRESSURE SENSOR SCHEMATIC

SCALE: NONE

6



NOTES:

1. * STRUCTURAL ENGINEERING REVIEW REQUIRED FOR PIPE BUCK LENGTHS ABOVE MAXIMUM.
2. COMPRESSION LOAD BASED ON HYDRAULIC THRUST OF 150 PSI.

FITTING SIZE	BUCK SIZE	BUCK MATERIAL	BUCK MATERIAL	MAXIMUM LENGTH *
3	1 1/2	GSP	SCH.80	5
4	2	GSP	SCH.80	5
6	2 1/2	GSP	SCH.80	5
8	4	DIP	CLASS 53	5
10	4	DIP	CLASS 53	5
12	6	DIP	CLASS 53	5
14	6	DIP	CLASS 53	5
16	6	DIP	CLASS 53	5
18	8	DIP	CLASS 53	5
20	8	DIP	CLASS 53	5
24	8	DIP	CLASS 53	5
30	10	DIP	CLASS 53	5

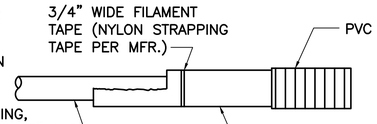
PIPE BUCK FOR COMPRESSIVE LOADS

SCALE: NONE

4

NOTE: ANY PIPING, PROCESS OR OTHERWISE, NOT IDENTIFIED IN THE ABOVE DETAIL SHALL MEET THE SPECIFICATIONS OUTLINED IN SECTION 40 42 13.

WITHIN THE LIMITS OF THE BUILDING, CHLORINE SOLUTION, PLANT WATER (3" AND LARGER), FINISHED WATER, AND RAW WATER SERVICE PIPE AS SHOWN ON DRAWINGS: PROCESS PIPING AND INSULATION SHALL BE PAINTED ACCORDING TO SPECIFICATIONS



PIPE INSULATION DETAIL

SCALE: NONE

1

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SCALE:	NONE

PROCESS STANDARD DETAILS PIPING

SD-11

SHEET: OF

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PLOTTED: 4/14/2022 6:01:27 PM

TYGON TUBING AND CARRIER PIPE

A. TYGON XL-60 TUBING FOR PERISTALTIC PUMPS.

TUBING SHALL BE DESIGNED FOR USE IN PERISTALTIC PUMP APPLICATIONS. TYGON-BRAND TUBING PUMP TUBING SHALL BE DESIGNED TO PROVIDE A MINIMUM PUMP LIFE OF 500 HOURS CONTINUOUS USE. CONTRACTOR SHALL PROVIDE ONE 50-FOOT ROLL OF TUBING FOR MEET REQUIREMENTS FOR USE WITH THE SODIUM BISULFITE PUMPS SPECIFIED ON THE CONTRACT DRAWINGS FOR THIS PROJECT.

TUBING SHALL HAVE THE FOLLOWING CHARACTERISTICS:

- LOW EXTRACTABLES
- FLEXIBLE AND EXHIBIT SUPERIOR FLEX LIFE.
- UV AND OZONE AND OXYGEN RESISTANT.
- DUROMETER HARDNESS OF (SHORE A): 60
- SUITABLE FOR TEMPERATURE RANGES OF -87 TO +250 DEGREES FAHRENHEIT.
- SHALL MEET FDA AND NSF 51 STANDARDS.
- WALL THICKNESS SHALL BE MINIMUM OF 1/16" AND RATED FOR MINIMUM 10 PSI AT 73 DEGREES F.
- PROVIDE IN UNCUT ROLLS WITH 50 FEET OF TUBING (TOLERANCE +/- 6" PER ROLL)

B. CHEMICAL SOLUTION TUBING - POLYPROPYLENE TUBING

POLYPROPYLENE TUBING SHALL BE PROVIDED TO CARRY SODIUM BISULFITE SOLUTION (35% STRENGTH) UNDER PRESSURE FROM THE PERISTALTIC PUMP DISCHARGE TO THE POINT OF APPLICATION AT THE LOCATIONS SHOWN ON THE PLANS STANDARD BARBED FITTINGS WITH 316 SS BANDS SHALL BE USED TO JOINT THE 1000-FOOT LONG LENGTHS OF TUBING. TUBING SHALL BE RESISTANT TO ACIDS, AND ALKALIS AND SUITABLE FOR THE INTENDED USE DESCRIBED ABOVE.

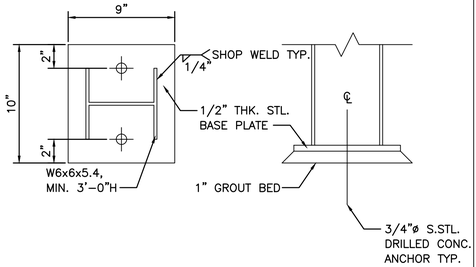
- TUBING SHALL BE NSF 51/61 LISTED
- NATURAL TRANSLUCENT TUBING SHALL BE PROVIDED TO ALLOW THE VISUAL INSPECTION OF THE CONTENTS. (BLACK TUBING, ALTHOUGH UV RESISTANT IS NOT REQUIRED FOR THIS BURIED APPLICATION).
- FLEXIBLE, ODORLESS, TASTELESS, AND NON-TOXIC AND EXHIBIT SUPERIOR FLEX LIFE.
- UV AND OZONE AND OXYGEN RESISTANT.
- SHALL BE NSF 51/61 LISTED.
- DUROMETER HARDNESS FOR NSF APPROVED IS 76R.
- USE COMPRESSION FITTINGS DESIGNED FOR USE WITH THE I.D./O.D. SIZE OF TUBING BEING PROVIDED.
- SUITABLE FOR TEMPERATURE RANGES UP TO MAXIMUM OF +180 DEGREES FAHRENHEIT.
- I.D SHALL BE 0.500" AND O.D. SHALL BE 0.625 WALL THICKNESS SHALL BE MINIMUM OF 1/16" AND RATED FOR MINIMUM WP 87 PSI AT 73 DEGREES F.
- PROVIDE IN UNCUT ROLLS WITH 100 FEET OF TUBING (TOLERANCE +/- 6" PER ROLL)

C. CARRIER PIPE AND FITTINGS - CORRUGATED PIPE AND FITTINGS

CARRIER PIPE SHALL BE DESIGNED FOR BURIED SERVICE AND INSTALLED WITH BEDDING PER MANUFACTURER RECOMMENDATIONS TO HANDLE H20 TRUCK WHEEL LOADS WITHOUT COLLAPSE OF THE PIPE WALL. THE CORRUGATED SINGLE WALL POLYETHYLENE PIPING IN ROLLS OR PIPE LENGTHS GREATER THAN 20 FEET TO MINIMIZE THE NUMBER OF JOINTS AND FITTING S REQUIRED TO INSTALL THE CARRIER PIPE AS SHOWN ON THE PLANS. ALL SECTIONS SHALL BE JOINED WITH PREFABRICATED PIPE CONNECTORS OR FITTINGS TO PROVIDE WATERTIGHT CONNECTIONS. PIPE SHALL BE LAID ON CONSTANT SLOPE AND OPEN AT THE DISCHARGE END SO THAT ANY MOISTURE, CONDENSATION, OR LEAKAGE DRAINS TO THE LOW END WHERE THE CHEMICAL SOLUTION IS APPLIED. ONCE THE CARRIER PIPE IS INSTALLED A PULL WIRE SHALL BE USED TO PULL IN POLYETHYLENE TUBING. A SPARE PULL WIRE SHALL BE LEFT IN THE CARRIER PIPE FOR FUTURE USE TO REMOVE AND/OR REINSTALL THE TUBING WITHOUT REMOVAL OF THE CARRIER PIPE. PIPE SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS FOR MATERIALS AND INSTALLATION.

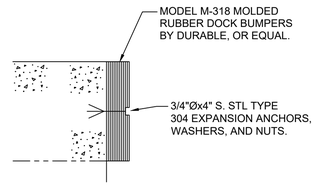
STANDARDS FOR QUALITY ASSURANCE/QUALITY CONTROL.

- AASHTO M252: STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE DRAINAGE PIPE: 3" - 10" (76.2MM - 254.0MM)
- ASTM D2321: STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-
  FLOW APPLICATIONS
- ASTM D3212: STANDARD SPECIFICATION FOR JOINTS FOR DRAIN AND SEWER PLASTIC PIPES USING FLEXIBLE ELASTOMERIC SEALS.
- ASTM D3350: STANDARD SPECIFICATION FOR POLYETHYLENE PLASTIC PIPE AND FITTINGS MATERIALS
- ASTM F477: STANDARD SPECIFICATION FOR ELASTOMERIC SEALS (GASKETS) FOR JOINT PLASTIC PIPE
- ASTM F405: STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE PIPE AND FITTINGS: 3" - 6" (76.2MM - 152.4M
- MANUFACTURER: PIPE SHALL BE AS MANUFACTURED BY PACIFIC CORRUGATED PIPE, ADS, OR APPROVED EQUAL.



STEEL BOLLARD INTERIOR USE ONLY
SCALE: NONE

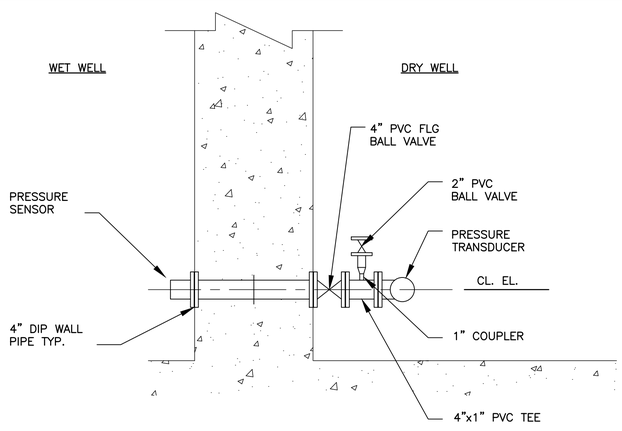
3



NOTE: MOUNT UNIT HORIZONTALLY AT SLABS AND VERTICAL AT WALLS.

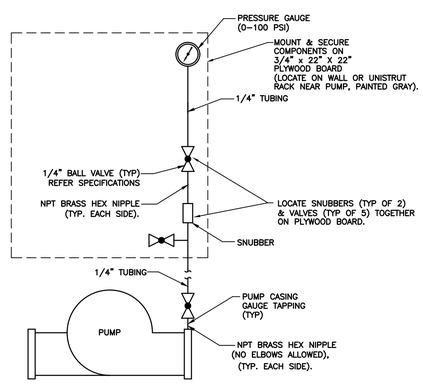
DOCK BUMPER DETAIL
SCALE: NONE

4



PRESSURE TRANSDUCER DETAIL
SCALE: NONE

8



PUMP PRESSURE GAUGE DETAIL
SCALE: NONE

9

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	ABP
DRAWN BY:	ABP
CHECKED BY:	CMS
APPROVED BY:	CMS
SCALE:	NONE

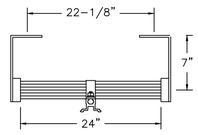
PROCESS STANDARD DETAILS PLATES AND GUIDES

SD-12

SHEET: OF

P:\PR58982\Cadd\Sheets\SD-12 PROCESS STANDARD DETAILS PLATE AND GUIDES.dwg 4/13/2022 4:46:52 PM Matt Kroll

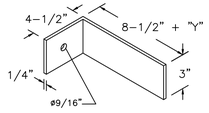
PLOTTED: 4/14/2022 6:01:36 PM



PLAN

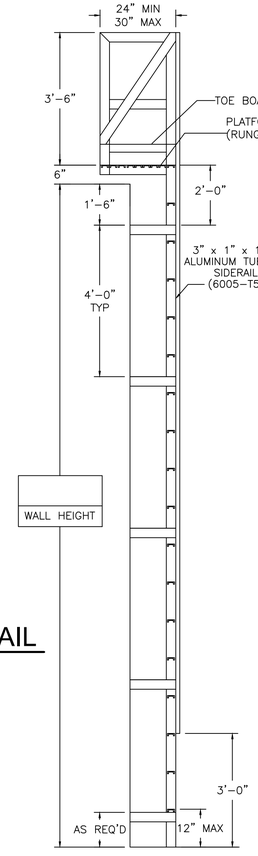
SCALE: NONE

(HANDRAILS OMITTED FOR CLARITY)



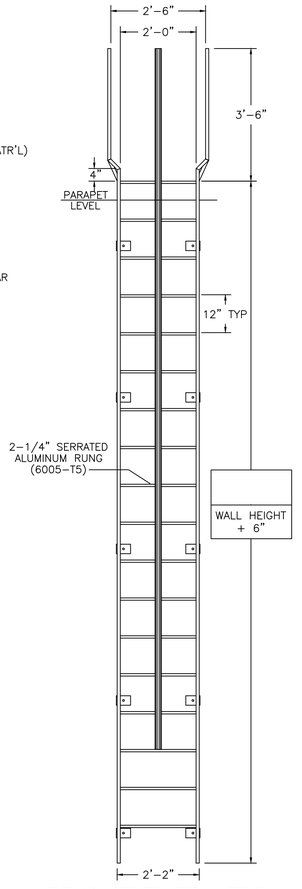
BRACKET DETAIL

SCALE: NONE



SIDE ELEVATION

SCALE: NONE

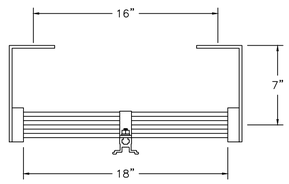


FRONT ELEVATION

SCALE: NONE

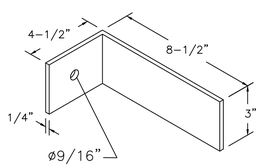
TUBULAR LADDER DETAIL

SCALE: NONE



PLAN

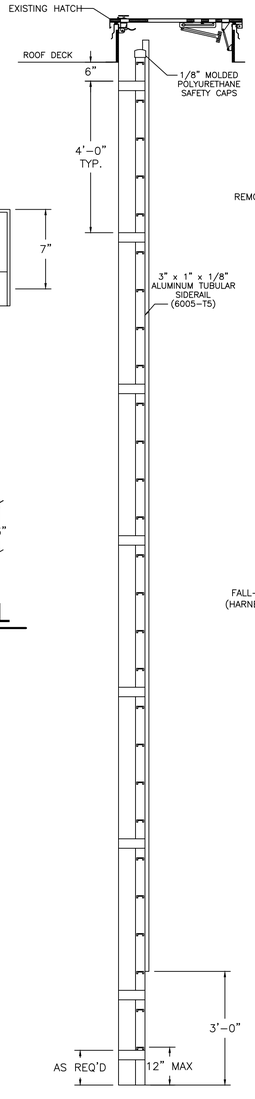
SCALE: NONE



BRACKET DETAIL

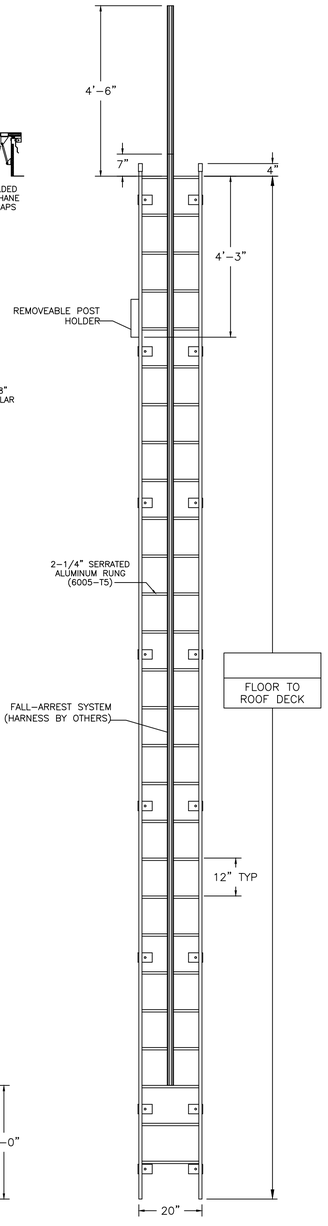
SCALE: NONE

IF WALL DOES NOT LINE UP WITH HATCH OPENING, ADVISE OFFSET



SIDE ELEVATION

SCALE: NONE

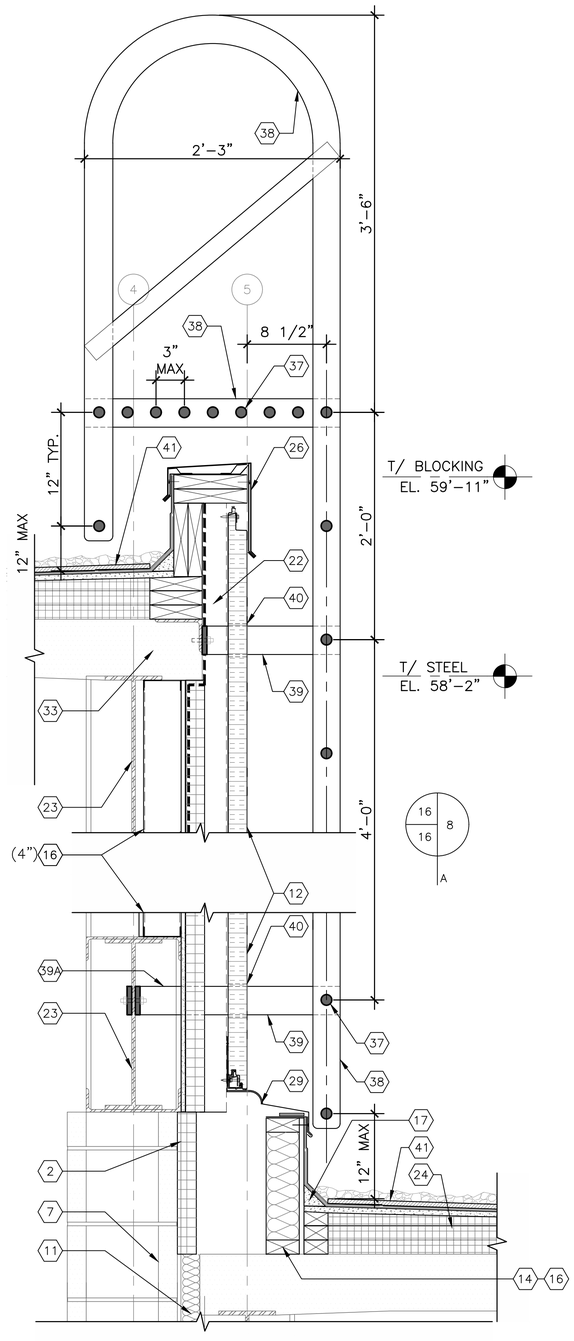


FRONT ELEVATION

SCALE: NONE

TUBULAR LADDER TO ROOF HATCH DETAIL

SCALE: NONE



LADDER FOR PARAPET PLATFORM

SCALE: NONE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

MISCELLANEOUS DETAILS

SD-13

SHEET: OF

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HVAC DUCTWORK SYMBOLS

SYMBOL	FEATURE
	DIRECTION OF FLOW
20x12	DUCT SIZE- FIRST NUMBER IS SIDE SHOWN
12"Ø	ROUND DUCT
20x12	DUCT SECTION, POSITIVE PRESS. (SUPPLY OR MUA OR EF DISCHARGE) FIRST NUMBER IS TOP AND BOTTOM.
20x12	DUCT SECTION, NEGATIVE PRESS.(EXHAUST OR RETURN) FIRST NUMBER IS TOP AND BOTTOM.
R(D)	ELEVATION CHANGE (R) RISE, (D) DROP
	BOTTOM MOUNT DEVICE REGISTER, GRILLE, DIFFUSER OR DUCT TAKEOFF
	90° ELBOW WITH TURNING VANES
D	MANUAL VOLUME DAMPER (VD)
M	MOTOR OPERATED DAMPER (MOD)
20x12 16x8	RECTANGULAR TO RECTANGULAR TRANSITION
20x12 16"Ø	RECTANGULAR TO ROUND TRANSITION
	POSITIVE PRESSURE DUCT - ELBOW TURNED UP (ONE DIAGONAL FOR NEGATIVE PRESSURE)
	POSITIVE PRESSURE DUCT - ELBOW TURNED DOWN (ONE DIAGONAL FOR NEGATIVE PRESSURE)
	EQUIPMENT & DUCTS TO BE REMOVED (ON DEMO PLANS)
FD FD	FIRE DAMPER
	RADIUS DUCT ELBOW WITH TURNING VANES.

HVAC DUCTWORK SYMBOLS(CONTINUED)

SYMBOL	FEATURE
	ROOF VENT OR ROOF FAN
X 400 CFM	TYPE OF DEVICE (SEE SCHEDULE) SIZE (SEE SCHEDULE) CAPACITY
	AIRFLOW TO SPACE
	AIRFLOW FROM SPACE
T	THERMOSTAT
S	DUCT SMOKE DETECTOR
$	SWITCH
H	HUMIDISTAT

VFD'S/STARTERS FOR HVAC EQUIPMENT

VFD'S AND STARTERS FOR HVAC EQUIPMENT SHALL BE PART OF THE HVAC PACKAGE, PROVIDED BY THE HVAC CONTRACTOR. E.C. WILL INSTALL/WIRE/POWER THE HVAC VFD'S/ STARTERS. HVAC/TEMP. CONTROL CONTRACTOR SHALL PROVIDE THE CONTROLS WIRING/CONDUIT, REGARDLESS OF VOLTAGE.

HVAC GENERAL NOTES

1. ALL DUCT SIZES ARE IN INCHES:
   1ST FIGURE = SIDE SHOWN
   2ND FIGURE = OPPOSITE SIDE
2. ALL DUCT SIZES ARE INSIDE DIMENSIONS (FREE AREA),
3. CONTRACTOR MUST VISIT THE SITE OF THE WORK TO DETERMINE EXACT KNOWLEDGE OF CONDITIONS AFFECTING THE EXECUTION OF THE WORK. AFTER VISITING THE SITE, CONTRACTOR SHALL REQUEST ADDITIONAL INFORMATION AND/OR CLARIFICATIONS NECESSARY TO FULLY UNDERSTAND THE WORK REQUIRED AND TO PROPERLY ESTIMATE THE OFFERING OF A PROPOSAL TO PERFORM THE WORK.
4. CONTRACTOR SHALL SEAL WORK/PENETRATIONS WITH LIKE KIND MATERIALS ALL EXISTING PENETRATIONS IN AND THROUGH WALLS AND FLOORS UNLESS NOTED OTHERWISE.
5. AIR DEVICE DESIGNATIONS ESTABLISH GENERAL TYPE ONLY, THE EXACT TYPE OF BORDER FOR AIR DEVICES WILL BE DETERMINED BY THE CONTRACTOR.
6. CONTRACTOR SHALL COORDINATE ALL NEW HVAC WORK WITH EXISTING CONDITIONS AND WORK OF OTHER TRADES SO THAT NO CONFLICTS OCCUR WITH PIPING, LIGHTS, STRUCTURE, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEVIATIONS FROM SHOWN DUCTWORK/HVAC PIPING ROUTING, WHICH ARE DUE TO FIELD COORDINATION OR LACK OF SAME. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR MORE EXACT LOCATIONS FOR EQUIPMENT, AND COORDINATE WITH G.C. ON ALL.
7. NOT ALL SYMBOLS AND ABBREVIATIONS SHOWN MAY NECESSARILY APPLY AND IF ANY SYMBOLS OR ABBREVIATIONS NOT CLEAR OR LISTED, CONTACT ENGINEER.
8. ALL MOD'S REQUIRED ARE TO RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
9. NOT USED.
10. FOR MECHANICAL/MECHANICAL CONTROLS WORK AT SURFACES THAT SEPARATE WET/CORROSIVE AREAS FROM OTHER AREAS. SEAL AROUND ALL WORK AIR-TIGHT, AND SEAL INSIDES OF MECHANICAL RELATED CONDUITS AIR-TIGHT.
11. IF THE TERM STAINLESS STEEL IS USED IN THE CONTRACT DOCUMENTS WITHOUT A TYPE LISTED, TYPE 304L TO BE USED.
12. WITH THE EXCEPTION OF SYSTEMS AND EQUIPMENT FURNISHED BY OWNER IF SPECIFIED, IT IS INTENDED THAT WORK COVERED BY THESE SPECIFICATIONS AND DRAWINGS INCLUDE EVERYTHING REQUISITE TO MAKE THE VARIOUS SYSTEMS COMPLETE AND OPERATIVE, IRRESPECTIVE OF WHETHER OR NOT EVERY ITEM IS SPECIFICALLY PROVIDED FOR. ANY OMISSION OF DIRECT REFERENCE TO ANY ESSENTIAL ITEM SHALL NOT EXCUSE THE CONTRACTOR FROM COMPLYING WITH THE ABOVE INTENT.
13. THE MECHANICAL DRAWINGS AND SPECIFICATIONS ARE MEANT TO SUPPLEMENT EACH OTHER. IN CASE OF AN INCONSISTENCY, THE MOST STRINGENT REQUIREMENT SHALL GOVERN. FIGURED DIMENSIONS SUPERSEDE SCALED ONES. THE CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY INCONSISTENCY IN SPECIFICATIONS AND DRAWINGS, AND SHALL PROMPTLY CALL THE OWNER'S ATTENTION TO ANY INCONSISTENCY IN THE SPECIFICATIONS AND DRAWINGS.
14. LAYOUT OF EQUIPMENT, DUCTWORK, ACCESSORIES, SPECIALTIES AND SUSPENDED, CONCEALED OR EXPOSED PIPING SYSTEMS ARE DIAGRAMMATIC UNLESS DIMENSIONED. IN PREPARING SHOP DRAWINGS, CONTRACTOR SHALL CHECK PROJECT CONDITIONS BEFORE INSTALLING WORK. IF THERE ARE ANY INTERFERENCES OR CONFLICTS, THEY SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER IMMEDIATELY FOR CLARIFICATION.
15. PRIOR TO SUBMITTING SHOP DRAWINGS, THE CONTRACTOR SHALL CHECK FOR DIMENSIONAL CORRECTNESS, INTERFERENCES AND CONFORMANCE TO SPECIFICATIONS AND PLANS. THE CONTRACTOR IS TO SUBMIT ELECTRONIC SHOP DRAWINGS IN PDF FORMAT, CATALOG SHEETS FOR EQUIPMENT, FIXTURES, DUCTWORK LAYOUT AND WIRING DIAGRAMS TO THE ARCHITECT FOR REVIEW. EACH CONTRACTOR IS RESPONSIBLE TO DISTRIBUTE APPROVED SHOP DRAWINGS TO ALL OTHER TRADES AFFECTED BY HIS WORK AND EQUIPMENT.
16. THE CONTRACTOR SHALL TEST ALL HIS EQUIPMENT AND WORK IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. ALL EQUIPMENT, APPARATUS, ETC. SHALL COMPLY FULLY WITH THE REQUIREMENTS OF THE SPECIFICATIONS AND DRAWINGS. PROVIDE TRAINING OF OWNER'S PERSONNEL AS REQUIRED AND OBTAIN SIGN-OFF ON SAME.

ABBREVIATIONS (NOT ALL USED)

AB.	ABOVE
AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AL.	ALUMINUM CONSTRUCTION
AP	ACCESS PANEL
ATC	AUTOMATIC TEMPERATURE CONTROL
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
BCV	BALL CHECK VALVE
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
CAI	COMBUSTION AIR INLET
CCW	COUNTER CLOCKWISE
CENT	CENTRIFUGAL
CFM	CUBIC FEET PER MINUTE
CLG.	CEILING
CONN.	CONNECTION
CONT.	CONTINUATION
CTR	CENTER
CUH	CABINET UNIT HEATER
CV	VALVE FLOW COEFFICIENT
CVR	CONVECTOR
CW	POTABLE COLD WATER
DB	DRY BULB
DEMO	DEMOLITION
DEPT	DEPARTMENT
DN	DOWN
DWG.	DRAWING
DISCH.	DISCHARGE
DS	DUCTLESS SPLIT
DPS	DIFFERENTIAL PRESSURE SENSOR
DSD	DUCT SMOKE DETECTOR
DS	DUCTLESS SPLIT
EA	EXHAUST AIR
EAG	EXHAUST AIR GRILLE
EAR	EXHAUST AIR REGISTER
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EL.	ELEVATION
EMERG	EMERGENCY
ENGR	ENGINEER
ESP	EXTERNAL STATIC PRESSURE
ENT	ENTERING, ENTRANCE
ER	EXHAUST REGISTER
E.S.P.	EXTERNAL STATIC PRESSURE
EUH	ELECTRIC UNIT HEATER
EXH	EXHAUST
EXIST	EXISTING
EWT	ENTERING WATER TEMPERATURE
ºF	DEGREE FAHRENHEIT
FAI	FRESH AIR INTAKE
FT	FOOT
F & T	FLOAT AND THERMOSTATIC
FC	FLEXIBLE CONNECTION
F	FIRE DAMPER
FL.	FLOOR
FLEX.	FLEXIBLE
FPM	FEET PER MINUTE
GV	GRAVITY VENT
GIV	GRAVITY INTAKE VENTILATOR
GRV	GRAVITY RELIEF VENTILATOR
GPM	GALLONS PER MINUTE
GMU	GLYCOL MAKE-UP UNIT
GUH	GAS-FIRED UNIT HEATER
HGR	HANGER
HP	HORSEPOWER
HHW	HEATING HOTWATER
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	POTABLE HOT WATER
Hz	HERTZ
HR	HOUR
HV	HEATING AND VENTILATING
INSTR	INSTRUMENT (TATION)
IN	INCH
IN. W.G.	INCHES WATER GAGE
LAT	LEAVING AIR TEMPERATURE
LPC	LOW PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
MAV	MANUAL AIR VENT
MAT	MIXED AIR TEMPERATURE
MATL	MATERIAL
MUAU	MAKE-UP AIR UNIT
MBH	THOUSAND BTU PER HOUR
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MISC	MISCELLANEOUS
M.O.D.	MOTOR OPERATED DAMPER
MTD	MOUNTED
MUA	MAKE-UP AIR
NOM	NOMINAL
NPT	AMERICAN NATIONAL TAPER PIPE THREAD
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OPNG.	OPENING
PC	PUMPED CONDENSATE
PD	PRESSURE DROP
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAGE
RA	RETURN AIR
RAG	RETURN AIR GRILLE
RAR	RETURN AIR REGISTER
RED	REDUCER
RH	RELATIVE HUMIDITY
RR	RETURN REGISTER
RG	RETURN GRILLE
ROS	REMOTE OPERATING SYSTEM
RPM	REVOLUTIONS PER MINUTE
SQ.IN.	SQUARE INCH
SA	SUPPLY AIR
SAG	SUPPLY AIR GRILLE
SA	SUPPLY AIR
SAO	SUPPLY AIR OPENING
SAR	SUPPLY AIR REGISTER
SCHED	SCHEDULE
SD	SUPPLY DIFFUSER
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SR	SUPPLY REGISTER
SS	STAINLESS STEEL
SSSC	SOLID STATE SPEED CONTROLLER
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TAG	TRANSFER AIR GRILLE
TOS	TOP OF STEEL
TYP.	TYPICAL
U	HEAT TRANSFER COEFFICIENT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
V	VOLUME DAMPER
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VFD	VARIABLE FREQUENCY DRIVE
W/	WITH
VEL	VELOCITY
W/O	WITHOUT
WB	WET BULB
WG	WATER GAUGE

HVAC GENERAL DEMOLITION NOTES

1. ALL DEMOLITION WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE STATE OF OHIO BUILDING CODES, OSHA AND NFPA.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS AND INSPECTIONS.
3. ALL DEMOLITION WORK SHALL BE COORDINATED WITH DEMOLITION WORK SHOWN ON OTHER CONTRACT DRAWINGS.
4. DEMOLITION PLANS ARE PROVIDED AS A GUIDE. COORDINATE DEMOLITION WITH NEW CONSTRUCTION DRAWING SHEETS, SPECIFICATIONS, AND FINAL DESIGN INTENTION. ANY DEMOLITION INDICATED ON THESE DRAWINGS IS SHOWN IN GENERAL TO INDICATE THE GENERAL EXTENT OF MAJOR DEMOLITION AND IS NOT TO BE CONSIDERED AS A RECORD DRAWING OF EXISTING CONDITIONS OR THE COMPLETE EXTENT OF REQUIRED DEMOLITION ACTIVITIES. DEMOLITION INCLUDES PROVISION OF TEMPORARY BRACING, SHORING AND SUPPORT TO ASSURE SAFE OPERATIONS AND TO MAINTAIN THE INTEGRITY OF THE BUILDING. PROVIDE LINTELS ETC. AT NEW OPENINGS ACCORDINGLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE REMOVAL AND DISPOSAL OF ALL MATERIALS NECESSARY TO ACHIEVE THE DESIGN INTENT, WHETHER EXPRESSLY SHOWN OR NOT.
5. PATCH, REPAIR, RESTORE AND REFINISH ALL ADJACENT MATERIALS AND CONSTRUCTION INTENDED TO REMAIN TO LIKE-NEW CONDITION AS WELL AS CORRECTION OF DAMAGE RESULTING FROM DEMOLITION OR NEW CONSTRUCTION ACTIVITIES. PATCH AND REPAIR EXISTING SURFACES LEFT EXPOSED AFTER DEMOLITION, AND PREPARE THEM FOR NEW CONSTRUCTION. INFILL VOIDS LEFT BY DEMOLITION TO MATCH SURROUNDING.

STATE OF OHIO
JOSEPH M. VEROSTKO
E-54044
PETER J. VEROSTKO
E-75283
REGISTERED
PROFESSIONAL ENGINEER

BURGESS & NIPLE
525 VINE STREET, STE 1300
CINCINNATI, OHIO 45202

CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLAN &
WELL FIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE

JOB NO: PR58982
DATE: APRIL 2022
DESIGNED BY: CWW
DRAWN BY: CMS
CHECKED BY: CWW
APPROVED BY: CWW
SCALE: AS NOTED

HVAC SYMBOLS, NOTES AND LEGENDS

H-1

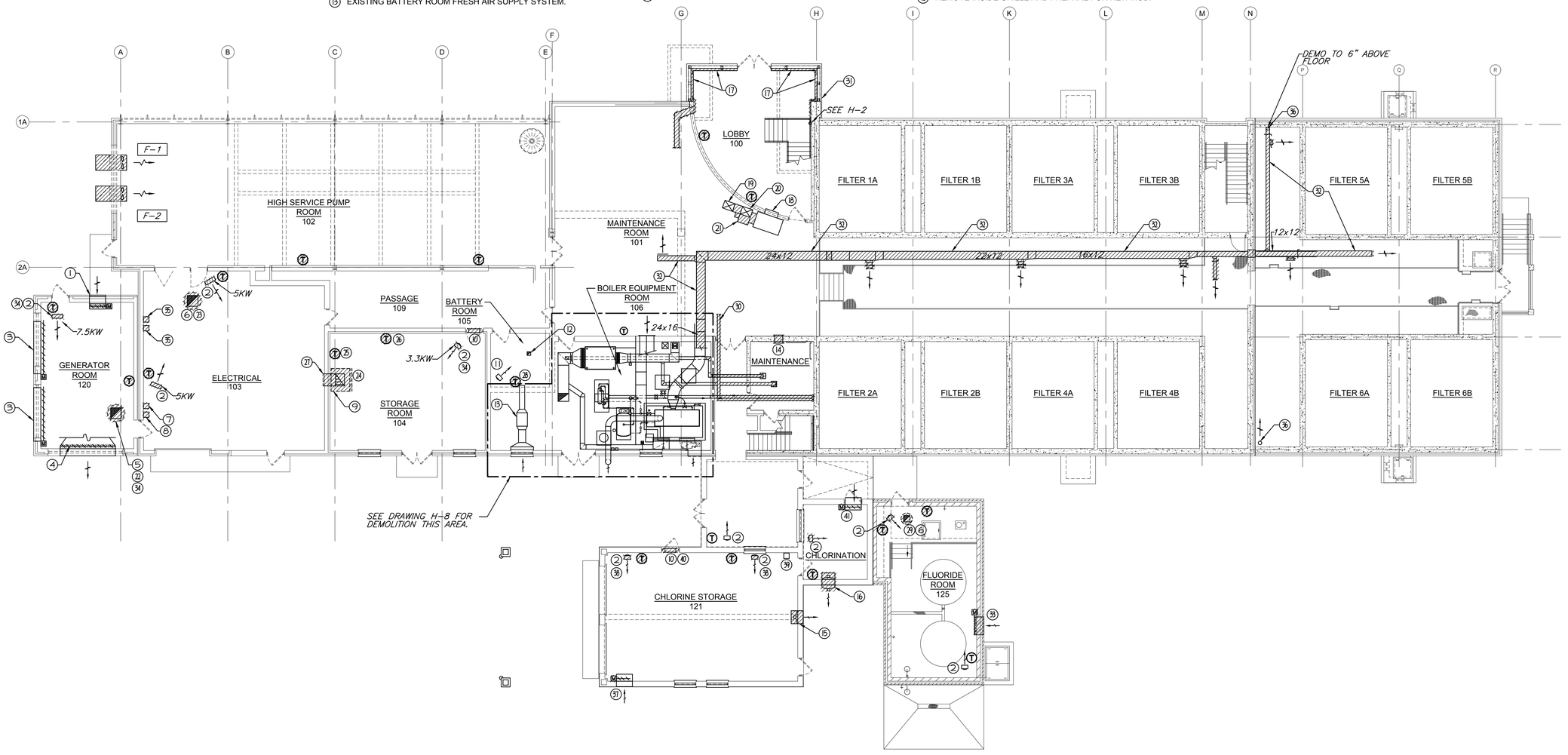
SHEET: OF

GENERAL NOTES

1. CROSS-HATCHED ITEMS TO BE REMOVED. IF WORK/ITEMS NOT CROSS-HATCHED, THEY ARE TO REMAIN.
2. WHEN REMOVING ITEMS SUCH AS ELECTRIC BASEBOARD HEATERS, REMOVE ITEM AND ASSOCIATED STAT AND CONTROL WIRING AND PATCH AND FINISH SURFACES AS REQUIRED TO MATCH.

CODED NOTES

(1) EXISTING INTAKE ASSEMBLY WITH MOD. REMOVE DAMPER AND OPERATOR, ITEMS TO BE REPLACED.
(2) EXISTING ELECTRIC UNIT HEATER.
(3) EXISTING 10'x10'-8" INTAKE ASSEMBLY WITH MOD'S. CLEAN LOUVERS, SCREENS, AND DAMPERS, AND REPLACE OPERATORS. LUBRICATE, SERVICE AND ADJUST DAMPERS AND LINKAGES FOR FULL CLOSE/OPEN AND FOR SMOOTH OPERATION.
(4) EXISTING 14'x12' GENERATOR DISCHARGE LOUVER WITH GRAVITY SHUTTER, REPLACE. ALSO, CLEAN LOUVER AND SCREEN.
(5) EXISTING ROOF EXHAUST FAN.
(6) EXISTING ROOF EXHAUST FAN.
(7) EXISTING H-O-A FOR FANS 2, 3, 4, 5.
(8) EXISTING H-O-A FOR FANS 1,6, 7, 8.
(9) EXISTING INTAKE SYSTEM FROM GRAVITY HOOD ON ROOF. SYSTEM HAS 48x24 PLENUM, REMOVE COMPLETE AND PATCH ROOF AND WALL.
(10) REMOVE EXISTING TRANSFER AIR ASSEMBLY ABOVE DOOR AND PATCH.
(11) EXISTING 3KW EXPLOSION PROOF UNIT HEATER. ROTATE TO BETTER SERVE ENLARGED BOILER ROOM, SEE NEW WORK DRAWING.
(12) EXISTING BATTERY ROOM RELIEF THRU ROOF WITH GOOSENECK ABOVE TO REMAIN.
(13) EXISTING BATTERY ROOM FRESH AIR SUPPLY SYSTEM.
(14) EXISTING AIR TRANSFER ASSEMBLY TO BE REMOVED AND PATCH WALL.
(15) TWO EXISTING, STACKED PROP EXHAUST FANS, REMOVE BOTH, AND PREPARE FOR NEW EF DUCT PENETRATION.
(16) TWO STACKED EXHAUST FANS, UPPER FAN IS PROP TYPE, LOWER FAN IS WALL CENTRIFUGAL TYPE. REMOVE BOTH AND PREPARE FOR NEW EF DUCT PENETRATION.
(17) EXISTING HOT WATER BASEBOARD HEATERS.
(18) APPROXIMATE 60x14 CURVED RAG FROM LOBBY TO REMAIN.
(19) EXISTING RELIEF DUCT UP INTO SECOND FLOOR CHASE STOPPING AT CHASE FLOOR.
(20) EXISTING SA DUCT UP.
(21) EXISTING LOBBY H&V SYSTEM FAN AND DUCTWORK.
(22) CURB TO REMAIN AND BE RE-USED.
(23) CURB TO REMAIN AND BE RE-USED FOR NEW ROOM HVAC DUCT PENETRATION.
(24) PLATE ON PLENUM NEAR FLOOR COVERING OLD AIR INLET.
(25) EXPECTED STAT FOR OLD ROOM VENTILATION SYSTEM.
(26) STAT FOR ROOM EUH.
(27) REMOVE GRILLE AND DUCT AND PATCH WALL.
(28) RELOCATE STAT, SEE NEW WORK PLAN.
(29) REMOVE CURB AND PATCH ROOF.
(30) HHW TO/FROM FRONT LOBBY WEST RADIATION, DEMOLISH COMPLETE.
(31) FED DOWN FROM ABOVE.
(32) REMOVE EXISTING SA DUCTING. NEW LARGER DUCT WITH SIMILAR OUTLETS TO INSTALL IN GENERALLY THE SAME LOCATION AS EXISTING. BUT ADJUSTED FOR INSULATION BEING ADDED TO THE PROCESS PIPING. REPLACEMENT DUCTING WILL NEED TO RISE/FALL AS NEEDED TO WEAVE THRU PROCESS PIPING. EXISTING HANGERS/SUPPORTS CAN BE RE-USED IF IN ACCEPTABLE CONDITION.
(33) REMOVE INTAKE ASSEMBLY AND PREPARE FOR NEW EF DUCT PENETRATION.
(34) TO BE REPLACED BASICALLY IN-KIND.
(35) EXPECTED EXISTING FAN F-5 RELATED DISCONNECT AND H-O-A WHICH MUST BE REMOVED/RELOCATED.
(36) DUCT SERVING CLEARWELL BELOW.
(37) (2) STACKED INTAKE ASSEMBLIES WITH M.O.D.'S., CLEAN LOUVERS, SCREENS, AND DAMPERS, AND REPLACE OPERATORS. LUBRICATE, SERVICE AND ADJUST DAMPERS AND LINKAGES FOR FULL CLOSE/OPEN AND FOR SMOOTH OPERATION.
(38) 15KW AT 208/3/60.
(39) EXISTING PROCESS CHLORINE DETECTOR.
(40) REMOVE INSIDE GRILLE AND PREPARE FOR NEW MOD.
(41) ROOM INTAKE ASSEMBLY WITH M.O.D., CLEAN LOUVER, SCREEN, AND DAMPER, AND REPLACE OPERATOR. LUBRICATE, SERVICE, AND ADJUST DAMPER AND LINKAGES FOR FULL CLOSE/OPEN AND FOR SMOOTH OPERATION.



FILTER BUILDING - FIRST FLOOR HVAC DEMOLITION

SCALE: 3/32" = 1'-0"

N

STATE OF OHIO
JOSEPH M. VEROSTKO
E-54044
PETER J. VEROSTKO
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REGISTERED
PROFESSIONAL ENGINEER

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CINCINNATI, OHIO 45202

CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLAN &
WELL FIELD IMPROVEMENTS

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FILTER BUILDING FIRST FLOOR PLAN HVAC DEMOLITION

H-2

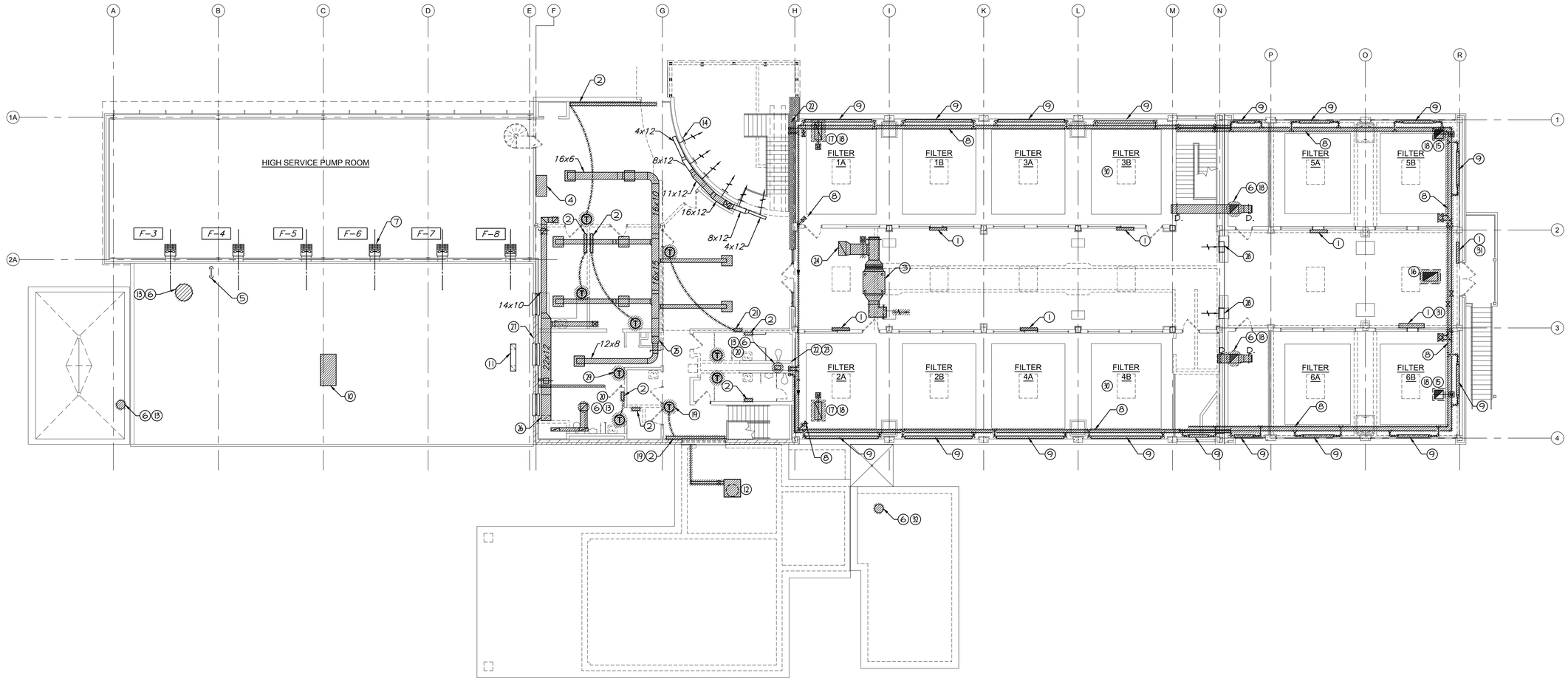
SHEET: OF

GENERAL NOTES

1. CROSS-HATCHED ITEMS TO BE REMOVED. IF WORK/ITEMS NOT CROSS-HATCHED, THEY ARE TO REMAIN.
2. WHEN REMOVING ITEMS SUCH AS ELECTRIC BASEBOARD HEATERS, REMOVE ITEM AND ASSOCIATED STAT AND CONTROL WIRING AND PATCH AND FINISH SURFACES AS REQUIRED TO MATCH.

CODED NOTES

(1) EXISTING ELECTRIC WALL HEATER.
(2) EXISTING ELECTRIC BASEBOARD HEATER.
(3) EXISTING OPERATOR AREA H&V SYSTEM WITH INTAKE DOWN FROM ROOF.
(4) EXISTING WALL A/C UNIT. PATCH WALL AFTER DEMO.
(5) EXISTING 12" STEEL PIPE CLEARWELL VENT.
(6) EXISTING ROOF EXHAUST FAN.
(7) EXISTING WALL PROP FAN TO REMAIN, TYPICAL OF 6.
(8) REMOVE HEATING HOT WATER PIPING, VALVES, HANGERS, ETC.
(9) REMOVE HOT WATER WALL RADIATOR AND ALL ASSOCIATED HARDWARE, PIPING, CONTROLS, SUPPORTS, ETC., AND PATCH AFTER REMOVAL.
(10) REMOVE ROOF INTAKE VENTILATOR AND CURB AND PATCH ROOF.
(11) EXISTING 8x8 BATTERY ROOM VENTILATION SYSTEM RELIEF GOOSENECK TO REMAIN.
(12) EXISTING ACCU SERVING 2ND FLOOR AHU IN BOILER ROOM, REMOVE UNIT/SYSTEM COMPLETE.
(13) CURB TO REMAIN.
(14) EXISTING SAG AND RUN-OUT DUCT TO REMAIN, TYPICAL OF 6.
(15) EXISTING 1000 CFM GIV, 16"x20" THROAT, REMOVE GIV, DAMPER, AND DUCT BELOW ROOF, AND CLEAN REMAINING DUCT/CURB.
(16) EXISTING 2,500 CFM GRV, 20"x30" THROAT, REMOVE GRV AND CURB AND PATCH ROOF.
(17) EXISTING 2,000 CFM GIV, 20"x30" THROAT, REMOVE GIV, DAMPER, AND DUCT BELOW ROOF, AND CLEAN REMAINING DUCT/CURB.
(18) ROOF OPENING AND CURB TO REMAIN.
(19) TO BE REPLACED BASICALLY IN KIND.
(20) FAN AND DUCTWORK TO BE REMOVED.
(21) REMOVE ELECTRIC HEATER AND PATCH TO MATCH.
(22) HWS/R LINES MAY BE ABANDONED IN PLACE IN CHASE/WALLS IF CAPPED AND APPROVED BY OWNER.
(23) REMOVE PIPING AS REQUIRED FOR NEW WORK.
(24) REMOVE INTAKE AND CURB AND PATCH ROOF.
(25) SA RISER FROM BELOW, PATCH FLOOR AFTER REMOVAL.
(26) RA DROP TO BELOW, PATCH FLOOR AFTER REMOVAL.
(27) PROPERLY PATCH WALL THIS AREA FROM REMOVAL OF OLD EXHAUST FAN.
(28) 24x16 AIR TRANSFER.
(29) FOR EXISTING HVAC UNIT.
(30) LOCATE AND REMOVE (AND PATCH) ANY CONTROLS ASSOCIATED WITH FILTER ROOM VENTILATION SYSTEM.
(31) HEATER TO BE REPLACED, SEE NEW WORK DRAWING.
(32) REMOVE CURB AND PATCH ROOF.



FILTER BUILDING - SECOND FLOOR AND LOWER ROOF HVAC DEMOLITION

SCALE: 3/32" = 1'-0"

STATE OF OHIO
JOSEPH M. VEROSTKO
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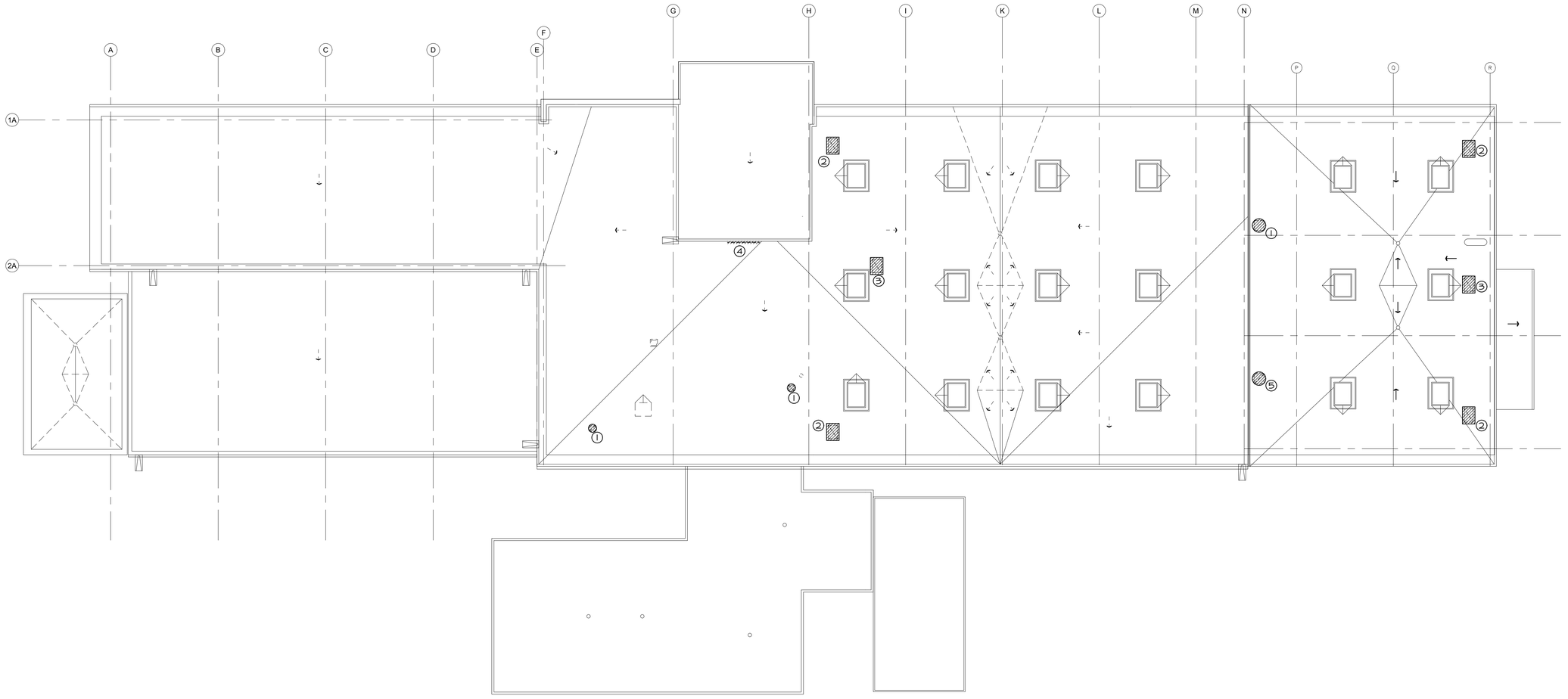
FILTER BUILDING SECOND FLOOR AND LOWER ROOF HVAC DEMOLITION

H-3

SHEET: OF



CODED NOTES

1. REMOVE EXISTING EXHAUST FAN, CURB TO REMAIN.
2. REMOVE EXISTING INTAKE VENTILATOR, CURB TO REMAIN.
3. REMOVE EXISTING VENTILATOR AND CURB AND PATCH ROOF.
4. REMOVE EXISTING CHASE RELIEF GRILLE, PATCH, INSULATE, AND RE-FLASH/RE-ROOF.
5. REMOVE EXISTING EXHAUST FAN AND CURB AND PATCH ROOF.

STATE OF OHIO
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FILTER BUILDING - UPPER ROOF PLAN HVAC DEMOLITION

SCALE: 3/32" = 1'-0"

N

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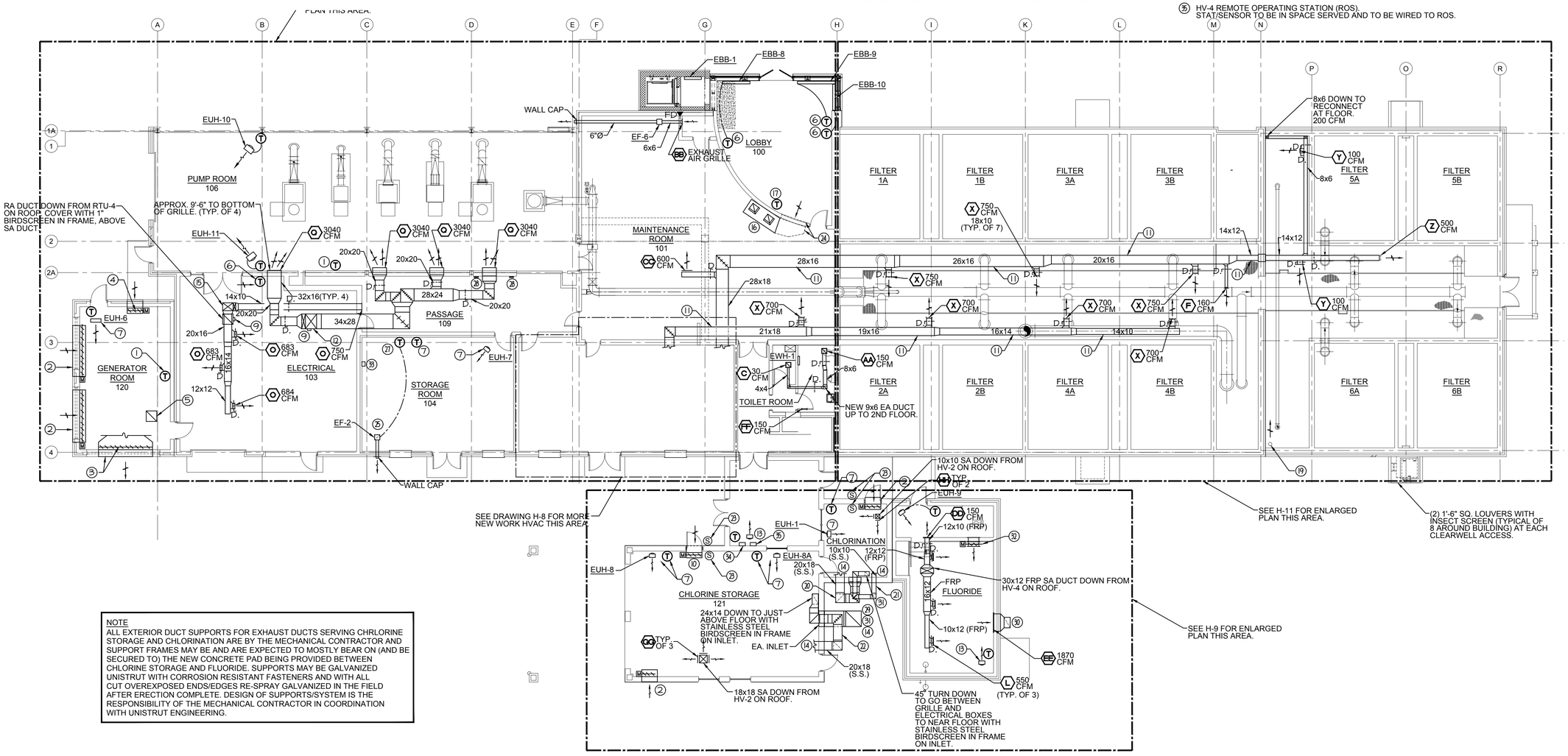
FILTER BUILDING
UPPER ROOF
PLAN HVAC
DEMOLITION

H-4

SHEET: OF

CODED NOTES

1. NEW PROPORTIONAL TEMPERATURE SENSOR FOR HSPR VENTILATION CONTROL.
2. SEE DRAWING H-2 FOR REQUIRED WORK.
3. CLEAN LOUVER AND SCREEN, AND REPLACE HEAVY DUTY GRAVITY SHUTTER.
4. CLEAN LOUVER AND SCREEN, AND REPLACE DAMPER AND OPERATOR.
5. REPLACE EXISTING ROOF EXHAUST FAN, SEE H-6.
6. NEW STAT.
7. NEW ELECTRIC UNIT HEATER AND STAT TO REPLACE ORIGINAL.
8. NOT USED.
9. DUCT SMOKE DETECTOR IN MAIN DUCT ABOVE ELBOWS.
10. EXTEND INTAKE ASSEMBLY ABOVE DOOR AND INSTALL MOD WITH BIRDSCREEN, TIE TO ROOM VENTILATION SYSTEM.
11. OFFSET DUCTS AS REQUIRED.
12. 34x34 SA DOWN FROM HV-1 SPLITTING INTO TWO VANED ELBOWS.
13. EXISTING ELECTRIC UNIT HEATER AND STAT TO REMAIN.
14. SEE H-6 FOR CONTINUATION ON ROOF.
15. 24x24 SA DOWN THRU EXISTING CURB FROM RTU-4 SPLIT TO HIT (2) ELBOWS AT BOTTOM OF DROP.
16. EXTEND EXISTING LOBBY RA PLENUM AND INSTALL (2) 16x14 RA DUCTS (WITH EXPANDED ENTRIES AT PLENUM) FROM PLENUM UP TO (2) EXISTING 16x14 DUCT RISERS NEAR CEILING.
17. NEW RTU-1 STAT.
18. NOT USED.
19. CLEARWELL RETURN AIR PIPE TO REMAIN.
20. 20x18 STAINLESS STEEL EA DUCT DOWN FROM APPROXIMATE 26x26 LOW WALL OPENING IN CHLORINATION. INSTALL DOUBLE WALL INSULATED ALUMINUM PANEL IN OPENING AND PENETRATE WITH DUCT. DUCT INLET TO HAVE 1" STAINLESS STEEL BIRDSCREEN IN FRAME. SEAL OPENING BLANK-OFF AND DUCT PENETRATION WEATHER-TIGHT. 2310 CFM. RISE DUCT TO ROOF.
21. 10x10 STAINLESS STEEL EA DUCT DOWN FROM APPROXIMATE 18x18 HIGH WALL OPENING IN CHLORINATION. INSTALL DOUBLE WALL INSULATED ALUMINUM PANEL IN OPENING AND PENETRATE WITH DUCT. DUCT INLET TO HAVE 1" STAINLESS STEEL BIRDSCREEN IN FRAME. SEAL OPENING BLANK-OFF AND DUCT PENETRATION WEATHER-TIGHT. 450 CFM. RISE DUCT TO ROOF.
22. 20x18 STAINLESS STEEL EA DUCT UP FROM APPROXIMATE 24x24 HIGH WALL OPENING IN CHLORINE STORAGE. INSTALL DOUBLE WALL INSULATED ALUMINUM PANEL IN OPENING AND PENETRATE WITH DUCT. DUCT INLET TO HAVE 1" STAINLESS STEEL BIRDSCREEN IN FRAME. SEAL OPENING BLANK-OFF AND DUCT PENETRATION WEATHER-TIGHT. 2310 CFM. RISE DUCT TO ROOF.
23. NEW LABELED EMERGENCY VENTILATION SYSTEM PUSHBUTTON WITH FAN-ON PILOT LIGHT. OUTDOOR PUSHBUTTONS AND LIGHTS TO BE WEATHER-PROOF.
24. EXISTING LOBBY RA GRILLE, DUCT THROUGH WALL, AND PLENUM SECTION IN MAINTENANCE ROOM TO REMAIN.
25. NEW STORAGE ROOM EF.
26. NOT USED.
27. NEW STAT FOR STORAGE ROOM EF.
28. EXISTING CONDUITS TO AVOID.
29. 36x36 STAINLESS STEEL EA DUCT UP FROM 36x36 (ENLARGED FROM APPROXIMATE 32x30) LOW WALL OPENING IN CHLORINE STORAGE DUCT INLET TO HAVE 1" STAINLESS STEEL BIRDSCREEN IN FRAME. SEAL DUCT PENETRATION WEATHER-TIGHT 11,495 CFM. RISE DUCT TO ROOF.
30. 24x14 FRP EA DUCT UP FROM APPROXIMATE 40x16 WALL OPENING IN FLUORIDE. INSTALL DOUBLE WALL INSULATED FRP PANEL IN OPENING AND PENETRATE WITH DUCT. SEAL OPENING BLANK-OFF AND DUCT PENETRATION WEATHER-TIGHT. 1870 CFM. RISE DUCT TO ROOF.
31. CONTRACTOR TO SUPPORT DUCTS THIS AREA OUTSIDE WITH STAINLESS STEEL UNISTRUT SYSTEM BEARING ON AND SECURED TO NEW CONCRETE SLAB.
32. FRP MOTORIZED DAMPER WITH 16x8 FRP SLEEVE FOR ROOM PRESSURE CONTROL.
33. HV-1 REMOTE OPERATING STATION.
34. HV-2 REMOTE OPERATING STATION (ROS). ROOM TEMP OVERRIDE STAT/SENSOR TO BE IN SPACE SERVED AND TO BE WIRED TO ROS.
35. HV-4 REMOTE OPERATING STATION (ROS). STAT/SENSOR TO BE IN SPACE SERVED AND TO BE WIRED TO ROS.



NOTE
ALL EXTERIOR DUCT SUPPORTS FOR EXHAUST DUCTS SERVING CHRLORINE STORAGE AND CHLORINATION ARE BY THE MECHANICAL CONTRACTOR AND SUPPORT FRAMES MAY BE AND ARE EXPECTED TO MOSTLY BEAR ON (AND BE SECURED TO) THE NEW CONCRETE PAD BEING PROVIDED BETWEEN CHLORINE STORAGE AND FLUORIDE. SUPPORTS MAY BE GALVANIZED UNISTRUT WITH CORROSION RESISTANT FASTENERS AND WITH ALL CUT OVEREXPOSED ENDS/EDGES RE-SPRAY GALVANIZED IN THE FIELD AFTER ERECTION COMPLETE. DESIGN OF SUPPORTS/SYSTEM IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR IN COORDINATION WITH UNISTRUT ENGINEERING.

FILTER BUILDING - FIRST FLOOR NEW WORK HVAC

SCALE: 3/32" = 1'-0"

STATE OF OHIO
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PETER J. VEROSTKO E-75283
REGISTERED PROFESSIONAL ENGINEER

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FILTER BUILDING FIRST FLOOR PLAN NEW WORK HVAC

H-5

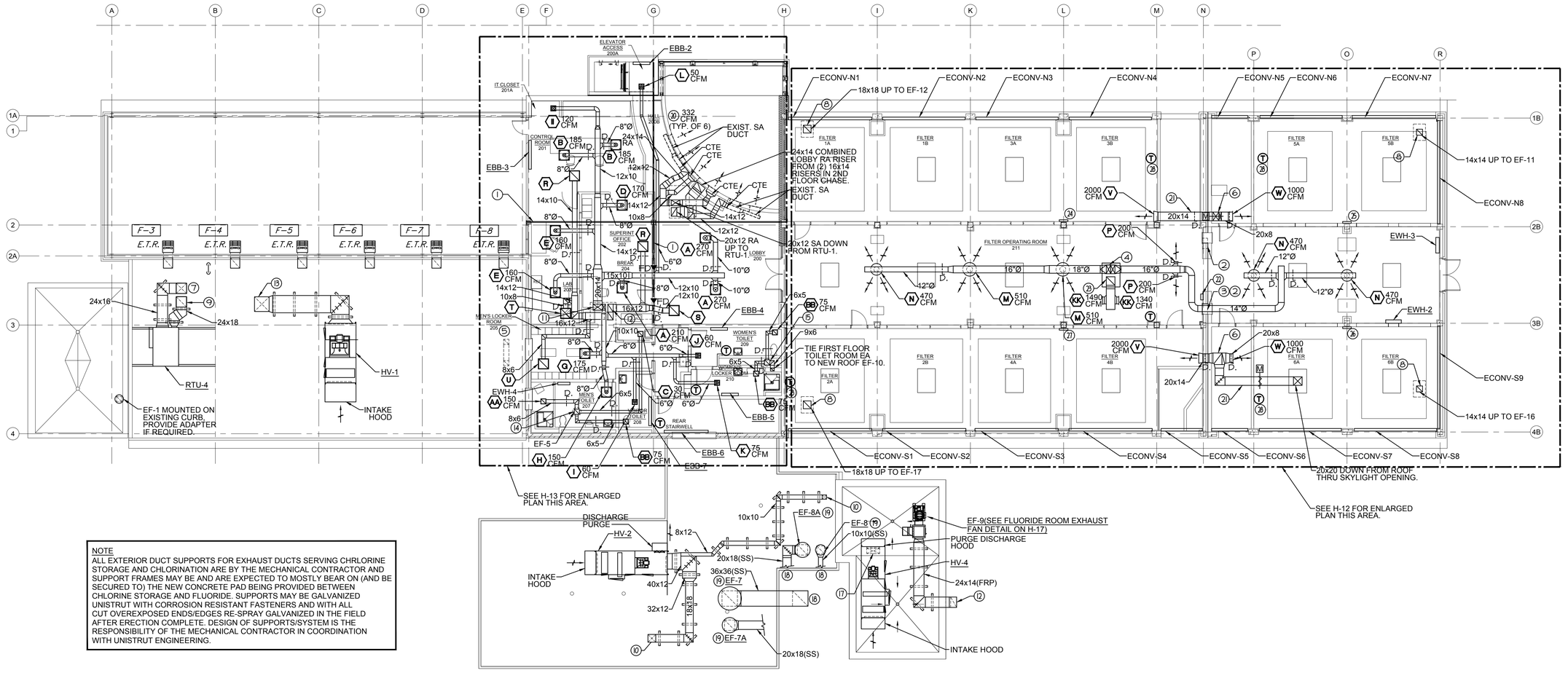
SHEET: OF

GENERAL NOTES

1. LOCATE OFFICE/CONTROL AREA STAT FOR RTU-3 PER OWNER.

CODED NOTES

1. BEAM IN SECOND FLOOR CEILING AREA WORK MUST PASS UNDER. TRANSITION/OFFSET DUCTS AS REQUIRED.
2. EXISTING AIR TRANSFER TO REMAIN.
3. REMOVE GRILLES BOTH SIDES FOR NEW DUCT INSTALLATION.
4. NEW 20x20 SA DOWN THRU EXISTING SKYLIGHT OPENING FROM RTU-2 ON ROOF SPLITTING INTO TWO VANED ELBOWS.
5. EXISTING GOOSENECK TO REMAIN.
6. NEW 20x20 SA FROM HV-5 ON ROOF SPLITTING INTO TWO VANED ELBOWS. INSTALL MOD IN DROP ABOVE ELBOWS.
7. 24x24 SA DUCT FROM RTU-4 DOWN TO ELECTRIC ROOM THRU EXISTING CURB.
8. ADD NEW FULL SIZE FRP DUCT STUB BELOW ROOF TO HOUSE MOTORIZED FRP DAMPER WITH CORROSIVE LOCATION OPERATOR/ENCLOSURE, AND WITH 1"x1" 304L STAINLESS SCREEN IN STAINLESS FRAME ON INLET. SEAL DUCT AT ROOF CURB.
9. 24x24 ELECTRIC ROOM RA DUCT UP THRU NEW CURB TO RTU-4.
10. STAINLESS STEEL SA DUCT DOWN THRU NEW INSULATED STAINLESS STEEL CURB.
11. 28x14 SA DOWN THRU ROOF FROM RTU-3 SPLITTING INTO (2) VANED ELBOWS.
12. 36x12 RA DOWN THRU ROOF FROM RTU-3 SPLITTING INTO TWO VANED ELBOWS.
13. 34x34 SA DOWN THRU NEW CURB FROM HV-1.
14. 10"x10" EA DUCT UP TO EF-5 THRU EXISTING CURB.
15. 10"x10" EA DUCT UP TO EF-10 THRU EXISTING CURB.
16. NOT USED.
17. FRP SA DUCT DOWN THRU ROOF.
18. SEE H-5 AND H-9 FOR CONTINUATION.
19. SEE DETAIL RF ON SHEET H-16.
20. CLEAN AND RE-USE EXISTING SA GRILLES.
21. SA DUCTWORK ALL STAINLESS STEEL.
22. HV-5 REMOTE OPERATING STATION (ROS). ROOM TEMP OVERRIDE STAT/SENSOR TO BE IN SPACE SERVED AND BE WIRED TO ROS.
23. 20x20 RA UP TO RTU-2.
24. CONTROL PANEL FOR NW FILTER ROOM PERIMETER HEAT, (4) CONTACTORS.
25. CONTROL PANEL FOR NE FILTER ROOM PERIMETER HEAT, (4) CONTACTORS.
26. CONTROL PANEL FOR SE FILTER ROOM PERIMETER HEAT, (4) CONTACTORS.
27. CONTROL PANEL FOR SW FILTER ROOM PERIMETER HEAT, (5) CONTACTORS.
28. LOW VOLTAGE STAT FOR FILTER ROOM PERIMETER HEAT, WIRE TO CONTACTORS IN ROOM CONTROL PANEL.



NOTE
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FILTER BUILDING - SECOND FLOOR AND LOWER ROOF NEW WORK HVAC

SCALE: 3/32" = 1'-0"

STATE OF OHIO
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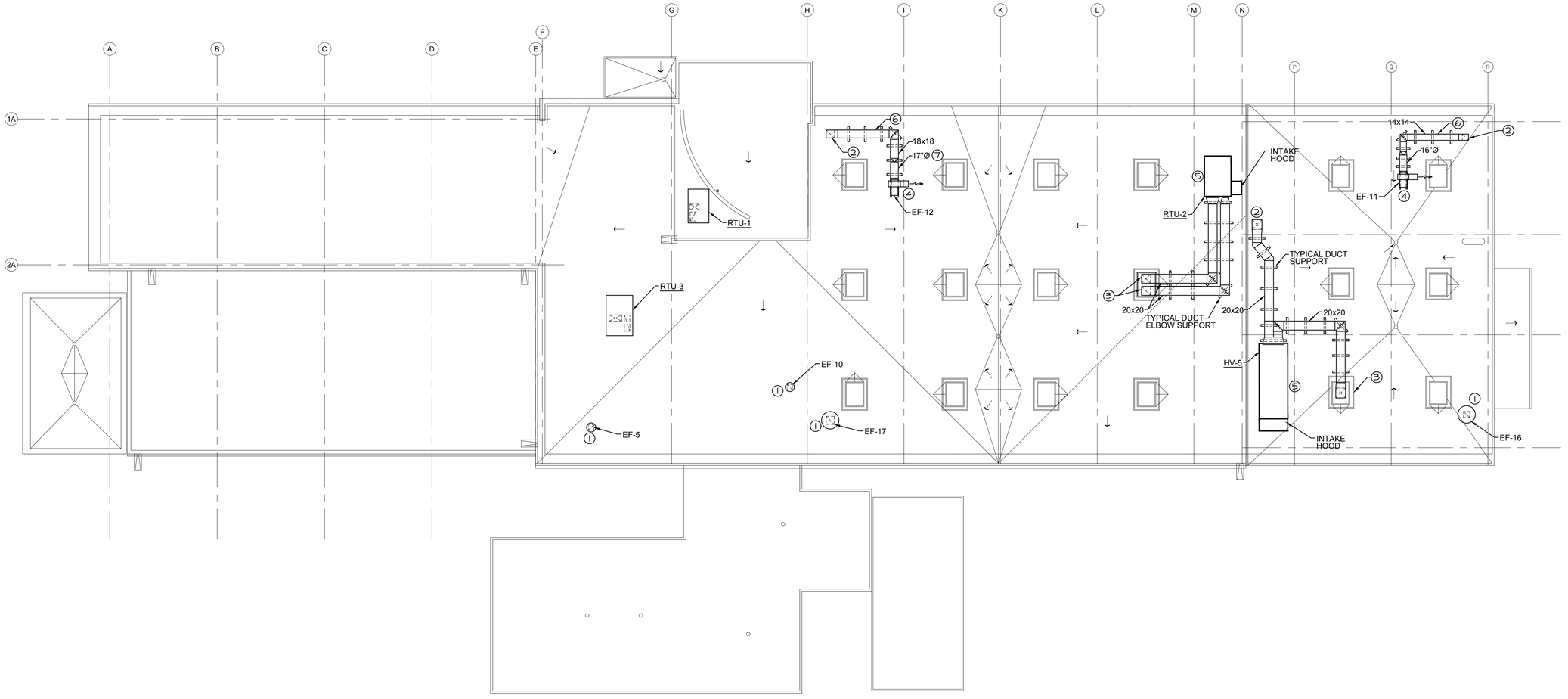
FILTER BUILDING SECOND FLOOR AND LOWER ROOF NEW WORK HVAC

H-6

SHEET: OF

CODED NOTES

1. MOUNT UPBLAST FAN ON EXISTING CURB, ADAPT TO SAME. SEE FAN SCHEDULE FOR MORE INFORMATION.
2. DUCT DOWN THRU EXISTING CURB, ADAPT TO SAME. ELBOW AND DROP TO BE STAINLESS STEEL.
3. DUCT THRU EXISTING SKYLIGHT OPENING. ELBOW AND DROP TO BE STAINLESS STEEL.
4. MOUNT CENTRIFUGAL FAN ON NEW ROOF RAILS. SEE ROOF VENT SET FAN DETAILS ON SHEET H-12.
5. SEE STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR UNIT SUPPORT.
6. EA DUCTING FRP.
7. OR AS REQUIRED TO CONNECT TO FAN.



FILTER BUILDING - UPPER ROOF PLAN HVAC

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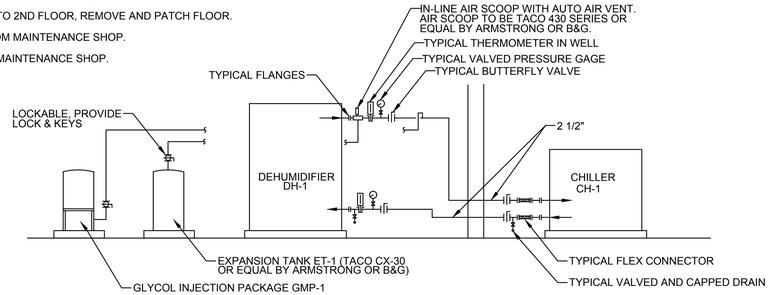
FILTER BUILDING
UPPER ROOF
PLAN HVAC

H-7

SHEET: OF

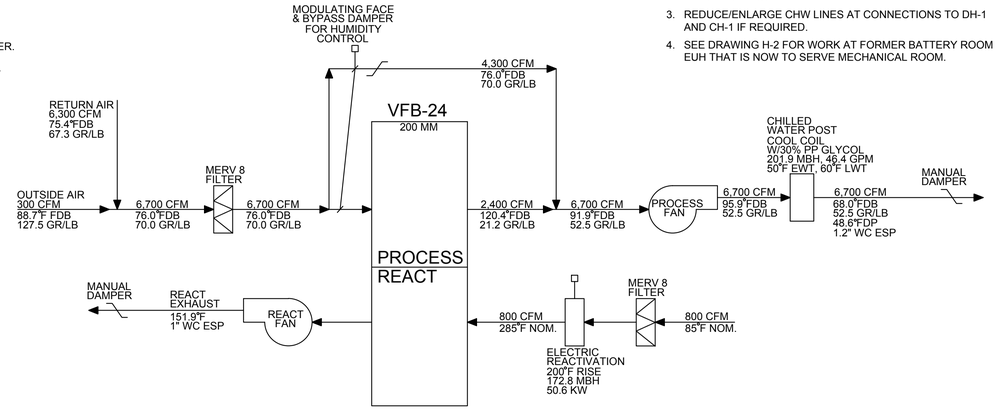
CODED NOTES

1. EXISTING HHW SYSTEM SHOT FEEDER (PIPING NOT SHOWN).
2. EXISTING CURB WITH PAD INSIDE FOR EXISTING DEHUMIDIFIER, REMOVE.
3. EXISTING DEHUMIDIFIER ON PAD INSIDE CURBED AREA.
4. EXISTING STEAM-TO-WATER HEAT EXCHANGER ON PAD.
5. EXISTING STEAM BOILER ON PAD.
6. EXISTING STEEL PIPE DEHUMIDIFIER DISCHARGE.
7. EXISTING 11 KW DUCT COIL.
8. EXISTING PAD.
9. EXISTING STEAM CONDENSATE RETURN PUMP (PIPING NOT SHOWN).
10. EXISTING BATTERY ROOM SUPPLY FAN TO BE REMOVED.
11. EXISTING AHU-1 DISCONNECT.
12. EXISTING ELECTRICAL PANEL.
13. EXISTING TELEPHONE PANEL.
14. EXISTING HVAC CONTROL PANEL.
15. EXISTING ELECTRICAL GEAR BEING REPLACED.
16. EXISTING 2ND FLOOR HVAC UNIT (PIPING NOT SHOWN BUT MUST ALL BE REMOVED).
17. EXISTING R.A. FROM 2ND FLOOR, REMOVE AND PATCH FLOOR.
18. EXISTING S.A. UP TO 2ND FLOOR, REMOVE AND PATCH FLOOR.
19. EXISTING R.A. FROM MAINTENANCE SHOP.
20. EXISTING S.A. TO MAINTENANCE SHOP.
21. EXPECTED SENSOR FOR DEHUMIDIFICATION SYSTEM, VERIFY IN FIELD. REMOVE IF VERIFIED, AND IF NO LONGER NEEDED. IF STILL NEEDED FOR DH-1, INSTALL NEW.
22. EXISTING HHW SYSTEM EXPANSION TANK AT CEILING.
23. EXPECTED OLD INCINERATOR FLUE/CHIMNEY, REMOVE AND PATCH.
24. APPROXIMATE LOCATION OF EXISTING DUCT SMOKE DETECTOR.
25. P-1 PUMP CONTROLS.
26. DUCTS CONTINUE TO/FROM DEHUMIDIFIER, REMOVE SAME.
27. BEING REMOVED BY P.C.
28. NEW DEHUMIDIFIER PAD.
29. CONSTRUCT NEW PAD TO MISS FLOOR DRAIN.
30. 60" SERVICE CLEARANCE.
31. 40" SERVICE CLEARANCE.
32. 48" SERVICE CLEARANCE.
33. APPROX. 4.5"x6" DEHUMIDIFIER REACTIVATION AIR OUTLET, DUCT TO OLD DEHUMIDIFIER DISCHARGE PIPE NEAR DOUBLE DOOR. DUCT/PIPE TO BE WELDED 1/4" BLACK STEEL AND/OR WELDED SCHEDULE 40 BLACK STEEL PIPE. INSTALL TO ALLOW FOR EXPANSION.
34. 4"Ø DEHUMIDIFIER REACTIVATION AIR INLET WITH MANUAL DAMPER TO BE DUCTED OUTSIDE. TRANSITION DUCT AS REQUIRED.
35. DEHUMIDIFIER PROCESS AIR SUPPLY TO PIPE GALLERY, SEE DRAWING H-6 FOR CONTINUATION.
36. DEHUMIDIFIER PROCESS AIR RETURN (AS HIGH AS POSSIBLE) FROM PIPE GALLERY. COVER WITH 1" GALVANIZED BIRDSCREEN IN FRAME.
37. RE-USE FOR DEHUMIDIFIER REACTIVATION AIR INTAKE, CLEAN GRILLE.
38. EXPECTED AREA FOR CHW CONNECTIONS AT DH-1, SEE PIPING SCHEMATIC.
39. PROCESS AIR SCOUR UNIT BY G.C.
40. INSTALL OSHA INLET GRILLE/SCREEN ASSEMBLY ON FAN.
41. ELECTRICAL GEAR AND ASSOCIATED CONDUITS BEING REMOVED.
42. SHADED TEMPERATURE SENSOR. VERIFY, REMOVE IF NO LONGER NEEDED.
43. MAIN DH-1 ELECTRICAL/CONTROL CABINET.
44. REPLACE DISCHARGE CAP AND SCREEN AT TOP OF RISER.
45. LOCATION FOR NEW ATC PANEL BELOW DUCT ON WALL.
46. NEW DUCT SMOKE DETECTOR.
47. HANG NEW FAN EF-3 FROM CEILING AND RUN NEW DISCHARGE DUCT WITH TRANSITION TO 44x16 LOUVER ASSEMBLY, INSTALL WITH NEW MOD AND FLEX DUCT CONNECTION.
48. INSTALL NEW 44x16 INTAKE LOUVER IN TOP WINDOW PANE WITH SLEEVE AND MOD. TIE TO SPACE EXHAUST FAN.
49. ROTATED AND RE-INSTALLED FORMER BATTERY ROOM ELECTRIC UNIT HEATER AND RE-INSTALLED STAT, ALL WIRING BY ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATIONS IN FIELD.
50. LOCATE DH-1 SYSTEM GLYCOL INJECTION UNIT HERE AND PIPE TO SYSTEM.
51. NEW ATC PANEL, 120V POWER BY ELECTRICAL CONTRACTOR.
52. LOCATE DH-1 SYSTEM EXPANSION TANK AND AIR SEPARATOR THIS AREA, COORDINATE WITH FIELD CONDITIONS.
53. CONTROL PANEL FOR DH-1/CH-1 SYSTEM.
54. NEW ELECTRICAL GEAR.



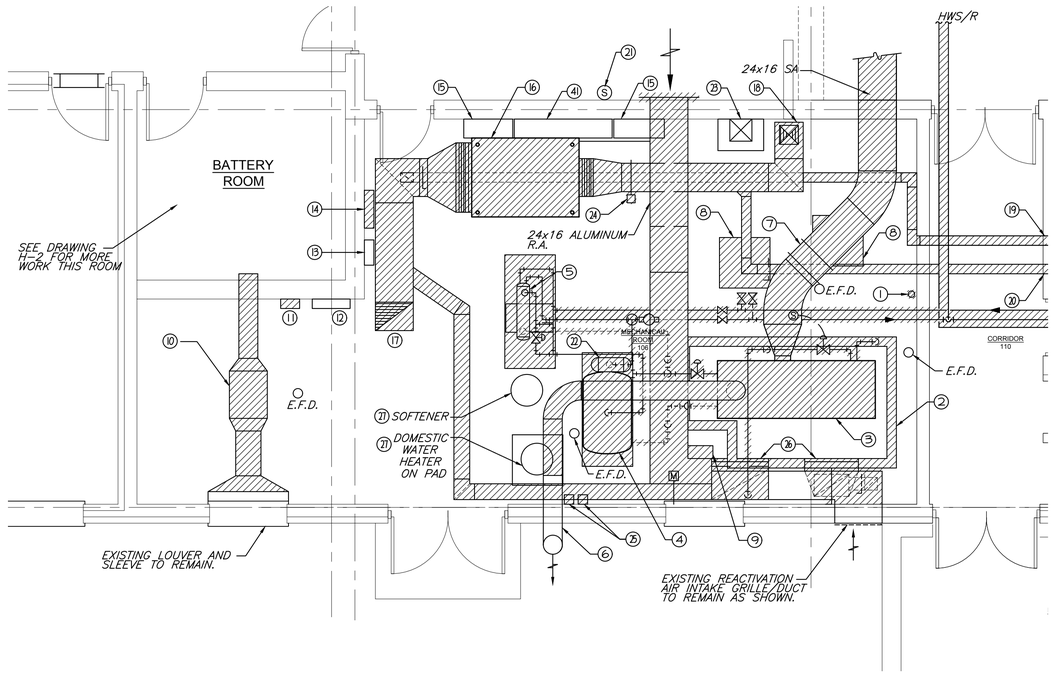
DEHUMIDIFIER DH-1 PIPING SCHEMATIC

SCALE: NTS



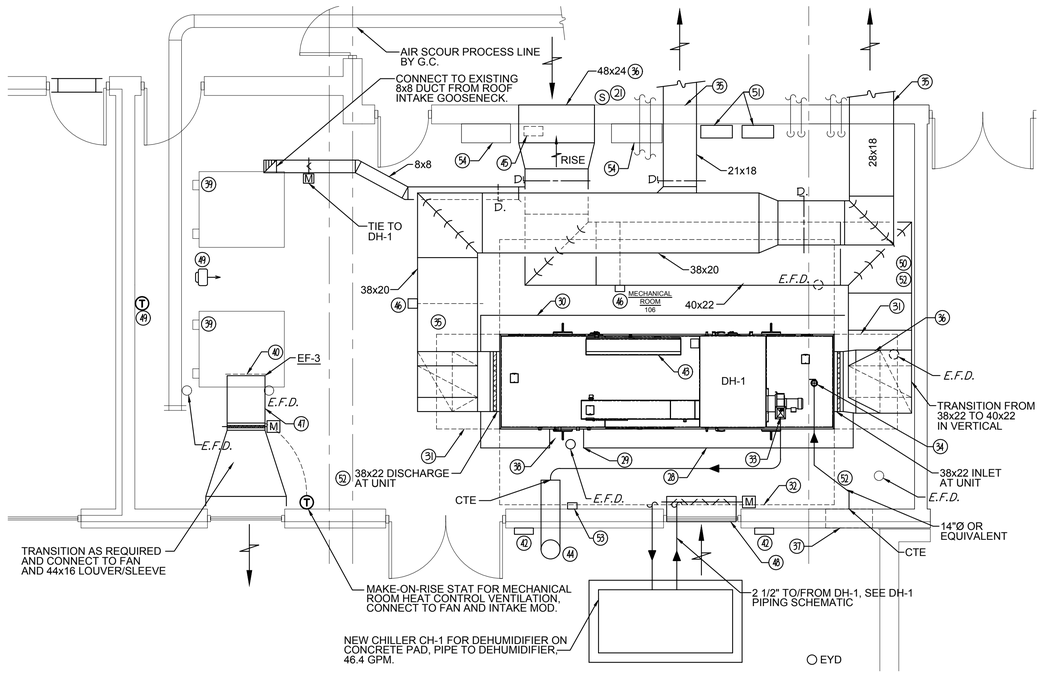
DEHUMIDIFIER DH-1 PROCESS SCHEMATIC

SCALE: NTS



ENLARGED BOILER ROOM MECHANICAL DEMOLITION PLAN

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



ENLARGED MECHANICAL ROOM NEW WORK PLAN

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

GENERAL NOTES

1. PATCH FLOORS FROM REMOVAL OF ALL PADS AND CURBS AND PATCH WALLS AS REQUIRED FROM DEMOLITION.
2. REMOVE EXISTING STEAM SYSTEM, STEAM CONDENSATE SYSTEM, DEHUMIDIFICATION SYSTEM, 2ND FLOOR HVAC SYSTEM, AND ENTIRE HEATING HOT WATER SYSTEM COMPLETE INCLUDING HANGERS AND SUPPORTS. PATCH AS REQUIRED.
3. REDUCE/ENLARGE CHW LINES AT CONNECTIONS TO DH-1 AND CH-1 IF REQUIRED.
4. SEE DRAWING H-2 FOR WORK AT FORMER BATTERY ROOM EUH THAT IS NOW TO SERVE MECHANICAL ROOM.

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CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLAN &
WELL FIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE

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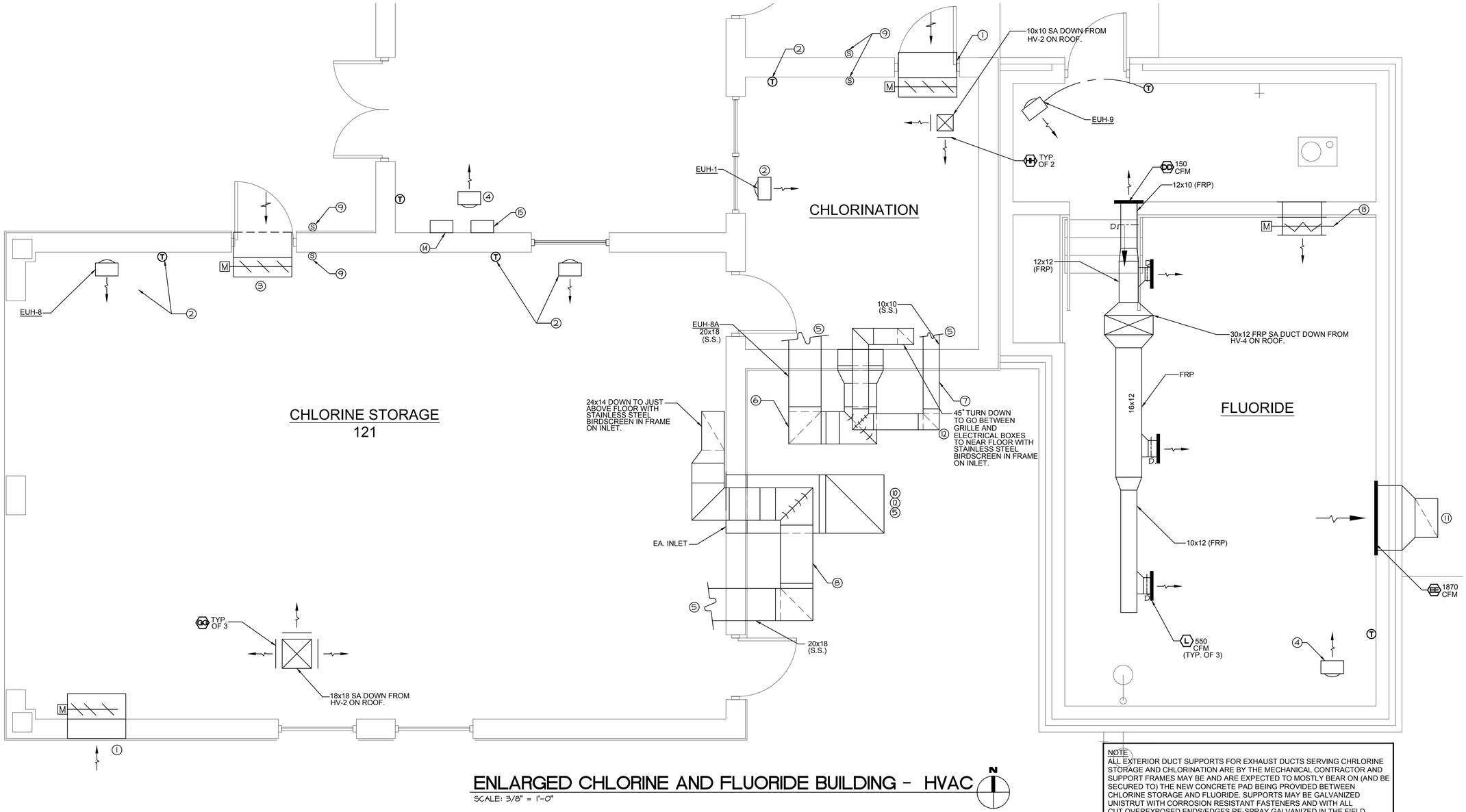
FILTER BUILDING FIRST FLOOR ENLARGED BOILER AND MECHANICAL ROOM PLANS

H-8

SHEET: OF

CODED NOTES

1. SEE DRAWING H-2 FOR REQUIRED WORK.
2. NEW ELECTRIC UNIT HEATER AND STAT TO REPLACE ORIGINAL.
3. EXTEND INTAKE ASSEMBLY ABOVE DOOR AND INSTALL MOD WITH BIRDSCREEN, TIE TO ROOM VENTILATION SYSTEM.
4. EXISTING ELECTRIC UNIT HEATER AND STAT TO REMAIN.
5. SEE H-6 FOR CONTINUATION ON ROOF.
6. 20x18 STAINLESS STEEL EA DUCT DOWN FROM APPROXIMATE 26x26 LOW WALL OPENING IN CHLORINATION. INSTALL DOUBLE WALL INSULATED ALUMINUM PANEL IN OPENING AND PENETRATE WITH DUCT. DUCT INLET TO HAVE 1" STAINLESS STEEL BIRDSCREEN IN FRAME. SEAL OPENING BLANK-OFF AND DUCT PENETRATION WEATHER-TIGHT. 2310 CFM. RISE DUCT TO ROOF.
7. 10x10 STAINLESS STEEL EA DUCT DOWN FROM APPROXIMATE 18x18 HIGH WALL OPENING IN CHLORINATION. INSTALL DOUBLE WALL INSULATED ALUMINUM PANEL IN OPENING AND PENETRATE WITH DUCT. DUCT INLET TO HAVE 1" STAINLESS STEEL BIRDSCREEN IN FRAME. SEAL OPENING BLANK-OFF AND DUCT PENETRATION WEATHER-TIGHT. 450 CFM. RISE DUCT TO ROOF.
8. 20x18 STAINLESS STEEL EA DUCT UP FROM APPROXIMATE 24x24 HIGH WALL OPENING IN CHLORINE STORAGE. INSTALL DOUBLE WALL INSULATED ALUMINUM PANEL IN OPENING AND PENETRATE WITH DUCT. DUCT INLET TO HAVE 1" STAINLESS STEEL BIRDSCREEN IN FRAME. SEAL OPENING BLANK-OFF AND DUCT PENETRATION WEATHER-TIGHT. 2310 CFM. RISE DUCT TO ROOF.
9. NEW LABELED EMERGENCY VENTILATION SYSTEM PUSHBUTTON WITH FAN-ON PILOT LIGHT. OUTDOOR PUSHBUTTONS AND LIGHTS TO BE WEATHER-PROOF.
10. 36x36 STAINLESS STEEL EA DUCT UP FROM 36x36 (ENLARGED FROM APPROXIMATE 32x30) LOW WALL OPENING IN CHLORINE STORAGE DUCT INLET TO HAVE 1" STAINLESS STEEL BIRDSCREEN IN FRAME. SEAL DUCT PENETRATION WEATHER-TIGHT 11,495 CFM. RISE DUCT TO ROOF.
11. 24x14 FRP EA DUCT UP FROM APPROXIMATE 40x16 WALL OPENING IN FLUORIDE. INSTALL DOUBLE WALL INSULATED FRP PANEL IN OPENING AND PENETRATE WITH DUCT. SEAL OPENING BLANK-OFF AND DUCT PENETRATION WEATHER-TIGHT. 1870 CFM. RISE DUCT TO ROOF.
12. CONTRACTOR TO SUPPORT DUCTS THIS AREA OUTSIDE WITH STAINLESS STEEL UNISTRUT SYSTEM BEARING ON AND SECURED TO NEW CONCRETE SLAB.
13. FRP MOTORIZED DAMPER WITH 16x8 FRP SLEEVE FOR ROOM PRESSURE CONTROL.
14. HV-2 REMOTE OPERATING STATION (ROS). ROOM TEMP OVERRIDE STAT/SENSOR TO BE IN SPACE SERVED AND TO BE WIRED TO ROS.
15. HV-4 REMOTE OPERATING STATION (ROS). STAT/SENSOR TO BE IN SPACE SERVED AND TO BE WIRED TO ROS.



ENLARGED CHLORINE AND FLUORIDE BUILDING - HVAC

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

NOTE
ALL EXTERIOR DUCT SUPPORTS FOR EXHAUST DUCTS SERVING CHRLORINE STORAGE AND CHLORINATION ARE BY THE MECHANICAL CONTRACTOR AND SUPPORT FRAMES MAY BE AND ARE EXPECTED TO MOSTLY BEAR ON (AND BE SECURED TO) THE NEW CONCRETE PAD BEING PROVIDED BETWEEN CHLORINE STORAGE AND FLUORIDE. SUPPORTS MAY BE GALVANIZED UNISTRUT WITH CORROSION RESISTANT FASTENERS AND WITH ALL CUT OVEREXPOSED ENDS/EDGES RE-SPRAY GALVANIZED IN THE FIELD AFTER ERECTION COMPLETE. DESIGN OF SUPPORTS/SYSTEM IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR IN COORDINATION WITH UNISTRUT ENGINEERING.

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SUGAR CREEK
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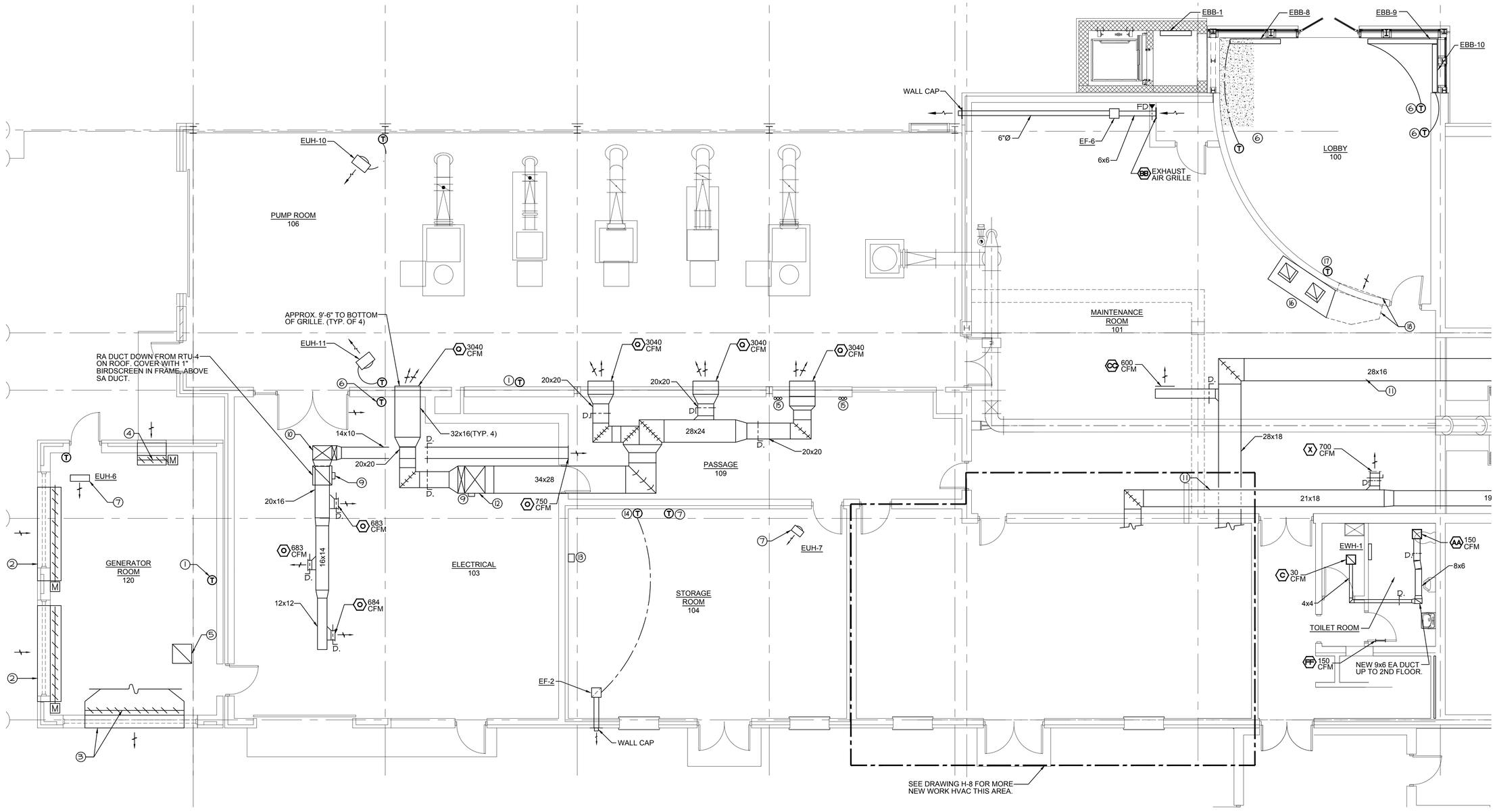
ENLARGED CHLORINE AND FLUORIDE BUILDING HVAC

H-9

SHEET: OF

CODED NOTES

1. NEW PROPORTIONAL TEMPERATURE SENSOR FOR HSPR VENTILATION CONTROL.
2. SEE DRAWING H-2 FOR REQUIRED WORK.
3. CLEAN LOUVER AND SCREEN, AND REPLACE HEAVY DUTY GRAVITY SHUTTER.
4. CLEAN LOUVER AND SCREEN, AND REPLACE DAMPER AND OPERATOR.
5. REPLACE EXISTING ROOF EXHAUST FAN, SEE H-6.
6. NEW STAT.
7. NEW ELECTRIC UNIT HEATER AND STAT TO REPLACE ORIGINAL.
8. NOT USED.
9. DUCT SMOKE DETECTOR IN MAIN DUCT ABOVE ELBOWS.
10. 24x24 SA DOWN THRU EXISTING CURB FROM RTU-4 SPLIT TO HIT (2) ELBOWS AT BOTTOM OF DROP.
11. OFFSET DUCTS AS REQUIRED.
12. 34x34 SA DOWN FROM HV-1 SPLITTING INTO TWO VANED ELBOWS.
13. HV-1 REMOTE OPERATING STATION.
14. NEW STAT FOR STORAGE ROOM EF.
15. EXISTING CONDUITS TO AVOID.
16. EXTEND EXISTING LOBBY RA PLENUM AND INSTALL (2) 16x14 RA DUCTS (WITH EXPANDED ENTRIES AT PLENUM) FROM PLENUM UP TO (2) EXISTING 16x14 DUCT RISERS NEAR CEILING.
17. NEW RTU-1 STAT.
18. EXISTING LOBBY RA GRILLE, DUCT THROUGH WALL, AND PLENUM SECTION IN MAINTENANCE ROOM TO REMAIN.



FILTER BUILDING - ENLARGED FIRST FLOOR PLAN NEW WORK HVAC (WEST)

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

N

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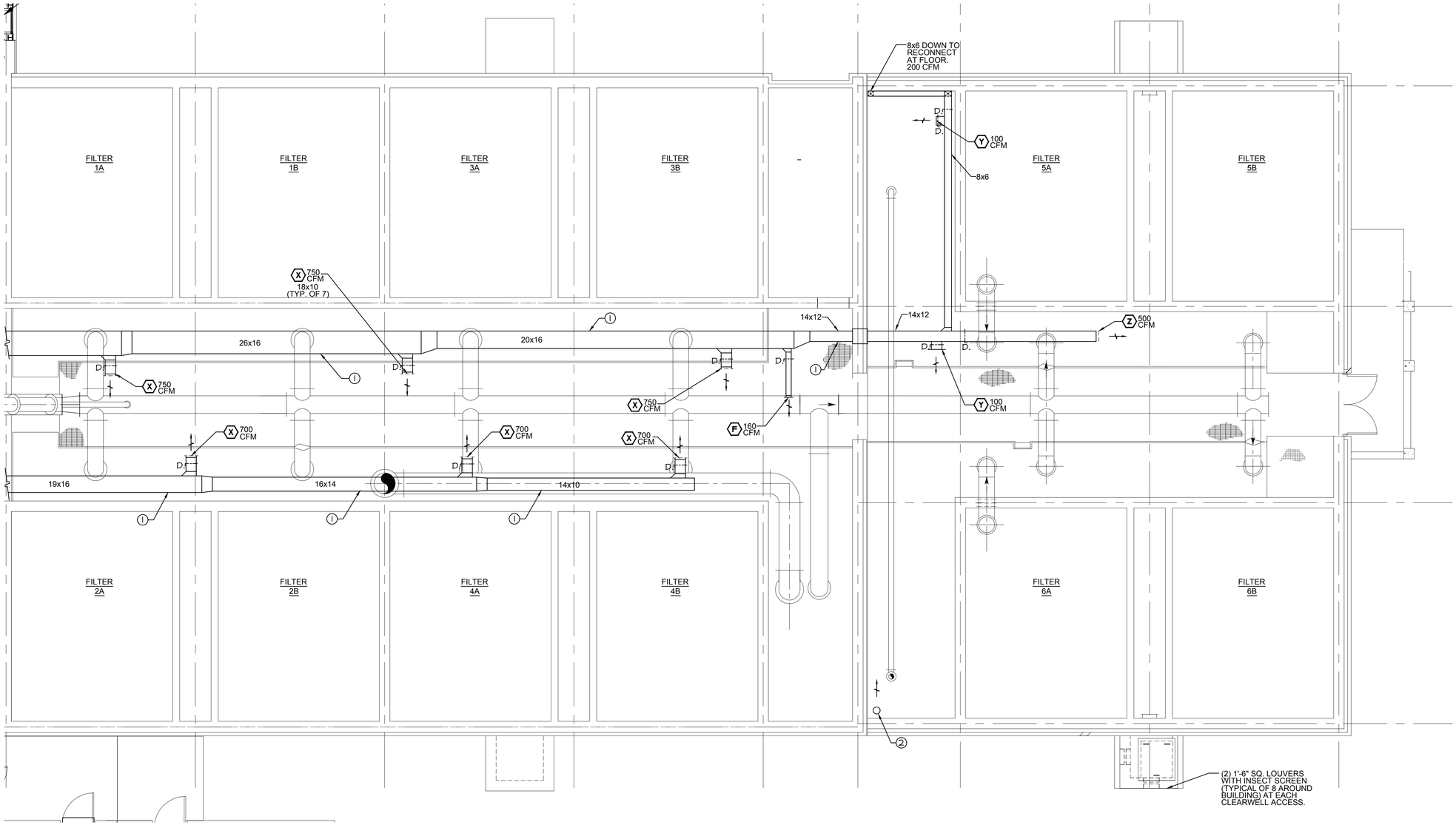
ENLARGED FILTER BUILDING FIRST FLOOR PLAN NEW WORK HVAC (WEST)

H-10

SHEET: OF

CODED NOTES

1. OFFSET DUCTS AS REQUIRED.
2. CLEARWELL RETURN PIPE TO REMAIN.



FILTER BUILDING - ENALRGED FIRST FLOOR PLAN NEW WORK HVAC (EAST)

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

N

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ENLARGED FILTER BUILDING FIRST FLOOR PLAN NEW WORK HVAC (EAST)

H-11

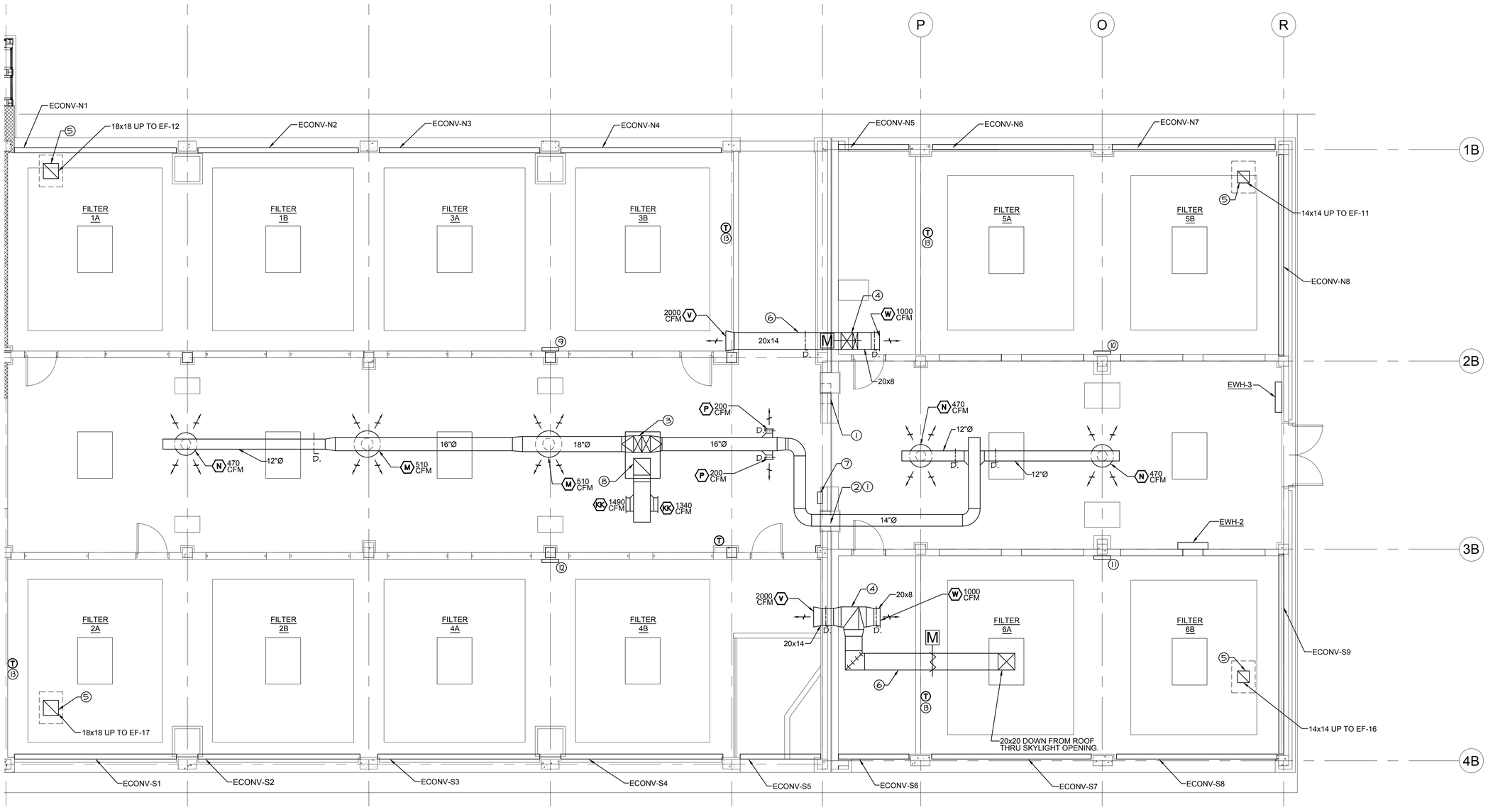
SHEET: OF

GENERAL NOTES

1. LOCATE OFFICE/CONTROL AREA STAT FOR RTU-3 PER OWNER.

CODED NOTES

(1) EXISTING AIR TRANSFER TO REMAIN.
(2) REMOVE GRILLES BOTH SIDES FOR NEW DUCT INSTALLATION.
(3) NEW 20x20 SA DOWN THRU EXISTING SKYLIGHT OPENING FROM RTU-2 ON ROOF SPLITTING INTO TWO VANED ELBOWS.
(4) NEW 20x20 SA FROM HV-5 ON ROOF SPLITTING INTO TWO VANED ELBOWS. INSTALL MOD IN DROP ABOVE ELBOWS.
(5) ADD NEW FULL SIZE FRP DUCT STUB BELOW ROOF TO HOUSE MOTORIZED FRP DAMPER WITH CORROSIVE LOCATION OPERATOR/ENCLOSURE, AND WITH 1"x1" 304L STAINLESS SCREEN IN STAINLESS FRAME ON INLET. SEAL DUCT AT ROOF CURB.
(6) SA DUCTWORK ALL STAINLESS STEEL.
(7) HV-5 REMOTE OPERATING STATION (ROS). ROOM TEMP OVERRIDE STAT/SENSOR TO BE IN SPACE SERVED AND BE WIRED TO ROS.
(8) 20x20 RA UP TO RTU-2.
(9) CONTROL PANEL FOR NW FILTER ROOM PERIMETER HEAT, (4) CONTACTORS.
(10) CONTROL PANEL FOR NE FILTER ROOM PERIMETER HEAT, (4) CONTACTORS.
(11) CONTROL PANEL FOR SE FILTER ROOM PERIMETER HEAT, (4) CONTACTORS.
(12) CONTROL PANEL FOR SW FILTER ROOM PERIMETER HEAT, (5) CONTACTORS.
(13) LOW VOLTAGE STAT FOR FILTER ROOM PERIMETER HEAT, WIRE TO CONTACTORS IN ROOM CONTROL PANEL.



FILTER BUILDING - ENLARGED SECOND FLOOR NEW WORK HVAC (EAST)

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

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ENLARGED FILTER BUILDING SECOND FLOOR NEW WORK HVAC (EAST)

H-12

SHEET: OF

GENERAL NOTES

1. LOCATE OFFICE/CONTROL AREA STAT FOR RTU-3 PER OWNER.

CODED NOTES

(1) BEAM IN SECOND FLOOR CEILING AREA WORK MUST PASS UNDER. TRANSITION/OFFSET DUCTS AS REQUIRED.
(2) ADD NEW FULL SIZE FRP DUCT STUB BELOW ROOF TO HOUSE MOTORIZED FRP DAMPER WITH CORROSIVE LOCATION OPERATOR/ENCLOSURE, AND WITH 1"x1" 304L STAINLESS SCREEN IN STAINLESS FRAME ON INLET. SEAL DUCT AT ROOF CURB.
(3) 28x14 SA DOWN THRU ROOF FROM RTU-3 SPLITTING INTO (2) VANED ELBOWS.
(4) 36x12 RA DOWN THRU ROOF FROM RTU-3 SPLITTING INTO TWO VANED ELBOWS.
(5) 10"x10" EA DUCT UP TO EF-5 THRU EXISTING CURB.
(6) 10"x10" EA DUCT UP TO EF-10 THRU EXISTING CURB.
(7) CLEAN AND RE-USE EXISTING SA GRILLES.
(8) LOW VOLTAGE STAT FOR FILTER ROOM PERIMETER HEAT, WIRE TO CONTACTORS IN ROOM CONTROL PANEL.

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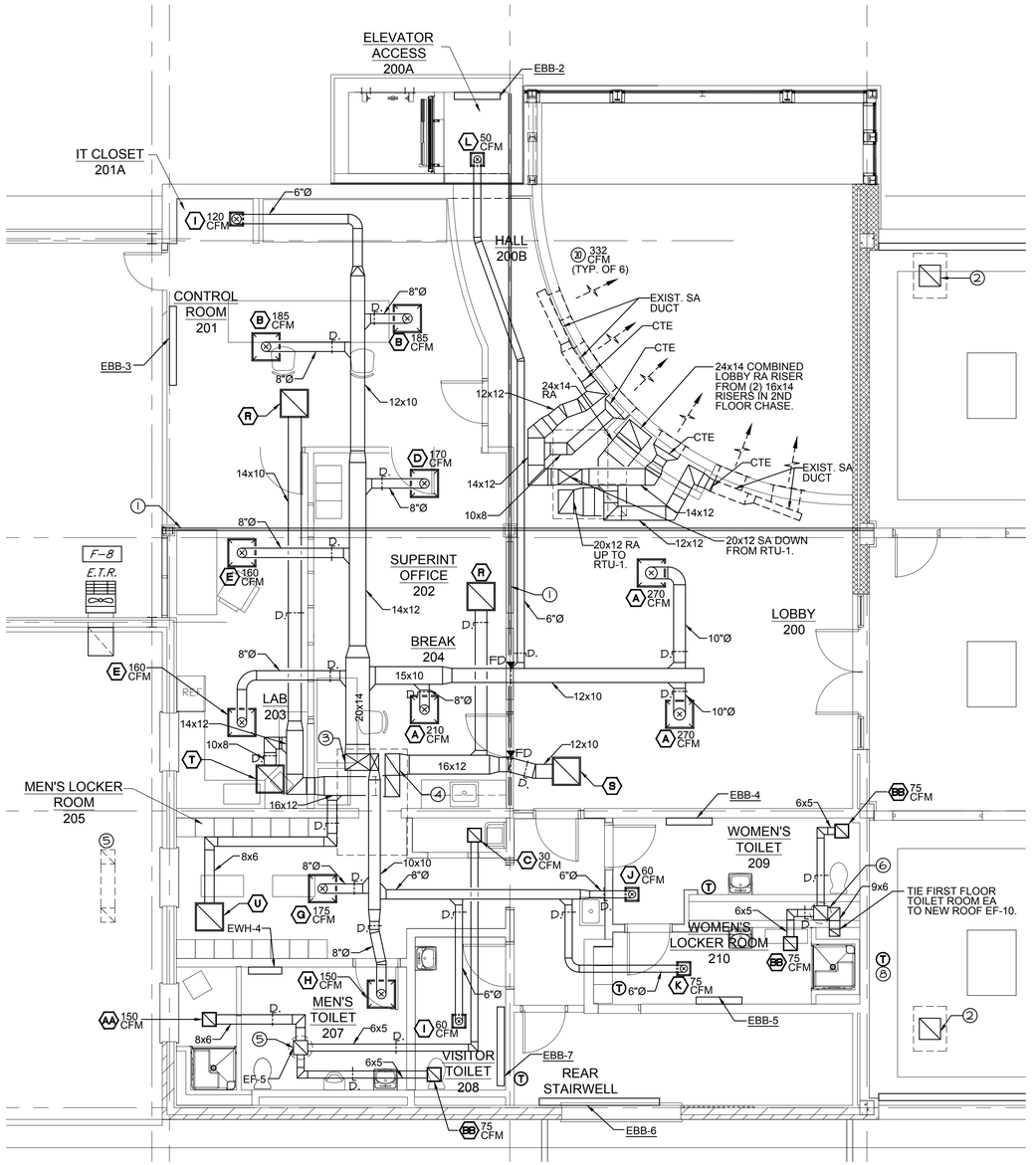

FILTER BUILDING - ENLARGED SECOND FLOOR NEW WORK HVAC (CENTER)

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

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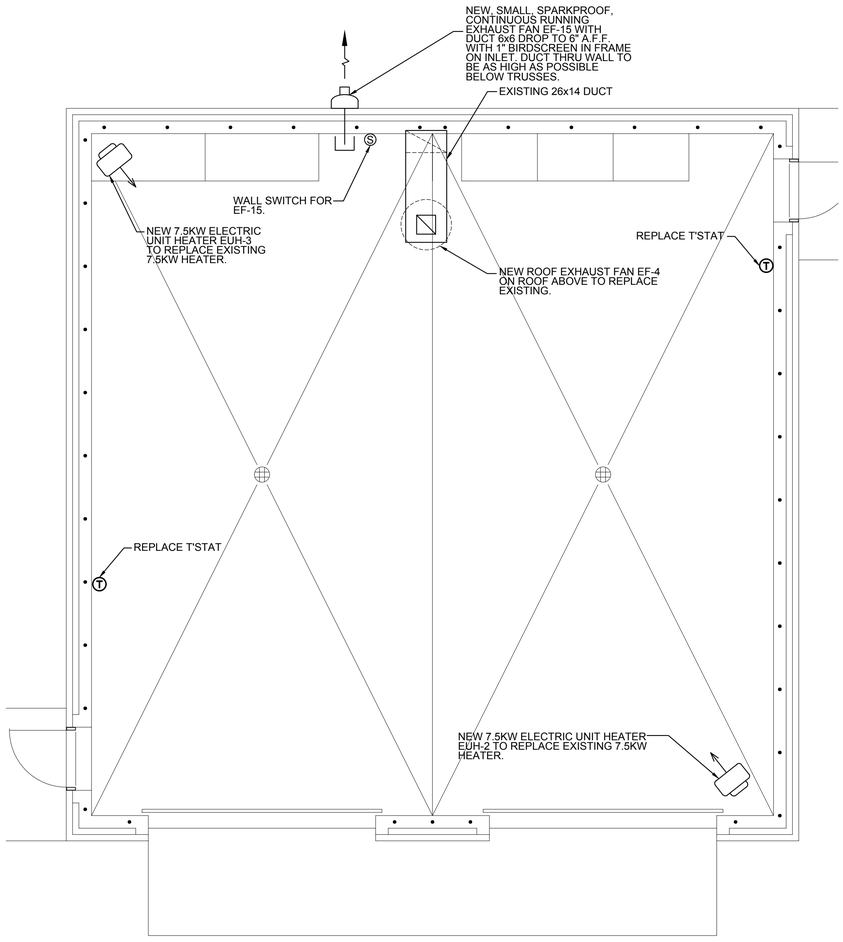
ENLARGED FILTER BUILDING SECOND FLOOR NEW WORK HVAC (CENTER)

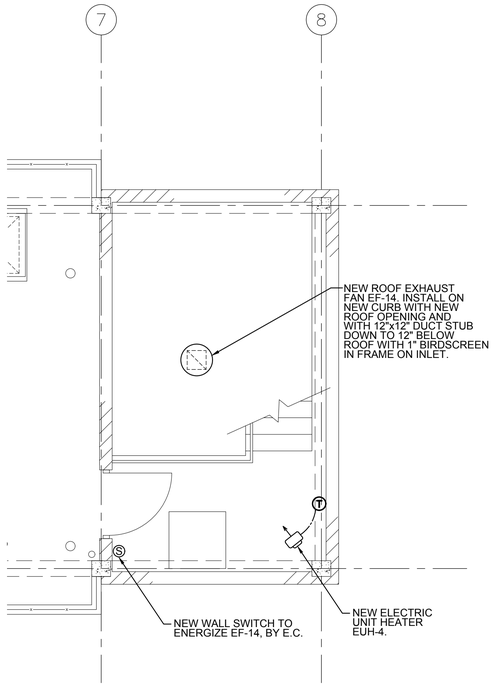
H-13

SHEET: OF



GARAGE HVAC PLAN (DEMO AND NEW WORK)

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

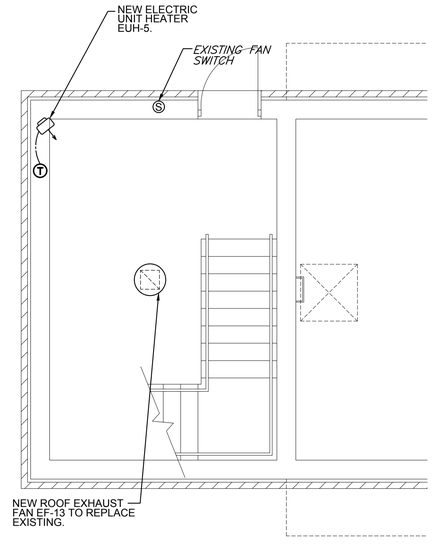


NOTES:

1. REFER TO SHEET A-1 FOR GENERAL LAYOUT OF THE WEST AERATOR BUILDING.

WEST AERATOR BUILDING HVAC PLAN

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



NOTES:

1. REFER TO SHEET A-4 FOR GENERAL LAYOUT OF THE WEST AERATOR BUILDING.

EAST AERATOR BUILDING HVAC PLAN (DEMO AND NEW WORK)

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

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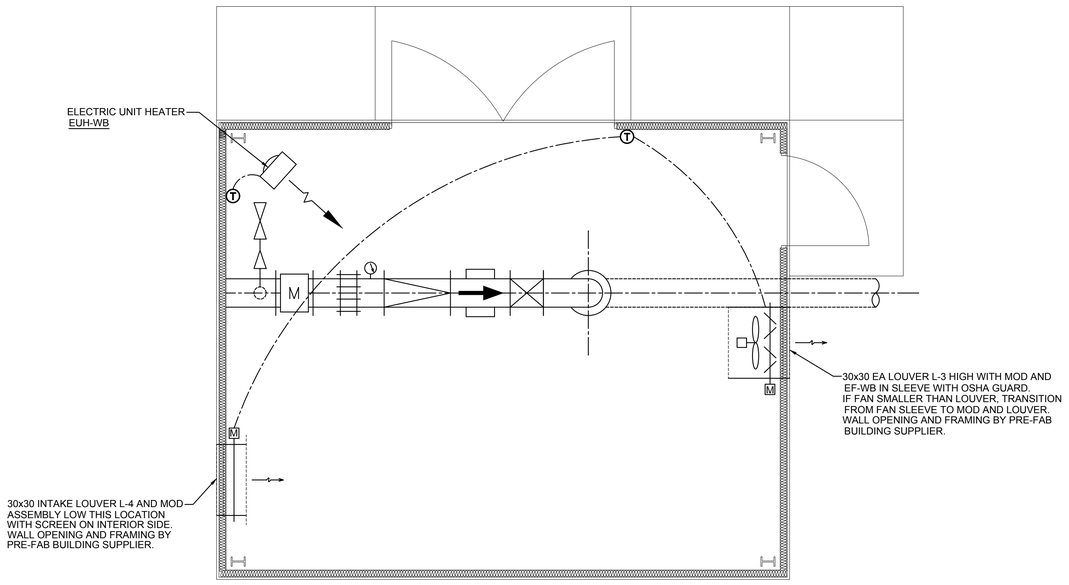
AERATOR BUILDING AND GARAGE HVAC PLANS

H-14

SHEET: OF



WELL BUILDING - HVAC PLAN (TYPICAL)

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

N

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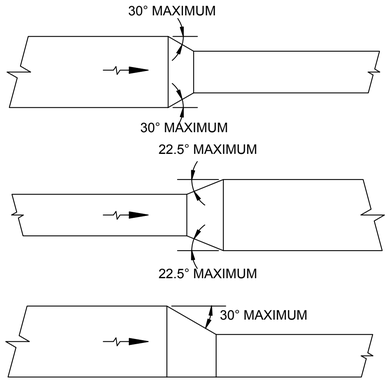
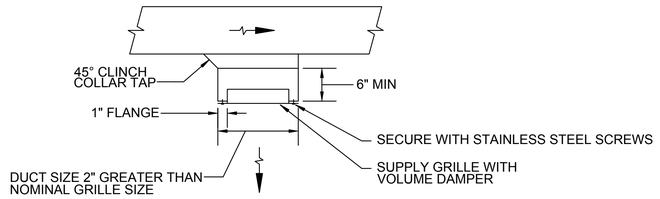
WELL BUILDING
FLOOR
PLAN HVAC
(TYPICAL)

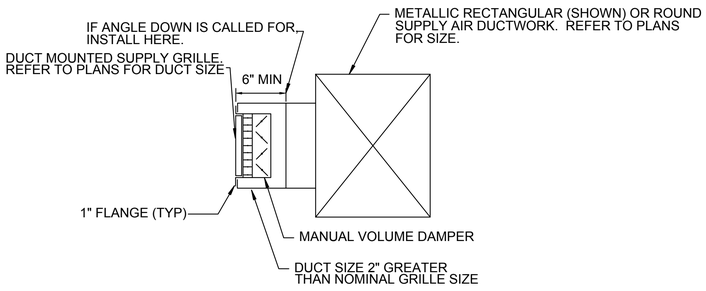
H-15

SHEET: OF

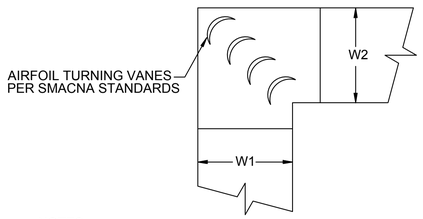


CONCENTRIC & ECCENTRIC RECT. DUCT
TRANSITION DETAILS
N.T.S



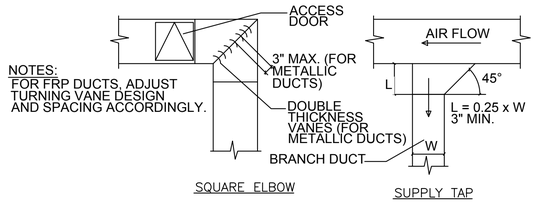


METALLIC DUCT TAP MOUNTED
SUPPLY GRILLE
N.T.S

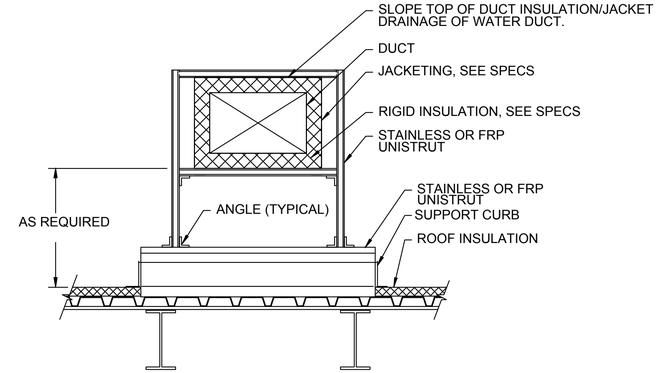


NOTES:
1. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS TYPE REGARDLESS OF DIMENSIONS OF W1 OR W2.
2. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" RADIUS, 1-1/2" MAXIMUM SPACING BETWEEN VANES, AND A 3/4" TRAILING EDGE.
3. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20", VANES SHALL BE DOUBLE VANE TYPE.

VANED ELBOW DETAIL(FOR METALLIC DUCT)
N.T.S

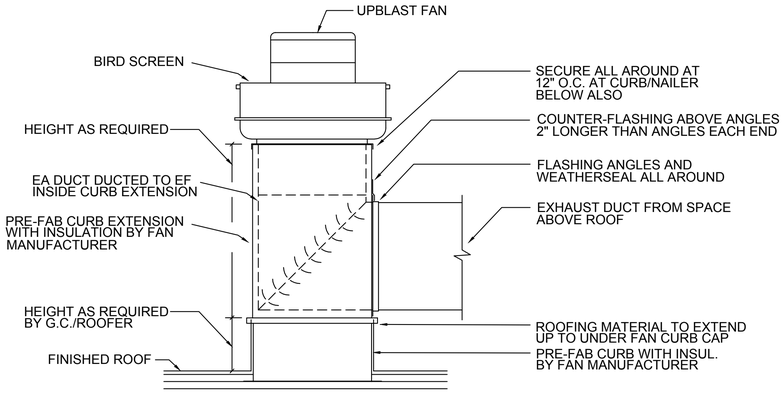


DUCTWORK DETAILS
N.T.S

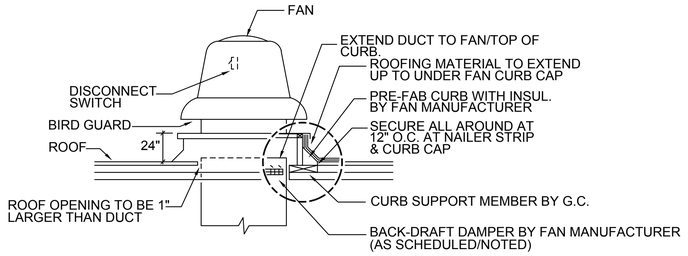


NOTE:
1. SUPPORT TO BE WELDED OR BOLTED CONSTRUCTION. FASTENERS TO BE STAINLESS STEEL.
2. INSULATION ON THE TOP OF THE DUCTS SHALL BE SLIGHTLY SLOPED TO ALLOW FOR WATER DRAINAGE. INSULATION AND DUCTWORK SHALL BE COMPLETELY COVERED WITH A JACKETING SYSTEM. TRANSVERSE JOINTS SHALL BE KEPT TO A MINIMUM. LONGITUDINAL JOINTS SHALL BE MADE ON THE BOTTOM OF THE DUCTWORK. ALL JOINTS, SEAMS, ETC. SHALL BE SEALED WEATHERPROOF. INSTALLATION SHALL BE COMPLETELY WATER TIGHT.
3. ROOF DECK/SYSTEM MAY BE DIFFERENT, ADJUST ACCORDINGLY IN COORDINATION WITH G.C.
4. SUPPORTS FOR ROUND DUCT SIMILAR BUT DUCT SURROUND FRAME TO BE ROUND WITH SUPPORT ANGLES AT 3 O'CLOCK POSITION AND 9 O'CLOCK POSITION.

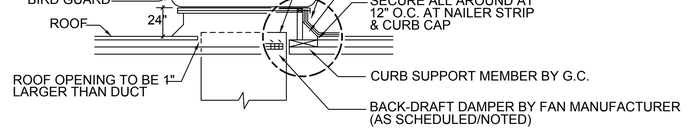
DUCT SUPPORT ON ROOF
N.T.S



(RF) DETAIL RF OF UPBLAST ROOF EXHAUST FAN WITH EMBEDDED DUCT (EF-7. 7A, 8, 8A)
N.T.S.



DETAIL OF DOWNBLAST ROOF EXHAUST FAN
N.T.S.



DETAIL OF UPBLAST ROOF EXHAUST FAN
N.T.S.

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CITY OF CANTON
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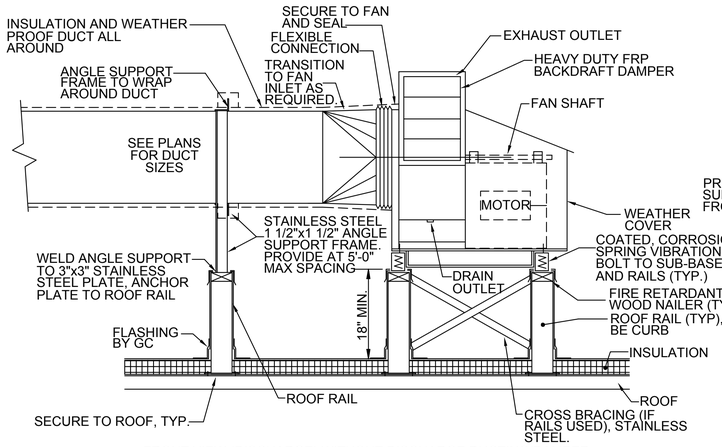
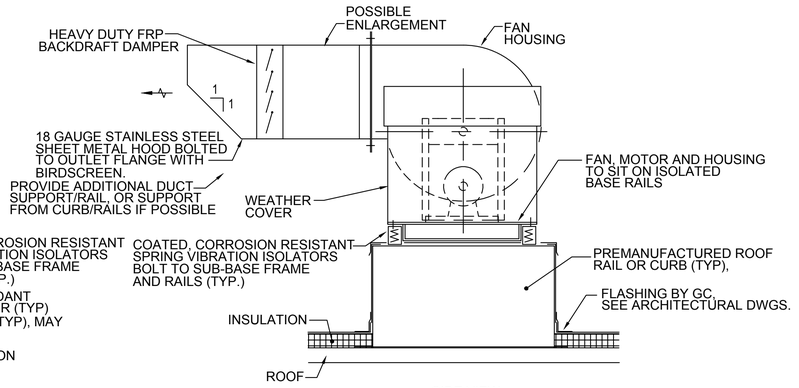
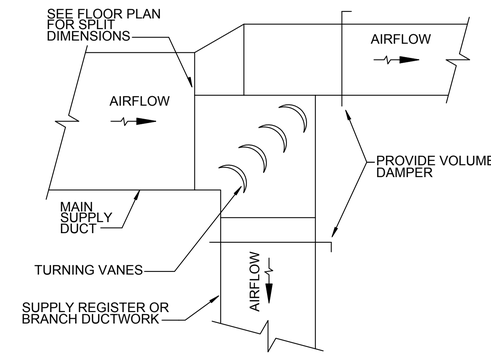


FRONT VIEW (DISCHARGE) WITHOUT DISCHARGE DUCTING/DAMPER

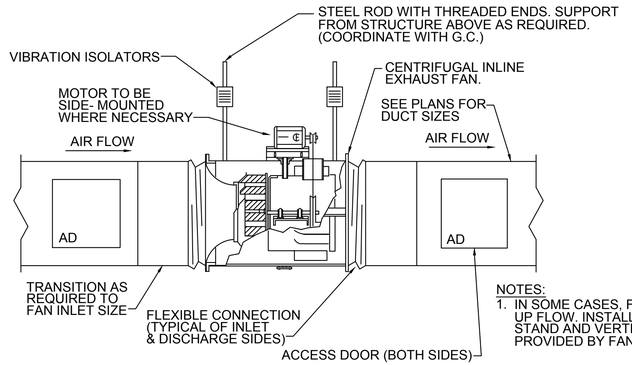


SIDE VIEW

ROOF VENT SET FAN DETAILS
N.T.S

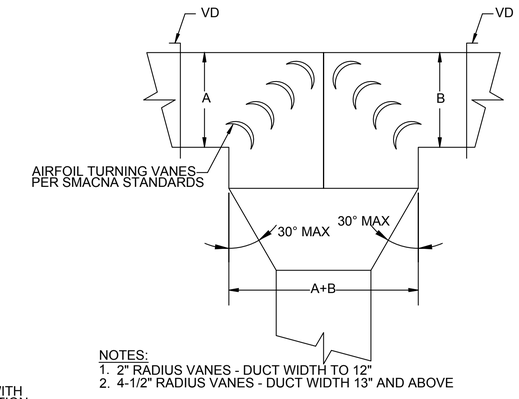


DUCT AIR SPLIT TAKEOFF
N.T.S



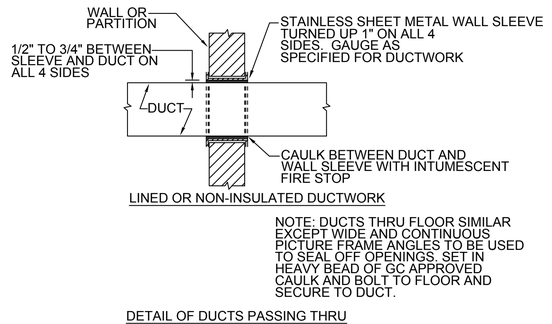
NOTES:
1. IN SOME CASES, FAN MAY BE VERTICAL UP FLOW. INSTALL SIMILARLY EXCEPT WITH STAND AND VERTICAL VIBRATION ISOLATION PROVIDED BY FAN MANUFACTURER.

INLINE CENTRIFUGAL OR AXIAL FAN
N.T.S.



NOTES:
1. 2" RADIUS VANES - DUCT WIDTH TO 12"
2. 4-1/2" RADIUS VANES - DUCT WIDTH 13" AND ABOVE

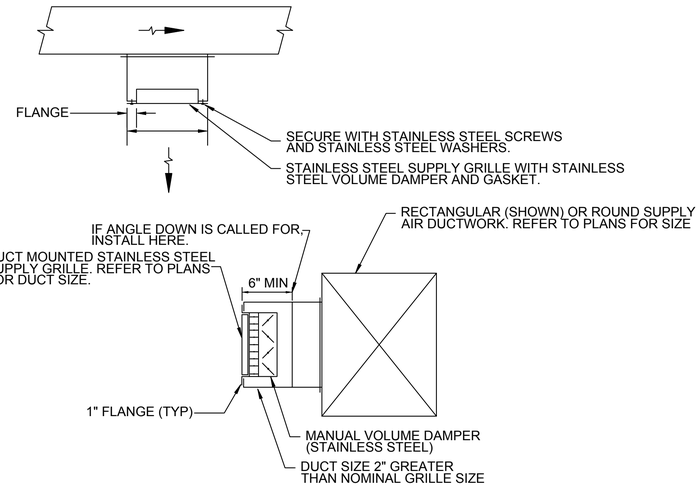
RECTANGULAR DUCT
TEE WITH TURNING VANES
N.T.S.



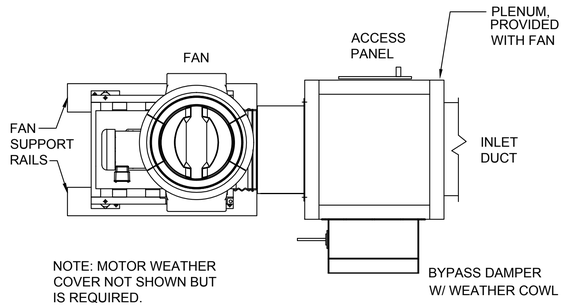
LINED OR NON-INSULATED DUCTWORK

NOTE: DUCTS THRU FLOOR SIMILAR EXCEPT WIDE AND CONTINUOUS PICTURE FRAME ANGLES TO BE USED TO SEAL OFF OPENINGS. SET IN HEAVY BEAD OF GC APPROVED CAULK AND BOLT TO FLOOR AND SECURE TO DUCT.

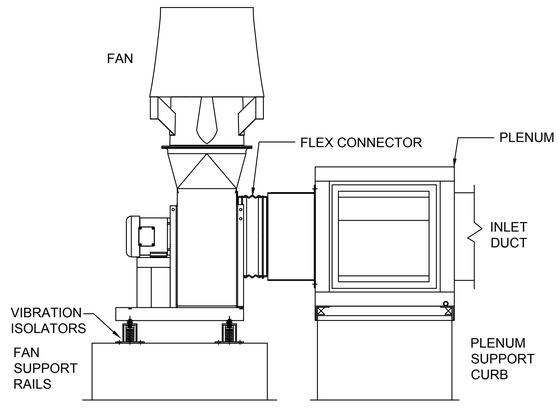
DETAIL OF DUCTS PASSING THRU WALLS OR PARTITIONS
N.T.S.



FRP DUCT TAP MOUNTED GRILLE/REGISTER
N.T.S



TOP VIEW



SIDE VIEW

FLUORIDE ROOM EXHAUST FAN
N.T.S.

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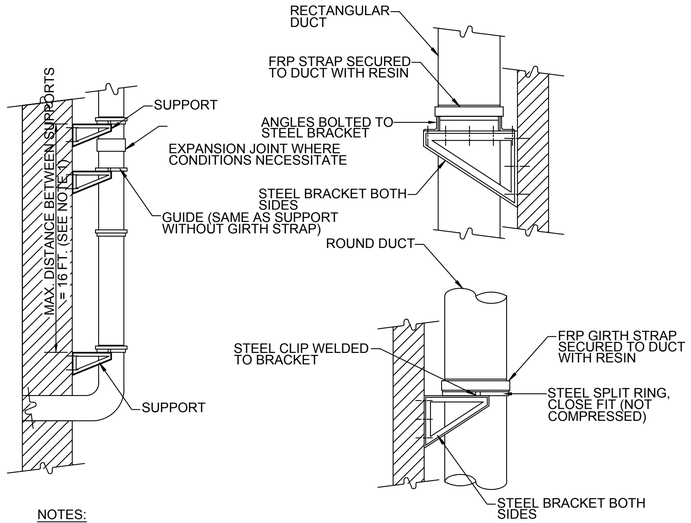
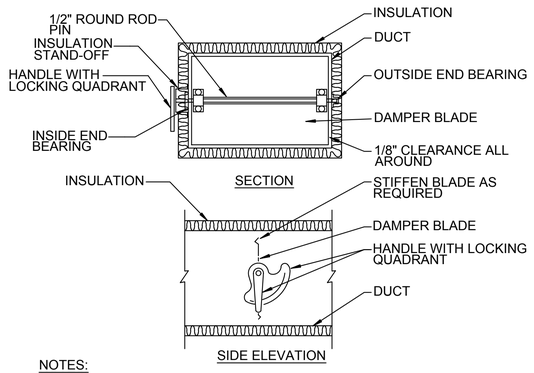


NOTES:

1. OR LESS PER DUCT MANUFACTURER OR SMACNA RECOMMENDATIONS.
2. ALL METALLIC SUPPORTS, HARDWARE, AND FASTENERS STAINLESS STEEL.
3. PROVIDE EXPANSION JOINTS AND GUIDES AS REQUIRED.

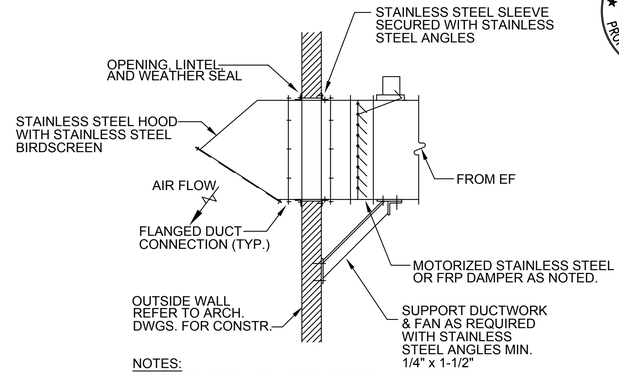
SUPPORT FOR VERTICAL FRP DUCT DETAIL
N.T.S



NOTES:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION. DETAIL SHOWS SHOWS SINGLE BLADE DAMPER. DAMPER INSULATION SHALL BE SIMILAR
2. FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.
3. MODIFY AS NEEDED FOR FRP DUCTS/DAMPERS WHERE ALL DAMPERS AND HARDWARE FRP OR STAINLESS STEEL. SEE SPECIFICATIONS.

VOLUME DAMPER (METALLIC DUCT)
N.T.S



NOTES:

1. ALL FASTENERS AND HARDWARE STAINLESS STEEL.
2. INTAKES SIMILAR EXCEPT WITH REVERSED AIR FLOW AND IF UNDUCTED, INSTALL BIRDSCREEN ON DUCT INSIDE BUILDING.

WALL DISCHARGE ASSEMBLY DETAIL
N.T.S

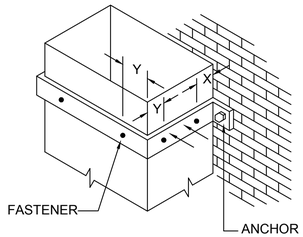


FIGURE A

FIG. A - SUGGESTED SIZING

DUCT SIZE	BAND
18" x 12"	1-1/2" x 16 GA.
24" x 20"	1" x 1/8"

FASTENERS - SUGGESTED SIZING

DUCT GAGE	ALLOWABLE LOAD PER FASTENER*.
28, 26	25 LB.
24, 22, 20	35 LB.
18, 16	50 LB.

* WELD, BOLT OR No. 8 SCREW (MIN). DEVIATION PERMITTED BY OTHER ANALYSIS. X = 1", Y = 2"; ADD OTHERS TO ACCOMMODATE LOAD. MINIMUM OF 3 ON 24" WIDTH AND UP. ADD ALONG SIDES NEAREST ANCHORS.

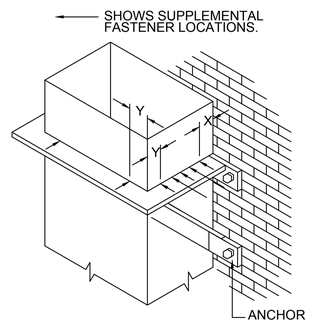
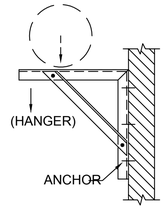


FIGURE B



SEE KNEE BRACKET TABLES IN THE ROUND INDUSTRIAL STANDARDS.

FIG. B - SUGGESTED SIZING

DUCT SIZE	ANGLE
30" x 12"	1" x 1" x 1/8"
36" x 18"	1" x 1" x 1/8"
42" x 24"	1-1/4" x 1-1/4" x 1/8"
48" x 30"	1-1/4" x 1-1/4" X 1/8"

NOTES:

1. BRACKETS ARE SIZED FOR 12 FEET OF DUCT, MAXIMUM.
2. LOCATE DUCTS AGAINST WALL OR MAXIMUM OF 2" AWAY FROM WALL.
3. EACH WALL ANCHOR SHALL SATISFY THE FOLLOWING CRITERIA UNLESS OTHER ANALYSIS IS MADE:
   A. TENSILE LOAD = 3/8 x DUCT WEIGHT; SAFETY FACTOR OF 4.
   B. SHEAR LOAD = 1/2 x DUCT WEIGHT; SAFETY FACTOR OF 4.
4. DATA SHOWN HERE BASED ON GALVANIZED STEEL SHEET METAL DUCT, ADJUST AS NECESSARY PER SMACNA FOR ALUMINUM DUCTS.
5. ALL SUPPORTS, HARDWARE, AND FASTENERS STAINLESS STEEL.

VERTICAL METALLIC DUCT WALL SUPPORT DETAIL
N.T.S

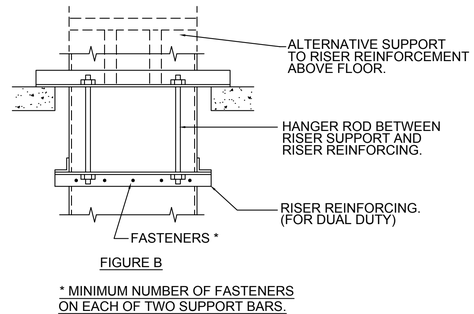


FIGURE B

* MINIMUM NUMBER OF FASTENERS ON EACH OF TWO SUPPORT BARS.

LARGEST DUCT DIM.	MINIMUM NUMBER OF FASTENERS.
16" AND DOWN	2
17" THRU 24"	3
OVER 24"	LARGEST DUCT DIM. DIVIDED BY 8

LOCATE A FASTENER WITHIN 2" OF THE DUCT EDGES. LOCATE OTHERS AT EVENLY SPACED INTERVALS.

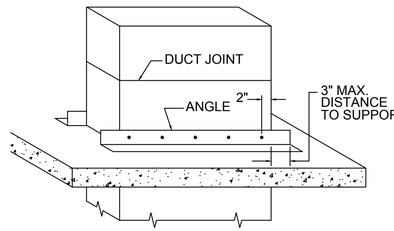


FIGURE A

SUGGESTED SIZING FOR SUPPORT OF 12 FT. DUCT.

DUCT SIZE/ANGLE
36" x 18" /1-1/2" x 1-1/2" X 1/8"
48" x 24" /1-1/2" x 1-1/2" X 1/8"
60" x 30" /1-1/2" x 1-1/2" x 3/16"
60" x 60" /1-1/2" x 1-1/2" x 1/4" OR 2" x 2" x 1/8"

OVER 60" - INCREASE ANGLE SIZE AS REQUIRED FOR SPACE & DUCT SIZE.

NOTES:

1. DATA SHOWN HERE BASED ON GALVANIZED STEEL SHEET METAL DUCT, ADJUST AS NECESSARY PER SMACNA FOR ALUMINUM DUCTS.
2. ALL SUPPORTS, HARDWARE, AND FASTENERS STAINLESS STEEL.
3. ADD ADDITIONAL ANGLES AS NECESSARY TO CLOSE OFF ALL OTHER OPENINGS AT FLOORS.

VERTICAL METALLIC DUCT THRU FLOOR SUPPORT DETAIL
N.T.S

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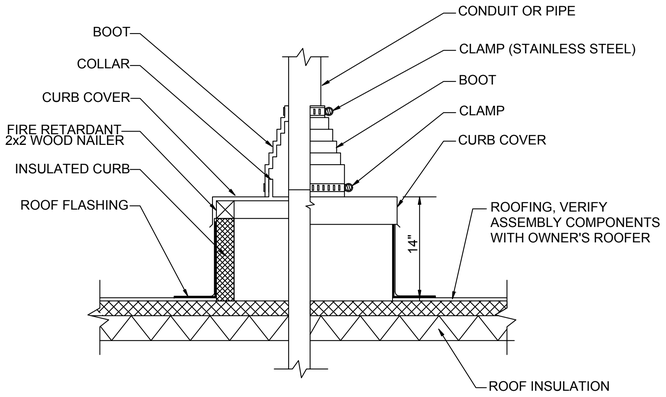
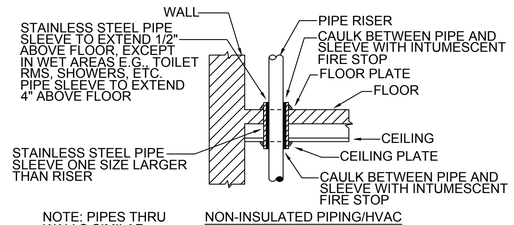
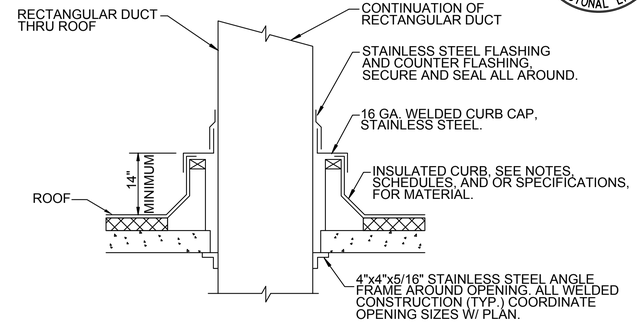


NOTES:
1. REFER TO MANUFACTURERS INSTALLATION REQUIREMENTS.
2. ONLY ONE PIPE OR DUCT ALLOWED THROUGH EACH BOOT.
3. INSULATE CURB CAP INSIDE CURB.

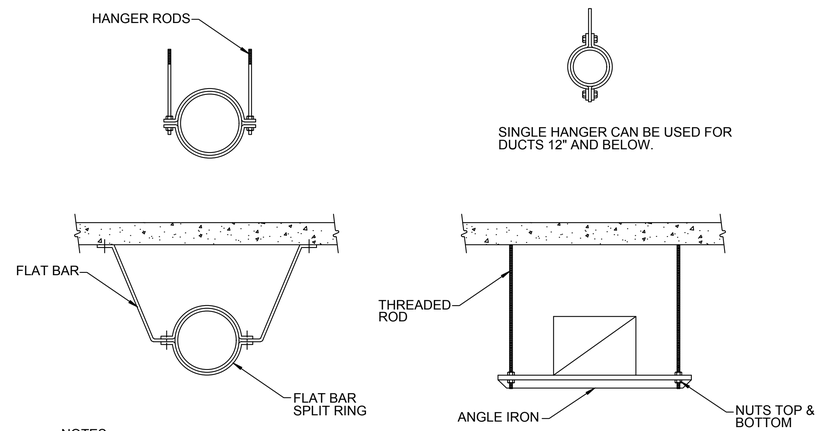
PIPE/CONDUIT CURB
N.T.S.



DETAIL OF PIPING/HVAC RELATED CONDUITS THRU FLOORS
N.T.S.



DUCTWORK ROOF PENETRATION DETAIL
N.T.S



NOTES:
1. SEE SMACNA THERMOSET FRP DUCT CONSTRUCTION MANUAL TABLES 7-1 THROUGH 7-4 FOR HANGER REQUIREMENTS.
2. ALL SUPPORTS, HARDWARE, AND FASTENERS STAINLESS STEEL.
3. FOR APPLICATIONS WHICH INVOLVE REPETITIVE AXIAL MOVEMENTS OF THE DUCT AS A RESULT OF EXPANSION, CONTRACTION, OR VIBRATION, PROVIDE WEAR PLATES BETWEEN THE DUCT AND ITS HANGERS AND SUPPORTS.
4. ALLOW FOR EXPANSION/CONTRACTION.

FRP DUCT HANGERS-HORIZONTAL
N.T.S.

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H-19

SHEET: OF

HEATING AND VENTILATING UNIT SCHEDULE(BASED ON ENGINEERED AIR)

TAG	AREA SERVED	LOCATION	FAN/AIRSIDE DATA					ELECTRIC HEAT DATA			FILTERS	MAIN CIRCUIT VOLTAGE/ PHASE/HZ/ MCA	MAIN CIRCUIT MOCP (AMPS)	OPERATING WEIGHT, LBS W/O CURB	APPROX. CURB INSIDE FACE DIMENSIONS	SA DISCHARGE LOCATION	NUMBER OF FAN SPEEDS PROGRAMMED INTO VFD/ CONTROLS	NOTES
			MAX/MIN SA CFM	FAN TYPE	O.A. CFM	E.S.P. IN.	MOTOR HP	MAX KW	MAX MBH	ATR @ MIN. AIRFLOW AND MAX. KW								
HV-1	HSPR	ROOF	12150/4050	DDP	100%	0.5	5.0	-	-	-	4" PLEATED MERV 8	480/3/60/17.5	25	3500	134.5"x68.25"	E	THREE	1 (EXCEPT NO HEAT), 3, 4, 6
HV-2	CHLORINE ROOMS	ROOF	2510/2510	DDP	100%	0.3	2.0	54	184.3	68F	4" PLEATED MERV 8	480/3/60/98.6	81.1	2800	161.5"x51.25"	E	ONE	1 (EXCEPT NO VAV),2,3,4,5
HV-3	NOT USED																	
HV-4	FLUORIDE/OBSERV.	ROOF	1700/1700	DDP	100%	0.25	1.5	32	109.2	59F	4" PLEATED MERV 8	480/3/60/62.5	70	2500	161.5"x51.25"	E	ONE	1 (EXCEPT NO VAV),2,3,4,5
HV-5	FILTER ROOMS	ROOF	6000/6000	DDP	100%	0.25	3.0	120	409.6	63F	4" PLEATED MERV 8	480/3/60/167.4	175	3000	163.5"x60.25"	E	ONE	1 (EXCEPT NO VAV),3,4,5,6

NOTES:

1. PROVIDE AND INSTALL WITH 24" (ABOVE FINISHED ROOF) INSULATED ROOF CURB, INLET HOOD WITH BIRDSCREEN AND MOTORIZED INLET DAMPER, CONTROLS, FILTER SECTION, ACCESS SECTIONS/DOORS WHERE REQUIRED, SCR CONTROLLED ELECTRIC HEATING COIL, AND VAV SA FAN WITH VFD.
2. PROVIDE AND INSTALL WITH DISCHARGE SAFETY PLENUM WITH FRP FINAL SA DAMPER. ALL DAMPERS TO BE MOTORIZED.
3. EC TO PROVIDE 15A, 120V FEED TO UNIT ALSO FOR CONVENIENCE OUTLET. DISCONNECT BY EC.
4. MAIN POWER DISCONNECTS BY UNIT MFGR.
5. SA FAN TO HAVE VFD FOR BALANCING.
6. DUCT SMOKE DETECTOR IN SA DUCT BY E.C., WIRE TO SHUT DOWN UNIT AND ALARM UPON TRIP.

DDP - DIRECT DRIVE PLENUM E - END ATR - AIR TEMPERATURE RISE

FAN SCHEDULE

TAG	AREA SERVED/DUTY	LOCATION	FAN TYPE	MAX./MIN. CFM	HIGHEST FLOW/SPEED E.S.P. (IN.WG.)	MAX. FAN RPM	MAX. MOTOR HP	DRIVE TYPE	VOLTAGE/ PHASE/HZ	APPROX. WEIGHT WITHOUT CURB (LBS.)	APPROX. ROOF OR SLAB OPENING SIZE (INCHES)	EXPECTED EXISTING ROOF OPENING SIZE (INCHES)	APPROX. FAN HOUSING DIAMETER (INCHES)	BASIS OF DESIGN MANUFACTURER & MODEL No.	CONTROLLED BY	NOTES
EF-1	FILTER BUILDING GENERATOR ROOM	ROOF	CD	435/435	0.50	1685	1/6	DD	115/1/60	25	EXISTING	12 1/2x12 1/2	19	COOK 90C17DEC	LVWS	1,2
EF-2	FILTER BUILDING STORAGE ROOM	IN ROOM	IN-LINE	50/50	0.25	750	30W	DD	115/1/60	12	——	——	——	COOK GC-128	LVWS	6,16
EF-3	FILTER BUILDING MECHANICAL ROOM	IN ROOM	IN-LINE	900/900	0.45	1236	1/6	DD	115/1/60	75	——	——	——	COOK 120SQN17D(VF)	LVWS	17
EF-4	GARAGE MAIN	ROOF	CD	900/900	0.50	1200	1/4	BD	115/1/60	60	EXISTING	18 /2x18 1/2	29	COOK 120ACEB	LVWS AND WHEN OCCUPIED AS REQUIRED	1,2
EF-5	FILTER BUILDING TOILET ROOMS	ROOF	CD	355/355	0.35	1397	1/6	DD	115/1/60	25		22x22	19	COOK 90C17DEC	TRL	2,4
EF-6	ELEV. MACHINE ROOM	IN-LINE	IN-LINE	120/40	0.25	1010	42W	DD	115/1/60	12	——	——	——	COOK GN-148	FAN TO RUN CONTINUOUSLY	6,15
EF-7	CHLOR. STOR. HIGH RATE	ROOF	CUED	11495/11495	0.35	682	5	DD	460/3/60	425	——	——	54	COOK ACRU-D-300R08D	SEE SOO	12
EF-7A	CHLOR. STOR. LOW RATE	ROOF	CUED	2310/2310	0.35	1671	3/4	DD	115/1/60	55	——	——	30	COOK ACRUD-EC-135R17DEC	SEE SOO	13
EF-8	CHLORINATION LOW RATE	ROOF	CUED	450/450	0.35	1624	1/6	DD	115/1/60	30	——	——	21	COOK ACRU-EC-90R17DEC	SEE SOO	13
EF-8A	CHLORINATION HIGH RATE	ROOF	CUED	2310/2310	0.35	1671	3/4	DD	115/1/60	55	——	——	30	COOK ACRUD-EC-135R17DEC	SEE SOO	13
EF-9	FLUORIDE	ROOF	HBV	SEE NOTE #8	0.5	1760	1	DD	460/3/60	300	——	——	30	MK PLASTICS AXIJET-F 1500	FAN TO RUN CONTINUOUSLY	9
EF-10	FILTER BUILDING TOILET ROOMS	ROOF	CD	310/310	0.40	1402	1/6	DD	115/1/60	25	——	24x24	19	COOK 90C17DEC	TRL	2,4
EF-11	FILTERS NORTH EAST	ROOF	SWSI	1000/1000	0.25	1223	1/2	BELT	115/1/60	200	——	——	——	COOK 120CPA	SEE SOO	11
EF-12	FILTERS NORTHWEST	ROOF	SWSI	2000/2000	0.25	1599	1/2	BELT	480/3/60	225	——	——	——	COOK 135CPA	SEE SOO	11
EF-13	EAST AERATION ACCESS	ROOF	CD	400/400	0.50	1405	1/8	DD	115/1/60	35	——	12 1/2x12 1/2	19	COOK 100C15DH	LVWS	1,2,6
EF-14	WEST AERATION ACCESS	ROOF	CD	400/400	0.50	1405	1/8	DD	115/1/60	35	13 1/2 x13 1/2	——	19	COOK 100C15DH	LVWS	1,3,6
EF-15	GARAGE LOW	WALL	CW	65/65	0.40	1000	1/6	BELT	115/1/60	60	14 x 14 (WALL)	——	30	COOK 120WOR60	FAN TO RUN CONTINUOUSLY	14
EF-16	FILTERS SOUTHEAST	ROOF	CU	1000/1000	0.15	1612	1/4	DD	115/1/60	95	——	16x20	30	COOK 120FRH17D	SEE SOO	2,4,5,7
EF-17	FILTERS SOUTHWEST	ROOF	CU	2000/2000	0.15	1223	1	DD	480/3/60	135	——	20x30	35	COOK 150FRH17D	SEE SOO	2,4,5,7
EF-WB	ALL (10) WELL BLDGS	IN SPACE	PROP	1400/800	0.25	1414	.25	DD	115/1/60	60	——	21 1/2x21 1/2(WALL)	——	COOK 14XP26D17EC	2-STAGE WALL STAT	10

NOTES:

1. PROVIDE AND INSTALL WITH BIRDSCREEN, LVWS, PRE-WIRED DISCONNECT, AND MOTORIZED 120V DAMPER. ALL WIRING BY E.C.
2. ADAPT TO EXISTING CURB, AND INSULATE ADAPTER.
3. PROVIDE AND INSTALL WITH NEW INSULATED CURB.
4. PROVIDE AND INSTALL WITH BIRDSCREEN, PRE-WIRED DISCONNECT, AND 120V MOTORIZED DAMPER. ALL WIRING BY E.C.
5. ALL COMPONENTS EXPOSED TO FILTER ROOMS AND FILTER ROOM AIR TO BE PROPERLY CORROSION RESISTANT AND SUITABLE FOR THE CHLORINATED POOL ATMOSPHERE.
6. PROVIDE AND INSTALL WITH SSSC.
7. PROVIDE AND INSTALL WITH VFD.
8. TOTAL FAN FLOW 1,945 CFM, 1,870 FROM FLUORIDE, 75 CFM BYPASS.
9. PROVIDE AND INSTALL WITH CLASS II WHEEL, FRP CASING, STACK, WINDBAND, AND IMPELLER, 304 STAINLESS STEEL HARDWARE, 4-6 MIL POLYESTER COATED STEEL STANDS FOR FAN AND PLENUM, HI-EFFICIENCY TEFC MOTOR, SHAFT SEAL, MOTOR COVER, ACCESS DOOR, 0.5" DRAIN AND PLUG, SPRING VIBRATION ISOLATORS, SINGLE INLET PLENUM WITH BYPASS DAMPER WITH HOOD, PLENUM ACCESS DOOR AND EA DUCT CONNECTION, LIFTING LUGS, FLEX CONNECTOR, DISCONNECT SWITCH (LOOSE), AND FAN AND PLENUM RAILS.
10. PROVIDE AND INSTALL WITH SLEEVE WITH DISCHARGE WEATHER HOOD W/ BIRDSCREEN, MOD, OSHA GUARD, 2-SPEED ADJUSTABLE EC CONTROLLER, AND 2-STAGE MAKE-ON-RISE WALL STAT. ALL WIRING BY E.C.
11. PROVIDE AND INSTALL AS ALL ALUMINUM WHEEL AND AIRWAY FAN, WITH PRE-WIRED NEMA3 DISCONNECT, MOTORIZED HEAVY DUTY ALUMINUM SHUTTER, UV RESISTANT COATING, ACCESS DOOR, DRAIN, FLANGED INLET, OSHA MOTOR AND DRIVE COVER, AND ISOLATION RAILS WITH ISOLATORS. CONTRACTOR TO PROVIDE TOP HORIZONTAL DISCHARGE ALUMINUM WEATHER HOOD WITH ALUMINUM BIRDSCREEN.
12. PROVIDE AND INSTALL AS ALL ALUMINUM FAN WITH VFD, REINFORCED ALUMINUM WHEEL, NEMA 3 PRE-WIRED DISCONNECT, HEAVY DUTY COUNTER-BALANCED ALUMINUM BACKDRAFT DAMPER, INSULATED AND OVERSIZED CURB AND CURB EXTENSION (TO ALLOW SIDE DUCT ENTRY INTERIOR-ELBOW, AND RISER TO FAN), CURB CAP ADAPTER, AND UV RESISTANT PHENOLIC EPOXY COATING
13. SAME AS NOTE 12 ABOVE EXCEPT SSSC INSTEAD OF VFD.
14. PROVIDE AND INSTALL WITH 1.5 SF DRIVES, ORIFICE PLATE, NEMA 3 PRE-WIRED DISCONNECT, AND AMCA-A AIRWAY.
15. INSTALL WITH VIBRATION HANGERS AND WALL DISCHARGE CAP, TRANSITION DUCTS AS REQUIRED. DISCONNECT/MANUAL MOTOR STARTER BY E.C.
16. INSTALL VIBRATION HANGERS, INLET GRILLE, AND WALL CAP. ALL WIRING BY E.C.
17. INSTALL VIBRATION HANGERS, INLET SCREEN, MOD, AND EC MOTOR CONTROLLER. ALL WIRING BY E.C.

LEGEND:

SWSI - SINGLE WIDTH, SINGLE INLET
FCU - FIBERGLASS CENTRIFUGAL UPBLAST
AFS - AIRFLOW STATION
LL - LOW LEAK
VFD/T - VFD IN RESPONSE TO TEMP.

WMA - WALL MOUNTED AXIAL (MOUNTED IN HORIZONTAL POSITION OUTSIDE)
MO - MOTOR OPERATED
VFD/P - VFD IN RESPONSE TO PRESSURE.
CD - CENTRIFUGAL DOWNBLAST
CU - CENTRIFUGAL UPBLAST
CUED - CENTRIFUGAL UPBLAST WITH CURB EXTENSION EMBEDDED DUCT.

SSSC - SOLID STATE SPEED CONTROL
BDD - BACKDRAFT DAMPER
HD - HEAVY DUTY
HBV - HIGH BLOW VERTICAL
CW - CENTRIFUGAL WALL

DD - DIRECT DRIVE
SOO - SEQUENCE OF OPERATION
LVWS - LINE VOLTAGE WALL STAT
TRL - TIE TO ROOM LIGHTS

VERIFY ALL EXISTING CURB/ROOF OPENING SIZES IN FIELD.

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CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLAN &
WELL FIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE

JOB NO: PR58982
DATE: APRIL 2022
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DRAWN BY: CMS
CHECKED BY: CWW
APPROVED BY: CWW
SCALE: AS NOTED

HVAC SCHEDULES

H-20

SHEET: OF

ELECTRIC HEATER SCHEDULE (BASED ON INDEECO)

TAG	TYPE	AREA SERVED	MOUNTING	KW	TOTAL AMPS	VOLTAGE/ PHASE/HZ	MODEL No.	NOTES
EUH-1	UNIT	CHLORINATION	WALL, CORROSION RESISTANT, WASHDOWN RATED	7.5	11	480/3/60	234-U11N-0080U	1, 5
EUH-2	UNIT	GARAGE	WALL BRACKET	7.5	21.5	208/3/60	UCI-926U07500DA	1
EUH-3	UNIT	GARAGE	WALL BRACKET	7.5	21.5	208/3/60	UCI-926U07500DA	1
EUH-4	UNIT	WEST AERATOR ACCESS	WALL BRACKET	10	28.5	208/3/60	UCI-926U10000DA	1
EUH-5	UNIT	EAST AERATOR ACCESS	WALL BRACKET	10	28.5	208/3/60	UCI-926U10000DA	1
EUH-6	UNIT	GENERATOR ROOM	WALL BRACKET	7.5	9.7	480/3/60	UCI-926U07500UA	1
EUH-7	UNIT	STORAGE 104	WALL BRACKET	3.0	4.3	480/3/60	UCI-926U04000UA	1
EUH-8, 8A	UNIT	CHLORINE STORAGE	WALL BRACKET	15	18.9	480/3/60	UCI-926U15000UA	1
EUH-9	UNIT	FLOURIDE OBSERV.	WALL BRACKET	5	6.7	480/3/60	UCI-926U05000UA	1
EWH-1	WALL	1ST FLOOR NEW TOILET	WALL SURFACE	1.1	5.8	208/1/60	933U01500V	3
EBB-1	BASE BOARD	ELEVATOR LOBBY 1ST FLOOR	BB (39" L)	0.75	3.6	208/1/60	BII-00750C	2
EBB-2	BASE BOARD	ELEVATOR LOBBY 2ND FLOOR	BB (39" L)	0.75	3.6	208/1/60	BII-00750C	2
EBB-3	BASE BOARD	CONTROL	BB (67" L)	1.2	5.8	208/1/60	BII-001200C-1710	2
EBB-4	BASE BOARD	W. TOILET	BB (39" L)	0.45	2.2	208/1/60	BII-0045ON-987	2
EBB-5	BASE BOARD	W. LOCKER	BB (39" L)	0.45	2.2	208/1/60	BII-0045ON-987	2
EBB-6	BASE BOARD	UPPER STAIR	BB (103" L)	2.25	10.8	208/1/60	BII-02250C-2627	2
EBB-7	BASE BOARD	VISITOR TOILET	BB (67" L)	1.2	5.8	208/1/60	BII-001200C-1710	2, 4
EBB-8	PEDESTAL	ENTRY LOBBY WEST	PED (71"L)	3	14.4	208/1/60	BHI-916U	2, 6
EBB-9	PEDESTAL	ENTRY LOBBY NORTH	PED (83"L)	3.5	16.8	208/1/60	BHI-916U	2, 6
EBB-10	PEDESTAL	ENTRY LOBBY EAST	PED (48"L)	2	9.6	208/1/60	BHI-916U	2, 6
EWH-2,3	WALL	2ND FLOOR OPERATOR EAST	WALL SURFACE	3	14.8	208/1/60	933V04000V	3
EUH-10,11	UNIT	HSPR	WALL BRACKET	10	12.7	480/3/60	UCI-926U10000UA	1
EUH-WB	UNIT	ALL (10) WELL BLDGS	WALL BRACKET	5	6.7	480/3/60	UCI-926U05000UA	1

NOTES:
1. PROVIDE AND INSTALL WITH WALL BRACKET, REMOTE STAT, AND DISCONNECT.
2. FIELD MEASURE.
3. PROVIDE AND INSTALL WITH SURFACE MOUNT CABINET AND INTEGRAL STAT AND DISCONNECT.
4. STAT TO BE TAMPERPROOF.
5. PARTS AND ACCESSORIES TO BE SIMILARLY CORROSION RESISTANT AS HEATER.
6. PROVIDE AND INSTALL WITH REMOTE TAMPERPROOF STAT, INTEGRAL DISCONNECT, AND PAINTED BACKS.

LOUVER SCHEDULE

TAG	SERVES	DUTY CFM	SIZE (WxH) INCHES	MIN. FREE AREA (SQ. FT.)	MAX PRESSURE DROP	FREE AREA MAX VELOCITY FPM	DAMPER TYPE	BIRD SCREEN	INTERLOCK DAMPER WITH	MANUFACTURER & MODEL No.	NOTES
L-1	MECH. ROOM	IA	44x16	1.43	0.12"	630	MOTORIZED	YES	EF-3	RUSKIN EME420DD	1
L-2	CLEARWELL ACCESS	NOTE 2	18x18 OR 12x12, VERIFY IN FIELD	——	——	——	NONE	YES	——	RUSKIN EME420DD	2
L-3	WELL BLDGS.	EA 1400	30x30	2.12	0.13"	661	MOTORIZED	YES	EF-WB	RUSKIN EME420DD	1
L-4	WELL BLDGS.	IA 1400	30x30	2.12	0.12"	661	MOTORIZED	YES	EF-WB	RUSKIN EME420DD	1

NOTES:
1. PROVIDE WITH RUSKIN TED50XT INSULATED DAMPER, EACH WITH AN ACTUATOR, OTHER FEATURES, COATINGS/FINISH, AND COLOR BY B & N.
2. FOR GRAVITY VENTING AS CLEARWELL WATER LEVEL RISES AND FALLS. COLOR AND FINAL FINISH PER B & N.

EA-EXHAUST AIR
IA-INTAKE AIR

DIFFUSER, REGISTER, AND GRILLE SCHEDULE (BASED ON TITUS)

MARK	DUTY	TYPE	NECK SIZE	MAX CFM	MAX N.C	MODEL	MATERIAL
A	SA	SAD	10"	270	16	TDC-A4	A
B	SA	SAD	8"	185	20	TDC-A4	A
C	EA	EAG	4x4	30	-	350FL	A
D	SA	SAD	8"	170	16	TDC-A4	A
E	SA	SAD	8"	160	-	PMC	A
F	SA	SAG	10x6	160	12	300FS	A
G	SA	SAD	8"	175	16	TDC-A4	A
H	SA	SAD	8"	150	11	TDC-G2	A
I	SA	SAD	6"	120	20	TDC-S1	A
J	SA	SAD	6"	60	10	TDC-G2	A
K	SA	SAD	6"	75	10	TDC-S2	A
L	MUA	SAG	14x10	550	-	272FL	A
M	SA	SAD	14"Ø	510	18	TMRA-AA	A
N	SA	SAD	12"Ø	470	23	TMRA-AA	A
O	SA	SAG	14x10	750		300FS	A
P	MUA	SAG	8x8	200	-	300FS	A
Q	MUA	SAG	32x16	3040	36	122RS	A
R	RA	RAG	14x12	660	20	350FL	A
S	RA	RAG	12x10	540	20	350FL	A
T	RA	RAR	10x8	320	20	350FL	A
U	RA	RAG	8x6	175	20	350FL	A
V	MUA	SAG	24x22	2000	28	300RS-SS	SS
W	MUA	SAG	24x10	1000	29	300RS-SS	SS
X	SA	SAG	18x10	750	27	300FS	A
Y	SA	SAG	10x6	100	12	300FS	A
Z	SA	SAG	14x12	500	17	300FS	A
AA	EA	EAG	8x6	150	-	350RL-SS	SS
BB	EA	EAG	6x6	75	-	350FL	A
CC	SA	SAG	12x12	600	26	300FS	A
DD	SA	SAG	12x10	150	-	272FL	A
EE	EA	EAG	40x16	1870	-	50F	A
FF	TA	TAG	12x10	150	25	CT700L (WITH FULL FRAME)	A
GG	MUA	SAG	14x14	700	23	300RS-SS	SS
HH	MUA	SAG	10x6	205	18	300RS-SS	SS
II							NOT USED
JJ							NOT USED
KK	RA	RAG	36x18	1490	15	350FL	A

NOTES:
1. STAINLESS STEEL DEVICES SHALL HAVE STAINLESS STEEL DAMPERS, ALUMINUM DEVICES SHALL HAVE ALUMINUM DAMPERS.
   A-ALUMINUM
   SS-STAINLESS STEEL

FILTER ROOM ELECTRIC CONVECTOR SCHEDULE (BASED ON 277/1/60 INDEECO MODEL BISI)

TAG	APPROX. WALL-TO-WALL ENCLOSURE LENGTH (FT.)	APPROX. ACTIVE FINNED LENGTH (FT.)	ACTIVE FINNED LENGTH W/LF	TOTAL WATTS/BTUH	MAX, TOTAL AMPS	NOTES
ECONV-N1	15.5	14.5	200	2900/9898	11.9	1-6
ECONV-N2, N3, N4, N6, S2, S3, S4, S7	15.75	14.75	200	2950/10068	12.1	1-6
ECONV-N5, S6	7	6	200	1200/4096	5.1	1-6
ECONV-N7, S1, S8	16	15	200	3000/10239	12.3	1-6
ECONV-N8, S9	19.75	18.75	200	3750/12799	16.2	1-6
ECONV-55	8	7	200	1400/4778	5.8	1-6

NOTES:
1. PROVIDE AND INSTALL WITH COMPLETELY PAINTED ENCLOSURES AND OTHER RELATED HARDWARE (INCLUDING ALL EDGES AND SURFACES).
2. FIELD MEASURE.
3. E.C.CONNECT TO WALL MOUNTED, PAINTED STEEL CONTROL PANEL AS SHOWN ON DRAWINGS.
4. STATS TO BE LOW VOLTAGE MOISTURE-PROOF TYPE AND BE WIRED TO RELAYS IN CONTROL PANELS.
5. SYSTEM DISCONNECTS FOR CONTROL PANELS BY E.C. AND HEATERS CONSIDERED WITHIN LINE OF SIGHT OF THE CONTROL PANELS/DISCONNECTS.
6. CONTROL PANELS TO HAVE 277/1/60 TO 24/1/60 TRANSFORMERS.

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CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLAN &
WELL FIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE

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HVAC SCHEDULES

H-21

SHEET: OF

DEHUMIDIFIER AIR COOLED CHILLER SCHEDULE

TAG	NOMINAL CAPACITY TONS	EFFICIENCY @ 95°F WITH WATER AS FLUID EER	EVAPORATOR EWT (°F)	EVAPORATOR LWT (°F)	EVAPORATOR FLUID	EVAPORATOR GPM	EVAPORATOR WPD (FT H20)	COMPRESSOR INFORMATION MIN. NO. OF COMP.	COMPRESSOR INFORMATION TYPE OF COMPRESSOR	COMPRESSOR INFORMATION NO. OF REFRIGERANT CIRCUITS	COMPRESSOR INFORMATION REFRIG. TYPE	ELECTRICAL VOLTS/ PHASE/ HERTZ	ELECTRICAL MCA	ELECTRICAL MOCP	ELECTRICAL DISCONNECT	WEIGHT (LBS)	PHYSICAL SIZE	NOTES
CH-1	18	10.4	60	50	30% P.G.	46.4	PER MFGR.	2	SCROLL	2	R407C	460/3/60	45	60	YES, BY MFGR., NON-FUSED	1550	85"Lx40"Wx76"H	1-5

NOTES:
1. BASIS OF DESIGN=LEGACY PZAT18D-88872-124669.
2. PROVIDE UNIT FULLY CHARGED WITH REFRIGERANT AND OIL.
3. INSTALL ON REINFORCED CONCRETE FROST PAD AND PIPE TO DEHUMIDIFIER DH-1 AS REQUIRED (AND PER PIPING SCHEMATIC).
4. SEE SPECIFICATION FOR ADDITIONAL FEATURES/REQUIREMENTS.
5. PROVIDE WITH AUTOMATIC HOT GAS BYPASS ON FIRST STAGE COMPRESSOR CIRCUIT.

DEHUMIDIFIER UNIT SCHEDULE (BASED ON BRY-AIR VFB-24-RC-E-6700-CWA)

SYMBOL	AREA SERVED	PROCESS AIR FAN CFM	PROCESS CFM	BYPASS CFM	E.S.P. (IN. WG.)	WHEEL INLET AIR F°	WHEEL INLET AIR GR/LB	WHEEL OUTLET AIR ° F	WHEEL OUTLET AIR GR/LB	MIXED SUPPLY PRIOR TO PROCESS FAN °F	MIXED SUPPLY PRIOR TO PROCESS FAN GR/LB	REACTIVATION AIR CFM	REACTIVATION AIR E.S.P.	REACT. INLET AIR °F	REACT. OUTLET AIR °F	HEATING COIL KW	HEATING COIL RISE ° F	UNIT WEIGHT LBS.	WHEEL DEPTH	NOTES
DH-1	PIPE GALLERY AND MAINT. ROOM	6,700	2,400	4,300	1.2	76	70	120.4	21.2	91.9	52.5	800	1"	285	152	50.6	200	3900	200mm	1-8

NOTES:
1. INCLUDE SINGLE POINT POWER CONNECTION WITH DISCONNECT, UNIT FLA = 71, UNIT MCA = 89, VOLTAGE = 460/3/60.
2. INCLUDE STRUCTURAL SKID BASE, MERV 8 AIR FILTERS FOR BOTH AIRSTREAMS, ALL REQUIRED DAMPERS (WITH ALL REQUIRED OPERATORS), INCLUDING PROCESS SIDE WHEEL FACE-AND-BYPASS DAMPER AND MANUAL DAMPERS.
3. DUCT MOUNT HUMIDISTAT, AND ALL OTHER SENSORS,/CONTROLLERS REQUIRED.
4. INCLUDE PLANT WATER TEMPERATURE SENSOR WITH DEWPOINT CALCULATION AND MINIMUM 10°F SEPARATION FOR SETPOINT.
5. INTEGRAL CHILLED WATER POST COOLING COIL (FOR 30% P.G./WATER MIX) TO BE 46.4 GPM, 201.9 MBH, WITH 50F EWT/60F LWT.
6. REACTIVATION AIR EXHAUST TEMPERATURE AFTER FAN 151.9F.
7. CONTRACTOR TO INSTALL DUCT SMOKE DETECTOR IN RETURN PROCESS AIRSTREAM TO SHUT DOWN UNIT AND ALARM UPON TRIP.
8. OTHER FEATURES AS SPECIFIED.

ELEC. HEAT/ELEC. COOL ROOFTOP AIR CONDITIONING UNIT SCHEDULE

No.	AREA SERVED	LOCATION	AIRSIDE/FAN DATA OUTSIDE AIR CFM	AIRSIDE/FAN DATA SUPPLY CFM	AIRSIDE/FAN DATA E.S.P. IN.	AIRSIDE/FAN DATA SA FAN HP	DX COOLING COIL EAT (DB/WB) F	DX COOLING COIL MAX. LAT (DB/WB) F	DX COOLING COIL AMBIENT TEMP. F	DX COOLING COIL MAX. DX. COIL FACE VELOCITY (FPM)	ELECTRIC HEATING DATA KW	ELECTRIC HEATING DATA M.B.H.	ELECTRIC HEATING DATA MIN. STAGES	HOT GAS REHEAT COIL M.B.H.	COMPRESSOR(S) MIN. QTY.	COMPRESSOR(S) TYPE(S)	APPROX. UNIT WEIGHT W/CURB (LBS.)	APPROX. CURB INSIDE FACE DIMS (IN.)	ELECTRICAL DATA V/PH/Hz	ELECTRICAL DATA MCA/MOCP	MANUFACTURER & MODEL NO.	NOTES
RTU-1	FRONT LOBBY	ROOF	35	1990	0.7	1.0	76/63	55/53	95	415	15	51.2	1	27.4	1	FSS	600	39.6x68	460/3/60	25/25	DAIKIN MPSA05C	1,4,5
RTU-2	2ND FLOOR OPERATOR AREA	ROOF	200	2890	0.5	3.0	77.1/63.1	54.5/52.5	95	214	20	68.3	1	42.5	1	FSS	1100	83.8x52.4	460/3/60	42/45	DAIKIN MPSA07D	1,2,4,5
RTU-3	2ND FLOOR CONTROL AREA	ROOF	215	2240	1.0	3.0	76.9/63.8	53.1/51.8	95	185	20	68.3	1	40.5	1	FSS	1025	83.8x52.4	460/3/60	42/45	DAIKIN MPSA07D	1,2,3,5
RTU-4	ELECTRIC ROOM AND CORRIDOR	ROOF	100	2800	0.9	2.0	80/67	93.5 MBH TC, 66.6 MBH SC	95	255	9.6	32.8	1	PER MFGR.	1	FSS	1175	83.8x52.4	460/3/60	SEE NOTE 6	DAIKIN MPSA07D	1,2,4,5,6,7

NOTES:
1. FURNISH W/ PRE-FABRICATED AND INSULATED 14" HIGH (ABOVE FINISHED ROOF) ROOF CURB, COMP. ENTHALPY ECONOMIZER SECTION/DAMPERS , PLEATED MERV 8 AIR FILTERS, PRE-WIRED DISCONNECT WITH SINGLE POINT POWER, O.A.I. HOOD WITH BIRDSCREEN, BACNET INTERFACE, CONVENIENCE OUTLET (FIELD POWERED), HAIL GUARDS, AND OTHER FEATURES AS SPECIFIED. UNIT TO MEET OHIO ENERGY CODE/ASHRAE 90.1-2010.
2. INSTALL E.C. PROVIDED DUCT SMOKE DETECTORS IN MAIN R.A. DUCTS AND WIRE TO SHUT DOWN UNIT AND ALARM UPON TRIP.
3. PROVIDE AND INSTALL WITH POWERED EXHAUST.
4. PROVIDE AND INSTALL WITH BAROMETRIC RELIEF.
5. PROVIDE AND INSTALL WITH AUTOMATIC HOT GAS REHEAT AND DEHUMIDIFICATION OPERATION.
6. W/O ELECTRIC HEAT ON, UNIT MCA=17.0, MCOP=25.0. ELECTRIC HEAT PACKAGE TAKES 11.5 FLA AND 21 MCA, 30 MFS. COMPLETE PACKAGE WILL HAVE SINGLE POINT POWER CONNECTION AND ELECTRIC HEAT WILL NOT RUN WHEN COMPRESSOR RUNS.
7. UNIT AND CURB TO BE MOUNTED UP OFF OF ROOF ON STEEL SUPERSTRUCTURE PROVIDED BY G.C. IF CURB CAN BE AVOIDED, AS COORDINATED WITH THE SUPERSTRUCTURE DESIGN, IT MAY BE DELETED IF NO OTHER ISSUES CAUSED WITH UNIT.

FSS - FIXED SPEED SCROLL

GLYCOL MAKE-UP PACKAGE (GMP) SCHEDULE

TAG	TANK CAPACITY (GALLONS)	PUMP QTY.	VOLTS/ PHASE/ HERTZ	PLUG-IN?	MFGR./MODEL	NOTES
GMP-1	6	1	115/1/60	YES	WESSELS/GMP-6	1

NOTES:
1. PROVIDE AND INSTALL WITH ALARM KIT WITH PANEL AND FLOAT AND WALL MOUNTING SHELF.

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CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLAN &
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HVAC SCHEDULES

H-22
SHEET: OF

PLUMBING LEGEND

EXISTING PIPING	
EXISTING PIPING TO BE REMOVED	
SANITARY SEWER	SAN
STORM SEWER	ST
ACID PROOF WASTE	APW
ACID PROOF VENT	APV
VENT PIPING	V
PUMP DISCHARGE	PD
DRAIN LINE	D
COLD WATER	CW
HOT WATER	HW
HOT WATER RETURN	HWR
GAS PIPING	G
DEIONIZED WATER	DI
ROOF DRAIN LEADER	RDL
EMERGENCY ROOF DRAIN LEADER	ERDL
SHUT OFF VALVE	
CHECK VALVE	
BALANCING VALVE	
PRESSURE REDUCING VALVE	
REDUCED PRESS. BACKFLOW PREVENTOR	
DOUBLE CHECK VALVE ASSEMBLY	
TEMPERATURE GAUGE	T.G.
PRESSURE GAUGE	P.G.
DRAIN VALVE	D.V.
HOSE VALVE	H.V.
HOSE BIBB	H.B.
CATCH BASIN	C.B.
INLET BASIN	I.B.
CLEANOUT	C.O.
MANHOLE	M.H.
FLOOR DRAIN	F.D.
FUNNEL FLOOR DRAIN	F.F.D.
FLOOR SINK	F.S.
ROOF DRAIN	R.D.
AREA DRAIN	A.D.
DOWNSPOUT	D.S.
SAFEWASTE	S.W.
POLYPROPLENE PIPING	P.P.
CAST IRON	C.I.
STAINLESS STEEL	S.S.
CORRUGATED METAL PIPE	C.M.P.
SQUARE FOOTAGE	S.F.
CONNECT TO EXISTING	C.T.X.

PIPING SYMBOLS

	NEW PIPING
	EXISTING PIPING (TO REMAIN)
	PIPING TO BE REMOVED
	LIMIT OF DEMOLITION
	DIRECTION OF FLOW
	REDUCER OR INCREASER
	TOP CONNECTION, 45° OR 90°
	BOTTOM CONNECTION, 45° OR 90°
	SIDE CONNECTION
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	RISER DOWN (IN PIPE)
	RISER UP (IN PIPE)
	RISE OR DROP IN PIPE
	ELBOW
	PIPE BREAK
	CAP ON END OF PIPE
	UNION
	BALL VALVE OR GENERIC VALVE
	GAS COCK
	BALANCE VALVE
	AUTOFLOW SELF BALANCING VALVE
	PRESSURE REDUCING VALVE
	PRESSURE REGULATING VALVE
	GAS PRESSURE REGULATOR
	STRAINER
	THERMOMETER

PLUMBING ABBREVIATIONS

SYMBOL	DESCRIPTION
BFF	BELOW FINISHED FLOOR
CO	CLEAN OUT
WH	WALL HYDRANT
CTE	CONNECT TO EXISTING
CW	COLD WATER
HWH	DOMESTIC WATER HEATER
EC	ELECTRICAL CONTRACTOR
EEW	EMERGENCY EYEWASH
ETR	EXISTING TO REMAIN
FD	FLOOR DRAIN
WH	FREEZE PROOF HOSE BIBB WALL HYDRANT
G	NATURAL GAS
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HW	HOT WATER
INV	INVERT
LAV	LAVATORY
LF	LINEAL FEET
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MH	MANHOLE
MIN	MINIMUM
P	PUMP
PC	PLUMBING CONTRACTOR
PD	PUMP DISCHARGE
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RD	ROOF DRAIN
ERD	EMERGENCY ROOF DRAIN
HWR	RECIRCULATING HOT WATER
FS	FLOOR SINK
SAN	SANITARY SEWER
ST	STORM PIPING
TW	TEMPERED WATER
UR	URINAL
V	VENT PIPING
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
°F	DEGREES FAHRENHEIT
Ø	DIAMETER
G	NATURAL GAS

PLUMBING PROJECT NOTES

1	ALL WORK MUST COMPLY WITH THE REQUIREMENTS OF LOCAL CODES AND ORDINANCES. WHERE INSPECTIONS ARE REQUIRED BY AUTHORITY HAVING JURISDICTION, WORK MUST NOT BE CONCEALED UNTIL INSPECTIONS AND TESTING ARE COMPLETED AND ACCEPTED.
2	PRIOR TO BID, CONTRACTOR MUST BECOME FAMILIAR WITH THE REQUIREMENTS OF THE DRAWINGS, SPECIFICATIONS, GENERAL NOTES AS WELL AS ALL OTHER NOTES SHOWN ON THE CONTRACT DOCUMENTS. VISIT THE SITE TO ESTABLISH THE EXISTING CONDITIONS PRIOR TO BID AND PRIOR TO ANY PIPE OR EQUIPMENT FABRICATION. SYSTEMS MUST BE ERECTED USING CONTRACTOR'S FIELD MEASUREMENTS FOR COORDINATION WITH EQUIPMENT, STRUCTURE, FIRE PROTECTION, COMMUNICATION, AND ELECTRICAL CONDITIONS IN THE SPACE.
3	ALL CONTRACT DOCUMENTS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OR GEOMETRICAL RELATIONSHIPS OF EQUIPMENT AND SERVICES. THEY ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, SEQUENCE, DEVICE, OPTION, FITTING, OR COMPONENT. DO NOT SCALE DRAWINGS.
4	INFORMATION AND COMPONENTS SHOWN ON DIAGRAMS OR DETAILS, BUT NOT SHOWN ON THE PLANS, AND VICE VERSA, MUST BE PROVIDED AS IF EXPRESSLY REQUIRED BY BOTH.
5	EXCEPT WHERE INDICATED OTHERWISE, THE NOTION OR DESCRIPTION OF ANY ITEM IN THE CONTRACT DOCUMENTS CARRIES WITH IT THE INSTRUCTIONS TO FURNISH AND INSTALL THE ITEM, WHETHER OR NOT THE INSTRUCTION IS EXPLICITLY STATED.
6	THE CONTRACT DOCUMENTS REFLECT A SYSTEM DESIGNED AROUND SPECIFIC REFERENCE PRODUCTS. THE SELECTION OF WHICH HAS IMPACTED THE DESIGNS OF OTHER TRADES. SOME EQUIPMENT MAY BE REQUIRED AS SCHEDULED WITH NO SUBSTITUTIONS (REFER TO EQUIPMENT SCHEDULES). FOR OTHER EQUIPMENT, IF ALTERNATE MANUFACTURERS ARE SUBMITTED OR BID, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE ALL THE DIFFERENCE AND IMPACTS WITH ALL OTHER TRADES PRIOR TO BID, INCLUDING THE COSTS ASSOCIATED WITH REQUIRED CHANGES TO OTHER TRADES IF ALTERNATE EQUIPMENT IS BID OR INSTALLED.
7	COORDINATE PLACEMENT OF ALL PLUMBING RELATED EQUIPMENT AND DEVICES WITH OTHER TRADES. DO NOT POSITION OR INSTALL ANY PLUMBING EQUIPMENT OR DEVICES IN ANY SYSTEM IN SUCH A WAY THAT IT WILL BE INACCESSIBLE OR UN-MAINTAINABLE AFTER CONSTRUCTION IS COMPLETED.
8	NO OTHER TRADES ARE ALLOWED TO BE SUPPORTED FROM MATERIALS, EQUIPMENT OR DEVICES INSTALLED BY THE PLUMBING TRADES. LIKEWISE, ALL WORK INSTALLED BY THE PLUMBING TRADES MUST BE SUPPORTED FROM THE STRUCTURE ABOVE, FROM WALLS OR FROM THE FLOOR UNLESS OTHERWISE INDICATED.
9	REPLACE OR REPAIR ALL ARCHITECTURAL FEATURES REMOVED OR DAMAGED DURING THE COURSE OF THE WORK. REPAIR OR REPLACEMENT MUST, AS A MINIMUM, EQUAL ORIGINAL CONDITION. SPECIAL CARE MUST BE TAKEN ON THE ROOFS TO PREVENT DAMAGE. ANY DAMAGE MUST BE PROMPTLY REPAIRED AT NO EXPENSE TO THE OWNER BY AN OWNER APPROVED ROOFING CONTRACTOR.
10	ALL WIRING INSTALLED FOR CONTROLS, POWER, INTERLOCKS, ETC. MUST BE INSTALLED IN CONDUIT. MATERIALS AND INSTALLATION MUST COMPLY WITH NFPA AND NEC REQUIREMENTS, AND LOCAL CODES.
11	SEAL ALL ROOF AND WALL PENETRATIONS, FLASH AND COUNTER-FLASH ALL ROOF PENETRATIONS. MINIMUM ACCEPTABLE HEIGHT OF FLASHING IS TWELVE (12) INCHES ABOVE ROOF.
12	CONTRACTOR SHALL INSTALL STEEL PIPE SLEEVES THRU WALLS, FOOTERS, ETC. SLEEVES TO BE MINIMUM TWO (2) SIZES LARGER THAN THE SANITARY LINE, STORM LINE, AND WATER LINE.
13	COORDINATE LOCATION OF SANITARY, STORM AND WATER LINES WITH SITE UTILITIES CONTRACTOR.
14	ALL FLOOR DRAINS AND FLOOR SINKS TO BE PROVIDED WITH ASSE #1072 TRAP SEALS UNLESS OTHERWISE NOTED.
15	ALL SANITARY PIPING LOCATED IN THE RETURN AIR PLENUM SHALL BE CAST IRON. ALL AREAS ABOVE CEILING TO BE CONSIDERED A RETURN AIR PLENUM UNLESS NOTED OTHERWISE.
16	ALL FLOOR DRAINS TO BE LOCATED AT BOTTOM OF SLOPED FLOOR. BUCKET TEST WILL BE USED AND FLOOR DRAINS WILL BE REQUIRED TO BE RELOCATED IF WATER DOES NOT FLOW TO FLOOR DRAIN.
17	WALL CLEANOUTS TO BE LOCATED ABOVE FLOOD RIM OF FIXTURES.
18	VERIFY LOCATION OF EQUIPMENT CONCRETE PADS PRIOR TO INSTALLING FLOOR SINKS IN MECHANICAL ROOMS.
19	CONTRACTOR IS RESPONSIBLE TO INSTALL NEW PIPING PER CONSTRUCTION CONDITIONS

SHOCK ABSORBER SIZING CHART

FIXTURE UNIT RANGES	MODEL NUMBER	INLET CONNECTION SIZE (INCHES)
1-11	100	3/4
12-32	200	3/4
33-60	300	1
61-113	400	1
114-154	500	1
155-330	600	1

BASED ON ZURN SHOKTROL # Z1700 WITH ASSE 1010 LISTING.

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PLUMBING LEGEND AND NOTES

PL-1

SHEET: OF

ELECTRIC WATER HEATER SCHEDULE

MARK	SERVICE	LOCATION	MAX INPUT	STORAGE CAPACITY	RECOVERY GPH @ TEMP RISE 90°	CONTROL CIRCUIT	HEATING ELEMENT VOLTAGE/ PHASE	SELECTION BASED ON
HWH	DOMESTIC HOT WATER	STORAGE ROOM 104	27 KW	119 GALLONS	124	120/1/60		BRADFORD WHITE CEHD120A273*CF

1.1 - PLUMBING FIXTURE SCHEDULE

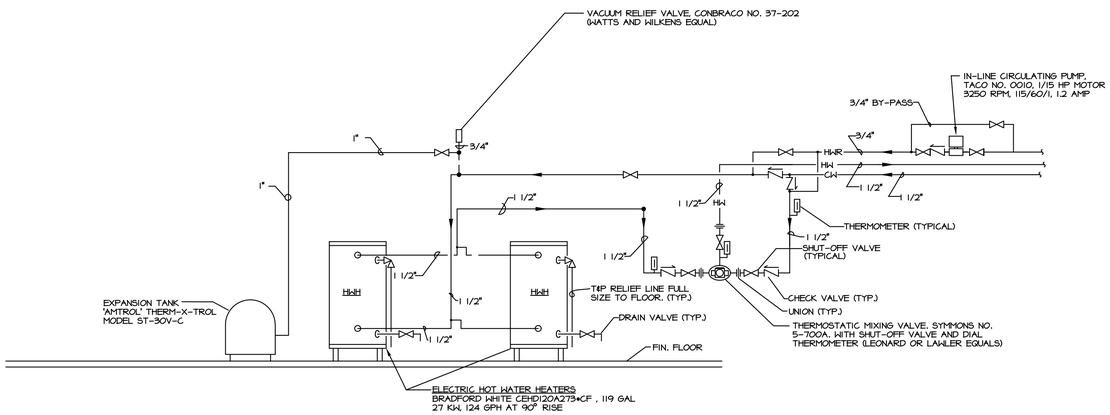
MARK	FIXTURE DESCRIPTION	COLD WATER	HOT WATER	WASTE PIPE	VENT PIPE	REMARKS	MANUFACTURER	MODEL #
WC	WATER CLOSET	1"	---	4"	2"	ELONGATED RIM; SLOAN NO. WETS-2450.1420 WITH BATTERY OPERATED SENSOR FLUSH VALVE. MOUNT AT HANDICAP HEIGHT. BEMIS MODEL NO. 1955CT	SLOAN / AMERICAN STANDARD / ZURN	WETS-2450.1420
UR	URINAL	3/4"	---	2"	1 1/2"	SLOAN MODEL SU-1009, 0.125 GPM. MOUNT URINAL-B AT HANDICAP HEIGHT. SLOAN NO. 186-0.125 XL FLUSH VALVE WITH OPTIMA SMOOTH #186-0.125 DBP SMOOTH HW SENSOR OPERATOR. MOUNT AT HANDICAP HEIGHT	SLOAN / AMERICAN STANDARD / ZURN	SU-1009/186-0.125 XL
LAV	LAVATORY	1/2"	1/2"	1 1/2"	1 1/2"	VITREOUS CHINA WALL MOUNTED, 20" X 18", 4" FAUCET CENTERS; MODEL SS-3003 BY SLOAN. CHICAGO FAUCET NO.802-317ABCP SUPPLY FAUCET, WRIST BLADE HANDLES, INSTALL ASSE 1070 MIXING VALVE.	AMERICAN STANDARD / CHICAGO FAUCET / SLOAN	SS-3003 / 802-317ABCP / ASSE 1070
SINK-A	SINK	1/2"	1/2"	2"	1 1/2"	SINGLE COMPARTMENT, 21" X 22" SELF-RIMMING MODEL NO. SL-ADA-2122-A-GR (5 1/2" DP) BY JUST. WITH CHICAGO FAUCET NO. 895-317GN2AE35ABCP FAUCET ASSE 1070 MIXING VALVE.	JUST / CHICAGO FAUCET / MOEN	SL-ADA-2122-A-GR / 895-317GN2AE35ABCP
SINK-B	SINK	1/2"	1/2"	2"	1 1/2"	SINGLE COMPARTMENT, 19" X 25" SELF-RIMMING MODEL NO. SL-1925-A-GR BY JUST. WITH CHICAGO FAUCET NO. 895-317GN2AE35ABCP FAUCET ASSE 1070 MIXING VALVE AND DEIONIZED WATER FAUCET 869-BPVC BY CHICAGO FAUCET. PROVIDE WITH SPEARS LABWASTE1 GALLON POLYPROPYLENE DILUTION TRAP .	JUST / CHICAGO FAUCET / SPEARS	SL-1925-A-GR / 895-317GN2AE35ABCP/ 869-BPVC
SINK-C	SINK	1/2"	---	2"	1 1/2"	SINGLE COMPARTMENT, 3"X9" X5" DEEP LABORATORY CUP SINK SELF-RIMMING MODEL NO. CS5-3X9X5-CUPSNKVOUTOVL BY ORION/WATTS PROVIDE WITH CHICAGO FAUCET NO. 869-BPVC PVC FAUCET AND SPEARS LABWASTE1 GALLON POLYPROPYLENE DILUTION TRAP .	WATTS / CHICAGO FAUCET / SPEARS	CS5-3X9X5 / 869-BPVC
EWC	ELECTRIC WATER COOLER	1/2"	---	1 1/2"	1 1/2"	SURFACE MOUNTED, HI-LO WITH BOTTLE FILLER; WITH STAINLESS STEEL TOP, ELEVATED ANTI-SQUIRT BUBBLER WITH STREAM GUARD, AUTOMATIC STREAM REGULATOR, MOUNTING BRACKET, REFRIGERATED WITH AIR COILED CONDENSER; MODEL NO. P8BFSL BY OASIS.	OASIS / ELKAY / HANSEY / TALOR	P8BFSL
SHR	SHOWER	1/2"	1/2"	3"	1 1/2"	CLARION BATHWARE NO. 3837 BF34, FIBERGLASS, RIGHT FIXTURE WALL, 1 ½" DIA CORNER GRAB BAR, FOLDING SEAT, HAND HELD SHOWER WITH STAINLESS STEEL GLIDE RAILS, PRESSURE BALANCING ANTI-SCALD MIXING VALVE, CURTAIN ROD, SOAP DISH AND, 2" BRASS DRAIN.	CLARION BATHWEAR	3837 BF34
ESHR	EMERGENCY EYE WASH/SHOWER	1 1/4"	1 1/4"	---	---	CORROSION RESISTANT SCHEDULE 80 PVC PIPE WITH GREEN EPOXY FINISH. ENTIRE UNIT TO BE PREBUILT AND PRESSURE TESTED. VALVES TO BE 316 STAINLESS STEEL. PROVIDE WITH THERMOSTATIC MIXING VALVE MODEL 9201E AND ALARM SYSTEM.	HAWS / BRADLEY	8336
HB	HOSE BIBB	3/4"	---	---	---	CHICAGO FAUCET NO. 952, CHROME FINISH WITH VACUUM BREAKER.	CHICAGO FAUCET	952
WH	WALL HYDRANT	3/4"	---	---	---	QUATER TURN NON-FREEZE HYDRANT WITH HOSE CONNECTION, VACUUM BREAKER, J.R. SMITH 5509QT.	J.R. SMITH	5509QT
SERVICE SINK	SERVICE SINK	1/2"	1/2"	3"	1 1/2"	ENAMELED CAST IRON WITH WALL HANGER AND RIM GUARD, WITH 2 HOLES DRILLED 8" CENTER AMERICAN STANDARD MODEL 7692.008. PROVIDE WITH YOKE WALL MOUNT UTILITY FAUCET WITH VACUUM BREAKER MODEL 8350.243 AND CAST IRON P-TRAP MODEL 7798.020	SLOAN / AMERICAN STANDARD / ZURN	7692.008/8350.243/7798.020

HOT AND COLD WATER BRANCH RUN-OUT SCHEDULE

SMALL FIXTURES		FLUSH-VALVE FIXTURES	
NO. FIXTURES	LINE SIZE	NO. FIXTURES	LINE SIZE
1	1/2"	1	1"
2	3/4"	2	1-1/2"
3-5	1"	3-7	2"
6-9	1-1/4"	8-14	2-1/2"
10-16	1-1/2"	15-34	3"
17-50	2"	-	-
51-107	2"	-	-
108-173	2-1/2"	-	-

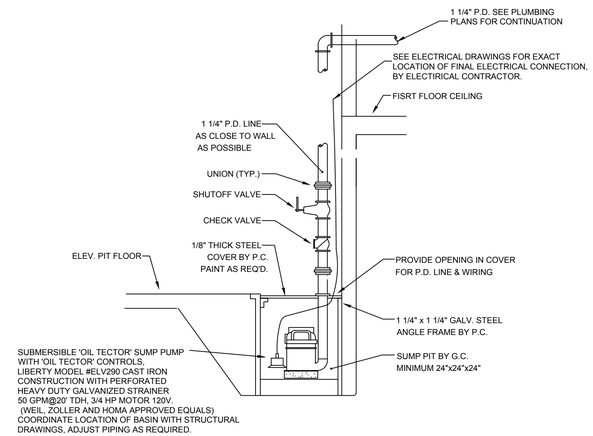
NOTES:

1. SIZING ON DRAWING SUPERSEDES THE ABOVE SCHEDULE
2. NOTE: FOR BRANCHES WHERE URINALS ARE THE ONLY FIXTURES BEING SERVED, ADJUST LINE SIZING BY 0.75



HWH PIPING DETAIL

N.T.S.



ELEVATOR PIT SUMP PUMP DETAIL

N.T.S.

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PLUMBING DETAILS & SCHEDULES

PL-2

SHEET: OF

CODED NOTES

① EXISTING TRENCH DRAIN TO BE BE REMOVED. INFILL TO MATCH EXISTING.EXISTING

② EXISTING FLOOR DRAIN TO BE BE REMOVED. INFILL TO MATCH EXISTING.

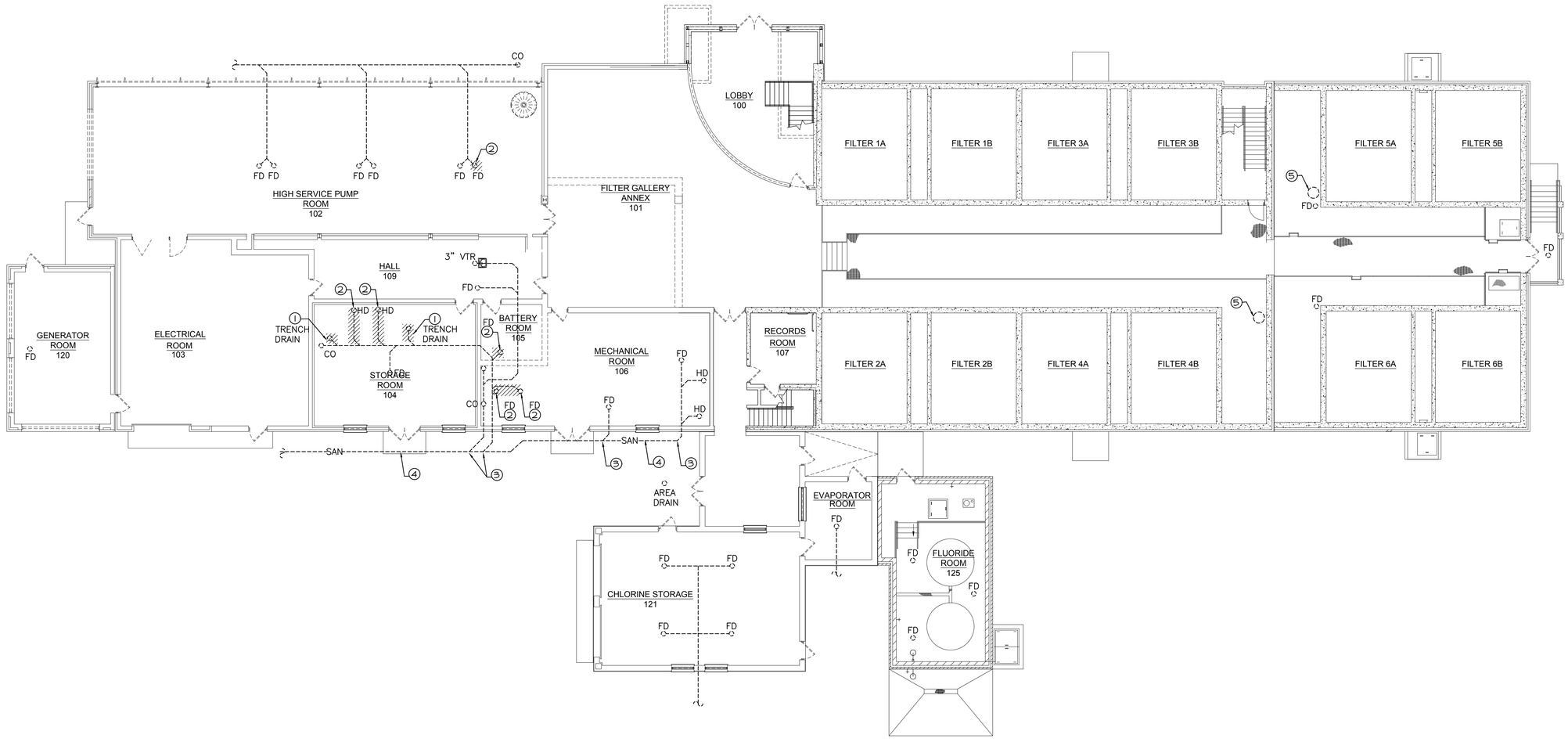
③ FINAL CONNECTION TO NEW SITE SANITARY LINE BY PLUMBING CONTRACTOR.

④ EXISTING SITE SANITARY LINE TO BE REMOVED AND REPLACED WITH NEW SITE SANITARY LINE BY SITE CIVIL CONTRACTOR.

⑤ EXISTING SUMP PUMP TO BE REMOVED AND PREPARE PIPING FOR NEW SUMP PUMP TO BE INSTALLED.

GENERAL NOTE

ALL EXISTING SANITARY LINE ARE TO BE PRESSURE JET CLEANED AND SCOPED WITH VIDEO RECORDING PROVIDED TO OWNER.



FILTER BUILDING - FIRST FLOOR SANITARY DEMOLITION

SCALE: 3/32" = 1'-0"

N

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FILTER BUILDING FIRST FLOOR PLAN SANITARY DEMOLITION

PL-3

SHEET: OF

CODED NOTES

① EXISTING CW AND HW TO BE REMOVED AS SHOWN.

② EXISTING PRESSURE REDUCING VALVE TO BE REMOVED.

③ EXISTING ELECTRIC WATER HEATER BE REMOVED.

④ EXISTING EMERGENCY EYE WASH AND SHOWER BE REMOVED.

⑤ EXISTING EMERGENCY FIXTURE TEMPERING TANK TO BE REMOVED.

⑥ EXISTING UTILITY SINK AND ASSOCIATED PIPING TO BE REMOVED. PREPARE SANITARY CONNECTION FOR INSTALLATION OF NEW FLOOR DRAIN.

⑦ EXISTING WATER SOFTENER TO BE REMOVED.

⑧ EXISTING DOUBLE CONTAINMENT FUEL OIL LINES FROM UNDERGROUND TANK BE REMOVED. PREPARE EXISTING PIPING IN GENERATOR ROOM FOR CONNECTION TO NEW FUEL OIL LINES FROM NEW ABOVE GROUND FUEL TANK.

⑨ EXISTING BACKFLOW PREVENTER AND BYPASS BACKFLOW PREVENTER TO BE REMOVED. PREPARE FOR INSTALLATION OF NEW BACKFLOW PREVENTERS.

⑩ EXISTING CW CHLORINATOR FEED LINES TO BE REMOVED AND REPLACED WITH NEW.

FILTER BUILDING - FIRST FLOOR PLUMBING DEMOLITION

SCALE: 3/32" = 1'-0"

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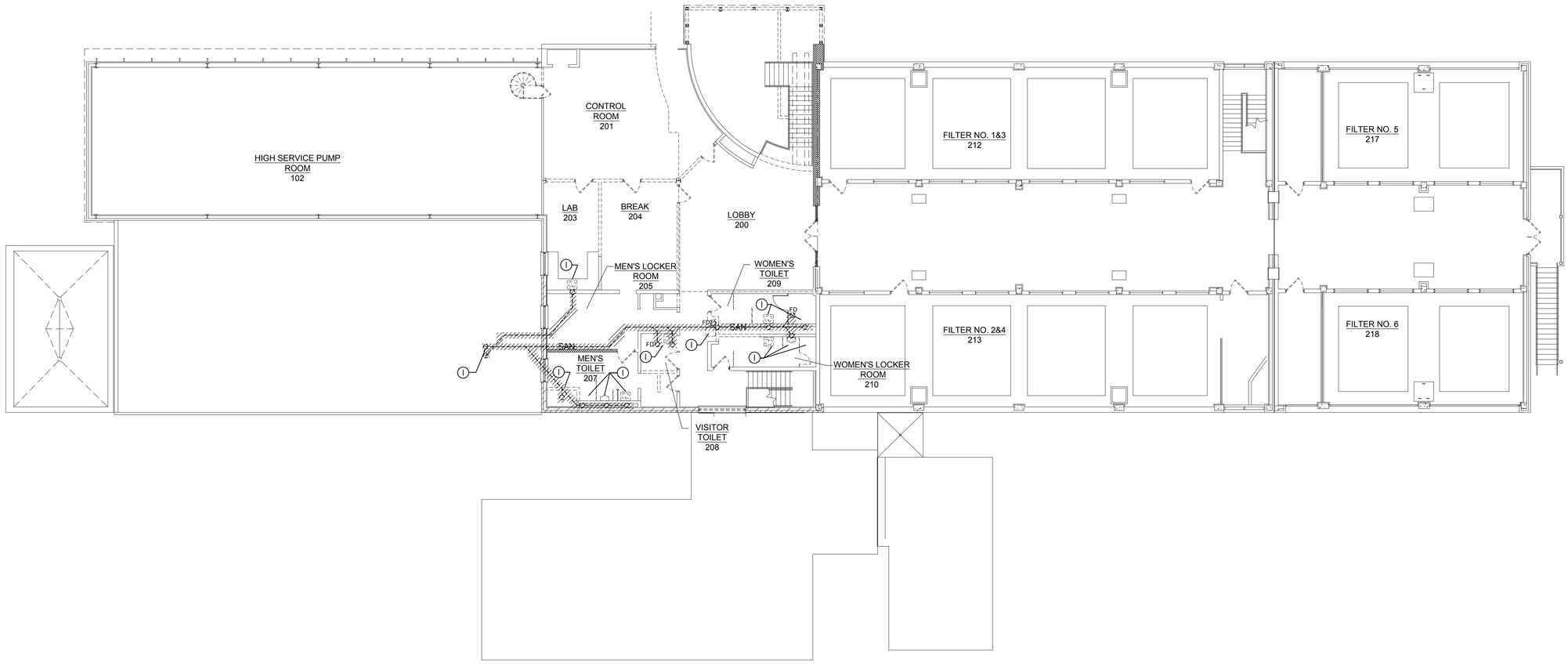
FILTER BUILDING
FIRST FLOOR
PLAN PLUMBING
DEMOLITION

PL-4

SHEET: OF

CODED NOTES

① EXISTING PLUMBING FIXTURE AND ALL ASSOCIATED PLUMBING PIPING TO BE REMOVED.



FILTER BUILDING - SECOND FLOOR AND LOWER ROOF SANITARY DEMOLITION

SCALE: 3/32" = 1'-0"

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FILTER BUILDING SECOND FLOOR AND LOWER ROOF SANITARY DEMOLITION

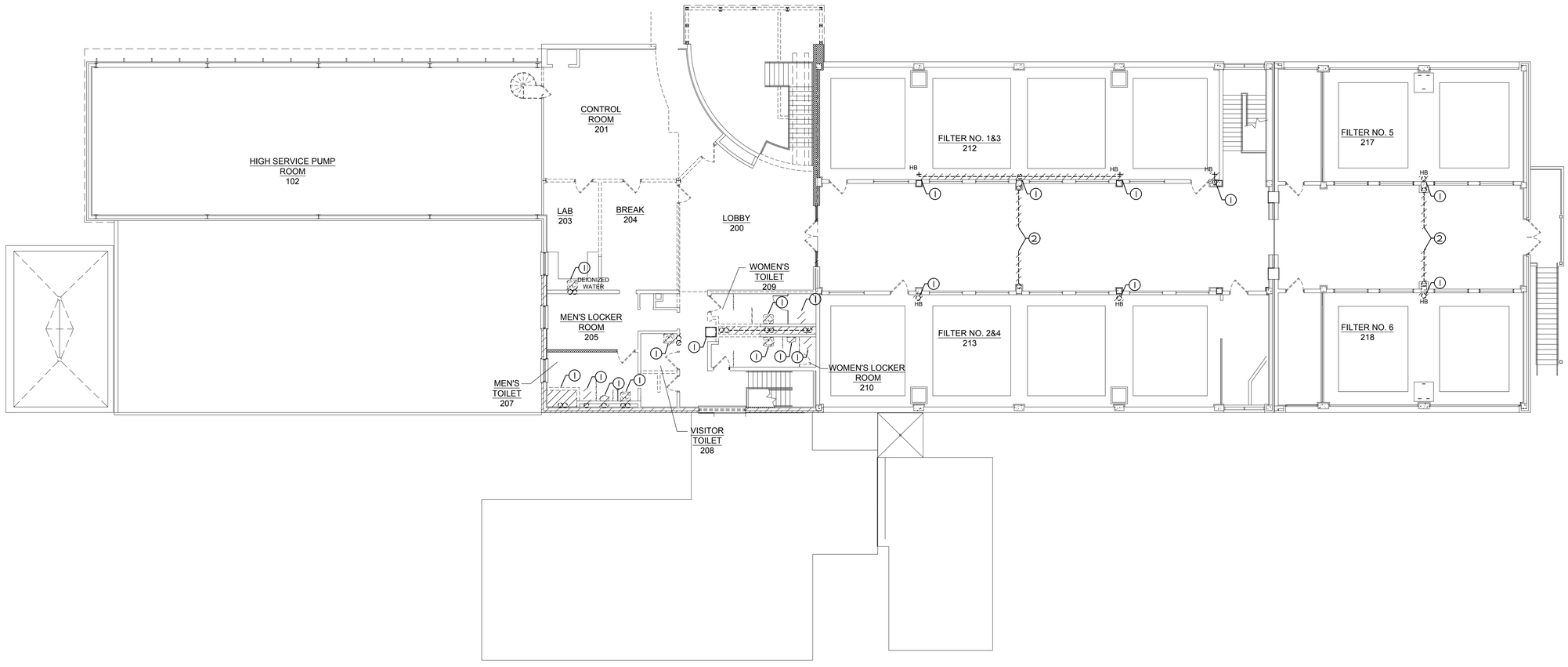
PL-5

SHEET: OF

CODED NOTES

① EXISTING PLUMBING FIXTURE AND ALL ASSOCIATED PLUMBING PIPING TO BE REMOVED.

② DISCONNECT EXISTING ROOF DRAIN PIPING FROM 24" BACK WASH LINE AND REMOVE PIPING BACK TO VERTICAL ROOF DRAIN LEADER. PREPARE VERTICAL LEADER FOR CONNECTION OF NEW PIPING. CUT AND CAP DEMOLISHED PIPING AS REQUIRED.



FILTER BUILDING - SECOND FLOOR AND LOWER ROOF PLUMBING DEMOLITION

SCALE: 3/32" = 1'-0"

N

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SCALE:	AS NOTED

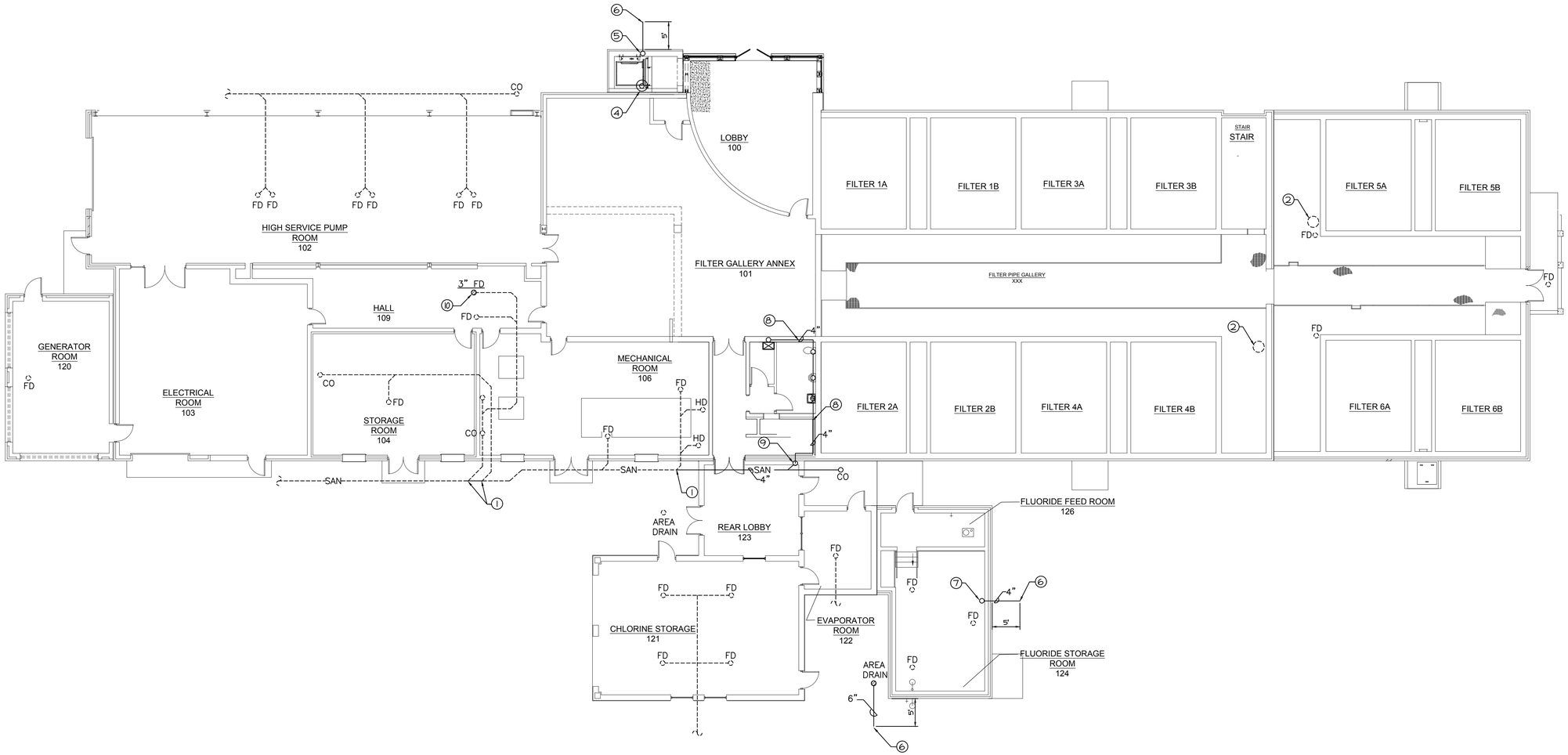
FILTER BUILDING SECOND FLOOR AND LOWER ROOF PLUMBING DEMOLITION

PL-6

SHEET: OF

CODED NOTES

1. CONNECT TO EXISTING SANITARY LINE. CONTRACTOR TO FILED VERIFY EXACT LOCATION, INVERT AND FLOW.
2. REPLACE EXISTING SUMP PUMP WITH NEW ZOLLER (OR EQUAL) MODEL 75 CAPABLE OF 10 GPM @ 20 FT HEAD ½ HP 115V SINGLE PHASE. CONNECT TO EXISTING PUMP DISCHARGE PIPING.
3. NOTE NOT USED
4. ELEVATOR SUMP PUMP (SEE ELEVATOR PIT SUMP PUMP DETAIL ON SHEET PL–2)
5. 2" ROOF DRAIN LEADER FROM ABOVE.
6. FINAL CONNECTION TO SITE STORM LINE BY P.C.
7. CONNECT TO EXISTING VERTICAL ROOF DRAIN LEADER FROM ABOVE AND EXTEND 5' OUT BELOW GRADE FOR CONNECTION TO NEW SITE STORM LINE.
8. ROUTE SANITARY LINE IN WALL/CHASE.
9. 4" SANITARY LINE DOWN TO BELOW GRADE IN THIS LOCATION TO AVOID CLEARWELL BELOW.
10. INSTALL NEW 3" FLOOR DRAIN AT REMOVED SERVICE SINK.



FILTER BUILDING - FIRST FLOOR SANITARY

SCALE: 3/32" = 1'-0"

N

STATE OF OHIO
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CINCINNATI, OHIO 45202

CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLAN &
WELL FIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE

JOB NO:	PR58982
DATE:	APRIL 2022
DESIGNED BY:	CWW
DRAWN BY:	CWH
CHECKED BY:	CWW
APPROVED BY:	CWW
SCALE:	AS NOTED

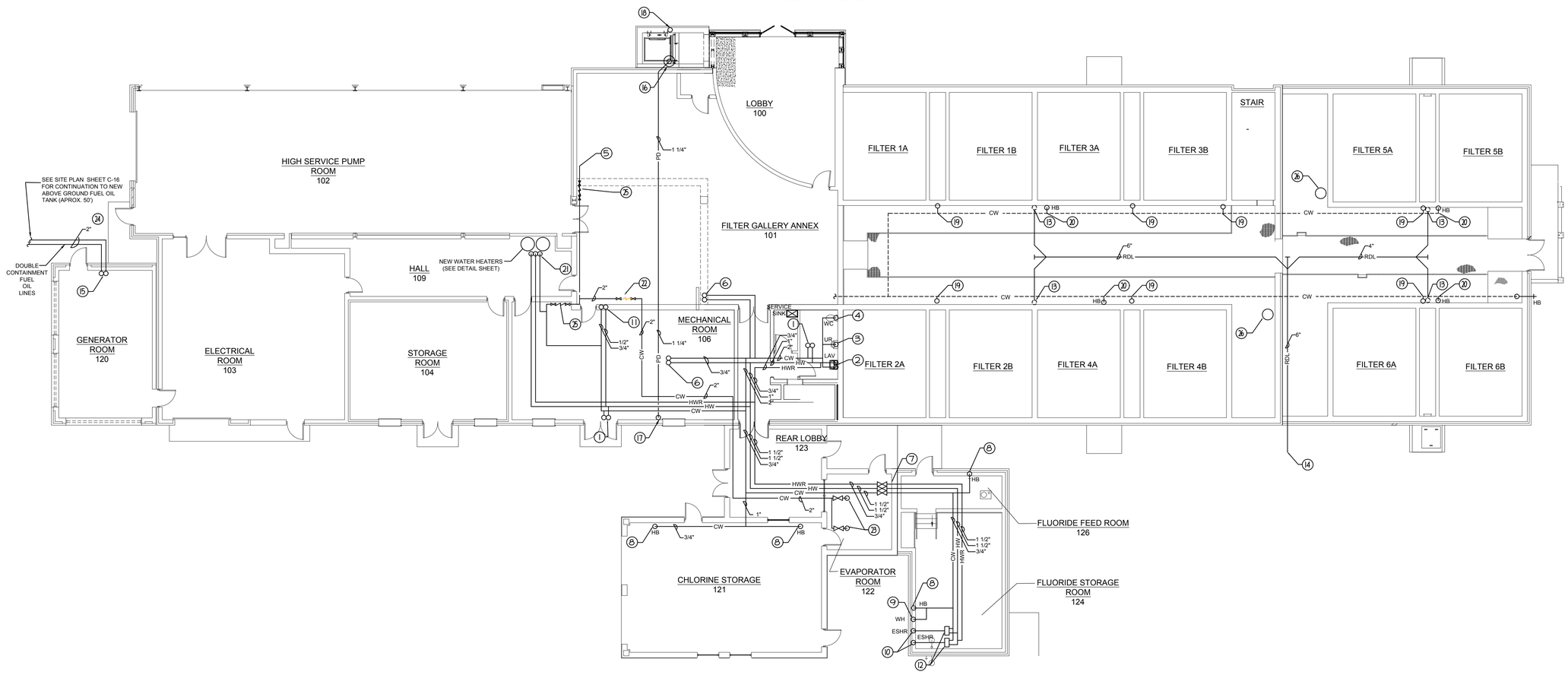
FILTER BUILDING
FIRST FLOOR
PLAN SANITARY

PL-7

SHEET: OF

CODED NOTES

1. 2" CW AND 3/4" HW UP INTO CHASE ABOVE.
2. 1/2" CW AND HW DOWN FOR CONNECTION TO NEW FIXTURE.
3. 3/4" CW DOWN FOR CONNECTION TO NEW FIXTURE.
4. 1" CW DOWN FOR CONNECTION TO NEW FIXTURE.
5. CONNECT TO EXISTING CW PIPING.
6. 3/4" CW AND HW UP.
7. TRANSITION FROM COPPER TO CPVC. ALL PIPING IN FLUORIDE ROOMS TO BE CPVC.
8. 3/4" CW DOWN FOR CONNECTION TO HOSE BIBB AT 2'-0" A.F.F
9. 3/4" CW DOWN FOR CONNECTION TO WALL HYDRANT AT 2'-0" A.F.F
10. 1 1/4" TEPID WATER DOWN FOR CONNECTION TO EMERGENCY SHOWN UNIT.
11. 3/4" CW AND 1/2" HW UP.
12. 1 1/4" CW AND HW TO MIXING VALVE AND 1 1/4" TEPID WATER TO ESHR.
13. CONNECT NEW 4" STORM PIPING TO EXISTING VERTICAL LEADER.
14. FINAL CONNECTION TO SITE STORM LINE BY P.C. AT 5'-0" OUTSIDE OF BLDG.
15. INSTALL NEW DOUBLE CONTAINMENT FUEL OIL LINES TO NEW ABOVE GROUND FUEL TANK. CONNECT TO EXISTING PIPING IN GENERATOR ROOM.
16. ELEVATOR SUMP PUMP (SEE ELEVATOR PIT SUMP PUMP DETAIL ON SHEET PL-2) 1 1/4" PUMP DISCHARGE FROM ELEVATOR SUMP.
17. 1 1/4" PUMP DISCHARGE DOWN FOR INDIRECT CONNECTION TO FLOOR SINK.
18. 2" ROOF DRAIN LEADER FROM ABOVE AND DOWN TO BELOW GRADE. (SEE SHEETS PL-7 AND PL-10 FOR CONTINUATION)
19. CONNECT 1" WATER TO EXISTING PROCESS WATER LINE AND UP (SEE SECOND FLOOR PLUMBING PLANS FOR CONTINUATION)
20. CONNECT 1" WATER TO EXISTING PROCESS WATER LINE AND DN TO NEW HOSE BIBB
21. 1 1/2" CW, 1 1/2" HW AND 3/4" HWR DOWN FOR CONNECTION TO WATER HEATERS. (SEE HWH PIPING DETAIL, SHEET PL-2)
22. INSTALL 2 NEW WATTS REDUCED PRESSURE BACK FLOW PREVENTERS AT PRIMARY AND BY-PASS LINE
23. CONNECT NEW WATER LINES TO CHLORINATOR AS REQUIRED.
24. FINAL CONNECTION TO FUEL TANK WITH ANGLE CHECK VALVE WITH PRESSURE RELIED OR FOOT VALVE, STRAINER AND PRESSURE RELIEF VALVE. SHUT-OFF VALVE WITH FUSIBLE LINK ON SUPPLY PIPING. ANTI SIPHON VALVE. SEE MANUFACTURES INSTALLATION INSTRUCTIONS/ RECOMMENDATIONS.
25. INSTALL NEW PRESSURE REDUCING/REGULATING VALVE SET TO 80 PSI
26. REPLACE EXISTING SUMP PUMP WITH NEW ZOLLER (OR EQUAL) MODEL 75 CAPABLE OF 10 GPM @ 20 FT HEAD 1/2 HP 115V SINGLE PHASE. CONNECT TO EXISTING PUMP DISCHARGE PIPING.



FILTER BUILDING - FIRST FLOOR PLUMBING

SCALE: 3/32" = 1'-0"

N

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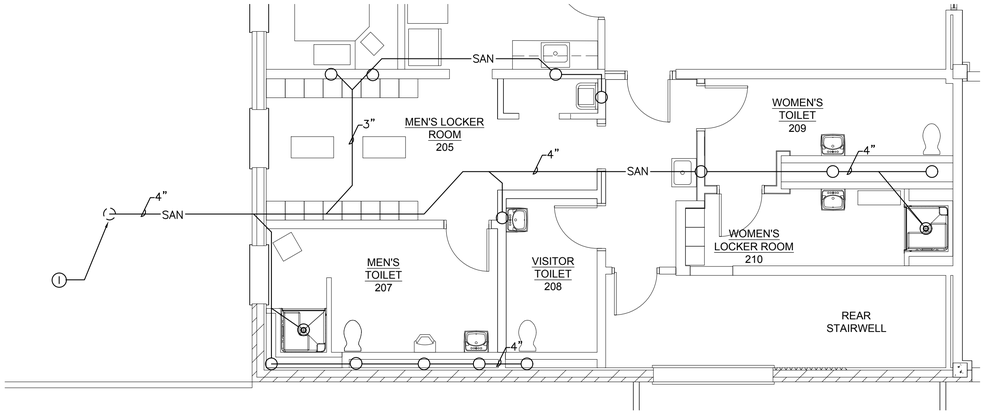
SCALE:	AS NOTED

FILTER BUILDING
FIRST FLOOR
PLAN PLUMBING

PL-8

SHEET: OF

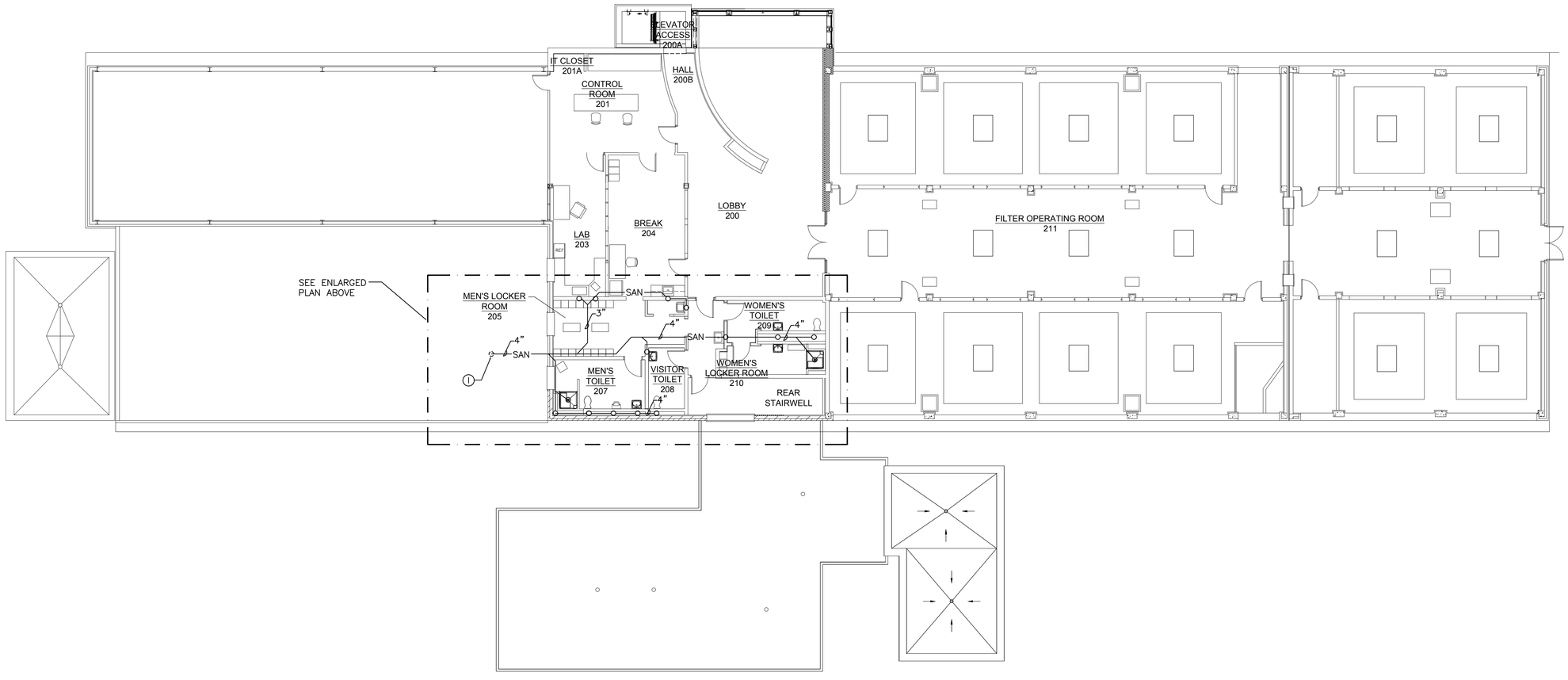


FILTER BUILDING - ENLARGED SECOND FLOOR SANITARY

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

CODED NOTES

1. CONNECT TO EXISTING 4" SANITARY STACK.



FILTER BUILDING - SECOND FLOOR AND LOWER ROOF SANITARY

SCALE: 3/32" = 1'-0"

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CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
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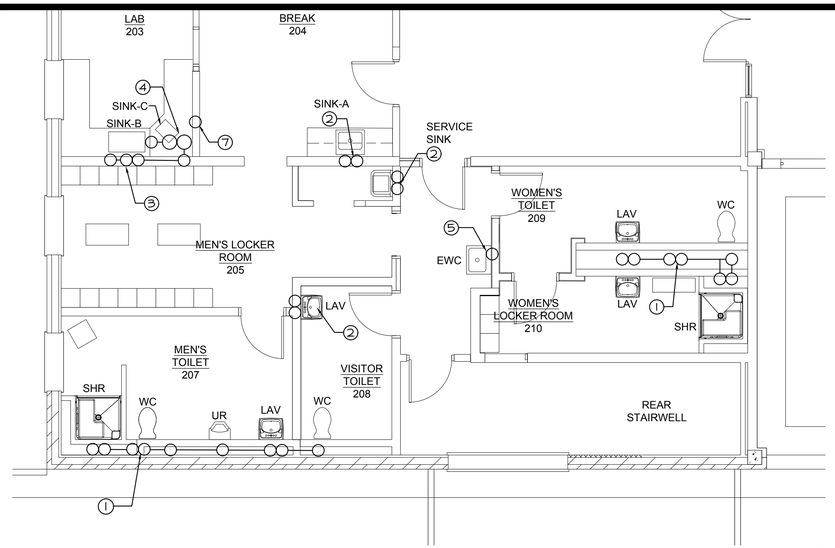
CHECKED BY:	CWW
APPROVED BY:	CWW
SCALE:	AS NOTED

FILTER BUILDING SECOND FLOOR AND LOWER ROOF SANITARY

PL-9

SHEET: OF

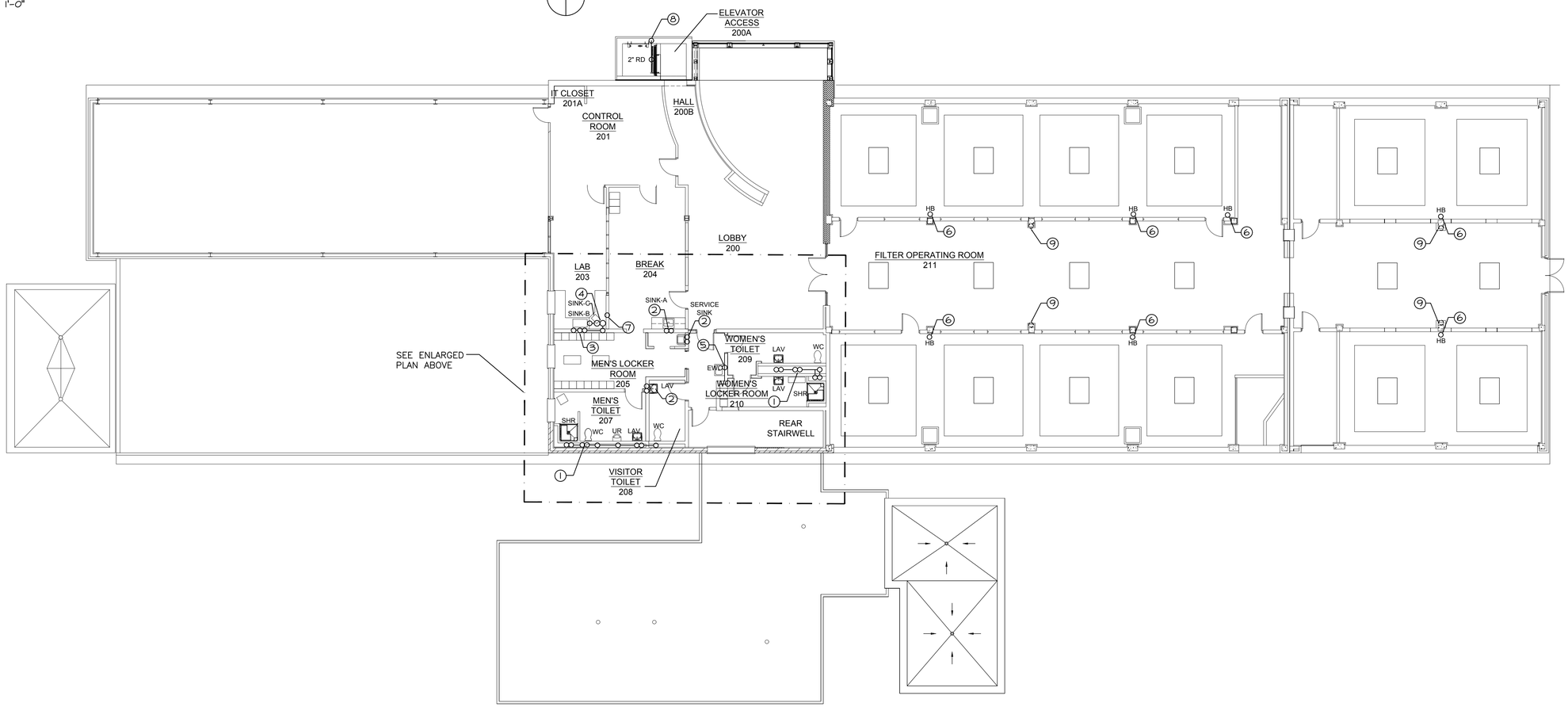


FILTER BUILDING - ENLARGED SECOND FLOOR PLUMBING

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

CODED NOTES

1. NEW 2" CW AND 3/4" HW UP IN CHASE AND HEADER FULL SIZE FOR CONNECTION TO NEW FIXTURES.
2. 1/2" CW AND HW UP FROM BELOW FOR CONNECTION TO NEW FIXTURES.
3. 3/4" CW AND 1/2" HW UP FOR CONNECTION TO NEW FIXTURES AND D.I. WATER SYSTEM.
4. NEW DEIONIZED WATER SYSTEM. PURE AQUA INC HOUSING MODEL NO. BBH-1010 WITH DI-10-B CARTRIDGE.
5. 1/2" CW UP FOR CONNECTION TO EWC.
6. 1" CW FROM BELOW FOR CONNECTION TO HOSE BIBB AT 18" A.F.F.
7. 1/2" CW TO GUY GREY BOX AT 4'-0" A.F.F. WITH SHUT-OFF VALVE FOR CONNECTION TO REFRIGERATOR.
8. 2" ROOF DRAIN LEADER DOWN IN CMU WALL.
9. EXISTING ROOF DRAIN PIPING FROM ABOVE AND DOWN.



FILTER BUILDING - SECOND FLOOR AND LOWER ROOF PLUMBING

SCALE: 3/32" = 1'-0"

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CITY OF CANTON
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SUGAR CREEK
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FILTER BUILDING
SECOND FLOOR
AND LOWER ROOF
PLUMBING

PL-10

SHEET: OF

CODED NOTES

(1) 2" CW AND 3/4" HW UP INTO CHASE ABOVE.

(2) 1/2" CW AND HW DOWN FOR CONNECTION TO NEW FIXTURE.

(3) 3/4" CW DOWN FOR CONNECTION TO NEW FIXTURE.

(4) 1" CW DOWN FOR CONNECTION TO NEW FIXTURE.

(5) NOTE NOT USED.

(6) 1/2" CW AND HW UP.

(7) TRANSITION FROM COPPER TO CPVC. ALL PIPING IN FLUORIDE ROOMS TO BE CPVC.

(8) 3/4" CW DOWN FOR CONNECTION TO HOSE BIBB AT 2'-0" A.F.F

(9) 3/4" CW DOWN FOR CONNECTION TO WALL HYDRANT AT 2'-0" A.F.F

(10) 1 1/4" TEPID WATER DOWN FOR CONNECTION TO EMERGENCY SHOWN UNIT.

(11) 3/4" CW AND 1/2" HW UP.

(12) 1 1/4" CW AND HW TO MIXING VALVE AND 1 1/4" TEPID WATER TO ESHR.

(13) NOTE NOT USED.

(14) NOTE NOT USED.

(15) NOTE NOT USED.

(16) NOTE NOT USED.

(17) 1 1/4" PUMP DISCHARGE DOWN FOR INDIRECT CONNECTION TO FLOOR SINK.

(18) NOTE NOT USED.

(19) CONNECT 1" WATER TO EXISTING PROCESS WATER LINE AND UP (SEE SECOND FLOOR PLUMBING PLANS FOR CONTINUATION)

(20) NOTE NOT USED.

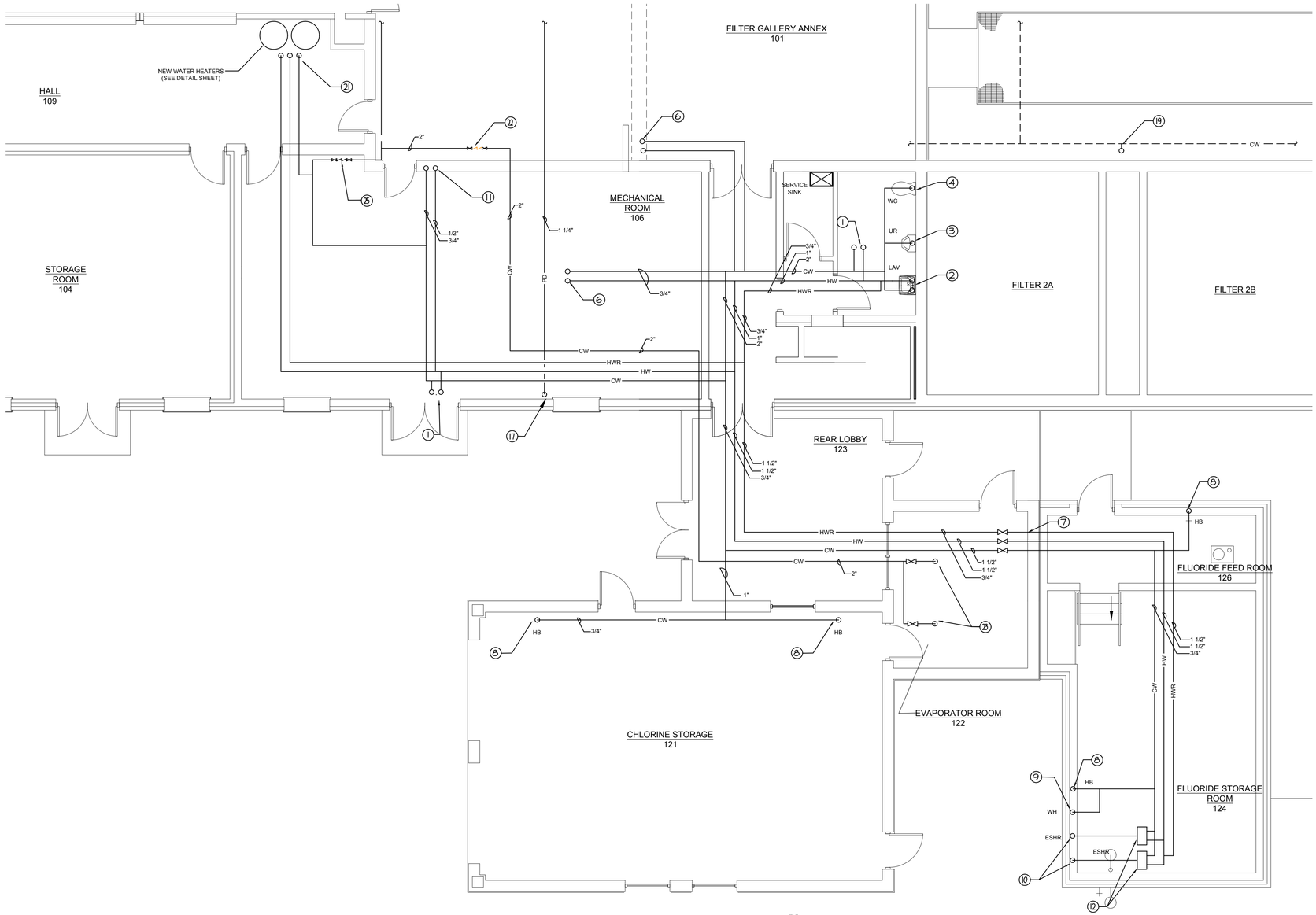
(21) 1 1/2" CW, 1 1/2" HW AND 3/4" HWR DOWN FOR CONNECTION TO WATER HEATERS. (SEE HWH PIPING DETAIL, SHEET PL-2)

(22) INSTALL 2 NEW WATTS REDUCED PRESSURE BACK FLOW PREVENTERS AT PRIMARY AND BY-PASS LINE

(23) CONNECT NEW WATER LINES TO CHLORINATOR AS REQUIRED.

(24) NOTE NOT USED.

(25) INSTALL NEW PRESSURE REDUCING/REGULATING VALVE SET TO 80 PSI



FILTER BUILDING - ENLARGED FIRST FLOOR PLUMBING

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

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CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
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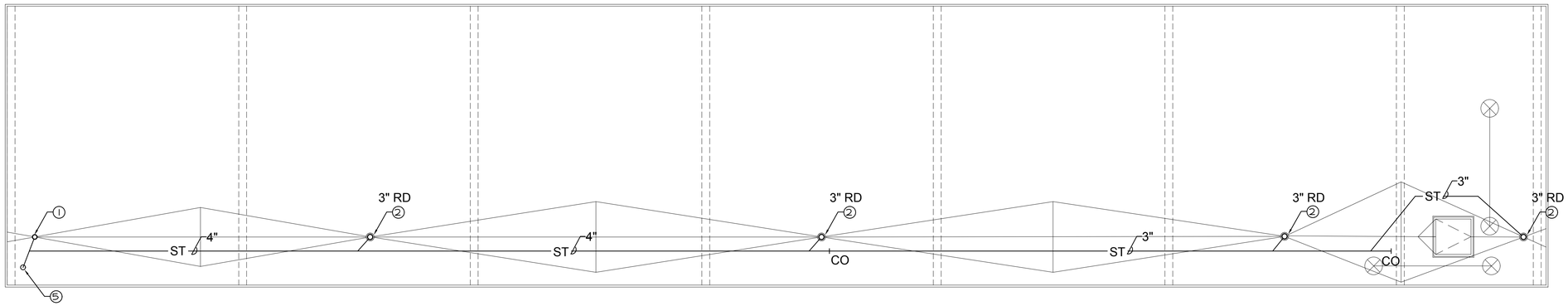
SCALE:	AS NOTED

FILTER BUILDING
ENLARGED
FIRST FLOOR
PLAN PLUMBING

PL-11

SHEET: OF

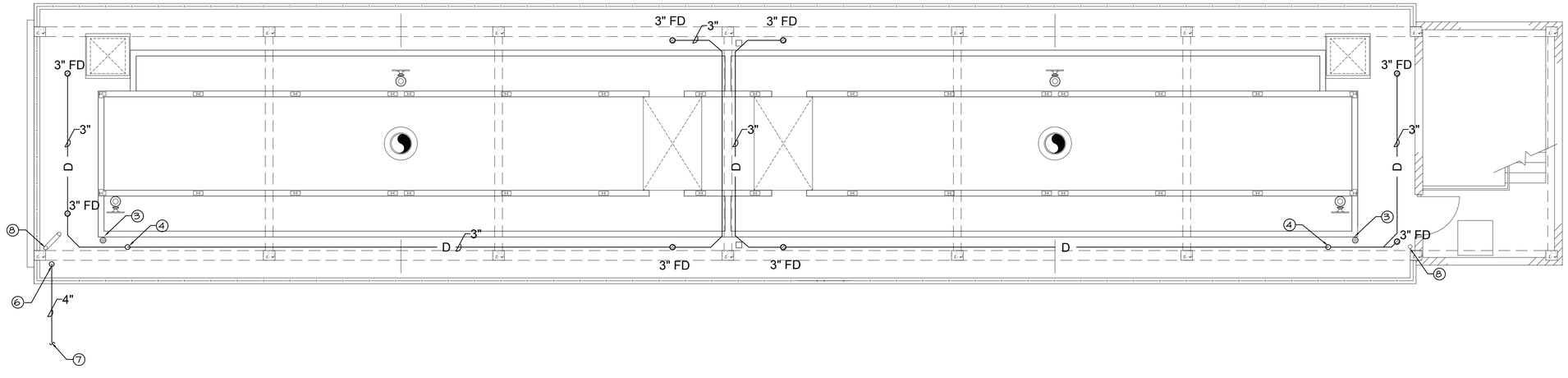


WEST AERATOR BUILDING PLUMBING ROOF PLAN

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

CODED NOTES

1. EXISTING ROOF DRAIN TO REMAIN. CONNECT TO NEW ROOF DRAIN PIPING.
2. NEW 3" ROOF DRAIN.
3. EXISTING FLOOR DRAIN DISCHARGING INTO OVERFLOW CHAMBER TO BE CLEANED AND INSPECTED FOR PROPER FLOW.
4. NEW 4" FLOOR DRAIN PIPING TO DISCHARGE INTO OVERFLOW CHAMBER.
5. 4" ROOF DRAIN PIPING DOWN.
6. 4" ROOF DRAIN PIPING FROM ABOVE AND DOWN THRU OVERHANG TO BELOW GRADE.
7. FINAL CONNECTION TO SITE STORM LINE AT 5'-0" OUTSIDE OF BUILDING.
8. EXISTING ROOF DRAIN PIPING TO BE REMOVED/ DEMOLISHED.



WEST AERATOR BUILDING UPPER PLUMBING PLAN

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

STATE OF OHIO
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CITY OF CANTON
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLAN &
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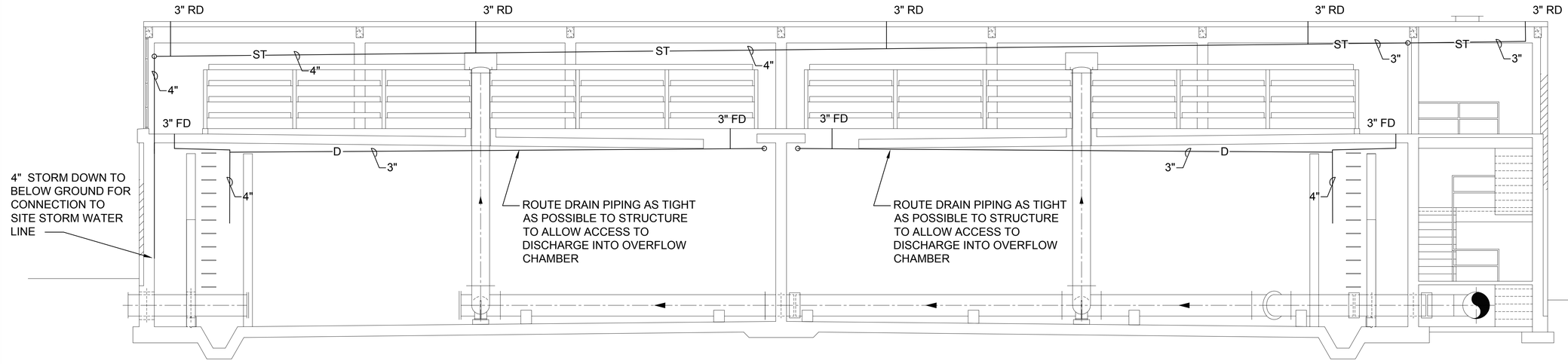
APPROVED BY:	CWW
SCALE:	AS NOTED

WEST AERATOR BUILDING PLUMBING PLANS

PL-12

SHEET: OF



WEST AERATOR BUILDING SECTION

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

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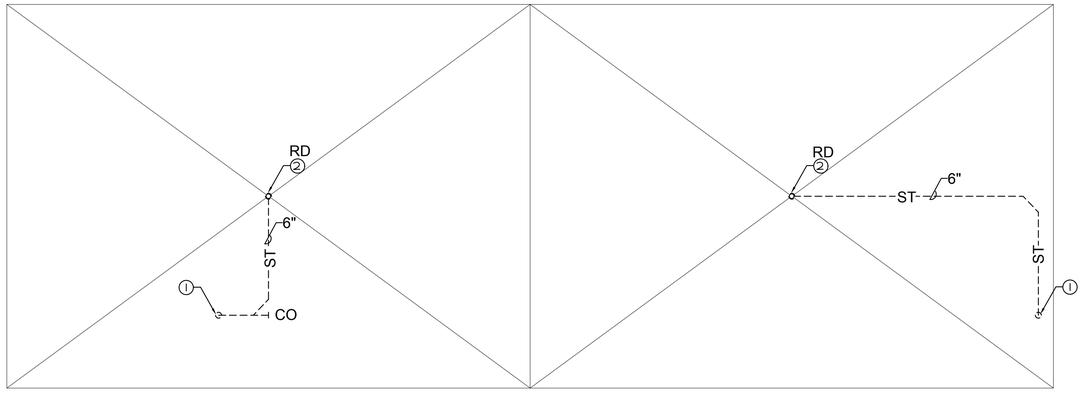
WEST AERATOR BUILDING PLUMBING PLANS

PL-13

SHEET: OF

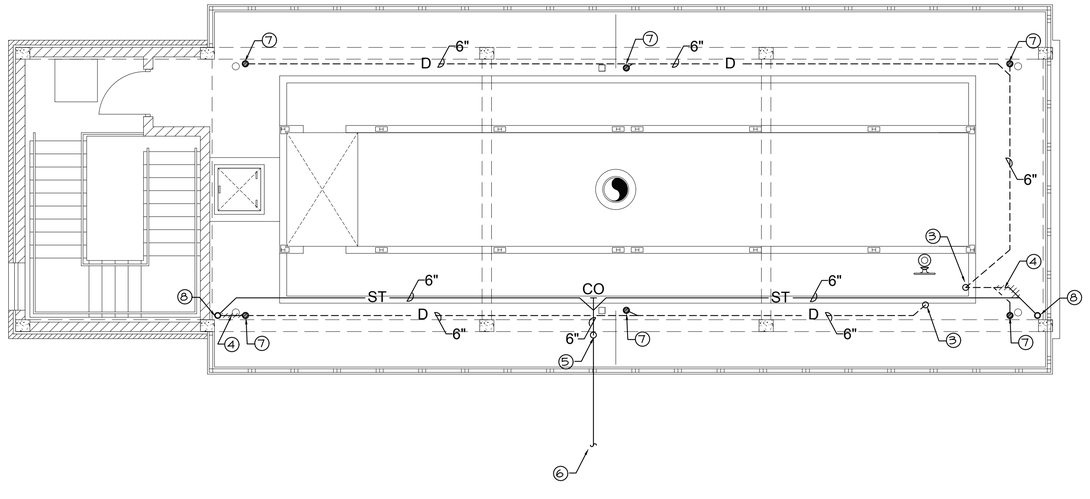


EAST AERATOR BUILDING PLUMBING ROOF PLAN

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

CODED NOTES

1. EXISTING 6" ROOF DRAIN PIPING DOWN.
2. EXISTING ROOF DRAIN TO RAMAIN.
3. EXISTING DRAIN PIPING DISCHARGING INTO OVERFLOW CHAMBER.
4. 6" ROOF DRAIN PIPING FROM ABOVE IS CURRENTLY TIED INTO THE FLOOR DRAIN PIPING. DISCONNECT ROOF DRAIN PIPING FROM FLOOR DRAIN BELOW SLAB, CAP AS REQUIRED FOR A FUNCTIONING FLOOR DRAIN SYSTEM SERVED BY EXISTING PIPING.
5. 6" ROOF DRAIN PIPING THRU WALL AND DOWN UNDER OVERHANG TO BELOW GRADE.
6. FINAL CONNECTION TO SITE STORM LINE AT 5'-0" OUTSIDE OF BUILDING.
7. EXISTING FLOOR/AREA DRAIN TO REMAIN. PRESSURE JET AND INSPECT FOR PROPER PERFORMANCE OF EXISTING DRAIN PIPING.
8. EXISTING ROOF DRAIN PIPING FROM ABOVE. CONNECT NEW 6" ROOF DRAIN LEADERS TO EXISTING ROOF DRAIN PIPING AND ROUTE AS SHOWN.



EAST AERATOR BUILDING UPPER PLUMBING PLAN

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

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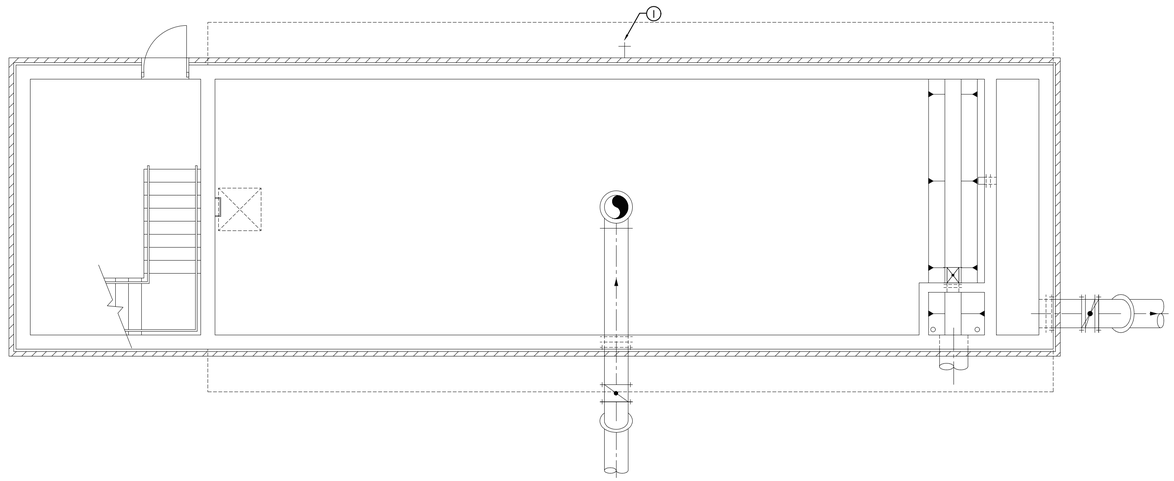
EAST AERATOR BUILDING PLUMBING PLANS

PL-14

SHEET: OF

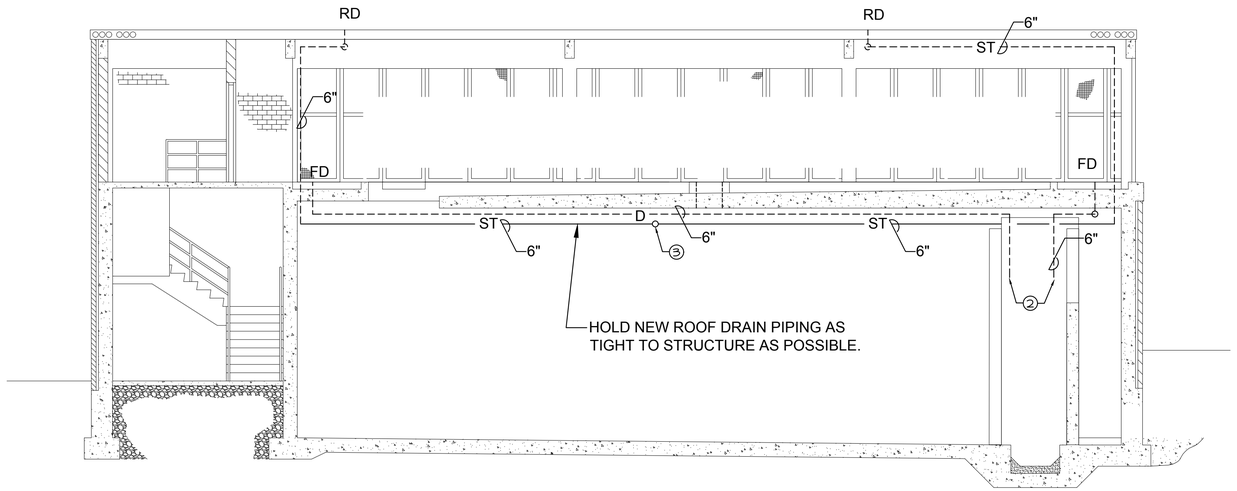


EAST AERATOR BUILDING LOWER PLUMBING PLAN

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

CODED NOTES

1. EXISTING WALL HYDRANT TO BE REMOVED AND REPLACED WITH NEW IN SAME LOCATION. CONNECT TO EXISTING WATER LINE.
2. EXISTING DRAIN PIPING DISCHARGES TO OVERFLOW CHAMBER.
3. NEW 6" ROOF DRAIN PIPING THRU CHAMBER WALL AND DOWN TO BELOW GRADE.



EAST AERATOR BUILDING SECTION

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

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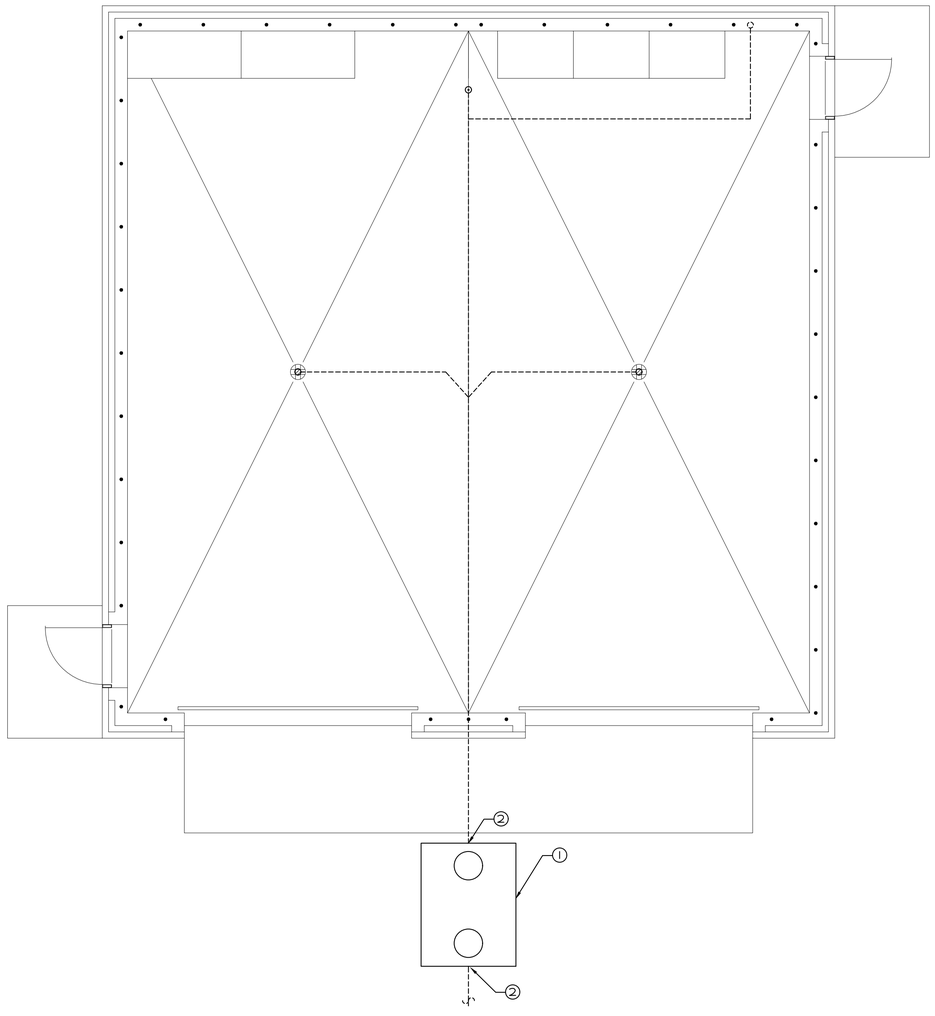
SCALE:	AS NOTED

EAST AERATOR BUILDING PLUMBING PLANS

PL-15

SHEET: OF



MAINTENANCE GARAGE PLUMBING PLAN

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

CODED NOTES

1. INSTALL NEW TRAFFIC-BEARING REINFORCED PRECAST CONCRETE OIL SEPARATOR WITH 50 CUBIC FEET EFFECTIVE CAPACITY. MACK INDUSTRIES DRAWING NO. E-10 OR EQUAL.
2. CONNECT TO EXISTING SANITARY LINE.

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WATER DEPARTMENT
SUGAR CREEK
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APPROVED BY: CWW
SCALE: AS NOTED

MAINTENANCE GARAGE PLUMBING PLAN

PL-16

SHEET: OF

PLOTTED: 4/18/2022 8:16:17 AM

POWER LEGEND

RECEPTACLE OUTLETS – NUMERAL BY THE SIDE OF THE SYMBOL INDICATES CIRCUIT NUMBER

- DUPLEX CONVENIENCE OUTLET MOUNTED AT +18" OR AS NOTED.
- DOUBLE DUPLEX OUTLET (FOURPLEX) RECEPTACLE MOUNTED AT +18" OR AS NOTED.
- C — DUPLEX CONVENIENCE OUTLET MOUNTED ABOVE COUNTER. VERIFY EXACT MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
- TELEPHONE OUTLET AT +18" OR AS NOTED. FURNISH (1) 3/4" CONDUIT WITH PULL WIRE TO TELEPHONE MOUNTING BOARD OR TO INTERNET SERVICE PANEL AS NOTED.
- CABLE TV OUTLET AT +18" OR AS NOTED. FURNISH (1) 3/4" CONDUIT WITH PULL WIRE TO TELEPHONE MOUNTING BOARD OR AS NOTED.
- CAT 5e DATA JACK AT +18" OR AS NOTED.
- DEDICATED OUTLET AT +18" OR AS NOTED. 'HUBBELL' #G5262 (ORANGE) RECEPTACLE WITH ISOLATED GROUND.
- DEDICATED TWISTLOCK OUTLET AT +18" OR AS NOTED.
- MULTI–OUTLET ASSEMBLY
- FLUSH MOUNTED PANELBOARD AND CABINET. MOUNT 6'–6" TO TOP
- SURFACE MOUNTED PANELBOARD AND CABINET. MOUNT 6'–6" TO TOP
- PB — PULL BOX
- 4X — COMBINATION MOTOR CONTROLLER – FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. SIZE AS NOTED. NUMBER INDICATES NEMA TYPE CONSTRUCTION.
- 1 — MOTOR – SIZE AS INDICATED ON DRAWINGS.
- DISCONNECT SWITCH – SIZE AND FUSES AS PER MANUFACTURER'S RECOMMENDATIONS (WEATHERPROOF WHERE OUTSIDE).
- J — JUNCTION BOX IN ACCESSIBLE LOCATION.
- J — JUNCTION BOX IN ACCESSIBLE LOCATION WITH FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT AS NOTED.
- PE — PHOTOCELL ON ROOF (AIM NORTH).
- SEALING FITTING
- VS 12 — MOTOR CONTROLLER OR VFD – INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. NUMBER INDICATES NEMA TYPE CONSTRUCTION, VS INDICATES VENDOR SUPPLIED.
- EQUIPMENT SHOWN LIGHT & DASHED INDICATES EXISTING EQUIPMENT EXCEPT, FOR UNDERGROUND CONDUITS AND/OR AS OTHERWISE NOTED.
- EQUIPMENT SHOWN LIGHT, DASHED, & HATCHED INDICATES EXISTING EQUIPMENT TO BE REMOVED.
- UTILITY POLE

RACEWAYS AND CONDUCTORS

- INDICATES HOMERUN FROM EQUIPMENT TO PANELBOARD OR AS NOTED.
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- OHP — PROPOSED OVERHEAD PRIMARY CABLE
- EX — EXISTING UNDERGROUND ELECTRICAL CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- EP — PROPOSED UNDERGROUND PRIMARY ELEC CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT

LIGHTING

LIGHTING FIXTURES – CAPITAL LETTER INDICATES THE FIXTURE TYPE AS SHOWN ON FIXTURE SCHEDULE. NUMERAL INDICATES CIRCUIT NO. AND SMALL LETTER DESIGNATES THE CONTROL SWITCH. EXACT MOUNTING PER SCHEDULE.

CEILING	WALL	DESCRIPTION
○	○	SURFACE OR PENDANT INCANDESCENT, HID OR SIMILAR LAMP FIXTURE.
▭	▭	SURFACE OR PENDANT INDIVIDUAL FLUORESCENT FIXTURE.
▭▭▭	▭▭▭	SURFACE OR PENDANT CONTINUOUS
▭	▭	BARE LAMP FLUORESCENT STRIP.
⊠	⊠	SURFACE OR PENDANT EXIT LIGHT. ARROWS INDICATE ROUTE OF EGRESS.
		EMERGENCY LIGHTING FIXTURE BATTERY OPERATED. ARROWS INDICATE AIMING DIRECTION.
□⊙□	□⊙	POLE MOUNTED LIGHT FIXTURE, SINGLE POLE W/SINGLE AND/OR DOUBLE FIXTURE.

SWITCHED OUTLET

SMALL LETTER BY THE SIDE OF SYMBOLS INDICATES THE PARTICULAR SWITCH.
SAMPLE: $a = SWITCH "a"

- $a — SINGLE POLE SWITCH MOUNTED AT +48" OR AS NOTED.
- $2 — TWO POLE SWITCH MOUNTED AT +48" OR AS NOTED.
- $3 — THREE WAY SWITCH MOUNTED AT +48" OR AS NOTED.
- $4 — FOUR WAY SWITCH MOUNTED AT +48" OR AS NOTED.
- $P — SINGLE POLE SWITCH WITH PILOT LIGHT MOUNTED AT +48" OR AS NOTED.
- $K — SINGLE POLE KEY OPERATED SWITCH MOUNTED AT +48" OR AS NOTED.
- $M — H.P. RATED MANUAL MOTOR STARTER (WEATHERPROOF WHERE OUTSIDE).
- $D — INCANDESCENT SLIDE CONTROL DIMMER AT +48" OR AS NOTED (1500 WATT UNLESS OTHERWISE NOTED).
- $T — 0–60 MINUTE TIMER SWITCH MOUNTED AT +48" OR AS NOTED.

ABBREVIATED LIST OF NEMA ENCLOSURE TYPES

- TYPE 1: GENERAL PURPOSE. INDOOR.
- TYPE 2: DRIP–PROOF. NONCORROSIVE. INDOOR.
- TYPE 3: DUST–TIGHT. RAINTIGHT. OUTDOOR.
- TYPE 3R: RAINPROOF. OUTDOOR.
- TYPE 4: WATERTIGHT AND DUST–TIGHT. NONCORROSIVE. INDOOR AND OUTDOOR.
- TYPE 4X: WATERTIGHT AND DUST–TIGHT. CORROSION RESISTANT. INDOOR AND OUTDOOR.
- TYPE 6: WATERTIGHT. DUST–TIGHT. SHORT–TIME SUBMERSIBLE. INDOOR AND OUTDOOR.
- TYPE 6P: WATERTIGHT. DUST–TIGHT. LONG–TIME SUBMERSIBLE. INDOOR AND OUTDOOR.
- TYPE 7: CLASS 1, GROUPS A, B, C, OR D. INDOOR.
- TYPE 8: CLASS 1, GROUPS A, B, C, OR D. INDOOR OR OUTDOOR.
- TYPE 9: CLASS II, GROUPS E OR G. INDOOR.
- TYPE 12: DUST–TIGHT. WATERTIGHT. NONCORROSIVE LIQUID. INDOOR.
- TYPE 13: WATERTIGHT. DUST–TIGHT. OILTIGHT. NONCORROSIVE LIQUID INDOOR.

PROJECT GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (N.E.C.) LATEST EDITION.
2. COORDINATE ALL ELECTRICAL EQUIPMENT LOCATIONS AND MECHANICAL APPURTENANCES WITHIN THE EXISTING CONDITIONS TO PROVIDE ADEQUATE WORKING AND ACCESS PER N.E.C. REQUIREMENTS.
3. WHERE EXISTING ELECTRICAL DEVICES AND PROCESS DEVICES ARE INDICATED THOSE LOCATIONS ARE APPROXIMATE AND NOT ALL ELECTRICAL DEVICES MAY BE INDICATED. (FIELD VERIFY ALL ELECTRICAL ITEMS WHERE POSSIBLE.)
4. CONDUITS, RACEWAYS AND CABLES SHALL BE PROPERLY AND SECURELY ATTACHED TO BUILDING STRUCTURAL COMPONENTS AS REQUIRED BY N.E.C. ALL FASTENERS AND HARDWARE SHALL BE APPROVED FOR THE INSTALLATION AND THE CONDITIONS ENCOUNTERED.
5. EACH JUNCTION IN ANY OF THE WIRING SYSTEMS SHALL BE MADE IN AN APPROVED JUNCTION BOX. SUCH BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS AND DEVICES TO BE INSTALLED, AS WELL AS THE CONDITION ENCOUNTERED. ALL SPLICES SHALL BE MADE WITH APPROVED, MECHANICAL CONNECTORS.
6. CONTRACTOR SHALL VERIFY ALL STRUCTURAL, PROCESS AND MECHANICAL CONDITIONS PRIOR TO ROUGH–IN FOR ELECTRICAL WIRING AND EQUIPMENT.
7. ALL ELECTRICAL WORK SHALL BE CAREFULLY COORDINATED WITH THE ON–SITE CONDITIONS. WHERE CUTTING, DRILLING OR ALTERATION TO THE WORK OF OTHERS IS NECESSARY FOR THE PROPER INSTALLATION OF ELECTRICAL EQUIPMENT, SUCH WORK SHALL BE PLANNED IN ADVANCE AND SHALL BE CAREFULLY DONE. ANY DAMAGE TO THE BUILDINGS OR EQUIPMENT SHALL BE REPAIRED BY PROPERLY TRAINED PERSONNEL TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
8. DURING ROUGH–IN AND FINISHED STAGES OF CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES AND DEVICES AS WELL AS ALL EXISTING EQUIPMENT AND RELATED WORK AREAS.
9. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH HE/SHE IS FURNISHING TO THE ENGINEER/OWNER FOR REVIEW PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE FINAL LOCATIONS OF INSTRUMENTATION, CONTROL AND POWER CONNECTION DETAILS SO THAT THE ASSOCIATED ELECTRICAL WORK WILL BE PROPERLY COORDINATED AND INSTALLED.
11. EQUIPMENT LAYOUT AND EXACT LAYOUT OF NEW ELECTRICAL EQUIPMENT AND INSTRUMENTATION SHALL BE COORDINATED WITH PROCESS AND MECHANICAL EQUIPMENT.
12. DRAWINGS SHOW A LAYOUT OF ELECTRICAL/INSTRUMENTATION SYSTEMS AND EQUIPMENT DIAGRAMMATICALLY. EXACT LOCATION OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE DETERMINED BY FIELD CONDITIONS AND DIRECTION BY ENGINEER AND OWNER. BY SUBMITTING A BID, CONTRACTOR WARRANTS THAT HE HAS VISITED THE SITE WHERE WORK IS TO BE PERFORMED, AND HAS EXAMINED THE EXISTING CONDITIONS AND EXTENT OF LABOR AND MATERIALS TO BE PROVIDED. COORDINATION WITH ALL TRADES, UTILITIES, ETC. SHALL BE PROVIDED. THE ENGINEER SHOULD BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS OR INTERFERENCES WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THEIR INTERPRETATIONS.

DEMOLITION GENERAL NOTES:

1. ANY DEMOLITION INDICATED ON THESE DRAWINGS IS SHOWN IN GENERAL TO INDICATE THE EXTENT OF DEMOLITION AND IS NOT TO BE CONSIDERED AS A RECORD DRAWING OF EXISTING CONDITIONS. ACCORDINGLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE DEMOLITION OF ELECTRICAL WORK INDICATED INCLUDING ANY BURIED ITEMS OR EXISTING ITEMS NOT SHOWN ON THESE DRAWINGS. BEFORE DEMOLITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPROPRIATE FIELD TESTING TO DETERMINE THE NATURE OF THE EXISTING WORK TO BE DEMOLISHED TO PROTECT EXISTING WORK REMAINING IN PLACE AND TO PROTECT THE PUBLIC.
2. REPAIR AND RESTORE TO ORIGINAL CONDITION ALL ITEMS OR PORTIONS OF ELECTRICAL WORK WHICH ARE NOT NOTED TO BE DEMOLISHED, BUT ARE DAMAGED BY WORK UNDER THIS CONTRACT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROTECT AND RETAIN POWER TO ALL EXISTING ACTIVE EQUIPMENT WHICH SHALL REMAIN. ELECTRICAL CONTRACTOR SHALL RECONNECT ANY EQUIPMENT BEING DISTURBED BY THIS RENOVATION.
3. WHERE WORK BY THE GENERAL CONTRACTOR (WALL REMOVAL, NEW OR RELOCATED WALL OPENINGS), REQUIRES THE REMOVAL, RELOCATION, OR REFEEDING OF ELECTRICAL DEVICES OR LIGHTING FIXTURES, THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND MAKE SAFE OR RECONNECT AS REQUIRED ALL ACTIVE DEVICES REMAINING ON THAT CIRCUIT.
4. CONTRACTOR SHALL VERIFY ALL CIRCUIT IN EXISTING PANEL AFFECTED BY THIS ALTERATION. WHERE ADDITIONAL CIRCUITS ARE NEEDED, USE AVAILABLE SPARE BREAKERS IN THE PANEL. TIGHTEN ALL CONNECTIONS AS REQUIRED.
5. DO NOT PROCEED WITH DEMOLITION WITHOUT WRITTEN AUTHORITY TO PROCEED. PROCEED WITH DEMOLITION IN A SYSTEMATIC MANNER AND COORDINATE WITH ALL TRADES INVOLVED. COORDINATE AND SEQUENCE DEMOLITION SO AS NOT TO CAUSE A SHUTDOWN OF OPERATION OF SURROUNDING AREAS.
6. DISCONNECT OR SHUT OFF SERVICE TO AREAS WHERE ELECTRICAL WORK IS TO BE REMOVED. REMOVE ALL ELECTRICAL PANELS, EQUIPMENT, AND RELATED CONDUIT, AND WIRING WHICH ARE NOT A PART OF THE FINAL PROJECT IN ALL AREAS WHERE WORK OF THIS CONTRACT ARE TO BE PERFORMED. ALL REMOVED EQUIPMENT SHALL BE DISPOSED OF BY THIS CONTRACTOR UNLESS DIRECTED TO DO OTHERWISE BY THE OWNER. REMOVE ALL CONDUIT, WIRE, BOXES, AND FASTENING DEVICES AS REQUIRED TO AVOID ANY INTERFACE WITH NEW INSTALLATIONS. ABANDONED CIRCUITS TO BE CAPPED AT BOTH ENDS. REMOVE THE EXISTING WIRE NO LONGER IN USE FROM DEVICE LOCATION BACK TO PANEL.
7. ARRANGE TIMING SHUTDOWN PERIODS OF ALL–IN SERVICE PANELS WITH OWNER OR HIS/HER REPRESENTATIVE. DO NOT SHUT DOWN ANY UTILITY WITHOUT PRIOR WRITTEN APPROVAL.
8. WHERE EXISTING CIRCUITS ARE INDICATED TO BE REUSED, CONTRACTOR TO USE SENSING MEASURING DEVICES TO VERIFY THAT CIRCUITS FEEDING PROJECTS ARE OR ARE NOT IN USE.
9. EXISTING ELECTRICAL EQUIPMENT NECESSARY FOR EXISTING INSTALLATION TO REMAIN OPERATIONAL WILL HAVE TO BE PROTECTED DURING CONSTRUCTION.
10. THE ELECTRICAL CONTRACTOR SHALL TAKE INTO ACCOUNT IN FILING HIS/HER BID HIS/HER OBLIGATION TO PROVIDE FOR THE DISMANTLING AND REMOVAL OR MODIFICATION OF EXISTING ELECTRICAL EQUIPMENT, CONDUIT, WIRING AND RELATED ITEMS FOR THEIR REPLACEMENT OR MODIFICATION AS SPECIFIED.
11. CONTRACTOR SHALL COORDINATE WITH OWNER FOR POSSIBLE SALVAGE OF ANY OF THE ABOVE LISTED EQUIPMENT INCLUDING BUT NOT LIMITED TO MCC, STARTERS, GENERATORS, INSTRUMENTATION, PANELS, WIRING & CONDUIT.
12. THE CONTRACTOR SHALL UTILIZE EXISTING BRANCH CIRCUITS WHEREVER POSSIBLE. DISCONNECT CIRCUITS BACK TO LAST DEVICE (FIXTURE OR OUTLET) UNAFFECTED BY THE DEMOLITION. EXTEND CIRCUITS FROM LAST DEVICE TO NEW DEVICE LOCATIONS AND CIRCUIT AS SHOWN ON FLOOR PLAN.
13. THE ELECTRICAL DEVICES AND PROCESS EQUIPMENT INDICATED ON THIS DRAWING REPRESENT EQUIPMENT TAKEN FROM EXISTING PLANS FURNISHED BY THE OWNER AND SITE VISITS BY THE ENGINEER AND DO NOT REPRESENT ALL EQUIPMENT AND WIRING WITHIN THE DEMOLITION AREA. THESE DOCUMENTS HAVE BEEN PREPARED TO ASSIST THE CONTRACTOR IN PRICING DEMOLITION WORK. CONTRACTOR IS TO VISIT THE SITE AND EXAMINE ALL EXISTING CONDITIONS. NO EXTRA COMPENSATION OR TIME EXTENSION WILL BE PERMITTED BECAUSE OF LACK OF COMPLIANCE WITH THIS REQUIREMENT.

ABBREVIATIONS

ACB	AIR CIRCUIT BREAKER
ALT	ALTERNATE
AC	ALTERNATING CURRENT
AL	ALUMINUM
AWG	AMERICAN WIRE GAUGE
A	AMPERE(S)
ATS	AUTOMATIC TRANSFER SWITCH
BW	BUSWAY
CLG	CEILING
CKT	CIRCUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
COND	CONDUCTOR
C	CONDUIT (SEE RACEWAYS AND CONDUCTORS)
CONN	CONNECT
CC	CONTROL CABINET
CP	CONTROL PANEL
CU	COPPER
CT	CURRENT TRANSFORMER
DIM	DIMMER CONTROL
D.C.	DIRECT CURRENT
DISC	DISCONNECT
DPP	DISTRIBUTION POWER PANEL
DP	DOUBLE POLE
DT	DOUBLE THROW
DN	DOWN
E	ELECTRIC
E.C.	ELECTRICAL CONTRACTOR
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EMT	ELECTRICAL METALLIC TUBING
EM	EMERGENCY
ELR	END LINE RESISTOR
EXIST	EXISTING
XP	EXPLOSION PROOF
FDR	FEEDER
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
F.P.C.	FIRE PROTECTION CONTRACTOR
FLUOR	FLUORESCENT
FL	FLOOR
F.S.C.	FOOD SERVICE CONTRACTOR
HZ	FREQUENCY IN CYCLES PER SECOND
F	FUSE
FS	FUSIBLE SWITCH
GEN	GENERATOR
G.C.	GENERAL CONTRACTOR
GRD	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
H.I.D.	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HOA	HAND–OFF–AUTO
H.P.S.	HIGH PRESSURE SODIUM
IMC	INTERMEDIATE METALLIC CONDUIT
INC	INCANDESCENT
IC	INTERCOM
ISO	ISOLATED NEUTRAL
JB	JUNCTION BOX
K	KEY OPERATED
KVAR	KILOVAR(S)
KVA	KILOVOLT AMPERE(S)
KW	KILOWATT(S)
LP	LIGHTING PANEL
L.P.S.	LOW PRESSURE SODIUM
LV	LOW VOLTAGE
MGST	MAGNETIC STARTER
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MH	MANHOLE
MTS	MANUAL TRANSFER SWITCH
MC	MECHANICAL CONTRACTOR
MIKE	MICROPHONE
MTR	MOTOR
MCC	MOTOR CONTROL CENTER
KCMIL	THOUSAND CIRCULAR MIL(S)
NF	NONFUSED
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
N.I.C.	NOT IN CONTRACT
OL	OVERLOAD ELEMENT
OC	OVER COUNTER
PNL	PANEL
P	PILOT INDICATOR
PVC	POLYVINYL CHLORIDE
PLG.C	PLUMBING CONTRACTOR
PT	POTENTIAL TRANSFORMER
PF	POWER FACTOR
PP	POWER PANEL
PRI	PRIMARY
PS	PULL SWITCH
RECP	RECEPTACLE
R	RELAY
RC	REMOTE CONTROL
RGS	RIGID GALVANIZED STEEL CONDUIT
RWT	REFLECTED WAVE TRAP
S	SIGNAL
SEC	SECONDARY
SP	SINGLE POLE
ST	SINGLE THROW
SPK	SPEAKER
SMR	SURFACE METAL RACEWAY
S.S.	SOLID STATE
SW	SWITCH
SWBD	SWITCHBOARD
T.C.C.	TEMPERATURE CONTROL CONTRACTOR
TEMP	TEMPORARY
T	TELEPHONE
TV	TELEVISION
TB	TERMINAL BOX
XFMR	TRANSFORMER
TYP	TYPICAL
UE	UNDERGROUND ELECTRIC
UG	UNDERGROUND
UH	UNIT HEATER
UNG	UNGROUNDED
UNP	UNGROUNDED PRIMARY
UPS	UNINTERRUPTED POWER SYSTEM
US	UNDERGROUND SIGNAL
VP	VAPORPROOF
VAR	REACTIVE VOLT AMPERES
V	VOLT(S)
VA	VOLTAMP(S)
VFD	VARIABLE FREQUENCY DRIVE
W	WATT(S)
WP	WEATHERPROOF

DIAGRAM SYMBOLS

- FUSED SWITCH
- CIRCUIT BREAKER
- LINE REACTOR
- DISCONNECT SWITCH
- TRANSFER SWITCH
- SOLID–STATE SOFT STARTER
- POTENTIAL TRANSFORMER
- CURRENT TRANSFORMER
- VFD
- X — METER: X INDICATES TYPE
  - V = VOLTMETER
  - A = AMMETER
  - W = WATT METER
  - H = KILOWATT HOUR METER
  - D = KILOWATT HOUR DEMAND METER
- DMM — DIGITAL MULTI METER
- AS — AMMETER SWITCH
- VS — VOLTMETER SWITCH
- GF — GROUND FAULT INTERRUPTER
- K — KIRK KEY INTERLOCK
- XX — MOTOR CONTROLLER: XX INDICATES TYPE
  - SS = SOLID STATE STARTER
  - AF = ADJUSTABLE FREQUENCY STARTER
  - AT = AUTO TRANSFORMER STARTER
  - PW = PART WINDING STARTER
  - Y–Δ = WYE–DELTA STARTER
  - WR = WOUND ROTOR STARTER
  - 22 = TWO SPEED TWO WINDING
  - 21 = TWO SPEED ONE WINDING
  - NR = FULL VOLTAGE NON REVERSING STARTER
  - R = FULL VOLTAGE REVERSING STARTER
  - LC = LIGHTING CONTACTOR
- CAPACITOR
- LIGHTNING ARRESTER
- EARTH GROUND
- TRANSFORMER
- PLUG AND RECEPTACLE OR DRAWOUT DEVICE
- X — MOTOR
- G — GENERATOR
- X — GENERAL LOADS

X INDICATES HORSEPOWER OR KILOWATTS

DETAIL & SECTION MARK LEGEND

- 2 / 23 — 2: DETAIL NUMBER; 23: SHEET NUMBER – WHERE DETAIL IS LOCATED
- A / 23 — DIRECTION SECTION IS BEING CUT; SECTION LETTER; 23: SHEET NUMBER – WHERE SECTION IS LOCATED

DIRECTION OF NORTH

N

SMALL LETTER BY THE SIDE OF SYMBOLS INDICATES THE PARTICULAR SWITCH.
SAMPLE: $a = SWITCH "a"

- $a — SINGLE POLE SWITCH MOUNTED AT +48" ℄ OR AS NOTED.
- $2 — TWO POLE SWITCH MOUNTED AT +48" ℄ OR AS NOTED.
- $3 — THREE WAY SWITCH MOUNTED AT +48" ℄ OR AS NOTED.
- $4 — FOUR WAY SWITCH MOUNTED AT +48" ℄ OR AS NOTED.
- $P — SINGLE POLE SWITCH WITH PILOT LIGHT MOUNTED AT +48" ℄ OR AS NOTED.
- $K — SINGLE POLE KEY OPERATED SWITCH MOUNTED AT +48" ℄ OR AS NOTED.
- $M — H.P. RATED MANUAL MOTOR STARTER (WEATHERPROOF WHERE OUTSIDE).
- $D — INCANDESCENT SLIDE CONTROL DIMMER AT +48" ℄ OR AS NOTED (1500 WATT UNLESS OTHERWISE NOTED).
- $T — 0–60 MINUTE TIMER SWITCH MOUNTED AT +48" ℄ OR AS NOTED.

CONTROL DIAGRAM SYMBOLS

NOTE:
ALL CONTROL SYMBOLS ARE DRAWN ASSUMING DEENERGIZED CIRCUITS, EMPTY TANKS, UNPRESSURIZED LINES, ETC.

OPEN ON INCREASE	CLOSE ON INCREASE	
		PRESSURE SWITCH
		LEVEL SWITCH
		FLOW SWITCH
		TEMPERATURE SWITCH
		SOLENOID VALVE
NORMALLY CLOSED	**NORMALLY OPEN**	
		PUSH BUTTON
		INSTANTANEOUS CONTACT
		TIMED CLOSE CONTACT
		TIMED OPEN CONTACT
		LIMIT SWITCH

- XO / OX — SELECTOR SWITCH: QUANTITY OF ARROWS INDICATES NUMBER OF POSITIONS. XO INDICATES UPPER CONTACT CLOSED IN LEFT POSITION AND OPEN IN RIGHT POSITION

INSTRUMENTATION SYMBOLS

- AIT — ANALYTICAL INDICATOR TRANSMITTER
- FS — FLOAT SWITCH
- FT — FLOW TRANSMITTER
- FLS — FLOW SWITCH
- LKS — LEAK SENSOR
- LSL — LEVEL SWITCH LOW
- LSH — LEVEL SWITCH HIGH
- LS — LEVEL SWITCH
- TT — TEMPERATURE TRANSMITTER
- ZS — PROXIMITY SWITCH
- FS — FIELD MOUNTED INSTRUMENT: NEW DENOTES FURNISHED & INSTALLED UNDER BASE BID
- LT — LEVEL TRANSMITTER
- MOV — MOTORIZED OPERATED VALVE
- MTD — METHANE DETECTOR
- PB — PUSH BUTTON SWITCH
- SC — SPEED CONTROLLER (POTENTIOMETER)
- PS — PRESSURE SWITCH
- SV — SOLENOID VALVE
- TS — TEMPERATURE SWITCH
- FS — FIELD MOUNTED INSTRUMENT: EXISTING
- FS — VENDER SUPPLIED INSTRUMENT INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR
- FS 101 — INSTRUMENT IDENTIFICATION LETTER & IDENTIFICATION #; DESTINATION & LOOP IDENTIFICATION #; TO PLC# DO–XXX

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BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

ELECTRICAL SYMBOLS, NOTES AND ABBREVIATIONS

E-1

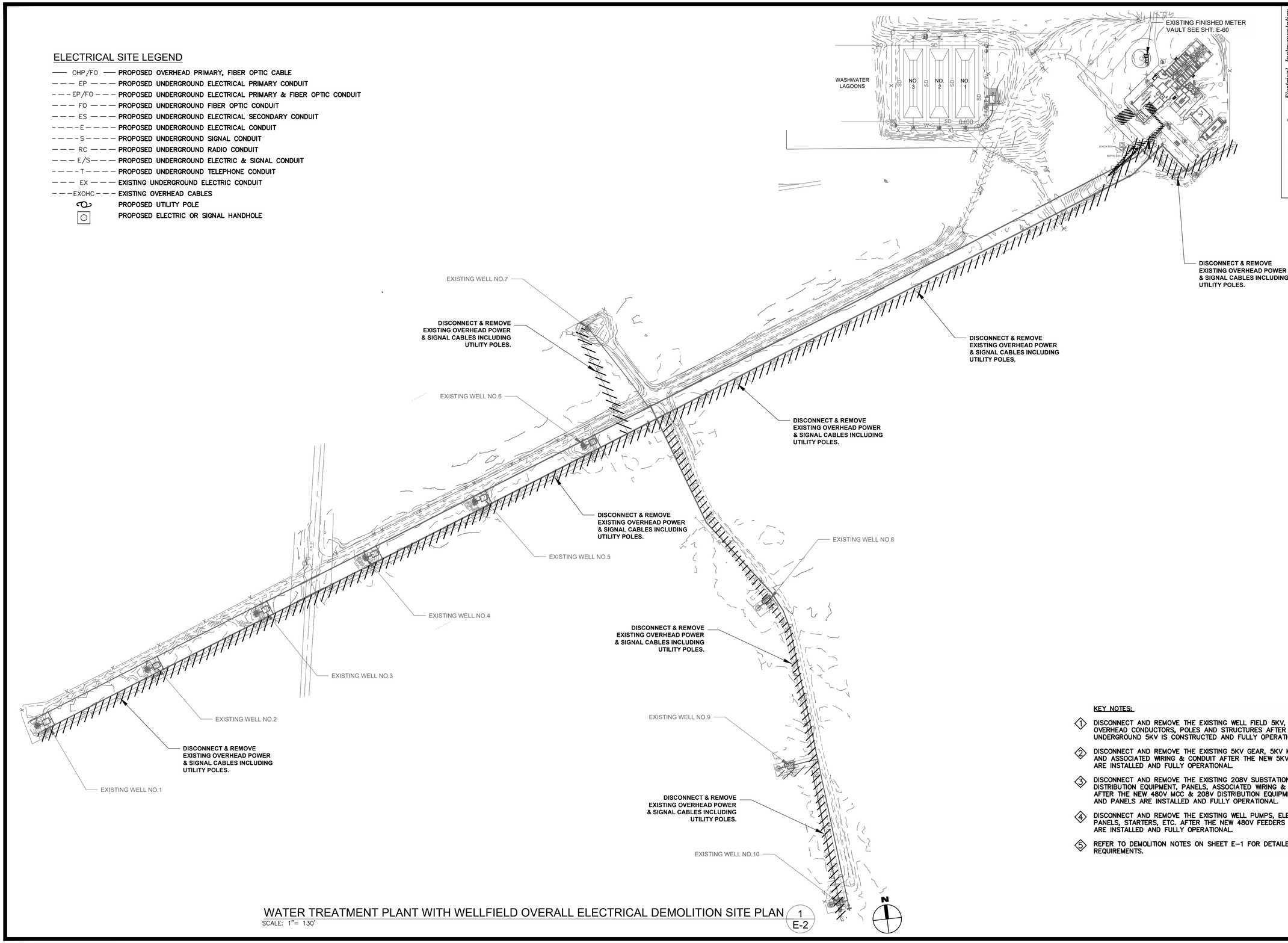
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-1 ELECTRICAL SYMBOLS AND ABBREVIATIONS.dwg 4/15/2022 8:02:08 AM Randy Podmore

PLOTTED: 4/18/2022 8:16:42 AM

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- RC — PROPOSED UNDERGROUND RADIO CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL HANDHOLE



WATER TREATMENT PLANT WITH WELLFIELD OVERALL ELECTRICAL DEMOLITION SITE PLAN

SCALE: 1"= 130'

1 / E-2

KEY NOTES:

1. DISCONNECT AND REMOVE THE EXISTING WELL FIELD 5KV, OVERHEAD CONDUCTORS, POLES AND STRUCTURES AFTER THE NEW UNDERGROUND 5KV IS CONSTRUCTED AND FULLY OPERATIONAL.
2. DISCONNECT AND REMOVE THE EXISTING 5KV GEAR, 5KV MCCS AND ASSOCIATED WIRING & CONDUIT AFTER THE NEW 5KV & MCCS ARE INSTALLED AND FULLY OPERATIONAL.
3. DISCONNECT AND REMOVE THE EXISTING 208V SUBSTATION & DISTRIBUTION EQUIPMENT, PANELS, ASSOCIATED WIRING & CONDUIT AFTER THE NEW 480V MCC & 208V DISTRIBUTION EQUIPMENT AND PANELS ARE INSTALLED AND FULLY OPERATIONAL.
4. DISCONNECT AND REMOVE THE EXISTING WELL PUMPS, ELECTRICAL PANELS, STARTERS, ETC. AFTER THE NEW 480V FEEDERS & MCCS ARE INSTALLED AND FULLY OPERATIONAL.
5. REFER TO DEMOLITION NOTES ON SHEET E–1 FOR DETAILED REQUIREMENTS.

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CITY OF CANTON, OHIO
WATER DEPARTMENT
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WATER TREATMENT PLANT &
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NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

OVERALL ELECTRICAL DEMOLITION SITE PLAN

E-2

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-2 OVERALL DEMOLITION SITE PLAN.dwg 4/15/2022 10:29:14 AM Randy Podmore

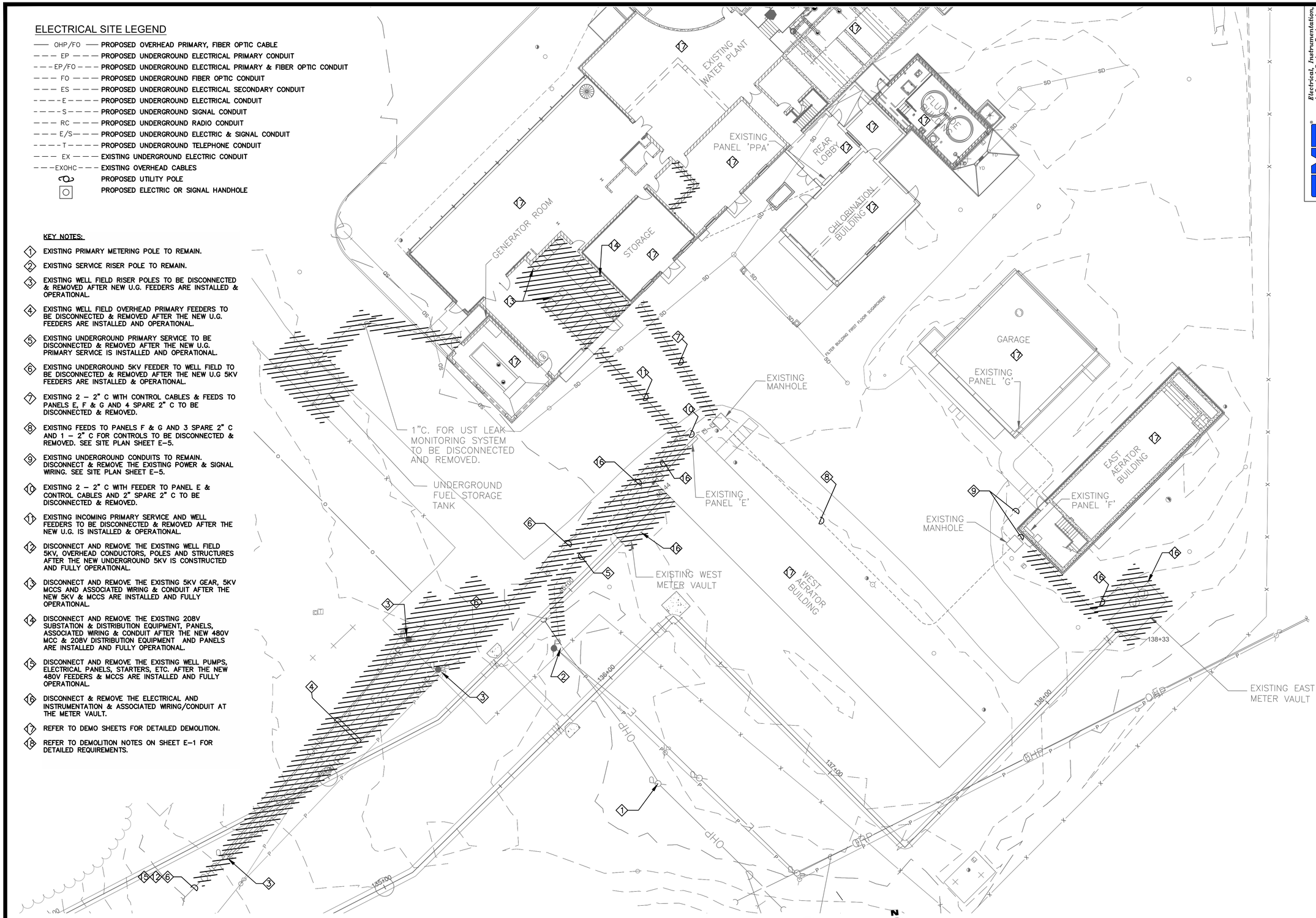
PLOTTED: 4/18/2022 8:17:07 AM

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- RC — PROPOSED UNDERGROUND RADIO CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL HANDHOLE

KEY NOTES:

1. EXISTING PRIMARY METERING POLE TO REMAIN.
2. EXISTING SERVICE RISER POLE TO REMAIN.
3. EXISTING WELL FIELD RISER POLES TO BE DISCONNECTED & REMOVED AFTER NEW U.G. FEEDERS ARE INSTALLED & OPERATIONAL.
4. EXISTING WELL FIELD OVERHEAD PRIMARY FEEDERS TO BE DISCONNECTED & REMOVED AFTER THE NEW U.G. FEEDERS ARE INSTALLED AND OPERATIONAL.
5. EXISTING UNDERGROUND PRIMARY SERVICE TO BE DISCONNECTED & REMOVED AFTER THE NEW U.G. PRIMARY SERVICE IS INSTALLED AND OPERATIONAL.
6. EXISTING UNDERGROUND 5KV FEEDER TO WELL FIELD TO BE DISCONNECTED & REMOVED AFTER THE NEW U.G 5KV FEEDERS ARE INSTALLED & OPERATIONAL.
7. EXISTING 2 – 2" C WITH CONTROL CABLES & FEEDS TO PANELS E, F & G AND 4 SPARE 2" C TO BE DISCONNECTED & REMOVED.
8. EXISTING FEEDS TO PANELS F & G AND 3 SPARE 2" C AND 1 – 2" C FOR CONTROLS TO BE DISCONNECTED & REMOVED. SEE SITE PLAN SHEET E–5.
9. EXISTING UNDERGROUND CONDUITS TO REMAIN. DISCONNECT & REMOVE THE EXISTING POWER & SIGNAL WIRING. SEE SITE PLAN SHEET E–5.
10. EXISTING 2 – 2" C WITH FEEDER TO PANEL E & CONTROL CABLES AND 2" SPARE 2" C TO BE DISCONNECTED & REMOVED.
11. EXISTING INCOMING PRIMARY SERVICE AND WELL FEEDERS TO BE DISCONNECTED & REMOVED AFTER THE NEW U.G. IS INSTALLED & OPERATIONAL.
12. DISCONNECT AND REMOVE THE EXISTING WELL FIELD 5KV, OVERHEAD CONDUCTORS, POLES AND STRUCTURES AFTER THE NEW UNDERGROUND 5KV IS CONSTRUCTED AND FULLY OPERATIONAL.
13. DISCONNECT AND REMOVE THE EXISTING 5KV GEAR, 5KV MCCS AND ASSOCIATED WIRING & CONDUIT AFTER THE NEW 5KV & MCCS ARE INSTALLED AND FULLY OPERATIONAL.
14. DISCONNECT AND REMOVE THE EXISTING 208V SUBSTATION & DISTRIBUTION EQUIPMENT, PANELS, ASSOCIATED WIRING & CONDUIT AFTER THE NEW 480V MCC & 208V DISTRIBUTION EQUIPMENT AND PANELS ARE INSTALLED AND FULLY OPERATIONAL.
15. DISCONNECT AND REMOVE THE EXISTING WELL PUMPS, ELECTRICAL PANELS, STARTERS, ETC. AFTER THE NEW 480V FEEDERS & MCCS ARE INSTALLED AND FULLY OPERATIONAL.
16. DISCONNECT & REMOVE THE ELECTRICAL AND INSTRUMENTATION & ASSOCIATED WIRING/CONDUIT AT THE METER VAULT.
17. REFER TO DEMO SHEETS FOR DETAILED DEMOLITION.
18. REFER TO DEMOLITION NOTES ON SHEET E–1 FOR DETAILED REQUIREMENTS.



ENLARGED WATER TREATMENT PLANT WITH WELLFIELD OVERALL ELECTRICAL DEMOLITION SITE PLAN (1 / E-3)
SCALE: 1"=15'–0"

N

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

ENLARGED WTP ELECTRICAL DEMOLITION SITE PLAN

E-3

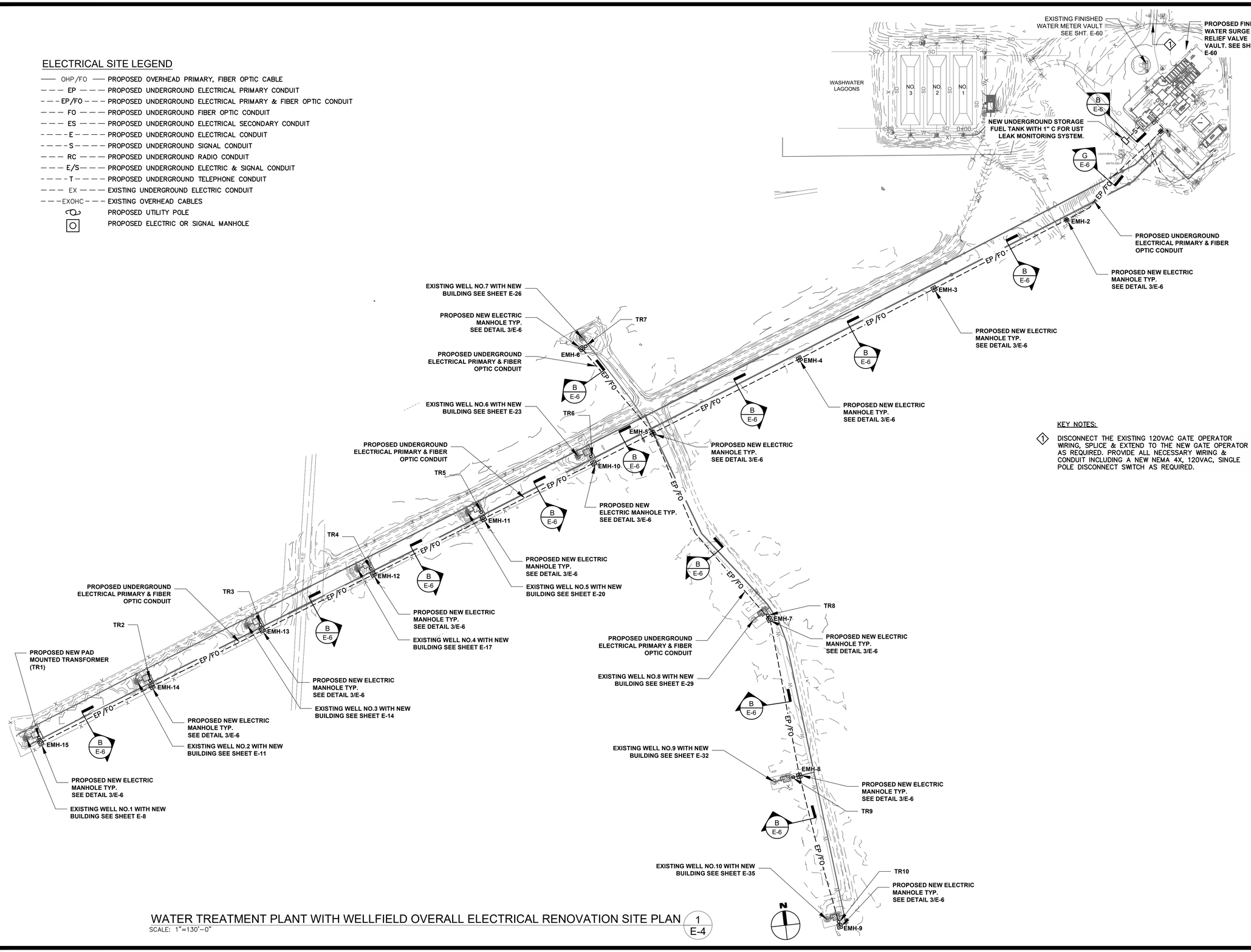
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-3 ENLARGED WTP ELECTRICAL DEMOLITION SITE PLAN.dwg 4/15/2022 10:21:17 AM Randy Podmore

PLOTTED: 4/18/2022 8:17:31 AM

ELECTRICAL SITE LEGEND

- —— OHP/FO —— PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- — — EP — — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- — — EP/FO — — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- — — FO — — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- — — ES — — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- — — E — — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- — — S — — PROPOSED UNDERGROUND SIGNAL CONDUIT
- — — RC — — PROPOSED UNDERGROUND RADIO CONDUIT
- — — E/S — — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- — — T — — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- — — EX — — EXISTING UNDERGROUND ELECTRIC CONDUIT
- — — EXOHC — — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE



KEY NOTES:

1. DISCONNECT THE EXISTING 120VAC GATE OPERATOR WIRING, SPLICE & EXTEND TO THE NEW GATE OPERATOR AS REQUIRED. PROVIDE ALL NECESSARY WIRING & CONDUIT INCLUDING A NEW NEMA 4X, 120VAC, SINGLE POLE DISCONNECT SWITCH AS REQUIRED.

WATER TREATMENT PLANT WITH WELLFIELD OVERALL ELECTRICAL RENOVATION SITE PLAN (1 / E-4)
SCALE: 1"=130'-0"

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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

OVERALL ELECTRICAL RENOVATION SITE PLAN

E-4

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-4 OVERALL ELECTRICAL RENOVATION SITE PLAN.dwg 4/16/2022 4:29:16 PM Randy Podmore

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P:\PR58982\Cadd\Sheets\E-Sheets\E-5 ENLARGED WTP ELECTRICAL RENOVATION SITE PLAN.dwg 4/18/2022 4:31:32 PM Randy Podmore

PROPOSED LOCATION OF NEW 5KV SWGR

PROPOSED LOCATION OF NEW TR1A. SEE DETAIL 1/E-37.

PROPOSED LOCATION OF NEW MVMCC-1 & MVMCC-2

PROPOSED LOCATION OF NEW PLC-7

PROPOSED LOCATION OF OVERHEAD FIBER OPTIC CABLE

PROPOSED LOCATION OF NEW MCC-A & MCC-B

PROPOSED UNDERGROUND CONDUIT FOR UST LEAK MONITORING SYSTEM

PROPOSED NEW UNDERGROUND FUEL STORAGE TANK

PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUITS TO WELL FIELD. SEE SHEET E-4 FOR CONTINUATION.

PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT

EXISTING OVERHEAD POWER TO REMAIN.

NEW PANEL 'DP2'

NEW PULLBOX. SEE SHEET E-53

EXISTING UNDERGROUND CONDUITS WITH NEW POWER FEEDER CABLES. APPROXIMATE LOCATION TO BE FIELD VERIFIED.

BOLLARDS (TYP. 4)

PROPOSED LOCATION OF NEW TR2A. SEE DETAIL 1/E-37.

PROPOSED NEW ELECTRIC MANHOLE (TYP.) SEE DETAIL 3/E-6.

EMH-1

EXISTING ELECTRIC MANHOLE 'XEM'

EXISTING PANEL 'E'

NEW PLC-9

NEW FIT-910

EXISTING UNDERGROUND CONDUITS WITH NEW POWER FIBER CABLES

EXISTING VAULT. SEE ENLARGED PLAN SHEET E-59

EXISTING PANEL 'G'

EXISTING UNDERGROUND CONDUITS WITH NEW POWER FEEDER CABLES

EXISTING ELECTRIC MANHOLE

EXISTING PANEL 'F'

EXISTING METER VAULT. SEE DETAIL SHEET E-59

STORAGE

CHLORINATION BUILDING

FILTER BUILDING FIRST FLOOR SUGARCREEK

GARAGE

WEST AERATOR BUILDING

EAST AERATOR BUILDING

PED

ENLARGED WATER TREATMENT PLANT ELECTRICAL RENOVATION SITE PLAN

SCALE: 1"=10'-0"

1 / E-5

KEY NOTES:

1. EXISTING PRIMARY METERING POLE TO REMAIN.
2. EXISTING SERVICE RISER POLE TO REMAIN. SEE KEY NOTE #2 ON SHEET E-39.

ELECTRICAL SITE LEGEND

OHP/FO	PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
EP	PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
EP/FO	PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
FO	PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
ES	PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
E	PROPOSED UNDERGROUND ELECTRICAL CONDUIT
S	PROPOSED UNDERGROUND SIGNAL CONDUIT
RC	PROPOSED UNDERGROUND RADIO CONDUIT
E/S	PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
T	PROPOSED UNDERGROUND TELEPHONE CONDUIT
EX	EXISTING UNDERGROUND ELECTRIC CONDUIT
EXOHC	EXISTING OVERHEAD CABLES
EX/E	EXISTING UNDERGROUND CONDUIT W/NEW FEEDER CABLES
EX/E/FO	EXISTING UNDERGROUND CONDUIT W/NEW FEEDER & FIBER OPTIC CABLES
	PROPOSED UTILITY POLE
	PROPOSED ELECTRIC OR SIGNAL HANDHOLE

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CITY OF CANTON, OHIO
WATER DEPARTMENT
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WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

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DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	1" = 10'-0"

ENLARGED WTP ELECTRICAL RENOVATION SITE PLAN

E-5

SHEET: OF

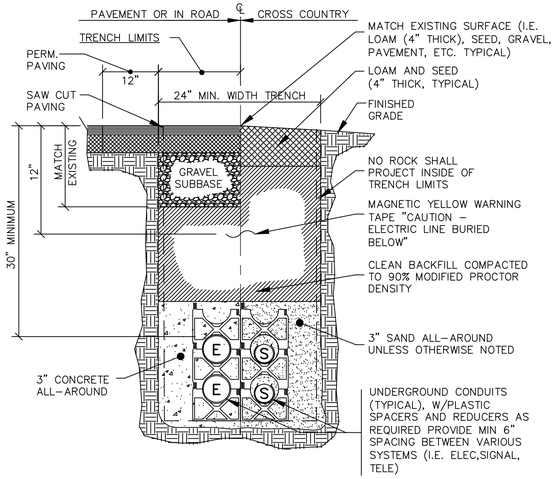
PLOTTED: 4/18/2022 8:17:55 AM

ELECTRICAL DUCT BANK SCHEDULE

DUCT BANK SECTION NO.		CONDUIT	EQUIPMENT	WIRE	FUNCTION
A E–6	A	5"	5KV SERVICE POLE	4#1/0, 5 KV	SERVICE CONDUCTORS FROM RISER POLE TO NEW SWGR IN ELECT. ROOM
	B	5"	5KV SERVICE POLE	4#1/0, 5 KV	SERVICE CONDUCTORS FROM RISER POLE TO NEW SWGR IN ELECT. ROOM
	C	5"	SPARE	PULL WIRE	SPARE CONDUIT FROM RISER POLE TO NEW SWGR IN ELECT. ROOM
B E–6	A	5"	PAD MTD XFMR TR1	3#250 KCMIL, 25 KV	FEEDER CONDUCTORS FROM NEW SWGR TO NEW PAD MOUNT TRANSFORMER TR1
	B	5"	SPARE	PULL WIRE	SPARE CONDUIT FROM NEW RISER POLE TO PAD MOUNT TRANSFORMER TR2
	C	5"	PAD MTD XFMR TR1	3#250 KCMIL, 25 KV	FEEDER CONDUCTORS FROM NEW SWGR TO NEW PAD MOUNT TRANSFORMER TR1
	D	5"	SPARE	PULL WIRE	SPARE CONDUIT FROM NEW RISER POLE TO PAD MOUNT TRANSFORMER TR2
	E	4"	RTU 1 THRU 10	(10) FIBER OPTIC CABLES	FIBER OPTIC CABLES FROM SCADA WTP TO WELLS 1 THRU 10 RTUS
	F	4"	SPARE	PULL WIRE	SPARE CONDUIT FROM SCADA AT WTP TO WELLS 1 THRU 10 RTUS
C E–6	A	4"	TR1A	3#1/0, 5KV, 1#2G	FEEDER CONDUCTORS FROM NEW SWGR TO NEW TR1A
	B	4"	TR1A	PULL WIRE	FROM NEW SWGR TO NEW TR1A
D E–6	A	4"	TR2A	3#1/0, 5KV, 1#2G	FEEDER CONDUCTORS FROM NEW SWGR TO NEW TR2A
	B	4"	TR2A	PULL WIRE	FROM NEW SWGR TO NEW TR2A
E E–6	A	4"	MCC-A	4#500 KCMIL, 1#1/0G	FEEDER CONDUCTORS FROM NEW TR1A TO NEW MCC-A
	B	4"	MCC-A	4#500 KCMIL, 1#1/0G	FEEDER CONDUCTORS FROM NEW TR1A TO NEW MCC-A
	C	4"	MCC-A	4#500 KCMIL, 1#1/0G	FEEDER CONDUCTORS FROM NEW TR1A TO NEW MCC-A
F E–6	A	4"	MCC-B	4#500 KCMIL, 1#1/0G	FEEDER CONDUCTORS FROM NEW TR2A TO NEW MCC-B
	B	4"	MCC-B	4#500 KCMIL, 1#1/0G	FEEDER CONDUCTORS FROM NEW TR2A TO NEW MCC-B
	C	4"	MCC-B	4#500 KCMIL, 1#1/0G	FEEDER CONDUCTORS FROM NEW TR2A TO NEW MCC-B
G E–6	A	1"	LEAK DETECTION	VENDOR CABLE	SIGNAL WIRING FROM UST TO LEAK DETECTOR INSIDE BLDG.
	B	1"	LEAK DETECTION	PULL WIRE	SPARE CONDUIT FROM UST TO LEAK DETECTOR INSIDE BLDG.
H E–6	A	2"	PANEL E	4#2, 1#6G	FEEDER CONDUCTORS FROM MCC-A TO PANEL E IN W. AERATOR BLDG
	B	2"	PANEL F	4#2, 1#6G	FEEDER CONDUCTORS FROM MCC-A TO PANEL F IN E. AERATOR BLDG
	C	2"	PANEL G	4#2, 1#6G	FEEDER CONDUCTORS FROM MCC-B TO PANEL G IN GARAGE
	D	2"	SPARE	PULL WIRE	SPARE CONDUIT FROM MCC-A TO EXISTING MANHOLE XEM
	E	2"	PLCS 8 & 9	(2) FIBER OPTIC CABLES	FIBER OPTIC CABLES FROM PLC-7 TO PLCS 8 & 9
	F	2"	SPARE	PULL WIRE	SPARE CONDUIT FROM PLC-7 TO EXISTING MANHOLE XEM
	G	2"	SPARE	PULL WIRE	SPARE CONDUIT FROM PLC-7 TO EXISTING MANHOLE XEM
I E–6 NOTE 7	A	2"	PANEL F	4#2, 1#6G	FEEDER CONDUCTORS FROM MCC-A TO PANEL F IN E. AERATOR BLDG
	B	2"	PLC-8	FIBER CABLE	FIBER CABLE FROM PLC-7 TO PLC-8 IN E. AERATOR BLDG
	C	2"	SPARE	PULL WIRE	FROM EXISTING MANHOLE XEM TO PANEL 'F' IN E. AERATOR BLDG
	D	2"	SPARE	PULL WIRE	FROM EXISTING MANHOLE XEM TO NEW PLC-9 IN E. AERATOR BLDG
	E	2"	PANEL G	4#2, 1#6G	FEEDER CONDUCTORS FROM MCC-B TO PANEL G IN GARAGE
	F	2"	SPARE	PULL WIRE	FROM EXISTING MANHOLE XEM TO PANEL 'G' IN GARAGE
J E–6	A	2"	PANEL E	4#2, 1#6G	FEEDER CONDUCTORS FROM MCC-A TO PANEL E IN W. AERATOR BLDG
	B	2"	PLC-9	FIBER OPTIC CABLE	FIBER OPTIC CABLE FROM PLC-7 TO PLC-9 IN W. AERATOR BLDG
	C	2"	SPARE	PULL WIRE	SPARE CONDUIT
K E–6 NOTE 7	A	2"	PANEL G	4#2, 1#6G	FEEDER CONDUCTORS FROM MCC-B TO PANEL G IN GARAGE
	B	2"	SPARE	PULL WIRE	SPARE CONDUIT
L E–6 NOTE 7	A	3-1/2"	PANEL DP-2	4#250 KCMIL, 1#4G	FEEDER CONDUCTORS FROM MCC-A TO PANEL DP-2 TO REAR LOBBY
M E–6	A	4"	RTU 1 THRU 10	(10) FIBER OPTIC CABLES	FIBER OPTIC CABLES FROM SCADA WTP TO WELLS 1 THRU 10 RTUS
	B	4"	SPARE	PULL WIRE	SPARE CONDUIT FROM SCADA AT WTP TO WELLS 1 THRU 10 RTUS

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AREAS AND EXISTING DIRT/GRAVEL ACCESS ROAD AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION. GRASSED AREAS TO BE RESTORED PER DIVISION 2.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E–6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/FIREALARM/CABLE/FIBER OPTIC CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.
7. EXISTING UNDERGROUND CONDUITS WITH NEW FEEDER & FIBER OPTIC CABLES.

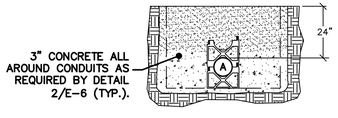


TYPICAL ELECTRICAL TRENCHING DETAIL 2/E-6
SCALE: NONE

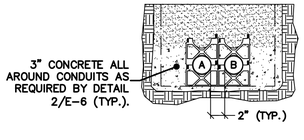
NOTE: REFER TO ELECTRICAL SITE PLAN & DUCT BANK SCHEDULE FOR SPECIFIC REQUIREMENTS.

SUBSURFACE WORK NOTE:

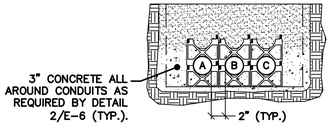
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR IT'S REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIG SAFE" AT 1(888)344–7233 (1(888)DIG–SAFE) AND COORDINATE ACTIVITIES PRIOR TO ANY EXCAVATIONS.



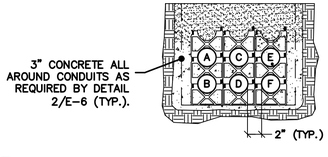
ELECTRICAL DUCT SECTION L/E-5
SCALE: NONE



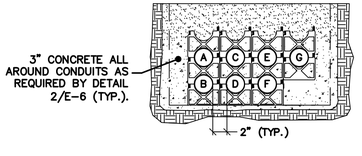
ELECTRICAL DUCT SECTION C/E-5 D/E-5 G/E-5 K/E-5 M/E-5
SCALE: NONE



ELECTRICAL DUCT SECTION A/E-5 E/E-5 F/E-5 J/E-5
SCALE: NONE

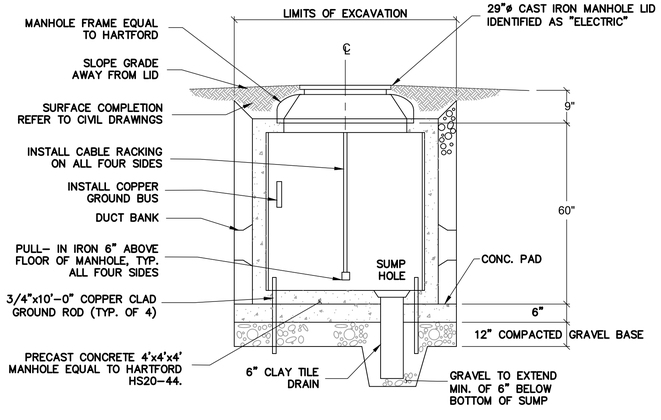


ELECTRICAL DUCT SECTION B/E-4 I/E-5
SCALE: NONE



ELECTRICAL DUCT SECTION H/E-5
SCALE: NONE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS 1/E-6
SCALE: NONE



MANHOLE SCHEDULE		
MANHOLE DESGINATIONS	QUANTITIES	SIZE
EMH–1 (ELECTRIC)	1	60" x 60" x 60" DEEP
EMH–2 THRU EMH–15 (ELECTRIC)	14	60" x 60" x 60" DEEP

NOTE:

1. CONTRACTOR SHALL NOT MAKE SPLICES IN MANHOLES, EXCEPT FOR TEMPORARY CONNECTIONS. (TYPICAL).
2. PROVIDE METAL BARRIER BETWEEN POWER AND SIGNAL CABLES WITHIN MANHOLE.
3. THE MANHOLE DESIGN LOADING SHALL BE: AASHTO – HS20–44.

MANHOLE INSTALLATION DETAIL 3/E-6
SCALE: NONE

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WATER DEPARTMENT
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SCALE:	NONE

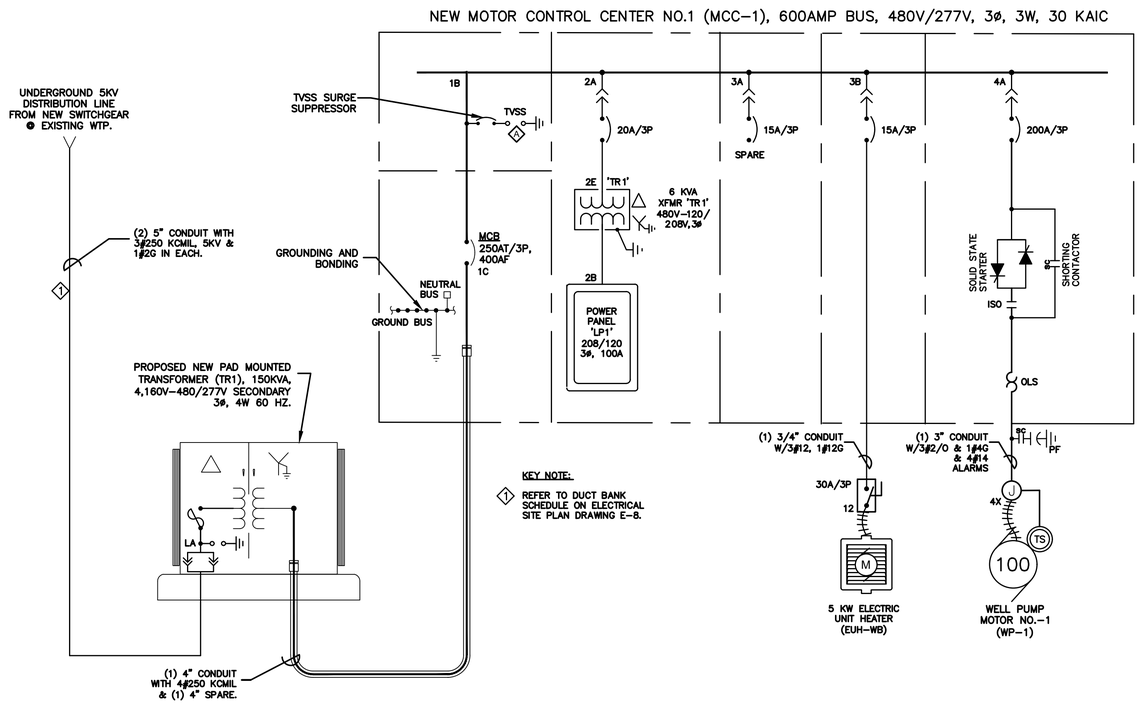
OVERALL SITE PLAN
DUCT BANK SCHEDULE

E-6

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-6 OVERALL SITE PLAN DUCT BANK SCHEDULE.dwg 4/15/2022 12:43:22 PM Randy Podmore

PLOTTED: 4/18/2022 8:18:04 AM



NEW MOTOR CONTROL CENTER NO.1 (MCC-1) ONE-LINE DIAGRAM 1 / E-7

SCALE: NONE

PARTIAL SYMBOLS LEGEND:

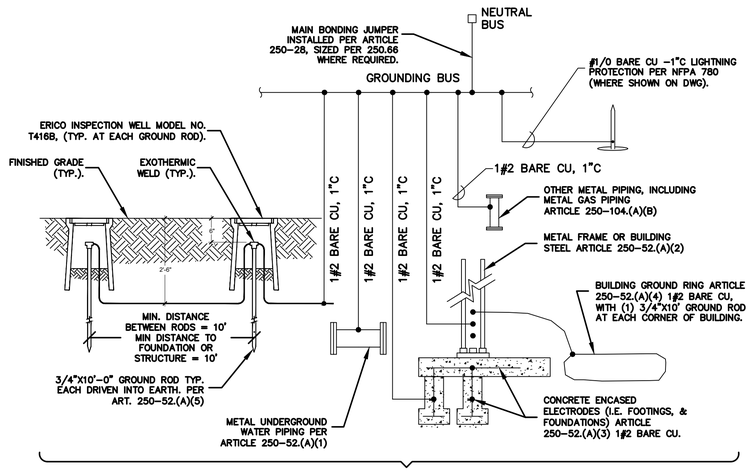
- DMM : DIGITAL MULTI-METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
1	MAIN BRKR (MCB)	PTE300-3Y201-D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

NOTE:

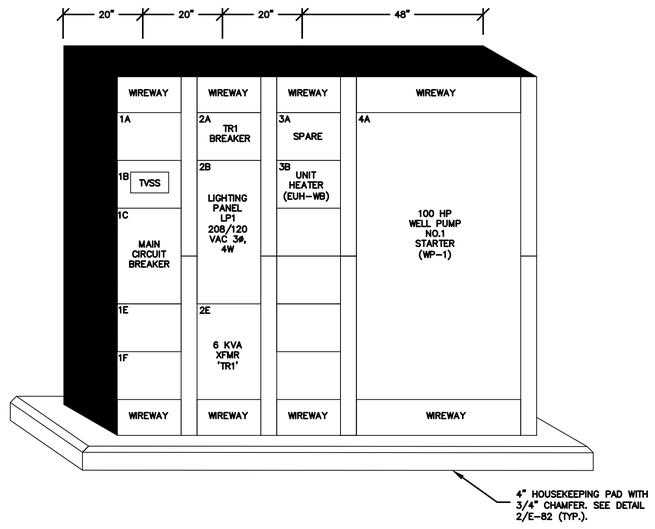
1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE-WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.1 2 / E-7

SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-1 EQUIPMENT ELEVATION 3 / E-7

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

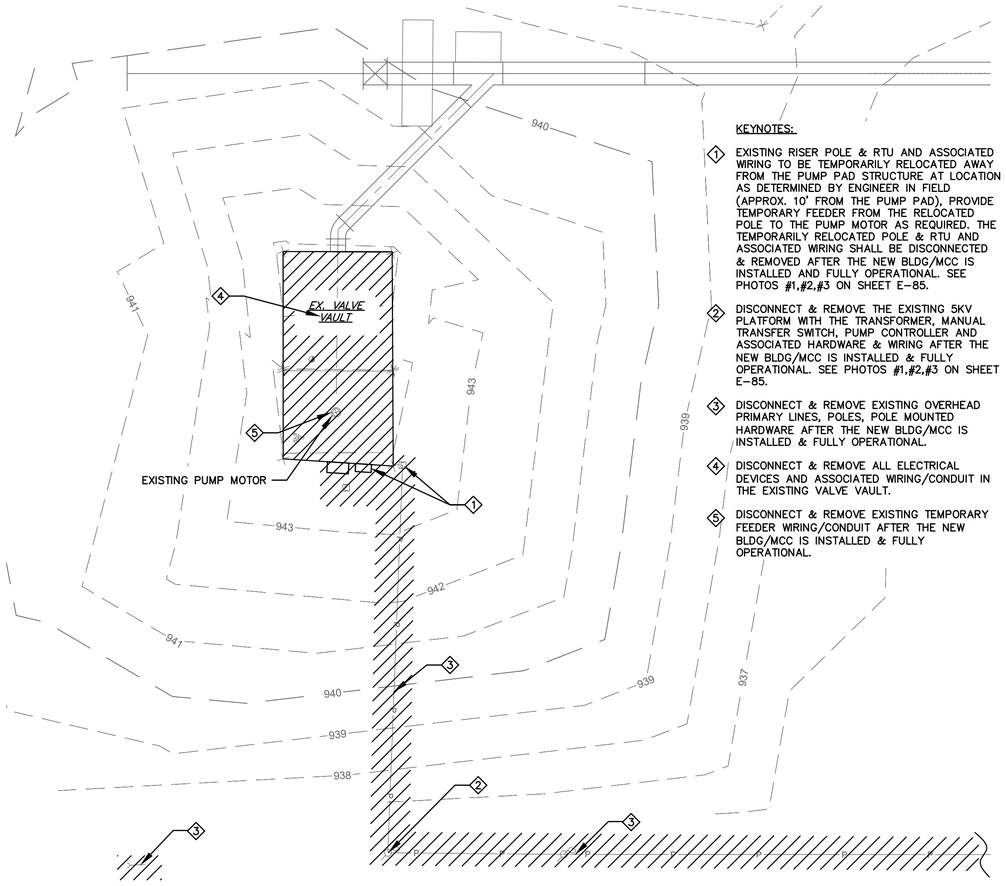
WELL NO.1
ONE-LINE DIAGRAM
AND EQUIPMENT
ELEVATION

E-7

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-7 WELL 1 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION.dwg 4/15/2022 10:34:52 AM Randy Podmore

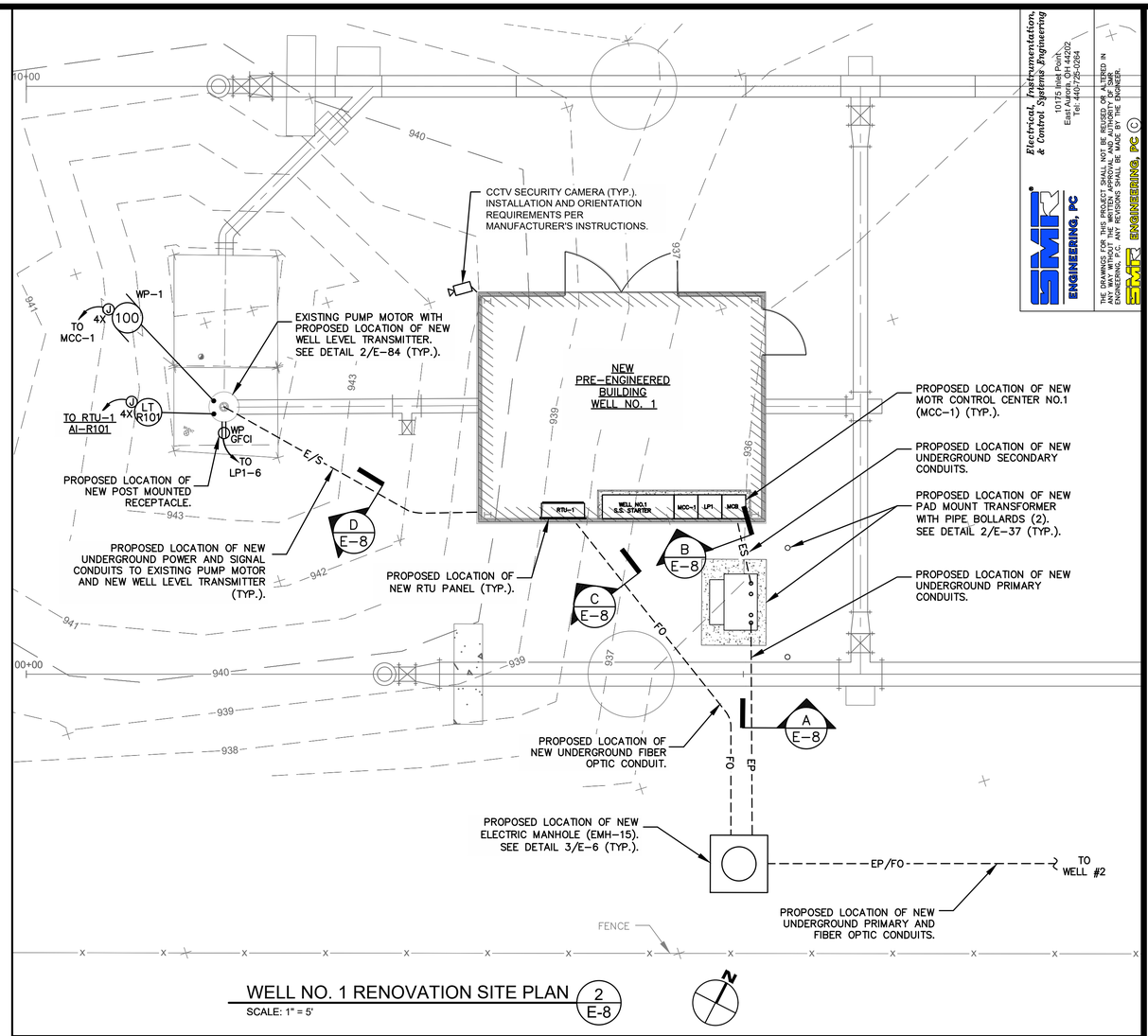
PLOTTED: 4/18/2022 8:18:51 AM



KEYNOTES:

1. EXISTING RISER POLE & RTU AND ASSOCIATED WIRING TO BE TEMPORARILY RELOCATED AWAY FROM THE PUMP PAD STRUCTURE AT LOCATION AS DETERMINED BY ENGINEER IN FIELD (APPROX. 10' FROM THE PUMP PAD). PROVIDE TEMPORARY FEEDER FROM THE RELOCATED POLE TO THE PUMP MOTOR AS REQUIRED. THE TEMPORARILY RELOCATED POLE & RTU AND ASSOCIATED WIRING SHALL BE DISCONNECTED & REMOVED AFTER THE NEW BLDG/MCC IS INSTALLED AND FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO. 1 DEMOLITION SITE PLAN — 1 / E-8
SCALE: 1" = 5'



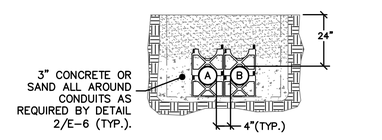
WELL NO. 1 RENOVATION SITE PLAN — 2 / E-8
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

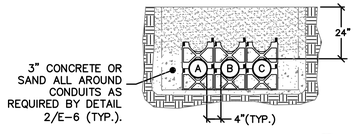
DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A E-8	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B E-8	(A) 4" PVC	MCC-1	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-1 INSIDE NEW PRE-ENGINEERING BUILDING NO.1.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-1 INSIDE NEW PRE-ENGINEERING BUILDING NO.1.
C E-8	(C) 4" PVC	RTU-1 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-15
D E-8	(A) 3" PVC	WELL PUMP NO.1	2#12, 1#12G	FEEDER CONDUIT FROM STARTER INSIDE NEW MCC-1 AT NEW PRE-ENGINEERED BUILDING NO.1 TO NEW WELL NO.1 PUMP MOTOR.
	(B) 1" PVC	WELL NO.1 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.1 LEVEL TRANSMITTER TO NEW RTU-1 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.1.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP1.

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



DUCT BANK SECTION — A E-8, B E-8, C E-8
SCALE: NONE



DUCT BANK SECTION — D E-8
SCALE: NONE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS — 3 / E-8
SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

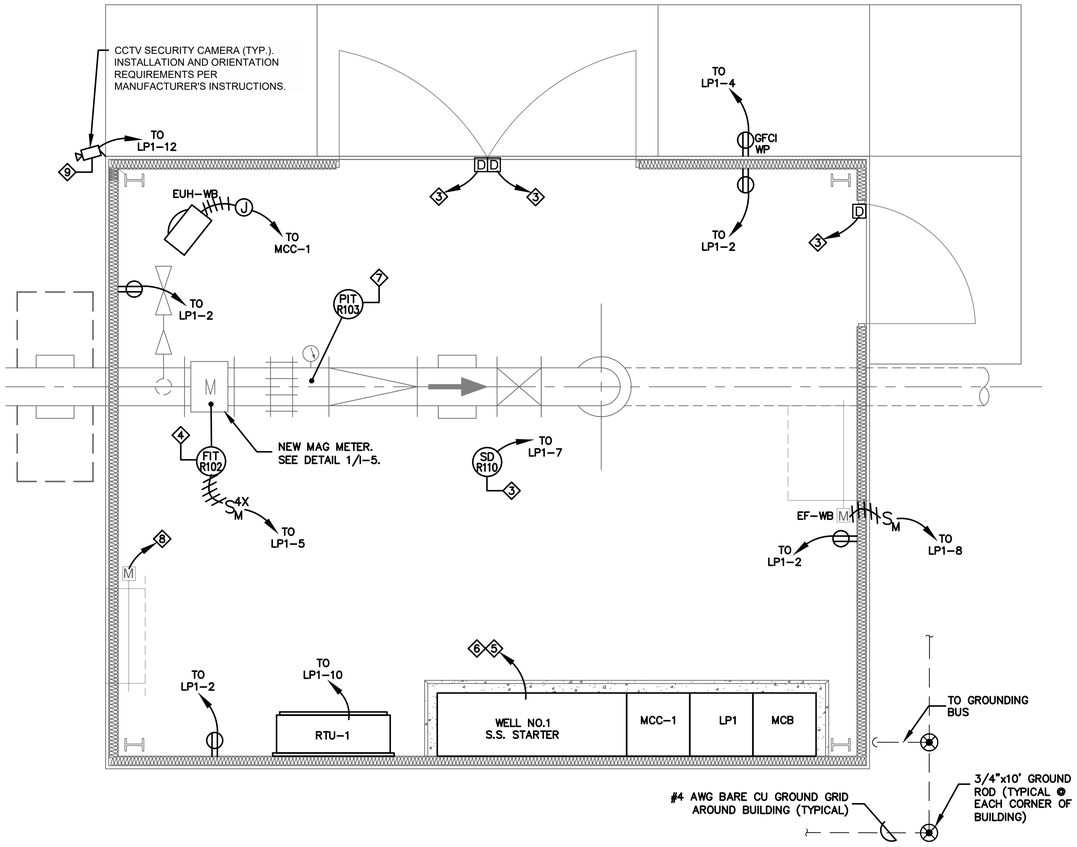
WELL NO.1 ELECTRICAL SITE PLAN

E-8

SHEET: OF

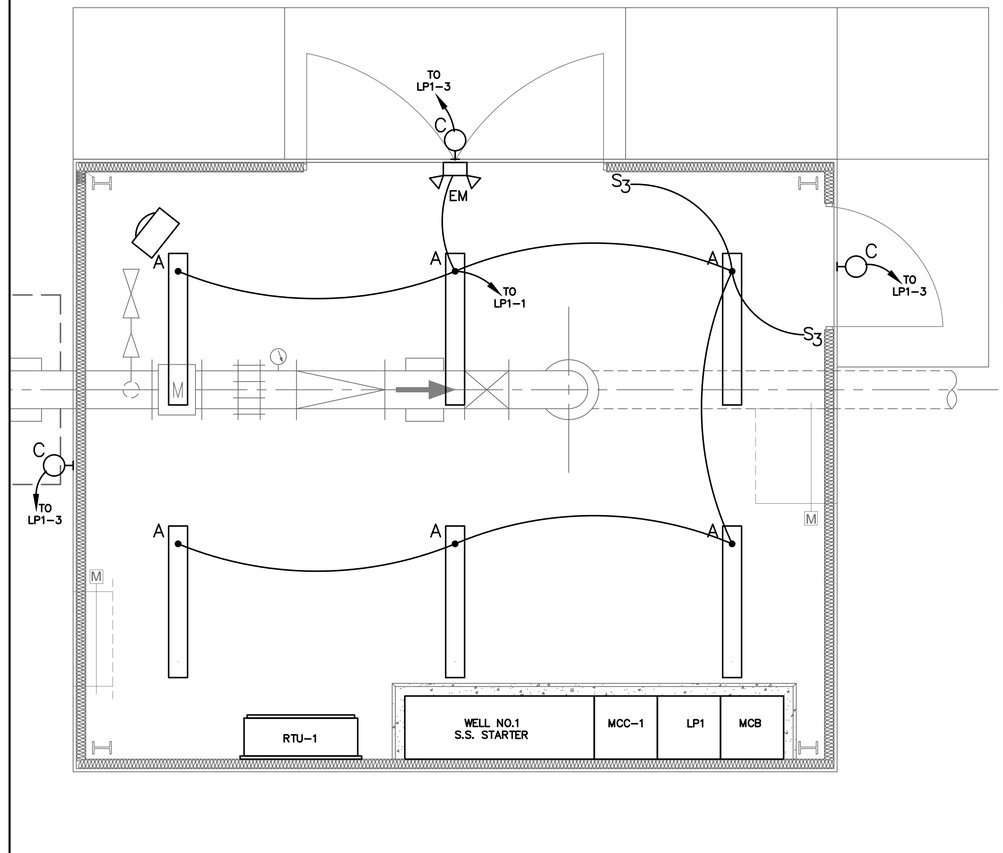
P:\PR58982\Cadd\Sheets\E-Sheets\E-8 WELL 1 ELECTRICAL SITE PLAN.dwg 4/16/2022 4:55:24 PM Randy Podmore

PLOTTED: 4/18/2022 8:19:05 AM



PRE-FABRICATED BUILDING NO.1 POWER PLAN 1 / E-9

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



PRE-FABRICATED BUILDING NO.1 LIGHTING PLAN 2 / E-9

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

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU-1.
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-1.
5. 3/4" CONDUIT WITH 10#14 TO RTU-1.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-1.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-1.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU-1 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP1

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3 PHASE, 4W, W/ GND BUS

LOCATION PRE-FAB BUILDING NO.1
MOUNTING SURFACE
DRAWING No.

	WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
	2#12, 1#12G	3/4"	LIGHTING - INTERIOR				1	20	1	X			2	1	20				RECEPTACLES - INTERIOR	3/4"	2#12, 1#12G
	2#12, 1#12G	3/4"	LIGHTING - EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
	2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
**	2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				EXHAUST FAN (EF-WB)	3/4"	2#12, 1#12G
									9		X		10	1	20				RTU PANEL	3/4"	2#12, 1#12G
									11			X	12	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
									13	X			14	1	20				SPARE		
									15		X		16	1	20				SPARE		
									17			X	18	1	20				SPARE		
									19	X			20	2	15				SPARE		
									21		X		22								
									23			X	24	1	20				SPARE		
													TOTAL 2								
			TOTAL 1																		
			TOTAL 2																		
			TOTAL 1 + 2																		
			TOTAL CONNECTED LOAD																		
			AMPERES																		

MAIN BREAKER 30A 3/P
FEEDER ENTRANCE TOP
FEEDER SIZE 4#10, 1#10G, 1"C
SOURCE 6 KVA XFMR 'TR1'
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE 3 / E-9

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

WELL NO.1 POWER & LIGHTING PLAN AND PANEL SCHEDULE

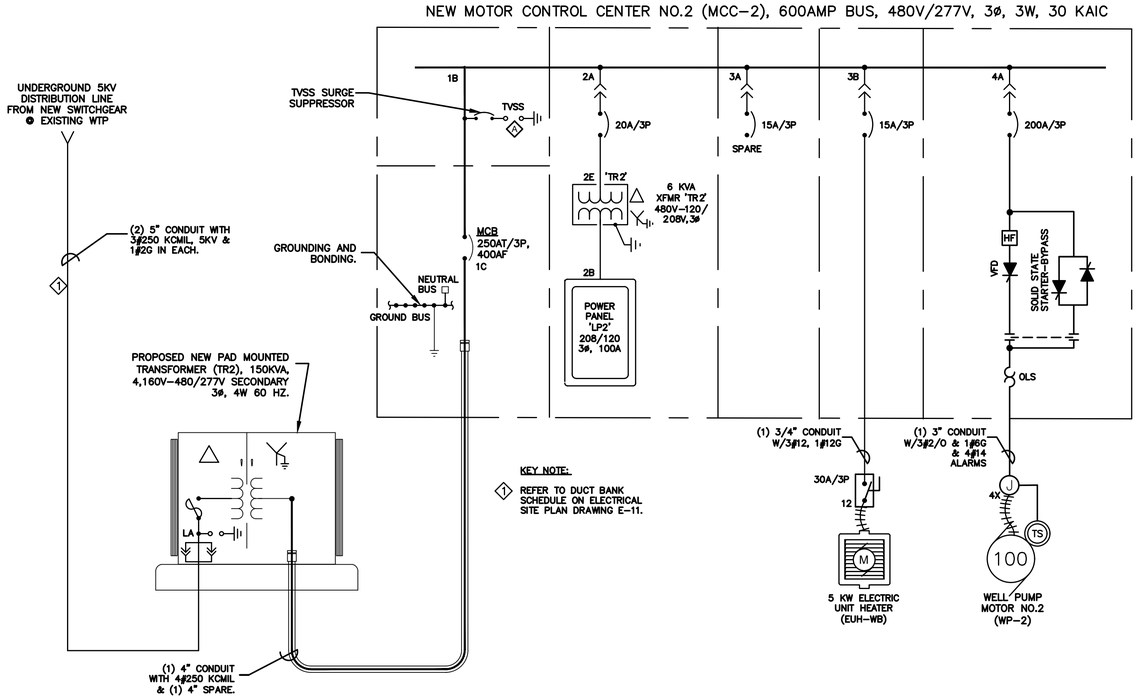
E-9

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-9 WELL 1 POWER & LIGHTING PLAN AND PANEL SCHEDULE.dwg 4/16/2022 4:35:46 PM Randy Podmore

PLOTTED: 4/18/2022 8:19:13 AM

NEW MOTOR CONTROL CENTER NO.2 (MCC-2), 600AMP BUS, 480V/277V, 3ø, 3W, 30 KAIC



NEW MOTOR CONTROL CENTER NO.2 (MCC-2) ONE-LINE DIAGRAM (1 / E-10)

SCALE: NONE

PARTIAL SYMBOLS LEGEND:

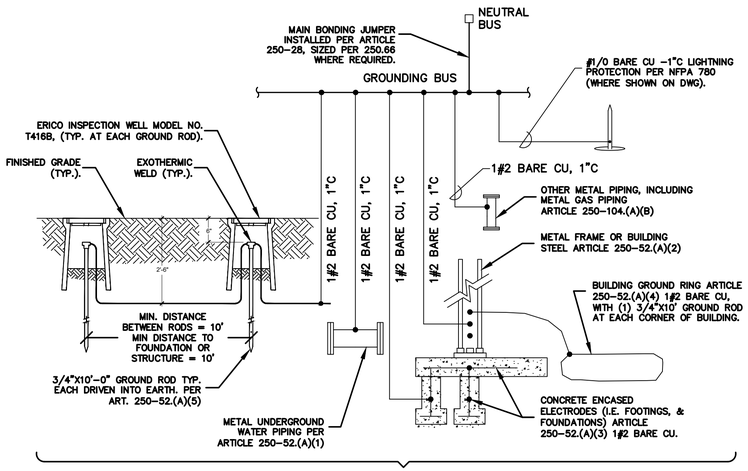
- DMM : DIGITAL MULTI-METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP
- HF : PASSIVE HARMONIC FILTER

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
A	MAIN BRKR (MCB)	PTE300-3Y201-D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

NOTE:

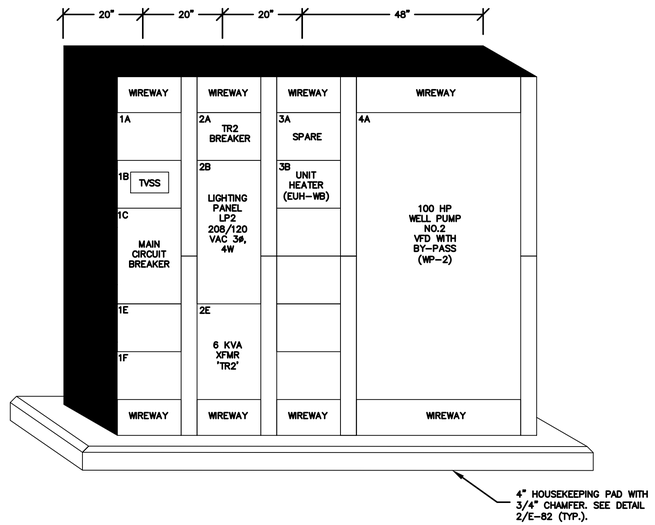
1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE-WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.2 (2 / E-10)

SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-2 EQUIPMENT ELEVATION (3 / E-10)

SCALE: NONE

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1	BID SET	04/2022

JOB NO:	PR58982
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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

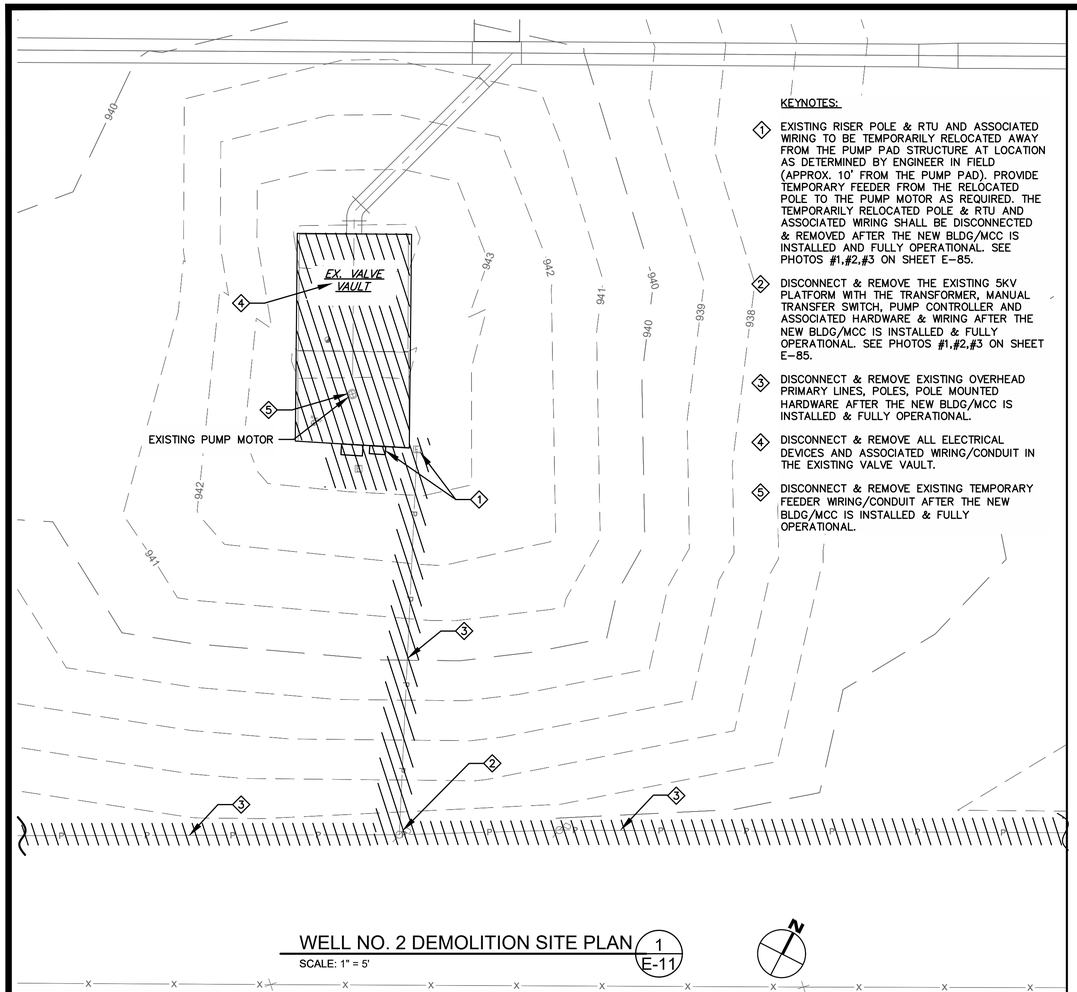
WELL NO.2
ONE-LINE DIAGRAM
AND EQUIPMENT
ELEVATION

E-10

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-10 WELL 2 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION.dwg 4/15/2022 10:43:26 AM Randy Podmore

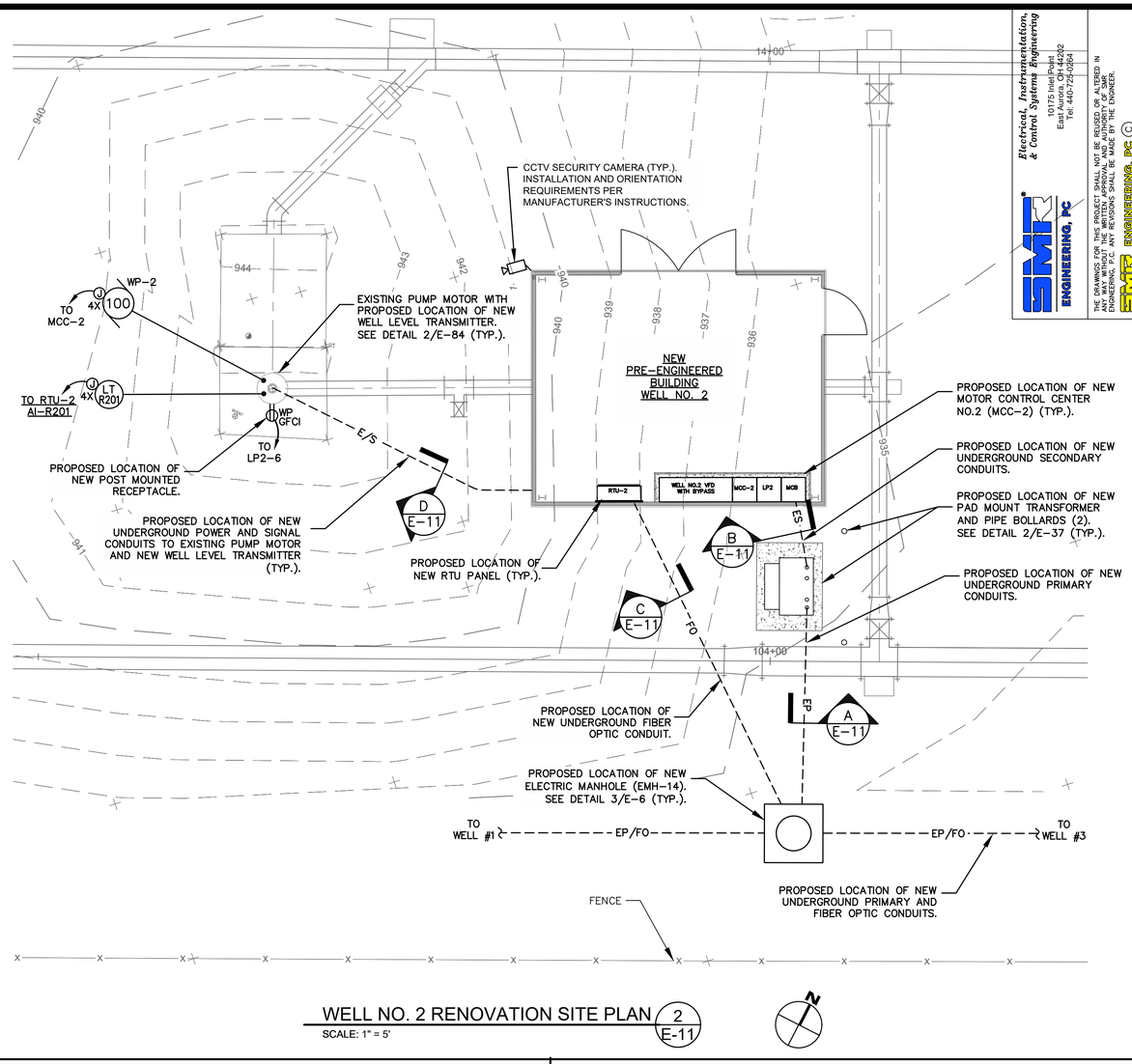
PLOTTED: 4/18/2022 8:19:58 AM



KEYNOTES:

1. EXISTING RISER POLE & RTU AND ASSOCIATED WIRING TO BE TEMPORARILY RELOCATED AWAY FROM THE PUMP PAD STRUCTURE AT LOCATION AS DETERMINED BY ENGINEER IN FIELD (APPROX. 10' FROM THE PUMP PAD). PROVIDE TEMPORARY FEEDER FROM THE RELOCATED POLE TO THE PUMP MOTOR AS REQUIRED. THE TEMPORARILY RELOCATED POLE & RTU AND ASSOCIATED WIRING SHALL BE DISCONNECTED & REMOVED AFTER THE NEW BLDG/MCC IS INSTALLED AND FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO. 2 DEMOLITION SITE PLAN (1 / E-11)
SCALE: 1" = 5'



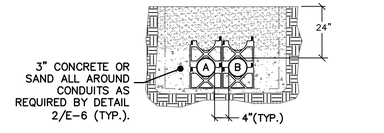
WELL NO. 2 RENOVATION SITE PLAN (2 / E-11)
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

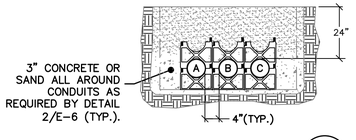
DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A E-11	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B E-11	(A) 4" PVC	MCC-2	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-2 INSIDE NEW PRE-ENGINEERING BUILDING NO.2.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-2 INSIDE NEW PRE-ENGINEERING BUILDING NO.2.
C E-11	(C) 4" PVC	RTU-2 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-14.
D E-11	(A) 3" PVC	WELL PUMP NO.2	3#1, WITH GRD VFD RATED CABLE	FEEDER CONDUIT FROM VFD INSIDE NEW MCC-2 AT NEW PRE-ENGINEERED BUILDING NO.2 TO NEW WELL NO.2 PUMP MOTOR.
	(B) 1" PVC	WELL NO.2 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.2 LEVEL TRANSMITTER TO NEW RTU-2 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.2.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP2.

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



DUCT BANK SECTION (A E-11, B E-11, C E-11)
SCALE: NONE



DUCT BANK SECTION (D E-11)
SCALE: NONE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS (3 / E-11)
SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

Electrical, Instrumentation, & Control Systems Engineering
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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

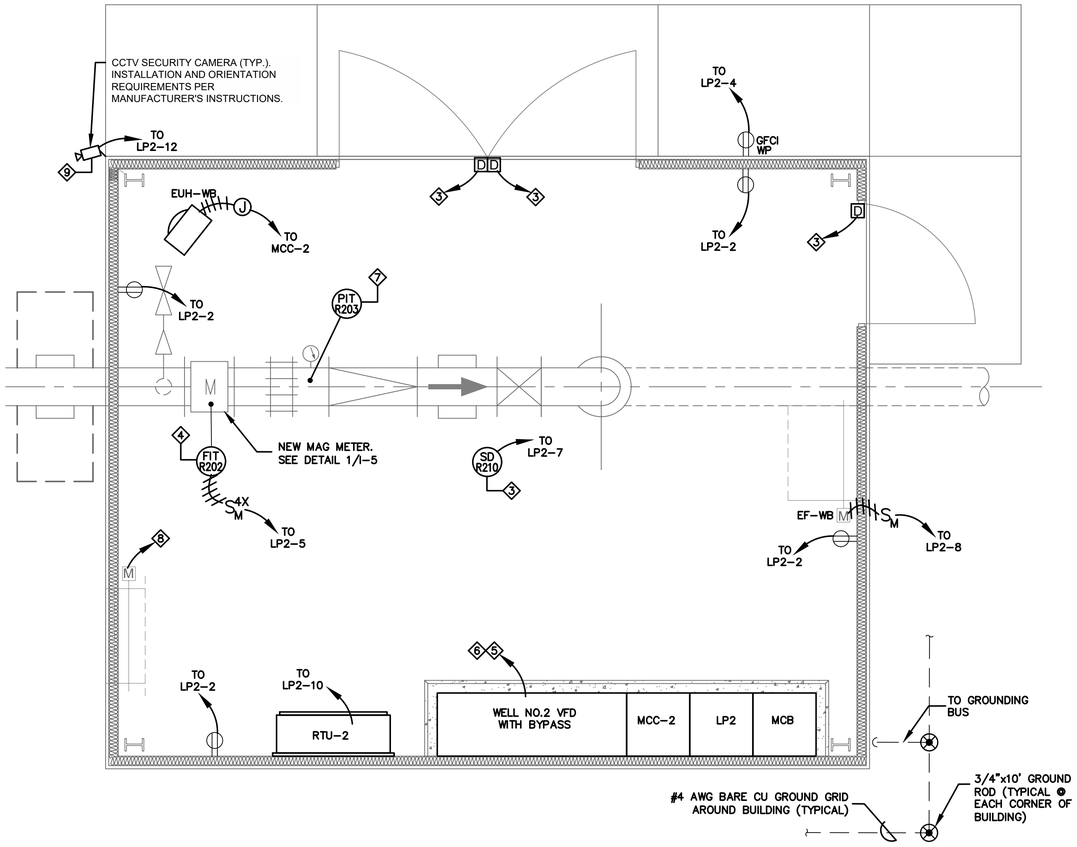
WELL NO.2 ELECTRICAL SITE PLAN

E-11

SHEET: OF

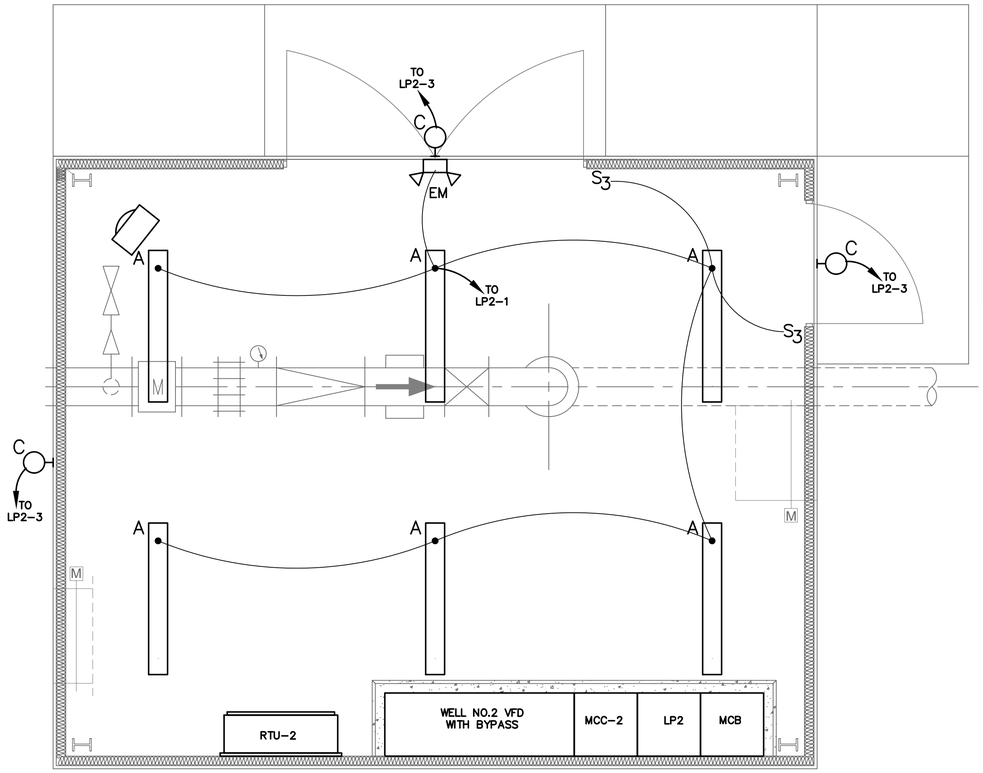
P:\PR58982\Cadd\Sheets\E-Sheets\E-11 WELL 2 ELECTRICAL SITE PLAN.dwg 4/16/2022 4:55:02 PM Randy Podmore

PLOTTED: 4/18/2022 8:20:12 AM



PRE-FABRICATED BUILDING NO.2 POWER PLAN 1 E-12

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



PRE-FABRICATED BUILDING NO.2 LIGHTING PLAN 2 E-12

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

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU-2.
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-2.
5. 3/4" CONDUIT WITH 10#14 TO RTU-2.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-2.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-2.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU-2 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP2

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3 PHASE, 4W, W/ GND BUS

LOCATION PRE-FAB BUILDING NO.2
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING - INTERIOR				1	20	1	X			2	1	20				RECEPTACLES - INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING - EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
** 2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				EXHAUST FAN (EF-WB)	3/4"	2#12, 1#12G
								9		X		10	1	20				RTU PANEL	3/4"	2#12, 1#12G
								11			X	12	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
								13	X			14	1	20				SPARE		
								15		X		16	1	20				SPARE		
								17			X	18	1	20				SPARE		
								19	X			20	2	15				SPARE		
								21		X		22								
								23			X	24	1	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 30A 3/P
FEEDER ENTRANCE TOP
FEEDER SIZE 4#10, 1#10G, 1"C
SOURCE 6 KVA XFMR 'TR2'
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE 3 E-12

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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REVISIONS

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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

WELL NO.2 POWER & LIGHTING PLAN AND PANEL SCHEDULE

E-12

SHEET: OF

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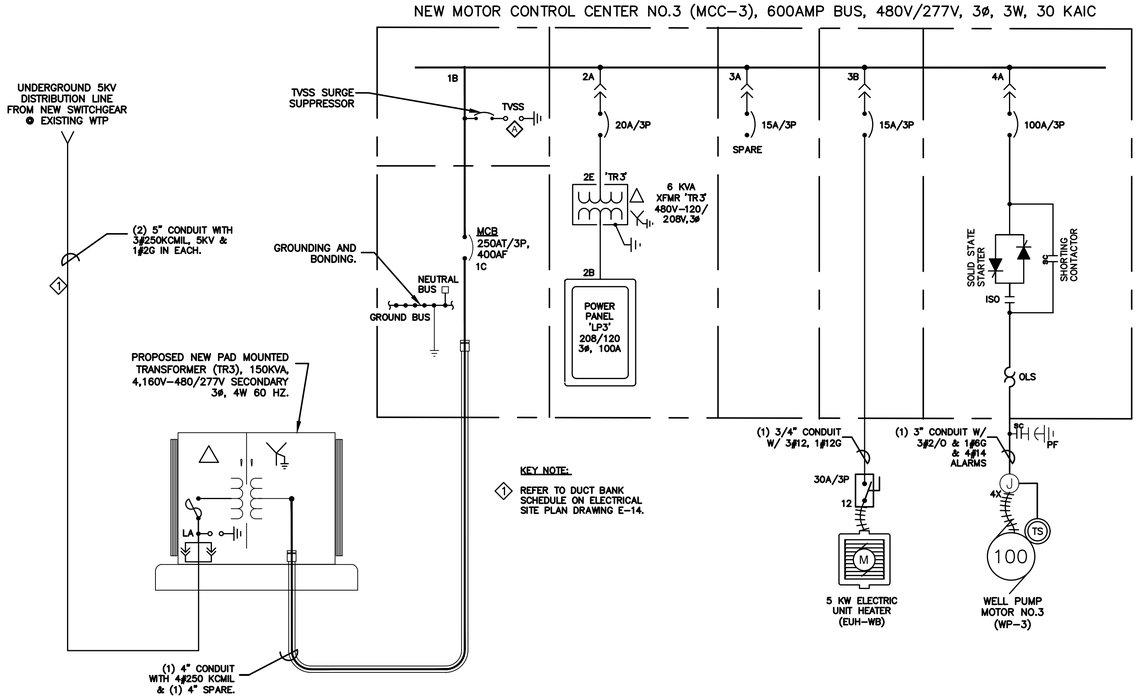
PLOTTED: 4/18/2022 8:20:20 AM

NEW MOTOR CONTROL CENTER NO.3 (MCC-3), 600AMP BUS, 480V/277V, 3ø, 3W, 30 KAIC



NEW MOTOR CONTROL CENTER NO.3 (MCC-3) ONE-LINE DIAGRAM (1 / E-13)

SCALE: NONE

PARTIAL SYMBOLS LEGEND:

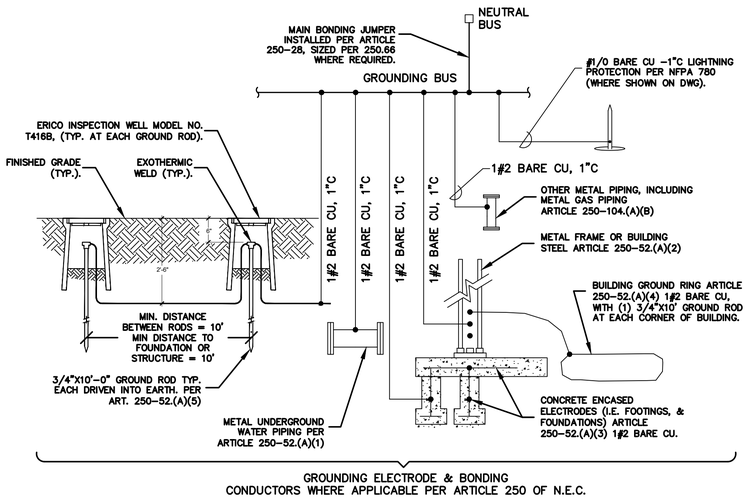
- DMM : DIGITAL MULTI-METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
1	MAIN BRKR (MCB)	PTE300-3Y201-D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

NOTE:

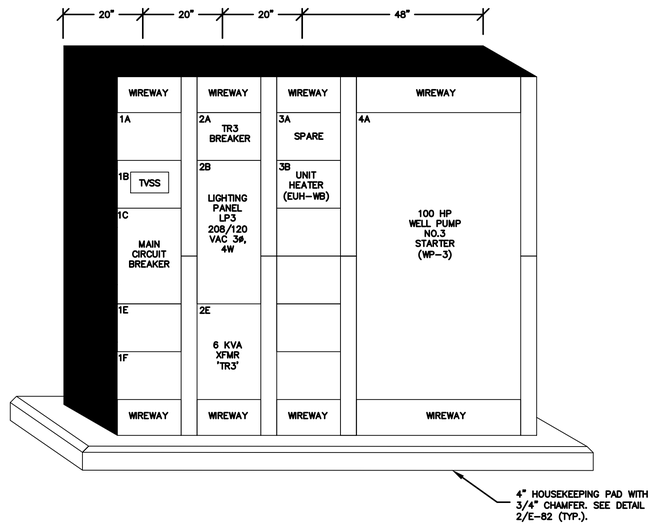
1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE-WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.3 (2 / E-13)

SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-3 EQUIPMENT ELEVATION (3 / E-13)

SCALE: NONE

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APPROVED BY:	SMR
SCALE:	AS NOTED

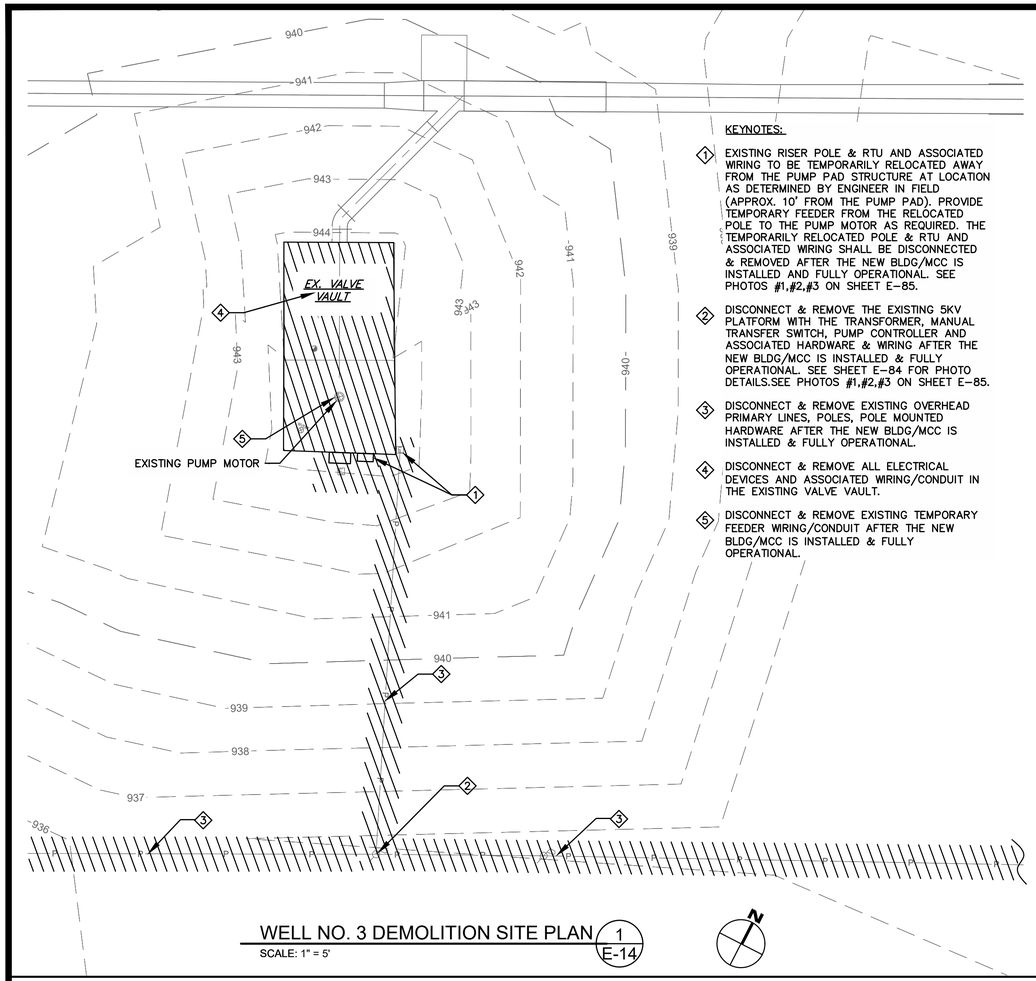
WELL NO.3
ONE-LINE DIAGRAM
AND EQUIPMENT
ELEVATION

E-13

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-13 WELL 3 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION.dwg 4/15/2022 10:54:13 AM Randy Podmore

PLOTTED: 4/18/2022 8:21:08 AM

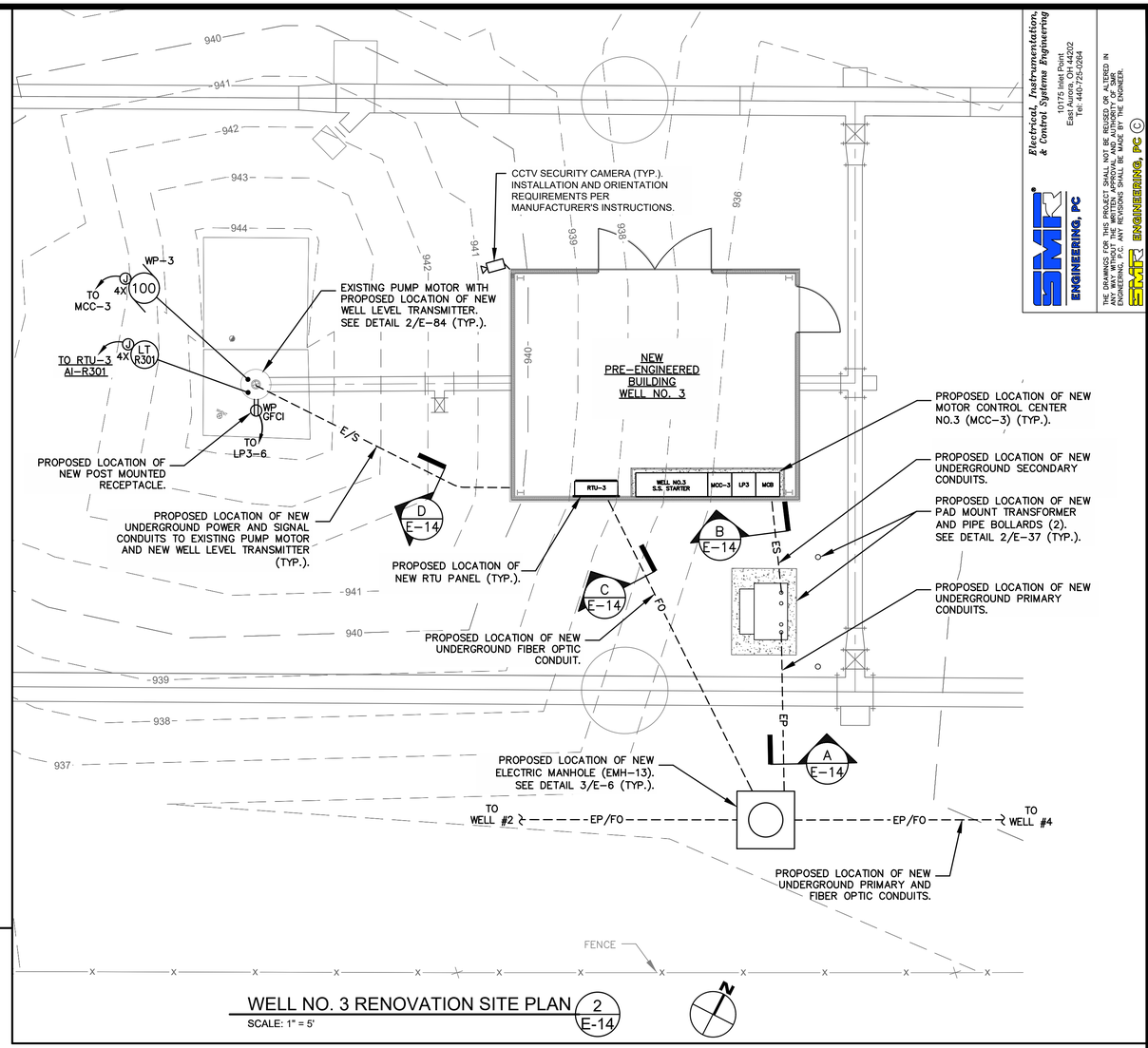


KEYNOTES:

1. EXISTING RISER POLE & RTU AND ASSOCIATED WIRING TO BE TEMPORARILY RELOCATED AWAY FROM THE PUMP PAD STRUCTURE AT LOCATION AS DETERMINED BY ENGINEER IN FIELD (APPROX. 10' FROM THE PUMP PAD). PROVIDE TEMPORARY FEEDER FROM THE RELOCATED POLE TO THE PUMP MOTOR AS REQUIRED. THE TEMPORARILY RELOCATED POLE & RTU AND ASSOCIATED WIRING SHALL BE DISCONNECTED & REMOVED AFTER THE NEW BLDG/MCC IS INSTALLED AND FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE SHEET E-84 FOR PHOTO DETAILS.SEE PHOTOS #1,#2,#3 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO. 3 DEMOLITION SITE PLAN (1 / E-14)

SCALE: 1" = 5'



WELL NO. 3 RENOVATION SITE PLAN (2 / E-14)

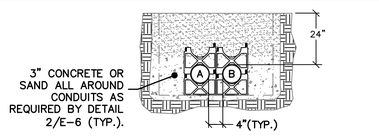
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A E-14	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B E-14	(A) 4" PVC	MCC-3	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-3 INSIDE NEW PRE-ENGINEERING BUILDING NO.3.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-3 INSIDE NEW PRE-ENGINEERING BUILDING NO.3.
C E-14	(C) 4" PVC	RTU-3 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-13.
D E-14	(A) 3" PVC	WELL PUMP NO.3	2#12, 1#12G	FEEDER CONDUIT FROM STARTER INSIDE NEW MCC-3 AT NEW PRE-ENGINEERED BUILDING NO.3 TO NEW WELL NO.3 PUMP MOTOR.
	(B) 1" PVC	WELL NO.3 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.3 LEVEL TRANSMITTER TO NEW RTU-3 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.3.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP3.

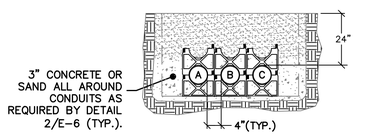
UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



DUCT BANK SECTION (A E-14, B E-14, C E-14)

SCALE: NONE



DUCT BANK SECTION (D E-14)

SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS (3 / E-14)

SCALE: NONE

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SCALE:	AS NOTED

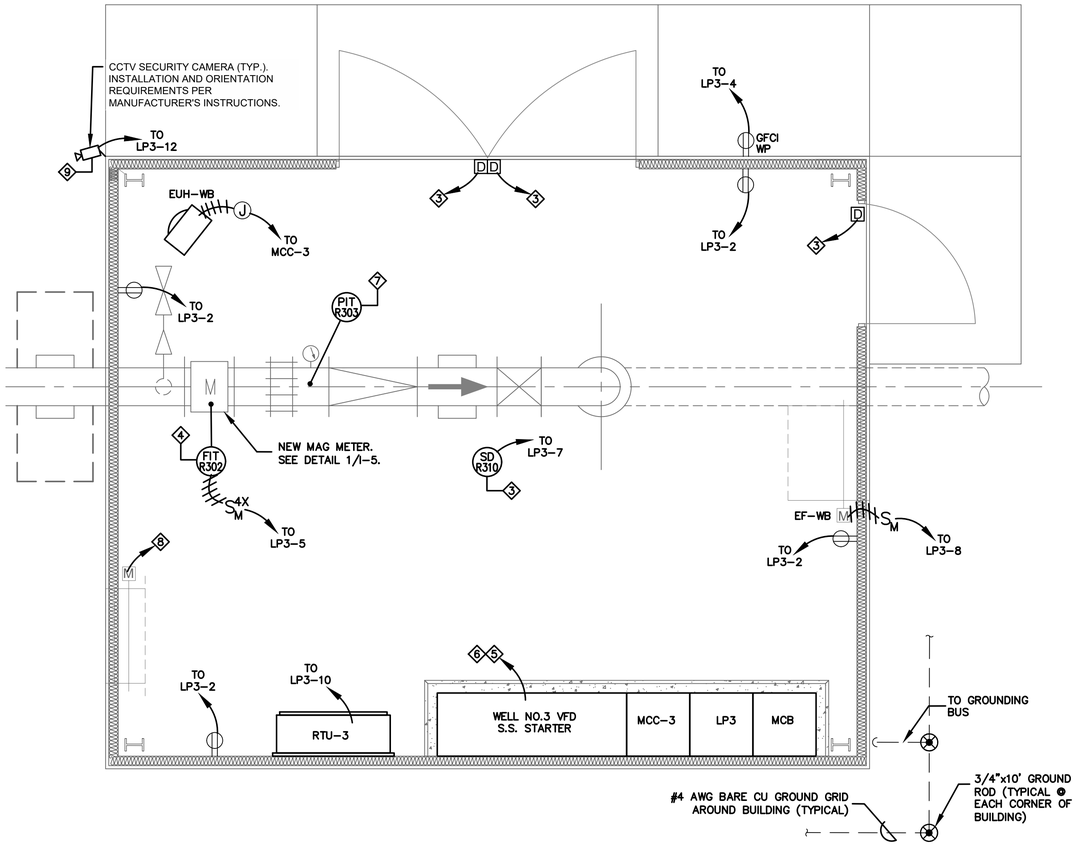
WELL NO. 3 ELECTRICAL SITE PLAN

E-14

SHEET: OF

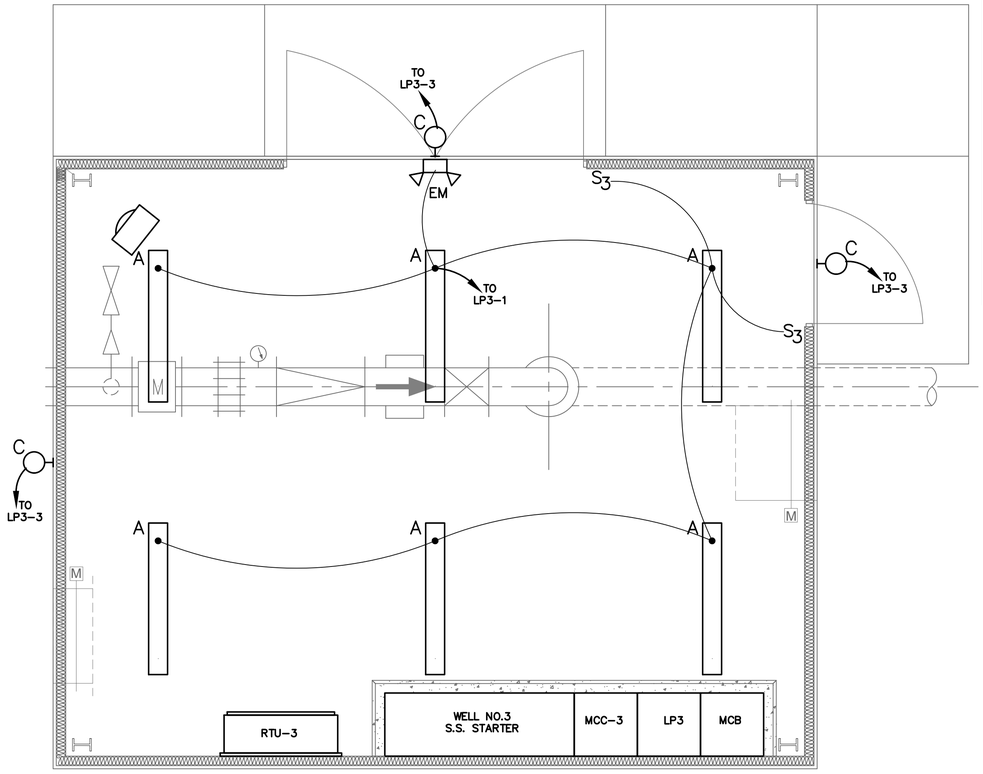
P:\PR58982\Cadd\Sheets\E-Sheets\E-14 WELL 3 ELECTRICAL SITE PLAN.dwg 4/15/2022 10:54:23 AM Randy Podmore

PLOTTED: 4/18/2022 8:21:21 AM



PRE-FABRICATED BUILDING NO.3 POWER PLAN 1 / E-15

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



PRE-FABRICATED BUILDING NO.3 LIGHTING PLAN 2 / E-15

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

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU-3.
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-3.
5. 3/4" CONDUIT WITH 10#14 TO RTU-3.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-3.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-3.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU-3 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP3

BUS: 100 AMPERE
PANEL RATING: 10 KAIC
SUPPLY VOLTAGE: 208Y/120V
SERVICE: 3 PHASE, 4W, W/ GND BUS

LOCATION: PRE-FAB BUILDING NO.3
MOUNTING: SURFACE
DRAWING No.:

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING - INTERIOR				1	20	1	X			2	1	20				RECEPTACLES - INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING - EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
** 2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				EXHAUST FAN (EF-WB)	3/4"	2#12, 1#12G
								9		X		10	1	20				RTU PANEL	3/4"	2#12, 1#12G
								11			X	12	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
								13	X			14	1	20				SPARE		
								15		X		16	1	20				SPARE		
								17			X	18	1	20				SPARE		
								19	X			20	2	15				SPARE		
								21		X		22								
								23			X	24	1	20				SPARE		
												TOTAL 2								
		TOTAL 1																		
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER: 30A 3/P
FEEDER ENTRANCE: TOP
FEEDER SIZE: 4#10, 1#10G, 1"C
SOURCE: 6 KVA XFMR 'TR3'
PANEL TYPE: BOLT-ON

MAIN LUGS: N/A
ENCLOSURE TYPE: NEMA 1
ACCESSORIES:

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE 3 / E-15

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0264

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100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

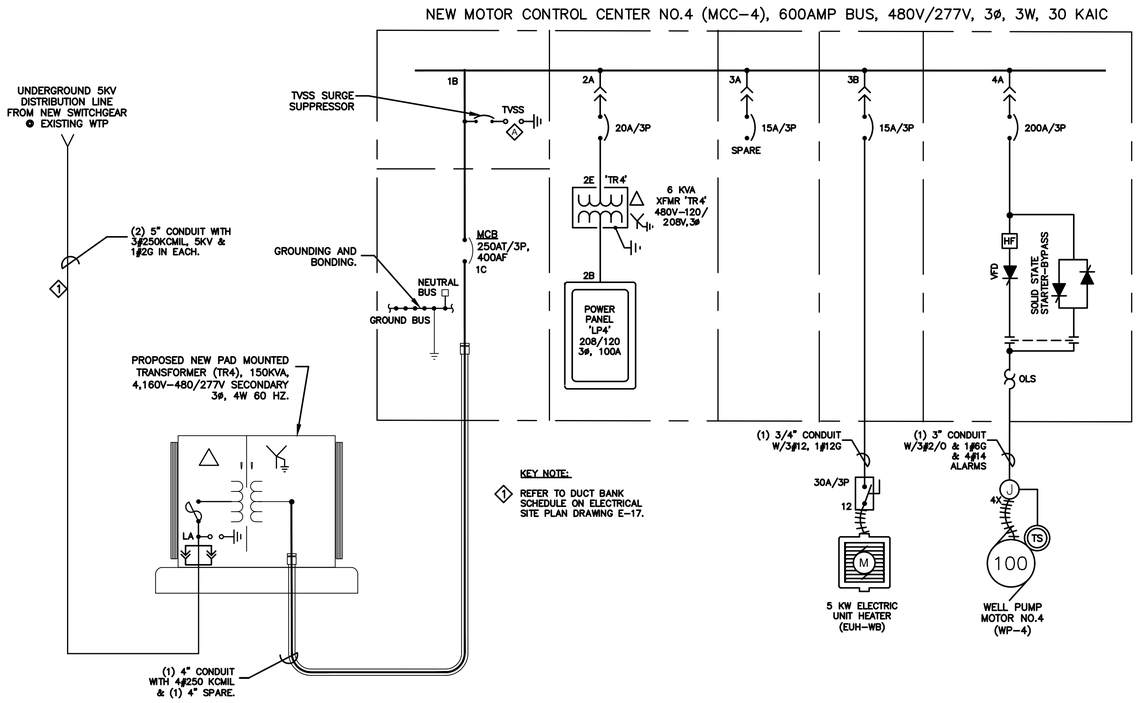
WELL NO. 3 POWER & LIGHTING AND PANEL SCHEDULE

E-15

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-15 WELL 3 POWER & LIGHTING PLAN AND PANEL SCHEDULE.dwg 4/16/2022 4:36:40 PM Randy Podmore

PLOTTED: 4/18/2022 8:21:29 AM



NEW MOTOR CONTROL CENTER NO.4 (MCC-4) ONE-LINE DIAGRAM 1 E-16

SCALE: NONE

PARTIAL SYMBOLS LEGEND:

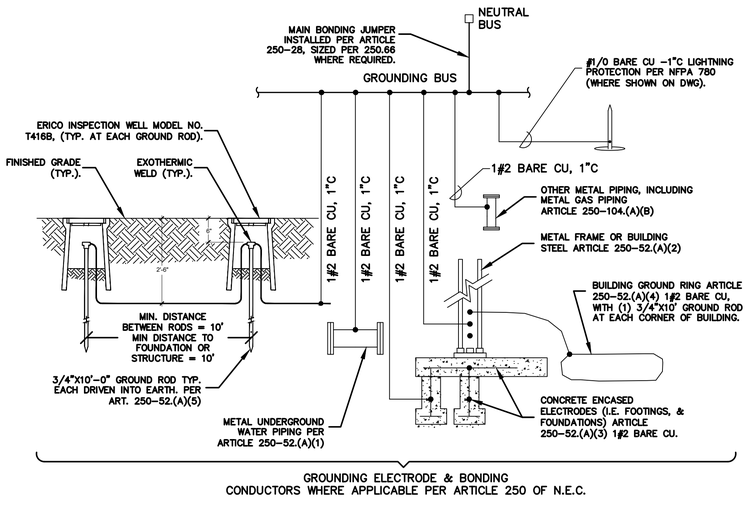
- DMM : DIGITAL MULTI-METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
2	MAIN BRKR (MCB)	PTE300-3Y201-D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

NOTE:

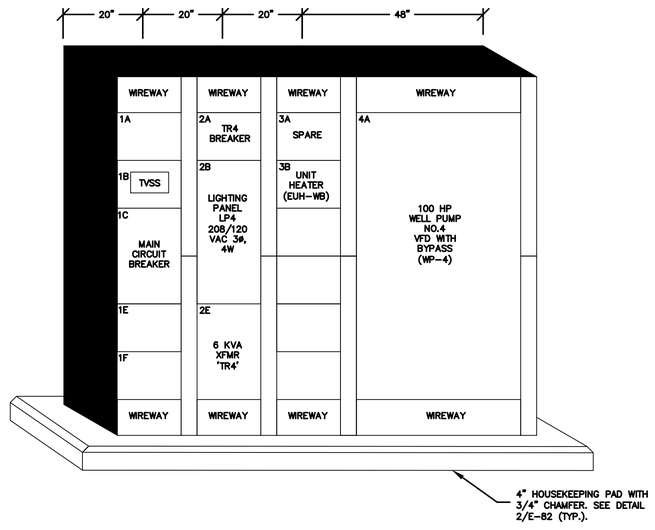
1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE-WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.4 2 E-16

SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-4 EQUIPMENT ELEVATION 3 E-16

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
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WELL NO.4
ONE-LINE DIAGRAM
AND EQUIPMENT
ELEVATION

E-16

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-16 WELL 4 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION.dwg 4/15/2022 10:59:08 AM Randy Podmore

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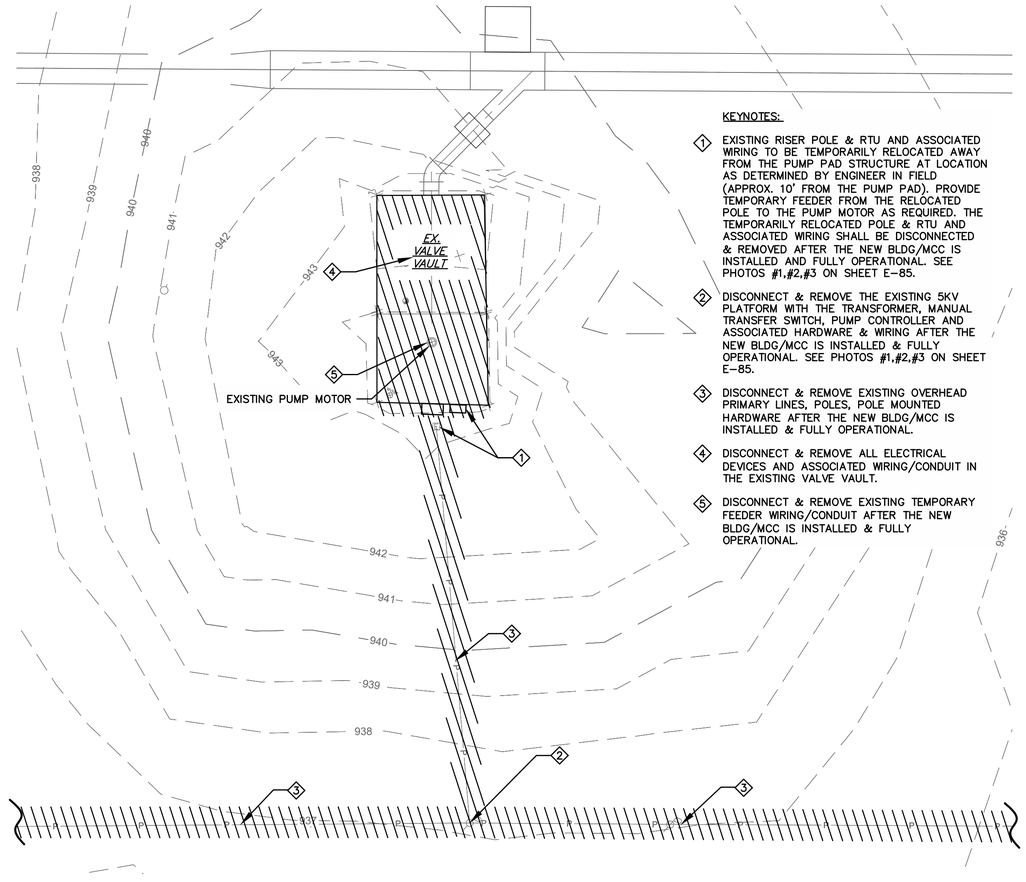
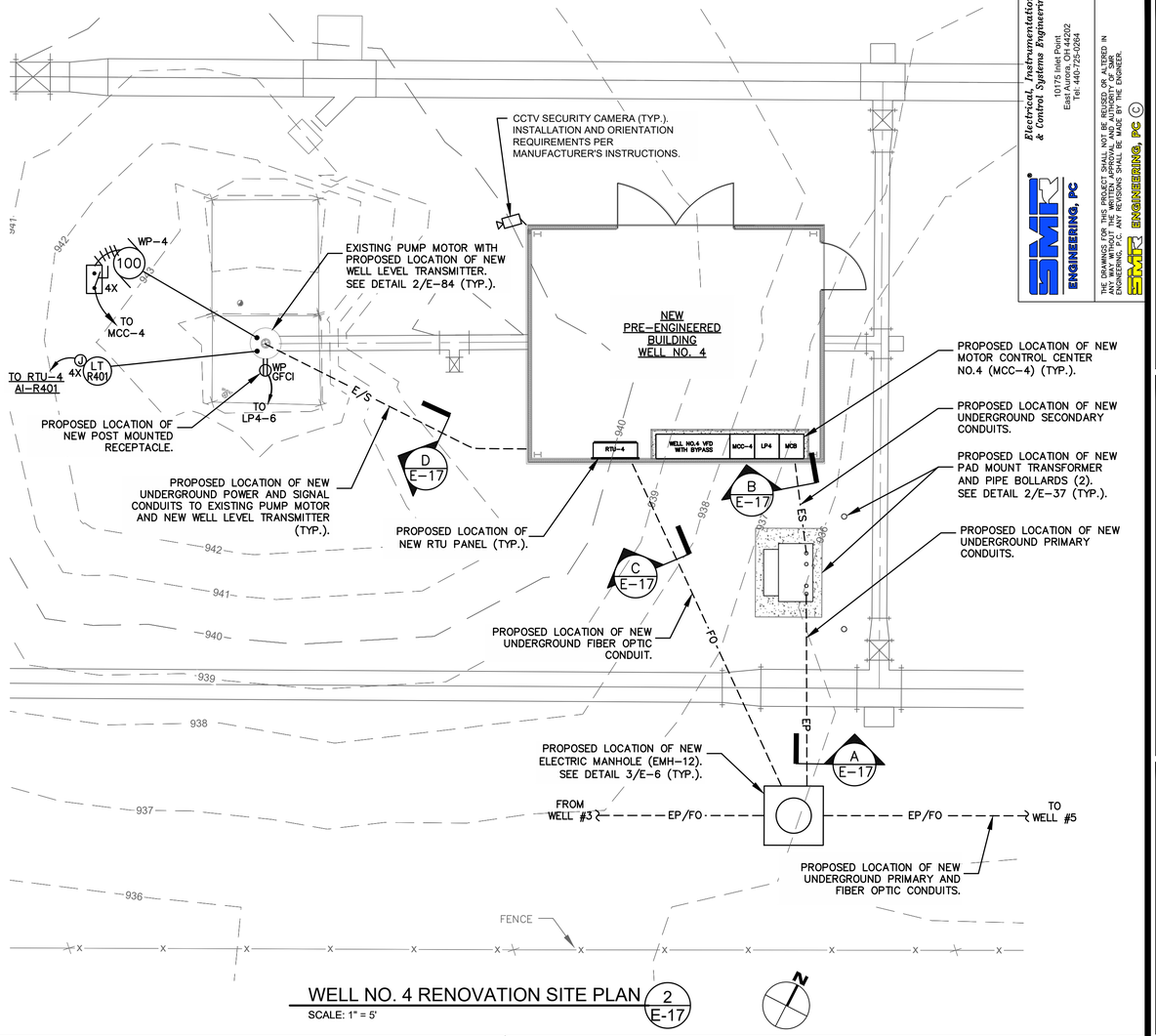


KEYNOTES:

1. EXISTING RISER POLE & RTU AND ASSOCIATED WIRING TO BE TEMPORARILY RELOCATED AWAY FROM THE PUMP PAD STRUCTURE AT LOCATION AS DETERMINED BY ENGINEER IN FIELD (APPROX. 10' FROM THE PUMP PAD). PROVIDE TEMPORARY FEEDER FROM THE RELOCATED POLE TO THE PUMP MOTOR AS REQUIRED. THE TEMPORARILY RELOCATED POLE & RTU AND ASSOCIATED WIRING SHALL BE DISCONNECTED & REMOVED AFTER THE NEW BLDG/MCC IS INSTALLED AND FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO. 4 DEMOLITION SITE PLAN (1 / E-17)
SCALE: 1" = 5'



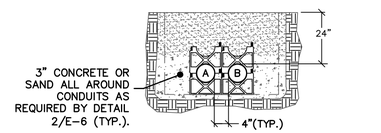
WELL NO. 4 RENOVATION SITE PLAN (2 / E-17)
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

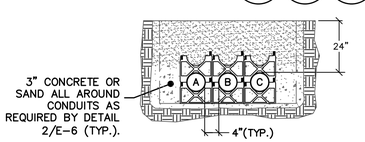
DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A / E-17	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B / E-17	(A) 4" PVC	MCC-4	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-4 INSIDE NEW PRE-ENGINEERING BUILDING NO.4.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-4 INSIDE NEW PRE-ENGINEERING BUILDING NO.4.
C / E-17	(C) 4" PVC	RTU-4 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-12.
D / E-17	(A) 3" PVC	WELL PUMP NO.4	3#1, WITH GRD VFD RATED CABLE	FEEDER CONDUIT FROM VFD INSIDE NEW MCC-4 AT NEW PRE-ENGINEERED BUILDING NO.4 TO NEW WELL NO.4 PUMP MOTOR.
	(B) 1" PVC	WELL NO.4 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.4 LEVEL TRANSMITTER TO NEW RTU-4 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.4.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP4.

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



DUCT BANK SECTION (A / E-17, B / E-17, C / E-17)
SCALE: NONE



DUCT BANK SECTION (D / E-17)
SCALE: NONE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS (3 / E-17)
SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

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SMT ENGINEERING, PC
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CITY OF CANTON, OHIO
WATER DEPARTMENT
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WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

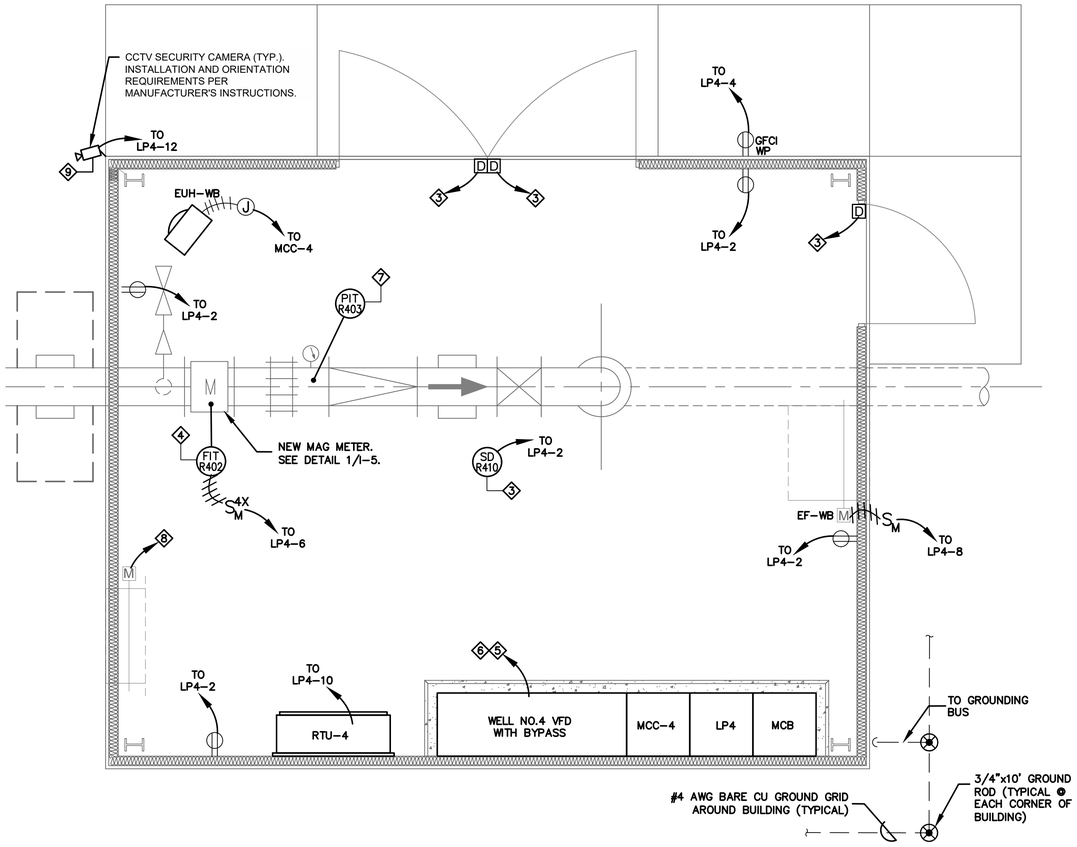
WELL NO.4 ELECTRICAL SITE PLAN

E-17

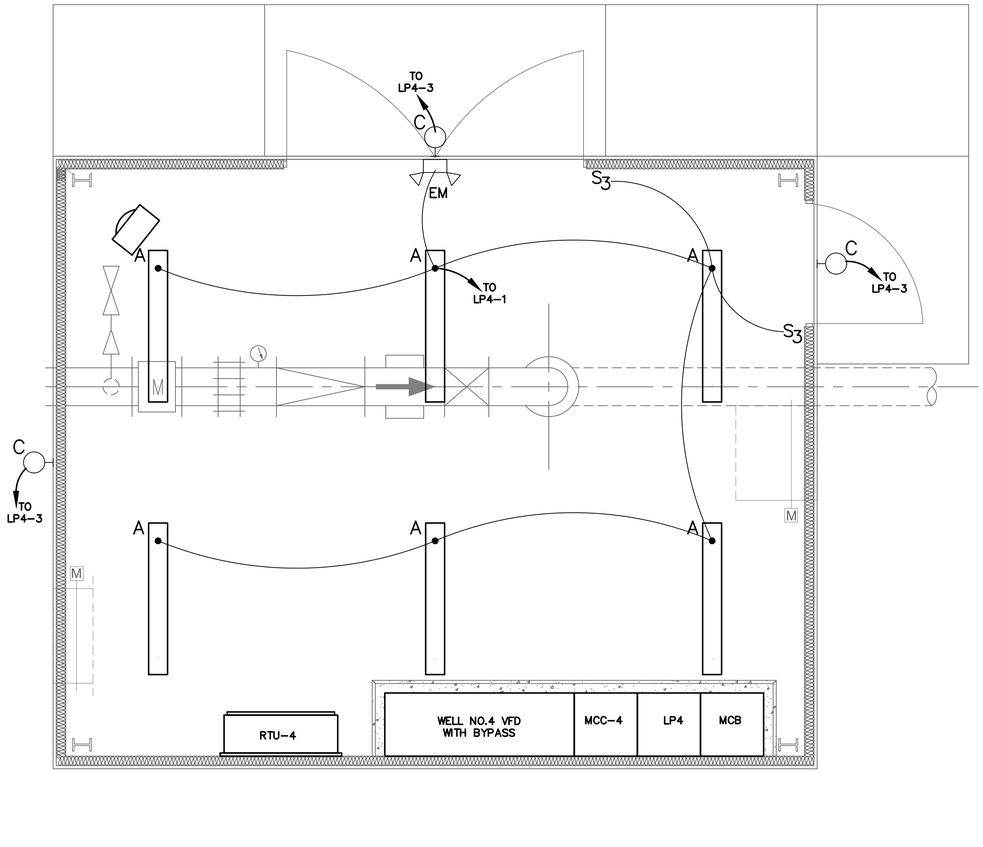
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-17 WELL 4 ELECTRICAL SITE PLAN.dwg 4/15/2022 10:59:17 AM Randy Podmore

PLOTTED: 4/18/2022 8:22:27 AM



PRE-FABRICATED BUILDING NO.4 POWER PLAN (1 / E-18)
SCALE: 1/2" = 1'-0"



PRE-FABRICATED BUILDING NO.4 LIGHTING PLAN (2 / E-18)
SCALE: 1/2" = 1'-0"

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J–BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU–4.
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU–4.
5. 3/4" CONDUIT WITH 10#14 TO RTU–4.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU–4.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU–4.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU–4 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP4

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3 PHASE, 4W, W/ GND BUS

LOCATION PRE–FAB BUILDING NO.4
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING – INTERIOR				1	20	1	X			2	1	20				RECEPTACLES – INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES – EXTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES – EXTERIOR	3/4"	2#12, 1#12G
** 2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				EXHAUST FAN (EF–WB)	3/4"	2#12, 1#12G
								9		X		10	1	20				RTU PANEL	3/4"	2#12, 1#12G
								11			X	12	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
								13	X			14	1	20				SPARE		
								15		X		16	1	20				SPARE		
								17			X	18	1	20				SPARE		
								19	X			20	2	15				SPARE		
								21		X		22								
								23			X	24	1	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 30A 3/P
FEEDER ENTRANCE TOP
FEEDER SIZE 4#10, 1#10G, 1"C
SOURCE 6 KVA XFMR 'TR4'
PANEL TYPE BOLT–ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE (3 / E-18)
SCALE: NONE

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JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

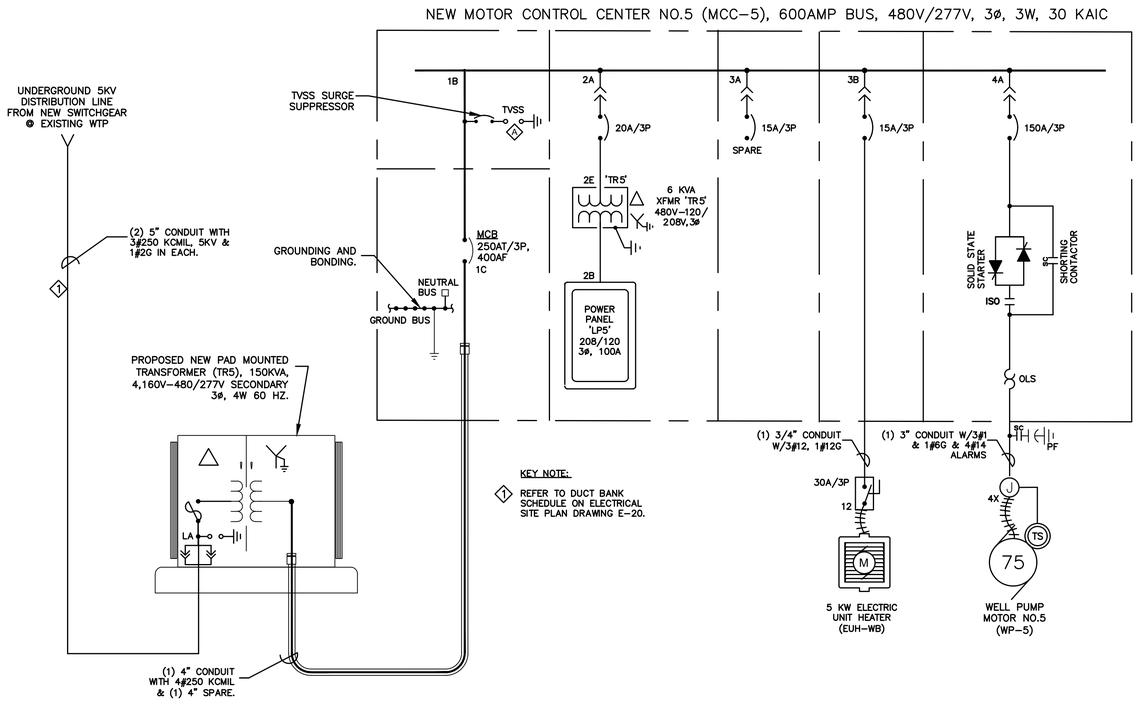
WELL NO.4 POWER & LIGHTING PLAN AND PANEL SCHEDULE

E-18

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-18 WELL 4 POWER & LIGHTING PLAN AND PANEL SCHEDULE.dwg 4/16/2022 4:40:43 PM Randy Podmore

PLOTTED: 4/18/2022 8:22:35 AM



NEW MOTOR CONTROL CENTER NO.5 (MCC-5) ONE-LINE DIAGRAM (1 / E-19)
SCALE: NONE

PARTIAL SYMBOLS LEGEND:

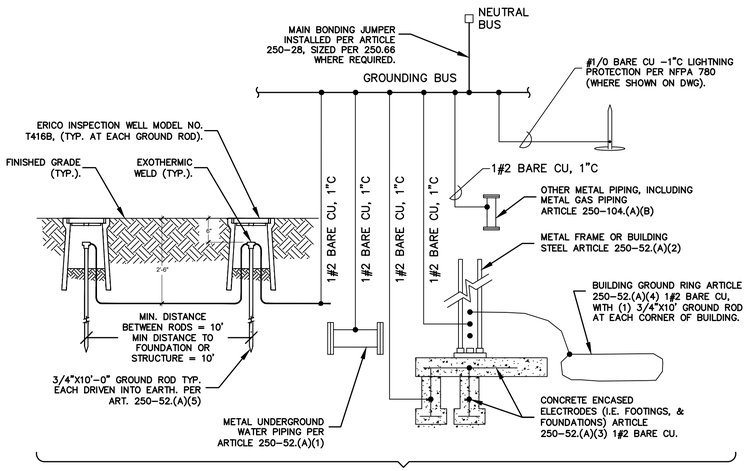
- DMM : DIGITAL MULTI-METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
A	MAIN BRKR (MCB)	PTE300-3Y201-D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

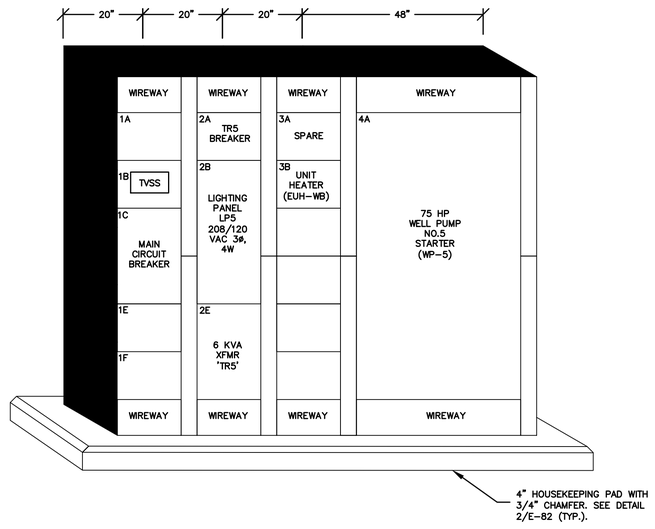
NOTE:

1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE-WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.5 (2 / E-19)
SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-5 EQUIPMENT ELEVATION (3 / E-19)
SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
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Tel: 440-725-0084

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

WELL NO. 5
ONE-LINE DIAGRAM
AND EQUIPMENT
ELEVATION

E-19

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-19 WELL 5 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION.dwg 4/15/2022 3:04:08 PM Randy Podmore

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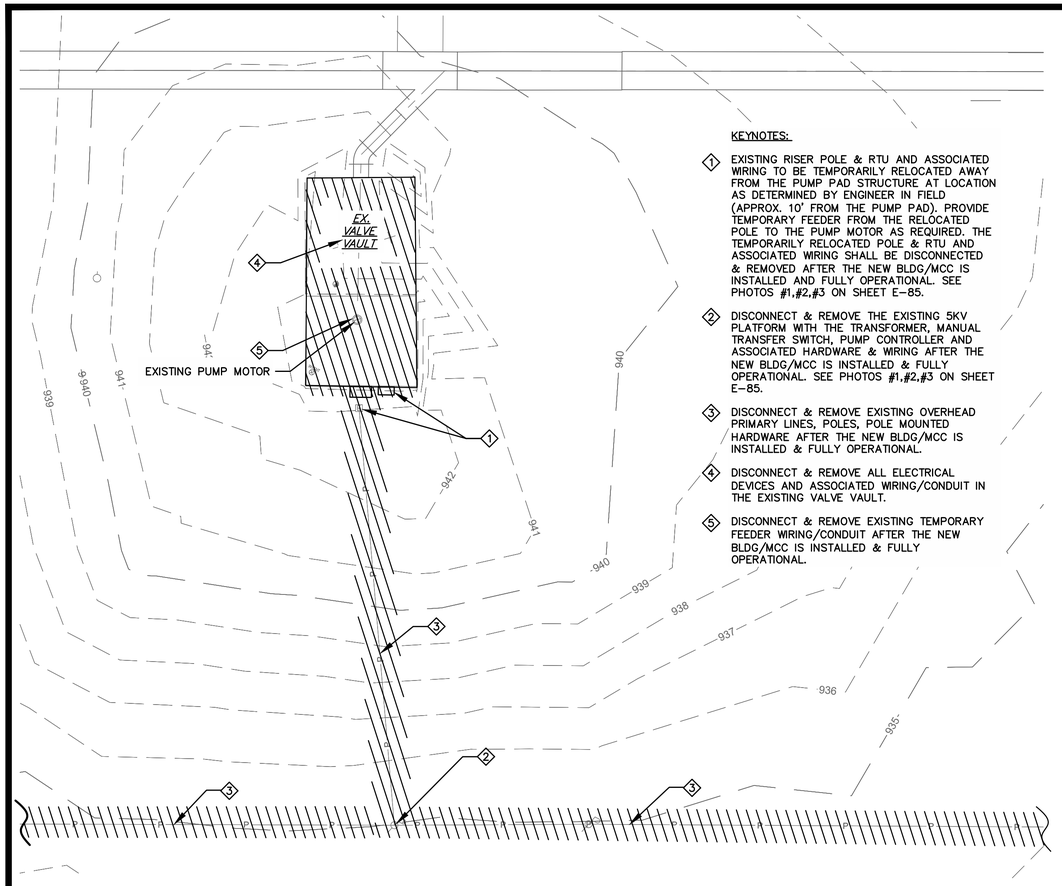
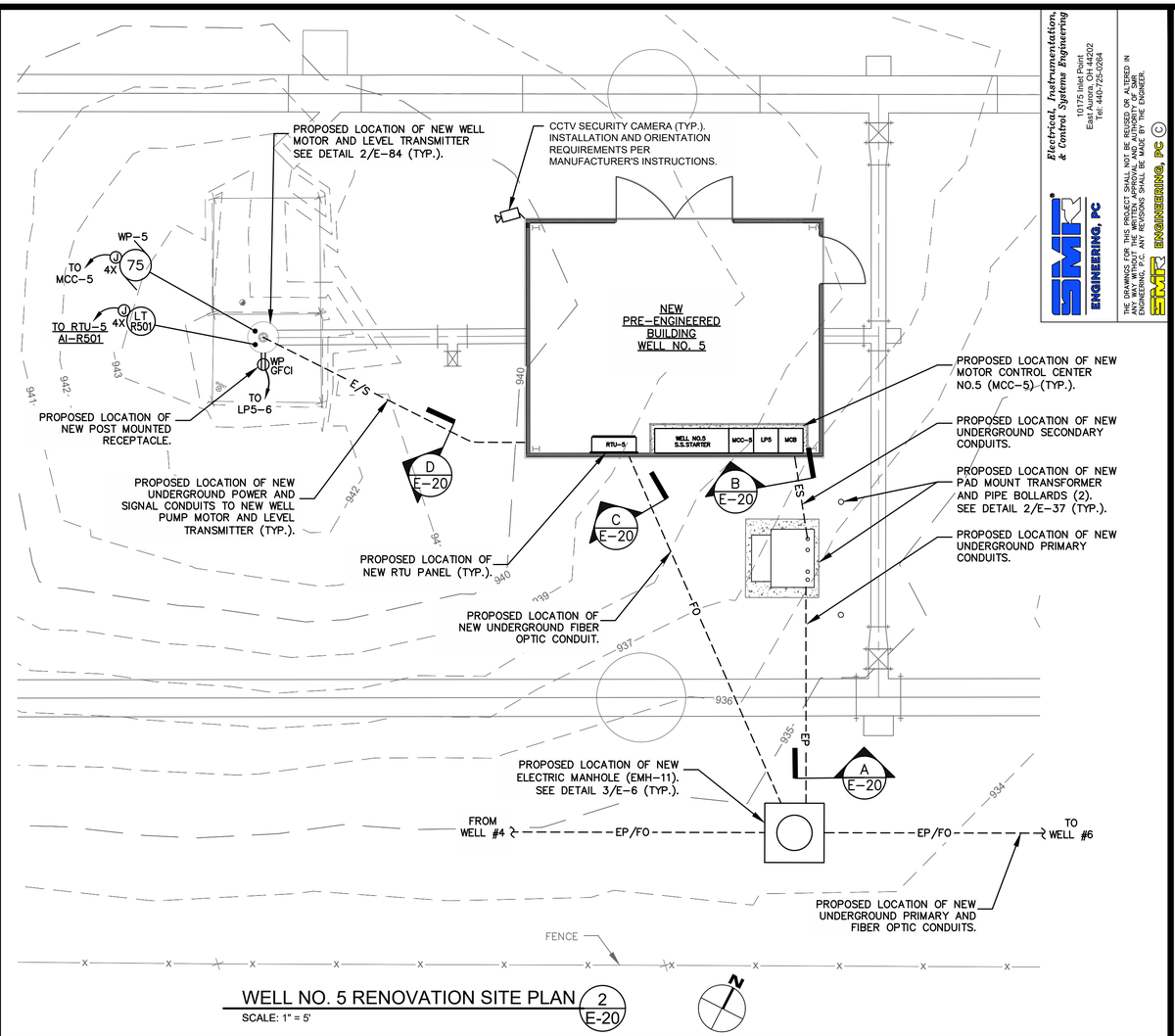


KEYNOTES:

1. EXISTING RISER POLE & RTU AND ASSOCIATED WIRING TO BE TEMPORARILY RELOCATED AWAY FROM THE PUMP PAD STRUCTURE AT LOCATION AS DETERMINED BY ENGINEER IN FIELD (APPROX. 10' FROM THE PUMP PAD). PROVIDE TEMPORARY FEEDER FROM THE RELOCATED POLE TO THE PUMP MOTOR AS REQUIRED. THE TEMPORARILY RELOCATED POLE & RTU AND ASSOCIATED WIRING SHALL BE DISCONNECTED & REMOVED AFTER THE NEW BLDG/MCC IS INSTALLED AND FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO. 5 DEMOLITION SITE PLAN — 1 / E-20
SCALE: 1" = 5'



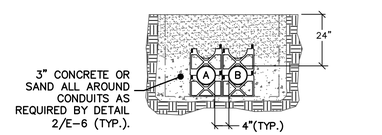
WELL NO. 5 RENOVATION SITE PLAN — 2 / E-20
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

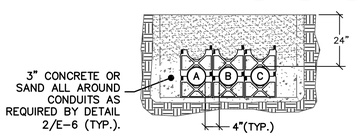
DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A E-20	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B E-20	(A) 4" PVC	MCC-5	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-5 INSIDE NEW PRE-ENGINEERING BUILDING NO.5.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-5 INSIDE NEW PRE-ENGINEERING BUILDING NO.5.
C E-20	(C) 4" PVC	RTU-5 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-11.
D E-20	(A) 3" PVC	WELL PUMP NO.5	2#12, 1#12G	FEEDER CONDUIT FROM STARTER INSIDE NEW MCC-5 AT NEW PRE-ENGINEERED BUILDING NO.5 TO NEW WELL NO.5 PUMP MOTOR.
	(B) 1" PVC	WELL NO.5 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.5 LEVEL TRANSMITTER TO NEW RTU-5 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.5.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP5.

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



DUCT BANK SECTION — A E-20, B E-20, C E-20
SCALE: NONE



DUCT BANK SECTION — D E-20
SCALE: NONE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS — 3 / E-20
SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

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APPROVED BY:	SMR
SCALE:	AS NOTED

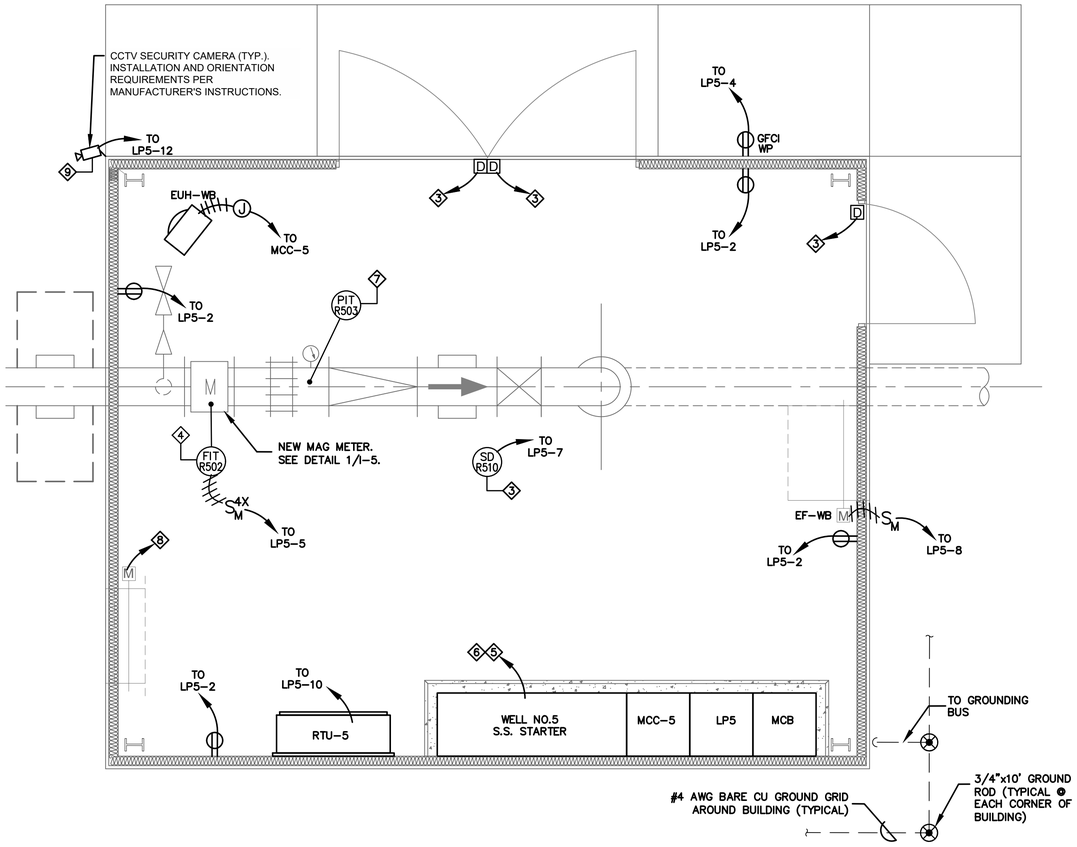
WELL NO.5 ELECTRICAL SITE PLAN

E-20

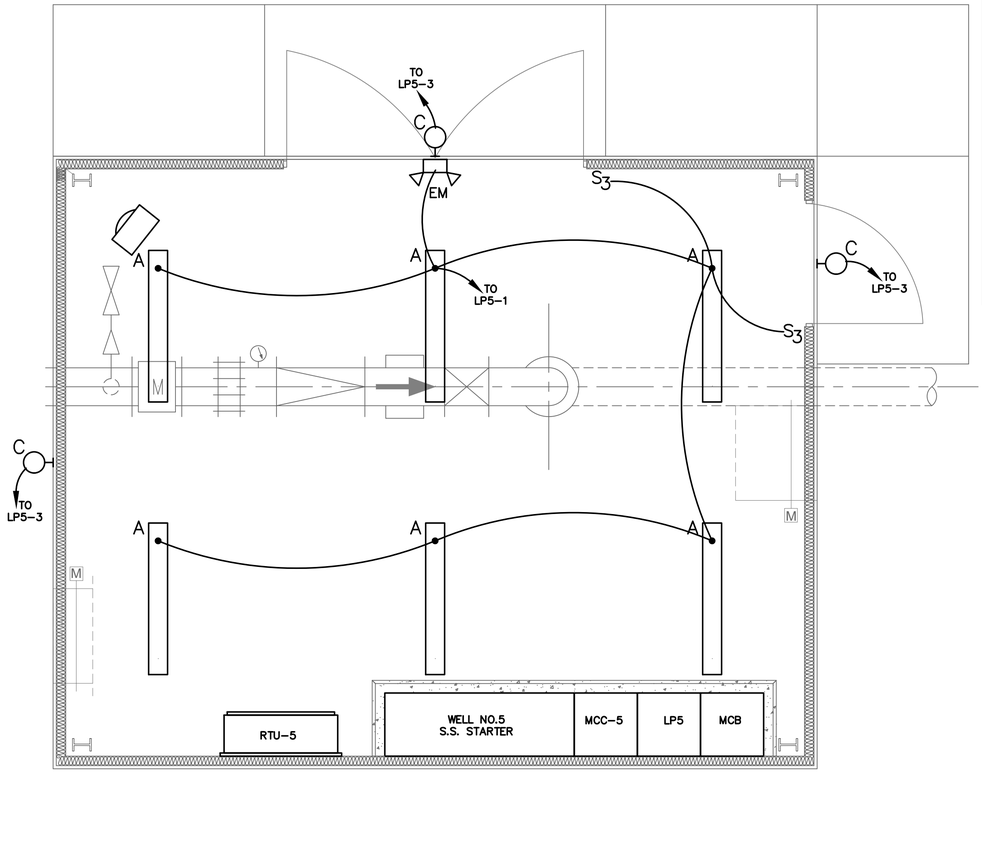
SHEET: OF

P:\PR58982\Cadd\Sheets\E-20 WELL 5 ELECTRICAL SITE PLAN.dwg 4/15/2022 3:04:37 PM Randy Podmore

PLOTTED: 4/18/2022 8:23:37 AM



PRE-FABRICATED BUILDING NO.5 POWER PLAN (1/E-21)
SCALE: 1/2" = 1'-0"



PRE-FABRICATED BUILDING NO.5 LIGHTING PLAN (2/E-21)
SCALE: 1/2" = 1'-0"

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU-5.
4. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO RTU-5.
5. 3/4" CONDUIT WITH 10#14 TO RTU-5.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-5.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-5.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU-5 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP5

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3 PHASE, 4W, W/ GND BUS

LOCATION PRE-FAB BUILDING NO.5
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING - INTERIOR				1	20	1	X			2	1	20				RECEPTACLES - INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING - EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
** 2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				ELECTRIC FAN (EF-WB)	3/4"	2#12, 1#12G
								9		X		10	1	20				RTU PANEL	3/4"	2#12, 1#12G
								11			X	12	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
								13	X			14	1	20				SPARE		
								15		X		16	1	20				SPARE		
								17			X	18	1	20				SPARE		
								19	X			20	2	15				SPARE		
								21		X		22								
								23			X	24	1	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 30A 3/P
FEEDER ENTRANCE TOP
FEEDER SIZE 4#10, 1#10G, 1"C
SOURCE 6 KVA XFMR 'TR5'
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE (3/E-21)
SCALE: NONE

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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APPROVED BY:	SMR
SCALE:	AS NOTED

WELL NO.5 POWER & LIGHTING PLAN AND PANEL SCHEDULE

E-21

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-21 WELL 5 POWER & LIGHTING PLAN AND PANEL SCHEDULE.dwg 4/16/2022 4:39:36 PM Randy Podmore

PLOTTED: 4/18/2022 8:23:44 AM

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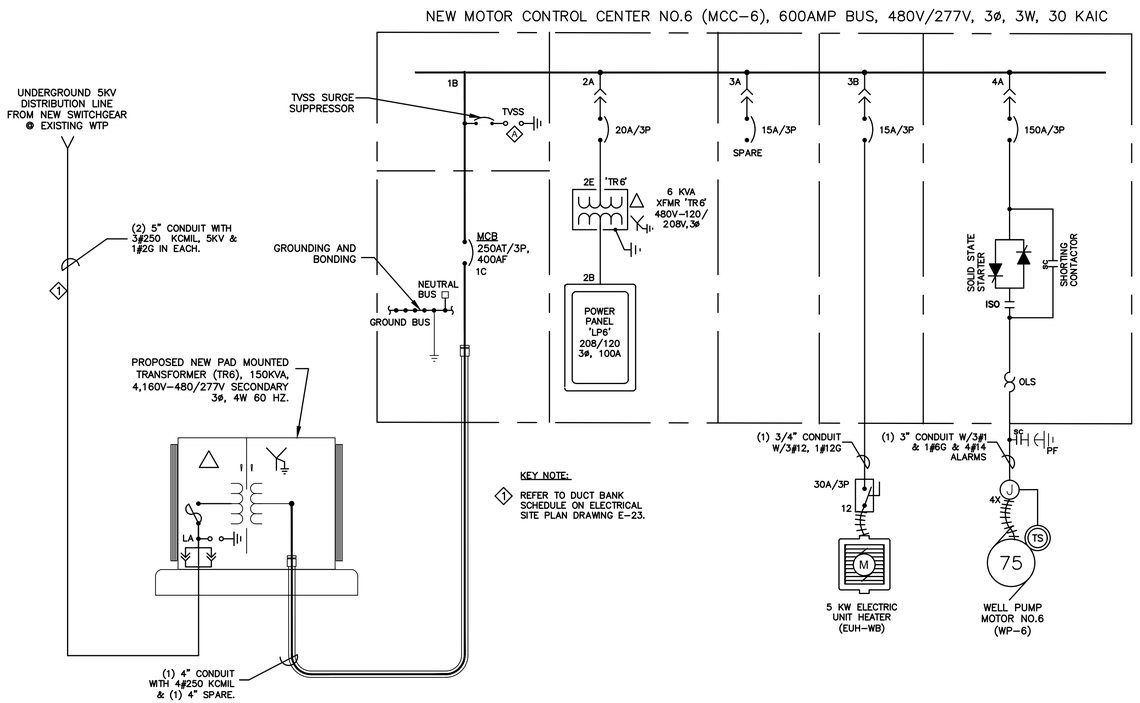


NEW MOTOR CONTROL CENTER NO.6 (MCC-6) ONE-LINE DIAGRAM (1 / E-22)

SCALE: NONE

PARTIAL SYMBOLS LEGEND:

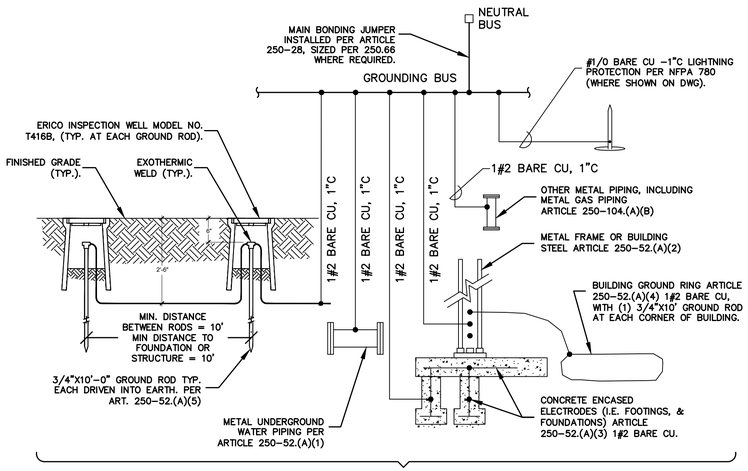
- DMM : DIGITAL MULTI-METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP
- HF : PASSIVE HARMONIC FILTER

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
A	MAIN BRKR (MCB)	PTE300-3Y201-D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

NOTE:

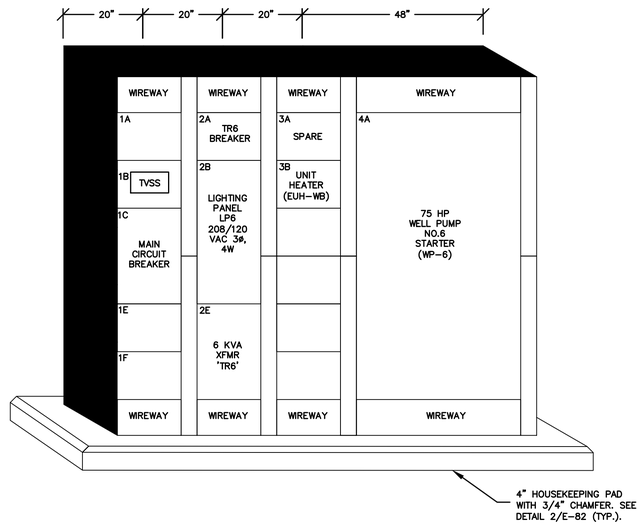
1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE-WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.6 (2 / E-22)

SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-6 EQUIPMENT ELEVATION (3 / E-22)

SCALE: NONE

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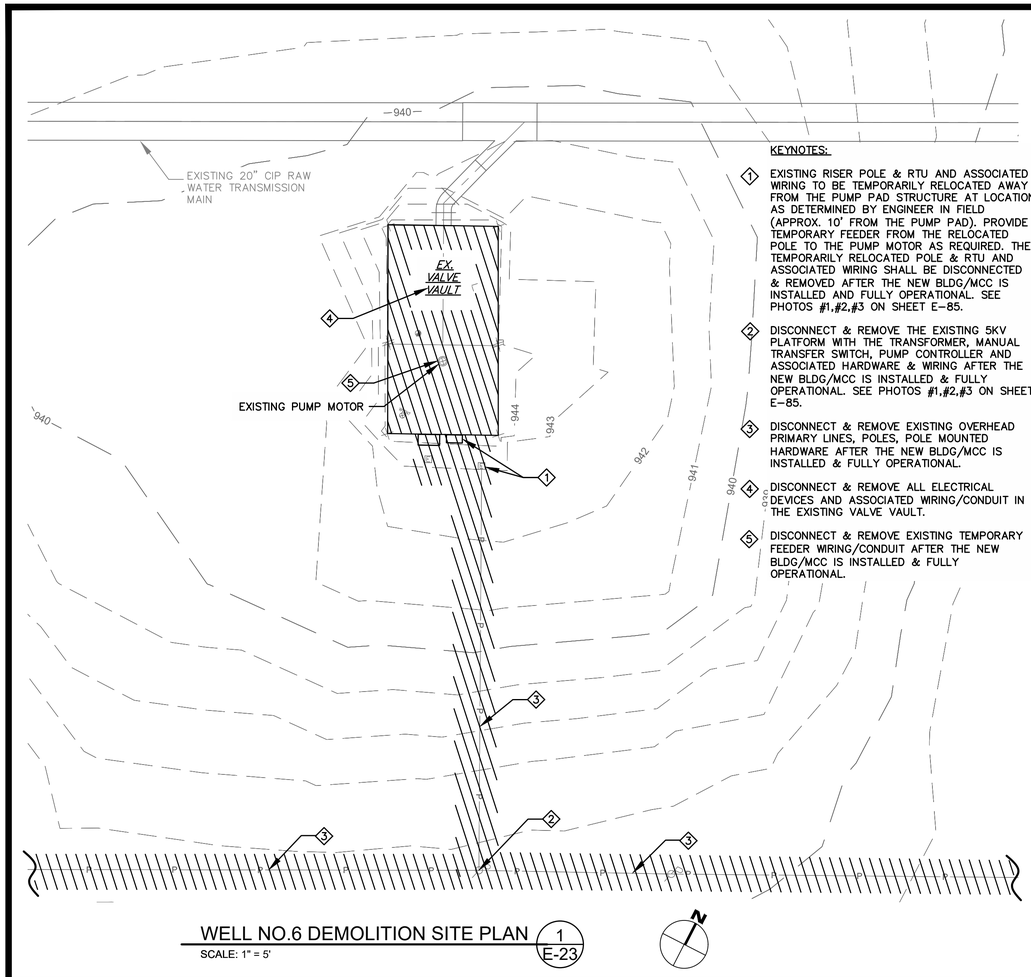
SCALE:	AS NOTED

WELL NO.6 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION

E-22

SHEET: OF

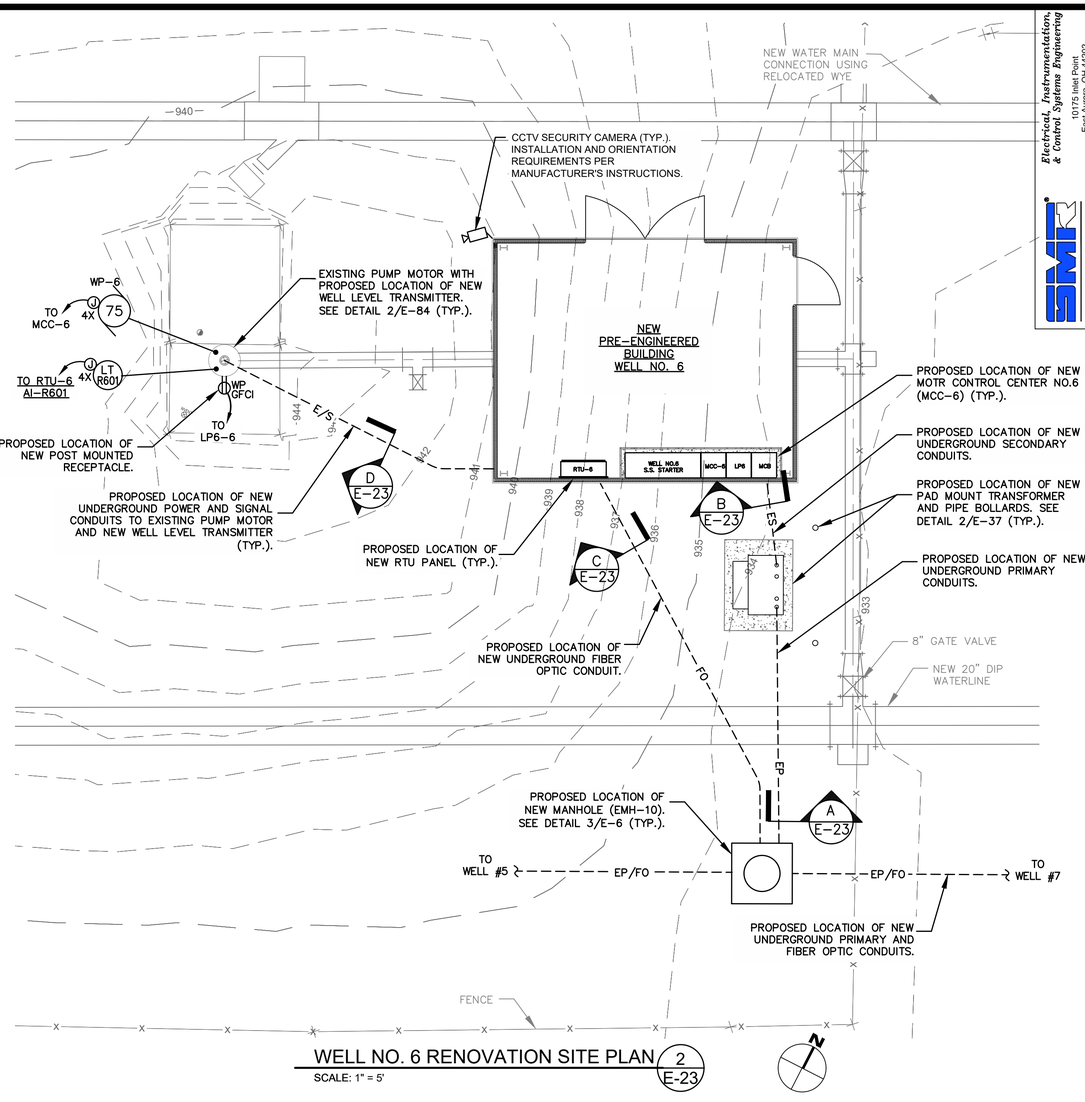
PLOTTED: 4/18/2022 8:24:27 AM



KEYNOTES:

1. EXISTING RISER POLE & RTU AND ASSOCIATED WIRING TO BE TEMPORARILY RELOCATED AWAY FROM THE PUMP PAD STRUCTURE AT LOCATION AS DETERMINED BY ENGINEER IN FIELD (APPROX. 10' FROM THE PUMP PAD). PROVIDE TEMPORARY FEEDER FROM THE RELOCATED POLE TO THE PUMP MOTOR AS REQUIRED. THE TEMPORARILY RELOCATED POLE & RTU AND ASSOCIATED WIRING SHALL BE DISCONNECTED & REMOVED AFTER THE NEW BLDG/MCC IS INSTALLED AND FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO.6 DEMOLITION SITE PLAN (1 / E-23)
SCALE: 1" = 5'



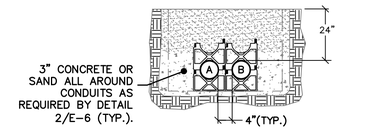
WELL NO. 6 RENOVATION SITE PLAN (2 / E-23)
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

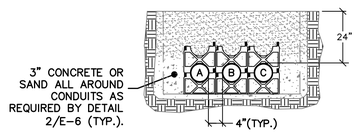
DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A E-23	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	SPARE CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B E-23	(A) 4" PVC	MCC-6	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-6 INSIDE NEW PRE-ENGINEERING BUILDING NO.6.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-6 INSIDE NEW PRE-ENGINEERING BUILDING NO.6.
C E-23	(C) 4" PVC	RTU-6 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-10.
D E-23	(A) 3" PVC	WELL PUMP NO.6	2#12, 1#12G	FEEDER CONDUIT FROM STARTER INSIDE NEW MCC-6 AT NEW PRE-ENGINEERED BUILDING NO.6 TO NEW WELL NO.6 PUMP MOTOR.
	(B) 1" PVC	WELL NO.6 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.6 LEVEL TRANSMITTER TO NEW RTU-6 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.6.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP6.

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



DUCT BANK SECTION (A / E-23, B / E-23, C / E-23)
SCALE: NONE



DUCT BANK SECTION (D / E-23)
SCALE: NONE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS (3 / E-23)
SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

Electrical, Instrumentation, & Control Systems Engineering
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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

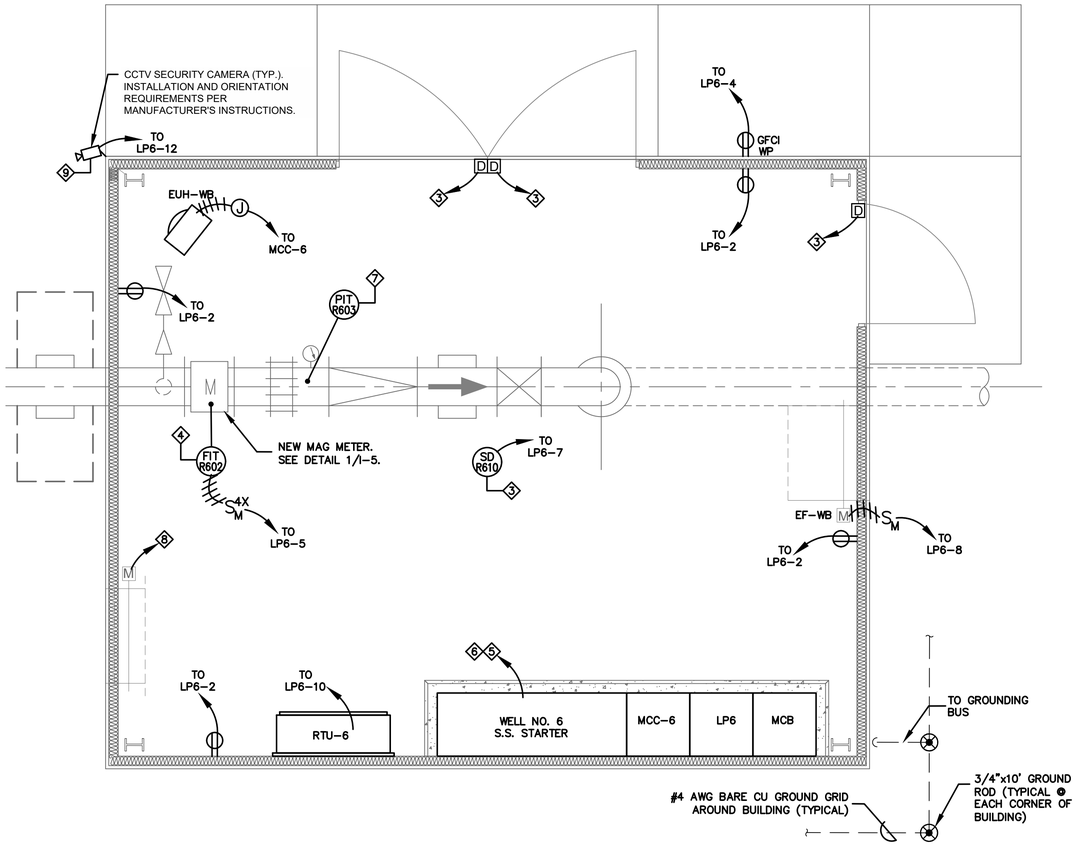
WELL NO.6 ELECTRICAL SITE PLAN

E-23

SHEET: OF

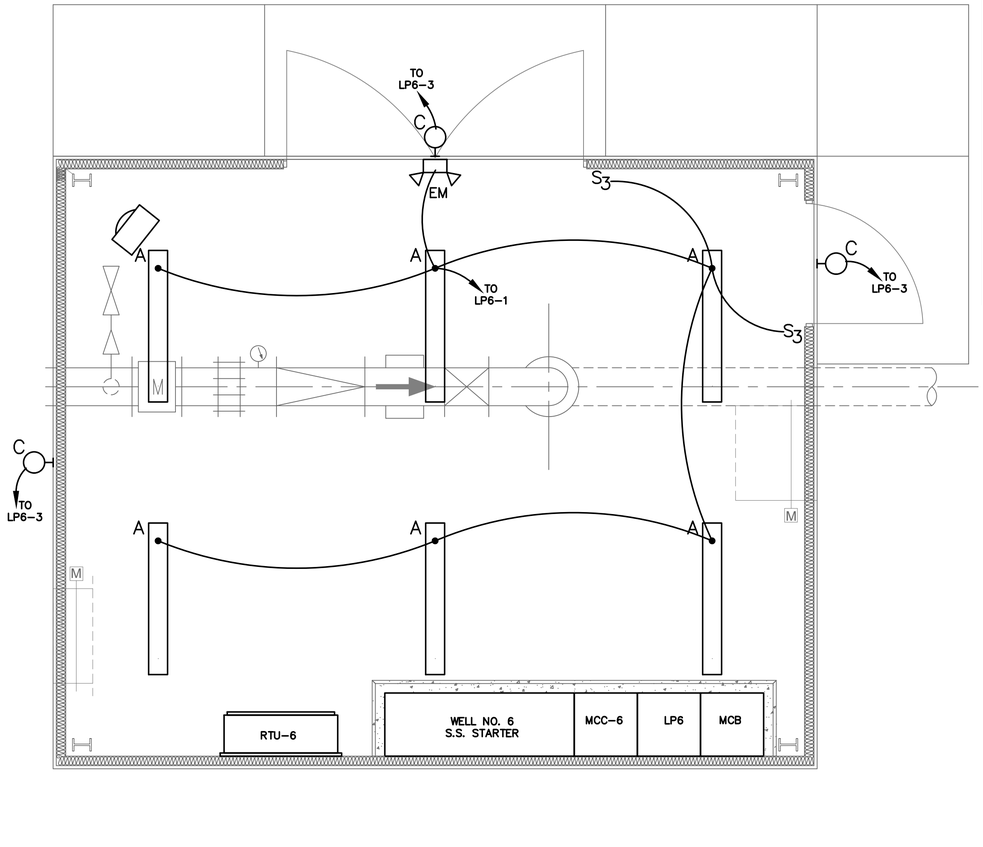
P:\PR58982\Cadd\Sheets\E-Sheets\E-23 WELL 6 ELECTRICAL SITE PLAN.dwg 4/15/2022 3:12:29 PM Randy Podmore

PLOTTED: 4/18/2022 8:24:40 AM



PRE-FABRICATED BUILDING NO.6 POWER PLAN 1 E-24

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



PRE-FABRICATED BUILDING NO.6 LIGHTING PLAN 2 E-24

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

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU-6.
4. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO RTU-6.
5. 3/4" CONDUIT WITH 10#14 TO RTU-6.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-6.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-6.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU-6 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP6

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3 PHASE, 4W, W/ GND BUS

LOCATION PRE-FAB BUILDING NO.6
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING - INTERIOR				1	20	1	X			2	1	20				RECEPTACLES - INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING - EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
** 2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				EXHAUST FAN (EF-WB)	3/4"	2#12, 1#12G
								9		X		10	1	20				RTU PANEL	3/4"	2#12, 1#12G
								11			X	12	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
								13	X			14	1	20				SPARE		
								15		X		16	1	20				SPARE		
								17			X	18	1	20				SPARE		
								19	X			20	2	15				SPARE		
								21		X		22								
								23			X	24	1	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER	30A 3/P	MAIN LUGS	N/A
FEEDER ENTRANCE	TOP	ENCLOSURE TYPE	NEMA 1
FEEDER SIZE	4#10, 1#10G, 1"C	ACCESSORIES	
SOURCE	6 KVA XFMR 'TR6'		
PANEL TYPE	BOLT-ON		

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE 3 E-24

SCALE: NONE

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

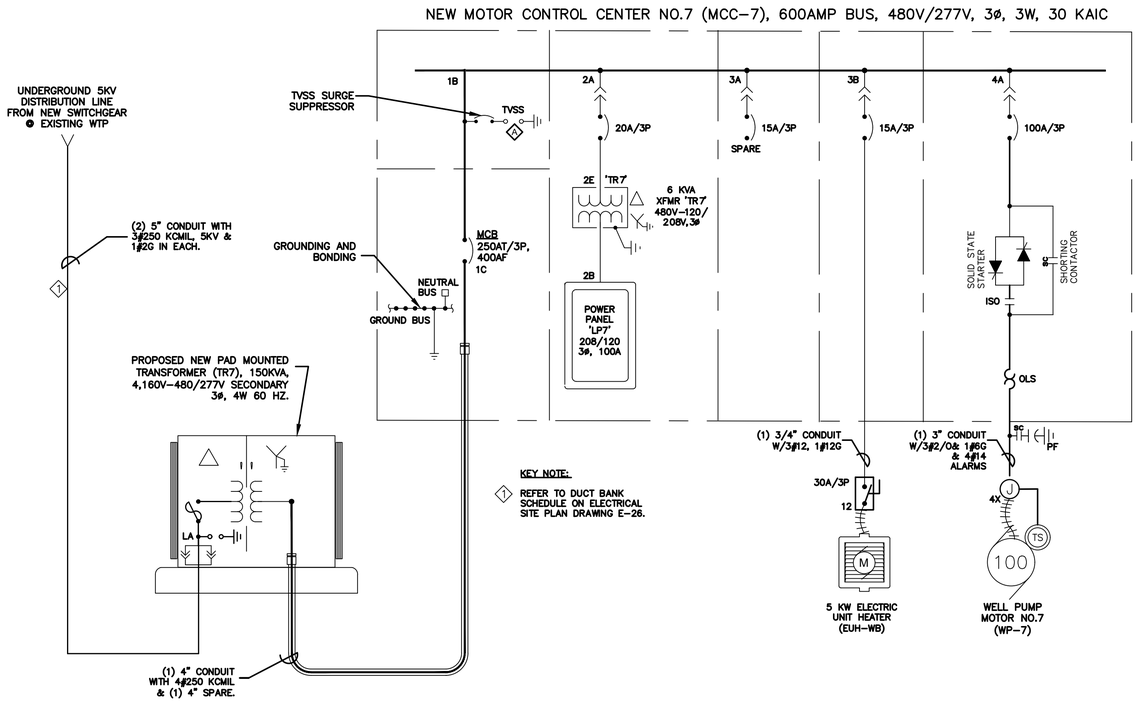
WELL NO.6 POWER & LIGHTING PLAN AND PANEL SCHEDULE

E-24

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-24 WELL 6 POWER & LIGHTING PLAN AND PANEL SCHEDULE.dwg 4/16/2022 4:38:23 PM Randy Podmore

PLOTTED: 4/18/2022 8:24:48 AM



NEW MOTOR CONTROL CENTER NO.7 (MCC-7) ONE-LINE DIAGRAM (1 / E-25)

SCALE: NONE

PARTIAL SYMBOLS LEGEND:

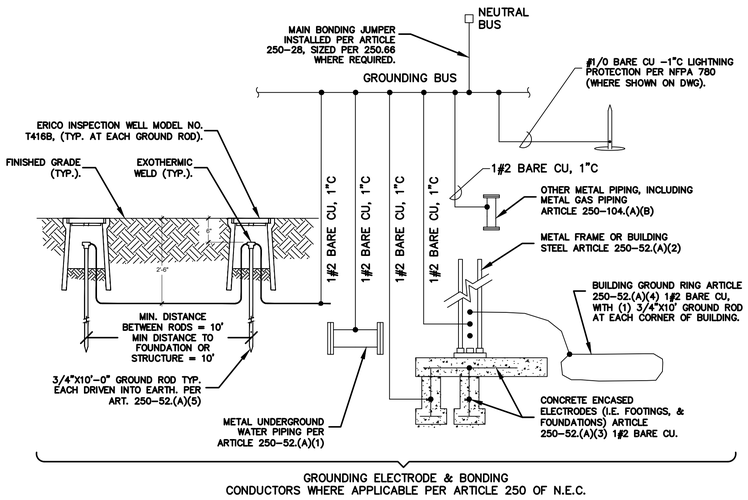
- DMM : DIGITAL MULTI-METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
A	MAIN BRKR (MCB)	PTE300-3Y201-D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

NOTE:

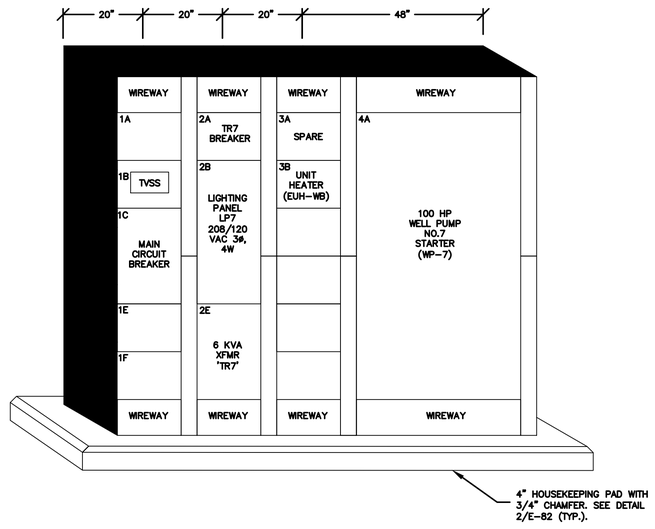
1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE-WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.7 (2 / E-25)

SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-7 EQUIPMENT ELEVATION (3 / E-25)

SCALE: NONE

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APPROVED BY:	SMR
SCALE:	AS NOTED

WELL NO.7 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION

E-25

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-25 WELL 7 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION.dwg 4/15/2022 3:14:1 PM Randy Podmore

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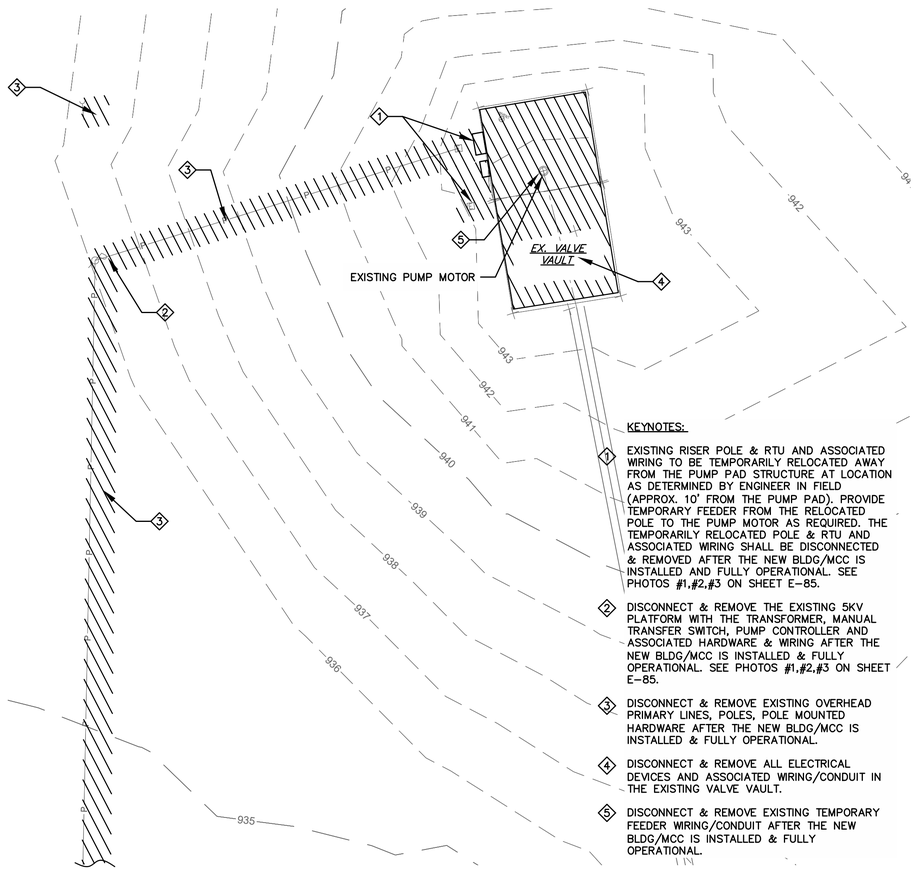
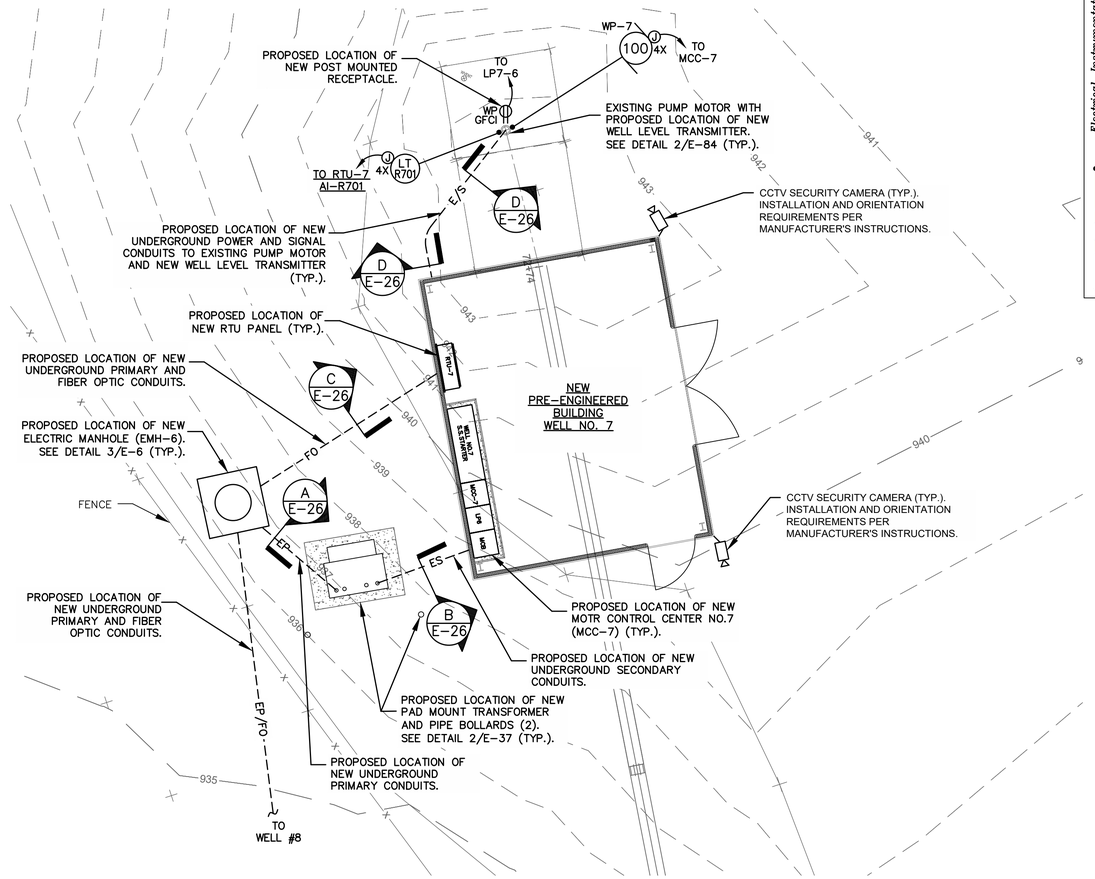


KEYNOTES:

1. EXISTING RISER POLE & RTU AND ASSOCIATED WIRING TO BE TEMPORARILY RELOCATED AWAY FROM THE PUMP PAD STRUCTURE AT LOCATION AS DETERMINED BY ENGINEER IN FIELD (APPROX. 10' FROM THE PUMP PAD). PROVIDE TEMPORARY FEEDER FROM THE RELOCATED POLE TO THE PUMP MOTOR AS REQUIRED. THE TEMPORARILY RELOCATED POLE & RTU AND ASSOCIATED WIRING SHALL BE DISCONNECTED & REMOVED AFTER THE NEW BLDG/MCC IS INSTALLED AND FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #1,#2,#3 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO.7 DEMOLITION SITE PLAN — 1 / E-26
SCALE: 1" = 5'



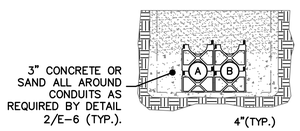
WELL NO. 7 RENOVATION SITE PLAN — 2 / E-26
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

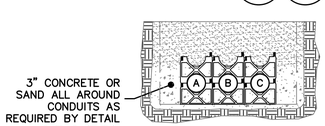
DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A E-26	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B E-26	(A) 4" PVC	MCC-7	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-7 INSIDE NEW PRE-ENGINEERING BUILDING NO.7.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-7 INSIDE NEW PRE-ENGINEERING BUILDING NO.7.
C E-26	(C) 4" PVC	RTU-7 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-6.
D E-26	(A) 3" PVC	WELL PUMP NO.7	2#12, 1#12G	FEEDER CONDUIT FROM STARTER INSIDE NEW MCC-7 AT NEW PRE-ENGINEERED BUILDING NO.7 TO NEW WELL NO.7 PUMP MOTOR.
	(B) 1" PVC	WELL NO.7 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.7 LEVEL TRANSMITTER TO NEW RTU-7 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.7.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP7.

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



DUCT BANK SECTION — A E-26, B E-26, C E-26
SCALE: NONE



DUCT BANK SECTION — D E-26
SCALE: NONE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS — 3 / E-26
SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

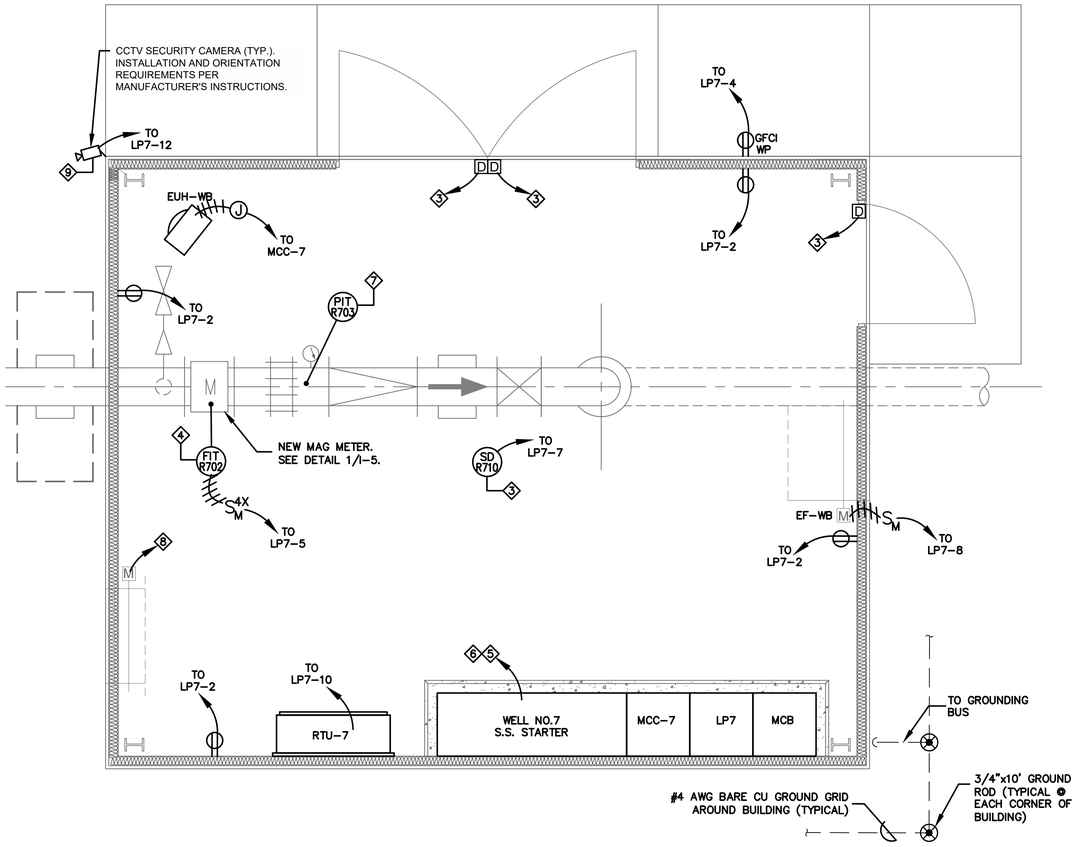
WELL NO.26 ELECTRICAL SITE PLAN

E-26

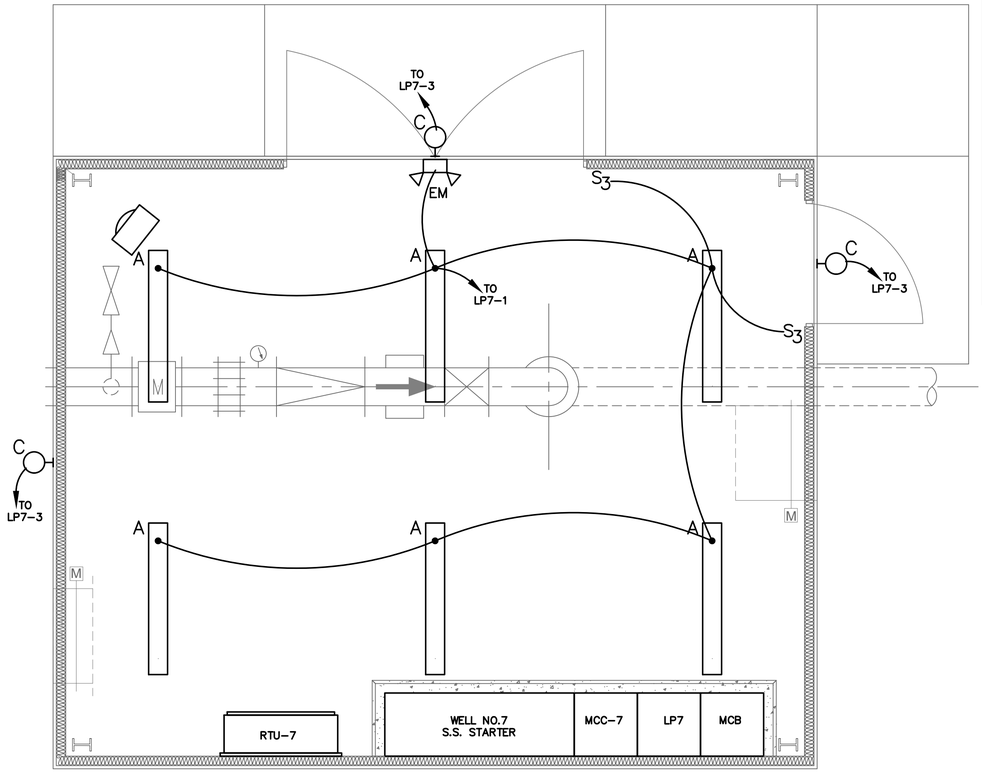
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-26 WELL 7 ELECTRICAL SITE PLAN.dwg 4/15/2022 3:17:42 PM Randy Podmore

PLOTTED: 4/18/2022 8:25:46 AM



PRE-FABRICATED BUILDING NO.7 POWER PLAN (1 / E-27)
SCALE: 1/2" = 1'-0"



PRE-FABRICATED BUILDING NO.7 LIGHTING PLAN (2 / E-27)
SCALE: 1/2" = 1'-0"

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU-7.
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-7.
5. 3/4" CONDUIT WITH 10#14 TO RTU-7.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-7.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-7.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU-7 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP7

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3 PHASE, 4W, W/ GND BUS

LOCATION PRE-FAB BUILDING NO.7
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING - INTERIOR				1	20	1	X			2	1	20				RECEPTACLES - INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING - EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
** 2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				EXHAUST FAN (EF-WB)	3/4"	2#12, 1#12G
								9		X		10	1	20				RTU PANEL	3/4"	2#12, 1#12G
								11			X	12	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
								13	X			14	1	20				SPARE		
								15		X		16	1	20				SPARE		
								17			X	18	1	20				SPARE		
								19	X			20	2	15				SPARE		
								21		X		22								
								23			X	24	1	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 30A 3/P
FEEDER ENTRANCE TOP
FEEDER SIZE 4#10, 1#10G, 1"C
SOURCE 6 KVA XFMR 'TR7'
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE (3 / E-27)
SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0084

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022
2		

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

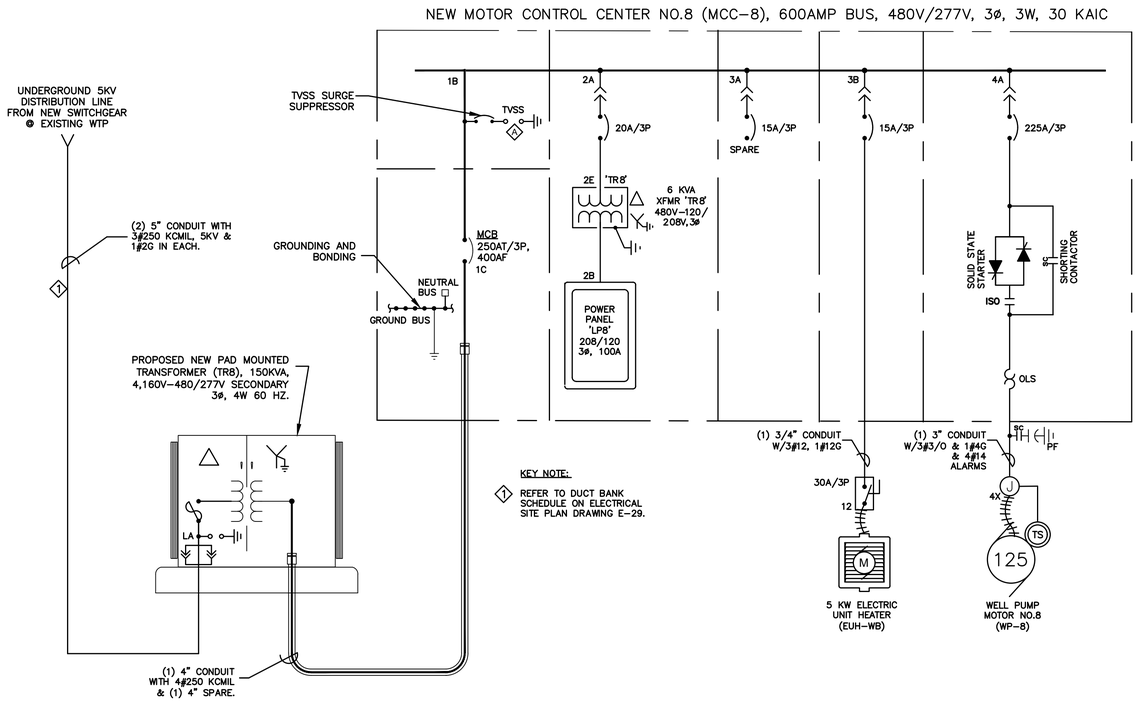
WELL NO.7 POWER & LIGHTING PLAN AND PANEL SCHEDULE

E-27

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-27 WELL 7 POWER & LIGHTING PLAN AND PANEL SCHEDULE.dwg 4/16/2022 4:45:20 PM Randy Podmore

PLOTTED: 4/18/2022 8:25:53 AM



NEW MOTOR CONTROL CENTER NO.8 (MCC-8) ONE-LINE DIAGRAM (1 / E-28)
SCALE: NONE

PARTIAL SYMBOLS LEGEND:

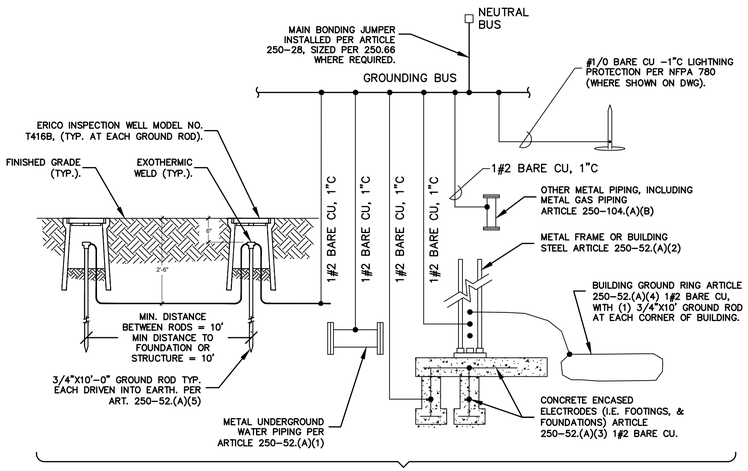
- DMM : DIGITAL MULTI-METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
A	MAIN BRKR (MCB)	PTE300-3Y201-D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

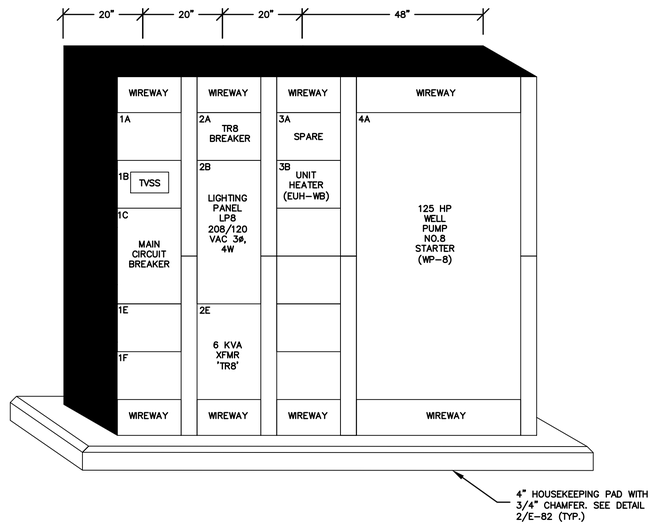
NOTE:

1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE-WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.8 (2 / E-28)
SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-8 EQUIPMENT ELEVATION (3 / E-28)
SCALE: NONE

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APPROVED BY:	SMR
SCALE:	AS NOTED

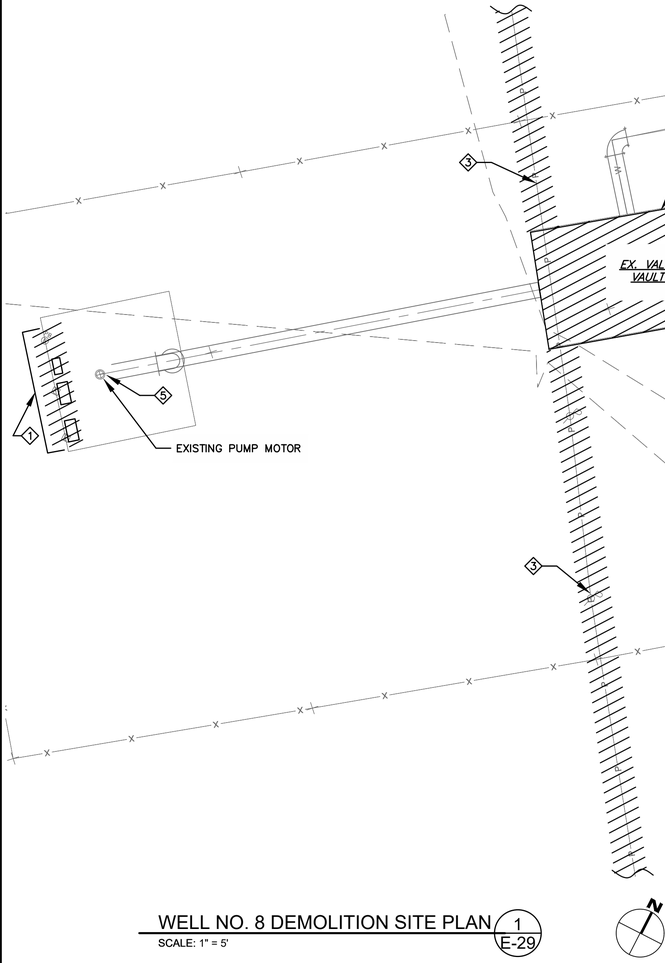
WELL NO.8 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION

E-28

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-28 WELL 8 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION.dwg 4/15/2022 3:20:53 PM Randy Podmore

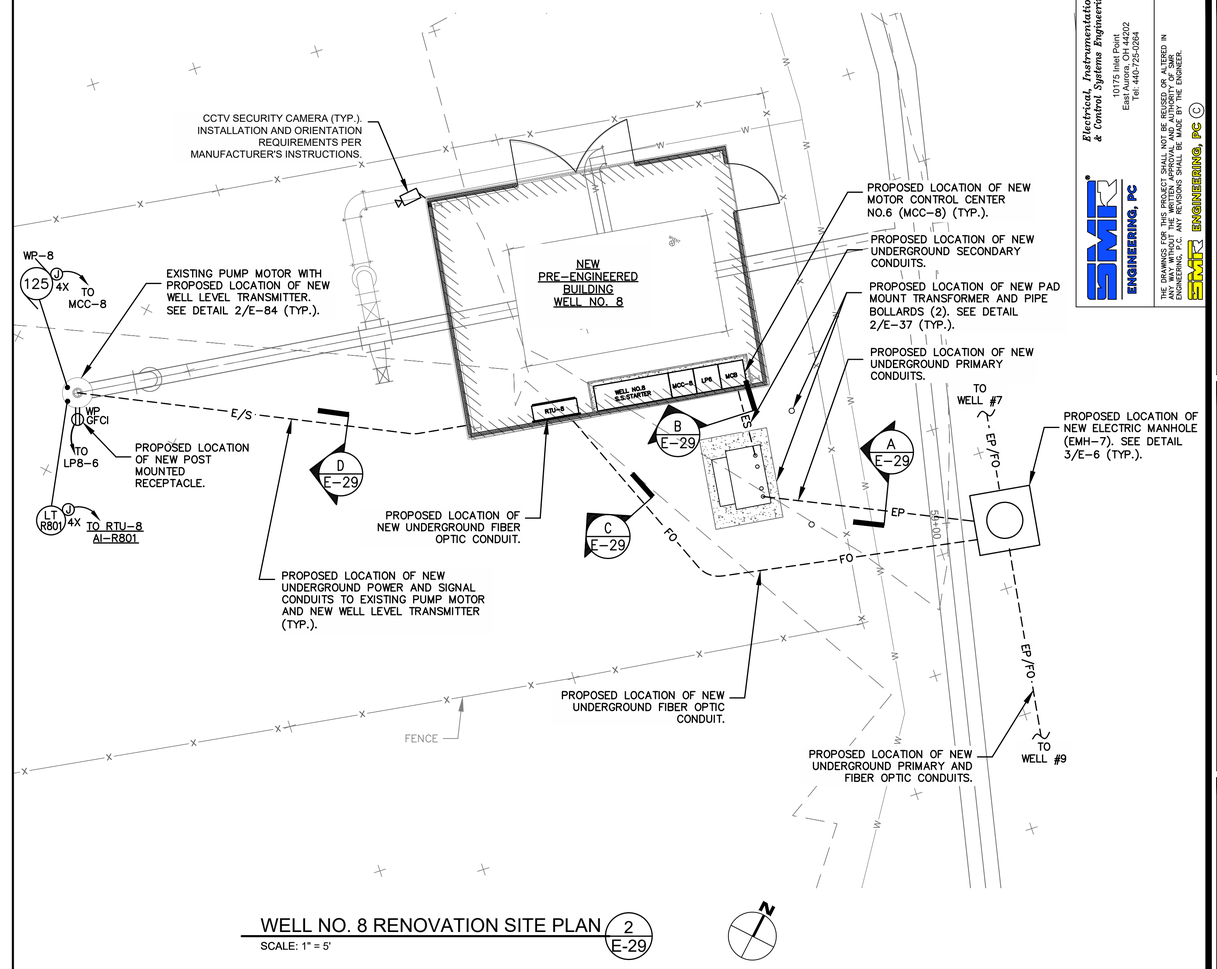
PLOTTED: 4/18/2022 8:26:37 AM



KEYNOTES:

1. EXISTING MOTOR STARTER, POWER PANEL & RTU. DISCONNECT & REMOVE THE MOTOR STARTER & POWER PANEL & ASSOCIATED WIRING/CONDUIT. RELOCATE THE EXISTING RTU/ANTENNA TEMPORARILY TO THE 5KV PLATFORM, MOUNTED ON THE PLATFORM STRUCTURE POLE AS REQUIRED. PROVIDE A TEMPORARY NEMA 3R, COMBINATION, SOFT-START STARTER, 480V, 3Ø WITH (3) 200A FUSES, HOA & FUSED CPT FOR THE 125HP PUMP. RECONNECT THE PLATFORM TRANSFORMERS 480V SECONDARY TO THE STARTER TEMPORARILY VIA 3#3/0, 1#6G IN FLEXIBLE CONDUIT. THE STARTER SHALL INCLUDE A 15A/1P BRANCH BREAKER TO PROVIDE 120VAC TO RTU WITH 2#12, 1#12G. MOUNT THE TEMPORARY STARTER ON THE PLATFORM STRUCTURE POLE. PROVIDE TEMPORARY FEEDER BETWEEN THE STARTER & THE PUMP AS REQUIRED. DISCONNECT & REMOVE ALL TEMPORARY ELECTRICAL EQUIPMENT & ASSOCIATED WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #4,#5,#6 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #4,#5,#6 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO. 8 DEMOLITION SITE PLAN — 1/E-29
SCALE: 1" = 5'



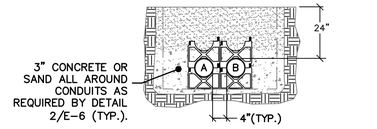
WELL NO. 8 RENOVATION SITE PLAN — 2/E-29
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

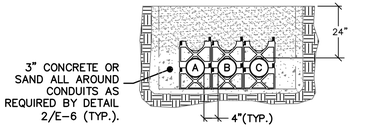
DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A E-29	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B E-29	(A) 4" PVC	MCC-8	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-8 INSIDE NEW PRE-ENGINEERING BUILDING NO.8.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-8 INSIDE NEW PRE-ENGINEERING BUILDING NO.8.
C E-29	(C) 4" PVC	RTU-8 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-7.
D E-29	(A) 3" PVC	WELL PUMP NO.8	2#12, 1#12G	FEEDER CONDUIT FROM STARTER INSIDE NEW MCC-8 AT NEW PRE-ENGINEERED BUILDING NO.8 TO NEW WELL NO.8 PUMP MOTOR.
	(B) 1" PVC	WELL NO.8 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.8 LEVEL TRANSMITTER TO NEW RTU-8 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.8.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP8.

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



DUCT BANK SECTION — A E-29, B E-29, C E-29
SCALE: NONE



DUCT BANK SECTION — D E-29
SCALE: NONE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS — 1/E-29
SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

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NO.	DESCRIPTION	DATE
1	BID SET	04/2022

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CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

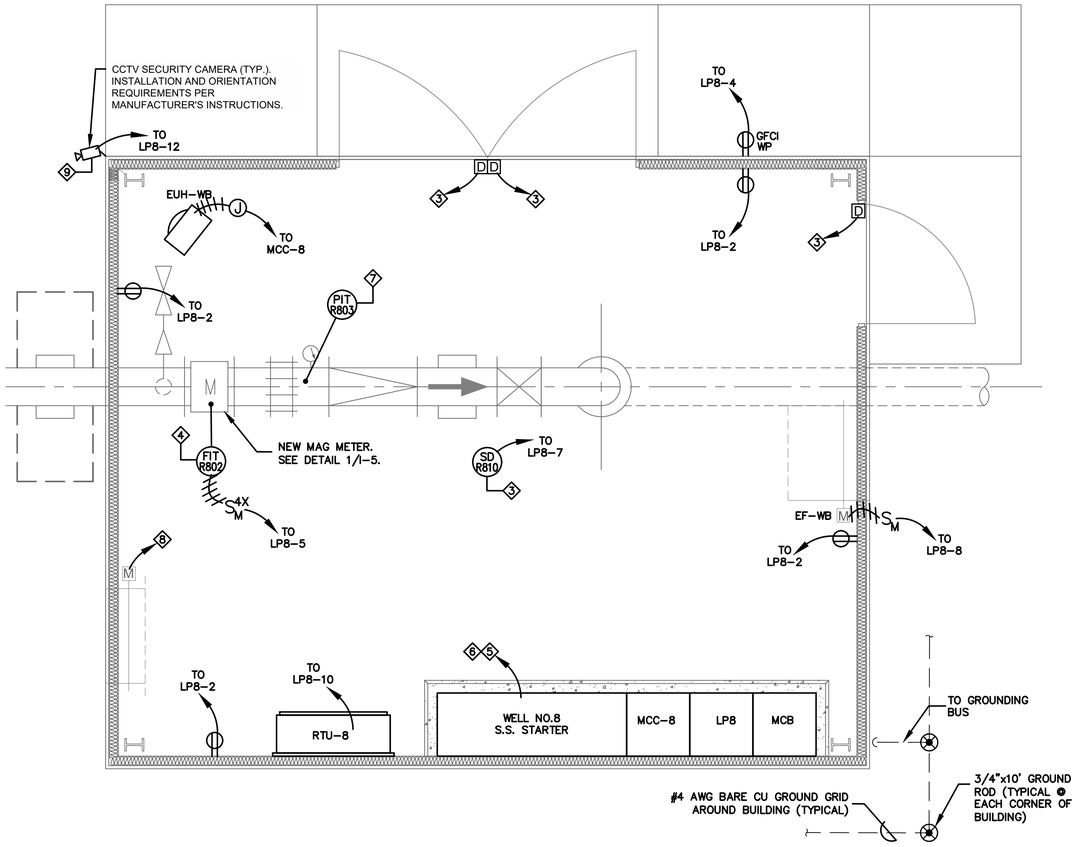
WELL NO.8 ELECTRICAL SITE PLAN

E-29

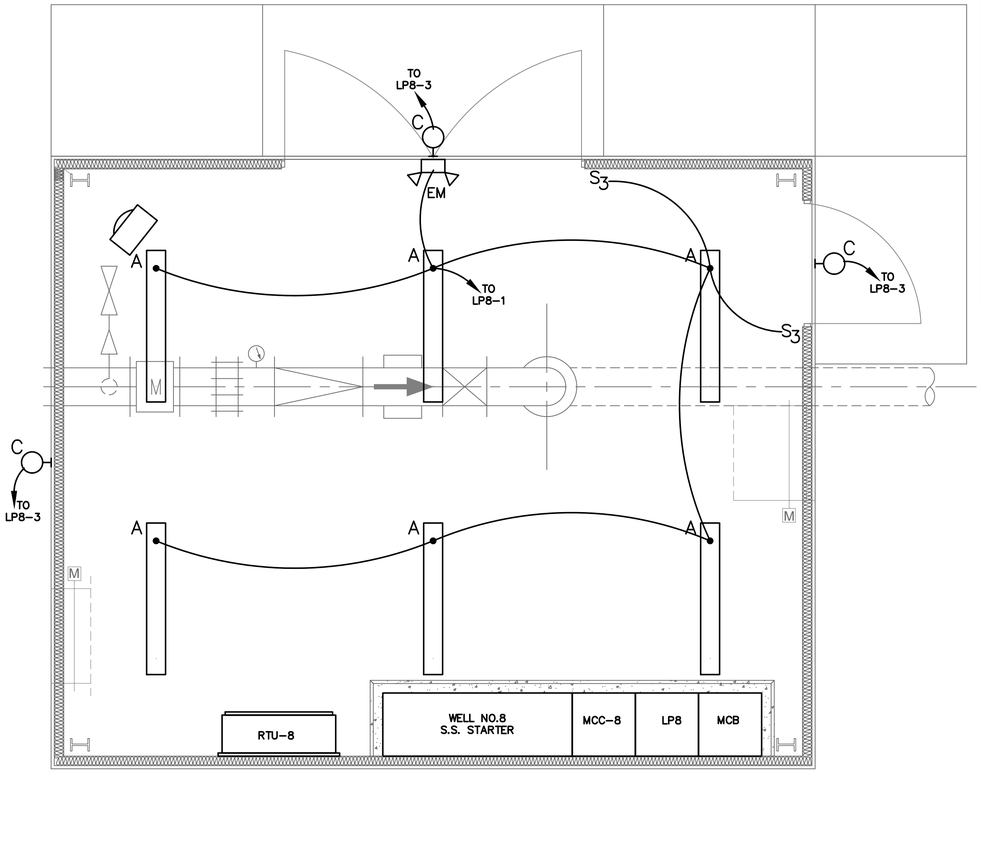
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-29 WELL 8 ELECTRICAL SITE PLAN.dwg 4/16/2022 5:00:26 PM Randy Podmore

PLOTTED: 4/18/2022 8:26:50 AM



PRE-FABRICATED BUILDING NO.8 POWER PLAN (1 / E-30)
SCALE: 1/2" = 1'-0"



PRE-FABRICATED BUILDING NO.8 LIGHTING PLAN (2 / E-30)
SCALE: 1/2" = 1'-0"

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU-8.
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-8.
5. 3/4" CONDUIT WITH 10#14 TO RTU-8.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-8.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-8.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU-8 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP8

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3 PHASE, 4W, W/ GND BUS

LOCATION PRE-FAB BUILDING NO.8
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING - INTERIOR				1	20	1	X			2	1	20				RECEPTACLES - INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING - EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES - INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
** 2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
								9		X		10	1	20				EXHAUST FAN (EF-WB)	3/4"	2#12, 1#12G
								11			X	12	1	20				RTU PANEL	3/4"	2#12, 1#12G
								13	X			14	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
								15		X		16	1	20				SPARE		
								17			X	18	1	20				SPARE		
								19	X			20	2	15				SPARE		
								21		X		22								
								23			X	24	1	20				SPARE		
												TOTAL 2								
		TOTAL 1																		
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD AMPERES																		

MAIN BREAKER 30A 3/P
FEEDER ENTRANCE TOP
FEEDER SIZE 4#10, 1#10G, 1"C
SOURCE 6 KVA XFMR 'TR8'
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE (3 / E-30)
SCALE: NONE

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

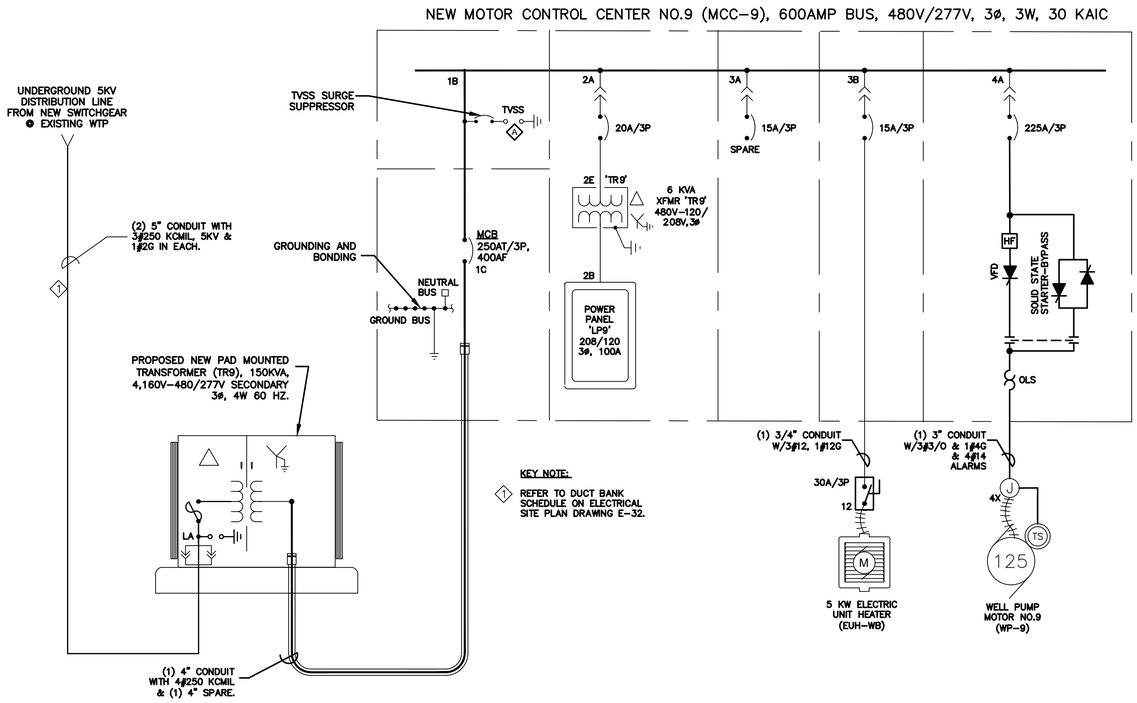
WELL NO.8 POWER & LIGHTING PLAN AND PANEL SCHEDULE

E-30

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-30 WELL 8 POWER & LIGHTING PLAN AND PANEL SCHEDULE.dwg 4/16/2022 4:44:33 PM Randy Podmore

PLOTTED: 4/18/2022 8:26:58 AM



NEW MOTOR CONTROL CENTER NO.9 (MCC-9) ONE-LINE DIAGRAM (1 / E-31)

SCALE: NONE

PARTIAL SYMBOLS LEGEND:

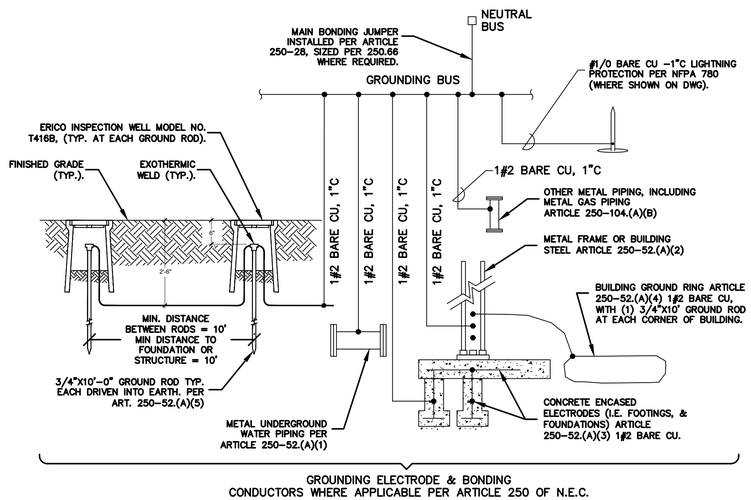
- DMM : DIGITAL MULTI–METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP
- HF : PASSIVE HARMONIC FILTER

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
2	MAIN BRKR (MCB)	PTE300–3Y201–D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

NOTE:

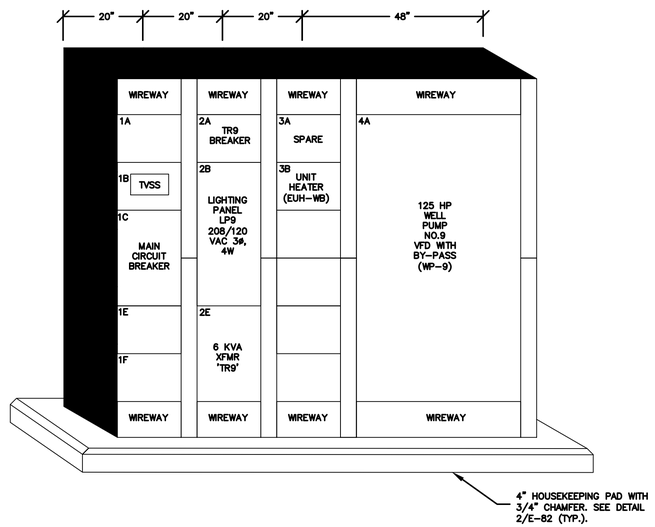
1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE–WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.9 (2 / E-31)

SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-9 EQUIPMENT ELEVATION (3 / E-31)

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
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WELL NO.9 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION

E-31

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-31 WELL 9 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION.dwg 4/15/2022 3:28:11 PM Randy Podmore

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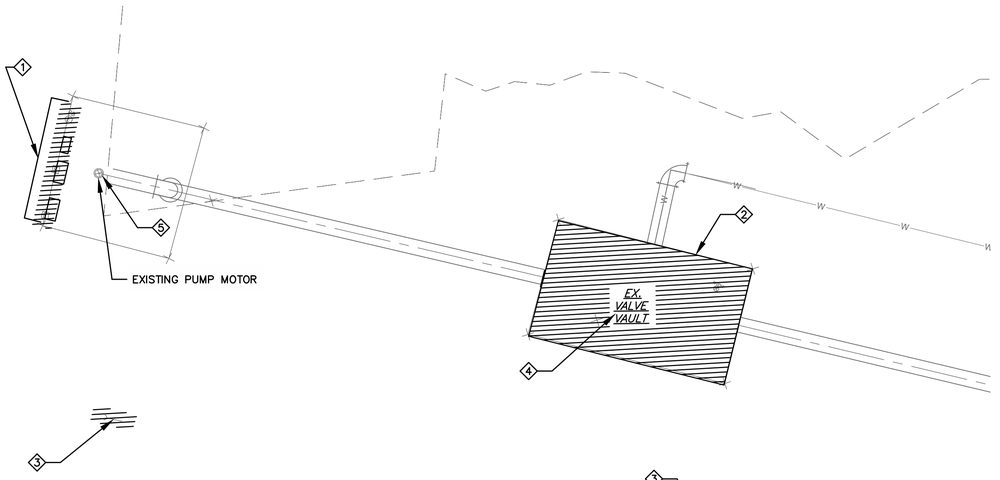
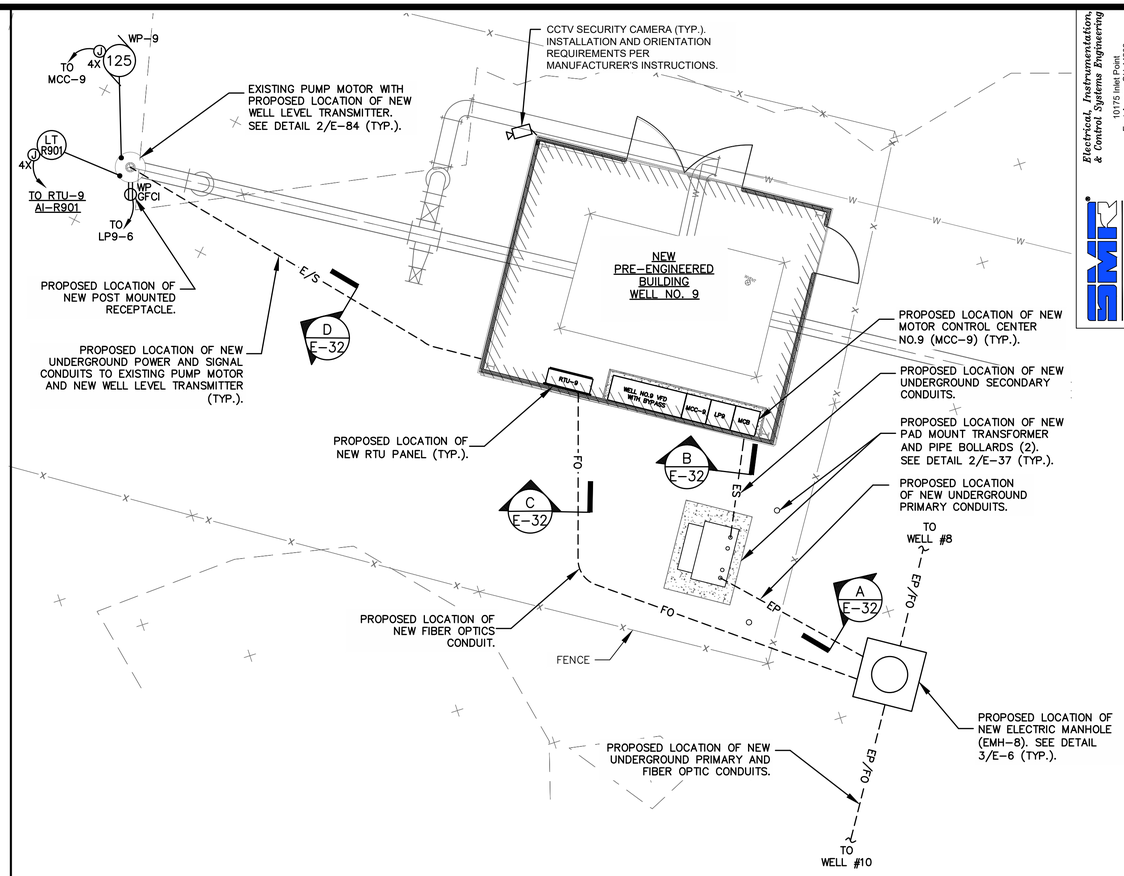


KEYNOTES:

1. EXISTING MOTOR STARTER, POWER PANEL & RTU. DISCONNECT & REMOVE THE MOTOR STARTER & POWER PANEL & ASSOCIATED WIRING/CONDUIT. RELOCATE THE EXISTING RTU/ANTENNA TEMPORARILY TO THE 5KV PLATFORM, MOUNTED ON THE PLATFORM STRUCTURE POLE AS REQUIRED. PROVIDE A TEMPORARY NEMA 3R, COMBINATION, SOFT-START STARTER, 480V, 3Ø WITH (3) 200A FUSES, HOA & FUSED CPT FOR THE 125HP PUMP. RECONNECT THE PLATFORM TRANSFORMERS 480V SECONDARY TO THE STARTER TEMPORARILY VIA 3#3/0, 1#6G IN FLEXIBLE CONDUIT. THE STARTER SHALL INCLUDE A 15A/1P BRANCH BREAKER TO PROVIDE 120VAC TO RTU WITH 2#12, 1#12G. MOUNT THE TEMPORARY STARTER ON THE PLATFORM STRUCTURE POLE. PROVIDE TEMPORARY FEEDER BETWEEN THE STARTER & THE PUMP AS REQUIRED. DISCONNECT & REMOVE ALL TEMPORARY ELECTRICAL EQUIPMENT & ASSOCIATED WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #4,#5,#6 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #4,#5,#6 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO. 9 DEMOLITION SITE PLAN (1 / E-32)
SCALE: 1" = 5'



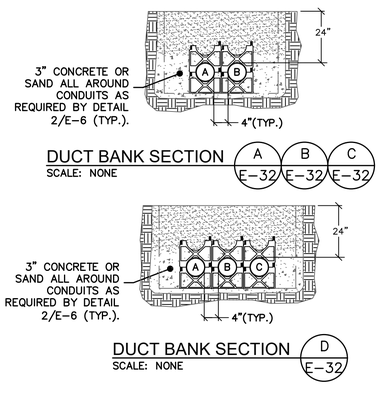
WELL NO. 9 RENOVATION SITE PLAN (2 / E-32)
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A E-32	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B E-32	(A) 4" PVC	MCC-9	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-9 INSIDE NEW PRE-ENGINEERING BUILDING NO.9.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-9 INSIDE NEW PRE-ENGINEERING BUILDING NO.9.
C E-32	(C) 4" PVC	RTU-9 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-8.
D E-32	(A) 3" PVC	WELL PUMP NO.9	3#1, WITH GRD VFD RATED CABLE	FEEDER CONDUIT FROM VFD INSIDE NEW MCC-9 AT NEW PRE-ENGINEERED BUILDING NO.9 TO NEW WELL NO.9 PUMP MOTOR.
	(B) 1" PVC	WELL NO.9 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.9 LEVEL TRANSMITTER TO NEW RTU-9 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.9.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP9.

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS (1 / E-32)
SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

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WELL NO.9 ELECTRICAL SITE PLAN

E-32

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-32 WELL 9 ELECTRICAL SITE PLAN.dwg 4/16/2022 4:59:19 PM Randy Podmore

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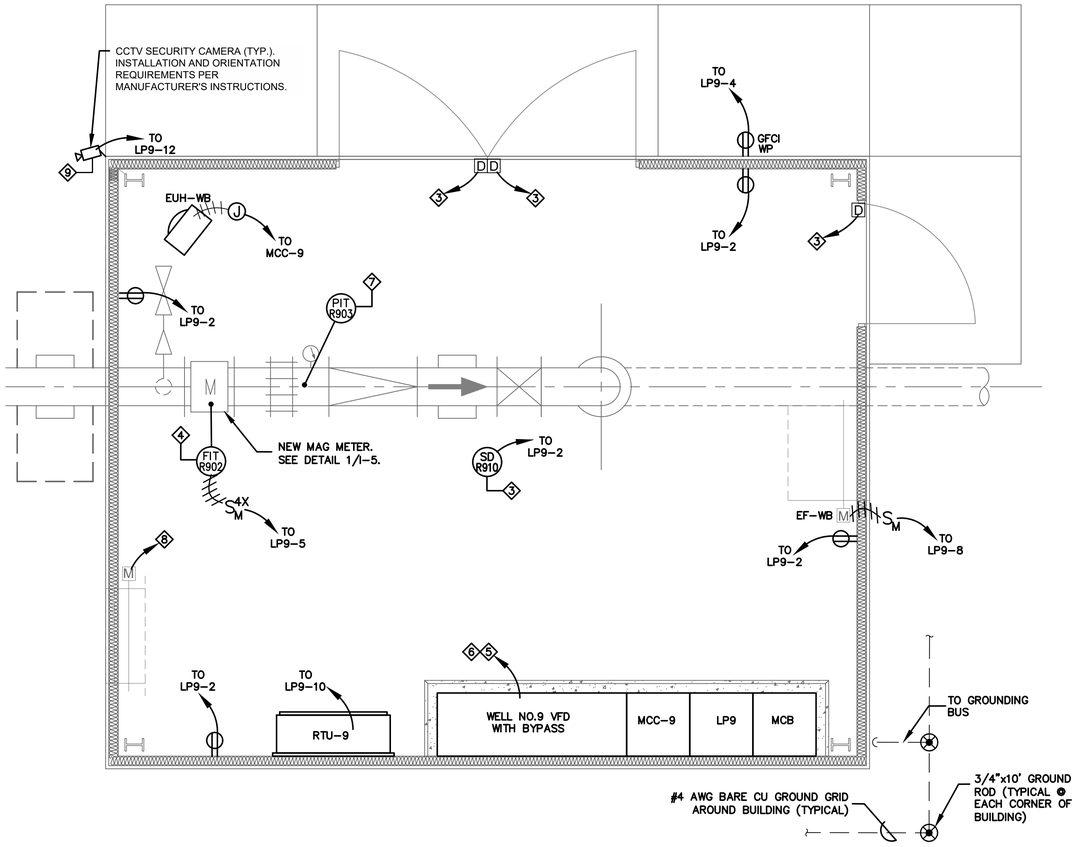
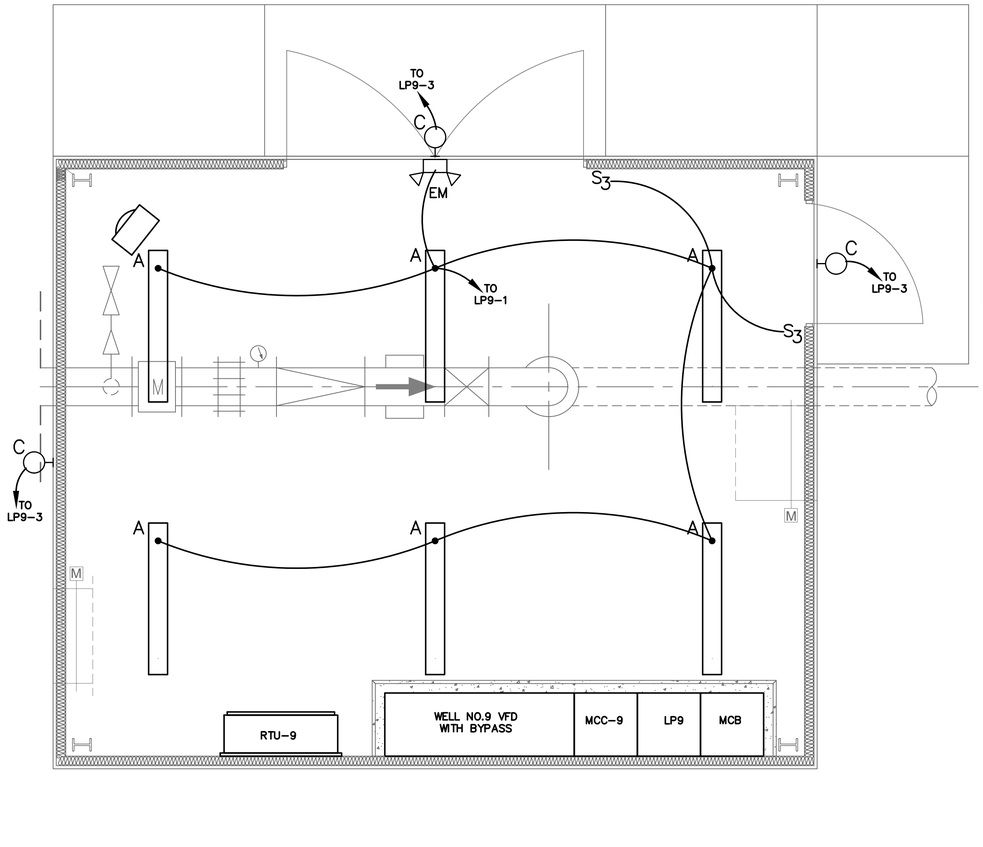


PRE-FABRICATED BUILDING NO.9 POWER PLAN (1/E-33)

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



PRE-FABRICATED BUILDING NO.9 LIGHTING PLAN (2/E-33)

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

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU-9.
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-9.
5. 3/4" CONDUIT WITH 10#14 TO RTU-9.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-9.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU-9.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU-9 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP9

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3 PHASE, 4W, W/ GND BUS

LOCATION PRE-FAB BUILDING NO.9
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING - INTERIOR				1	20	1	X			2	1	20				RECEPTACLES - INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING - EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES - EXTERIOR	3/4"	2#12, 1#12G
** 2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				EXHAUST FAN (EF-WB)	3/4"	2#12, 1#12G
								9		X		10	1	20				RTU PANEL	3/4"	2#12, 1#12G
								11			X	12	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
								13	X			14	1	20				SPARE		
								15		X		16	1	20				SPARE		
								17			X	18	1	20				SPARE		
								19	X			20	2	15				SPARE		
								21		X		22								
								23			X	24	1	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD AMPERES																		

MAIN BREAKER 30A 3/P
FEEDER ENTRANCE TOP
FEEDER SIZE 4#10, 1#10G, 1"C
SOURCE 6 KVA XFMR 'TR9'
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE (3/E-33)

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
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SCALE:	AS NOTED

WELL NO.9 POWER & LIGHTING PLAN AND PANEL SCHEDULE

E-33

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-33 WELL 9 POWER & LIGHTING PLAN AND PANEL SCHEDULE.dwg 4/16/2022 4:43:56 PM Randy Podmore

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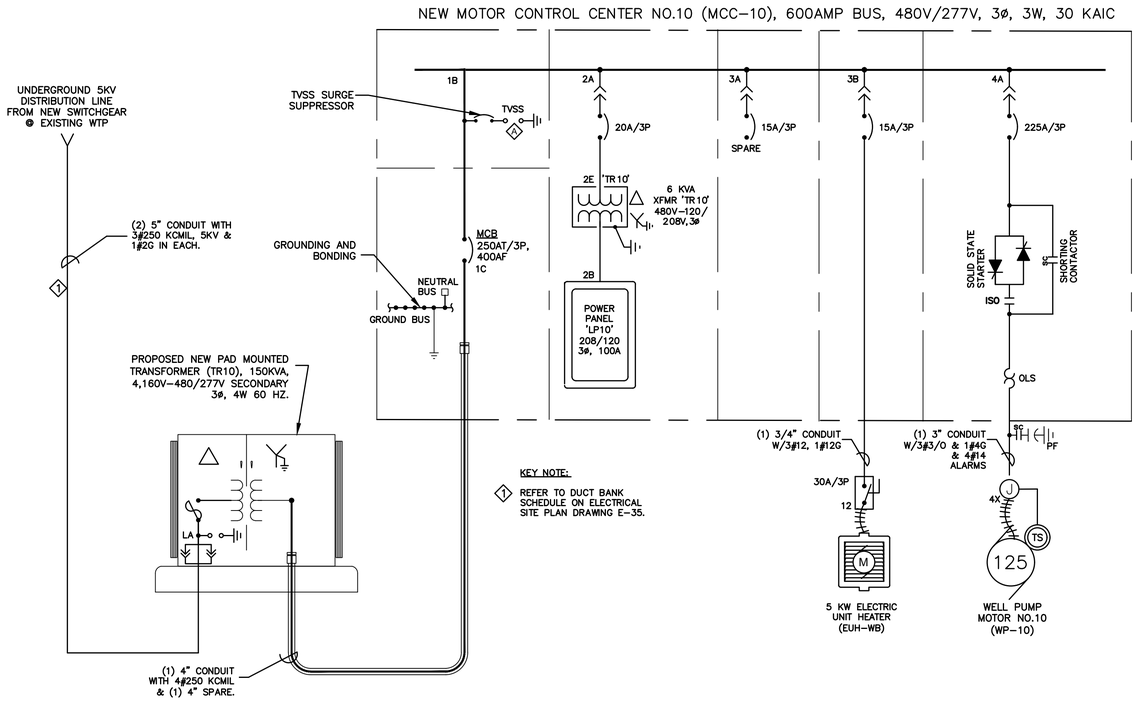


NEW MOTOR CONTROL CENTER NO.10 (MCC-10) ONE-LINE DIAGRAM (1, E-34)

SCALE: NONE

PARTIAL SYMBOLS LEGEND:

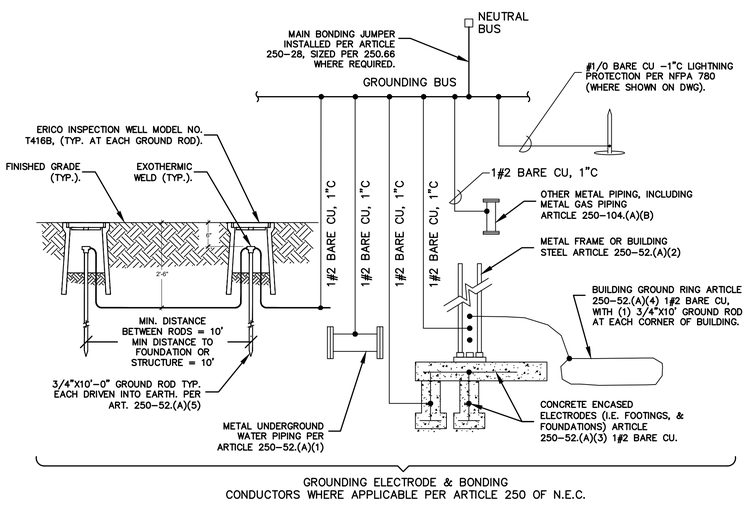
- DMM : DIGITAL MULTI-METER
- ES : EMERGENCY SHUTDOWN
- ST : SHUNT TRIP
- GFP : GROUND FAULT PROTECTION
- CT'S : CURRENT TRANSFORMER
- CT'S : CURRENT TRANSFORMER
- PT'S : POTENTIAL TRANSFORMER
- SP : SURGE PROTECTOR (TVSS)
- SST : SOLID STATE TRIP
- RWT : REFLECTOR WAVE TRAP

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
A	MAIN BRKR (MCB)	PTE300-3Y201-D	480Y/277V, 3ø,4W	300,000 AMPS PER ø

NOTE:

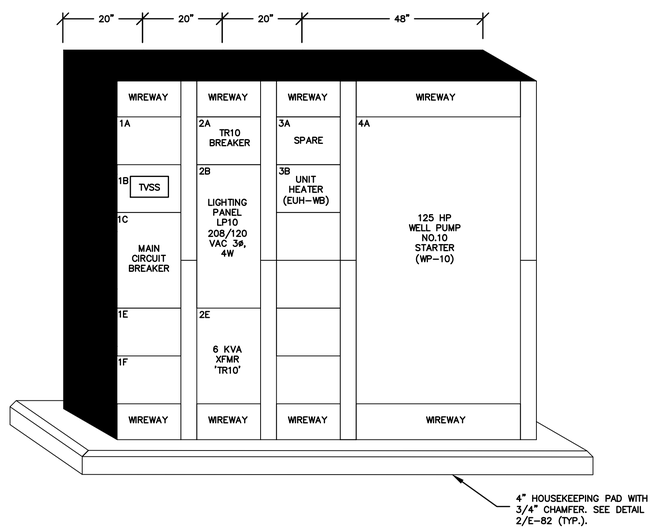
1. SURGE PROTECTORS SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY OR APPROVED EQUAL.
2. UNIT SHALL HAVE: 10 MODE MOV DESIGN, SINE-WAVE TRACKING, 20 YEAR WARRANTY, & SURGE COUNTER.



NEW GROUNDING AND BONDING INSTALLATION DETAIL @ BUILDING NO.10 (2, E-34)

SCALE: NONE

ELECTRICAL ROOM WALL



NEW MCC-10 EQUIPMENT ELEVATION (3, E-34)

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
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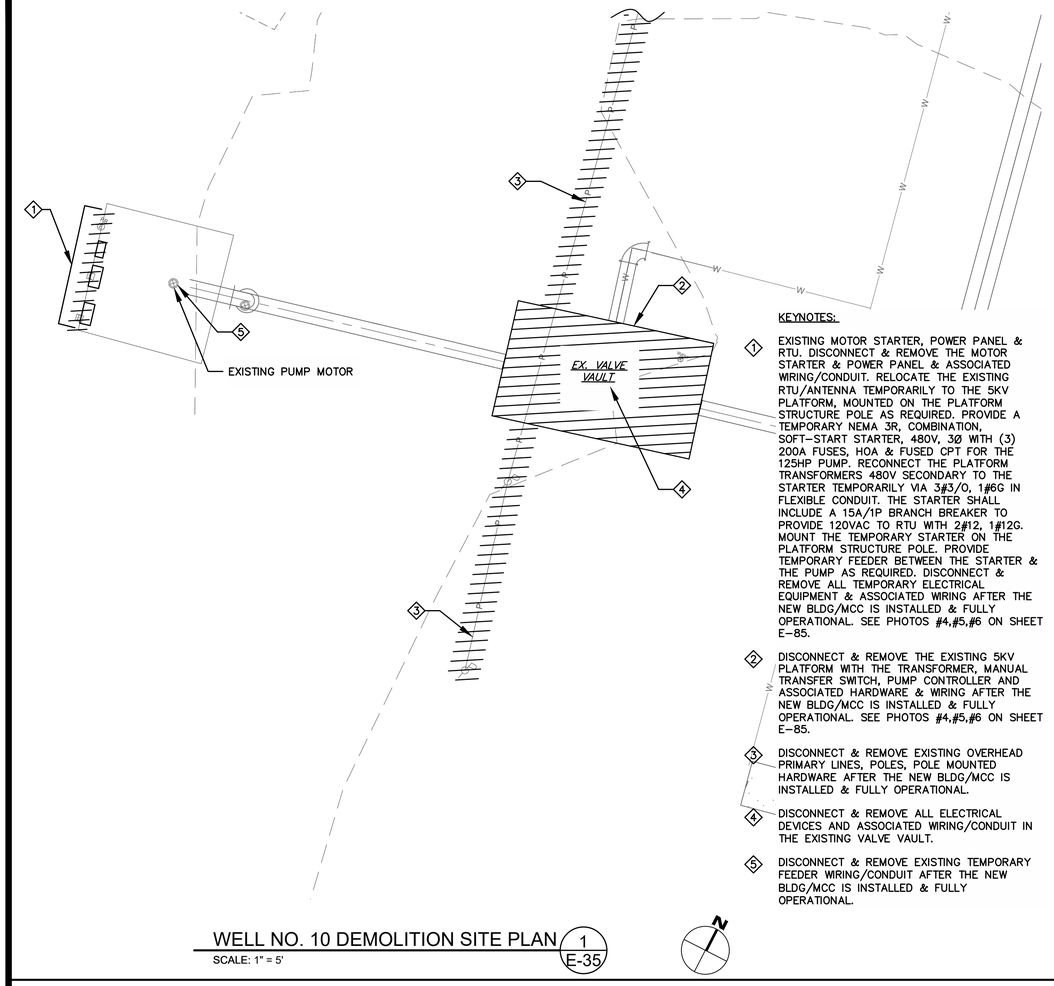
WELL NO.10 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION

E-34

SHEET: OF

P:\PR58982\Cadd\Sheets\E-34 WELL 10 ONE-LINE DIAGRAM AND EQUIPMENT ELEVATION.dwg 4/15/2022 3:31:44 PM Randy Podmore

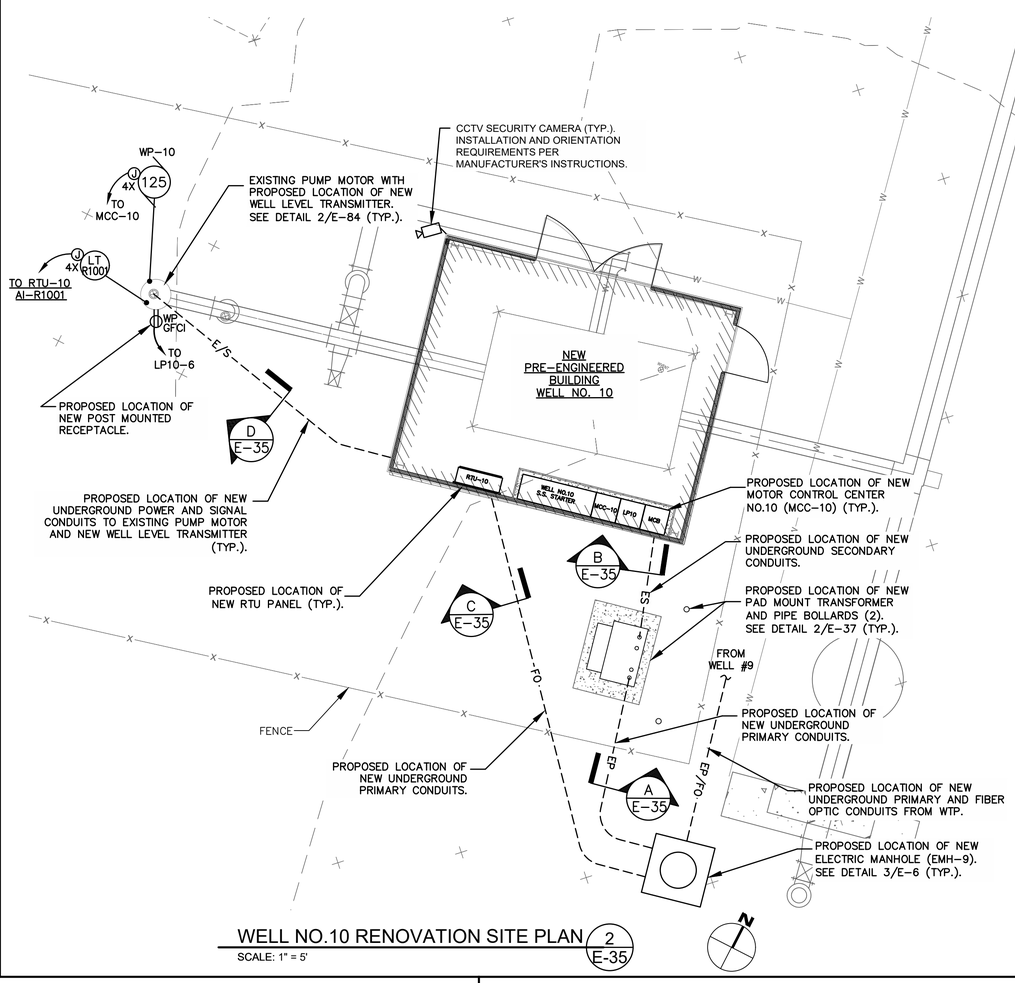
PLOTTED: 4/18/2022 8:28:43 AM



KEYNOTES:

1. EXISTING MOTOR STARTER, POWER PANEL & RTU. DISCONNECT & REMOVE THE MOTOR STARTER & POWER PANEL & ASSOCIATED WIRING/CONDUIT. RELOCATE THE EXISTING RTU/ANTENNA TEMPORARILY TO THE 5KV PLATFORM, MOUNTED ON THE PLATFORM STRUCTURE POLE AS REQUIRED. PROVIDE A TEMPORARY NEMA 3R, COMBINATION, SOFT-START STARTER, 480V, 3Ø WITH (3) 200A FUSES, HOA & FUSED CPT FOR THE 125HP PUMP. RECONNECT THE PLATFORM TRANSFORMERS 480V SECONDARY TO THE STARTER TEMPORARILY VIA 3#3/0, 1#6G IN FLEXIBLE CONDUIT. THE STARTER SHALL INCLUDE A 15A/1P BRANCH BREAKER TO PROVIDE 120VAC TO RTU WITH 2#12, 1#12G. MOUNT THE TEMPORARY STARTER ON THE PLATFORM STRUCTURE POLE. PROVIDE TEMPORARY FEEDER BETWEEN THE STARTER & THE PUMP AS REQUIRED. DISCONNECT & REMOVE ALL TEMPORARY ELECTRICAL EQUIPMENT & ASSOCIATED WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #4,#5,#6 ON SHEET E-85.
2. DISCONNECT & REMOVE THE EXISTING 5KV PLATFORM WITH THE TRANSFORMER, MANUAL TRANSFER SWITCH, PUMP CONTROLLER AND ASSOCIATED HARDWARE & WIRING AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL. SEE PHOTOS #4,#5,#6 ON SHEET E-85.
3. DISCONNECT & REMOVE EXISTING OVERHEAD PRIMARY LINES, POLES, POLE MOUNTED HARDWARE AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.
4. DISCONNECT & REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING/CONDUIT IN THE EXISTING VALVE VAULT.
5. DISCONNECT & REMOVE EXISTING TEMPORARY FEEDER WIRING/CONDUIT AFTER THE NEW BLDG/MCC IS INSTALLED & FULLY OPERATIONAL.

WELL NO. 10 DEMOLITION SITE PLAN (1 / E-35)
SCALE: 1" = 5'



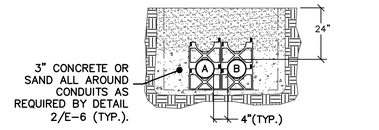
WELL NO.10 RENOVATION SITE PLAN (2 / E-35)
SCALE: 1" = 5'

ELECTRICAL DUCT BANK SCHEDULE

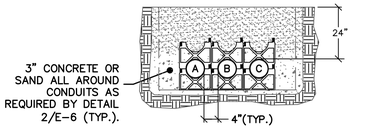
DUCT BANK SECTION NO.	CONDUIT	EQUIPMENT	WIRE	CONNECTION
A E-35	(A) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
	(B) 5" PVC	PAD MOUNT TRANSFORMER	3#250 KCMIL, 5KV & 1#2G	PRIMARY CONDUIT FROM NEW SWITCHGEAR AT EXISTING WTP TO NEW PAD MOUNT TRANSFORMER VIA MANHOLES.
B E-35	(A) 4" PVC	MCC-10	4#250 KCMIL	SERVICE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-10 INSIDE NEW PRE-ENGINEERING BUILDING NO.10.
	(D) 4" PVC	SPARE	PULL ROPE	SPARE CONDUIT FROM NEW PAD MOUNT TRANSFORMER TO NEW MCC-10 INSIDE NEW PRE-ENGINEERING BUILDING NO.10.
C E-35	(C) 4" PVC	RTU-10 PANEL	FIBER OPTIC CABLE	FIBER OPTIC CONDUIT FROM NEW FIBER SWITCH AT PLC-7 AT EXISTING WTP TO NEW RTU PANEL VIA MANHOLES.
	(D) 4" PVC	SPARE	PULL ROPE	SERVICE CONDUIT FROM EMH-9.
D E-35	(A) 3" PVC	WELL PUMP NO.10	2#12, 1#12G	FEEDER CONDUIT FROM STARTER INSIDE NEW MCC-10 AT NEW PRE-ENGINEERED BUILDING NO.10 TO NEW WELL NO.10 PUMP MOTOR.
	(B) 1" PVC	WELL NO.10 LEVEL TRANSMITTER	(1) 2/C #16 SH., PR CABLE	SIGNAL CONDUIT FROM NEW WELL NO.10 LEVEL TRANSMITTER TO NEW RTU-10 PANEL INSIDE NEW PRE-ENGINEERED BUILDING NO.10.
	(C) 1" PVC	RECEPTACLE	2#12, 1#12G	FEEDER CONDUIT FROM PANEL LP10.

UNDERGROUND CONDUIT NOTES:

1. PROVIDE RIGID GALVANIZED SWEEPS ON ALL 90° TURNS.
2. COORDINATE NEW UNDERGROUND CONDUIT LOCATION WITH EXISTING UNDERGROUND ELECTRIC CONDUIT, PROCESS PIPING AND STRUCTURES PRIOR TO EXCAVATION.
3. REPAIR EXISTING PAVED AND GRASSED AREAS TO CONDITION EXISTING PRIOR TO EXCAVATION.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE OHIO GENERAL LAWS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. REFER TO DETAIL 2/E-6 FOR TYPICAL TRENCHING DETAIL FOR ELECTRICAL/TELEPHONE/FIREALARM/CABLE CONDUITS.
6. CONTRACTOR SHALL FURNISH AND INSTALL POLYESTER PULLING TAPE IN ALL SPARE CONDUITS RATED @ 2500 LBS, WITH FOOTAGE MARKINGS AS MANUFACTURED BY NEPT CO., MODEL# WP2500 OR APPROVED EQUAL.



DUCT BANK SECTION (A / E-35, B / E-35, C / E-35)
SCALE: NONE



DUCT BANK SECTION (D / E-35)
SCALE: NONE

ELECTRICAL DUCT BANK SCHEDULE WITH DUCT BANK SECTIONS (1 / E-35)
SCALE: NONE

ELECTRICAL SITE LEGEND

- OHP/FO — PROPOSED OVERHEAD PRIMARY, FIBER OPTIC CABLE
- EP — PROPOSED UNDERGROUND ELECTRICAL PRIMARY CONDUIT
- EP/FO — PROPOSED UNDERGROUND ELECTRICAL PRIMARY & FIBER OPTIC CONDUIT
- FO — PROPOSED UNDERGROUND FIBER OPTIC CONDUIT
- ES — PROPOSED UNDERGROUND ELECTRICAL SECONDARY CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- E/S — PROPOSED UNDERGROUND ELECTRIC & SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT
- EX — EXISTING UNDERGROUND ELECTRIC CONDUIT
- EXOHC — EXISTING OVERHEAD CABLES
- PROPOSED UTILITY POLE
- PROPOSED ELECTRIC OR SIGNAL MANHOLE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0264

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BURGESS & NIPLE

100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	GS
DRAWN BY:	SMR
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

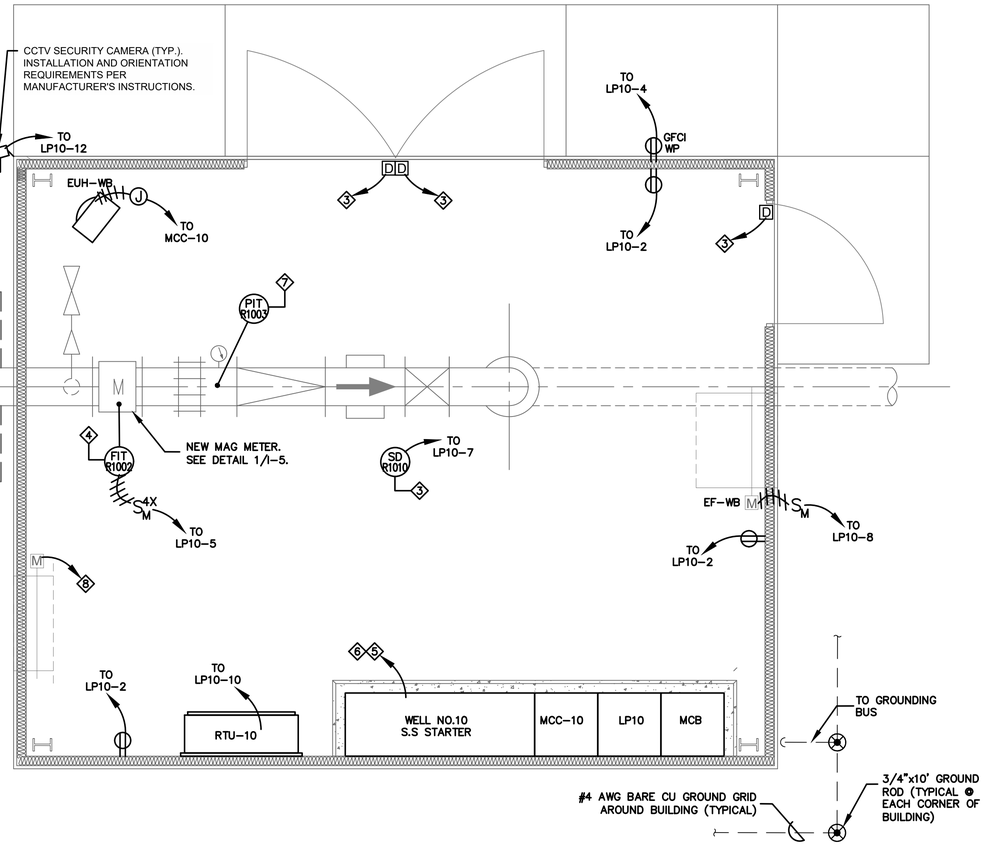
WELL NO.10 ELECTRICAL SITE PLAN

E-35

SHEET: OF

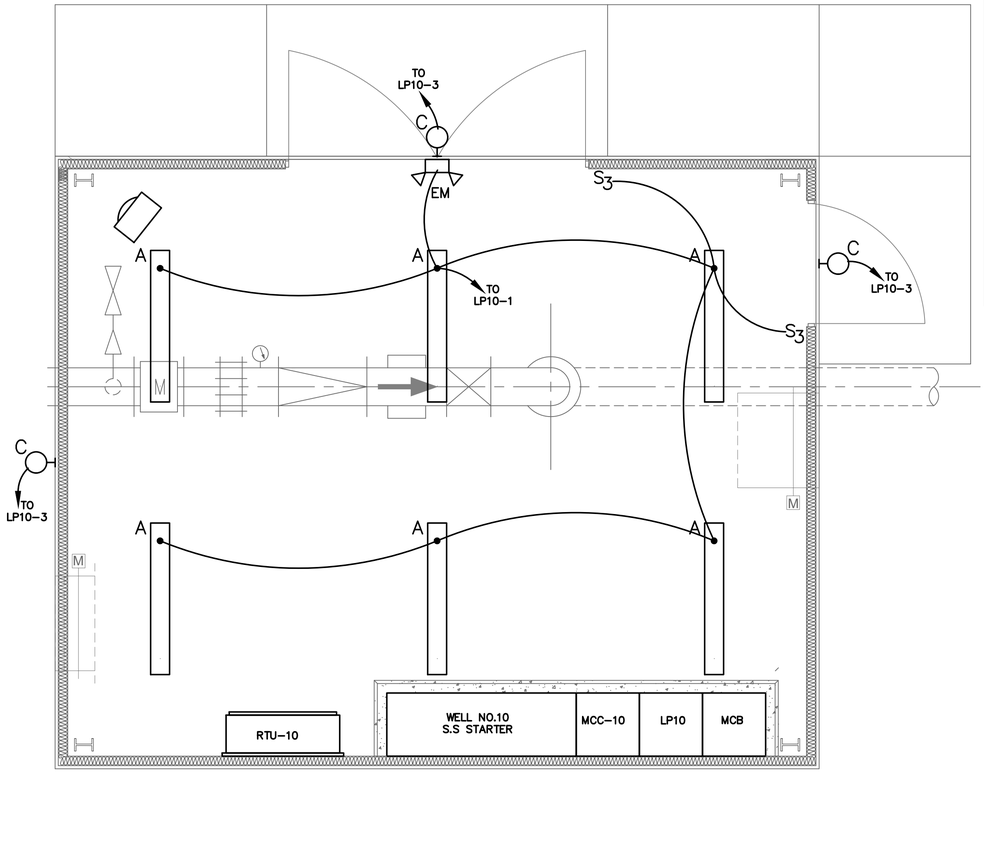
P:\PR58982\Cadd\Sheets\E-Sheets\E-35 WELL 10 ELECTRICAL SITE PLAN.dwg 4/16/2022 4:58:09 PM Randy Podmore

PLOTTED: 4/18/2022 8:28:56 AM



PRE-FABRICATED BUILDING NO.10 POWER PLAN 1 E-36

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



PRE-FABRICATED BUILDING NO.10 LIGHTING PLAN 2 E-36

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

KEY NOTES:

1. PROVIDE 3/4" THICK WHITE POLYETHYLENE BACKBOARD FOR ALL PANELS, CABINETS ETC. AS REQUIRED.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN THE WELL PUMP STATION BUILDING EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. EXCEPT FOR CHEMICAL FEED AREA SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE OUTDOOR AREA SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES PULL BOXES, J–BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED.
3. 3/4" CONDUIT WITH 2#14 TO RTU–10.
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU–10.
5. 3/4" CONDUIT WITH 10#14 TO RTU–10.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU–10.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO RTU–10.
8. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN.
9. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA RTU–10 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

PANEL No. LP10

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208Y/120V
SERVICE 3 PHASE, 4W, W/ GND BUS

LOCATION PRE–FAB BUILDING NO.10
MOUNTING SURFACE
DRAWING No.

	WIRING		DESCRIPTION	VA OR W			BREAKER		CKT.	BUS			CKT.	BREAKER		VA OR W			DESCRIPTION	WIRING	
	# OF WIRES	CONDUIT		ØA	ØB	ØC	POLE	AMPS	NO	A	B	C	NO	POLE	AMPS	ØA	ØB	ØC		CONDUIT	# OF WIRES
	2#12, 1#12G	3/4"	LIGHTING – INTERIOR				1	20	1	X			2	1	20				RECEPTACLES – INTERIOR	3/4"	2#12, 1#12G
	2#12, 1#12G	3/4"	LIGHTING – EXTERIOR				1	20	3		X		4	1	20				RECEPTACLES – EXTERIOR	3/4"	2#12, 1#12G
	2#12, 1#12G	3/4"	MAG METER				1	20	5			X	6	1	20				RECEPTACLES – EXTERIOR	3/4"	2#12, 1#12G
**	2#12, 1#12G	3/4"	SMOKE DETECTORS				1	20	7	X			8	1	20				EXHAUST FAN (EF–WB)	3/4"	2#12, 1#12G
									9		X		10	1	20				RTU PANEL	3/4"	2#12, 1#12G
									11			X	12	1	20				CCTV SECURITY CAMERA	3/4"	2#12, 1#12G
									13	X			14	1	20				SPARE		
									15		X		16	1	20				SPARE		
									17			X	18	1	20				SPARE		
									19	X			20	2	15						
									21		X		22						SPARE		
									23			X	24	1	20						
													TOTAL 2								
			TOTAL 1																		
			TOTAL 2																		
			TOTAL 1 + 2																		
			TOTAL CONNECTED LOAD																		
			AMPERES																		

MAIN BREAKER	30A 3/P	MAIN LUGS	N/A
FEEDER ENTRANCE	TOP	ENCLOSURE TYPE	NEMA 1
FEEDER SIZE	4#10, 1#10G, 1"C	ACCESSORIES	
SOURCE	6 KVA XFMR 'TR10'		
PANEL TYPE	BOLT–ON		

* GFCI BREAKER
** PROVIDE LOCKOUT DEVICE

LIGHTING PANEL SCHEDULE 3 E-36

SCALE: NONE

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NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

WELL NO.10 POWER & LIGHTING PLAN AND PANEL SCHEDULE

E-36

SHEET: OF

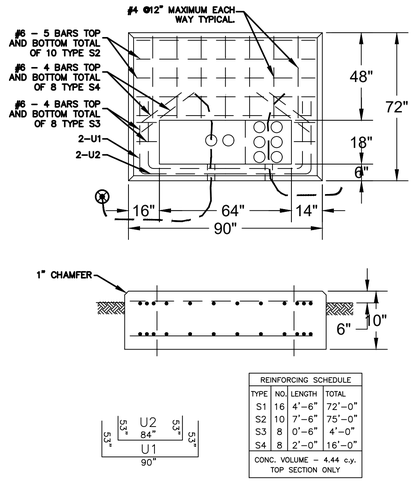
P:\PR58982\Cadd\Sheets\E-Sheets\E-36 WELL 10 POWER & LIGHTING PLAN AND PANEL SCHEDULE.dwg 4/16/2022 4:42:52 PM Randy Podmore

PLOTTED: 4/18/2022 8:29:04 AM

NOTES:

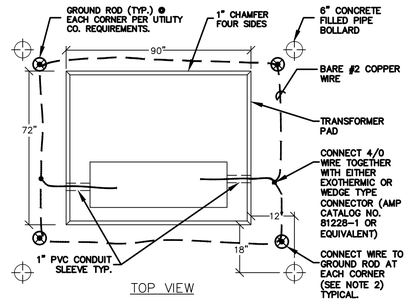
1. ONE 3/4" x 8'–0" GALVANIZED STEEL GROUND ROD TO BE INSTALLED AT EACH CORNER.
2. REMOVE ALL ORGANIC TOPSOIL UNDER FOUNDATION AND COMPACT NATIVE MATERIAL. BACKFILL, IF NECESSARY, WITH CLEAN WELL COMPACTED GRAVEL 12" MINIMUM.
3. ALL REINFORCING BARS SHALL MEET A.S.T.M. #615 GRADE 60 SPECIFICATION FOR DEFORMED BARS.
4. ALL REINFORCING SHALL BE TIED AS ONE UNIT.
5. MINIMUM CONCRETE COVER OVER REINFORCING STEEL SHALL BE 3".
6. ONE 3/4" X 8'–0" GALVANIZED STEEL GROUND ROD TO BE INSTALLED AT EACH CORNER
7. TOP OF SLAB SHOULD BE NO MORE THAN 6" ABOVE GROUND LEVEL.
8. GROUND RODS TO BE TIED TOGETHER WITH BARE 4/0 COPPER WIRE BURIED AT LEAST ONE FOOT IN THE GROUND. WIRE CONNECTIONS TO GROUND RODS TO BE EITHER CADWELD OR WEDGE TYPE CONNECTORS. (AMP CATALOG NO. 81228–1 OR EQUIVALENT).
9. BOTH TAILS OF THE GROUND GRID SHOULD BE BROUGHT INTO THE PAD OPENING AT ONE END THRU 2–1" PLASTIC PIPES LOCATED IN A KNOCK OUT AND A MINIMUM OF 15' OF SLACK ON EACH TAIL. THE ENTRY POINT SHOULD BE PROPERLY SEALED WITH MORTAR OR NON–SHRINK GROUT TO PREVENT WATER FROM ENTERING.
10. IF THE GROUND ROD HITS ROCK OR LEDGE IT MAY BE DRIVEN AT AN ANGLE BUT IT SHOULD NOT BE CUT OFF.
11. TOP TO BE REINFORCED TO SUPPORT H–20 WHEEL LOAD.
12. GALVANIZED PULL EYES AND ADDITIONAL DUCT OPENINGS ON SPECIAL ORDER.
13. SIX 4 1/2" DIAMETER HOLE INLINE ON ALL FOUR SIDES WITH KNOCKOUTS 5/8" THICK MAXIMUM.
14. MANUFACTURER'S NAME TO BE STENCILED ON VERTICAL WALL OF ACCESS CHIMNEY.
15. ALL CONDUITS OPENINGS TO HAVE 4" BELL ENDS FLUSH WITH INSIDE WALL. PAD TO BE INSTALLED ON 12" BED OF CRUSHED STONE.
16. THE TRANSFORMER PAD SHALL BE FURNISHED AND INSTALLED BY G.C.
17. CONCRETE STRENGHT SHALL BE 5000 P.S.I. @ 28 DAYS.

    CHAMFER ALL EXPOSED CONCRETE EDGES 1" @ 45°.
18. STEEL REINFORCEMENT – ASTM – A615 – GRADE 60, 1" MINIMUM COVER.
19. DESIGN LOADING – AASHTO – HS20–44
20. THE TRANSFORMER PAD SHOWN IS INFORMATIONAL ONLY. ACTUAL PAD AND REQUIREMENTS AS DETERMINED DURING CONSTRUCTION AND AS PER TRANSFORMERS INSTALLATION REQUIREMENTS.



REINFORCING SCHEDULE			
TYPE	NO.	LENGTH	TOTAL
S1	16	4'–6"	72'–0"
S2	10	7'–6"	75'–0"
S3	8	0'–6"	4'–0"
S4	8	2'–0"	16'–0"
CONC. VOLUME – 4.44 c.y. TOP SECTION ONLY			

3Ø PAD MOUNTED TRANSFORMER SLAB DETAIL

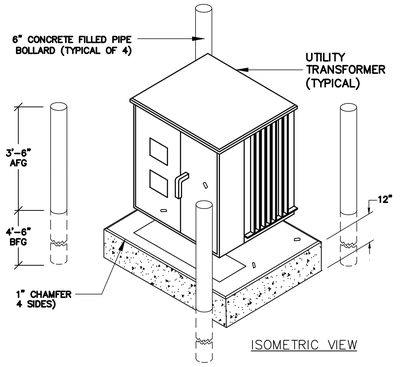


TOP VIEW

NOTES:

1. ONE 3/4" x 8'–0" COPPER GROUND ROD TO BE INSTALLED AT EACH CORNER.
2. GROUND RODS TO BE TIED TOGETHER WITH BARE #4/0 COPPER WIRE BURIED AT LEAST ONE FOOT IN THE GROUND. WIRE CONNECTIONS TO GROUND RODS TO BE EITHER CADWELD OR WEDGE TYPE CONNECTORS. (AMP CATALOG NO. 81228–1 OR EQUIVALENT).
3. BOTH TAILS OF THE GROUND GRID SHOULD BE BROUGHT INTO THE PAD OPENING AT ONE END THRU 2–1" PLASTIC PIPES LOCATED IN A KNOCK OUT AND A MINIMUM OF 15' OF SLACK ON EACH TAIL. THE ENTRY POINT SHOULD BE PROPERLY SEALED WITH MORTAR OR NON–SHRINK GROUT TO PREVENT WATER FROM ENTERING.
4. IF THE GROUND ROD HITS ROCK OR LEDGE IT MAY BE DRIVEN AT AN ANGLE BUT IT SHOULD NOT BE CUT OFF.

TYPICAL FOR ALL TRANSFORMER PAD GROUND GRID DETAIL (PLAN VIEW)



ISOMETRIC VIEW

TRANSFORMER PAD PROTECTION

PAD MOUNTED TRANSFORMERS DETAILS TR-1A & TR-2A (1 / E-37)
SCALE: NONE

NOTES:

1. ONE 3/4" x 8'–0" GALVANIZED STEEL GROUND ROD TO BE INSTALLED AT EACH CORNER.
2. REMOVE ALL ORGANIC TOPSOIL UNDER FOUNDATION AND COMPACT NATIVE MATERIAL. BACKFILL, IF NECESSARY, WITH CLEAN WELL COMPACTED GRAVEL 12" MINIMUM.
3. ALL REINFORCING BARS SHALL MEET A.S.T.M. #615 GRADE 60 SPECIFICATION FOR DEFORMED BARS.
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5. MINIMUM CONCRETE COVER OVER REINFORCING STEEL SHALL BE 3".
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8. GROUND RODS TO BE TIED TOGETHER WITH BARE 4/0 COPPER WIRE BURIED AT LEAST ONE FOOT IN THE GROUND. WIRE CONNECTIONS TO GROUND RODS TO BE EITHER CADWELD OR WEDGE TYPE CONNECTORS. (AMP CATALOG NO. 81228–1 OR EQUIVALENT).
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13. SIX 4 1/2" DIAMETER HOLE INLINE ON ALL FOUR SIDES WITH KNOCKOUTS 5/8" THICK MAXIMUM.
14. MANUFACTURER'S NAME TO BE STENCILED ON VERTICAL WALL OF ACCESS CHIMNEY.
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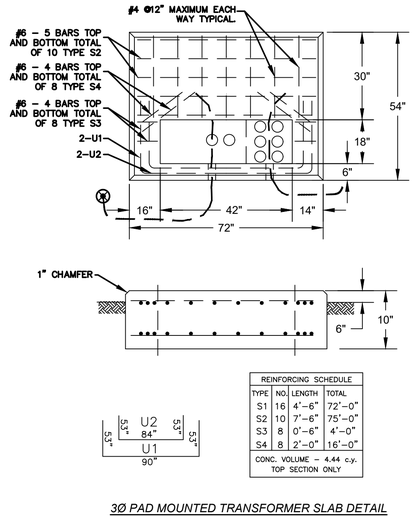
17. CONCRETE STRENGHT SHALL BE 5000 P.S.I. @ 28 DAYS.

    CHAMFER ALL EXPOSED CONCRETE EDGES 1" @ 45°.
18. STEEL REINFORCEMENT – ASTM – A615 – GRADE 60, 1" MINIMUM COVER.
19. DESIGN LOADING – AASHTO – HS20–44
20. THE TRANSFORMER PAD SHOWN IS INFORMATIONAL ONLY. ACTUAL PAD AND REQUIREMENTS AS DETERMINED DURING CONSTRUCTION AND AS PER TRANSFORMERS INSTALLATION REQUIREMENTS.



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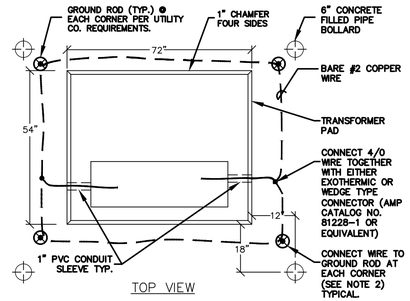
CONC. VOLUME – 4.44 c.y. TOP SECTION ONLY			

3Ø PAD MOUNTED TRANSFORMER SLAB DETAIL



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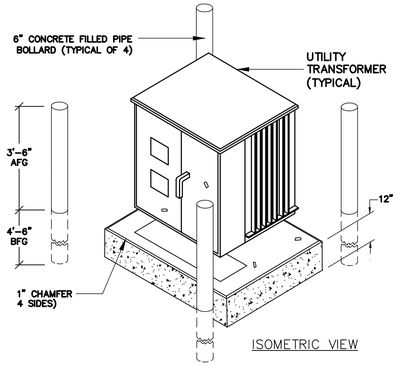
4. IF THE GROUND ROD HITS ROCK OR LEDGE IT MAY BE DRIVEN AT AN ANGLE BUT IT SHOULD NOT BE CUT OFF.

TYPICAL FOR ALL TRANSFORMER PAD GROUND GRID DETAIL (PLAN VIEW)



ISOMETRIC VIEW

TRANSFORMER PAD PROTECTION

PAD MOUNTED TRANSFORMERS DETAILS TR1 THROUGH TR10 (TYP. OF 10) (2 / E-37)
SCALE: NONE

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

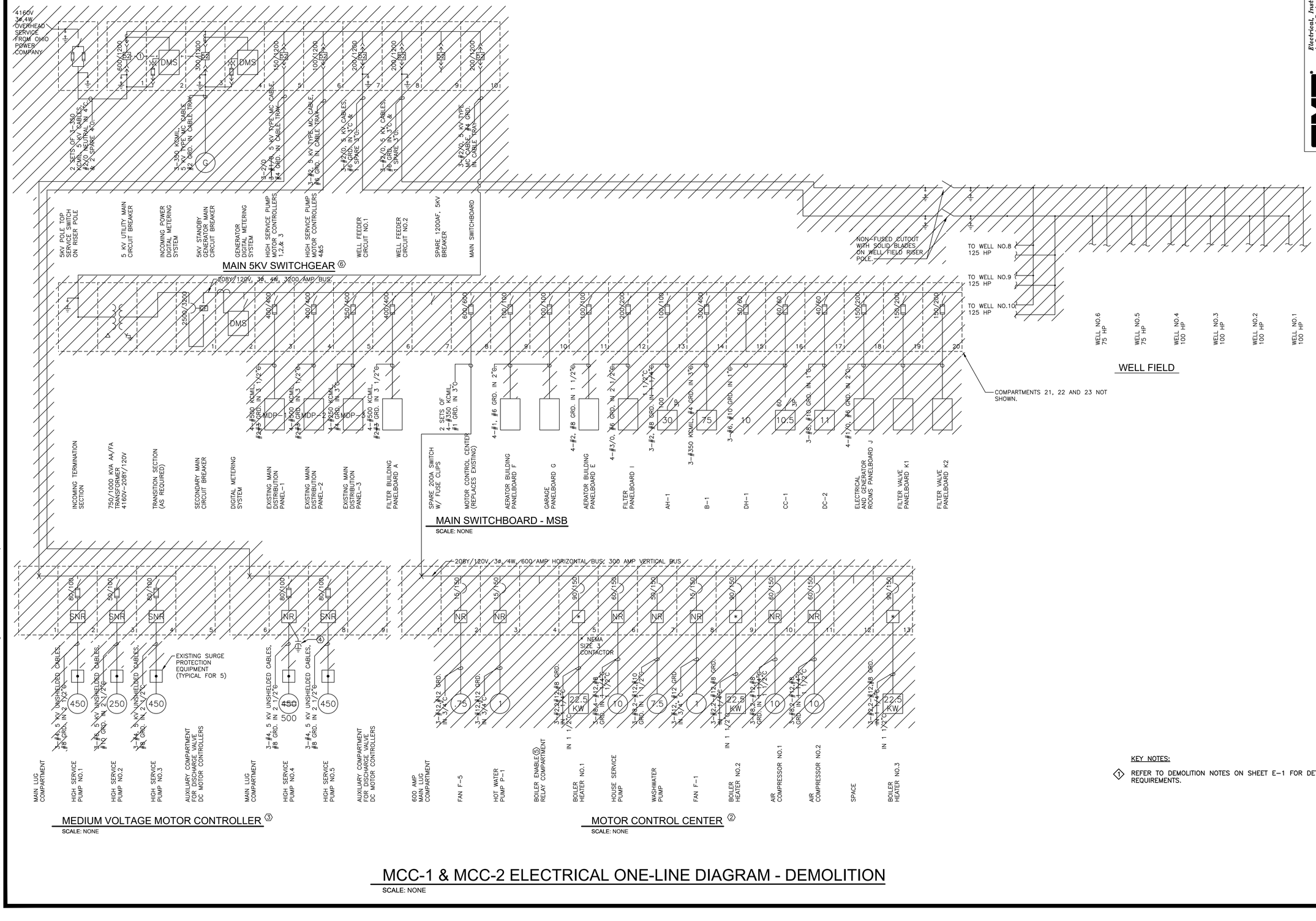
PAD MOUNTED TRANSFORMERS DETAILS

E-37

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-37 PAD MOUNTED TRANSFORMERS DETAILS.dwg 3/21/2022 1:48:05 PM Randy Podmore

PLOTTED: 4/18/2022 8:29:12 AM



MCC-1 & MCC-2 ELECTRICAL ONE-LINE DIAGRAM - DEMOLITION

SCALE: NONE

KEY NOTES:

① REFER TO DEMOLITION NOTES ON SHEET E-1 FOR DETAILED REQUIREMENTS.

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APPROVED BY:	SMR
SCALE:	AS NOTED

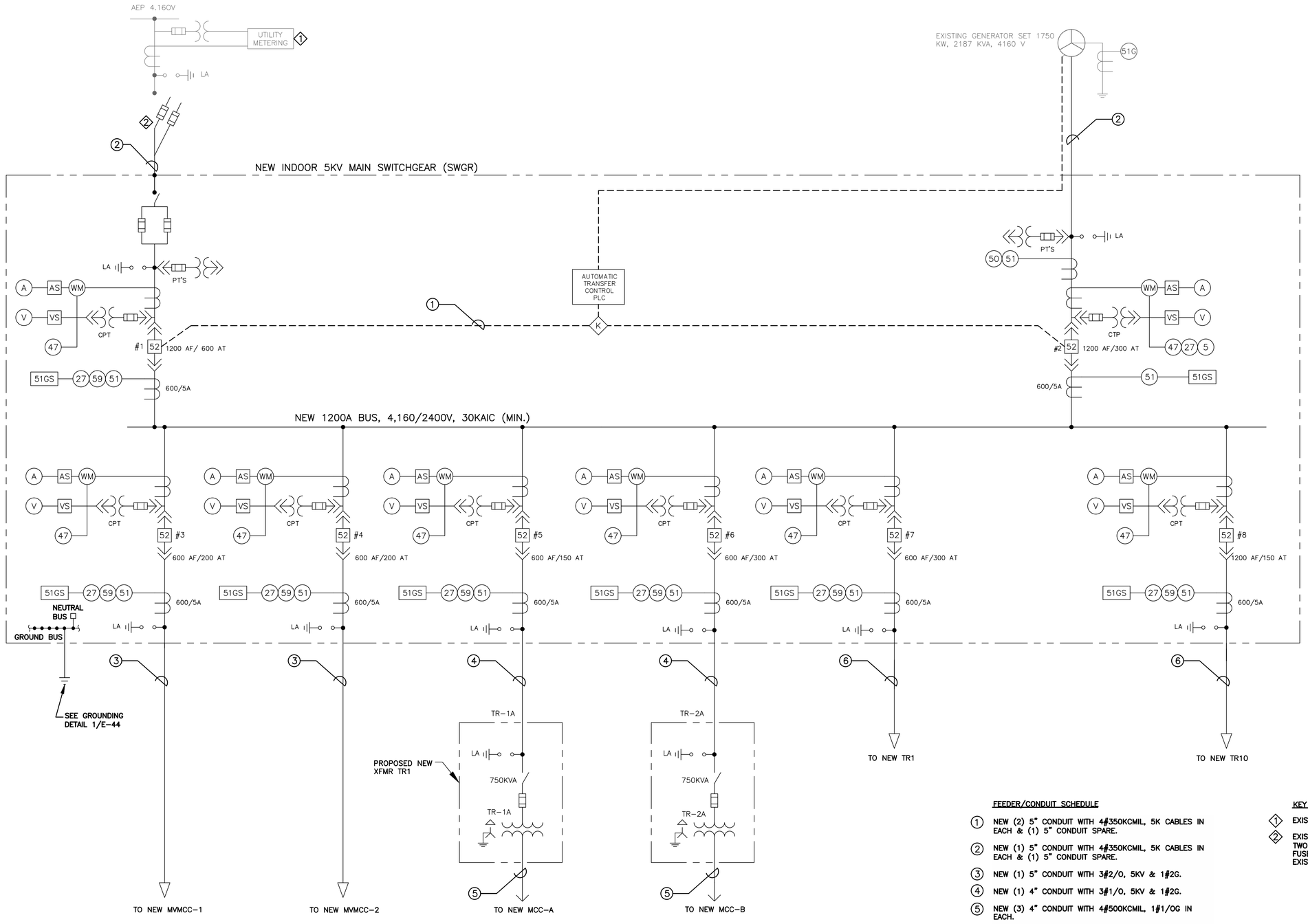
EXISTING ONE-LINE DIAGRAM DEMOLITION

E-38

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-38 EXISTING ONE-LINE DIAGRAM DEMOLITION.dwg 4/15/2022 3:37:56 PM Randy Podmore

PLOTTED: 4/18/2022 8:29:19 AM



PROTECTIVE DEVICE AND CONTROL LEGEND

- 27 59 : UNDER VOLTAGE/ OVER VOLTAGE RELAY
- 47 : PHASE SEQUENCE VOLTAGE RELAY
- 50GS : INSTANTANEOUS GROUND SENSOR OVERCURRENT RELAY
- 51GS : TIME GROUND SENSOR OVERCURRENT RELAY
- 50 51 : PHASE INSTANTANEOUS/TIME CURRENT RELAY
- 52 : CIRCUIT BREAKER
- LA : LIGHTNING ARRESTOR – DISTRIBUTION CLASS

FEEDER/CONDUIT SCHEDULE

1. NEW (2) 5" CONDUIT WITH 4#350KCMIL, 5K CABLES IN EACH & (1) 5" CONDUIT SPARE.
2. NEW (1) 5" CONDUIT WITH 4#350KCMIL, 5K CABLES IN EACH & (1) 5" CONDUIT SPARE.
3. NEW (1) 5" CONDUIT WITH 3#2/0, 5KV & 1#2G.
4. NEW (1) 4" CONDUIT WITH 3#1/0, 5KV & 1#2G.
5. NEW (3) 4" CONDUIT WITH 4#500KCMIL, 1#1/0G IN EACH.
6. NEW (1) 5" CONDUIT WITH 3#250KCMIL, 5KV & 1#2G & (1) 5" CONDUIT SPARE.

KEY NOTES:

1. EXISTING AEP OWNED METERING POLE TO REMAIN.
2. EXISTING CITY OWNED RISER POLE TO REMAIN. PROVIDE TWO SETS OF NEW FUSES (6) TO REPLACE EXISTING FUSES. NEW FUSES TYPE, STYLE & RATING TO MATCH EXISTING.

PROPOSED NEW 5KV ONE-LINE DIAGRAM - CONTINUED

SCALE: NONE

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APPROVED BY:	SMR
SCALE:	NONE

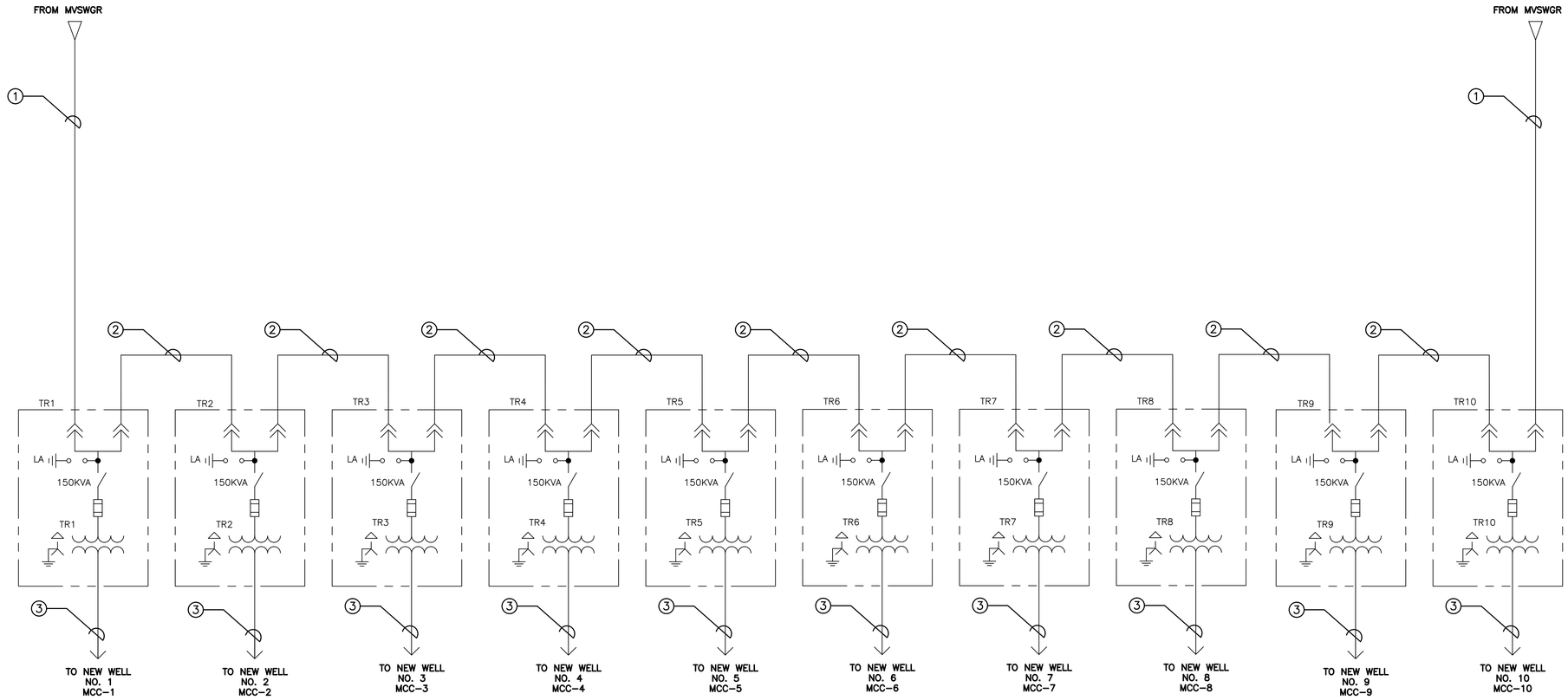
PROPOSED NEW 5KV ONE-LINE DIAGRAM

E-39

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-40 PROPOSED NEW 5KV ONE-LINE DIAGRAM -CONT.dwg 4/15/2022 3:37:47 PM Randy Podmore

PLOTTED: 4/18/2022 8:29:20 AM



FEEDER/CONDUIT SCHEDULE

1. NEW (1) 5" CONDUIT WITH 3#250 KCMIL, 5KV & 1#2G & (1) 5" CONDUIT SPARE.
2. NEW (1) 5" CONDUIT WITH 3#250 KCMIL, 5KV & 1#2G & (1) 5" CONDUIT SPARE.
3. NEW (1) 4" CONDUIT WITH 4#250 KCMIL, 600V & (1) 4" CONDUIT SPARE.

PROPOSED NEW 5KV ONE-LINE DIAGRAM-CONTINUED

SCALE: NONE

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CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

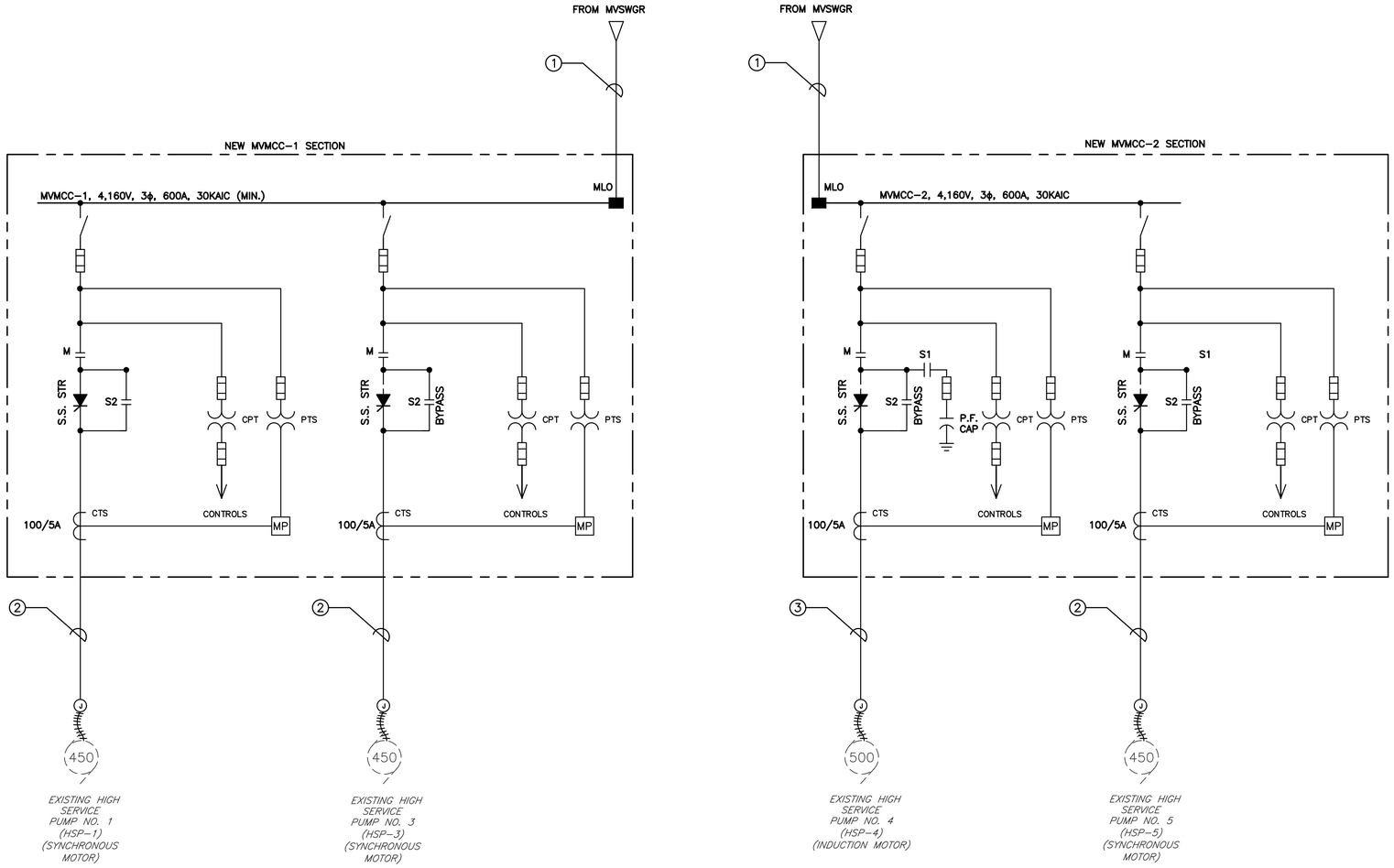
PROPOSED NEW 5KV ONE-LINE DIAGRAM CONTINUED

E-40

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-40 PROPOSED NEW 5KV ONE-LINE DIAGRAM -CONT.dwg 4/15/2022 3:37:47 PM Randy Podmore

PLOTTED: 4/18/2022 8:29:27 AM



PROPOSED NEW 5KV MVMCC-1 AND MVMCC-2 ONE-LINE DIAGRAM

SCALE: NONE

FEEDER/CONDUIT SCHEDULE

1. NEW (1) 5" CONDUIT WITH 3#2/0, 5KV & 1#2G.
2. NEW 3" CONDUIT WITH 5KV, 3#2, 1#6G & 1" CONDUIT WITH 2#10, 1#12G (DC EXCITATION) 4#14 & 1" CONDUIT WITH 12#14 (SURGE CONTROL VALVE).
3. NEW 3" CONDUIT WITH 5KV, 3#2, 1#6G & 1" CONDUIT WITH 4#14 & 1" CONDUIT WITH 12#14 (SURGE CONTROL VALVE).

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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

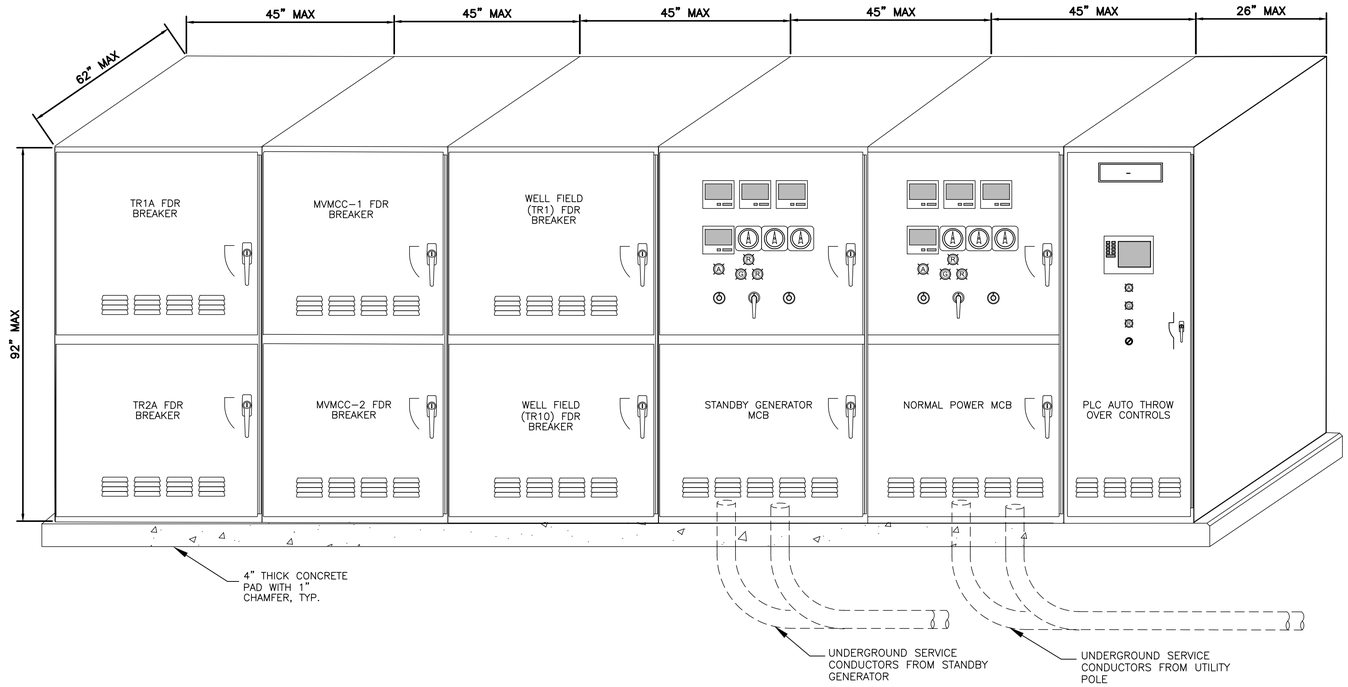
ELECTRICAL
ONE-LINE DIAGRAM
5 KV MVMCC-1 AND
MVMCC-2

E-41

SHEET: OF

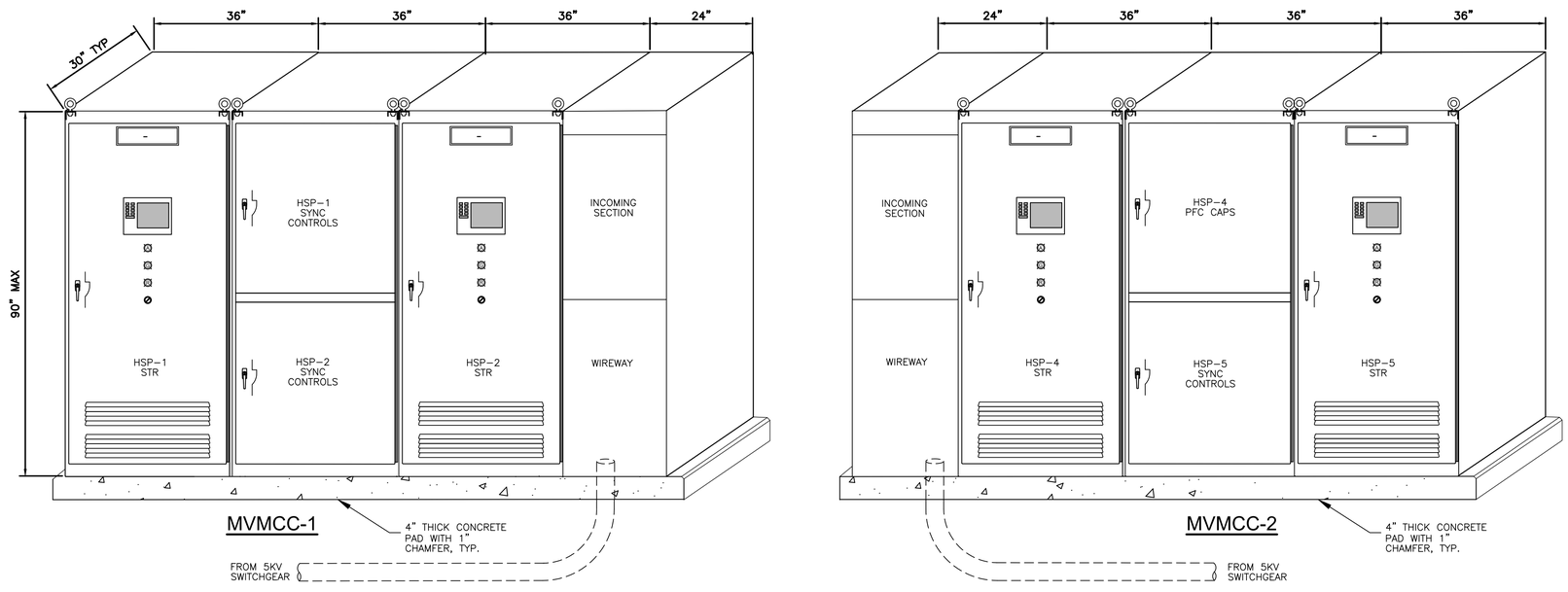
P:\PR58982\Cadd\Sheets\E-Sheets\E-41 PROPOSED NEW 5KV MVMCC1 AND MVMCC2 ONE-LINE DIAGRAM.dwg 4/15/2022 6:50:32 AM Randy Podmore

PLOTTED: 4/18/2022 8:29:34 AM



NEW INDOOR 5KV MAIN SWITCHGEAR ELEVATION

SCALE: NONE



PROPOSED NEW 5KV MVMCC-1 AND MVMCC-2 ELEVATION

SCALE: NONE

P:\PR58982\Cadd\Sheets\E-Sheets\E-42 PROPOSED NEW MVMCC1 AND MVMCC2 ELEVATION.dwg 4/15/2022 6:55:56 AM Randy Podmore

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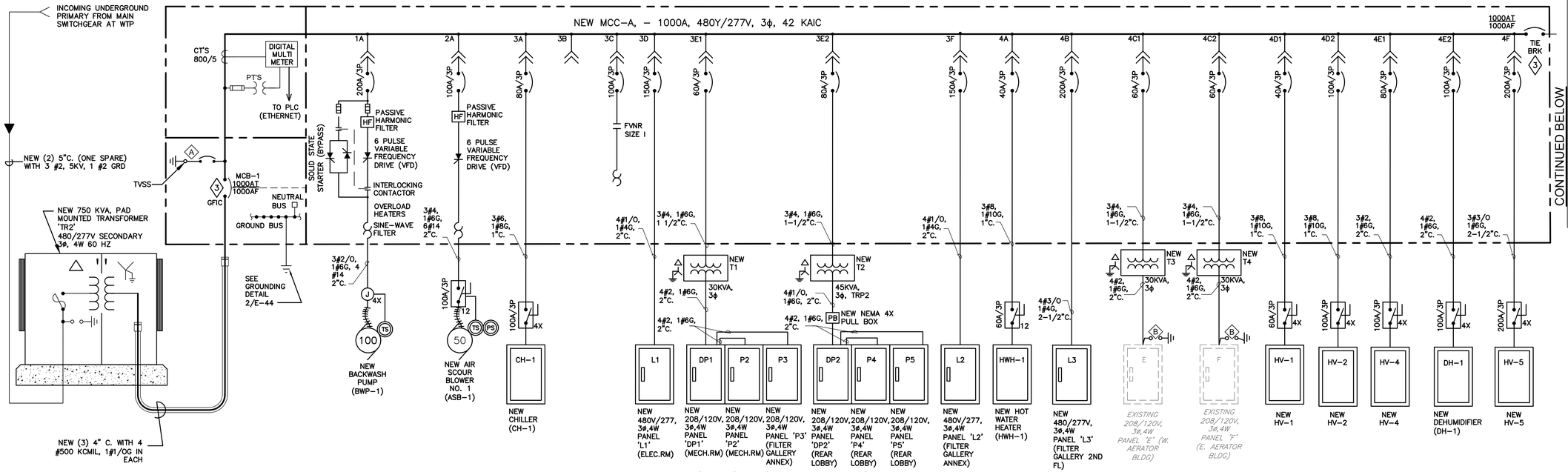
SCALE:	NONE

PROPOSED NEW 5KV MVMCC-1 & MVMCC2 ELEVATION

E-42

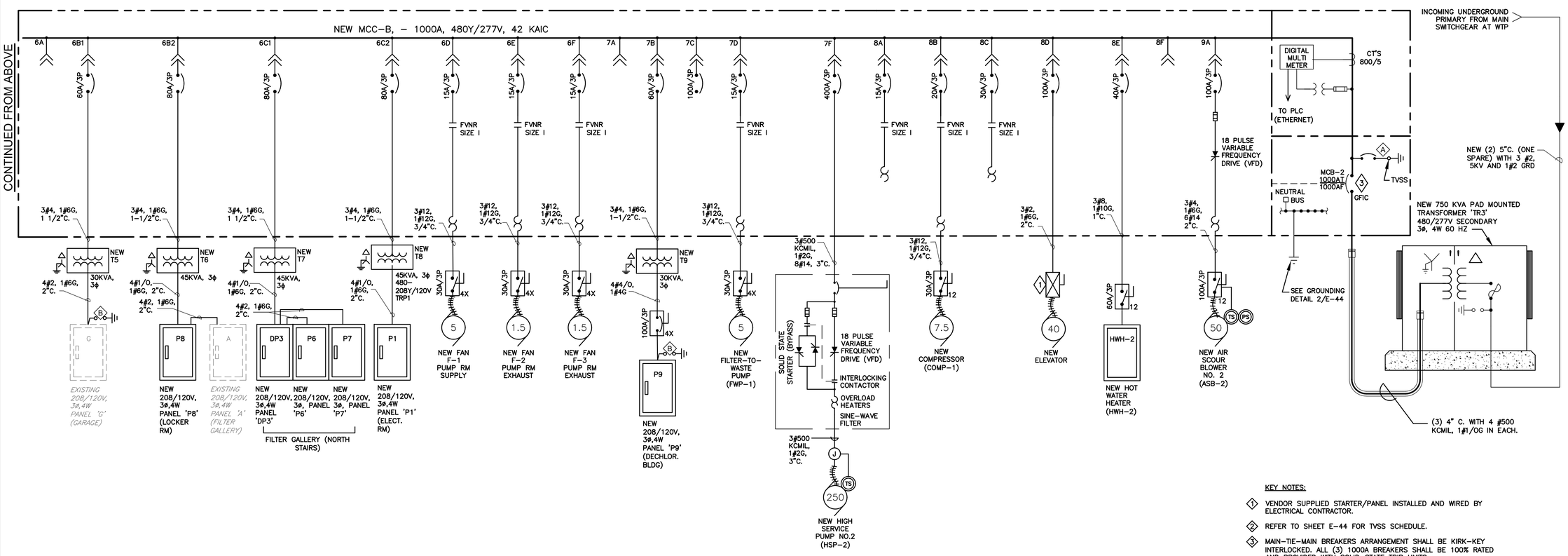
SHEET: OF

PLOTTED: 4/18/2022 8:29:41 AM



NEW ELECTRICAL ONE-LINE DIAGRAM

SCALE: NONE



NEW MCC-A & MCC-B ELECTRICAL ONE-LINE DIAGRAM

SCALE: NONE

KEY NOTES:

1. VENDOR SUPPLIED STARTER/PANEL INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
2. REFER TO SHEET E-44 FOR TVSS SCHEDULE.
3. MAIN-TIE-MAIN BREAKERS ARRANGEMENT SHALL BE KIRK-KEY INTERLOCKED. ALL (3) 1000A BREAKERS SHALL BE 100% RATED AND PROVIDED WITH SOLID-STATE TRIP UNITS.

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APPROVED BY:	SMR
SCALE:	AS NOTED

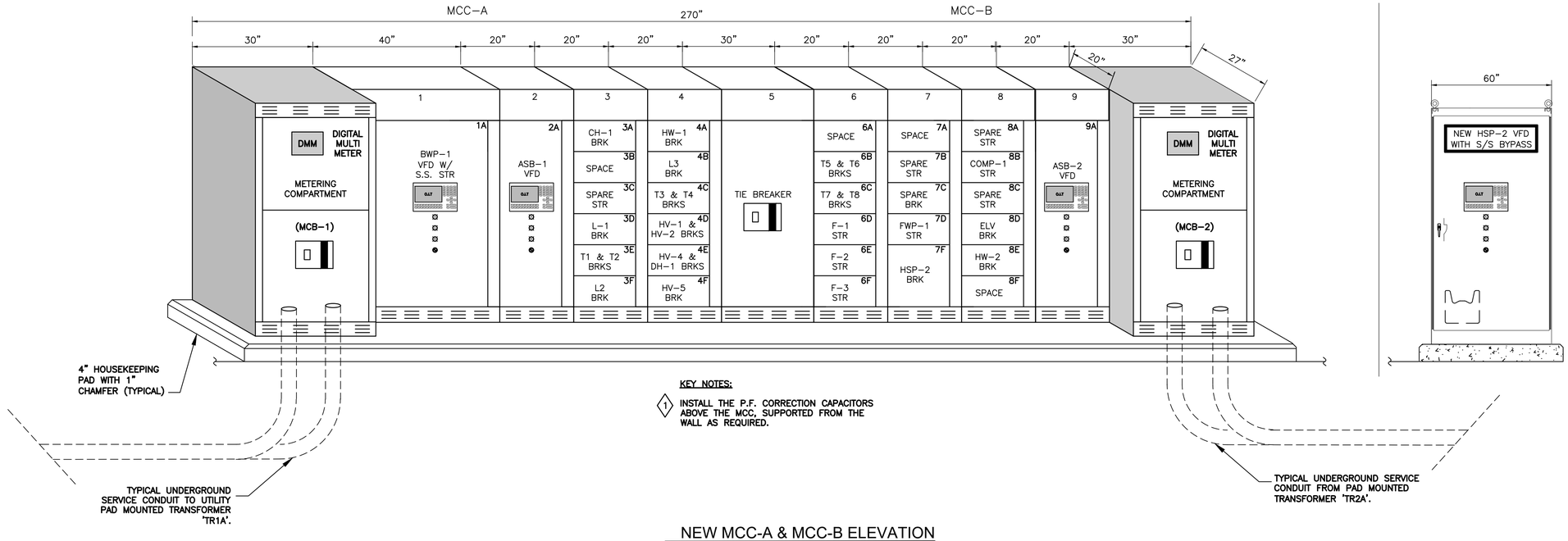
NEW MCC-A & MCC-B ELECTRICAL ONE-LINE DIAGRAM

E-43

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-43 NEW MCC-1 & MCC-2 ELECTRICAL ONE-LINE DIAGRAM.dwg 4/16/2022 5:05:36 PM Randy Podmore

PLOTTED: 4/18/2022 8:29:48 AM

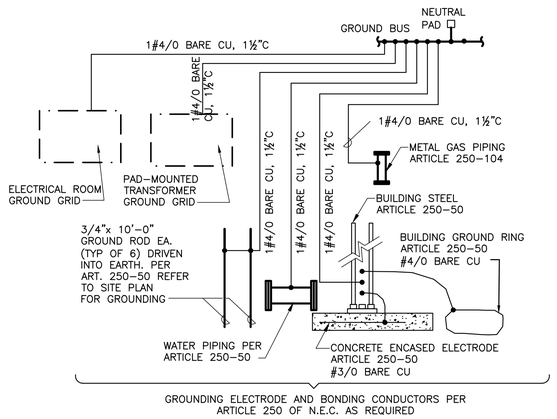


KEY NOTES:

1. INSTALL THE P.F. CORRECTION CAPACITORS ABOVE THE MCC, SUPPORTED FROM THE WALL AS REQUIRED.

NEW MCC-A & MCC-B ELEVATION

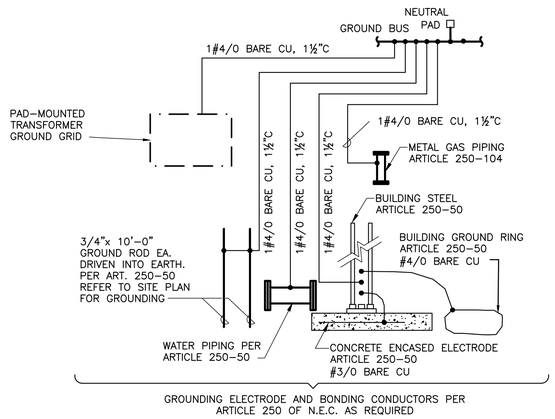
SCALE: NONE



NEW MAIN 5KV SWGR ELECTRICAL GROUNDING AND BONDING DETAIL

1 / E-44

SCALE: NONE



NEW MCC-A & MCC-B ELECTRICAL GROUNDING AND BONDING DETAIL

2 / E-44

SCALE: NONE

TRANSIENT VOLTAGE SURGE SUPPRESSER (TVSS) SCHEDULE:

	LOCATION	MODEL NO.	SYSTEM VOLTAGE	PEAK SURGE CURRENT
A	MAIN BRKR	PTE300–3Y201–D	480Y/277V, 3ø,4W	300,000 AMPS PER ø
B	208/120 VAC, 3ø,4W PNLS	PTE080–3Y101–L	208Y/120V, 3ø,4W	80,000 AMPS PER ø
C	CAT 5 (ETHERNET)	ITC–CAT5E	24 VAC	30,000 AMPS PER PAIR
D	4–20mA LOOP DEVICES	OEM–D24–6C	24 VDC	10,000 AMPS PER PAIR

NOTE:
SURGE PROTECTORS SHALL INCLUDE IO MODE MOV DESIGN, SINE WAVE TRACKING, SURGE COUNTER AND 20 YEAR WARRANTY. THE UNIT SHALL BE MANUFACTURED BY INNOVATIVE TECHNOLOGY, SEIMENS ENERGY AND AUTOMATION, OR APPROVED EQUAL.

NEW MCC-A & MCC-B TVSS SCHEDULE

3 / E-44

SCALE: NONE

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APPROVED BY:	SMR
SCALE:	NONE

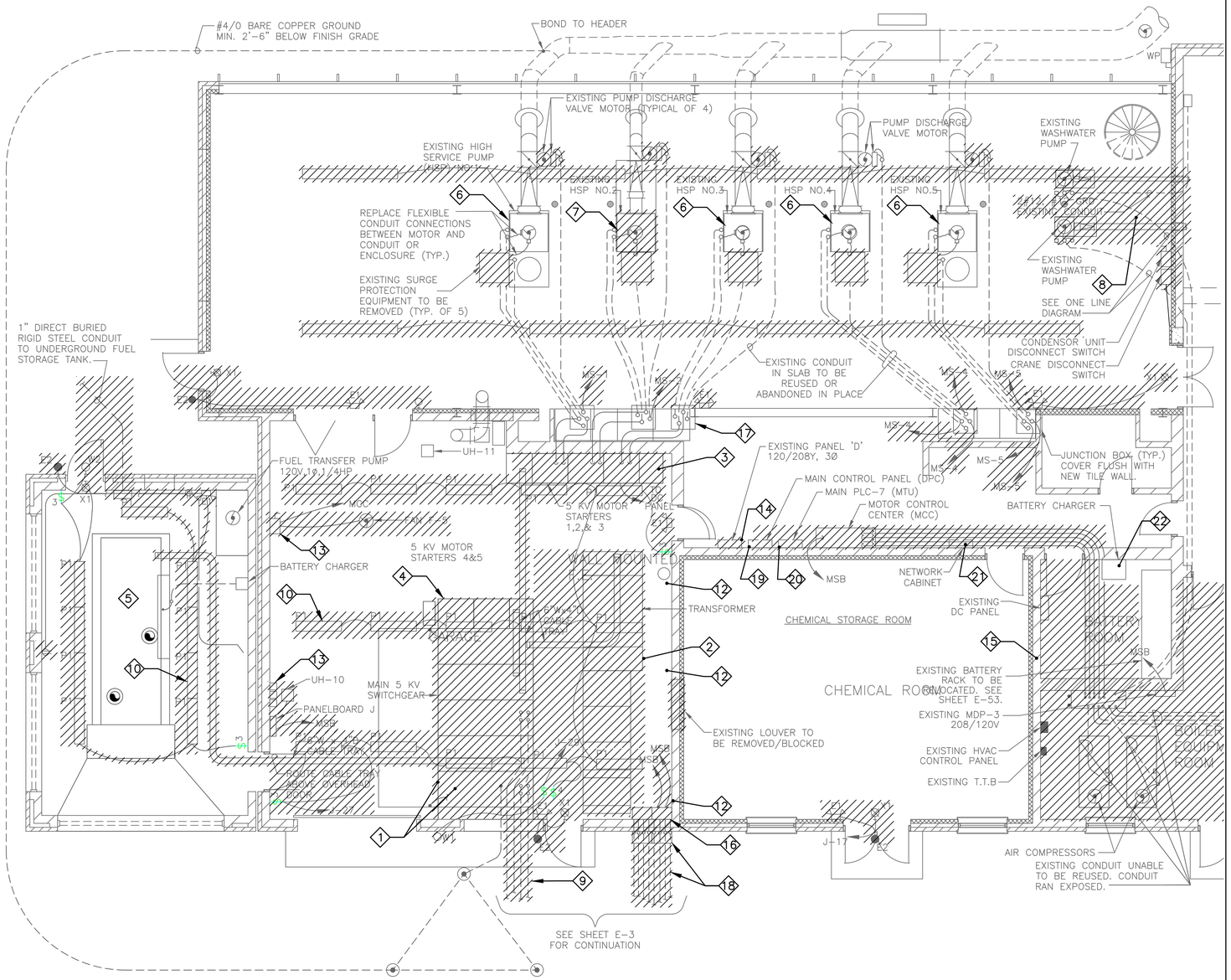
NEW ELECTRICAL MCC-A & MCC-B ELEVATION

E-44

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-44 NEW MCC-A AND MCC-B ELEVATION.dwg 4/15/2022 7:05:10 AM Randy Podmore

PLOTTED: 4/18/2022 8:29:57 AM



HIGH SERVICE PUMP ROOM DEMOLITION FLOOR PLANS

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

PANELBOARD "J"							
208Y/120V, 3ø, 4 W, 225 AMP BUS			PANEL LOADING SCHEDULE				
100 AMP MAIN: CB ( ) SW ( ) LUGS ( )			CONNECTED				DEMAND
FEED THRU LUGS ( )			PHASE	A	B	C	TOTAL	
SURFACE (X) FLUSH ( ) COLUMN TYPE ( )			AMPS	100.3	89.1	92.8		93.8
ENCLOSURE: NEMA 1( ) 3R( ) 12(X) 4X( )			KVA	12.0	11.1	10.7	33.8	6.6

CIRCUIT DESCRIPTION	LOAD AMPS	BKR./ POLES	CKT. NO.		BKR./ POLES	LOAD AMPS	CIRCUIT DESCRIPTION
GENERATOR ROOM LIGHTING	7.5	20/1	1	2	20/1	10.0	BATTERY CHARGER
GENERATOR ROOM RECEPTACLES	4.5	20/1	3	4	20/1	5.8	FUEL TRANSFER PUMP
GENERATOR COOLANT HEATER	19.2	30/2	5	6	20/1	5.8	FAN F-6
	19.2		7	8	20	20.8	
GENERATOR COOLANT HEATER	19.2	30/2	9	10		20.8	UNIT HEATER UH-12
	19.2		11	12	3	20.8	
UPS (CONTROL ROOM)	10.0	40/2	13	14	20	–	
	10.0		15	16		–	UNIT HEATER UH-11
~~SPARE~~ EMERGENCY/EXIT LTS	–	20/1	17	18	3	–	
UST MONITORING PANEL	5.0	20/1	19	20	20	–	
BOILER CONTROLS	1.0	–	21	22		–	UNIT HEATER UH-10
~~SPARE~~	–	–	23	24	3	–	
SPARE	–	–	25	26	20/1	–	SPARE
SPARE	–	–	27	28	20/1	–	SPARE
SPARE	–	–	29	30	20/1	–	SPARE

KEY NOTES:

1. DISCONNECT & REMOVE THE EXISTING 5KV GEAR & ASSOCIATED WIRING/CONDUITS & ELECTRICAL DUCTS AFTER THE NEW GEAR IS INSTALLED & OPERATIONAL. SAW CUT CONCRETE PAD TO MATCH THE NEW MVMCC-1 & MVMCC-2 DIMENSIONS.
2. DISCONNECT & REMOVE THE EXISTING 208V SWITCHBOARD/TRANSFORMER & ASSOCIATED WIRING/CONDUITS AFTER NEW 480V MCC-1 & MCC-2 ARE INSTALLED & OPERATIONAL. SAW CUT & REMOVE THE EXISTING CONCRETE PAD. FINISH THE FLOOR TO MATCH EXISTING.
3. DISCONNECT & REMOVE THE EXISTING 5KV MCC & ASSOCIATED WIRING/CONDUITS AFTER NEW 5KV MCC IS INSTALLED AND OPERATIONAL.
4. DISCONNECT & REMOVE THE EXISTING 5KV MCC & ASSOCIATED WIRING/CONDUITS AFTER NEW 5KV MCC IS INSTALLED AND OPERATIONAL.
5. EXISTING 5KV STANDBY GENERATOR TO REMAIN.
6. EXISTING HIGH SERVICE PUMP/MOTOR TO BE REFURBISHED.
7. EXISTING HIGH SERVICE PUMP/MOTOR #2 TO BE REPLACED.
8. EXISTING WASHWATER PUMP TO BE REPLACED. DISCONNECT & REMOVE THE ASSOCIATED WIRING & CONDUIT.
9. EXISTING UNDERGROUND DUCT BANKS, WIRING/CONDUITS TO BE DISCONNECTED & REMOVED AFTER NEW U.G DUCT BANKS ARE INSTALLED & OPERATIONAL.
10. EXISTING LIGHTING FIXTURE & ASSOCIATED WIRING/CONDUITS TO BE DISCONNECTED & REMOVED.
11. REFER TO DEMOLITION NOTES ON SHEET E-1 FOR DETAILED REQUIRMENTS.
12. DISCONNECT & REMOVE ALL EXISTING WATER & GAS PIPING/CONDUITS ON THE NORTHEAST WALL AS REQUIRED.
13. DISCONNECT & REMOVE EXISTING ELECTRICAL PANEL 'J'/DISCONNECT SWITCHES, HVAC CONTROL BOXES AS REQUIRED.
14. EXISTING ELECTRICAL PANEL & ASSOCIATED WIRING/CONDUITS TO BE DISCONNECTED & REMOVED.
15. EXISTING UNDERGROUND CONDUITS & EXTERIOR PULL BOX TO REMAIN.
16. EXISTING INTERIOR PULL BOXES & ASSOCIATED WIRING/CONDUITS TO BE REMOVED.
17. EXISTING PULL BOXES TO REMAIN (TYP. OF 5). DISCONNECT & REMOVE THE POWER & CONTROL WIRING BETWEEN EACH PULL BOX & THE RESPECTIVE HIGH SERVICE PUMP (HSP). THE IN-SLAB CONDUITS BETWEEN THE PULL BOXES & PUMPS TO REMAIN AND TO BE REUSED FOR NEW POWER & SIGNAL WIRING. DISCONNECT ALL POWER & SIGNAL WIRING & CONDUITS BETWEEN THE PULL BOXES AND THE 5KV MCCS. SEE DIAMOND NOTES 3 & 4.
18. EXISTING EXTERIOR PULLBOX & ASSOCIATED UNDERGROUND CONDUITS TO BE REMOVED.
19. DISCONNECT & REMOVE THE MAIN CONTROL PANEL (DPC) & ASSOCIATED FIELD WIRING/CONDUIT AFTER THE NEW SCADA IS INSTALLED & FULLY OPERATIONAL.
20. DISCONNECT & REMOVE THE MAIN PLC-7 (MTU) & ASSOCIATED WIRING/CONDUIT AFTER THE NEW PLC-7 IS INSTALLED, WIRED & FULLY OPERATIONAL.
21. DISCONNECT & REMOVE THE NETWORK CABINET & ASSOCIATED WIRING/CONDUIT AFTER THE NEW SCADA IS INSTALLED & FULLY OPERATIONAL. PROVIDE TEMPORARY ETHERNET CONNECTION TO THE EXISTING RELOCATED NETWORK CABINET AS REQUIRED. SEE NOTE 21 ON SHEET E-53.
22. RELOCATE THE EXISTING BATTERY CHARGING EQUIPMENT TEMPORARILY TO OUTSIDE. SEE NOTE 24 ON SHEET E-53.

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	3/16" = 1'-0"

HIGH SERVICE PUMP ROOM DEMOLITION PLAN

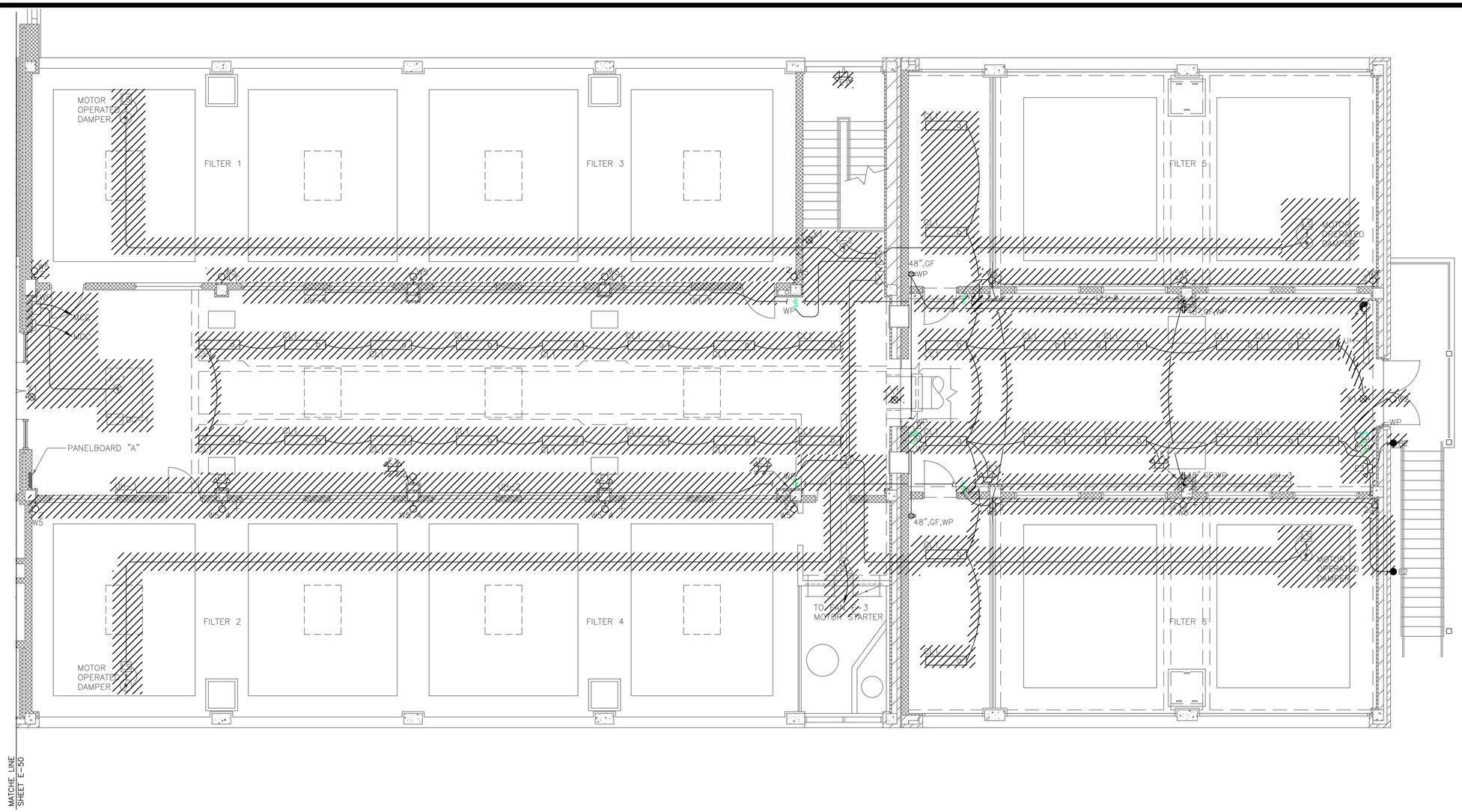
E-45

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-45 HIGH SERVICE PUMP ROOM DEMOLITION PLAN.dwg 4/15/2022 2:42:47 PM Randy Podmore

PLOTTED: 4/18/2022 8:30:06 AM

P:\PR58982\Cadd\Sheets\E-Sheets\E-46 FILTER ROOM ELECTRICAL DEMOLITION POWER AND LIGHTING UPPER.dwg 4/15/2022 7:06:27 AM Randy Podmore



KEY NOTES:

1. UNLESS OTHERWISE NOTED, DISCONNECT & REMOVE THE EXISTING ELECTRICAL EQUIPMENT & ASSOCIATED WIRING/CONDUITS INCLUDING INTERIOR, EXTERIOR, EMERGENCY & EXIT LIGHTING FIXTURES, WIRING DEVICES, DISCONNECT SWITCHES, BOXES, HVAC FEEDER & BRANCH CIRCUIT WIRING/CONDUITS AND INSTRUMENTATION..
2. REFER TO DEMOLITION NOTES ON SHEET E-1 FOR DETAILED REQUIREMENTS.

FILTER ROOM ELECTRICAL DEMOLITION POWER AND LIGHTING UPPER PLAN

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

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

FILTER ROOM ELECTRICAL POWER & LIGHTING UPPER PLAN

E-46

SHEET: OF

PLOTTED: 4/18/2022 8:30:19 AM
P:\PR58982\Cadd\Sheets\E-Sheets\E-47 FILTER GALLERY ELECTRICAL DEMOLITION POWER & LIGHTING LOWER PLAN.dwg 4/15/2022 7:10:11 AM Randy Podmore

SEE "CLEARWELL ACCESS – LOWER PLAN" ON THIS SHEET FOR LIGHTING AND POWER REQUIREMENTS

FILTER 1
FILTER 2
FILTER 3
FILTER 4
FILTER 5
FILTER 6

K2-19
K2-20
K2-21
K2-22
K2-23
K2-24
K2-25
K1-1/3/5
I-18
I-30
MSB, M5B
WP,GF,48"@ +70
48" GF WP @
WP,GF,48"
FOR SUMP
SUMP PUMP 1/3 HP, 120V
CL1
CL2
CL3
CL4
CL5
CL6
CL7
CL8
CL9
CL10
CL11
CL12
CL13
CL14
CL15
CL16
CL17
CL18
CL19
CL20
CL21
CL22
CL23
CL24
CL25
CL26
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CL28
CL29
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CL31
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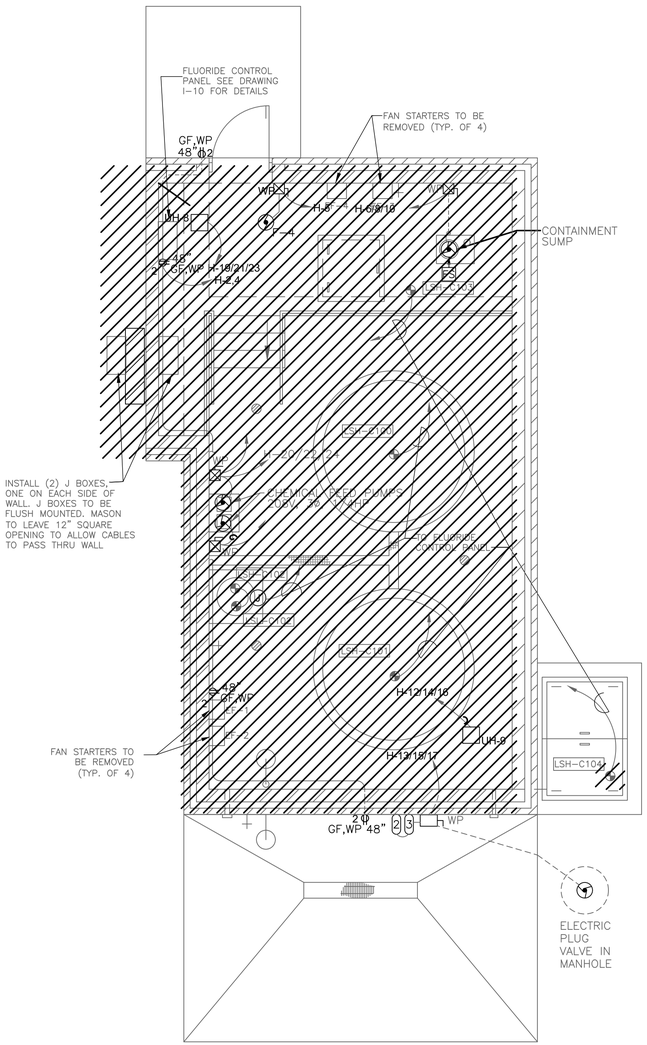
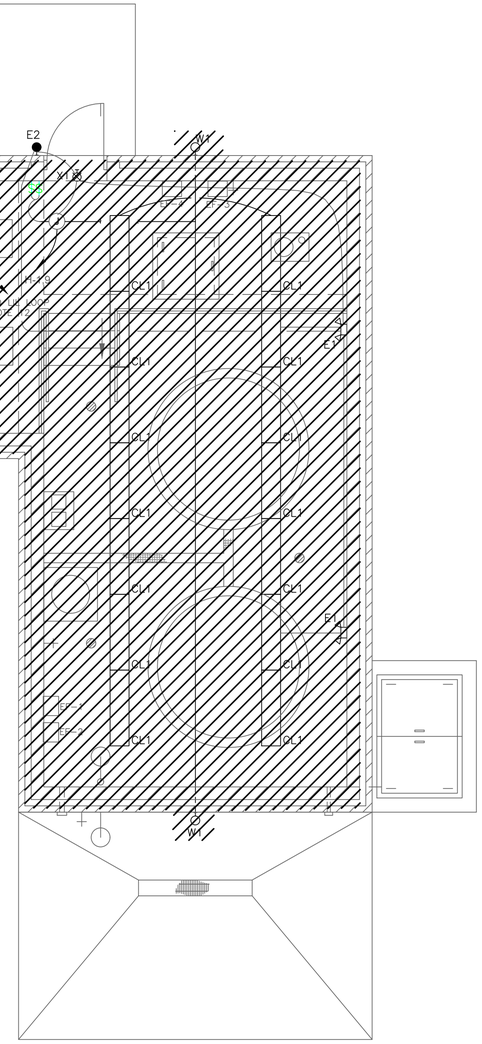
CL34
CL35
CL36
CL37
CL38
CL39
CL40

PLOTTED: 4/18/2022 8:30:27 AM

P:\PR58982\Cadd\Sheets\E-Sheets\E-48 FLUORIDE BLDG ELECTRICAL DEMOLITION POWER & LIGHTING PLAN.dwg 4/15/2022 2:48:40 PM Randy Podmore



ELECTRICAL POWER PLAN



ELECTRICAL LIGHTING PLAN

KEY NOTES:

1. UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT AND ASSOCIATED WIRE AND CONDUITS INCLUDING INTERIOR AND EXTERIOR LIGHTING, RECEPTACLES, WIRING DEVICES, DISCONNECTED SWITCHES, ELECTRICAL PANELS, MOTOR CONTROL CENTERS, DRY TYPE TRANSFORMERS, P.F. CAPACITORS, PULL BOXES, CONTROLS, INSTRUMENTATION, HVAC WIRING SYSTEMS, ETC. THROUGHOUT THE BUILDING AT BOTH LEVELS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL ELECTRICAL EQUIPMENT UNLESS TO DO OTHERWISE DIRECTED BY THE OWNER.
3. COORDINATE WITH ENGINEER IN FIELD BEFORE ELECTRICAL DEMOLITION.
4. REFER TO DEMOLITION NOTES ON SHEET E-1 FOR DETAILED REQUIREMENTS.

FLUORIDE BUILDING ELECTRICAL DEMOLITION POWER AND LIGHTING PLAN

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

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NO.	DESCRIPTION	DATE
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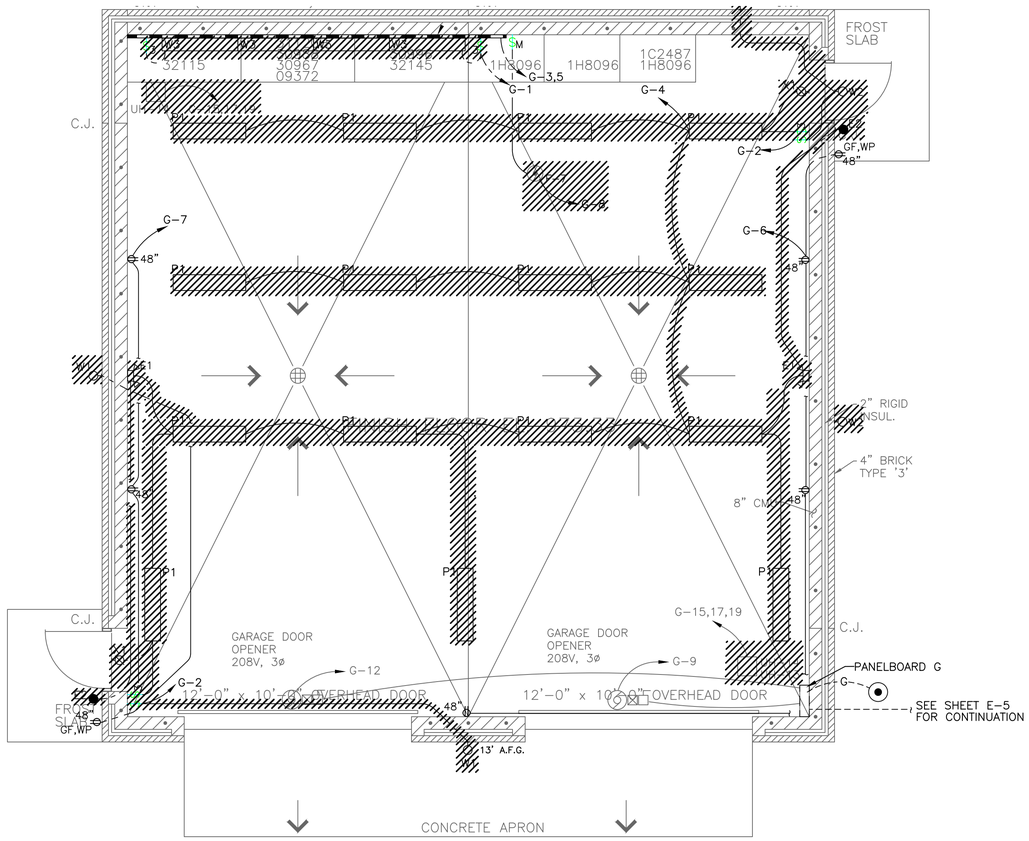
SCALE:	AS NOTED

FLUORIDE BLDG ELECTRICAL DEMOLITION POWER & LIGHTING PLAN

E-48

SHEET: OF

PLOTTED: 4/18/2022 8:30:34 AM



KEY NOTES:

1. UNLESS OTHERWISE NOTED, DISCONNECT & REMOVE THE EXISTING LIGHTING FIXTURE & ASSOCIATED WIRING/CONDUITS INCLUDING INTERIOR, EXTERIOR, EMERGENCY & EXIT LIGHTING FIXTURES, BOXES, HVAC FEEDER & BRANCH CIRCUIT WIRING/CONDUITS.
2. REFER TO DEMOLITION NOTES ON SHEET E-1 FOR DETAILED REQUIREMENTS.

GARAGE ELECTRICAL POWER AND LIGHTING PLAN - DEMOLITION

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

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NO.	DESCRIPTION	DATE
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SCALE:	1/4" = 1'-0"

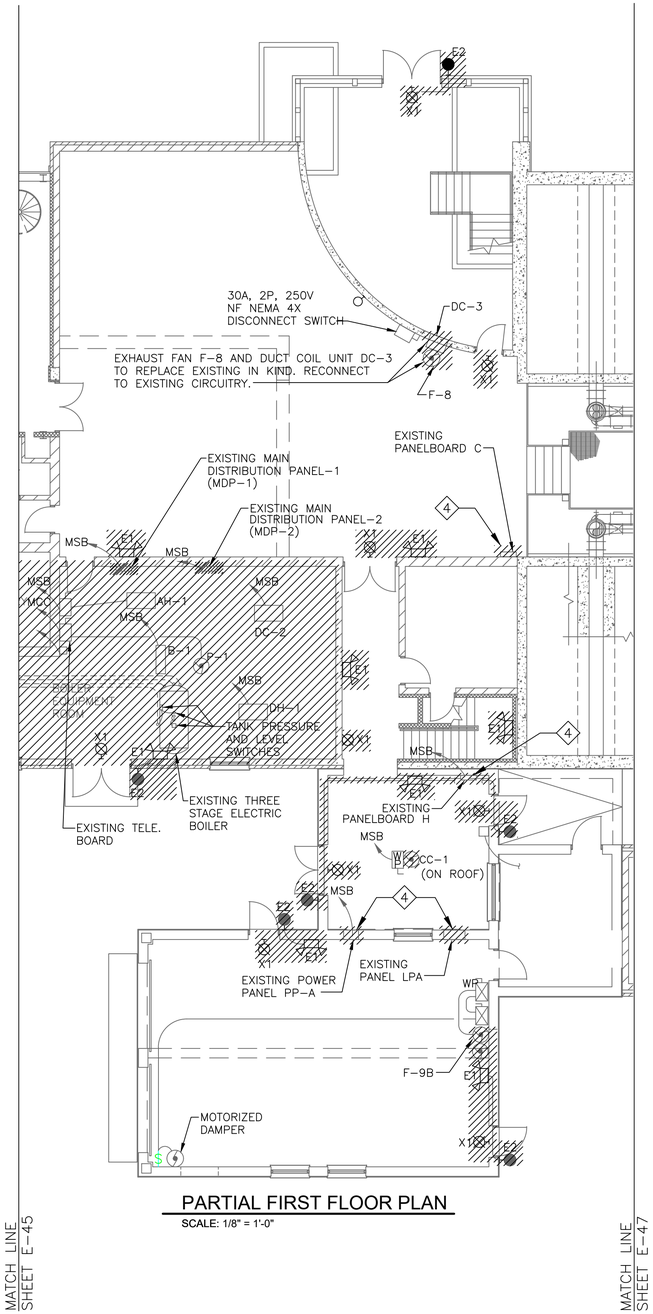
GARAGE ELECTRICAL DEMOLITION POWER & LIGHTING PLAN

E-49

SHEET: OF

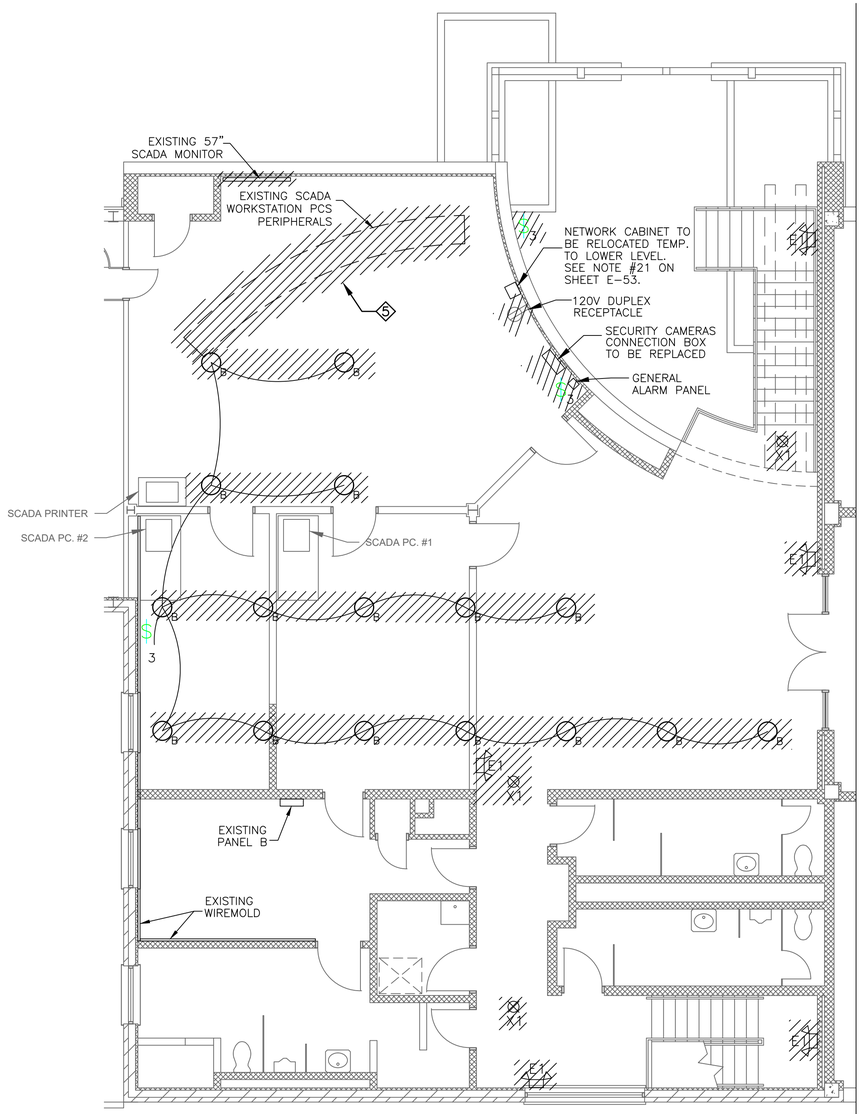
P:\PR58982\Cadd\Sheets\E-Sheets\E-49 GARAGE ELECTRICAL DEMOLITION POWER & LIGHTING PLAN.dwg 4/15/2022 2:49:20 PM Randy Podmore

PLOTTED: 4/18/2022 8:30:43 AM
P:\PR58982\Cadd\Sheets\E-Sheets\E-50 PARTL FILTER ELECTRICAL DEMOLITON POWER & LIGHTING UPPER LOWER.dwg 4/15/2022 3:47:18 PM Randy Podmore



PARTIAL FIRST FLOOR PLAN

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



PARTIAL SECOND FLOOR PLAN

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

KEY NOTES:

1. UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT AND ASSOCIATED WIRE AND CONDUITS INCLUDING INTERIOR AND EXTERIOR LIGHTING, RECEPTACLES, WIRING DEVICES, DISCONNECTED SWITCHES, ELECTRICAL PANELS, MOTOR CONTROL CENTERS, DRY TYPE TRANSFORMERS, P.F. CAPACITORS, PULL BOXES, CONTROLS, INSTRUMENTATION, HVAC WIRING SYSTEMS, ETC. THROUGHOUT THE BUILDING AT BOTH LEVELS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL ELECTRICAL EQUIPMENT UNLESS TO DO OTHERWISE DIRECTED BY THE OWNER.
3. COORDINATE WITH ENGINEER IN FIELD BEFORE ELECTRICAL DEMOLITION.
4. EXISTING ELECTRICAL PANEL & ASSOCIATED WIRING/CONDUITS TO BE DISCONNECTED & REMOVED.
5. REFER TO SHEET I-2 FOR SCADA DEMOLITION NOTES.
6. REFER TO DEMOLITION NOTES ON E-1 FOR DETAILED REQUIREMENTS.

PARTIAL FILTER BUILDING ELECTRICAL DEMOLITION POWER AND LIGHTING UPPER AND LOWER PLANS

SCALE: NONE

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NO.	DESCRIPTION REVISIONS	DATE

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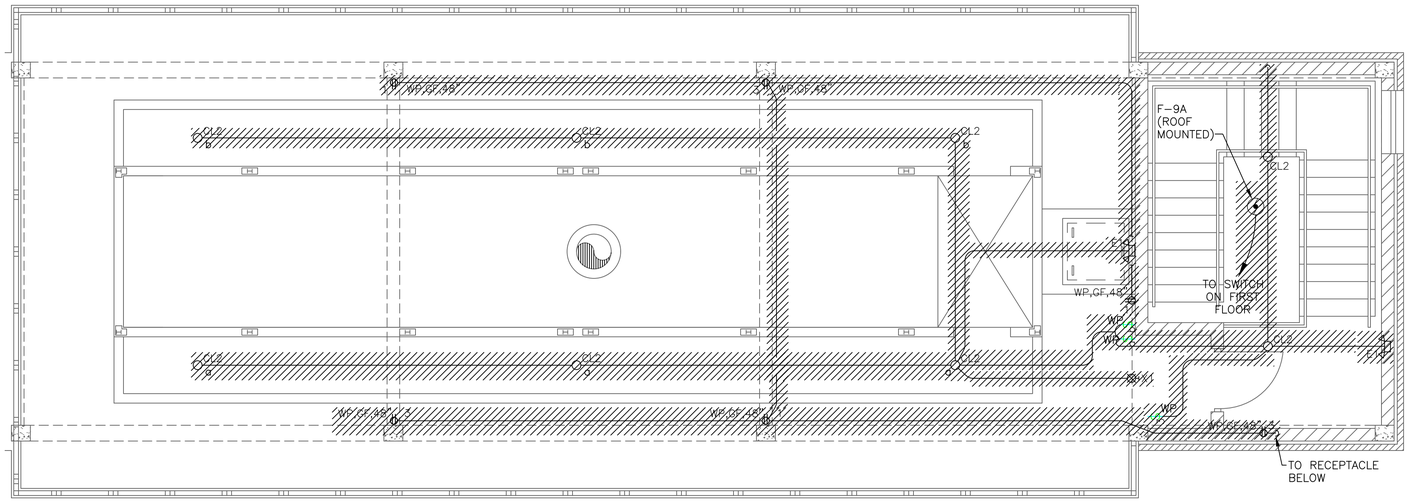
SCALE:	AS NOTED

PARTIAL FILTER BLDG ELECTRICAL DEMOLITION POWER & LIGHTING UPPER & LOWER PLANS

E-50

SHEET: OF

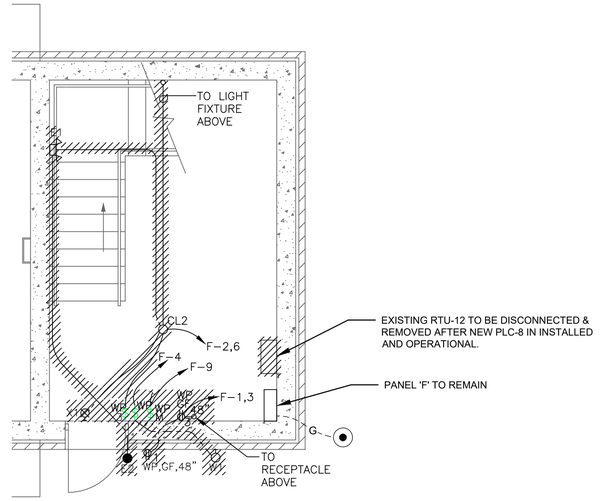
PLOTTED: 4/18/2022 8:30:50 AM



ELECTRICAL POWER AND LIGHTING UPPER PLAN

KEY NOTES:

1. UNLESS OTHERWISE NOTED, DISCONNECT & REMOVE THE EXISTING ELECTRICAL EQUIPMENT & ASSOCIATED WIRING/CONDUITS INCLUDING INTERIOR, EXTERIOR, EMERGENCY & EXIT LIGHTING FIXTURES, WIRING DEVICES, DISCONNECT SWITCHES, BOXES, HVAC FEEDER & BRANCH CIRCUIT WIRING/CONDUITS, RTU–12 AND INSTRUMENTATION.
2. REFER TO DEMOLITION NOTES ON SHEET E–1 FOR DETAILED REQUIREMENTS.



ELECTRICAL POWER AND LIGHTING LOWER PLAN

EAST AERATOR BUILDING ELECTRICAL DEMOLITION POWER & LIGHTING PLANS
SCALE: 1"=1/4"

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SCALE:	AS NOTED

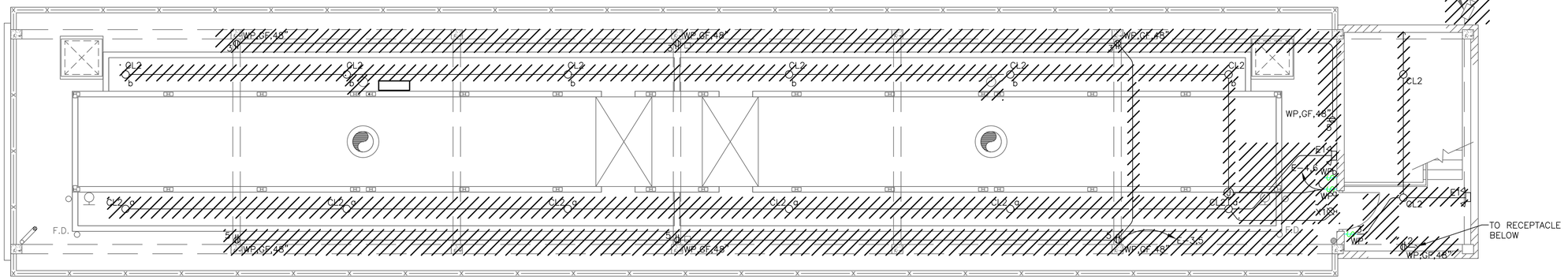
AERATOR BLDG
ELECTRICAL
DEMOLITION POWER
& LIGHTING PLAN

E-51

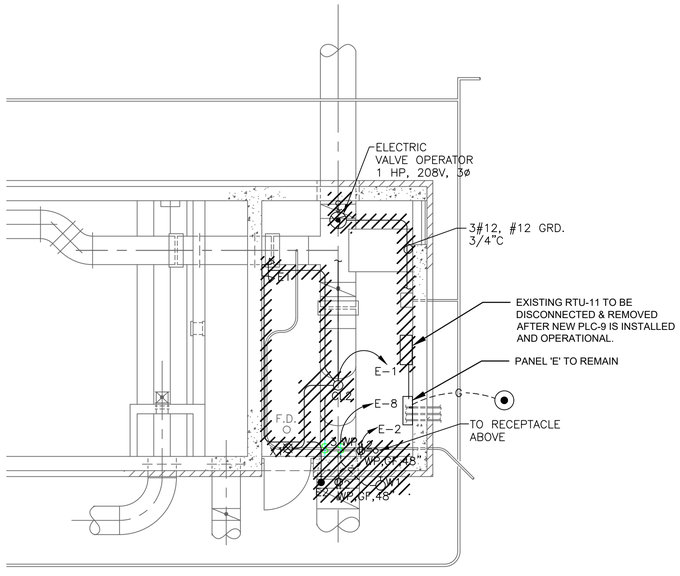
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-51 EAST AERATOR BLDG ELECTRICAL DEMO POWER & LIGHTING PLAN.dwg 4/15/2022 2:52:13 PM Randy Podmore

PLOTTED: 4/18/2022 8:30:57 AM



ELECTRICAL POWER AND LIGHTING UPPER PLAN



ELECTRICAL POWER AND LIGHTING LOWER PLAN

KEY NOTES:

1. UNLESS OTHERWISE NOTED, DISCONNECT & REMOVE THE EXISTING ELECTRICAL EQUIPMENT & ASSOCIATED WIRING/CONDUITS INCLUDING INTERIOR, EXTERIOR, EMERGENCY & EXIT LIGHTING FIXTURES, WIRING DEVICES, DISCONNECT SWITCHES, BOXES, HVAC FEEDER & BRANCH CIRCUIT WIRING/CONDUITS, RTU-11 AND INSTRUMENTATION.
2. REFER TO DEMOLITION NOTES ON SHEET E-1 FOR DETAILED REQUIREMENTS. .

WEST AERATOR BUILDING DEMOLITION POWER & LIGHTING UPPER AND LOWER PLANS

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

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SCALE:	AS NOTED

EXISTING AERATOR BLDG ELECTRICAL DEMO POWER & LIGHTING UPPER & LOWER PLAN

E-52

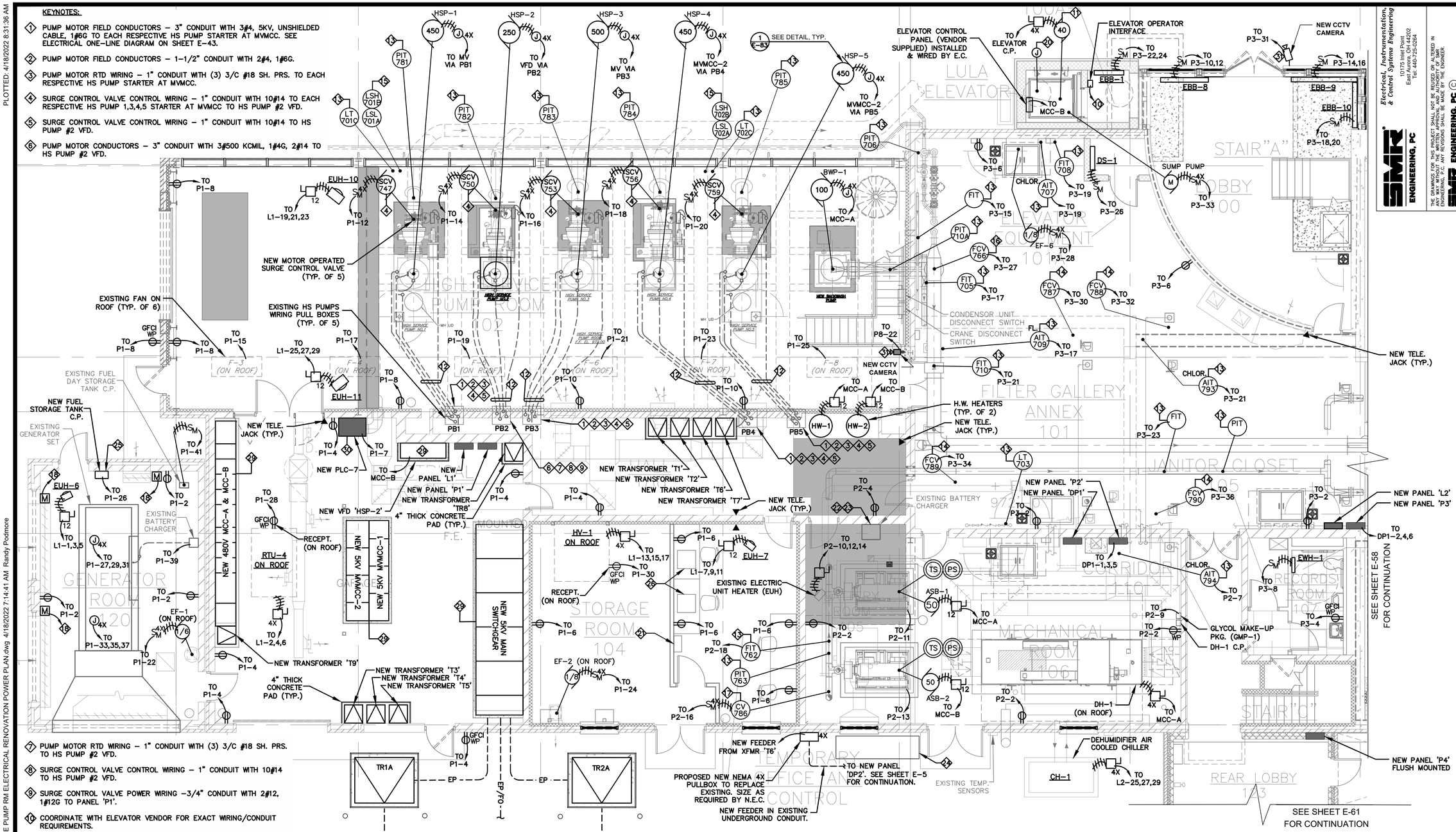
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-52 WEST AERATOR BLDG ELECTRICAL DEMO PP & LP UPPER & LOWER PLAN.dwg 4/15/2022 2:53:54 PM Randy Podmore

PLOTTED: 4/18/2022 8:31:36 AM

KEYNOTES:

1. PUMP MOTOR FIELD CONDUCTORS – 3" CONDUIT WITH 3#4, 5KV, UNSHIELDED CABLE, 1#6G TO EACH RESPECTIVE HS PUMP STARTER AT MVMCC. SEE ELECTRICAL ONE-LINE DIAGRAM ON SHEET E-43.
2. PUMP MOTOR FIELD CONDUCTORS – 1-1/2" CONDUIT WITH 2#4, 1#6G.
3. PUMP MOTOR RTD WIRING – 1" CONDUIT WITH (3) 3/C #18 SH. PRS. TO EACH RESPECTIVE HS PUMP STARTER AT MVMCC.
4. SURGE CONTROL VALVE CONTROL WIRING – 1" CONDUIT WITH 10#14 TO EACH RESPECTIVE HS PUMP 1,3,4,5 STARTER AT MVMCC TO HS PUMP #2 VFD.
5. SURGE CONTROL VALVE CONTROL WIRING – 1" CONDUIT WITH 10#14 TO HS PUMP #2 VFD.
6. PUMP MOTOR CONDUCTORS – 3" CONDUIT WITH 3#500 KCMIL, 1#4G, 2#14 TO HS PUMP #2 VFD.



7. PUMP MOTOR RTD WIRING – 1" CONDUIT WITH (3) 3/C #18 SH. PRS. TO HS PUMP #2 VFD.
8. SURGE CONTROL VALVE CONTROL WIRING – 1" CONDUIT WITH 10#14 TO HS PUMP #2 VFD.
9. SURGE CONTROL VALVE POWER WIRING –3/4" CONDUIT WITH 2#12, 1#12G TO PANEL 'P1'.
10. COORDINATE WITH ELEVATOR VENDOR FOR EXACT WIRING/CONDUIT REQUIREMENTS.
11. 1-1/2" CONDUIT WITH 3#4, 1#6G, 6#14.
12. EXISTING IN-SLAB POWER & SIGNAL CONDUIT WITH NEW POWER & SIGNAL WIRING. REFER TO ONE-LINE DIAGRAMS.
13. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO PLC-7
14. 3/4" CONDUIT WITH 10#14 TO PLC-7.
15. 3/4" CONDUIT WITH 4#14 TO PLC-7.
16. 3/4" CONDUIT WITH (2) 2/C #18 SH. PR. & 3/4" CONDUIT WITH 8#14 TO PLC-7.
17. 3/4" CONDUIT WITH 8#14 TO PLC-7.
18. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EXHAUST FAN OR GENERATOR CONTROL PANEL.
19. REFER TO I-SHEETS FOR INSTRUMENTATION INSTALLATION DETAILS.
20. 3/4" CONDUIT WITH TELEPHONE CABLE TO TTB.
21. EXISTING RELOCATED TEMPORARY NETWORK CABINET. EXTEND THE EXISTING INCOMING INTERNET SERVICE TO THE NETWORK CABINET AS REQUIRED.
22. THE EXISTING BATTERY CHARGE TO REMAIN TEMPORARILY & SHALL BE DISCONNECTED & REMOVED AFTER NEW EMERGENCY LIGHTS ARE INSTALLED & THE NEW H.S. PUMPS SURGE CONTROL VALVES INSTALLED & OPERATIONAL.
23. TEMPORARY 1" CONDUIT WITH 2#6 TO RELOCATED BATTERY RACK.
24. TEMPORARILY RELOCATED BATTERY RACK IN A TEMPORARY WOOD SHED.
25. 3/4" CONDUIT WITH 4#14 TO PLC-7.
26. EXISTING RELOCATED SCADA WORKSTATION EQUIPMENT. SEE NOTES ON SHEET I-2.
27. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4-20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J-BOXES, ETC. SHALL BE NEMA 4X NON-METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.
28. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
29. REFER TO I/O SCHEDULES FOR SIGNAL WIRING/CONDUIT REQUIREMENTS.
30. 1" CONDUIT WITH FIBER OPTIC CABLE TO NETWORK CABINET.
31. 3/4" CONDUIT W/CAT6e CABLE TO SEC. SYSTEM PANEL IN CONTROL ROOM.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

HIGH SERVICE PUMP ROOM FIRST FLOOR RENOVATION POWER PLAN ELEV. 972

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

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 14202
TEL: 1-407-252-0084

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	3/16" = 1'-0"

HIGH SERVICE PUMP RM ELECTRICAL RENOVATION POWER PLAN

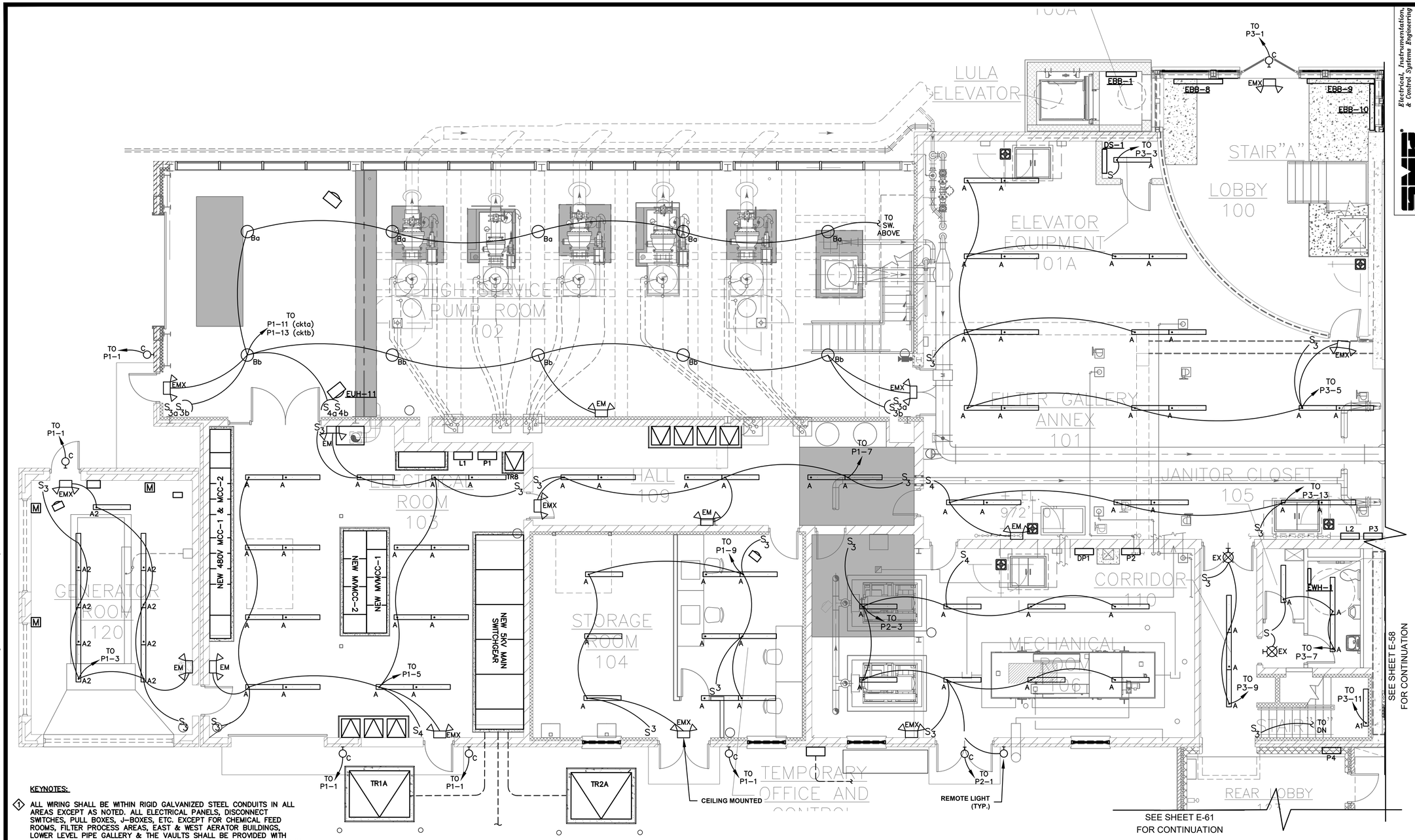
E-53

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-53 HIGH SERVICE PUMP RM ELECTRICAL RENOVATION POWER PLAN.dwg 4/18/2022 7:14:41 AM Randy Podmore

PLOTTED: 4/18/2022 8:32:13 AM

P:\PR58982\Cadd\Sheets\E-Sheets\E-54 HIGH SERVICE PUMP RM ELECTRICAL RENOVATION LIGHTING PLAN.dwg 4/16/2022 5:12:13 PM Randy Podmore



KEYNOTES:

1. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
2. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4-20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J-BOXES, ETC. SHALL BE NEMA 4X NON-METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.

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HIGH SERVICE PUMP ROOM FIRST FLOOR RENOVATION LIGHTING PLAN ELEV. 972

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

SMR ENGINEERING, PC
Electrical, Instrumentation, & Control Systems Engineering
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0264

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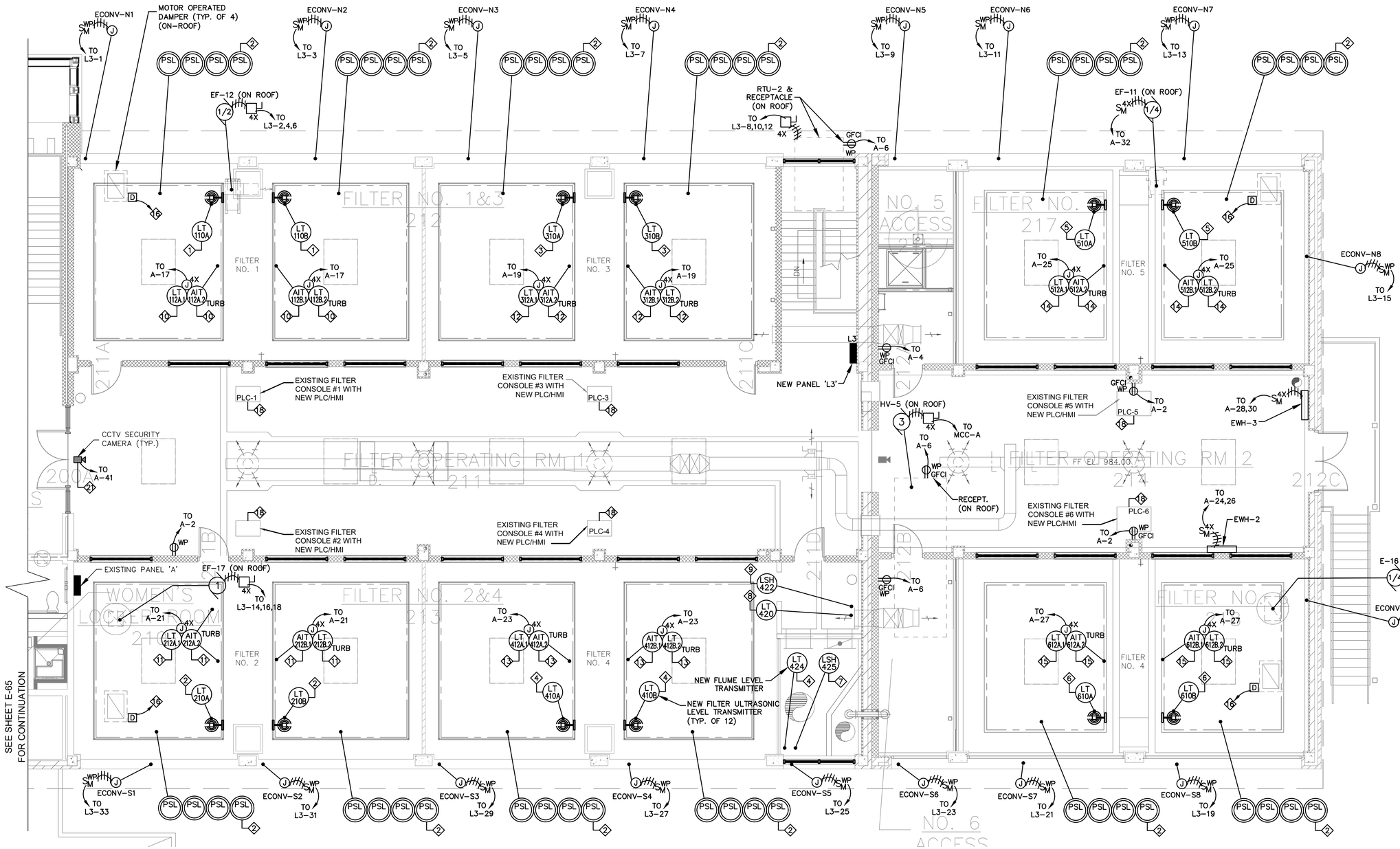
HIGH SERVICE PUMP RM ELECTRICAL RENOVATION LIGHTING PLAN

E-54

SHEET: OF

PLOTTED: 4/18/2022 8:32:47 AM



KEYNOTES:

1. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-1.
2. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-2.
3. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-3.
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-4.
5. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-5.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-6.
7. 3/4" CONDUIT WITH 2#14 TO PLC-4.
8. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-5.
9. 3/4" CONDUIT WITH 2#14 TO PLC-5.
10. 3/4" CONDUIT WITH (2) 2/C #18 SH. PR. TO PLC-1.
11. 3/4" CONDUIT WITH (2) 2/C #18 SH. PR. TO PLC-2.
12. 3/4" CONDUIT WITH (2) 2/C #18 SH. PR. TO PLC-3
13. 3/4" CONDUIT WITH (2) 2/C #18 SH. PR. TO PLC-4.
14. 3/4" CONDUIT WITH (2) 2/C #18 SH. PR. TO PLC-5.
15. 3/4" CONDUIT WITH (2) 2/C #18 SH. PR. TO PLC-6.
16. 3/4" CONDUIT WITH 2#12, 1#12G TO THE RESPECTIVE HVAC UNIT.
17. REFER TO I-SHEETS FOR INSTRUMENTATION INSTALLATION DETAILS.
18. REFER TO SCADA BLOCK DIAGRAM, SHEET I-3 & SPECS FOR FILTER CONSOLES, HARDWARE/SOFTWARE UPGRADE REQUIREMENTS.
19. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
20. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4-20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J-BOXES, ETC. SHALL BE NEMA 4X NON-METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.
21. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL IN CONTROL ROOM.

GENERAL NOTES:

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FILTER OPERATING ROOM SECOND FLOOR RENOVATION POWER PLAN AT 984.0

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

SMR ENGINEERING, PC
Electrical, Instrumentation, & Control Systems Engineering
10175 Inlet Point
East Aurora, OH 44202
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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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

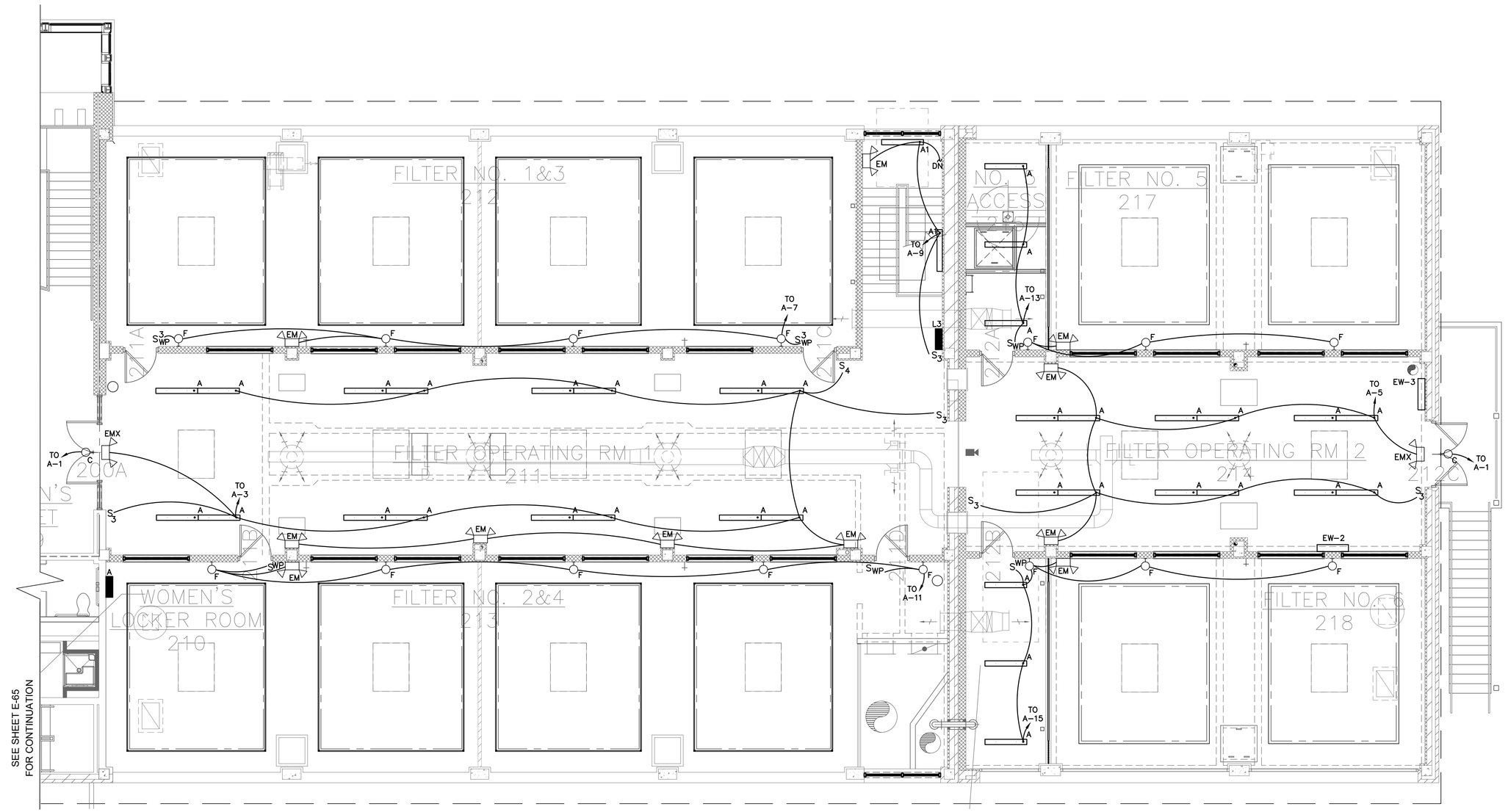
FILTER GALLERY ELECTRICAL RENOVATION 2ND FL POWER PLAN EL. 979.5

E-55

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-55 FILTER OPERATING ROOM RENOVATION POWER PLAN EL. 984.0.dwg 4/17/2022 7:11:34 PM Randy Podmore

PLOTTED: 4/18/2022 8:33:23 AM



KEYNOTES:

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FILTER OPERATING ROOM SECOND FLOOR RENOVATION LIGHTING PLAN ELEV. 984.0

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

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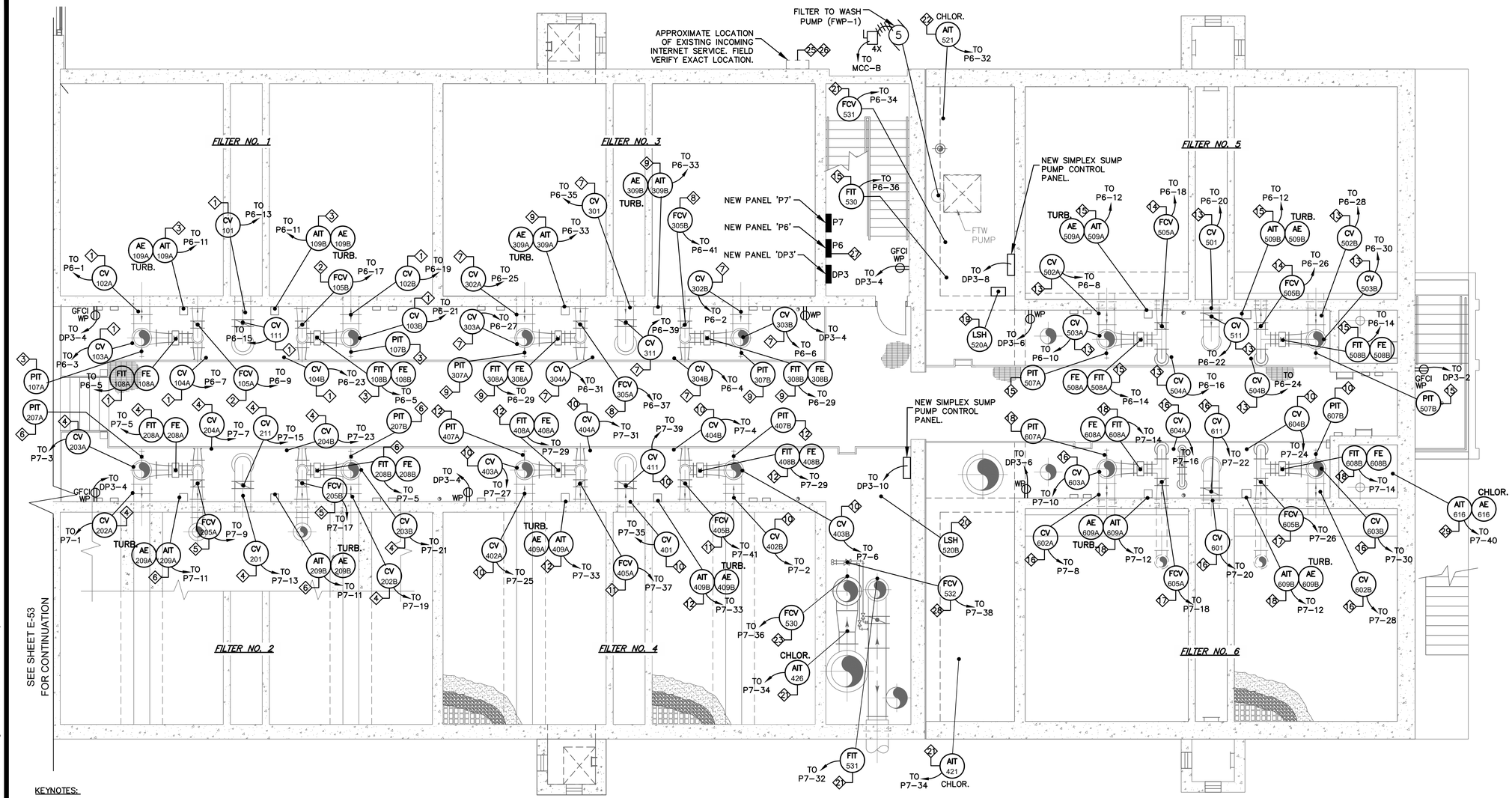
FILTER OPERATING ROOM ELECTRICAL RENOVATION LIGHTING PLAN EL. 984.0

E-56

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-56 FILTER OPERATING ROOM RENOVATION LIGHTING PLAN EL. 984.0.dwg 4/15/2022 3:11:17 PM Randy Podmore

PLOTTED: 4/18/2022 8:33:57 AM
P:\PR58982\Cadd\Sheets\E-Sheets\E-57 FILTER GALLERY ELECTRICAL RENOVATION POWER PLAN EL 975.dwg 4/18/2022 6:23:31 AM Randy Podmore



KEYNOTES:

1. 3/4" CONDUIT WITH 10#14 TO FILTER CONSOLE #1.
2. 3/4" CONDUIT WITH 10#14 & 3/4" CONDUIT WITH (2) 2/C #18 SH. PRS. TO FILTER CONSOLE #1.
3. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO FILTER CONSOLE #1.
4. 3/4" CONDUIT WITH 10#14 TO FILTER CONSOLE #2.
5. 3/4" CONDUIT WITH 10#14 & 3/4" CONDUIT WITH (2) 2/C #18 SH. PRS. TO FILTER CONSOLE #2.
6. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO FILTER CONSOLE #2.
7. 3/4" CONDUIT WITH 10#14 TO FILTER CONSOLE #3.
8. 3/4" CONDUIT WITH 10#14 & 3/4" CONDUIT WITH (2) 2/C #18 SH. PRS. TO FILTER CONSOLE #3.
9. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO FILTER CONSOLE #3.
10. 3/4" CONDUIT WITH 10#14 TO FILTER CONSOLE #4.
11. 3/4" CONDUIT WITH 10#14 & 3/4" CONDUIT WITH (2) 2/C #18 SH. PRS. TO FILTER CONSOLE #4.
12. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO FILTER CONSOLE #4.
13. 3/4" CONDUIT WITH 10#14 TO FILTER CONSOLE #5.
14. 3/4" CONDUIT WITH 10#14 & 3/4" CONDUIT WITH (2) 2/C #18 SH. PRS. TO FILTER CONSOLE #5.
15. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO FILTER CONSOLE #5.
16. 3/4" CONDUIT WITH 10#14 TO FILTER CONSOLE #6.
17. 3/4" CONDUIT WITH 10#14 & 3/4" CONDUIT WITH (2) 2/C #18 SH. PRS. TO FILTER CONSOLE #6.
18. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO FILTER CONSOLE #6.
19. 3/4" CONDUIT WITH 2#14 TO PLC-4.
20. 3/4" CONDUIT WITH 2#14 TO PLC-5.
21. 3/4" CONDUIT WITH (2) 2/C #18 SHR. PR. & 3/4" CONDUIT WITH 8#14 TO PLC-5.
22. 3/4" CONDUIT WITH (2) 2/C #18 SHR. PR. TO PLC-4.
23. 3/4" CONDUIT WITH (2) 2/C #18 SHR. PR. TO PLC-5.
24. REFER TO I-SHEETS FOR INSTRUMENTATION INSTALLATION DETAILS.
25. PROVIDE TEMPRORARY INTERNET SERVICE TO THE EXISTING RELOCATED NETWORK CABINET. SEE NOTE 21 ON E-53 AND NOTES ON SHEET I-2.
26. 2" CONDUIT WITH INTERNET SERVICE TO THE NEW INTERNET SERVICE PANEL IN CONTROL ROOM. SEE SHEET E-65.
27. PROVIDE STAINLESS STEEL, NEMA 4X, WIREWAY, SIZE AS REQUIRED.
28. 3/4" CONDUIT WITH 10#14 TO PLC-5.
29. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-6.
30. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
31. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4-20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J-BOXES, ETC. SHALL BE NEMA 4X NON-METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.

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FILTER GALLERY FIRST FLOOR RENOVATION POWER PLAN ELEV. 975

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

SMR ENGINEERING, PC
Electrical, Instrumentation, & Control Systems Engineering
10175 Inlet Point
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Tel: 440-725-0084

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CITY OF CANTON, OHIO
WATER DEPARTMENT
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NO.	DESCRIPTION	DATE
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REVISIONS

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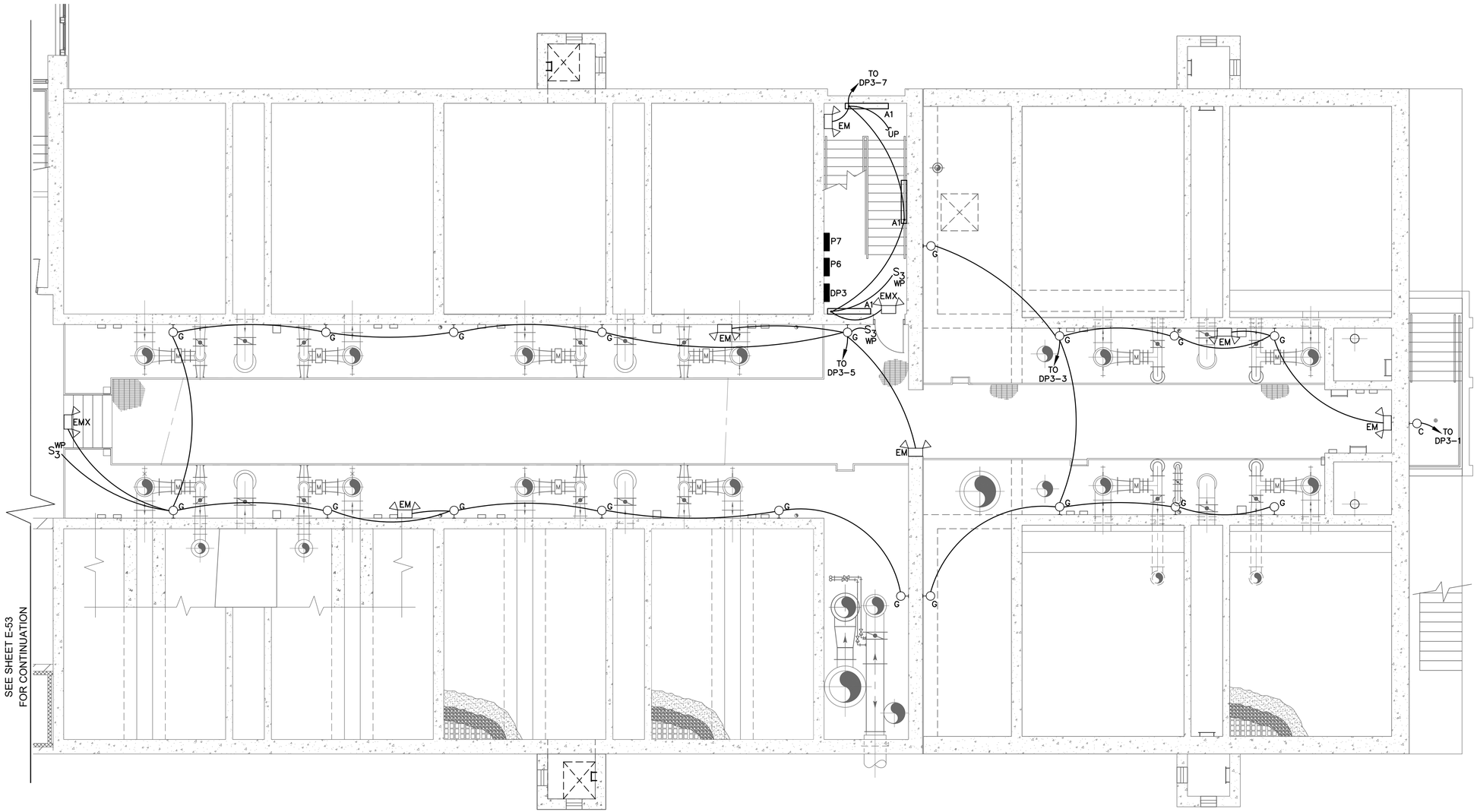
FILTER GALLERY ELECTRICAL RENOVATION POWER PLAN EL. 975

E-57

SHEET: OF

PLOTTED: 4/18/2022 8:34:33 AM



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FILTER GALLERY FIRST FLOOR RENOVATION LIGHTING PLAN ELEV. 975

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

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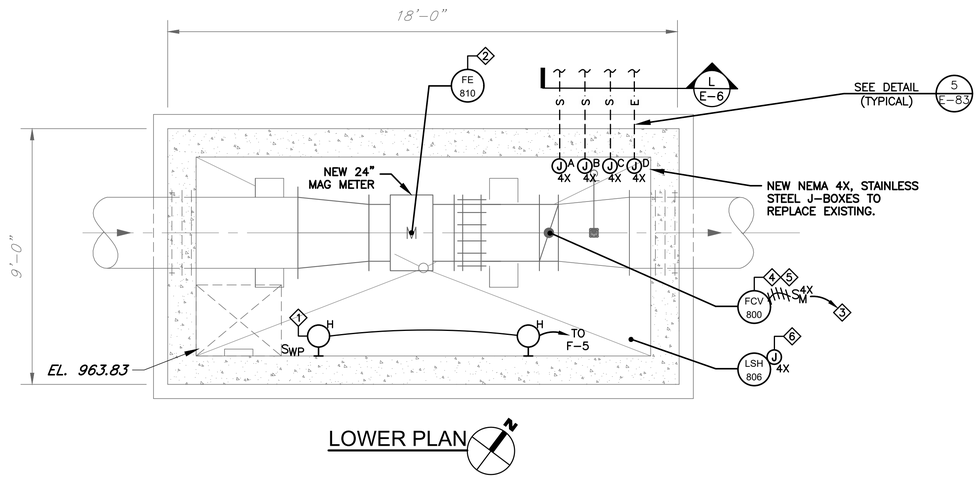
FILTER GALLERY ELECTRICAL RENOVATION LIGHTING PLAN EL. 975

E-58

SHEET: OF

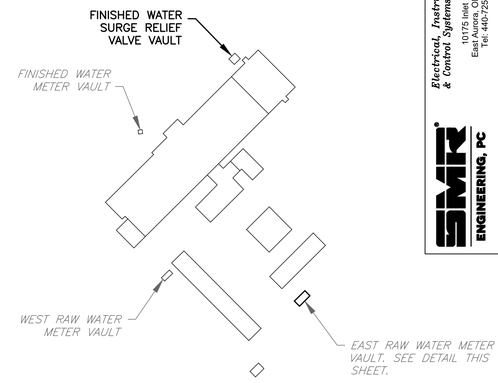
P:\PR58982\Cadd\Sheets\E-Sheets\E-58 FILTER GALLERY ELECTRICAL RENOVATION LIGHTING PLAN EL 975.dwg 4/15/2022 9:25:37 AM Randy Podmore

PLOTTED: 4/18/2022 8:34:45 AM



EAST RAW WATER METER VAULT POWER AND LIGHTING PLAN

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

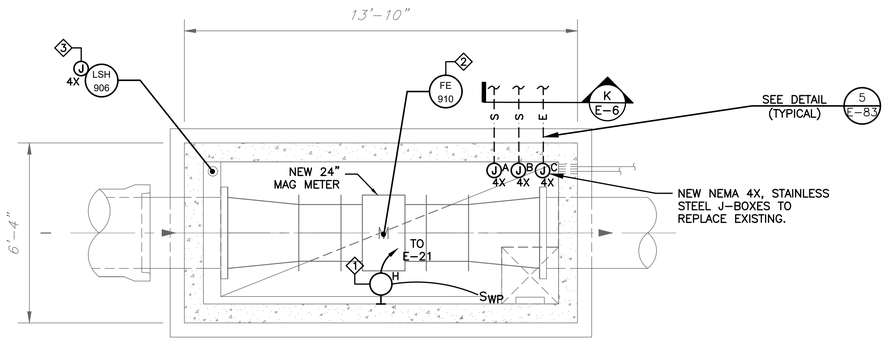


LOCATION PLAN

SCALE: NONE

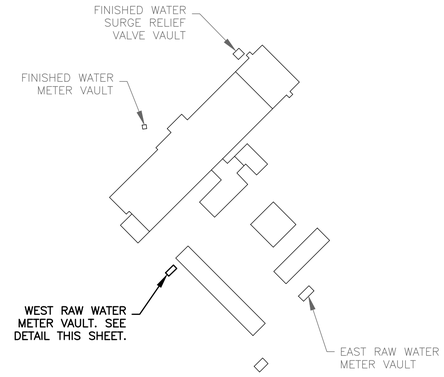
KEYNOTES:

1. 3/4" CONDUIT WITH 2#12, 1#12G TO 280/120V PANEL 'F' VIA J-BOX 'D'. PROVIDE A 15A/1P BRANCH BREAKER AS REQUIRED.
2. 1" CONDUIT WITH VENDOR SUPPLIED CABLE TO FIT-810 INSIDE EAST AERATOR BUILDING VIA J-BOX 'A'.
3. 3/4" CONDUIT WITH 2#10, 1#10G TO 208/120V PANEL 'F' VIA J-BOX 'D' PROVIDE A 20A/1P BRANCH BREAKER AS REQUIRED.
4. 3/4" CONDUIT WITH (2) 2/C #18 SH. PRS. TO PLC-8 VIA J-BOX 'B'.
5. 3/4" CONDUIT WITH 8#14 TO PLC-8 VIA J-BOX 'C'.
6. 3/4" CONDUIT WITH 2#14 TO PLC-8 VIA J-BOX 'C'.
7. REFER TO I-SHEETS FOR INSTRUMENTATION INSTALLATION DETAILS.



WEST RAW WATER METER VAULT POWER AND LIGHTING PLAN

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



LOCATION PLAN

SCALE: NONE

KEYNOTES:

1. 3/4" CONDUIT WITH 2#12, 1#12G TO 280/120V PANEL 'E' VIA J-BOX C'. PROVIDE A 15A/1P BRANCH BREAKER AS REQUIRED.
2. 1" CONDUIT WITH VENDOR SUPPLIED CABLE TO FIT-910 INSIDE WEST AERATOR BUILDING VIA J-BOX 'A'.
3. 3/4" CONDUIT WITH 2#14 TO PLC-9 VIA J-BOX 'B'.
4. REFER TO I-SHEETS FOR INSTRUMENTATION INSTALLATION DETAILS.

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

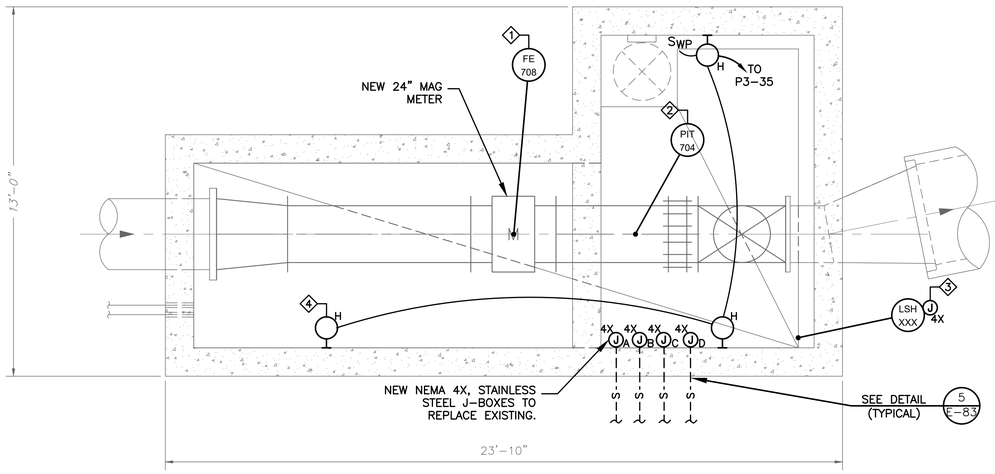
ELECTRICAL RAW WATER METER VAULTS RENOVATION POWER & LIGHTING PLAN

E-59

SHEET: OF

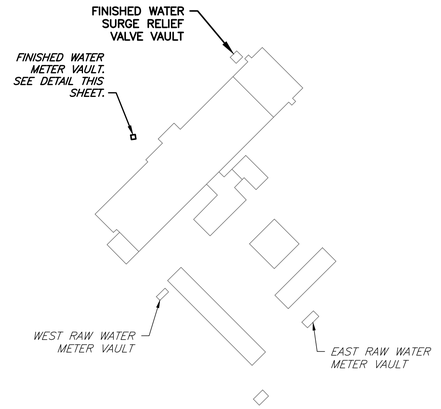
P:\PR58982\Cadd\Sheets\E-Sheets\E-59 ELECTRICAL RW METER VAULTS RENOVATION POWER & LIGHTING PLANS.dwg 4/17/2022 8:04:55 PM Randy Podmore

PLOTTED: 4/18/2022 8:34:55 AM



FINISHED WATER METER VAULT POWER & LIGHTING LOWER PLAN

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

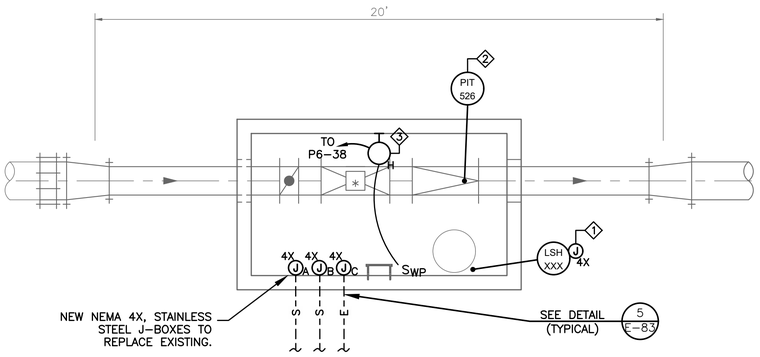


LOCATION PLAN

SCALE: NONE

KEYNOTES:

1. 1"CONDUIT WITH VENDOR SUPPLIED CABLES TO FIT-708 VIA J-BOX 'A'.
2. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-7 VIZ J-BOX 'B'.
3. 3/4" CONDUIT WITH 2#14 TO PLC-7 VIA J-BOX 'C'.
4. 3/4" CONDUIT WITH 2#12, 1#12G TO PANEL P3-35 VIA J-BOX 'D'.
5. REFER TO I-SHEETS FOR INSTRUMENTATION INSTALLATION DETAILS.



FINISHED WATER SURGE RELIEF VALVE VAULT POWER & LIGHTING LOWER PLAN

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

KEYNOTES:

1. 3/4" CONDUIT WITH 2#14 TO PLC-5 VIA J-BOX 'B'.
2. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-5 VIA J-BOX 'A'.
3. 3/4" CONDUIT WITH 2#12, 1#12G TO PANEL P6-38 VIA J-BOX 'C'.
4. REFER TO I-SHEETS FOR INSTRUMENTATION INSTALLATION DETAILS.

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WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

ELECTRICAL FINISH WATER METER VAULT RENOVATION POWER & LIGHTING PLANS

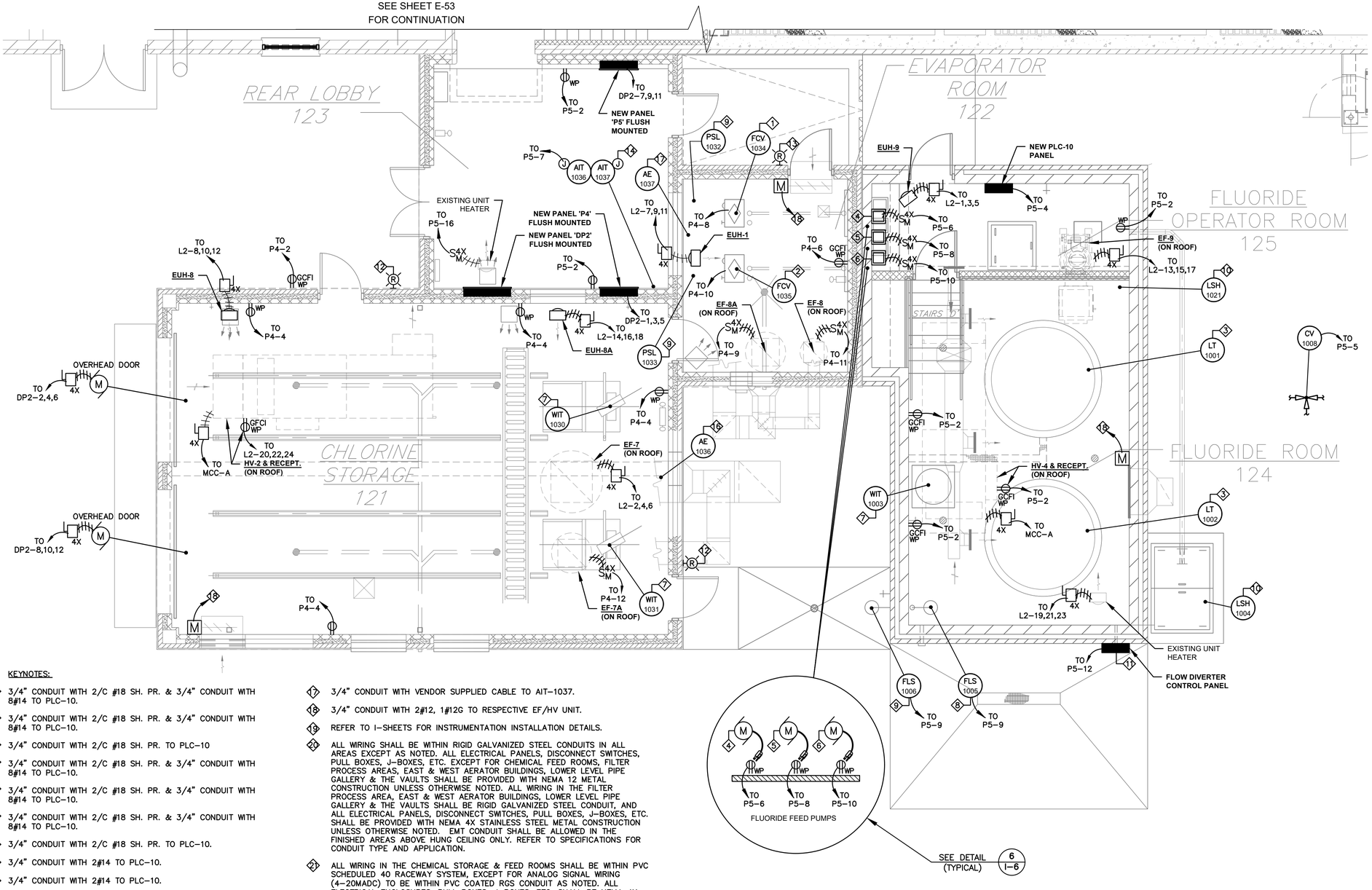
E-60

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-60 ELECTRICAL FW METER VAULT RENOVATION POWER & LIGHTING PLANS.dwg 4/17/2022 8:06:01 PM Randy Podmore

PLOTTED: 4/18/2022 8:35:30 AM
P:\PR58982\Cadd\Sheets\E-Sheets\E-61 CHLORINE STORAGE - FLUORIDE RM ELECTRICAL RENOVATION POWER PLAN.dwg 4/18/2022 7:14:30 AM Randy Podmore

SEE SHEET E-53
FOR CONTINUATION



KEYNOTES:

1. 3/4" CONDUIT WITH 2/C #18 SH. PR. & 3/4" CONDUIT WITH 8#14 TO PLC–10.
2. 3/4" CONDUIT WITH 2/C #18 SH. PR. & 3/4" CONDUIT WITH 8#14 TO PLC–10.
3. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC–10
4. 3/4" CONDUIT WITH 2/C #18 SH. PR. & 3/4" CONDUIT WITH 8#14 TO PLC–10.
5. 3/4" CONDUIT WITH 2/C #18 SH. PR. & 3/4" CONDUIT WITH 8#14 TO PLC–10.
6. 3/4" CONDUIT WITH 2/C #18 SH. PR. & 3/4" CONDUIT WITH 8#14 TO PLC–10.
7. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC–10.
8. 3/4" CONDUIT WITH 2#14 TO PLC–10.
9. 3/4" CONDUIT WITH 2#14 TO PLC–10.
10. 3/4" CONDUIT WITH 2#14 TO PLC–10.
11. 3/4" CONDUIT WITH 8#14 TO PLC–10.
12. 3/4" CONDUIT WITH 2#12, 1#12G TO AIT–1036.
13. 3/4" CONDUIT WITH 2#12, 1#12G TO AIT–1037.
14. 3/4" CONDUIT WITH 4#14 TO PLC–10.
15. NOT USED
16. 3/4" CONDUIT WITH VENDOR SUPPLIED CABLE TO AIT–1036.
17. 3/4" CONDUIT WITH VENDOR SUPPLIED CABLE TO AIT–1037.
18. 3/4" CONDUIT WITH 2#12, 1#12G TO RESPECTIVE EF/HV UNIT.
19. REFER TO I–SHEETS FOR INSTRUMENTATION INSTALLATION DETAILS.
20. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
21. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4–20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J–BOXES, ETC. SHALL BE NEMA 4X NON–METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

CHLORINE STORAGE AND FLUORIDE ROOM FIRST FLOOR RENOVATION POWER PLAN

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

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

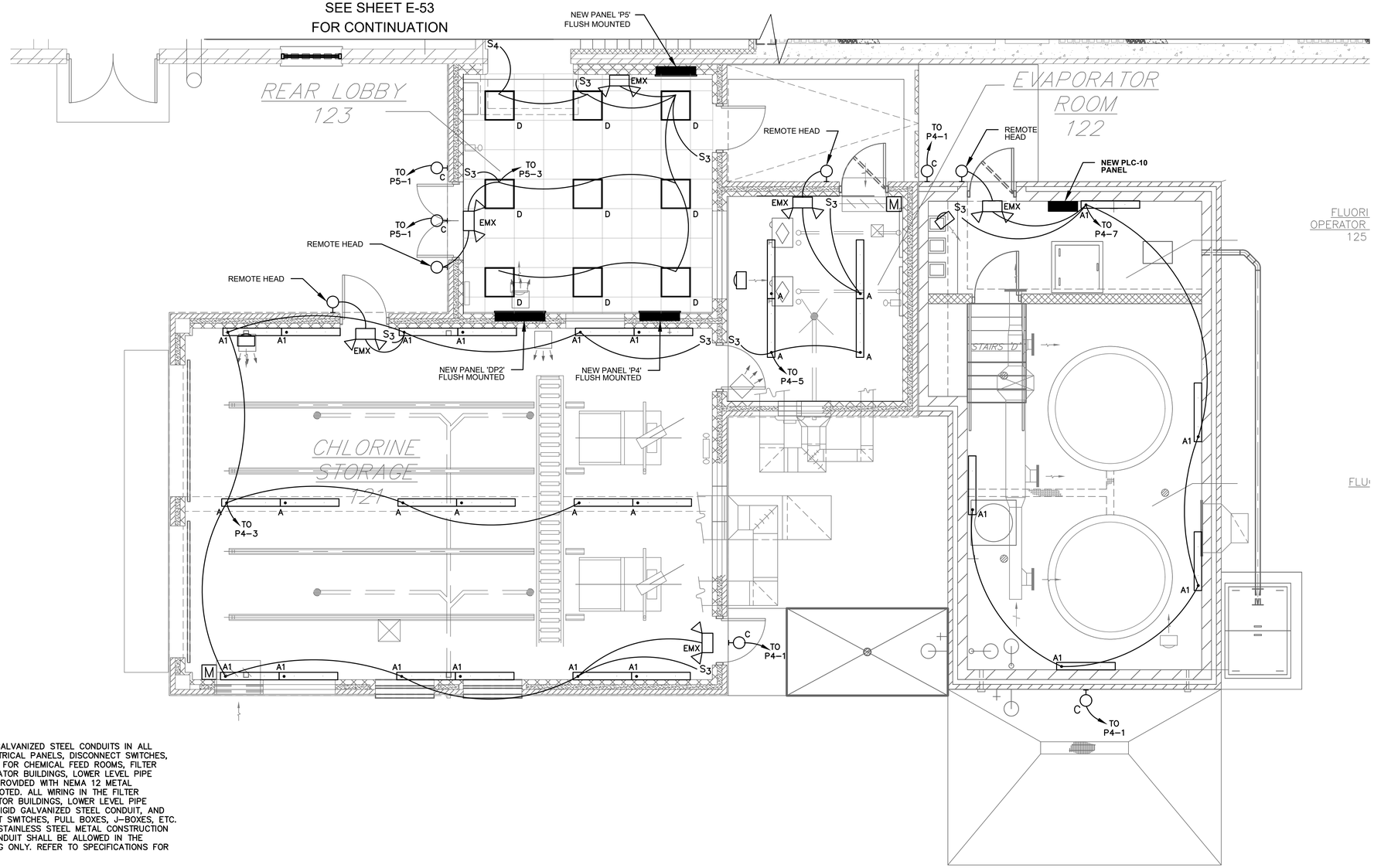
NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	GS
DRAWN BY:	SMR
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	1/4" = 1'-0"

CHRLORINE STORAGE - FLUORIDE RM ELECTRICAL RENOVATION POWER PLAN

E-61

SHEET: OF



KEYNOTES:

1. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
2. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4–20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J–BOXES, ETC. SHALL BE NEMA 4X NON–METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

CHLORINE STORAGE AND FLUORIDE ROOM FIRST FLOOR RENOVATION LIGHTING PLAN

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

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NO.	DESCRIPTION	DATE
1	BID SET	04/2022

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JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	3/16" = 1'-0"

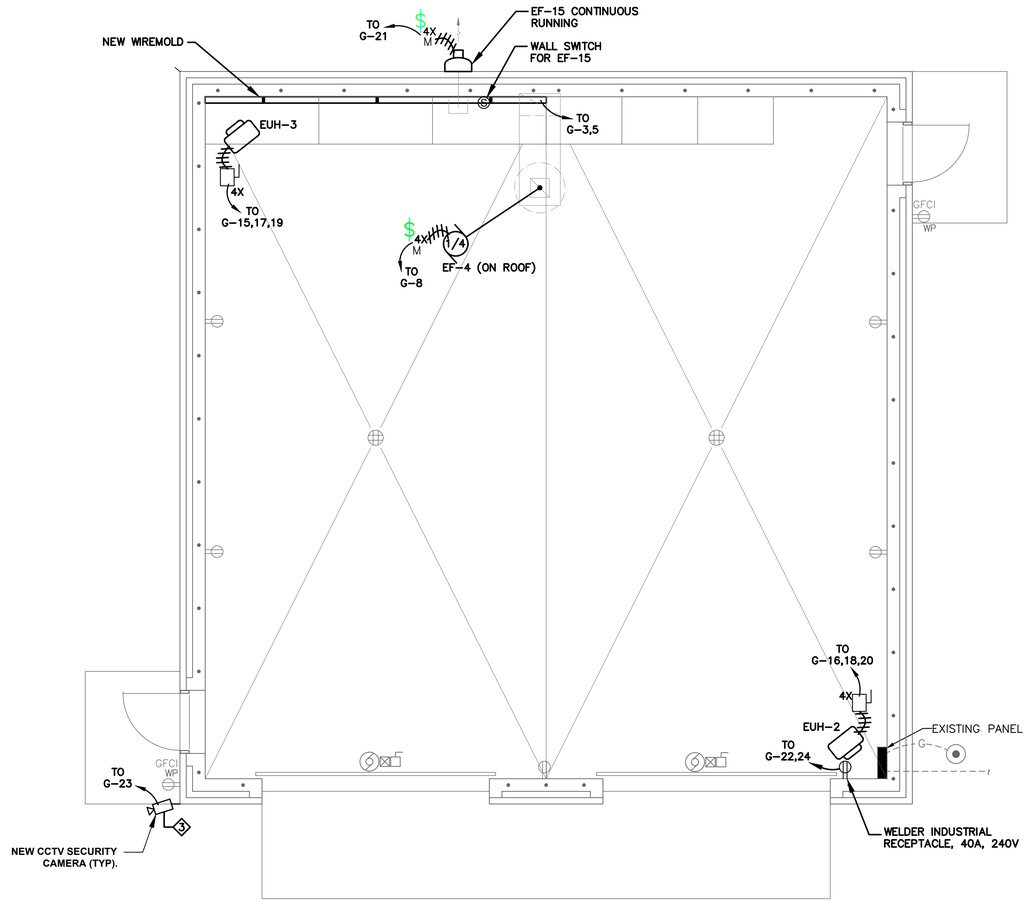
CHRLORINE STORAGE - FLUORIDE RM ELECTRICAL RENOVATION LIGHTING PLAN

E-62

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-62 CHRLORINE STORAGE - FLUORIDE RM ELECTRICAL RENOVATION LIGHT PLAN.dwg 4/16/2022 5:36:09 PM Randy Podmore

PLOTTED: 4/18/2022 8:36:16 AM



GARAGE ELECTRICAL RENOVATION POWER PLAN

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

KEYNOTES:

1. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
2. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4-20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J-BOXES, ETC. SHALL BE NEMA 4X NON-METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.
3. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

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WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	1/4" = 1'-0"

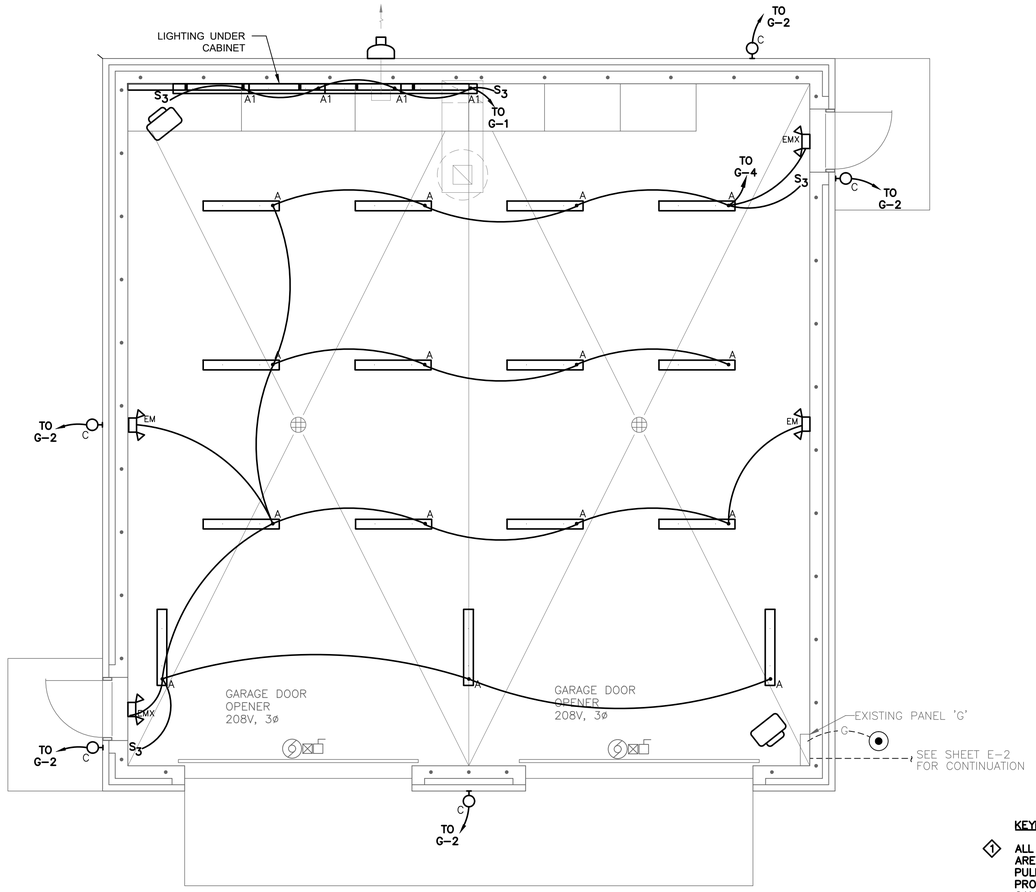
GARAGE ELECTRICAL RENOVATION POWER PLAN

E-63

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-63 GARAGE ELECTRICAL RENOVATION POWER PLAN.dwg 4/15/2022 9:37:32 AM Randy Podmore

PLOTTED: 4/18/2022 8:36:25 AM



GARAGE ELECTRICAL RENOVATION LIGHTING PLAN

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

KEYNOTES:

1. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
2. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4–20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J–BOXES, ETC. SHALL BE NEMA 4X NON–METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	1/4"=1'-0"

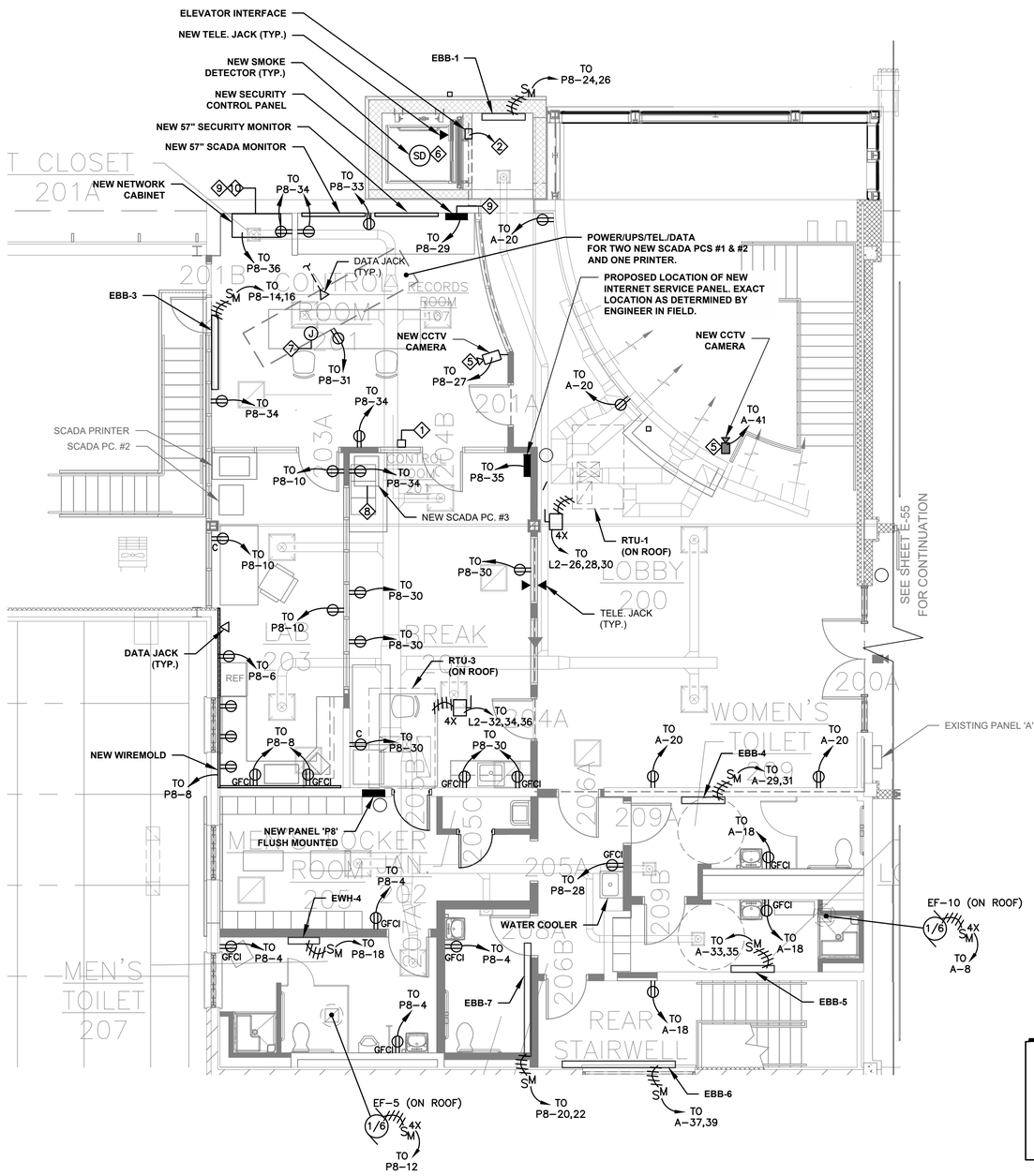
GARAGE ELECTRICAL RENOVATION POWER PLAN

E-64

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-64 GARAGE ELECTRICAL RENOVATION LIGHTING PLAN.dwg 4/15/2022 9:43:22 AM Randy Podmore

PLOTTED: 4/18/2022 8:37:00 AM
P:\PR58982\Cadd\Sheets\E-Sheets\E-65 CONTROL RM & LOBBY ELECTRICAL RENOVATION 2ND FL POWER PLAN.dwg 4/18/2022 7:15:05 AM Randy Podmore



CONTROL ROOM AND LOBBY SECOND FLOOR RENOVATION POWER PLAN

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

KEYNOTES:

1. RELOCATED GENERATOR ALARM ANNUNCIATOR PANEL.
2. COORDINATE WITH ELEVATOR VENDOR FOR EXACT WIRING/CONDUIT REQUIREMENTS.
3. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
4. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4-20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J-BOXES, ETC. SHALL BE NEMA 4X NON-METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.
5. 1" CONDUIT WITH FIBER OPTIC CABLE TO NETWORK CABINET.
6. 3/4" CONDUIT WITH 4#14 TO ELEVATOR CONTROL PANEL.
7. 1" CONDUIT WITH CAT6e CABLES TO NETWORK CABINET.
8. 3/4" CONDUIT WITH CAT6e CABLE TO NETWORK CABINET.
9. 3/4" CONDUIT WITH CAT6e CABLE TO INTERNET SERVICE PANEL.
10. 1" CONDUIT WITH CAT6e CABLES (CCTV SECURITY CAMERAS) TO SECURITY SYSTEM PANEL.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

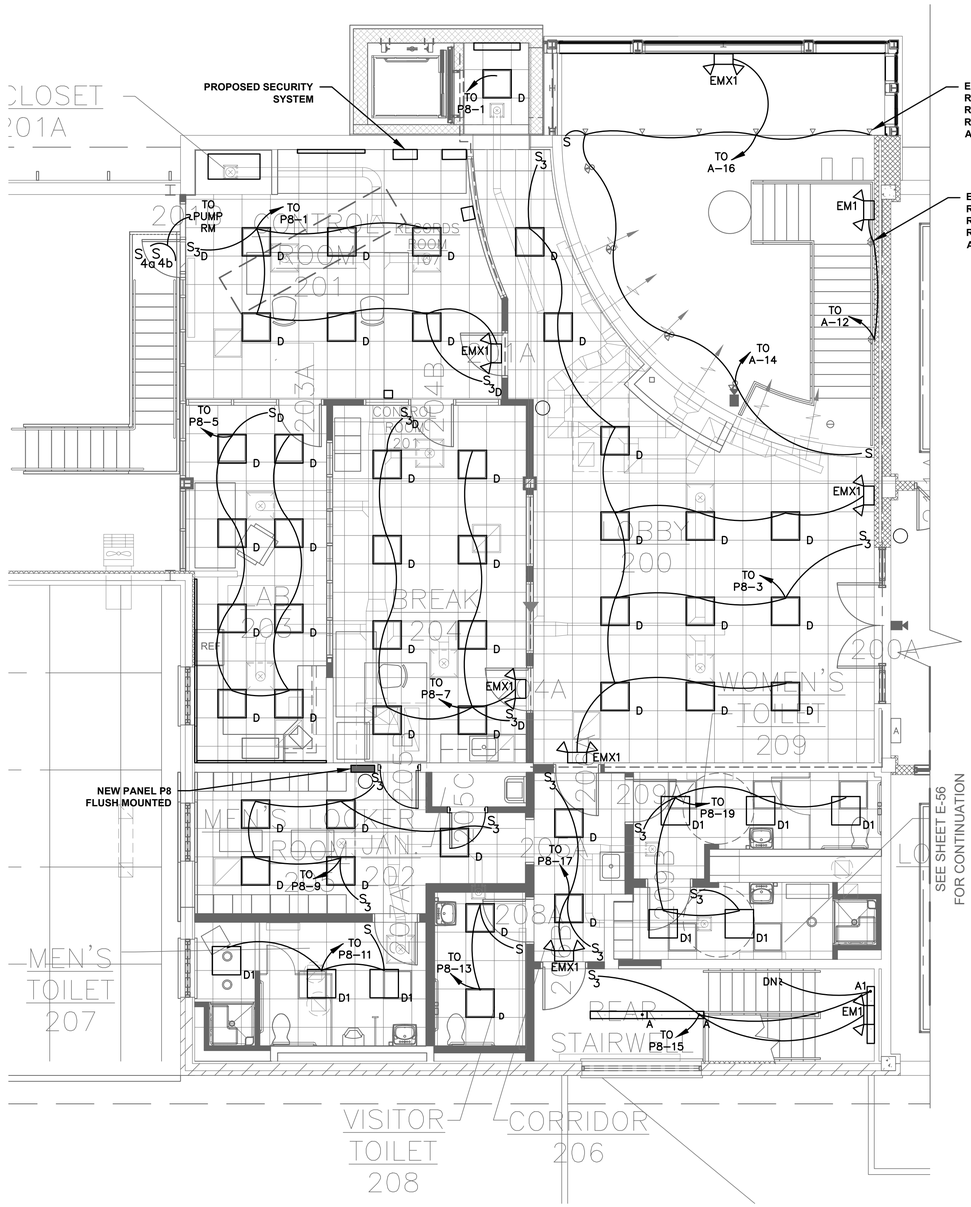
JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	3/16" = 1'-0"

CONTROL RM & LOBBY ELECTRICAL RENOVATION 2ND FLOOR POWER PLAN

E-65

SHEET: OF

PLOTTED: 4/18/2022 8:37:37 AM



CONTROL ROOM AND LOBBY SECOND FLOOR RENOVATION LIGHTING PLAN

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

KEYNOTES:

1. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
2. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4–20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J–BOXES, ETC. SHALL BE NEMA 4X NON–METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.

GENERAL NOTES:

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2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

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REVISIONS

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APPROVED BY:	SMR
SCALE:	3/16" = 1'-0"

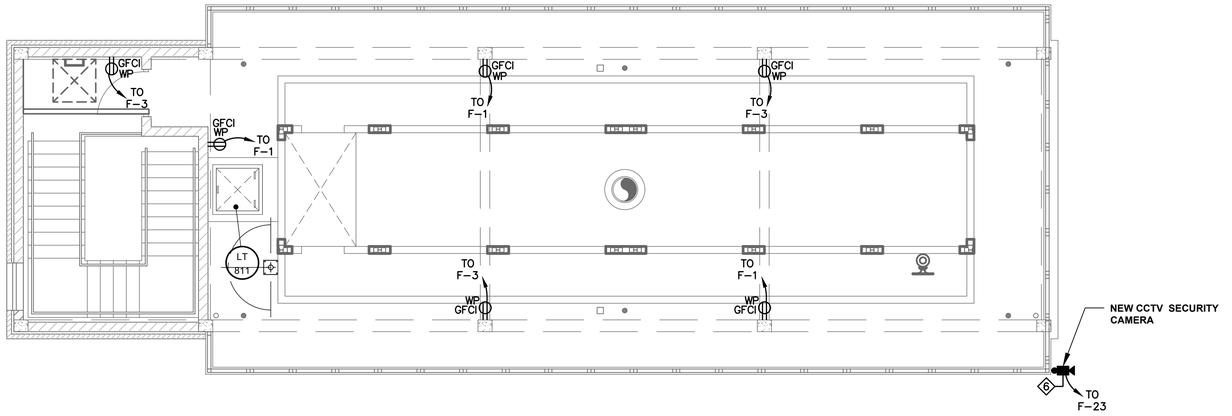
CONTROL RM & LOBBY ELECTRICAL RENOVATION 2ND FLOOR LIGHTING PLAN

E-66

SHEET: OF

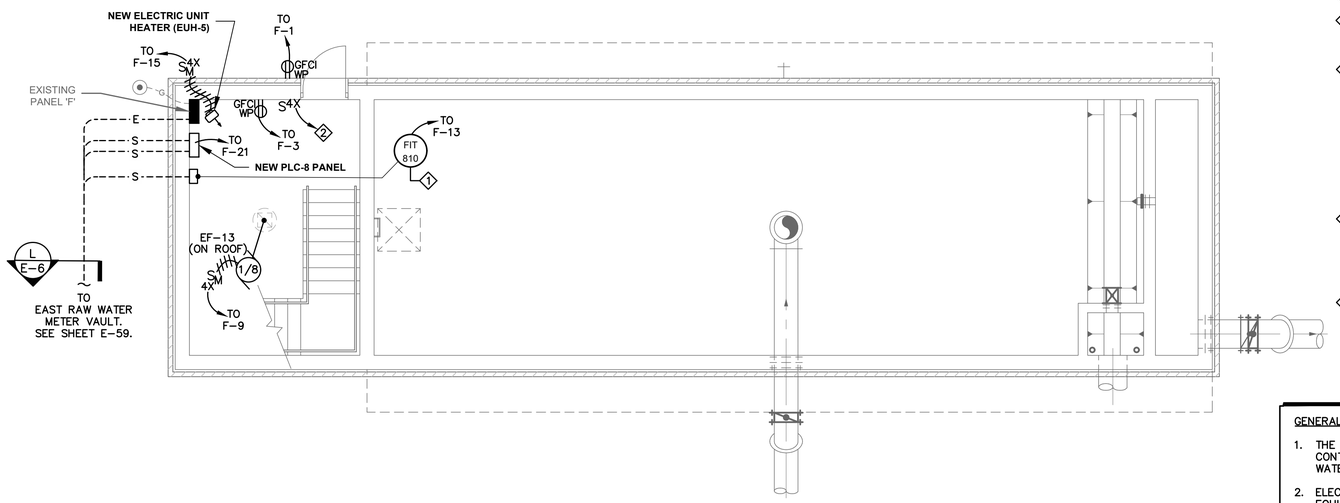
P:\PR58982\Cadd\Sheets\E-Sheets\E-66 CONTROL RM & LOBBY ELECTRICAL RENOVATION 2ND FL LIGHTING PLAN.dwg 4/16/2022 8:01:37 PM Randy Podmore

PLOTTED: 4/18/2022 8:37:51 AM
P:\PR58982\Cadd\Sheets\E-Sheets\E-67 EAST AERATOR BLDG ELECTRICAL RENOVATION UPPER-LOWER POWER PLAN.dwg 4/16/2022 6:13:20 PM Randy Podmore



EAST AERATOR BUILDING UPPER RENOVATION POWER PLAN

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



EAST AERATOR BUILDING LOWER RENOVATION POWER PLAN

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

KEYNOTES:

1. 3/4" CONDUIT WITH 2/C #18 SH. PR. TO PLC-8.
2. 3/4" CONDUIT WITH 2#12, 1#12G TO EF-13.
3. REFER TO I-SHEETS FOR INSTRUMENTATION INSTALLATION DETAILS.
4. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
5. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4-20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J-BOXES, ETC. SHALL BE NEMA 4X NON-METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.
6. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA PLC-8 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.

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WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

EAST AERATOR BLDG RENOVATION PLANS

E-67

SHEET: OF

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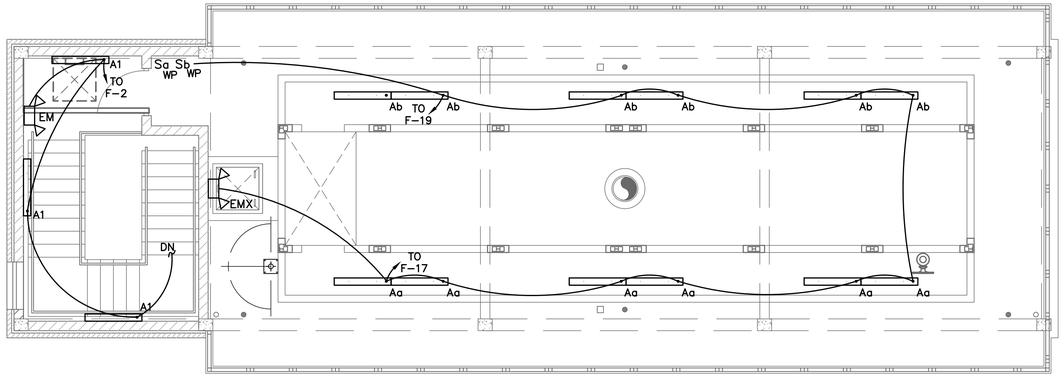
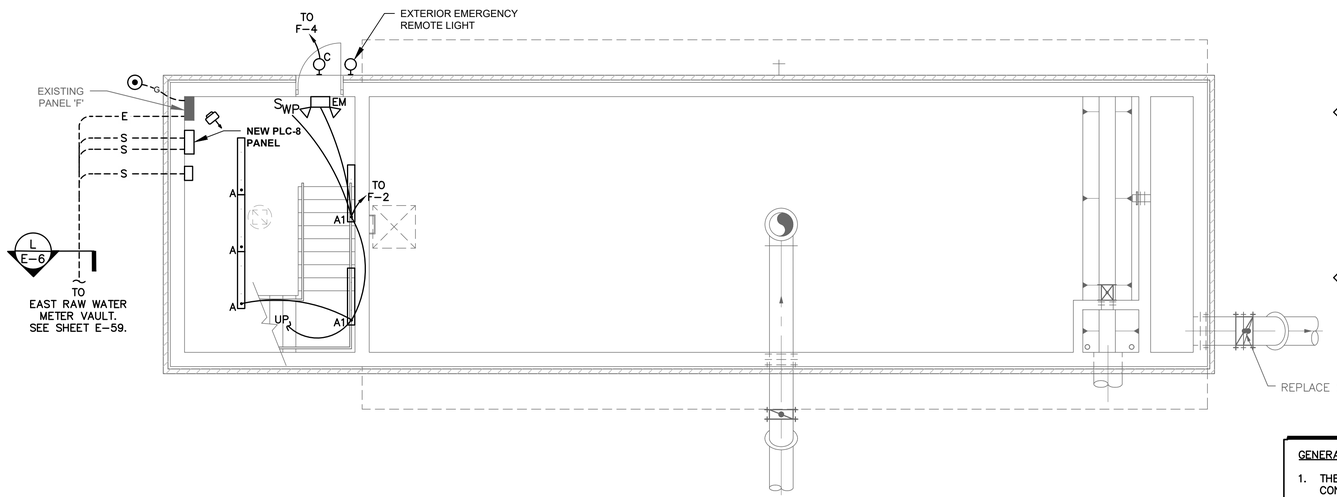


EAST AERATOR BUILDING UPPER LIGHTING PLAN

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



EAST AERATOR BUILDING LOWER LIGHTING PLAN

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

KEYNOTES:

1. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
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GENERAL NOTES:

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CHECKED BY:	SMR
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SCALE:	AS NOTED

EAST AERATOR BLDG ELECTRICAL RENOVATION UPPER LOWER LIGHTING PLAN

E-68

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-68 EAST AERATOR BLDG ELECTRICAL RENOVATION UPPER LOWER LIGHTING PLN.dwg 4/16/2022 6:09:19 PM Randy Podmore

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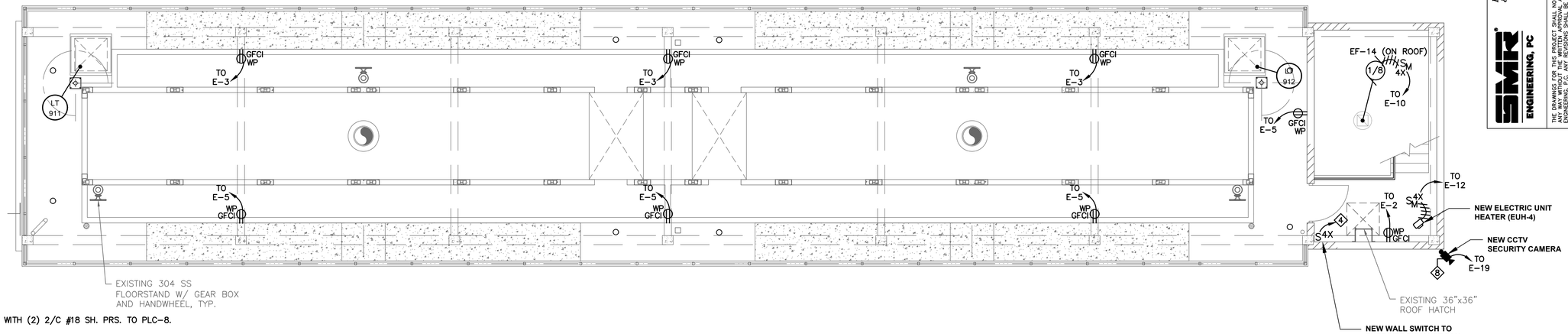


WEST AERATOR BUILDING UPPER RENOVATION POWER PLAN

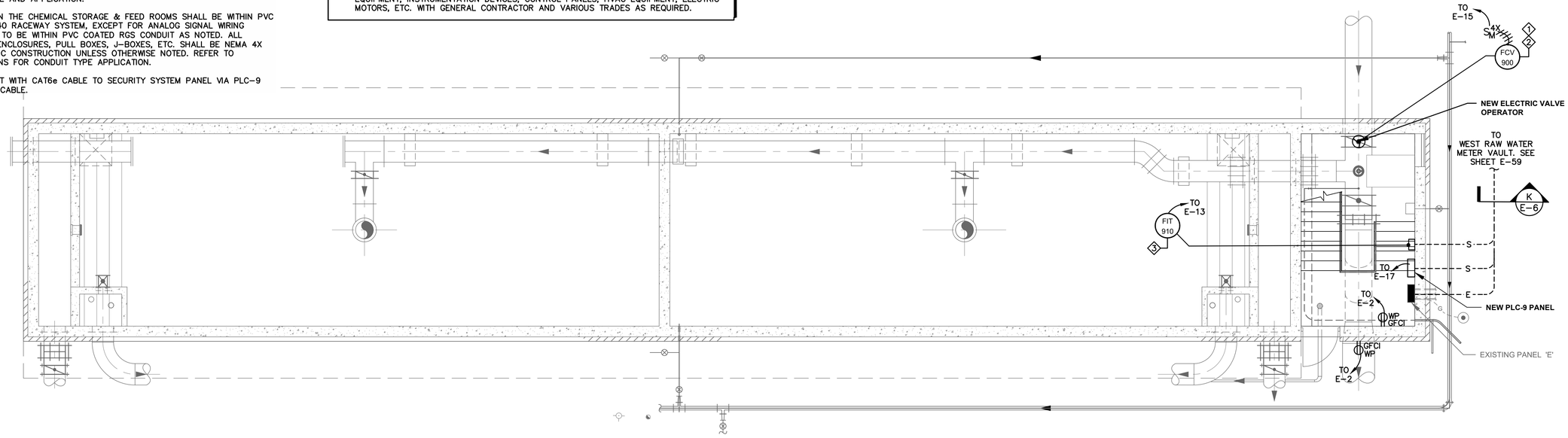
SCALE: 3/16" = 1'-0"

KEYNOTES:

1. 3/4" CONDUIT WITH (2) 2/C #18 SH. PRS. TO PLC-8.
2. 3/4" CONDUIT WITH 8#14 TO PLC-8.
3. 3/4" CONDUIT WITH 2/C #18 SH. PRS. TO PLC-9.
4. 3/4" CONDUIT WITH 2#12, 1#12G TO EF-14.
5. REFER TO I-SHEETS FOR INSTRUMENTATION INSTALLATION
6. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J-BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
7. ALL WIRING IN THE CHEMICAL STORAGE & FEED ROOMS SHALL BE WITHIN PVC SCHEDULED 40 RACEWAY SYSTEM, EXCEPT FOR ANALOG SIGNAL WIRING (4-20MADC) TO BE WITHIN PVC COATED RGS CONDUIT AS NOTED. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J-BOXES, ETC. SHALL BE NEMA 4X NON-METALLIC CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR CONDUIT TYPE APPLICATION.
8. 3/4" CONDUIT WITH CAT6e CABLE TO SECURITY SYSTEM PANEL VIA PLC-9 FIBER OPTIC CABLE.

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INSTRUMENTATION AND CONTROL WIRING & CONDUITS AS SHOWN ON INSTRUMENTATION DRAWINGS FOR THE WATER TREATMENT FACILITY AND ALL REMOTE PUMP STATIONS AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL PROCESS EQUIPMENT, INSTRUMENTATION DEVICES, CONTROL PANELS, HVAC EQUIPMENT, ELECTRIC MOTORS, ETC. WITH GENERAL CONTRACTOR AND VARIOUS TRADES AS REQUIRED.



WEST AERATOR BUILDING LOWER RENOVATION POWER PLAN

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

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SUGAR CREEK
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SCALE:	AS NOTED

WEST AERATOR BLDG ELECTRICAL RENOVATION POWER PLAN

E-69

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-69 WEST AERATOR BLDG ELECTRICAL RENOVATION POWER PLAN.dwg 4/18/2022 6:25:31 PM Randy Podmore

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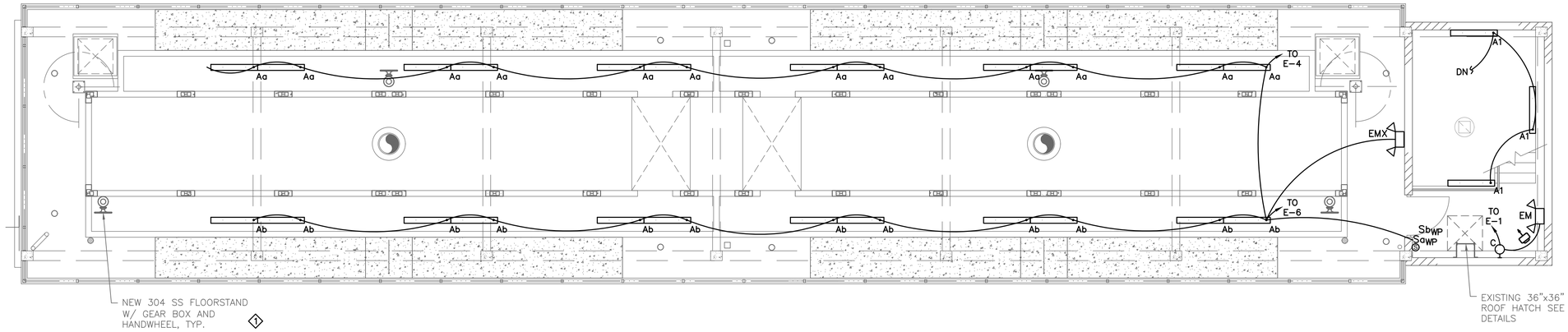

WEST AERATOR BUILDING UPPER RENOVATION LIGHTING PLAN

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

KEYNOTES:

1. 3" CONDUIT WITH FEEDER CABLE TO ELECTRIC ROOM.
2. ALL WIRING SHALL BE WITHIN RIGID GALVANIZED STEEL CONDUITS IN ALL AREAS EXCEPT AS NOTED. ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. EXCEPT FOR CHEMICAL FEED ROOMS, FILTER PROCESS AREAS, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE PROVIDED WITH NEMA 12 METAL CONSTRUCTION UNLESS OTHERWISE NOTED. ALL WIRING IN THE FILTER PROCESS AREA, EAST & WEST AERATOR BUILDINGS, LOWER LEVEL PIPE GALLERY & THE VAULTS SHALL BE RIGID GALVANIZED STEEL CONDUIT, AND ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, PULL BOXES, J–BOXES, ETC. SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL METAL CONSTRUCTION UNLESS OTHERWISE NOTED. EMT CONDUIT SHALL BE ALLOWED IN THE FINISHED AREAS ABOVE HUNG CEILING ONLY. REFER TO SPECIFICATIONS FOR CONDUIT TYPE AND APPLICATION.
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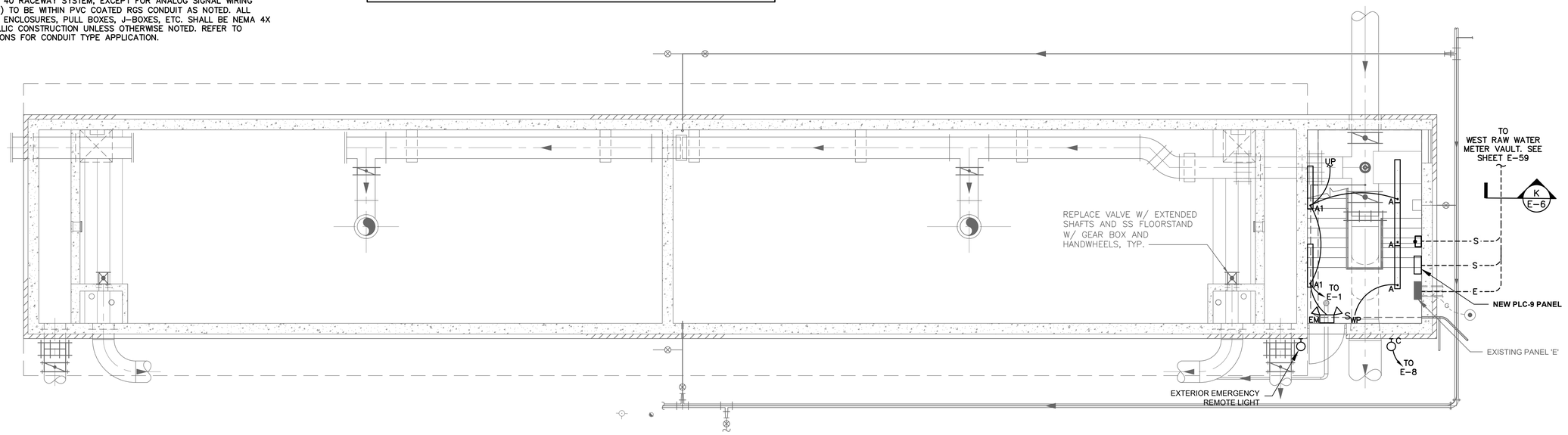

WEST AERATOR BUILDING LOWER RENOVATION LIGHTING PLAN

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

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WATER DEPARTMENT
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APPROVED BY:	SMR
SCALE:	AS NOTED

WEST AERATOR BLDG ELECTRICAL RENOVATION LIGHTING PLAN

E-70

SHEET: OF

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PLOTTED: 4/18/2022 8:38:33 AM

EXISTING PANEL No. A

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION FILTER GALLERY
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING – EXTERIOR				1	20	1	X			2	1	20				RECEPTACLE – FILTER OPERATING RM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER OPERATING RM 1				1	20	3		X		4	1	20				RECEPT. – FILTER NO. 5 & NO. 6	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER OPERATING RM 2				1	20	5			X	6	1	20				RECEPT. – HV-5 & RTU-2 (ON ROOF)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER NO.1 & NO.3				1	20	7	X			8	1	20				EXHAUST FAN (EF-10 ON-ROOF)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER GALLERY STAIRWELL				1	20	9		X		10	1	20				EXHAUST FAN (EF-16 ON-ROOF)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER NO.2 & NO.4				1	20	11			X	12	1	20				VESTIBULE STAIR LIGHTS	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER NO.5				1	20	13	X			14	1	20				VESTIBULE MURAL LIGHTS	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER NO.6				1	20	15		X		16	1	20				VESTIBULE FRONT LIGHTS	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AIT-112A & AIT-112B				1	20	17			X	18	1	20				RECEPT. RESTRM 209A–209B/STAIRWELL	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AIT-312A & AIT-312B				1	20	19	X			20	1	20				RECEPT. OPERATING FLOOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AIT-212A & AIT-212B				1	20	21		X		22	1	20				SPARE	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AIT-412A & AIT-412B				1	20	23			X	24	2	30				EWH-2	3/4"	2#10, 1#10G
2#12, 1#12G	3/4"	AIT-512A & AIT-512B				1	20	25	X			26								
2#12, 1#12G	3/4"	AIT-612A & AIT-612B				1	20	27		X		28	2	30				EWH-3	3/4"	2#10, 1#10G
2#12, 1#12G	3/4"	EBB-4				2	20	29			X	30	1	20						
								31	X			32	1	20				EXHAUST FAN (EF-11 ON-ROOF)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	EBB-5				2	20	33		X		34	1	20				SPARE		
								35			X	36	1	20				SPARE		
2#12, 1#12G	3/4"	EBB-6				2	20	37	X			38	1	20				SPARE		
								39		X		40	2	20				SPARE		
2#12, 1#12G	3/4"	CCTV SECURITY CAMERA				1	20	41			X	42								
												TOTAL 2								

TOTAL 1
TOTAL 2
TOTAL 1 + 2
TOTAL CONNECTED LOAD
AMPERES

MAIN BREAKER 200A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G, 2"C
SOURCE PANEL P8
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NOTE: ALL EXISTING BRANCH CIRCUITS NOT IMPACTED BY NEW UPGRADE SHALL REMAIN AS IS.

EXISTING PANEL No. G

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION GARAGE
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
3#4, 1#6G	3/4"	LIGHTING – UNDER CABINET				1	20	1	X			2	1	20				LIGHTING – EXTERIOR	3/4"	3#4, 1#6G
3#4, 1#6G	3/4"	RECEPTACLES – WORKBENCH				1	20	3		X		4	1	20				LIGHTING – INTERIOR	3/4"	3#4, 1#6G
3#4, 1#6G	3/4"	RECEPTACLES – WORKBENCH				1	20	5			X	6	1	20				RECEPTACLE – GARAGE	3/4"	3#4, 1#6G
3#4, 1#6G	3/4"	RECEPTACLES – GARAGE				1	20	7	X			8	1	60				EXHAUST FAN (EF-4) ON ROOF	3/4"	3#4, 1#6G
3#4, 1#6G	3/4"	GARAGE DOOR OPENER – SOUTH				1	20	9		X		10	1	20				SPARE	3/4"	3#4, 1#6G
		SPARE				1	20	11			X	12	1	20				GARAGE DOOR OPENER – NORTH		
		SPARE				1	20	13	X			14								
3#4, 1#6G	3/4"	ELECTRIC UNIT HEATER (EUH-3)				3	60	15		X		16	3	60				ELECTRIC UNIT HEATER (EUH-2)	3/4"	3#4, 1#6G
								17			X	18								
								19	X			20								
3#4, 1#6G	3/4"	EXHAUST FAN (EF-15) CONT. RUNNING				1	60	21		X		22	2	20				WELDER INDUSTRIAL RECEPTACLE	1"	2#8, 1#10G
2#12, 1#12G	3/4"	CCTV SECURITY CAMERA				1	20	23			X	24								
		SPARE				1	20	25	X			26	1	20				SPARE		
		SPARE				1	20	27		X		28	1	20				SPARE		
		SPARE				2	15	29			X	30	1	20				SPARE		
								31	X			32	2	15				SPARE		
								33		X		34								
								35			X	36	1	20				SPARE		
								37	X			38	1	20				SPARE		
								39		X		40	2	20				SPARE		
								41			X	42								
												TOTAL 2								

TOTAL 1
TOTAL 2
TOTAL 1 + 2
TOTAL CONNECTED LOAD
AMPERES

MAIN BREAKER 60A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G, 2"C
SOURCE 30 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NOTE: ALL EXISTING BRANCH CIRCUITS NOT IMPACTED BY NEW UPGRADE SHALL REMAIN AS IS.

EXISTING PANEL No. E

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION WEST AERATOR BUILDING
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	STAIRWELL LIGHTING				1	20	1	X			2	1	20				STAIRWELL RECEPTACLES	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AERATOR BLDG RECEPTACLES				1	20	3		X		4	1	20				AERATOR LIGHTING CIRCUIT a	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AERATOR BLDG RECEPTACLES				1	20	5			X	6	1	20				AERATOR LIGHTING CIRCUIT b	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	ELECTRIC VALVE OPERATOR				3	15	7	X			8	1	20				EXTERIOR LIGHTING	3/4"	2#12, 1#12G
								9		X		10	1	20				EF-14 (ON ROOF)	3/4"	2#12, 1#12G
								11			X	12	1	20				ELECTRIC UNIT HEATER (EUH-4)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FIT-910				1	20	13	X			14	1	20				SPARE		
2#12, 1#12G	3/4"	FCV-900				1	20	15		X		16	1	20				SPARE		
2#12, 1#12G	3/4"	PLC-9				1	20	17			X	18	1	20				SPARE		
2#12, 1#12G	3/4"	CCTV SECURITY CAMERA				1	20	19	X			20								
2#12, 1#12G	3/4"	LIGHTING-W. RAW WATER METER VAULT				1	20	21		X		22								
						1	20	23			X	24								
		SPARE				2	15	25	X			26								
								27		X		28								
		SPARE				1	20	29			X	30								
		SPARE				1	20	31	X			32								
		SPARE				1	20	33		X		34								
		SPARE				3	20	35			X	36								
								37	X			38								
								39		X		40								
								41			X	42								
												TOTAL 2								

TOTAL 1
TOTAL 2
TOTAL 1 + 2
TOTAL CONNECTED LOAD
AMPERES

MAIN BREAKER 40A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G, 2"C
SOURCE 30 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NOTE: ALL EXISTING BRANCH CIRCUITS NOT IMPACTED BY NEW UPGRADE SHALL REMAIN AS IS.

NEW PANEL No. P1

BUS 150 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION GENERATOR, ELECTRICAL, STORAGE ROOM
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING–EXTERIOR				1	20	1	X			2	1	20				RECEPTACLES–GENERATOR RM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING–GENERATOR RM				1	20	3		X		4	1	20				RECEPTACLES–ELECTRICAL RM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING–ELECTRICAL RM				1	20	5			X	6	1	20				RECEPTACLES–ELEC. & STORAGE RM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING–ELECTRICAL RM HALL				1	20	7	X			8	1	20				RECEPTACLES–HIGH SERV. PUMP RM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING–STORAGE RM				1	20	9		X		10	1	20				RECEPTACLES–HIGH SERV. PUMP RM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING–H.S.P. RM ckt–a				1	20	11			X	12	1	20				SCV–747	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING–H.S.P. RM ckt–b				1	20	13	X			14	1	20				SCV–750	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FAN F–3				1	20	15		X		16	1	20				SCV–753	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FAN F–4				1	20	17			X	18	1	20				SCV–756	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FAN F–5				1	20	19	X			20	1	20				SCV–759	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FAN F–6				1	20	21		X		22	1	20				EXHAUST FAN (EF–1) ON ROOF	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FAN F–7				1	20	23			X	24	1	20				EXHAUST FAN (EF–2) ON ROOF	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FAN F–8				1	20	25	X			26	1	20				NEW FUEL STORAGE TANK C.P.	3/4"	2#12, 1#12G
3#10, 1#10G	3/4"	GENERATOR BLOCK HEATER				3	30	27		X		28	1	20				RECEPTACLE – RTU–4 (ON ROOF)	3/4"	2#12, 1#12G
								29			X	30	1	20				RECEPTACLE – HV–1 (ON ROOF)	3/4"	2#12, 1#12G
								31	X			32	1	20				SPARE		
3#10, 1#10G	3/4"	GENERATOR BLOCK HEATER				3	30	33		X		34	1	20				SPARE		
								35			X	36	1	20				SPARE		
								37	X			38	3	20				SPARE		
2#12, 1#12G	3/4"	BATTERY CHARGER				1	20	39		X		40								
2#12, 1#12G	3/4"	FUEL TRANSFER PUMP				1	20	41			X	42								
												TOTAL 2								

TOTAL 1
TOTAL 2
TOTAL 1 + 2
TOTAL CONNECTED LOAD
AMPERES

MAIN BREAKER 150A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#1/0, 1#6G
SOURCE 45 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

EXISTING PANEL No. F

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION EAST AERATOR BUILDING
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W øA	VA OR W øB	VA OR W øC	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W øA	VA OR W øB	VA OR W øC	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	AERATOR BLDG RECEPTACLES				1	20	1	X			2	1	20				STAIRWELL LIGHTING	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AERATOR BLDG RECEPTACLES				1	20	3		X		4	1	20				EXTERIOR LIGHTING	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – E. RAW WATER METER VAULT				1	20	5			X	6	1	20				SPARE		
		SPARE				1	20	7	X			8	3	15				SPARE		
2#12, 1#12G	3/4"	ELECTRIC FAN EF–13 (ON–ROOF)				1	20	9		X		10								
		SPARE				1	20	11			X	12								
2#12, 1#12G	3/4"	FIT–810				1	20	13	X			14	1	20				SPARE		
2#12, 1#12G	3/4"	ELECTRIC UNIT HEATER (EUH–5)				1	20	15		X		16	1	20				SPARE		
2#12, 1#12G	3/4"	AERATOR LIGHTING CIRCUIT a				1	20	17			X	18	1	20				SPARE		
2#12, 1#12G	3/4"	AERATOR LIGHTING CIRCUIT b				1	20	19	X			20								
2#12, 1#12G	3/4"	PLC–8				1	20	21		X		22								
2#12, 1#12G	3/4"	CCTV SECURITY CAMERA				1	20	23			X	24								
		SPARE				2	15	25	X			26								
								27		X		28								
		SPARE				2	15	29			X	30								
								31	X			32								
		SPARE				1	20	33		X		34								
		SPARE				1	20	35			X	36								
		SPARE				3	20	37	X			38								
								39		X		40								
								41			X	42								
												TOTAL 2								

TOTAL 1
TOTAL 2
TOTAL 1 + 2
TOTAL CONNECTED LOAD
AMPERES

MAIN BREAKER 60A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G, 2"C
SOURCE 30 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

ELECTRICAL PANEL SCHEDULES

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0264

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BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

ELECTRICAL PANEL SCHEDULES

E-71

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-71 ELECTRICAL PANEL SCHEDULES 1.dwg 4/17/2022 9:19:45 PM Randy Podmore

PLOTTED: 4/18/2022 8:38:40 AM

NEW PANEL No. DP1

BUS 250 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION MECHANICAL ROOM
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
4#2, 1#6G	3/4"	PANEL P2				3	100	1	X			2	3	100				PANEL P3	2"	4#2, 1#6G
								3		X		4								
								5			X	6								
		SPARE				3	20	7	X			8	1	20				SPARE		
								9		X		10	1	20				SPARE		
								11			X	12	1	20				SPARE		
		SPARE				1	20	13	X			14	1	20				SPARE		
		SPARE				1	20	15		X		16	1	20				SPARE		
		SPARE				1	20	17			X	18	1	20				SPARE		
		SPARE				1	20	19	X			20	1	20				SPARE		
		SPARE				1	20	21		X		22	1	20				SPARE		
		SPARE				1	20	23			X	24	1	20				SPARE		
		SPARE				1	20	25	X			26	1	20				SPARE		
		SPARE				1	20	27		X		28	1	20				SPARE		
		SPARE				1	20	29			X	30	2	20				SPARE		
		SPARE				1	20	31	X			32	1	20						
		SPARE				1	20	33		X		34								
		SPARE				3	20	35			X	36								
								37	X			38								
								39		X		40								
		SPARE				1	20	41			X	42								
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 100A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G
SOURCE 30 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NEW PANEL No. DP2

BUS 150 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION REAR LOBBY
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
4#2, 1#6G	2"	PANEL P4				3	100	1	X			2	1	20				OVERHEAD DOOR – NORTH	3/4"	2#12, 1#12G
								3		X		4	1	20						
								5			X	6	1	20						
4#2, 1#6G	2"	PANEL P5				3	100	7	X			8	1	20				OVERHEAD DOOR – SOUTH	3/4"	2#12, 1#12G
						1	20	9		X		10	1	20						
						1	20	11			X	12	1	20						
		SPARE				1	20	13	X			14	1	20				SPARE		
		SPARE				1	20	15		X		16	1	20				SPARE		
		SPARE				1	20	17			X	18	1	20				SPARE		
		SPARE				1	20	19	X			20	1	20				SPARE		
		SPARE				1	20	21		X		22	1	20				SPARE		
		SPARE				1	20	23			X	24	1	20				SPARE		
		SPARE				1	20	25	X			26	1	20				SPARE		
		SPARE				1	20	27		X		28	1	20				SPARE		
		SPARE				1	20	29			X	30	1	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 150A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#1/0, 1#6G, 2"C
SOURCE 45 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NEW PANEL No. P2

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION MECHANICAL ROOM
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING – EXTERIOR MECH. RM.				1	20	1	X			2	1	20				RECEPTACLE – MECH. RM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – INTERIOR MECH. RM				1	20	3		X		4	1	20				RECEPTACLE – HALLWAY	3/4"	2#12, 1#12G
		SPARE				1	20	5			X	6	1	20				SPARE		
2#12, 1#12G	3/4"	AIT–784				1	20	7	X			8	1	20				SPARE		
2#12, 1#12G	3/4"	GLYCOL MAKE–UP PKG (GMP–1)				1	15	9		X		10	3	15				ELECTRIC UNIT HEATER	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	BLOWER #1 COOLING FAN				1	20	11			X	12								
2#12, 1#12G	3/4"	BLOWER #2 COOLING FAN				1	20	13	X			14								
		SPARE				1	20	15		X		16	1	20				CV–786	3/4"	2#12, 1#12G
		SPARE				1	20	17			X	18	1	20				FIT–782	3/4"	2#12, 1#12G
		SPARE				1	20	19	X			20	1	20				SPARE		
		SPARE				1	20	21		X		22	1	20				SPARE		
		SPARE				1	20	23			X	24	1	20				SPARE		
		SPARE				1	20	25	X			26	1	20				SPARE		
		SPARE				1	20	27		X		28	1	20				SPARE		
		SPARE				1	20	29			X	30	1	20				SPARE		
		SPARE				1	20	31	X			32	1	20				SPARE		
		SPARE				1	20	33		X		34	1	20				SPARE		
		SPARE				3	20	35			X	36	1	20				SPARE		
								37	X			38	1	20				SPARE		
								39		X		40	2	20				SPARE		
		SPARE				1	20	41			X	42								
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 100A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G
SOURCE 30 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NEW PANEL No. P4

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION REAR LOBBY
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING–EXT, CHLORINE & FLUOR. RM.				1	20	1		X		2	1	20				RECEPT. – CHLORINE STORAGE–EXT.	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – CHLORINE STORAGE				1	20	3	X			4	1	20				RECEPT. – CHLORINE STORAGE–INT.	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – EVAPORATOR RM.				1	20	5			X	6	1	20				RECEPT. – EVAPORATOR RM.	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FLUORIDE RM.				1	20	7	X			8	1	20				FCV–1034	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	EF–8A (ON ROOF)				1	20	9		X		10	1	20				FCV–1035	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	EF–8 (ON ROOF)				1	20	11			X	12	1	20				EF–7A (ON ROOF)	3/4"	2#12, 1#12G
		SPARE				1	20	13	X			14	1	20				SPARE		
		SPARE				1	20	15		X		16	1	20				SPARE		
		SPARE				1	20	17			X	18	1	20				SPARE		
		SPARE				1	20	19	X			20	1	20				SPARE		
		SPARE				1	20	21		X		22	1	20				SPARE		
		SPARE				1	20	23			X	24	1	20				SPARE		
		SPARE				1	20	25	X			26	1	20				SPARE		
		SPARE				1	20	27		X		28	1	20				SPARE		
		SPARE				1	20	29			X	30	1	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 50A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G, 2"C
SOURCE DP2
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NEW PANEL No. P3

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION FILTER GALLERY ANNEX
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING – FRONT ENTRANCE –EXT.				1	20	1	X			2	1	20				RECEPTACLE – HALLWAY	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – ELEVATOR ENTRY				1	20	3		X		4	1	20				RECEPTACLE – RESTROOM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER ANNEX				1	20	5			X	6	1	20				RECEPTACLE – FILTER ANNEX		
2#12, 1#12G	3/4"	LIGHTING – RESTROOM				1	20	7	X			8	1	60				ELECT. WALL HEATER (EWH–1)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – HALLWAY				1	20	9		X		10	2	20				ELECT. BASEBOARD HTR (EBB–8)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – STAIRWELL				1	20	11			X	12								
2#12, 1#12G	3/4"	LIGHTING – FILTER ANNEX HALLWAY				1	20	13	X			14	2	20				ELECT. BASEBOARD HTR (EBB–9)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FIT – FILTER ANNEX AREA				1	20	15		X		16								
2#12, 1#12G	3/4"	FIT–705 & AIT–709				1	20	17			X	18	2	20				ELECT. BASEBOARD HTR (EBB–10)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FIT–708 & AIT–707				1	20	19	X			20								
2#12, 1#12G	3/4"	FIT–710 & AIT–793				1	20	21		X		22	2	20				ELECT. BASEBOARD HTR (EBB–1)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FIT–756				1	20	23			X	24								
2#12, 1#12G	3/4"	AIT–793				1	20	25	X			26	1	20				DS–1	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FCV–786				1	20	27		X		28	1	20				EF–6	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	SPARE				1	20	29			X	30	1	20				FCV–787	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CCTV SECURITY CAMERA				1	20	31	X			32	1	20				FCV–788	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	ELEVATOR SUMP PUMP				1	20	33		X		34	1	20				FCV–789	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING– F.W. METER VAULT				3	20	35			X	36	1	20				FCV–790	3/4"	2#12, 1#12G
								37	X			38	1	20				SPARE		
								39		X		40	2	20				SPARE		
		SPARE				1	20	41			X	42								
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 100A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G
SOURCE 30 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NEW PANEL No. P5

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION REAR LOBBY
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING – REAR LOBBY – EXT.				1	20	1	X			2	1	20				RECEPTACLE – FLUORIDE RM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – REAR LOBBY – INT.				1	20	3		X		4	1	20				PLC–10 PANEL	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–1008				1	20	5			X	6	1	20				RECEPT–FLUORIDE FEED PUMP #1	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AIT–1036				1	20	7	X			8	1	20				RECEPT–FLUORIDE FEED PUMP #2	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FLS–1005 & FLS–1006 – EYEWASH				1	20	9		X		10	1	20				RECEPT–FLUORIDE FEED PUMP #3	3/4"	2#12, 1#12G
		SPARE				1	20	11			X	12	1	20				FLOW DIVERTER C.P.	3/4"	2#12, 1#12G
		SPARE				1	20	13	X			14	1	20				SUMP PUMP	3/4"	2#12, 1#12G
		SPARE				1	20	15		X		16	1	20				EXISTING UNIT HEATER	3/4"	2#12, 1#12G
		SPARE				1	20	17			X	18	1	20				RECEPT. – HV–4 (ON ROOF)	3/4"	2#12, 1#12G
		SPARE				1	20	19	X			20	1	20				SPARE		
		SPARE				1	20	21		X		22	1	20				SPARE		
		SPARE				1	20	23			X	24	1	20				SPARE		
		SPARE				1	20	25	X			26	1	20				SPARE		
		SPARE				1	20	27		X		28	1	20				SPARE		
		SPARE				1	20	29			X	30	1	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 150A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G, 2"C
SOURCE DP2
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

ELECTRICAL PANEL SCHEDULES
SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0264

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BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO: PR58982
DATE: APR 2022
DESIGNED BY: SMR
DRAWN BY: GMS
CHECKED BY: SMR
APPROVED BY: SMR
SCALE: NONE

ELECTRICAL PANEL SCHEDULES 2

E-72

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-72 ELECTRICAL PANEL SCHEDULES 2.dwg 4/19/2022 7:15:25 AM Randy Podmore

PLOTTED: 4/18/2022 8:38:47 AM

NEW PANEL No. DP3

BUS 150 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION FILTER GALLERY (NORTH STAIRS)
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING – EXTERIOR				1	20	1	X			2	1	20				RECEPTACLE – EXTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER NO.5 & NO.6				1	20	3			X	4	1	20				RECEPT.–FILTER GALLERY & STAIRWELL	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – FILTER NO.1 THRU NO.4				1	20	5			X	6	1	20				RECEPT. – FILTER GALLERY	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – STAIRWELL				1	20	7	X			8	1	20				SPARE		
		SPARE				3	15	9			X	10	1	20				SPARE		
								11			X	12	1	20				SPARE		
								13	X			14	1	20				SPARE		
		SPARE				3	15	15			X	16	1	20				SPARE		
								17			X	18	1	20				SPARE		
								19	X			20	1	20				SPARE		
		SPARE				1	20	21			X	22	1	20				SPARE		
		SPARE				1	20	23			X	24	1	20				SPARE		
		SPARE				1	20	25	X			26	1	20				SPARE		
		SPARE				1	20	27			X	28	1	20				SPARE		
		SPARE				1	20	29			X	30	1	20				SPARE		
		SPARE				1	20	31	X			32	1	20				SPARE		
		SPARE				1	20	33			X	34	1	20				SPARE		
		SPARE				1	20	35			X	36	1	20				SPARE		
4#12, 1#6G	2"	PANEL P6				3	100	37	X			38	3	100				PANEL P7	2"	4#2, 1#6G
								39			X	40								
								41			X	42								
												TOTAL	2							
		TOTAL 1																		
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 150A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#1/0, 1#6G, 2"C
SOURCE 45 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 12
ACCESSORIES

NEW PANEL No. P8

BUS 150 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION LOCKER ROOM
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	LIGHTING – RECORDS RM & ELEVATOR				1	20	1		X		2	1	20				SPARE	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – LOBBY				1	20	3			X	4	1	20				RECEPT.–MENS LOCKER RM & RESTRM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – LAB				1	20	5			X	6	1	20				RECEPTACLE – REFRIGERATOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – CONTROL RM				1	20	7	X			8	1	20				RECEPT. LAB	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – LOCKER RM				1	20	9			X	10	1	20				RECEPTACLE – LAB	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – RESTROOM 207A				1	20	11			X	12	1	20				EF–5 (ON ROOF)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – RESTROOM 208A				1	20	13	X			14	2	20				EBB–3	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – STAIRWELL				1	20	15			X	16								
2#12, 1#12G	3/4"	LIGHTING – RESTROOM 205A				1	20	17		X		18	1	20				EWH–4	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – RESTROOM 209A				1	20	19	X			20	2	20				EBB–7	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	LIGHTING – RESTROOM 209A				1	20	21		X		22								
		SPARE				1	20	23			X	24	2	20				EBB–1	3/4"	2#12, 1#12G
		SPARE				1	20	25	X			26								
2#12, 1#12G	3/4"	CCTV SECURITY CAMERA				1	20	27		X		28	1	20				WATER COOLER	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	SECURITY CAMERA CONTROL PANEL				1	20	29			X	30	1	20				RECEPT. – BREAK ROOM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	SCADA WORKSTATION #1 & #2				1	20	31	X			32	1	20						
2#12, 1#12G	3/4"	SECURITY & SCADA MONITORS				1	20	33		X		34	1	20				RECEPT. – CONTROL ROOM	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	INTERNET SERVICE PANEL				1	20	35			X	36	1	20				RECEPT. – NETWORK CABINET	3/4"	2#12, 1#12G
4#2, 1#6G	2"	PANEL A				3	100	37	X			38	1	20				SPARE		
								39		X		40	1	20				SPARE		
								41			X	42	1	20				SPARE		
												TOTAL	2							
		TOTAL 1																		
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 150A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#1/0, 1#6G, 2"C
SOURCE 45 KVA XFMR
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NEW PANEL No. P6

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION FILTER GALLERY – (NORTH STAIRS)
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	CV–102A				1	15	1	X			2	1	15				CV–302B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–103A				1	15	3			X	4	1	15				CV–304B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FIT–108A & FIT–108B				1	15	5			X	6	1	15				CV–303B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–104A				1	15	7	X			8	1	15				CV–502A	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FCV–105A				1	15	9			X	10	1	15				CV–503A	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AIT–109A & AIT–109B				1	15	11			X	12	1	15				AIT–509A & AIT–509B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–101				1	15	13	X			14	1	15				FIT–508A & FIT–508B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–111				1	15	15			X	16	1	15				CV–504A	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FCV–105B				1	15	17			X	18	1	15				FCV–505A	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–102B				1	15	19	X			20	1	15				CV–501	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–103B				1	15	21			X	22	1	15				CV–511	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–104B				1	15	23			X	24	1	15				CV–504B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–302A				1	15	25	X			26	1	15				FCV–504B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–303A				1	15	27			X	28	1	15				CV–502B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FIT–308A & FIT–308B				1	15	29			X	30	1	15				CV–503B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–304A				1	15	31	X			32	1	15				AIT–521	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AIT–309A & AIT–309B				1	15	33		X		34	1	15				FCV–531 – FTW VALVE	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–301				1	15	35			X	36	1	15				FIT–530	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FCV–305A				1	15	37	X			38	1	15				LIGHT–F.W. SURGE RELIEF VALVE VAULT	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–311				1	15	39		X		40	1	15				SPARE		
2#12, 1#12G	3/4"	FCV–305B				1	15	41			X	42	1	15				SPARE		
												TOTAL	2							
		TOTAL 1																		
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 100A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G, 2"C
SOURCE DP3
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 12
ACCESSORIES

NEW PANEL No. P7

BUS 100 AMPERE
PANEL RATING 10 KAIC
SUPPLY VOLTAGE 208/120V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION FILTER GALLERY (NORTH STAIRS) ELEV. 975
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	CV–202A				1	15	1	X			2	1	15				CV–402B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4	CVC–203A				1	15	3		X		4	1	15				CV–404B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FIT–208A & FIT–208B				1	15	5			X	6	1	15				CV–403B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–204A				1	15	7	X			8	1	15				CV–602A	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FCV–205A				1	15	9		X		10	1	15				CV–603A	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AIT–209A & AIT–209B				1	15	11			X	12	1	15				AIT–609A & AIT–609B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–201				1	15	13	X			14	1	15				FIT–608A & FIT–608B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–211				1	15	15		X		16	1	15				CV–604A	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FCV–205B				1	15	17			X	18	1	15				FCV–605A	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–202B				1	15	19	X			20	1	15				CV–601	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–203B				1	15	21		X		22	1	15				CV–611	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–204B				1	15	23			X	24	1	15				CV–604B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–402A				1	15	25	X			26	1	15				FCV–605B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–403A				1	15	27		X		28	1	15				CV–602B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FIT–408A & FIT–408B				1	15	29			X	30	1	15				CV–603B	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–404A				1	15	31	X			32	1	15				FIT–531	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	AIT–409A & AIT–409B				1	15	33		X		34	1	15				AIT–421 & AIT–426	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–401				1	15	35			X	36	1	15				FCV–531	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	FCV–405A				1	15	37	X			38	1	15				FCV–532	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	CV–411				1	15	39		X		40	1	15				AIT–616	3/4"	2#12, 1#12G
2#12, 1#12G	3/4	FCV–405B				1	15	41			X	42	1	15				SPARE		
												TOTAL	2							
		TOTAL 1																		
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 100A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#2, 1#6G, 2"C
SOURCE DP3
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 12
ACCESSORIES

ELECTRICAL PANEL SCHEDULES
SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0264

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100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO: PR58982
DATE: APR 2022
DESIGNED BY: SMR
DRAWN BY: GMS
CHECKED BY: SMR
APPROVED BY: SMR
SCALE: NONE

ELECTRICAL PANEL SCHEDULES 3

E-73

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-73 ELECTRICAL PANEL SCHEDULES 3.dwg 4/18/2022 7:14:52 AM Randy Podmore

PLOTTED: 4/18/2022 8:38:54 AM

NEW PANEL No. L1

BUS 150 AMPERE
PANEL RATING 42 KAIC
SUPPLY VOLTAGE 480Y/277V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION ELECTRICAL ROOM
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	ELECTRIC UNIT HEATER (EUH-6)				3	60	1	X			2	3	20				RTU-4 (ON ROOF)	3/4"	2#12, 1#12G
								3		X		4								
								5			X	6								
2#12, 1#12G	3/4"	ELECTRIC UNIT HEATER (EUH-7)				3	60	7	X			8	3	15				SPARE		
								9		X		10								
								11			X	12								
2#12, 1#12G	3/4"	HV-1 ON ROOF				3	60	13	X			14	3	30				SPARE		
								15		X		16								
								17			X	18								
2#12, 1#12G	3/4"	ELECTRIC UNIT HEATER (EUH-10)				3	60	19	X			20	3	20				SPARE		
								21		X		22								
								23			X	24								
2#12, 1#12G	3/4"	ELECTRIC UNIT HEATER (EUH-11)				3	60	25	X			26								
								27		X		28								
								29			X	30								
		SPARE				3	20	31	X			32								
								33		X		34								
								35			X	36								
								37	X			38								
								39		X		40								
								41			X	42								
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 150A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#1/0, 1#4G, 2"
SOURCE MCC-A
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NEW PANEL No. L2

BUS 150 AMPERE
PANEL RATING 30 KAIC
SUPPLY VOLTAGE 480V/277V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION FILTER GALLERY ANNEX
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	EUH-9 - FLUORIDE RM				3	20	1	X			2	3	20				EF-7 (ON ROOF) ABOVE CHLOR. STG.	3/4"	2#12, 1#12G
								3		X		4								
								5			X	6								
2#12, 1#12G	3/4"	EUH-1 - EVAPORATOR RM				3	20	7	X			8	3	20				EUH-8 - CHLORINE STORAGE	3/4"	2#12, 1#12G
								9		X		10								
								11			X	12								
2#12, 1#12G	3/4"	EF-9 (ON ROOF) ABOVE FLUORIDE RM				3	20	13	X			14	3	20				EUH-8 - CHLORINE STORAGE	3/4"	2#12, 1#12G
								15		X		16								
								17			X	18								
2#12, 1#12G	3/4"	EXISTING HEATER - FLUORIDE RM				3	20	19	X			20	3	20				HV-2 (ON ROOF) ABOVE CHLOR. STG.	3/4"	2#12, 1#12G
								21		X		22								
								23			X	24								
2#12, 1#12G	3/4"	CHILLER (CH-1) - OUTSIDE MECH. RM				3	20	25	X			26	3	20				RTU-1 (ON ROOF) ABOVE LOBBY	3/4"	2#12, 1#12G
								27		X		28								
								29			X	30								
		SPARE				3	15	31	X			32	3	20				RTU-3 (ON ROOF) ABOVE CONTROL RM	3/4"	2#12, 1#12G
								33		X		34								
		SPARE				3	15	35			X	36								
								37	X			38	3	20				SPARE		
								39		X		40								
								41			X	42								
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 150A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#3/0, 1#4G, 2"C
SOURCE MCC-A
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

NEW PANEL No. L3

BUS 225 AMPERE
PANEL RATING 30 KAIC
SUPPLY VOLTAGE 480V/277V
SERVICE 3 PHASE, 4W, W/GND BUS

LOCATION FILTER GALLERY - EL.984
MOUNTING SURFACE
DRAWING No.

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	ECONV-N1				1	15	1	X			2	3	15				EXHAUST FAN (EF-12 ON ROOF)	3/4"	3#12, 1#12G
2#12, 1#12G	3/4"	ECONV-N2				1	15	3		X		4								
2#12, 1#12G	3/4"	ECONV-N3				1	15	5			X	6								
2#12, 1#12G	3/4"	ECONV-N4				1	15	7	X			8	3	25				RTU-2 (ON ROOF)	3/4"	3#10, 1#10G
2#12, 1#12G	3/4"	ECONV-N5				1	15	9		X		10								
2#12, 1#12G	3/4"	ECONV-N6				1	15	11			X	12								
2#12, 1#12G	3/4"	ECONV-N7				1	15	13	X			14	3	15				EF-17 (ON ROOF)	3/4"	3#12, 1#12G
2#12, 1#12G	3/4"	ECONV-N8				1	15	15		X		16								
2#12, 1#12G	3/4"	ECONV-S9				1	15	17			X	18								
2#12, 1#12G	3/4"	ECONV-S8				1	15	19	X			20	3	30				SPARE		
2#12, 1#12G	3/4"	ECONV-S7				1	15	21		X		22								
2#12, 1#12G	3/4"	ECONV-S6				1	15	23			X	24								
2#12, 1#12G	3/4"	ECONV-S5				1	15	25	X			26	3	20				SPARE		
2#12, 1#12G	3/4"	ECONV-S4				1	15	27		X		28								
2#12, 1#12G	3/4"	ECONV-S3				1	15	29			X	30								
2#12, 1#12G	3/4"	ECONV-S2				1	15	31	X			32	3	20				SPARE		
2#12, 1#12G	3/4"	ECONV-S1				1	15	33		X		34								
		SPARE				3	15	35			X	36								
								37	X			38	3	20				SPARE		
								39		X		40								
		SPARE				1	20	41			X	42								
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER 200A 3/P
FEEDER ENTRANCE
FEEDER SIZE 4#3/0, 1#4G, 2-1/2"C
SOURCE MCC-A
PANEL TYPE BOLT-ON

MAIN LUGS N/A
ENCLOSURE TYPE NEMA 1
ACCESSORIES

ELECTRICAL PANEL SCHEDULES

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0264

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO: PR58982
DATE: APR 2022
DESIGNED BY: SMR
DRAWN BY: GMS
CHECKED BY: SMR
APPROVED BY: SMR
SCALE: NONE

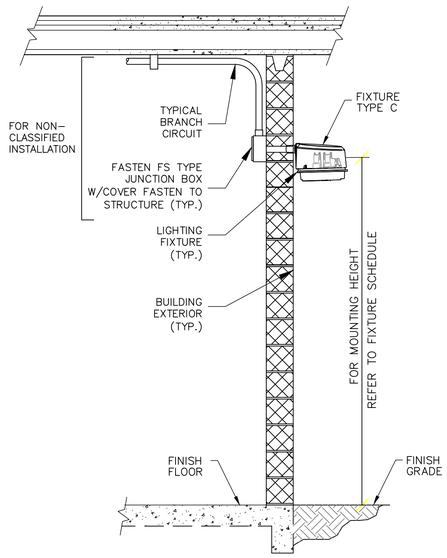
ELECTRICAL PANEL SCHEDULES 4

E-74

SHEET: OF

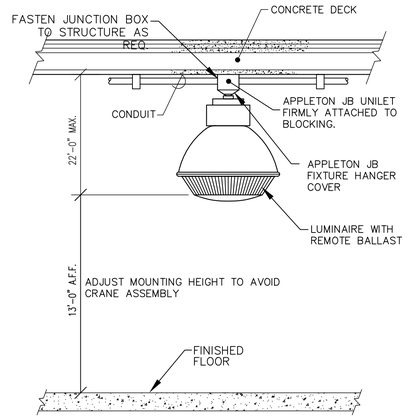
P:\PR58982\Cadd\Sheets\E-Sheets\E-74 ELECTRICAL PANEL SCHEDULES 4.dwg 4/17/2022 8:46:34 AM Randy Podmore

PLOTTED: 4/18/2022 8:39:02 AM



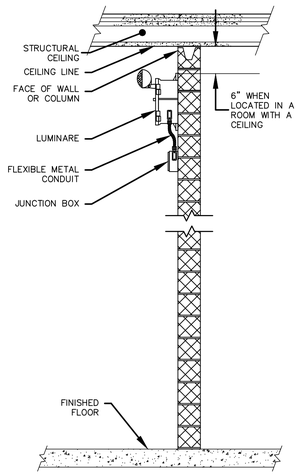
LIGHTING FIXTURE TYPE 'C' MOUNTING DETAIL — 1 / E-75

SCALE: NONE



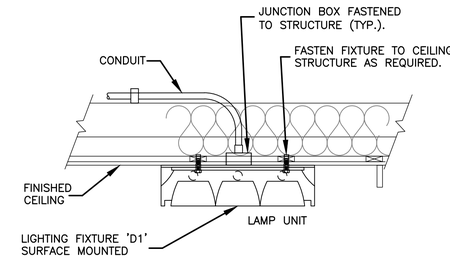
LIGHTING FIXTURE TYPE 'B' MOUNTING DETAIL — 2 / E-75

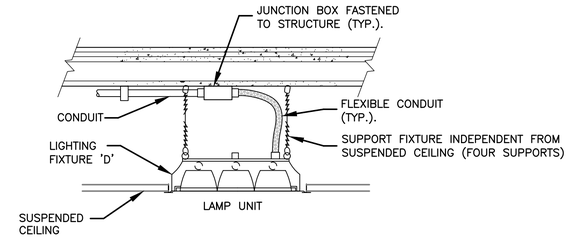
SCALE: NONE



LIGHTING FIXTURE TYPE 'EM' & 'EM1' MOUNTING DETAIL — 3 / E-75

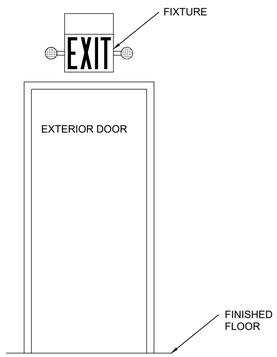
SCALE: NONE





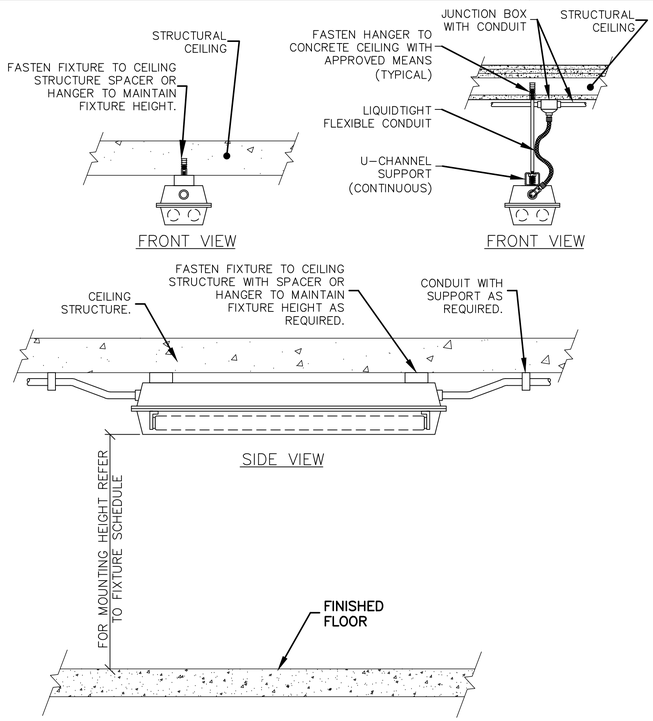
LIGHTING FIXTURE TYPE 'D' & 'D1' MOUNTING DETAIL — 4 / E-75

SCALE: NONE



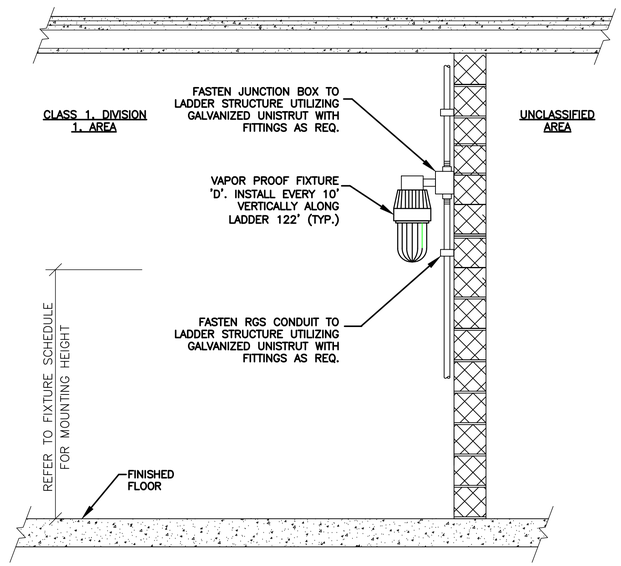
LIGHTING FIXUTRE TYPE 'EMX' & 'EMX1' MOUNTING DETAIL — 5 / E-75

SCALE: NONE



LIGHTING FIXUTRE TYPE 'A' , 'A1 & 'A2' MOUNTING DETAIL — 6 / E-75

SCALE: NONE



LIGHTING FIXTURE TYPE 'H' (WALL MTD) MOUNTING DETAIL — 7 / E-75

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0264

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PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

LIGHTING FIXTURE DETAILS

E-75

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-75 LIGHTING FIXTURE DETAILS.dwg 4/14/2022 2:16:07 PM Randy Podmore

PLOTTED: 4/18/2022 8:39:10 AM

PROJECT LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	MODEL NO.	TYPE	COLOR	MOUNTING	VOLTAGE/WATTS	LAMPS	REMARKS
A	COLUMBIA	LXEM-440-VL-RFA-EU-SSL OR APPROVED EQUAL	LED	–	CEILING/PENANT	120V/68W	LED	MOUNT 12'-0" ABOVE FINISHED FLOOR – (WET LOCATION)
A1	COLUMBIA	LXEM-440-VL-RFA-EU-SSL OR APPROVED EQUAL	LED	–	WALL MOUNT	120V/68W	LED	MOUNT 12'-0" ABOVE FINISHED FLOOR – (WET LOCATION)
A2	HUBBELL	LCS-4-40-VL-E-U-CSWG4 OR APPROVED EQUAL	LED	GRAY	CEILING/PENANT	120V/95W	LED	WITH LENS AND WIRE GAURD
B	HUBBELL	HBL-72L-U-A-3-35K-W-070-ND-GR-ENDG OR APPROVED EQUAL	LED	GRAY	PENDANT	120V/169W	LED	MOUNT 12'-0" ABOVE FINISHED FLOOR, OR ABOVE CRANE SYSTEM (WET LOCATION)
C	HUBBELL	LMC-30LU-4K-3-2-PC4 OR APPROVED EQUAL	LED	–	WALL	120V/70W	LED	MOUNT 12'-0" AFG.
D	LITHONIA LIGHTING	BLC-2X2-4000LM-80CRI35KADSM-MINI10-ZT-MVOLT OR APPROVED EQUAL	LED	WHITE	2X2 DROP IN FIXTURE	120V/29W	LED	COORDINATE WITH ARCHITECTURAL DRAWINGS
D1	LITHONIA LIGHTING	2BLTX2-33L-ADP-120-LP835 OR APPROVED EQUAL	LED	WHITE	CEILING SURFACE	120V/29W	LED	COORDINATE WITH ARCHITECTURAL DRAWINGS
F	HUBBELL	ALD-72L-170-4K7-4X4-UNV-WM-LSG OR APPROVED EQUAL	LED	WHITE	WALL	120V/170W	LED	MOUNT SURFACE ON WALL ABOVE DOOR AT 9' A.F.F.
G	HUBBELL	PGM3-180L60-4K-U-D54-GR OR APPROVED EQUAL	LED	DARK BRONZE	WALL	120V/60W	LED	COORDINATE WITH ARCHITECTURAL DRAWINGS
H	HUBBELL	VTC-5K-G-U-W-2-G-GR OR APPROVED EQUAL	LED	GRAY	WALL	120V/27W	LED	MOUNT AS HIGH AS POSSIBLE
EM	CHLORIDE	VNX12L – NEMA 4X OR APPROVED EQUAL	EMERGENCY	GRAY	WALL	120V/34W	LED	MOUNT SURFACE ON WALL ABOVE DOOR AT 8' A.F.F.
EMX1	CHLORIDE	VNLCN R DEM – NEMA 4X OR APPROVED EQUAL	EXIT WITH EMERGENCY	GRAY	WALL	120V/36W	LED	MOUNT SURFACE ON WALL ABOVE DOOR
EM1	DUAL-LITE/ HUBBELL	HLEBS-23DH-P-N-BE-EL-D OR APPROVED EQUAL	EXIT WITH EMERGENCY	GRAY	WALL	120V/34W	LED	MOUNT SURFACE ON WALL ABOVE DOOR
EMX	HUBBELL	EMLG-50-G-A3-AN-EZ-A3G OR APPROVED EQUAL	EXIT WITH EMERGENCY	GRAY	WALL	120V/36W	LED	COORDINATE WITH MECHANICAL, PROCESS EQUIPMENT, IN CLASS I, DIV I, GROUP D.

ELECTRICAL LIGHTING FIXTURE SCHEDULES (1 / E-76)
SCALE: NONE

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SUGAR CREEK
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WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO: PR58982
DATE: APR 2022
DESIGNED BY: SMR
DRAWN BY: GMS
CHECKED BY: SMR
APPROVED BY: SMR
SCALE: NONE

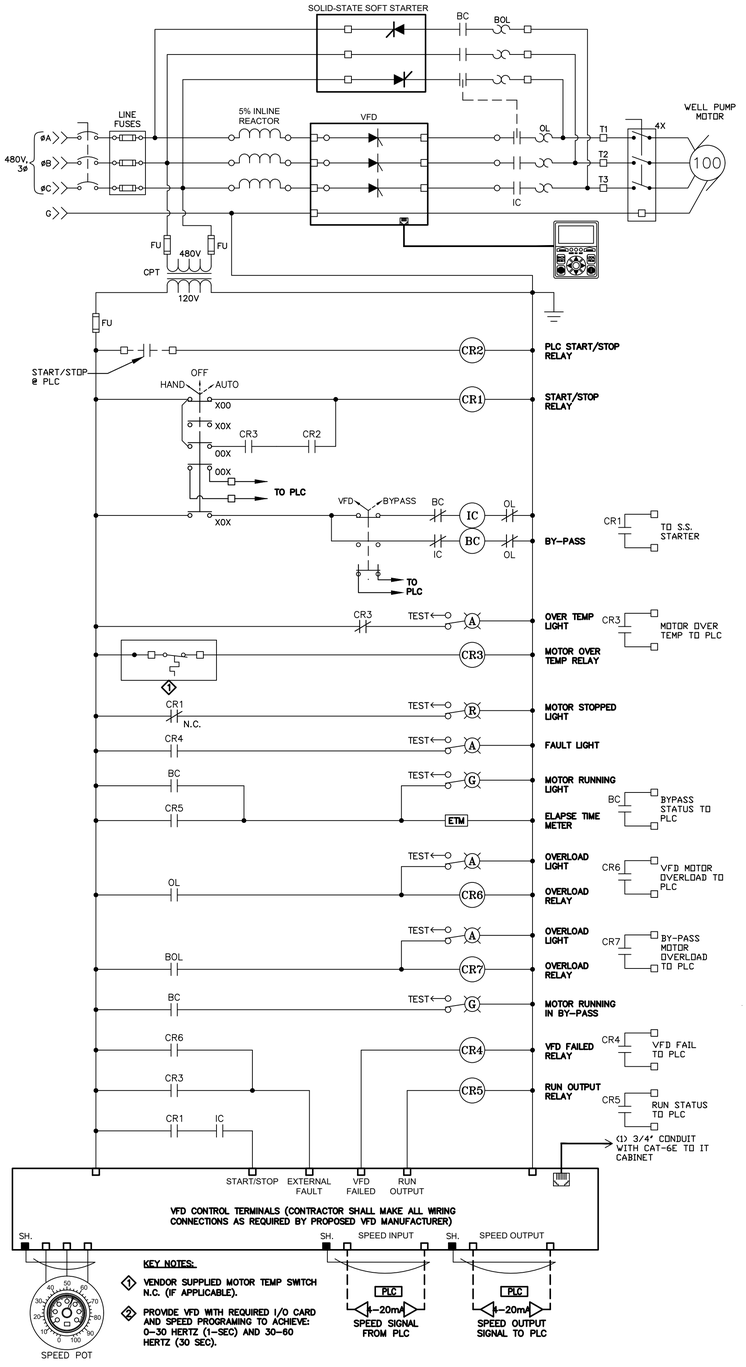
LIGHTING FIXTURE SCHEDULE

E-76

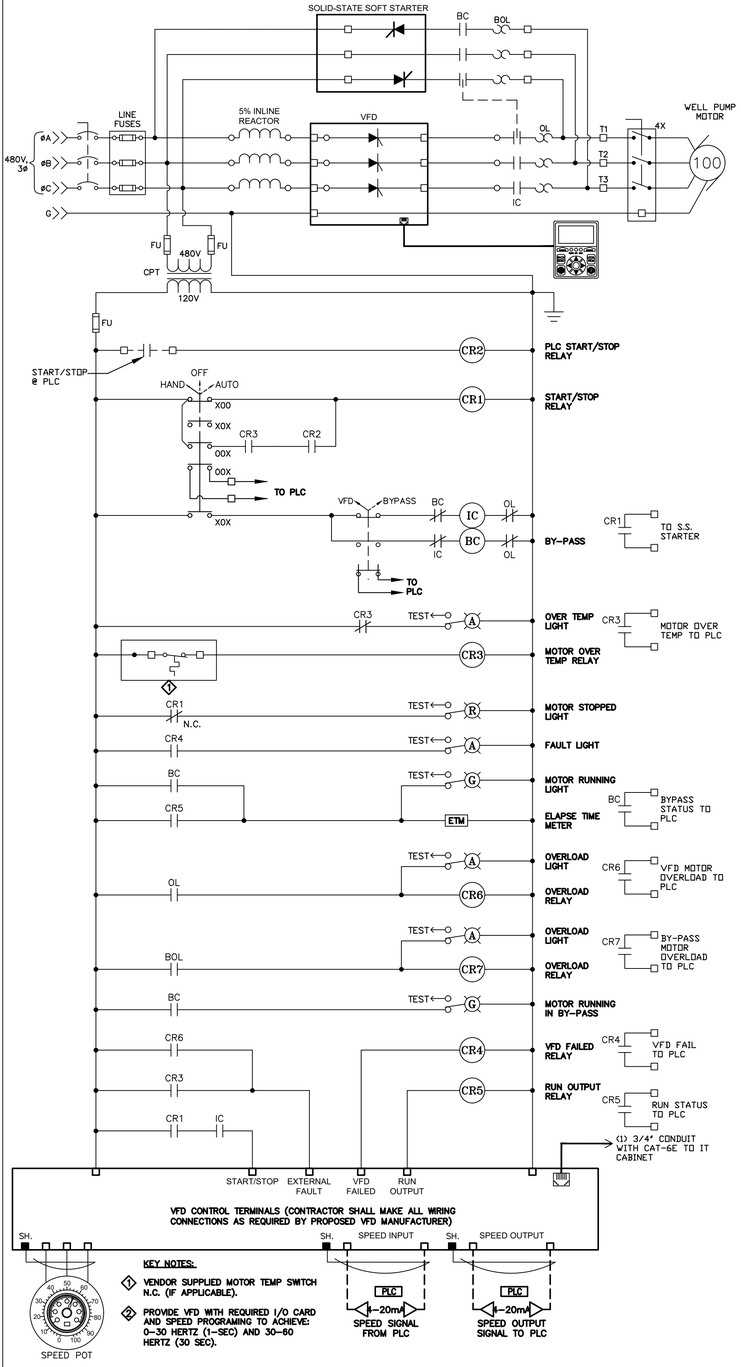
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-76 LIGHTING FIXTURE SCHEDULE.dwg 4/14/2022 2:08:48 PM Randy Podmore

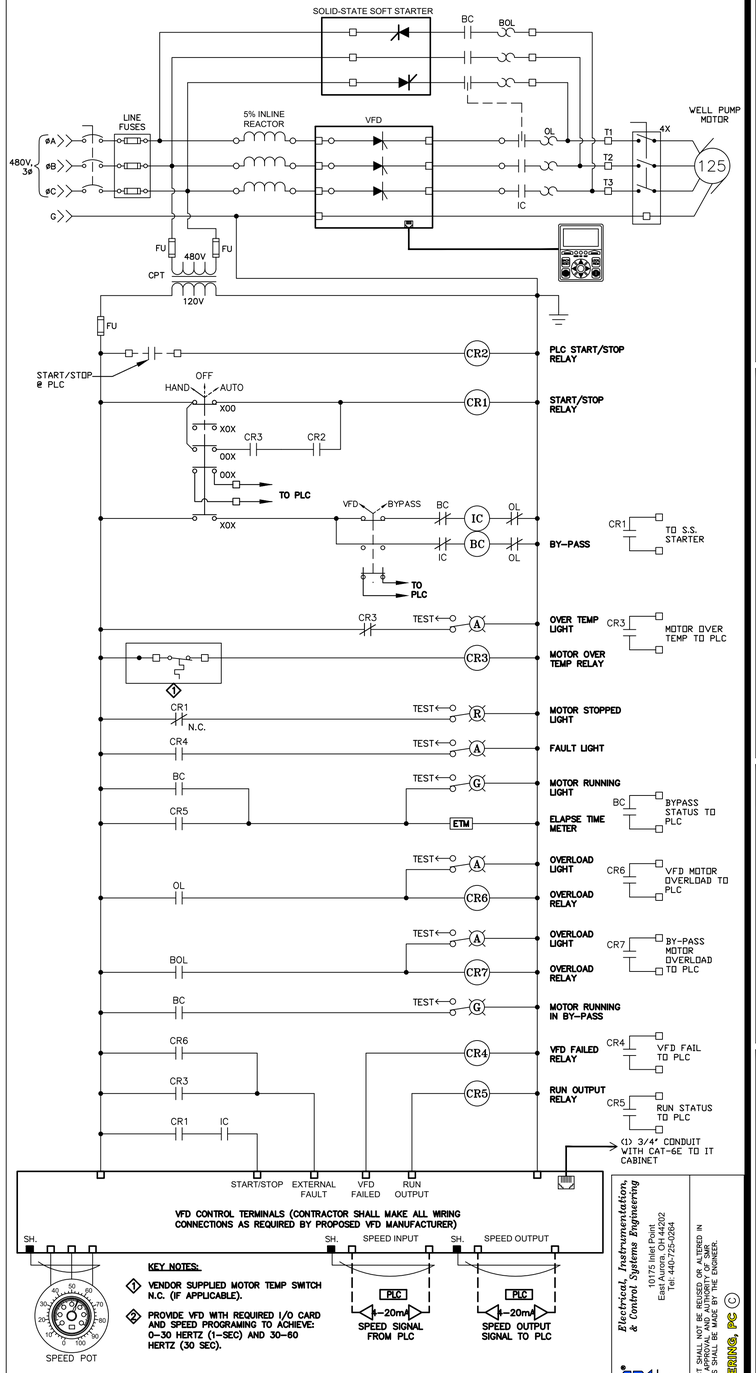
PLOTTED: 4/18/2022 8:39:20 AM



WELL PUMP #2 VFD WIRING DIAGRAM (1) E-77
MCC-2
SCALE: NONE



WELL PUMP #4 VFD WIRING DIAGRAM (2) E-77
MCC-4
SCALE: NONE



WELL PUMP #9 VFD WIRING DIAGRAM (3) E-77
MCC-9
SCALE: NONE

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1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
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APPROVED BY:	SMR
SCALE:	NONE

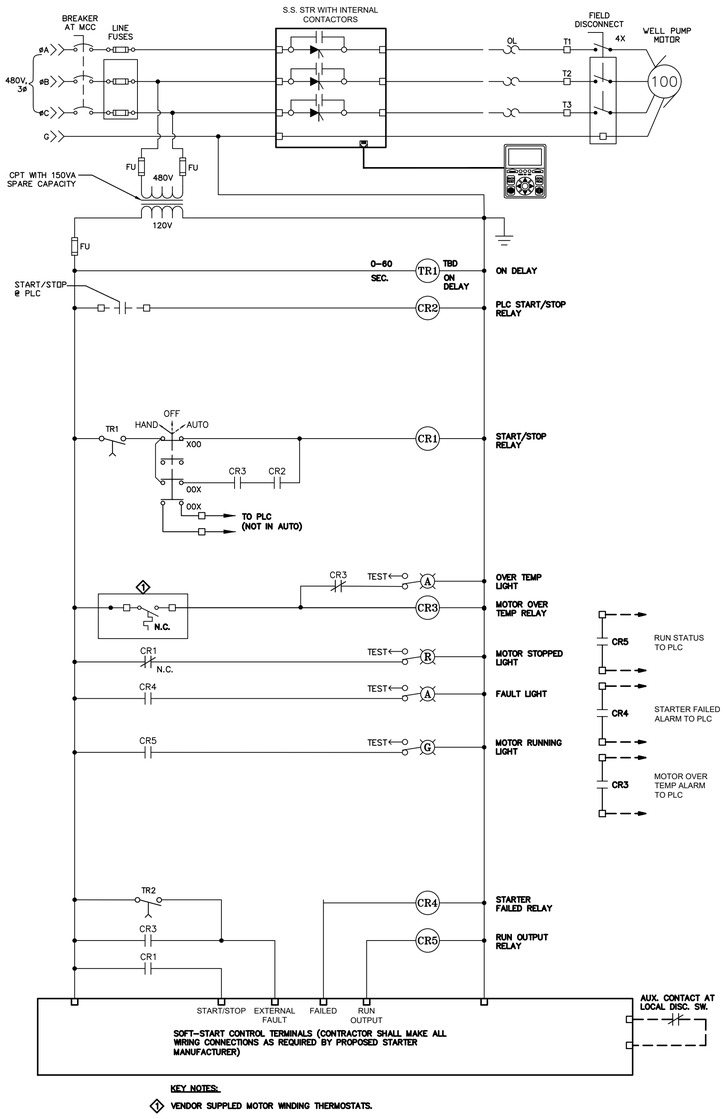
ELECTRICAL WIRING DIAGRAMS 1

E-77

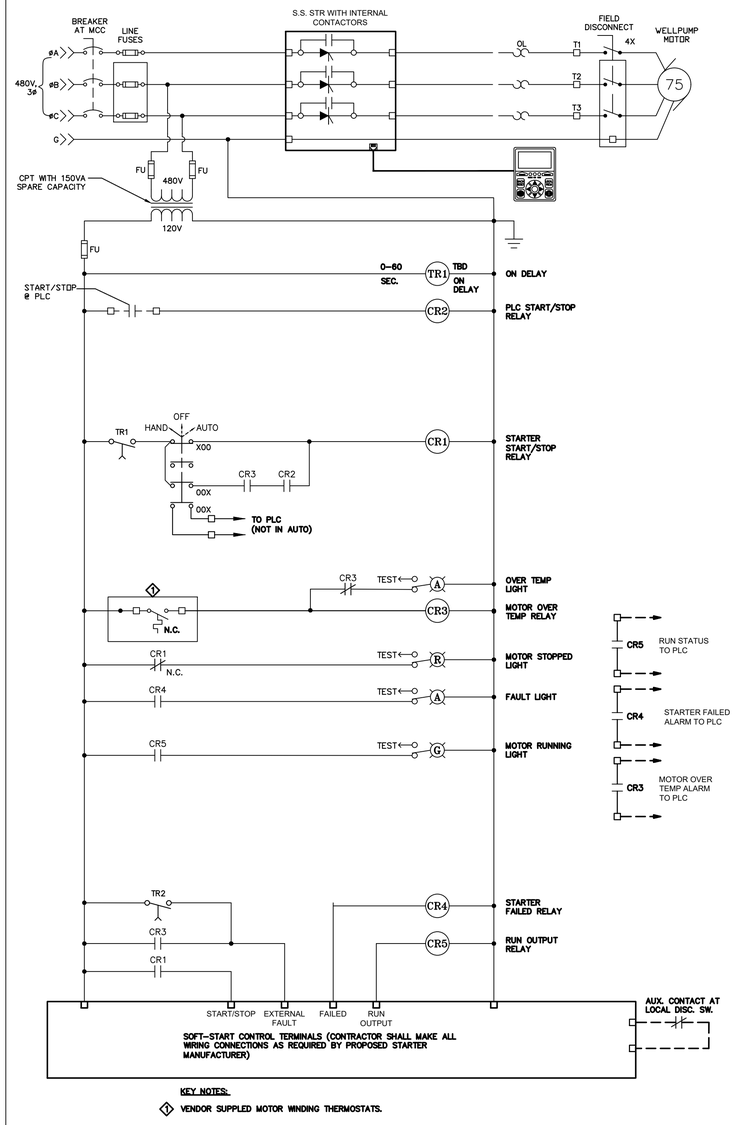
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-77 ELECTRICAL WIRING DIAGRAMS 1.dwg 4/15/2022 8:17:32 AM Randy Podmore

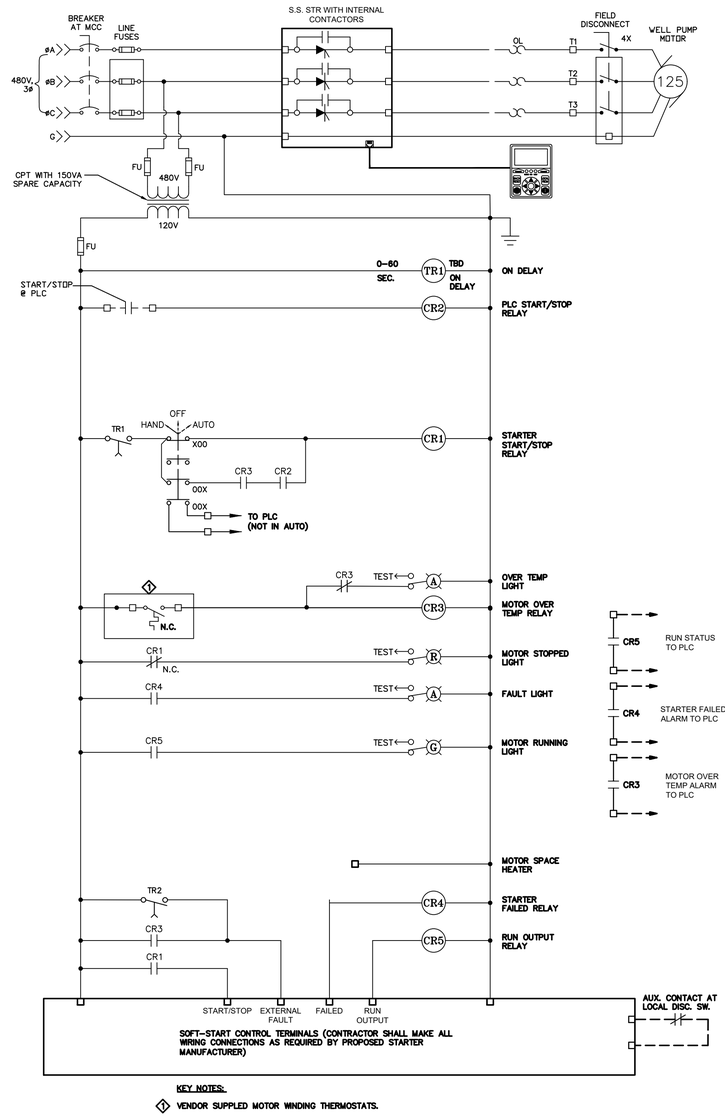
PLOTTED: 4/18/2022 8:45:17 AM



WELL PUMP #1, #3, #7 SOFT-START WIRING DIAGRAM (1 / E-78)
(TYP. OF 3) MCC-1, MCC-3, MCC-7
SCALE: NONE



WELL PUMP #5 & #6 SOFT-START WIRING DIAGRAM (2 / E-78)
(TYP. OF 2) MCC-5, MCC-6
SCALE: NONE



WELL PUMP #8 & #10 SOFT-START WIRING DIAGRAM (3 / E-78)
(TYP. OF 2) MCC-8, MCC-10
SCALE: NONE

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JOB NO:	PR58982
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SCALE:	NONE

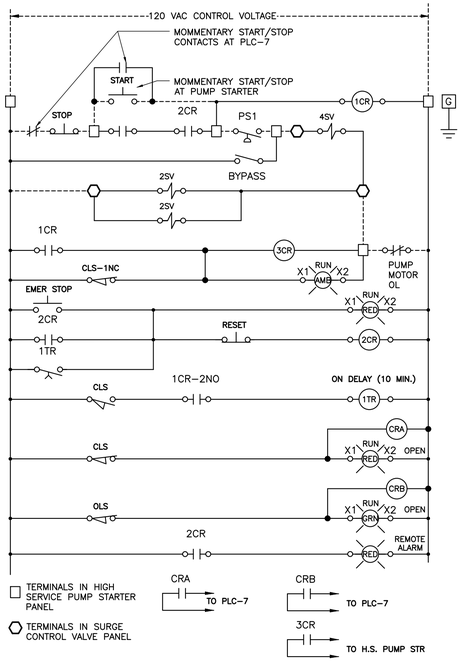
ELECTRICAL WIRING DIAGRAMS 2

E-78

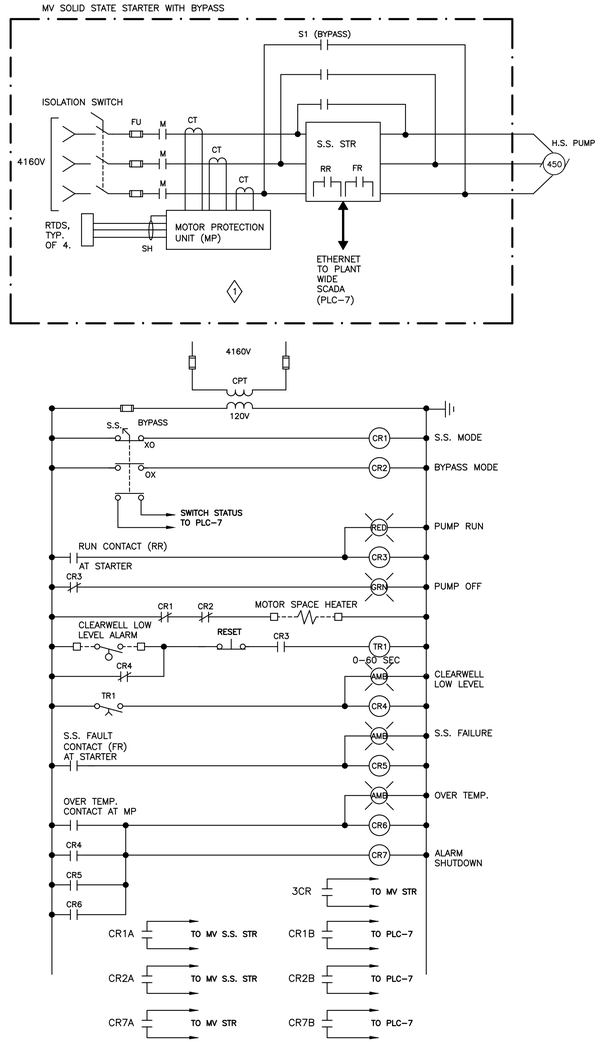
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-78 ELECTRICAL WIRING DIAGRAMS 2.dwg 4/18/2022 8:43:10 AM Randy Podmore

PLOTTED: 4/18/2022 8:45:20 AM



SURGE CONTROL VALVE WIRING DIA.



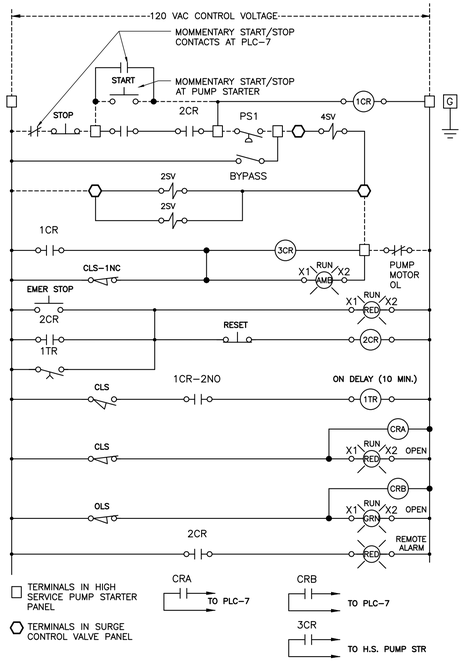
KEY NOTES:

1. PROVIDE THE REQUIRED EXCITATION VOLTAGE SOURCE WIRING FOR THE EXISTING SYNCHRONOUS MOTOR.

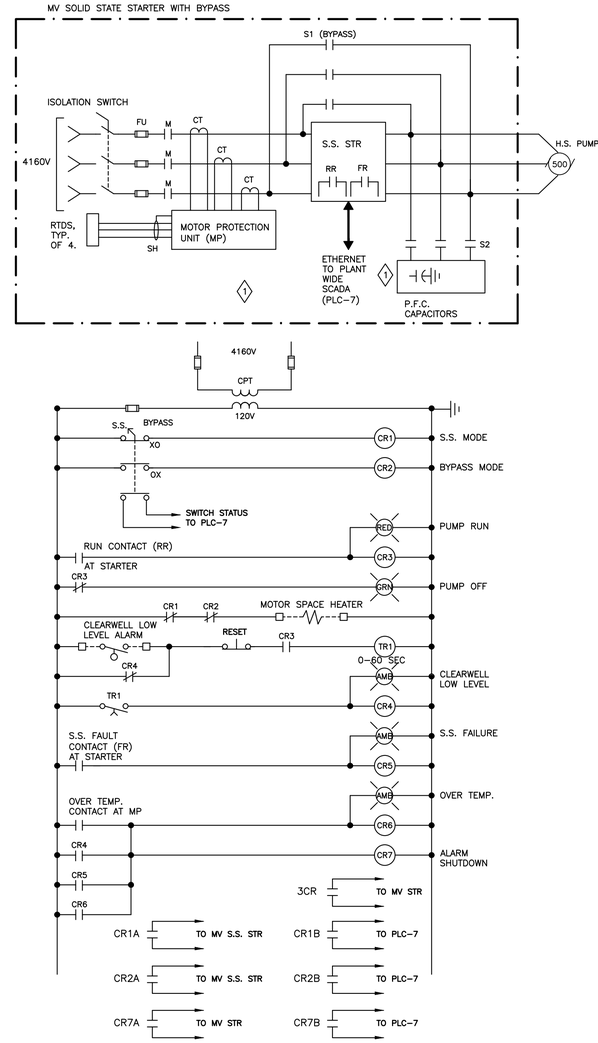
HIGH SERVICE PUMPS SOLID-STATE STARTERS PARTIAL WIRING DIAGRAM - SYNCHRONOUS MOTOR (TYP. FOR HSP-1, HSP-3, HSP-5) MVMCC-1, MVMCC-2

1 / E-79

SCALE: NONE



SURGE CONTROL VALVE WIRING DIA.



KEY NOTES:

1. EXTERNAL P.F. CORRECTION CAPACITOR BANK TO BE MOUNTED OVER THE STARTER, SUPPORT FROM STRUCTURAL CEILING AS REQUIRED.

HIGH SERVICE PUMPS SOLID-STATE STARTERS PARTIAL WIRING DIAGRAM INDUCTION MOTOR (TYP. FOR HSP-4) MVMCC-2

2 / E-79

SCALE: NONE

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APPROVED BY:	SMR
SCALE:	NONE

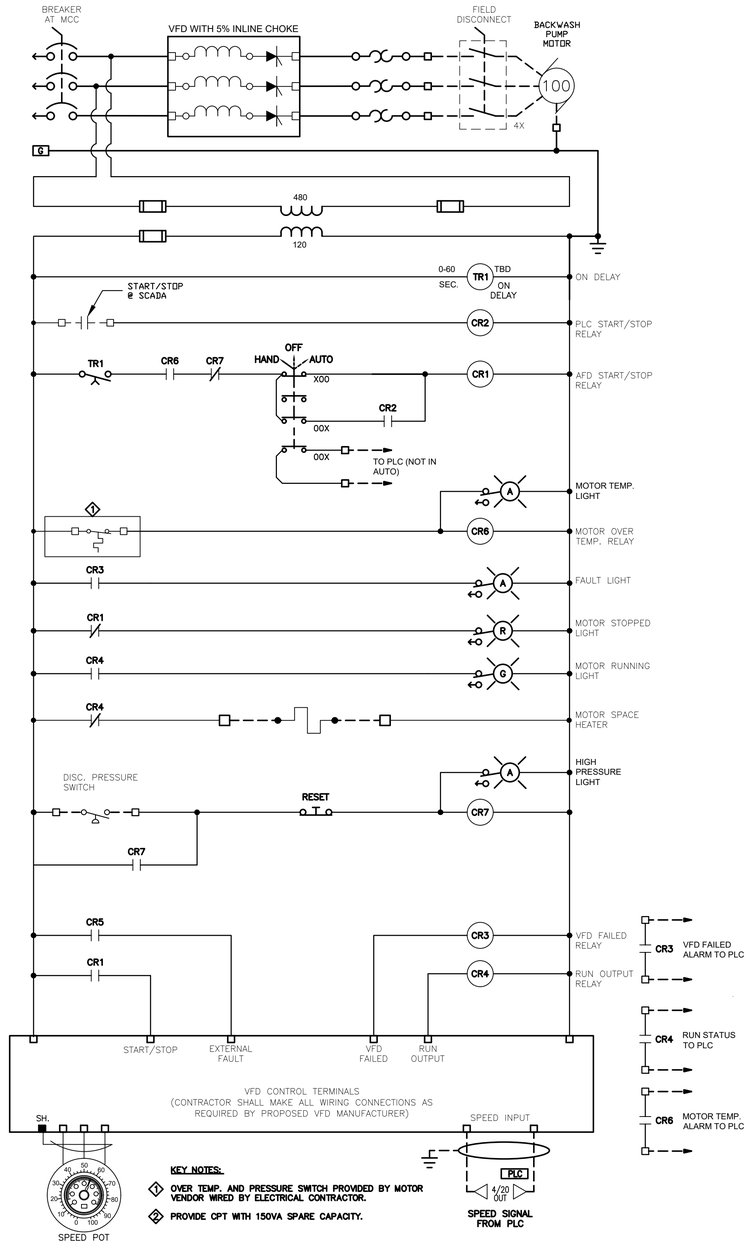
ELECTRICAL WIRING DIAGRAMS 3

E-79

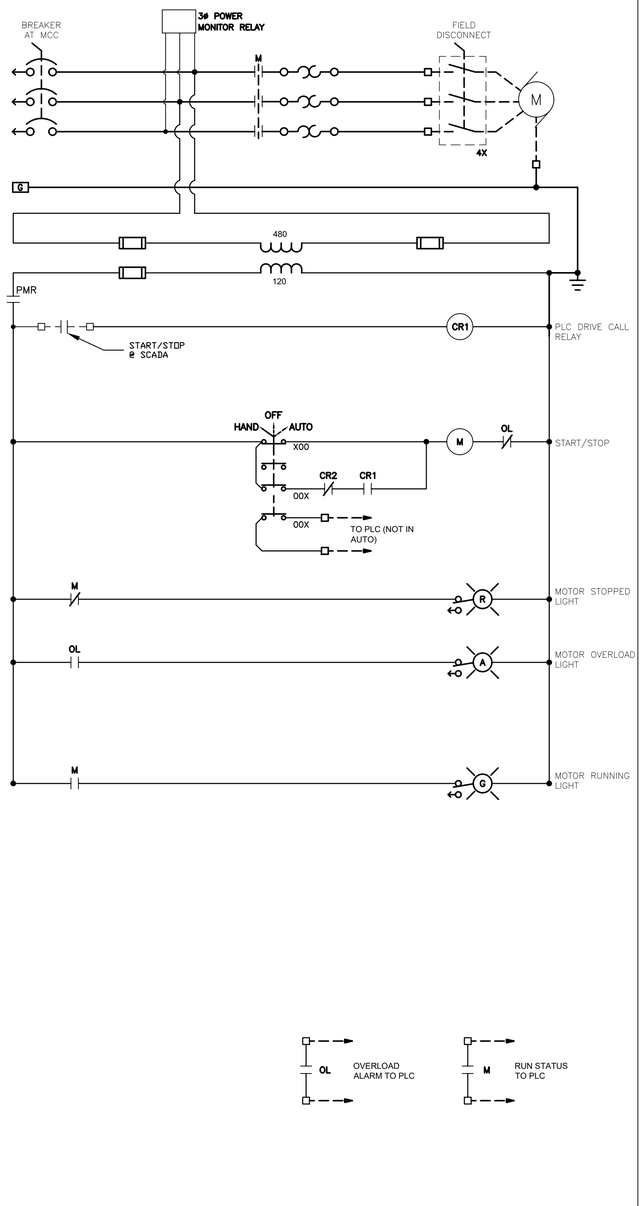
SHEET: OF

P:\PR58982\Cad\Sheets\E-Sheets\E-79 ELECTRICAL WIRING DIAGRAMS 3.dwg 4/18/2022 8:44:05 AM Randy Podmore

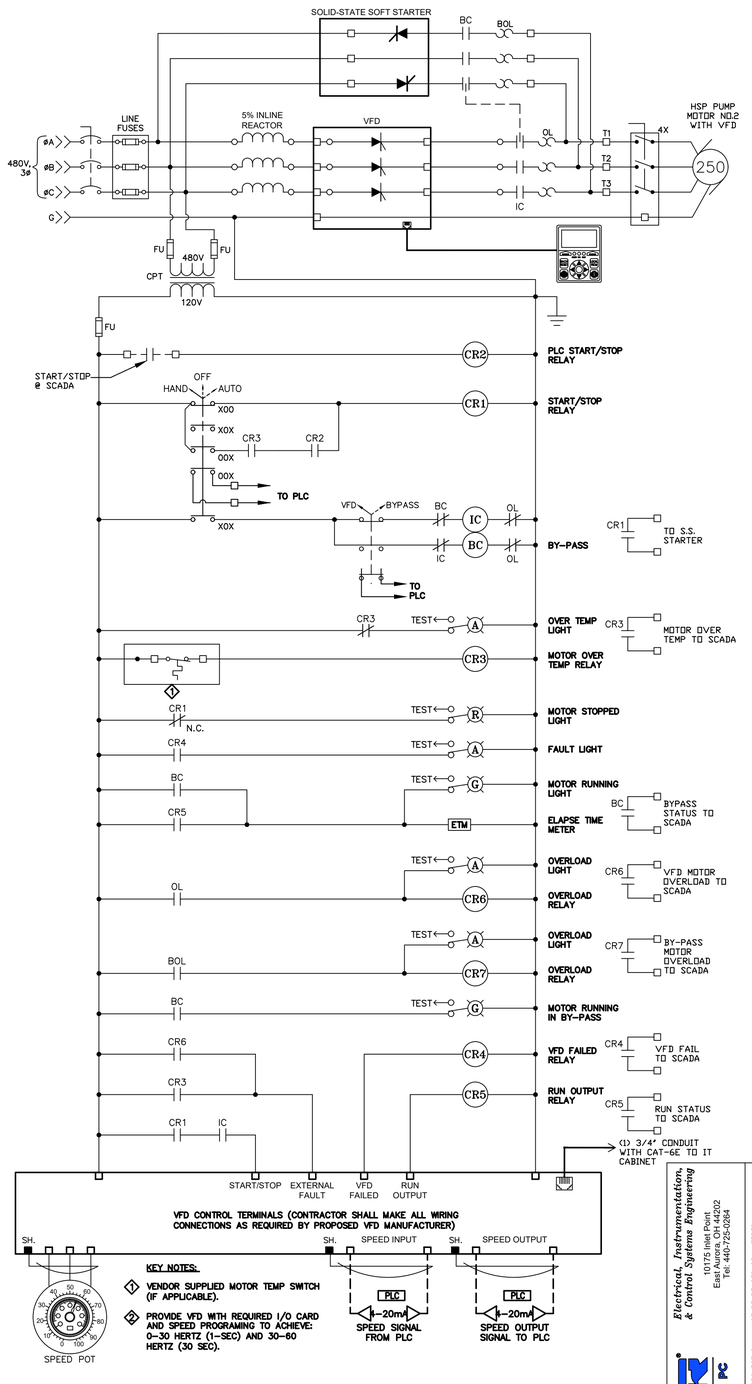
PLOTTED: 4/18/2022 8:39:42 AM



BACKWASH PUMP WIRING DIAGRAM (TYP.) 1 E-80
MCC-A
SCALE: NONE



EXHAUST OR SUPPLY FAN WIRING DIAGRAM (TYP.) 2 E-80
MCC-B
SCALE: NONE



HIGH SERVICE PUMP #2 VFD WIRING DIAGRAM 3 E-80
MCC-?
SCALE: NONE

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SCALE:	NONE

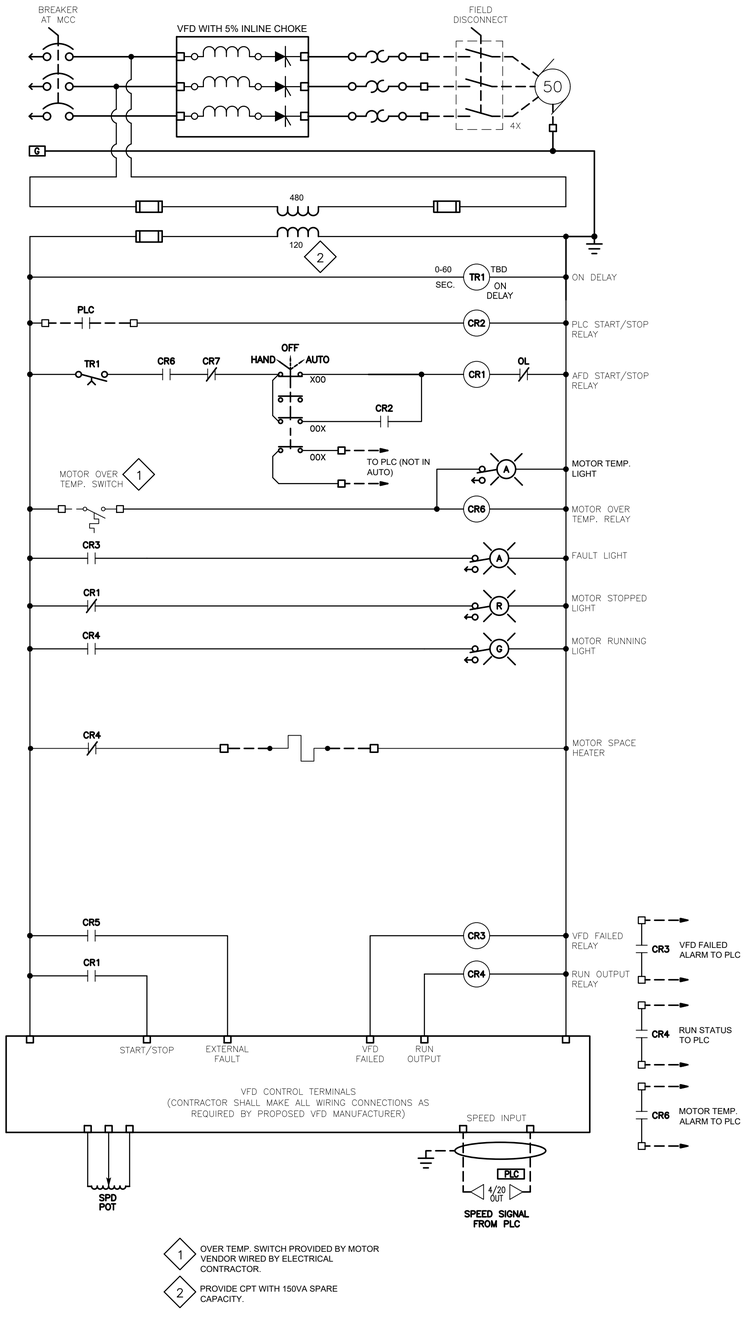
ELECTRICAL WIRING DIAGRAMS 4

E-80

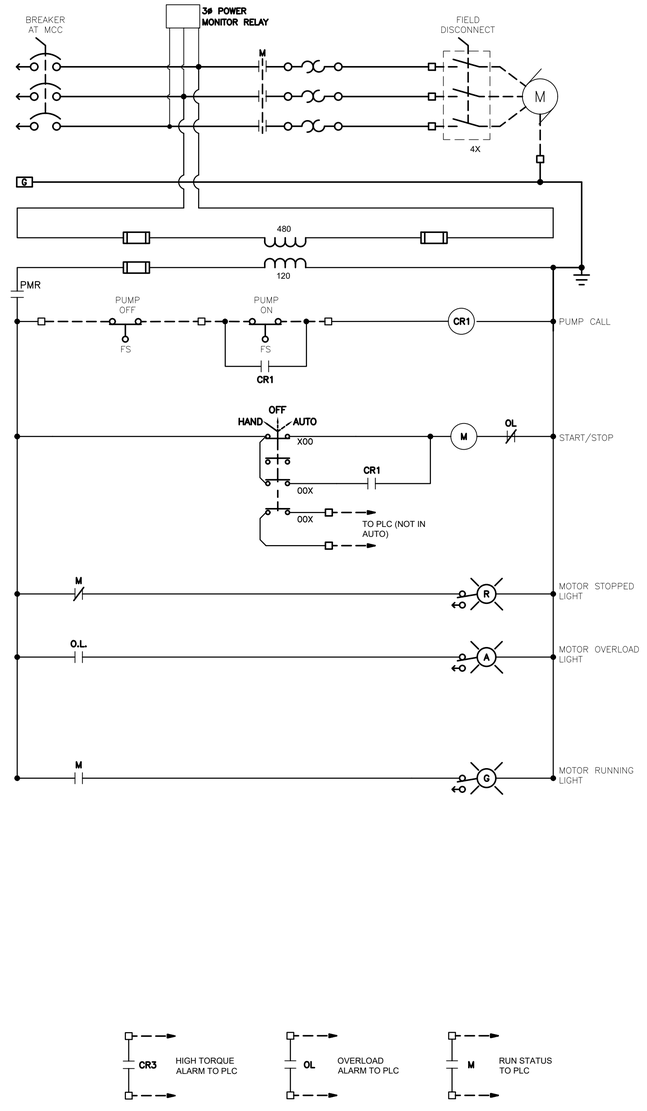
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-80 ELECTRICAL WIRING DIAGRAMS 4.dwg 4/15/2022 8:17:10 AM Randy Podmore

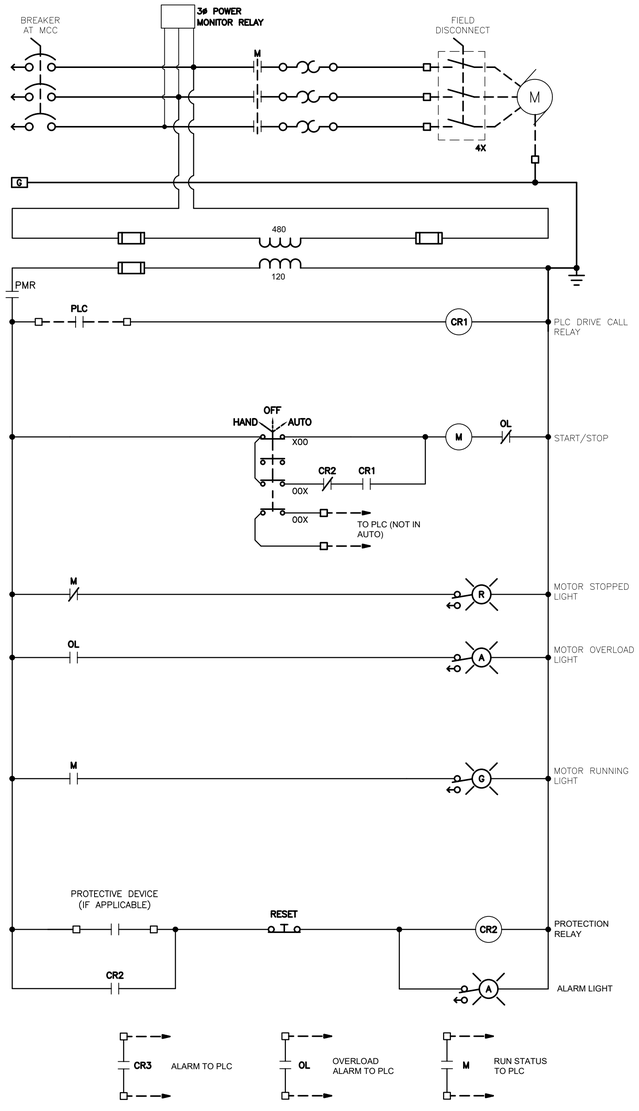
PLOTTED: 4/18/2022 8:39:50 AM



AIR SCOUR BLOWERS WIRING DIAGRAM (TYP. OF 2) — 1 / E-81
MCC-A, MCC-B
SCALE: NONE



SUMP PUMP WIRING DIAGRAM (TYP.) — 2 / E-81
MCC-?
SCALE: NONE



DRAIN PUMP WIRING DIAGRAM (TYP.) — 3 / E-81
MCC-B
SCALE: NONE

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SCALE:	NONE

ELECTRICAL WIRING DIAGRAMS 5

E-81

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\E-81 ELECTRICAL WIRING DIAGRAMS 5.dwg 4/15/2022 8:17:01 AM Randy Podmore

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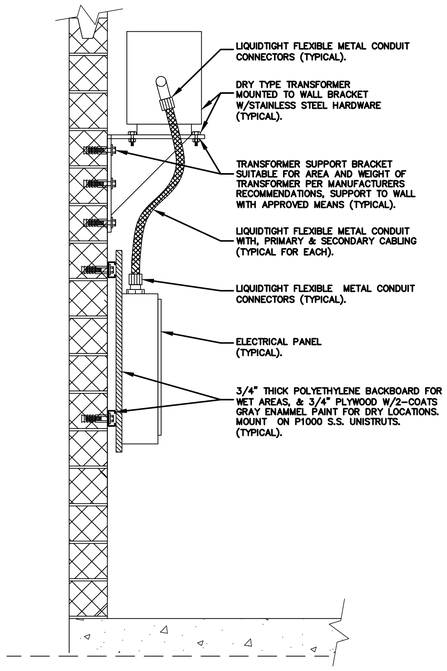
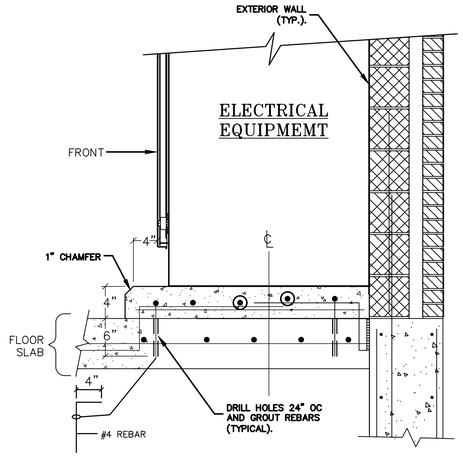


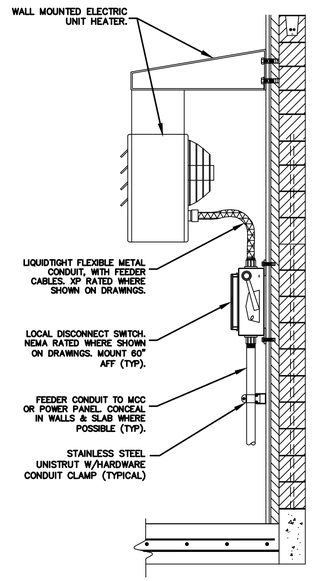
WALL MOUNT TRANSFORMER INSTALLATION DETAIL (TYP.) 1 E-82
SCALE: NONE



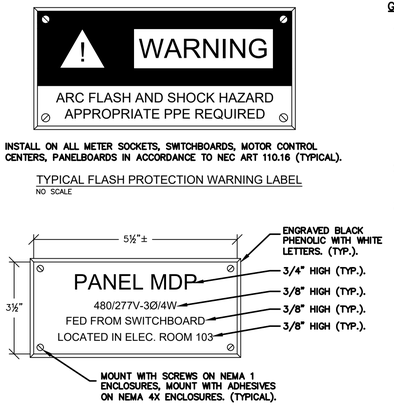
NOTES

1. REFER TO STRUCTURAL SHEETS FOR PAD DETAILS

4" THICK HOUSEKEEPING PAD INSTALLATION DETAIL (TYP.) 2 E-82
SCALE: NONE



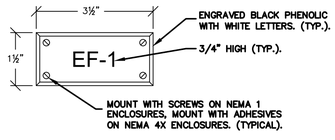
ELECTRIC HEATER ELECTRICAL CONNECTION DETAIL (TYP.) 3 E-82
SCALE: NONE



INSTALL ON ALL METER SOCKETS, SWITCHBOARDS, MOTOR CONTROL CENTERS, PANELBOARDS IN ACCORDANCE TO NEC ART 110.16 (TYPICAL).

TYPICAL FLASH PROTECTION WARNING LABEL
NO SCALE

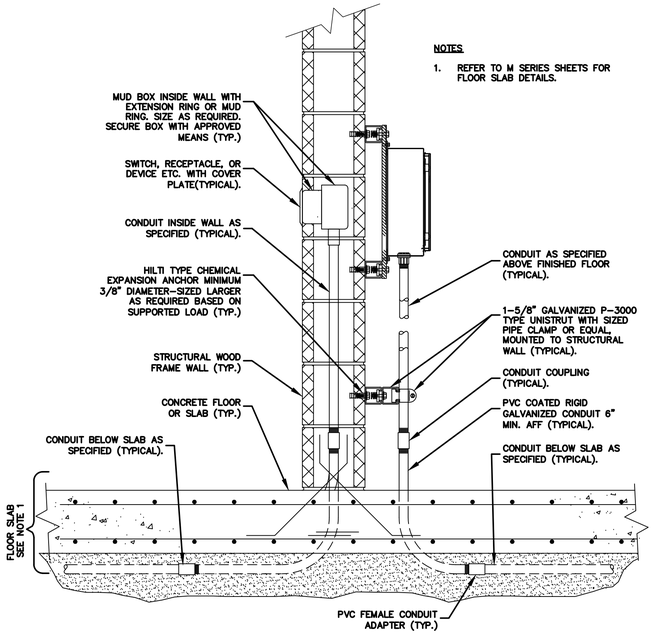
TYPICAL PANEL NAMEPLATE
NO SCALE



GENERAL NOTE:

1. NAMEPLATES ARE REQUIRED TO BE INSTALLED ON ALL ELECTRICAL EQUIPMENT FURNISHED ON PROJECT INCLUDING BUT NOT LIMITED TO: DISCONNECT SWITCHES, STARTERS, MOTOR CONTROL CENTERS, CONTROL STATIONS, SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, ELECTRICAL CONTROL CENTERS (PROCESS PANELS) AND RELATED ITEMS.
2. REFER TO SPECIFICATIONS FOR NAMEPLATE REQUIREMENTS.
3. ALL NAMEPLATES TO BE 1/16" THICK PHENOLIC WITH WHITE CENTER LAMINATION

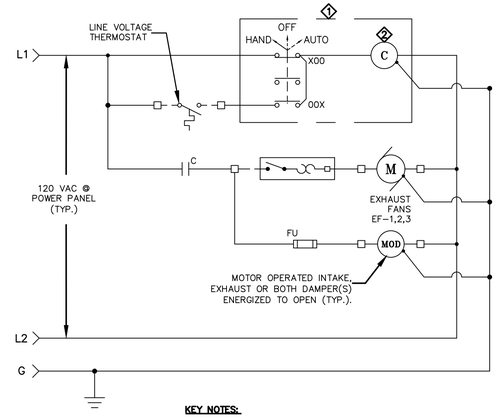
ELECTRICAL EQUIPMENT NAME TAG DETAIL (TYP.) 4 E-82
SCALE: NONE



NOTES

1. REFER TO M SERIES SHEETS FOR FLOOR SLAB DETAILS.

CONDUITS IN AND BELOW SLAB INSTALLATION DETAIL (TYP.) 5 E-82
SCALE: NONE



KEY NOTES:

1. HOA SELECTOR SWITCH IN NEMA 4X ENCLOSURE.
2. CONTACTOR DPDT, 120VAC COIL, 20 AMP RATED CONTACTS).

SINGLE PHASE EXHAUST FAN WIRING DIAGRAM (TYP.) 6 E-82
SCALE: NONE

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SCALE:	NONE

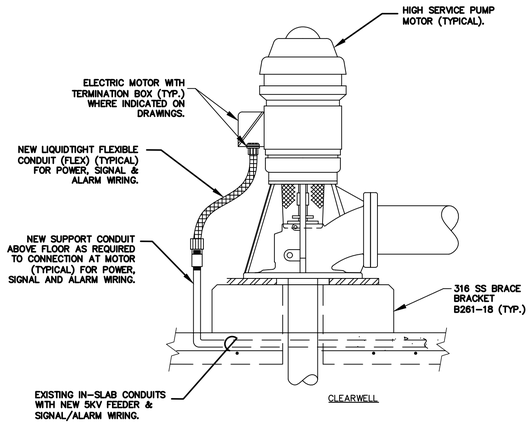
ELECTRICAL DETAILS

E-82

SHEET: OF

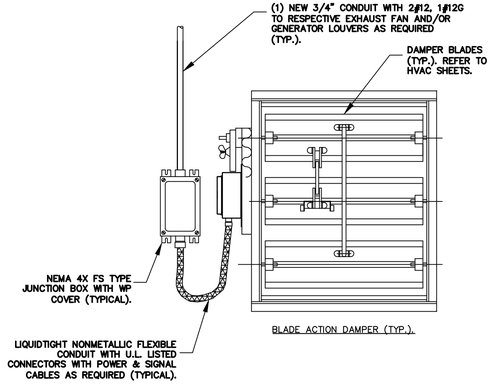
P:\PR58982\Cadd\Sheets\E-Sheets\E-82 ELECTRICAL DETAILS 1.dwg 4/15/2022 2:01:59 PM Randy Podmore

PLOTTED: 4/18/2022 8:40:07 AM



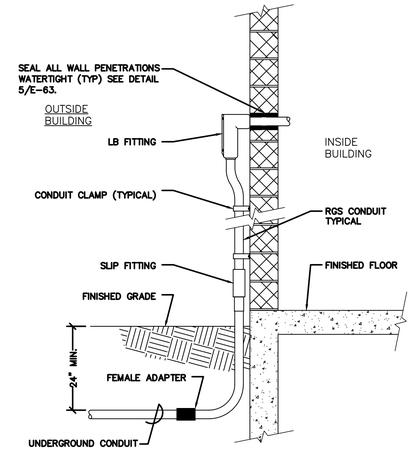
HIGH SERVICE PUMP WIRING INSTALLATION DETAIL (TYP. OF 5) 1 E-83

SCALE: NONE



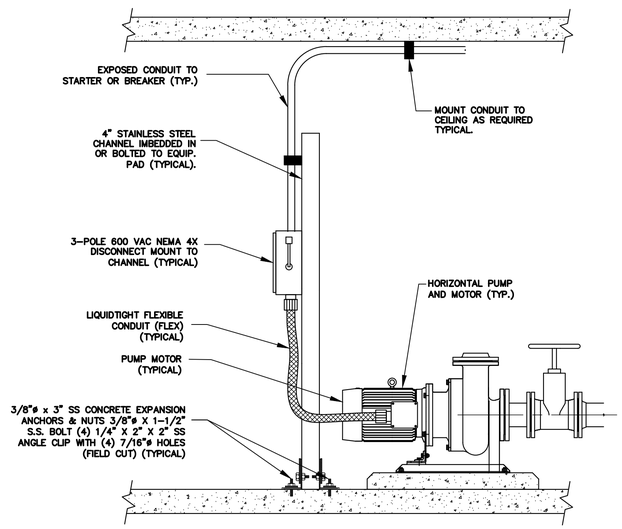
ELECTRICAL CONNECTION AT MOTOR OPERATED DAMPERS DETAIL (TYP.) 2 E-83

SCALE: NONE



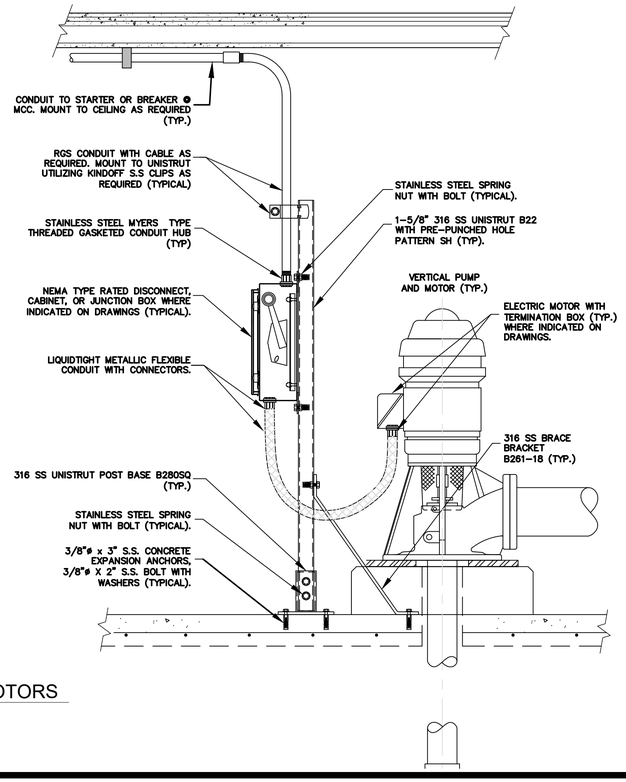
CONDUIT PENETRATION THRU CMU WALLS DETAIL (TYP.) 3 E-83

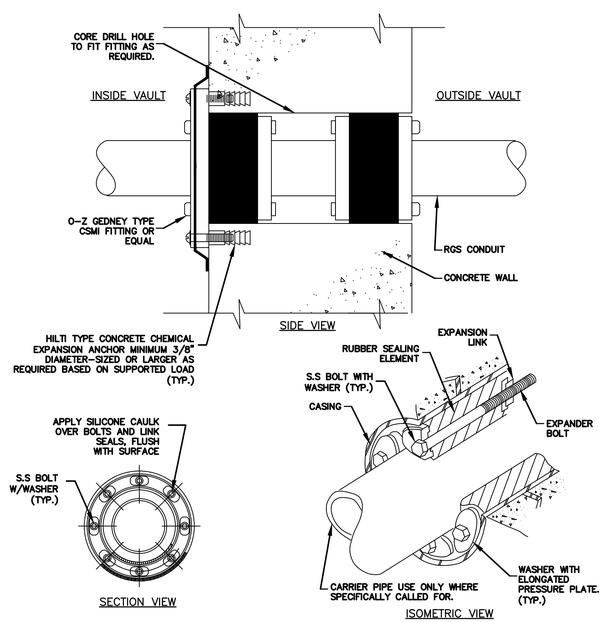
SCALE: NONE



ELECTRICAL CONNECTIONS AT PUMP OR MOTORS DETAIL (TYP.) 4 E-83

SCALE: NONE





CONDUIT PENETRATION THRU CONCRETE WALL DETAIL (TYP.) 5 E-83

SCALE: NONE

Electrical, Instrumentation, & Control Systems Engineering
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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

ELECTRICAL DETAILS

E-83

SHEET: OF

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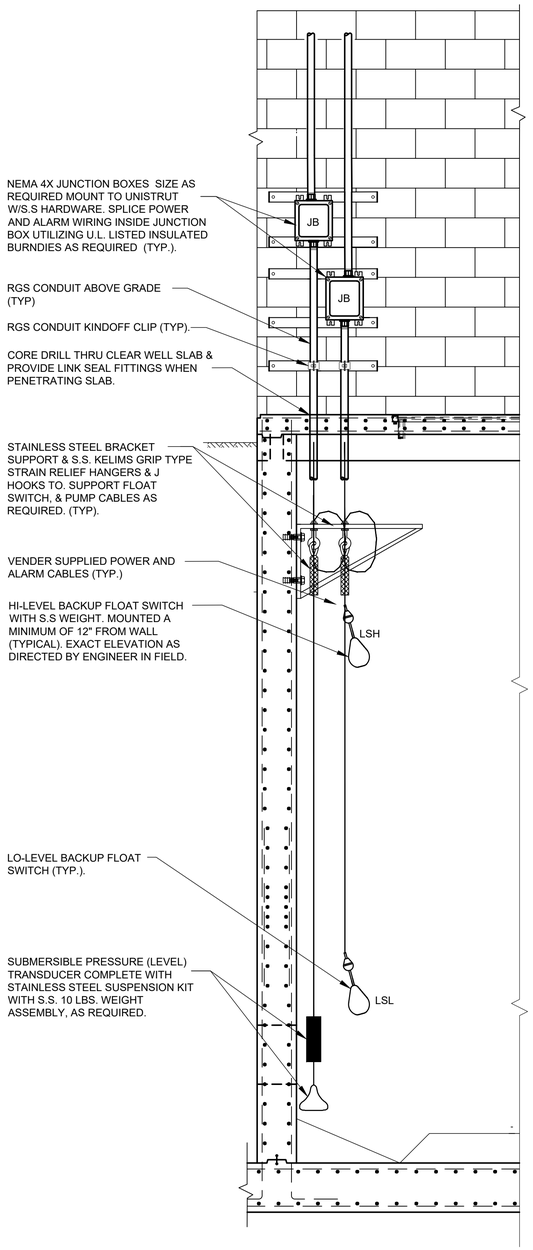
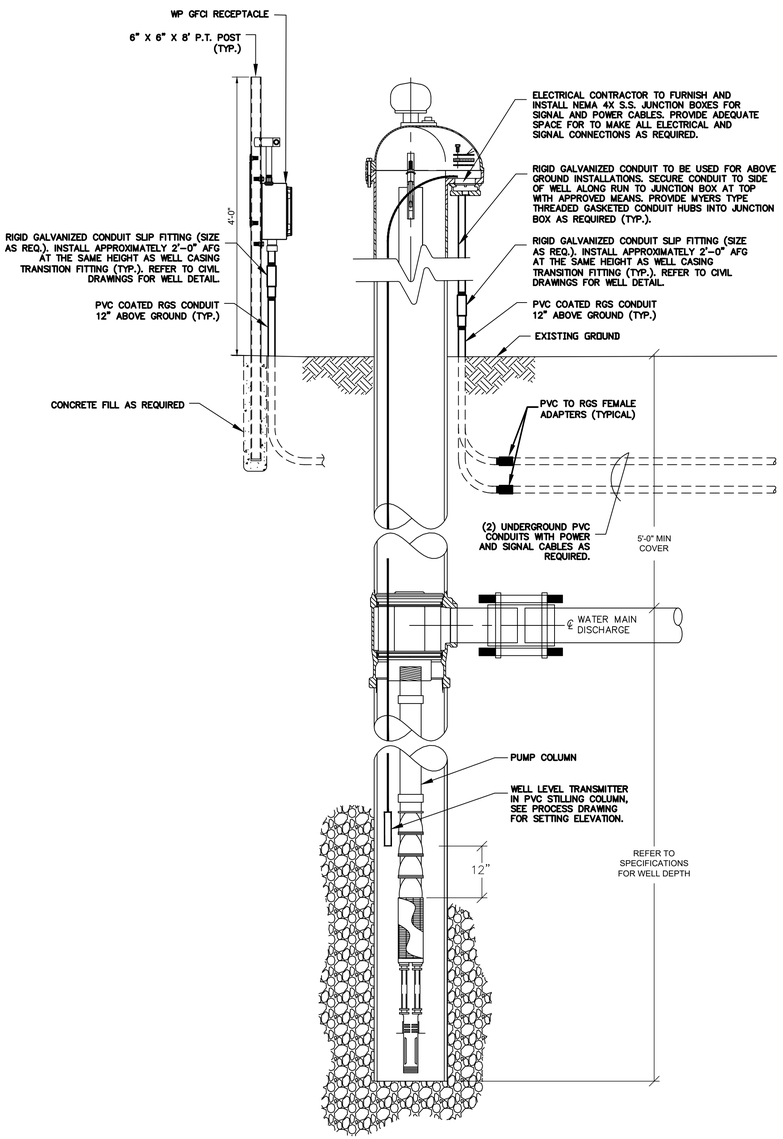


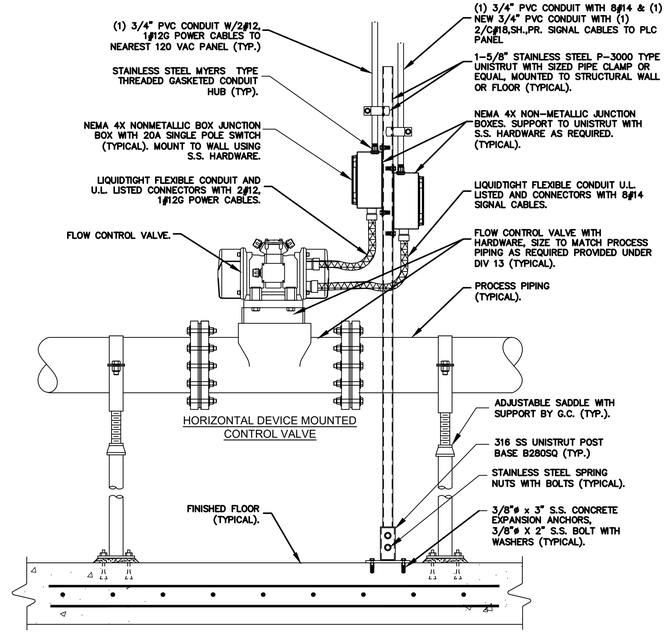
SUBMERSIBLE LEVEL/MEASUREMENT INSTRUMENTATION INSTALLATION DETAIL (TYP.) 1 E-84

SCALE: NONE



ELECTRICAL & SIGNAL CONNECTIONS & WELL PUMP INSTALLATION DETAIL (TYP.) 2 E-84

SCALE: NONE



HORIZONTAL DEVICE MOUNTED CONTROL VALVE INSTALLATION DETAIL (TYP.) 3 E-84

SCALE: NONE

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SCALE:	NONE

ELECTRICAL DETAILS

E-84

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NOTES:

WELL 1 THRU 7 – 5KV PLATFORM WITH RTU, TRANSFORMER, TRANSFER SWITCH, PUMP CONTROLLER & HARDWARE TO BE REMOVED. SEE NOTES ON EACH WELL SITE.

EXISTING WELL 1 THRU 7 SITE DETAIL (TYP. OF 7) 1 E-85

SCALE: NONE

NOTES:

WELL 1 THRU 7 – RTU & RISER POLE WITH ANTENNA TO BE REMOVED. SEE NOTES ON EACH WELL PUMP SITE PLAN.

EXISTING WELL 1 THRU 7 RTU & RISER POLE DETAIL (TYP. OF 7) 2 E-85

SCALE: NONE

NOTES:

WELL 1 THRU 7 – 5KV PLATFORM WITH TRANSFORMER, TRANSFER SWITCH, PUMP CONTROLLER & HARDWARE TO BE REMOVED. SEE NOTES ON EACH WELL SITE.

EXISTING WELL 1 THRU 7 SITE DETAIL WITH 5KV FEED PLATFORM (TYP. OF 7) 3 E-85

SCALE: NONE

NOTES:

WELL 8 THRU 10 – 5KV PLATFORM WITH RTU, TRANSFORMER, TRANSFER SWITCH, PUMP CONTROLLER & HARDWARE TO BE REMOVED. SEE NOTES ON EACH WELL SITE.

WELL 8 THRU 10 SITE DETAIL (TYP. OF 3) 4 E-85

SCALE: NONE

NOTES:

WELL 8 THRU 10 – RTU WITH ANTENNA, MOTOR STARTER & POWER PANEL TO BE REMOVED. SEE NOTES ON EACH WELL PUMP SITE PLAN.

EXISTING WELL 8 THRU 10 RTU & PANELS DETAIL (TYP. OF 3) 5 E-85

SCALE: NONE

NOTES:

WELL 8 THRU 10 – 5KV PLATFORM WITH TRANSFORMER, TRANSFER SWITCH, PUMP CONTROLLER & HARDWARE TO BE REMOVED. SEE NOTES ON EACH WELL SITE.

WELL 8 THRU 10 SITE DETAIL WITH 5KV PLATFORM (TYP. OF 3) 6 E-85

SCALE: NONE

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1	BID SET	04/2022

JOB NO:	PR58982
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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

ELECTRICAL DETAILS 4 - WELL PHOTOS

E-85

SHEET: OF

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PLOTTED: 4/18/2022 8:53:17 AM

POWER LEGEND

RECEPTACLE OUTLETS – NUMERAL BY THE SIDE OF THE SYMBOL INDICATES CIRCUIT NUMBER

- DUPLEX CONVENIENCE OUTLET MOUNTED AT +18" OR AS NOTED.
- DOUBLE DUPLEX OUTLET (FOURPLEX) RECEPTACLE MOUNTED AT +18" OR AS NOTED.
- DUPLEX CONVENIENCE OUTLET MOUNTED ABOVE COUNTER. VERIFY EXACT MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
- TELEPHONE OUTLET AT +18" OR AS NOTED. FURNISH (1) 3/4" CONDUIT WITH PULL WIRE TO TELEPHONE MOUNTING BOARD OR AS NOTED.
- CABLE TV OUTLET AT +18" OR AS NOTED. FURNISH (1) 3/4" CONDUIT WITH PULL WIRE TO TELEPHONE MOUNTING BOARD OR AS NOTED.
- DEDICATED OUTLET AT +18" OR AS NOTED. 'HUBBELL' #IG5262 (ORANGE) RECEPTACLE WITH ISOLATED GROUND.
- MULTI-OUTLET ASSEMBLY
- FLUSH MOUNTED PANELBOARD AND CABINET. MOUNT 6'-6" TO TOP
- SURFACE MOUNTED PANELBOARD AND CABINET. MOUNT 6'-6" TO TOP
- PB — PULL BOX
- 4X — COMBINATION MOTOR CONTROLLER – FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. SIZE AS NOTED. NUMBER INDICATES NEMA TYPE CONSTRUCTION.
- (1) — MOTOR – SIZE AS INDICATED ON DRAWINGS.
- DISCONNECT SWITCH – SIZE AND FUSES AS PER MANUFACTURER'S RECOMMENDATIONS (WEATHERPROOF WHERE OUTSIDE).
- (J) — JUNCTION BOX IN ACCESSIBLE LOCATION.
- (J) — JUNCTION BOX IN ACCESSIBLE LOCATION WITH FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT AS NOTED.
- (PE) — PHOTOCELL ON ROOF (AIM NORTH).
- SEALING FITTING
- VS 12 — MOTOR CONTROLLER OR VFD – INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. NUMBER INDICATES NEMA TYPE CONSTRUCTION, VS INDICATES VENDOR SUPPLIED.
- EQUIPMENT SHOWN LIGHT & DASHED INDICATES EXISTING EQUIPMENT EXCEPT, FOR UNDERGROUND CONDUITS AND/OR AS OTHERWISE NOTED.
- EQUIPMENT SHOWN LIGHT, DASHED, & HATCHED INDICATES EXISTING EQUIPMENT TO BE REMOVED.
- UTILITY POLE

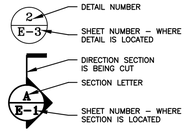
RACEWAYS AND CONDUCTORS

- INDICATES HOMERUN TO PANELBOARD OR AS NOTED.
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- —OHP— PROPOSED OVERHEAD PRIMARY CABLE
- —EX— EXISTING UNDERGROUND ELECTRICAL CONDUIT
- —E— PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- —EP— PROPOSED UNDERGROUND PRIMARY ELEC CONDUIT
- —S— PROPOSED UNDERGROUND SIGNAL CONDUIT
- —T— PROPOSED UNDERGROUND TELEPHONE CONDUIT

ABBREVIATED LIST OF NEMA ENCLOSURE TYPES

- **TYPE 1: GENERAL PURPOSE. INDOOR.**
- **TYPE 2: DRIP–PROOF. NONCORROSIVE. INDOOR.**
- **TYPE 3: DUST–TIGHT. RAINTIGHT. OUTDOOR.**
- **TYPE 3R: RAINPROOF. OUTDOOR.**
- **TYPE 4: WATERTIGHT AND DUST–TIGHT. NONCORROSIVE. INDOOR AND OUTDOOR.**
- **TYPE 4X: WATERTIGHT AND DUST–TIGHT. CORROSION RESISTANT. INDOOR AND OUTDOOR.**
- **TYPE 6: WATERTIGHT. DUST–TIGHT. SHORT–TIME SUBMERSIBLE. INDOOR AND OUTDOOR.**
- **TYPE 6P: WATERTIGHT. DUST–TIGHT. LONG–TIME SUBMERSIBLE. INDOOR AND OUTDOOR.**
- **TYPE 7: CLASS 1, GROUPS A, B, C, OR D. INDOOR.**
- **TYPE 8: CLASS 1, GROUPS A, B, C, OR D. INDOOR OR OUTDOOR.**
- **TYPE 9: CLASS II, GROUPS E OR G. INDOOR.**
- **TYPE 12: DUST–TIGHT. WATERTIGHT. NONCORROSIVE LIQUID. INDOOR.**
- **TYPE 13: WATERTIGHT. DUST–TIGHT. OILTIGHT. NONCORROSIVE LIQUID INDOOR.**

DETAIL & SECTION MARK LEGEND



DIRECTION OF NORTH

ABBREVIATIONS

ACB	AIR CIRCUIT BREAKER	EM	EMERGENCY	L.P.S.	LOW PRESSURE SODIUM	RWT	REFLECTED WAVE TRAP
ALT	ALTERNATE	ELR	END LINE RESISTOR	LV	LOW VOLTAGE	S	SIGNAL
AC	ALTERNATING CURRENT	EXIST	EXISTING	MGST	MAGNETIC STARTER	SEC	SECONDARY
AL	ALUMINUM	XP	EXPLOSION PROOF	MCB	MAIN CIRCUIT BREAKER	SP	SINGLE POLE
AWG	AMERICAN WIRE GAUGE	FDR	FEEDER	MLO	MAIN LUGS ONLY	ST	SINGLE THROW
A	AMPERE(S)	FA	FIRE ALARM	MH	MANHOLE	SPK	SPEAKER
ATS	AUTOMATIC TRANSFER SWITCH	FACP	FIRE ALARM CONTROL PANEL	MTS	MANUAL TRANSFER SWITCH	SMR	SURFACE METAL RACEWAY
BW	BUSWAY	F.P.C.	FIRE PROTECTION CONTRACTOR	MC	MECHANICAL CONTRACTOR	S.S.	SOLID STATE
CLG	CEILING	FLUOR	FLUORESCENT	MIKE	MICROPHONE	SW	SWITCH
CKT	CIRCUIT	FL	FLOOR	MTR	MOTOR	SWBD	SWITCHBOARD
CB	CIRCUIT BREAKER	F.S.C.	FOOD SERVICE CONTRACTOR	MCC	MOTOR CONTROL CENTER	T.C.C.	TEMPERATURE CONTROL CONTRACTOR
CCTV	CLOSED CIRCUIT TELEVISION	HZ	FREQUENCY IN CYCLES PER SECOND	KCMIL	THOUSAND CIRCULAR MIL(S)		
COND	CONDUCTOR	F	FUSE	NF	NONFUSED	TEMP	TEMPORARY
C	CONDUIT (SEE RACEWAYS AND CONDUCTORS).	FS	FUSIBLE SWITCH	NC	NORMALLY CLOSED	T	TELEPHONE
		GEN	GENERATOR	NO	NORMALLY OPEN	TV	TELEVISION
CONN	CONNECT	G.C.	GENERAL CONTRACTOR	NTS	NOT TO SCALE	TB	TERMINAL BOX
CC	CONTROL CABINET	GRD	GROUND	N.I.C.	NOT IN CONTRACT	XFMR	TRANSFORMER
CP	CONTROL PANEL	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	OL	OVERLOAD ELEMENT	TYP	TYPICAL
CU	COPPER	H.I.D.	HIGH INTENSITY DISCHARGE	OC	OVER COUNTER	UE	UNDERGROUND ELECTRIC
CT	CURRENT TRANSFORMER	HP	HORSEPOWER	PNL	PANEL	UG	UNDERGROUND
DIM	DIMMER CONTROL	HOA	HAND–OFF–AUTO	P	PILOT INDICATOR	UH	UNIT HEATER
D.C.	DIRECT CURRENT	H.P.S.	HIGH PRESSURE SODIUM	PVC	POLYVINYL CHLORIDE	UNG	UNGROUNDED
DISC	DISCONNECT	IMC	INTERMEDIATE METALLIC CONDUIT	PLG.C	PLUMBING CONTRACTOR	UNP	UNGROUNDED PRIMARY
DPP	DISTRIBUTION POWER PANEL	INC	INCANDESCENT	PT	POTENTIAL TRANSFORMER	UPS	UNINTERRUPTED POWER SYSTEM
DP	DOUBLE POLE	IC	INTERCOM	PF	POWER FACTOR	US	UNDERGROUND SIGNAL
DT	DOUBLE THROW	ISO	ISOLATED NEUTRAL	PP	POWER PANEL	VP	VAPORPROOF
DN	DOWN	JB	JUNCTION BOX	PRI	PRIMARY	VAR	REACTIVE VOLT AMPERES
E	ELECTRIC	K	KEY OPERATED	PS	PULL SWITCH	V	VOLT(S)
E.C.	ELECTRICAL CONTRACTOR	KVAR	KILOVAR(S)	RECP	RECEPTACLE	VA	VOLTAMP(S)
EUH	ELECTRIC UNIT HEATER	KVA	KILOVOLT AMPERE(S)	R	RELAY	VFD	VARIABLE FREQUENCY DRIVE
EWC	ELECTRIC WATER COOLER	KW	KILOWATT(S)	RC	REMOTE CONTROL	W	WATT(S)
EMT	ELECTRICAL METALLIC TUBING	LP	LIGHTING PANEL	RGS	RIGID GALVANIZED STEEL CONDUIT	WP	WEATHERPROOF

PROJECT GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (N.E.C.) LATEST EDITION.
2. COORDINATE ALL ELECTRICAL EQUIPMENT LOCATIONS AND MECHANICAL APPURTENANCES WITHIN THE EXISTING CONDITIONS TO PROVIDE ADEQUATE WORKING AND ACCESS PER N.E.C. REQUIREMENTS.
3. WHERE EXISTING ELECTRICAL DEVICES AND PROCESS DEVICES ARE INDICATED THOSE LOCATIONS ARE APPROXIMATE AND NOT ALL ELECTRICAL DEVICES MAY BE INDICATED. (FIELD VERIFY ALL ELECTRICAL ITEMS WHERE POSSIBLE.)
4. CONDUITS, RACEWAYS AND CABLES SHALL BE PROPERLY AND SECURELY ATTACHED TO BUILDING STRUCTURAL COMPONENTS AS REQUIRED BY N.E.C. ALL FASTENERS AND HARDWARE SHALL BE APPROVED FOR THE INSTALLATION AND THE CONDITIONS ENCOUNTERED.
5. EACH JUNCTION IN ANY OF THE WIRING SYSTEMS SHALL BE MADE IN AN APPROVED JUNCTION BOX. SUCH BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS AND DEVICES TO BE INSTALLED, AS WELL AS THE CONDITION ENCOUNTERED. ALL SPLICES SHALL BE MADE WITH APPROVED, MECHANICAL CONNECTORS.
6. CONTRACTOR SHALL VERIFY ALL STRUCTURAL, PROCESS AND MECHANICAL CONDITIONS PRIOR TO ROUGH–IN FOR ELECTRICAL WIRING AND EQUIPMENT.
7. ALL ELECTRICAL WORK SHALL BE CAREFULLY COORDINATED WITH THE ON–SITE CONDITIONS. WHERE CUTTING, DRILLING OR ALTERATION TO THE WORK OF OTHERS IS NECESSARY FOR THE PROPER INSTALLATION OF ELECTRICAL EQUIPMENT, SUCH WORK SHALL BE PLANNED IN ADVANCE AND SHALL BE CAREFULLY DONE. ANY DAMAGE TO THE BUILDINGS OR EQUIPMENT SHALL BE REPAIRED BY PROPERLY TRAINED PERSONNEL TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
8. DURING ROUGH–IN AND FINISHED STAGES OF CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES AND DEVICES AS WELL AS ALL EXISTING EQUIPMENT AND RELATED WORK AREAS.
9. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH HE/SHE IS FURNISHING TO THE ENGINEER/OWNER FOR REVIEW PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE FINAL LOCATIONS OF INSTRUMENTATION, CONTROL AND POWER CONNECTION DETAILS SO THAT THE ASSOCIATED ELECTRICAL WORK WILL BE PROPERLY COORDINATED AND INSTALLED.
11. EQUIPMENT LAYOUT AND EXACT LAYOUT OF NEW ELECTRICAL EQUIPMENT AND INSTRUMENTATION SHALL BE COORDINATED WITH PROCESS AND MECHANICAL EQUIPMENT.
12. DRAWINGS SHOW A LAYOUT OF ELECTRICAL/INSTRUMENTATION SYSTEMS AND EQUIPMENT DIAGRAMMATICALLY. EXACT LOCATION OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE DETERMINED BY FIELD CONDITIONS AND DIRECTION BY ENGINEER AND OWNER. BY SUBMITTING A BID, CONTRACTOR WARRANTS THAT HE HAS VISITED THE SITE WHERE WORK IS TO BE PERFORMED, AND HAS EXAMINED THE EXISTING CONDITIONS AND EXTENT OF LABOR AND MATERIALS TO BE PROVIDED. COORDINATION WITH ALL TRADES, UTILITIES, ETC. SHALL BE PROVIDED. THE ENGINEER SHOULD BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS OR INTERFERENCES WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THEIR INTERPRETATIONS.

DEMOLITION GENERAL NOTES:

1. ANY DEMOLITION INDICATED ON THESE DRAWINGS IS SHOWN IN GENERAL TO INDICATE THE EXTENT OF DEMOLITION AND IS NOT TO BE CONSIDERED AS A RECORD DRAWING OF EXISTING CONDITIONS. ACCORDINGLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE DEMOLITION OF ELECTRICAL WORK INDICATED INCLUDING ANY BURIED ITEMS OR EXISTING ITEMS NOT SHOWN ON THESE DRAWINGS. BEFORE DEMOLITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPROPRIATE FIELD TESTING TO DETERMINE THE NATURE OF THE EXISTING WORK TO BE DEMOLISHED TO PROTECT EXISTING WORK REMAINING IN PLACE AND TO PROTECT THE PUBLIC.
2. REPAIR AND RESTORE TO ORIGINAL CONDITION ALL ITEMS OR PORTIONS OF ELECTRICAL WORK WHICH ARE NOT NOTED TO BE DEMOLISHED, BUT ARE DAMAGED BY WORK UNDER THIS CONTRACT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROTECT AND RETAIN POWER TO ALL EXISTING ACTIVE EQUIPMENT WHICH SHALL REMAIN. ELECTRICAL CONTRACTOR SHALL RECONNECT ANY EQUIPMENT BEING DISTURBED BY THIS RENOVATION.
3. WHERE WORK BY THE GENERAL CONTRACTOR (WALL REMOVAL, NEW OR RELOCATED WALL OPENINGS), REQUIRES THE REMOVAL, RELOCATION, OR REFEEDING OF ELECTRICAL DEVICES OR LIGHTING FIXTURES, THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND MAKE SAFE OR RECONNECT AS REQUIRED ALL ACTIVE DEVICES REMAINING ON THAT CIRCUIT.
4. CONTRACTOR SHALL VERIFY ALL CIRCUIT IN EXISTING PANEL AFFECTED BY THIS ALTERATION. WHERE ADDITIONAL CIRCUITS ARE NEEDED, USE AVAILABLE SPARE BREAKERS IN THE PANEL. TIGHTEN ALL CONNECTIONS AS REQUIRED.
5. DO NOT PROCEED WITH DEMOLITION WITHOUT WRITTEN AUTHORITY TO PROCEED. PROCEED WITH DEMOLITION IN A SYSTEMATIC MANNER AND COORDINATE WITH ALL TRADES INVOLVED. COORDINATE AND SEQUENCE DEMOLITION SO AS NOT TO CAUSE A SHUTDOWN OF OPERATION OF SURROUNDING AREAS.
6. DISCONNECT OR SHUT OFF SERVICE TO AREAS WHERE ELECTRICAL WORK IS TO BE REMOVED. REMOVE ALL ELECTRICAL PANELS, EQUIPMENT, AND RELATED CONDUIT, AND WIRING WHICH ARE NOT A PART OF THE FINAL PROJECT IN ALL AREAS WHERE WORK OF THIS CONTRACT ARE TO BE PERFORMED. ALL REMOVED EQUIPMENT SHALL BE DISPOSED OF BY THIS CONTRACTOR UNLESS DIRECTED TO DO OTHERWISE BY THE OWNER. REMOVE ALL CONDUIT, WIRE, BOXES, AND FASTENING DEVICES AS REQUIRED TO AVOID ANY INTERFACE WITH NEW INSTALLATIONS. ABANDONED CIRCUITS TO BE CAPPED AT BOTH ENDS. REMOVE THE EXISTING WIRE NO LONGER IN USE FROM DEVICE LOCATION BACK TO PANEL.
7. ARRANGE TIMING SHUTDOWN PERIODS OF ALL–IN SERVICE PANELS WITH OWNER OR HIS/HER REPRESENTATIVE. DO NOT SHUT DOWN ANY UTILITY WITHOUT PRIOR WRITTEN APPROVAL.
8. WHERE EXISTING CIRCUITS ARE INDICATED TO BE REUSED, CONTRACTOR TO USE SENSING MEASURING DEVICES TO VERIFY THAT CIRCUITS FEEDING PROJECTS ARE OR ARE NOT IN USE.
9. EXISTING ELECTRICAL EQUIPMENT NECESSARY FOR EXISTING INSTALLATION TO REMAIN OPERATIONAL WILL HAVE TO BE PROTECTED DURING CONSTRUCTION.
10. THE ELECTRICAL CONTRACTOR SHALL TAKE INTO ACCOUNT IN FILING HIS/HER BID HIS/HER OBLIGATION TO PROVIDE FOR THE DISMANTLING AND REMOVAL OR MODIFICATION OF EXISTING ELECTRICAL EQUIPMENT, CONDUIT, WIRING AND RELATED ITEMS FOR THEIR REPLACEMENT OR MODIFICATION AS SPECIFIED.
11. CONTRACTOR SHALL COORDINATE WITH OWNER FOR POSSIBLE SALVAGE OF ANY OF THE ABOVE LISTED EQUIPMENT INCLUDING BUT NOT LIMITED TO MCC, STARTERS, GENERATORS, INSTRUMENTATION, PANELS, WIRING & CONDUIT.
12. THE CONTRACTOR SHALL UTILIZE EXISTING BRANCH CIRCUITS WHEREVER POSSIBLE. DISCONNECT CIRCUITS BACK TO LAST DEVICE (FIXTURE OR OUTLET) UNAFFECTED BY THE DEMOLITION. EXTEND CIRCUITS FROM LAST DEVICE TO NEW DEVICE LOCATIONS AND CIRCUIT AS SHOWN ON FLOOR PLAN.
13. THE ELECTRICAL DEVICES AND PROCESS EQUIPMENT INDICATED ON THIS DRAWING REPRESENT EQUIPMENT TAKEN FROM EXISTING PLANS FURNISHED BY THE OWNER AND SITE VISITS BY THE ENGINEER AND DO NOT REPRESENT ALL EQUIPMENT AND WIRING WITHIN THE DEMOLITION AREA. THESE DOCUMENTS HAVE BEEN PREPARED TO ASSIST THE CONTRACTOR IN PRICING DEMOLITION WORK. CONTRACTOR IS TO VISIT THE SITE AND EXAMINE ALL EXISTING CONDITIONS. NO EXTRA COMPENSATION OR TIME EXTENSION WILL BE PERMITTED BECAUSE OF LACK OF COMPLIANCE WITH THIS REQUIREMENT.

INSTRUMENTATION NOTES:

1. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY POWER AND SIGNAL WIRING WITH CONDUITS AS SHOWN ON ELECTRICAL AND INSTRUMENTAION DRAWINGS BETWEEN POWER PANELS, PLC'S, CONTROL PANELS, AND FIELD INSTRUMENTS AS REQUIRED.
2. MINIMUM SIZE CONDUIT TO BE 3/4".
3. MINIMUM SIZE CONTROL WIRING TO BE #14 AWG. SHIELDED CABLE TO BE 2/C#16 FOR LOOP POWERED DEVICES. 4/C#16 FOR 4–WIRE DEVICES.
4. WIRING MAY BE COMBINED IN SINGLE RACEWAYS FOR EACH OF THE FOLLOWING CATEGORIES. DO NOT MIX CATEGORIES IN A SINGLE CONDUIT:
   A. 120V POWER WIRING
   B. CONTROL AND DISCRETE OUTPUT SIGNALS (24VAC)
   C. DISCRETE INPUT SIGNALS (24VDC)
   D. ANALOG SIGNAL WIRING
5. LOCATION OF PROCESS EQUIPMENT, MOTORS, VALVES, INSTRUMENTS, ETC. SHOWN ON THE DRAWINGS ARE APPROXIMATE. REFER TO PROCESS AND MECHANICAL DRAWINGS FOR EXACT LOCATIONS. FINAL LOCATIONS TO BE DETERMINED IN FIELD TO MATCH EQUIPMENT SUPPLIED BY CONTRACTOR.
6. REFER TO POWER PLANS FOR INSTRUMENTATION POWER REQUIREMENTS.
7. IT IS THE INTENT OF DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND COMPLETELY DEFINE THE WORK OF THE CONTRACTOR. DRAWINGS ARE DIAGRAMMATIC, BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE FACILITY AND THE WORK OF OTHER TRADES WILL PERMIT. THE DRAWINGS OF NECESSITY UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS TO INDICATE VARIOUS ITEMS OF WORK. THEREFORE, NO INTERPRETATION WILL BE MADE FROM THE USE OF SYMBOLS AND DIAGRAMS THAT ANY ELEMENTS NECESSARY FOR A COMPLETE INSTALLATION ARE EXCLUDED. THE ENGINEER SHOULD BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS OR INTERFERENCES WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THEIR INTERPRETATIONS.
8. DURING ROUGH IN AND FINISHED STAGES OF CONSTRUCTION, THE INSTRUMENTATION SUBCONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES AND DEVICES AS WELL AS ALL EXISTING EQUIPMENT AND RELATED WORK AREAS.
9. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH HE/SHE IS FURNISHING TO THE ENGINEER/OWNER FOR REVIEW PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
10. ELECTRICAL CONTRACTOR AND/OR SUBCONTRACTOR TO OBTAIN ALL PERMITS AND INSPECTIONS.
11. CONTROL CIRCUITS SHALL BE ARRANGED TO USE SUPERVISED CONTACTS WHEREVER POSSIBLE. THIS MEANS THAT NORMALLY CLOSED CONTACTS WILL BE USED AND THE CONTACTS WILL OPEN WHEN A PROCESS TRANSITION OCCURS (E.G. HIGH LEVEL, LOW LEVEL, HIGH PRESSURE, ETC.)
12. REFER TO ELECTRICAL SERIES DRAWINGS FOR ADDITION DETAILS FOR CONDUIT, DEVICE LOCATIONS, AND POWER CIRCUITS.
13. DRAWINGS SHOW A LAYOUT OF SCADA/INSTRUMENTATION SYSTEMS AND EQUIPMENT DIAGRAMMATICALLY. EXACT LOCATION OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE DETERMINED BY FIELD CONDITIONS AND DIRECTION BY ENGINEER AND OWNER. BY SUBMITTING A BID, CONTRACTOR WARRANTS THAT HE HAS VISITED THE SITE WHERE WORK IS TO BE PERFORMED, AND HAS EXAMINED THE EXISTING CONDITIONS AND EXTENT OF LABOR AND MATERIALS TO BE PROVIDED. COORDINATION WITH ALL TRADES, UTILITIES, ETC. SHALL BE PROVIDED.

INSTRUMENTATION GROUNDING

1. SHIELDED CONDUCTORS SHALL HAVE THEIR SHIELD WIRE CONNECTED TO GROUND AT ONE END ONLY.
2. CONTROL CABINETS SHALL BE PROVIDED WITH AN ISOLATED INSTRUMENT GROUND BUS FOR INSTRUMENTATION GROUND WIRE. THIS BUS SHALL BE TIED TO FACILITY GROUND AT A SINGLE POINT (BONDED).
3. EQUIPMENT & INSTRUMENT GROUNDS SHALL NOT BE INTERMIXED.
4. WHERE ANALOG SIGNALS ARE LACED FROM ONE DEVICE TO ANOTHER, THE SHIELD/DRAIN WIRE SHALL BE CONTINUOUS AND ONLY TIED TO GROUND AT ONE POINT.

PROCESS SIGNAL SCALING & CALIBRATION

1. ALL INSTRUMENTS SHALL BE PROPERLY CALIBRATED BY THE INSTALLING CONTRACTOR. A CALIBRATION STICKER SHALL BE ATTACHED INDICATING CALIBRATION DATE AND THE INITIALS OF THE INDIVIDUAL WHO PERFORMED THE CALIBRATION.
2. ALL PROCESS ANALOG LOOPS SHALL BE PROPERLY CALIBRATED AND SCALED TO THE EXTENT POSSIBLE AND PRACTICAL. ANALOG INSTRUMENTS SHALL BE CALIBRATED TO READ THE ENTIRE OPERATING RANGE FOR THE PARAMETER BEING MONITORED.
3. THE INSTRUMENT CALIBRATION SHALL BE DOCUMENTED IN "AS–BUILT' INFORMATION SUBMITTED TO THE OWNER.

INSTRUMENTATION PIPING & MOUNTING

1. DIRECT READING INSTRUMENTS SHALL BE MOUNTED AT EYE HEIGHT, ~5 FT ABOVE FINISHED FLOOR, UNLESS PROCESS RESTRAINTS NECESSITATE OTHER MOUNTING ARRANGEMENTS, OR UNLESS OTHERWISE NOTED.
2. INSTRUMENTS SHALL BE SECURELY ANCHORED TO THE STRUCTURES OR MONITORED EQUIPMENT. PROPER MOUNTING HARDWARE SHALL BE UTILIZED. (BOLTS, NUTS, UNISTRUT, ETC.)
3. ALL INSTRUMENT TUBING SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED. TUBING INSTALLATION SHALL PROVIDE ADEQUATE PROTECTION AND SUPPORT WHERE APPROPRIATE. TUBING AND PIPING ARRANGEMENTS SHALL BE PROPERLY SLOPED AND INSTALLED FOR THE FLUID BEING MONITORED.
4. ALL INSTRUMENT TAPS INTO PROCESS PIPING SHALL BE PROVIDED WITH AN ISOLATION VALVE. (NOMINAL 1/2" OR 3/4" BALL VALVE). ISOLATION VALVES SHALL BE CONSTRUCTED OF MATERIAL COMPATIBLE WITH THE MONITORED PROCESS FLUID.
6. ALL INSTRUMENTS WHICH REQUIRE PERIODIC CALIBRATION SHALL BE PROVIDED WITH MEANS TO CALIBRATE IN PLACE (E.G. CALIBRATION BLOCK AND/OR CALIBRATION VALVING.)
7. VENTS AND DRAINS SHALL BE PROVIDED ON PROCESS EQUIPMENT AND INSTRUMENTATION AS REQUIRED TO SUPPORT ROUTINE AND MAINTENANCE OPERATIONS.

CONTROL SYSTEM HIERARCHY

SCHEME. THE FACILITY IS DESIGNED TO USE A FOUR LEVEL CONTROL

1. A PLANT PC BASED SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM (SCADA) PROVIDES OVERALL PROCESS MONITORING AND CONTROL ADJUSTMENTS. (LEVEL 3).
2. PLANT PROCESS CONTROL PROGRAMMABLE LOGIC CONTROLLERS (PLC) TO MONITOR AND CONTROL VARIOUS PLANT PROCESSES AND PARAMETERS (LEVEL 2).
3. INDIVIDUAL PROCESSES AND PIECES OF EQUIPMENT HAVE DEDICATED PLCS (LEVEL 1).
4. INDIVIDUAL SENSORS AND OTHER DEVICES MONITOR SPECIFIC PLANT PROCESS PARAMETERS (LEVEL 0).

CONTROL SYSTEM VOLTAGES

1. THE PREFERRED CONTROL VOLTAGES ARE 24 VAC AND 24 VDC FOR SAFETY CONSIDERATIONS.
2. 120 VAC MAY BE USED FOR CONTROL WHERE NECESSARY.
3. 24 VDC SHOULD BE USED INSIDE CABINETS AND WHERE THE POSSIBILITY OF INDUCTIVE COUPLING WILL PRODUCE ERRONEOUS SIGNALS.
4. CONTROL CIRCUITS SHALL BE PROPERLY FUSED.
5. 4–20 ma EXTERNAL LOOPS SHOULD BE FUSED WITH A SERIES 217,0.032A FAST ACTING FUSE.

INPUT/OUTPUT SIGNALS

1. THE VARIOUS EQUIPMENT AND CONTROL SYSTEM SUPPLIERS SHALL COORDINATE THEIR RESPECTIVE INPUT/OUTPUT SIGNALS BETWEEN THEMSELVES, THE SYSTEM INTEGRATOR AND THE ENGINEER.
2. WHERE ONE CONTROL SYSTEM REQUIRES A SIGNAL (DIGITAL INPUT OR DIGITAL OUTPUT) FROM AN EXTERNAL DEVICE OR OTHER CONTROL SYSTEM, IT SHALL BE PROVIDED BY INDEPENDENT DRY CONTACT.
3. WHERE CONTROL VOLTAGES OR SIGNALS ARE NOT COMPATIBLE, INTERPOSING RELAYS SHALL BE PROVIDED.

CONTROL SYSTEM ALARMS

1. THE VARIOUS EQUIPMENT AND CONTROL SYSTEM SUPPLIERS SHALL COORDINATE THEIR RESPECTIVE ALARM LISTS AND POINTS SO THAT AN INTEGRATED ALARM LIST IS PREPARED FOR THE PROJECT.
2. THE SYSTEM INTEGRATOR SHALL PREPARE AND PROVIDE A SUMMARY OF ALL PLANT ALARMS.

CONTROL DIAGRAM SYMBOLS

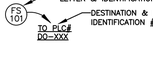
NOTE:
ALL CONTROL SYMBOLS ARE DRAWN ASSUMING DEENERGIZED CIRCUITS, EMPTY TANKS, UNPRESSURIZED LINES, ETC.

OPEN ON INCREASE	CLOSE ON INCREASE	
		PRESSURE SWITCH
		LEVEL SWITCH
		FLOW SWITCH
		TEMPERATURE SWITCH
		SOLENOID VALVE

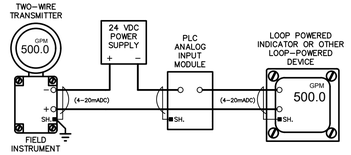
NORMALLY CLOSED	NORMALLY OPEN	
		PUSH BUTTON
		INSTANTANEOUS CONTACT
		TIMED CLOSE CONTACT
		TIMED OPEN CONTACT
		LIMIT SWITCH
		SELECTOR SWITCH: QUANTITY OF ARROWS INDICATES NUMBER OF POSITIONS. XO INDICATES UPPER CONTACT CLOSED IN LEFT POSITION AND OPEN IN RIGHT POSITION

INSTRUMENTATION SYMBOLS WITH ABBREVIATIONS

- (AE) ANALYTICAL ELEMENT
- (AIT) ANALYTICAL INDICATOR TRANSMITTER
- (FE) FLOW ELEMENT
- (FIT) FLOW INDICATOR TRANSMITTER
- (FT) FLOW TRANSMITTER
- (FLS) FLOW SWITCH
- (FS) FLOAT SWITCH
- (GS) GAS SENSOR
- (HOA) HAND–OFF–AUTO SWITCH
- (HD) HEAT DETECTOR
- (IA) INTRUSION ALARM
- (IR) CURRENT MONITOR RELAY
- (IS) CURRENT SENSOR
- (LE) LEVEL ELEMENT
- (LIT) LEVEL INDICATOR TRANSMITTER
- (LKS) LEAK SENSOR
- (LS) LEVEL SWITCH
- (LSH) LEVEL SWITCH HIGH
- (LSL) LEVEL SWITCH LOW
- (LT) LEVEL TRANSMITTER
- (MOV) MOTORIZED OPERATED VALVE
- (MTD) METHANE DETECTOR
- (PB) PUSH BUTTON SWITCH
- (PIT) PRESSURE INDICATOR TRANSMITTER
- (PT) PRESSURE TRANSMITTER
- (PS) PRESSURE SWITCH
- (SC) SPEED CONTROLLER (POTENTIOMETER)
- (SD) SMOKE DETECTOR
- (SSL) ZERO SPEED DETECTOR
- (SV) SOLINOID VALVE
- (TE) TEMPERATURE ELEMENT
- (TQS) TORQUE LIMIT SWITCH
- (TIT) TEMPERATURE INDICATOR TRANSMITTER
- (TS) TEMPERATURE SWITCH
- (TT) TEMPERATURE TRANSMITTER
- (VS) VIBRATION SWITCH
- (ZS) PROXIMITY SWITCH
- (FS) FIELD MOUNTED INSTRUMENT: NEW DENOTES FURNISHED & INSTALLED UNDER BASE BID
- (FS) FIELD MOUNTED INSTRUMENT: EXISTING
- (FS) VENDER SUPPLIED INSTRUMENT INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR



TYPICAL 4–20mA ANALOG INPUT LOOP



NOTE:

LOOP FAN OUT CONSIDERATIONS MUST BE EVALUATED. ACTUAL WIRING CONNECTION AT PLC MAY VARY DEPENDING ON DC SUPPLY AND PLC AI CARD WIRING ARRANGEMENT. OTHER LOOP WIRING ARRANGEMENT MAY BE REQUIRED (E.G. 3

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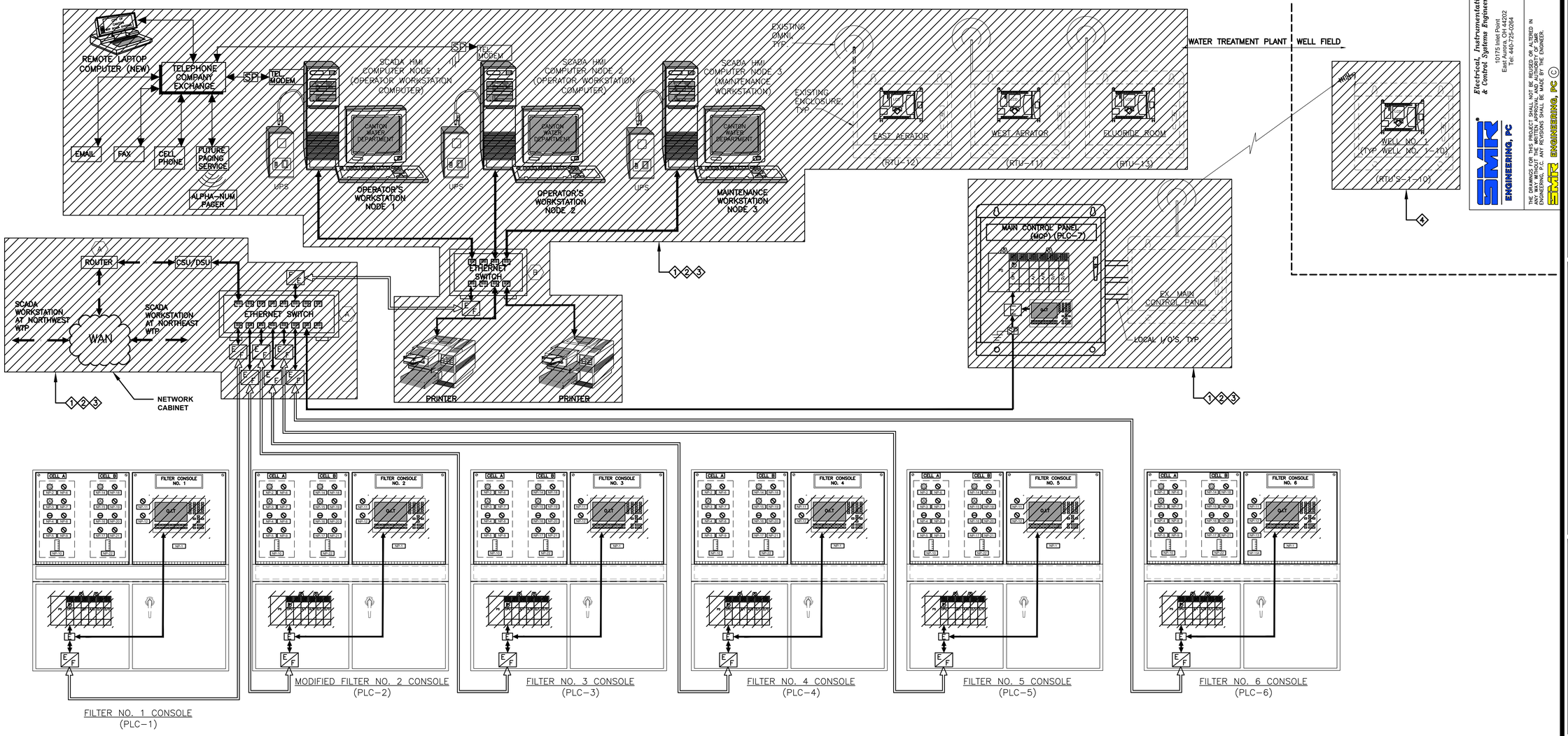

KEY NOTES:

1. RELOCATE THE EXISTING SCADA WORKSTATION PCS, PRINTERS, UPS, NETWORK SWITCHES, CONVERTERS, CABLING, ETC. (SEE SHEET E-53) TEMPORARILY TO THE CONTROL ROOM IN LOWER LEVEL (SEE SHEET E-53). THE INTENT IS TO MAINTAIN THE PLANT EXISTING SCADA FULLY OPERATIONAL WHILE THE NEW SCADA IS BEING INSTALLED. THE EXISTING SCADA WILL THEN BE REMOVED AFTER THE NEW SCADA IS IN PLACE & FULLY OPERATIONAL.
2. PROVIDE A TEMPORARY 1" CONDUIT WITH CAT-6e ETHERNET CABLE BETWEEN THE EXISTING NETWORK CABINET (SEE SHEET E-45, NOTE #21) AND THE RELOCATED SCADA PCS/PRINTERS AS REQUIRED.
3. THE SCADA DEMOLITION WORK SHALL BE COORDINATED WITH THE ENGINEER/OWNER PRIOR TO IMPLEMENTATION.
4. DISCONNECT & REMOVE THE EXISTING RTUS AFTER THE NEW RTUS ARE INSTALLED & FULLY OPERATIONAL.

SUGARCREEK WTP SCADA - DEMOLITION

SCALE: NONE

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

SUGARCREEK WTP
SCADA DEMOLITION

I-2

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P:\PR58982\Cadd\Sheets\E-Sheets\I-2 SUGARCREEK WTP SCADA DEMOLITION.dwg 4/16/2022 3:11:40 PM Randy Podmore

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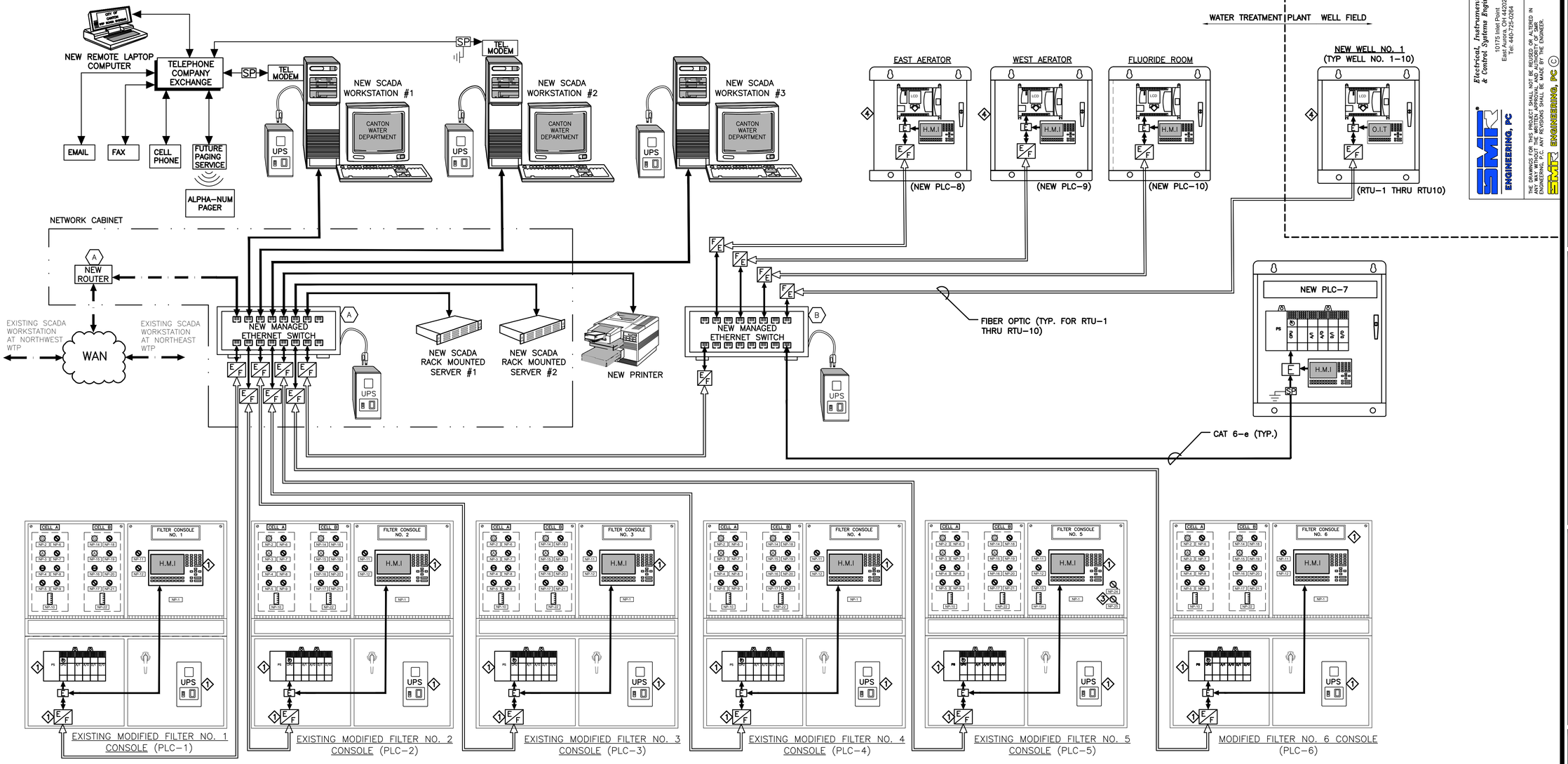

ABBREVIATIONS LIST:	
CPU	CENTRAL PROCESS UNIT
OIT	OPERATOR INTERFACE TERMINAL
I/O	INPUT – OUTPUT
HMI	HUMAN–MACHINE INTERFACE
PS	POWER SUPPLY
PLC	PROGRAMMABLE LOGIC CONTROLLER
SP	SURGE PROTECTOR FOR NETWORK
WAN	WIDE AREA NETWORK
E	ETHERNET SWITCH, 4–PORT

(A) NEW 16 PORT 10/100 AUTO SENSING MANAGED ETHERNET SWITCH, RACK MOUNTED ASSEMBLY INCLUDING ROUTER AND FIBER OPTIC MEDIA CONVERTERS & PATCH PANEL & UPS TO BE HOUSED IN THE NEW NETWORK CABINET.

(B) NEW 16 PORT 10/100 AUTO SENSING MANAGED ETHERNET SWITCH, FIBER OPTIC MEDIA CONVERTERS & PATCH PANEL TO BE MOUNTED INSIDE PLC–7, FLOOR MOUNTED ENCLOSURE, UPS POWERED.

SP NETWORK SURGE SUPPRESSION, ELECTRONIC SPECIALISTS INC. OR APPROVED EQUIVALENT.

E 4 PORT AUTO SENSING ETHERNET SWITCH

E/F ETHERNET TO FIBER OPTIC CONVERTER/PATCH PANEL.

COMMUNICATIONS LEGEND

- DIALUP ANALOG TELEPHONE LINE
- FIBER OPTIC CABLING
- CAT 6–e ETHERNET
- HIGH SPEED INTERNET (DSL OR CABLE TV) LINE
- RS–323 LINK

KEY NOTES:

1. NEW AB COMPACTLOGIX, NEW HMI PANEL, NEW UPS & NEW FIBER MEDIA CONVERTER TO REPLACE EXISTING. REFER TO SCADA SPECIFICATIONS FOR EXACT REQUIREMENTS.
2. FIBER OPTIC CONNECTIONS FOR RTUS 2 THRU 10 NOT SHOWN FOR CLARITY.
3. PROVIDE A TWO–POSITION SELECT SWITCH (BLOWER–1, BLOWER–2) & THREE–POSITION SELECTOR SWITCH (BLOWER HOA).
4. UTILIZE THE SPARE 2–STRAND FIBER CABLE FOR CCTV SECURITY CAMERA DATA TRANSMISSION TO THE SECURITY SYSTEM PANEL.

SUGARCREEK WTP SCADA- RENOVATION

SCALE: NONE

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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

SUGARCREEK WTP SCADA RENOVATION

I-3

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-3 SUGARCREEK WTP SCADA RENOVATION.dwg 4/16/2022 3:22:12 PM Randy Podmore

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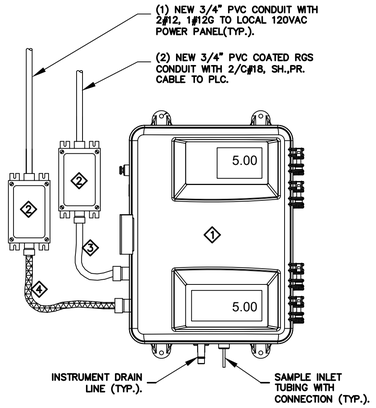
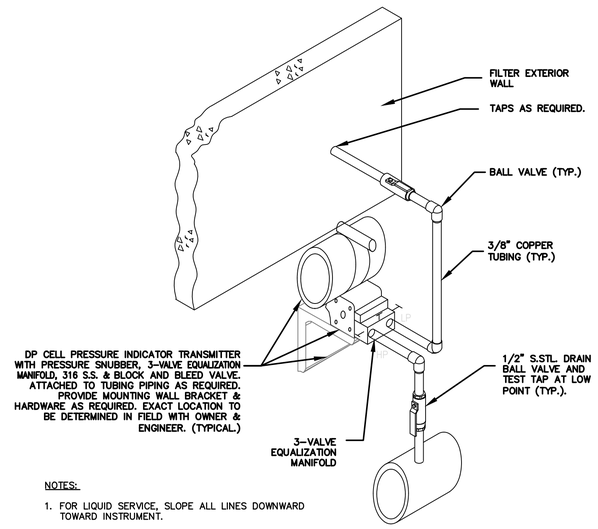


KEY NOTES:

1. VENDER SUPPLIED CHLORINE & pH ANALYZER PANEL INSTALLED BY GC. WIRED BY EC.
2. NEMA 4X NONMETALLIC BOX JUNCTION BOX (TYPICAL). MOUNT TO WALL USING S.S. HARDWARE.
3. LIQUIDTIGHT METALLIC FLEXIBLE CONDUIT WITH U.L. LISTED CONNECTORS AND SIGNAL CABLE (TYPICAL).
4. LIQUIDTIGHT NONMETALLIC FLEXIBLE CONDUIT WITH U.L. LISTED CONNECTORS AND POWER CABLES (TYPICAL).

CHLORINE/pH ANALYZER INSTALLATION DETAIL (TYP.) 1 / I-4

SCALE: NONE

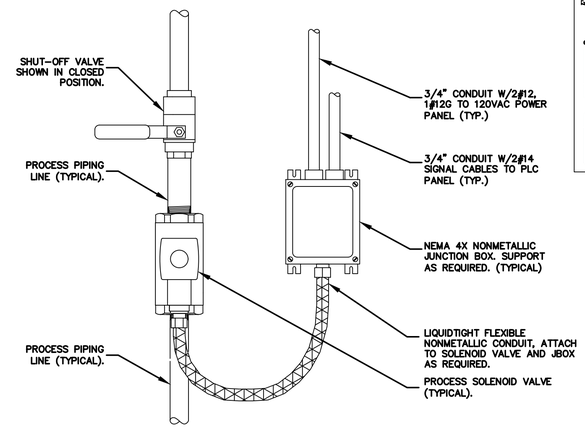


NOTES:

1. FOR LIQUID SERVICE, SLOPE ALL LINES DOWNWARD TOWARD INSTRUMENT.
2. ALL LINES SHALL HAVE A CONTINUOUS SLOPE OF 1/4" PER FOOT MIN. (1" PER FOOT PREFERRED)

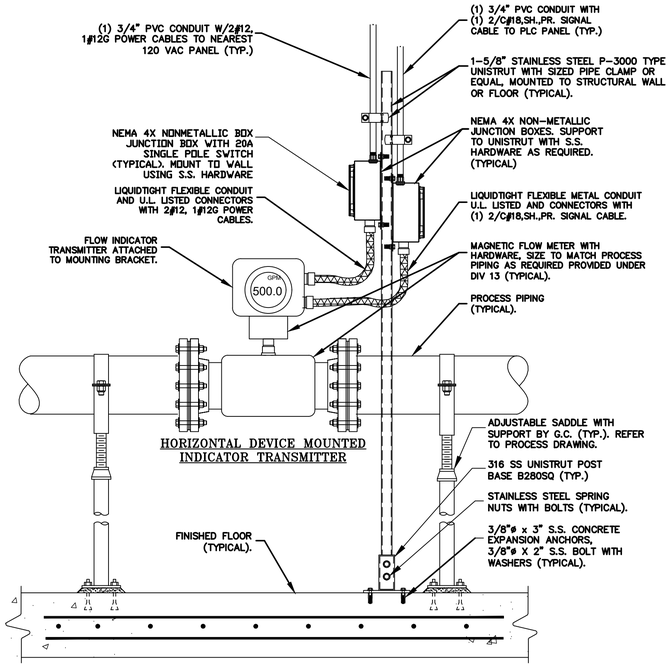
PRESSURE DIFFERENTIAL TRANSMITTER/INDICATOR FOR FILTER HEAD LOSS INSTALLATION DETAIL 2 / I-4

SCALE: NONE



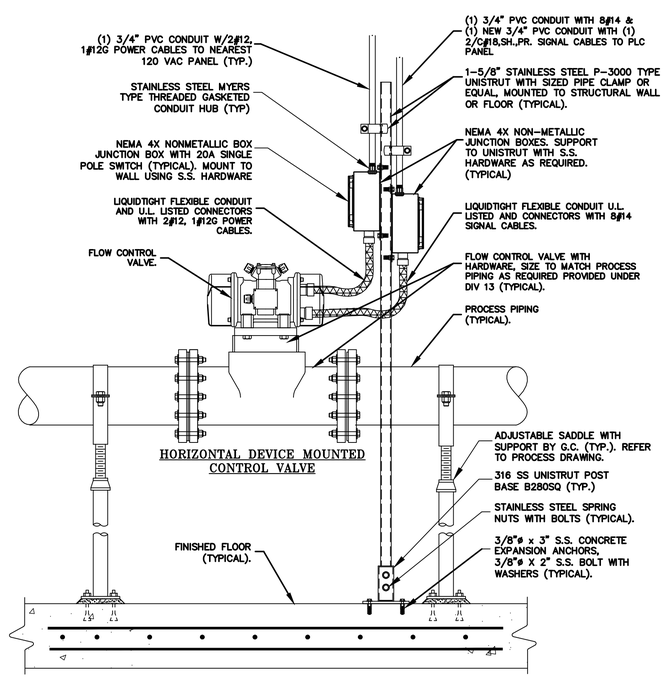
SAMPLE LINE SOLENOID VALVE CONNECTION DETAIL (TYP.) 3 / I-4

SCALE: NONE



ELECTRICAL CONNECTION @ MAG METER INSTALLATION DETAIL (TYP.) 4 / I-4

SCALE: NONE



ELECTRICAL CONNECTION @ MOTOR OPERATED VALV INSTALLATION DETAIL (TYP.) 5 / I-4

SCALE: NONE

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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

INSTRUMENTATION DETAILS 1

I-4

SHEET: OF

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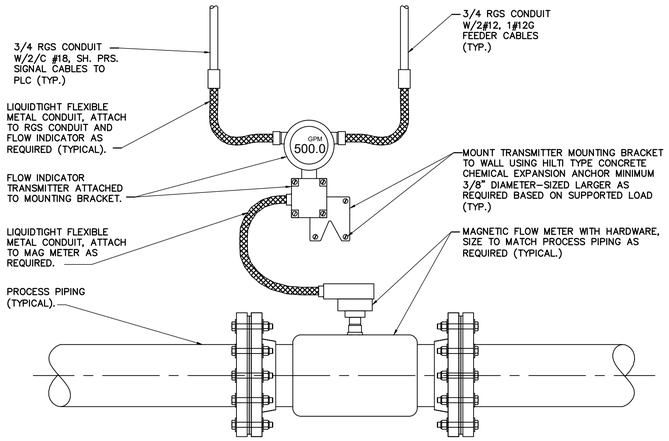
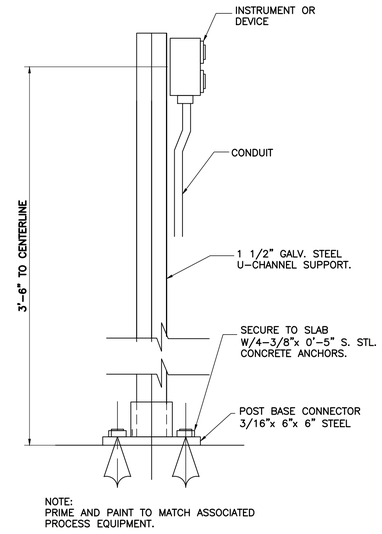


MAG METER ELECTRICAL/ SIGNAL CONNECTION DETAIL (TYP.) 1 I-5

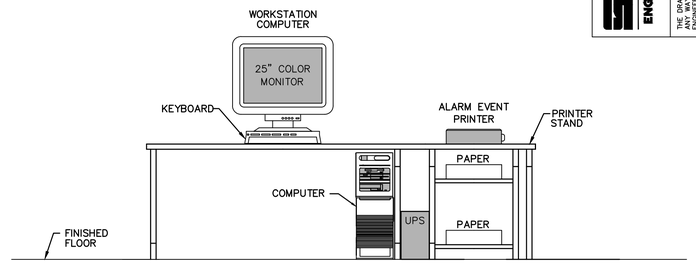
SCALE: NONE



NOTE:
PRIME AND PAINT TO MATCH ASSOCIATED PROCESS EQUIPMENT.

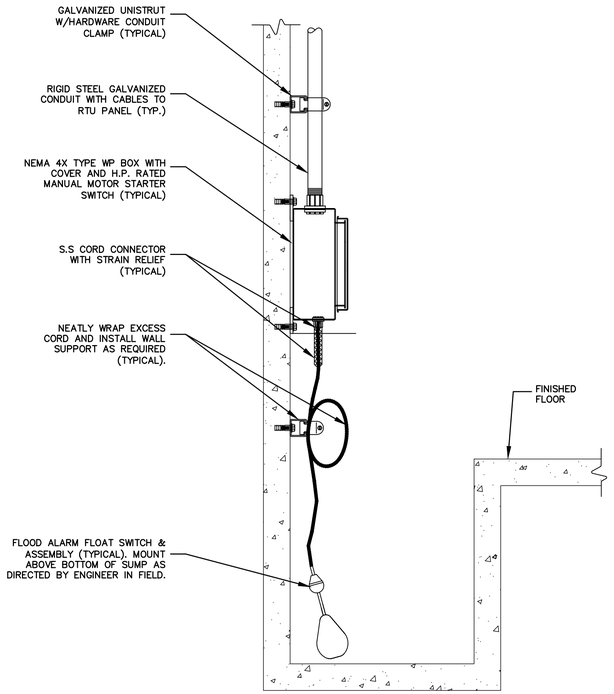
CHANNEL MOUNTED INSTRUMENT DETAIL (TYP.) 2 I-5

SCALE: NONE



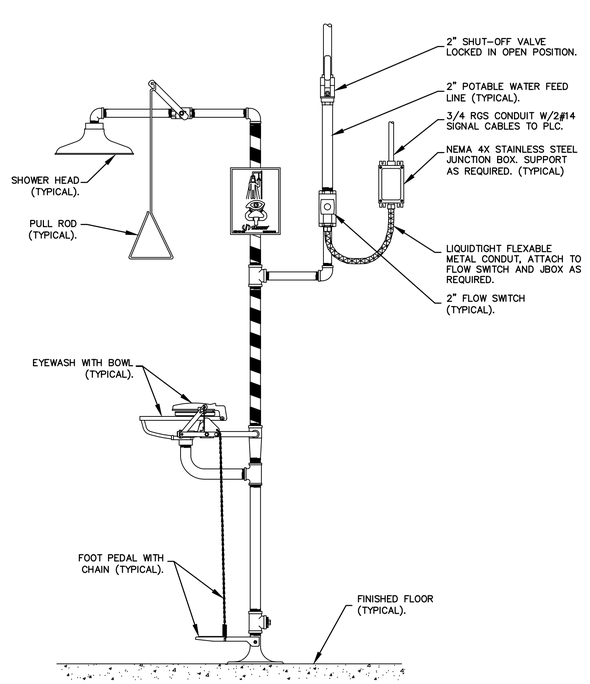
WORKSTATION DETAIL (TYP.) 3 I-5

SCALE: NONE



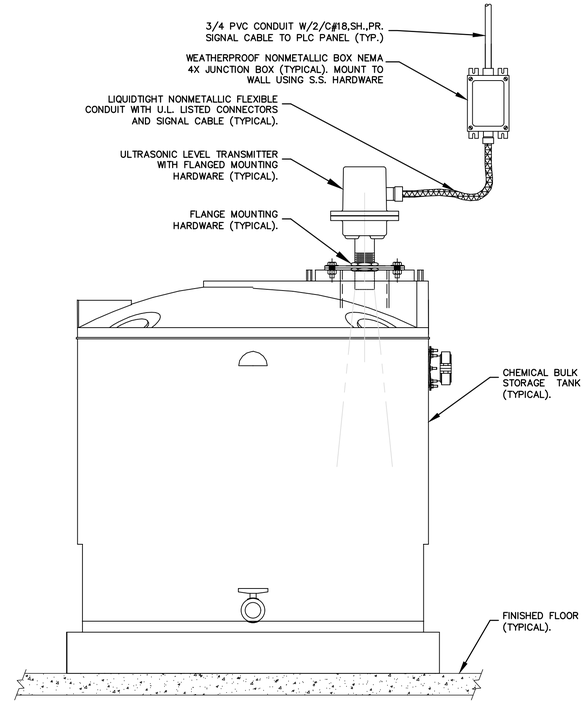
HIGH LEVEL ALARM SIGNAL CONNECTION DETAIL (TYP.) 4 I-5

SCALE: NONE



EYEWASH/SHOWER SIGNAL CONNECTION DETAIL (TYP.) 5 I-5

SCALE: NONE



LEVEL TRANSMITTER @ CHEMICAL TANK DETAIL (TYP. OF 2) 6 I-5

SCALE: NONE

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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

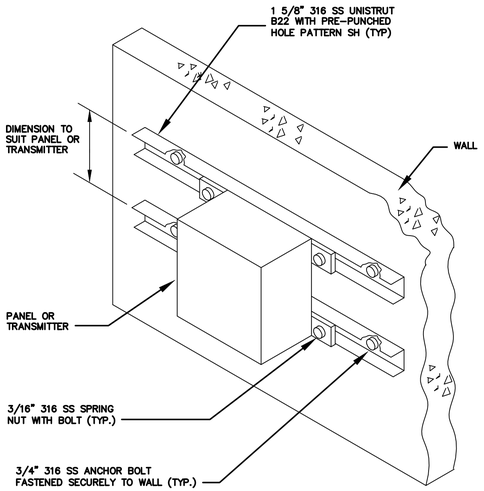
INSTRUMENTATION DETAILS 2

I-5

SHEET: OF

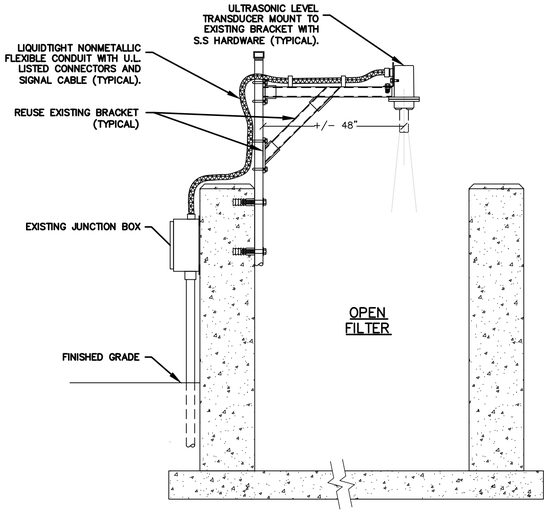
P:\PR58982\Cadd\Sheets\E-Sheets\I-5 INSTRUMENTATION DETAILS 2.dwg 4/16/2022 3:40:38 PM Randy Podmore

PLOTTED: 4/18/2022 8:54:07 AM



WALL MOUNTING SUPPORT FOR PANEL OR TRANSMITTER DETAIL (TYP.) 1 / I-6

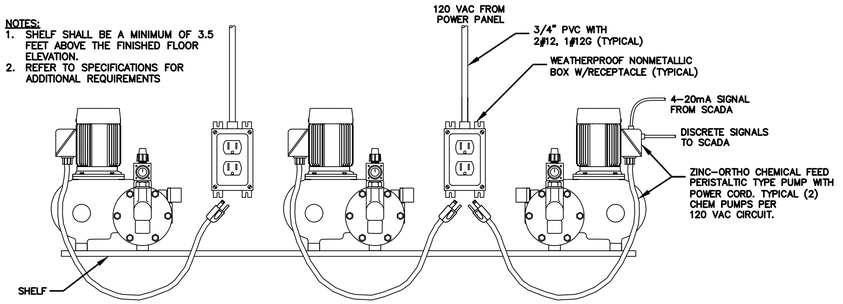
SCALE: NONE

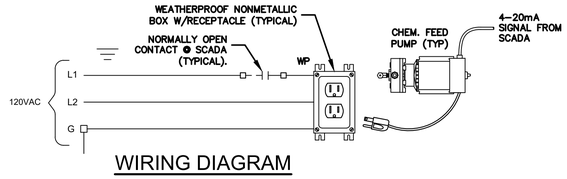


FILTER LEVEL TRANSMITTER INSTALLATION DETAIL (TYP. OF 3) 2 / I-6

SCALE: NONE

NOTES:
1. SHELF SHALL BE A MINIMUM OF 3.5 FEET ABOVE THE FINISHED FLOOR ELEVATION.
2. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS



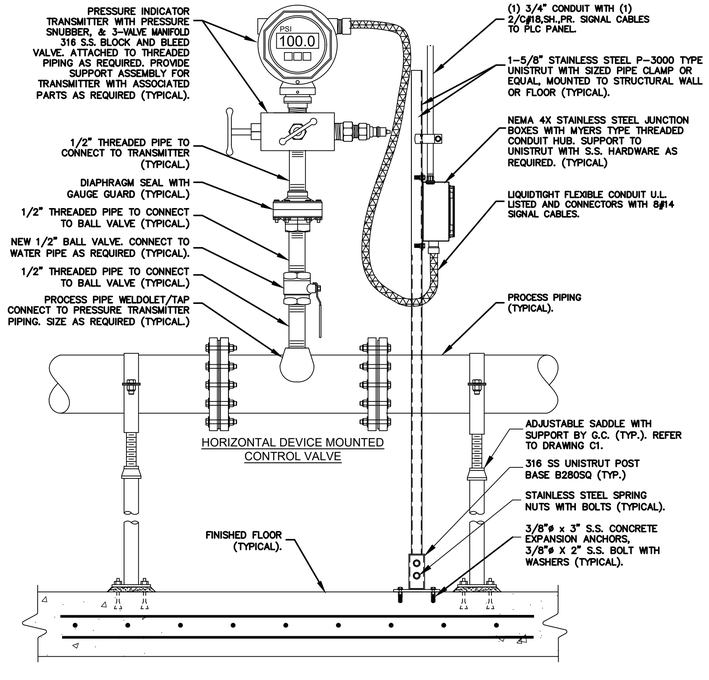


WIRING DIAGRAM

SHELF TO ACCOMODATE THREE (3) PUMPS PER SPECIFICATION

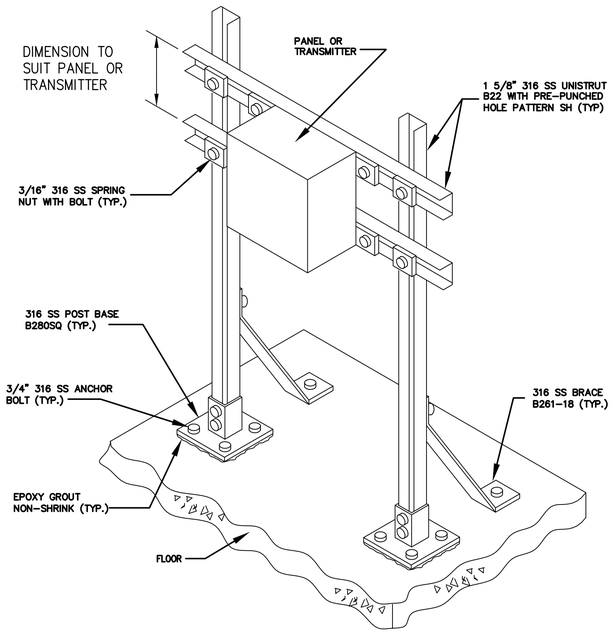
CHEMICAL METERING PUMPS W.D. DETAIL TYPICAL FOR SIMPLEX & DUPLEX SHELF-MOUNTED CHEMICAL PUMPS 6 / I-6

SCALE: NONE



PRESSURE TRANSMITTER INSTALLATION DETAIL (TYP.) 3 / I-6

SCALE: NONE



FLOOR MOUNTING SUPPORT FOR PANEL OR TRANSMITTER (TYP.) 4 / I-6

SCALE: NONE

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SUGAR CREEK
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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

INSTRUMENTATION DETAILS 3

I-6

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-6 INSTRUMENTATION DETAILS 3.dwg 4/16/2022 4:16:51 PM Randy Podmore

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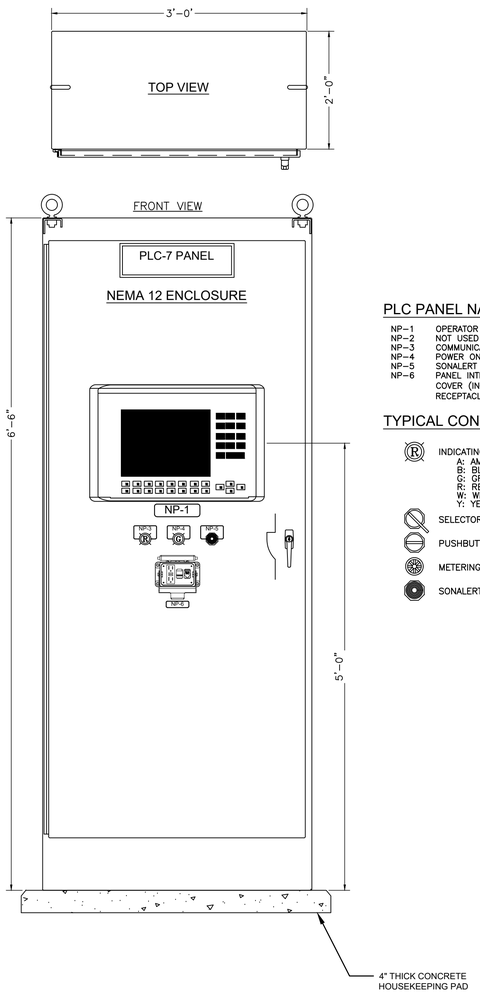


PLC PANEL NAMEPLATE SCHEDULE:

NP-1	OPERATOR INTERFACE TERMINAL (OIT)
NP-2	NOT USED
NP-3	COMMUNICATION FAIL
NP-4	POWER ON
NP-5	SONALERT
NP-6	PANEL INTERFACE CONNECTOR MODULE WITH COVER (INCLUDES 120 VAC 20 AMP GFCI RECEPTACLE, USB PORT, & RJ45 JACK)

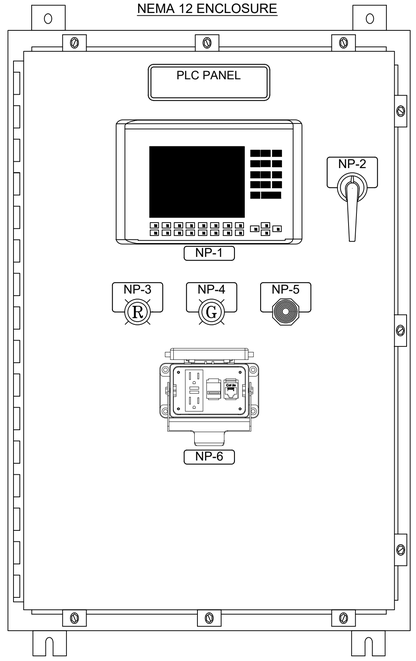
TYPICAL CONTROL PANEL SYMBOLS:

- INDICATING LIGHTS
  - A: AMBER
  - B: BLUE
  - G: GREEN
  - R: RED
  - W: WHITE
  - Y: YELLOW
- SELECTOR SWITCH, TWO OR THREE POSITION
- PUSHBUTTON STATION – MOMENTARY
- METERING PUMP SPEED POT
- SONALERT

NEW PLC-7 PANEL ELEVATION

SCALE: NONE

1 / I-7



RTU PANEL NAMEPLATE SCHEDULE:

NP-1	OPERATOR INTERFACE TERMINAL (OIT)
NP-2	PANEL DISCONNECT SWITCH
NP-3	COMMUNICATION FAIL
NP-4	POWER ON
NP-5	SONALERT
NP-6	PANEL INTERFACE CONNECTOR MODULE WITH COVER (INCLUDES 120 VAC 20 AMP GFCI RECEPTACLE, USB PORT, & RJ45 JACK)

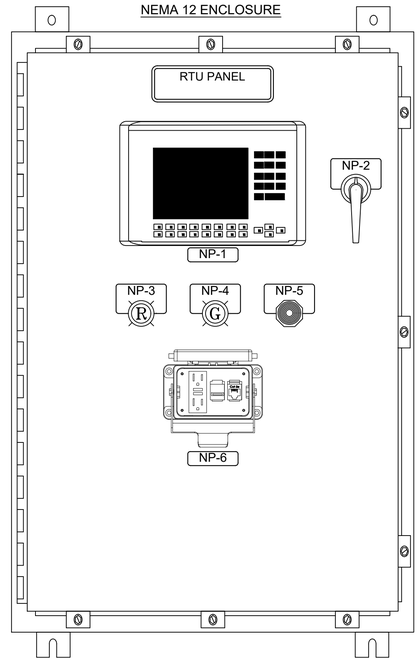
TYPICAL CONTROL PANEL SYMBOLS:

- INDICATING LIGHTS
  - A: AMBER
  - B: BLUE
  - G: GREEN
  - R: RED
  - W: WHITE
  - Y: YELLOW
- SELECTOR SWITCH, TWO OR THREE POSITION
- PUSHBUTTON STATION – MOMENTARY
- METERING PUMP SPEED POT
- SONALERT

NEW PLC-8, 9 & 10 PANELS ELEVATION

SCALE: NONE

2 / I-7



RTU PANEL NAMEPLATE SCHEDULE:

NP-1	OPERATOR INTERFACE TERMINAL (OIT)
NP-2	PANEL DISCONNECT SWITCH
NP-3	COMMUNICATION FAIL
NP-4	POWER ON
NP-5	SONALERT
NP-6	PANEL INTERFACE CONNECTOR MODULE WITH COVER (INCLUDES 120 VAC 20 AMP GFCI RECEPTACLE, USB PORT, & RJ45 JACK)

TYPICAL CONTROL PANEL SYMBOLS:

- INDICATING LIGHTS
  - A: AMBER
  - B: BLUE
  - G: GREEN
  - R: RED
  - W: WHITE
  - Y: YELLOW
- SELECTOR SWITCH, TWO OR THREE POSITION
- PUSHBUTTON STATION – MOMENTARY
- METERING PUMP SPEED POT
- SONALERT

NEW RTU-1 THRU RTU-10 PANELS ELEVATION DETAIL (TYP.)

SCALE: NONE

3 / I-7

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SCALE:	NONE

INSTRUMENTATION DETAILS 4

I-7

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-7 INSTRUMENTATION DETAILS 4.dwg 4/16/2022 4:16:57 PM Randy Podmore

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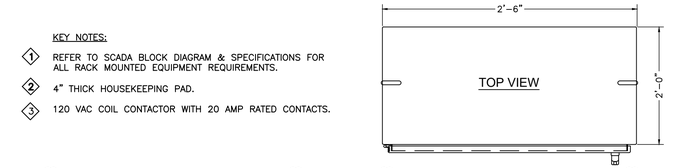
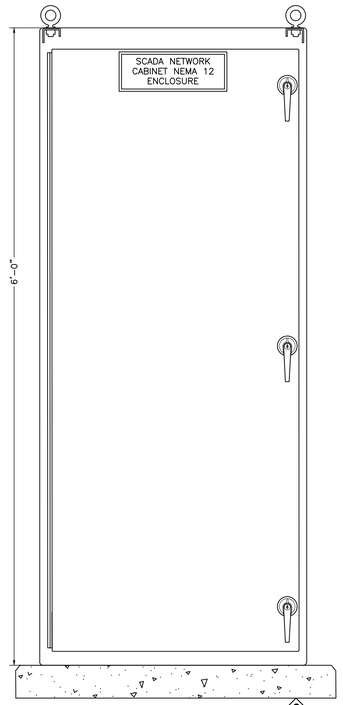
P:\PR58982\Cadd\Sheets\E-Sheets\I-8 INSTRUMENTATION DETAILS 5.dwg 4/16/2022 4:02:26 PM Randy Podmore

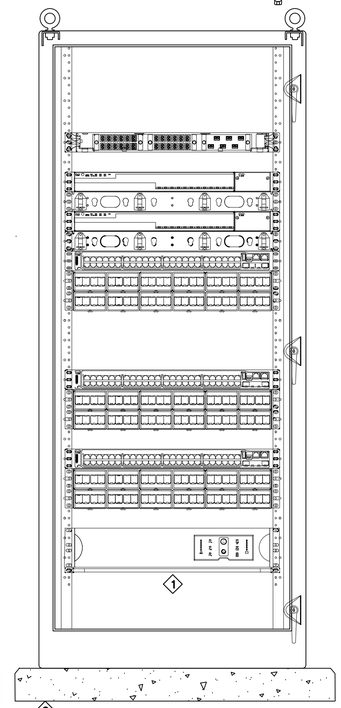
KEY NOTES:

1. REFER TO SCADA BLOCK DIAGRAM & SPECIFICATIONS FOR ALL RACK MOUNTED EQUIPMENT REQUIREMENTS.
2. 4" THICK HOUSEKEEPING PAD.
3. 120 VAC COIL CONTACTOR WITH 20 AMP RATED CONTACTS.

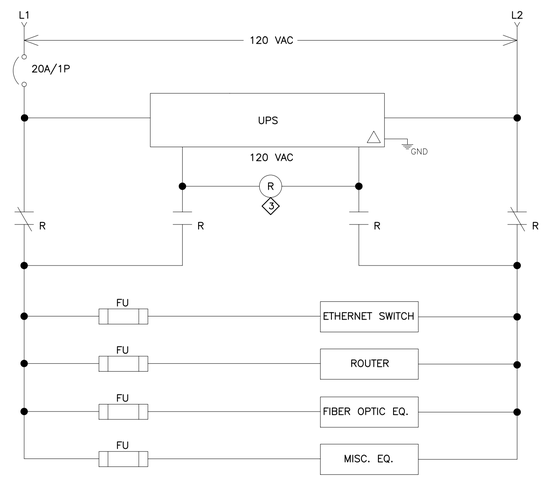




FRONT ELEVATION



FRONT INTERIOR VIEW



NEW SCADA NETWORK CABINET ELEVATION DETAIL 1/I-8

SCALE: NONE

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INSTRUMENTATION DETAILS 5

I-8

SHEET: OF

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PLANT HMI

LEVEL IND	NOT IN AUTO	FAIL	STATUS	START/ STOP	FLOW IND	PRESSURE IND	POWER FAIL	IND	START/ STOP	STATUS	FAULT	NOT IN AUTO	SPEED CMD	POWER FAIL	FLOW IND	PRESSURE IND
AIR 101 DO	YID 107	XA 106	YIR 105	PB 104	AIR 102	AIR 103	XA 108	AIR 201 DO	YC 204	YL 205	YA 206	YD 207	SC 208	XA 209	AIR 202	AIR 203

LEVEL IND	NOT IN AUTO	FAULT	RUN	START/ STOP	FLOW IND	PRESSURE IND	POWER FAIL	LEVEL IND	START/ STOP	STATUS	FAULT	NOT IN AUTO	SPEED CMD	POWER FAIL	FLOW IND	PRESSURE IND
AIR 301 DO	YID 307	XA 306	YIR 305	PB 304	AIR 302	AIR 303	XA 308	AIR 401 DO	YC 404	YL 405	YA 406	YD 407	SC 408	XA 409	AIR 402	AIR 403

RTU-1 RACK: Ai | Di | Di | Di | Do | Ai | Ai | DI

RTU-2 RACK: Ai | Do | Di | Di | Di | Ao | DI

RTU-3 RACK: Ai | Di | Di | Di | Do | Ai | Ai | DI

RTU-4 RACK: Ai | Do | Di | Di | Di | Ao | DI | Ai | Ai

WP-1: HS HOA | SRT | HS S/S | 480V | IL ILUN | MS | IL FAIL

WP-2: IL B READY | IL R RUNNING | IL G STOPPED | VFD | IL A FAULT | HS HOA | SC

WP-3: HS HOA | SRT | HS S/S | 480V | IL ILUN | MS | IL FAIL

WP-4: IL B READY | IL R RUNNING | IL G STOPPED | VFD | IL A FAULT | HS HOA | SC

	WELLFIELD PUMP #1	WELLFIELD PUMP #2	WELLFIELD PUMP #3	WELLFIELD PUMP #4
120V	LT R101 / LE R101	LT R201 / LE R201	LT R301 / LE R301	LT R401 / LE R401
M	AV 101	AV 111	AV 121	AV 131
120V	FIT R102 / FE R102	FIT R202 / FE R202	FIT R302 / FE R302	FIT R402 / FE R402
120V	PIT R103 / PI R103	PIT R203 / PI R203	PIT R303 / PI R303	PIT R403 / PI R403
M	104 105	114 115	124 125	134 135
8"	102	112	122	132
	103	113	123	133
	F.F. OF PUMP BUILDING, TYP.			
1"				
	WELL CASING PIPE	WELL CASING PIPE	WELL CASING PIPE	WELL CASING PIPE

12" BLOWOFF VALVE — 108 — 18"X12" REDUCER

EXISTING 20" — NEW 20"

12"X16" INCREASER — 16" GATE VALVE 107 — 106 16" GATE VALVE — 12"X16" INCREASER

EXISTING 24" — NEW 24"

12"X16" INCREASER — 16" GATE VALVE 117 — 116 16" GATE VALVE — 12"X16" INCREASER

12"X16" INCREASER — 16" GATE VALVE 127 — 126 16" GATE VALVE — 12"X16" INCREASER

EXISTING 30" — NEW 30"

12"X16" INCREASER — 16" GATE VALVE 137 — 136 16" GATE VALVE — 12"X16" INCREASER

TO WELLFIELD PUMP #5

TO WELLFIELD PUMP #5

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

WELLS 1-4 P&ID

I-9

SHEET: OF

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PLANT HMI

	LEVEL IND	NOT IN AUTO	FAULT	STATUS	START/ STOP	FLOW IND	PRESSURE IND	POWER FAIL
	AIR 501	YID 507	XA 506	YIR 505	PB 504	AIR 502	AIR 503	XA 508
	DO							

	LEVEL IND	NOT IN AUTO	FAULT	RUN	START/ STOP	FLOW IND	PRESSURE IND	POWER FAIL
	AIR 601	YID 607	XA 606	YIR 605	PB 604	AIR 602	AIR 603	XA 609
	DO							

	LEVEL IND	NOT IN AUTO	FAULT	RUN	START/ STOP	FLOW IND	PRESSURE IND	POWER FAIL
	AIR 701	YID 707	XA 706	YIR 705	PB 704	AIR 702	AIR 703	XA 708
	DO							

RTU-5 RACK: Ai | Di | Di | Di | Do | Ai | Ai | DI

RTU-6 RACK: Ai | Di | Di | Di | Do | Ai | Ai | DI

RTU-7 RACK: Ai | Di | Di | Di | Do | Ai | Ai | DI

WP-5: HS HOA | SRT | HS S/S | 480V | IL ILUN | MS | IL FAIL

WP-6: HS HOA | SRT | HS S/S | 480V | IL ILUN | MS | IL FAIL

WP-7: HS HOA | SRT | HS S/S | 480V | IL ILUN | MS | IL FAIL

WELLFIELD PUMP #5

120V
LT R501
LE R501
M
AV 141
8" 142
143
144
145
FIT 502
FE R502
PIT R503
PI R503
1"
WELL CASING PIPE

WELLFIELD PUMP #6

120V
LT R601
LE R601
M
AV 151
8" 152
153
154
155
FIT R602
FE R602
PIT R603
PI R603
1"
WELL CASING PIPE

WELLFIELD PUMP #7

120V
LT R701
LE R701
M
AV 161
8" 162
163
164
165
FIT R702
FE R702
PIT R703
PI R703
1"
WELL CASING PIPE

30" FROM WELLFIELD PUMP #4

30" FROM WELLFIELD PUMP #4

EXISTING 30"

NEW 30"

12"X16" INCREASER
16" GATE VALVE 147
146
16" GATE VALVE
12"X16" INCREASER

12"X16" INCREASER
16" GATE VALVE 157
156
16" GATE VALVE
12"X16" INCREASER

30" B'FLY VALVE 201

201
30" B'FLY VALVE

30" B'FLY VALVE 204

204
30" B'FLY VALVE

30" TO WEST AERATOR

36" TO EAST AERATOR

201
12" SURGE RELIEF VALVE
224
202

201
30" B'FLY VALVE

36" B'FLY VALVE 205

30" FROM WELLS #8–#10

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SCALE:	NONE

WELLS 5-7 P&ID

I-10

SHEET: OF

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PLANT HMI

LEVEL IND	NOT IN AUTO	FAIL	STATUS	START/ STOP	FLOW IND	PRESSURE IND	POWER FAIL
AIR 801	YID 807	XA 806	YIR 805	PB 804	AIR 802	AIR 803	XA 808
DO							

LEVEL IND	START/ STOP	STATUS	FAULT	NOT IN AUTO	SPEED CMD	FLOW IND	PRESSURE IND	POWER FAIL
AIR 901	YC 904	YL 905	YA 906	YD 907	SC 908	AIR 902	AIR 903	XA 909
DO								

LEVEL IND	NOT IN AUTO	FAULT	RUN	START/ STOP	FLOW IND	PRESSURE IND	POWER FAIL
AIR 1001	YID 1007	XA 1006	YIR 1005	PB 1004	AIR 1002	AIR 1003	XA 1008
DO							

RTU-8 RACK: Ai | Di | Di | Di | Do | Ai | Ai | DI

RTU-9 RACK: Ai | Do | Di | Di | Di | Ao | Ai | Ai | DI

RTU-10 RACK: Ai | Di | Di | Di | Do | Ai | Ai | DI

WP-8: HS HOA | SRT | HS S/S | 480V | IL ILUN | MS | IL FAIL

WP-9: IL READY (B) | IL RUNNING (R) | IL STOPPED (G) | VFD | IL FAULT (A) | HS HOA | SC

WP-10: HS HOA | SRT | HS S/S | 480V | IL ILUN | MS | IL FAIL

WELLFIELD PUMP #8

120V | LT R801 | LE R801 | M | AV 171 | 12" | 172 | 12" | 8" | 173 | 1" | 174 | 120V | FIT R802 | FE R802 | M | 120V | PIT R803 | PI R803 | 175 | 176 | WELL CASING PIPE

WELLFIELD PUMP #9

120V | LT R901 | LE R901 | M | AV 181 | 12" | 182 | 12" | 8" | 183 | 1" | 184 | 120V | FIT R902 | FE R902 | M | 120V | PIT R903 | PI R903 | 185 | 186 | WELL CASING PIPE

WELLFIELD PUMP #10

120V | LT R1001 | LE R1001 | M | AV 191 | 12" | 192 | 12" | 8" | 193 | 1" | 194 | 120V | FIT R1002 | FE R1002 | M | 120V | PIT R1003 | PI R1003 | 195 | 196 | WELL CASING PIPE

TO RAW WATER MAINS

EXISTING 30" | EXISTING 24" | EXISTING 20" | 18"

12" DRAIN FOR WELL TESTING TO SWALE

12" TO SWALE

P:\PR58982\Cadd\Sheets\I-9 WELLS 1-4 P&ID.dwg 4/14/2022 9:22:17 AM Randy Podmore

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WELLS 8-10 P&ID

I-11

SHEET: OF

PLOTTED: 4/18/2022 8:54:45 AM

EAST AERATOR

PLANT HMI

E. AERATOR FLOW	E. AERATOR VALVE VAULT FLOOD ALARM	NOT IN AUTO	FAULT	OPEN	CLOSED	MODULATING COMMAND	POSITION FEEDBACK	CLEARWELL LEVEL	LEVEL HI ALARM	LEVEL LO ALARM
FIR 810	LAH 806	YID 803	AX 804	ZSO 801	ZSC 802	SC 800	AI 805	LIT 811	LAH 811A	LAL 811B

PLC-8 RACK

Ai	Di	Di	Di	Di	Di	Ao	Ai	Ai

120V

LT 811

LE 811

20" RAW WATER

AERATOR TRAYS

OVERFLOW EL. 979.50

308
10" PV

WEST AERATOR OVERFLOW

FILTER BACKWASH WATER

EAST AERATOR OVERFLOW TO BACKWASH LAGOON

TO BACKWASH LAGOONS

20" B'FLY VALVE 211

30" BYPASS

24" B'FLY VALVE 212

36"X24" TEE, PLUGGED

36" TO FILTERS

CHLORINE SOLUTION

120V

FCV 800

HS
HK
ZC
ZSC M ZSO

120V

LSH 806

FIT 810

FE 810

M

30" RAW WATER FROM WELLFIELD

BFV 207

209

30" B'FLY VALVE 207

30"X36" INCREASER

VALVE VAULT

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

EAST AERATOR BUILDING P&ID

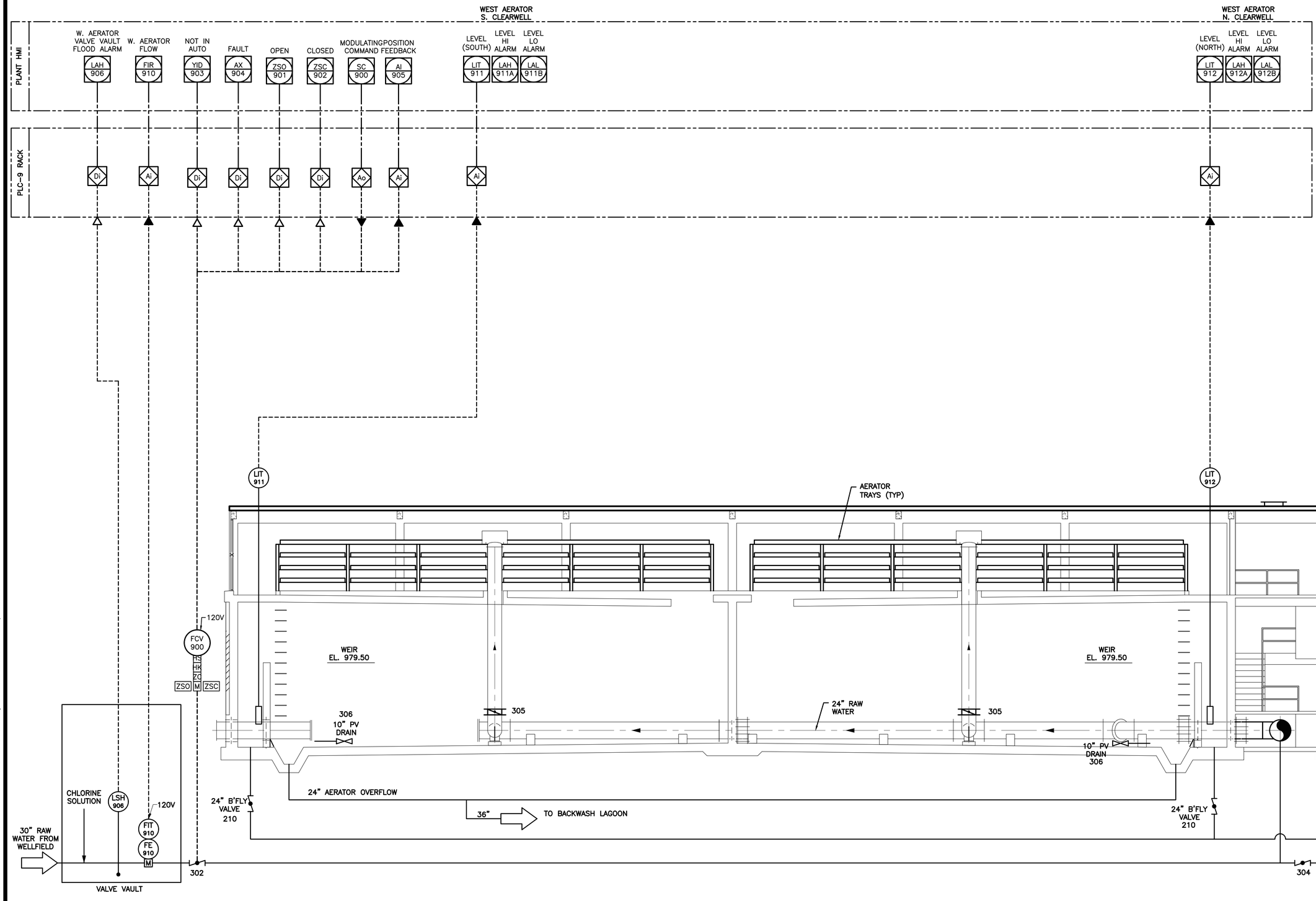
I-12

SHEET: OF

P:\PR58982\Cadd\Sheets\I-12 EAST AERATOR BUILDING P&ID.dwg 4/14/2022 1:34:13 PM Randy Podmore

PLOTTED: 4/18/2022 8:54:52 AM

P:\PR58982\Cadd\Sheets\I-13 WEST AERATOR BUILDING P&ID.dwg 4/14/2022 9:26:09 AM Randy Podmore



BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

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SCALE:	NONE

WEST AERATOR BUILDING P&ID

I-13

SHEET: OF

PLOTTED: 4/18/2022 8:54:59 AM

PLANT HMI

PLC-10 RACK

FAULT AX 1010 | OPEN ZSO 1008 | CLOSED ZSC 1009 | PUMPOUT SUMP HI LEVEL LSH 1004 | CHLORINE EYEWASH ALARM XA 1006 | CONTAINMENT SUMP HI LEVEL LAH 1007 | FLUORIDE EYEWASH XA 1005

IND LI 1001 | LAH LAH 1001A | LAL LL 1001B

IND LI 1002 | LAH LAH 1002A | LAL LL 1002B

FLUORIDE PUMP P-1: START/STOP YC 1011 | STATUS YL 1012 | FAULT YA 1013 | SPEED CMD SC 1014 | NOT IN AUTO YID 1015

FLUORIDE PUMP P-2: START/STOP YC 1016 | STATUS YL 1017 | FAULT YA 1018 | SPEED CMD SC 1019 | NOT IN AUTO YID 1024

IND WIT 1003 | LAH LAH 1003A | LAL LAL 1003B

FROM P-2

VENT

FLOW DIVERTER CONTROL PANEL LCP FCV1008

PB OPEN

PB CLOSED

FILL

LT 1001 / LE 1001

NEW FLANGE FRP MANWAY COVER

FLUORIDE TANK 1 (NORTH)

LT 1002 / LE 1002

NEW FLANGE FRP MANWAY COVER

FLUORIDE TANK 2 (SOUTH)

FLUORIDE PUMP 1

IL R RUNNING | IL G STOPPED | VFD

IL FAULT | HS HOA | SC

TYP. 2

TO FLUORIDATION CHAMBER (NORTH END)

TO FLUORIDATION CHAMBER (SOUTH END)

PRV

PRV

PRESSURE GAUGE

PRESSURE GAUGE

PULSATION DAMPENER

PULSATION DAMPENER

MEASURE

WIT 1003 WGT

DAY TANK

NEW SCALE FOR WEIGHING

CONTAINMENT

BLIND FLANGE

DRAIN

C.O.

TRAP

FS 1006

FS 1005

PW

POTABLE WATER

120V

CV 1008

HS L/O/R
HK OC
ZC
ZSO M ZSC

FLUORIDE UNLOADING STATION

EYEWASH/SAFETY SHOWER w/ FLOW SWITCH

LSH 1004

YARD DRAIN TRUCK UNLOAD PAD

DRAIN

EYEWASH/SAFETY SHOWER w/ FLOW SWITCH

LSH 1007

FD

FD

FLOOR DRAIN

M

EXTERIOR PUMPOUT SUMP

FLUORIDE BUILDING CONTAINMENT SUMP PIT

TO STORM SEWER

3-WAY VALVE DIVERTED TO SUMP DURING FILLING OPERATION (DRAINAGE NORMALLY DIRECTED TO STORM SEWER)

NEW 8" DRAIN FROM CONTAINMENT SUMP TO PUMPOUT SUMP

FLUORIDE SYSTEM

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
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FLUORIDE P&ID

I-14

SHEET: OF

P:\PR58982\Cadd\Sheets\I-14 FLUORIDE P&ID.dwg 4/14/2022 9:27:43 AM Randy Podmore

PLOTTED: 4/18/2022 8:55:06 AM

AIR SCOUR BLOWER 1 | AIR SCOUR BLOWER 2 | TYP. FILTER 2,4,6 | TYP. FILTER 3,5,7

PLANT HMI

VFD FAULT YA 737 | NOT IN AUTO YID 738 | STATUS YIR 736 | S/S HSN 739 | SPEED SC 740

VFD FAULT YA 742 | NOT IN AUTO YID 743 | STATUS YIR 741 | S/S HSN 744 | SPEED SC 745

IND PIR 763

AUTO YID 786 | ALARM AX 787 | OPEN ZSO 788 | CLOSED ZSC 789 | OPEN/CLOSE PB 790

IND FIR 762

NOT IN AUTO YID 202A.3 | FAIL AX 202A.4 | OPEN ZSO 202A.1 | CLOSED ZSC 202A.2 | COMMAND PB 202A

NOT IN AUTO YID 102A.3 | FAIL AX 102A.4 | OPEN ZSO 102A.1 | CLOSED ZSC 102A.2 | COMMAND PB 102A

PLC-7 RACK: Di | Di | Di | Do | Ao

PLC-7 RACK: Di | Di | Di | Do | Ao

PLC-1,2,3,4,5 RACK: Ai | Di Di Di Di DO | Ai | Di Di Di Di DO | Di Di Di Di DO

AIR SCOUR BLOWER 1: READY (B) IL | RUNNING (R) IL | STOPPED (G) IL | VFD | HI MOTOR TEMP. (R) IL | FAULT (A) IL | HS HOA | SC | HI DISC. PRES. (R) IL

AIR SCOUR BLOWER 2: READY (B) IL | RUNNING (R) IL | STOPPED (G) IL | VFD | HI MOTOR TEMP. (R) IL | FAULT (A) IL | HS HOA | SC | HI DISC. PRES. (R) IL

TSH TSH TSH | PSH 528 ** | PI 529 * VFD | TI 529 * | TSH 529 ** | TE 529 * | PRV 473 * | M

PSH 534 ** | TSH TSH TSH | PI 535 * | TI 535 * | TSH 535 ** | TE 535 * | PRV 473 * | M

INLET AIR | AIR SCOUR BLOWER 1 | TO ATMOSPHERE | 471 | 474

INLET AIR | AIR SCOUR BLOWER 2 | TO ATMOSPHERE | 471 | 474

PIT 763 120V | PE 763

DP FIT 762 120V | FE 762 DP | M

FILTER INFLUENT CV 786 120V | L/O/R HS | OC HK | ZC | ZSC M ZSO | AIR BLOWOFF 475 | OUTLET AIR

CV 202A 120V | L/O/R HS | OC HK | ZC | ZSC M ZSO | AIR SCOUR CV 426 | AIR TO FILTER NO.2A

CV 102A 120V | L/O/R HS | OC HK | ZC | ZSC M ZSO | AIR SCOUR CV 416 | AIR TO FILTER NO.1A

CV 202B 120V | AIR SCOUR CV 426 | AIR TO FILTER NO.2B

CV 102B 120V | AIR SCOUR CV 416 | AIR TO FILTER NO.1B

8"

CV 402A 120V | AIR SCOUR CV 446 | AIR TO FILTER NO.4A

CV 302A 120V | AIR SCOUR CV 436 | AIR TO FILTER NO.3A

CV 402B 120V | AIR SCOUR CV 446 | AIR TO FILTER NO.4B

CV 302B 120V | AIR SCOUR CV 436 | AIR TO FILTER NO.3B

8"

CV 602A 120V | AIR SCOUR CV 466 | AIR TO FILTER NO.6A

CV 502A 120V | AIR SCOUR CV 456 | AIR TO FILTER NO.5A

CV 602B 120V | AIR SCOUR CV 466 | AIR TO FILTER NO.6B

CV 502B 120V | AIR SCOUR CV 456 | AIR TO FILTER NO.5B

* FURNISHED BY BLOWER MFR. AND INSTALLED BY GENERAL CONTRACTOR.
** FURNISHED BY BLOWER MFR., INSTALLED BY GENERAL CONTRACTOR, AND WIRED BY ELECTRICAL CONTRACTOR.

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

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SCALE:	NONE

FILTER AIR SCOUR BLOWER P&ID

I-15

SHEET: OF

P:\PR58982\Cadd\Sheets\I-15 FILTER AIR SCOUR BLOWER P&ID.dwg 4/14/2022 9:40:37 AM Randy Podmore

PLOTTED: 4/18/2022 8:55:16 AM

BACKWASH PUMP

BACKWASH RESERVOIR

PLANT HMI

BW PUMP PRESSURE PIT 759 | START/STOP YC 734 | STATUS YL 731 | FAULT YA 732 | HOA NOT IN AUTO YD 733 | SPEED CMD SC 735 | NOT IN AUTO YID 768 | FAIL AX 768A | OPEN ZSO 768B | CLOSED ZSC 769 | MODULATIONS SC 766 | POSITION PO 767 | BW PUMP FLOW FIT 710 | SURGE PRESSURE PIT 710A | PRESSURE PIT 423 | POSITION PO 530.5 | NOT IN AUTO YID 530.3 | FAIL AX 530.4 | OPEN ZSO 530.1 | CLOSED ZSC 530.2 | MODULATIONS PB 530 | FIT 420 | BW RESERVOIR LEVEL LIT 531 | SUMP LOW LEVEL LAL 520A | SUMP HI LEVEL LAH 520B

PLC-7 RACK: AI | Do | Di | Di | Di | Ao | Di | Di | Di | Di | AO | AI | Ai | AI

PLC-4 RACK: Ai | AI | Di | Di | Di | Di | AO | Ai | Ai | Di | Di

SP-1: IL B READY | IL R RUNNING | IL G STOPPED | VFD | IL A FAULT | HS HOA | SC

P-7 — M — PIT 759 — 501 — 18" — SEE SHEET I-18 FOR DETAILS

18" BACKWASH WATER TO FILTERS — 502 — FIT 710 / FE 710 — 18" MAG METER — 18" B FLY 503

120V — FCV 766 — HS L/O/R MOD, HK, ZC — ZSO M ZSC

PIT 710A — FILTER NO. 1 — FILTER NO. 2 — 24" BACKWASH

MAKEUP RESERVOIR FILL LINE SEE SHEET I-19

FILTER NO. 3 — FILTER NO. 4 — FILTER NO. 5 — FILTER NO. 6

120V — FCV 530 — HS L/O/R MOD, HK, ZC — ZSO M ZSC — 24" — 405

FE 531 / FIT 531 — TO WASTEWATER

120V — FCV 532 — HS L/O/R OC, HK, ZC — ZSO M ZSC — 24" B'FLY VALVE 406

TO FILTER TO WASTE PUMP. SEE SHT. I-32 — 6" GATE VALVE

SURGE RELIEF SEE SHT. I-19

LSH 520B — 2" GV — 2" CV — LSL 520A — HLN

PIT 423 — SUBMERSIBLE SUMP P-X — M — ON

LIT 517 / LE 517 — 20" — FILTER GALLERY SUMP

BACKWASH RESERVOIR

20" B'FLY VALVE

SEE SHEET I-18 FOR DETAILS — LIT 702C / LE 702C

SEE SHEET I-19 FOR DETAILS — LIT 703 / LE 703

LIT 701C / LE 701C

FLUORIDATION CHAMBER

PUMP CHAMBER NO. 2 (NORTH) CLEARWELL — V030 — 30"

PUMP CHAMBER NO. 1 (SOUTH) CLEARWELL — V030 — 30"

CLEARWELL

FILTER EFFLUENT FROM CL CONTACT TANK NO. 2 (SOUTH)

FILTER EFFLUENT FROM CLEARWELL NO. 3A (CENTER)

FILTER EFFLUENT FROM CL CONTACT TANK NO. 1 (NORTH)

BURGESS & NIPLE
100 WEST ERIE STREET
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SCALE:	NONE

BACKWASH AND FINISHED WATER DISTRIBUTION PUMPS P&ID

I-16

SHEET: OF

P:\PR58982\Cadd\Sheets\I-16 BACKWASH AND RECIRCULATION PUMPS P&ID.dwg 4/15/2022 7:56:29 AM Randy Podmore

PLOTTED: 4/18/2022 8:55:24 AM

PLANT HMI

PLC-7 RACK

PLC-6 RACK

CONTACT TANK NO. 2 CL RESIDUAL AIT 794

AIT 746

CHLORINE TANK NO. 3 LEVEL LIT 703

CONTACT TANK NO. 1 CL RESIDUAL AIT 793

CL RESIDUAL CLEARWELL NO.1 AIT 616

Ai

120V

AIT 793 / AE 793 CHLORINE

3/4" B FLY

LIT 701C

Cl_2

BAFFLE

NORTH CHLORINE CONTACT TANK 1

FILTER 1 A/B

FILTER 3 A/B

1 – 36" TRANSFER PIPE

FILTER 5 A/B

BAFFLE WALL

FILTER CLEARWELL NO. 1A

2' x 3'W OPENING IN BAFFLE

CLEARWELL 1B

42" B FLY

42"

TO CLEARWELL NO. 3B

LIT 703 / LE 703

481

36" B FLY

30" B FLY CLEARWELL NO. 3 BYPASS 480

FLUORIDE AIT 746 / AE 746

FLOURIDE (NORTH)

CLEARWELL NO. 3 TO CHLORINE TANK NO. 1 481

TO HSP CLEARWELL NO. 1 (WEST). SEE SHT. I–18

TO HSPS CLEARWELL NO. 2 (SOUTH). SEE SHT. I–19

3/4" B FLY

24" B FLY

3/4" NPT PIPE TAP FOR CHLORINE RESIDUAL INSERTION PROBE

FLUORIDATION CHAMBER

Cl_2 & FLUORIDE (SOUTH)

2 – 36" TRANSFER PIPES

CHLORINE AIT 616 / AE 616

CLEARWELL NO. 1B

3/4" NPT PIPE TAP FOR CHLORINE RESIDUAL INSERTION PROBE

FILTER CLEARWELL NO. 3A

CLEARWELL 3B (CENTER)

42" B FLY

CLEARWELL NO. 2B

AIT 794 / AE 794 CHLORINE

LIT 702C

FILTER 2 A/B

FILTER 4 A/B

FILTER 6 A/B

SOUTH CHLORINE CONTACT TANK 2

FILTER CLEARWELL NO. 2A

CLEARWELL 2B

PUMP CHAMBER NO. 1 (SOUTH) HSP 1&2

PUMP CHAMBER NO. 2 (NORTH) HSP 3,4,5 & BW PUMP

N. CL. CONTACT TANK NO.1

CLEARWELL NO.1A FILTER 1,3

CLEARWELL 1B FILTER 5

FLUORIDATION CHAMBER

CLEARWELL NO.3A

CLEARWELL 3B

S. CL. CONTACT TANK NO.2

CLEARWELL NO.2A FILTER 2,5

CLEARWELL 2B FILTER 6

CLEARWELL KEY PLAN

BURGESS & NIPLE

100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

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APPROVED BY:	CMS
SCALE:	NONE

CLEARWELL NO. 3 CHLORINE CONTACT TANK 1 AND 2 P&ID

I-17

SHEET: OF

P:\PR58982\Cadd\Sheets\I-17 CLEARWELL NO. 3 CHLORINE CONTACT TANK 1 AND 2 P&ID.dwg 4/14/2022 12:14:19 PM Randy Podmore

PLOTTED: 4/18/2022 8:55:32 AM

W. CLEARWELL LEVEL

FCV 747

FCV 784

PLANT HMI

PLC RACK

	HI LEVEL ALARM	LO LEVEL ALARM	IND	NOT IN AUTO	FAULT	STATUS	S/S	FAIL	OPEN	CLOSED	DISCHARGE PRESSURE	TEMP ALARM	AUTO	FAULT	STATUS	S/S	FAIL	OPEN	CLOSED	IND	DISCHARGE PRESSURE
PLANT HMI	LAH 701B	LHL 701A	LIT 701C	YID 713	XA 712	YIR 711	PB 714	XA 749	ZSO 747	ZSC 748	PIR 781		YID 723	XA 724	YIR 721	PB 722	XA 749	ZSO 750	ZSC 754	SC 729	PIR 782
PLC RACK	DI	DI	Ai	DI	Di	Di	Do	Di	Di	Di	AI		DI	Di	Di	Do	Di	Di	Di	AO	AI

HS LCP

HSP 1

HS HOA

HS S/S

480V

IL ILUN

MS

IL FAIL

IL R FCV 741 FAULT

HSP 2

IL B READY

IL R RUNNING

IL G STOPPED

VFD

IL FAULT

HS HOA

SC

IL R PLV 726 FAULT

30"

30"

FINISHED WATER DISCHARGE HEADER TO PUMP CHAMBER NO. 2, SEE SHEET I-19.

SURGE CONTROL VALVE

512

16"

VACUUM PRIMING LEVEL SWITCH

522

16"

PSH

PSL

TT RTD

AV V036

PIT 781

PIT 782

CONTROL PANEL

120V

ZSO M ZSC

HK HSL/O/R OC

SCV 747

SCV 750

PUMP BALL CHECK VALVE (TYP FOR 4) 511

PUMP BALL CHECK VALVE (TYP FOR 4) 521

M

LIT 701C

LE 701C

LSH 701B

LSL 701A

HSP-1

HSP-2

HIGH SERVICE PUMP NO. 1

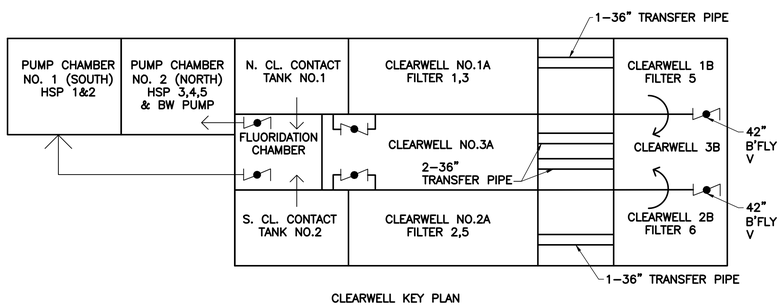
HIGH SERVICE PUMP NO. 2

16"

HS PUMP 1 AND 2 PUMP CHAMBER NO. 1 (SOUTH) CLEARWELL

FROM FLUORIDATION CHAMBER, SEE SHT. I-17

24"



CLEARWELL KEY PLAN

BURGESS & NIPLE

100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
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APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION HIGH SERVICE PUMP P&ID

I-18

SHEET: OF

P:\PR58982\Cadd\Sheets\I-18 PROCESS AND INSTRUMENTATION HIGH SERVICE PUMP P&ID.dwg 4/14/2022 12:18:27 PM Randy Podmore

PLOTTED: 4/18/2022 8:55:39 AM

HS PUMP 3 | HS PUMP 4 | HS PUMP 5

PLANT HMI | PLC RACK

	HS PUMP 3	HS PUMP 4	HS PUMP 5
AUTO	YID 733	YID 743	YID 753
FAIL	XA 734	XA 744	XA 754
RUN	YIR 731	YIR 741	YIR 751
S/S	PB 732	PB 742	PB 752
FAIL	XA	XA 757	XA 760
OPEN	ZSO 753	ZSO 755	ZSO 758
CLOSED	ZSC 754	ZSC 756	ZSC 759
DISCHARGE PRESSURE	PIR 783	PIR 784	PIR 785

PLC RACK: DI | Di | Di | Do | Di | Di | Di | AI

PLANT HMI: PRESSURE PIT 520 | PLANT WTR. FLOW IND FIQ 523 | NPW WTR. FLOW IND FIQ 524 | FIN. WTR. FLOW IND FIQ 708 | FIN. WTR. PRESSURE FIQ 706 | HI LEVEL ALARM LSC 702B | LO LEVEL ALARM LSC 702A | S. CLEARWELL LEVEL LIC 702C

PLC RACK: Ai | Ai | Ai | Ai | Ai | DI | DI | Ai

HS LCP — HSP 3 / HSP 4 / HSP 5

HS HOA | HS S/S | 480V | IL ILUN | MS | IL FAIL | IL R FAULT FCV 736 / FCV 746 / FCV 756

FINISHED WATER DISCHARGE HEADER FROM PUMP CHAMBER NO.1, SEE SHT. I-18

30" | 30" | 30" | 30"

VACUUM PRIMING LEVEL SWITCH

532 | 542 | 552

16" | 16" | 16"

RTD | TT | AV V036 | PIT 783 / 784 / 785 | M

CONTROL PANEL | 120V | PSH | PSL | ZSO | M | ZSC | HK | ZC | HSL O/C | O/R | SCV 753 / 756 / 759 | 120V

PUMP BALL CHECK VALVE (TYP FOR 4) 531 / 541 / 551

HSPS 1 & 2 CLEARWELL WEST

HSP-3 | HSP-4 | HSP-5

HIGH SERVICE PUMP NO. 3 | HIGH SERVICE PUMP NO. 4 | HIGH SERVICE PUMP NO. 5

16" | 16" | 16"

HSPS 3,4,5 & BW PUMP CLEARWELL (EAST)

FLOURIDE AIT 120V AE | CHLORINE AIT 120V AE

DP FIT 708 FE 708 | PIT 706

V041 | EXIST. V042

TO DISTRIBUTION SYSTEM 16" | TO DISTRIBUTION SYSTEM 30"

30" | 24" M

16" 505 | 221 | 12" | 215 | 216 | 219 | PIT 520

505 508 505 MAKEUP RESERVOIR FILL LINE SEE SHEET I-16

4" BACKFLOW PREVENTER (TYP OF 2)

505 507 505 FE 524 4" MAG METER

TO EX. 3" SURFACE WASH

TO FLUORIDE & CHLORIDE CHEMICAL FEED SYSTEMS

505 FE 523 4" MAG METER

3" BACKFLOW PREVENTER (TYP OF 2)

TO EXISTING 4" PLANT WATER

TO FILTER BACKWASH SEE SHT. I-16

222

SURGE RELIEF

LSH 702B | LSL 702A | LIT 702C LE 702C

24"

FROM FLUORIDATION CHAMBER, SEE SHT. I-17

P:\PR58982\Cadd\Sheets\I-19 PROCESS AND INSTRUMENTATION HIGH SERVICE PUMP P&ID.dwg 4/14/2022 1:41:15 PM Randy Podmore

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
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SCALE:	NONE

PROCESS AND INSTRUMENTATION HIGH SERVICE PUMP P&ID

I-19

SHEET: OF

PLOTTED: 4/18/2022 8:55:46 AM

FILTER 1–4 FLUME | FILTER 5–6 FLUME | BACKWASH WATER TO LAGOON | SHARED FILTER INFLUENT VALVE | FILTER CELL 1A LEVEL | FILTER BW EXPANSION | AIR SCOUR BW TURBIDITY | AIR SCOUR LEAK ALARM | AIR SCOUR IN THE VALVE | DIFF PRESSURE | BACKWASH CONTROL VALVE | FILTERED WATER EFFLUENT VALVE | FILTER TO WASTE DRAIN | FILTER NO. 1A TURBIDITY | FILTER NO. 1A EFFLUENT FLOW

PLANT HMI: LIT 424 LEVEL; LSH 425 LEVEL HI; LIT 420 LEVEL; LSH 422 LEVEL HI; YID 111.3 NOT IN AUTO; AX 111.4 FAULT; ZSO 111.1 OPEN; ZSC 111.2 CLOSED; SC 111 COMMAND; ZI 111.5 MODULATING POSITION FEEDBACK; YID 101.3 NOT IN AUTO; AX 101.4 FAULT; ZSO 101.1 OPEN; ZSC 101.2 CLOSED; PB 101 COMMAND; LIC 110A; AIR 112A.1; AIR 112A.2; AX 115A; YID 102A.3 NOT IN AUTO; AX 102A.4 FAULT; ZSO 102A.1 OPEN; ZSC 102A.2 CLOSED; PB 102A COMMAND; PIR 107A IND; YID 103A.3 NOT IN AUTO; AX 103A.4 FAULT; ZSO 103A.1 OPEN; ZSC 103A.2 CLOSED; PB 103A COMMAND; YID 105A.3 NOT IN AUTO; AX 105A.4 FAULT; ZSO 105A.1 OPEN; ZSC 105A.2 CLOSED; PB 105A COMMAND; ZI 105A.5 MODULATING POSITION FEEDBACK; YID 104A.3 NOT IN AUTO; AX 104A.4 FAIL; ZSO 104A.1 OPEN; ZSC 104A.2 CLOSED; PB 104A COMMAND; AIR 109A; FIQ 108A IND

PLC–4 RACK: Ai | DI | Ai | DI

PLC–1 RACK: Di | Di | Di | Di | DO | Ao | Di | Di | Di | Di | DO | Ai | Ai | Ai | Di | Di | Di | Di | Di | DO | Ai | Di | Di | Di | Di | DO | Di | Di | Di | Di | DO | Ao | Di | Di | Di | Di | DO | Ai | Ai

36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)

EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)

LSH 425; LIT 424; LSH 422; LIT 420; 409; 408

INFLUENT DISTRIBUTION BOX

48"x48" FILTER INFLUENT FLUME

FILTER #1; FILTER #2; STOP GATE; FILTER #3; FILTER #4; FILTER #5; FILTER #6

20" WASHWATER PUMP DISCHARGE SEE SHEET I–16

FILTER BACKWASH 18"

TO FILTER #1A; TO FILTER #1B; TO FILTER #2A; TO FILTER #2B; TO FILTER #3A; TO FILTER #3B; TO FILTER #4A; TO FILTER #4B; TO FILTER #5A; TO FILTER #5B; TO FILTER #6A; TO FILTER #6B

LT 110A

120V CV 101 SHARED FILTER INFLUENT L/O/R OC HS HK ZC ZSC M ZSO; 24"; 411

AIT 112A; AIT 112A BACKWASH ANALYZER

120V CV 102A HS L/O/R OC HK ZC ZSO M ZSC; 6" AIR; 416 FINE INLET SCREEN

4" AIR; 2"; PSL 115A1; PSL 115A2; PSL 115A3; PSL 115A4 AIR SCOUR LEAK DETECTOR

SHARED INFLUENT AND BACKWASH EFFLUENT GULLET

FILTER MEDIA

GRAVEL

UNDERDRAIN

FILTER NO. 1A

V024; DP; PIT 107A; V024

FILTER EFFLUENT BACKWASH INFLUENT 20"

120V CV 111 L/O/R OC HS HK ZC ZSC M ZSO; 24"; 414

36" WASHWATER TO LAGOONS

AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)

FROM F–T–W PUMP SEE SHT. I–32

BACKWASH WATER DIVERSION CHAMBER

24" B'FLY VALVE

36" OVERFLOW TO STREAM

24"

120V B.W. CONTROL VALVE CV 103A HS L/O/R OC HK ZC ZSO M ZSC; 413

120V FILTERED WATER EFFLUENT FCV 105A HS L/O/R OC HK ZC ZSO M ZSC; 18"; 16"; 10"; 412

AIT 109A; AE 109A NTU

120V FIT 108A; FE 108A M TO CLEARWELL

6"; 120V CV 104A FILTER TO WASTE DRAIN HS L/O/R OC HK ZC ZSO M ZSC; 415 FILTER TO WASTE

TO FILTER TO WASTE PUMP. SEE SHT. I–32

FUTURE

FLOW DISTRIBUTION CHAMBER

OVERFLOW

NO. 3; 20" B'FLY (TYP); 20"

NO. 2; 20" B'FLY V.

NO. 1; 20" B'FLY V.

BACKWASH LAGOONS

DECHLORINATION PUMPS

1" 2"

CHEMICAL TOTES

OUTFALL

DECHLORINATION MANHOLE

P:\PR58982\Cadd\Sheets\E-Sheets\I-20 PROCESS AND INSTRUMENTATION FILTER NO. 1A P&ID.dwg 4/14/2022 10:36:16 AM Randy Podmore

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 1A P&ID

I-20

SHEET: OF

PLOTTED: 4/18/2022 8:55:54 AM

FILTER 1–4 FLUME: LEVEL LIT 424 (PLC–4 RACK Ai)
FILTER 5–6 FLUME: LEVEL HI LSH 425 (DI); LEVEL LIT 420 (Ai); LEVEL HI LSH 422 (DI)
BACKWASH WATER TO LAGOON: NOT IN AUTO YID 111.3; FAULT AX 111.4; OPEN ZSO 111.1; CLOSED ZSC 111.2; COMMAND SC 111; MODULATING POSITION FEEDBACK ZI 111.5 (PLC–1 RACK Di Di Di Di DO Ao)
SHARED FILTER INFLUENT VALVE: NOT IN AUTO YID 101.3; FAULT AX 101.4; OPEN ZSO 101.1; CLOSED ZSC 101.2; COMMAND PB 101 (Di Di Di Di DO)
FILTER CELL 1A LEVEL LIC 110B (Ai)
FILTER BW EXPANSION AIR 112B.1 (Ai)
BW TURBIDITY AIR 112B.2 (Ai)
AIR SCOUR LEAK ALARM AX 115B (Di)
AIR SCOUR IN THE VALVE: NOT IN AUTO YID 102B.3; FAULT AX 102B.4; OPEN ZSO 102B.1; CLOSED ZSC 102B.2; COMMAND PB 102B (Di Di Di Di DO)
DIFF PRESSURE IND PIR 107B (Ai)
BACKWASH CONTROL VALVE: NOT IN AUTO YID 103B.3; FAULT AX 103B.4; OPEN ZSO 103B.1; CLOSED ZSC 103B.2; COMMAND PB 103B (Di Di Di Di DO)
FILTERED WATER EFFLUENT VALVE: NOT IN AUTO YID 105B.3; FAULT AX 105B.4; OPEN ZSO 105B.1; CLOSED ZSC 105B.2; COMMAND PB 105B; MODULATING POSITION FEEDBACK ZI 105B.5 (Di Di Di Di DO Ao)
FILTER TO WASTE DRAIN: NOT IN AUTO YID 104B.3; FAIL AX 104B.4; OPEN ZSO 104B.1; CLOSED ZSC 104B.2; COMMAND PB 104B (Di Di Di Di DO)
FILTER NO. 1B TURBIDITY AIR 109B (Ai)
FILTER NO. 1B EFFLUENT FLOW IND FIQ 108B (Ai)

LSH 425; LIT 424; LSH 422; LIT 420
36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)
409; 408
INFLUENT DISTRIBUTION BOX
EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)
48"x48" FILTER INFLUENT FLUME
FILTER #1; FILTER #2; STOP GATE; FILTER #3; FILTER #4; FILTER #5; FILTER #6
LT 110B
AIT 112B; AIT 112B
BACKWASH ANALYZER
120V CV 101 L/O/R HS HK ZC OC ZSC M ZSO
SHARED FILTER INFLUENT
24"
411
120V CV 111 L/O/R HS HK ZC OC ZSC M ZSO
24"
414
36"
WASHWATER TO LAGOONS
FROM F–T–W PUMP SEE SHT. I–32
BACKWASH WATER DIVERSION CHAMBER
24" B'FLY VALVE
36"
OVERFLOW TO STREAM
SHARED INFLUENT AND BACKWASH EFFLUENT GULLET
4" AIR
2"; PSL 115B; PSL 115B2; PSL 115B3; PSL 115B4
AIR SCOUR LEAK DETECTOR
AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)
FILTER MEDIA
GRAVEL
UNDERDRAIN
FILTER NO. 1B
120V CV 102B HS L/O/R HK OC ZC ZSO M ZSC
6" AIR
416 FINE INLET SCREEN
V024; DP PIT 107B; V024
FILTER EFFLUENT BACKWASH INFLUENT
20"
20" WASHWATER PUMP DISCHARGE
FILTER BACKWASH
FILTER BACKWASH 18"
120V CV 103B B.W. CONTROL VALVE HS L/O/R HK OC ZC ZSO M ZSC
413
18"
120V FCV 105B FILTERED WATER EFFLUENT HS L/O/R HK OC ZC ZSO M ZSC
AIT 109B; AE 109B NTU
120V FIT 108B; FE 108B M TO CLEARWELL
16"
10"
412
6"
120V CV 104B FILTER TO WASTE DRAIN HS L/O/R HK OC ZC ZSO M ZSC
TO FILTER TO WASTE PUMP. SEE SHT. I–32
FILTER TO WASTE
415
FUTURE
FLOW DISTRIBUTION CHAMBER
TO FILTER #1A; TO FILTER #1B
TO FILTER #2A; TO FILTER #2B
TO FILTER #3A; TO FILTER #3B
TO FILTER #4A; TO FILTER #4B
TO FILTER #5A; TO FILTER #5B
TO FILTER #6A; TO FILTER #6B
OVERFLOW
NO. 3; NO. 2; NO. 1
20" B'FLY (TYP)
20" B'FLY V.
20" B'FLY V.
BACKWASH LAGOONS
20"
DECHLORINATION PUMPS
1/2"
CHEMICAL TOTES
OUTFALL
DECHLORINATION MANHOLE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 1B P&ID

I-21

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-21 PROCESS AND INSTRUMENTATION FILTER NO. 1B P&ID.dwg 4/14/2022 12:43:21 PM Randy Podmore

PLOTTED: 4/18/2022 8:56:01 AM

P:\PR58982\Cadd\Sheets\E-Sheets\I-22 PROCESS AND INSTRUMENTATION FILTER NO. 2A P&ID.dwg 4/14/2022 12:56:58 PM Randy Podmore

FILTER 1–4 FLUME | FILTER 5–6 FLUME | BACKWASH WATER TO LAGOON | SHARED FILTER INFLUENT VALVE | AIR SCOUR IN THE VALVE | DIFF PRESSURE | BACKWASH CONTROL VALVE | FILTERED WATER EFFLUENT VALVE | FILTER TO WASTE DRAIN | FILTER NO. 2A TURBIDITY | FILTER NO. 2A EFFLUENT FLOW

PLANT HMI: LIT 424 LEVEL; LSH 425 LEVEL HI; LIT 420 LEVEL; LSH 422 LEVEL HI; YID 211.3 NOT IN AUTO; AX 211.4 FAULT; ZSO 211.1 OPEN; ZSC 211.2 CLOSED; SC 211 COMMAND; ZI 211.5 MODULATING POSITION FEEDBACK; YID 201.3 NOT IN AUTO; AX 201.4 FAULT; ZSO 201.1 OPEN; ZSC 201.2 CLOSED; PB 201 COMMAND; LIC 210A FILTER CELL 1A LEVEL; AIR 212A.1 FILTER BW EXPANSION; AIR 212A.2 BW TURBIDITY; AX 215A AIR SCOUR LEAK ALARM; YID 202A.3 NOT IN AUTO; AX 202A.4 FAULT; ZSO 202A.1 OPEN; ZSC 202A.2 CLOSED; PB 202A COMMAND; PIR 207A IND; YID 203A.3 NOT IN AUTO; AX 203A.4 FAULT; ZSO 203A.1 OPEN; ZSC 203A.2 CLOSED; PB 203A COMMAND; YID 205A.3 NOT IN AUTO; AX 205A.4 FAULT; ZSO 205A.1 OPEN; ZSC 205A.2 CLOSED; PB 205A COMMAND; ZI 205A.5 MODULATING POSITION FEEDBACK; YID 204A.3 NOT IN AUTO; AX 204A.4 FAIL; ZSO 204A.1 OPEN; ZSC 204A.2 CLOSED; PB 204A COMMAND; AIR 209A; FIQ 208A IND

PLC-4 RACK: Ai; DI; Ai; DI

PLC-1 RACK: Di Di Di Di DO Ao | Di Di Di Di DO | Ai | Ai | Ai | Di | Di Di Di Di DO | Ai | Di Di Di Di DO | Di Di Di Di DO Ao | Di Di Di Di DO | Ai | Ai

36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)

EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)

LSH 425; LIT 424; LSH 422; LIT 420; 409; 408

INFLUENT DISTRIBUTION BOX

48"x48" FILTER INFLUENT FLUME

FILTER #1; FILTER #2; FILTER #3; FILTER #4; FILTER #5; FILTER #6; STOP GATE

20" WASHWATER PUMP DISCHARGE

FILTER BACKWASH 18"

TO FILTER #1A; TO FILTER #1B; TO FILTER #2A; TO FILTER #2B; TO FILTER #3A; TO FILTER #3B; TO FILTER #4A; TO FILTER #4B; TO FILTER #5A; TO FILTER #5B; TO FILTER #6A; TO FILTER #6B

LT 210A

AIT 212A; AIT 212A BACKWASH ANALYZER

120V CV 201 SHARED FILTER INFLUENT L/O/R OC HS HK ZC ZSC M ZSO; 24"; 421

SHARED INFLUENT AND BACKWASH EFFLUENT GULLET

120V CV 202A L/O/R OC HS HK ZC ZSO M ZSC; 423

4" AIR; 2" PSL 215A1; PSL 215A2; PSL 215A3; PSL 215A4; AIR SCOUR LEAK DETECTOR

6" AIR; 426 FINE INLET SCREEN

V024; V024

DP PIT 207A

FILTER MEDIA

GRAVEL

UNDERDRAIN

FILTER NO. 2A

FILTER EFFLUENT BACKWASH INFLUENT 20"

AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)

120V CV 211 L/O/R OC HS HK ZC ZSC M ZSO; 24"; 424

WASHWATER TO LAGOONS

36"

FROM F–T–W PUMP SEE SHT. I–32

BACKWASH WATER DIVERSION CHAMBER

24" B'FLY VALVE

36" OVERFLOW TO STREAM

24"

120V CV 203A B.W. CONTROL VALVE HS HK ZC L/O/R OC ZSO M ZSC; 423

18"

120V FCV 205A FILTERED WATER EFFLUENT HS HK ZC L/O/R OC ZSO M ZSC; 422

16" 10"

AIT 209A; AE 209A NTU

120V FIT 208A; FE 208A M TO CLEARWELL

6"

120V CV 204A FILTER TO WASTE DRAIN HS HK ZC L/O/R OC ZSO M ZSC; 425

FILTER TO WASTE

TO FILTER TO WASTE PUMP, SEE SHT. I–32

FUTURE

FLOW DISTRIBUTION CHAMBER

OVERFLOW

NO. 3; NO. 2; NO. 1

20" B'FLY (TYP); 20" B'FLY V.; 20" B'FLY V.

BACKWASH LAGOONS

20"

DECHLORINATION PUMPS

1/2"

CHEMICAL TOTES

OUTFALL

DECHLORINATION MANHOLE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 2A P&ID

I-22

SHEET: OF

PLOTTED: 4/18/2022 8:56:09 AM

FILTER 1–4 FLUME | FILTER 5–6 FLUME | BACKWASH WATER TO LAGOON | SHARED FILTER INFLUENT VALVE | FILTER CELL 1A LEVEL | FILTER BW EXPANSION | BW TURBIDITY | AIR SCOUR LEAK ALARM | AIR SCOUR IN THE VALVE | DIFF PRESSURE | BACKWASH CONTROL VALVE | FILTERED WATER EFFLUENT VALVE | FILTER TO WASTE DRAIN | FILTER NO. 2B TURBIDITY | FILTER NO. 2B EFFLUENT FLOW

PLANT HMI: LIT 424 LEVEL | LSH 425 LEVEL HI | LIT 420 LEVEL | LSH 422 LEVEL HI | YID 211.3 NOT IN AUTO | AX 211.4 FAULT | ZSO 211.1 OPEN | ZSC 211.2 CLOSED | SC 211 COMMAND | ZI 211.5 MODULATING POSITION FEEDBACK | YID 201.3 NOT IN AUTO | AX 201.4 FAULT | ZSO 201.1 OPEN | ZSC 201.2 CLOSED | PB 201 COMMAND | LIC 210B | AIR 212B,1 | AIR 212B,2 | AX 215B | YID 202B,3 NOT IN AUTO | AX 202B,4 FAULT | ZSO 202B,1 OPEN | ZSC 202B,2 CLOSED | PB 202B COMMAND | PIR 207B IND | YID 203B,3 NOT IN AUTO | AX 203B,4 FAULT | ZSO 203B,1 OPEN | ZSC 203B,2 CLOSED | PB 203B COMMAND | YID 205B,3 NOT IN AUTO | AX 205B,4 FAULT | ZSO 205B,1 OPEN | ZSC 205B,2 CLOSED | PB 205B COMMAND | ZI 205B,5 MODULATING POSITION FEEDBACK | YID 204B,3 NOT IN AUTO | AX 204B,4 FAIL | ZSO 204B,1 OPEN | ZSC 204B,2 CLOSED | PB 204B COMMAND | AIR 209B | FIQ 208B IND

PLC–4 RACK: Ai | DI | Ai | DI

PLC–1 RACK: Di | Di | Di | Di | DO | Ao | Di | Di | Di | Di | DO | Ai | Ai | Ai | Di | Di | Di | Di | Di | DO | Ai | Di | Di | Di | Di | DO | Di | Di | Di | Di | DO | Ao | Di | Di | Di | Di | DO | Ai | Ai

LSH 425 | LIT 424 | LSH 422 | LIT 420

36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)

409 | 408

INFLUENT DISTRIBUTION BOX

EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)

48"x48" FILTER INFLUENT FLUME

FILTER #1 | FILTER #2 | FILTER #3 | FILTER #4 | FILTER #5 | FILTER #6 | STOP GATE

20" WASHWATER PUMP DISCHARGE

FILTER BACKWASH 20" | FILTER BACKWASH 18"

TO FILTER #1A | TO FILTER #1B | TO FILTER #2A | TO FILTER #2B | TO FILTER #3A | TO FILTER #3B | TO FILTER #4A | TO FILTER #4B | TO FILTER #5A | TO FILTER #5B | TO FILTER #6A | TO FILTER #6B

120V CV 203B B.W. CONTROL VALVE HS L/O/R HK OC ZC ZSO M ZSC 423

120V CV 202B HS L/O/R HK OC ZC ZSO M ZSC 426 FINE INLET SCREEN 6" AIR

4" AIR

2" PSL 215B1 | 2" PSL 215B2 | 2" PSL 215B3 | 2" PSL 215B4

AIT 212B | AIT 212B BACKWASH ANALYZER

LT 210B

AIR SCOUR LEAK DETECTOR

120V CV 201 SHARED FILTER INFLUENT L/O/R HS OC HK ZC ZSC M ZSO 24" 421

SHARED INFLUENT AND BACKWASH EFFLUENT GULLET

120V CV 211 L/O/R HS OC HK ZC ZSC M ZSO 24" 424

36" WASHWATER TO LAGOONS

FROM F–T–W PUMP SEE SHT. I–32

BACKWASH WATER DIVERSION CHAMBER

24" B'FLY VALVE

36" OVERFLOW TO STREAM

V024 | DP PIT 207B | V024

FILTER MEDIA

GRAVEL

UNDERDRAIN

FILTER NO. 2B

AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)

FILTER EFFLUENT BACKWASH INFLUENT 20"

18" | 6"

120V FCV 205B FILTERED WATER EFFLUENT HS L/O/R HK OC ZC ZSO M ZSC 16" 422 10"

AIT 209B | AE 209B NTU

120V FIT 208B | FE 208B M TO CLEARWELL

120V CV 204B FILTER TO WASTE DRAIN HS L/O/R HK OC ZC ZSO M ZSC 425

TO FILTER TO WASTE PUMP. SEE SHT. I–32

FILTER TO WASTE

FUTURE

FLOW DISTRIBUTION CHAMBER

NO. 3 | NO. 2 | NO. 1 OVERFLOW | 20" B'FLY (TYP) | 20" B'FLY V. | 20" B'FLY V. 20"

BACKWASH LAGOONS

DECHLORINATION PUMPS | 1/2" | CHEMICAL TOTES

OUTFALL

DECHLORINATION MANHOLE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 2B P&ID

I-23

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-23 PROCESS AND INSTRUMENTATION FILTER NO. 2B P&ID.dwg 4/14/2022 12:57:08 PM Randy Podmore

PLOTTED: 4/18/2022 8:56:16 AM

FILTER 1–4 FLUME | FILTER 5–6 FLUME | BACKWASH WATER TO LAGOON | SHARED FILTER INFLUENT VALVE | FILTER CELL 1A LEVEL | FILTER BW EXPANSION | BW TURBIDITY | AIR SCOUR LEAK ALARM | AIR SCOUR IN THE VALVE | DIFF PRESSURE | BACKWASH CONTROL VALVE | FILTERED WATER EFFLUENT VALVE | FILTER TO WASTE DRAIN | FILTER NO. 3A TURBIDITY | FILTER NO. 3A EFFLUENT FLOW

PLANT HMI: LIT 424 LEVEL; LSH 425 LEVEL HI; LIT 420 LEVEL; LSH 422 LEVEL HI; YID 311.3 NOT IN AUTO; AX 311.4 FAULT; ZSO 311.1 OPEN; ZSC 311.2 CLOSED; SC 311 COMMAND; ZI 311.5 MODULATING POSITION FEEDBACK; YID 301.3 NOT IN AUTO; AX 301.4 FAULT; ZSO 301.1 OPEN; ZSC 301.2 CLOSED; PB 301 COMMAND; LIC 310A; AIR 312A.1; AIR 312A.2; AX 315A; YID 302A.3 NOT IN AUTO; AX 302A.4 FAULT; ZSO 302A.1 OPEN; ZSC 302A.2 CLOSED; PB 302A COMMAND; PIR 307A IND; YID 303A.3 NOT IN AUTO; AX 303A.4 FAULT; ZSO 303A.1 OPEN; ZSC 303A.2 CLOSED; PB 303A COMMAND; YID 305A.3 NOT IN AUTO; AX 305A.4 FAULT; ZSO 305A.1 OPEN; ZSC 305A.2 CLOSED; PB 305A COMMAND; ZI 305A.5 MODULATING POSITION FEEDBACK; YID 304A.3 NOT IN AUTO; AX 304A.4 FAIL; ZSO 304A.1 OPEN; ZSC 304A.2 CLOSED; PB 304A COMMAND; AIR 309A; FIQ 308A IND

PLC–4 RACK: Ai | DI | Ai | DI

PLC–1 RACK: Di Di Di Di DO Ao | Di Di Di Di DO | Ai | Ai Ai Di | Di Di Di Di DO | Ai | Di Di Di Di DO | Di Di Di Di DO Ao | Di Di Di Di DO | Ai Ai

LSH 425; LIT 424; LSH 422; LIT 420

36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)

409; 408

INFLUENT DISTRIBUTION BOX

36" EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)

48"x48" FILTER INFLUENT FLUME

FILTER #1; FILTER #2; FILTER #3; FILTER #4; FILTER #5; FILTER #6; STOP GATE

LT 310A

120V CV 301 L/O/R HS OC HK ZC ZSC M ZSO — SHARED FILTER INFLUENT — 24" — 431

SHARED INFLUENT AND BACKWASH EFFLUENT GULLET

120V CV 311 L/O/R HS OC HK ZC ZSC M ZSO — 24" — 434

36" WASHWATER TO LAGOONS

FROM F–T–W PUMP SEE SHT. I–32

BACKWASH WATER DIVERSION CHAMBER

24" B'FLY VALVE

36" OVERFLOW TO STREAM

20" WASHWATER PUMP DISCHARGE

FILTER BACKWASH

FILTER BACKWASH 18"

AIT 312A; AIT 312A — BACKWASH ANALYZER

4" AIR

2" PSL 315A1; 2" PSL 315A2; 2" PSL 315A3; 2" PSL 315A4 — AIR SCOUR LEAK DETECTOR

120V CV 302A L/O/R HS OC HK ZC ZSO M ZSC — 436 — 6" AIR — FINE INLET SCREEN

V024; V024

DP PIT 307A

FILTER MEDIA

GRAVEL

UNDERDRAIN

FILTER NO. 3A

FILTER EFFLUENT BACKWASH INFLUENT 20"

AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)

120V CV 303A B.W. CONTROL VALVE L/O/R HS OC HK ZC ZSO M ZSC — 433

18"

120V FCV 305A FILTERED WATER EFFLUENT L/O/R HS OC HK ZC ZSO M ZSC — 16" — 10" — 432

AIT 309A; AE 309A NTU

FIT 308A; FE 308A M — 120V — TO CLEARWELL

6"

120V CV 304A FILTER TO WASTE DRAIN L/O/R HS OC HK ZC ZSO M ZSC — 435

TO FILTER TO WASTE PUMP. SEE SHT. I–32

FILTER TO WASTE

FUTURE

FLOW DISTRIBUTION CHAMBER

OVERFLOW

NO. 3 — 20" B'FLY (TYP) — 20"

NO. 2 — 20" B'FLY V.

NO. 1 — 20" B'FLY V. — BACKWASH LAGOONS

1/2"

DECHLORINATION PUMPS

CHEMICAL TOTES

OUTFALL

DECHLORINATION MANHOLE

TO FILTER #1A | TO FILTER #1B

TO FILTER #2A | TO FILTER #2B

TO FILTER #3A | TO FILTER #3B

TO FILTER #4A | TO FILTER #4B

TO FILTER #5A | TO FILTER #5B

TO FILTER #6A | TO FILTER #6B

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 3A P&ID

I-24

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-24 PROCESS AND INSTRUMENTATION FILTER NO. 3A P&ID.dwg 4/14/2022 12:59:10 PM Randy Podmore

PLOTTED: 4/18/2022 8:56:24 AM

FILTER 1–4 FLUME | FILTER 5–6 FLUME | BACKWASH WATER TO LAGOON | SHARED FILTER INFLUENT VALVE | FILTER CELL 1A LEVEL | FILTER BW EXPANSION | BW TURBIDITY | AIR SCOUR LEAK ALARM | AIR SCOUR IN THE VALVE | DIFF PRESSURE | BACKWASH CONTROL VALVE | FILTERED WATER EFFLUENT VALVE | FILTER TO WASTE DRAIN | FILTER NO. 3B EFFLUENT TURBIDITY | FILTER NO. 3B EFFLUENT FLOW

PLANT HMI: LEVEL LIT 424 | LEVEL HI LSH 425 | LEVEL LIT 420 | LEVEL HI LSH 422 | NOT IN AUTO YID 311.3 | FAULT AX 311.4 | OPEN ZSO 311.1 | CLOSED ZSC 311.2 | COMMAND SC 311 | MODULATING POSITION FEEDBACK ZI 311.5 | NOT IN AUTO YID 301.3 | FAULT AX 301.4 | OPEN ZSO 301.1 | CLOSED ZSC 301.2 | COMMAND PB 301 | LIC 310B | AIR 312B.1 | AIR 312B.2 | AX 315B | NOT IN AUTO YID 302B.3 | FAULT AX 302B.4 | OPEN ZSO 302B.1 | CLOSED ZSC 302B.2 | COMMAND PB 302B | IND PIR 307B | NOT IN AUTO YID 303B.3 | FAULT AX 303B.4 | OPEN ZSO 303B.1 | CLOSED ZSC 303B.2 | COMMAND PB 303B | NOT IN AUTO YID 305B.3 | FAULT AX 305B.4 | OPEN ZSO 305B.1 | CLOSED ZSC 305B.2 | COMMAND PB 305B | MODULATING POSITION FEEDBACK ZI 305B.5 | NOT IN AUTO YID 304B.3 | FAIL AX 304B.4 | OPEN ZSO 304B.1 | CLOSED ZSC 304B.2 | COMMAND PB 304B | AIR 309B | IND FIQ 308B

PLC–4 RACK: Ai | DI | Ai | DI

PLC–1 RACK: Di | Di | Di | Di | DO | Ao | Di | Di | Di | Di | DO | Ai | Ai | Ai | Di | Di | Di | Di | Di | DO | Ai | Di | Di | Di | Di | DO | Di | Di | Di | Di | DO | Ao | Di | Di | Di | Di | DO | Ai | Ai

LSH 425 | LIT 424 | LSH 422 | LIT 420

36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)

409 | 408

INFLUENT DISTRIBUTION BOX

EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)

48"x48" FILTER INFLUENT FLUME

FILTER #1 | FILTER #2 | FILTER #3 | FILTER #4 | FILTER #5 | FILTER #6 | STOP GATE

20" WASHWATER PUMP DISCHARGE

FILTER BACKWASH 20" | FILTER BACKWASH 18"

LT 310B

AIT 312B | AIT 312B BACKWASH ANALYZER

120V CV 301 SHARED FILTER INFLUENT L/O/R HS HK ZC ZSC M ZSO 431 24"

SHARED INFLUENT AND BACKWASH EFFLUENT GULLET

4" AIR | 2" | PSL 315B1 | PSL 315B2 | PSL 315B3 | PSL 315B4 | AIR SCOUR LEAK DETECTOR

120V CV 302B L/O/R HS HK ZC ZSO M ZSC 436 6" AIR FINE INLET SCREEN

V024 | DP PIT 307B | V024

FILTER MEDIA | GRAVEL | UNDERDRAIN | FILTER NO. 3B

AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)

120V CV 311 L/O/R HS HK ZC ZSC M ZSO 434 24"

WASHWATER TO LAGOONS

36" FROM F–T–W PUMP SEE SHT. I–32

BACKWASH WATER DIVERSION CHAMBER

24" B'FLY VALVE | 24" | 36" OVERFLOW TO STREAM

120V CV 303B B.W. CONTROL VALVE L/O/R HS HK ZC ZSO M ZSC 433

FILTER EFFLUENT BACKWASH INFLUENT 20" | 18" | 16" | 6"

120V FCV 305B FILTERED WATER EFFLUENT L/O/R HS HK ZC ZSO M ZSC 432 10"

AIT 309B | AE 309B NTU | FIT 308B | FE 308B M | 120V TO CLEARWELL

120V CV 304B FILTER TO WASTE DRAIN L/O/R HS HK ZC ZSO M ZSC 435

FILTER TO WASTE

TO FILTER TO WASTE PUMP. SEE SHT. I–32

FUTURE

FLOW DISTRIBUTION CHAMBER

TO FILTER #1A | TO FILTER #1B | TO FILTER #2A | TO FILTER #2B | TO FILTER #3A | TO FILTER #3B | TO FILTER #4A | TO FILTER #4B | TO FILTER #5A | TO FILTER #5B | TO FILTER #6A | TO FILTER #6B

OVERFLOW | NO. 3 | NO. 2 | NO. 1 | 20" B'FLY (TYP) | 20" B'FLY V. | 20" B'FLY V. | 20" | 1" 2"

BACKWASH LAGOONS

DECHLORINATION PUMPS | CHEMICAL TOTES | OUTFALL | DECHLORINATION MANHOLE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 3B P&ID

I-25

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-25 PROCESS AND INSTRUMENTATION FILTER NO. 3B P&ID.dwg 4/14/2022 1:01:09 PM Randy Podmore

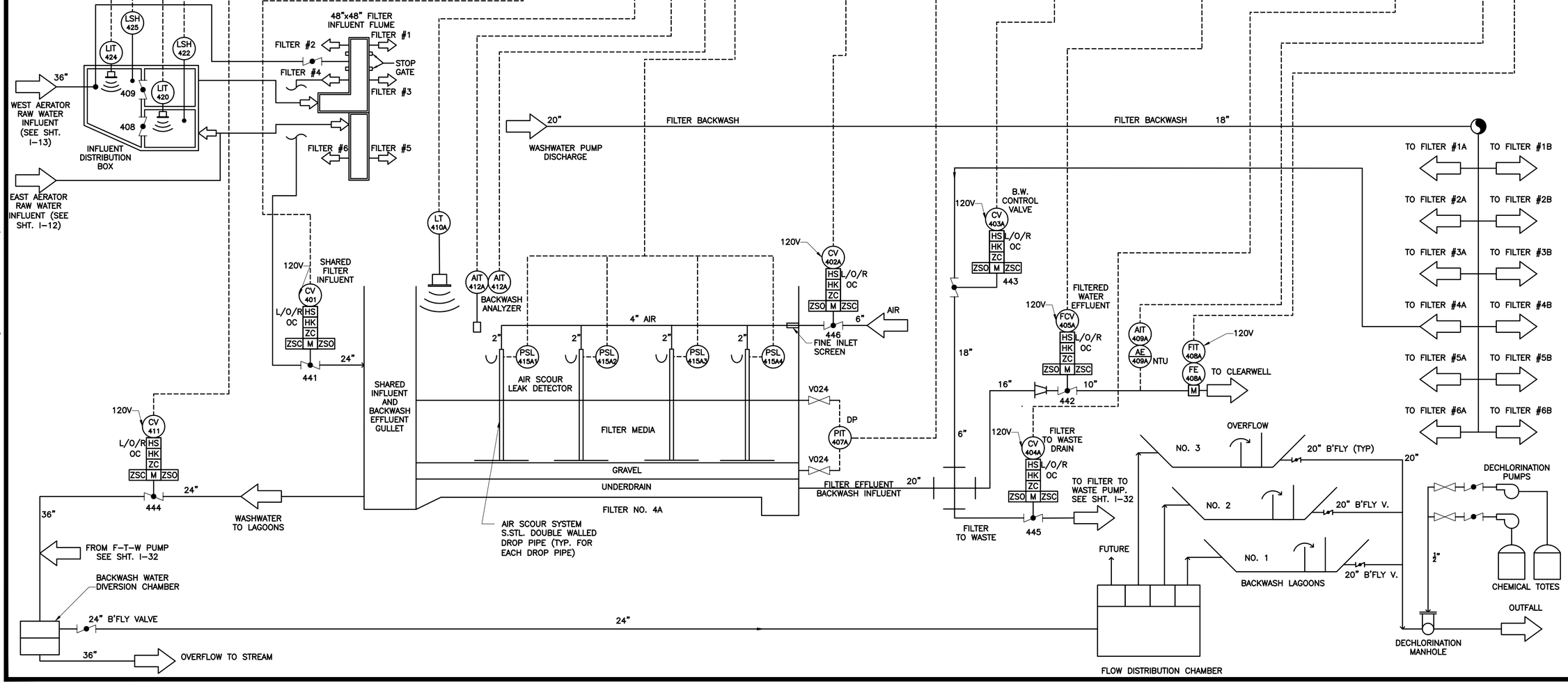
PLOTTED: 4/18/2022 8:56:31 AM

PLANT HMI

PLC-4 RACK

PLC-1 RACK

FILTER 1–4 FLUME		FILTER 5–6 FLUME		BACKWASH WATER TO LAGOON						SHARED FILTER INFLUENT VALVE						FILTER CELL 1A LEVEL	FILTER BW EXPANSION	BW TURBIDITY	AIR SCOUR LEAK ALARM	AIR SCOUR IN THE VALVE						DIFF PRESSURE	BACKWASH CONTROL VALVE						FILTERED WATER EFFLUENT VALVE							FILTER TO WASTE DRAIN						FILTER NO. 4A TURBIDITY	FILTER NO. 4A EFFLUENT FLOW
LEVEL	LEVEL HI	LEVEL	LEVEL HI	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND	MODULATING POSITION FEEDBACK	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND						NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND		IND	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND		NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND	MODULATING POSITION FEEDBACK		NOT IN AUTO	FAIL	OPEN	CLOSED	COMMAND			
LIT 424	LSH 425	LIT 420	LSH 422	YID 411.3	AX 411.4	ZSO 411.1	ZSC 411.2	SC 411	ZI 411.5	YID 401.3	AX 401.4	ZSO 401.1	ZSC 401.2	PB 401		LIC 410A	AIR 412A.1	AIR 412A.2	AX 415A	YID 402A.3	AX 402A.4	ZSO 402A.1	ZSC 402A.2	PB 402A		PIR 407A	YID 403A.3	AX 403A.4	ZSO 403A.1	ZSC 403A.2	PB 403A		YID 405A.3	AX 405A.4	ZSO 405A.1	ZSC 405A.2	PB 405A	ZI 405A.5		YID 404A.3	AX 404A.4	ZSO 404A.1	ZSC 404A.2	PB 404A		AIR 409A	FIQ 408A
Ai	DI	Ai	DI	Di	Di	Di	Di	DO	Ao	Di	Di	Di	Di	DO		Ai	Ai	Ai	Di	Di	Di	Di	Di	DO		Ai	Di	Di	Di	Di	DO		Di	Di	Di	Di	DO	Ao		Di	Di	Di	Di	DO		Ai	Ai



BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022
	REVISIONS	

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 4A P&ID

I-26

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-26 PROCESS AND INSTRUMENTATION FILTER NO. 4A P&ID.dwg 4/14/2022 1:04:42 PM Randy Podmore

PLOTTED: 4/18/2022 8:56:39 AM

FILTER 1–4 FLUME | FILTER 5–6 FLUME | BACKWASH WATER TO LAGOON | SHARED FILTER INFLUENT VALVE | FILTER CELL 1A LEVEL | FILTER BW EXPANSION | BW TURBIDITY | AIR SCOUR LEAK ALARM | AIR SCOUR IN THE VALVE | DIFF PRESSURE | BACKWASH CONTROL VALVE | FILTERED WATER EFFLUENT VALVE | FILTER TO WASTE DRAIN | FILTER NO. 4B EFFLUENT TURBIDITY | FILTER NO. 4B EFFLUENT FLOW

PLANT HMI: LIT 424 LEVEL | LSH 425 LEVEL HI | LIT 420 LEVEL | LSH 422 LEVEL HI | YID 411.3 NOT IN AUTO | AX 411.4 FAULT | ZSO 411.1 OPEN | ZSC 411.2 CLOSED | SC 411 COMMAND | ZI 411.5 MODULATING POSITION FEEDBACK | YID 401.3 NOT IN AUTO | AX 401.4 FAULT | ZSO 401.1 OPEN | ZSC 401.2 CLOSED | PB 401 COMMAND | LIC 410B | AIR 412B.1 | AIR 412B.2 | AX 415B | YID 402B.3 NOT IN AUTO | AX 402B.4 FAULT | ZSO 402B.1 OPEN | ZSC 402B.2 CLOSED | PB 402B COMMAND | PIR 407B IND | YID 403B.3 NOT IN AUTO | AX 403B.4 FAULT | ZSO 403B.1 OPEN | ZSC 403B.2 CLOSED | PB 403B COMMAND | YID 405B.3 NOT IN AUTO | AX 405B.4 FAULT | ZSO 405B.1 OPEN | ZSC 405B.2 CLOSED | PB 405B COMMAND | ZI 405B.5 MODULATING POSITION FEEDBACK | YID 404B.3 NOT IN AUTO | AX 404B.4 FAIL | ZSO 404B.1 OPEN | ZSC 404B.2 CLOSED | PB 404B COMMAND | AIR 409B | FIQ 408B IND

PLC–4 RACK: Ai | DI | Ai | DI

PLC–1 RACK: Di | Di | Di | Di | DO | Ao | Di | Di | Di | Di | DO | Ai | Ai | Ai | Di | Di | Di | Di | Di | DO | Ai | Di | Di | Di | Di | DO | Di | Di | Di | Di | DO | Ao | Di | Di | Di | Di | DO | Ai | Ai

LSH 425 | LIT 424 | LSH 422 | LIT 420

36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)

409 | 408

INFLUENT DISTRIBUTION BOX

EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)

48"x48" FILTER INFLUENT FLUME

FILTER #1 | FILTER #2 | FILTER #3 | FILTER #4 | FILTER #5 | FILTER #6 | STOP GATE

20" WASHWATER PUMP DISCHARGE

FILTER BACKWASH 20" | FILTER BACKWASH 18"

TO FILTER #1A | TO FILTER #1B | TO FILTER #2A | TO FILTER #2B | TO FILTER #3A | TO FILTER #3B | TO FILTER #4A | TO FILTER #4B | TO FILTER #5A | TO FILTER #5B | TO FILTER #6A | TO FILTER #6B

LT 410B

AIT 412B | AIT 412B BACKWASH ANALYZER

120V CV 401 SHARED FILTER INFLUENT L/O/R OC HS HK ZC ZSC M ZSO 24" 441

120V CV 411 L/O/R OC HS HK ZC ZSC M ZSO 24" 444

120V CV 402B L/O/R OC HS HK ZC ZSO M ZSC 443

120V CV 403B B.W. CONTROL VALVE L/O/R OC HS HK ZC ZSO M ZSC 443

120V FCV 405B FILTERED WATER EFFLUENT L/O/R OC HS HK ZC ZSO M ZSC 442

120V CV 404B FILTER TO WASTE DRAIN L/O/R OC HS HK ZC ZSO M ZSC 445

4" AIR | 2" | PSL 415B1 | PSL 415B2 | PSL 415B3 | PSL 415B4 | AIR 6" | 446 FINE INLET SCREEN

AIR SCOUR LEAK DETECTOR

SHARED INFLUENT AND BACKWASH EFFLUENT GULLET

FILTER MEDIA | GRAVEL | UNDERDRAIN | FILTER NO. 4B

V024 | DP PIT 407B | V024

FILTER EFFLUENT BACKWASH INFLUENT 20"

AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)

18" | 6" | 16" | 10"

AIT 409B | AE 409B NTU | FIT 408B | FE 408B M | 120V | TO CLEARWELL

FILTER TO WASTE

TO FILTER TO WASTE PUMP. SEE SHT. I–32

FUTURE

FLOW DISTRIBUTION CHAMBER

NO. 3 | NO. 2 | NO. 1 | OVERFLOW | 20" B'FLY (TYP) | 20" B'FLY V. | 20" B'FLY V. | 20"

BACKWASH LAGOONS

DECHLORINATION PUMPS | 1" 2" | CHEMICAL TOTES | OUTFALL | DECHLORINATION MANHOLE

FROM F–T–W PUMP SEE SHT. I–32

BACKWASH WATER DIVERSION CHAMBER

24" B'FLY VALVE | 24" | 36" OVERFLOW TO STREAM

WASHWATER TO LAGOONS

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 4B P&ID

I-27

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-27 PROCESS AND INSTRUMENTATION FILTER NO. 4B P&ID.dwg 4/14/2022 1:04:52 PM Randy Podmore

PLOTTED: 4/18/2022 8:56:47 AM

PLANT HMI

FILTER 1–4 FLUME: LEVEL LIT 424 — LEVEL HI LSH 425
FILTER 5–6 FLUME: LEVEL LIT 420 — LEVEL HI LSH 422
BACKWASH WATER TO LAGOON: NOT IN AUTO YID 511.3 — FAULT AX 511.4 — OPEN ZSO 511.1 — CLOSED ZSC 511.2 — COMMAND SC 511 — MODULATING POSITION FEEDBACK ZI 511.5
SHARED FILTER INFLUENT VALVE: NOT IN AUTO YID 501.3 — FAULT AX 501.4 — OPEN ZSO 501.1 — CLOSED ZSC 501.2 — COMMAND PB 501
FILTER CELL 1A LEVEL LIC 510A
FILTER BW EXPANSION AIR 512A.1
BW TURBIDITY AIR 512A.2
AIR SCOUR LEAK ALARM AX 515A
AIR SCOUR IN THE VALVE: NOT IN AUTO YID 502A.3 — FAULT AX 502A.4 — OPEN ZSO 502A.1 — CLOSED ZSC 502A.2 — COMMAND PB 502A
DIFF PRESSURE IND PIR 507A
BACKWASH CONTROL VALVE: NOT IN AUTO YID 503A.3 — FAULT AX 503A.4 — OPEN ZSO 503A.1 — CLOSED ZSC 503A.2 — COMMAND PB 503A
FILTERED WATER EFFLUENT VALVE: NOT IN AUTO YID 505A.3 — FAULT AX 505A.4 — OPEN ZSO 505A.1 — CLOSED ZSC 505A.2 — COMMAND PB 505A — MODULATING POSITION FEEDBACK ZI 505A.5
FILTER TO WASTE DRAIN: NOT IN AUTO YID 504A.3 — FAIL AX 504A.4 — OPEN ZSO 504A.1 — CLOSED ZSC 504A.2 — COMMAND PB 504A
FILTER NO. 5A TURBIDITY AIR 509A
FILTER NO. 5A EFFLUENT FLOW IND FIQ 508A

PLC–4 RACK: Ai — DI — Ai — DI
PLC–1 RACK: Di Di Di Di DO Ao — Di Di Di Di DO — Ai — Ai Ai Di — Di Di Di Di DO — Ai — Di Di Di Di DO — Di Di Di Di DO Ao — Di Di Di Di DO — Ai Ai

48"x48" FILTER INFLUENT FLUME
FILTER #1 — FILTER #2 — FILTER #3 — FILTER #4 — FILTER #5 — FILTER #6
STOP GATE
LSH 425 — LIT 424 — LSH 422 — LIT 420
36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)
409 — 408
INFLUENT DISTRIBUTION BOX
EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)

20" WASHWATER PUMP DISCHARGE
FILTER BACKWASH — FILTER BACKWASH 18"

LT 510A
AIT 512A — AIT 512A — BACKWASH ANALYZER

120V — CV 501 — SHARED FILTER INFLUENT — L/O/R HS — OC HK — ZC — ZSC M ZSO — 24" — 451

SHARED INFLUENT AND BACKWASH EFFLUENT GULLET

120V — CV 511 — L/O/R HS — OC HK — ZC — ZSC M ZSO — 24" — 454
36" WASHWATER TO LAGOONS
FROM F–T–W PUMP SEE SHT. I–32
BACKWASH WATER DIVERSION CHAMBER
24" B'FLY VALVE
36" OVERFLOW TO STREAM

4" AIR
2" PSL 515A1 — 2" PSL 515A2 — 2" PSL 515A3 — 2" PSL 515A4
AIR SCOUR LEAK DETECTOR
FILTER MEDIA
GRAVEL
UNDERDRAIN
FILTER NO. 5A
AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)

120V — CV 502A — L/O/R HS — OC HK — ZC — ZSO M ZSC — 6" AIR — 456 FINE INLET SCREEN
V024 — DP PIT 507A — V024
FILTER EFFLUENT BACKWASH INFLUENT 20"

120V — B.W. CONTROL VALVE CV 503A — L/O/R HS — OC HK — ZC — ZSO M ZSC — 453
18" — 6"
FILTER TO WASTE
120V — CV 504A — FILTER TO WASTE DRAIN — L/O/R HS — OC HK — ZC — ZSC M ZSO — 455
TO FILTER TO WASTE PUMP. SEE SHT. I–32

120V — FCV 505A — FILTERED WATER EFFLUENT — L/O/R HS — OC HK — ZC — ZSO M ZSC — 16" — 10" — 452
AIT 509A — AE 509A — NTU
120V — FIT 508A — FE 508A — M — TO CLEARWELL

TO FILTER #1A — TO FILTER #1B
TO FILTER #2A — TO FILTER #2B
TO FILTER #3A — TO FILTER #3B
TO FILTER #4A — TO FILTER #4B
TO FILTER #5A — TO FILTER #5B
TO FILTER #6A — TO FILTER #6B

OVERFLOW
NO. 3 — 20" B'FLY (TYP) — 20"
NO. 2 — 20" B'FLY V.
NO. 1 — 20" B'FLY V. — BACKWASH LAGOONS
FUTURE
24"
FLOW DISTRIBUTION CHAMBER

DECHLORINATION PUMPS
1" CHEMICAL TOTES
OUTFALL
DECHLORINATION MANHOLE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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REVISIONS

JOB NO:	PR58982
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DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 5A P&ID

I-28

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-28 PROCESS AND INSTRUMENTATION FILTER NO. 5A P&ID.dwg 4/14/2022 1:05:05 PM Randy Podmore

PLOTTED: 4/18/2022 8:56:55 AM

P:\PR58982\Cadd\Sheets\E-Sheets\I-29 PROCESS AND INSTRUMENTATION FILTER NO. 5B P&ID.dwg 4/14/2022 1:11:08 PM Randy Podmore

PLANT HMI

PLC-4 RACK

PLC-1 RACK

FILTER 1–4 FLUME		FILTER 5–6 FLUME		BACKWASH WATER TO LAGOON						SHARED FILTER INFLUENT VALVE						FILTER CELL 1A LEVEL	FILTER BW EXPANSION	BW TURBIDITY	AIR SCOUR LEAK ALARM	AIR SCOUR IN THE VALVE						DIFF PRESSURE	BACKWASH CONTROL VALVE						FILTERED WATER EFFLUENT VALVE							FILTER TO WASTE DRAIN						FILTER NO. 5B TURBIDITY	FILTER NO. 5B EFFLUENT FLOW
LEVEL	LEVEL HI	LEVEL	LEVEL HI	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND	MODULATING POSITION FEEDBACK	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND						NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND		IND	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND		NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND	MODULATING POSITION FEEDBACK		NOT IN AUTO	FAIL	OPEN	CLOSED	COMMAND			
LIT 424	LSH 425	LIT 420	LSH 422	YID 511.3	AX 511.4	ZSO 511.1	ZSC 511.2	SC 511	ZI 511.5	YID 501.3	AX 501.4	ZSO 501.1	ZSC 501.2	PB 501		LIC 510B	AIR 512B.1	AIR 512B.2	AX 515B	YID 502B.3	AX 502B.4	ZSO 502B.1	ZSC 502B.2	PB 502B		PIR 507B	YID 503B.3	AX 503B.4	ZSO 503B.1	ZSC 503B.2	PB 503B		YID 505B.3	AX 505B.4	ZSO 505B.1	ZSC 505B.2	PB 505B	ZI 505B.5		YID 504B.3	AX 504B.4	ZSO 504B.1	ZSC 504B.2	PB 504B		AIR 509B	FIQ 508B
Ai	DI	Ai	DI	Di	Di	Di	Di	DO	Ao	Di	Di	Di	Di	DO		Ai	Ai	Ai	Di	Di	Di	Di	Di	DO		Ai	Di	Di	Di	Di	DO		Di	Di	Di	Di	DO	Ao		Di	Di	Di	Di	DO		Ai	Ai

48"x48" FILTER INFLUENT FLUME

FILTER #1 · FILTER #2 · FILTER #3 · FILTER #4 · FILTER #5 · FILTER #6 · STOP GATE

LSH 425 · LIT 424 · LSH 422 · LIT 420

36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)

409 · 408

INFLUENT DISTRIBUTION BOX

EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)

20" WASHWATER PUMP DISCHARGE

FILTER BACKWASH

FILTER BACKWASH 18"

TO FILTER #1A · TO FILTER #1B · TO FILTER #2A · TO FILTER #2B · TO FILTER #3A · TO FILTER #3B · TO FILTER #4A · TO FILTER #4B · TO FILTER #5A · TO FILTER #5B · TO FILTER #6A · TO FILTER #6B

LT 510B

AIT 512B · AIT 512B · BACKWASH ANALYZER

120V · CV 501 · L/O/R OC · HS · HK · ZC · ZSC M ZSO · SHARED FILTER INFLUENT · 24" · 451

120V · CV 511 · L/O/R OC · HS · HK · ZC · ZSC M ZSO · 24" · 454

36" · WASHWATER TO LAGOONS

SHARED INFLUENT AND BACKWASH EFFLUENT GULLET

4" AIR

2" · PSL 515B1 · PSL 515B2 · PSL 515B3 · PSL 515B4 · AIR SCOUR LEAK DETECTOR

120V · CV 502B · HS L/O/R OC · HK · ZC · ZSO M ZSC · 6" AIR · 456 · FINE INLET SCREEN

V024 · DP · PIT 507B · V024

FILTER MEDIA

GRAVEL

UNDERDRAIN

FILTER NO. 5B

FILTER EFFLUENT BACKWASH INFLUENT 20"

AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)

120V · B.W. CONTROL VALVE · CV 503B · HS L/O/R OC · HK · ZC · ZSO M ZSC · 453

18" · 16" · 10" · 452

120V · FCV 505B · FILTERED WATER EFFLUENT · HS L/O/R OC · HK · ZC · ZSO M ZSC

AIT 509B · AE 509B NTU

120V · FIT 508B · FE 508B · M · TO CLEARWELL

6" · 120V · CV 504B · FILTER TO WASTE DRAIN · HS L/O/R OC · HK · ZC · ZSO M ZSC · 455

FILTER TO WASTE

TO FILTER TO WASTE PUMP. SEE SHT. I–32

FROM F–T–W PUMP SEE SHT. I–32

BACKWASH WATER DIVERSION CHAMBER

24" B'FLY VALVE

24"

36" · OVERFLOW TO STREAM

FUTURE

FLOW DISTRIBUTION CHAMBER

OVERFLOW

NO. 3 · 20" B'FLY (TYP) · 20"

NO. 2 · 20" B'FLY V.

NO. 1 · 20" B'FLY V.

BACKWASH LAGOONS

DECHLORINATION PUMPS

1/2"

CHEMICAL TOTES

OUTFALL

DECHLORINATION MANHOLE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	RMP
DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 5B P&ID

I-29

SHEET: OF

PLOTTED: 4/18/2022 8:57:03 AM

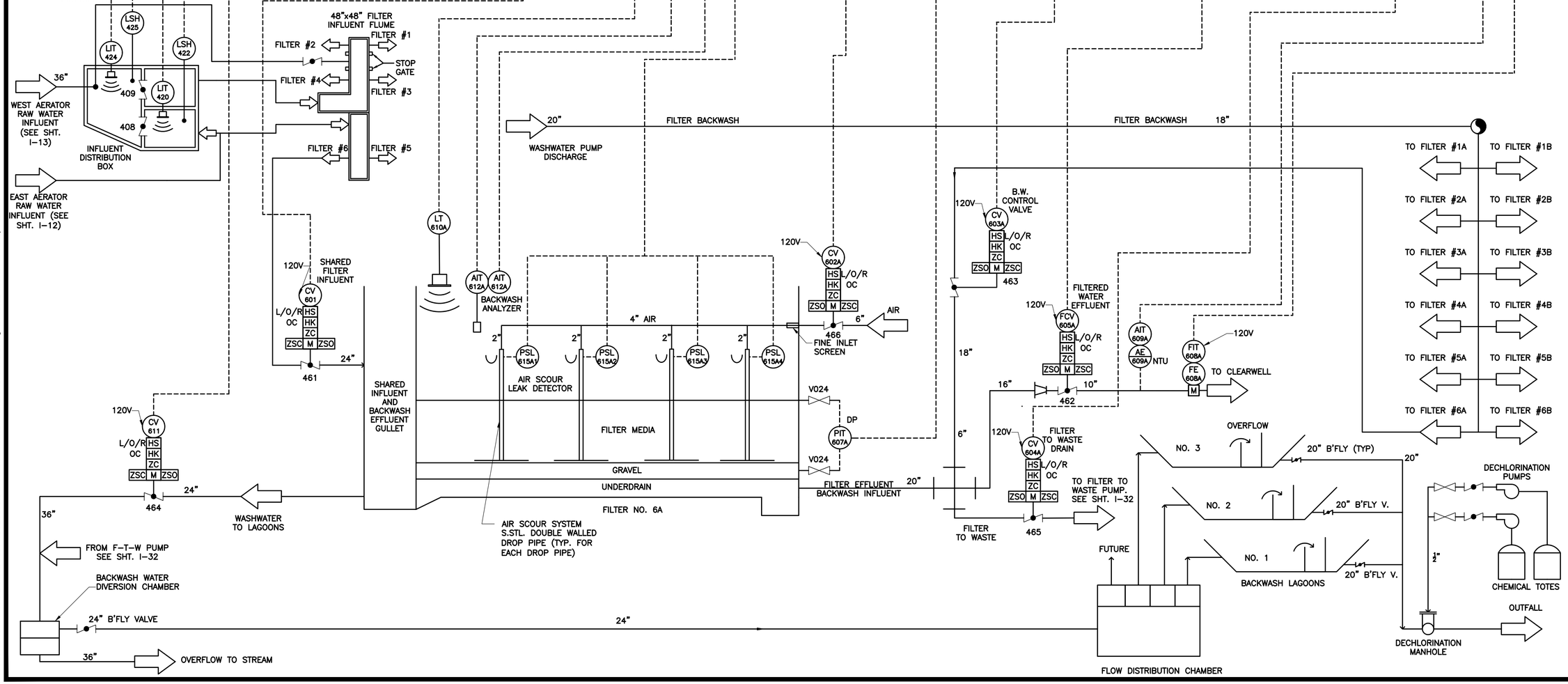
P:\PR58982\Cadd\Sheets\E-Sheets\I-30 PROCESS AND INSTRUMENTATION FILTER NO. 6A P&ID.dwg 4/14/2022 1:05:45 PM Randy Podmore

PLANT HMI

PLC-4 RACK

PLC-1 RACK

FILTER 1-4 FLUME		FILTER 5-6 FLUME		BACKWASH WATER TO LAGOON						SHARED FILTER INFLUENT VALVE						FILTER CELL 1A LEVEL	FILTER BW EXPANSION	BW TURBIDITY	AIR SCOUR LEAK ALARM	AIR SCOUR IN THE VALVE						DIFF PRESSURE	BACKWASH CONTROL VALVE						FILTERED WATER EFFLUENT VALVE							FILTER TO WASTE DRAIN						FILTER NO. 6A TURBIDITY	FILTER NO. 6A EFFLUENT FLOW
LEVEL	LEVEL HI	LEVEL	LEVEL HI	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND	MODULATING POSITION FEEDBACK	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND						NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND		IND	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND		NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND	MODULATING POSITION FEEDBACK		NOT IN AUTO	FAIL	OPEN	CLOSED	COMMAND			
LIT 424	LSH 425	LIT 420	LSH 422	YID 611.3	AX 611.4	ZSO 611.1	ZSC 611.2	SC 611	ZI 611.5	YID 601.3	AX 601.4	ZSO 601.1	ZSC 601.2	PB 601		LIC 610A	AIR 612A.1	AIR 612A.2	AX 615A	YID 602A.3	AX 602A.4	ZSO 602A.1	ZSC 602A.2	PB 602A		PIR 607A	YID 603A.3	AX 603A.4	ZSO 603A.1	ZSC 603A.2	PB 603A		YID 605A.3	AX 605A.4	ZSO 605A.1	ZSC 605A.2	PB 605A	ZI 605A.5		YID 604A.3	AX 604A.4	ZSO 604A.1	ZSC 604A.2	PB 604A		AIR 609A	IND FIQ 608A
Ai	DI	Ai	DI	Di	Di	Di	Di	DO	Ao	Di	Di	Di	Di	DO		Ai	Ai	Ai	Di	Di	Di	Di	Di	DO		Ai	Di	Di	Di	Di	DO		Di	Di	Di	Di	DO	Ao		Di	Di	Di	Di	DO		Ai	Ai



BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

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CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 6A P&ID

I-30

SHEET: OF

PLOTTED: 4/18/2022 8:57:11 AM

P:\PR58982\Cadd\Sheets\E-Sheets\I-31 PROCESS AND INSTRUMENTATION FILTER NO. 6B P&ID.dwg 4/14/2022 1:05:33 PM Randy Podmore

PLANT HMI

PLC-4 RACK

PLC-1 RACK

	FILTER 1–4 FLUME		FILTER 5–6 FLUME		BACKWASH WATER TO LAGOON						SHARED FILTER INFLUENT VALVE						FILTER CELL 1A LEVEL	FILTER BW EXPANSION	BW TURBIDITY	AIR SCOUR LEAK ALARM	AIR SCOUR IN THE VALVE						DIFF PRESSURE	BACKWASH CONTROL VALVE						FILTERED WATER EFFLUENT VALVE							FILTER TO WASTE DRAIN						FILTER NO. 6B TURBIDITY	FILTER NO. 6B EFFLUENT FLOW
	LEVEL	LEVEL HI	LEVEL	LEVEL HI	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND	MODULATING POSITION FEEDBACK	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND						NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND		DIFF PRESSURE	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND		NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND	MODULATING POSITION FEEDBACK		NOT IN AUTO	FAIL	OPEN	CLOSED	COMMAND			
	LIT 424	LSH 425	LIT 420	LSH 422	YID 611.3	AX 611.4	ZSO 611.1	ZSC 611.2	SC 611	ZI 611.5	YID 601.3	AX 601.4	ZSO 601.1	ZSC 601.2	PB 601		LIC 610B	AIR 612B.1	AIR 612B.2	AX 615B	YID 602B.3	AX 602B.4	ZSO 602B.1	ZSC 602B.2	PB 602B		PIR 607B	YID 603B.3	AX 603B.4	ZSO 603B.1	ZSC 603B.2	PB 603B		YID 605B.3	AX 605B.4	ZSO 605B.1	ZSC 605B.2	PB 605B	ZI 605B.5		YID 604B.3	AX 604B.4	ZSO 604B.1	ZSC 604B.2	PB 604B		AIR 609B	FIQ 608B
PLC-4 RACK	Ai	DI	Ai	DI																																												
PLC-1 RACK					Di	Di	Di	Di	DO	Ao	Di	Di	Di	Di	DO		Ai	Ai	Ai	Di	Di	Di	Di	Di	DO		Ai	Di	Di	Di	Di	DO		Di	Di	Di	Di	DO	Ao		Di	Di	Di	Di	DO		Ai	Ai

36" WEST AERATOR RAW WATER INFLUENT (SEE SHT. I–13)

EAST AERATOR RAW WATER INFLUENT (SEE SHT. I–12)

LSH 425 · LIT 424 · LSH 422 · LIT 420 · 409 · 408

INFLUENT DISTRIBUTION BOX

48"x48" FILTER INFLUENT FLUME

FILTER #1 · FILTER #2 · FILTER #3 · FILTER #4 · FILTER #5 · FILTER #6 · STOP GATE

20" WASHWATER PUMP DISCHARGE

FILTER BACKWASH 18" FILTER BACKWASH

TO FILTER #1A · TO FILTER #1B · TO FILTER #2A · TO FILTER #2B · TO FILTER #3A · TO FILTER #3B · TO FILTER #4A · TO FILTER #4B · TO FILTER #5A · TO FILTER #5B · TO FILTER #6A · TO FILTER #6B

LT 610B

AIT 612B · AIT 612B · BACKWASH ANALYZER

120V CV 601 L/O/R HS HK ZC OC ZSC M ZSO — SHARED FILTER INFLUENT — 24" — 461

120V CV 602B L/O/R HS HK ZC OC ZSO M ZSC — 6" AIR — 466 FINE INLET SCREEN

4" AIR

2" PSL 615B1 · 2" PSL 615B2 · 2" PSL 615B3 · 2" PSL 615B4 — AIR SCOUR LEAK DETECTOR

SHARED INFLUENT AND BACKWASH EFFLUENT GULLET

FILTER MEDIA

GRAVEL

UNDERDRAIN

FILTER NO. 6B

V024 · V024 · DP PIT 607B

FILTER EFFLUENT BACKWASH INFLUENT 20"

AIR SCOUR SYSTEM S.STL. DOUBLE WALLED DROP PIPE (TYP. FOR EACH DROP PIPE)

120V CV 611 L/O/R HS HK ZC OC ZSC M ZSO — 24" — 464

WASHWATER TO LAGOONS

36" FROM F–T–W PUMP SEE SHT. I–32

BACKWASH WATER DIVERSION CHAMBER

24" B'FLY VALVE

36" OVERFLOW TO STREAM

24"

120V B.W. CONTROL VALVE CV 603B L/O/R HS HK ZC OC ZSO M ZSC — 463

18" · 16" · 6"

120V FILTERED WATER EFFLUENT FCV 605B L/O/R HS HK ZC OC ZSO M ZSC — 10" — 462

AIT 609B · AE 609B NTU

120V FIT 608B · FE 608B M — TO CLEARWELL

120V FILTER TO WASTE DRAIN CV 604B L/O/R HS HK ZC OC ZSO M ZSC — 465

TO FILTER TO WASTE PUMP. SEE SHT. I–32

FILTER TO WASTE

FUTURE

FLOW DISTRIBUTION CHAMBER

OVERFLOW

NO. 3 · 20" B'FLY (TYP) · 20"

NO. 2 · 20" B'FLY V.

NO. 1 · 20" B'FLY V.

BACKWASH LAGOONS

DECHLORINATION PUMPS

1/2"

CHEMICAL TOTES

OUTFALL

DECHLORINATION MANHOLE

BURGESS & NIPLE
100 WEST ERIE STREET
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DRAWN BY:	RMP
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

PROCESS AND INSTRUMENTATION FILTER NO. 6B P&ID

I-31

SHEET: OF

PLOTTED: 4/18/2022 8:57:19 AM

PLANT HMI

PLC RACK

NOT IN AUTO	ALARM	OPEN	CLOSED	COMMAND	NOT IN AUTO	FAULT	OPEN	CLOSED	COMMAND	MODULATING POSITION FEEDBACK	NOT IN AUTO	FAIL	STATUS	START/ STOP	FTW	CYLINDER ROOM CL. LEAK ANALYZER	CL. CYL. 1 WEIGHT SCALE	CL. CYL. 1 VAC. PR. LO	CL. CYL. 2 WEIGHT SCALE	CL. CYL. 2 VAC. PR. LO	CHLORINATOR DISTRIBUTOR ROOM CL. LEAK
YID 404B.3	AX 404B.4	ZSO 404B.1	ZSC 404B.2	PB 404B	YID 531C	AX 531D	ZSO 531A	ZSC 531B	PB 531	ZI 531E	YID 772	XA 771	YIR 770	PB 773	FIT 530	AIT 1036	WIT 1030	PSL 1032	WIT 1040	PSL 1042	AIT 1037
Di	Di	Di	Di	DO	Di	Di	Di	Di	DO	Ao	Di	Di	Di	Do	AI	Ai	Ai	Ai	Ai	Ai	Ai

F.T.W. PUMP: HS HOA; HS S/S; 480V; IL ILUN; MS; IL FAIL

INFLUENT DISTRIBUTION BOX

409

408

TO FILTERS 1–4

TO FILTERS 5 & 6

SHARED INFLUENT AND BACKWASH FLUME

FILTER NO. 4B (TYP. 10 CELLS)

FTW FCV FOR FILTER 1A/B – 6A/B

2A 1A

2B 1B

4A 3A

4B 3B

6A 5A

6B 5B

120V CV 404B FILTER TO WASTE DRAIN HS L/O/R HK OC ZC ZSO M ZSC

(TYP. 12) 445

120V FCV 531 FTW FLOW CONTROL VALVE HS L/O/R HK OC ZC ZSO M ZSC

FIT 530 FE 530

404

FROM 6" MAKEUP RESERVOIR HEADER

TO BACKWASH LAGOON. SEE SHT. I–20 TO I–31

6" GV 402

6" CV 403

M

6" GV 402

FTW PUMP

FTW DRAIN TO FLOOR SUMP

FLOOR SUMP (SEE SHT. I–16 FOR DETAILS)

IL

AIT 1036 CHLORINE LEAK ANALYZER

IL

CHLORINE LEAK ANALYZER AIT 1037

36" PCCP AERATED WATER AT MH C

CHLORINE CONTACT TANK NO. 2

CHLORINATION CHAMBER & CHLORINE CONTACT TANK NO.1

WEST AERATOR BUILDING

36" DIP AERATED WATER AT MH B

36" RAW WATER AT MH E

75 PSI DISTRIBUTION PANEL

150 PSI DISTRIBUTION PANEL

NPW

NPW

VENT

WIT 1030

PSL 1032

VACUUM VALVE

WIT 1031

PSL 1033

VACUUM VALVE

CHLORINATOR NO. 1

CHLORINATOR NO. 2

CHLORINE CYLINDER ROOM

CHLORINATOR/ DISTRIBUTOR ROOM

P:\PR58982\Cadd\Sheets\I-32 FILTER-TO-WASTE PUMP & CHLORINE P&ID.dwg 4/14/2022 1:18:35 PM Randy Podmore

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
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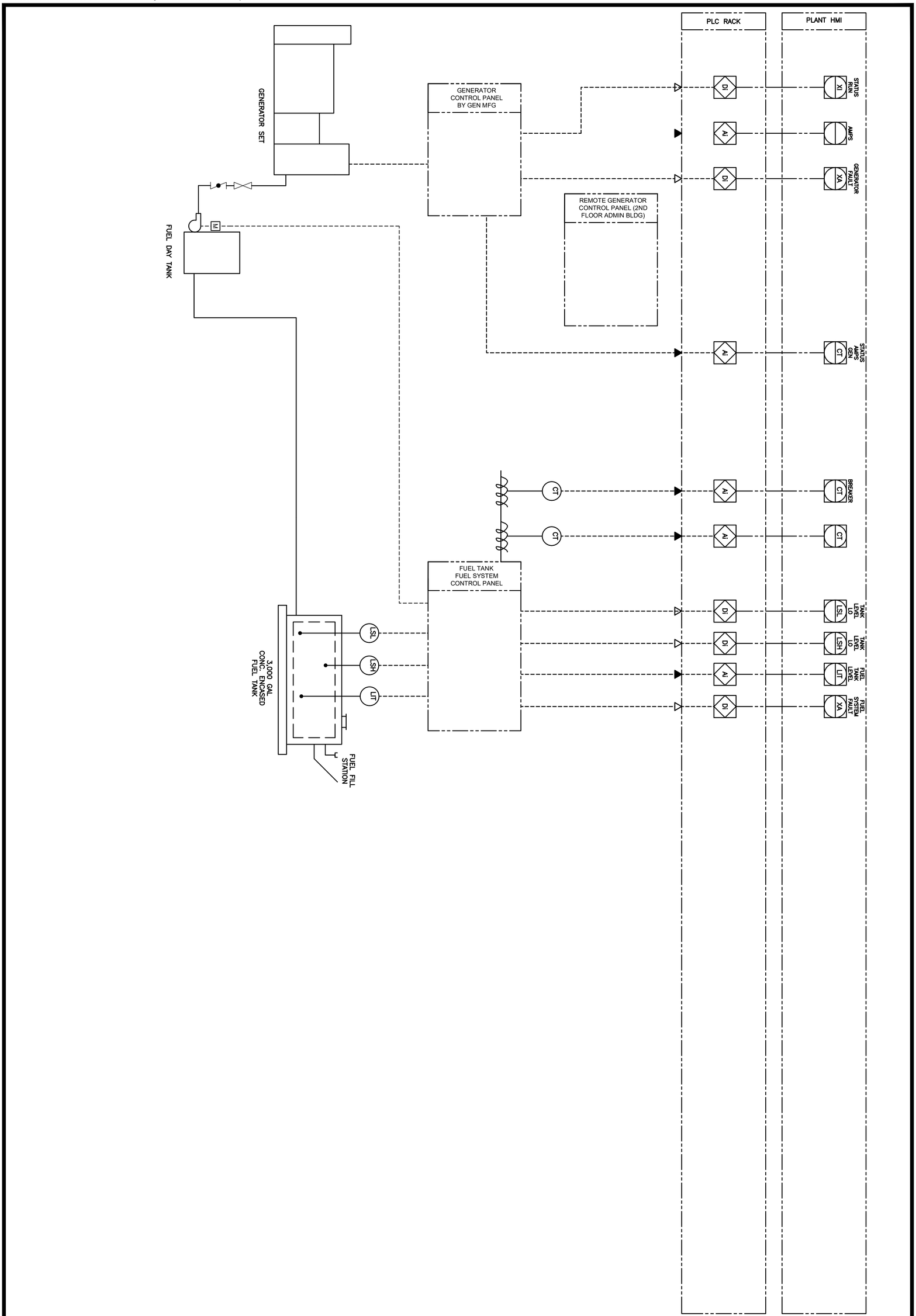
JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	MMK
APPROVED BY:	CMS
SCALE:	NONE

FILTER-TO-WASTE PUMP & CHLORINE P&ID

I-32

SHEET: OF



SHEET:	I-33	
OF		
	GENERATOR P&ID	
SCALE:	NONE	
APPROVED BY:	CMS	
CHECKED BY:	MMK	
DRAWN BY:	KAS	
DESIGNED BY:	KAS	
DATE:	APR 2022	
JOB NO:	PR58982	

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

PLOTTED: 4/18/2022 8:57:35 AM

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	TO	DESCRIPTION	FUNCTION	HARDWARE: WIRE: 2@#14 AWG	3@#14 AWG	2/C #18 SH. PR.	INPUT/OUTPUT: DIGITAL: DI (DIGITAL INPUT)	DO (DIGITAL OUTPUT)	ANALOG: AI (ANALOG INPUT)	AO (ANALOG OUTPUT)	OUTPUT FUNCT.: DIGITAL: PULSE	START/STOP	ANALOG: OPEN/CLOSE	PACING	SOFTWARE: STATUS: @ GUI	LOCAL INDICATOR	LOCAL OPERATOR INTERFACE	LOGGING: DAILY	WEEKLY	MONTHLY	HISTORICAL	SCHEDULING: MANUAL @ G.U.I.	TOTALIZATION/VO/UM	MAINTENANCE TIME REM.	PEAK SHAVING	APPLICATION PROGRAM: RES. @ PLC	P.I.D.	TIME CLOCK	ALARMS: HIGH ALARM	LOW ALARM	OFF NORMAL	ANNUNCIATE @ GUI	ANNUNCIATE @ PRINTER	ANNUNCIATE TO MODEM	MISC.: SET POINT ADJ. @ PLC	TREND LOG	CALCULATION NO.	REMARKS
PLC-1		**FILTER CONTROL CONSOLE NO. 1**																																				
101	PLC-1	FILTER NO. 1 MAIN INFLUENT CONTROL VALVE (CV-101)	VALVE OPEN/CLOSE COMMAND		X			X					X			X											X		X								
101.1	PLC-1	FILTER NO. 1 MAIN INFLUENT CONTROL VALVE (CV-101)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
101.2	PLC-1	FILTER NO. 1 MAIN INFLUENT CONTROL VALVE (CV-101)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
101.3	PLC-1	FILTER NO. 1 MAIN INFLUENT CONTROL VALVE (CV-101)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
101.4	PLC-1	FILTER NO. 1 MAIN INFLUENT CONTROL VALVE (CV-101)	VALVE FAIL		X			X								X											X			X	X	X					
102A	PLC-1	FILTER NO. 1 CELL A AIR SCOUR CONTROL VALVE (CV-102A)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
102A.1	PLC-1	FILTER NO. 1 CELL A AIR SCOUR CONTROL VALVE (CV-102A)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
102A.2	PLC-1	FILTER NO. 1 CELL A AIR SCOUR CONTROL VALVE (CV-102A)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
102A.3	PLC-1	FILTER NO. 1 CELL A AIR SCOUR CONTROL VALVE (CV-102A)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
102A.4	PLC-1	FILTER NO. 1 CELL A AIR SCOUR CONTROL VALVE (CV-102A)	VALVE FAIL		X			X								X											X			X	X	X					
103A	PLC-1	FILTER NO. 1 CELL A BW CONTROL VALVE (CV-103A)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
103A.1	PLC-1	FILTER NO. 1 CELL A BW CONTROL VALVE (CV-103A)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
103A.2	PLC-1	FILTER NO. 1 CELL A BW CONTROL VALVE (CV-103A)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
103A.3	PLC-1	FILTER NO. 1 CELL A BW CONTROL VALVE (CV-103A)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
103A.4	PLC-1	FILTER NO. 1 CELL A BW CONTROL VALVE (CV-103A)	VALVE FAIL		X			X								X											X			X	X	X					
104A	PLC-1	FILTER NO. 1 CELL A FTW CONTROL VALVE (CV-104A)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
104A.1	PLC-1	FILTER NO. 1 CELL A FTW CONTROL VALVE (CV-104A)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
104A.2	PLC-1	FILTER NO. 1 CELL A FTW CONTROL VALVE (CV-104A)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
104A.3	PLC-1	FILTER NO. 1 CELL A FTW CONTROL VALVE (CV-104A)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
104A.4	PLC-1	FILTER NO. 1 CELL A FTW CONTROL VALVE (CV-104A)	VALVE FAIL		X			X								X											X			X	X	X					
105A	PLC-1	FILTER NO. 1 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-105A)	VALVE OPEN/CLOSE-MODULATING			X			X			X			X	X	X					X	X				X		X						X	X	
105A.1	PLC-1	FILTER NO. 1 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-105A)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
105A.2	PLC-1	FILTER NO. 1 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-105A)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
105A.3	PLC-1	FILTER NO. 1 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-105A)	VALVE NOT IN AUTO		X			X								X											X			X	X	X					
105A.4	PLC-1	FILTER NO. 1 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-105A)	VALVE FAIL		X			X								X											X			X	X	X					
105A.5	PLC-1	FILTER NO. 1 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-105A)	VALVE STATUS-POSITION			X				X						X	X	X	X	X				X	X				X			X	X	X				
106A	PLC-1	NOT USED	NOT USED																																			
107A	PLC-1	FILTER NO. 1 CELL A PRESSURE DIFFERENTIAL TRANSMITTER	HEADLOSS			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
108A	PLC-1	FILTER NO. 1 CELL A FLOW METER	EFFLUENT FLOW			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
109A	PLC-1	FILTER NO. 1 CELL A TURBIDITY ANALYZER	TURBIDITY			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
110A	PLC-1	FILTER NO. 1 CELL A LEVEL TRANSMITTER	FILTER LEVEL			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
111	PLC-1	FILTER NO. 1 MAIN DRAIN CONTROL VALVE (CV-111)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
111.1	PLC-1	FILTER NO. 1 MAIN DRAIN CONTROL VALVE (CV-111)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
111.2	PLC-1	FILTER NO. 1 MAIN DRAIN CONTROL VALVE (CV-111)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
111.3	PLC-1	FILTER NO. 1 MAIN DRAIN CONTROL VALVE (CV-111)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
111.4	PLC-1	FILTER NO. 1 MAIN DRAIN CONTROL VALVE (CV-111)	VALVE FAIL		X			X								X											X			X	X	X					
112A.1	PLC-1	FILTER NO. 1 CELL A BACKWASH ANALYZER	FILTER LEVEL			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
112A.2	PLC-1	FILTER NO. 1 CELL A BACKWASH TURBIDITY	TURBIDITY			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
113A	PLC-1	FILTER NO. 1 CELL A MODE SELECT SWITCH	SWITCH STATUS		X			X								X											X			X	X	X					
102B	PLC-1	FILTER NO. 1 CELL B AIR SCOUR CONTROL VALVE (CV-102B)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
102B.1	PLC-1	FILTER NO. 1 CELL B AIR SCOUR CONTROL VALVE (CV-102B)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
102B.2	PLC-1	FILTER NO. 1 CELL B AIR SCOUR CONTROL VALVE (CV-102B)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
102B.3	PLC-1	FILTER NO. 1 CELL B AIR SCOUR CONTROL VALVE (CV-102B)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
102B.4	PLC-1	FILTER NO. 1 CELL B AIR SCOUR CONTROL VALVE (CV-102B)	VALVE FAIL		X			X								X											X			X	X	X					
103B	PLC-1	FILTER NO. 1 CELL B BW CONTROL VALVE (CV-103B)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
103B.1	PLC-1	FILTER NO. 1 CELL B BW CONTROL VALVE (CV-103B)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
103B.2	PLC-1	FILTER NO. 1 CELL B BW CONTROL VALVE (CV-103B)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
103B.3	PLC-1	FILTER NO. 1 CELL B BW CONTROL VALVE (CV-103B)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
103B.4	PLC-1	FILTER NO. 1 CELL B BW CONTROL VALVE (CV-103B)	VALVE FAIL		X			X								X											X			X	X	X					
104B	PLC-1	FILTER NO. 1 CELL B FTW CONTROL VALVE (CV-104B)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
104B.1	PLC-1	FILTER NO. 1 CELL B FTW CONTROL VALVE (CV-104B)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
104B.2	PLC-1	FILTER NO. 1 CELL B FTW CONTROL VALVE (CV-104B)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
104B.3	PLC-1	FILTER NO. 1 CELL B FTW CONTROL VALVE (CV-104B)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
104B.4	PLC-1	FILTER NO. 1 CELL B FTW CONTROL VALVE (CV-104B)	VALVE FAIL		X			X								X											X			X	X	X					
105B	PLC-1	FILTER NO. 1 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-105B)	VALVE OPEN/CLOSE-MODULATING			X				X			X			X	X							X	X				X			X	X	X				
105B.1	PLC-1	FILTER NO. 1 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-105B)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
105B.2	PLC-1	FILTER NO. 1 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-105B)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
105B.3	PLC-1	FILTER NO. 1 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-105B)	VALVE NOT IN AUTO		X			X								X											X			X	X	X					
105B.4	PLC-1	FILTER NO. 1 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-105B)	VALVE FAIL		X			X								X											X			X	X	X					
105B.5	PLC-1	FILTER NO. 1 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-105B)	VALVE STATUS-POSITION			X				X						X	X	X	X	X				X	X				X			X	X	X				
114	PLC-1	NOT USED	NOT USED																																			
114.1	PLC-1	NOT USED	NOT USED																																			
114.2	PLC-1	NOT USED	NOT USED																																			
114.3	PLC-1	NOT USED	NOT USED																																			
115A	PLC-1	FILTER NO. 1 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM		X			X					X			X											X			X	X	X					
115A.1	PLC-1	FILTER NO. 1 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM		X			X					X			X											X			X	X	X					
115A.2	PLC-1	FILTER NO. 1 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM		X			X					X			X											X			X	X	X					
115A.3	PLC-1	FILTER NO. 1 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM		X			X					X			X											X			X	X	X					
115B	PLC-1	FILTER NO. 1 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM		X			X					X			X											X			X	X	X					
115B.1	PLC-1	FILTER NO. 1 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM		X			X					X			X											X			X	X	X					
115B.2	PLC-1	FILTER NO. 1 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM		X			X					X			X											X			X	X	X					
115B.3	PLC-1	FILTER NO. 1 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM		X			X					X			X											X			X	X	X					

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	TO	DESCRIPTION	FUNCTION	HARDWARE: WIRE: 2@#14 AWG	3@#14 AWG	2/C #18 SH. PR.	INPUT/OUTPUT: DIGITAL: DI (DIGITAL INPUT)	DO (DIGITAL OUTPUT)	ANALOG: AI (ANALOG INPUT)	AO (ANALOG OUTPUT)	OUTPUT FUNCT.: DIGITAL: PULSE	START/STOP	ANALOG: OPEN/CLOSE	PACING	SOFTWARE: STATUS: @ GUI	LOCAL INDICATOR	LOCAL OPERATOR INTERFACE	LOGGING: DAILY	WEEKLY	MONTHLY	HISTORICAL	SCHEDULING: MANUAL @ G.U.I.	TOTALIZATION/VO/UM	MAINTENANCE TIME REM.	PEAK SHAVING	APPLICATION PROGRAM: RES. @ PLC	P.I.D.	TIME CLOCK	ALARMS: HIGH ALARM	LOW ALARM	OFF NORMAL	ANNUNCIATE @ GUI	ANNUNCIATE @ PRINTER	ANNUNCIATE TO MODEM	MISC.: SET POINT ADJ. @ PLC	TREND LOG	CALCULATION NO.	REMARKS
PLC-2		**FILTER CONTROL CONSOLE NO. 2**																																				
201	PLC-2	FILTER NO. 2 MAIN INFLUENT CONTROL VALVE (CV-201)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
201.1	PLC-2	FILTER NO. 2 MAIN INFLUENT CONTROL VALVE (CV-201)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
201.2	PLC-2	FILTER NO. 2 MAIN INFLUENT CONTROL VALVE (CV-201)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
201.3	PLC-2	FILTER NO. 2 MAIN INFLUENT CONTROL VALVE (CV-201)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
201.4	PLC-2	FILTER NO. 2 MAIN INFLUENT CONTROL VALVE (CV-201)	VALVE FAIL		X			X								X											X			X	X	X					
202A	PLC-2	FILTER NO. 2 CELL A AIR SCOUR CONTROL VALVE (CV-202A)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
202A.1	PLC-2	FILTER NO. 2 CELL A AIR SCOUR CONTROL VALVE (CV-202A)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
202A.2	PLC-2	FILTER NO. 2 CELL A AIR SCOUR CONTROL VALVE (CV-202A)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
202A.3	PLC-2	FILTER NO. 2 CELL A AIR SCOUR CONTROL VALVE (CV-202A)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
202A.4	PLC-2	FILTER NO. 2 CELL A AIR SCOUR CONTROL VALVE (CV-202A)	VALVE FAIL		X			X								X											X			X	X	X					
203A	PLC-2	FILTER NO. 2 CELL A BW CONTROL VALVE (CV-203A)	VALVE OPEN/CLOSE COMMAND																																			
203A.1	PLC-2	FILTER NO. 2 CELL A BW CONTROL VALVE (CV-203A)	VALVE OPEN STATUS																																			
203A.2	PLC-2	FILTER NO. 2 CELL A BW CONTROL VALVE (CV-203A)	VALVE CLOSE STATUS																																			
203A.3	PLC-2	FILTER NO. 2 CELL A BW CONTROL VALVE (CV-203A)	VALVE LOR SELECTOR SW. STATUS																																			
203A.4	PLC-2	FILTER NO. 2 CELL A BW CONTROL VALVE (CV-203A)	VALVE FAIL		X			X								X											X			X	X	X					
204A	PLC-2	FILTER NO. 2 CELL A FTW CONTROL VALVE (CV-204A)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
204A.1	PLC-2	FILTER NO. 2 CELL A FTW CONTROL VALVE (CV-204A)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
204A.2	PLC-2	FILTER NO. 2 CELL A FTW CONTROL VALVE (CV-204A)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
204A.3	PLC-2	FILTER NO. 2 CELL A FTW CONTROL VALVE (CV-204A)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
204A.4	PLC-2	FILTER NO. 2 CELL A FTW CONTROL VALVE (CV-204A)	VALVE FAIL		X			X								X											X			X	X	X					
204A	PLC-2	FILTER NO. 2 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-204A)	VALVE OPEN/CLOSE-MODULATING			X				X			X			X	X							X	X				X			X	X	X				
204A.1	PLC-2	FILTER NO. 2 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-204A)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
204A.2	PLC-2	FILTER NO. 2 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-204A)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
204A.3	PLC-2	FILTER NO. 2 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-204A)	VALVE NOT IN AUTO		X			X								X											X			X	X	X					
204A.4	PLC-2	FILTER NO. 2 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-204A)	VALVE FAIL		X			X								X											X			X	X	X					
204A.5	PLC-2	FILTER NO. 2 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-204A)	VALVE STATUS-POSITION			X				X						X	X	X	X	X				X	X				X			X	X	X				
206A	PLC-2	FILTER NO. 2 CELL A PRESSURE SWITCH	FILTER PRESSURE		X			X								X											X			X	X	X					
207A	PLC-2	FILTER NO. 2 CELL A PRESSURE DIFFERENTIAL TRANSMITTER	HEADLOSS			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
208A	PLC-2	FILTER NO. 2 CELL A FLOW METER	EFFLUENT FLOW			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
209A	PLC-2	FILTER NO. 2 CELL A TURBIDITY ANALYZER	TURBIDITY			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
210A	PLC-2	FILTER NO. 2 CELL A LEVEL TRANSMITTER	FILTER LEVEL			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
211	PLC-2	FILTER NO. 2 MAIN DRAIN CONTROL VALVE (CV-211)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
211.1	PLC-2	FILTER NO. 2 MAIN DRAIN CONTROL VALVE (CV-211)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
211.2	PLC-2	FILTER NO. 2 MAIN DRAIN CONTROL VALVE (CV-211)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
211.3	PLC-2	FILTER NO. 2 MAIN DRAIN CONTROL VALVE (CV-211)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
211.4	PLC-2	FILTER NO. 2 MAIN DRAIN CONTROL VALVE (CV-211)	VALVE FAIL		X			X								X											X			X	X	X					
213A	PLC-2	FILTER NO. 2 CELL MODE SELECT SWITCH	SWITCH STATUS		X			X								X											X			X	X	X					
202B	PLC-2	FILTER NO. 2 CELL B AIR SCOUR CONTROL VALVE (CV-202B)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
202B.1	PLC-2	FILTER NO. 2 CELL B AIR SCOUR CONTROL VALVE (CV-202B)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
202B.2	PLC-2	FILTER NO. 2 CELL B AIR SCOUR CONTROL VALVE (CV-202B)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
202B.3	PLC-2	FILTER NO. 2 CELL B AIR SCOUR CONTROL VALVE (CV-202B)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
202B.4	PLC-2	FILTER NO. 2 CELL B AIR SCOUR CONTROL VALVE (CV-202B)	VALVE FAIL		X			X								X											X			X	X	X					
203B	PLC-2	FILTER NO. 2 CELL B BW CONTROL VALVE (CV-203B)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
203B.1	PLC-2	FILTER NO. 2 CELL B BW CONTROL VALVE (CV-203B)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
203B.2	PLC-2	FILTER NO. 2 CELL B BW CONTROL VALVE (CV-203B)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
203B.3	PLC-2	FILTER NO. 2 CELL B BW CONTROL VALVE (CV-203B)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
203B.4	PLC-2	FILTER NO. 2 CELL B BW CONTROL VALVE (CV-203B)	VALVE FAIL		X			X								X											X			X	X	X					
204B	PLC-2	FILTER NO. 2 CELL B FTW CONTROL VALVE (CV-204B)	VALVE OPEN/CLOSE COMMAND		X				X				X			X											X		X								
204B.1	PLC-2	FILTER NO. 2 CELL B FTW CONTROL VALVE (CV-204B)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
204B.2	PLC-2	FILTER NO. 2 CELL B FTW CONTROL VALVE (CV-204B)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
204B.3	PLC-2	FILTER NO. 2 CELL B FTW CONTROL VALVE (CV-204B)	VALVE LOR SELECTOR SW. STATUS		X			X								X											X			X	X	X					
204B.4	PLC-2	FILTER NO. 2 CELL B FTW CONTROL VALVE (CV-204B)	VALVE FAIL		X			X								X											X			X	X	X					
205B	PLC-2	FILTER NO. 2 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-205B)	VALVE OPEN/CLOSE-MODULATING			X				X			X			X	X							X	X				X			X	X	X				
205B.1	PLC-2	FILTER NO. 2 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-205B)	VALVE OPEN STATUS		X			X								X											X			X	X	X					
205B.2	PLC-2	FILTER NO. 2 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-205B)	VALVE CLOSE STATUS		X			X								X											X			X	X	X					
205B.3	PLC-2	FILTER NO. 2 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-205B)	VALVE NOT IN AUTO		X			X								X											X			X	X	X					
205B.4	PLC-2	FILTER NO. 2 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-205B)	VALVE FAIL		X			X								X											X			X	X	X					
205B.5	PLC-2	FILTER NO. 2 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-205B)	VALVE STATUS-POSITION			X				X						X	X	X	X	X				X	X				X			X	X	X				
206B	PLC-2	FILTER NO. 2 CELL B PRESSURE SWITCH	FILTER PRESSURE		X			X								X											X			X	X	X					
207B	PLC-2	FILTER NO. 2 CELL B PRESSURE DIFFERENTIAL TRANSMITTER	HEADLOSS			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
208B	PLC-2	FILTER NO. 2 CELL B FLOW METER	EFFLUENT FLOW			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
209B	PLC-2	FILTER NO. 2 CELL B TURBIDITY ANALYZER	TURBIDITY			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
210B	PLC-2	FILTER NO. 2 CELL B LEVEL TRANSMITTER	FILTER LEVEL			X			X							X	X	X	X				X					X		X	X	X	X	X	X			
213B	PLC-2	FILTER NO. 2 CELL B MODE SELECT SWITCH	SWITCH STATUS		X			X								X											X			X	X	X					
214	PLC-2	NOT USED	NOT USED																																			
214.1	PLC-2	NOT USED	NOT USED																																			
214.2	PLC-2	NOT USED	NOT USED																																			
214.3	PLC-2	NOT USED	NOT USED																																			
212A	PLC-2	FLUME LOW LEVEL SWITCH – BACKUP	LOW LEVEL ALARM		X

PLOTTED: 4/18/2022 8:57:44 AM

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	DESCRIPTION TO	FUNCTION	HARDWARE: WIRE: 2#14 AWG	3#14 AWG	2/C #18 SH. PR.	INPUT/OUTPUT: DIGITAL: DI (DIGITAL INPUT)	DO (DIGITAL OUTPUT)	ANALOG: AI (ANALOG INPUT)	AO (ANALOG OUTPUT)	OUTPUT FUNCT.: DIGITAL: START/STOP	OPEN/CLOSE	PACING	ANALOG	SOFTWARE: STATUS: @ GUI	LOCAL INDICATOR	LOCAL OPERATOR INTERFACE	LOGGING: WEEKLY	MONTHLY	HISTORICAL	MANUAL @ G.U.I.	TOTALIZATION/VIO/UM	MAINTENANCE TIME REM.	PEAK SHAVING	SCHEDULING: APPLICATION PROGRAM: @ PLC	P.I.D.	TIME CLOCK	ALARMS: HIGH ALARM	LOW ALARM	OFF NORMAL	@ GUI	ANNUNCIATE @ PRINTER	ANNUNCIATE TO MODEM	SET POINT ADJ. @ PLC	TREND LOG	CALCULATION NO.	MISC.	REMARKS
PLC-3		**FILTER CONTROL CONSOLE NO. 3**																																				
301	PLC-3	FILTER NO. 3 MAIN INFLUENT CONTROL VALVE (CV-301)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
301.1	PLC-3	FILTER NO. 3 MAIN INFLUENT CONTROL VALVE (CV-301)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
301.2	PLC-3	FILTER NO. 3 MAIN INFLUENT CONTROL VALVE (CV-301)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
301.3	PLC-3	FILTER NO. 3 MAIN INFLUENT CONTROL VALVE (CV-301)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
301.4	PLC-3	FILTER NO. 3 MAIN INFLUENT CONTROL VALVE (CV-301)	VALVE FAIL	X			X								X									X					X	X	X						
302A	PLC-3	FILTER NO. 3 CELL A SURFACE WASH CONTROL VALVE (CV-302A)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
302A.1	PLC-3	FILTER NO. 3 CELL A SURFACE WASH CONTROL VALVE (CV-302A)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
302A.2	PLC-3	FILTER NO. 3 CELL A SURFACE WASH CONTROL VALVE (CV-302A)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
302A.3	PLC-3	FILTER NO. 3 CELL A SURFACE WASH CONTROL VALVE (CV-302A)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
302A.4	PLC-3	FILTER NO. 3 CELL A SURFACE WASH CONTROL VALVE (CV-302A)	VALVE FAIL	X			X								X									X					X	X	X						
303A	PLC-3	FILTER NO. 3 CELL A BW CONTROL VALVE (CV-303A)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
303A.1	PLC-3	FILTER NO. 3 CELL A BW CONTROL VALVE (CV-303A)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
303A.2	PLC-3	FILTER NO. 3 CELL A BW CONTROL VALVE (CV-303A)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
303A.3	PLC-3	FILTER NO. 3 CELL A BW CONTROL VALVE (CV-303A)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
303A.4	PLC-3	FILTER NO. 3 CELL A BW CONTROL VALVE (CV-303A)	VALVE FAIL	X			X								X									X					X	X	X						
304A	PLC-3	FILTER NO. 3 CELL A FTW CONTROL VALVE (CV-304A)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
304A.1	PLC-3	FILTER NO. 3 CELL A FTW CONTROL VALVE (CV-304A)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
304A.2	PLC-3	FILTER NO. 3 CELL A FTW CONTROL VALVE (CV-304A)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
304A.3	PLC-3	FILTER NO. 3 CELL A FTW CONTROL VALVE (CV-304A)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
304A.4	PLC-3	FILTER NO. 3 CELL A FTW CONTROL VALVE (CV-304A)	VALVE FAIL	X			X								X									X					X	X	X						
305A	PLC-3	FILTER NO. 3 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-305A)	VALVE OPEN/CLOSE-MODULATING		X				X					X	X					X	X				X	X							X	X			
305A.1	PLC-3	FILTER NO. 3 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-305A)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
305A.2	PLC-3	FILTER NO. 3 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-305A)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
305A.3	PLC-3	FILTER NO. 3 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-305A)	VALVE NOT IN AUTO	X			X								X									X					X	X	X						
305A.4	PLC-3	FILTER NO. 3 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-305A)	VALVE FAIL	X			X								X									X					X	X	X						
305A.5	PLC-3	FILTER NO. 3 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-305A)	VALVE STATUS-POSITION			X				X					X	X	X	X	X	X					X		X	X	X								
306A	PLC-3	FILTER NO. 3 CELL A PRESSURE SWITCH	FILTER PRESSURE	X			X								X									X													
307A	PLC-3	FILTER NO. 3 CELL A PRESSURE DIFFERENTIAL TRANSMITTER	HEADLOSS			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
308A	PLC-3	FILTER NO. 3 CELL A FLOW METER	EFFLUENT FLOW			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
309A	PLC-3	FILTER NO. 3 CELL A TURBIDITY ANALYZER	TURBIDITY			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
310A	PLC-3	FILTER NO. 3 CELL A LEVEL TRANSMITTER	FILTER LEVEL			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
311	PLC-3	FILTER NO. 3 MAIN DRAIN CONTROL VALVE (CV-311)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
311.1	PLC-3	FILTER NO. 3 MAIN DRAIN CONTROL VALVE (CV-311)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
311.2	PLC-3	FILTER NO. 3 MAIN DRAIN CONTROL VALVE (CV-311)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
311.3	PLC-3	FILTER NO. 3 MAIN DRAIN CONTROL VALVE (CV-311)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
311.4	PLC-3	FILTER NO. 3 MAIN DRAIN CONTROL VALVE (CV-311)	VALVE FAIL	X			X								X									X					X	X	X						
313A	PLC-3	FILTER NO. 3 CELL A MODE SELECT SWITCH	SWITCH STATUS	X			X								X									X													
302B	PLC-3	FILTER NO. 3 CELL B SURFACE WASH CONTROL VALVE (CV-302B)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
302B.1	PLC-3	FILTER NO. 3 CELL B SURFACE WASH CONTROL VALVE (CV-302B)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
302B.2	PLC-3	FILTER NO. 3 CELL B SURFACE WASH CONTROL VALVE (CV-302B)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
302B.3	PLC-3	FILTER NO. 3 CELL B SURFACE WASH CONTROL VALVE (CV-302B)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
302B.4	PLC-3	FILTER NO. 3 CELL B SURFACE WASH CONTROL VALVE (CV-302B)	VALVE FAIL	X			X								X									X					X	X	X						
303B	PLC-3	FILTER NO. 3 CELL B BW CONTROL VALVE (CV-303B)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
303B.1	PLC-3	FILTER NO. 3 CELL B BW CONTROL VALVE (CV-303B)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
303B.2	PLC-3	FILTER NO. 3 CELL B BW CONTROL VALVE (CV-303B)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
303B.3	PLC-3	FILTER NO. 3 CELL B BW CONTROL VALVE (CV-303B)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
303B.4	PLC-3	FILTER NO. 3 CELL B BW CONTROL VALVE (CV-303B)	VALVE FAIL	X			X								X									X					X	X	X						
304B	PLC-3	FILTER NO. 3 CELL B FTW CONTROL VALVE (CV-304B)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
304B.1	PLC-3	FILTER NO. 3 CELL B FTW CONTROL VALVE (CV-304B)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
304B.2	PLC-3	FILTER NO. 3 CELL B FTW CONTROL VALVE (CV-304B)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
304B.3	PLC-3	FILTER NO. 3 CELL B FTW CONTROL VALVE (CV-304B)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
304B.4	PLC-3	FILTER NO. 3 CELL B FTW CONTROL VALVE (CV-304B)	VALVE FAIL	X			X								X									X					X	X	X						
305B	PLC-3	FILTER NO. 3 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-305B)	VALVE OPEN/CLOSE-MODULATING			X				X					X	X					X	X				X	X							X	X			
305B.1	PLC-3	FILTER NO. 3 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-305B)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
305B.2	PLC-3	FILTER NO. 3 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-305B)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
305B.3	PLC-3	FILTER NO. 3 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-305B)	VALVE NOT IN AUTO	X			X								X									X					X	X	X						
305B.4	PLC-3	FILTER NO. 3 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-305B)	VALVE FAIL	X			X								X									X					X	X	X						
305B.5	PLC-3	FILTER NO. 3 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-305B)	VALVE STATUS-POSITION			X				X					X	X	X	X	X	X					X		X	X	X								
306B	PLC-3	FILTER NO. 3 CELL B PRESSURE SWITCH	FILTER PRESSURE	X			X								X									X													
307B	PLC-3	FILTER NO. 3 CELL B PRESSURE DIFFERENTIAL TRANSMITTER	HEADLOSS			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
308B	PLC-3	FILTER NO. 3 CELL B FLOW METER	EFFLUENT FLOW			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
309B	PLC-3	FILTER NO. 3 CELL B TURBIDITY ANALYZER	TURBIDITY			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
310B	PLC-3	FILTER NO. 3 CELL B LEVEL TRANSMITTER	FILTER LEVEL			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
313B	PLC-3	FILTER NO. 3 CELL B MODE SELECT SWITCH	SWITCH STATUS	X			X								X									X													
314	PLC-3	NOT USED																																				
314.1	PLC-3	NOT USED																																				
314.2	PLC-3	NOT USED																																				
314.3	PLC-3	NOT USED																																				
315A	PLC-3	FILTER NO. 3 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM	X			X								X									X					X	X	X						
315A.1	PLC-3	FILTER NO. 3 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM	X			X								X									X					X	X	X						
315A.2	PLC-3	FILTER NO. 3 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM	X			X								X									X					X	X	X						
315A.3	PLC-3	FILTER NO. 3 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM	X			X								X									X					X	X	X						
315B	PLC-3	FILTER NO. 3 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM	X			X								X									X					X	X	X						
315B.1	PLC-3	FILTER NO. 3 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM	X			X								X									X					X	X	X						
315B.2	PLC-3	FILTER NO. 3 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM	X			X								X									X					X	X	X						
315B.3	PLC-3	FILTER NO. 3 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM	X			X								X									X					X	X	X						

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	DESCRIPTION TO	FUNCTION	HARDWARE: WIRE: 2#14 AWG	3#14 AWG	2/C #18 SH. PR.	INPUT/OUTPUT: DIGITAL: DI (DIGITAL INPUT)	DO (DIGITAL OUTPUT)	ANALOG: AI (ANALOG INPUT)	AO (ANALOG OUTPUT)	OUTPUT FUNCT.: DIGITAL: START/STOP	OPEN/CLOSE	PACING	ANALOG	SOFTWARE: STATUS: @ GUI	LOCAL INDICATOR	LOCAL OPERATOR INTERFACE	LOGGING: DAILY	WEEKLY	MONTHLY	HISTORICAL	MANUAL @ G.U.I.	TOTALIZATION/VIO/UM	MAINTENANCE TIME REM.	PEAK SHAVING	SCHEDULING: APPLICATION PROGRAM: @ PLC	RES. @ P.I.D.	TIME CLOCK	ALARMS: HIGH ALARM	LOW ALARM	OFF NORMAL	@ GUI	ANNUNCIATE @ PRINTER	ANNUNCIATE TO MODEM	SET POINT ADJ. @ PLC	TREND LOG	CALCULATION NO.	MISC.	REMARKS
PLC-4		**FILTER CONTROL CONSOLE NO. 4**																																				
401	PLC-4	FILTER NO. 4 MAIN INFLUENT CONTROL VALVE (CV-401)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
401.1	PLC-4	FILTER NO. 4 MAIN INFLUENT CONTROL VALVE (CV-401)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
401.2	PLC-4	FILTER NO. 4 MAIN INFLUENT CONTROL VALVE (CV-401)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
401.3	PLC-4	FILTER NO. 4 MAIN INFLUENT CONTROL VALVE (CV-401)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
401.4	PLC-4	FILTER NO. 4 MAIN INFLUENT CONTROL VALVE (CV-401)	VALVE FAIL	X			X								X									X					X	X	X						
402A	PLC-4	FILTER NO. 4 CELL A AIR SCOUR CONTROL VALVE (CV-402A)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
402A.1	PLC-4	FILTER NO. 4 CELL A AIR SCOUR CONTROL VALVE (CV-402A)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
402A.2	PLC-4	FILTER NO. 4 CELL A AIR SCOUR CONTROL VALVE (CV-402A)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
402A.3	PLC-4	FILTER NO. 4 CELL A AIR SCOUR CONTROL VALVE (CV-402A)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
402A.4	PLC-4	FILTER NO. 4 CELL A AIR SCOUR CONTROL VALVE (CV-402A)	VALVE FAIL	X			X								X									X					X	X	X						
403A	PLC-4	FILTER NO. 4 CELL A BW CONTROL VALVE (CV-403A)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
403A.1	PLC-4	FILTER NO. 4 CELL A BW CONTROL VALVE (CV-403A)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
403A.2	PLC-4	FILTER NO. 4 CELL A BW CONTROL VALVE (CV-403A)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
403A.3	PLC-4	FILTER NO. 4 CELL A BW CONTROL VALVE (CV-403A)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
403A.4	PLC-4	FILTER NO. 4 CELL A BW CONTROL VALVE (CV-403A)	VALVE FAIL	X			X								X									X					X	X	X						
404A	PLC-4	FILTER NO. 4 CELL A FTW CONTROL VALVE (CV-404A)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
404A.1	PLC-4	FILTER NO. 4 CELL A FTW CONTROL VALVE (CV-404A)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
404A.2	PLC-4	FILTER NO. 4 CELL A FTW CONTROL VALVE (CV-404A)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
404A.3	PLC-4	FILTER NO. 4 CELL A FTW CONTROL VALVE (CV-404A)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
404A.4	PLC-4	FILTER NO. 4 CELL A FTW CONTROL VALVE (CV-404A)	VALVE FAIL	X			X								X									X					X	X	X						
405A	PLC-4	FILTER NO. 4 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-405A)	VALVE OPEN/CLOSE-MODULATING		X				X					X	X					X	X				X	X							X	X			
405A.4	PLC-4	FILTER NO. 4 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-405A)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
405A.2	PLC-4	FILTER NO. 4 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-405A)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
405A.3	PLC-4	FILTER NO. 4 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-405A)	VALVE NOT IN AUTO	X			X								X									X					X	X	X						
405A.4	PLC-4	FILTER NO. 4 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-405A)	VALVE FAIL	X			X								X									X					X	X	X						
405A.5	PLC-4	FILTER NO. 4 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-405A)	VALVE STATUS-POSITION			X				X					X	X	X	X	X	X					X		X	X	X								
406A	PLC-4	FILTER NO. 4 CELL A PRESSURE SWITCH	FILTER PRESSURE	X			X								X									X													
407A	PLC-4	FILTER NO. 4 CELL A PRESSURE DIFFERENTIAL TRANSMITTER	HEADLOSS			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
408A	PLC-4	FILTER NO. 4 CELL A FLOW METER	EFFLUENT FLOW			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
409A	PLC-4	FILTER NO. 4 CELL A TURBIDITY ANALYZER	TURBIDITY			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
410A	PLC-4	FILTER NO. 4 CELL A LEVEL TRANSMITTER	FILTER LEVEL			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
411	PLC-4	FILTER NO. 4 MAIN DRAIN CONTROL VALVE (CV-411)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
411.1	PLC-4	FILTER NO. 4 MAIN DRAIN CONTROL VALVE (CV-411)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
411.2	PLC-4	FILTER NO. 4 MAIN DRAIN CONTROL VALVE (CV-411)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
411.3	PLC-4	FILTER NO. 4 MAIN DRAIN CONTROL VALVE (CV-411)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
411.4	PLC-4	FILTER NO. 4 MAIN DRAIN CONTROL VALVE (CV-411)	VALVE FAIL	X			X								X									X					X	X	X						
413A	PLC-4	FILTER NO. 4 CELL A MODE SELECT SWITCH	SWITCH STATUS	X			X								X									X													
402B	PLC-4	FILTER NO. 4 CELL B SURFACE WASH CONTROL VALVE (CV-402B)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
402B.1	PLC-4	FILTER NO. 4 CELL B SURFACE WASH CONTROL VALVE (CV-402B)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
402B.2	PLC-4	FILTER NO. 4 CELL B SURFACE WASH CONTROL VALVE (CV-402B)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
402B.3	PLC-4	FILTER NO. 4 CELL B SURFACE WASH CONTROL VALVE (CV-402B)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
402B.4	PLC-4	FILTER NO. 4 CELL B SURFACE WASH CONTROL VALVE (CV-402B)	VALVE FAIL	X			X								X									X					X	X	X						
403B	PLC-4	FILTER NO. 4 CELL B BW CONTROL VALVE (CV-403B)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
403B.1	PLC-4	FILTER NO. 4 CELL B BW CONTROL VALVE (CV-403B)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
403B.2	PLC-4	FILTER NO. 4 CELL B BW CONTROL VALVE (CV-403B)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
403B.3	PLC-4	FILTER NO. 4 CELL B BW CONTROL VALVE (CV-403B)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
403B.4	PLC-4	FILTER NO. 4 CELL B BW CONTROL VALVE (CV-403B)	VALVE FAIL	X			X								X									X					X	X	X						
404B	PLC-4	FILTER NO. 4 CELL B FTW CONTROL VALVE (CV-404B)	VALVE OPEN/CLOSE COMMAND	X				X			X				X									X	X				X	X	X						
404B.1	PLC-4	FILTER NO. 4 CELL B FTW CONTROL VALVE (CV-404B)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
404B.2	PLC-4	FILTER NO. 4 CELL B FTW CONTROL VALVE (CV-404B)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
404B.3	PLC-4	FILTER NO. 4 CELL B FTW CONTROL VALVE (CV-404B)	VALVE LOR SELECTOR SW. STATUS	X			X								X									X					X	X	X						
404B.4	PLC-4	FILTER NO. 4 CELL B FTW CONTROL VALVE (CV-404B)	VALVE FAIL	X			X								X									X					X	X	X						
404B	PLC-4	FILTER NO. 4 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-404B)	VALVE OPEN/CLOSE-MODULATING			X				X					X	X					X	X				X	X							X	X			
404B.1	PLC-4	FILTER NO. 4 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-404B)	VALVE OPEN STATUS	X			X								X									X					X	X	X						
404B.2	PLC-4	FILTER NO. 4 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-404B)	VALVE CLOSE STATUS	X			X								X									X					X	X	X						
404B.3	PLC-4	FILTER NO. 4 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-404B)	VALVE NOT IN AUTO	X			X								X									X					X	X	X						
404B.4	PLC-4	FILTER NO. 4 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-404B)	VALVE FAIL	X			X								X									X					X	X	X						
404B.5	PLC-4	FILTER NO. 4 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-404B)	VALVE STATUS-POSITION			X				X					X	X	X	X	X	X					X		X	X	X								
406B	PLC-4	FILTER NO. 4 CELL B PRESSURE SWITCH	FILTER PRESSURE	X			X								X									X													
407B	PLC-4	FILTER NO. 4 CELL B PRESSURE DIFFERENTIAL TRANSMITTER	HEADLOSS			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
408B	PLC-4	FILTER NO. 4 CELL B FLOW METER	EFFLUENT FLOW			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
409B	PLC-4	FILTER NO. 4 CELL B TURBIDITY ANALYZER	TURBIDITY			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
410B	PLC-4	FILTER NO. 4 CELL B LEVEL TRANSMITTER	FILTER LEVEL			X			X						X	X	X	X	X						X		X	X	X	X	X	X					
413B	PLC-4	FILTER NO. 4 CELL B MODE SELECT SWITCH	SWITCH STATUS	X			X								X							

PLOTTED: 4/18/2022 8:57:53 AM

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	DESCRIPTION TO	FUNCTION	HARDWARE: WIRE 2@14 AWG	WIRE 3@14 AWG	WIRE 2/C #18 SH. PR.	INPUT/OUTPUT DIGITAL DI (DIGITAL INPUT)	DIGITAL DO (DIGITAL OUTPUT)	ANALOG AI (ANALOG INPUT)	ANALOG AO (ANALOG OUTPUT)	OUTPUT FUNCT. DIGITAL PULSE	DIGITAL START/STOP	DIGITAL OPEN/CLOSE	ANALOG PACING	SOFTWARE: STATUS @ GUI	STATUS LOCAL INDICATOR	STATUS LOCAL OPERATOR INTERFACE	LOGGING DAILY	LOGGING WEEKLY	LOGGING MONTHLY	LOGGING HISTORICAL	SCHEDULING MANUAL @ G.U.I.	SCHEDULING TOTALIZATION/VO/UM	SCHEDULING MAINTENANCE TIME REM.	APPLICATION PROGRAM PEAK SHAVING	APPLICATION PROGRAM RES. @ PLC	APPLICATION PROGRAM TIME CLOCK	ALARMS HIGH ALARM	ALARMS LOW ALARM	ALARMS OFF NORMAL	ALARMS ANNUNCIATE @ GUI	ALARMS ANNUNCIATE @ PRINTER	ALARMS ANNUNCIATE TO MODEM	MISC. SET POINT ADJ. @ PLC	MISC. TREND LOG	MISC. CALCULATION NO.	REMARKS
PLC-5		**FILTER CONTROL CONSOLE NO. 5**																																			
501	PLC-5	FILTER NO. 5 MAIN INFLUENT CONTROL VALVE (CV-501)	VALVE OPEN/CLOSE COMMAND	X				X			X				X										X	X					X	X	X			
501.1	PLC-5	FILTER NO. 5 MAIN INFLUENT CONTROL VALVE (CV-501)	VALVE OPEN STATUS	X			X								X										X						X	X	X			
501.2	PLC-5	FILTER NO. 5 MAIN INFLUENT CONTROL VALVE (CV-501)	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
501.3	PLC-5	FILTER NO. 5 MAIN INFLUENT CONTROL VALVE (CV-501)	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
501.4	PLC-5	FILTER NO. 5 MAIN INFLUENT CONTROL VALVE (CV-501)	VALVE FAIL	X			X								X										X						X	X	X			
502A	PLC-5	FILTER NO. 5 CELL A AIR SCOUR CONTROL VALVE (CV-502A)	VALVE OPEN/CLOSE COMMAND	X				X			X				X										X	X					X	X	X			
502A.1	PLC-5	FILTER NO. 5 CELL A AIR SCOUR CONTROL VALVE (CV-502A)	VALVE OPEN STATUS	X			X								X										X						X	X	X			
502A.2	PLC-5	FILTER NO. 5 CELL A AIR SCOUR CONTROL VALVE (CV-502A)	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
502A.3	PLC-5	FILTER NO. 5 CELL A AIR SCOUR CONTROL VALVE (CV-502A)	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
502A.4	PLC-5	FILTER NO. 5 CELL A AIR SCOUR CONTROL VALVE (CV-502A)	VALVE FAIL	X			X								X										X						X	X	X			
503A	PLC-5	FILTER NO. 5 CELL A BW CONTROL VALVE (CV-503A)	VALVE OPEN/CLOSE COMMAND	X				X			X				X										X	X					X	X	X			
503A.1	PLC-5	FILTER NO. 5 CELL A BW CONTROL VALVE (CV-503A)	VALVE OPEN STATUS	X			X								X										X						X	X	X			
503A.2	PLC-5	FILTER NO. 5 CELL A BW CONTROL VALVE (CV-503A)	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
503A.3	PLC-5	FILTER NO. 5 CELL A BW CONTROL VALVE (CV-503A)	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
503A.4	PLC-5	FILTER NO. 5 CELL A BW CONTROL VALVE (CV-503A)	VALVE FAIL	X			X								X										X						X	X	X			
504A	PLC-5	FILTER NO. 5 CELL A FTW CONTROL VALVE (CV-504A)	VALVE OPEN/CLOSE COMMAND	X				X			X				X										X	X					X	X	X			
504A.1	PLC-5	FILTER NO. 5 CELL A FTW CONTROL VALVE (CV-504A)	VALVE OPEN STATUS	X			X								X										X						X	X	X			
504A.2	PLC-5	FILTER NO. 5 CELL A FTW CONTROL VALVE (CV-504A)	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
504A.3	PLC-5	FILTER NO. 5 CELL A FTW CONTROL VALVE (CV-504A)	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
504A.4	PLC-5	FILTER NO. 5 CELL A FTW CONTROL VALVE (CV-504A)	VALVE FAIL	X			X								X										X						X	X	X			
505A	PLC-5	FILTER NO. 5 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-605A)	VALVE OPEN/CLOSE-MODULATING			X				X			X		X	X						X	X			X	X										
505A.1	PLC-5	FILTER NO. 5 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-605A)	VALVE OPEN STATUS	X		X									X										X						X	X	X			
505A.2	PLC-5	FILTER NO. 5 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-605A)	VALVE CLOSE STATUS	X		X									X										X						X	X	X			
505A.3	PLC-5	FILTER NO. 5 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-605A)	VALVE NOT IN AUTO	X		X									X										X						X	X	X			
505A.4	PLC-5	FILTER NO. 5 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-605A)	VALVE FAIL	X		X									X										X						X	X	X			
505A.5	PLC-5	FILTER NO. 5 CELL A EFFLUENT FLOW CONTROL VALVE (FCV-605A)	VALVE STATUS-POSITION			X				X					X	X		X	X	X	X				X			X	X								
506A	PLC-5	FILTER NO. 5 CELL A PRESSURE SWITCH	FILTER PRESSURE	X			X								X										X						X	X	X			
507A	PLC-5	FILTER NO. 5 CELL A PRESSURE DIFFERENTIAL TRANSMITTER	HEADLOSS			X			X						X	X		X	X	X	X				X			X	X								
508A	PLC-5	FILTER NO. 5 CELL A FLOW METER	EFFLUENT FLOW			X			X						X	X		X	X	X	X				X			X	X								
509A	PLC-5	FILTER NO. 5 CELL A TURBIDITY ANALYZER	TURBIDITY			X			X						X	X		X	X	X	X				X			X	X								
510A	PLC-5	FILTER NO. 5 CELL A LEVEL TRANSMITTER	FILTER LEVEL			X			X						X	X		X	X	X	X				X			X	X								
511	PLC-5	FILTER NO. 5 MAIN DRAIN CONTROL VALVE (CV-511)	VALVE OPEN/CLOSE COMMAND	X				X			X				X										X	X					X	X	X			
511.1	PLC-5	FILTER NO. 5 MAIN DRAIN CONTROL VALVE (CV-511)	VALVE OPEN STATUS	X			X								X										X						X	X	X			
511.2	PLC-5	FILTER NO. 5 MAIN DRAIN CONTROL VALVE (CV-511)	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
511.3	PLC-5	FILTER NO. 5 MAIN DRAIN CONTROL VALVE (CV-511)	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
511.4	PLC-5	FILTER NO. 5 MAIN DRAIN CONTROL VALVE (CV-511)	VALVE FAIL	X			X								X										X						X	X	X			
513A	PLC-5	FILTER NO. 5 CELL A MODE SELECT SWITCH	SWITCH STATUS	X			X								X										X						X	X	X			
502B	PLC-5	FILTER NO. 5 CELL B AIR SCOUR CONTROL VALVE (CV-502B)	VALVE OPEN/CLOSE COMMAND	X				X			X				X										X	X					X	X	X			
502B.1	PLC-5	FILTER NO. 5 CELL B AIR SCOUR CONTROL VALVE (CV-502B)	VALVE OPEN STATUS	X			X								X										X						X	X	X			
502B.2	PLC-5	FILTER NO. 5 CELL B AIR SCOUR CONTROL VALVE (CV-502B)	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
502B.3	PLC-5	FILTER NO. 5 CELL B AIR SCOUR CONTROL VALVE (CV-502B)	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
502B.4	PLC-5	FILTER NO. 5 CELL B AIR SCOUR CONTROL VALVE (CV-502B)	VALVE FAIL	X			X								X										X						X	X	X			
503B	PLC-5	FILTER NO. 5 CELL B BW CONTROL VALVE (CV-503B)	VALVE OPEN/CLOSE COMMAND	X				X			X				X										X	X					X	X	X			
503B.1	PLC-5	FILTER NO. 5 CELL B BW CONTROL VALVE (CV-503B)	VALVE OPEN STATUS	X			X								X										X						X	X	X			
503B.2	PLC-5	FILTER NO. 5 CELL B BW CONTROL VALVE (CV-503B)	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
503B.3	PLC-5	FILTER NO. 5 CELL B BW CONTROL VALVE (CV-503B)	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
503B.4	PLC-5	FILTER NO. 5 CELL B BW CONTROL VALVE (CV-503B)	VALVE FAIL	X			X								X										X						X	X	X			
504B	PLC-5	FILTER NO. 5 CELL B FTW CONTROL VALVE (CV-504B)	VALVE OPEN/CLOSE COMMAND	X				X			X				X										X	X					X	X	X			
504B.1	PLC-5	FILTER NO. 5 CELL B FTW CONTROL VALVE (CV-504B)	VALVE OPEN STATUS	X			X								X										X						X	X	X			
504B.2	PLC-5	FILTER NO. 5 CELL B FTW CONTROL VALVE (CV-504B)	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
504B.3	PLC-5	FILTER NO. 5 CELL B FTW CONTROL VALVE (CV-504B)	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
504B.4	PLC-5	FILTER NO. 5 CELL B FTW CONTROL VALVE (CV-504B)	VALVE FAIL	X			X								X										X						X	X	X			
505B	PLC-5	FILTER NO. 5 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-505B)	VALVE OPEN/CLOSE-MODULATING			X				X			X		X	X						X	X			X	X										
505B.1	PLC-5	FILTER NO. 5 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-505B)	VALVE OPEN STATUS			X									X										X						X	X	X			
505B.2	PLC-5	FILTER NO. 5 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-505B)	VALVE CLOSE STATUS			X									X										X						X	X	X			
505B.3	PLC-5	FILTER NO. 5 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-505B)	VALVE NOT IN AUTO			X									X										X						X	X	X			
505B.4	PLC-5	FILTER NO. 5 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-505B)	VALVE FAIL			X									X										X						X	X	X			
505B.5	PLC-5	FILTER NO. 5 CELL B EFFLUENT FLOW CONTROL VALVE (FCV-505B)	VALVE STATUS-POSITION			X				X					X	X		X	X	X	X				X			X	X								
506B	PLC-5	FILTER NO. 5 CELL B PRESSURE SWITCH	FILTER PRSSURE	X			X								X										X						X	X	X			
507B	PLC-5	FILTER NO. 5 CELL B PRESSURE DIFFERENTIAL TRANSMITTER	HEADLOSS			X			X						X	X		X	X	X	X				X			X	X								
508B	PLC-5	FILTER NO. 5 CELL B FLOW METER	EFFLUENT FLOW			X			X						X	X		X	X	X	X				X			X	X								
509B	PLC-5	FILTER NO. 5 CELL B TURBIDITY ANALYZER	TURBIDITY			X			X						X	X		X	X	X	X				X			X	X								
510B	PLC-5	FILTER NO. 5 CELL B LEVEL TRANSMITTER	FILTER LEVEL			X			X						X	X		X	X	X	X				X			X	X								
512	PLC-5	FILTER NO. 5 CELL B BACKWASH FLOW TRANSMITTER	FILTER LEVEL			X			X						X	X		X	X	X	X				X			X	X								
513	PLC-5	FILTER NO. 5 BACKWASH FLOW CONTROL VALVE	VALVE OPEN/CLOSE-MODULATING			X				X			X		X	X						X	X			X	X										
513.1	PLC-5	FILTER NO. 5 BACKWASH FLOW CONTROL VALVE	VALVE STATUS-POSITION			X			X						X	X		X	X	X	X				X			X	X								
513.2	PLC-5	FILTER NO. 5 BACKWASH FLOW CONTROL VALVE	VALVE OPEN STATUS	X		X									X										X						X	X	X			
513.3	PLC-5	FILTER NO. 5 BACKWASH FLOW CONTROL VALVE	VALVE CLOSE STATUS	X		X									X										X						X	X	X			
514	PLC-5	FULME LEVEL TRANSMITTER	FLUME LEVEL			X			X						X	X		X	X	X	X				X			X	X								
515	PLC-5	FLUME HIGH LEVEL SWITCH	HIGH LEVEL ALARM	X		X									X										X						X	X	X			
514B	PLC-5	NOT USED	NOT USED																																		
515	PLC-5	NOT USED	NOT USED																																		
516	PLC-5	NOT USED	NOT USED																																		
517	PLC-5	NOT USED	NOT USED																																		
513B	PLC-5	FILTER NO. 5 CELL B MODE SELECT SWITCH	SWITCH STATUS	X			X								X										X						X	X	X			
514	PLC-5	NOT USED																																			
514.1	PLC-5	NOT USED																																			
514.2	PLC-5	NOT USED																																			
514.3	PLC-5	NOT USED																																			
515A	PLC-5	FILTER NO. 5 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM	X			X				X				X										X						X	X	X			
515A.1	PLC-5	FILTER NO. 5 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM	X			X				X				X										X						X	X	X			
515A.2	PLC-5	FILTER NO. 5 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM	X			X				X				X										X						X	X	X			
515A.3	PLC-5	FILTER NO. 5 CELL A AIR SCOUR LEAK ALARM	LEAK ALARM	X			X				X				X										X						X	X	X			
515B	PLC-5	FILTER NO. 5 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM	X			X				X				X										X						X	X	X			
515B.1	PLC-5	FILTER NO. 5 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM	X			X				X				X										X						X	X	X			
515B.2	PLC-5	FILTER NO. 5 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM	X			X				X				X										X						X	X	X			
515B.3	PLC-5	FILTER NO. 5 CELL B AIR SCOUR LEAK ALARM	LEAK ALARM	X			X				X				X										X						X	X	X			
520A	PLC-5	SUMP PUMP FLOAT SWITCH	HI LEVEL ALARM	X			X								X										X						X	X	X			
520B	PLC-5	SUMP PUMP FLOAT SWITCH	HI LEVEL ALARM	X			X								X										X						X	X	X			
521	PLC-5	TANK #1 CHLORINE ANALYZER	CHLORINE			X			X						X	X		X	X	X	X				X			X	X								
522	PLC-5	F.W. HEADER FLUORIDE ANALYZER	FLUORIDE			X			X						X	X		X	X	X	X				X			X	X								
525B	PLC-5	SUMP PUMP FLOAT SWITCH	HI-LEVEL ALARM			X			X						X	X		X	X	X	X				X			X	X								
526	PLC-5	SURGE PRESSURE TRANSMITTER	PRESSURE			X			X						X	X		X	X	X	X				X			X	X								
530	PLC-5	FTW FLOW METER	FLOW RATE			X			X						X	X		X	X	X	X				X			X	X								
531	PLC-5	RESERVOIR BACKWASH FLOW TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X				X			X	X								
530	PLC-5	FLOW CONTROL VALVE	VALVE OPEN/CLOSE-MODULATING	X				X			X				X										X	X					X	X	X			
530.1	PLC-5	FLOW CONTROL VALVE	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
530.2	PLC-5	FLOW CONTROL VALVE	VALVE OPEN STATUS	X			X								X										X						X	X	X			
530.3	PLC-5	FLOW CONTROL VALVE	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
530.4	PLC-5	FLOW CONTROL VALVE	VALVE STATUS POSITION	X			X								X										X						X	X	X			
530.5	PLC-5	FLOW CONTROL VALVE	VALVE FAIL STATUS	X			X								X										X						X	X	X			

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	DESCRIPTION TO	FUNCTION	HARDWARE: WIRE 2@14 AWG	WIRE 3@14 AWG	WIRE 2/C #18 SH. PR.	INPUT/OUTPUT DIGITAL DI (DIGITAL INPUT)	DIGITAL DO (DIGITAL OUTPUT)	ANALOG AI (ANALOG INPUT)	ANALOG AO (ANALOG OUTPUT)	OUTPUT FUNCT. DIGITAL PULSE	DIGITAL START/STOP	DIGITAL OPEN/CLOSE	ANALOG PACING	SOFTWARE: STATUS @ GUI	STATUS LOCAL INDICATOR	STATUS LOCAL OPERATOR INTERFACE	LOGGING DAILY	LOGGING WEEKLY	LOGGING MONTHLY	LOGGING HISTORICAL	SCHEDULING MANUAL @ G.U.I.	SCHEDULING TOTALIZATION/VO/UM	SCHEDULING MAINTENANCE TIME REM.	APPLICATION PROGRAM PEAK SHAVING	APPLICATION PROGRAM RES. @ PLC	APPLICATION PROGRAM TIME CLOCK	ALARMS HIGH ALARM	ALARMS LOW ALARM	ALARMS OFF NORMAL	ALARMS ANNUNCIATE @ GUI	ALARMS ANNUNCIATE @ PRINTER	ALARMS ANNUNCIATE TO MODEM	MISC. SET POINT ADJ. @ PLC	MISC. TREND LOG	MISC. CALCULATION NO.	REMARKS
PLC-5		**FILTER CONTROL CONSOLE NO. 5 – CONTINUED**																																			
531	PLC-5	F.T.W. FLOW CONTROL VALVE	VALVE OPEN/CLOSE-MODULATING	X				X			X				X										X	X					X	X	X			
531.1	PLC-5	F.T.W FLOW CONTROL VALVE	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
531.2	PLC-5	F.T.W FLOW CONTROL VALVE	VALVE OPEN STATUS	X			X								X										X						X	X	X			
531.3	PLC-5	F.T.W FLOW CONTROL VALVE	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
531.4	PLC-5	F.T.W. FLOW CONTROL VALVE	VALVE STATUS POSITION	X			X								X										X						X	X	X			
531.5	PLC-5	F.T.W. FLOW CONTROL VALVE	VALVE FAIL STATUS	X			X								X										X						X	X	X			
532	PLC-5	RESERVOIR BACKWASH FLOW CONTROL VALVE	VALVE OPEN/CLOSE-MODULATING	X				X			X				X										X	X					X	X	X			
532.1	PLC-5	RESERVOIR BACKWASH FLOW CONTROL VALVE	VALVE CLOSE STATUS	X			X								X										X						X	X	X			
532.2	PLC-5	RESERVOIR BACKWASH FLOW CONTROL VALVE	VALVE OPEN STATUS	X			X								X										X						X	X	X			
532.3	PLC-5	RESERVOIR BACKWASH FLOW CONTROL VALVE	VALVE LOR SELECTOR SW. STATUS	X			X								X										X						X	X	X			
532.4	PLC-5	RESERVOIR BACKWASH FLOW CONTROL VALVE	VALVE STATUS POSITION	X			X								X										X						X	X	X			
532.5	PLC-5	RESERVOIR BACKWASH FLOW CONTROL VALVE	VALVE FAIL STATUS	X			X								X										X						X	X	X			

PLOTTED: 4/18/2022 8:58:02 AM

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	DESCRIPTION TO	FUNCTION	HARDWARE: WIRE 2#14 AWG	WIRE 3#14 AWG	WIRE 2/C #18 SH. PR.	I/O DIGITAL (DIGITAL INPUT)	I/O DO (DIGITAL OUTPUT)	I/O ANALOG AI (ANALOG INPUT)	I/O ANALOG AO (ANALOG OUTPUT)	OUTPUT FUNCT. START/STOP	OUTPUT FUNCT. OPEN/CLOSE	OUTPUT FUNCT. PACING	SOFTWARE: STATUS ● GUI	STATUS LOCAL INDICATOR	STATUS LOCAL OPERATOR INTERFACE	LOGGING DAILY	LOGGING WEEKLY	LOGGING MONTHLY	LOGGING HISTORICAL	SCHEDULING MANUAL ● G.U.I.	SCHEDULING TOTALIZATION/VOLUM	SCHEDULING MAINTENANCE TIME REM.	SCHEDULING PEAK SHAVING	APPLICATION PROGRAM RES. ● PLC	APPLICATION PROGRAM P.I.D.	APPLICATION PROGRAM TIME CLOCK	ALARMS HIGH ALARM	ALARMS LOW ALARM	ALARMS OFF NORMAL	ALARMS ANNUNCIATE ● GUI	ALARMS ANNUNCIATE ● PRINTER	ALARMS ANNUNCIATE TO MODEM	MISC. SET POINT ADJ. ● PLC	MISC. TREND LOG	MISC. CALCULATION NO.	REMARKS
PLC–7		**MAIN ELECTRICAL ROOM**																																			
701A	PLC–7	CLEARWELL NO. 1 LEVEL SWITCH	LO LEVEL ALARM	X		X								X											X			X	X	X						
701B	PLC–7	CLEARWELL NO. 1 LEVEL SWITCH	HI LEVEL ALARM	X		X								X											X			X	X	X						
701C	PLC–7	CLEARWELL NO. 1 LEVEL TRANSMITTER	CONTINUOUS LEVEL		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
702A	PLC–7	CLEARWELL NO. 2 LEVEL SWITCH	LO LEVEL ALARM	X		X								X											X			X	X	X						
702B	PLC–7	CLEARWELL NO. 2 LEVEL SWITCH	HI LEVEL ALARM	X		X								X											X			X	X	X						
702C	PLC–7	CLEARWELL NO. 2 LEVEL TRANSMITTER	CONTINUOUS LEVEL		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
703	PLC–7	CHLORINE CONTACT TANK #3 LEVEL TRANSMITTER	CONTINUOUS LEVEL		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
704	PLC–7	FINISHED WATER SURGE PRESSURE TRANSMITTER	CONTINUOUS PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
705	PLC–7	PLANT WATER FLOW TRANSMITTER	FLOW RATE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
706	PLC–7	FINISHED WATER PRESSURE TRANSMITTER	CONTINUOUS PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
707	PLC–7	FINISHED WATER CHLORINE ANALYZER	CHLORINE CONCENTRATION		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
708	PLC–7	FINISHED WATER FLOW TRANSMITTER	FLOW RATE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
709	PLC–7	FINISHED WATER FLUORIDE ANALYZER	FLUORIDE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
710	PLC–7	RESERVOIR BACKWASH PUMP FLOW TRANSMITTER	FLOW RATE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
710A	PLC–7	RESERVOIR BACKWASH PUMP PRESSURE TRANSMITTER	PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
711	PLC–7	HIGH SERVICE PUMP 1 STARTER	STATUS	X		X								X											X			X	X	X						
712	PLC–7	HIGH SERVICE PUMP 1 STARTER	FAIL	X		X								X											X			X	X	X						
713	PLC–7	HIGH SERVICE PUMP 1 STARTER	HOA NOT IN AUTO	X		X								X											X			X	X	X						
714	PLC–7	HIGH SERVICE PUMP 1 STARTER (VIA CONE VALVE)	START/STOP	X			X				X			X											X	X		X	X	X						
715	PLC–7	HIGH SERVICE PUMP 2 VFD	STATUS	X		X								X											X			X	X	X						
716	PLC–7	HIGH SERVICE PUMP 2 VFD	FAIL	X		X								X											X			X	X	X						
717	PLC–7	HIGH SERVICE PUMP 2 VFD	SPEED	X		X								X											X			X	X	X						
718	PLC–7	HIGH SERVICE PUMP 2 VFD (VIA CONE VALVE)	HOA NOT IN AUTO	X			X				X			X		X									X			X	X	X						
718A	PLC–7	HIGH SERVICE PUMP 2 VFD	SPEED	X		X								X											X			X	X	X						
719	PLC–7	HIGH SERVICE PUMP 3 STARTER	STATUS	X		X								X											X			X	X	X						
720	PLC–7	HIGH SERVICE PUMP 3 STARTER	FAIL	X		X								X											X			X	X	X						
721	PLC–7	HIGH SERVICE PUMP 3 STARTER	HOA NOT IN AUTO	X		X								X											X			X	X	X						
722	PLC–7	HIGH SERVICE PUMP 3 STARTER (VIA CONE VALVE)	START/STOP	X			X				X			X		X									X			X	X	X						
723	PLC–7	HIGH SERVICE PUMP 4 STARTER	STATUS	X		X								X											X			X	X	X						
724	PLC–7	HIGH SERVICE PUMP 4 STARTER	FAIL	X		X								X											X			X	X	X						
725	PLC–7	HIGH SERVICE PUMP 4 STARTER	HOA NOT IN AUTO	X		X								X											X			X	X	X						
726	PLC–7	HIGH SERVICE PUMP 4 STARTER (VIA CONE VALVE)	START/STOP	X			X				X			X		X									X			X	X	X						
727	PLC–7	HIGH SERVICE PUMP 5 STARTER	STATUS	X		X								X											X			X	X	X						
728	PLC–7	HIGH SERVICE PUMP 5 STARTER	FAIL	X		X								X											X			X	X	X						
729	PLC–7	HIGH SERVICE PUMP 5 STARTER	HOA NOT IN AUTO	X		X								X											X			X	X	X						
730	PLC–7	HIGH SERVICE PUMP 5 STARTER (VIA CONE VALVE)	START/STOP	X			X				X			X		X									X			X	X	X						
731	PLC–7	BACKWASH PUMP 1 VFD	STATUS	X		X								X											X			X	X	X						
732	PLC–7	BACKWASH PUMP 1 VFD	FAIL	X		X								X											X			X	X	X						
733	PLC–7	BACKWASH PUMP 1 VFD	HOA NOT IN AUTO	X		X								X											X			X	X	X						
734	PLC–7	BACKWASH PUMP 1 VFD	START/STOP	X			X				X			X		X									X			X	X	X						
735	PLC–7	BACKWASH PUMP 1 VFD	SPEED		X				X					X											X			X	X	X						
736	PLC–7	AIR SCOUR BLOWER 1 VFD	STATUS	X		X								X											X			X	X	X						
737	PLC–7	AIR SCOUR BLOWER 1 VFD	FAIL	X		X								X											X			X	X	X						
738	PLC–7	AIR SCOUR BLOWER 1 VFD	HOA NOT IN AUTO	X		X								X											X			X	X	X						
739	PLC–7	AIR SCOUR BLOWER 1 VFD	START/STOP	X			X				X			X		X									X			X	X	X						
740	PLC–7	AIR SCOUR BLOWER 1 VFD	SPEED		X				X					X											X			X	X	X						
741	PLC–7	AIR SCOUR BLOWER 2 VFD	STATUS	X		X								X											X			X	X	X						
742	PLC–7	AIR SCOUR BLOWER 2 VFD	FAIL	X		X								X											X			X	X	X						
743	PLC–7	AIR SCOUR BLOWER 2 VFD	HOA NOT IN AUTO	X		X								X											X			X	X	X						
744	PLC–7	AIR SCOUR BLOWER 2 VFD	START/STOP	X			X				X			X		X									X			X	X	X						
745	PLC–7	AIR SCOUR BLOWER 2 VFD	SPEED		X				X					X											X			X	X	X						
746	PLC–7	NOT USED	NOT USED																																		
747	PLC–7	HIGH SERVICE PUMP–1 SURGE CONE VALVE	VALVE OPEN STATUS	X		X						X		X											X			X	X	X						
748	PLC–7	HIGH SERVICE PUMP–1 SURGE CONE VALVE	VALVE CLOSE STATUS	X		X						X		X											X			X	X	X						
749	PLC–7	HIGH SERVICE PUMP–1 SURGE CONE VALVE	FAIL STATUS	X		X						X		X											X			X	X	X						
750	PLC–7	HIGH SERVICE PUMP–2 SURGE CONE VALVE	VALVE OPEN STATUS	X		X						X		X											X			X	X	X						
751	PLC–7	HIGH SERVICE PUMP–2 SURGE CONE VALVE	VALVE CLOSE STATUS	X		X						X		X											X			X	X	X						
752	PLC–7	HIGH SERVICE PUMP–2 SURGE CONE VALVE	FAIL STATUS	X			X					X	X	X										X	X			X	X	X						
753	PLC–7	HIGH SERVICE PUMP–3 SURGE CONE VALVE	VALVE OPEN STATUS	X		X						X		X											X			X	X	X						
754	PLC–7	HIGH SERVICE PUMP–3 SURGE CONE VALVE	VALVE CLOSE STATUS	X		X						X		X											X			X	X	X						
755	PLC–7	HIGH SERVICE PUMP–3 SURGE CONE VALVE	FAIL STATUS	X			X					X	X	X										X	X			X	X	X						
756	PLC–7	HIGH SERVICE PUMP–4 SURGE CONE VAVLE	VALVE OPEN STATUS	X		X						X		X											X			X	X	X						
757	PLC–7	HIGH SERVICE PUMP–4 SURGE CONE VALVE	VALVE CLOSE STATUS	X		X						X		X											X			X	X	X						
758	PLC–7	HIGH SERVICE PUMP–4 SURGE CONE VAVLE	FAIL STATUS	X			X					X	X	X										X	X			X	X	X						
759	PLC–7	HIGH SERVICE PUMP–5 SURGE CONE VALVE	VALVE OPEN STATUS	X		X						X		X											X			X	X	X						
760	PLC–7	HIGH SERVICE PUMP–5 SURGE CONE VALVE	VALVE CLOSE STATUS	X		X						X		X											X			X	X	X						
761	PLC–7	HIGH SERVICE PUMP–5 SURGE CONE VALVE	FAIL STATUS																																		
762	PLC–7	BLOWER FLOW TRANSMITTER	FLOW RATE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
763	PLC–7	BLOWER PRESSURE TRANSMITTER	PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
764	PLC–7	NOT USED																																			
765	PLC–7	BACKWASH PUMP PRESSURE TRANSMITTER	PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
766	PLC–7	BACKWASH FLOW CONTROL VALVE	VALVE OPEN/CLOSE–MODULATING	X	X		X			X		X	X			X	X								X			X								
767	PLC–7	BACKWASH FLOW CONTROL VALVE	VALVE STATUS–POSITION		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
768	PLC–7	BACKWASH FLOW CONTROL VALVE	VALVE LOR SELECTOR SWITCH	X		X								X											X			X	X	X						
768A	PLC–7	BACKWASH FLOW CONTROL VALVE	FAIL STATUS	X		X								X											X			X	X	X						
768B	PLC–7	BACKWASH FLOW CONTROL VALVE	VALVE OPEN STATUS	X		X								X											X			X	X	X						
768C	PLC–7	BACKWASH FLOW CONTROL VALVE	VALVE CLOSE STATUS	X		X								X											X			X	X	X						
769	PLC–7	BACKWASH FLOW CONTROL VALVE	FAIL STATUS	X		X								X											X			X	X	X						
770	PLC–7	F.T.W. PUMP STARTER	STATUS		X			X						X	X						X	X			X			X								
771	PLC–7	F.T.W. PUMP STARTER	FAIL STATUS		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
772	PLC–7	F.T.W. PUMP STARTER	NOT IN AUTO	X		X								X											X			X	X	X						
773	PLC–7	F.T.W. PUMP STARTER	START STATUS	X		X								X											X			X	X	X						
774	PLC–7	F.T.W. PUMP STARTER	NOT IN AUTO	X		X								X											X			X	X	X						
775	PLC–7	FUEL STORAGE TANK CONTROL PANEL	STATUS	X		X								X											X			X	X	X						
776	PLC–7	FUEL STORAGE TANK CONTROL PANEL	ALARM		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
781	PLC–7	HIGH SERVICE PUMP–1 PRESSURE TRANSMITTER	PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
782	PLC–7	HIGH SERVICE PUMP–2 PRESSURE TRANSMITTER	PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
783	PLC–7	HIGH SERVICE PUMP–3 PRESSURE TRANSMITTER	PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
784	PLC–7	HIGH SERVICE PUMP–4 PRESSURE TRANSMITTER	PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
785	PLC–7	HIGH SERVICE PUMP–5 PRESSURE TRANSMITTER	PRESSURE		X			X						X	X	X	X	X							X		X	X	X	X	X	X				
786	PLC–7	BLOWERS BYPASS VALVE	VALVE OPEN/CLOSE COMMAND	X			X			X				X											X			X	X	X						
786A	PLC–7	BLOWERS BYPASS VALVE	VALVE OPEN STATUS	X		X								X											X			X	X	X						
786B	PLC–7	BLOWERS BYPASS VALVE	VALVE CLOSE STATUS	X		X								X											X			X	X	X						
786C	PLC–7	BLOWERS BYPASS VALVE	VALVE LOR SELECTOR SWITCH	X		X								X											X			X	X	X						
787	PLC–7	CONTROL VALVE	VALVE OPEN/CLOSE COMMAND	X			X			X				X											X			X	X	X						
787A	PLC–7	CONTROL VALVE	VALVE OPEN STATUS	X		X								X											X			X	X	X						
787B	PLC–7	CONTROL VALVE	VALVE CLOSE STATUS	X		X								X											X			X	X	X						
787C	PLC–7	CONTROL VALVE	VALVE LOR SELECTOR SWITCH	X		X								X											X			X	X	X						
788	PLC–7	CONTROL VALVE	VALVE OPEN/CLOSE COMMAND	X			X			X				X											X			X	X	X						
788A	PLC–7	CONTROL VALVE	VALVE OPEN STATUS	X		X								X											X			X	X	X						
788B	PLC–7	CONTROL VALVE	VALVE CLOSE STATUS	X		X								X											X			X	X	X						
788C	PLC–7	CONTROL VALVE	VALVE LOR SELECTOR SWITCH	X		X								X											X			X	X	X						

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	DESCRIPTION TO	FUNCTION	HARDWARE: WIRE 2#14 AWG	WIRE 3#14 AWG	WIRE 2/C #18 SH. PR.	I/O DIGITAL (DIGITAL INPUT)	I/O DO (DIGITAL OUTPUT)	I/O ANALOG AI (ANALOG INPUT)	I/O ANALOG AO (ANALOG OUTPUT)	OUTPUT FUNCT. START/STOP	OUTPUT FUNCT. OPEN/CLOSE	OUTPUT FUNCT. PACING	SOFTWARE: STATUS ● GUI	STATUS LOCAL INDICATOR	STATUS LOCAL OPERATOR INTERFACE	LOGGING DAILY	LOGGING WEEKLY	LOGGING MONTHLY	LOGGING HISTORICAL	SCHEDULING MANUAL ● G.U.I.	SCHEDULING TOTALIZATION/VOLUM	SCHEDULING MAINTENANCE TIME REM.	SCHEDULING PEAK SHAVING	APPLICATION PROGRAM RES. ● PLC	APPLICATION PROGRAM P.I.D.	APPLICATION PROGRAM TIME CLOCK	ALARMS HIGH ALARM	ALARMS LOW ALARM	ALARMS OFF NORMAL	ALARMS ANNUNCIATE ● GUI	ALARMS ANNUNCIATE ● PRINTER	ALARMS ANNUNCIATE TO MODEM	MISC. SET POINT ADJ. ● PLC	MISC. TREND LOG	MISC. CALCULATION NO.	REMARKS
PLC–7		**MAIN ELECTRICAL ROOM – CONTINUATION**																																			
789	PLC–7	CONTROL VALVE	VALVE OPEN/CLOSE COMMAND	X			X				X			X											X			X	X	X						
789A	PLC–7	CONTROL VALVE	VALVE OPEN STATUS	X		X								X											X			X	X	X						
789B	PLC–7	CONTROL VALVE	VALVE CLOSE STATUS	X		X								X											X			X	X	X						
789C	PLC–7	CONTROL VALVE	VALVE LOR SELECTOR SWITCH	X		X								X											X			X	X	X						
790	PLC–7	CONTROL VALVE	VALVE OPEN/CLOSE COMMAND	X			X				X			X											X			X	X	X						
790A	PLC–7	CONTROL VALVE	VALVE OPEN STATUS	X		X								X											X			X	X	X						
790B	PLC–7	CONTROL VALVE	VALVE CLOSE STATUS	X		X								X											X			X	X	X						
790C	PLC–7	CONTROL VALVE	VALVE LOR SELECTOR SWITCH	X		X								X											X			X	X	X						
791	PLC–7	CLEARWELL TRANSFER PIPE #1 CHLORINE ANALYZER	CHLORINE CONCENTRATION			X			X					X	X		X	X	X	X					X		X	X	X	X	X	X				
792	PLC–7	CLEARWELL TRANSFER PIPE #1 CHLORINE ANALYZER	CHLORINE CONCENTRATION			X			X					X	X		X	X	X	X					X		X	X	X	X	X	X				
793	PLC–7	CLEARWELL TRANSFER PIPE #2 CHLORINE ANALYZER	CHLORINE CONCENTRATION			X			X					X	X		X	X	X	X					X		X	X	X	X	X	X				
794	PLC–7	CLEARWELL TRANSFER PIPE #2 CHLORINE ANALYZER	CHLORINE CONCENTRATION			X			X					X	X		X	X	X	X					X		X	X	X	X	X	X				
795	PLC–7	NORMAL POWER BREAKER	STATUS	X			X							X											X			X	X	X						
796	PLC–7	NORMAL POWER BREAKER	FAIL	X			X							X											X			X	X	X						
797	PLC–7	STANDBY POWER BREAKER	STATUS	X			X							X											X			X	X	X						
798	PLC–7	STANDBY POWER BREAKER	FAIL	X			X							X											X			X	X	X						
799	PLC–7	GENERATOR CONTROL PANEL	STATUS	X			X							X											X			X	X	X						
799A	PLC–7	GENERATOR CONTROL PANEL	FAIL	X			X							X											X			X	X	X						
799B	PLC–7	POWER ANALYZER	KW USEAGE			X			X					X	X		X	X	X	X					X		X	X	X	X	X	X				

PLOTTED: 4/18/2022 8:58:10 AM

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	DESCRIPTION TO	FUNCTION	HARDWARE: WIRE 2#14 AWG	WIRE 3#14 AWG	WIRE 2/C #18 SH. PR.	INPUT/OUTPUT: DIGITAL DI (DIGITAL INPUT)	DIGITAL DO (DIGITAL OUTPUT)	ANALOG AI (ANALOG INPUT)	ANALOG AO (ANALOG OUTPUT)	OUTPUT FUNCT.: DIGITAL PULSE	DIGITAL START/STOP	DIGITAL OPEN/CLOSE	ANALOG PACING	SOFTWARE: STATUS @ GUI	STATUS LOCAL INDICATOR	STATUS LOCAL OPERATOR INTERFACE	LOGGING DAILY	LOGGING WEEKLY	LOGGING MONTHLY	LOGGING HISTORICAL	SCHEDULING MANUAL @ G.U.I.	SCHEDULING TOTALIZATION/VO/UM	SCHEDULING MAINTENANCE	SCHEDULING TIME REM.	SCHEDULING PEAK SHAVING	APPLICATION PROGRAM RES. @ PLC	APPLICATION PROGRAM P.I.D.	APPLICATION PROGRAM TIME CLOCK	ALARMS HIGH ALARM	ALARMS LOW ALARM	ALARMS OFF NORMAL	ALARMS ANNUNCIATE @ GUI	ALARMS ANNUNCIATE @ PRINTER	ALARMS ANNUNCIATE TO MODEM	MISC. SET POINT ADJ. @ PLC	MISC. TREND LOG	MISC. CALCULATION NO.	REMARKS
RTU–1		**WELL NO. 1**																																						
R101	RTU–1	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R102	RTU–1	WELL FLOW TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R103	RTU–1	PRESSURE INDICATOR TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R104	RTU–1	WELL PUMP STARTER	START/STOP	X				X				X			X							X	X							X			X	X	X				
R105	RTU–1	WELL PUMP STARTER	STATUS	X			X								X									X	X	X							X	X	X				
R106	RTU–1	WELL PUMP STARTER	FAIL	X			X								X									X	X	X							X	X	X				
R107	RTU–1	WELL PUMP STARTER	NOT IN AUTO	X			X								X									X	X	X							X	X	X				
R108	RTU–1	POWER FAIL RELAY	AC PRESENT	X			X								X									X	X	X							X	X	X				
R109	RTU–1	SPARE																																						
R110	RTU–1	SPARE																																						
R111	RTU–1	SPARE																																						
R112	RTU–1	SPARE																																						
R113	RTU–1	SPARE																																						
R114	RTU–1	SPARE																																						
R115	RTU–1	SPARE																																						
R116	RTU–1	SPARE																																						
R117	RTU–1	SPARE																																						
RTU–2		**WELL NO. 2**																																						
R201	RTU–2	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R202	RTU–2	WELL FLOW TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R203	RTU–2	PRESSURE INDICATOR TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R204	RTU–2	WELL PUMP VFD	START/STOP	X				X				X			X							X	X							X			X	X	X				
R205	RTU–2	WELL PUMP VFD	STATUS	X			X								X									X	X	X							X	X	X				
R206	RTU–2	WELL PUMP VFD	FAIL	X			X								X									X	X	X							X	X	X				
R207	RTU–2	WELL PUMP VFD	NOT IN AUTO	X			X								X									X	X	X							X	X	X				
R208	RTU–2	WELL PUMP VFD SPEED	SPEED COMMAND			X				X			X		X	X					X	X					X									X	X			
R209	RTU–2	POWER FAIL RELAY	AC PRESENT	X			X								X									X	X	X							X	X	X				
R210	RTU–2	SPARE																																						
R211	RTU–2	SPARE																																						
R212	RTU–2	SPARE																																						
R213	RTU–2	SPARE																																						
R214	RTU–2	SPARE																																						
R215	RTU–2	SPARE																																						
R216	RTU–2	SPARE																																						
R217	RTU–2	SPARE																																						
RTU–3		**WELL NO. 3**																																						
R301	RTU–3	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R302	RTU–3	WELL FLOW TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R303	RTU–3	PRESSURE INDICATOR TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R304	RTU–3	WELL PUMP STARTER	START/STOP	X				X				X			X							X	X							X			X	X	X				
R305	RTU–3	WELL PUMP STARTER	STATUS	X			X								X									X	X	X							X	X	X				
R306	RTU–3	WELL PUMP STARTER	FAIL	X			X								X									X	X	X							X	X	X				
R307	RTU–3	WELL PUMP STARTER	NOT IN AUTO	X			X								X									X	X	X							X	X	X				
R308	RTU–3	POWER FAIL RELAY	AC PRESENT	X			X	X				X			X							X	X							X			X	X	X				
R309	RTU–3	SPARE																																						
R310	RTU–3	SPARE																																						
R311	RTU–3	SPARE																																						
R312	RTU–3	SPARE																																						
R313	RTU–3	SPARE																																						
R314	RTU–3	SPARE																																						
R315	RTU–3	SPARE																																						
R316	RTU–3	SPARE																																						
R317	RTU–3	SPARE																																						
RTU–4		**WELL NO. 4**																																						
R401	RTU–4	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R402	RTU–4	WELL FLOW TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R403	RTU–4	PRESSURE INDICATOR TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R404	RTU–4	WELL PUMP VFD	START/STOP	X				X				X			X							X	X							X			X	X	X				
R405	RTU–4	WELL PUMP VFD	STATUS	X			X								X									X	X	X							X	X	X				
R406	RTU–4	WELL PUMP VFD	FAIL	X			X								X									X	X	X							X	X	X				
R407	RTU–4	WELL PUMP VFD	NOT IN AUTO	X			X								X									X	X	X							X	X	X				
R408	RTU–4	WELL PUMP VFD SPEED	SPEED COMMAND			X				X			X		X	X					X	X					X									X	X			
R409	RTU–4	POWER FAIL RELAY	AC PRESENT	X			X								X									X	X	X							X	X	X				
R410	RTU–4	SPARE																																						
R411	RTU–4	SPARE																																						
R412	RTU–4	SPARE																																						
R413	RTU–4	SPARE																																						
R414	RTU–4	SPARE																																						
R415	RTU–4	SPARE																																						
R416	RTU–4	SPARE																																						
R417	RTU–4	SPARE																																						

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	DESCRIPTION TO	FUNCTION	HARDWARE: WIRE 2#14 AWG	WIRE 3#14 AWG	WIRE 2/C #18 SH. PR.	INPUT/OUTPUT: DIGITAL DI (DIGITAL INPUT)	DIGITAL DO (DIGITAL OUTPUT)	ANALOG AI (ANALOG INPUT)	ANALOG AO (ANALOG OUTPUT)	OUTPUT FUNCT.: DIGITAL PULSE	DIGITAL START/STOP	DIGITAL OPEN/CLOSE	ANALOG PACING	SOFTWARE: STATUS @ GUI	STATUS LOCAL INDICATOR	STATUS LOCAL OPERATOR INTERFACE	LOGGING DAILY	LOGGING WEEKLY	LOGGING MONTHLY	LOGGING HISTORICAL	SCHEDULING MANUAL @ G.U.I.	SCHEDULING TOTALIZATION/VO/UM	SCHEDULING MAINTENANCE	SCHEDULING TIME REM.	SCHEDULING PEAK SHAVING	APPLICATION PROGRAM RES. @ PLC	APPLICATION PROGRAM P.I.D.	APPLICATION PROGRAM TIME CLOCK	ALARMS HIGH ALARM	ALARMS LOW ALARM	ALARMS OFF NORMAL	ALARMS ANNUNCIATE @ GUI	ALARMS ANNUNCIATE @ PRINTER	ALARMS ANNUNCIATE TO MODEM	MISC. SET POINT ADJ. @ PLC	MISC. TREND LOG	MISC. CALCULATION NO.	REMARKS
RTU–5		**WELL NO .5**																																						
R501	RTU–5	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R502	RTU–5	WELL FLOW TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R503	RTU–5	PRESSURE INDICATOR TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R504	RTU–5	WELL PUMP STARTER	START/STOP	X				X				X			X							X	X							X			X	X	X				
R505	RTU–5	WELL PUMP STARTER	STATUS	X			X								X									X	X	X							X	X	X				
R506	RTU–5	WELL PUMP STARTER	FAIL	X			X								X									X	X	X							X	X	X				
R507	RTU–5	WELL PUMP STARTER	NOT IN AUTO	X			X								X									X	X	X							X	X	X				
R508	RTU–5	POWER FAIL RELAY	AC PRESENT	X			X								X									X	X	X							X	X	X				
R509	RTU–5	SPARE																																						
R510	RTU–5	SPARE																																						
R511	RTU–5	SPARE																																						
R512	RTU–5	SPARE																																						
R513	RTU–5	SPARE																																						
R514	RTU–5	SPARE																																						
R515	RTU–5	SPARE																																						
R516	RTU–5	SPARE																																						
R517	RTU–5	SPARE																																						
RTU–6		**WELL NO. 6**																																						
R601	RTU–6	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R602	RTU–6	WELL FLOW TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R603	RTU–6	PRESSURE INDICATOR TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R604	RTU–6	WELL PUMP STARTER	START/STOP	X				X				X			X							X	X							X			X	X	X				
R605	RTU–6	WELL PUMP STARTER	STATUS	X			X								X									X	X	X							X	X	X				
R606	RTU–6	WELL PUMP STARTER	FAIL	X			X								X									X	X	X							X	X	X				
R607	RTU–6	WELL PUMP STARTER	NOT IN AUTO	X			X								X									X	X	X							X	X	X				
R608	RTU–6	POWER FAIL RELAY	AC PRESENT	X			X								X									X	X	X							X	X	X				
R609	RTU–6	SPARE																																						
R610	RTU–6	SPARE																																						
R611	RTU–6	SPARE																																						
R612	RTU–6	SPARE																																						
R613	RTU–6	SPARE																																						
R614	RTU–6	SPARE																																						
R615	RTU–6	SPARE																																						
R616	RTU–6	SPARE																																						
R617	RTU–6	SPARE																																						
RTU–7		**WELL NO. 7**																																						
R701	RTU–7	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R702	RTU–7	WELL FLOW TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R703	RTU–7	PRESSURE INDICATOR TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R704	RTU–7	WELL PUMP STARTER	START/STOP	X				X				X			X							X	X							X			X	X	X				
R705	RTU–7	WELL PUMP STARTER	STATUS	X			X								X									X	X	X							X	X	X				
R706	RTU–7	WELL PUMP STARTER	FAIL	X			X								X									X	X	X							X	X	X				
R707	RTU–7	WELL PUMP STARTER	NOT IN AUTO	X			X								X									X	X	X							X	X	X				
R708	RTU–7	POWER FAIL RELAY	AC PRESENT	X			X								X									X	X	X							X	X	X				
R709	RTU–7	SPARE																																						
R710	RTU–7	SPARE																																						
R711	RTU–7	SPARE																																						
R712	RTU–7	SPARE																																						
R713	RTU–7	SPARE																																						
R714	RTU–7	SPARE																																						
R715	RTU–7	SPARE																																						
R716	RTU–7	SPARE																																						
R717	RTU–7	SPARE																																						
RTU–8		**WELL NO. 8**																																						
R801	RTU–8	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R802	RTU–8	WELL FLOW TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R803	RTU–8	PRESSURE INDICATOR TRANSMITTER	FLOW RATE			X			X						X	X		X	X	X	X						X			X		X	X	X	X	X			
R804	RTU–8	WELL PUMP STARTER	START/STOP	X				X				X			X							X	X							X			X	X	X				
R805	RTU–8	WELL PUMP STARTER	STATUS	X			X								X									X	X	X							X	X	X				
R806	RTU–8	WELL PUMP STARTER	FAIL	X			X								X									X	X	X							X	X	X				
R807	RTU–8	WELL PUMP STARTER	NOT IN AUTO	X			X								X									X	X	X							X	X	X				
R808	RTU–8	POWER FAIL RELAY	AC PRESENT	X			X								X									X	X	X							X	X	X				
R809	RTU–8	SPARE																																						
R810	RTU–8	SPARE																																						
R811	RTU–8	SPARE																																						
R812	RTU–8	SPARE																																						
R813	RTU–8	SPARE																																						
R814	RTU–8	SPARE																																						
R815	RTU–8	SPARE																																						
R816	RTU–8	SPARE																																						
R817	RTU–8	SPARE																																						

GENERAL NOTES:

1. THE PLC PANEL DOOR MOUNTED DEVICES I/O'S NOT SHOWN FOR CLARITY.
2. ALL PLC INPUTS/OUTPUTS (I/O) FIELD WIRING BETWEEN PLC'S AND FIELD DEVICES, PANELS, MCC'S, ETC. AS SHOWN ON I/O SCHEDULES, POWER PLANS AND DUCT BANK SCHEDULES SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
5. ETHERNET AND FIBER OPTIC CABLES SHOWN ON THE SCADA BLOCK DIAGRAM, POWER PLANS AND DUCT BANK SCHEDULES SHALL BE FURNISHED BY SYSTEM INTEGRATOR, INSTALLED BY THE ELECTRICAL CONTRACTOR. TERMINATION FOR ETHERNET AND FIBER CABLES AT EACH END SHALL BE BY SYSTEM INTEGRATOR.

Electrical, Instrumentation & Control Systems Engineering
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Phone: 440-725-0264

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

SCADA I/O SCHEDULES

I-38

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-38 SCADA IO SCHEDULES 5.dwg 4/17/2022 9:18:41 PM Randy Podmore

PLOTTED: 4/18/2022 8:58:17 AM

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	TO	DESCRIPTION	FUNCTION	HARDWARE: WIRE: 2#14 AWG	3#14 AWG	2/C #18 SH. PR.	INPUT/OUTPUT: DIGITAL: DI (DIGITAL INPUT)	DO (DIGITAL OUTPUT)	ANALOG: AI (ANALOG INPUT)	AO (ANALOG OUTPUT)	PULSE	OUTPUT: DIGITAL: START/STOP	OPEN/CLOSE	ANALOG: PACING	SOFTWARE: STATUS: ● GUI	LOCAL INDICATOR	LOCAL OPERATOR INTERFACE	LOGGING: DAILY	WEEKLY	MONTHLY	HISTORICAL	SCHEDULING: MANUAL ● G.U.I.	TOTALIZATION/VO/JOM	MAINTENANCE TIME REM.	PEAK SHAVING	APPLICATION PROGRAM: RES. ● PLC	P.I.D.	TIME CLOCK	ALARMS: HIGH ALARM	LOW ALARM	OFF NORMAL	ANNUNCIATE ● GUI	ANNUNCIATE ● PRINTER	ANNUNCIATE ● MODEM	MISC.: SET POINT ADJ. ● PLC	TREND LOG	CALCULATION NO.	REMARKS
RTU-9		**WELL NO. 9**																																					
R901	RTU-9	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X							X	X		X	X	X	X					X			X	X		X	X	X	X	X		
R902	RTU-9	WELL FLOW TRANSMITTER	FLOW RATE			X			X							X	X		X	X	X	X					X			X	X		X	X	X	X	X		
R903	RTU-9	PRESSURE INDICATOR TRANSMITTER	FLOW			X			X							X	X		X	X	X	X					X			X	X		X	X	X	X	X		
R904	RTU-9	WELL PUMP VFD	START/STOP	X			X				X					X											X						X	X	X				
R905	RTU-9	WELL PUMP VFD	STATUS	X		X										X											X						X	X	X				
R906	RTU-9	WELL PUMP VFD	FAIL	X		X										X											X						X	X	X				
R907	RTU-9	WELL PUMP VFD	NOT IN AUTO	X		X										X											X						X	X	X				
R908	RTU-9	WELL PUMP VFD SPEED	SPEED COMMAND		X					X				X		X	X					X	X				X	X					X			X	X		
R909	RTU-9	POWER FAIL RELAY	AC PRESENT	X		X										X											X						X	X	X				
R910	RTU-9	SPARE																																					
R911	RTU-9	SPARE																																					
R912	RTU-9	SPARE																																					
R913	RTU-9	SPARE																																					
R914	RTU-9	SPARE																																					
R915	RTU-9	SPARE																																					
R916	RTU-9	SPARE																																					
R917	RTU-9	SPARE																																					
RTU-10		**WELL NO. 10**																																					
R1001	RTU-10	WELL LEVEL TRANSMITTER	WELL LEVEL			X			X							X	X		X	X	X	X					X			X	X		X	X	X	X	X		
R1002	RTU-10	WELL FLOW TRANSMITTER	FLOW RATE			X			X							X	X		X	X	X	X					X			X	X		X	X	X	X	X		
R1003	RTU-10	PRESSURE INDICATOR TRANSMITTER	FLOW RATE			X			X							X	X		X	X	X	X					X			X	X		X	X	X	X	X		
R1004	RTU-10	WELL PUMP STARTER	START/STOP	X			X				X					X											X						X	X	X				
R1005	RTU-10	WELL PUMP STARTER	STATUS	X		X										X											X						X	X	X				
R1006	RTU-10	WELL PUMP STARTER	FAIL	X		X										X											X						X	X	X				
R1007	RTU-10	WELL PUMP STARTER	NOT IN AUTO	X		X										X											X						X	X	X				
R1008	RTU-10	POWER FAIL RELAY	AC PRESENT	X		X										X											X						X	X	X				
R1009	RTU-10	SPARE																																					
R1010	RTU-10	SPARE																																					
R1011	RTU-10	SPARE																																					
R1012	RTU-10	SPARE																																					
R1013	RTU-10	SPARE																																					
R1014	RTU-10	SPARE																																					
R1015	RTU-10	SPARE																																					
R1016	RTU-10	SPARE																																					
R1017	RTU-10	SPARE																																					

LOOP SCHEDULE

LOOP NUMBER	INPUT/OUTPUT	TO	DESCRIPTION	FUNCTION	HARDWARE: WIRE: 2#14 AWG	3#14 AWG	2/C #18 SH. PR.	INPUT/OUTPUT: DIGITAL: DI (DIGITAL INPUT)	DO (DIGITAL OUTPUT)	ANALOG: AI (ANALOG INPUT)	AO (ANALOG OUTPUT)	PULSE	OUTPUT: DIGITAL: START/STOP	OPEN/CLOSE	ANALOG: PACING	SOFTWARE: STATUS: ● GUI	LOCAL INDICATOR	LOCAL OPERATOR INTERFACE	LOGGING: DAILY	WEEKLY	MONTHLY	HISTORICAL	SCHEDULING: MANUAL ● G.U.I.	TOTALIZATION/VO/JOM	MAINTENANCE TIME REM.	PEAK SHAVING	APPLICATION PROGRAM: RES. ● PLC	P.I.D.	TIME CLOCK	ALARMS: HIGH ALARM	LOW ALARM	OFF NORMAL	ANNUNCIATE ● GUI	ANNUNCIATE ● PRINTER	ANNUNCIATE ● MODEM	MISC.: SET POINT ADJ. ● PLC	TREND LOG	CALCULATION NO.	REMARKS

GENERAL NOTES:

1. THE PLC PANEL DOOR MOUNTED DEVICES I/O'S NOT SHOWN FOR CLARITY.
2. ALL PLC INPUTS/OUTPUTS (I/O) FIELD WIRING BETWEEN PLC'S AND FIELD DEVICES, PANELS, MCC'S, ETC. AS SHOWN ON I/O SCHEDULES, POWER PLANS AND DUCT BANK SCHEDULES SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

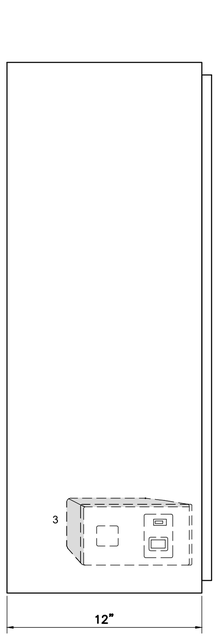
SCADA I/O SCHEDULES

I-39

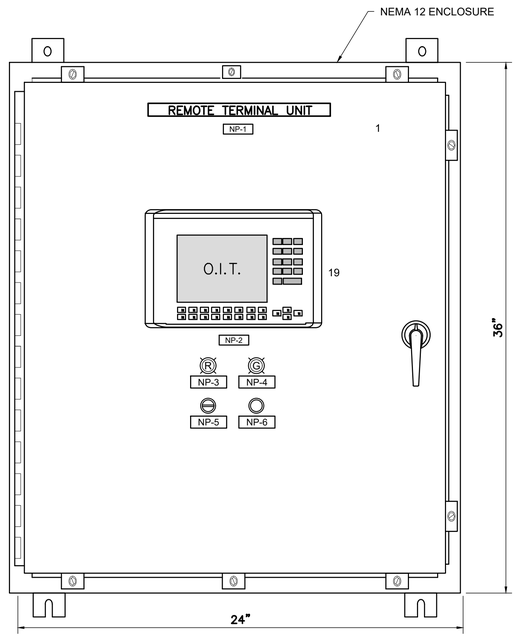
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-39 SCADA IO SCHEDULES 6.dwg 4/17/2022 9:19:26 PM Randy Podmore

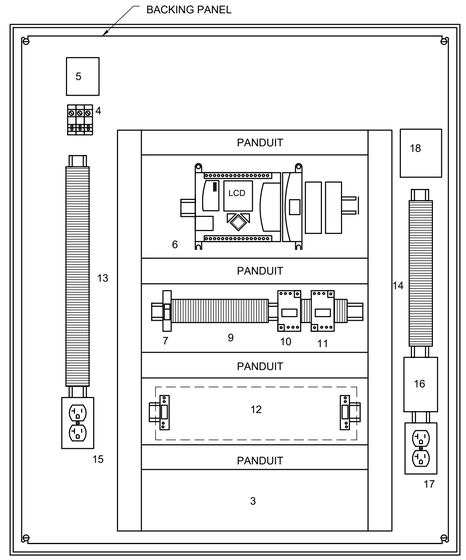
PLOTTED: 4/18/2022 8:58:25 AM



SIDE ELEVATION



FRONT ELEVATION



INTERIOR ELEVATION

NAMEPLATE SCHEDULE

1. NAMEPLATE
2. OPERATOR INTERFACE TERMINAL
3. COMMUNICATION FAIL
4. POWER ON
5. RESET PUSH–BUTTON
6. AUDIBLE ALARM

TYPICAL CONTROL PANEL SYMBOLS:

- 28.9 (GPM) — LCD, 3–1/2 LARGE DIGIT INDICATOR
- (R) — INDICATING LIGHTS
  - A: AMBER
  - B: BLUE
  - G: GREEN
  - R: RED
  - W: WHITE
  - Y: YELLOW
- SELECTOR SWITCH, TWO OR THREE POSITION
- PUSHBUTTON STATION – MOMENTARY
- METERING PUMP SPEED POT
- SONALERT

DEVICE SCHEDULE

1. NEMA 12 ENCLOSURE
2. NOT USED
3. UNINTERUPTABLE POWER SUPPLY
4. DISTRIBUTION BLOCK
5. SURGE ARRESTOR
6. PROGRAMMABLE LOGIC CONTROLLER – AB MICROLOGIX 1400
7. CIRCUIT BREAKER
8. NOT USED
9. TERMINAL BLOCKS–POWER
10. POWER SUPPLY
11. POWER SUPPLY
12. CONTROL RELAYS
13. TERMINAL BLOCK–DISCREET
14. TERMINAL BLOCKS–ANALOG
15. UPS RECEPTACLE
16. CONDENSATION HEATER WITH BUILT–IN THERMOSTAT
17. TEST INSTRUMENT RECEPTACLE
18. 4–CHANNEL ETHERNET SWITCH AND FIBER OPTIC CONVERTOR
19. OPERATOR INTERFACE TERMINAL AB PANELVIEW 700, COLOR PLUS.

GENERAL NOTES:

1. THE EQUIPMENT LAYOUT AND CONTROL POWER WIRING DIAGRAMS SHOWN INDICATES THE PROPOSED MAJOR RTU PANEL COMPONENTS AND THE ORIENTATION ON A CONCEPTIONAL LEVEL. THE SYSTEM INTEGRATOR SHALL BE RESPONSIBLE TO PROVIDE ALL NECESSARY SOFTWARE AND HARDWARE AT EACH PANEL TO PROVIDE A FULLY OPERATIONAL SYSTEM AS REQUIRED. PLC INPUTS/OUTPUTS (I/O'S) & FIELD WIRING NOT SHOWN FOR CLARITY.
2. ENCLOSURE DIMENSIONS SHOWN ARE PROPOSED. ACTUAL DIMENSIONS AS DETERMINED BY PANEL VENDOR.
3. THE PANEL INTERIOR & FRONT ELEVATIONS & ORIENTATION (NOT SHOWN) FOR NEW PLCS 7, 8, 9 & 10 SHALL BE GENERALLY SIMILAR TO THE NEW RTUS WITH EXCEPTION OF PANEL'S PHYSICAL SIZE, PLC HARDWARE, HMI, NETWORK SWITCHES, ETC. REFER TO SPECIFICATIONS & I/O SCHEDULES FOR EXACT REQUIREMENTS.

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

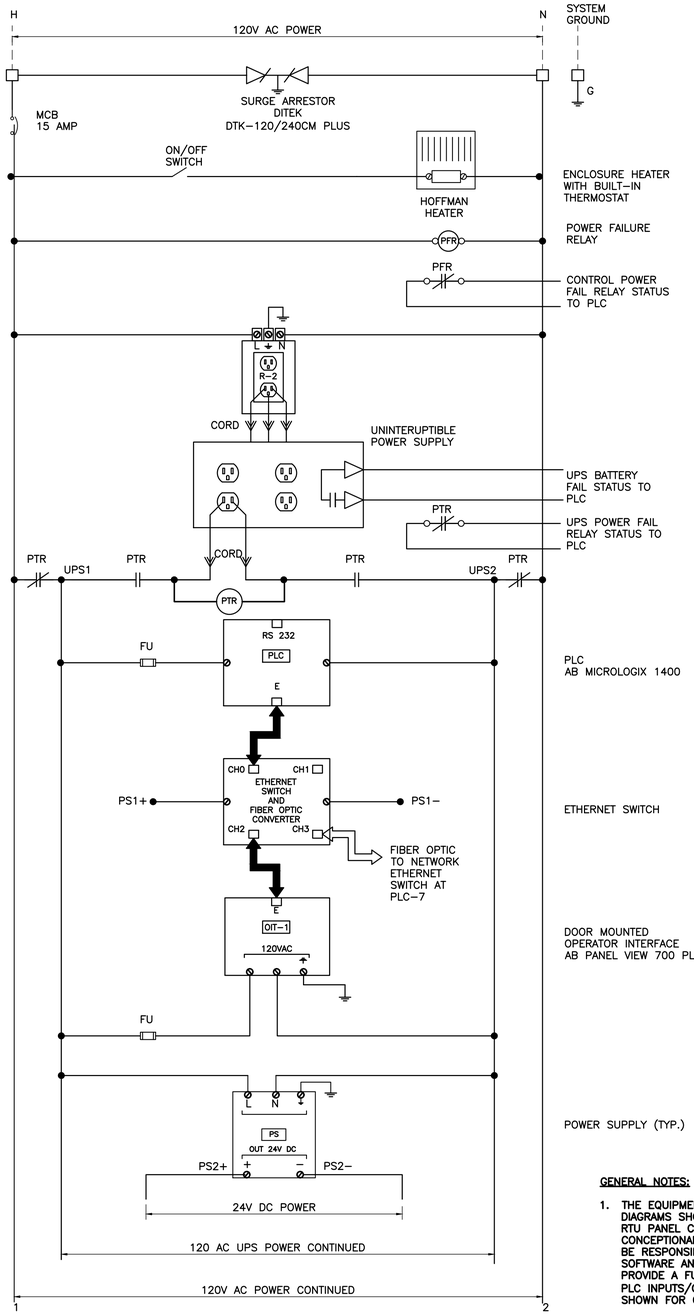
WIRING DIAGRAMS - NEW RTUS FOR WELLS NO. 1 THRU NO.10 (10 RTUS)

I-40

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-40 WIRING DIA. RTU FOR WELLS NO. 1 THRU NO. 10.dwg 4/17/2022 10:09:57 PM Randy Podmore

PLOTTED: 4/18/2022 8:58:32 AM



GENERAL NOTES:

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NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
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DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

WIRING DIAGRAMS - NEW RTUS CONTROL POWER FOR WELLS NO.1 THRU NO.10

I-41

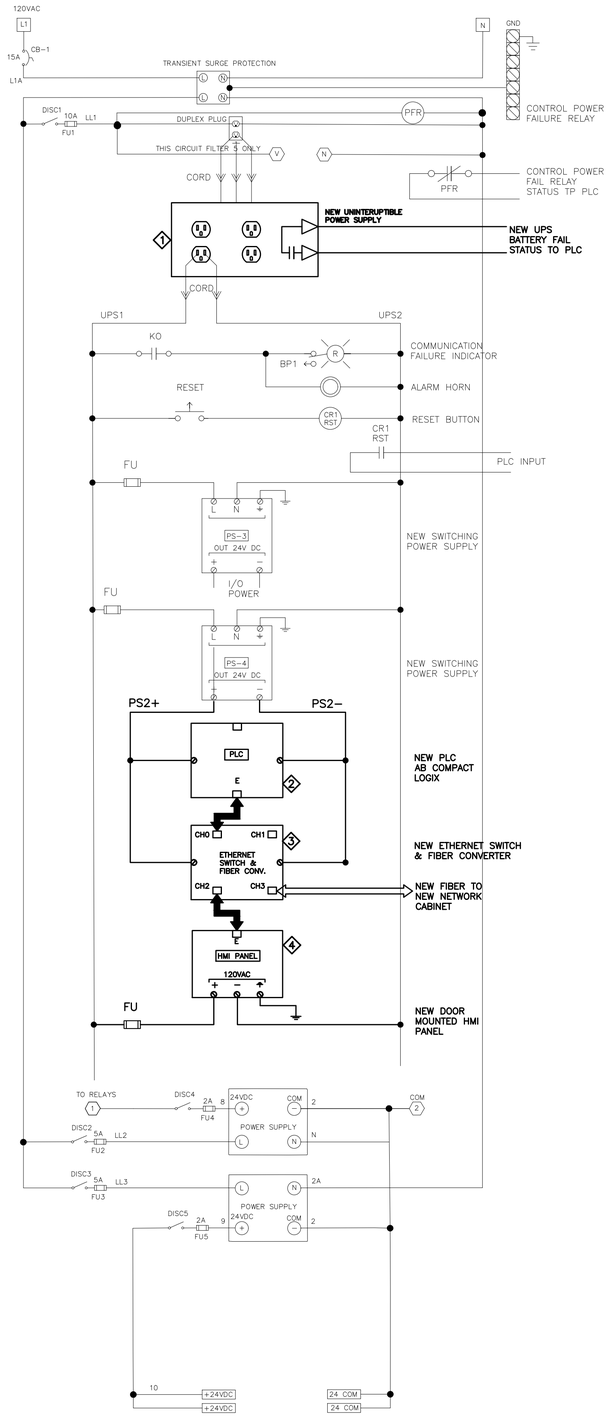
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-41 WIRING DIA. RTU CONTROL POWER FOR WELLS NO.1 THRU NO.10.dwg 4/17/2022 10:09:34 PM Randy Podmore

PLOTTED: 4/18/2022 8:58:39 AM

KEY NOTES:

1. THE EXISTING UPS SHALL BE REPLACED WITH NEW UPS, SIZE TO MATCH EXISTING.
2. THE EXISTING AB COMPACTLOGIX PLC & ALL RELATED I/O CARDS & POWER SUPPLY SHALL BE REPLACED WITH NEW AB COMPACTLOGIX PLC, POWER SUPPLY & I/O'S.
3. THE EXISTING ETHERNET SWITCH & FIBER CONVERTER SHALL BE REPLACED WITH NEW ETHERNET SWITCH WITH FIBER CONVERTER.
4. THE EXISTING OIT SHALL BE REPLACED WITH NEW HMI PANEL.
5. THE SYSTEM INTEGRATOR SHALL MODIFY THE EXISTING FILTER CONTROL CONSOLE WIRING TO REFLECT THE NEW DEVICES AS REQUIRED.
6. THE EQUIPMENT LAYOUT AND WIRING DIAGRAMS SHOWN INDICATE THE PROPOSED MAJOR FILTER CONSOLE PANEL COMPONENTS AND THE ORIENTATION. THE SYSTEM INTEGRATOR SHALL BE RESPONSIBLE TO PROVIDE ALL NECESSARY SOFTWARE AND HARDWARE AT EACH PANEL AS REQUIRED.



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DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

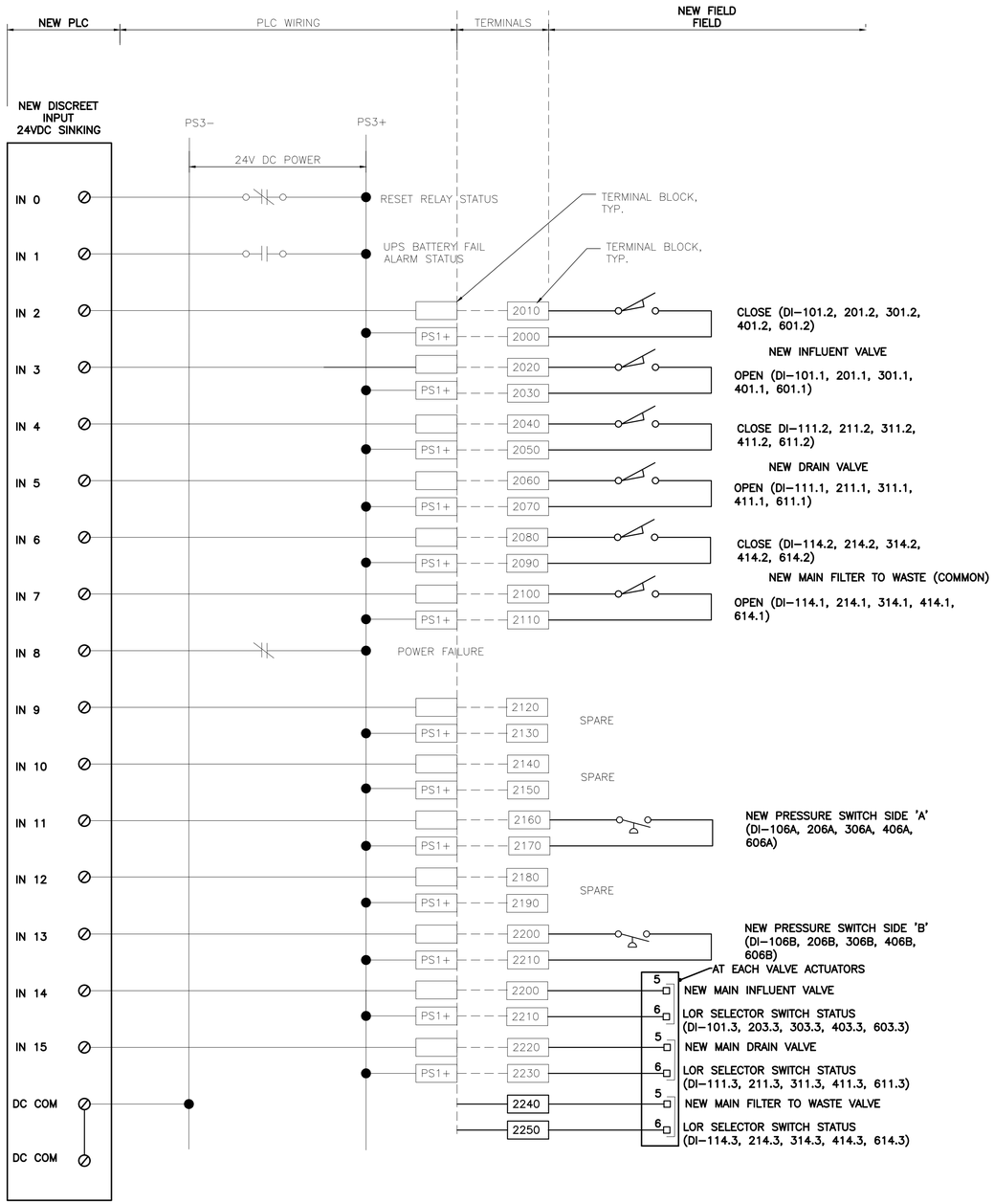
EXISTING WIRING DIA. FILTER CONSOLES TYP. FOR NOS. 1, 2, 3, 4, AND 6

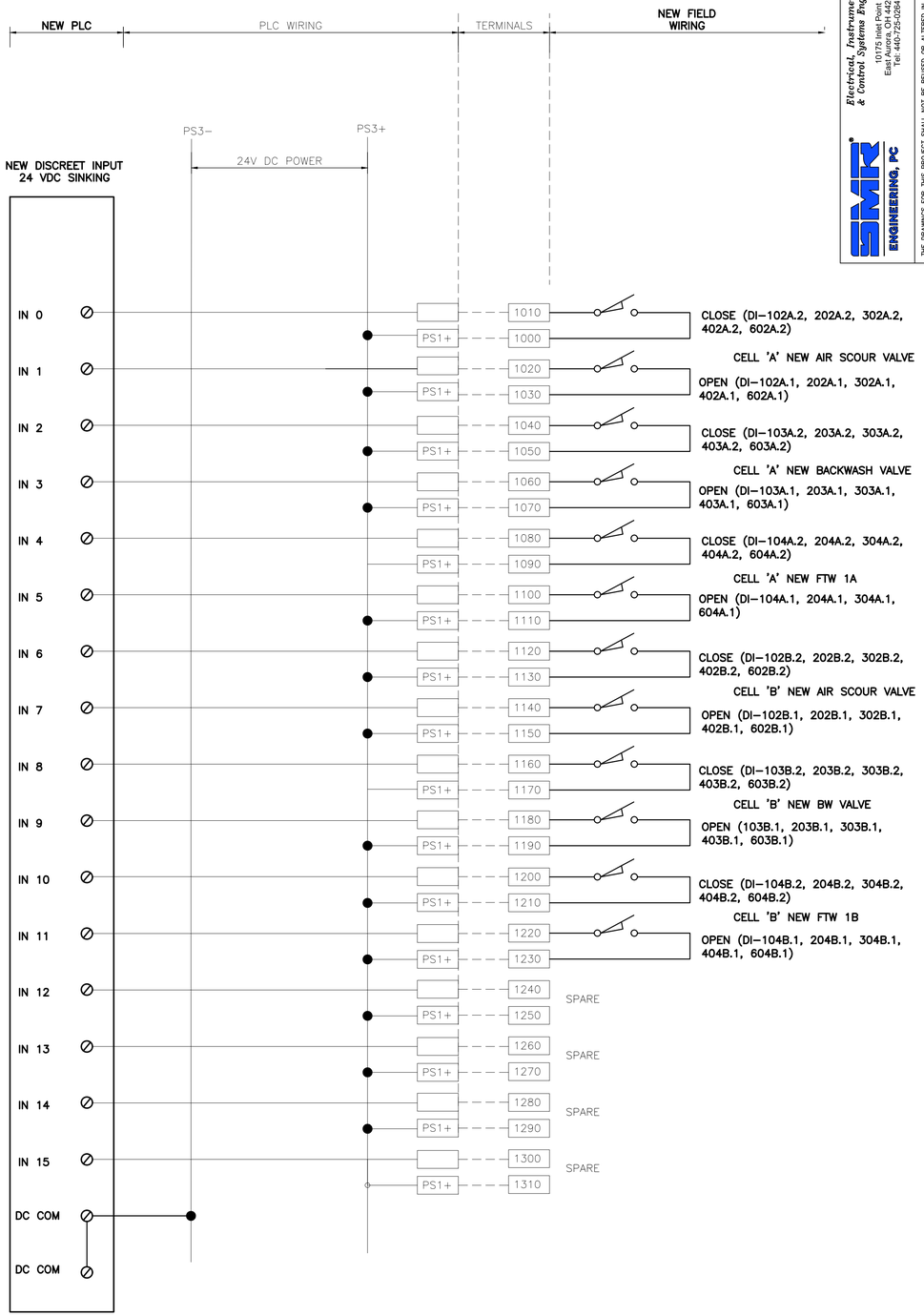
I-42

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-42 WIRING DIA. FILTER CONSOLE NOS. 1, 2, 3, 4, 6.dwg 4/17/2022 10:18:27 PM Randy Podmore

PLOTTED: 4/18/2022 8:58:47 AM





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REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

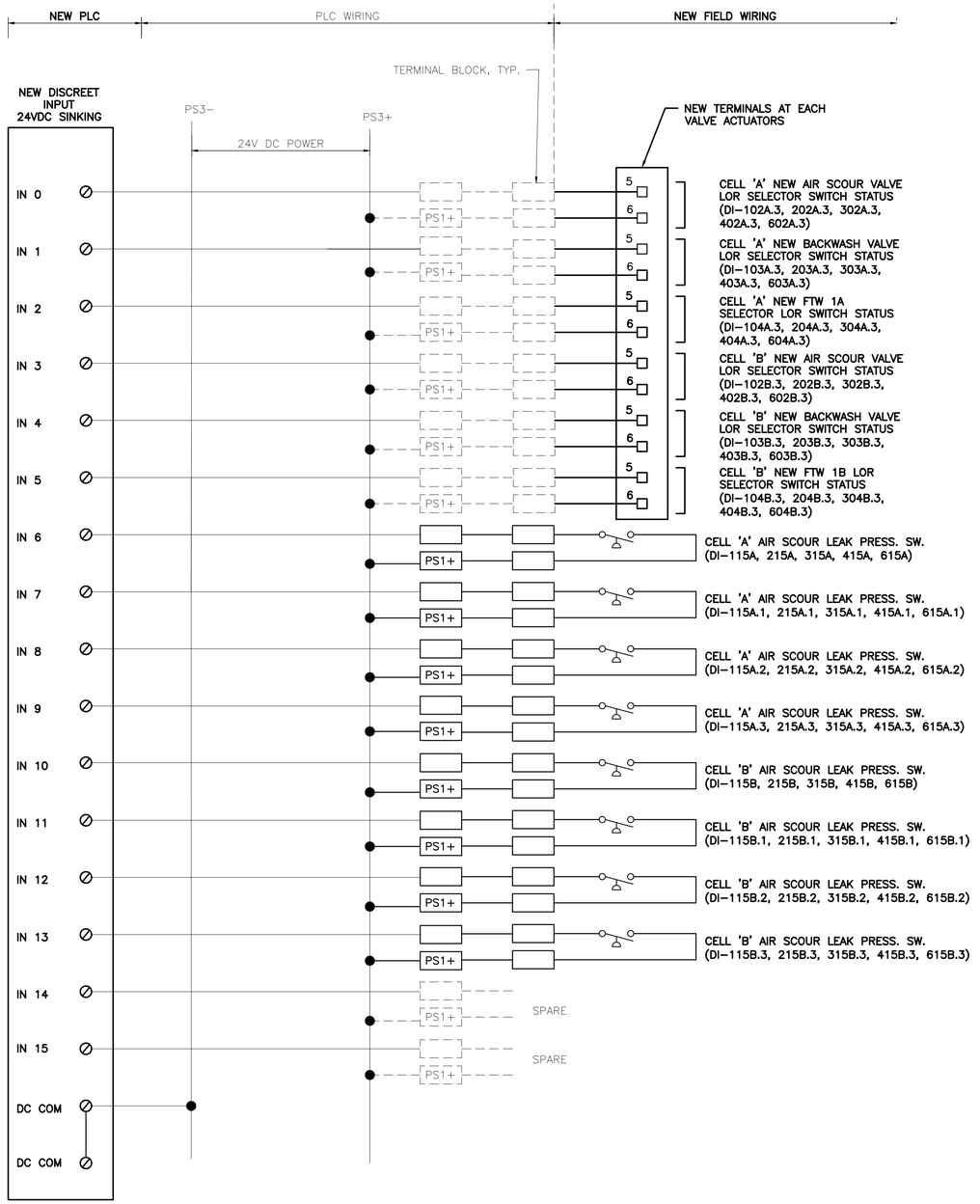
EXISTING MODIFIED WIRING DIAGRAMS - FILTER CONSOLES TYP. FOR NOS. 1,2,3,4,AND 6

I-43

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-43 WIRING DIA. FILTER CONSOLE NOS. 1, 2, 3, 4 AND 6.dwg 4/17/2022 10:19:27 PM Randy Podmore

PLOTTED: 4/18/2022 8:58:55 AM



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DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

EXISTING MODIFIED WIRING DIAGRAMS FILTER CONSOLES TYP. FOR NOS. 1 2 3 4 AND 6

I-44

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-44 WIRING DIA. FILTER CONSOLE NOS. 1, 2, 3, 4, AND 6.dwg 4/17/2022 10:22:10 PM Randy Podmore

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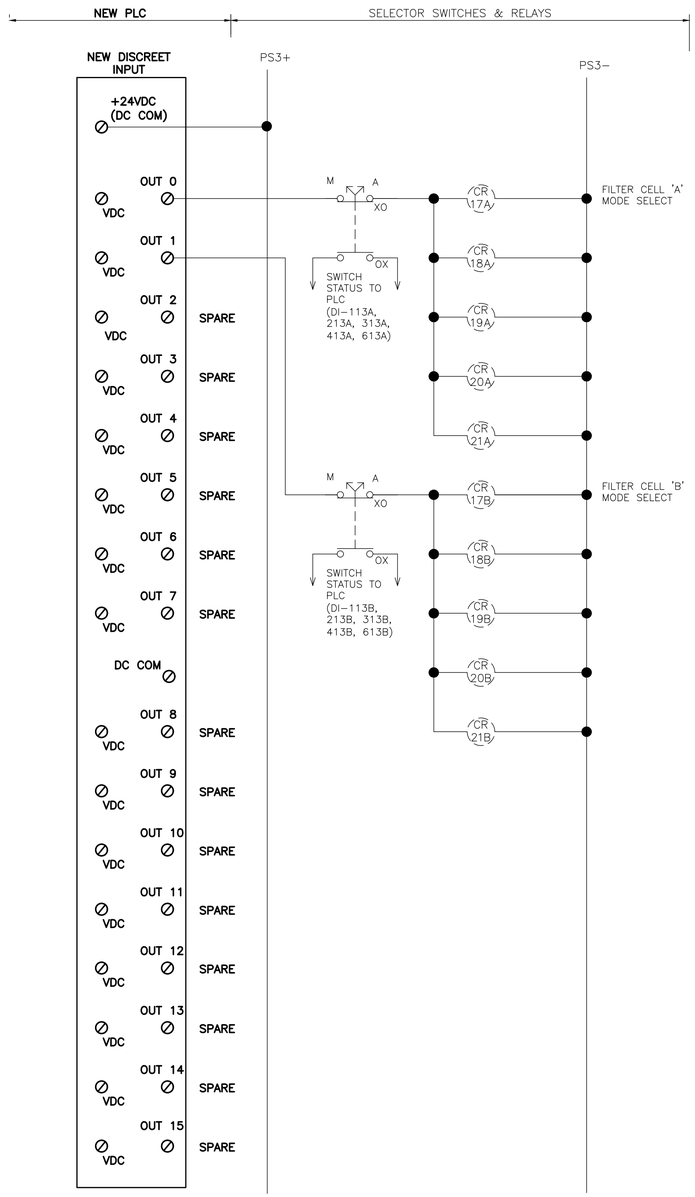

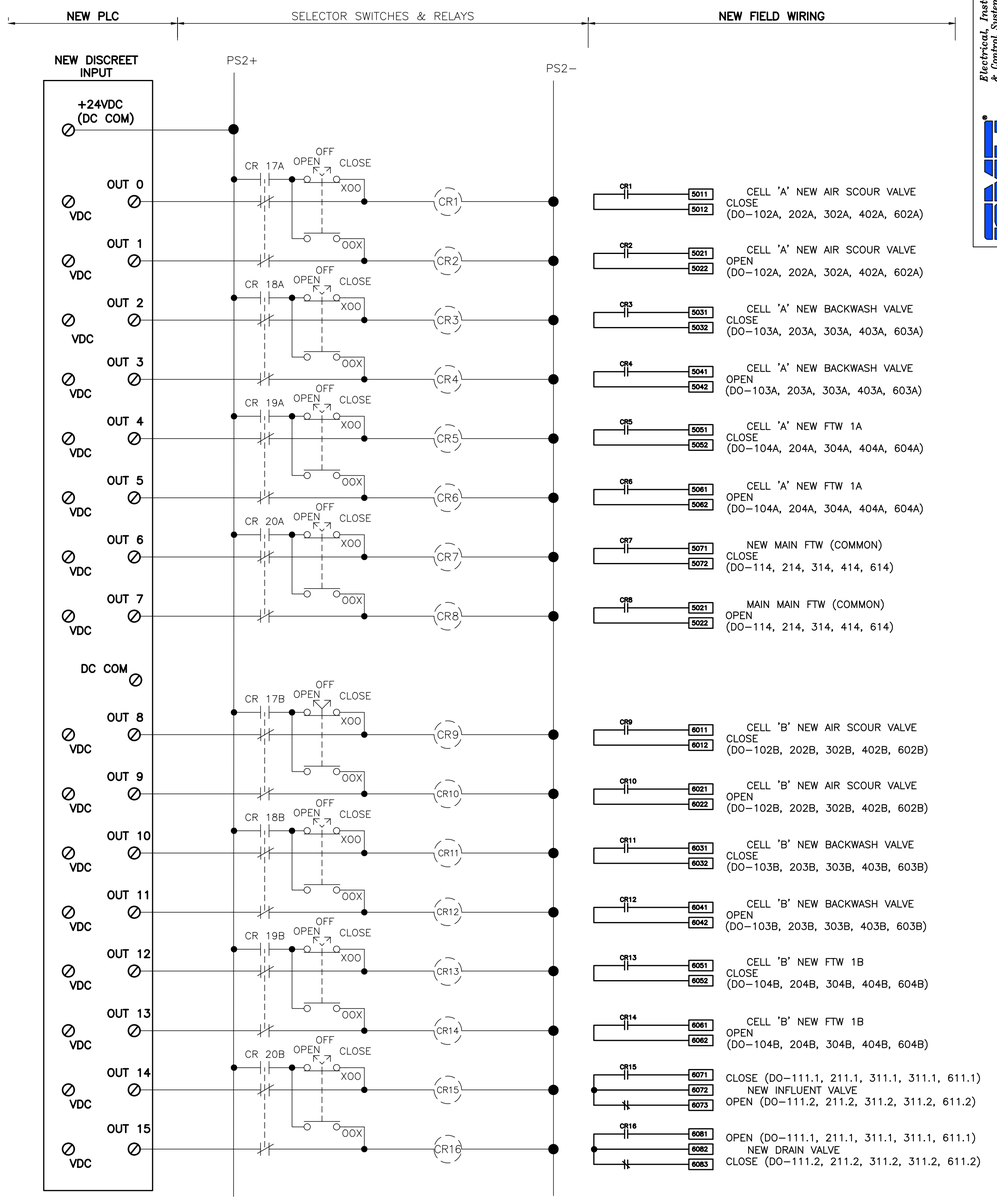

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WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

REVISIONS

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

EXISTING MODIFIED WIRING DIA. - FILTER CONSOLES TYP. FOR NOS.1, 2, 3, 4, AND 6

I-45

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-45 WIRING DIA. - FILTER CONSOLE NOS.1, 2, 3, 4, AND 6.dwg 4/17/2022 10:22:47 PM Randy Podmore

PLOTTED: 4/18/2022 8:59:10 AM

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CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

EXISTING MODIFIED WIRING DIA. - FILTER CONSOLES TYP. FOR NOS. 1, 2, 3, 4, AND 6

I-46

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-46 WIRING DIA. - FILTER CONSOLE NOS.1, 2, 3, 4, AND 6.dwg 4/17/2022 10:23:46 PM Randy Podmore

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APPROVED BY:	SMR
SCALE:	NONE

EXISTING MODIFIED WIRING DIA. - FILTER CONSOLES TYP. FOR NOS.1, 2, 3, 4, AND 6

I-47

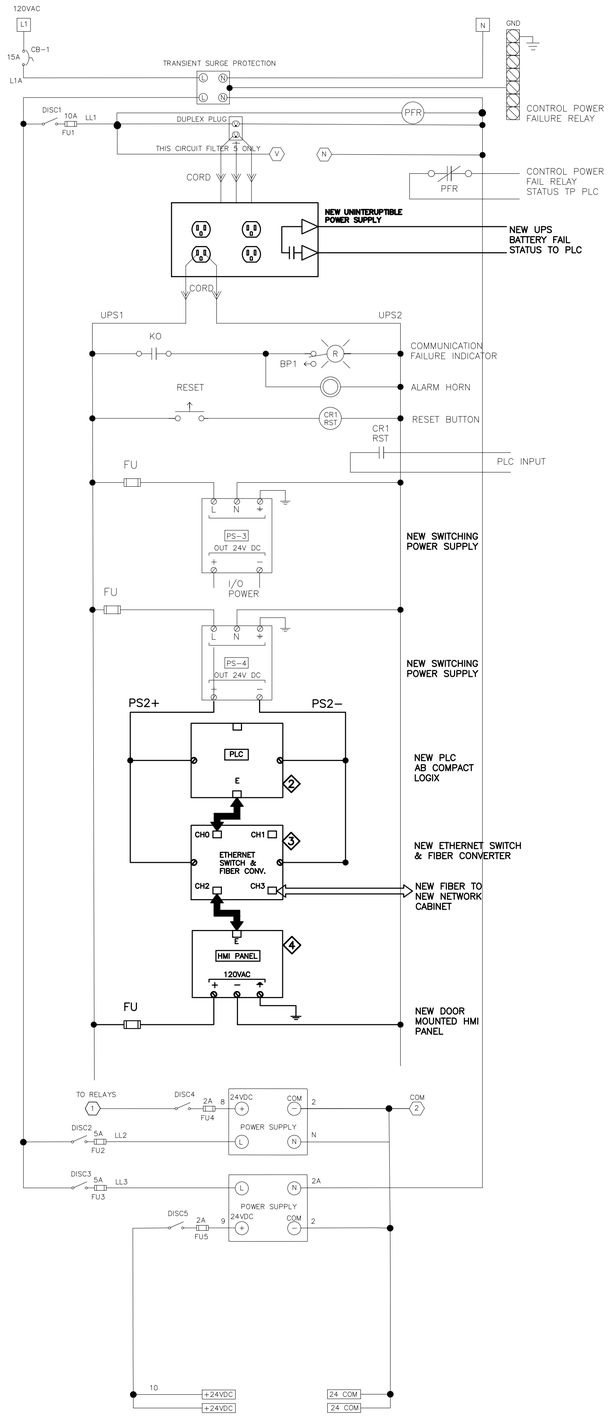
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-47 WIRING DIA. - FILTER CONSOLE NOS.1, 2, 3, 4, AND 6.dwg 4/17/2022 10:24:19 PM Randy Podmore

PLOTTED: 4/18/2022 8:59:24 AM

KEY NOTES:

1. THE EXISTING UPS SHALL BE REPLACED WITH NEW UPS, SIZE TO MATCH EXISTING.
2. THE EXISTING AB COMPACTLOGIX PLC & ALL RELATED I/O CARDS & POWER SUPPLY SHALL BE REPLACED WITH NEW AB COMPACTLOGIX PLC, POWER SUPPLY & I/O'S.
3. THE EXISTING ETHERNET SWITCH & FIBER CONVERTER SHALL BE REPLACED WITH NEW ETHERNET SWITCH WITH FIBER CONVERTER.
4. THE EXISTING OIT SHALL BE REPLACED WITH NEW HMI PANEL.
5. THE SYSTEM INTEGRATOR SHALL MODIFY THE EXISTING FILTER CONTROL CONSOLE WIRING TO REFLECT THE NEW DEVICES AS REQUIRED.
6. THE EQUIPMENT LAYOUT AND WIRING DIAGRAMS SHOWN INDICATE THE PROPOSED MAJOR FILTER CONSOLE PANEL COMPONENTS AND THE ORIENTATION. THE SYSTEM INTEGRATOR SHALL BE RESPONSIBLE TO PROVIDE ALL NECESSARY SOFTWARE AND HARDWARE AT EACH PANEL AS REQUIRED.



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APPROVED BY:	SMR
SCALE:	NONE

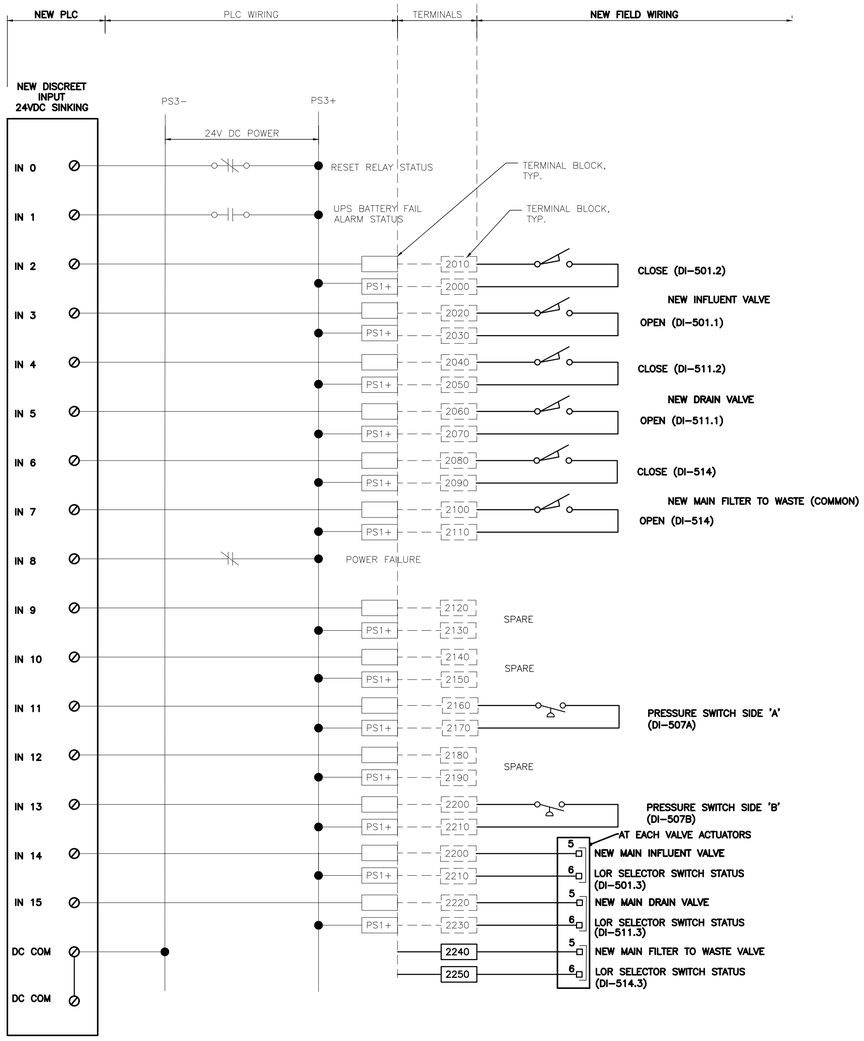
EXISTING MODIFIED WIRING DIAGRAM FILTER CONSOLE NO. 5

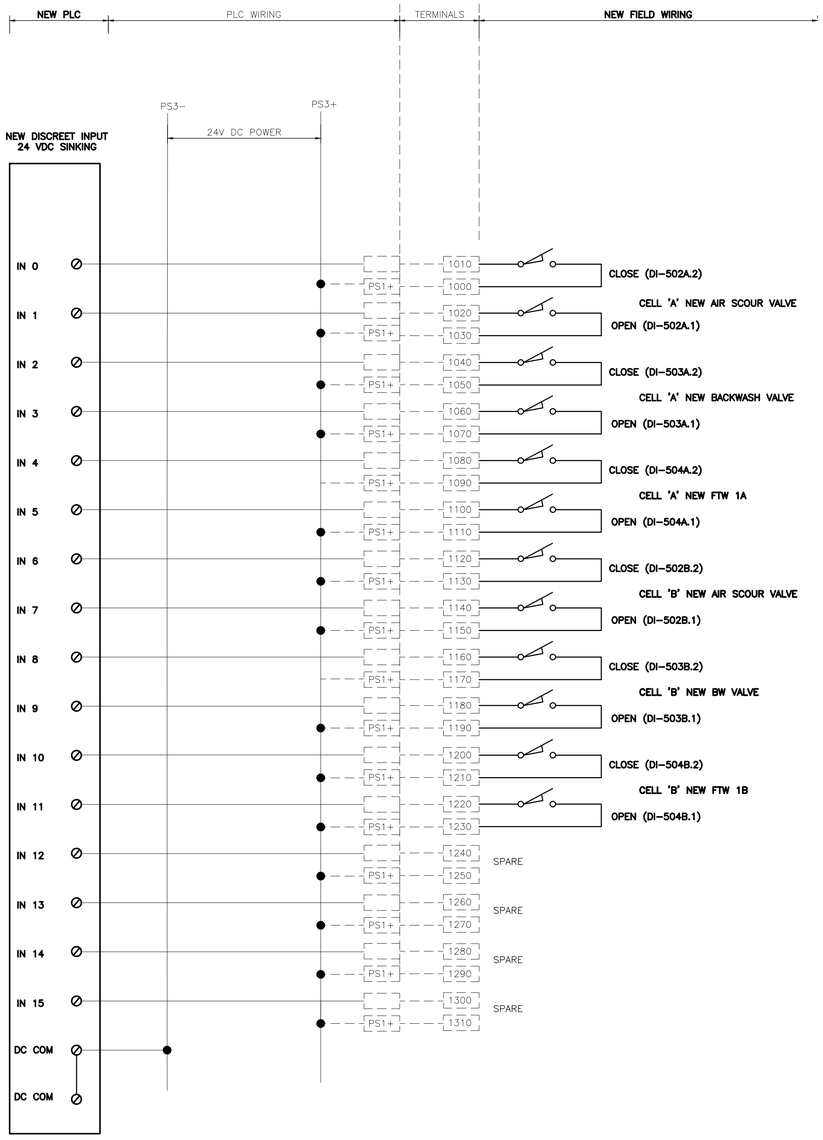
I-48

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-48 WIRING DIA. FILTER CONSOLE NO. 5.dwg 4/17/2022 10:36:04 PM Randy Podmore

PLOTTED: 4/18/2022 8:59:31 AM





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APPROVED BY:	SMR
SCALE:	NONE

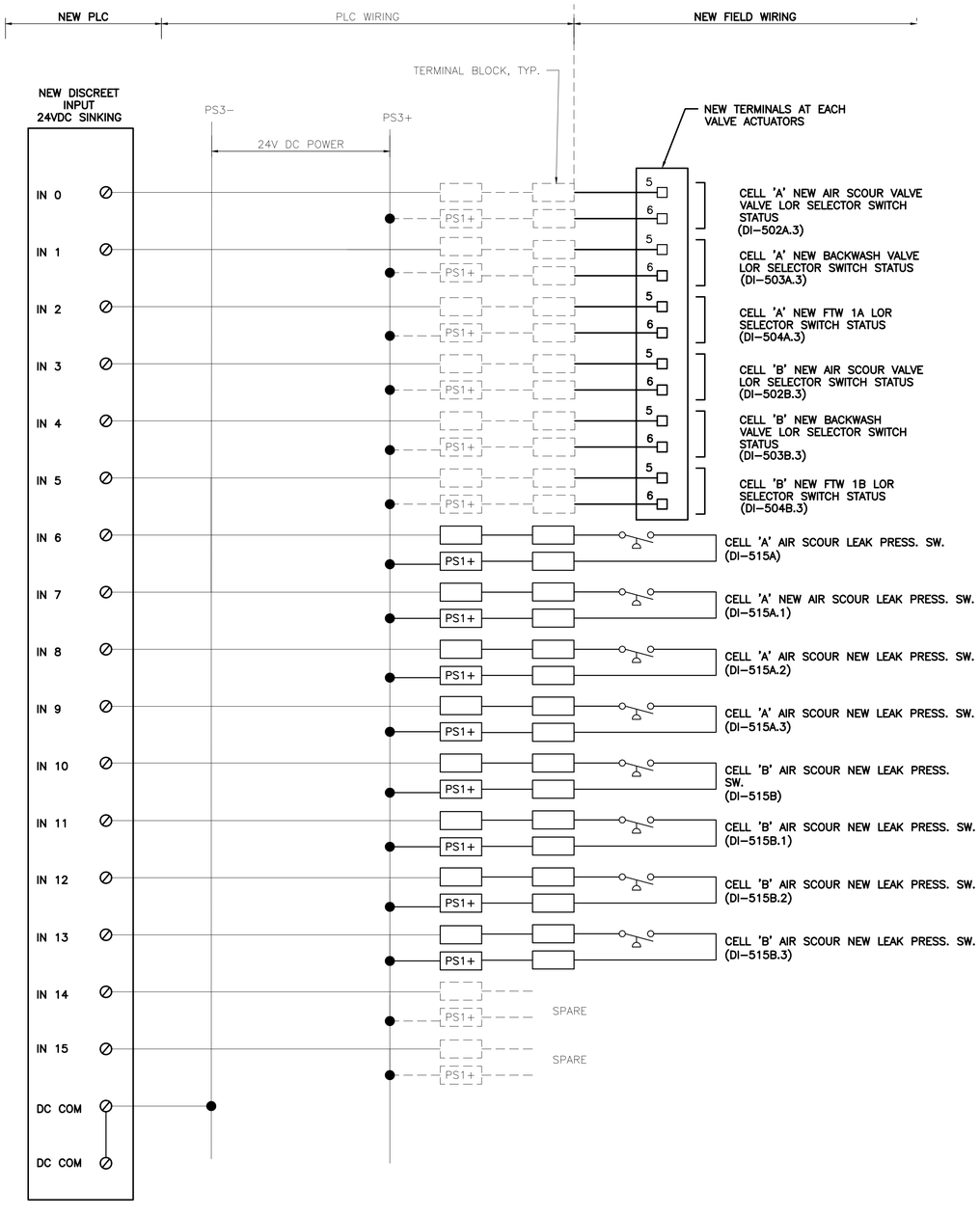
EXISTING WIRING DIAGRAM - FILTER CONSOLE NO. 5

I-49

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-49 WIRING DIA. - FILTER CONSOLE NO. 5.dwg 4/17/2022 10:26:58 PM Randy Podmore

PLOTTED: 4/18/2022 8:59:38 AM



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APPROVED BY:	SMR
SCALE:	NONE

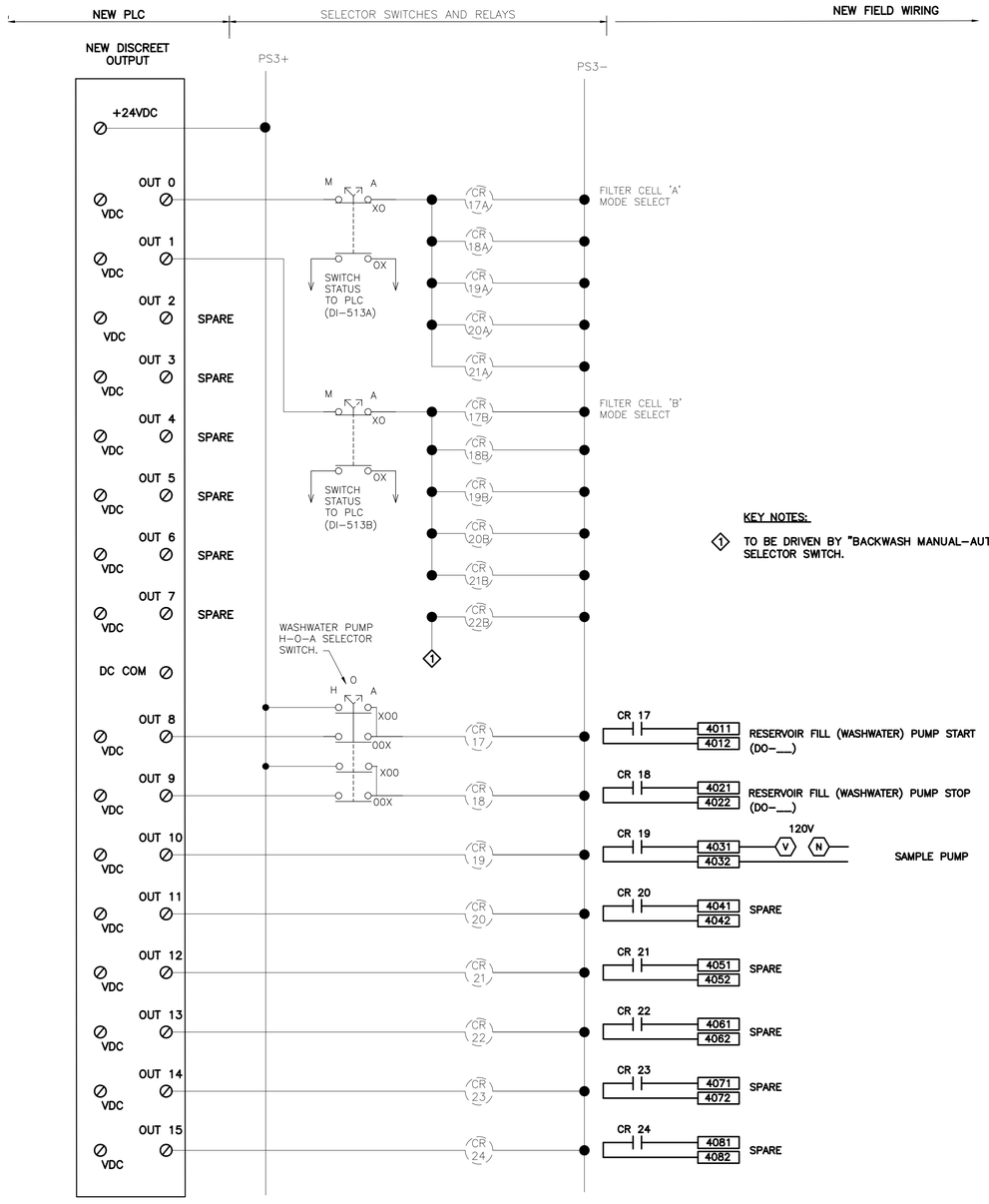
EXISTING MODIFIED WIRING DIAGRAM - FILTER CONSOLE NO. 5

I-50

SHEET: OF

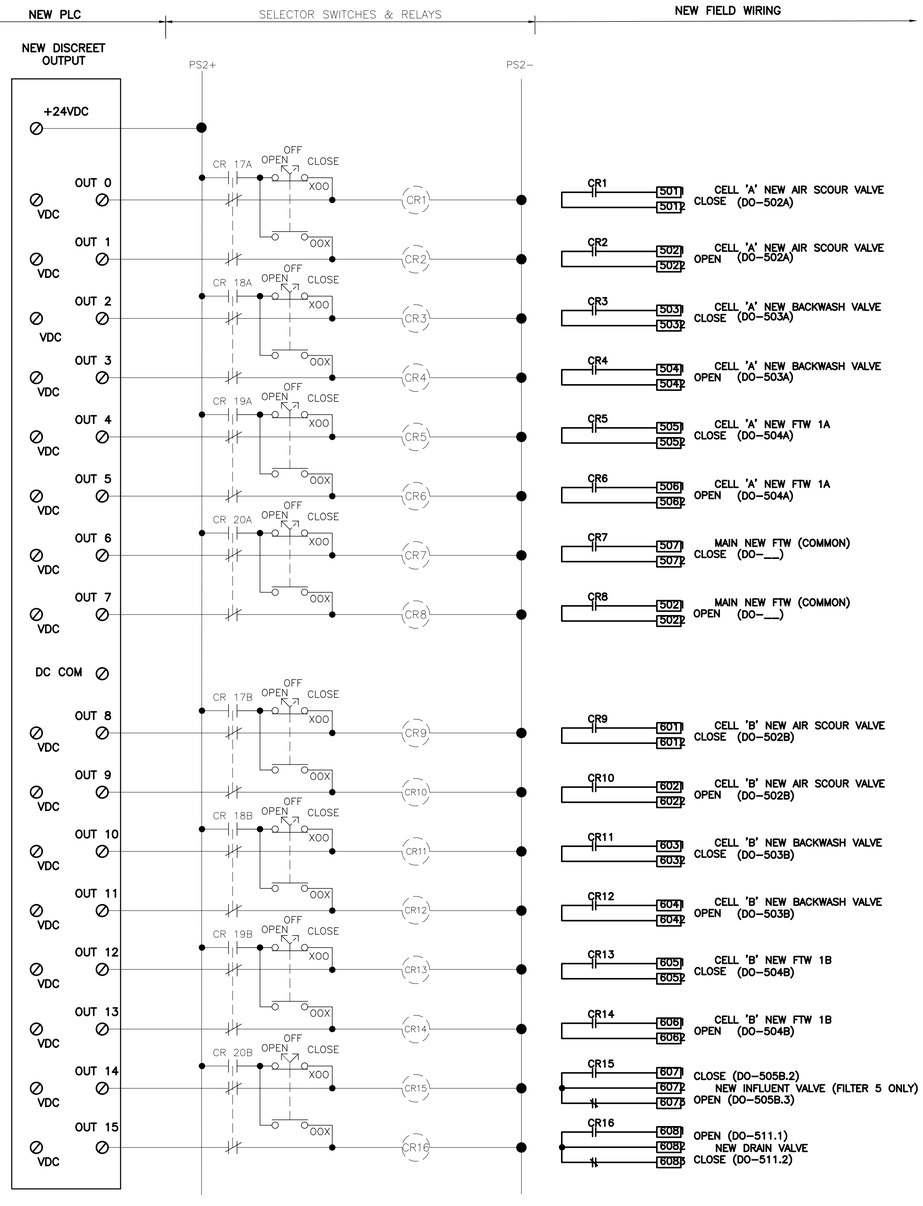
P:\PR58982\Cadd\Sheets\E-Sheets\I-50 WIRING DIA. - FILTER CONSOLE NO. 5.dwg 4/17/2022 10:27:53 PM Randy Podmore

PLOTTED: 4/18/2022 8:59:46 AM



KEY NOTES:

1. TO BE DRIVEN BY "BACKWASH MANUAL-AUTO" SELECTOR SWITCH.



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DESIGNED BY:	SMR
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APPROVED BY:	SMR
SCALE:	NONE

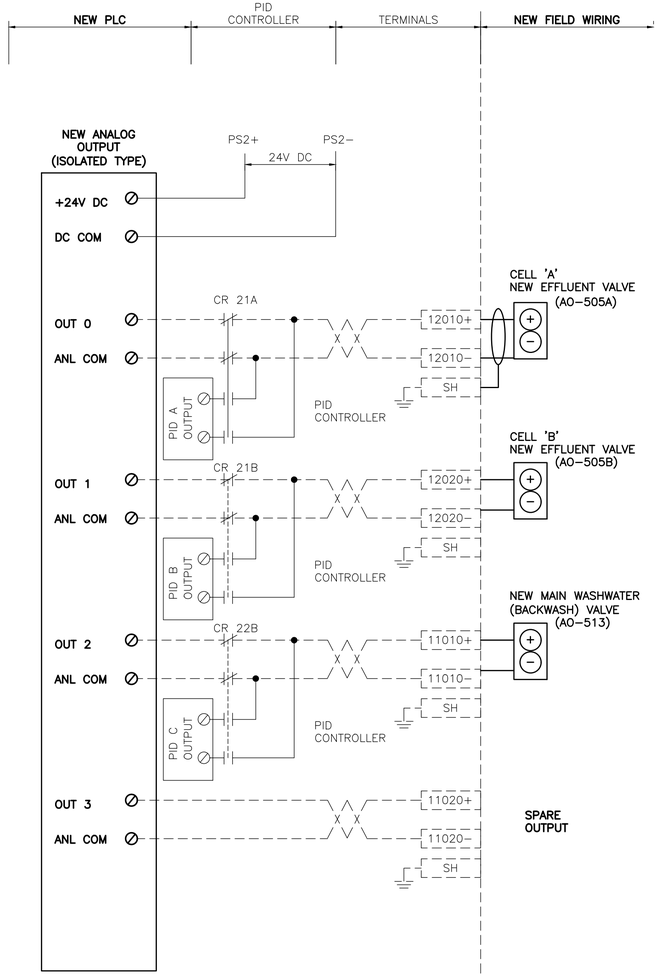
EXISTING MODIFIED WIRING DIAGRAM - FILTER CONSOLE NO. 5

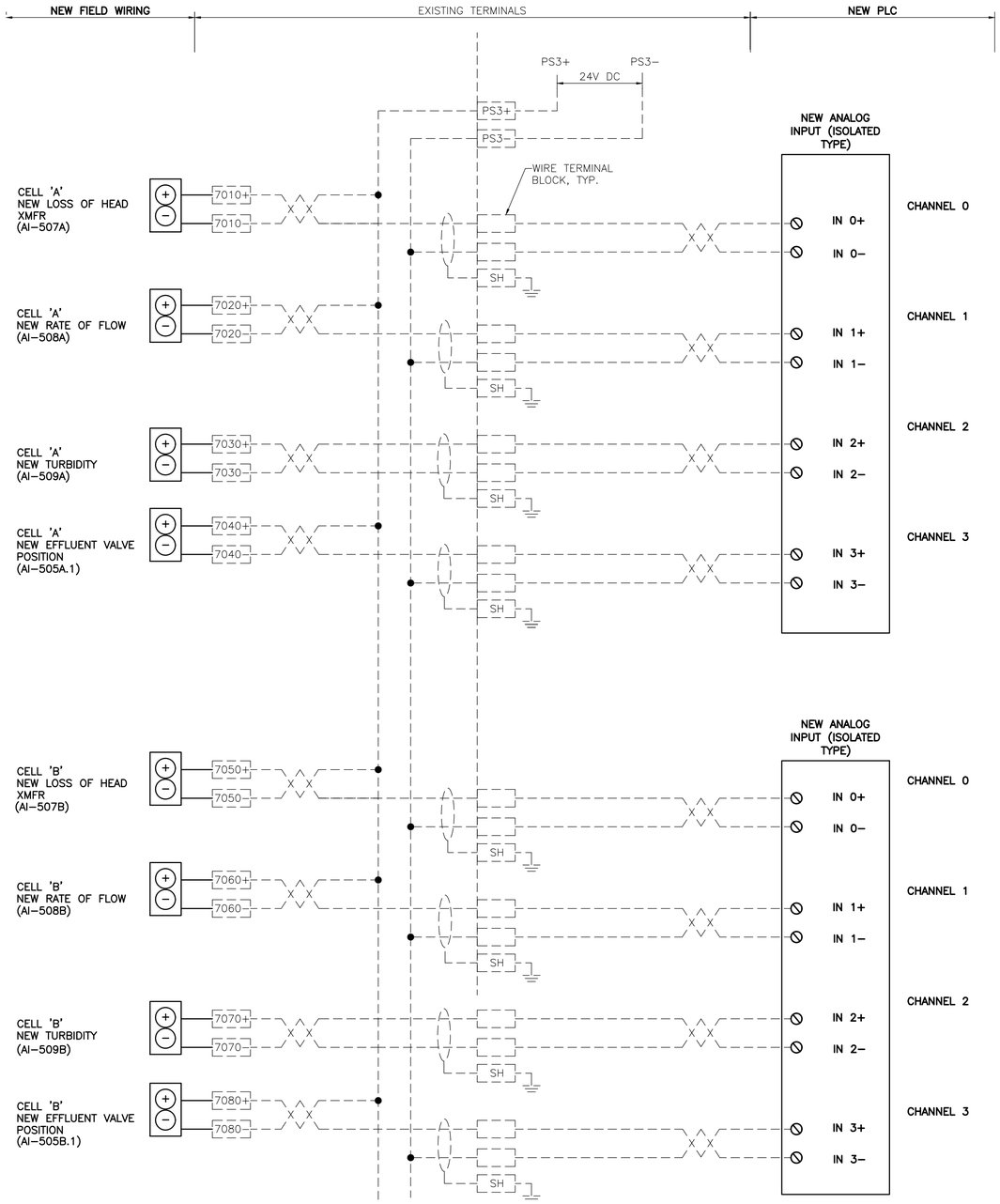
I-51

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-51 WIRING DIA. FILTER CONSOLE NO. 5.dwg 4/17/2022 10:28:19 PM Randy Podmore

PLOTTED: 4/18/2022 8:59:53 AM





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JOB NO:	PR58982
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DESIGNED BY:	SMR
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APPROVED BY:	SMR
SCALE:	NONE

EXISTING MODIFIED WIRING DIAGRAM - FILTER CONSOLE NO. 5

I-52

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-52 WIRING DIA - FILTER CONSOLE NO. 5.dwg 4/17/2022 10:28:54 PM Randy Podmore

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NO.	DESCRIPTION	DATE
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JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

EXISTING MODIFIED WIRING DIAGRAM - FILTER CONSOLE NO. 5

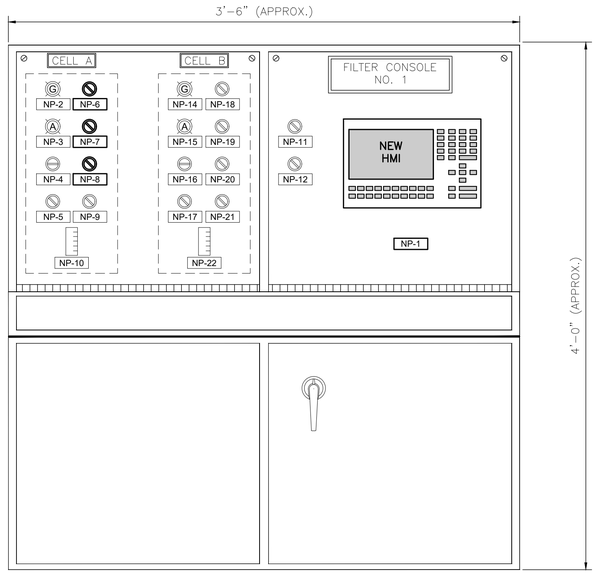
I-53

SHEET: OF

PLOTTED: 4/18/2022 9:00:00 AM
P:\PR58982\Cadd\Sheets\E-Sheets\I-53 WIRING DIA. FILTER CONSOLE NO. 5.dwg 4/17/2022 10:29:17 PM Randy Podmore

PLOTTED: 4/18/2022 9:00:07 AM

NP-1 : NEW HMI PANEL
NP-2 : FILTER IN SERVICE
NP-3 : BACKWASH IN PROGRESS
NP-4 : BACKWASH INITIATE
NP-5 : FILTER MAIN BACKWASH VALVE 'OPEN-CLOSE'
NP-6 : NEW FILTER AIR SCOUR VALVE 'OPEN-CLOSE'
NP-7 : NEW FILTER-TO-WASTE VALVE "OPEN-CLOSE"
NP-8 : NEW MAIN FILTER-TO-WASTE VALVE 'OPEN-CLOSE'
NP-9 : SYSTEM MODE SELECT 'MANUAL-AUTO'
NP-10 : FILTER EFFLUENT MODULATING VALVE LOADING STATION
NP-11 : FILTER MAIN INFLUENT VALVE 'OPEN-CLOSE'
NP-12 : FILTER MAIN DRAIN VALVE 'OPEN-CLOSE'
NP-13 : NOT USED
NP-14 : FILTER IN SERVICE
NP-15 : BACKWASH IN PROGRESS
NP-16 : BACKWASH INITIATE
NP-17 : FILTER MAIN BACKWASH VALVE 'OPEN-CLOSE'
NP-18 : FILTER SURFACE WASH VALVE 'OPEN-CLOSE'
NP-19 : FILTER-TO-WASTE VALVE "OPEN-CLOSE"
NP-20 : FILTER EFFLUENT VALVE 'OPEN-CLOSE'
NP-21 : SYSTEM MODE SELECT 'MANUAL-AUTO'
NP-22 : FILTER EFFLUENT MODULATING VALVE LOADING STATION



FILTER CONSOLE NAMEPLATE SCHEDULE

FILTER CONTROL CONSOLE (TYP. OF NO. 1, 2, 3, 4, AND 6)

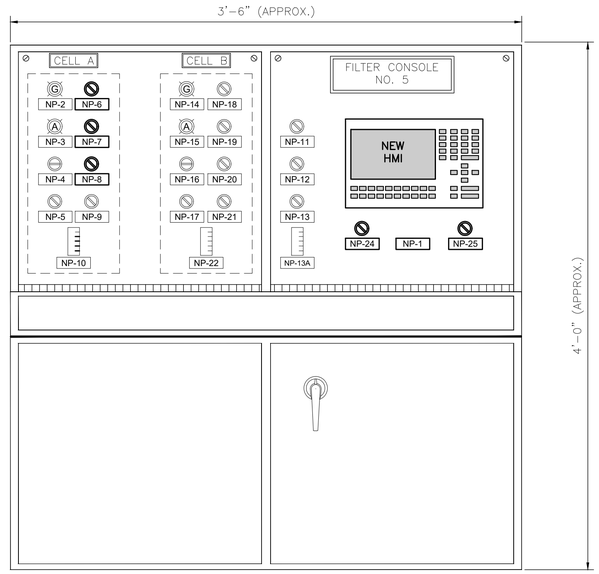
SCALE: NONE

1
I-54

TYPICAL CONTROL PANEL SYMBOLS:

- INDICATING LIGHTS
  - A: AMBER
  - B: BLUE
  - G: GREEN
  - R: RED
  - W: WHITE
  - Y: YELLOW
- SELECTOR SWITCH, TWO OR THREE POSITION
- PUSHBUTTON STATION – MOMENTARY
- SINGLE STATION PID CONTROLLER, HONEYWELL, UDC-3300 OR EQUAL

NP-1 : NEW HMI PANEL
NP-2 : FILTER IN SERVICE
NP-3 : BACKWASH IN PROGRESS
NP-4 : BACKWASH INITIATE
NP-5 : FILTER MAIN BACKWASH VALVE 'OPEN-OFF-CLOSE'
NP-6 : NEW FILTER AIR SCOUR VALVE 'OPEN-OFF-CLOSE'
NP-7 : NEW FILTER-TO-WASTE VALVE "OPEN-OFF-CLOSE"
NP-8 : NEW MAIN FILTER-TO-WASTE VALVE 'OPEN-OFF-CLOSE'
NP-9 : SYSTEM MODE SELECT 'MANUAL-AUTO'
NP-10 : FILTER EFFLUENT MODULATING VALVE PID CONTROLLER 'A'
NP-11 : FILTER MAIN INFLUENT VALVE 'OPEN-OFF-CLOSE'
NP-12 : FILTER MAIN DRAIN VALVE 'OPEN-OFF-CLOSE'
NP-13 : BACKWASH PUMP HOA
NP-13A: MAIN BACKWASH VALVE LOADING STATION
NP-14 : FILTER IN SERVICE
NP-15 : BACKWASH IN PROGRESS
NP-16 : BACKWASH INITIATE
NP-17 : FILTER MAIN BACKWASH VALVE 'OPEN-OFF-CLOSE'
NP-18 : FILTER SURFACE WASH VALVE 'OPEN-OFF-CLOSE'
NP-19 : FILTER-TO-WASTE VALVE "OPEN-OFF-CLOSE"
NP-20 : FILTER EFFLUENT VALVE 'OPEN-OFF-CLOSE'
NP-21 : SYSTEM MODE SELECT 'MANUAL-AUTO'
NP-22 : FILTER EFFLUENT MODULATING VALVE PID CONTROLLER 'B'
NP-23 : NEW BACKWASH 'MANUAL-AUTO' SELECT
NP-24 : NEW BACKWASH RESERVOIR – 'BW PUMP' MODE SELECT
NP-25 : NEW FTW VALVE – 'FTW PUMP' MODE SELECT
NP-26 : NEW FTW MAIN VALVE
NP-27 : NEW MAKEUP RESERVOIR 'SHUT-OFF' VALVE
NP-28 : NEW PID FOR AIR BLOWER 'SPEED'



FILTER CONSOLE NAMEPLATE SCHEDULE

FILTER CONTROL CONSOLE (TYP. OF NO. 5)

SCALE: NONE

2
I-54

TYPICAL CONTROL PANEL SYMBOLS:

- INDICATING LIGHTS
  - A: AMBER
  - B: BLUE
  - G: GREEN
  - R: RED
  - W: WHITE
  - Y: YELLOW
- SELECTOR SWITCH, TWO OR THREE POSITION
- PUSHBUTTON STATION – MOMENTARY
- SINGLE STATION PID CONTROLLER, HONEYWELL, UDC-3300 OR EQUAL

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SCALE:	NONE

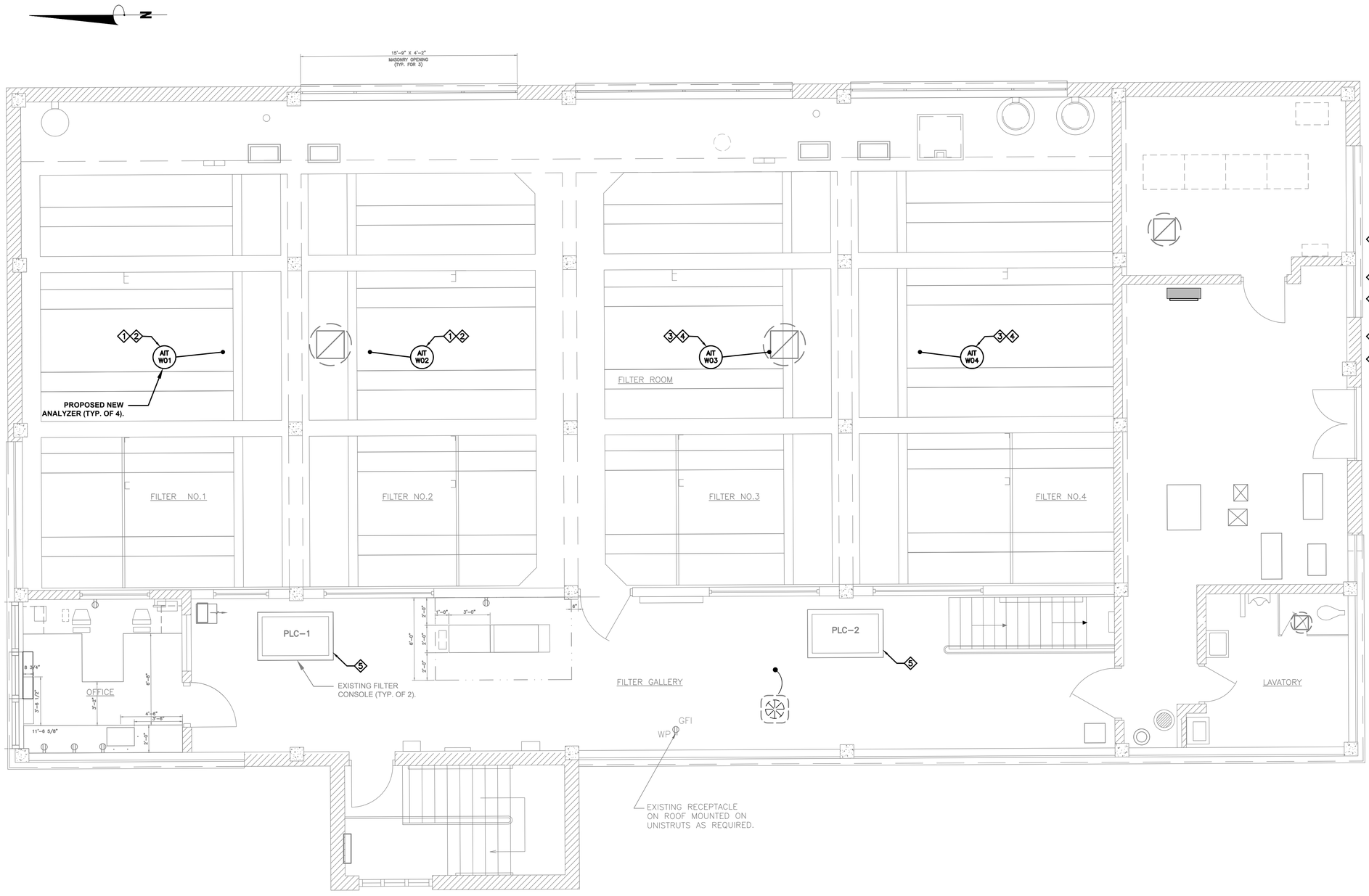
EXISTING MODIFIED FILTER CONSOLE ELEVATIONS & DETAIL RENOVATIONS

I-54

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\I-54 FILTER CONSOLE ELEV. & DETAIL RENOVATIONS.dwg 4/17/2022 10:35:20 PM Randy Podmore

PLOTTED: 4/18/2022 9:00:15 AM



ELECTRICAL INSTRUMENATION PLAN AT ELEV. 1067.00

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

KEY NOTES:

1. 3/4" C. WITH 2 #12, 1 #12G TO EXISTING PANEL 'LA' IN PUMP ROOM. UTILIZE THE SPARE 20A/1P BRANCH BREAKER, CIRCUIT #39.
2. 3/4" C. WITH 2/C #18 SH. PRS. TO PLC-1.
3. 3/4" C. WITH 2 #12, 1 #12G TO EXISTING PANEL 'LA' IN PUMP ROOM. UTILIZE THE SPARE 20A/1P BRANCH BREAKER, CIRCUIT #41.
4. 3/4" C. WITH 2/C #18 SH. PRS. TO PLC-2.
5. UTILIZE THE SPARE ANALOG INPUTS TO ACCEPT THE FILTER'S NEW ANALYZER'S SIGNALS (I.E. ONE 4-20 mA SIGNAL) C. FOR FILTER B.W. TURBIDITY & ONE 4-20 mA SIGNAL) C. FOR FILTER B.W. LEVEL).

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SCALE:	NONE

NORTHWEST ELECTRICAL INSTRUMENTATION PLAN

I-55

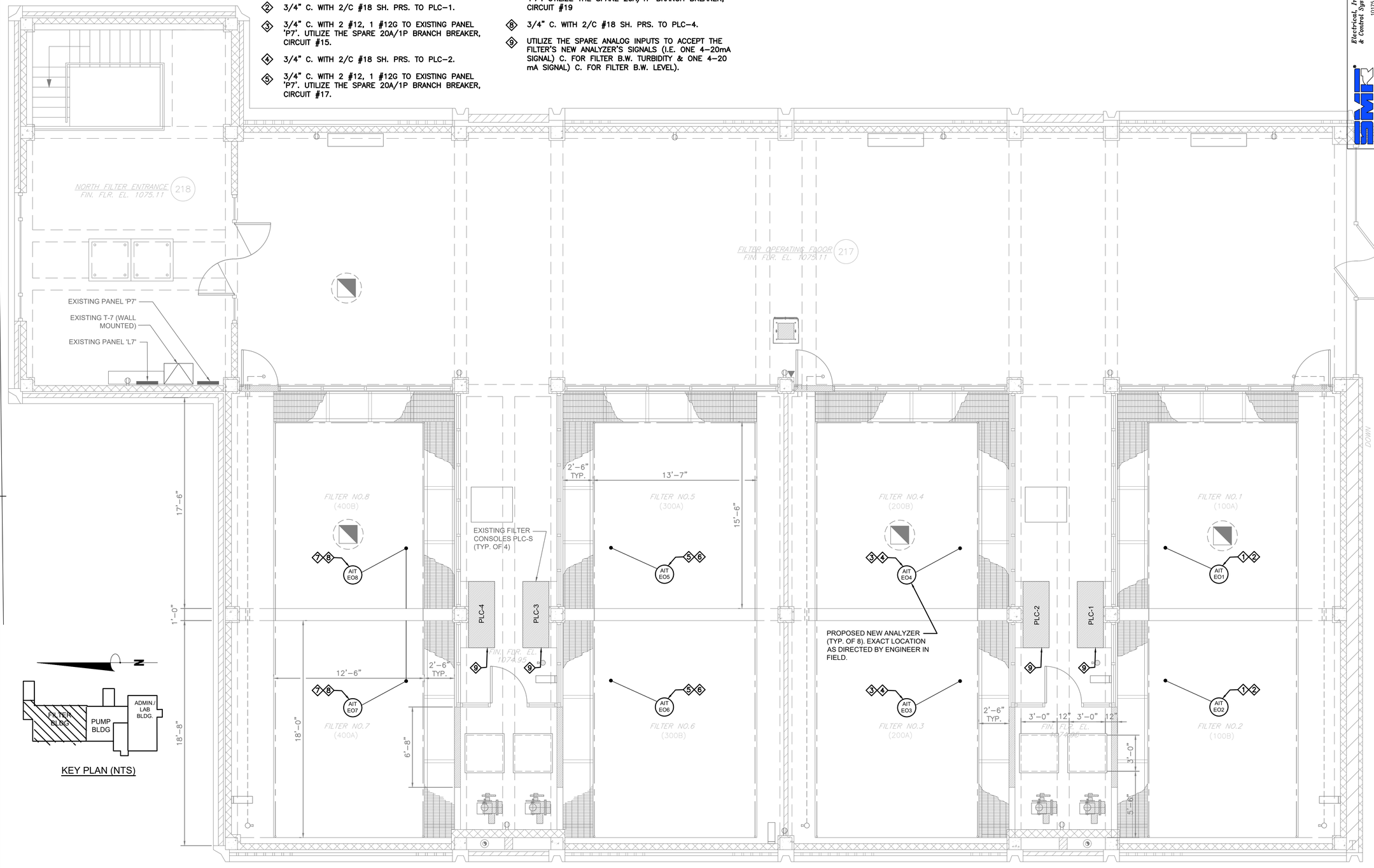
SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\NORTHWEST WTP ELECTRICAL FILTER BLDG 1ST FL POWER PLAN EL. 1067.dwg 4/18/2022 7:53:24 AM Randy Podmore

PLOTTED: 4/18/2022 11:53:41 AM

KEY NOTES:

1. 3/4" C. WITH 2 #12, 1 #12G TO EXISTING PANEL 'P7'. UTILIZE THE SPARE 20A/1P BRANCH BREAKER, CIRCUIT #13.
2. 3/4" C. WITH 2/C #18 SH. PRS. TO PLC-1.
3. 3/4" C. WITH 2 #12, 1 #12G TO EXISTING PANEL 'P7'. UTILIZE THE SPARE 20A/1P BRANCH BREAKER, CIRCUIT #15.
4. 3/4" C. WITH 2/C #18 SH. PRS. TO PLC-2.
5. 3/4" C. WITH 2 #12, 1 #12G TO EXISTING PANEL 'P7'. UTILIZE THE SPARE 20A/1P BRANCH BREAKER, CIRCUIT #17.
6. 3/4" C. WITH 2/C #18 SH. PRS. TO PLC-3.
7. 3/4" C. WITH 2 #12, 1 #12G TO EXISTING PANEL 'P7'. UTILIZE THE SPARE 20A/1P BRANCH BREAKER, CIRCUIT #19
8. 3/4" C. WITH 2/C #18 SH. PRS. TO PLC-4.
9. UTILIZE THE SPARE ANALOG INPUTS TO ACCEPT THE FILTER'S NEW ANALYZER'S SIGNALS (I.E. ONE 4-20mA SIGNAL) C. FOR FILTER B.W. TURBIDITY & ONE 4-20 mA SIGNAL) C. FOR FILTER B.W. LEVEL).



KEY PLAN (NTS)

NOTE:
REFER TO P&ID AND PROCESS DRAWINGS FOR INSTRUMENTATION LOCATIONS

ELECTRICAL INSTRUMENTATION PLAN AT ELEV. 1067.00
SCALE: 1/4" = 1'-0"

Electrical, Instrumentation, & Control Systems Engineering
SMR ENGINEERING, PC
10175 Inlet Point
East Aurora, OH 44202
Tel: 440-725-0264

THE DRAWINGS FOR THIS PROJECT SHALL NOT BE REUSED, OR ALTERED IN ANY WAY WITHOUT THE WRITTEN APPROVAL AND AUTHORITY OF SMR ENGINEERING, PC. ANY REVISIONS SHALL BE MADE BY THE ENGINEER.
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BURGESS & NIPLE

100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	NONE

NORTHEAST ELECTRICAL INSTRUMENTATION PLAN

I-56

SHEET: OF

P:\PR58982\Cadd\Sheets\E-Sheets\NORTHEAST ELECTRICAL FILTER BLDG INST PLAN EL. 1080.dwg 4/18/2022 11:50:40 AM Matt Kroll

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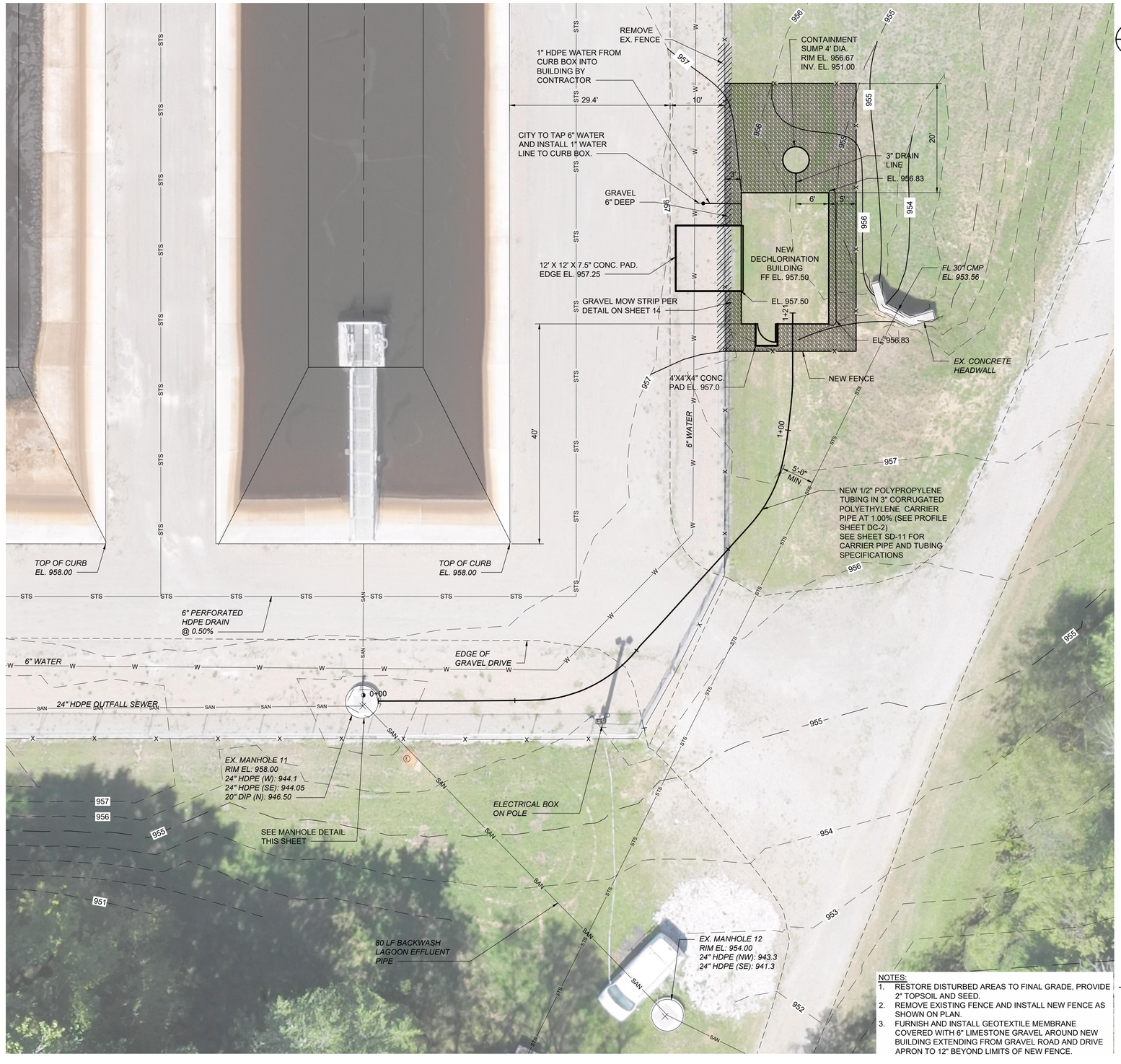
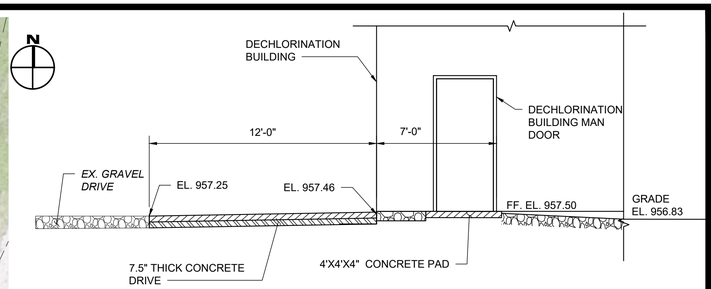


NOTES:
1. RESTORE DISTURBED AREAS TO FINAL GRADE, PROVIDE 2" TOPSOIL AND SEED.
2. REMOVE EXISTING FENCE AND INSTALL NEW FENCE AS SHOWN ON PLAN.
3. FURNISH AND INSTALL GEOTEXTILE MEMBRANE COVERED WITH 6" LIMESTONE GRAVEL AROUND NEW BUILDING EXTENDING FROM GRAVEL ROAD AND DRIVE APRON TO 12" BEYOND LIMITS OF NEW FENCE.

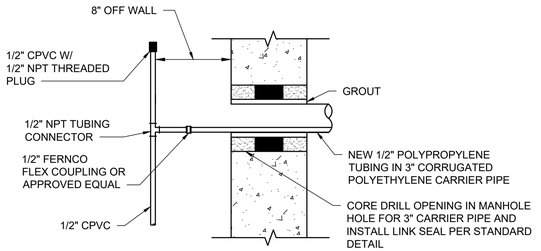
DECHLORINATION BUILDING LOCATION PLAN AND GRADING

SCALE: 1" = 10'



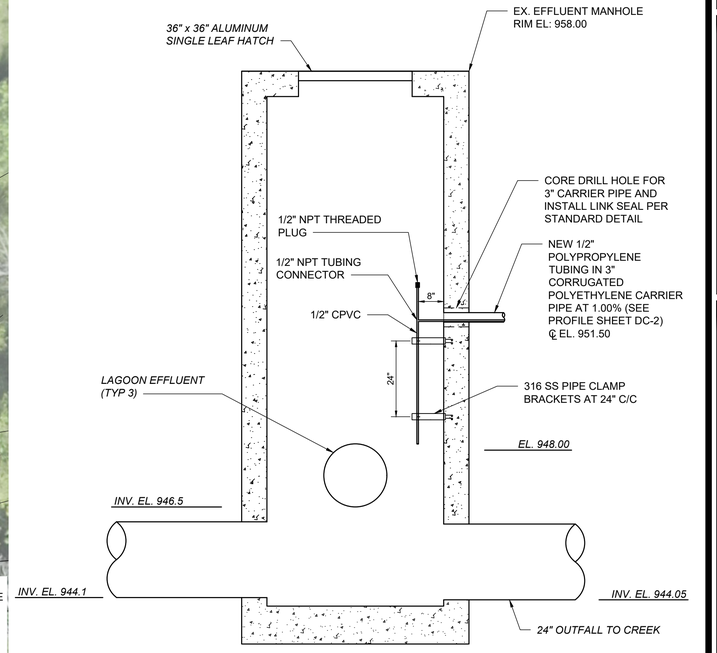
DECHLORINATION BUILDING DETAIL

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



MANHOLE 11 TOP VIEW DETAIL

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



MANHOLE 11 DETAIL

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

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CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
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REVISIONS

JOB NO:	PR58982
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DESIGNED BY:	CMS
DRAWN BY:	GCB
CHECKED BY:	CMS
APPROVED BY:	CMS
SCALE:	AS NOTED

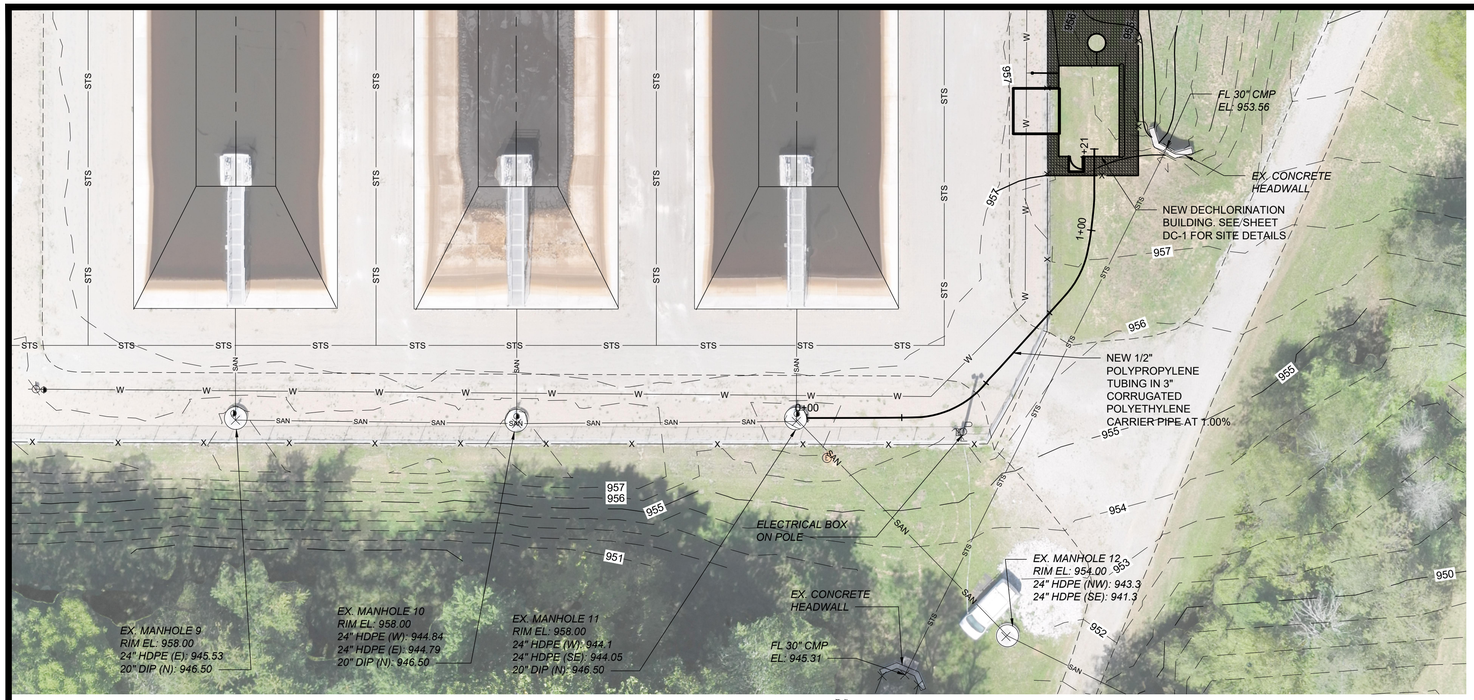
DECHLORINATION BUILDING CIVIL YARD GRADING AND DETAILS

DC-1

SHEET: OF

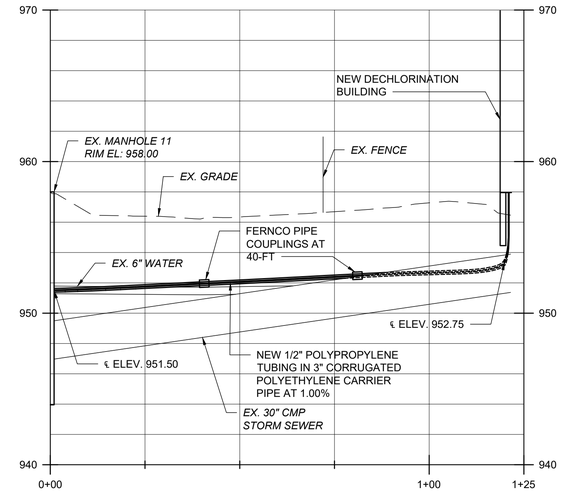
P:\PR58982\Cadd\Sheets\DC-1 DECHLORINATION BUILDING CIVIL YARD GRADING AND DETAILS.dwg 2/1/2022 9:39:47 AM Matt Kroll

PLOTTED: 4/14/2022 5:44:19 PM



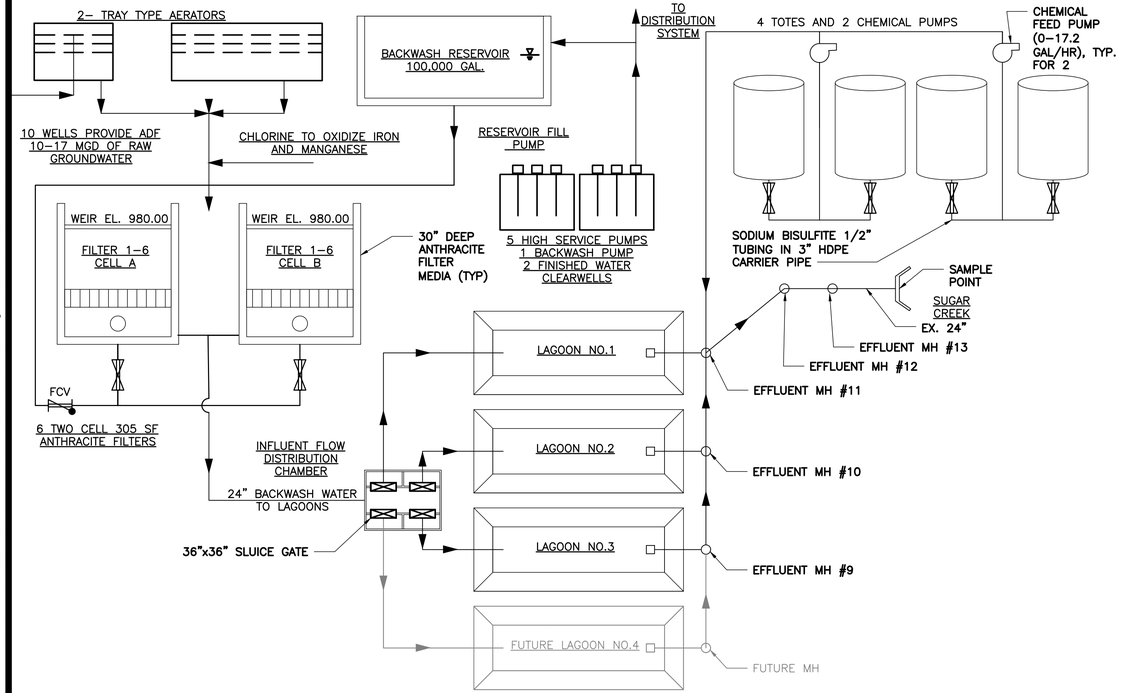
CHEMCIAL FEED LINE PLAN

SCALE: 1" = 20'



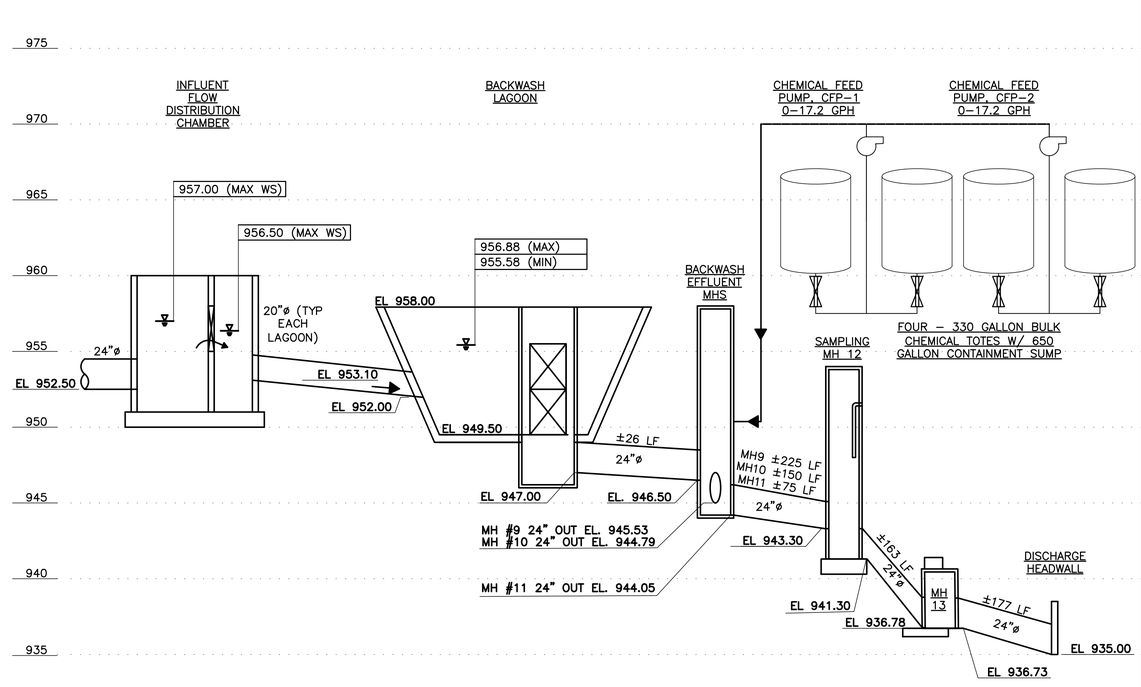
CHEMCIAL FEED LINE PROFILE

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



PROCESS FLOW DIAGRAM

SCALE: NONE



HYDRAULIC PROFILE

SCALE: NONE

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APPROVED BY:	CMS
SCALE:	AS NOTED

CHEMICAL FEED RENOVATION PLAN-DIAGRAM-PROFILES

DC-2

SHEET: OF

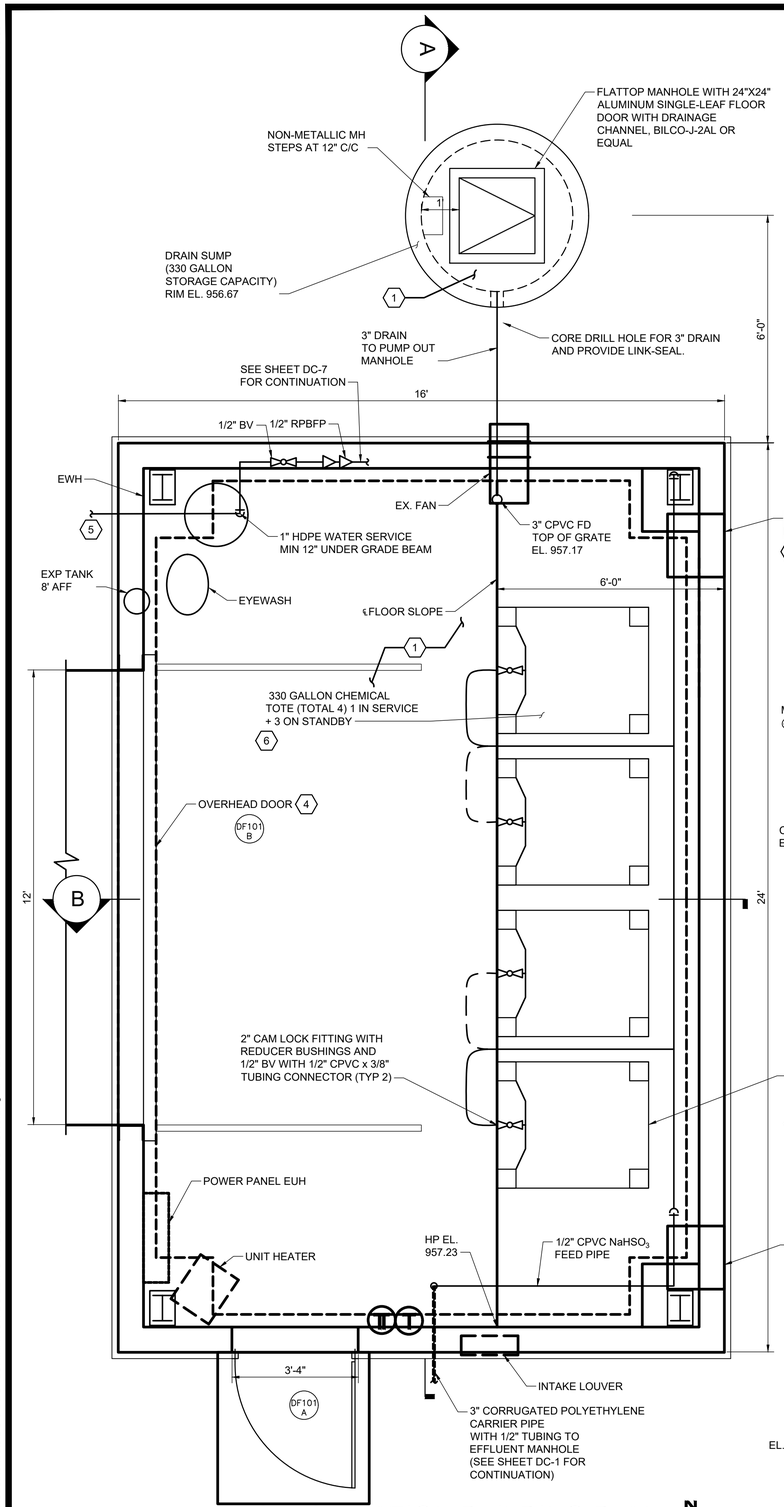
P:\PR58982\Cadd\Sheets\DC-2 CHEMICAL FEED RENOVATION PLAN-DIAGRAM-PROFILES.dwg 3/1/2022 12:12:33 PM Matt Kroll

PLOTTED: 4/14/2022 5:45:09 PM

P:\PR58982\Cadd\Sheets\DC-3 DECHLORINATION BUILDING PROCESS PLAN-SECTIONS.dwg 2/17/2022 8:47:22 AM Matt Kroll

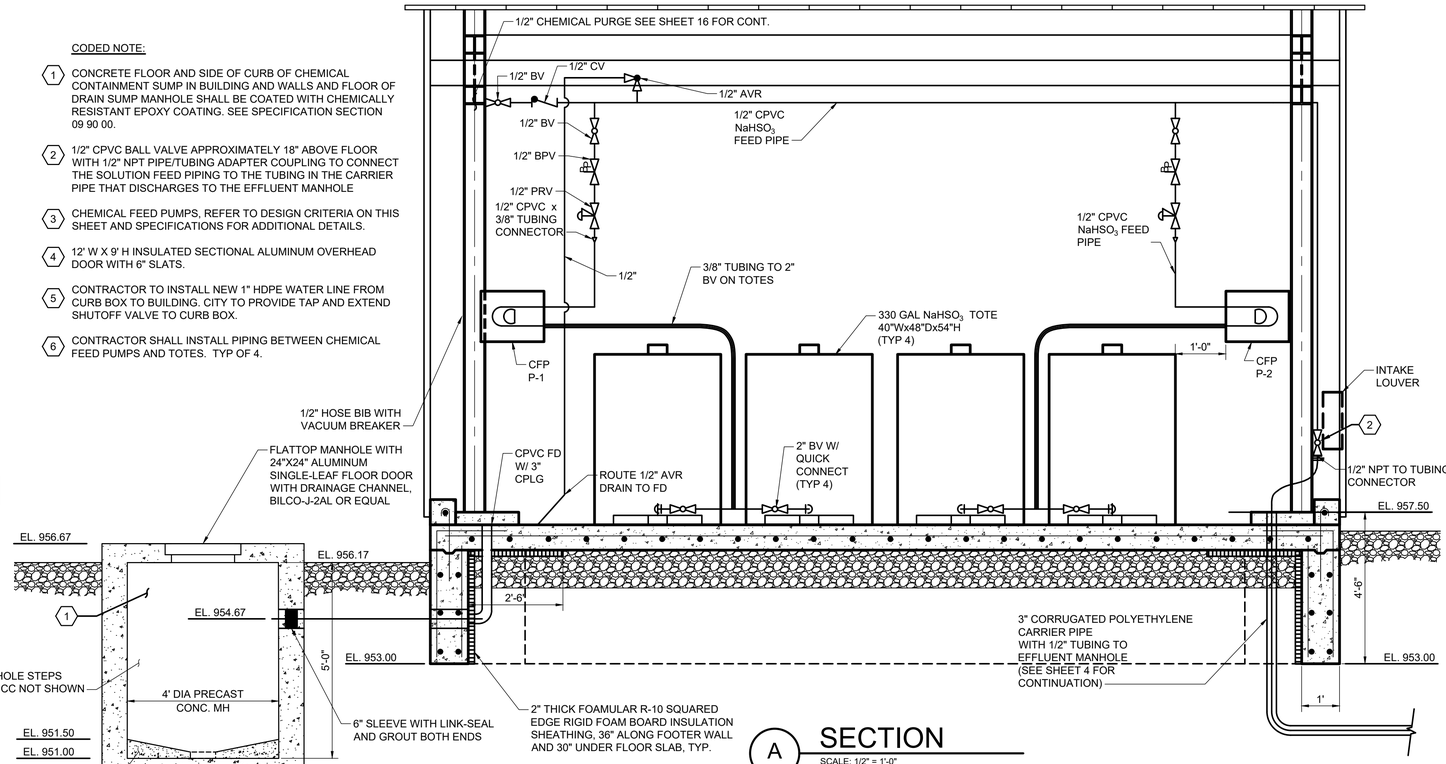
CODED NOTE:

1. CONCRETE FLOOR AND SIDE OF CURB OF CHEMICAL CONTAINMENT SUMP IN BUILDING AND WALLS AND FLOOR OF DRAIN SUMP MANHOLE SHALL BE COATED WITH CHEMICALLY RESISTANT EPOXY COATING. SEE SPECIFICATION SECTION 09 90 00.
2. 1/2" CPVC BALL VALVE APPROXIMATELY 18" ABOVE FLOOR WITH 1/2" NPT PIPE/TUBING ADAPTER COUPLING TO CONNECT THE SOLUTION FEED PIPING TO THE TUBING IN THE CARRIER PIPE THAT DISCHARGES TO THE EFFLUENT MANHOLE
3. CHEMICAL FEED PUMPS, REFER TO DESIGN CRITERIA ON THIS SHEET AND SPECIFICATIONS FOR ADDITIONAL DETAILS.
4. 12' W X 9' H INSULATED SECTIONAL ALUMINUM OVERHEAD DOOR WITH 6" SLATS.
5. CONTRACTOR TO INSTALL NEW 1" HDPE WATER LINE FROM CURB BOX TO BUILDING. CITY TO PROVIDE TAP AND EXTEND SHUTOFF VALVE TO CURB BOX.
6. CONTRACTOR SHALL INSTALL PIPING BETWEEN CHEMICAL FEED PUMPS AND TOTES. TYP OF 4.



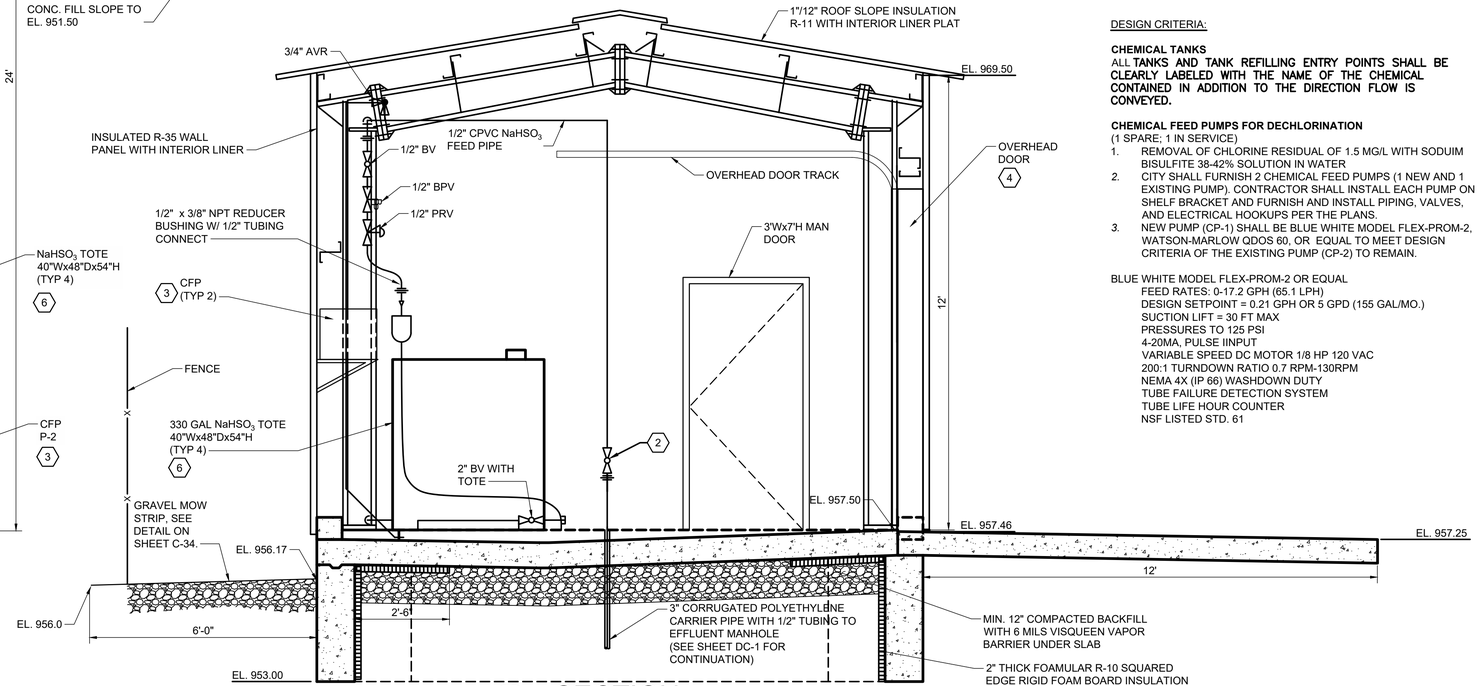
DECHLORINATION BUILDING PLAN

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



SECTION

A — SCALE: 1/2" = 1'-0"



SECTION

B — SCALE: 1/2" = 1'-0"

DESIGN CRITERIA:

CHEMICAL TANKS

ALL TANKS AND TANK REFILLING ENTRY POINTS SHALL BE CLEARLY LABELED WITH THE NAME OF THE CHEMICAL CONTAINED IN ADDITION TO THE DIRECTION FLOW IS CONVEYED.

CHEMICAL FEED PUMPS FOR DECHLORINATION

(1 SPARE; 1 IN SERVICE)

1. REMOVAL OF CHLORINE RESIDUAL OF 1.5 MG/L WITH SODUIM BISULFITE 38-42% SOLUTION IN WATER
2. CITY SHALL FURNISH 2 CHEMICAL FEED PUMPS (1 NEW AND 1 EXISTING PUMP). CONTRACTOR SHALL INSTALL EACH PUMP ON SHELF BRACKET AND FURNISH AND INSTALL PIPING, VALVES, AND ELECTRICAL HOOKUPS PER THE PLANS.
3. NEW PUMP (CP-1) SHALL BE BLUE WHITE MODEL FLEX-PROM-2, WATSON-MARLOW QDOS 60, OR EQUAL TO MEET DESIGN CRITERIA OF THE EXISTING PUMP (CP-2) TO REMAIN.

BLUE WHITE MODEL FLEX-PROM-2 OR EQUAL
FEED RATES: 0-17.2 GPH (65.1 LPH)
DESIGN SETPOINT = 0.21 GPH OR 5 GPD (155 GAL/MO.)
SUCTION LIFT = 30 FT MAX
PRESSURES TO 125 PSI
4-20MA, PULSE INPUT
VARIABLE SPEED DC MOTOR 1/8 HP 120 VAC
200:1 TURNDOWN RATIO 0.7 RPM-130RPM
NEMA 4X (IP 66) WASHDOWN DUTY
TUBE FAILURE DETECTION SYSTEM
TUBE LIFE HOUR COUNTER
NSF LISTED STD. 61

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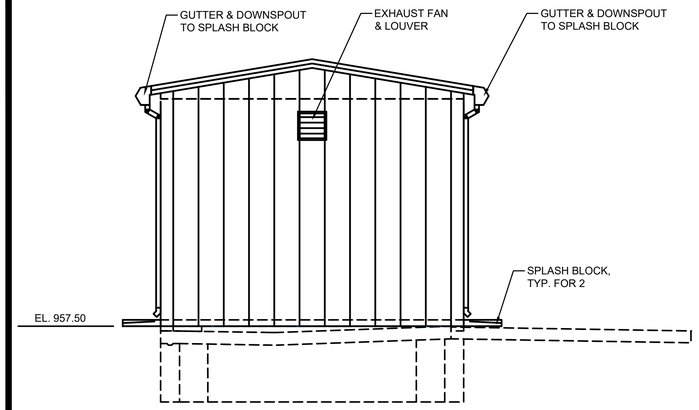
APPROVED BY:	CMS
SCALE:	AS NOTED

DECHLORINATION BUILDING PROCESS PLAN-SECTIONS

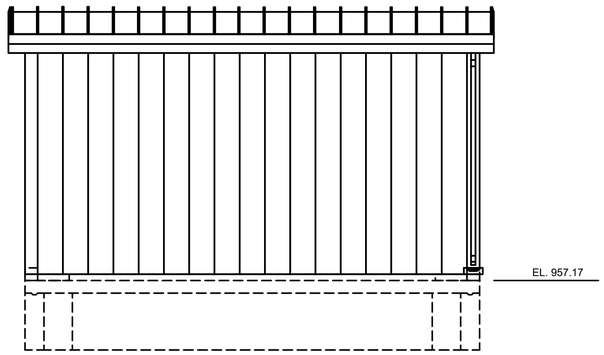
DC-3

SHEET: OF

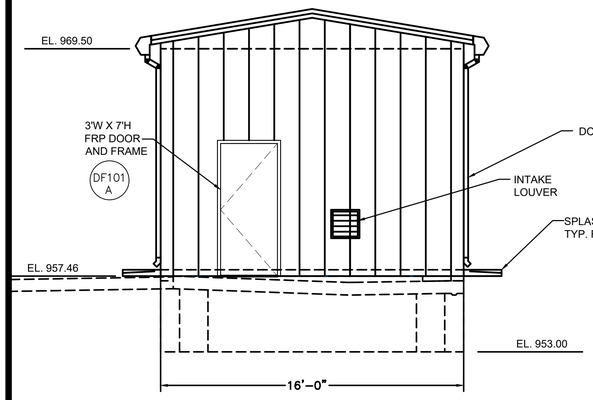
PLOTTED: 4/14/2022 5:45:42 PM



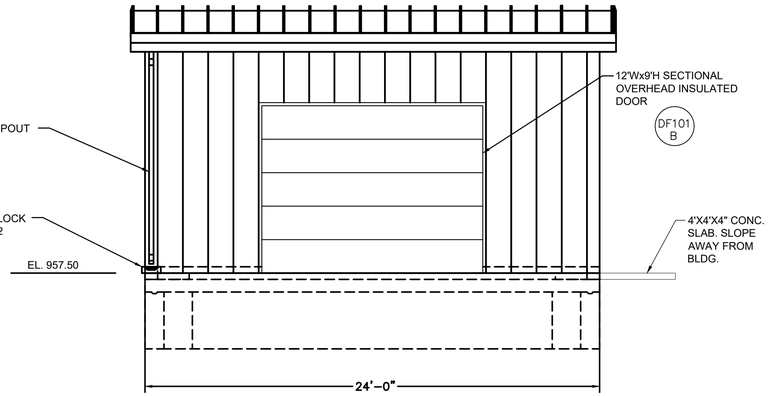
NORTH ELEVATION



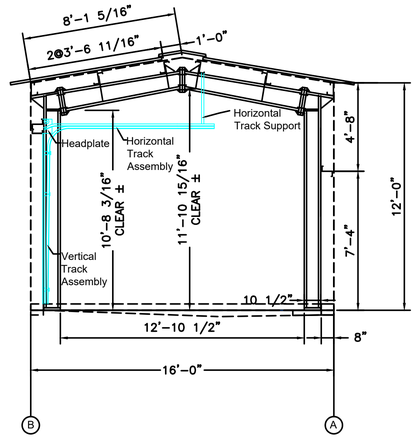
EAST ELEVATION



SOUTH ELEVATION

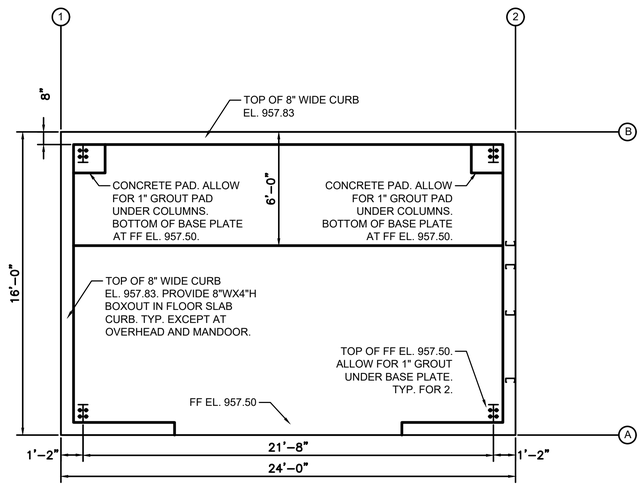


WEST ELEVATION



RIGID FRAME SECTION

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

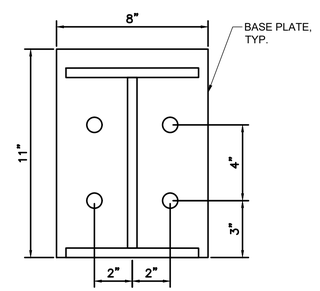


ANCHOR BOLT PLAN

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

NOTES:

1. 16'x24' PRE-ENGINEERED METAL BUILDING WITH INNER LINER PLATE, R-13 WALL AND R-19 INSULATION FOR ROOF.
2. PROVIDE CHEMICAL RESISTANT EPOXY COATING OF FLOOR AND SIDE OF CURB PER SPEC 09 90 00.
3. SEE SHEET DC-7 FOR MECHANICAL HC AND PLUMBING DETAILS.
4. PROVIDE MINIMUM OF 1" GROUT UNDER BASE PLATES.
5. BUILDING SIDING AND ROOFING REQUIREMENTS SHALL BE MBCI METAL BUILDING PRODUCT LINE OR APPROVED EQUAL. PANELS SHALL CONFORM TO THE FOLLOWING PANEL TYPE:
   - ROOF PANEL: ULTRA-DEK STANDING SEAM - 24 GAUGE (STANDARD COLOR CHART TO BE USE FOR OWNER SELECTION)
   - WALL PANEL: AVP EXPOSED FASTENER - 26 GAUGE (STANDARD COLOR CHART TO BE USE FOR OWNER SELECTION)
   - ROOF AND WALL LINER PANEL: PBR EXPOSED FASTENER IN POLAR WHITE - 26 GAUGE
   - FINISH- SHALL BE SIGNATURE 300 OR EQUAL FOR ROOF AND WALL PANELS.



ANCHOR BOLT DETAIL

SCALE: 3" = 1'-0"

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CITY OF CANTON, OHIO
WATER DEPARTMENT
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WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

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DESIGNED BY:	KAS
DRAWN BY:	KAS
CHECKED BY:	CMS
APPROVED BY:	CMS
SCALE:	AS NOTED

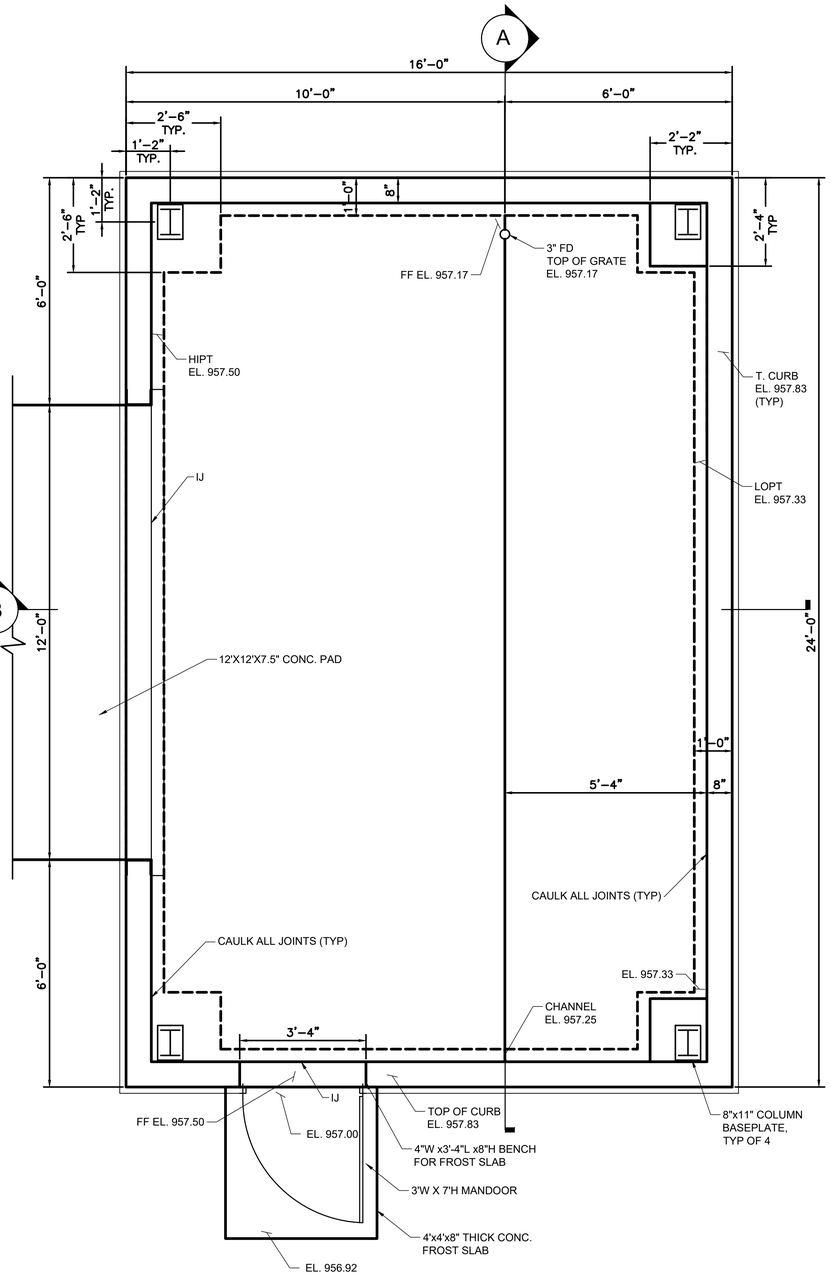
DECHLORINATION BLDG ARCHITECTURAL PLAN-SECTION-ELEVATIONS

DC-4

SHEET: OF

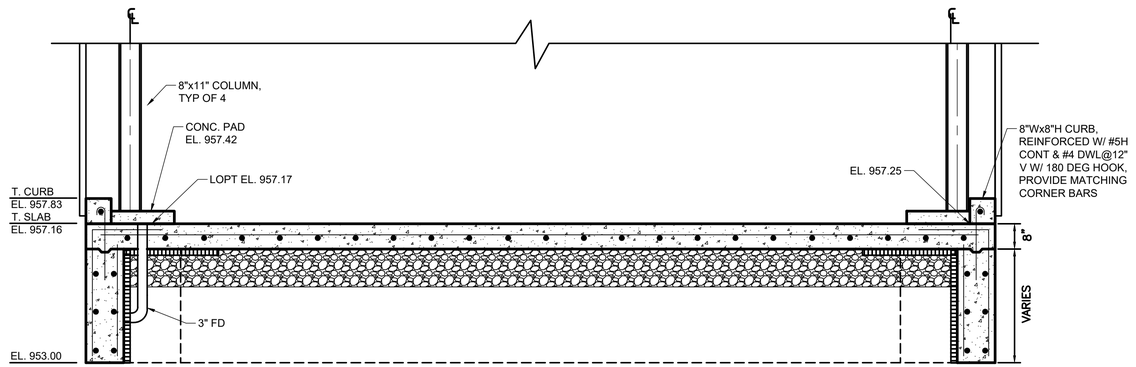
P:\PR58982\Cadd\Sheets\DC-4 DECHLORINATION BLDG ARCHITECTURAL PLAN-SECTION-ELEVATIONS.dwg 2/1/2022 9:48:39 AM Matt Kroll

PLOTTED: 4/14/2022 5:46:13 PM



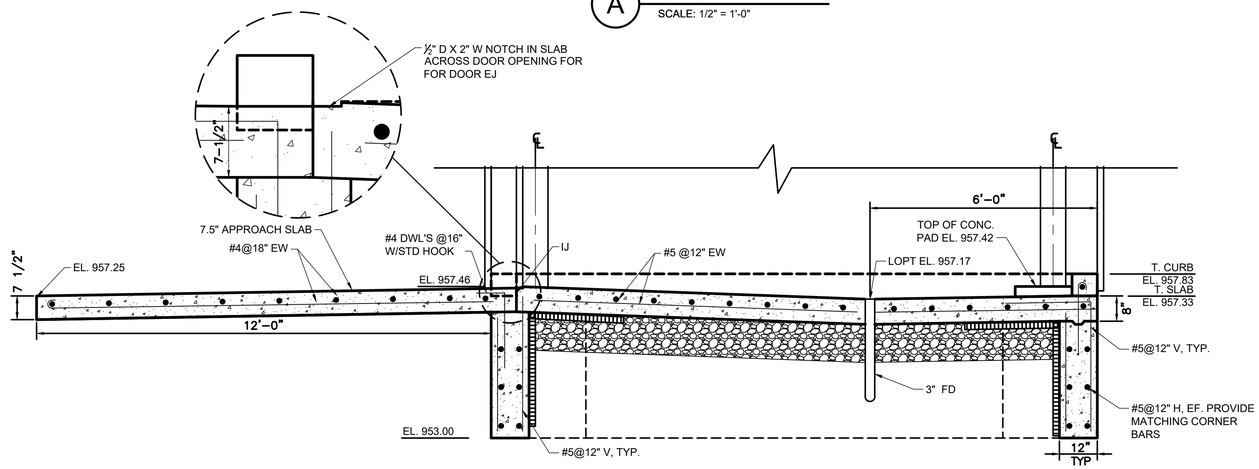
DECHLORINATION BUILDING FOUNDATION PLAN

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



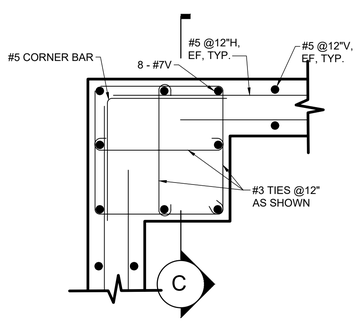
A SECTION

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



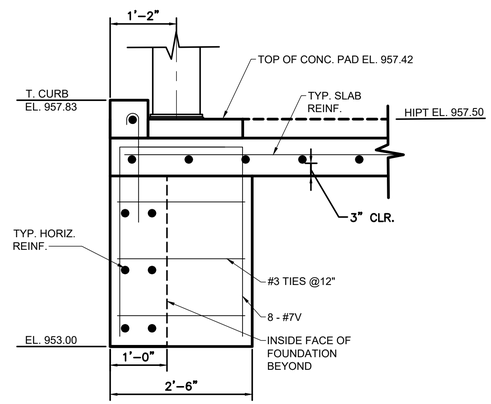
B SECTION

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



COLUMN FOUNDATION DETAIL AT EL. 955.0

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



C SECTION

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

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DRAWN BY:	KAS
CHECKED BY:	CMS
APPROVED BY:	CMS
SCALE:	AS NOTED

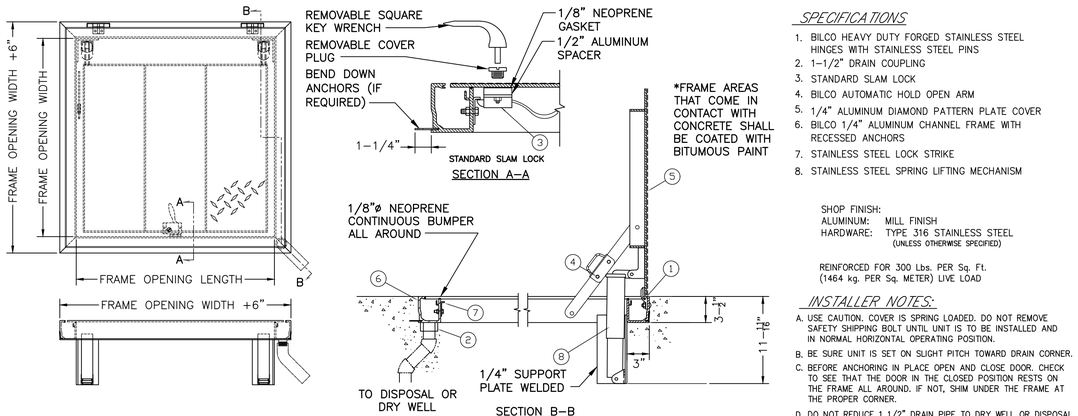
DECHLORINATION BLDG STRUCTURAL PLAN-SECTIONS-DETAIL

DC-5

SHEET: OF

P:\PR58982\Cadd\Sheets\DC-5 DECHLORINATION BLDG STRUCTURAL PLAN-SECTIONS-DETAIL.dwg 2/1/2022 9:48:49 AM Matt Kroll

PLOTTED: 4/14/2022 5:46:23 PM



SINGLE LEAF MANHOLE DOOR

SCALE: NONE

SPECIFICATIONS

1. BILCO HEAVY DUTY FORGED STAINLESS STEEL HINGES WITH STAINLESS STEEL PINS
2. 1-1/2" DRAIN COUPLING
3. STANDARD SLAM LOCK
4. BILCO AUTOMATIC HOLD OPEN ARM
5. 1/4" ALUMINUM DIAMOND PATTERN PLATE COVER
6. BILCO 1/4" ALUMINUM CHANNEL FRAME WITH RECESSED ANCHORS
7. STAINLESS STEEL LOCK STRIKE
8. STAINLESS STEEL SPRING LIFTING MECHANISM

SHOP FINISH:
ALUMINUM: MILL FINISH
HARDWARE: TYPE 316 STAINLESS STEEL
(UNLESS OTHERWISE SPECIFIED)

REINFORCED FOR 300 Lbs. PER Sq. Ft.
(1464 kg. PER Sq. METER) LIVE LOAD

INSTALLER NOTES:

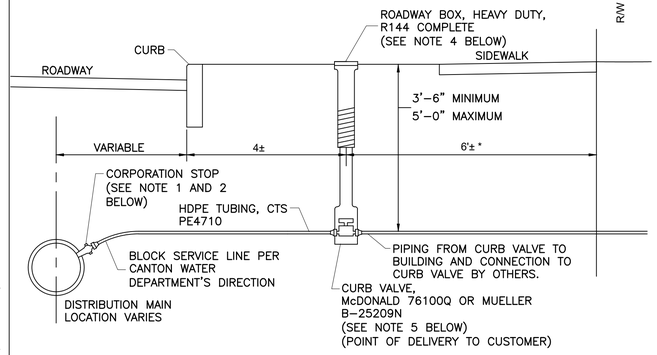
A. USE CAUTION. COVER IS SPRING LOADED. DO NOT REMOVE SAFETY SHIPPING BOLT UNTIL UNIT IS TO BE INSTALLED AND IN NORMAL HORIZONTAL OPERATING POSITION.

B. BE SURE UNIT IS SET ON SLIGHT PITCH TOWARD DRAIN CORNER.

C. BEFORE ANCHORING IN PLACE OPEN AND CLOSE DOOR. CHECK TO SEE THAT THE DOOR IN THE CLOSED POSITION RESTS ON THE FRAME ALL AROUND. IF NOT, SHIM UNDER THE FRAME AT THE PROPER CORNER.

D. DO NOT REDUCE 1 1/2" DRAIN PIPE TO DRY WELL OR DISPOSAL SYSTEM.

E. BEND DOWN ANCHORS IF REQUIRED



NOTES:

1.) A 1" SERVICE ON A 6" OR 8" MAIN SHALL CONSIST OF A 3/4" TAP WITH A 3/4" X 1" CORP.

2.) CORPORATION STOP AND ASSEMBLY SHALL BE AS FOLLOWS:

3/4" X 1" CORP. STOP ON DIP (6" AND 8" MAINS):
INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION STOP WITH A COMPRESSION CONNECTION.

3/4" X 1" CORP. STOP ON PVC C909 (6" AND 8" MAINS):
INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION STOP WITH A COMPRESSION CONNECTION AND A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).

1" CORP. STOP ON DIP (MAINS 12" AND UP):
INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION STOP WITH A COMPRESSION CONNECTION.

1" CORP. STOP ON PVC C909 (MAINS 12" AND UP):
INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION STOP WITH A COMPRESSION CONNECTION AND A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).

1 ½" CORP. STOP (ALL MAIN SIZES):
INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION STOP WITH A COMPRESSION CONNECTION AND A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).

2" CORP. STOP (ALL MAIN SIZES):
INSTALL AT A 45° ANGLE, A MUELLER H-10003 CORPORATION STOP WITH 2" IRON TOP, A STANDARD NO LEAD BRASS 45° ELBOW AND A MUELLER H-15428 COMPRESSION MALE WITH INSERT COUPLING. ASSEMBLY SHALL ALSO CONSIST OF A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).

3.) A SERVICE CLAMP MUST BE USED WHEN THE MAIN SIZE IS 2 INCH OR SMALLER.

4.) HEAVY DUTY VALVE BOXES, COMPLETE, MUST BE USED IN PLACE OF ROADWAY BOXES WHEN THE CURB VALVE IS LOCATED IN ROADWAYS OR ASPHALT DRIVES.

5.) WHEN CONNECTING A NEW 1" SERVICE TO AN EXISTING 3/4" SERVICE, THE CURB VALVE SIZE SHALL BE A 1" X 3/4" REDUCING CURB VALVE.

6.) BRASS REDUCING BUSHINGS OR SWIVEL ELLS WILL NOT BE ALLOWED.

7.) APPROVED EQUALS MAY BE USED IN PLACE OF SPECIFIED ITEMS.

TYPICAL WATER SERVICE

(C94)

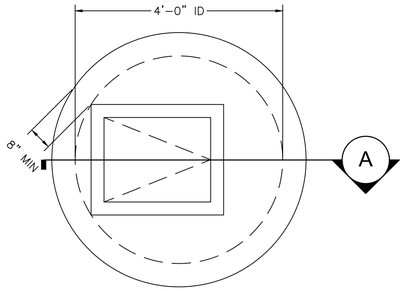
REV 10/16/2020

NOTES:

1. MANHOLES SHALL BE PERFECTLY PLUMB.
2. THOROSEAL INSIDE OF SANITARY MANHOLES ONLY, FULL DEPTH (ANY COLOR BUT GRAY).
3. ALL JOINTS AND CONNECTIONS TO BE WATER PLUGGED.
4. ALL MATERIALS SHALL BE AS LISTED IN THE SPECIFICATIONS.
5. ALL PRECAST CONCRETE SHALL BE REINFORCED IN ACCORDANCE WITH THE LATEST REVISIONS OF A.S.T.M. DESIGNATION C-478. ALL PRECAST CONCRETE SECTIONS SHALL BE MANUFACTURED AND FURNISHED AS SOLID SECTIONS WITHOUT LIFT HOLES OF ANY KIND.
6. 1-1/2" FPT DRAIN OUTLET TO SIDE ON MANHOLE LID WITH 1-1/2" CIP PIPE. CENTERLINE OF DRAIN PIPE AT 5" BELOW TOP OF MANHOLE LID.

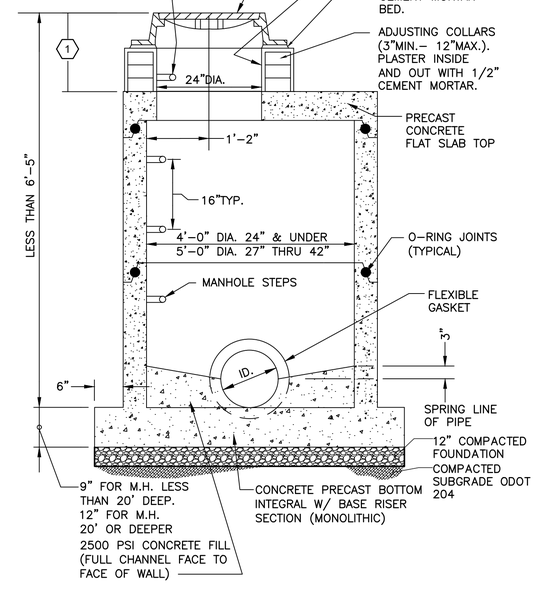
CODED NOTE:

(1) A FLUSH MOUNT FLOOR DOOR CAN BE PROVIDED WHEN NOTED ON PLANS. PROVIDE SINGLE-LEAF EMBEDDED ALUMINUM FLOOR DOOR AND FRAME WITH GUTTER AND 1-1/2" GALVANIZED IRON PIPE DRAIN TO OUTLET SIDE OF PRECAST CONCRETE LID AT 2" ABOVE FINAL GRADE.



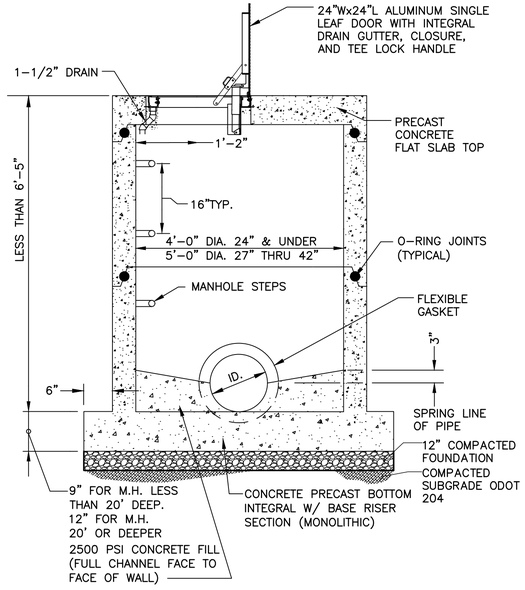
TOP PLAN

SCALE: NONE



(A) SHALLOW MANHOLE W/ CASTING

SCALE: NONE



(A) FLAT TOP MANHOLE SECTION

SCALE: NONE

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION REVISIONS	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	CMS
DRAWN BY:	GCB
CHECKED BY:	CMS
APPROVED BY:	CMS
SCALE:	NONE

DECHLORINATION BLDG CIVIL MISCELLANEOUS DETAILS

DC-6

SHEET: OF

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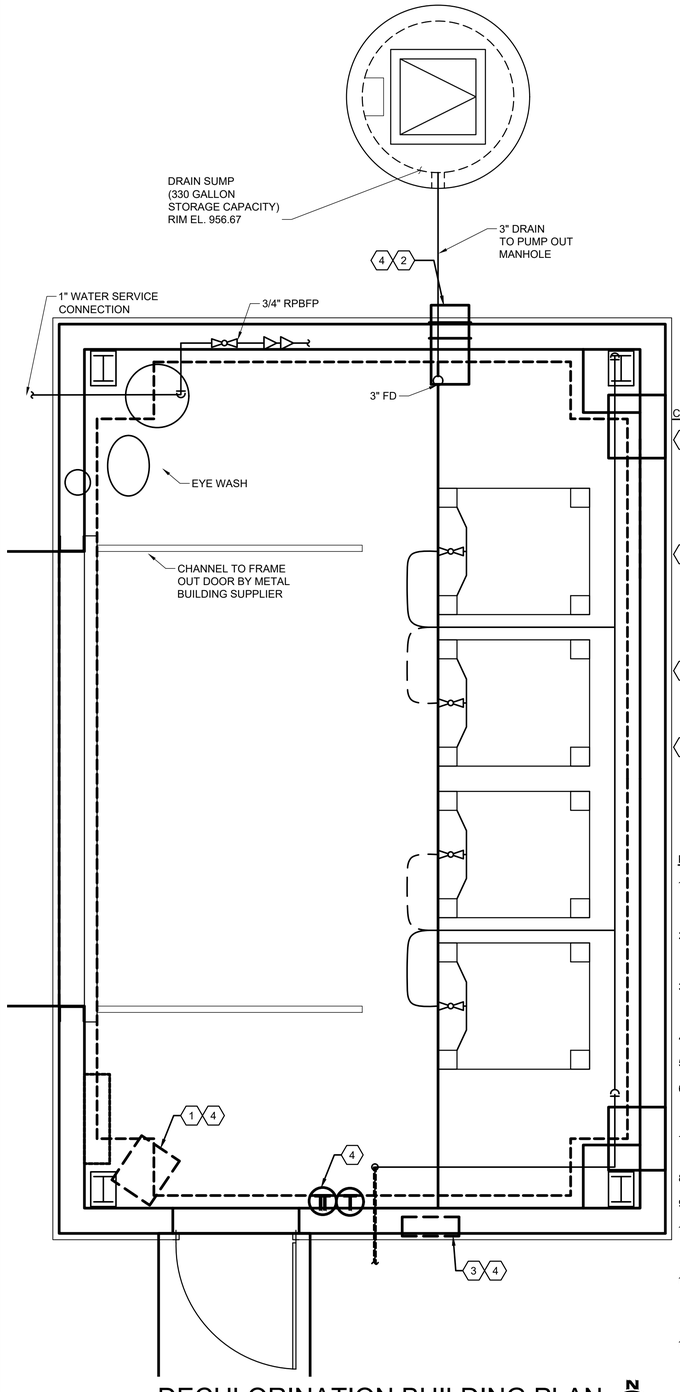
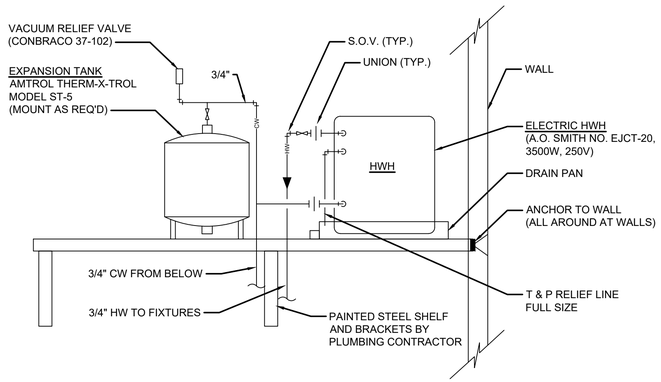


DECHLORINATION BUILDING PLAN

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



ELECTRIC WATER HEATER PIPING AND MOUNTING DETAIL

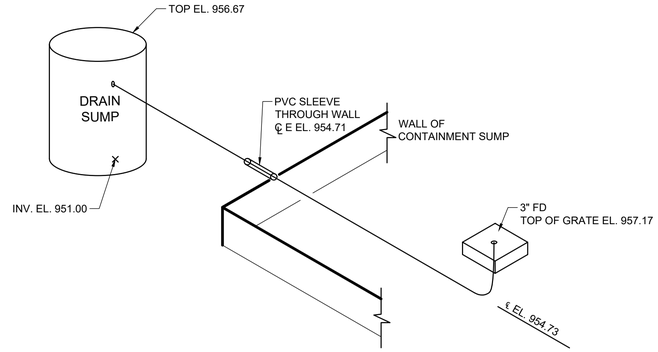
SCALE: NONE

CODED NOTES:

1. ELECTRIC UNIT HEATER EUH-1 TO BE MARKEL CATALOG NUMBER 07133002, MODEL NUMBER P3P5510T, WASHDOWN FAN FORCED TYPE, 10 KW, 480/3/60 (12.1 AMPS), WITH MOUNTING BRACKETS/HARDWARE WITH VIBRATION ISOLATORS, BUILT-IN DISCONNECT AND STAT, TOTALLY ENCLOSED FAN MOTOR, NEMA 4X NON-METALLIC CONTROL PANEL, POWER ON PILOT LIGHT, AND ALL OTHER STANDARD FEATURES. WEIGHT OF UNIT APPROXIMATELY 75 POUNDS.
2. EXHAUST FAN EF-1 ASSEMBLY TO BE LOREN COOK MODEL 12XW36D17(VF), DIRECT DRIVE ECM PROP TYPE, 500 CFM @ .45" SP, 120/1/60, 1/6 HP, WITH MANUAL MOTOR SPEED CONTROLLER, WALL COLLAR/SLEEVE WITH OSHA INSIDE GUARD, EXTERIOR HOOD WITH BIRESCREEN, INSULATED 120V MOTORIZED DAMPER, LOW VOLTAGE MAKE-ON-RISE WALL STAT, AND WITH EPOXY POWDER COATING. MOUNT FAN ASSEMBLY HIGH IN WALL.
3. 18" X 18" VENTILATION SYSTEM INTAKE ASSEMBLY TO CONSIST OF A 16 GAGE GALVANIZED SHEET METAL SLEEVE, AN INSULATED AND MOTORIZED 120V DAMPER, AN OUTDOOR WEATHER HOOD WITH BIRDSCREEN, AND INSIDE BIRDSCREEN. DAMPER TO BE INTERLOCKED WITH EF-1.
4. ALL SYSTEM 120V AND HIGHER WIRING (POWER AND/OR INTERLOCK) BY E.C. INCLUDING ADDING A LABELED VENTILATION SYSTEM TWIST TIMER JUST INSIDE THE MAN-DOOR ENTRANCE TO BRING THE SYSTEM ON IF IT IS NOT ALREADY ON VIA THE WALL STAT. ALL LOW VOLTAGE WIRING BY M.C.

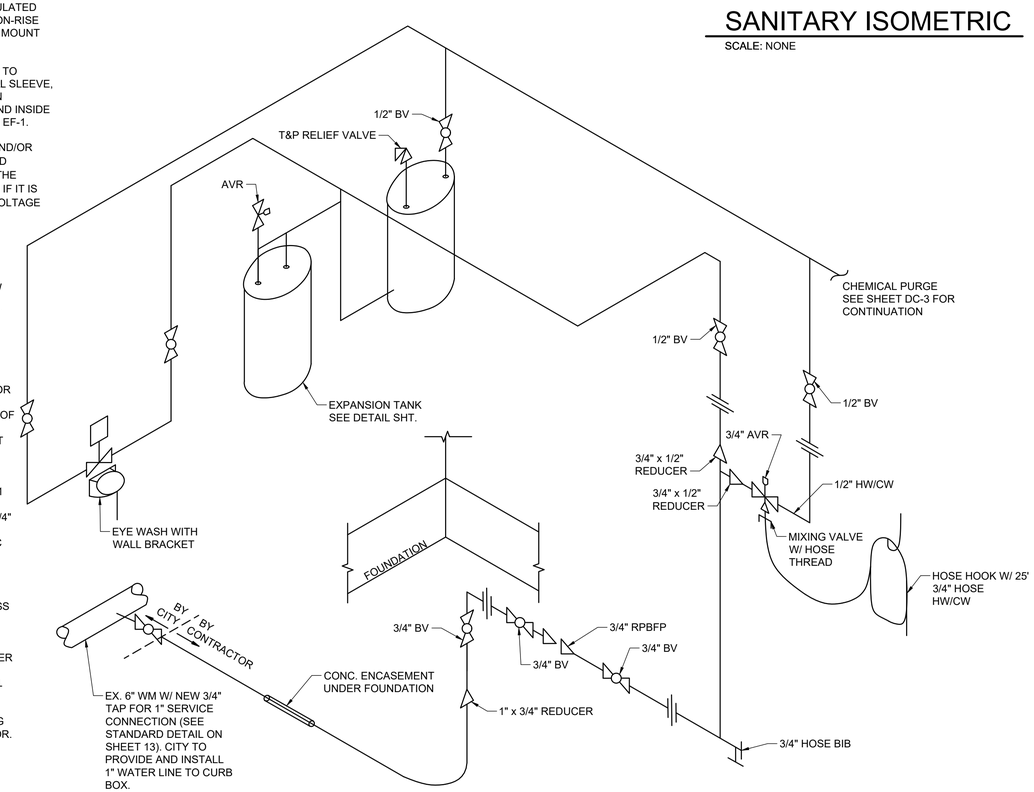
PLUMBING NOTES:

1. 1 1/2" POTABLE CW WITH WATTS 009QT BACKFLOW PREVENTER DOWN FOR WATER STORAGE TANK SYSTEM. AIR GAPED CONNECTION TO EQUIPMENT PER MANUFACTURERS INSTALLATION DETAILS.
2. 1 1/2" POTABLE CW DOWN FOR CONNECTION TO ELECTRIC WATER HEATER (4500W/208V) WITH TEMPERING VALVE FOR CONNECTION TO EMERGENCY SHOWER/EYE WASH.
3. 1 1/2" POTABLE CW DOWN INTO TUNNEL BELOW FOR CONNECTION TO EXISTING POTABLE WATER LINE. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING POTABLE WATER LINE.
4. 3/4" POTABLE WATER DOWN TO WALL HYDRANT AT 18" AFF.
5. 3" SANITARY DOWN FROM FLOOR DRAIN AND DISCHARGE INTO SUMP PIT BELOW.
6. 3/4" CW AND HW DOWN TO (DIXON MODEL DXWDS1 OR APPROVED EQUAL) AND CONNECT TO HOSE REEL (HANNAY REELS MODEL N818-23-24J 50' OF 3/4" HOSE)
7. 1/2" CW AND HW TO HAWS 9210EW THERMOSTATIC MIXING VALVE ANN 1/2" TEPID WATER TO HAWS 7260B-7270B WALL MOUNT EYE WASH.
8. 1 1/2" HW FOR CONNECTION TO PROCESS EQUIPMENT.
9. 1 1/2" CW AND HW LINES FROM ELECTRIC TANKLESS WATER HEATERS.
10. FURNISH AND INSTALL EXPANSION TANK AMTROL THERM-X-TROL MODEL ST-5 OR EQUAL SHALL BE PROVIDED ON COLD WATER SUPPLY LINE TO WATER HEATER (SEE DETAIL THIS SHEET).
11. FLOOR CLEANOUT SHALL BE ZURN-1400 OR EQUAL WITH ADJUSTABLE FLOOR CLEANOUT. DURA-COATED CAST IRON BODY WITH GAS TIGHT AND WATER TIGHT ABS TAPERED THREADED PLUG AND SERRATED TOP ADJUSTABLE TO FINISH FLOOR.
12. FLOOR DRAIN SHALL BE CHARLOTTE PIPE CHEMDRAIN CPVC WITH BOTTOM OUTLET AND 5" ADJUSTABLE GRATE WITH STRAINER AND P-TRAP SYSTEM, OR APPROVED EQUAL.



SANITARY ISOMETRIC

SCALE: NONE



PLUMBING ISOMETRIC

SCALE: NONE

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100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

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WATER DEPARTMENT
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SCALE:	AS NOTED

DECHLORINATION
BLDG
MECHANICAL
PLAN-DETAILS

DC-7

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POWER LEGEND

RECEPTACLE OUTLETS – NUMERAL BY THE SIDE OF THE SYMBOL INDICATES CIRCUIT NUMBER

- DUPLEX CONVENIENCE OUTLET MOUNTED AT +18" OR AS NOTED.
- DOUBLE DUPLEX OUTLET (FOURPLEX) RECEPTACLE MOUNTED AT +18" OR AS NOTED.
- C — DUPLEX CONVENIENCE OUTLET MOUNTED ABOVE COUNTER. VERIFY EXACT MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
- TELEPHONE OUTLET AT +18" OR AS NOTED. FURNISH (1) 3/4" CONDUIT WITH PULL WIRE TO TELEPHONE MOUNTING BOARD OR AS NOTED.
- CABLE TV OUTLET AT +18" OR AS NOTED. FURNISH (1) 3/4" CONDUIT WITH PULL WIRE TO TELEPHONE MOUNTING BOARD OR AS NOTED.
- DEDICATED OUTLET AT +18" OR AS NOTED. 'HUBBELL' #IG5262 (ORANGE) RECEPTACLE WITH ISOLATED GROUND.
- DEDICATED TWISTLOCK OUTLET AT +18" OR AS NOTED.
- MULTI-OUTLET ASSEMBLY
- FLUSH MOUNTED PANELBOARD AND CABINET. MOUNT 6'-6" TO TOP
- SURFACE MOUNTED PANELBOARD AND CABINET. MOUNT 6'-6" TO TOP
- PB — PULL BOX
- 4X — COMBINATION MOTOR CONTROLLER – FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. SIZE AS NOTED. NUMBER INDICATES NEMA TYPE CONSTRUCTION.
- 1 — MOTOR – SIZE AS INDICATED ON DRAWINGS.
- DISCONNECT SWITCH – SIZE AND FUSES AS PER MANUFACTURER'S RECOMMENDATIONS (WEATHERPROOF WHERE OUTSIDE).
- J — JUNCTION BOX IN ACCESSIBLE LOCATION.
- J — JUNCTION BOX IN ACCESSIBLE LOCATION WITH FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT AS NOTED.
- PE — PHOTOCELL ON ROOF (AIM NORTH).
- SEALING FITTING
- VS, 12 — MOTOR CONTROLLER OR VFD – INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. NUMBER INDICATES NEMA TYPE CONSTRUCTION, VS INDICATES VENDOR SUPPLIED.
- EQUIPMENT SHOWN LIGHT & DASHED INDICATES EXISTING EQUIPMENT EXCEPT, FOR UNDERGROUND CONDUITS AND/OR AS OTHERWISE NOTED.
- EQUIPMENT SHOWN LIGHT, DASHED, & HATCHED INDICATES EXISTING EQUIPMENT TO BE REMOVED.
- UTILITY POLE

RACEWAYS AND CONDUCTORS

- INDICATES HOMERUN FROM EQUIPMENT TO PANELBOARD OR AS NOTED.
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- OHP — PROPOSED OVERHEAD PRIMARY CABLE
- EX — EXISTING UNDERGROUND ELECTRICAL CONDUIT
- E — PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- EP — PROPOSED UNDERGROUND PRIMARY ELEC CONDUIT
- S — PROPOSED UNDERGROUND SIGNAL CONDUIT
- T — PROPOSED UNDERGROUND TELEPHONE CONDUIT

LIGHTING

LIGHTING FIXTURES – CAPITAL LETTER INDICATES THE FIXTURE TYPE AS SHOWN ON FIXTURE SCHEDULE. NUMERAL INDICATES CIRCUIT NO. AND SMALL LETTER DESIGNATES THE CONTROL SWITCH. EXACT MOUNTING PER SCHEDULE.

CEILING	WALL	DESCRIPTION
○	○	SURFACE OR PENDANT INCANDESCENT, HID OR SIMILAR LAMP FIXTURE.
▭	▭	SURFACE OR PENDANT INDIVIDUAL FLUORESCENT FIXTURE.
▭▭▭		SURFACE OR PENDANT CONTINUOUS
		BARE LAMP FLUORESCENT STRIP.
⊠	⊠	SURFACE OR PENDANT EXIT LIGHT. ARROWS INDICATE ROUTE OF EGRESS.
		EMERGENCY LIGHTING FIXTURE BATTERY OPERATED. ARROWS INDICATE AIMING DIRECTION.
		POLE MOUNTED LIGHT FIXTURE, SINGLE POLE W/SINGLE AND/OR DOUBLE FIXTURE.

SWITCHED OUTLET

SMALL LETTER BY THE SIDE OF SYMBOLS INDICATES THE PARTICULAR SWITCH.
SAMPLE: $_{G}$ = SWITCH "a"

- $_{G}$ — SINGLE POLE SWITCH MOUNTED AT +48" OR AS NOTED.
- $_{2}$ — TWO POLE SWITCH MOUNTED AT +48" OR AS NOTED.
- $_{3}$ — THREE WAY SWITCH MOUNTED AT +48" OR AS NOTED.
- $_{4}$ — FOUR WAY SWITCH MOUNTED AT +48" OR AS NOTED.
- $_{P}$ — SINGLE POLE SWITCH WITH PILOT LIGHT MOUNTED AT +48" OR AS NOTED.
- $_{K}$ — SINGLE POLE KEY OPERATED SWITCH MOUNTED AT +48" OR AS NOTED.
- $_{M}$ — H.P. RATED MANUAL MOTOR STARTER (WEATHERPROOF WHERE OUTSIDE).
- $_{D}$ — INCANDESCENT SLIDE CONTROL DIMMER AT +48" OR AS NOTED (1500 WATT UNLESS OTHERWISE NOTED).
- $_{T}$ — 0–60 MINUTE TIMER SWITCH MOUNTED AT +48" OR AS NOTED.

ABBREVIATED LIST OF NEMA ENCLOSURE TYPES

- TYPE 1: GENERAL PURPOSE. INDOOR.
- TYPE 2: DRIP-PROOF. NONCORROSIVE. INDOOR.
- TYPE 3: DUST-TIGHT. RAINTIGHT. OUTDOOR.
- TYPE 3R: RAINPROOF. OUTDOOR.
- TYPE 4: WATERTIGHT AND DUST-TIGHT. NONCORROSIVE. INDOOR AND OUTDOOR.
- TYPE 4X: WATERTIGHT AND DUST-TIGHT. CORROSION RESISTANT. INDOOR AND OUTDOOR.
- TYPE 6: WATERTIGHT. DUST-TIGHT. SHORT-TIME SUBMERSIBLE. INDOOR AND OUTDOOR.
- TYPE 6P: WATERTIGHT. DUST-TIGHT. LONG-TIME SUBMERSIBLE. INDOOR AND OUTDOOR.
- TYPE 7: CLASS 1, GROUPS A, B, C, OR D. INDOOR.
- TYPE 8: CLASS 1, GROUPS A, B, C, OR D. INDOOR OR OUTDOOR.
- TYPE 9: CLASS II, GROUPS E OR G. INDOOR.
- TYPE 12: DUST-TIGHT. WATERTIGHT. NONCORROSIVE LIQUID. INDOOR.
- TYPE 13: WATERTIGHT. DUST-TIGHT. OILTIGHT. NONCORROSIVE LIQUID INDOOR.

PROJECT GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (N.E.C.) LATEST EDITION.
2. COORDINATE ALL ELECTRICAL EQUIPMENT LOCATIONS AND MECHANICAL APPURTENANCES WITHIN THE EXISTING CONDITIONS TO PROVIDE ADEQUATE WORKING AND ACCESS PER N.E.C. REQUIREMENTS.
3. WHERE EXISTING ELECTRICAL DEVICES AND PROCESS DEVICES ARE INDICATED THOSE LOCATIONS ARE APPROXIMATE AND NOT ALL ELECTRICAL DEVICES MAY BE INDICATED. (FIELD VERIFY ALL ELECTRICAL ITEMS WHERE POSSIBLE.)
4. CONDUITS, RACEWAYS AND CABLES SHALL BE PROPERLY AND SECURELY ATTACHED TO BUILDING STRUCTURAL COMPONENTS AS REQUIRED BY N.E.C. ALL FASTENERS AND HARDWARE SHALL BE APPROVED FOR THE INSTALLATION AND THE CONDITIONS ENCOUNTERED.
5. EACH JUNCTION IN ANY OF THE WIRING SYSTEMS SHALL BE MADE IN AN APPROVED JUNCTION BOX. SUCH BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS AND DEVICES TO BE INSTALLED, AS WELL AS THE CONDITION ENCOUNTERED. ALL SPLICES SHALL BE MADE WITH APPROVED, MECHANICAL CONNECTORS.
6. CONTRACTOR SHALL VERIFY ALL STRUCTURAL, PROCESS AND MECHANICAL CONDITIONS PRIOR TO ROUGH-IN FOR ELECTRICAL WIRING AND EQUIPMENT.
7. ALL ELECTRICAL WORK SHALL BE CAREFULLY COORDINATED WITH THE ON-SITE CONDITIONS. WHERE CUTTING, DRILLING OR ALTERATION TO THE WORK OF OTHERS IS NECESSARY FOR THE PROPER INSTALLATION OF ELECTRICAL EQUIPMENT, SUCH WORK SHALL BE PLANNED IN ADVANCE AND SHALL BE CAREFULLY DONE. ANY DAMAGE TO THE BUILDINGS OR EQUIPMENT SHALL BE REPAIRED BY PROPERLY TRAINED PERSONNEL TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
8. DURING ROUGH-IN AND FINISHED STAGES OF CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES AND DEVICES AS WELL AS ALL EXISTING EQUIPMENT AND RELATED WORK AREAS.
9. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH HE/SHE IS FURNISHING TO THE ENGINEER/OWNER FOR REVIEW PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE FINAL LOCATIONS OF INSTRUMENTATION, CONTROL AND POWER CONNECTION DETAILS SO THAT THE ASSOCIATED ELECTRICAL WORK WILL BE PROPERLY COORDINATED AND INSTALLED.
11. EQUIPMENT LAYOUT AND EXACT LAYOUT OF NEW ELECTRICAL EQUIPMENT AND INSTRUMENTATION SHALL BE COORDINATED WITH PROCESS AND MECHANICAL EQUIPMENT.
12. DRAWINGS SHOW A LAYOUT OF ELECTRICAL/INSTRUMENTATION SYSTEMS AND EQUIPMENT DIAGRAMMATICALLY. EXACT LOCATION OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE DETERMINED BY FIELD CONDITIONS AND DIRECTION BY ENGINEER AND OWNER. BY SUBMITTING A BID, CONTRACTOR WARRANTS THAT HE HAS VISITED THE SITE WHERE WORK IS TO BE PERFORMED, AND HAS EXAMINED THE EXISTING CONDITIONS AND EXTENT OF LABOR AND MATERIALS TO BE PROVIDED. COORDINATION WITH ALL TRADES, UTILITIES, ETC. SHALL BE PROVIDED. THE ENGINEER SHOULD BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS OR INTERFERENCES WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THEIR INTERPRETATIONS.

DEMOLITION GENERAL NOTES:

1. ANY DEMOLITION INDICATED ON THESE DRAWINGS IS SHOWN IN GENERAL TO INDICATE THE EXTENT OF DEMOLITION AND IS NOT TO BE CONSIDERED AS A RECORD DRAWING OF EXISTING CONDITIONS. ACCORDINGLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE DEMOLITION OF ELECTRICAL WORK INDICATED INCLUDING ANY BURIED ITEMS OR EXISTING ITEMS NOT SHOWN ON THESE DRAWINGS. BEFORE DEMOLITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPROPRIATE FIELD TESTING TO DETERMINE THE NATURE OF THE EXISTING WORK TO BE DEMOLISHED TO PROTECT EXISTING WORK REMAINING IN PLACE AND TO PROTECT THE PUBLIC.
2. REPAIR AND RESTORE TO ORIGINAL CONDITION ALL ITEMS OR PORTIONS OF ELECTRICAL WORK WHICH ARE NOT NOTED TO BE DEMOLISHED, BUT ARE DAMAGED BY WORK UNDER THIS CONTRACT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROTECT AND RETAIN POWER TO ALL EXISTING ACTIVE EQUIPMENT WHICH SHALL REMAIN. ELECTRICAL CONTRACTOR SHALL RECONNECT ANY EQUIPMENT BEING DISTURBED BY THIS RENOVATION.
3. WHERE WORK BY THE GENERAL CONTRACTOR (WALL REMOVAL, NEW OR RELOCATED WALL OPENINGS), REQUIRES THE REMOVAL, RELOCATION, OR REFEEDING OF ELECTRICAL DEVICES OR LIGHTING FIXTURES, THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND MAKE SAFE OR RECONNECT AS REQUIRED ALL ACTIVE DEVCES REMAINING ON THAT CIRCUIT.
4. CONTRACTOR SHALL VERIFY ALL CIRCUIT IN EXISTING PANEL AFFECTED BY THIS ALTERATION. WHERE ADDITIONAL CIRCUITS ARE NEEDED, USE AVAILABLE SPARE BREAKERS IN THE PANEL. TIGHTEN ALL CONNECTIONS AS REQUIRED.
5. DO NOT PROCEED WITH DEMOLITION WITHOUT WRITTEN AUTHORITY TO PROCEED. PROCEED WITH DEMOLITION IN A SYSTEMATIC MANNER AND COORDINATE WITH ALL TRADES INVOLVED. COORDINATE AND SEQUENCE DEMOLITION SO AS NOT TO CAUSE A SHUTDOWN OF OPERATION OF SURROUNDING AREAS.
6. DISCONNECT OR SHUT OFF SERVICE TO AREAS WHERE ELECTRICAL WORK IS TO BE REMOVED. REMOVE ALL ELECTRICAL PANELS, EQUIPMENT, AND RELATED CONDUIT, AND WIRING WHICH ARE NOT A PART OF THE FINAL PROJECT IN ALL AREAS WHERE WORK OF THIS CONTRACT ARE TO BE PERFORMED. ALL REMOVED EQUIPMENT SHALL BE DISPOSED OF BY THIS CONTRACTOR UNLESS DIRECTED TO DO OTHERWISE BY THE OWNER. REMOVE ALL CONDUIT, WIRE, BOXES, AND FASTENING DEVICES AS REQUIRED TO AVOID ANY INTERFACE WITH NEW INSTALLATIONS. ABANDONED CIRCUITS TO BE CAPPED AT BOTH ENDS. REMOVE THE EXISTING WIRE NO LONGER IN USE FROM DEVICE LOCATION BACK TO PANEL.
7. ARRANGE TIMING SHUTDOWN PERIODS OF ALL-IN SERVICE PANELS WITH OWNER OR HIS/HER REPRESENTATIVE. DO NOT SHUT DOWN ANY UTILITY WITHOUT PRIOR WRITTEN APPROVAL.
8. WHERE EXISTING CIRCUITS ARE INDICATED TO BE REUSED, CONTRACTOR TO USE SENSING MEASURING DEVICES TO VERIFY THAT CIRCUITS FEEDING PROJECTS ARE OR ARE NOT IN USE.
9. EXISTING ELECTRICAL EQUIPMENT NECESSARY FOR EXISTING INSTALLATION TO REMAIN OPERATIONAL WILL HAVE TO BE PROTECTED DURING CONSTRUCTION.
10. THE ELECTRICAL CONTRACTOR SHALL TAKE INTO ACCOUNT IN FILING HIS/HER BID HIS/HER OBLIGATION TO PROVIDE FOR THE DISMANTLING AND REMOVAL OR MODIFICATION OF EXISTING ELECTRICAL EQUIPMENT, CONDUIT, WIRING AND RELATED ITEMS FOR THEIR REPLACEMENT OR MODIFICATION AS SPECIFIED.
11. CONTRACTOR SHALL COORDINATE WITH OWNER FOR POSSIBLE SALVAGE OF ANY OF THE ABOVE LISTED EQUIPMENT INCLUDING BUT NOT LIMITED TO MCC, STARTERS, GENERATORS, INSTRUMENTATION, PANELS, WIRING & CONDUIT.
12. THE CONTRACTOR SHALL UTILIZE EXISTING BRANCH CIRCUITS WHEREVER POSSIBLE. DISCONNECT CIRCUITS BACK TO LAST DEVICE (FIXTURE OR OUTLET) UNAFFECTED BY THE DEMOLITION. EXTEND CIRCUITS FROM LAST DEVICE TO NEW DEVICE LOCATIONS AND CIRCUIT AS SHOWN ON FLOOR PLAN.
13. THE ELECTRICAL DEVICES AND PROCESS EQUIPMENT INDICATED ON THIS DRAWING REPRESENT EQUIPMENT TAKEN FROM EXISTING PLANS FURNISHED BY THE OWNER AND SITE VISITS BY THE ENGINEER AND DO NOT REPRESENT ALL EQUIPMENT AND WIRING WITHIN THE DEMOLITION AREA. THESE DOCUMENTS HAVE BEEN PREPARED TO ASSIST THE CONTRACTOR IN PRICING DEMOLITION WORK. CONTRACTOR IS TO VISIT THE SITE AND EXAMINE ALL EXISTING CONDITIONS. NO EXTRA COMPENSATION OR TIME EXTENSION WILL BE PERMITTED BECAUSE OF LACK OF COMPLIANCE WITH THIS REQUIREMENT.

ABBREVIATIONS

ACB	AIR CIRCUIT BREAKER
ALT	ALTERNATE
AC	ALTERNATING CURRENT
AL	ALUMINUM
AWG	AMERICAN WIRE GAUGE
A	AMPERE(S)
ATS	AUTOMATIC TRANSFER SWITCH
BW	BUSWAY
CLG	CEILING
CKT	CIRCUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
COND	CONDUCTOR
C	CONDUIT (SEE RACEWAYS AND CONDUCTORS)
CONN	CONNECT
CC	CONTROL CABINET
CP	CONTROL PANEL
CU	COPPER
CT	CURRENT TRANSFORMER
DIM	DIMMER CONTROL
D.C.	DIRECT CURRENT
DISC	DISCONNECT
DPP	DISTRIBUTION POWER PANEL
DP	DOUBLE POLE
DT	DOUBLE THROW
DN	DOWN
E	ELECTRIC
E.C.	ELECTRICAL CONTRACTOR
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EMT	ELECTRICAL METALLIC TUBING
EM	EMERGENCY
ELR	END LINE RESISTOR
EXIST	EXISTING
XP	EXPLOSION PROOF
FDR	FEEDER
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
F.P.C.	FIRE PROTECTION CONTRACTOR
FLUOR	FLUORESCENT
FL	FLOOR
F.S.C.	FOOD SERVICE CONTRACTOR
HZ	FREQUENCY IN CYCLES PER SECOND
F	FUSE
FS	FUSIBLE SWITCH
GEN	GENERATOR
G.C.	GENERAL CONTRACTOR
GRD	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
H.I.D.	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HOA	HAND-OFF-AUTO
H.P.S.	HIGH PRESSURE SODIUM
IMC	INTERMEDIATE METALLIC CONDUIT
INC	INCANDESCENT
IC	INTERCOM
ISO	ISOLATED NEUTRAL
JB	JUNCTION BOX
K	KEY OPERATED
KVAR	KILOVAR(S)
KVA	KILOVOLT AMPERE(S)
KW	KILOWATT(S)
LP	LIGHTING PANEL
L.P.S.	LOW PRESSURE SODIUM
LV	LOW VOLTAGE
MGST	MAGNETIC STARTER
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MH	MANHOLE
MTS	MANUAL TRANSFER SWITCH
MC	MECHANICAL CONTRACTOR
MIKE	MICROPHONE
MTR	MOTOR
MCC	MOTOR CONTROL CENTER
KCMIL	THOUSAND CIRCULAR MIL(S)
NF	NONFUSED
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
N.I.C.	NOT IN CONTRACT
OL	OVERLOAD ELEMENT
OC	OVER COUNTER
PNL	PANEL
P	PILOT INDICATOR
PVC	POLYVINYL CHLORIDE
PLG.C	PLUMBING CONTRACTOR
PT	POTENTIAL TRANSFORMER
PF	POWER FACTOR
PP	POWER PANEL
PRI	PRIMARY
PS	PULL SWITCH
RECP	RECEPTACLE
R	RELAY
RC	REMOTE CONTROL
RGS	RIGID GALVANIZED STEEL CONDUIT
RWT	REFLECTED WAVE TRAP
S	SIGNAL
SEC	SECONDARY
SP	SINGLE POLE
ST	SINGLE THROW
SPK	SPEAKER
SMR	SURFACE METAL RACEWAY
S.S.	SOLID STATE
SW	SWITCH
SWBD	SWITCHBOARD
T.C.C.	TEMPERATURE CONTROL CONTRACTOR
TEMP	TEMPORARY
T	TELEPHONE
TV	TELEVISION
TB	TERMINAL BOX
XFMR	TRANSFORMER
TYP	TYPICAL
UE	UNDERGROUND ELECTRIC
UG	UNDERGROUND
UH	UNIT HEATER
UNG	UNGROUNDED
UNP	UNGROUNDED PRIMARY
UPS	UNINTERRUPTED POWER SYSTEM
US	UNDERGROUND SIGNAL
VP	VAPORPROOF
VAR	REACTIVE VOLT AMPERES
V	VOLT(S)
VA	VOLTAMP(S)
VFD	VARIABLE FREQUENCY DRIVE
W	WATT(S)
WP	WEATHERPROOF

DETAIL & SECTION MARK LEGEND

- 2 / 23 — DETAIL NUMBER / SHEET NUMBER – WHERE DETAIL IS LOCATED
- A / 23 — DIRECTION SECTION IS BEING CUT; SECTION LETTER / SHEET NUMBER – WHERE SECTION IS LOCATED

DIRECTION OF NORTH

DIAGRAM SYMBOLS

- FUSED SWITCH
- CIRCUIT BREAKER
- LINE REACTOR
- DISCONNECT SWITCH
- TRANSFER SWITCH
- SOLID-STATE SOFT STARTER
- POTENTIAL TRANSFORMER
- CURRENT TRANSFORMER
- VFD
- X — METER: X INDICATES TYPE
  - V = VOLTMETER
  - A = AMMETER
  - W = WATT METER
  - H = KILOWATT HOUR METER
  - D = KILOWATT HOUR DEMAND METER
- DMM — DIGITAL MULTI METER
- AS — AMMETER SWITCH
- VS — VOLTMETER SWITCH
- GF — GROUND FAULT INTERRUPTER
- K — KIRK KEY INTERLOCK
- XX — MOTOR CONTROLLER: XX INDICATES TYPE
  - SS = SOLID STATE STARTER
  - AF = ADJUSTABLE FREQUENCY STARTER
  - AT = AUTO TRANSFORMER STARTER
  - PW = PART WINDING STARTER
  - Y-Δ = WYE-DELTA STARTER
  - WR = WOUND ROTOR STARTER
  - 22 = TWO SPEED TWO WINDING
  - 21 = TWO SPEED ONE WINDING
  - NR = FULL VOLTAGE NON REVERSING STARTER
  - R = FULL VOLTAGE REVERSING STARTER
  - LC = LIGHTING CONTACTOR
- CAPACITOR
- LIGHTNING ARRESTER
- EARTH GROUND
- TRANSFORMER
- PLUG AND RECEPTACLE OR DRAWOUT DEVICE
- X — MOTOR
- G — GENERATOR
- X — GENERAL LOADS

X INDICATES HORSEPOWER OR KILOWATTS

CONTROL DIAGRAM SYMBOLS

NOTE:
ALL CONTROL SYMBOLS ARE DRAWN ASSUMING DEENERGIZED CIRCUITS, EMPTY TANKS, UNPRESSURIZED LINES, ETC.

OPEN ON INCREASE	CLOSE ON INCREASE	
		PRESSURE SWITCH
		LEVEL SWITCH
		FLOW SWITCH
		TEMPERATURE SWITCH
		SOLENOID VALVE
NORMALLY CLOSED	NORMALLY OPEN	
		PUSH BUTTON
		INSTANTANEOUS CONTACT
		TIMED CLOSE CONTACT
		TIMED OPEN CONTACT
		LIMIT SWITCH

- XO / OX — SELECTOR SWITCH: QUANTITY OF ARROWS INDICATES NUMBER OF POSITIONS. XO INDICATES UPPER CONTACT CLOSED IN LEFT POSITION AND OPEN IN RIGHT POSITION

INSTRUMENTATION SYMBOLS

- AIT — ANALYTICAL INDICATOR TRANSMITTER
- FS — FLOAT SWITCH
- FT — FLOW TRANSMITTER
- FLS — FLOW SWITCH
- LKS — LEAK SENSOR
- LSL — LEVEL SWITCH LOW
- LSH — LEVEL SWITCH HIGH
- LS — LEVEL SWITCH
- LT — LEVEL TRANSMITTER
- MOV — MOTORIZED OPERATED VALVE
- MTD — METHANE DETECTOR
- PB — PUSH BUTTON SWITCH
- SC — SPEED CONTROLLER (POTENTIOMETER)
- PS — PRESSURE SWITCH
- SV — SOLENOID VALVE
- TS — TEMPERATURE SWITCH

INSTRUMENTATION NOTES:

1. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY POWER AND SIGNAL WIRING WITH CONDUITS AS SHOWN ON ELECTRICAL AND INSTRUMENTAION DRAWINGS BETWEEN POWER PANELS, PLC'S, CONTROL PANELS, AND FIELD INSTRUMENTS AS REQUIRED.
2. MINIMUM SIZE CONDUIT TO BE 3/4".
3. MINIMUM SIZE CONTROL WIRING TO BE #14 AWG. SHIELDED CABLE TO BE 2/C#16 FOR LOOP POWERED DEVICES. 4/C#16 FOR 4-WIRE DEVICES.
4. WIRING MAY BE COMBINED IN SINGLE RACEWAYS FOR EACH OF THE FOLLOWING CATEGORIES. DO NOT MIX CATEGORIES IN A SINGLE CONDUIT:
   A. 120V POWER WIRING
   B. CONTROL AND DISCRETE OUTPUT SIGNALS (24VAC)
   C. DISCRETE INPUT SIGNALS (24VDC)
   D. ANALOG SIGNAL WIRING
5. LOCATION OF PROCESS EQUIPMENT, MOTORS, VALVES, INSTRUMENTS, ETC. SHOWN ON THE DRAWINGS ARE APPROXIMATE. REFER TO PROCESS AND MECHANICAL DRAWINGS FOR EXACT LOCATIONS. FINAL LOCATIONS TO BE DETERMINED IN FIELD TO MATCH EQUIPMENT SUPPLIED BY CONTRACTOR.
6. REFER TO POWER PLANS FOR INSTRUMENTATION POWER REQUIREMENTS.
7. IT IS THE INTENT OF DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND COMPLETELY DEFINE THE WORK OF THE CONTRACTOR. DRAWINGS ARE DIAGRAMMATIC, BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE FACILITY AND THE WORK OF OTHER TRADES WILL PERMIT. THE DRAWINGS OF NECESSITY UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS TO INDICATE VARIOUS ITEMS OF WORK. THEREFORE, NO INTERPRETATION WILL BE MADE FROM THE LIMITATION OF SYMBOLS AND DIAGRAMS THAT ANY ELEMENTS NECESSARY FOR A COMPLETE INSTALLATION ARE EXCLUDED. THE ENGINEER SHOULD BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS OR INTERFERENCES WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THEIR INTERPRETATIONS.
8. DURING ROUGH IN AND FINISHED STAGES OF CONSTRUCTION, THE INSTRUMENTATION SUBCONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES AND DEVICES AS WELL AS ALL EXISTING EQUIPMENT AND RELATED WORK AREAS.
9. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH HE/SHE IS FURNISHING TO THE ENGINEER/OWNER FOR REVIEW PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
10. ELECTRICAL CONTRACTOR AND/OR SUBCONTRACTOR TO OBTAIN ALL PERMITS AND INSPECTIONS.
11. CONTROL CIRCUITS SHALL BE ARRANGED TO USE SUPERVISED CONTACTS WHEREVER POSSIBLE. THIS MEANS THAT NORMALLY CLOSED CONTACTS WILL BE USED AND THE CONTACTS WILL OPEN WHEN A PROCESS TRANSITION OCCURS (E.G. HIGH LEVEL, LOW LEVEL, HIGH PRESSURE, ETC.)
12. REFER TO ELECTRICAL SERIES DRAWINGS FOR ADDITION DETAILS FOR CONDUIT, DEVICE LOCATIONS, AND POWER CIRCUITS.
13. DRAWINGS SHOW A LAYOUT OF SCADA/INSTRUMENTATION SYSTEMS AND EQUIPMENT DIAGRAMMATICALLY. EXACT LOCATION OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE DETERMINED BY FIELD CONDITIONS AND DIRECTION BY ENGINEER AND OWNER. BY SUBMITTING A BID, CONTRACTOR WARRANTS THAT HE HAS VISITED THE SITE WHERE WORK IS TO BE PERFORMED, AND HAS EXAMINED THE EXISTING CONDITIONS AND EXTENT OF LABOR AND MATERIALS TO BE PROVIDED. COORDINATION WITH ALL TRADES, UTILITIES, ETC. SHALL BE PROVIDED.

INSTRUMENTATION GROUNDING

1. SHIELDED CONDUCTORS SHALL HAVE THEIR SHIELD WIRE CONNECTED TO GROUND AT ONE END ONLY.
2. CONTROL CABINETS SHALL BE PROVIDED WITH AN ISOLATED INSTRUMENT GROUND BUS FOR INSTRUMENTATION GROUND WIRE. THIS BUS SHALL BE TIED TO FACILITY GROUND AT A SINGLE POINT (BONDED).
3. EQUIPMENT & INSTRUMENT GROUNDS SHALL NOT BE INTERMIXED.
4. WHERE ANALOG SIGNALS ARE LACED FROM ONE DEVICE TO ANOTHER, THE SHIELD/DRAIN WIRE SHALL BE CONTINUOUS AND ONLY TIED TO GROUND AT ONE POINT.

PROCESS SIGNAL SCALING & CALIBRATION

1. ALL INSTRUMENTS SHALL BE PROPERLY CALIBRATED BY THE INSTALLING CONTRACTOR. A CALIBRATION STICKER SHALL BE ATTACHED INDICATING CALIBRATION DATE AND THE INITIALS OF THE INDIVIDUAL WHO PERFORMED THE CALIBRATION.
2. ALL PROCESS ANALOG LOOPS SHALL BE PROPERLY CALIBRATED AND SCALED TO THE EXTENT POSSIBLE AND PRACTICAL. ANALOG INSTRUMENTS SHALL BE CALIBRATED TO READ THE ENTIRE OPERATING RANGE FOR THE PARAMETER BEING MONITORED.
3. THE INSTRUMENT CALIBRATION SHALL BE DOCUMENTED IN "AS-BUILT" INFORMATION SUBMITTED TO THE OWNER.

INSTRUMENTATION PIPING & MOUNTING

1. DIRECT READING INSTRUMENTS SHALL BE MOUNTED AT EYE HEIGHT, ~5 FT ABOVE FINISHED FLOOR, UNLESS PROCESS RESTRAINTS NECESSITATE OTHER MOUNTING ARRANGEMENTS, OR UNLESS OTHERWISE NOTED.
2. INSTRUMENTS SHALL BE SECURELY ANCHORED TO THE STRUCTURES OR MONITORED EQUIPMENT. PROPER MOUNTING HARDWARE SHALL BE UTILIZED. (BOLTS, NUTS, UNISTRUT, ETC.)
3. ALL INSTRUMENT TUBING SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED. TUBING INSTALLATION SHALL PROVIDE ADEQUATE PROTECTION AND SUPPORT WHERE APPROPRIATE. TUBING AND PIPING ARRANGEMENTS SHALL BE PROPERLY SLOPED AND INSTALLED FOR THE FLUID BEING MONITORED.
4. ALL INSTRUMENT TAPS INTO PROCESS PIPING SHALL BE PROVIDED WITH AN ISOLATION VALVE. (NOMINAL 1/2" OR 3/4" BALL VALVE). ISOLATION VALVES SHALL BE CONSTRUCTED OF MATERIAL COMPATIBLE WITH THE MONITORED PROCESS FLUID.
6. ALL INSTRUMENTS WHICH REQUIRE PERIODIC CALIBRATION SHALL BE PROVIDED WITH MEANS TO CALIBRATE IN PLACE (E.G. CALIBRATION BLOCK AND/OR CALIBRATION VALVING.)
7. VENTS AND DRAINS SHALL BE PROVIDED ON PROCESS EQUIPMENT AND INSTRUMENTATION AS REQUIRED TO SUPPORT ROUTINE AND MAINTENANCE OPERATIONS.

INSTRUMENTATION SYMBOLS CONT.

- TT — TEMPERATURE TRANSMITTER
- ZS — PROXIMITY SWITCH
- FS — FIELD MOUNTED INSTRUMENT: NEW DENOTES FURNISHED & INSTALLED UNDER BASE BID
- FS — FIELD MOUNTED INSTRUMENT: EXISTING
- FS — VENDER SUPPLIED INSTRUMENT INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR
- FS 101 — INSTRUMENT IDENTIFICATION LETTER & IDENTIFICATION #; DESTINATION & LOOP IDENTIFICATION #; TO PLC# DO-XXX

ELECTRICAL FLOOR PLAN

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

Electrical, Instrumentation & Control Systems Engineering
SMI ENGINEERING, PC
101 Inner Pointe
East Aurora, OH 44202
Phone: 440-725-2694

THE DRAWINGS FOR THIS PROJECT SH

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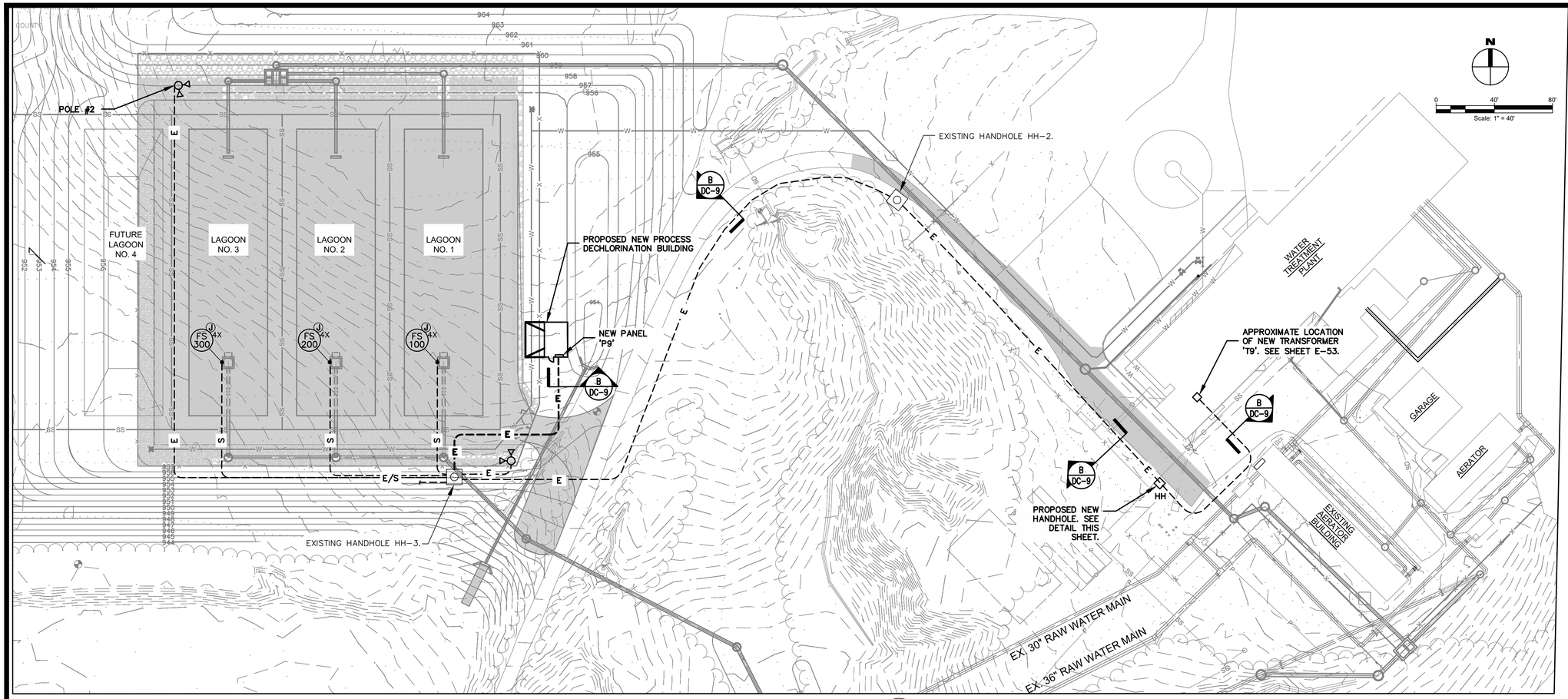
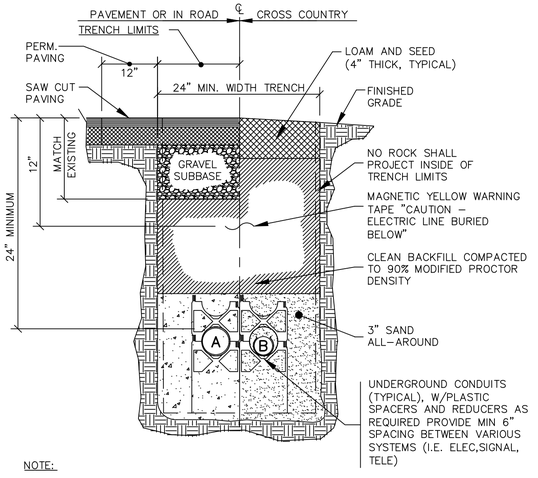


ELECTRICAL SITE PLAN (1/DC-9)

SCALE: 1"=40'-0"



NOTE:

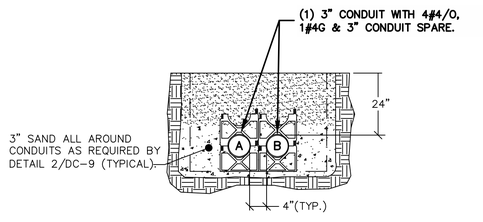
REFER TO ELECTRICAL PLAN FOR SPECIFIC REQUIREMENTS.

TYPICAL ELECTRICAL TRENCHING DETAIL (A/DC-9)

SCALE: NONE

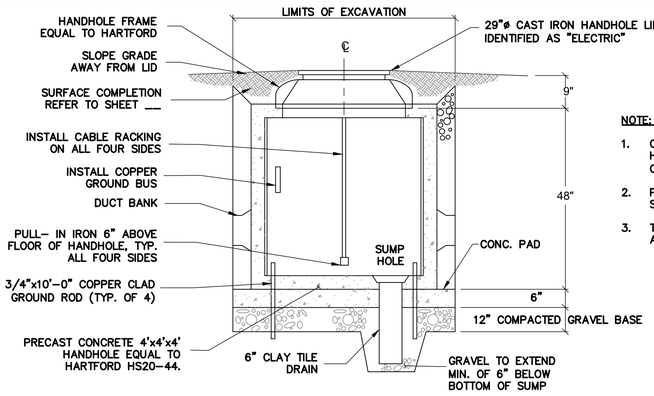
SUBSURFACE WORK NOTE:

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR IT'S REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIG SAFE" AT 1(888)344-7233 (1(888)DIG-SAFE)AND COORDINATE ACTIVITIES PRIOR TO ANY EXCAVATIONS.



DUCT BANK SECTION (B/DC-9)

SCALE: NONE



NOTE:

1. CONTRACTOR SHALL NOT MAKE SPLICES IN HANDHOLES, EXCEPT FOR TEMPORARY CONNECTIONS. (TYPICAL).
2. PROVIDE METAL BARRIER BETWEEN POWER AND SIGNAL CABLES WITHIN HANDHOLE.
3. THE HANDHOLE DESIGN LOADING SHALL BE: AASHTO – HS20-44.

HANDHOLE SCHEDULE		
HANDHOLE DESGINATIONS	QUANTITIES	SIZE
HH-1 (ELECTRIC)	1	48" x 48" x 48" DEEP

HANDHOLE INSTALLATION DETAIL (2/DC-9)

SMI ENGINEERING, PC
Electrical, Instrumentation & Control Systems Engineering
101 Inlet Pointe
East Aurora, OH 44202
Phone: 440-725-0264

THE DRAWINGS FOR THIS PROJECT SHALL NOT BE REUSED OR ALTERED IN ANY WAY WITHOUT THE WRITTEN APPROVAL AND AUTHORITY OF SMI ENGINEERING, P.C. ANY REVISIONS SHALL BE MADE BY THE ENGINEER.
SMI ENGINEERING, PC ©

BURGESS & NIPLE

100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT &
WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

ELECTRICAL SITE PLAN AND DETAILS

DC-9

SHEET: OF

P:\PR58982\Cadd\Sheets\DC-9 ELECTRICAL SITE PLAN AND DETAILS.dwg 3/22/2022 12:20:38 PM Matt Kroll

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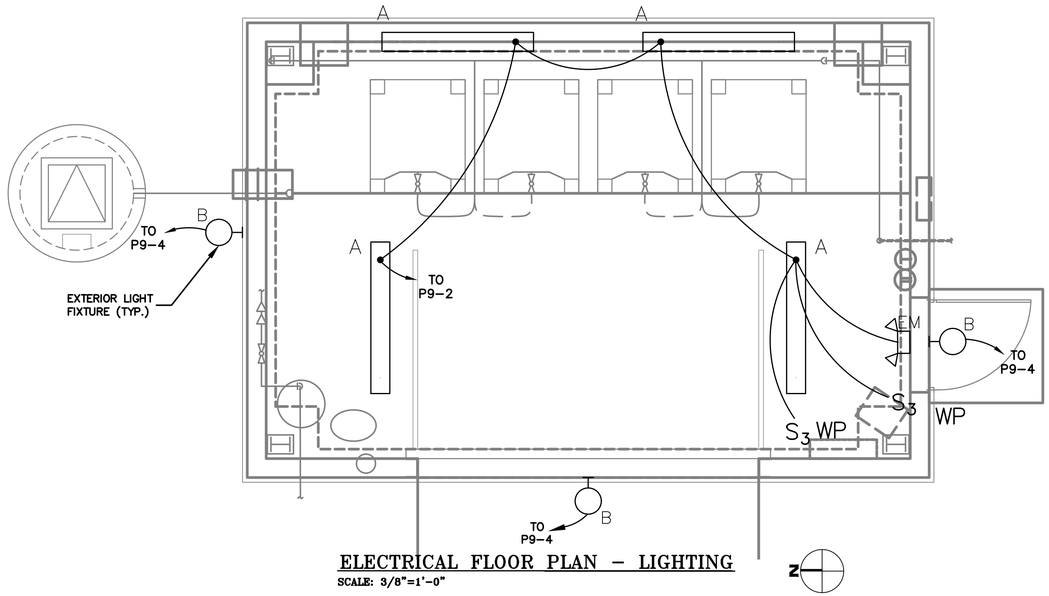
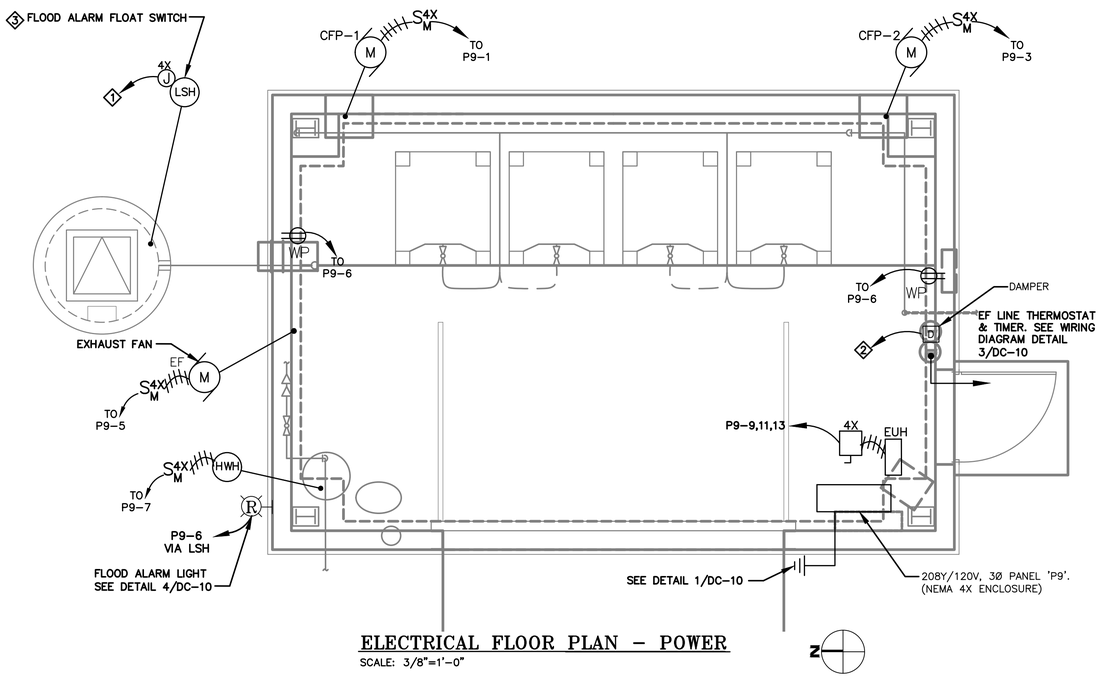


ELECTRICAL FLOOR PLAN – LIGHTING

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



ELECTRICAL FLOOR PLAN – POWER

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

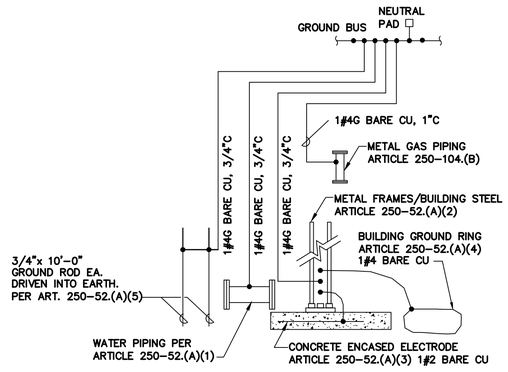
PROJECT LIGHTING FIXTURE SCHEDULE								
TYPE	MANUFACTURER	MODEL NO.	COLOR	LAMPS	MOUNTING	TYPE	VOLTAGE	REMARKS
A	HUBBELL	LXEM-440-VL-RFA-E-U-SSL OR APPROVED EQUAL	WHITE	LED	PENDANT	LED	120V	(1) 4' FIXTURE (CORROSIVE AND WET LOCATIONS) COORDINATE WITH MECHANICAL, PROCESS, EQ.
B	SPAULDING	LMC-30LU-4K-3-2-PC4 OR APPROVED EQUAL	–	LED	SURFACE	LED	120V	PROVIDE WITH PHOTO CELL, & MOTION SENSOR. MOUNT SURFACE ON WALL 12" ABOVE DOOR A.F.G.
EM	CARPENTER	NX12-36-E-N1 OR APPROVED EQUAL	GRAY	LED	WALL AT 8'-0"	EMERGENCY	120V	MOUNT SURFACE ON WALL ON SIDE OF DOOR AT 8' A.F.F. PROVIDE AN ADDITIONAL REMOTE HEAD.

LIGHTING FIXTURE SCHEDULE 2/DC-10

SCALE: NONE

CODED NOTES:

1. 2#14, 3/4"C TO FUSE BOXL. SEE FLOUT SW WIRING DIAGRAM DETAIL 4/DC-10.
2. 2#12, 1#12G, 3/4"C TO EF. SEE WIRING DIAGRAM DETAIL 3/DC-10.
3. CONTRACTOR SHALL INSTALL THE SPECIFIED NEMA 4X, NON-METALLIC JUNCTION BOX IN THE CONTAINMENT SUMP (ABOUT 12" BELOW THE GRADE) TO SUPPORT THE FLOAT SWITCH WITH UNDERGROUND CONDUIT TO THE WALL MOUNTED WARNING LIGHT AS SHOWN ON THE DRAWINGS. THE FLOAT SWITCH SHALL BE UL LISTED, MECHANICALLY ACTIVATED, NARROW ANGLE, SNAP ACTION CONTACT, 20' CABLE WITH REQUIRED WEIGHT ASSEMBLY MANUFACTURED BY SJW RHOMBUS, CONERY OR EQUAL. THE WARNING LIGHT SHALL BE UL LISTED, WEATHERPROOF, 120VAC, FLASHING AUDIBLE/VISUAL WITH RED LENS. FEDERAL SIGNAL MODEL AV1-LED OR EQUAL

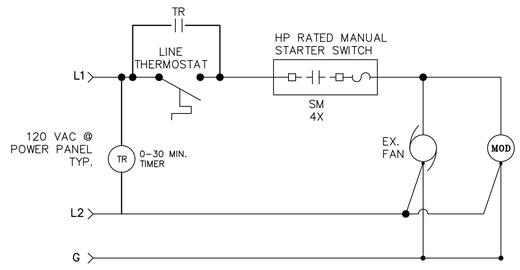


ELEC. GROUNDING & BONDING DETAIL 1/DC-10

SCALE: NONE

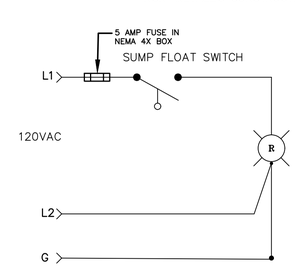
GENERAL NOTES:

1. ALL WIRING IN DECHLORINATION BUILDING SHALL BE WITHIN PVC RACEWAY SYSTEM. ALL ELECTRICAL ENCLOSURES, PULL BOXES, J-BOXES, ETC. SHALL BE NEMA 4X, NON-METALLIC CONSTRUCTION.



SINGLE PHASE EXHAUST WIRING DIA. 3/DC-10

SCALE: NONE



FLOOD ALARM WIRING DIA. 4/DC-10

SCALE: NONE

PANEL No. P9

BUS	100A	LOCATION	DECHLORINATION BLDG
PANEL RATING	10 KAIC	MOUNTING	
SUPPLY VOLTAGE	208V	DRAWING No.	
SERVICE	208Y/120V, 3ø, 4-W W/ GND BUS		

WIRING # OF WIRES	WIRING CONDUIT	DESCRIPTION	VA OR W #A	VA OR W #B	VA OR W #C	BREAKER POLE	BREAKER AMPS	CKT. NO	BUS A	BUS B	BUS C	CKT. NO	BREAKER POLE	BREAKER AMPS	VA OR W #A	VA OR W #B	VA OR W #C	DESCRIPTION	WIRING CONDUIT	WIRING # OF WIRES
2#12, 1#12G	3/4"	CFP-1				1	20	1	X			2	1	20						
2#12, 1#12G	3/4"	CFP-2				1	20	3		X		4	1	20				LIGHTING-INTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	EF				1	20	5			X	6	1	20				LIGHTING-EXTERIOR	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	EWH				1	20	7	X			8	2	20				RECEP9ACLES	3/4"	2#12, 1#12G
3#8,1#10G	1"	EUH				3	40	9		X		10								
								11			X	12	1	20				SPARE		
		SPARE						13	X			14	1	20				SPARE		
		SPARE						15		X		16	2	30				SPARE		
		SPARE				2	15	17			X	18						SPARE		
		SPARE						19	X			20	2	20				SPARE		
		TOTAL 1										TOTAL 2								
		TOTAL 2																		
		TOTAL 1 + 2																		
		TOTAL CONNECTED LOAD																		
		AMPERES																		

MAIN BREAKER	100A/3P	MAIN LUGS	
FEEDER ENTRANCE		ENCLOSURE TYPE	4X NON-METALLIC
FEEDER SIZE	4#4/0, 1#4G, 3"C	ACCESSORIES	
SOURCE			
PANEL TYPE	TRANSFORMER 'T9'		

ELECTRICAL PANEL SCHEDULE 5/DC-10

SCALE: NONE

Electrical, Instrumentation & Control Systems Engineering
SMR ENGINEERING, PC
101 Inlet Pointe
East Aurora, OH 44202
Phone: 440-725-0264

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BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

CITY OF CANTON, OHIO
WATER DEPARTMENT
SUGAR CREEK
WATER TREATMENT PLANT & WELLFIELD IMPROVEMENTS

NO.	DESCRIPTION	DATE
1	BID SET	04/2022

JOB NO:	PR58982
DATE:	APR 2022
DESIGNED BY:	SMR
DRAWN BY:	GMS
CHECKED BY:	SMR
APPROVED BY:	SMR
SCALE:	AS NOTED

DECHLORINATION BLDG ELECTRICAL PLAN-SCHEDULE-DIAGRAMS

DC-10

SHEET: OF

P:\PR58982\Cadd\Sheets\DC-10 DECHLORINATION BLDG ELECTRICAL PLAN-SCHEDULE-DIAGRAMS.dwg 3/25/2022 1:47:32 PM Matt Kroll