VICINITY MAP

Contract Drawings For

TOWN OF MINTURN

WATER TREATMENT PLANT

30% ISSUED FOR REVIEW

Project No. 10348601

Date: JULY 2024

PRELIMINARY - NOT FOR CONSTRUCTION

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00D-601	PROCESS FLOW DIAGRAM
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ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

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PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT
PLANT

SHEET INDEX

0 1" 2"

FILENAME

SCALE NONE

SHEET
00G-001

Autodesk Docs://10348601_Minturn_WTP_Design_2022 ACC/10348601_00 GEN.rvt
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A/C	AIR CONDITIONING
A/E	ARCHITECT/ENGINEER
A	AMPERE
AB	ANCHOR BOLT
ABAN	ABANDON
ABC	AGGREGATE BASE COURSE
ABT	ABOUT
AC	ALTERNATING CURRENT
ACK	ACKNOWLEDGE
ACP	ACOUSTIC CEILING PANEL, ASPHALTIC CONCRETE PAVEMENT
ACST	ACOUSTIC
AD	ADDENDUM, AREA DRAIN
ADDL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE, ADJACENT
AF	AMP FRAME, AMP FUSE
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AGGR	AGGREGATE
AI	AREA INLET, ANALOG INPUT
AIC	AMPS INTERRUPTING CAPACITY
ALIG	ALIGNMENT
ALT	ALTERNATE, ALTITUDE
ALUM	ALUMINUM
AM	ACOUSTICAL MATERIAL
AMB	AMBIENT
ANC	ANCHOR
AO	ANALOG OUTPUT
AP	ACCESS PANEL
APRX	APPROXIMATE
APVD	APPROVED
ARCH	ARCHITECTURAL
ASSY	ASSEMBLY
AT	ACOUSTICAL TILE, AMP TRIP
ATC	ACOUSTICAL TILE CEILING
ATM	ATMOSPHERE
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
AWG	AMERICAN WIRE GAGE
AWT	ACOUSTICAL WALL TILE
B TO B	BACK TO BACK
BAL	BALANCE
BBD	BULLETIN BOARD
BC	BASE CABINET, BOTTOM CHORD, BOLT CENTER, BOLT CIRCLE
BD	BOARD
BE	BOTH ENDS, BELL END
BF	BOTH FACES, BOTTOM FACE, BLIND FLANGE, BOARD FEET
BITUM	BITUMINOUS
BKG	BACKING
BL	BASE LINE
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BENCHMARK, BEAM
BOC	BACK OF CURB
BOD	BOTTOM OF DUCT
BOG	BOTTOM OF GRILLE
BOL	BOTTOM OF LOUVER, BOLLARD
BOP	BOTTOM OF PIPE
BOR	BOTTOM OF REGISTER
BOT	BOTTOM
BOU	BOTTOM OF UNIT
BP	BASE PLATE
BRG	BEARING
BRGP	BEARING PLATE
BRKT	BRACKET
BS	BOTH SIDES
BTU	BRITISH THERMAL UNIT
BTW	BETWEEN
BTWLD	BUTT WELD
BU	BELL UP, BUILT-UP
BUR	BUILT-UP ROOFING
BW	BOTH WAYS
BYP	BYPASS
CTOC	CENTER TO CENTER
C&G	CURB AND GUTTER
C	CHANNEL SHAPE, CENTIGRADE, CONDUIT
CAB	CABINET
CAP	CAPACITY
CAT	CATALOG, CATEGORY
CAV	CAVITY
CB	CATCH BASIN
CCB	CONCRETE BLOCK
CCW	COUNTER CLOCKWISE
CDF	CONTROLLED-DENSITY FILL
CE	CONCRETE EDGE
CER	CERAMIC
CF	CUBIC FEET (FOOT)
CFL	COUNTER FLASHING
CHBD	CHALKBOARD
CHD	CHORD
CHFR	CHAMFER
CHH	COMMUNICATION HANDHOLE
CI	CURB INLET
CIP	CAST-IN-PLACE
CIPB	CONCRETE INTERLOCKING PAVER BALLAST
CIRC	CIRCULATION, CIRCULAR
CJ	CONSTRUCTION JOINT
CKT	CIRCUIT
CL	CENTERLINE, CLASS, CLOSE
CLG	CEILING

CLKG	CAULKING
CLR	CLEAR
CMH	COMMUNICATION MANHOLE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT, CONCRETE OPENING
COL	COLUMN
COM	COMMON
COMB	COMBINATION
COMM	COMMUNICATION
COMP	COMPOSITION, COMPRESSIBLE, COMPOSITE
CON	CONCENTRIC
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COOR	COORDINATE
CORR	CORROSIVE, CORRUGATED
CP	CHECKER PLATE, CONTROL POINT
CPLG	COUPLING
CRL	CORROSION-RESISTANT LINING
CSC	COMPRESSION SLEEVE COUPLING
CSK	COUNTERSINK
CSS	CLINIC SERVICE SINK
CT	CERAMIC TILE
CTJ	CONTRACTION JOINT
CTR	CENTER
CTRL	CONTROL
CVT	CULVERT
CU	COPPER, CUBIC
CW	CLOCKWISE
CY	CUBIC YARD
d	PENNY (NAIL MEASURE)
D	DEEP, DIFFUSER, DRAIN
DB	DUCT BANK, DECIBEL, DRY BULB
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DEG C	DEGREE CENTIGRADE
DEG F	DEGREE FAHRENHEIT
DEMO	DEMOLITION
DEP	DEPRESSED
DEPT	DEPARTMENT
DET	DETAIL
DI	DROP INLET, DUCTILE IRON, DIGITAL INPUT
DIA	DIAMETER
DIAG	DIAGONAL, DIAGRAM
DIFF	DIFFERENTIAL, DIFFERENCE
DIM	DIMENSION
DISCH	DISCHARGE
DIST	DISTANCE, DISTRIBUTION
DIV	DIVISION
DL	DEAD LOAD
DMJ	DOUBLE MECHANICAL JOINT
DMPF	DAMP PROOFING
DN	DOWN
DO	DISSOLVED OXYGEN, DIGITAL OUTPUT, DITTO
DP	DEPTH
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
DS	DOWN SPOUT
DT	DOUBLE TEE, DRIP TRAP ASSEMBLY
DUP	DUPLICATE
DWG	DRAWING
DWL	DOWEL
DWR	DRAWER
E	EAST
EA	EACH, EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
ECC	ECCENTRIC
ED	EQUIPMENT DRAIN
EDB	ELECTRICAL DUCT BANK
EE	EACH END
EF	EACH FACE
EFF	EFFLUENT, EFFICIENCY
EHH	ELECTRICAL HANDHOLE
EIFS	EXTERIOR INSULATION & FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELBOW, ELEVATION
ELEC	ELECTRICAL
EMBD	EMBEDDED
EMER	EMERGENCY
EMH	ELECTRICAL MANHOLE
ENCL	ENCLOSURE
ENGR	ENGINEER
ENTR	ENTRANCE
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ES	EACH SIDE, EQUAL SPACE, EMERGENCY SHOWER
ESEW	EMERGENCY SHOWER AND EYE WASH
EST	ESTIMATE
EW	EACH WAY, EMERGENCY EYE/FACE WASH
EWC	ELECTRIC WATER COOLER
EWEF	EACH WAY, EACH FACE
EWTB	EACH WAY, TOP AND BOTTOM
EXC	EXCAVATION
EXH	EXHAUST
EXP	EXPANSION, EXPOSED
EXST	EXISTING
EXT	EXTERIOR, EXTERNAL, EXTENSION

F TO F	FACE TO FACE
F&B	FACE AND BYPASS
FAB	FABRICATE
FB	FLOOR BEAM
FBD	FIBERBOARD
FBG	FIBERGLASS
FBM	BOARD FOOT MEASURE
FBO	FURNISHED BY OWNER
FC	FLUSHING CONNECTION
FCA	FLANGED COUPLING ADAPTER
FD	FLOOR DRAIN
FDC	FLEXIBLE DUCT CONNECTION
FDR	FEEDER
FDTN	FOUNDATION
FE	FLANGED END
FEC	FIRE EXTINGUISHER CABINET
FES	FLARED END SECTION
FEXT	FIRE EXTINGUISHER
FF	FAR FACE, FACTORY FINISH, FLAT FACE
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH
FJT	FLUSH JOINT
FL	FLOW, FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE
FLOR	FLUORESCENT
FLR	FLOOR
FLS	FLASHING, FLUSH
FN	FENCE
FO	FINISHED OPENING
FOB	FLAT ON BOTTOM
FOC	FACE OF CONCRETE, FACE OF CURB
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOT	FLAT ON TOP
FPT	FEMALE PIPE THREAD
FR	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FRTM	FIRE RETARDANT TREATED MATERIAL
FS	FLOOR SINK, FAR SIDE
FT	FEET, FOOT
FTG	FOOTING, FITTING
FUR	FURRED, FURRING
FURN	FURNITURE, FURNISH
FUT	FUTURE
FV	FACE VELOCITY
FW	FIELD WELD, FIRE WALL
FWD	FORWARD
FWE	FURNISHED WITH EQUIPMENT
FXTR	FIXTURE
G	GRILLE, GROUND
GA	GAGE (METAL THICKNESS)
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR, GRADE BREAK
GC	GROOVED COUPLING
GD	GUARD
GEN	GENERAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFMU	GROUND FACE MASONRY UNIT
GG	GUTTER GRADE
GJ	GROOVED JOINT
GL	GLASS
GLB	GLASS BLOCK, GLULAM BEAM
GND	GROUND
GP	GUY POLE
GR	GRADE
GRTG	GRATING
GSB	GYPSUM SHEATHING BOARD
GT	GREASE TRAP
GVL	GRAVEL
GW	GUY WIRE
GWB	GYPSUM WALLBOARD
GYP	GYPSUM HARDBOARD
H	HIGH
HB	HOSE BIBB
HBD	HARDBOARD
HC	HANDICAPPED, HOLLOW CORE, HORIZONTAL CURVE, HORIZONTAL CENTERLINE
HD	HEAD, HOT DIP
HDR	HEADER
HDW	HARDWARE
HEX	HEXAGONAL
HGR	HANGER
HH	HANDHOLE
HID	HIGH-INTENSITY DISCHARGE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HIGH POINT, HORSEPOWER
HPC	HORIZONTAL POINT OF CURVATURE
HPS	HIGH-PRESSURE SODIUM
HPT	HORIZONTAL POINT OF TANGENCY
HR	HOSE REEL, HOUR
HS	HEADED STUD, HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SHAPE
HT	HEIGHT
HTG	HEATING
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWD	HARDWOOD
HWL	HIGH WATER LEVEL
HYD	HYDRAULIC
HZ	HERTZ, CYCLES PER SECOND

ID	INSIDE DIAMETER, INTERIOR DIMENSION
IE	INVERT ELEVATION, FOR EXAMPLE
IF	INSIDE FACE
IH	INTAKE HOOD
IMP	IMPACT
IN	INCH
INC	INCLUDE, INCANDESCENT
INF	INFLUENT
INSTR	INSTRUMENTATION
INSUL	INSULATION
INT	INTERIOR, INTERSECTION
INTR	INTERMEDIATE, INTERIOR
INV	INVERT
IPS	IRON PIPE SIZE
IPT	INTERNAL PIPE THREAD
IR	INSIDE RADIUS, IRON ROD
IRR	IRRIGATION
ISO	ISOMETRIC
JB	JUNCTION BOX
JCT	JUNCTION
JF	JOINT FILLER
JST	JOIST
JT	JOINT
K	KIP
KB	KNEE BRACE
KCMIL	THOUSAND CIRCULAR MILS
KD	KNOCK DOWN
KO	KNOCK OUT
KSI	KIPS PER SQUARE INCH
KW	KILOWATT
L	ANGLE, LENGTH, LAVATORY, LINTEL
LAD	LADDER
LAM	LAMINATE
LATL	LATERAL
LB	LAG BOLT, POUND
LCTB	LIQUID CHALK AND TACK BOARD
LDG	LANDING
LDR	LEADER
LE	LIFTING EYE
LF	LINEAR FOOT
LG	LONG
LH	LEFT HAND
LIN	LINEAR
LIQ	LIQUID
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LMLU	LIQUID MARKER LECTURE UNIT
LNG	LONGITUDINAL
LOC	LOCATION
LP	LOW POINT
LPS	LOW-PRESSURE SODIUM
LR	LONG RADIUS
LT	LEFT
LTD	LIMITED
LTG	LIGHTING
LTL	LINTEL
LTNG	LIGHTNING
LV	LOW VOLTAGE
LVL	LAMINATED VENEER LUMBER
LVR	LOUVER
LW	LIGHTWEIGHT
LWC	LIGHTWEIGHT CONCRETE
LWL	LOW WATER LEVEL
MA	MIXED AIR
MACH	MACHINED
MAINT	MAINTENANCE
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MBR	MEMBER
MC	MECHANICAL CONTRACTOR, MECHANICAL COUPLING, MOMENT CONNECTION
MCB	METAL CORNER BEAD
MCJ	MASONRY CONTROL JOINT
MDMJ	MODIFIED DOUBLE MECHANICAL JOINT
MECH	MECHANICAL
MED	MEDIUM
MFR	MANUFACTURER
MH	MANHOLE, METAL HALIDE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
ML	MASONRY LINTEL
MLO	MAIN LUGS ONLY
MMB	MEMBRANE
MO	MASONRY OPENING
MOD	MODULAR, MODIFY
MON	MONUMENT
MPT	MALE PIPE THREAD
MRGWB	MOISTURE-RESISTANT GYPSUM WALLBOARD
MS	MOP SINK
MSL	MEAN SEA LEVEL
MT	MOUNT
MU	MASONRY UNIT
MULL	MULLION
MV	MEDIUM VOLTAGE
MW	MONITORING WELL

N	NORTH, NEUTRAL
NA	NOT APPLICABLE
NAT	NATURAL, NATIONAL
NC	NORMALLY CLOSED
NEG	NEGATIVE
NF	NEAR FACE, NON-FUSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NUMBER
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NS	NEAR SIDE
NTS	NOT TO SCALE
NWL	NORMAL WATER LEVEL
O TO O	OUT TO OUT
OA	OUTSIDE AIR, OVERALL
OC	ON CENTER
OCPD	OVER CURRENT PROTECTION DEVICE
OD	OUTSIDE DIAMETER
OED	OPEN END DUCT
OF	OUTSIDE FACE, OFFICE FURNISHING
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OG	ORIGINAL GROUND
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OPT	OPTIONAL
OR	OUTSIDE RADIUS
ORD	OVERFLOW ROOF DRAIN
ORIG	ORIGINAL
OVFL	OVERFLOW
OVHG	OVERHANG
OZ	OUNCE
P	PAINT
PA	PUBLIC ADDRESS
PAR	PARALLEL, PARAPET
PB	PANIC BAR, PULL BOX
PBD	PARTICLE BOARD
PC	POINT OF CURVE, PIECE, PRECAST
PCC	POINT OF COMPOUND CURVATURE
PCF	POUNDS PER CUBIC FOOT
PCT	PERCENT
PE	PLAIN END
PED	PEDESTAL
PEN	PENETRATION
PERF	PERFORATED
PERM	PERMANENT
PERP	PERPENDICULAR
PF	POWER FACTOR
PFMU	PREFACED MASONRY UNIT
PH	PHASE
PI	POINT OF INTERSECTION
PKG	PACKAGE
PL	PLATE, PROPERTY LINE, PRECAST LINTEL
PLAS	PLASTER
PLAT	PLATFORM
PLBG	PLUMBING
PLF	POUNDS PER LINEAR FOOT
PNEU	PNEUMATIC
POL	POLISH
POS	POSITIVE, POSITION
PP	POLYPROPYLENE, POWER POLE
PRC	POINT OF REVERSE CURVATURE
PREF	PREFINISHED
PREFAB	PREFABRICATED
PRELIM	PRELIMINARY
PREP	PREPARE
PRES	PRESSURE
PRI	PRIMARY
PROP	PROPERTY, PROPOSED
PROT	PROTECTION
PS	PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAGE
PST	PRESTRESSED
PT	POINT, POINT OF TANGENCY
PTN	PARTITION
PVC	POLYVINYL CHLORIDE, POINT OF ERTICAL CURVE
PVC-RGS	PVC COATED RGS
PVMT	PAVEMENT
PWD	PLYWOOD
PWJ	PLYWOOD WEB JOIST
PZ	PIEZOMETER
Q	RATE OF FLOW
QT	QUARRY TILE
QTR	QUARTER
QTY	QUANTITY
QUAL	QUALITY

R&R	REMOVE AND REPLACE
R&S	REMOVE AND SALVAGE
R	RADIUS, REGISTER, RISER
RA	RETURN AIR
RB	RESILIENT BASE, ROCK BERM
RCPT	RECEPTACLE
RD	ROOF DRAIN
REC	RECESS
RECD	RECEIVED
RECT	RECTANGULAR
RED	REDUCER
REF	REFERENCE
REINF	REINFORCING
REM	REMOVE
REQD	REQUIRED
RESIL	RESILIENT
RET	RETAINING, RETURN
REV	REVISION, REVERSE
RF	RESILIENT FLOORING
RFG	ROOFING
RFL	REFLECTED, REFLECTOR
RGH	ROUGH
RGS	RIGID GALVANIZED STEEL
RH	RELIEF HOOD, RIGHT HAND, RELATIVE HUMIDITY
RL	REQUIRED LAP
RLFA	RELIEF AIR
RND	ROUND
RNG	RUNNING
RO	ROUGH OPENING
ROW	RIGHT-OF-WAY
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
RVT	RESILIENT VINYL TILE
RY	READY
S	SOUTH, SINK
SA	SUPPLY AIR
SAMU	SOUND-ABSORBING MASONRY UNIT
SAN	SANITARY
SB	SPLASH BLOCK
SC	SOLID CORE
SCH	SCHEDULE
SCHEM	SCHEMATIC
SCN	SCREEN
SE	STEEL/ALUMINUM EDGE
SEC	SECONDARY, SECONDS
SECT	SECTION
SEP	SEPARATE
SF	SQUARE FOOT, SILT FENCE
SG	SHEET GLASS, SEALANT GROOVE
SH	SHOWER
SHT	SHEET
SHTG	SHEATHING
SIL	SILENCE
SIM	SIMILAR
SJ	SLAB JOINT
SL	SLOPE, STEEL LINTEL
SLTD	SLOTTED
SLV	SLEEVE
SMLS	SEAMLESS
SOG	SLAB ON GRADE
SP	SOUNDPROOF, STANDPIPE
SPA	SPACING
SPEC	SPECIFICATION
SPLY	SUPPLY
SPST	SINGLE POLE SINGLE THROW
SPT	SET POINT
SQ	SQUARE
SR	SHORT RADIUS
SS	SERVICE SINK
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STIF	STIFFENER
STIR	STIRRUP
STL	STEEL
STOR	STORAGE
STR	STRUCTURAL, STRAIGHT
SUB	SUBSTITUTE
SUC	SUCTION
SUSP	SUSPENDED
SY	SQUARE YARD
SYM	SYMBOL
SYMM	SYMMETRICAL
SYN	SYNTHETIC
SYS	SYSTEM
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T	TILE, TREAD
TA	TOILET ACCESSORY, TEMPERED AIR
TAN	TANGENT
TBM	TEMPORARY BENCHMARK
TCE	TEMPORARY CONSTRUCTION EASEMENT
TEF	TROWELED EPOXY FLOORING
TEMP	TEMPORARY, TEMPERATURE
THD	THREAD
THK	THICK
THRESH	THRESHOLD
TKBD	TACK BOARD

TOB	TOP OF BOLT, TOP OF BANK, TOP OF BEAM, TOP OF BERM
TOC	TOP OF CURB, TOP OF CONCRETE
TOD	TOP OF DUCT
TOF	TOP OF FOOTING
TOG	TOP OF GRATING
TOL	TOLERANCE, TOP OF LEDGER
TOM	TOP OF MASONRY
TOP	TOP OF PLATE
TOPO	TOPOGRAPHY
TOS	TOP OF SLAB, TOP OF STEEL, TOE OF SLOPE
TOW	TOP OF WALL
TP	TOILET PARTITION, TELEPHONE POLE, TOE PLATE, TRAP PRIMER
TPD	TOILET PAPER DISPENSER
TPG	TOPPING, THROUGH PLATE GIRDER
TR	TRANSOM
TRANS	TRANSITION
TRD	TRENCH DRAIN
TYP	TYPICAL
U	URINAL
UG	UNDERGROUND
ULT	ULTIMATE
UNFN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY
V	VENT, VELOCITY, VOLT
VA	VOLT AMPERE
VAC	VACUUM
VAR	VARNISH, VARIABLE, VOLT AMPERES REACTIVE
VB	VAPOR BARRIER, VINYL BASE, VALVE BOX
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VCT	VINYL COMPOSITION TILE, VERTICAL CENTERLINE
VEL	VELOCITY
VENT	VENTILATION
VERT	VERTICAL
VERTS	VERTICAL REINFORCING
VG	VERTICAL GRAIN
VIF	VERIFY IN FIELD
VIN	VINYL
VOL	VOLUME
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
VS	VERSUS, VAPOR SEAL
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
W/	WITH
W/O	WITHOUT
W	WATT, WEST, WIDE, WINDOW, WIRE, WIDE FLANGE BEAM
WB	WOOD BASE
WC	WATER CLOSET, WATER COLUMN
WD	WOOD, WIDTH
WF	WIDE FLANGE, WASH FOUNTAIN
WG	WIRE GLASS, WATER GAGE
WH	WALL HYDRANT, WEEP HOLE
WI	WROUGHT IRON
WL	WATER LEVEL
WLD	WELDED
WM	WIRE MESH
WP	WEATHERPROOF
WS	WATERSTOP, WATER SURFACE
WSCT	WAINSCOT
WT	WEIGHT, WATER TIGHT
WTHP	WATERPROOF, WORKING POINT
WWF	WELDED WIRE FABRIC
XP	EXPLOSION-PROOF
XS	EXTRA STRONG
XSECT	CROSS SECTION
XXS	DOUBLE EXTRA STRONG
YH	YARD HYDRANT
YS	YIELD STRENGTH

GENERAL NOTES

1. THESE ABBREVIATIONS APPLY TO THE ENTIRE SET OF CONTRACT DRAWINGS.
2. LISTING OF ABBREVIATIONS DOES NOT IMPLY THAT ALL ABBREVIATIONS ARE USED IN THE CONTRACT DRAWINGS.
3. ABBREVIATIONS SHOWN ON THIS SHEET INCLUDE VARIATIONS OF A WORD. FOR EXAMPLE, "MOD" MAY MEAN MODIFY OR MODIFICATION, "INC" MAY MEAN INCLUDED OR INCLUDING, AND "REINF" MAY MEAN REINFORCE OR REINFORCING.
4. SEE INSTRUMENTATION AND GENERAL LEGEND SHEETS FOR PROJECT-SPECIFIC EQUIPMENT AND PIPING SYSTEM ABBREVIATIONS.

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Author
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

ABBREVIATIONS

0 1" 2"

FILENAME

SCALE NONE

SHEET 00G-002

Autodesk Docs://10348601_Minturn_WTP_Design_2022 ACC/10348601_00 GEN.rvt
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MATERIALS IN PLAN/SECTION

FILLED REGIONS - MATERIALS
"MATERIAL" FILLED REGIONS ARE DRAFTING HATCH PATTERNS THAT REPRESENTS AN ACTUAL MATERIAL OR PRODUCT.

- MATERIAL - BITUMINOUS PAVING (ASPHALT)
- MATERIAL - CONCRETE - ARCHITECTURE PRECAST WALL PANEL
- MATERIAL - CONCRETE - ARCHITECTURAL PRECAST WALL PANEL
- MATERIAL - CONCRETE - CAST-IN-PLACE
- MATERIAL - CONCRETE - GLASS FIBER REINFORCED
- MATERIAL - CONCRETE - LIGHTWEIGHT
- MATERIAL - CONCRETE - STRUCTURAL
- MATERIAL - EFIS
- MATERIAL - FILL - COURSE - CRUSHED STONE
- MATERIAL - FILL - FINE - GRAVEL
- MATERIAL - FILL - FINE - SAND
- MATERIAL - FILL - MEDIUM - GRAVEL
- MATERIAL - FILTER POINT MAT - PLAN
- MATERIAL - FIREPROOFING - MINERAL WOOL
- MATERIAL - FIREPROOFING - SEALANT
- MATERIAL - FIREPROOFING - SPRAY-APPLIED
- MATERIAL - FLOOR - CARPET - STYLE 1
- MATERIAL - FLOOR - CARPET - STYLE 2
- MATERIAL - FLOOR - TERRAZZO - STYLE 1
- MATERIAL - FLOOR - TERRAZZO - STYLE 2
- MATERIAL - GLAZING
- MATERIAL - GLAZING - SPANDREL
- MATERIAL GRATING - PLAN
- MATERIAL GRATING - SECTION
- MATERIAL - GROUT
- MATERIAL - GYPSUM - PLASTER
- MATERIAL - GYPSUM - WALLBOARD
- MATERIAL - INSULATION - BATTING - SECTION
- MATERIAL - INSULATION - RIGID FOAM
- MATERIAL - MASONRY - BRICK
- MATERIAL - MASONRY - CMU
- MATERIAL - MASONRY - DOLMITE
- MATERIAL - MASONRY - MORTAR
- MATERIAL - MASONRY - STRUCTURAL CLAY TILE
- MATERIAL - METAL - ALUMINUM
- MATERIAL - METAL - CHECKERED PLATE - PLAN
- MATERIAL - METAL - ORNAMENTAL
- MATERIAL - METAL - STEEL
- MATERIAL - PLASTER STUCCO
- MATERIAL - PLASTIC
- MATERIAL - RESILIENT TILE
- MATERIAL - RIPRAP - PLAN AND/OR SECTION
- MATERIAL - SEALANT - ACOUSTICAL
- MATERIAL - SEALANT - FIRE SEALANT
- MATERIAL - SOD - SECTION
- MATERIAL - SOILD - COMPACTED - EARTH
- MATERIAL - SOILD - COMPACTED - FINE
- MATERIAL - SOIL - UNDISTURBED - FINE
- MATERIAL - SOIL - UNDISTURBED - EARTH
- MATERIAL - STONE - CAST
- MATERIAL - STONE - CUT FINISHED
- MATERIAL - SYSTEM - DRAINABLE EXTERIOR INSULATION AND FINISH
- MATERIAL - TERRAZZO - 1
- MATERIAL - TERRAZZO - 2
- MATERIAL - TILE - PORCELAIN
- MATERIAL - WEEP JOINT MORTAR PROTECTION SYSTEM - SECTION
- MATERIAL - WOOD - FINISH - COURSE GRAIN
- MATERIAL - WOOD - FINISH - FINE GRAIN
- MATERIAL - WOOD - FINISH VERTICAL GRAIN
- MATERIAL - WOOD FLOORING
- MATERIAL - WOOD - GLULAM
- MATERIAL - WOOD - MDF
- MATERIAL - WOOD - PARTICLE BOARD
- MATERIAL - WOOD - PLYWOOD
- MATERIAL - WOOD - CONTINUOUS - SECTION
- MATERIAL - WOOD - BLOCKING - SECTION

Filled Regions - Graphics
GRAPHIC FILLED REGIONS ARE DRAFTING HATCH PATTERNS THAT ARE A SIMPLE GRAPHIC PATTERN AND DOES NOT REPRESENT A MATERIAL OR PRODUCT.

- MATERIAL - RESILIENT SHEET
- GRAPHIC - CONTRACT LIMIT - NOT-IN-CONTRACT

Filled Regions - Surface
SURFACE FILLED REGIONS ARE MODELING HATCH PATTERNS THAT RESPRESENT A MATERIAL OR PRODUCT AS RESPRESENTED ON A VERTCIAL OR HORIZONTAL SURFACE.

Ceiling Tiles

- SURFACE - CEILING TILE - 24" x 24"
- SURFACE - CEILING TILE - 24" x 24" - DEMO
- SURFACE - CEILING TILE - 24" x 48"
- SURFACE - CEILING TILE - 24" x 48" - DEMO
- SURFACE - CEILING TILE - 24" x 72"
- SURFACE - CEILING TILE - 24" x 72" - DEMO
- SURFACE - CEILING TILE - 48" x 48"
- SURFACE - CEILING TILE - 48" x 48" - DEMO
- SURFACE - CEILING - ACOUSTICAL TILE - SECTION

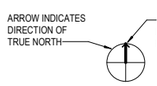
Masonry

- SURFACE - MASONRY - BRICK - MODULAR - RUNNING BOND
- SURFACE - MASONRY - CMU - 8" x 16" - RUNNING BOND
- SURFACE - MASONRY - CMU - 8" x 16" - STACKED BOND

Metals

- SURFACE - ENTRANCE GRID - 65 MM

GENERAL SYMBOLOGY



NORTH ARROW

PLAN TITLE ON SHEET

DETAIL

FOR REFERENCING DETAILS INCLUDED IN DRAWING SET.
1. DETAIL NUMBER
2. SHEET WHERE DETAIL IS LOCATED *

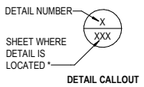
SECTION

1. SECTION NUMBER
2. SHEET WHERE SECTION VIEW IS FIRST CUT *

ELEVATION

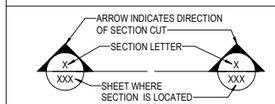
1. ELEVATION IDENTIFICATION NUMBER
2. SHEET WHERE POINT OF VIEW MARKER CAN BE FOUND *

SECTION, DETAIL, ELEVATION TITLE

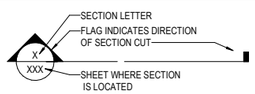


DETAIL CALLOUT

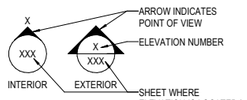
FOR REFERENCING DETAILS INCLUDED IN DRAWING SET.



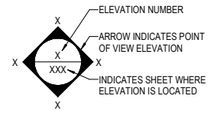
FULL BUILDING SECTION CUT MARKER



SECTION CUT MARKER



SINGLE ELEVATION OR PHOTO MARKER



MULTIPLE ELEVATION OR PHOTO MARKER

TARGET ELEVATION MARKER

* EXCEPTIONS WHERE THE SHEET NUMBER IS REPLACED BY A DASH (-)

1. FOR COMMON DETAILS, SECTIONS, ELEVATIONS OR DETAILS THAT ARE CUT OR CALLED OUT ON MULTIPLE SHEETS.
2. SECTIONS, ELEVATIONS OR DETAILS THAT ARE LOCATED ON THE SAME SHEET THEY ARE CUT OR CALLED OUT ON.

GENERAL TAGGING

ROOM/SPACE NAME — XX-XX — ROOM OR SPACE

XXX — DOOR

DOOR MARK | STAIR — XXX | XXX / XXXX | XXXX — FIRE DOOR/STAIR

A — NEW COLUMN GRID BUBBLE

A — EXISTING COLUMN GRID BUBBLE

X — WALL TYPE

X — CURTAIN WALL

X — WINDOW TYPE

X — ACCESSORY, FURNITURE, AND MISCELLANEOUS EQUIPMENT IDENTIFIER

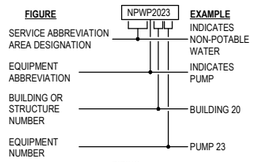
KEYNOTE NUMBER — X — LOUVER TYPE

— SHEET KEYNOTE

— REVISION DELTA

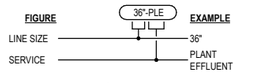
EQUIPMENT IDENTIFICATION

NOTE: THE BELOW EQUIPMENT TAG IS AN EXAMPLE ONLY. MODIFY FIELDS AS REQUIRED PER THE PROJECT STANDARD.

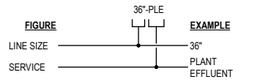


PIPING

NOTE: THE BELOW PIPE TAG IS AN EXAMPLE ONLY. MODIFY FIELDS AS REQUIRED PER THE PROJECT STANDARD.



PIPING (ALTERNATE)



GENERAL LINE STYLES

- 4-HOUR FIRE RATED WALL
- 3-HOUR FIRE RATED WALL
- 2-HOUR FIRE RATED WALL
- 1-HOUR FIRE RATED WALL
- COLUMN GRID LINE
- CENTERLINE
- CONTRACT LIMIT
- ELEVATION LINE
- MATCHLINE
- PROPERTY LINE

SHEET NAMING CONVENTION

AREA DESIGNATION

TO BE EDITED ON AN A PROJECT BASIS. TO BE DETERMINED BY THE PROJECT MANAGER, THEN ADDED TO THE GENERAL LEGEND.

EXAMPLE:
01 BUILDING OR AREA NAME
02 BUILDING OR AREA NAME
03 BUILDING OR AREA NAME

SINGLE DISCIPLINE DESIGNATOR & DISCIPLINE ORDER*

G	GENERAL
X	DEMOLITION/HAZAROUS MATERIAL
V	SURVEYING/MAPPING
B	GEOTECHNICAL
C	CIVIL
L	LANDSCAPE
S	STRUCTURAL
A	ARCHITECTURAL
I	INTERIORS
Q	EQUIPMENT
F	FIRE PROTECTION
P	PLUMBING
D	PROCESS
M	MECHANICAL
E	ELECTRICAL
W	DISTRIBUTED ENERGY
T	TELECOMMUNICATIONS
R	RESOURCE
U	UNIVERSAL/OTHER DISCIPLINES
Y	INSTRUMENTATION & CONTROLS
Z	CONTRACTOR/SHOP DRAWINGS
O	OPERATIONS

DOUBLE LETTER DESIGNATOR*

SEE LINKED NCS DOCUMENT:

\\intranet.hdr\hdr\Engl\ECGCADStandards\BIM\Autodesk\Common \Documentation\NCS_Discipline_Designators.pdf

SHEET TYPE DESIGNATOR

0	GENERAL (SYMBOLS, LEGENDS)
1	PLANS
2	ELEVATIONS
3	SECTIONS
4	LARGE SCALE VIEWS
5	DETAILS
6	SCHEDULES AND DIAGRAMS
7	OTHER VIEWS

*NCS ALLOWS THE COMBINED USE OF BOTH SINGLE AND DOUBLE LETTER DISCIPLINE DESIGNATORS WITHIN A PROJECT.

EXAMPLE 1 (WITH BUILDING SERIES, SINGLE LETTER DESIGNATOR)

GRAVITY THICKENER STRUCTURAL FOUNDATION PLAN, DRAWING 01

0	2						BUILDING OR AREA 02
BUILDING OR AREA DESIGNATION							
		S	-				STRUCTURAL
DISCIPLINE DESIGNATOR							
				1			PLAN
SHEET TYPE DESIGNATOR							
					0	1	SHEET 01
SHEET NUMBER							
0	2	S	-	1	0	1	EXAMPLE

EXAMPLE 2 (WITH BUILDING SERIES, DOUBLE LETTER DESIGNATOR)

GRAVITY THICKENER STRUCTURAL FOUNDATION PLAN, DRAWING 01

0	2						BUILDING OR AREA 02
BUILDING OR AREA DESIGNATION							
		S	B				STRUCTURAL
DISCIPLINE DESIGNATOR							
				1			PLAN
SHEET TYPE DESIGNATOR							
					0	1	SHEET 01
SHEET NUMBER							
0	2	S	B	1	0	1	EXAMPLE

EXAMPLE 3 (NO BUILDING SERIES, DOUBLE LETTER DESIGNATOR)

GRAVITY THICKENER STRUCTURAL FOUNDATION PLAN, DRAWING 01

							BUILDING OR AREA (LEFT BLANK)
BUILDING OR AREA DESIGNATION (LEFT BLANK)							
		S	B				STRUCTURAL
DISCIPLINE DESIGNATOR							
				1			PLAN
SHEET TYPE DESIGNATOR							
					0	1	SHEET 01
SHEET NUMBER							
		S	B	1	0	1	EXAMPLE

FIRE & LIFE SAFETY

GENERAL NOTES

1. THIS IS A STANDARD SHEET SHOWING COMMON SYMBOLOGY. ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
2. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.

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PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Author
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

GENERAL LEGEND

0 1" 2"

FILENAME

SCALE NONE

SHEET **00G-003**

Autodesk Docs://10348601_Minturn_WTP_Design_2022 ACC/10348601_00 GEN.rvt
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CIVIL MAPPING SYMBOLOGY

- EMBANKMENT SLOPE (CUT)
- EMBANKMENT SLOPE (FILL)
- EMBANKMENT SLOPE RIGHT ARROW RIGHT (H:V)
- EMBANKMENT SLOPE LEFT ARROW LEFT (H:V)
- SPOT ELEVATION/POINT # (123)
- SURVEY BENCHMARK
- SURVEY CONTROL POINT (CP-X)
- HORIZONTAL CONTROL POINT
- VERTICAL CONTROL POINT
- SECTION CORNER MONUMENT
- SECTION CORNER NO MONUMENT
- IDENTIFICATION AND APPROXIMATE LOCATION OF SOIL TEST HOLE (X)
- TEST PIT (X)
- SOIL BORING (X)
- BUOY
- FLOW ARROW
- WATER LEVEL IN SECTION/PROFILE
- TIDE GAUGE
- EXISTING UTILITY POLE
- DOWNGUY
- EXTERIOR UTILITY JUNCTION BOX (J X)
- INTERSTATE HIGHWAY SYMBOL (XXX)
- US HIGHWAY SYMBOL (XXX)
- STATE HIGHWAY SYMBOL (XXX)
- HAY BALE SILT CHECK
- TEMPORARY SEDIMENT TRAP
- PIEZOMETER (X)
- RAIL SIGNAL
- RAIL SWITCH
- SIGN
- TIRE TREDDLE (In)
- TRAFFIC ARM WITH CARD READER
- TRAFFIC ARM MECHANICAL SWING

- CLEANOUT (CO)
- CULVERT END SYMBOL (WITH CULVERT SHOWN BETWEEN SYMBOLS)
- FIRE HYDRANT (X)
- FUEL OIL METER (F)
- FUEL OIL MANHOLE (F)
- FUEL OIL VAULT (F)
- GREASE TRAP (GT)
- GRIT CHAMBER (GC)
- HEADWALL
- INDUSTRIAL WASTE WATER METER (I)
- INDUSTRIAL WASTE WATER MANHOLE (I)
- NATURAL GAS METER (G)
- NATURAL GAS RECEIVER (G)
- NATURAL GAS TRAP (G)
- NATURAL GAS LINE VAULT (G)
- MONITORING WELL (MW)
- POST INDICATOR VALVE (X)
- PUMP STATION (PS X)
- SANITARY MANHOLE (S)
- SEPTIC TANK (ST)
- TANK BELOW GROUND (X)
- TANK HORIZONTAL ABOVE GROUND (X)
- TANK VERTICAL ABOVE GROUND (X)

- STORM CATCH BASIN (CB)
- STORM ROUND CATCH BASIN (CB)
- STORM DRAINAGE MANHOLE (D)
- WATER/AIR VENT
- WATER BACKFLOW PREVENTER (W)
- WATER BLOWOFF
- WATER METER (W)
- WATER SHUTOFF
- WATER SOFTENER (WS)
- WATER VALVE VAULT (W)
- VALVE

UTILITY/CIVIL LINE SYMBOLOGY

- PIPELINE
- LARGE PIPELINE
- UTILITY BENEATH STRUCTURE
- RAILROAD
- CENTERLINE
- BOTTOM OF DITCH
- PROPERTY LINE
- EASEMENT
- LIMITS OF CONSTRUCTION
- ROW
- EXISTING CONTOUR (MINOR)
- EXISTING CONTOUR W/ELEVATION (MAJOR) (25)
- EXISTING FENCE (X X X)
- EXISTING VEGETATION/BRUSH LINE
- FENCE - BARB WIRE (X)
- FENCE - CHAIN LINK
- FENCE - FIELD (X)
- FENCE - OTHER (X X X)
- FENCE - WOOD
- FENCE - WOVEN WIRE (XX)
- FLOOD LIMIT (25 YEAR) (25 YEAR)
- FLOOD LIMIT (50 YEAR) (50 YEAR)
- FLOOD LIMIT (100 YEAR) (100 YEAR)
- FLOOD LIMIT (500 YEAR) (500 YEAR)
- HIGHWAY GUARDRAIL
- LEVEE TOP
- LEVEE TOE
- NEW CONTOUR (MINOR)
- NEW CONTOUR (MAJOR) (25)
- ROCK BERM (RB RB RB RB)
- SILT FENCE (SF SF SF SF)
- LIMITS OF DISTURBANCE (LOD LOD LOD)
- TOE OF SLOPE
- TOP OF SLOPE

- SANITARY SEWER (SS SS SS)
- STORM SEWER (SD SD SD)
- DOMESTIC WATER NON-POTABLE (NPW NPW NPW)

GENERAL NOTES:

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PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	M. JARRETT
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

GENERAL
CIVIL LEGEND

0 1" 2"

FILENAME 00G-004.DWG
SCALE 1"=20'

SHEET
00G-004

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PIPING SYSTEMS

- COLD WATER, POTABLE (CW)
- HOT WATER, POTABLE (HW)
- HOT WATER RECIRCULATING, POTABLE (HWC)
- NON POTABLE COLD WATER
- HOT WATER - TEMPERATURE, POTABLE
- TEPID WATER, POTABLE
- SANITARY SEWER BELOW GRADE
- SANITARY SEWER ABOVE GRADE
- SANITARY VENT
- COMBINATION WASTE AND VENT
- REFRIGERANT LIQUID
- REFRIGERANT SUCTION
- CONDENSATE DRAIN

PIPING SYMBOLOGY

- PIPE ANCHOR
- PIPE GUIDE
- EXPANSION JOINT
- PRESSURE/ TEMPERATURE PORT
- THERMOMETER
- THERMOWELL
- PRESSURE GAUGE
- TEMPERATURE GAUGE
- FLEXIBLE PIPING CONNECTION
- WYE STRAINER
- MANUAL AIR VENT
- AUTOMATIC AIR VENT
- METER (WATER, GAS, OTHER)
- FLOOR CLEANOUT
- CLEANOUT
- WALL CLEANOUT
- DOUBLE GRADE CLEANOUT
- WATER HAMMER ARRESTOR
- EARTHQUAKE VALVE
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER, FLAT ON BOTTOM
- ECCENTRIC REDUCER, FLAT ON TOP
- ELBOW, 90° TURN DOWN
- ELBOW, 90° TURN UP
- TEE, OUTLET UP
- TEE, OUTLET DOWN
- TEE, OUTLET UP W/ 90° TURN
- TEE, OUTLET DOWN W/ 90° TURN
- PIPE BREAK
- PIPE CAP
- BLIND FLANGE
- UNION
- FLOW ARROW
- SHUTOFF VALVE (NORMALLY OPEN)
- SHUTOFF VALVE (NORMALLY CLOSED)
- DRAIN VALVE
- CHECK VALVE
- VACUUM BREAKER
- AUTOMATIC FLOW CONTROL VALVE
- CALIBRATED MANUAL BALANCING VALVE
- PRESSURE-RELIEF VALVE
- PRESSURE-REDUCING VALVE (PRV)
- AUTOMATIC CONTROL VALVE, 2-WAY
- AUTOMATIC CONTROL VALVE, 3-WAY
- BACKFLOW PREVENTER
- PLUMBING FIXTURE

HVAC SYMBOLOGY

- SUPPLY AIR OR OUTSIDE AIR DUCT UP (SECTION CUT, FIRST DIMENSION DUCT WIDTH)
- SUPPLY AIR OR OUTSIDE AIR DUCT DOWN (NO SECTION CUT)
- RETURN AIR DUCT UP (SECTION CUT)
- RETURN AIR DUCT DOWN (NO SECTION CUT)
- EXHAUST AIR DUCT UP (NO SECTION CUT)
- EXHAUST AIR DUCT DOWN (NO SECTION CUT)
- ROUND ELBOW UP
- ROUND ELBOW DOWN
- TRANSITION - RECTANGULAR TO ROUND DUCT
- STANDARD BRANCH
- ELBOW - W/TURNING VANE (RECTANGULAR)
- ELBOW - (RECTANGULAR), SMOOTH RADIUS
- RECTANGULAR DUCT OR OPENING SIZE FIRST NUMBER INDICATES SIZE OF SIDE SHOWN
- ROUND DUCT SIZE
- RECTANGULAR DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW
- ROUND DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW
- HIDDEN DUCT
- DUCT/PIPE ELEVATION TAG ABOVE FINISH FLOOR
- VOLUME DAMPER
- MOTOR OPERATED DAMPER
- FIRE DAMPER
- SMOKE DAMPER
- SMOKE AND FIRE DAMPER
- FLEXIBLE CONNECTION

- EXHAUST AIR OR RETURN AIR GRILLE
- EXHAUST AIR OR RETURN AIR GRILLE
- SUPPLY AIR ASSEMBLY SQUARE DIFFUSER
- SUPPLY AIR ASSEMBLY ROUND DIFFUSER

TEMPERATURE CONTROL DIAGRAM SYMBOLOGY

CONTROL DEVICE IDENTIFIER

AFS	AIRFLOW MEASURING STATION
AM	AIRFLOW MEASURING SENSOR
CO	CARBON MONOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
F	FLOW SWITCH
FRZ	FREEZE STAT
H	HUMIDITY SENSOR
HS	HIGH STATIC SWITCH
LS	LOW STATIC SWITCH
NO2	NITROGEN DIOXIDE SENSOR
P	PRESSURE SENSOR
S	SPACE TEMPERATURE SENSOR
SD	SMOKE DETECTOR
T	TEMPERATURE SENSOR
TS	TEMPERATURE SWITCH
ΔP	DIFFERENTIAL PRESSURE SENSOR

CONTROL INPUT/OUTPUT IDENTIFIER

AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT

COIL IDENTIFIERS

CC	CHILLED WATER COOLING COIL
DG	DIRECT FIRED GAS BURNER
DX	DIRECT EXPANSION COOLING COIL
EH	ELECTRIC HEATING COIL
ER	DIRECT EVAPORATIVE COIL
FC	FACE AND BYPASS COOLING COIL
FH	FACE AND BYPASS HEATING COIL
HC	HEATING HOT WATER HEATING COIL
IG	INDIRECT FIRED GAS BURNER
ST	STEAM HEATING COIL

CONTROL ABBREVIATIONS

BTU	BTU METER
COMM	COMMUNICATION
CT	CURRENT TRANSMITTER
EC	ELECTRONICALLY COMMUTATED
EF	EXHAUST FAN
FM	FLOW METER
M	MOTOR ACTUATOR
MA	MIXED AIR
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTDOOR AIR
RA	RETURN AIR
RF	RETURN FAN
RL	RELIEF FAN
SA	SUPPLY AIR
SF	SUPPLY FAN
TCC	TEMPERATURE CONTROL CONTRACTOR
VFD	VARIABLE FREQUENCY DRIVE

- DUCT MOUNTED SMOKE DETECTOR
- TEMPERATURE AVERAGING SENSOR
- MOTOR OPERATED DAMPER
- MOTOR OPERATED SINGLE BLADE DAMPER
- BACKDRAFT DAMPER
- INTAKE/ EXHAUST LOUVER
- FILTER
- SEE CONTROL ABBREVIATIONS (TYP)
- FAN
- FAN WITH EC MOTOR
- PUMP
- PUMP WITH EC MOTOR

ABBREVIATIONS

AD	ACCESS DOOR
AFR	ABOVE FINISHED ROOF
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
ARF	ABOVE RAISED FLOOR
AV	AIR VALVE
BAS	BUILDING AUTOMATION SYSTEM
BDD	BACK DRAFT DAMPER
BHP	BRAKE HORSE POWER
BOE	BOTTOM OF EQUIPMENT
BTUH	BRITISH THERMAL UNITS PER HOUR
CAV	CONSTANT AIR VOLUME
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
COP	COEFFICIENT OF PERFORMANCE
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CRAC	COMPUTER ROOM AIR CONDITIONER
CU	CONDENSING UNIT
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DH	DEHUMIDIFIER
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EDH	ELECTRIC DUCT HEATER
EER	ENERGY EFFICIENCY RATIO
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
ERU	ENERGY RECOVERY UNIT
ESP	EXTERNAL STATIC PRESSURE
ESS	EMERGENCY SHUTOFF SWITCH
EWT	ENTERING WATER TEMPERATURE
F	FUTURE
FA	FREE AREA
FCP	FAN CONTROL PANEL
FCU	FAN COIL UNIT
FDBK	FEEDBACK
FLA	FULL LOAD AMPS
FLT	FILTER
FPB	FAN POWERED BOX
FPM	FEET PER MINUTE
GC	GENERAL CONTRACTOR
GE	GRAVITY EXHAUST
GI	GRAVITY INTAKE
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
I/O	INPUT/OUTPUT
I/P	CURRENT TO PNEUMATIC
IAQ	INDOOR AIR QUALITY
IPLV	INTEGRATED PART LOAD VALUE
LAT	LEAVING AIR TEMPERATURE
LVR	LOUVER
LWT	LEAVING WATER TEMPERATURE
MAU	MAKE-UP AIR UNIT
MBH	THOUSAND BTUH
MCC	MOTOR CONTROL CENTER
NC	NOISE CRITERIA
NO	NUMBER
NRC	NOISE REDUCTION COEFFICIENT
OS&Y	OUTSIDE SCREW AND YOKE
PD	PRESSURE DROP
PPH	POUNDS PER HOUR
RH	RELATIVE HUMIDITY
RTU	ROOFTOP UNIT
S	SIGNAL PORT
SCFM	STANDARD CUBIC FEET PER MINUTE
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SP	STATIC PRESSURE
TC	TECHNOLOGY CONTRACTOR
TCP	TEMPERATURE CONTROL PANEL
TD	TEMPERATURE DIFFERENTIAL
TES	THERMAL ENERGY STORAGE
TSP	TOTAL STATIC PRESSURE
UH	UNIT HEATER
V&C	VALVE AND CAP
VAV	VARIABLE AIR VOLUME
VRF	VARIABLE REFRIGERANT FLOW
VTR	VENT THROUGH ROOF
WB	WET BULB
WC	WATER COLUMN
WPD	WATER PRESSURE DROP

GENERAL NOTES

GENERAL MECHANICAL NOTES

1. THESE NOTES ARE NOT ALL INCLUSIVE. REFER TO DRAWINGS AND SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
2. THIS IS A STANDARD MECHANICAL (HVAC AND PLUMBING) SYMBOLOGY AND ABBREVIATIONS SHEET. LISTING OF SYMBOLS AND ABBREVIATIONS DOES NOT IMPLY ALL SYMBOLS AND ABBREVIATIONS HAVE BEEN USED ON THIS PROJECT.
3. VALVE SYMBOLS SHOWN HERE ARE APPLICABLE ONLY TO MECHANICAL SHEETS.
4. PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR COMPLETE AND OPERABLE SYSTEMS AS INDICATED ON THE DRAWINGS AS SPECIFIED, OR AS REQUIRED BY CODE.
5. MECHANICAL INSTALLATION SHALL COMPLY WITH THE ADA/ABA ACCESSIBILITY GUIDELINES.
6. DETAILS APPLY TO THE ENTIRE PROJECT AND ARE ONLY REFERENCED TO PROVIDE CLARITY IF THERE ARE MULTIPLE DETAILS THAT COULD APPLY TO A PARTICULAR PROJECT CONDITION.
7. COORDINATE LOCATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING WITH OTHER TRADES BEFORE PROCEEDING WITH WORK. DO NOT INSTALL MECHANICAL EQUIPMENT, DUCTWORK, OR PIPING ABOVE ELECTRICAL EQUIPMENT WHERE PROHIBITED BY ELECTRICAL CODES (SWITCHBOARDS, PANELS, ETC.).
8. COORDINATE INSTALLATION OF OUTSIDE AIR INTAKE WITH INSTALLATION OF PLUMBING VENTS, FLUES AND EXHAUST/RELIEF OUTLETS TO MAINTAIN 10' SEPARATION.
9. ALL DUCTWORK, PIPING, AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH ALL TRADES. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS OR AS SHOWN ON THE MECHANICAL OR STRUCTURAL DRAWINGS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED.
10. ALL MISCELLANEOUS METALS AND MATERIALS REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE PROVIDED BY THE INSTALLING CONTRACTOR.
11. PROVIDE DIELECTRIC UNIONS AT ALL CONNECTIONS OF DISSIMILAR METALS (SUCH AS COPPER TO GALVANIZED STEEL).
12. PROVIDE ISOLATION VALVES AT EACH PIECE OF EQUIPMENT. ALSO PROVIDE ISOLATION VALVES ON EACH BRANCH AND/OR RISER SERVING MULTIPLE PIECES OF EQUIPMENT OR FIXTURES AND ELSEWHERE AS INDICATED. INSTALL VALVES AS CLOSE TO MAIN AS POSSIBLE.

GENERAL HVAC NOTES

1. DUCTWORK DIMENSIONS: FIRST NUMBER INDICATES SIDE OF DUCTWORK SHOWN. ALL DIMENSIONS ARE IN INCHES AND ARE INSIDE CLEAR DIMENSIONS.
2. VOLUME DAMPERS ABOVE PLASTER OR GYPBOARD CEILINGS SHALL HAVE EXTENSION RODS AND CHROME-PLATED ESCUTCHEON PLATES.
3. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK AND PIPING SYSTEMS CONNECTED TO FANS, PUMPS AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION.
4. PROVIDE ACCESSIBLE VOLUME DAMPERS OR OTHER MEANS OF AIRFLOW ADJUSTMENT AT ALL DUCT RUN-OUTS TO DIFFUSERS AND GRILLES.
5. PROVIDE DUCT ACCESS DOORS AT OUTSIDE AIR INTAKE PLENUMS.
6. ALL DUCT RUN-OUTS TO DIFFUSERS AND GRILLES SHALL BE THE SAME AS THE DIFFUSER OR GRILLE NECK SIZE UNLESS NOTED OTHERWISE.
7. ALL PIPING RUNOUTS SHALL BE 3/4" UNLESS NOTED OTHERWISE.

GENERAL PLUMBING NOTES

1. SANITARY SEWER PIPING SMALLER THAN 3" SHALL BE SLOPED AT 1/4" PER FOOT, 3" AND LARGER SHALL BE SLOPED AT 1/8" PER FOOT.
2. WALL HYDRANTS SHALL BE INSTALLED BETWEEN 18" MIN AND 24" MAX ABOVE FINISH GRADE. COORDINATE ELEVATIONS OF FINISH FLOOR OR FINISH EXTERIOR GRADE. PROVIDE ACCESSIBLE INSIDE SHUTOFF VALVE FOR EACH WALL HYDRANT.
3. PROVIDE BACKFLOW PREVENTERS IN ACCORDANCE WITH THE LOCAL CODES. PROVIDE AIR GAP FITTINGS FOR ALL RPZ BACKFLOW PREVENTERS AND ROUTE DISCHARGE PIPING TO NEAREST FLOOR DRAIN OR FLOOR SINK OR AS SHOWN ON DRAWINGS.

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	J. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
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MECHANICAL	K. CHAUDHARI
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DRAWN BY	Y. AL-MILAFI
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

MECHANICAL LEGEND

0 1" 2"

FILENAME: 10348601_05MP - MEMBRANE TREATMENT.rvt

SCALE: 12" = 1'-0"

SHEET: **00G-005**

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ONE-LINE, POWER, AND LIGHTING SYMBOLOGY

X
20A
3P

X
100AF
80AT
3P

LOW VOLTAGE CIRCUIT BREAKER (CB). RATING AND NO. OF POLES AS SHOWN. WHEN SPECIFIC TYPE, OTHER THAN MCCB, IS REQUIRED, X INDICATES TYPE.

TYPES

MCCB - MOLDED CASE
ICCB - INSULATED CASE
LVP - LOW VOLTAGE POWER
MCP - MOTOR CIRCUIT PROTECTOR (RATING PER CONNECTED LOAD)

TRIP UNIT

L - LONG TIME PICKUP
S - SHORT TIME PICKUP
I - INSTANTANEOUS PICKUP
G - GROUND FAULT PICKUP
A - ARC ENERGY REDUCTION MODE

X — INTERLOCK: X - INDICATES TYPE

TYPES

E - ELECTRICAL
M - MECHANICAL
K - KEY

GFP — GROUND FAULT PROTECTION

52 — MEDIUM VOLTAGE CIRCUIT BREAKER

FUSE, RATING, AND NUMBER OF FUSES AS NOTED

FUSED CUTOUT, CURRENT RATING, FUSE RATING, AND QUANTITY AS NOTED

FUSIBLE SWITCH, CURRENT RATING, FUSE RATING, AND QUANTITY AS NOTED (3 POLE UON)

NON-FUSED SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED (3 POLE UON)

DISCONNECT OR DRAWOUT CONNECTION

A C B — MAGNETIC MOTOR STARTER

A C B — SEPARATELY MOUNTED COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECT

D C — MOTOR/LOAD CONTROLLER

D C — SEPARATELY MOUNTED MOTOR/LOAD CONTROLLER WITH SHORT CIRCUIT PROTECTION AND DISCONNECT

MOTOR STARTER AND CONTROLLER SUBSCRIPTS

A - MAGNETIC STARTER NEMA SIZE
B - STARTER TYPE
NONE - FULL VOLTAGE NON-REVERSING (FVNR)
FVR - FULL VOLTAGE REVERSING
2S - TWO SPEED
RVAT - REDUCED VOLTAGE AUTO TRANSFORMER
C - CONTROL DIAGRAM OR CONTROLS SCHEDULE NUMBER (IF REQUIRED)
D - CONTROLLER TYPE
VFD - VARIABLE FREQUENCY DRIVE
SS - SOLID STATE
CONT - CONTACTOR

J — SEPARATELY MOUNTED COMBINATION MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE - LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION

J — SEPARATELY MOUNTED MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION

X J — NON-FUSED SAFETY SWITCH, 30A, 3P, X INDICATES AMP RATING GREATER THAN 30A

X J Y — FUSED SAFETY SWITCH, 3P, X INDICATES AMP RATING GREATER THAN 30A, Y INDICATES FUSE SIZE

CB J — SEPARATELY MOUNTED CIRCUIT BREAKER; SEE ELECTRICAL ONE - LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION

7 1/2 — MOTOR WITH DESIGN HORSEPOWER (WHEN INDICATED)

HP

G — GENERATOR

ATS — TRANSFER SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED
ATS - AUTOMATIC
MTS - MANUAL

TRANSFORMER
3-PHASE, 3-WIRE DELTA CONNECTION
3-PHASE, 4-WIRE GROUNDED WYE CONNECTION

LP100
208/120V
3 , 4W — SWITCHBOARD OR PANELBOARD; NAME, VOLTAGE, PHASE, NUMBER OF WIRES WHEN INDICATED

100
KVA — NON-MOTOR LOAD WITH DESIGN KVA, KW, OR AMP

VOLTAGE TRANSFORMER (VT, PT, OR CPT)

CURRENT TRANSFORMER (CT)

WH — UTILITY WATT-HOUR METER PER UTILITY REQUIREMENTS

DMP — DIGITAL METERING PACKAGE

GROUND

LIGHTNING ARRESTER

SPD — LOW VOLTAGE SURGE PROTECTIVE DEVICE

SS — SELECTOR SWITCH

PB — PUSHBUTTON

IC — INSTRUMENTATION / CONTROL DEVICE

SV — SOLENOID VALVE

CONTROL PANEL INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT

CONTROL PANEL WITH DISCONNECT SWITCH INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT

J OR J — JUNCTION OR PULL BOX

PANELBOARD (250V TO 600V)

PANELBOARD (LESS THAN 250V)

X — ELECTRICAL EQUIPMENT ENCLOSURE: SWITCHBOARD, MOTOR CONTROL CENTER, CONTROL PANEL, TRANSFORMER OR OTHER EQUIPMENT AS INDICATED. ESTIMATED SIZE AS INDICATED. WHEN USED X INDICATES EQUIPMENT TYPE.

EQUIPMENT TYPES

ATS - AUTOMATIC TRANSFER SWITCH
CP - CONTROL PANEL
MTS - MANUAL TRANSFER SWITCH
MCC - MOTOR CONTROL CENTER
UPS - UNINTERRUPTIBLE POWER SUPPLY
VFD - VARIABLE FREQUENCY DRIVE
SB - SWITCHBOARD
SG - SWITCHGEAR
T - TRANSFORMER

PLUG-IN RECEPTACLE STRIP, QUANTITY AND SPACING OF RECEPTACLES AS NOTED OR SPECIFIED

X Y — SPECIAL-PURPOSE RECEPTACLE AS DEFINED ON PLANS

X Y — TWO RECEPTACLES IN 2-GANG BOX UNDER COMMON COVER PLATE

X Y — DUPLEX RECEPTACLE

X Y — SIMPLEX RECEPTACLE

X Y — RECESSED FLOOR MOUNTED BOX, QUANTITY AND TYPE OF RECEPTACLES AS INDICATED

SUBSCRIPTS

X - INDICATES TYPE
GFCI - GROUND FAULT CIRCUIT INTERRUPTER
IG - ISOLATED GROUND
TR - TAMPER RESISTANT
PLH - PLUG LOAD HALF CONTROLLED
PLD - PLUG LOAD DUAL CONTROLLED
USB - USB CHARGING STATION
SPD - SURGE PROTECTIVE DEVICE
Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD

CONDUIT TURNING UP

CONDUIT TURNING DOWN

(#X) — HOMERUN TO SOURCE (E.G. PANELBOARD, MCC) NUMBER IN PARENTHESES REPRESENTS CONDUCTOR SIZE OTHER THAN #12
SINGLE PHASE: 2#12, 1#12G IN 3/4"C
THREE PHASE: 3#12, 1#12G IN 3/4"C
UNLESS OTHERWISE NOTED, CONDUCTOR SIZE IS FOR ENTIRE CIRCUIT, SOURCE TO LAST DEVICE. ALSO, SEE ONE LINE DIAGRAM FOR CIRCUIT REQUIREMENTS

CONDUIT CONNECTION TO EQUIPMENT

CIRCUIT RUN BETWEEN DEVICES EXPOSED IN NON-ARCHITECTURALLY FINISHED AREAS; CONCEALED IN ARCHITECTURALLY FINISHED AREAS. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.

CONDUIT RUN BETWEEN DEVICES CONCEALED IN NON-ARCHITECTURALLY FINISHED AREAS OR UNDER FLOOR SLAB. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.

(#X) — CIRCUIT HASH MARKS (WHEN INDICATED); LONG, SHORT, SINGLE DOT, AND DOUBLE DOT REPRESENT PHASE, NEUTRAL, EQUIPMENT GROUND, AND ISOLATED EQUIPMENT GROUND, RESPECTIVELY. X REPRESENTS CONDUCTOR SIZE OTHER THAN #12 IN 3/4" CONDUIT.

CIRCUIT CONTINUATION

CONDUIT STUBBED OUT AND CAPPED

CORD AND PLUG CONNECTION

XXX XXX — CONDUIT TAG OR CIRCUIT NUMBER - WIRE AND CONDUIT SIZE AS SPECIFIED IN CIRCUIT SCHEDULE ON THE SHEETS

GROUND CABLE

GROUND ROD

Z X Y — CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED

Z X Y — CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)

Z X Y — WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED

Z X Y — WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)

Z X Y — WALL MOUNTED FLOOD LUMINAIRE, LAMP TYPE AS SPECIFIED

Z X Y — POLE/STANCHION MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED

Z X Y — POLE/STANCHION MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED

Z X Y — POLE/STANCHION MOUNTED FLOOR LUMINAIRE, LAMP TYPE AS SPECIFIED

Z X Y — CEILING/PENDANT MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED

Z X Y — WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED

Z X Y — CEILING/PENDANT MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, ALL OR PARTIAL EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED

Z X Y — WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, ALL OR PARTIAL EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED

X Y — EMERGENCY LIGHT, NUMBER OF ATTACHED HEADS AS SHOWN

X Y — EMERGENCY LIGHT, REMOTE MOUNTED HEAD

X Y X Y — DOUBLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS

X Y X Y — SINGLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS

LIGHTING FIXTURE SUBSCRIPTS

X - INDICATES LUMINAIRE TYPE PER LUMINAIRE SCHEDULE
Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD
Z - INDICATES CONTROLLING SWITCH (IF REQUIRED)

NL - NIGHT LIGHT UNSWITCHED

X — ROOM/AREA LIGHTING CONTROL TYPE, SEE LIGHTING CONTROL SCHEDULE FOR REQUIREMENTS

2 a — LOW VOLTAGE DIGITAL WALL SWITCH; NUMBER INDICATES QUANTITY OF PUSH BUTTONS PER SINGLE GANG PLATE, LETTER INDICATES CONTROL ZONE WHEN SHOWN

Y X — WALL SWITCH

SUBSCRIPTS

X - INDICATES TYPE
NONE - SINGLE POLE
2 - DOUBLE POLE
3 - THREE-WAY
4 - FOUR-WAY
K - KEY SWITCH
P - PILOT LIGHT
L - LIGHTED HANDLE
DM - DIMMING
MC - MOMENTARY CONTACT
T - TIMER

Y X — Y - INDICATES CONTROLLING SWITCH (IF REQUIRED)

MANUAL MOTOR STARTER

SUBSCRIPTS

X - INDICATES TYPE
HP - HORSEPOWER RATED
TE - HORSEPOWER RATED WITH FT - THERMAL ELEMENT HORSEPOWER RATED WITH FUSETRON FUSE
Y - INDICATES SWITCH TYPE
NONE - TOGGLE SWITCH TYPE
R - ROTARY SWITCH TYPE

PC — PHOTOCELL

TC — TIME CLOCK

OSX — LIGHTING CONTROL OCCUPANCY SENSOR, WALL MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED

OSX — LIGHTING CONTROL OCCUPANCY SENSOR, CEILING MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED

COMMUNICATION SYMBOLOGY

WALL MOUNTED TELEPHONE OUTLET

WALL MOUNTED DATA OUTLET

WALL MOUNTED COMBINATION TELEPHONE AND DATA OUTLET

RECESSED FLOOR MOUNTED TELEPHONE OUTLET

RECESSED FLOOR MOUNTED DATA OUTLET

RECESSED FLOOR MOUNTED COMBINATION TELEPHONE AND DATA OUTLET

AUDIO/VISUAL SYMBOLOGY

TV — TELEVISION OUTLET

S — CEILING MOUNT SPEAKER

S X — WALL MOUNT SPEAKER

SPEAKER SUBSCRIPTS

X - INDICATES HEIGHT

H — HORN TYPE TRANSDUCER

VC — VOLUME CONTROL

PAHE — HEAD END EQUIPMENT

M — FLOOR MOUNTED MICROPHONE JACK

M — WALL MOUNTED MICROPHONE JACK

SECURITY SYMBOLOGY

DOOR POSITION SWITCH

COMBINATION ELECTRIC DOOR STRIKE AND POSITION SWITCH

R P — PROXIMITY CARD READER

R K — PROXIMITY CARD READER WITH KEYPAD

M — DUAL TECHNOLOGY MOTION DETECTOR

REQUEST TO EXIT MOTION DETECTOR

REQUEST TO EXIT PUSH BUTTON

G — GLASS BREAK DETECTOR

PTZ — CCTV CAMERA PAN/TILT/ZOOM WHEN INDICATED

SEC — SECURITY EQUIPMENT CABINET

R — REMOTE KEYPAD/CONTROL STATION

EMERGENCY ALARM SYMBOLOGY

E — ALARM BELL

E — ALARM HORN

E — ALARM FLASHING LIGHT

E — ALARM BELL AND FLASHING LIGHT COMBINATION UNIT

E — ALARM HORN AND FLASHING LIGHT COMBINATION UNIT

E — PUSHBUTTON OR PULLSTATION

SITE SYMBOLOGY

EXTERIOR PAD MOUNTED TRANSFORMER

POLE - MOUNTED TRANSFORMER

X Y — ELECTRICAL HANDHOLE OR MANHOLE
X - INDICATES SEQUENCE NUMBER
Y- MHX OR HHX

X Y — POLE/STANCHION MOUNTED FLOOD LUMINAIRE, LAMP TYPE AS SPECIFIED

X Y — POLE MOUNTED AREA OR ROADWAY LUMINAIRE, LAMP TYPE AS SPECIFIED

X Y — HIGH MAST LIGHTING, NUMBER OF LUMINAIRES AS SPECIFIED

LIGHTING FIXTURE SUBSCRIPTS

X - INDICATES LUMINAIRE TYPE PER LUMINAIRE SCHEDULE
Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD

POWER POLE

DOWNGUY

E — UNDERGROUND (UNO) ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY

OHE — OVERHEAD ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY

CONTROL SYMBOLOGY

ELECTRICAL CONNECTION

NO ELECTRICAL CONNECTION

SV — SOLENOID VALVE

X Y — CONTROL/RELAY COIL:
X-INDICATES TYPE
Y-INDICATES LOOP NUMBER, WHEN USED

TYPE

CR-CONTROL RELAY
PC-PHOTOCELL
DP-DEFINITE PURPOSE
M-MOTOR STARTER
TC-TIME CLOCK
LC-LIGHTING CONTACTOR
TR-TIMING RELAY

NORMALLY OPEN CONTACT (N.O.)

NORMALLY CLOSED CONTACT (N.C.)

MICROPROCESSOR (PLC, RTU, ETC.) OUTPUT

MICROPROCESSOR (PLC, RTU, ETC.) INPUT

FIELD WIRING EXTERNAL TO CONTROL PANEL

NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS ENERGIZED

NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS ENERGIZED

NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS DE-ENERGIZED

NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS DE-ENERGIZED

NORMALLY OPEN TEMPERATURE SWITCH; CLOSE ON RISING TEMPERATURE

NORMALLY CLOSED TEMPERATURE SWITCH; OPEN ON RISING TEMPERATURE

NORMALLY OPEN FLOW SWITCH; CLOSE ON INCREASING FLOW

NORMALLY CLOSED FLOW SWITCH; OPEN ON INCREASING FLOW

NORMALLY OPEN LEVEL SWITCH, CLOSE ON RISING LEVEL

NORMALLY CLOSED LEVEL SWITCH, OPEN ON RISING LEVEL

NORMALLY OPEN PRESSURE SWITCH, CLOSE ON INCREASING PRESSURE

NORMALLY CLOSED PRESSURE SWITCH, OPEN ON INCREASING PRESSURE

NORMALLY OPEN LIMIT SWITCH, CLOSE ON REACHING LIMIT

NORMALLY CLOSED LIMIT SWITCH, OPEN ON REACHING LIMIT

CONTROL SYMBOLOGY

OFF
HAND — AUTO
XOO
OOX — 3 POSITION SELECTOR SWITCH, MAINTAINED CONTACTS; UNLESS OTHERWISE NOTED, 2-POSITION SIMILAR

NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED

NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED

X — INDICATING LIGHT: X INDICATES LENS COLOR

X — PUSH TO TEST INDICATING LIGHT: X INDICATES LENS COLOR

LENS COLORS

R - RED
G - GREEN
B - BLUE
Y - YELLOW
W - WHITE
A - AMBER

THERMAL OVERLOAD ELEMENT

OL
(X) — THERMAL OVERLOAD RELAY CONTACT. WHEN SHOWN X INDICATES QUANTITY.

CPT — CONTROL POWER TRANSFORMER (CPT)

RTM — RUN TIME METER

GENERAL NOTES

1. THIS IS A STANDARD ELECTRICAL SYMBOLOGY SHEET. NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT.
2. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
3. SEE P&ID LEGEND SHEET FOR PROJECT SPECIFIC EQUIPMENT SYMBOLS, EQUIPMENT ABBREVIATIONS, AND PIPING SYSTEM ABBREVIATIONS.

ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER	JAROD C. LIMKE
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MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Author
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

ELECTRICAL LEGEND

0 1" 2"

FILENAME

SCALE 12" = 1'-0"

SHEET 00G-006

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PRIMARY ELEMENT SYMBOLOGY

- ORIFICE PLATE
- PITOT TUBE OR ANNUBAR
- FI — ROTOMETER
- SONIC OR ULTRASONIC FLOWMETER
- M — MAGNETIC FLOWMETER
- FI — MASS DISPERSION FLOWMETER
- FLUME
- WEIR
- PROPELLER OR TURBINE METER
- VENTURI TUBE
- VENTURI FLUME
- FLOAT SWITCH
- TE — TEMPERATURE ELEMENT WITH THERMOWELL
- FG — SIGHT FLOW GLASS

LINE TYPES

- MAIN PROCESS LINE
- SECONDARY PROCESS LINE
- AUXILIARY PROCESS LINE
- DIRECTION OF FLOW
- PNEUMATIC SIGNAL
- ELECTRICAL SIGNAL
- HYDRAULIC SIGNAL
- O — SOFTWARE OR DATA LINK
- SIGNAL CONNECTION
- CROSSOVER - NO CONNECTION
- X — CAPILLARY

CROSS REFERENCE SYMBOLOGY

X | YYYYYYY — CONTINUATION TO THE RIGHT
Z

YYYYYYY | X — CONTINUATION TO THE LEFT
Z

TEXT
X = CONNECTOR NUMBER
Y = SHEET CONTINUATION
Z = TO/FROM DESCRIPTION

INSTRUMENT SYMBOLOGY

- LOCALLY MOUNTED FIELD INSTRUMENTATION
- MOUNTED ON PANEL FRONT
- MOUNTED INSIDE PANEL
- XXX — FRONT PANEL MOUNTED ON AUXILIARY PANEL (SUBSCRIPT INDICATES PANEL)
- MOUNTED INSIDE AUXILIARY PANEL
- PILOT LIGHT
- INSTRUMENT FUNCTIONS SHARING COMMON HOUSING
- COMPLEX INTERLOCK AS DEFINED IN CONTROL DIAGRAM OR IN SPECIFICATIONS
- SHARED DISPLAY, SHARED CONTROL, FIELD MOUNTED
- SHARED DISPLAY, SHARED CONTROL, PRIMARY LOCATION - NORMALLY ACCESSIBLE TO OPERATOR
- PROGRAMMABLE LOGIC CONTROL, PRIMARY LOCATION - NORMALLY ACCESSIBLE TO OPERATOR
- PROGRAMMABLE LOGIC CONTROL, FIELD MOUNTED

CONTROL SWITCH NOTATION ABBREVIATIONS

XXX / XXXX

ACK	ACKNOWLEDGE
ESTOP	EMERGENCY STOP
FAIL	FAILURE
FOR	FORWARD-OFF-REVERSE
FR	FORWARD-REVERSE
FS	FAST-SLOW
HA	HAND-AUTO
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
LL	LEAD-LAG
LLS	LEAD-LAG-STANDBY
LOR	LOCAL-OFF-REMOTE
LR	LOCAL-REMOTE
LS	LEAD-STANDBY
MA	MANUAL-AUTO
OAC	OPEN-AUTO-CLOSE
OC	OPEN-CLOSE
OO	ON-OFF
OSC	OPEN-STOP-CLOSE
RJ	RUN-JOG
RJR	RUN-JOG-REVERSE
SIL	SILENCE
SS	START-STOP

VALVES

- BALL VALVE
- BUTTERFLY VALVE
- CONE VALVE
- CHECK VALVE
- DOUBLE-DISK CHECK VALVE
- BALL CHECK VALVE
- DIAPHRAGM VALVE
- GATE VALVE
- GLOBE VALVE
- KNIFE GATE VALVE
- NEEDLE VALVE
- PINCH VALVE
- PLUG VALVE
- THREE-WAY BALL VALVE
- THREE-WAY PLUG VALVE
- PRESSURE-REDUCING VALVE
- PRESSURE-REGULATING VALVE
- THREE-WAY CONTROL VALVE
- or — PRESSURE-RELIEF VALVE
- X — AIR-RELEASE VACUUM VALVE
  A = AIR RELEASE
  VAC = VACUUM

ACTUATOR SYMBOLOGY

- M P S — OPERATOR ABBREVIATIONS:
  M = MOTOR
  P = PNEUMATIC
  S = SOLENOID
- FLOAT OPERATOR
- SPRING-OPPOSED SINGLE-ACTING PNEUMATIC CYLINDER
- DOUBLE-ACTING PNEUMATIC CYLINDER
- PNEUMATIC DIAPHRAGM
- PNEUMATIC DIAPHRAGM WITH POSITIONER

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER: MEASURED OR INITIATING VARIABLE	FIRST LETTER: VARIABLE MODIFIER	SUCCEEDING LETTERS: READOUT OR PASSIVE FUNCTION	SUCCEEDING LETTERS: OUTPUT/ACTIVE FUNCTION	SUCCEEDING LETTERS: FUNCTION MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USERS CHOICE			CONTROL	CLOSED
D	USERS CHOICE	DIFFERENTIAL			DEVIATION
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, GAUGE VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN	SCAN		
K	TIME, TIME SCHEDULE	TIME; RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE				MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R	RADIATION		RECORD		RUN
S	SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL PROBE		
X	UNCLASSIFIED	X AXIS	ACCESSORY DEVICES UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		AUXILLIARY DEVICES	
Z	POSITION, DIMENSION	Z AXIS SAFETY INSTRUMENTED SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

ABBREVIATIONS

MISCELLANEOUS INSTRUMENTATION

AI	ANALOG INPUT
AO	ANALOG OUTPUT
CL2	CHLORINE (ANALYZER MODIFIER)
CO	CARBON MONOXIDE (ANALYZER MODIFIER)
CO2	CARBON DIOXIDE (ANALYZER MODIFIER)
COMB	COMBUSTIBLES (ANALYZER MODIFIER)
COND	CONDUCTIVITY (ANALYZER MODIFIER)
DEN	DENSITY (ANALYZER MODIFIER)
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DO	DISSOLVED OXYGEN (ANALYZER MODIFIER)
E/P	VOLTAGE TO PNEUMATIC
H2S	HYDROGEN SULFIDE (ANALYZER MODIFIER)
HCL	HYDROGEN CHLORIDE (ANALYZER MODIFIER)
I/O	INPUT/OUTPUT
I/P	CURRENT TO PNEUMATIC
NOX	NITROGEN OXIDE (ANALYZER MODIFIER)
OI	OPERATOR INTERFACE
O2	OXYGEN (ANALYZER MODIFIER)
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
SS	SUSPENDED SOLIDS (ANALYZER MODIFIER)
TURB	TURBIDITY (ANALYZER MODIFIER)
WAN	WIDE AREA NETWORK

TYPES OF POWER SUPPLY

A	PLANT COMPRESSED AIR
IA	INSTRUMENTATION AIR
ES	ELECTRIC SUPPLY
NG	NATURAL GAS
HYD	HYDRAULIC

EQUIPMENT ABBREVIATIONS

XXX

ABBREVIATIONS

PIPING SYSTEM IDENTIFICATION

ABI	AERATION BASIN INFLUENT
ACE	ACETYLENE
ALS	ALUM SOLUTION
AMGV	AMMONIA GAS (VACUUM)
AMS	AMMONIA SOLUTION
ARG	ARGON
ASH	ASH
ASHS	ASH SLURRY
AV	ACID VENT
AW	ACID WASTE
BD	BASIN DRAIN
BWR	BACKWASH RETURN
BWS	BACKWASH SUPPLY
BRW	BLENDED RAW WATER
BWW	BACKWASH WASTE
CA	COMPRESSED AIR
CARD	CARBON (DRY)
CARS	CARBON (SLURRY)
CBI	CONTACT BASIN INFLUENT
CEN	CENTRATE
CFE	COMBINED FILTER EFFLUENT
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CIP	CLEAN-IN-PLACE
CIPS	CIP SUPPLY
CIPW	CIP WASTE
CKD	CEMENT KILN DUST
CLGP	CHLORINE GAS (PRESSURE)
CLGV	CHLORINE GAS (VACUUM)
CLI	CLARIFIER INFLUENT
CLL	CHLORINE LIQUID
CLS	CHLORINE SOLUTION
CVT	CULVERT
CWI	CLEARWELL INFLUENT
CTA	CITRIC ACID
DCW	DECANT
DG	DIGESTER GAS
DS	DIGESTED SLUDGE
DR	DRAIN
FC	FERRIC CHLORIDE
FLT	FILTRATE
FLCI	FLOCCULATION INFLUENT
FLU	FLOURIDE
FOD	FOUNDATION DRAIN
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FTI	FILTER INFLUENT
FW	FINISHED WATER
GBI	GRIT BASIN INFLUENT
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY
GTS	GRIT SLURRY
GW3	WELL #3 GROUNDWATER (RAW)
GW4	WELL #4 GROUNDWATER (RAW)
HE	HELIUM
HTWR	HEATING WATER RETURN
HTWS	HEATING WATER SUPPLY
HYD	HYDROGEN
IA	INSTRUMENT AIR
IW	IRRIGATION WATER
LM	LIME (DRY)
LPA	LOW PRESSURE PROCESS AIR
MET	METHANE
NG	NATURAL GAS
NIT	NITROGEN
NPW	NON POTABLE WATER
NTO	NITROUS OXIDE
OVFL	OVERFLOW
PLI	PLANT INFLUENT
POL	POLYPHOSPHATE
POSA	POLYMER SOLUTION (ANIONIC)
POSC	POLYMER SOLUTION (CATIONIC)
POT	POTASSIUM PERMANGANATE
PSG	PRMARY SLUDGE
PW	POTABLE WATER
PWC	POTABLE WATER (COLD)
PWH	POTABLE WATER (HOT)
RAS	RETURN ACTIVATED SLUDGE
RAW	RAW WATER (CROSS CREEK)
RCY	RECYCLE
RFGT	REFRIGERANT
RL	RAIN LEADER
RWS	RAW WATER SUPPLY
SAN	SANITARY SEWER
SBS	SODIUM BISULFITE (DECHLORINATION)
SCK	SLUDGE CAKE
SCM	SCUM
SDA	SODA ASH (PH/ALKALINITY)
SDGP	SULFER DIOXIDE GAS (PRESSURE)
SDGV	SULFER DIOXIDE GAS (VACUUM)
SDL	SULFER DIOXIDE LIQUID
SDS	SULFER DIOXIDE SOLUTION
SG	SLUDGE
SGB	SLUDGE BLOWDOWN
SHC	SODIUM HYPOCHLORITE (DISINFECTION/CIP)
SHY	SODIUM HYDROXIDE/CAUSTIC (CIP NEUTR.)
SMP	SAMPLE
SP	SUMP
SRL	SECONDARY RAIN LEADER
SSG	SECONDARY SLUDGE
STW	STORMWATER
SUL	SULFURIC ACID (CIP)
SUP	SUPERNATANT
SVW	SERVICE WATER
SW	SEAL WATER
SWH	SOFT WATER (HOT)
TFI	TRICKLING FILTER INFLUENT
TSG	THICKENED SLUDGE
UPW	ULTRA PURE WATER
VT	VENT
WAS	WASTE ACTIVATED SLUDGE
WLW	WELL WATER
WST	WASTE

MISCELLANEOUS SYMBOLOGY

GENERAL NOTES

1. THIS IS A STANDARD INSTRUMENTATION SYMBOLOGY AND ABBREVIATIONS SHEET. LISTING OF SYMBOLS AND ABBREVIATIONS DOES NOT IMPLY ALL SYMBOLS AND ABBREVIATIONS HAVE BEEN USED ON THIS PROJECT.
2. SEE PROCESS, MECHANICAL AND PLUMBING LEGEND SHEET FOR MISCELLANEOUS PIPING SYMBOLS.
3. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
4. VALVE SYMBOLS SHOWN HERE ARE APPLICABLE ONLY TO INSTRUMENTATION DIAGRAMS. SEE PROCESS, MECHANICAL AND PLUMBING LEGEND SHEET FOR VALVE SYMBOLS USED ELSEWHERE ON THE SHEETS.

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ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Author
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

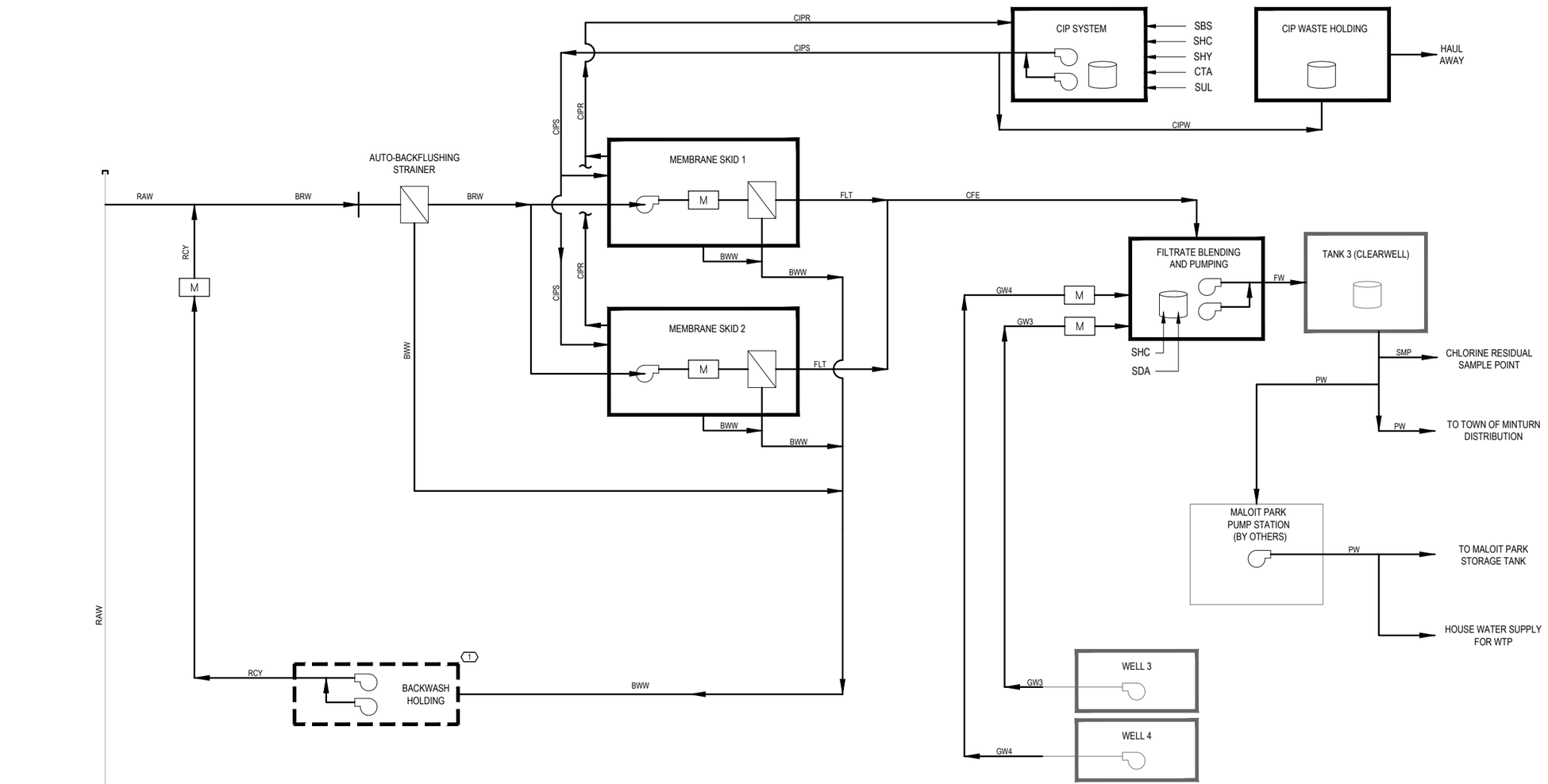
PROCESS AND INSTRUMENTATION LEGEND

0 1" 2"

FILENAME

SCALE 12" = 1'-0"

SHEET
00G-007



PROCESS DESIGN CRITERIA

TREATMENT FLOW RATES

RAW WATER FEED RATE (MIN/MAX)	230 - 460 GPM
NET FILTRATE PRODUCTION RATE (MIN/MAX)	210 - 420 GPM (0.3 - 0.6 MGD)
MINIMUM RECOVERY RATE (OVERALL PROCESS)	92%

AUTOMATIC BACKFLUSHING STRAINER

SCREEN SIZE	1/32 IN
HORSEPOWER	1/4 HP

ULTRAFILTRATION MEMBRANE TREATMENT SYSTEM

MEMBRANE SYSTEM	
NUMBER OF TRAINS/SKIDS	2
FILTRATE CAPACITY PER TRAIN (EA) (MIN/MAX)	40-210 GPM MAX
MAXIMUM FLUX RATE @ 20°C	29 GFD
MAXIMUM TRANSMEMBRANE PRESSURE LOSS	22 PSI
FEED PUMPS	
NUMBER	2 (1 PER SKID)
PUMP TYPE	CLOSE COUPLED CENTRIFUGAL
DRIVE TYPE	VFD
DESIGN CAPACITY	210 GPM
TDH AT DESIGN CAPACITY	80 FT
HORSEPOWER	20 HP
CIP WASTE TANK	
TYPE	HDPE
NUMBER	1
VOLUME	6,000 GAL

GROUNDWATER WELLS (EXISTING)

NUMBER	2
FLOW CAPACITY (EA)	80 GPM

FILTRATE TANK

TYPE	HDPE
NUMBER	1
TANK VOLUME	8,000 GAL

FILTRATE PUMPS

NUMBER OF PUMPS	2 (1 DUTY, 1 STANDBY)
PUMP TYPE	VERTICAL MULTI-STAGE
DRIVE TYPE	VFD
DESIGN CAPACITY (EA)	420 GPM
TDH AT DESIGN CAPACITY	50
HORSEPOWER	10 HP

BACKWASH RECOVERY PUMPS

NUMBER OF PUMPS	2 (1 DUTY, 1 STANDBY)
PUMP TYPE	VERTICAL MULTI-STAGE
DRIVE TYPE	VFD
DESIGN CAPACITY (EA)	42 GPM
TDH AT DESIGN CAPACITY	25 FT
HORSEPOWER	1 HP

DISINFECTION

DESIGN FLOW RATE	420 GPM
VIRUS INACTIVATION REQUIRED	4 LOG
REQUIRED CT	8 MIN @ 5°C
BAFFLING FACTOR	0.1
RESIDUAL CHLORINE CONCENTRATION	1 MG/L
VOLUME REQUIRED FOR CT	33,600 GAL
VOLUME AVAILABLE IN TANK AT 12' DEPTH	191,000 GAL
VOLUME AVAILABLE IN TANK AT OVERFLOW	544,000

GENERAL NOTES

A. EXISTING FILTERS 1 AND 2 WILL BE ABANDONED.

KEYNOTES (##)

1. EXISTING FILTER 3 WILL BE REPURPOSED INTO BACKWASH WASTE FILTRATION AND RECYCLE PUMP STATION.

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PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT PLANT

GENERAL PROCESS FLOW DIAGRAM

0 1" 2"

FILENAME 00D-601.DWG

SCALE NOT TO SCALLE

SHEET **00D-601**

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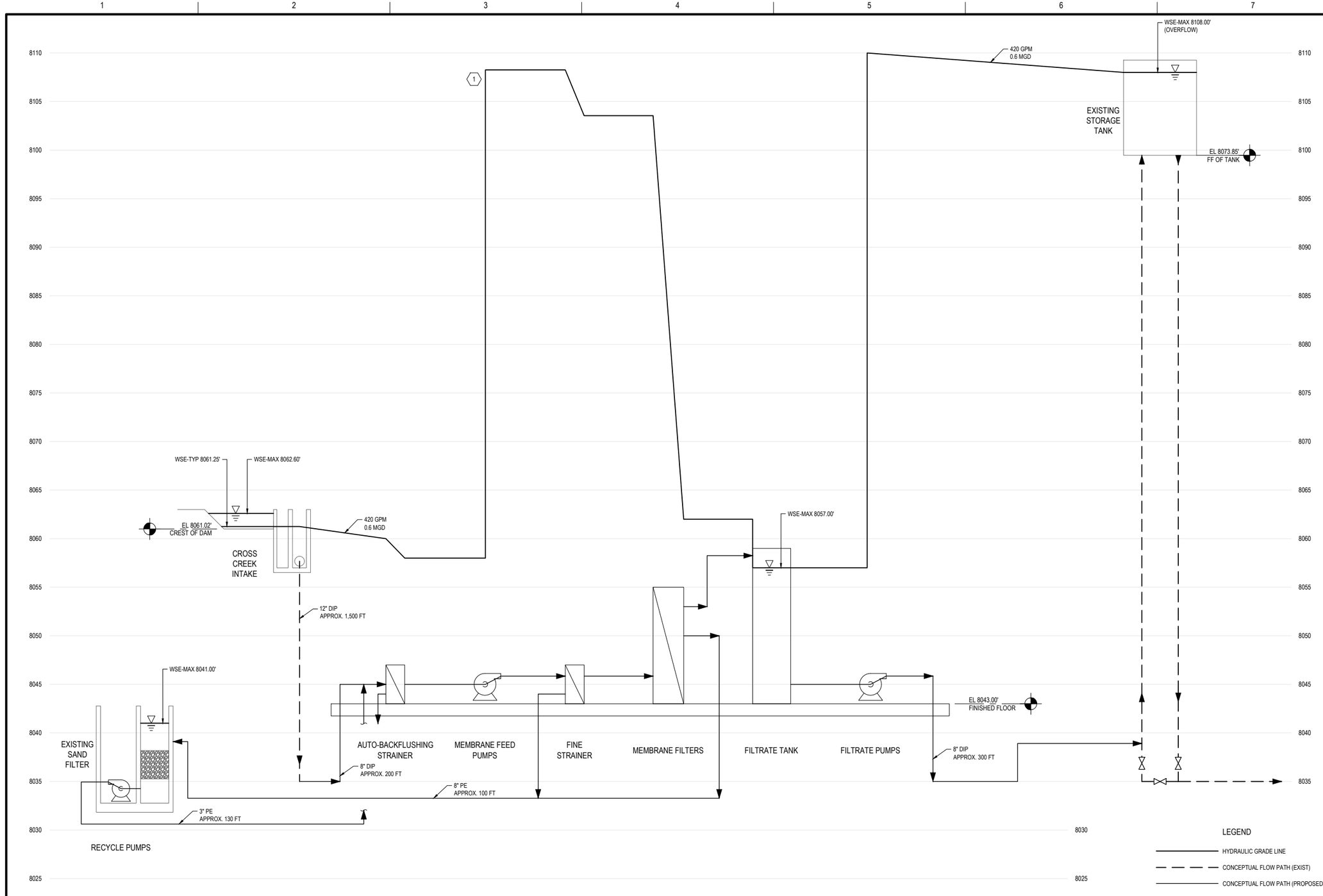

GENERAL NOTES

A. FLOW PATH IS CONCEPTUAL AND NOT REPRESENTATIVE OF ACTUAL PIPE CONFIGURATION.

KEYNOTES (##)

1. ASSUME MAX PRESSURE DROP OF 22 PSI ACROSS MEMBRANE SYSTEM.

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ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
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TOWN OF MINTURN

WATER TREATMENT
PLANT

GENERAL
HYDRAULIC PROFILE

0 1" 2"

FILENAME 00D-602.DWG
SCALE NOT TO SCALLE

SHEET
00D-602

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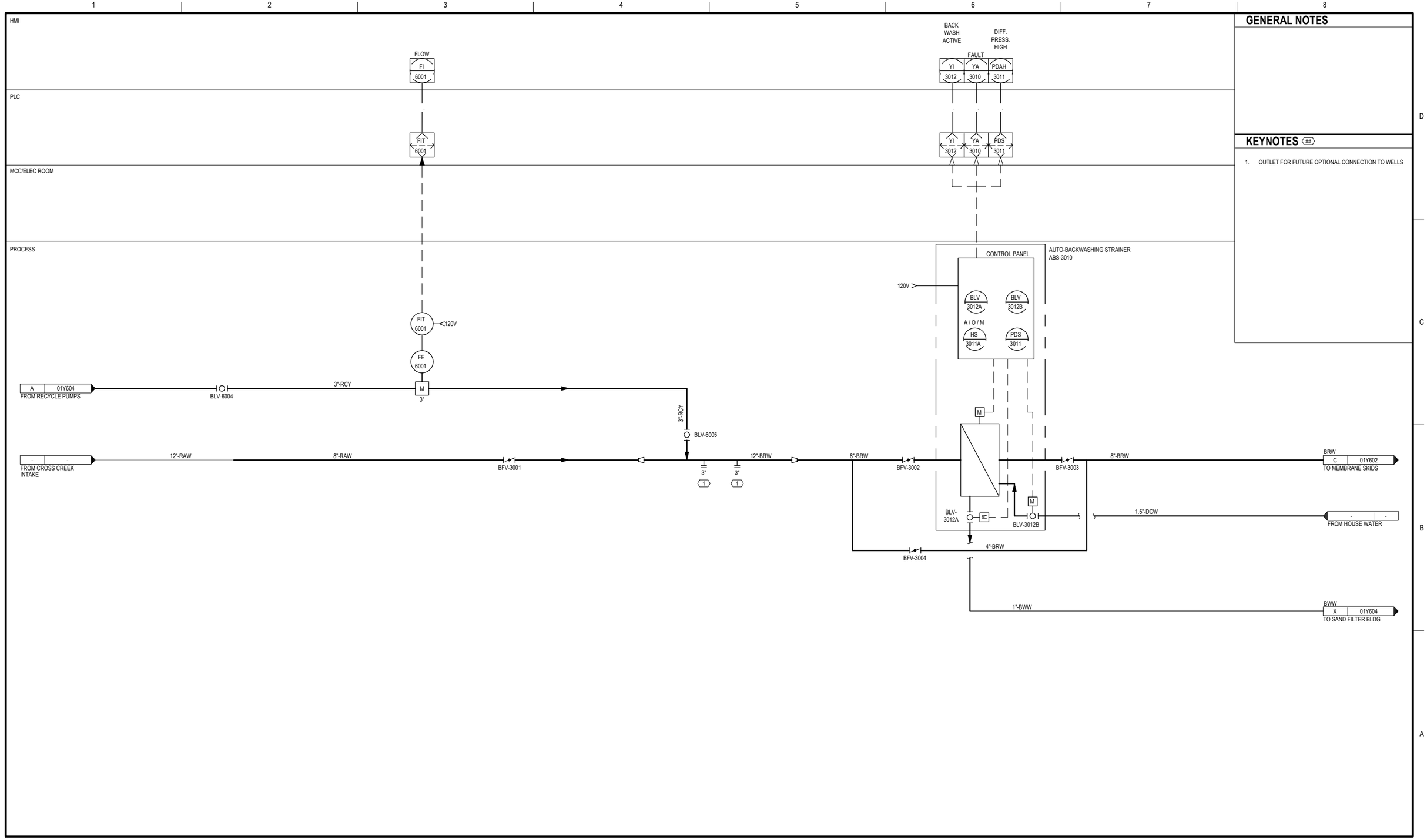

GENERAL NOTES

KEYNOTES (##)

1. OUTLET FOR FUTURE OPTIONAL CONNECTION TO WELLS

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PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
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TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION RAW WATER BLENDING

0 1" 2"

FILENAME 01Y-601.DWG

SCALE NOT TO SCALLE

SHEET 01Y-601

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HMI

PLC

COORDINATE WITH MEMBRANE SYSTEM
VENDOR TO BRING SIGNALS BACK TO CLIENT
CONTROL SYSTEM

MCC/ELEC ROOM

PROCESS

MEMBRANE CONTROL
PANEL (V)

480V

(TYPICAL OF 2)

8"-CFE

A | 01Y603
TO FILTRATE BLENDING

BRW
C | 01Y601
FROM BLENDED RAW
WATER STRAINER

8"-BRW

8"-BWW

SBS
T | 01Y608
FROM SODIUM BISULFITE
FEED SYSTEM

1/2"-SBS

SHY
T | 01Y607
FROM SODIUM HYDROXIDE
FEED SYSTEM

1/2"-SHY

CTA
B | 01Y606
FROM CITRIC ACID
FEED SYSTEM

1/2"-CTA

SHC
Y | 01Y605
FROM SODIUM HYPOCHLORITE
FEED SYSTEM

1/2"-SHC

SUL
T | 01Y609
FROM SULFURIC ACID
FEED SYSTEM

1/2"-SUL

8"-BWW

BWW
W | 01Y604
TO SAND FILTER BLDG

GENERAL NOTES

KEYNOTES (##)

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TOWN OF MINTURN

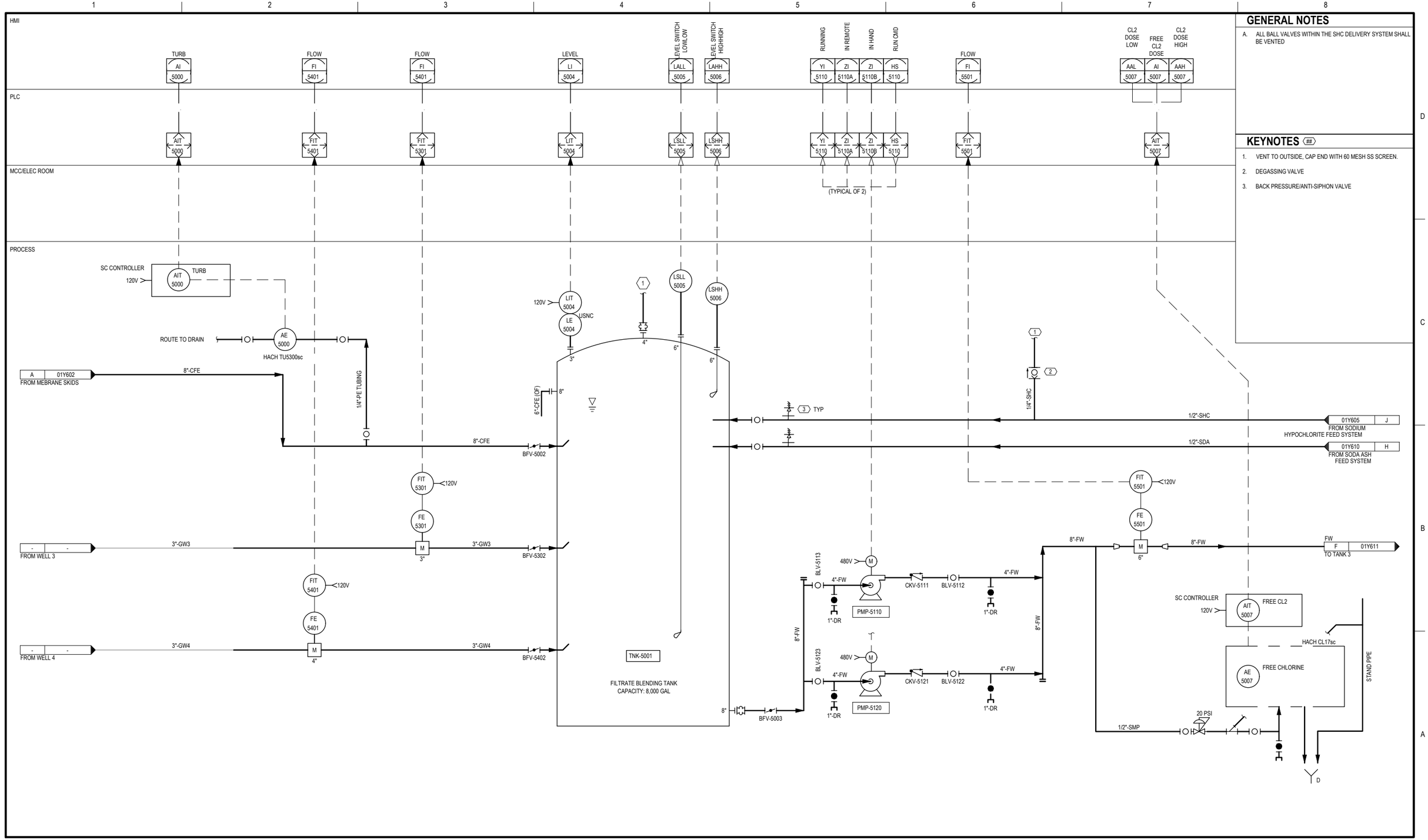
WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION MEMBRANE FILTRATION

0 1" 2"

FILENAME 01Y-602.DWG
SCALE NOT TO SCALLE

SHEET **01Y-602**



GENERAL NOTES

A. ALL BALL VALVES WITHIN THE SHC DELIVERY SYSTEM SHALL BE VENTED

KEYNOTES (##)

1. VENT TO OUTSIDE, CAP END WITH 60 MESH SS SCREEN.
2. DEGASSING VALVE
3. BACK PRESSURE/ANTI-SIPHON VALVE

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ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
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TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION FILTRATE BLENDING

0 1" 2"

FILENAME 01Y-603.DWG

SCALE NOT TO SCALLE

SHEET **01Y-603**

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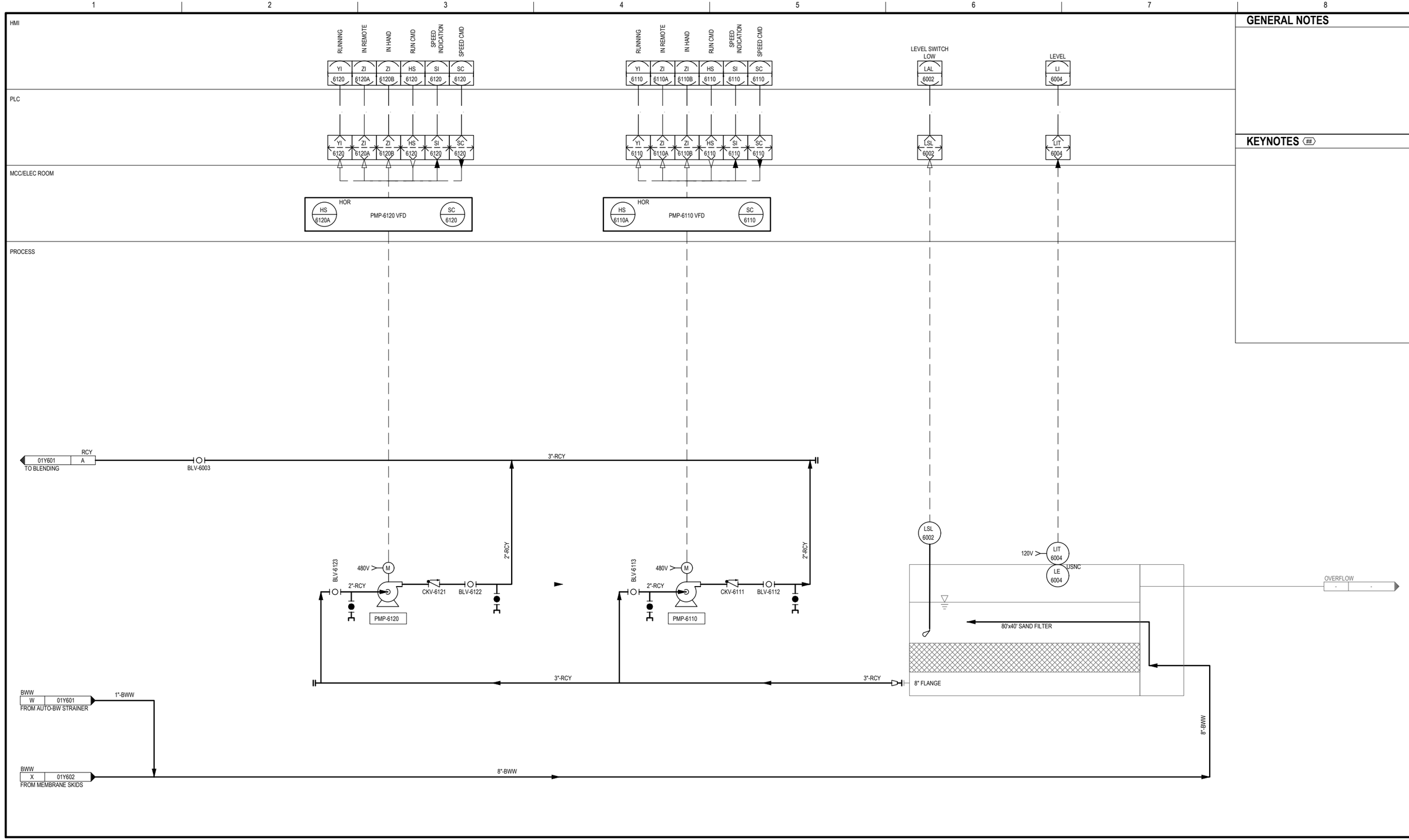

GENERAL NOTES

KEYNOTES (##)

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PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION BACKWASH RECYCLING

0 1" 2"

FILENAME 01Y-604.DWG

SCALE NOT TO SCALLE

SHEET **01Y-604**

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HMI

PLC

MCC/ELEC ROOM

PROCESS

RUNNING
YI 7220

IN REMOTE
ZI 7220A

IN HAND
ZI 7220B

RUN CMD
HS 7220

SPEED INDICATION
SI 7220

SPEED CMD
SC 7220

(TYPICAL OF 2)

HIGH DISCH PRESSURE
PAH 7203
PSH 7203

EYE SHOWER ACTIVE
FA 9901
FSH 9901

CAL. CLM.

1/2"-SHC

PSV-7211

PSV-7221

PMP-7220
GPH
20 PSI

1/2" FLUSH/DR CONNECTION, TYP

PMP-7210
GPH
20 PSI

SODIUM HYPOCHLORITE BARREL
CAPACITY: 55 GAL

PW (C)
PW (H)
FROM BUILDING PW PIPING

D

SHC
J 01Y603
TO FILTRATE TANK

FURNISHED BY MEMBRANE SYSTEM SUPPLIER

MEMBRANE CONTROL PANEL

PMP-7230 1

GPH
20 PSI

SHC
Y 01Y602
TO CIP SYSTEM

GENERAL NOTES

A. ALL BALL VALVES WITHIN THE SHC DELIVERY SYSTEM SHALL BE VENTED

KEYNOTES (##)

1. CIP PUMP

C:\USERS\EPAZDC\ACCDOCS\HDR\10348601_MINTURN_WTP_DESIGN_2022 ACC\PROJECT FILES\01 - WATER TREATMENT PLANT_SHEETS\01Y-605.DWG
10/17/2023 8:27:10 AM

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION
SODIUM HYPOCHLORITE

0 1" 2"

FILENAME 01Y-605.DWG
SCALE NOT TO SCALLE

SHEET
01Y-605

HMI

PLC

MCC/ELEC ROOM

PROCESS

RUNNING
YI 7310

IN REMOTE
ZI 7310A

IN HAND
ZI 7310B

RUN CMD
HS 7310

SPEED INDICATION
SI 7310

SPEED CMD
SC 7310

HIGH DISCH PRESSURE
PAH 7303

PSH 7303

CAL. CLM.

1/2"-CTA

PSV-7311

PSV-7321

M

PMP-7310

GPH
20 PSI

CITRIC ACID BARREL
CAPACITY: 55 GAL

CHEMICAL FEED PANEL SUPPLIED BY MEMBRANE MANUFACTURER

CTA
B 01Y602
TO CIP SYSTEM

GENERAL NOTES

KEYNOTES ⟨##⟩

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION
CITRIC ACID

0 1" 2"

FILENAME 01Y-606.DWG
SCALE NOT TO SCALLE

SHEET
01Y-606

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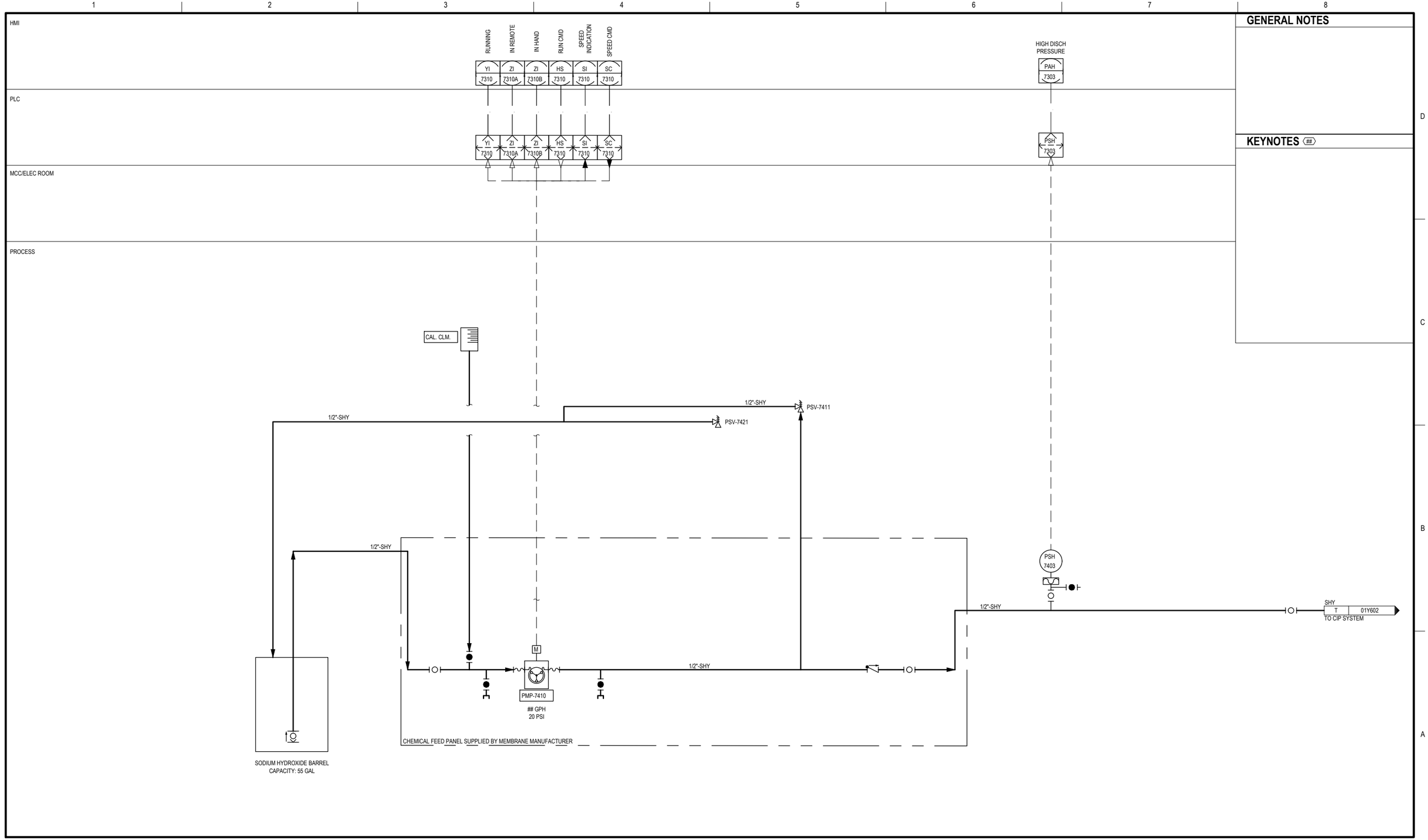

GENERAL NOTES

KEYNOTES (##)

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION SODIUM HYDROXIDE

0 1" 2"

FILENAME 01Y-607.DWG

SCALE NOT TO SCALLE

SHEET **01Y-607**

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10/17/2023 8:27:10 AM

HMI

PLC

MCC/ELEC ROOM

PROCESS

RUNNING
YI 7310

IN REMOTE
ZI 7310A

IN HAND
ZI 7310B

RUN CMD
HS 7310

SPEED INDICATION
SI 7310

SPEED CMD
SC 7310

HIGH DISCH PRESSURE
PAH 7303

PSH 7303

CAL. CLM.

1/2"-SBS

PSV-7511

PSV-7521

PSH 7503

SBS T 01Y602
TO CIP SYSTEM

M

PMP-7510
GPH
20 PSI

CHEMICAL FEED PANEL SUPPLIED BY MEMBRANE MANUFACTURER

SODIUM BISULFITE BARREL
CAPACITY: 55 GAL

GENERAL NOTES

KEYNOTES (##)

1. ANTI-SIPHON VALVE

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION
SODIUM BISULFITE

0 1" 2"

FILENAME 01Y-608.DWG
SCALE NOT TO SCALLE

SHEET 01Y-608

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10/17/2023 8:27:10 AM

HMI

PLC

MCC/ELEC ROOM

PROCESS

RUNNING
IN REMOTE
IN HAND
RUN CMD
SPEED INDICATION
SPEED CMD

YI 7310
ZI 7310A
ZI 7310B
HS 7310
SI 7310
SC 7310

HIGH DISCH PRESSURE

PAH 7303
PSH 7303

CAL. CLM.

1/2"-SUL

PSV-7611
PSV-7621

PSH 7603

SUL
T 01Y602
TO CIP SYSTEM

M
PMP-7410
GPH
20 PSI

CHEMICAL FEED PANEL SUPPLIED BY MEMBRANE MANUFACTURER

SULFURIC ACID BARREL
CAPACITY: 55 GAL

GENERAL NOTES

KEYNOTES (##)

1. ANTI-SIPHON VALVE

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION
SULFURIC ACID

0 1" 2"

FILENAME 01Y-609.DWG
SCALE NOT TO SCALLE

SHEET 01Y-609

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10/17/2023 8:27:10 AM

1 2 3 4 5 6 7 8

HMI

PLC

MCC/ELEC ROOM

PROCESS

CONVEYOR MOTOR RUNNING — YI 7700A
CONVEYOR CONDITIONING AUGER RUNNING — YI 7700B
CONVEYOR HOPPER VIBRATOR RUNNING — YI 7700C
SCREW FEEDER RUNNING — YI 7700D
SOLUTION TANK AGITATOR RUNNING — YI 7700E
SYSTEM ACTIVE ALARM — XA 7700

HIGH DISCH PRESSURE — PAH 7703

PSH 7703

SODA ASH CONTROL PANEL (V)

FROM HOUSE WATER

PSH 7703

1/2"-SDA

SDA H 01Y603 TO FILTRATE TANK

GENERAL NOTES

KEYNOTES (##)

D C B A

C:\USERS\EPAZDC\ACCDOCS\HDR\10348601_MINTURN_WTP_DESIGN_2022 ACC\PROJECT FILES\01 - WATER TREATMENT PLANT_SHEETS\01Y-610.DWG
10/17/2023 8:27:10 AM

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION SODA ASH

0 1" 2"

FILENAME 01Y-610.DWG
SCALE NOT TO SCALLE

SHEET **01Y-610**

HMI

PLC

MCC/ELEC ROOM

PROCESS

CL2 DOSE LOW
AAL 9002

FREE CL2
AI 9002

CL2 DOSE HIGH
AAH 9002

pH
AI 9001A

TEMP
TI 9001B

AIT 9002

AIT 9001A

AIT 9001B

TANK 3

STORAGE TANK
CAPACITY: 572,000 GAL

FW
F 01Y603
FROM FILTRATE PUMPS

8"-FW

1/2"-SMP

6"-PW

FW
- -
FROM EXIST WTP

SC CONTROLLER
120V

AIT 9002 FREE CL2

AIT 9001 pH/TEMP

HACH CL17sc

AE 9002 FREE CHLORINE

STAND PIPE

1/4"-PE TUBING

AE 9001

1/2"-SMP

INSERTION pH PROBE w/ FLOW CELL

D

WITHIN WATER TREATMENT PLANT

12"-PW

1

12"-PW

TO TOWN OF MINTURN DISTRIBUTION SYSTEM

GENERAL NOTES

KEYNOTES

1. VALVE NORMALLY CLOSED. TANK 3 IS BEING USED AS DISINFECTION VOLUME

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PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION DISINFECTION

0 1" 2"

FILENAME 01Y-611.DWG

SCALE NOT TO SCALLE

SHEET **01Y-611**

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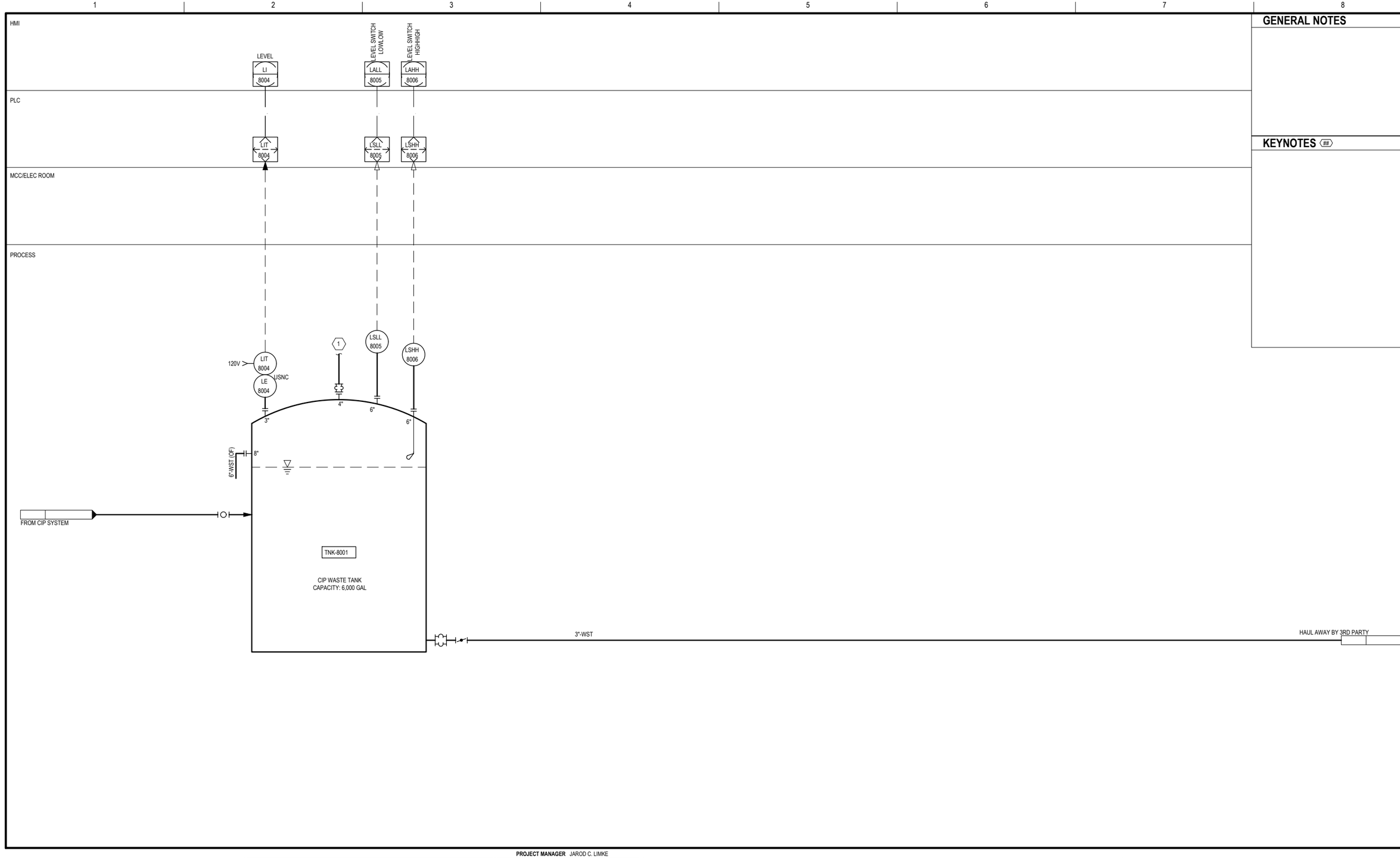

GENERAL NOTES

KEYNOTES (##)

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PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT
PLANT

PROCESS & INSTRUMENTATION
CIP WASTE HOLDING

0 1" 2"

FILENAME 01Y-612.DWG

SCALE NOT TO SCALLE

SHEET
01Y-612

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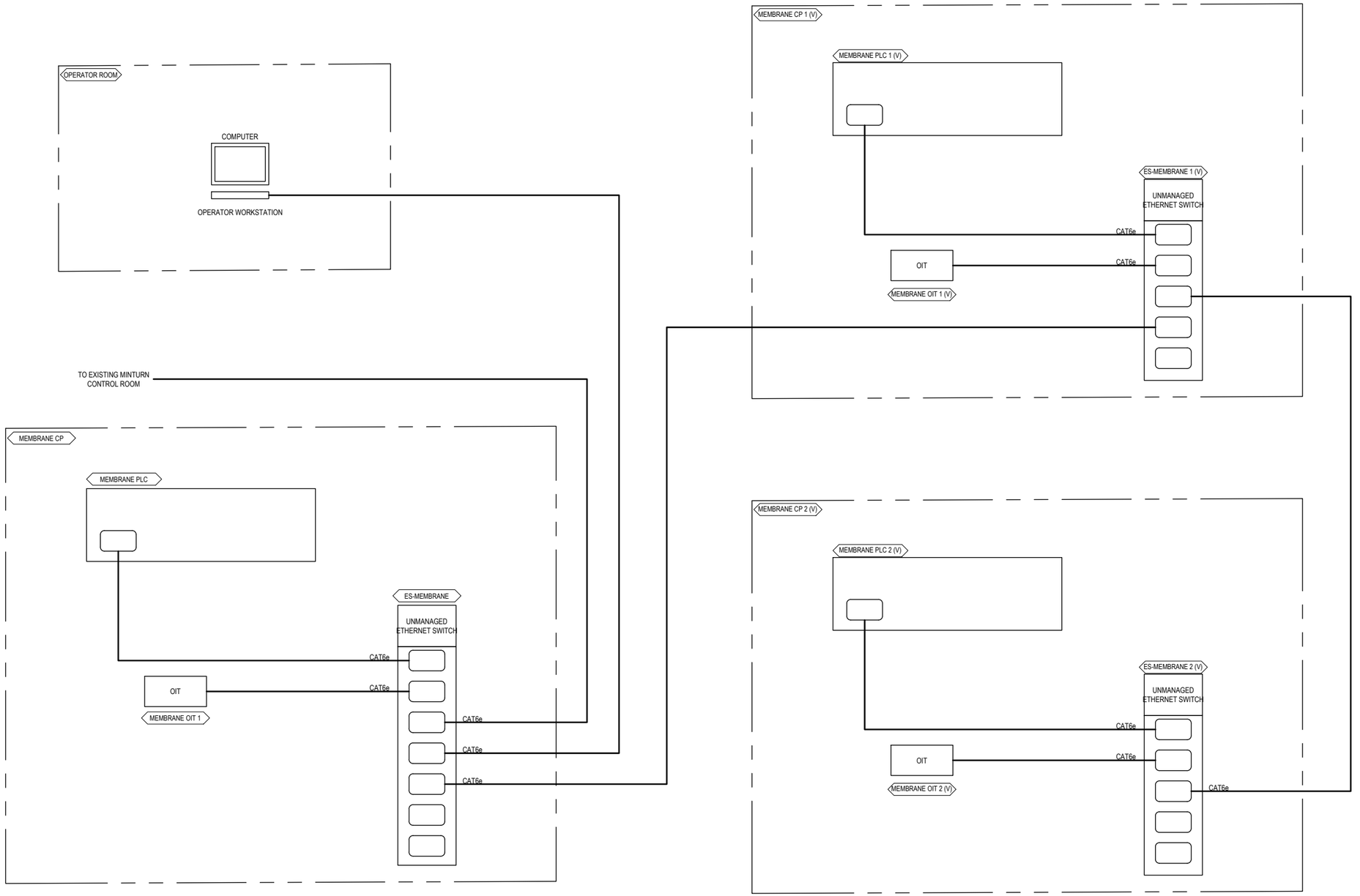

GENERAL NOTES

KEYNOTES

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PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

PROCESS & INSTRUMENTATION NETWORK DIAGRAM

0 1" 2"

FILENAME 01Y-620.DWG

SCALE NOT TO SCALLE

SHEET **01Y-620**

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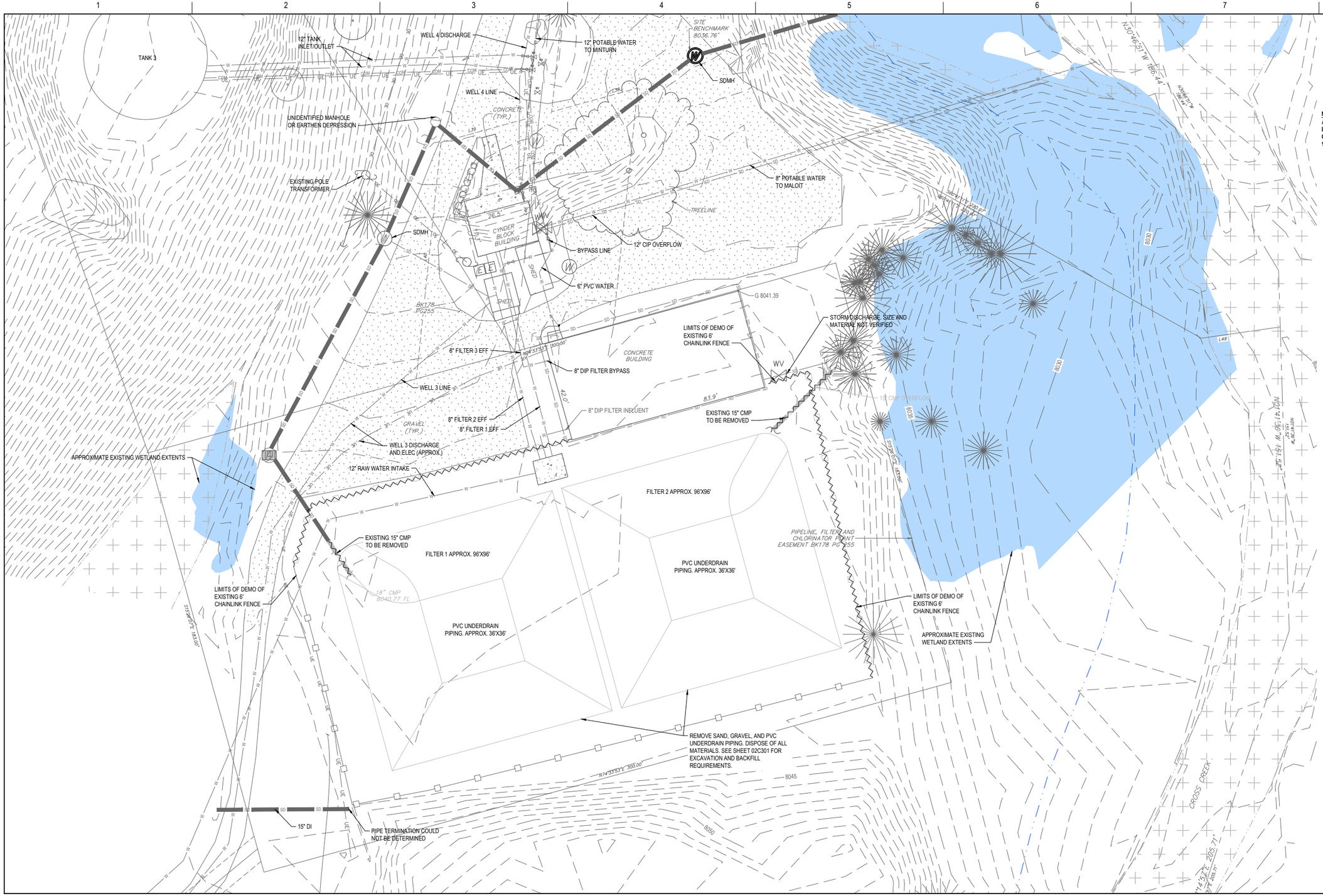

NOTE REGARDING SURVEY ACCURACY:
AS-BUILT LOCATION ACCURACY OF EXISTING UTILITIES IS LEVEL D. LOCATIONS OF PIPING CONDUIT, AND STRUCTURES NOT VISIBLE AT GRADE ARE BASED UPON AS-BUILT DRAWINGS DATED 1965, 1975, 1991, 1996, 2015, 2022, AND 2024.

ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	J. HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	C. BUEME
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

SITE PLAN
EXISTING CONDITIONS PLAN

0 1" 2"

FILENAME 02C-101.DWG
SCALE 1"=20'

SHEET **02C-101**

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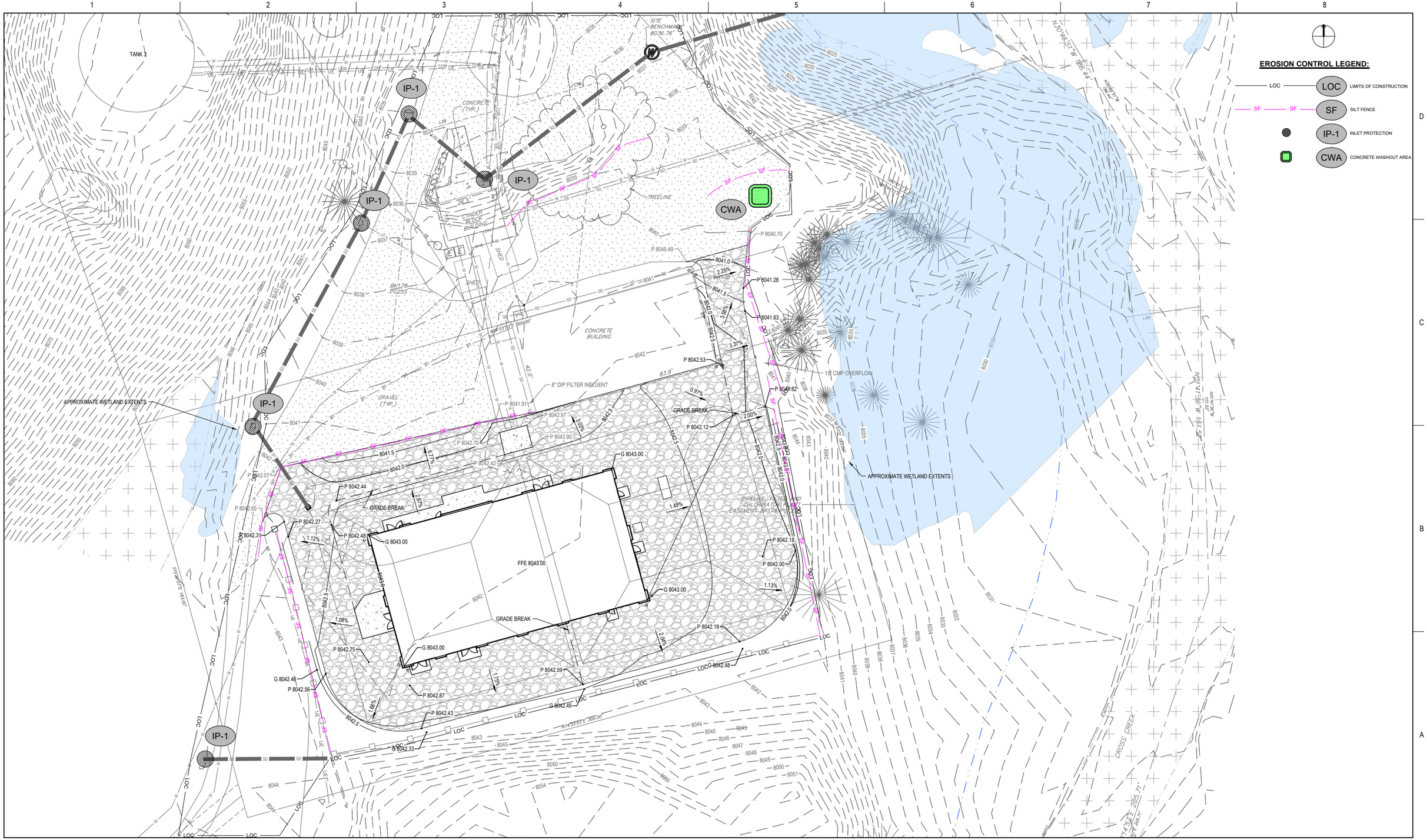

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ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	J. CORONADO
PROCESS	S. SCHUMACHER
ELECTRICAL	J. HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	C. BUEME
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

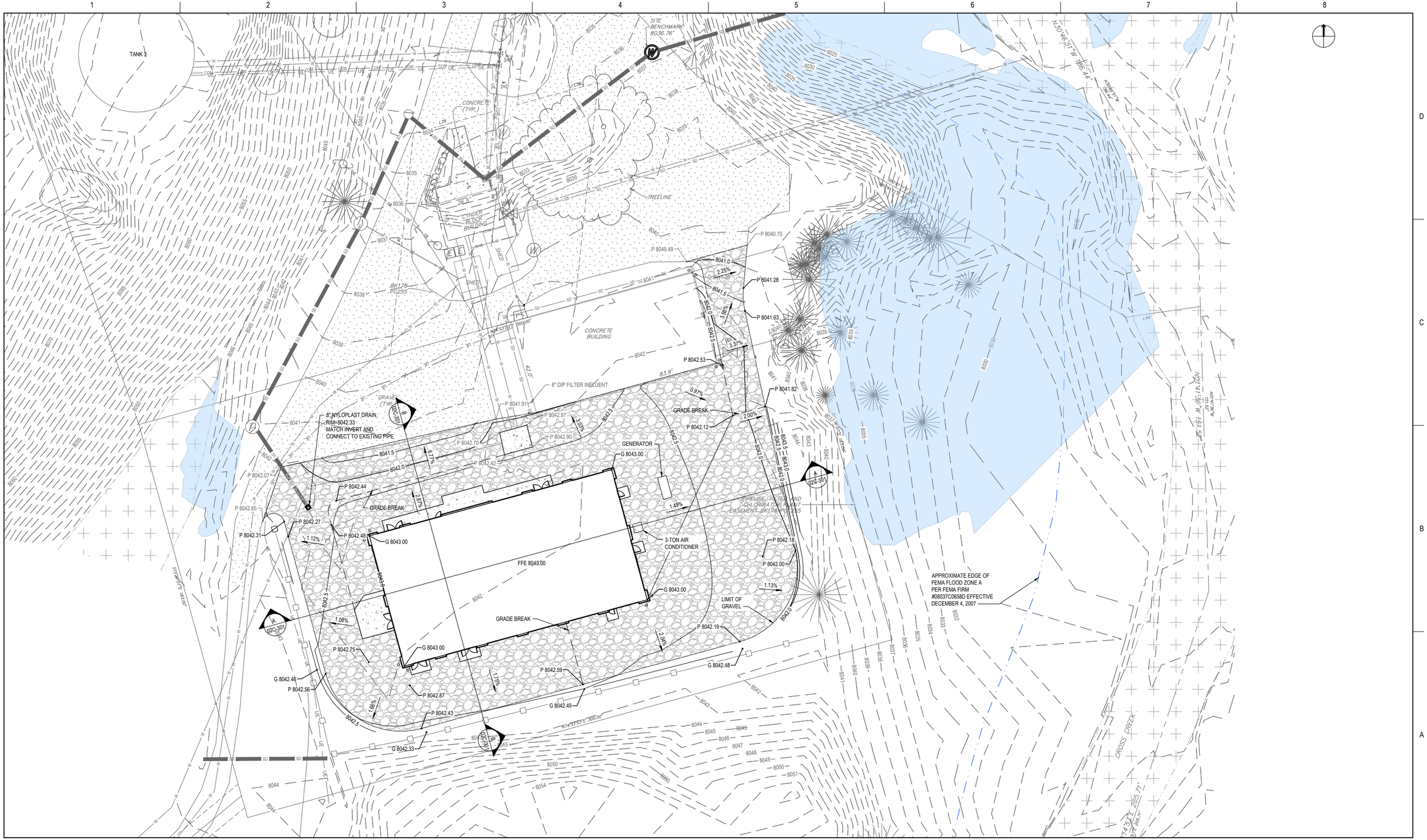
WATER TREATMENT PLANT

SITE PLAN
EROSION AND SEDIMENT CONTROL PLAN

0 1" 2"

FILENAME 02C-102.DWG
SCALE 1"=20'

SHEET **02C-102**



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ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	J. CORONADO
PROCESS	S. SCHUMACHER
ELECTRICAL	J. HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	C. BUEME
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

SITE PLAN
GRADING & DRAINAGE PLAN

0 1" 2"

FILENAME 02C-103.DWG
SCALE 1"=20'

SHEET **02C-103**

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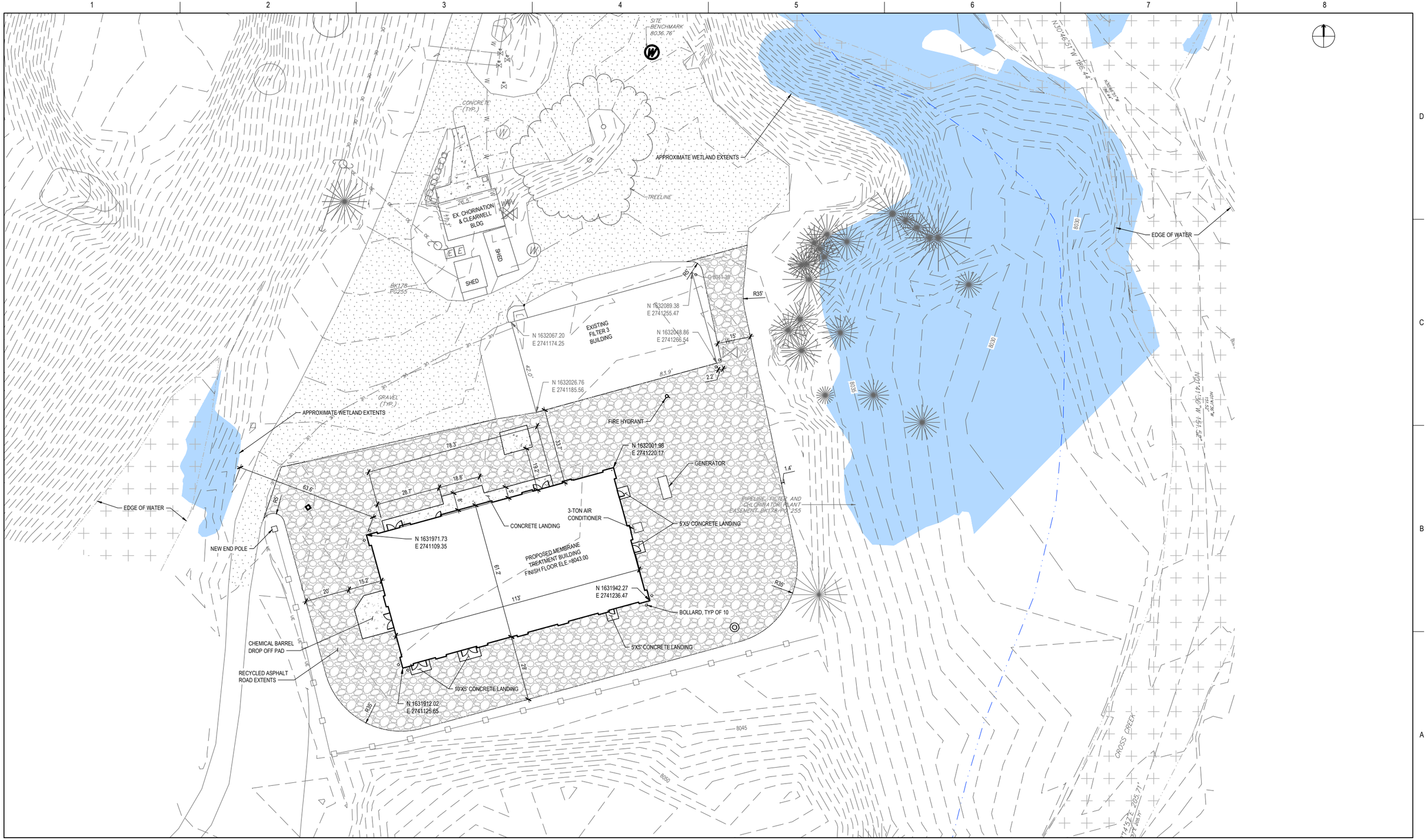

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PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	C. MULDERICK
PROCESS	S. SCHUMACHER
ELECTRICAL	HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	J. LIMKE
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

SITE & ACCESS PLAN

0 1" 2"

FILENAME 02C-104.DWG

SCALE 1"=20'

SHEET **02C-104**

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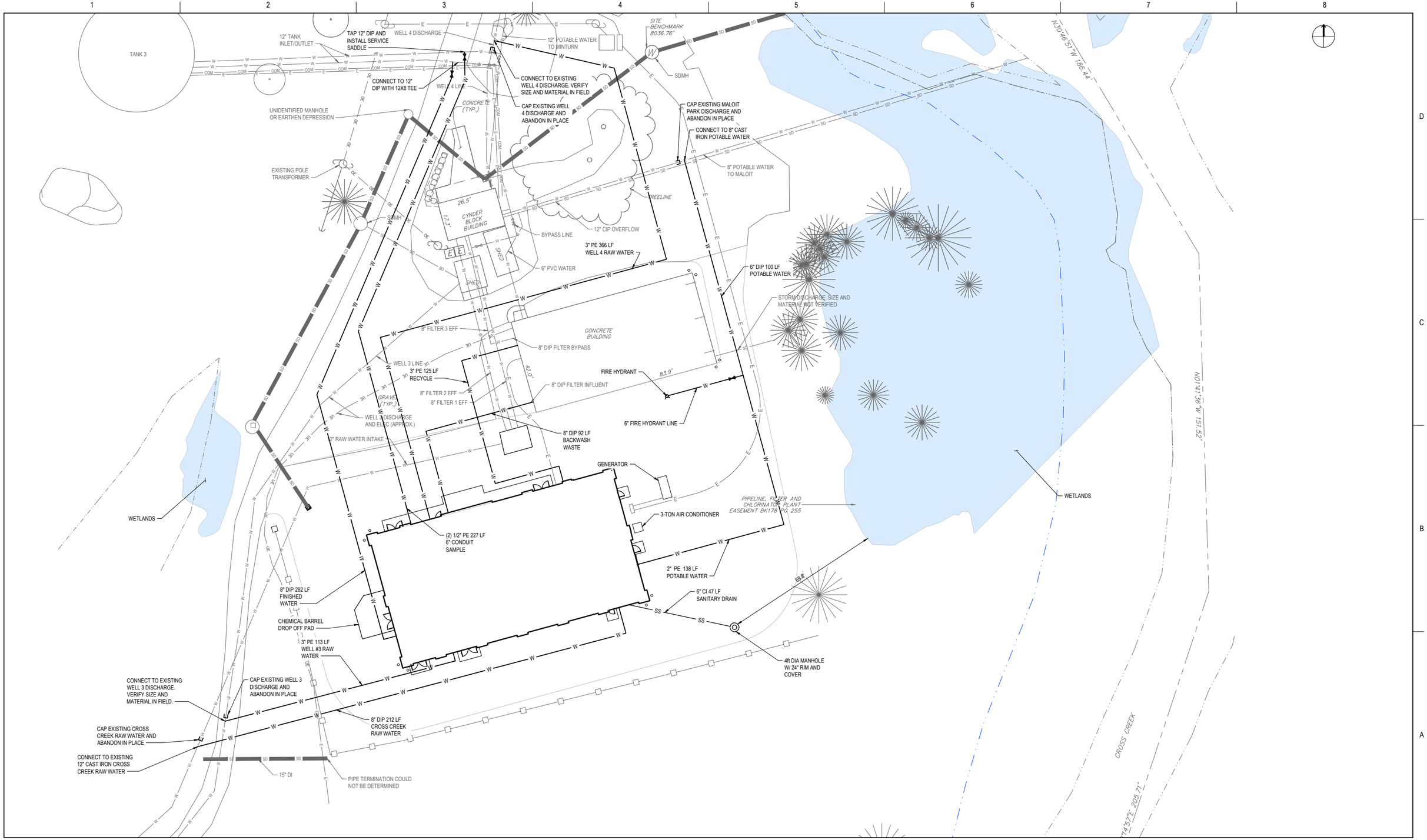

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ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	J. CORONADO
PROCESS	S. SCHUMACHER
ELECTRICAL	J. HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	C. BUEME
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

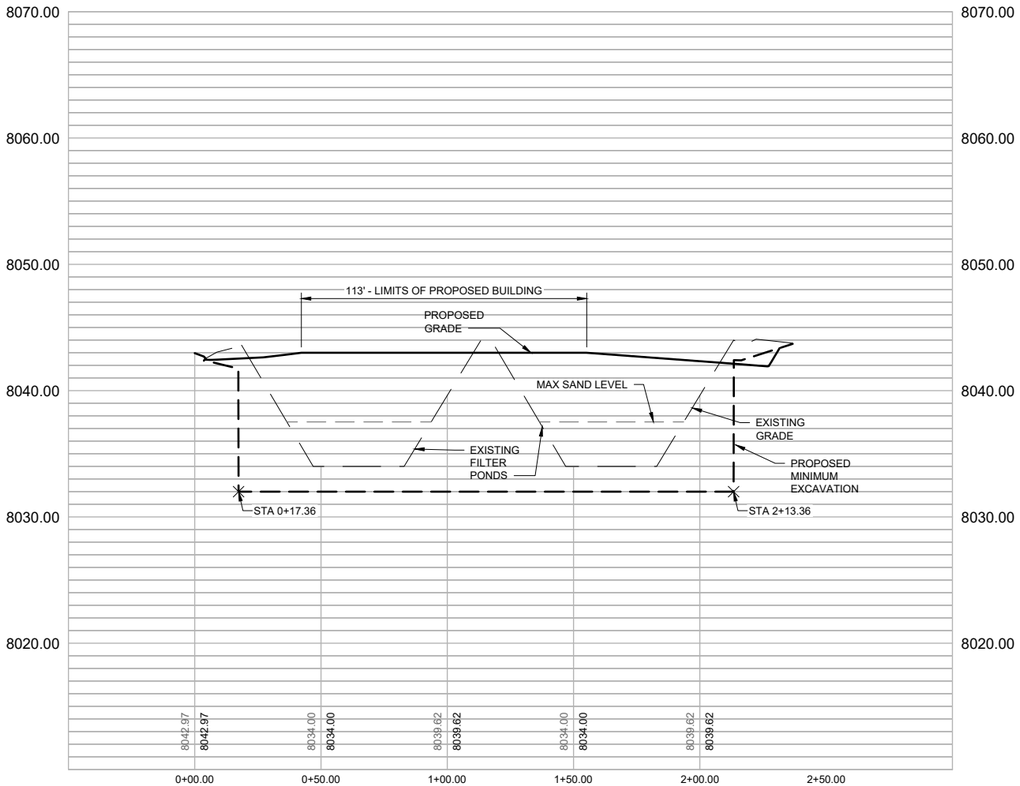
WATER TREATMENT PLANT

SITE PLAN UTILITY PLAN

0 1" 2"

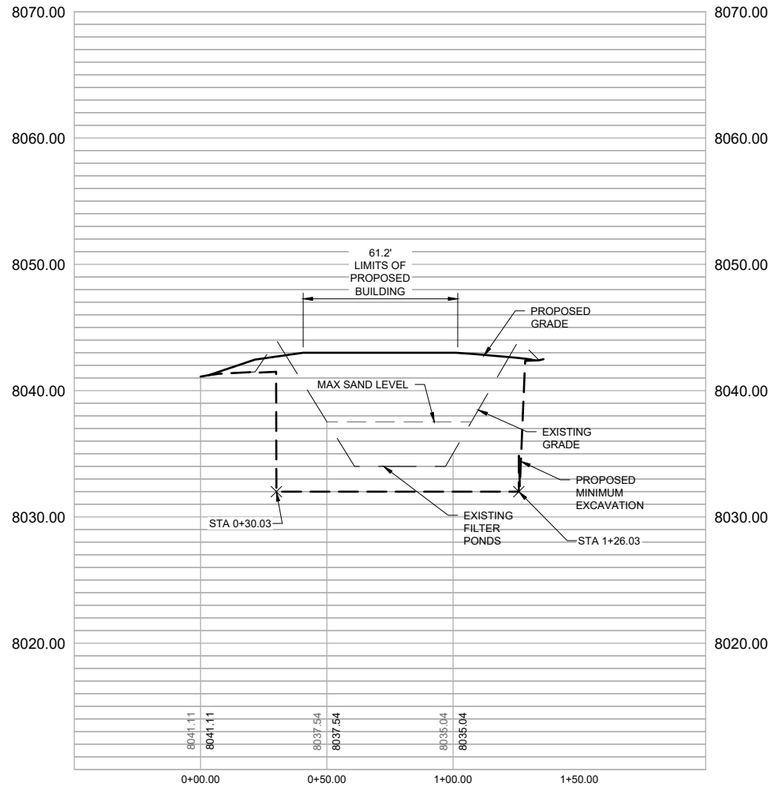
FILENAME 02C-105.DWG
SCALE 1"=20'

SHEET **02C-105**



A-A
01C-105

EAST-WEST CROSS SECTION



B-B
01C-105

NORTH-SOUTH CROSS SECTION

NOTES:

1. CUT VOLUME: 4,914 CY
2. FILL VOLUME: 8,142 CY
3. COMPACTION = 98%

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PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	J. CORONADO
PROCESS	S. SCHUMACHER
ELECTRICAL	J. HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	C. BUEME
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

EXISTING FILTERS CROSS SECTIONS

0 1" 2"

FILENAME 02C-301.DWG
SCALE AS NOTED

SHEET
02C-301

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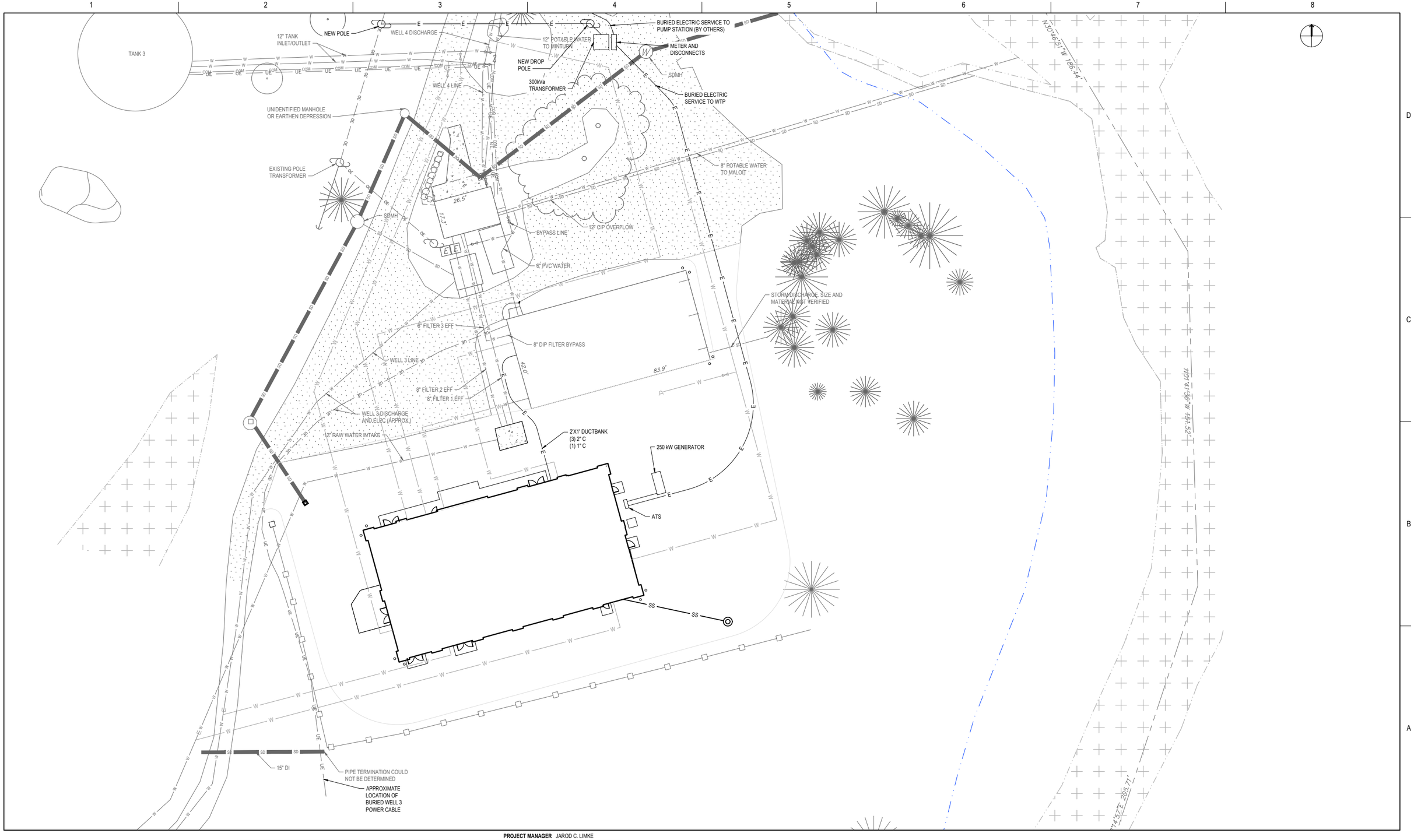

ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEEER	M. LARSON
CIVIL	M. JARRETT
STRUCTURAL	J. CORONADO
PROCESS	S. SCHUMACHER
ELECTRICAL	J. HUCKENPAHLER
I & C	C. OPPEGARD
DRAWN BY	C. BUEME
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

ELECTRICAL SITE PLAN

0 1" 2"

FILENAME 02E-101.DWG

SCALE 1"=20'

SHEET **02E-101**

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10/17/2023 8:27:10 AM

KEYNOTES (##)

1 REMOVAL OF EXISTING PIPE, VALVING, AND PARSHALL FLUME.

2 CAP PIPE AND ABANDON IN PLACE.

3 PLUG PIPE FOR CONNECTION OF NEW PIPING.

4 REMOVAL OF EXISTING ELBOW REDUCER ON INLET PIPE.

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	J. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Author
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT
PLANT

EXISTING FILTER BUILDING
DEMOLITION PLAN

0 1" 2"

FILENAME

SCALE 1/4" = 1'-0"

SHEET
04X-101

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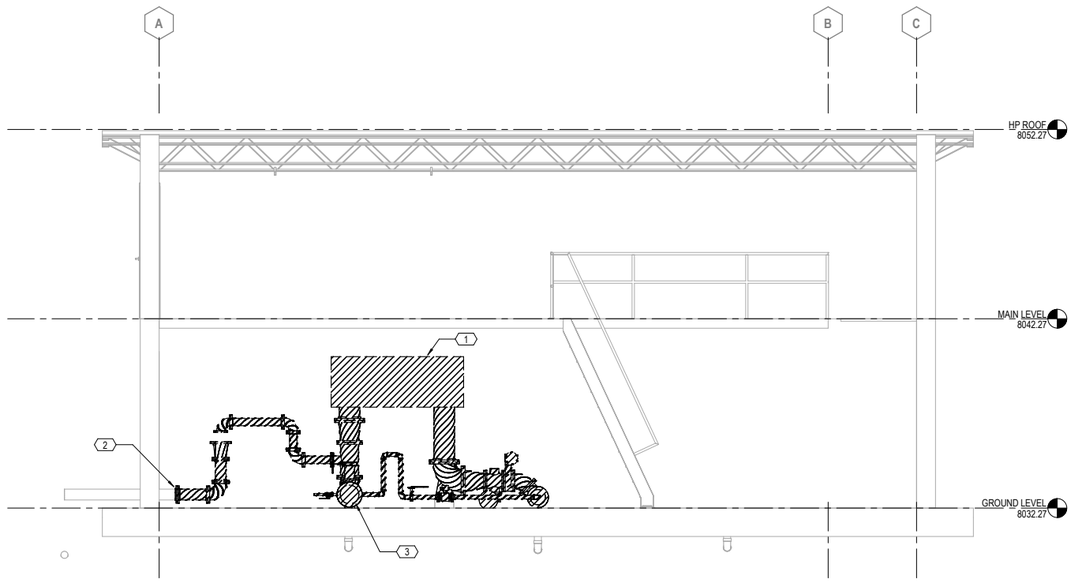
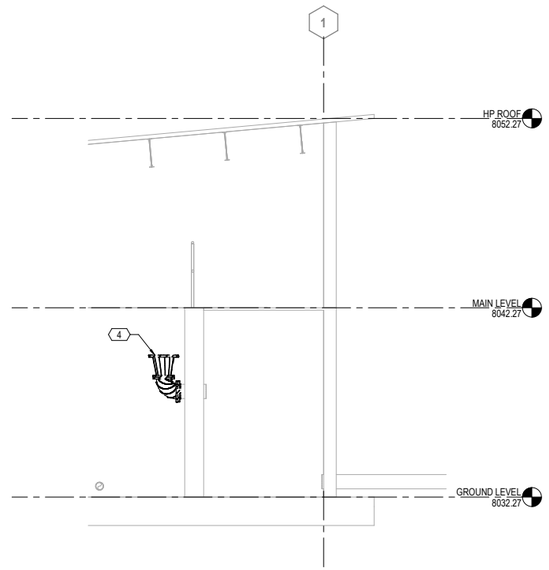


A 04X-101 SECTION

1/4" = 1'-0"



B 04X-101 SECTION

1/4" = 1'-0"

KEYNOTES (##)

1 REMOVAL OF EXISTING PIPE, VALVING, AND PARSHALL FLUME.

2 CAP PIPE AND ABANDON IN PLACE.

3 PLUG PIPE FOR CONNECTION OF NEW PIPING.

4 REMOVAL OF EXISTING ELBOW REDUCER ON INLET PIPE.

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	J. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	E. PAZ
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

EXISTING FILTER BUILDING
DEMOLITION SECTIONS

0 1" 2"

FILENAME

SCALE 1/4" = 1'-0"

SHEET
04X-301

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A 04X-101 PHOTO A
1 1/2" = 1'-0"

B 04X-101 PHOTO B
1 1/2" = 1'-0"

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DRAWN BY	Author
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TOWN OF MINTURN

WATER TREATMENT
PLANT

EXISTING FILTER BUILDING
DEMOLITION DETAILS

0 1" 2"

FILENAME

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

SHEET
04X-501

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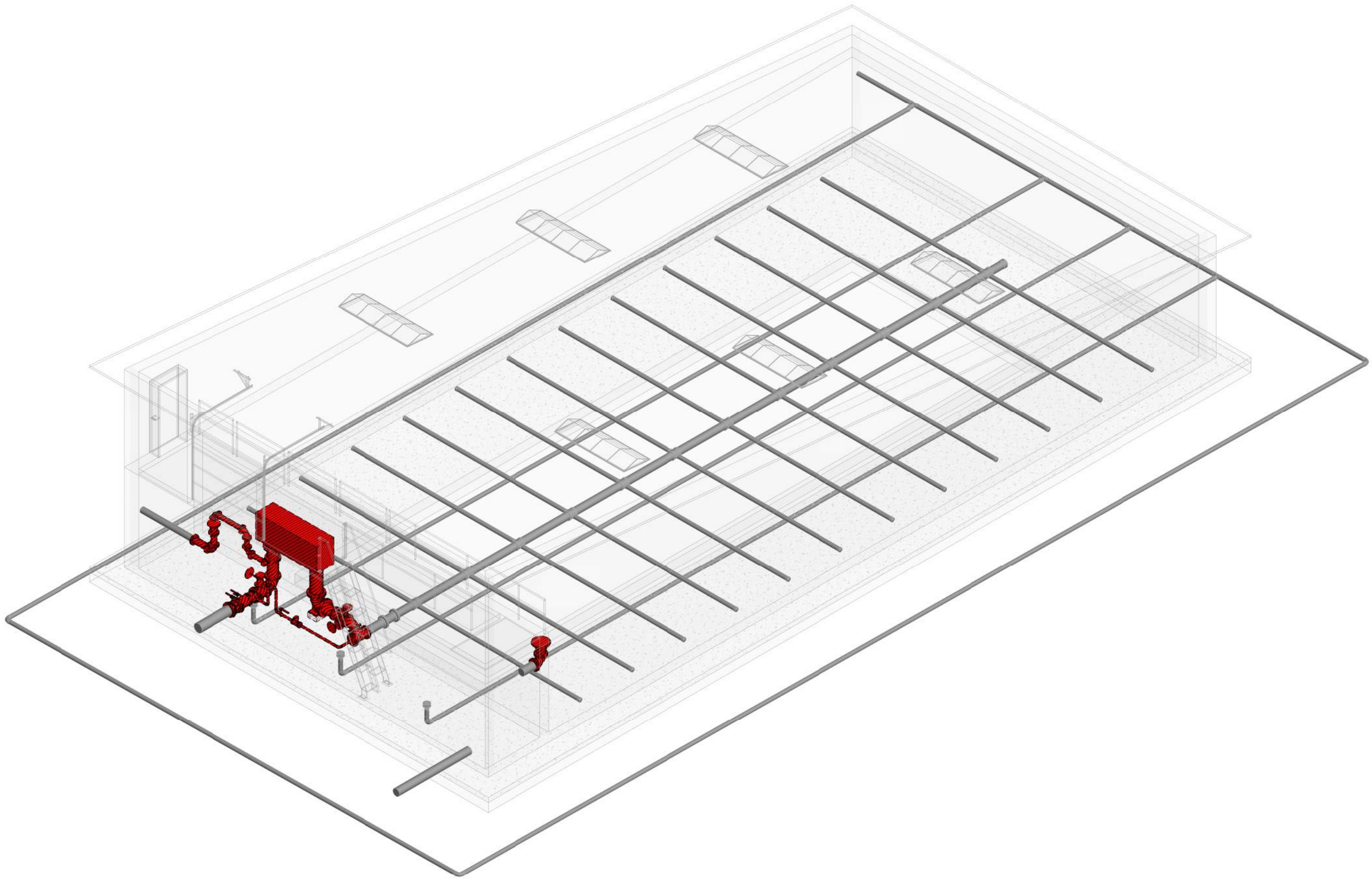

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TOWN OF MINTURN

WATER TREATMENT PLANT

EXISTING FILTER BUILDING
DEMOLITION 3D REPRESENTATIONS AND PHOTOGRAPHS

0 1" 2"

FILENAME

SCALE

SHEET
04X-701

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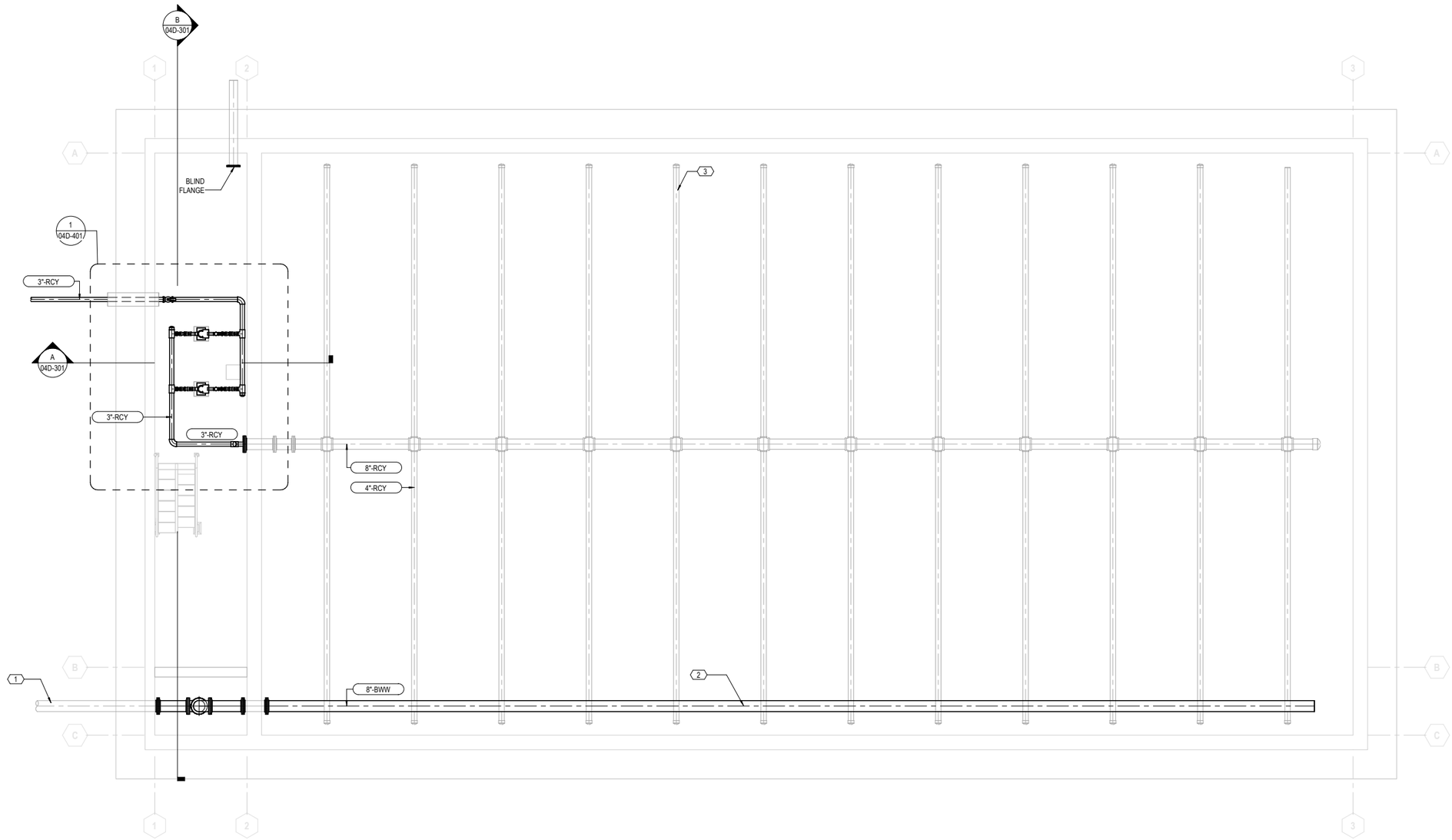

KEYNOTES (##)

1 NEW 6" PVC PIPING TO CONNECT THE FILTER BUILDING INLET TO THE FILTER.

2 NEW 6" PVC PIPING MOUNTED TO WALL OF FILTER WITH 1/2" DIA HOLES DRILLED ALONG THE BOTTOM AT 6" SPACING.

3 EXISTING FILTER UNDERDRAIN PIPING TO REMAIN IN PLACE.

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MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	E. PAZ
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT PLANT

EXISTING FILTER PROCESS PLAN

0 1" 2"

FILENAME

SCALE 1/4" = 1'-0"

SHEET 04D-101

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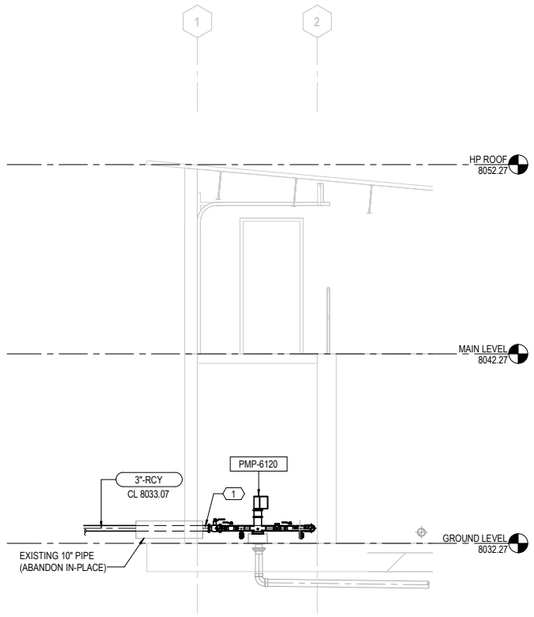
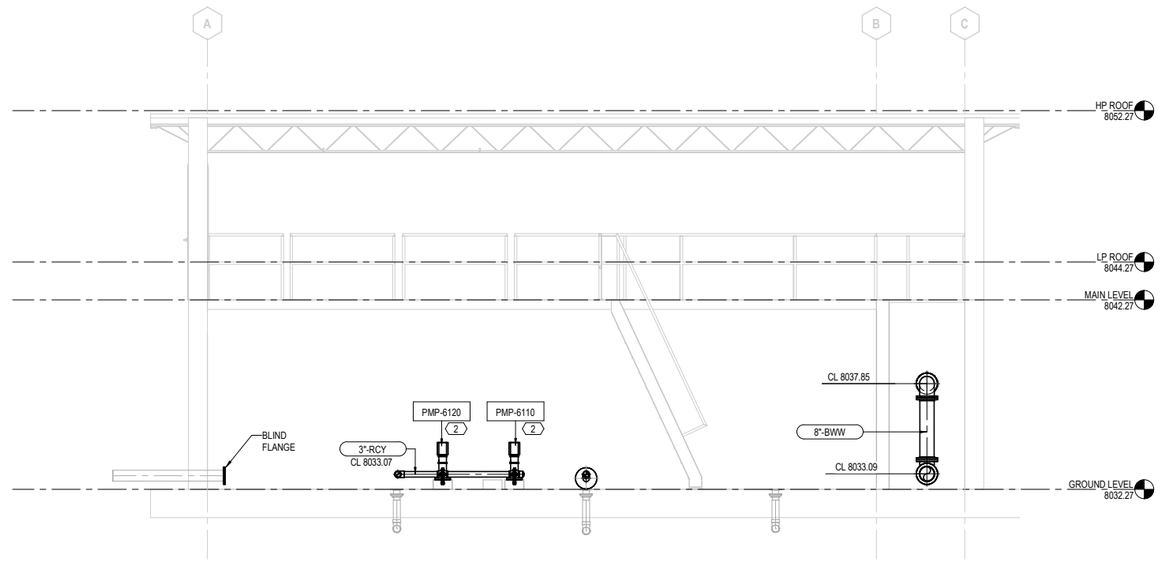
8/2/2024 8:01:52 AM



A SECTION
04D-101 1/4" = 1'-0"



B SECTION
04D-101 1/4" = 1'-0"

KEYNOTES (##)

1 NEW 3" PVC DISCHARGE PIPING CONNECTED TO EXISTING 6" FLANGE AT FILTER BUILDING OUTLET.

2 BACKWASH RECYCLE PUMPS.

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

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PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT
PLANT

EXISTING FILTER
PROCESS SECTIONS

0 1" 2"

FILENAME

SCALE 1/4" = 1'-0"

SHEET
04D-301

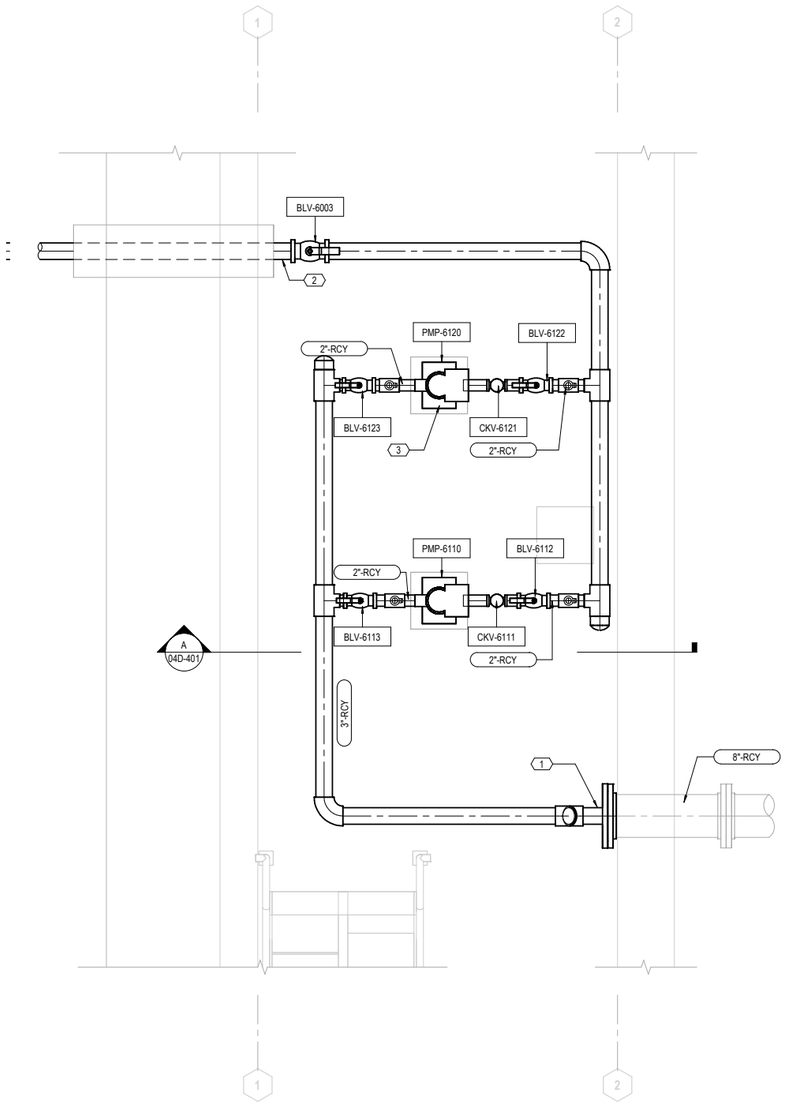
Autodesk Docs://10348601_Minturn_WTP_Design_2022.ACC/10348601_04D-EXISTING FILTER.rvt
8/2/2024 8:01:53 AM

KEYNOTES (##)

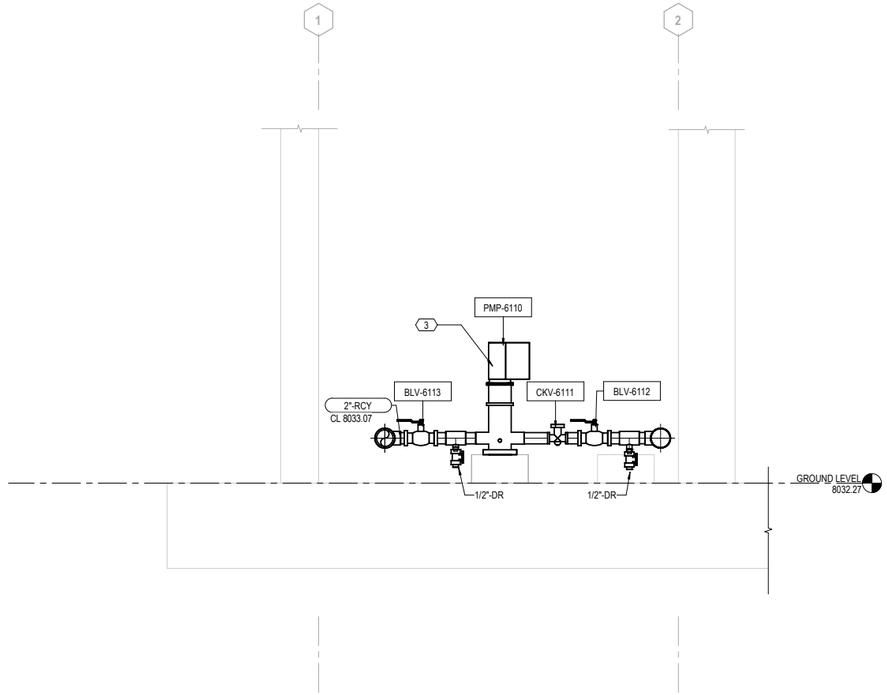
1 NEW 3" PVC SUCTION PIPING CONNECTED TO EXISTING 8" FLANGE AT FILTER OUTLET.

2 NEW 3" PVC DISCHARGE PIPING CONNECTED TO EXISTING 6" FLANGE AT FILTER BUILDING OUTLET.

3 BACKWASH RECYCLE PUMPS.



1 04D-101 ENLARGED PLAN
3/4" = 1'-0"



A 04D-401 SECTION
3/4" = 1'-0"

D C B A

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ISSUE	DATE	DESCRIPTION
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PROJECT ENGINEER	M. LARSON
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PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	E. PAZ
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT
PLANT

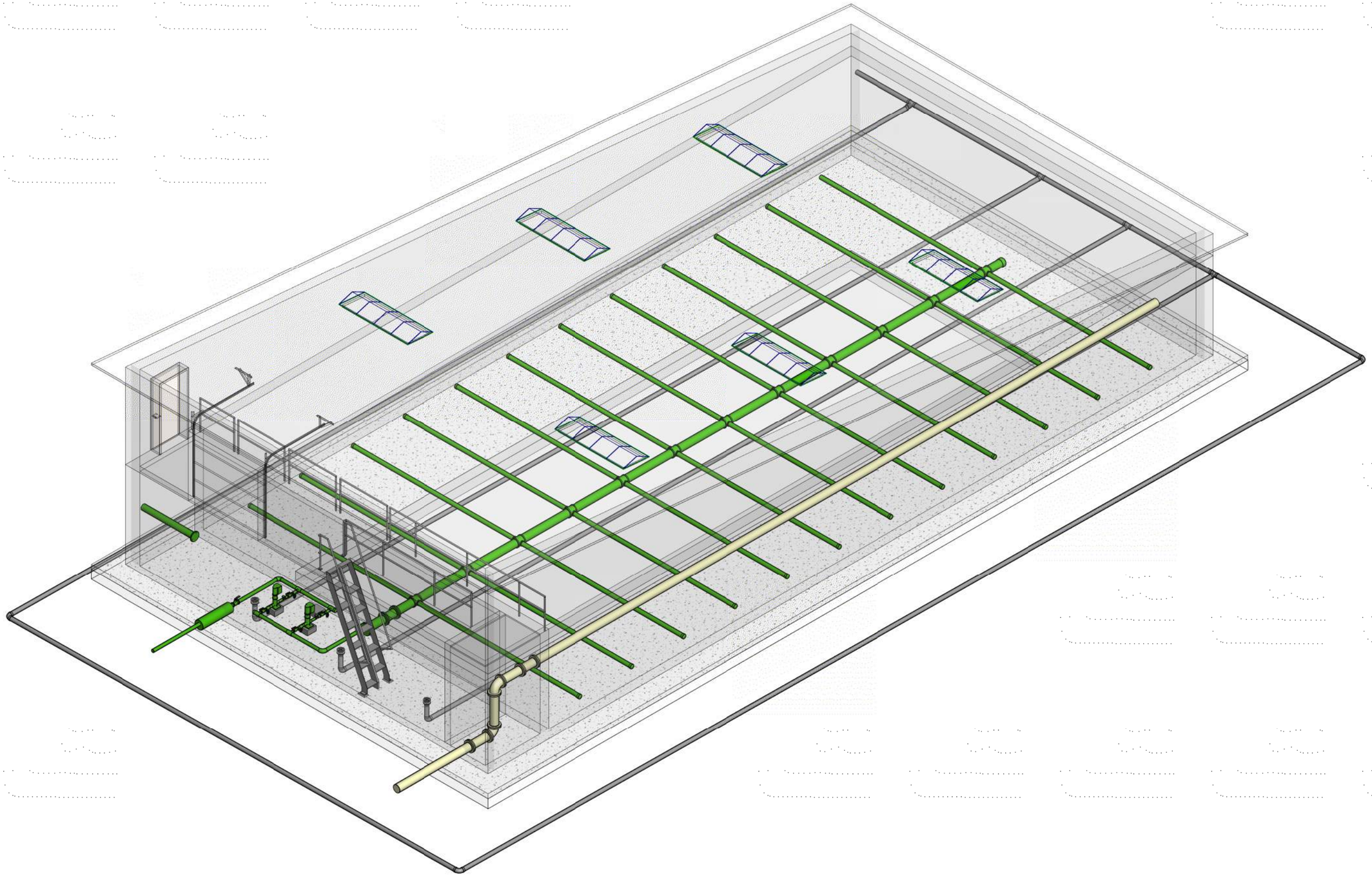
EXISTING FILTER
PROCESS ENLARGED PLAN

0 1" 2"

FILENAME

SCALE 3/4" = 1'-0"

SHEET
04D-401



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MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Author
PROJECT NUMBER	10348601

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CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT
PLANT

EXISTING FILTER
PROCESS 3D REPRESENTATIONS AND PHOTOGRAPHS

0 1" 2"

FILENAME

SCALE

SHEET
04D-701

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GENERAL

G1. SCOPE
THE NOTES ON THIS SHEET AND THE STANDARD STRUCTURAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT WHETHER SPECIFICALLY CALLED OUT OR NOT, EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY ON STRUCTURAL SHEETS. IF THERE ARE QUESTIONS, THEY SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND ANSWERED IN WRITING PRIOR TO CONSTRUCTION.

G2. APPLICABLE SPECIFICATIONS AND CODES
A. INTERNATIONAL BUILDING CODE, IBC 2021 WITH APPLICABLE EDITIONS OF THE CODE REFERENCED STANDARDS.
B. TOWN OF MINTURN AMENDMENTS

G3. DESIGN CRITERIA
1. APPLIES TO ALL STRUCTURES (UNO)
A. DEAD LOAD:
1. ACTUAL TRIBUTARY STRUCTURE WEIGHT
2. SUPERIMPOSED DEAD LOAD:
B. LIVE LOAD:
1. ELEVATED FLOORS: 100 PSF
2. WALKWAYS, STAIRS, GRATING: 100 PSF
3. SLAB ON GRADE: 250 PSF
4. ROOF: 20 PSF (NOT REDUCIBLE)
C. WIND:
1. BASIC WIND SPEED, Vult: 111 MPH
2. ALLOWABLE STRESS DESIGN WIND SPEED, Vasd: 130 MPH
3. EXPOSURE: C
4. ALL STRUCTURES ARE ENCLOSED
D. SEISMIC:
1. ABOVE GRADE, NON WATER BEARING STRUCTURES:
a. RISK CATEGORY: III
b. IMPORTANCE FACTOR: 1.25
c. SPECTRAL RESPONSE ACCELERATION, SS = 0.319 (g)
d. SPECTRAL RESPONSE ACCELERATION, S1 = 0.079 (g)
e. SITE CLASS: D
f. SEISMIC DESIGN CATEGORY: D
g. SPECTRAL RESPONSE COEFFICIENT, SDS = 0.600 (g)
h. SPECTRAL RESPONSE COEFFICIENT, SD1 = 0.126 (g)
i. BASIC SEISMIC FORCE RESISTING SYSTEM: STEEL ORDINARY MOMENT FRAMES
j. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
E. SNOW LOAD:
1. GROUND SNOW LOAD = 80 PSF
2. BALANCED SNOW LOAD = 40.4 PSF
3. EXPOSURE FACTOR = 0.90
4. IMPORTANCE FACTOR = 1.10
5. THERMAL FACTOR = 1.00

G4. THE FOLLOWING NON-CONTRACTUAL GEOTECHNICAL REPORT WAS DEVELOPED FOR THIS PROJECT AND IS THE BASIS OF THIS STRUCTURAL DESIGN:
GEOTECHNICAL FIRM NAME: XXXXXXXXX
ADDRESS: XXXXXXXXX
REPORT NUMBER: XXXXXXXXX
REPORT DATE: XXXXXXXXX
ALLOWABLE SOIL BEARING: XXXXXXXXX

G5. SAFETY
SAFETY AND STRUCTURE STABILITY DURING CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LIVE LOADS ONLY AS A COMPLETED STRUCTURE.

G6. OPENINGS
OPENINGS FOR PIPES, DUCTS, CONDUITS, ETC. ARE NOT ALL SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE AND PROVIDE OPENINGS AS REQUIRED TO ACCOMMODATE ALL WORK SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS AND OTHERWISE REQUIRED FOR THE FURNISHING OF A FUNCTIONALLY COMPLETE PROJECT. REINFORCE AROUND OPENINGS PER STANDARD STRUCTURAL DETAILS UNLESS OTHERWISE SHOWN.

G7. STANDARD DETAILS
THE STANDARD DETAILS DEPICT TYPICAL DETAILING TO BE USED ON THIS PROJECT. IF CONDITIONS ARE NOT EXPLICITLY SHOWN ON THE DRAWINGS THEY SHALL BE MADE SIMILAR TO THE STANDARD DETAILS. OBTAIN APPROVAL OF ENGINEER IN WRITING FOR SIMILAR CONDITIONS PRIOR TO CONSTRUCTION.

G8. THE CONTACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION AS REQUIRED TO COORDINATE NEW CONSTRUCTION. SUBMIT REQUIRED CHANGES FOR APPROVAL.

G9. CONTRACTOR TO SUBMIT FOR REVIEW ALL EQUIPMENT SIZES, OPERATING WEIGHTS, VIBRATION FORCES, SUPPORT LOCATIONS, ALONG WITH ANY FLOOR OPENINGS, NOTCHES, AND RECESSES REQUIRED BY SUCH EQUIPMENT. CONCRETE SUPPORT PADS AND/OR FRAMING REQUIRED TO SUPPORT SAID EQUIPMENT SHALL NOT BE FABRICATED AND PLACED UNTIL THE CONCRETE SUPPORT PADS AND/OR FRAMING IS APPROVED TO SUPPORT THE EQUIPMENT.

CONCRETE

C1. DESIGN STRENGTHS:
F'c = 4500 PSI
Fy = 60,000 PSI

C2. CONCRETE COVER
UNLESS OTHERWISE NOTED, PROVIDE CONCRETE COVER FOR REINFORCING AS FOLLOWS:
CONCRETE DEPOSITED AGAINST EARTH: 3"
CONCRETE IN CONTACT WITH GROUND: 1 1/2"
CONCRETE NOT IN CONTACT WITH GROUND:
SLABS: 3/4"
BEAMS: 1 1/2"
SEE DRAWINGS FOR EXCEPTIONS

C3. SEE SPECIFICATIONS FOR REINFORCING PLACEMENT REQUIREMENTS.

C4. REFER TO OTHER DISCIPLINE DRAWINGS PRIOR TO CONSTRUCTION FOR EMBEDDED ITEMS AND PENETRATIONS NOT SHOWN ON STRUCTURAL DRAWINGS. AS REQUIRED TO ACCOMMODATE ALL WORK SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS AND OTHERWISE REQUIRED FOR THE FURNISHING OF A FUNCTIONALLY COMPLETE PROJECT. REINFORCE AROUND OPENINGS PER STANDARD STRUCTURAL DETAILS UNLESS OTHERWISE SHOWN.

C5. PROVIDE 3/4" CHAMFERS AT ALL EXPOSED EDGES AND 1/2" CHAMFERS AT JOINTS AS SHOWN. NOT ALL CHAMFERS MAY BE SHOWN ON DRAWINGS.

C6. FIELD ADJUST REINFORCING AT OPENINGS AND EMBEDDED ITEMS AS INDICATED.

C7. ANCHOR BOLTS NOT SPECIFIED BY ENGINEER SHALL BE DESIGNED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER, RETAINED BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE PROJECT AND CODE REQUIREMENTS. SUBMIT AS A SHOP DRAWING FOR REVIEW AND APPROVAL BY THE ENGINEER. COORDINATE LOCATION, SIZE AND EMBEDMENT PRIOR TO CASTING CONCRETE.

C8. CONTINUOUS WATERSTOP SHALL BE INSTALLED IN JOINTS SUBJECT TO STATIC WATER PRESSURE.

C9. ABSOLUTELY NO WELDING OF REINFORCING BARS OR TORCHING TO BEND REINFORCING BARS SHALL BE ALLOWED WITHOUT SPECIFIC APPROVAL FROM THE STRUCTURAL ENGINEER.

C10. ALL CAST IN PLACE AND POST-INSTALLED ANCHORS INDICATED IN THE STRUCTURAL DOCUMENTS SHALL COMPLY WITH APPENDIX 17 OF ACI 318 AND CHAPTER 19 OF THE IBC. ALL EXPANSION AND ADHESIVE ANCHORS SHALL HAVE THE ICC REPORT SHOWING EQUIVALENT LOAD CAPACITY. SUBMIT AND INSTALL PER THE ICC EVALUATION REPORT.

MASONRY

M1. DESIGN STRENGTHS:
F'm= 2,000 PSI
Fy = 60,000 PSI

M2. GROUT FOR FILLING MASONRY CAVITIES TO BE COARSE GROUT UNO, MAXIMUM COARSE AGGREGATE SIZE IS 3/8 INCH.

M3. GROUT POURS SHALL NOT EXCEED 4 FEET IN HEIGHT UNLESS CLEANOUTS ARE PROVIDED IN THE BOTTOM COURSE OF THE CELL(S) TO BE GROUTED AND WRITTEN PERMISSION IS OBTAINED FOR HIGH LIFT GROUTING.

M4. RESTRICTED BAR ANCHORAGE:
IN CASES WHERE REINFORCING BARS CANNOT BE EXTENDED AS FAR AS REQUIRED, THE BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOK. SHOW ON SHOP DRAWINGS AND HIGHLIGHT WITH A BOX TO BRING TO ENGINEER'S ATTENTION.

M5. ANCHOR BOLTS:
ALL EXPANSION AND ADHESIVE ANCHORS SHALL HAVE THE ICC REPORT SHOWING EQUIVALENT LOAD CAPACITY. SUBMIT AND INSTALL PER THE ICC EVALUATION REPORT.

M6. IF BOND BEAMS AT INTERSECTING WALLS ARE SHOWN ON THE DRAWINGS TO MEET AT DIFFERENT ELEVATIONS, EXTEND REIFORCING OF BOTH BOND BEAMS AROUND INTERSECTING CORNER NOT LESS THAN 4 FEET IN EACH DIRECTION.

M7. LINTEL BLOCKS SHALL NOT BE USED AS BOND BEAM BLOCKS EXCEPT AT OPENINGS WHERE BOND BEAMS AND LINTELS COINCIDE.

STEEL

S1. DESIGN STRENGTHS:
WIDE FLANGE AND TEES: Fy=50 KSI
PIPES: Fy=35 KSI
STAINLESS STEEL Fy=33 KSI
HSS SECTIONS Fy=46 KSI
ALL OTHER PLATES AND SHAPES: Fy=36 KSI

S2. DIMENSIONS:
TO CENTERLINES OF COLUMNS AND BEAMS, TOP SURFACES OF BEAMS AND TUBES AND BACKS OF CHANNELS AND ANGLES UNO.

S3. ELEVATIONS:
TOP OF STEEL REFERS TO TOP SURFACE OF MEMBER OR FLANGE UNO.

S4. WHEN FILLET WELD SIZE IS NOT INDICATED, PROVIDE MAXIMUM WELD SIZE BASED ON MATERIAL THICKNESS IN ACCORDANCE WITH AISC SPECIFICATIONS.

S5. ALL BOLTED STRUCTURAL CONNECTIONS ARE BEARING TYPE CONNECTIONS UNLESS OTHERWISE SPECIFIED TO BE SLIP-CRITICAL. PROVIDE LOAD INDICATING WASHERS AT SLIP-CRITICAL CONNECTIONS.

S6. CONFORM TO AISC 360, STEEL CONSTRUCTION MANUAL AND AISC 341, SEISMIC DESIGN MANUAL.

ALUMINUM

A1. STRUCTURAL ALUMINUM YIELD STRENGTHS
STRUCTURAL ALUMINUM: Fy=35 KSI
STRUCTURAL ALUMINUM IS ALLOY 6061-T6, UNO

A2. DIMENSIONS:
TO CENTERLINES OF COLUMNS AND BEAMS, TOP SURFACES OF BEAMS AND TUBES AND BACKS OF CHANNELS AND ANGLES UNO.

A3. ELEVATIONS:
TOP OF ALUMINUM REFERS TO TOP SURFACE OR FLANGE OF MEMBER UNO.

A4. WHEN FILLET WELD SIZE IS NOT INDICATED, PROVIDE MAXIMUM WELD SIZE FOR THE MATERIAL THICKNESS IN ACCORDANCE WITH THE LATEST EDITION OF THE "ALUMINUM DESIGN MANUAL" BY THE ALUMINUM ASSOCIATION.

A5. ALUMINUM IN CONTACT WITH DISSIMILAR MATERIALS OR CONCRETE:
CONTACT SURFACES SHALL BE PROVIDED WITH GALVANIC SEPERATION PER SPECIFICATIONS.

DEFERRED SUBMITTALS

D1. PORTIONS OF THE STRUCTURE HAVE ELEMENTS OF PROPRIETARY DESIGN AND FABRICATION, WHICH SHALL BE SUBMITTED BY THE SUPPLIER FOR APPROVAL. THESE ITEMS SHALL CONFORM TO THE REQUIREMENTS OF PRE-ENGINEERED OTHER STRUCTURES SPECIFIED ON THIS SHEET.

D2. DEFERRED SUBMITTAL WILL BE REVIEWED BY THE STRUCTURAL ENGINERER OF RECORD FOR COMPLIANCE WITH THE SPECIFIED DESIGN REQUIREMENTS, STAMPED AS REVIEWED, AND FORWARDED TO THE BUILDING DEPARTMENT FOR APPROVAL.

D3. FINAL ISSUANCE OF THE BUILDING PERMIT MAY BE CONTINGENT ON BUILDING DEPARTMENT APPROVAL OF THE DEFERRED SUBMITTAL DOCUMENTS.

D4. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING DEPARTMENT.

D5. DEFERRED SUBMITTAL INCLUDE:
1. PRE-ENGINEERED METAL BULIING SYSTEMS - SPEC 13 34 19
2. ANCHORAGE TO CONCRETE - SPEC 03 15 19
3. ALUMINUM RAILING - SPEC 05 52 43
4. PIPE SUPPORT SYSTEMS - SPEC 40 05 07
5. OTHER - ANY EQUIPEMENT OR COMPONENT IN WHICH A TECHNICAL SPECIFICATION REQUIRES SUBMITTAL OF EQUIPMENT OR ANCHORAGE SYSTEM CALCULATIONS.

PRE-ENGINEERED STRUCTURES

P1. PRE-ENGINEERED STRUCTURES SHALL BE DESIGNED FOR THE STRUCTURAL DESIGN CRITERIA NOTED ON THESE DRAWINGS APPLIED LOADS AND LOAD COMBINATIONS SHALL BE IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODE. SEISMIC RESPONSE COEFFICIENT MAY BE MODIFIED TO THE APPROPRIATE LATERAL FORCE RESISTING SYSTEM.

P2. SUBMIT DRAWINGS AND CALCULATIONS FOR THE PRE-ENGINEERED STRUCTURES TO THE ENGINEER FOR APPROVAL. DRAWINGS AND CALCULATIONS SHALL BE PREPARED UNDER THE CONTROL AND SUPERVISION OF A COLORADO REGISTERED PROFESSIONAL ENGINEER AND SHALL BE SEALED AND SIGNED.

P3. CONTRACTOR'S ENGINEER OR PRE-ENGINEERED STRUCTURE SUPPLIER SHALL BE RESPONSIBLE FOR THE DESIGN OF ANY BASE PLATES AND ANCHORAGE TO EXISTING STRUCTURE ALONG WITH ALL OTHER STRUCTURAL MEMBERS AND CONNECTIONS.

ISSUE	DATE	DESCRIPTION
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ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	R. NELSON
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING
STRUCTURAL NOTES

0 1" 2"

FILENAME 10348601_05S-MEMBRANE TREATMENT.rvt
SCALE 12" = 1'-0"

SHEET 05S-001

STATEMENT OF SPECIAL INSPECTIONS (IBC 1705):
UNLESS NOTED OTHERWISE

SI1. SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS ARE REQUIRED IN ACCORDANCE WITH IBC CHAPTER 1 AND CHAPTER 17. PAYMENT FOR THESE INSPECTIONS IS NOT THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE FOR FULL ACCESS TO THE WORK BY THE SPECIAL INSPECTOR AND SHALL PROVIDE FOR THESE INSPECTIONS IN HIS CONSTRUCTION SCHEDULE IN ACCORDANCE WITH THE SPECIFICATIONS.

SI2. SHOP FABRICATED ITEMS BY APPROVED FABRICATOR IS EXEMPT FROM SPECIAL INSPECTION. UPON COMPLETION, APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE STATING WORK WAS PERFORMED IN ACCORDANCE WITH APPROVED CONSTRUCTION DOCUMENTS.

SI3. CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY PRIOR TO CONSTRUCTION, INCLUDING:
A. ACKNOWLEDGEMENT OF SPECIAL INSPECTION REQUIREMENTS.
B. ACKNOWLEDGE THAT CONTROL WILL BE EXERCISED TO CONFORM WITH APPROVED CONSTRUCTION DOCUMENTS.
C. PROCEDURES FOR EXERCISING CONTROL, INCLUDING METHOD AND FREQUENCY OF REPORTING, AND DISTRIBUTION OF REPORTS.
D. IDENTIFICATION AND QUALIFICATION OF PERSON(S) EXERCISING SUCH CONTROL.

SI4. THE FOLLOWING CONSTRUCTION IS SUBJECT TO SPECIAL INSPECTION:

SCHEDULE OF SPECIAL INSPECTION SERVICES

INSPECTION ITEM REQUIRED	FREQUENCY CONTINUOUS	FREQUENCY PERIODIC	CODE REFERENCE	REMARKS
GENERAL STRUCTURAL OBSERVATIONS				
CONDUCT DAILY VISUAL OBSERVATION OF THE STRUCTURAL SYSTEMS FOR GENERAL CONFORMANCE TO THE CONSTRUCTION DOCUMENTS. PREPARE WEEKLY REPORT OF OBSERVATIONS DESCRIBING WORK PROGRESS AND NON-CONFORMING ITEMS.	-	X		
SOIL AND EARTHWORK				
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	-	X	TABLE 1705.6	
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-	X		
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	-	X		
VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	-		
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	X		
CONCRETE AND REINFORCING STEEL			TABLE 1705.3	
INSPECTION OF REINFORCING STEEL SIZE AND PLACEMENT.	-	X	ACI 318: 3.5, 7.1 - 7.7	
INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1705.3, ITEM 4.	-	-	AWS D1.4 ACI 318: 3.5.2	
INSPECTION OF BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.	-	X	ACI 318: 3.1.3, 21.2.8	
INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE.	-	X	ACI 318: 3.8.6, 8.1.3, 21.2.8	
VERIFYING USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH. 4, 5.2 - 5.4	
AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 318: 5.6, 5.8	
INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 5.9, 5.10	
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 5.11 - 5.13	
VERIFYING CONCRETE STRENGTH.	-	X	ACI 318: 6.2	
ERECTION OF PRECAST CONCRETE MEMBERS.	-	X	ACI 318: CH. 16	
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 6.1.1	

SCHEDULE OF SPECIAL INSPECTION SERVICES (CONT.)

INSPECTION ITEM REQUIRED	FREQUENCY CONTINUOUS	FREQUENCY PERIODIC	CODE REFERENCE	REMARKS
STRUCTURAL STEEL				
VERIFY FABRICATOR CERTIFICATION.	-	X		
INSPECT FABRICATION SHOP TO OBSERVE FABRICATION PROCEDURES.	X	-		ONLY ONE INSPECTION IS REQUIRED UNLESS ON-SITE EVENTS INDICATE FURTHER INSPECTIONS ARE NECESSARY
MATERIAL VERIFICATION OF STRUCTURAL STEEL FOR IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.	-	X	AISC 360, SECTION M5.5	
MATERIAL VERIFICATION OF OTHER STEEL FOR IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	-	X	APPLICABLE ASTM MATERIAL STANDARDS	
MATERIAL VERIFICATION OF STRUCTURAL STEEL FOR MANUFACTURER'S CERTIFIED TEST REPORTS.	-	X		MILL CERTIFICATIONS
MATERIAL VERIFICATION OF WELD FILLER MATERIALS: MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	-	X		
VERIFY CONTRACTOR'S RECEIPT OF WELDER CERTIFICATIONS.	-	X	AWS D1.1	
VISUALLY INSPECT ALL WELDS.	-	X	AWS D1.1 AND D1.3	
PERFORM ULTRASONIC OR MAGNETIC PARTICLE TESTING ON ALL FULL PENETRATION WELDS.	-	X		
INSPECTION OF WELDING FOR STRUCTURAL STEEL AND COLD-FORMED DECKING: COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS.	X	-		
INSPECTION OF WELDING FOR STRUCTURAL STEEL AND COLD-FORMED DECKING: PLUG AND SLOT WELDS.	X	-		
INSPECTION OF WELDING FOR STRUCTURAL STEEL AND COLD-FORMED DECKING: SINGLE-PASS FILLET WELDS <= 5/16".	-	X		
CAST-IN-PLACE DEEP FOUNDATION ELEMENTS				
INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	-		
VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE), AND ADEQUATE END-BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES.	X	-		
FOR CONCRETE ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.	-	-		

SI5. STRUCTURAL OBSERVATIONS ARE REQUIRED IN ACCORDANCE WITH IBC SECTION 1704. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY A REGISTERED DESIGN PROFESSIONAL (RDP). RDP SHALL BE HIRED BY THE OWNER. FOR GENERAL COMPLIANCE WITH DESIGN DOCUMENTS AND INTENT OBSERVATION SCHEDULE SHALL BE SUBMITTED PRIOR TO OBSERVATION COMMENCEMENT. REGISTERED DESIGN PROFESSIONAL SHALL PREPARE A REPORT INDICATING SITE VISITS MADE AND IDENTIFYING ANY STRUCTURAL DEFICIENCIES THAT HAVE NOT BEEN CORRECTED.

SCHEDULE OF SPECIAL INSPECTION SERVICES (CONT.)

INSPECTION ITEM REQUIRED	FREQUENCY CONTINUOUS	FREQUENCY PERIODIC	CODE REFERENCE	REMARKS
MASONRY CONSTRUCTION (LEVEL B)			TMS 402/ACI 530/ASCE-5 TABLE 4	
MINIMUM TESTS				
VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SITE FOR SELF-CONSOLIDATING GROUT	-	-	TMS 602/ACI 530/ASCE-6 ART. 1.5B.1.b.3	
VERIFICATION OF f'm PRIOR TO CONSTRUCTION	-	-	TMS 602/ACI 530.1/ASCE-6 ART. 1.4B	
MINIMUM INSPECTIONS				
1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 1.5	
2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
a. PROPORTIONS OF SITE-PREPARED MORTAR	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 2.1, 2.6A	
b. CONSTRUCTION OF MORTAR JOINTS	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 3.3B	
c. GRADE AND SIZE OF ANCHORAGES	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 2.4B, 2.4H	
d. LOCATION OF REINFORCEMENT, CONNECTORS, AND ANCHORAGES	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 3.4, 3.6A	
3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
a. GROUT SPACE	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 3.2D, 3.2F	
b. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS	-	X	TMS 402/ACI 530/ASCE-5 SEC. 6.1, TMS 602/ACI 530.1/ASCE-6 ART. 2.4, 3.4	
c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHORAGES	-	X	TMS 402/ACI 530/ASCE-5 SEC. 6.1, 6.2.1, 6.2.6, 6.2.7 TMS 602/ACI 530.1/ASCE-6 ART. 3.3F	
d. PROPORTIONS OF SITE-PREPARED GROUT	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 2.6B, 2.4G.1.b	
e. CONSTRUCTION OF MORTAR JOINTS	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 3.3B	
4. VERIFY DURING CONSTRUCTION:				
a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 3.3F	
b. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.	-	X	TMS 402/ACI 530/ASCE-5 SEC. 1.2.1(e), 6.1.4.3, 6.2.1	
c. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40° F) OR HOT WEATHER (TEMPERATURE ABOVE 90° F)	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 1.8C, 1.8D	
d. PLACEMENT OF GROUT	X	-	TMS 602/ACI 530.1/ASCE-6 ART. 3.5, 3.6C	
e. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	-	X	TMS 602/ACI 530.1/ASCE-6 ART. 1.4B.2.a.3, 1.4B.2.b.3, 1.4B.2.c.3, 1.4B.3, 1.4B.4	

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PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	J. CORONADO
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	R. NELSON
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING
SCHEDULE OF SPECIAL INSPECTIONS

0 1" 2"

FILENAME 10348601_05S-MEMBRANE TREATMENT.rvt
SCALE 12" = 1'-0"

SHEET 05S-002

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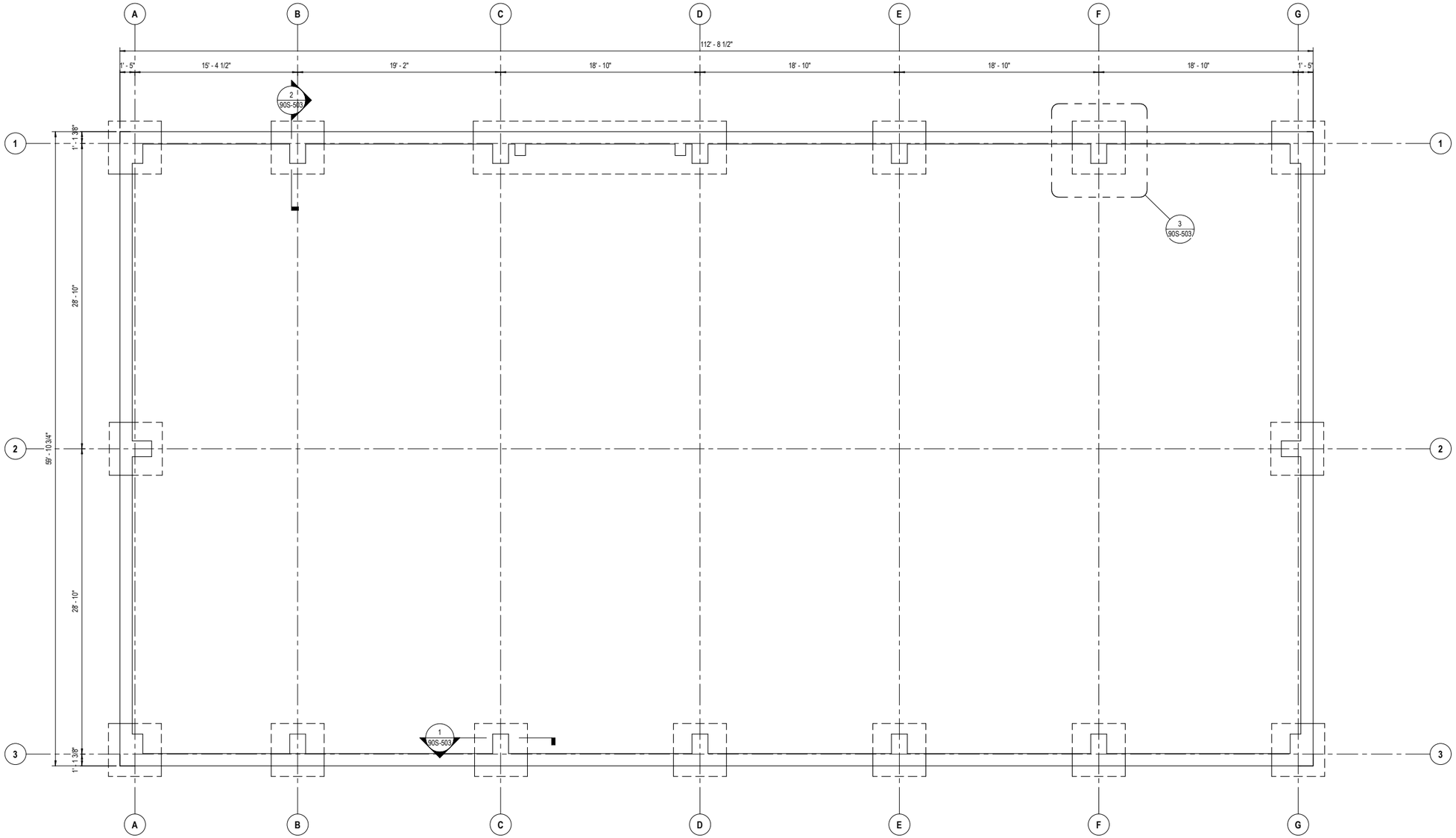


GENERAL NOTES

A. COORDINATE THIS PLAN WITH CIVIL, PROCESS, ARCHITECTURAL, AND MECHANICAL.

B. TYPICAL TOP OF CONCRETE FOUNDATION = 8043 FT.

KEYNOTES (##)

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	J. CORONADO
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	R. NELSON
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

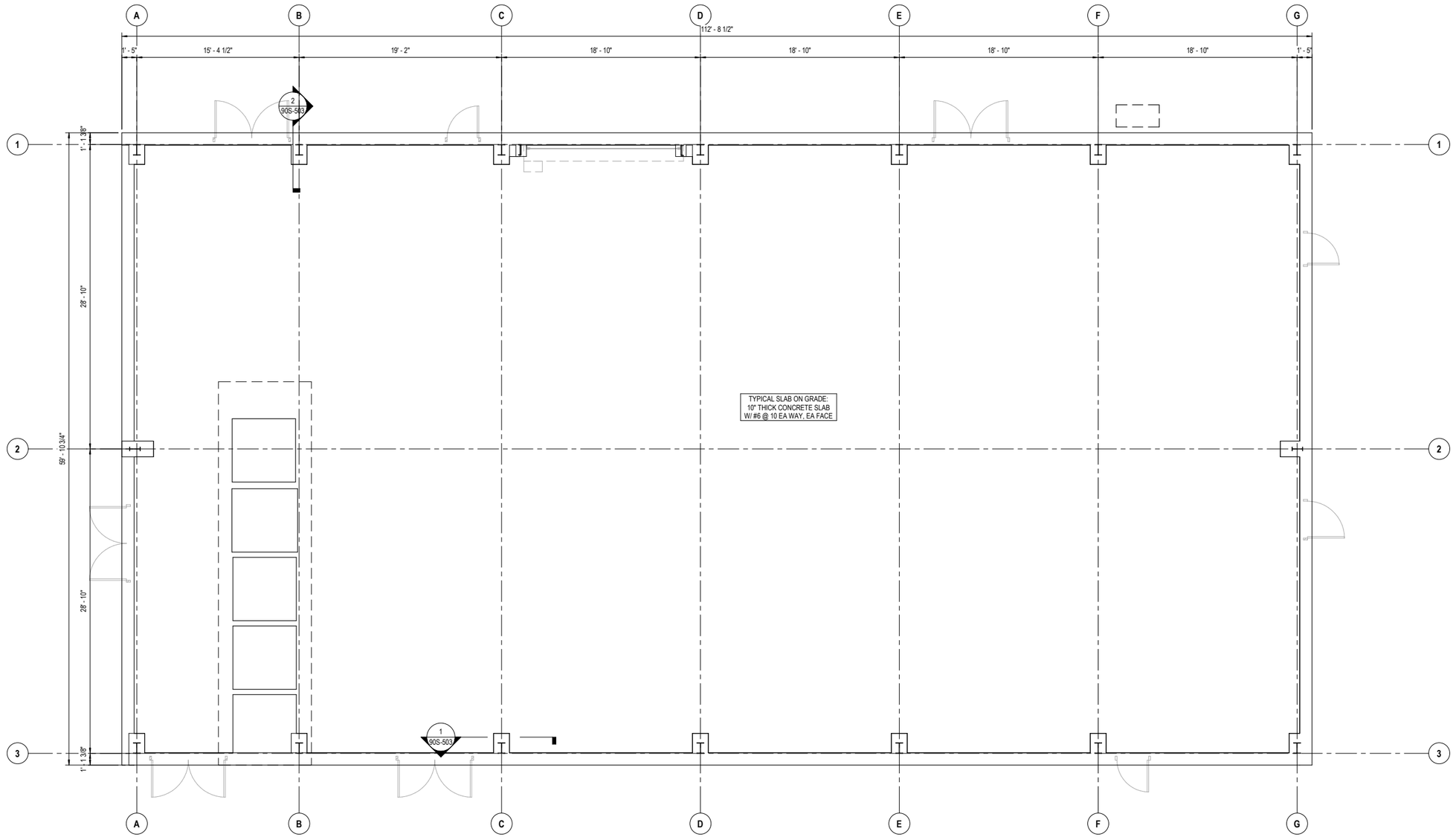
MEMBRANE TREATMENT BUILDING STRUCTURAL FOUNDATION PLAN

0 1" 2"

FILENAME 10348601_05S-MEMBRANE TREATMENT.rvt

SCALE 3/16" = 1'-0"

SHEET **05S-101**



GENERAL NOTES

A. COORDINATE THIS PLAN WITH CIVIL, PROCESS, ARCHITECTURAL, AND MECHANICAL.

B. FINISH FLOOR ELEV = 8043 FT

KEYNOTES (##)

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PROJECT ENGINEER	M. LARSON
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I & C	C. OPPEGARD
DRAWN BY	R. NELSON
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT
PLANT

MEMBRANE TREATMENT BUILDING
STRUCTURAL FLOOR PLAN

0 1" 2"

FILENAME 10348601_05S-MEMBRANE TREATMENT.rvt

SCALE 3/16" = 1'-0"

SHEET 05S-102

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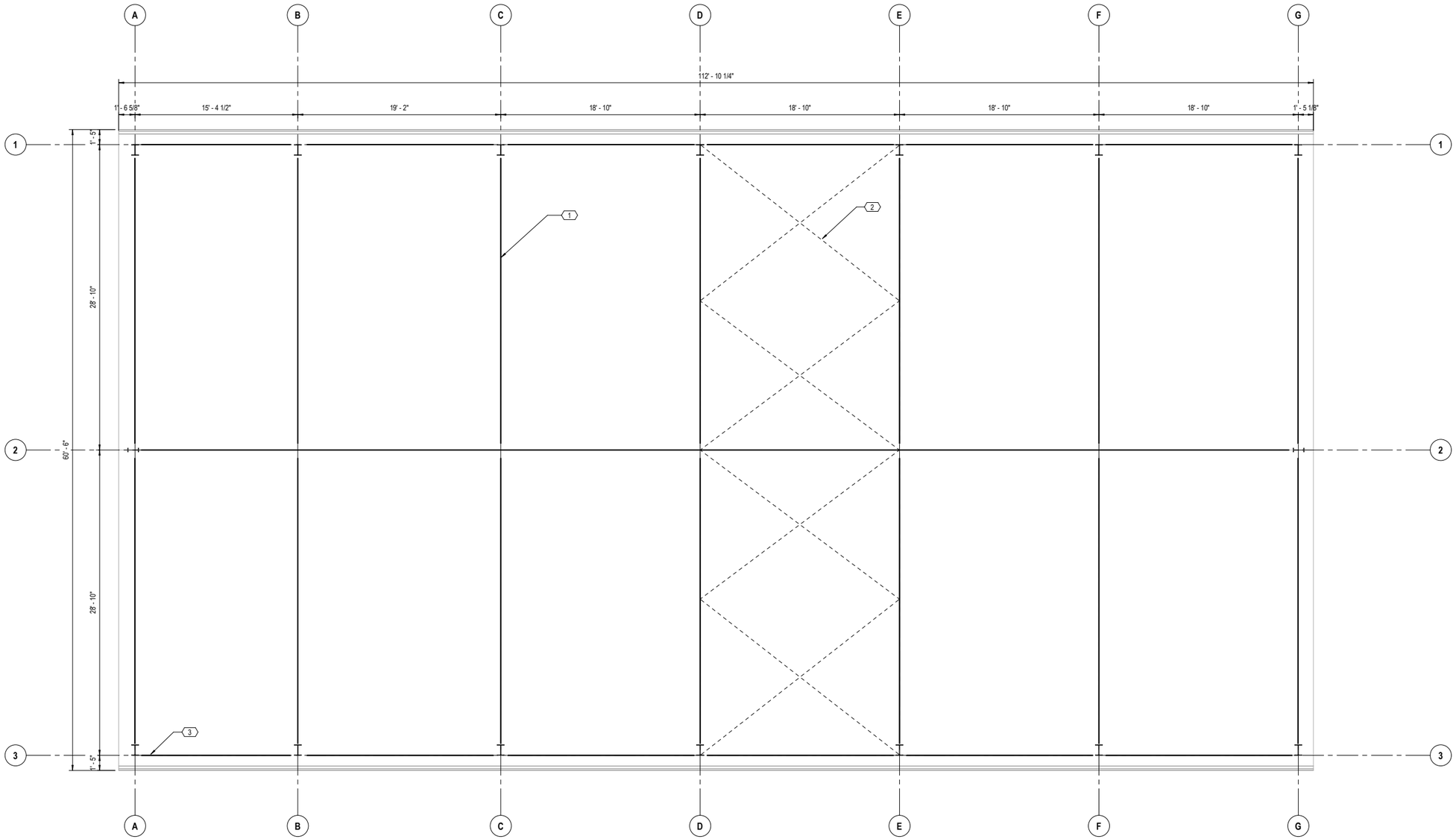

GENERAL NOTES

A. COORDINATE THIS PLAN WITH CIVIL, PROCESS, ARCHITECTURAL, AND MECHANICAL.

KEYNOTES (##)

1 RIGID FRAME (LFRS).

2 HORIZONTAL X-BRACING (LFRS).

3 EAVE STRUTS AT PERIMETER, EACH SIDE, EACH BAY (LFRS).

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PROJECT ENGINEER	M. LARSON
STRUCTURAL	J. CORONADO
ARCHITECTURAL	R. McKINLEY
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MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	R. NELSON
PROJECT NUMBER	10348601

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CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT
PLANT

MEMBRANE TREATMENT BUILDING
STRUCTURAL ROOF FRAMING PLAN

0 1" 2"

FILENAME 10348601_05S-MEMBRANE TREATMENT.rvt

SCALE 3/16" = 1'-0"

SHEET 05S-103

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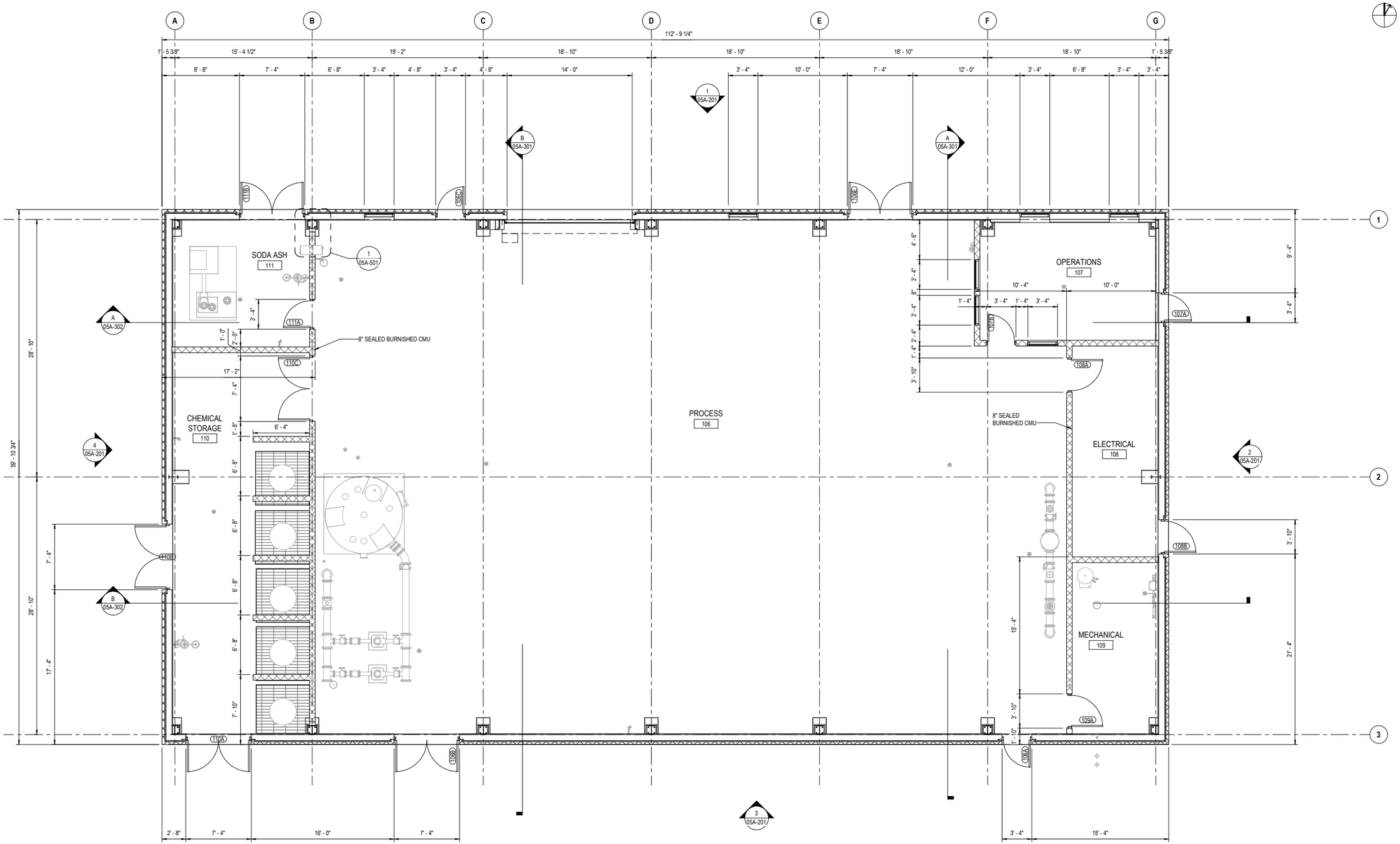

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PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	D. SPERRY
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

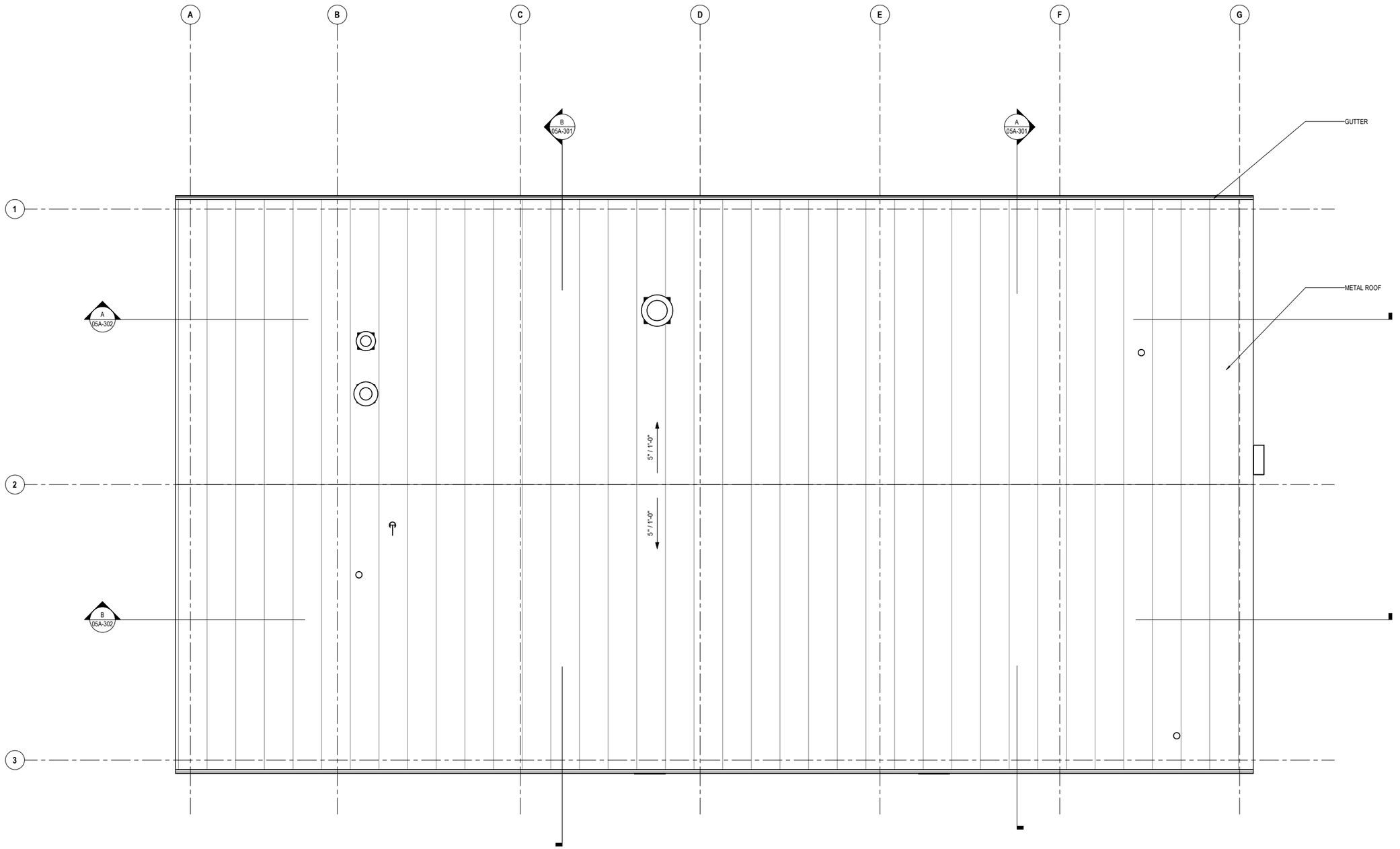
MEMBRANE TREATMENT BUILDING ARCHITECTURE PLAN

0 1" 2"

FILENAME 10348601_05A -MEMBRANE TREATMENT.RVT

SCALE 3/16" = 1'-0"

SHEET **05A-102**



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I & C	C. OPPEGARD
DRAWN BY	D. SPERRY
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING ARCHITECTURE ROOF PLAN

0 1" 2"

FILENAME: 10348601_05A -MEMBRANE TREATMENT.RVT

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

SHEET: 05A-103

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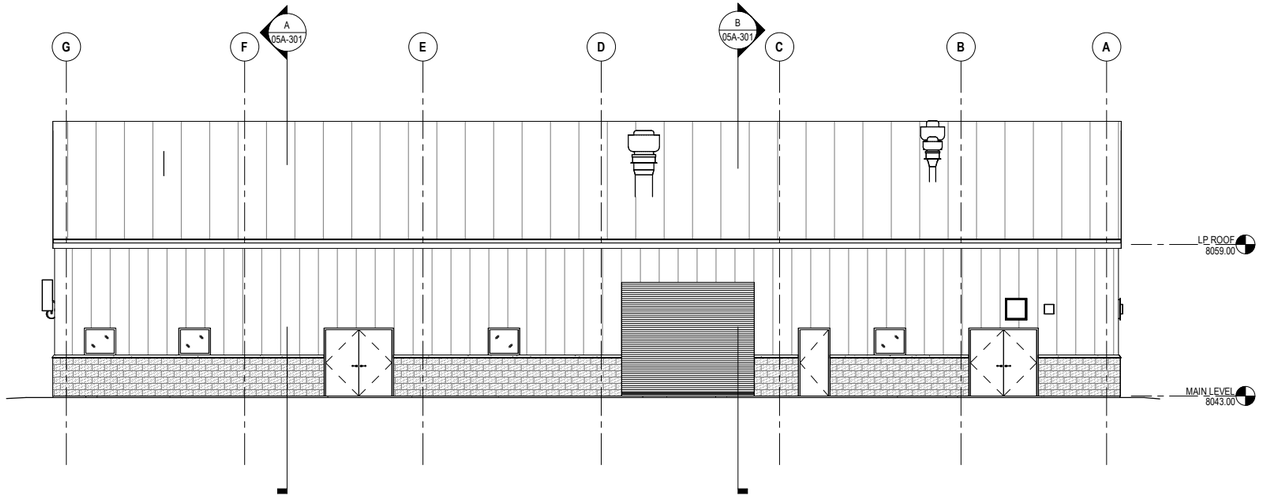
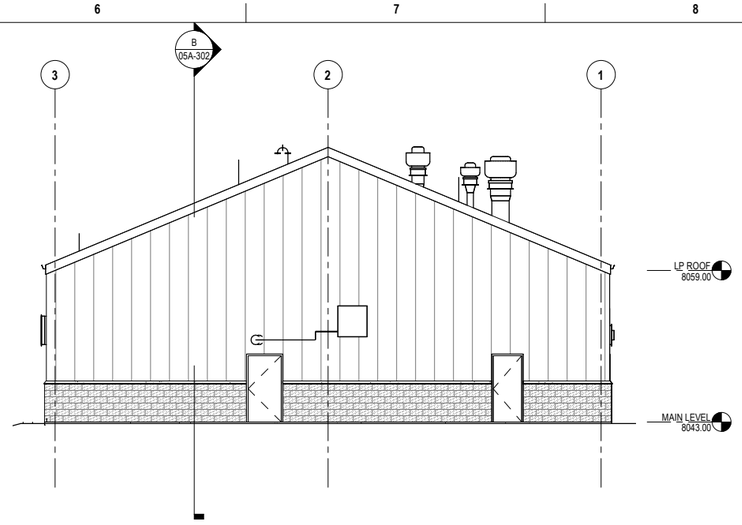
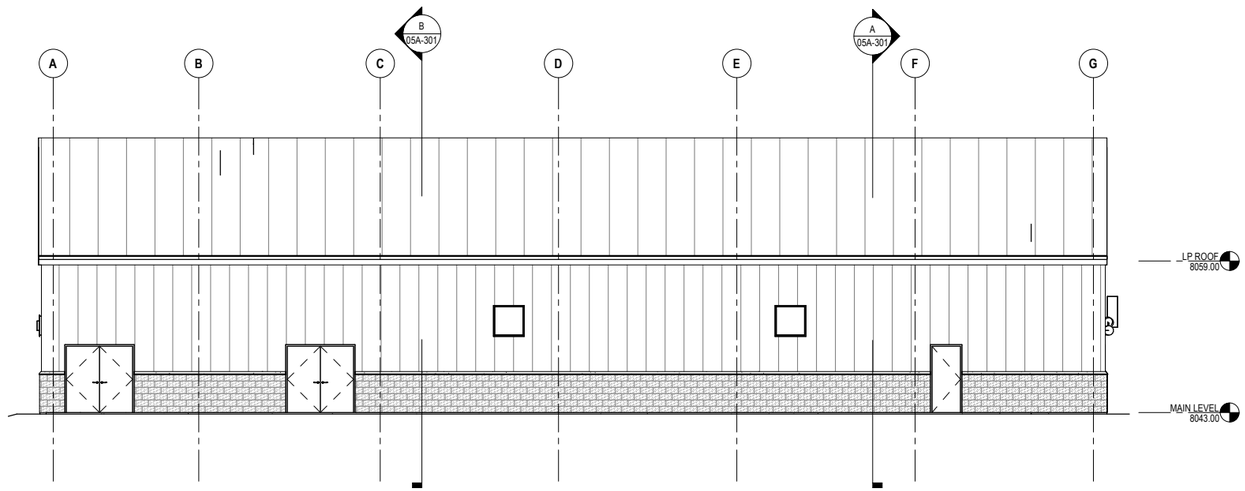


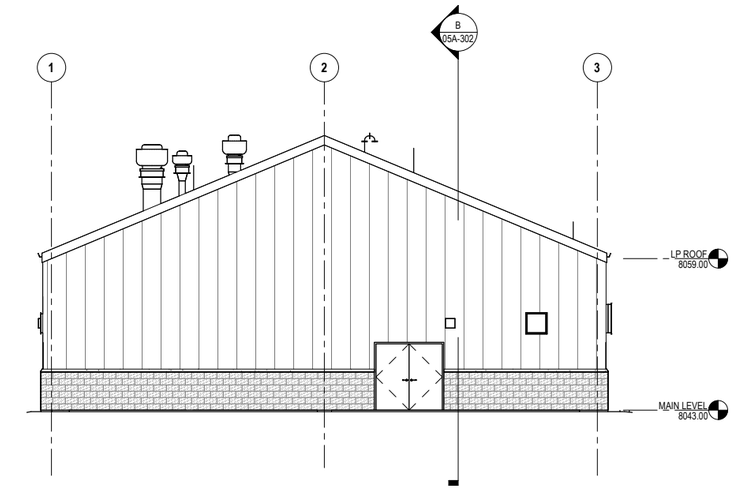
1 05A-102 NORTH ELEVATION
1/8" = 1'-0"



2 05A-102 EAST ELEVATION
1/8" = 1'-0"



3 05A-102 SOUTH ELEVATION
1/8" = 1'-0"



4 05A-102 WEST ELEVATION
1/8" = 1'-0"

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MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	D. SPERRY
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT PLANT

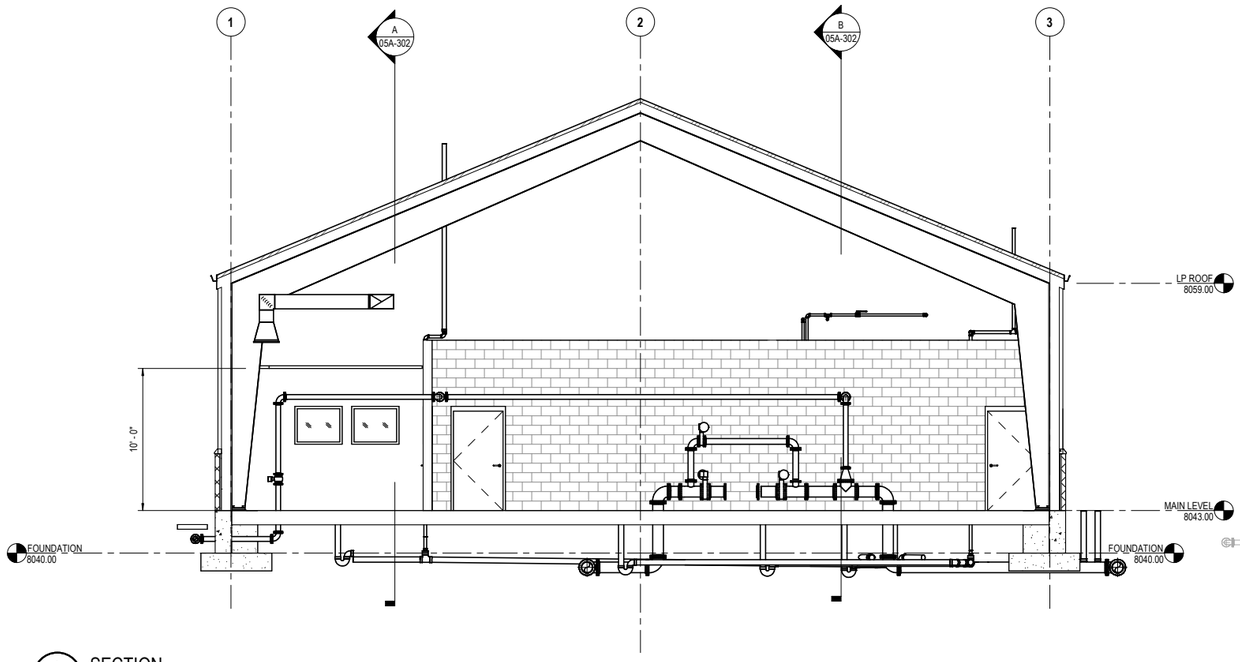
MEMBRANE TREATMENT BUILDING
ARCHITECTURE EXTERIOR ELEVATIONS

0 1" 2"

FILENAME 10348601_05A -MEMBRANE TREATMENT.RVT

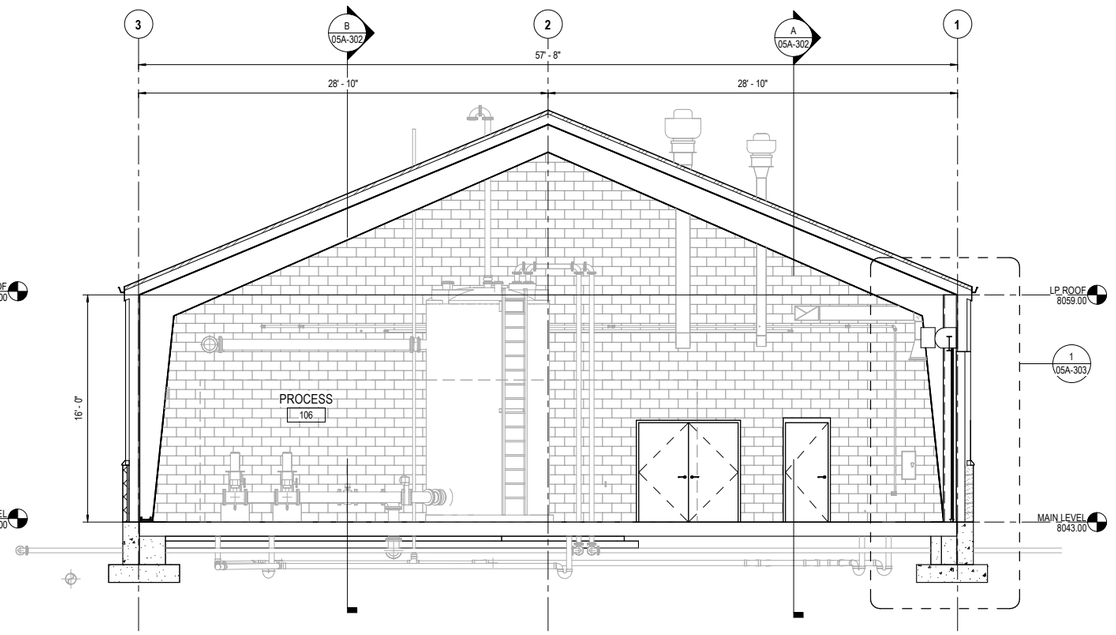
SCALE 1/8" = 1'-0"

SHEET **05A-201**



A 05A-102 SECTION

3/16" = 1'-0"



B 05A-102 SECTION

3/16" = 1'-0"

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PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	D. SPERRY
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING ARCHITECTURE BUILDING SECTIONS

0 1" 2"

FILENAME 10348601_05A -MEMBRANE TREATMENT.RVT

SCALE 3/16" = 1'-0"

SHEET **05A-301**

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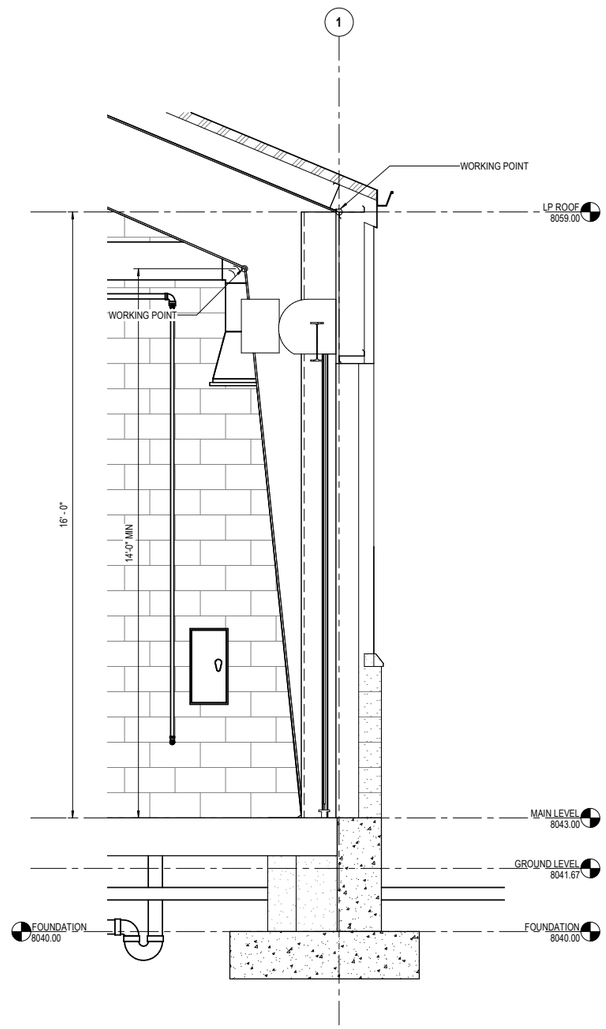

1 TYPICAL WALL SECTION
05A-301 1/2" = 1'-0"

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PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	D. SPERRY
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT
PLANT

MEMBRANE TREATMENT BUILDING
ARCHITECTURE WALL SECTIONS

0 1" 2"

FILENAME 10348601_05A -MEMBRANE TREATMENT.RVT

SCALE 1/2" = 1'-0"

SHEET 05A-303

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ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS				CEILING		*REMARKS
				NORTH	EAST	SOUTH	WEST	HEIGHT	FINISH	
100	CHEMICAL STORAGE									
101	OPERATIONS									
102	ELECTRICAL									
103	MECHANICAL									
104	PROCESS									
105	CHEMICAL STORAGE									
106	PROCESS									
107	OPERATIONS									
108	ELECTRICAL									
109	MECHANICAL									
110	CHEMICAL STORAGE									
111	SODA ASH									

DOOR SCHEDULE

DOOR NUMBER		WIDTH	HEIGHT	DOOR			FRAME			GLASS	RATING	HARDWARE SET	DETAILS			*REMARKS
				TYPE	MATERIAL	FINISH	TYPE	MATERIAL	FINISH				HEAD	JAMB	SILL	
106A			7' - 0"													
106B			7' - 0"													
106C			7' - 0"													
106E			7' - 0"													
106F			12' - 0"		G/S			STL								
107A			7' - 0"													
107B			7' - 0"													
108A			7' - 0"													
108B			7' - 0"													
109A			7' - 0"													
110A			7' - 0"													
110B			7' - 0"													
110C			7' - 0"													
111A			7' - 0"													
111B			7' - 0"													

MATERIAL AND FINISH LEGEND

FLOOR		BASE	
CPT	CARPET	N	NONE
CS-1	CHEMICAL FLOOR SEALER	CPT	CARPET
CS-2	CHEMICAL FLOOR SEALER, HARDENER DENSIFIER	CT	CERAMIC TILE
CS-3	CHEMICAL FLOOR SEALER (WATER REPELLENT)	QT	QUARRY TILE
CT	CERAMIC TILE	RB	RESILIENT BASE
HPIC-#	HIGH PERFORMANCE INDUSTRIAL COATING	TE	TROWELED EPOXY
MAT	METALLIC AGGREGATE TOPPING	TTZO	TROWELED TERRAZZO
QT	QUARRY TILE	WD	WOOD
SPTE	SPARK PROOF TROWELED EPOXY		
TE	TROWELED EPOXY		
TTZO	TROWELED TERRAZZO		
VCT	VINYL COMPOSITE TILE		
WALLS		CEILING	
AP-#	ARCHITECTURAL PAINT NO. #	ACT	ACOUSTICAL CEILING TILE
BRK	BRICK	AP-#	ARCHITECTURAL PAINT NO. #
CF-#	CONCRETE FINISH NO. #	C	CONCRETE - NO PAINT
CMU	CONCRETE MASONRY UNITS - NO PAINT	ES	EXPOSED STRUCTURE - NO PAINT
CT	CERAMIC TILE - FULL HEIGHT	GP	GYPSUM PLASTER
CTW	CERAMIC TILE - WAINSCOT	HPIC-#	PAINTED STRUCTURE WITH HPIC NO. #
GFMU	GROUND FACE CONCRETE MASONRY UNITS	PCP	PORTLAND CEMENT PLASTER
GUM	GLASS UNIT MASONRY		
HPIC-#	HIGH PERFORMANCE INDUSTRIAL COATING NO. #		
PFMUSA	'PREFACED' CONCRETE MASONRY UNITS		
MUSC	SOUND ABSORBING CONCRETE MASONRY UNITS		
SGFT	SPECIAL COATING		
VWC	STRUCTURAL GLAZED FACING TILE		
	VINYL WALL COVERING		

NOTES:
1. SEE DRAWINGS FOR WALL TYPES.
2.

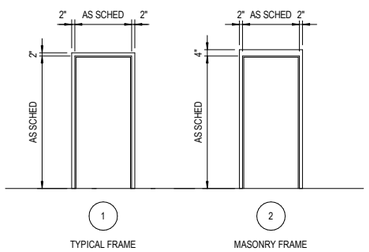
REMARKS:
1. PROVIDE CONCRETE FINISH NO. 5 WHERE CONCRETE WALLS ARE INDICATED TO BE PAINTED; SEE SPECIFICATION SECTION 03348.
2. PAINTED STEEL STRUCTURE. SEE DRAWINGS FOR HEIGHT.

MATERIAL AND FINISH LEGEND

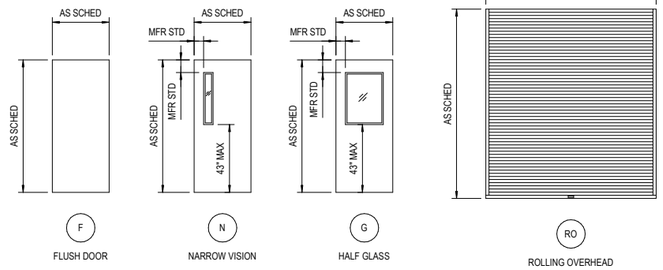
MATERIAL		FINISH	
AL	ALUMINUM	AN	ANODIZED
FRP	FIBERGLASS REINFORCED POLYMER PANEL	FAP	FACTORY APPLIED PAINT
HM	HOLLOW METAL	FAPC	FACTORY APPLIED POWDER COATING
SF	STOREFRONT	FAS	FACTORY APPLIED STAIN AND VARNISH
SS	STAINLESS STEEL	GC	FACTORY APPLIED GEL COATING
ST	STEEL	HPIC	HIGH PERFORMANCE INDUSTRIAL COATING
V	VINYL	PLAM	HIGH PRESSURE PLASTIC LAMINATE
WD	WOOD	PVDF	FLUOROPOLYMER
		SAT	#4 SATIN FINISH
		STN	FIELD STAINED AND VARNISHED
		AP - #	ARCHITECTURAL PAINT NO. #
		FRP/AN	FIBERGLASS REINFORCED POLYMER PANEL/ANODIZED

NOTES:
1. SEE DOOR TYPES DETAIL {THIS SHEET}{X/XXXXX} FOR DOOR ELEVATIONS.
2. SEE FRAME TYPES DETAIL {THIS SHEET}{X/XXXXX} FOR FRAME ELEVATIONS.

REMARKS:
1. PROVIDE ELECTRIC DOOR ASSISTING DEVICE. SEE PLANS FOR LOCATION OF ACTIVATION SWITCHES.



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



3 DOOR TYPES
1/4" = 1'-0"

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PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	D. SPERRY
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING
ARCHITECTURE SCHEDULES

0 1" 2"

FILENAME 10348601_05A -MEMBRANE TREATMENT.RVT

SCALE As indicated

SHEET 05A-601

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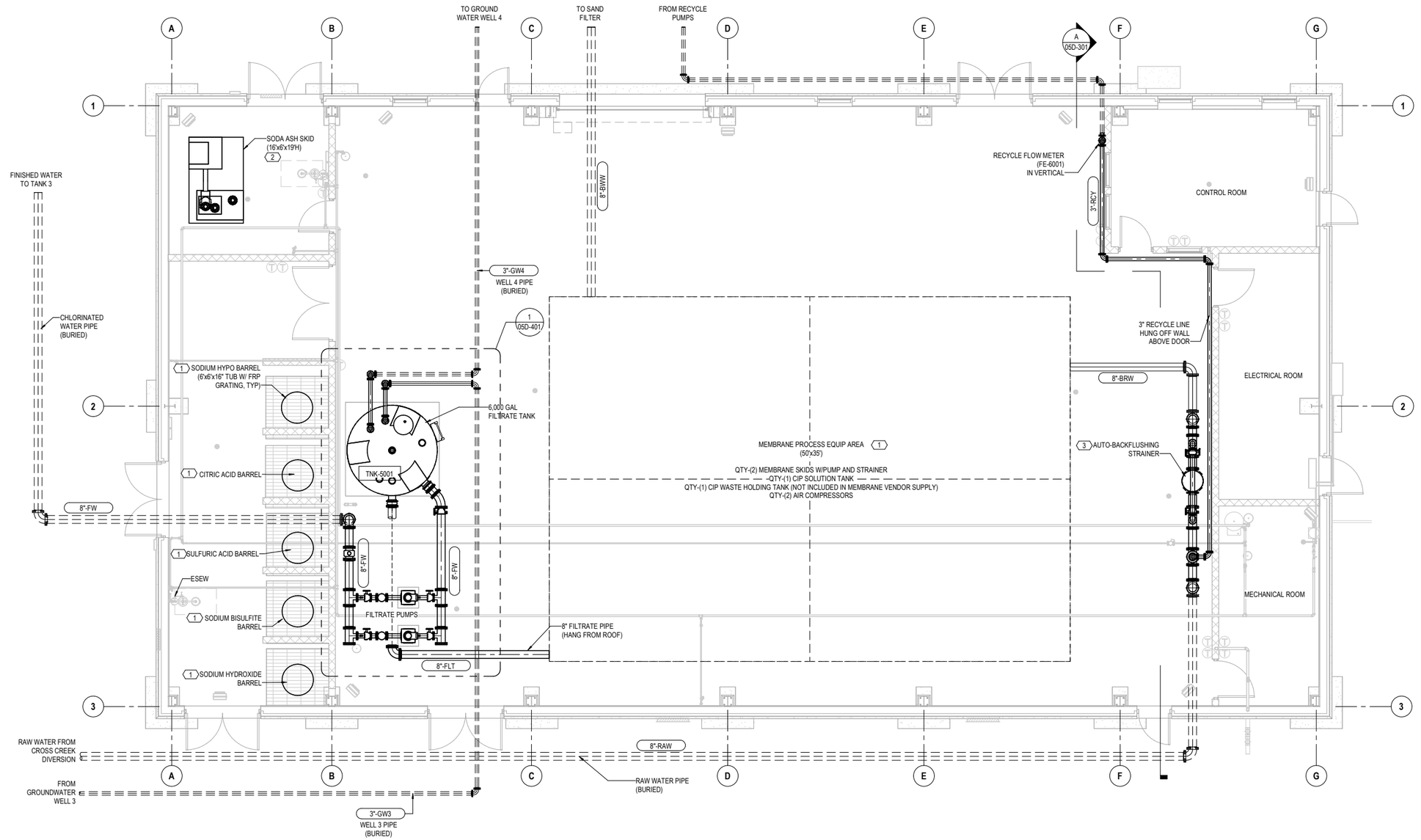

GENERAL NOTES

A. IINTERIOR PIPING TO BE DUCTILE IRON.

B. SEE P&IDS FOR DIVISION OF RESPONSIBILITY FOR SUPPLY OF CHEMICAL FEED PANELS BETWEEN CONTRACTOR AND MEMRBANE SUPPLIER.

KEYNOTES (##)

1 EQUIPMENT INCLUDED IN THE MEMBRANE SUPPLIER'S SCOPE OF SUPPLY.

2 EQUIPMENT INCLUDED IN THE SODA ASH SUPPLIER'S SCOPE OF SUPPLY.

3 EQUIPMENT INCLUDED IN AUTO BACKFLUSHING STRAINER SUPPLIER'S SCOPE OF SUPPLY.

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MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	E. PAZ
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT PROCESS PLAN

0 1" 2"

FILENAME

SCALE 3/16" = 1'-0"

SHEET 05D-101

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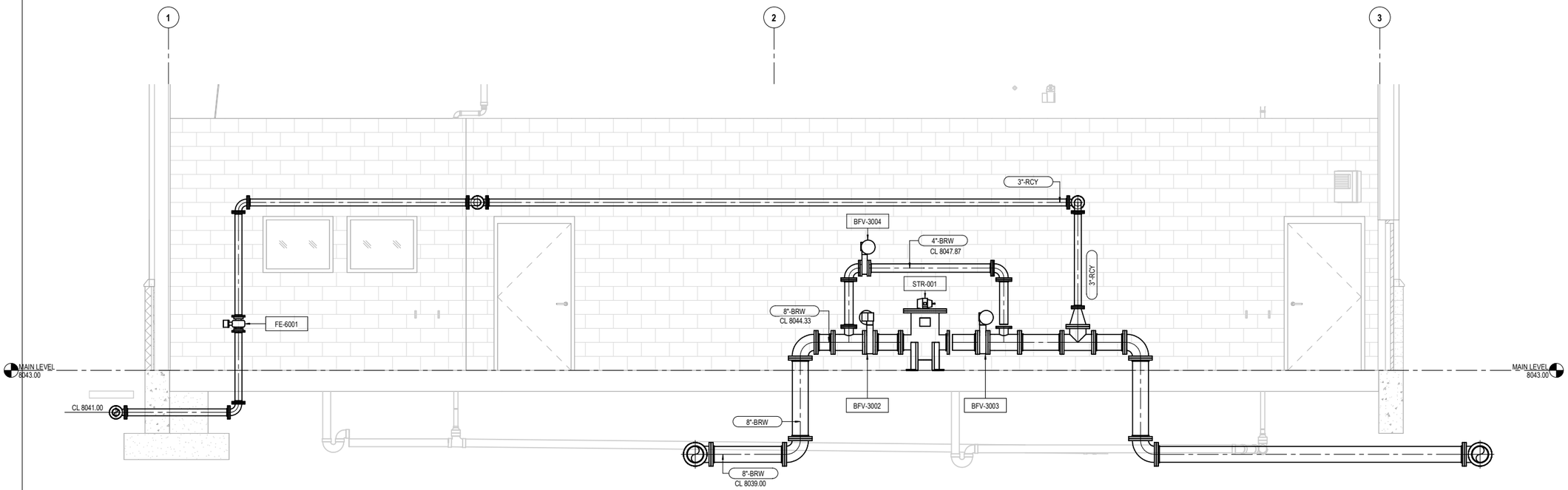

A 05D-101 SECTION
3/8" = 1'-0"

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MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	E. PAZ
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT
PLANT

MEMBRANE TREATMENT
PROCESS SECTIONS

0 1" 2"

FILENAME

SCALE 3/8" = 1'-0"

SHEET
05D-301

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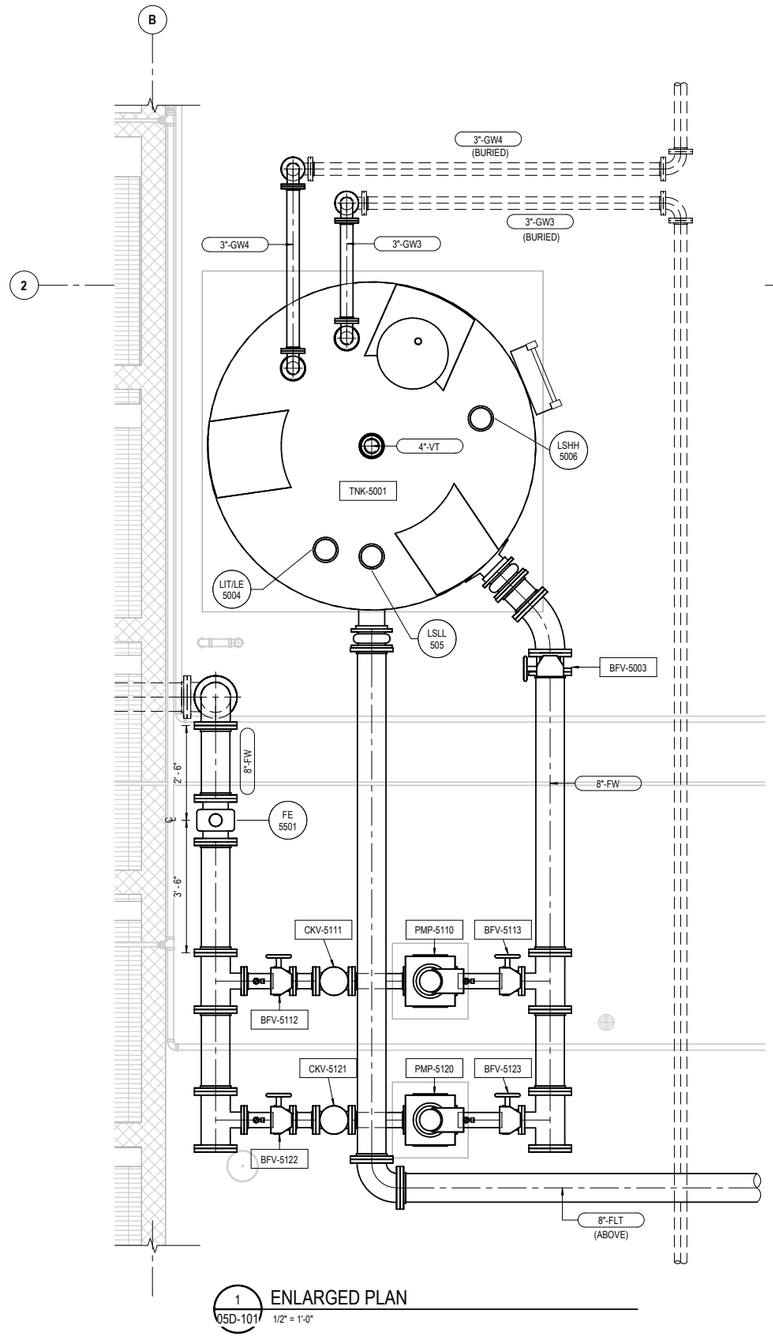

1 ENLARGED PLAN
05D-101 1/2" = 1'-0"

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PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	E. PAZ
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT
PLANT

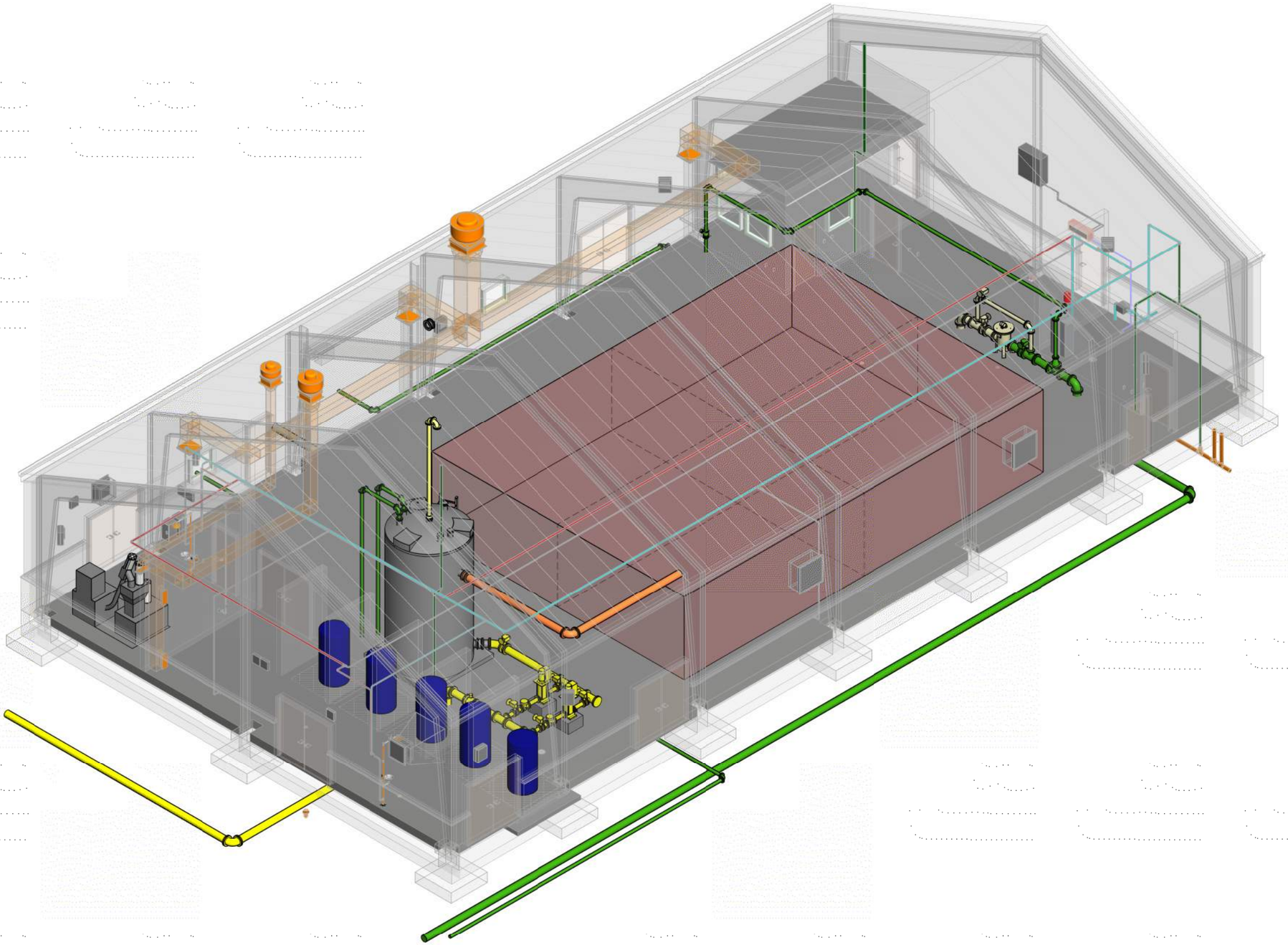
MEMBRANE TREATMENT
PROCESS ENLARGED PLAN

0 1" 2"

FILENAME

SCALE 1/2" = 1'-0"

SHEET
05D-401



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I & C	C. OPPEGARD
DRAWN BY	E. PAZ
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT
PLANT

MEMBRANE TREATMENT
PROCESS 3D REPRESENTATIONS AND PHOTOGRAPHS

0 1" 2"

FILENAME

SCALE

SHEET
05D-701

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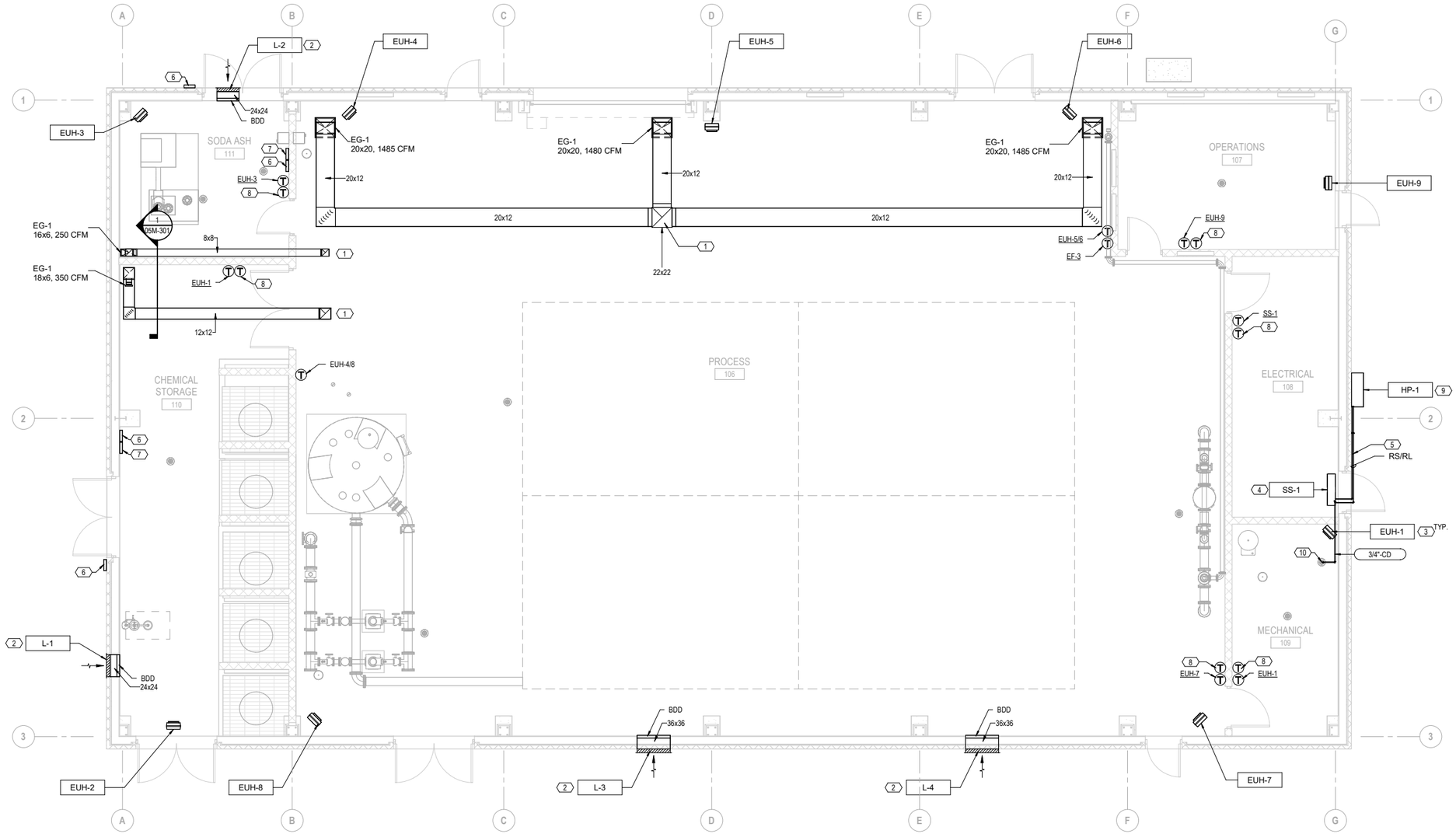

KEYNOTES (##)

1. EA DUCTWORK SAME SIZE AS FAN INLET CONNECTION UP TO ROOF.
2. WALL MOUNTED LOUVRE WITH COUNTERWEIGHT BACKDRAFT DAMPER.
3. ELECTRIC UNIT HEATER REMOTE THERMOSTAT. INSTALL AT 8' AFF. REFER TO 5/05M-501 FOR MORE DETAIL.
4. INSTALL INDOOR WALL MOUNTED UNIT ABOVE 8' AFF.
5. ROUTE REFRIGERANT PIPING FROM SS TO HP. EXACT SIZE/QUANTITY OF PIPES, PIPING ACCESSORIES, AND ROUTING SHALL BE PER MANUFACTURER REQUIREMENTS. SEAL WALL PENETRATIONS AIR/WATER TIGHT. COORDINATE EXACT LOCATION OF SS/HP WITH ELECTRICAL CONTRACTOR.
6. PROVIDE AUDIO/VISUAL ALARM, INTERLOCKED WITH EXHAUST FAN OPERATION. REFER TO 3/05M-701 FOR MORE DETAIL. MOUNT 10' ABOVE FINSIH FLOOR.
7. EMERGENCY ALARM CONTROL PANEL AND PUSH BUTTON FOR EXHAUST FAN SERVING THE AREA. REFER TO 3/05M-701 FOR MORE DETAIL.
8. TEMPERATURE SENSOR. REFER TO 1/05M-701 FOR TEMPERATURE MONITORING REQUIREMENTS.
9. OUTDOOR HEAT PUMP UNIT MOUNTED ON WALL, 9' AFF.
10. ROUTE CONDENSATE DRAIN SAME SIZE AS OUTLET TO NEAREST FLOOR DRAIN AS SHOWN. TERMINATE WITH DOWNTURNED ELBOW OVER FLOOR DRAIN WITH AIR GAP.

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MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Y. AL MILAIFY
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT
PLANT

MEMBRANE TREATMENT BUILDING
MECHANICAL HVAC PLAN

0 1" 2"

FILENAME 10348601_05MP - MEMBRANE TREATMENT.rvt

SCALE 3/16" = 1'-0"

SHEET 05M-101

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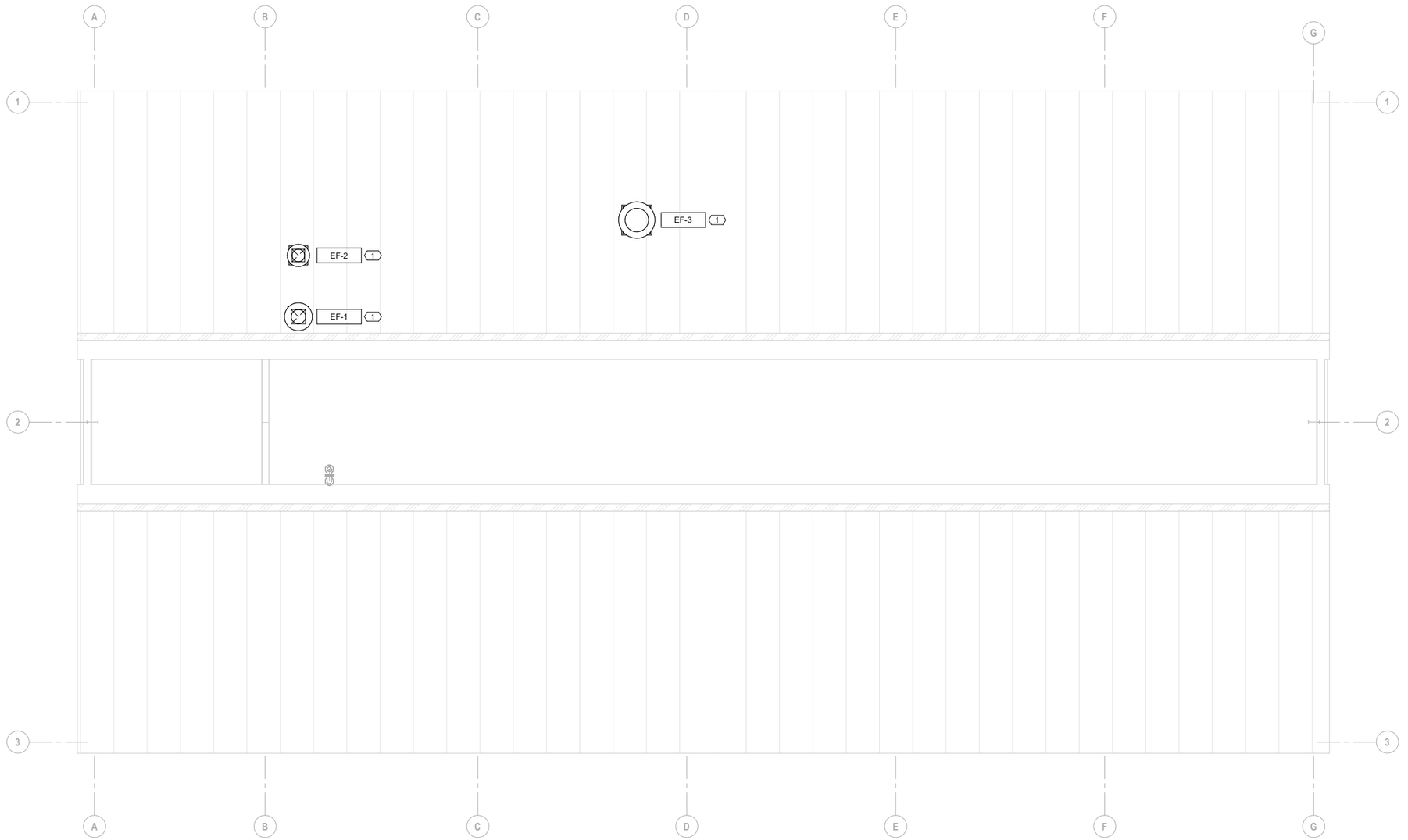
KEYNOTES (##)

1 EXHAUST FAN ON ROOF, REFER TO DETAIL 3/90M-501.



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WATER TREATMENT
PLANT

MEMBRANE TREATMENT BUILDING
MECHANICAL HVAC ROOF PLAN

0 1" 2"

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SCALE 3/16" = 1'-0"

SHEET 05M-102

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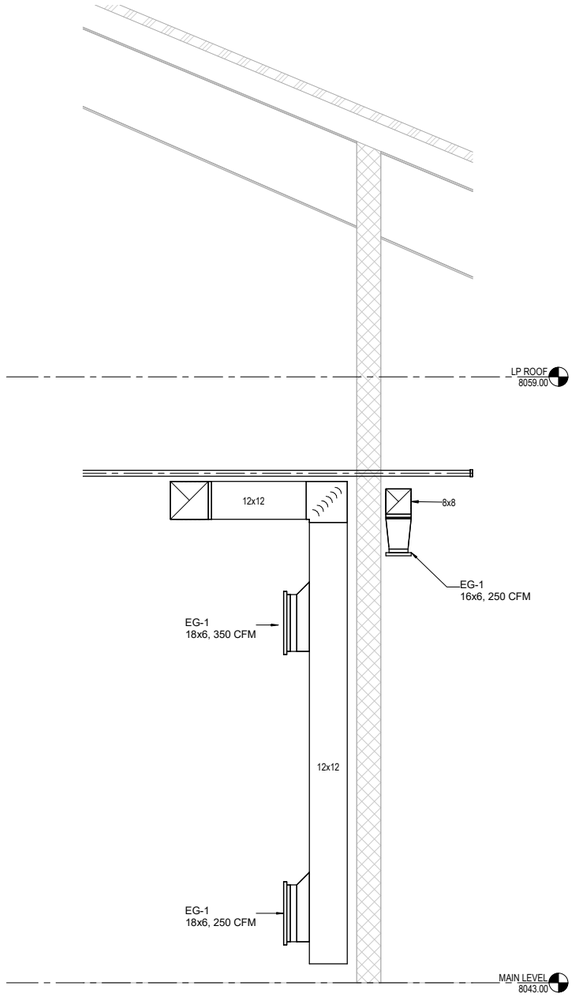

1 05M-101 DUCT SECTION
1/2" = 1'-0"

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TOWN OF MINTURN

WATER TREATMENT
PLANT

MEMBRANE TREATMENT BUILDING
MECHANICAL SECTIONS

0 1" 2"

FILENAME 10348601_05MP - MEMBRANE TREATMENT.rvt

SCALE 1/2" = 1'-0"

SHEET 05M-301

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SITE CRITERIA	
LOCATION	MINTURN, CO, USA
ASHRAE CLIMATE ZONE	6B
ELEVATION	8,043 FT
LATITUDE	39.586 N
LONGITUDE	106.430 W
WEATHER STATION DATAT	
WEATHER DATA LOCATION	LEADVILLE LAKE COUNTY AP, CO, USA
ASHRAE CLIMATE ZONE	6B
ELEVATION	6,497 FT
LATITUDE	39.650 N
LONGITUDE	106.917 W
OUTDOOR DESIGN CONDITIONS	
COOLING (0.4% DB/MCWB)*	89.9 F / 56.9 F
HEATING (99.6% DB)*	- 4.3 F
CONDENSING UNIT DRY BULB	96.9 F

* PER ASHRAE 2021 FUNDAMENTALS.

INDOOR DESIGN CONDITIONS

ROOM TYPE	SUMMER			WINTER		
	MAX. TEMP.	SET POINT	MAX. %RH	MIN. TEMP.	SET POINT	MIN. %RH
CONTROL ROOM	100 °F	N/A	N/A	50	55	N/A
ELECTRICAL ROOM	100 °F	80	N/A	55	60	N/A
MECHANICAL ROOM	100 °F	N/A	N/A	50	55	N/A
CHEMICAL ROOM	100 °F	N/A	N/A	50	55	N/A
PROCESS ROOM	100 °F	85	N/A	55	60	N/A

SPLIT-SYSTEM SCHEDULE

SYMBOL (INDOOR UNIT/OUTDOOR UNIT)	SS-1/HP-1
SERVICE	ELECTRICAL ROOM
TOTAL COOLING CAPACITY (MBH) AT AMBIENT 95 DB/75 WB AND INDOOR 80 DB/67 WB	34.4
SENSIBLE COOLING CAPACITY (MBH) AT AMBIENT 95 DB/75 WB AND INDOOR 80 DB/67 WB	22.1
TOTAL HEATING CAPACITY (MBH) AT AMBIENT 47 DB/43 WB AND INDOOR 70 DB/60 WB	36.0
REFRIGERANT	R-410A
INDOOR UNIT	
TYPE	WALL MOUNTED
COOLING EAT (DB/WB)	80/67
HEATING EAT (DB)	70
CFM (HIGH SETTING)	915
WEIGHT (LBS.)	38
OUTDOOR UNIT	
VOLTAGE/PHASE	208-230/1
MCA/MOCP (NOTE 7)	19.8/20
WEIGHT (LBS.)	133
SEER	15.9
EER	9.11
CONTROL TYPE	NOTE 6
BASIS OF DESIGN MANUFACTURER	DAIKIN
BASIS OF DESIGN MODEL INDOOR UNIT/OUTDOOR UNIT	FTX/RX
NOTES	1-5

NOTES:
1. DISCONNECT AND CONTROLLER/STARTER PROVIDED BY THE MANUFACTURER.
2. EXACT QUANTITY, SIZE, AND ROUTING OF REFRIGERANT LINES SHALL BE VALVING SHALL BE PROVIDED PER UNIT MANUFACTURER.
3. LOCATE HP ON CONCRETE PAD.
4. PROVIDE WITH WASHABLE FILTER.
5. PROVIDE HP WITH HAIL GUARDS.
6. PROVIDE WITH SEVEN DAYS A WEEK, 24/7 CONTROLLER THERMOSTAT WITH AUTOMATIC CHANGEOVER BETWEEN HEATING/COOLING.
7. SHALL BE SINGLE POINT ELECTRICAL CONNECTION. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT.

ELECTRIC UNIT HEATER SCHEDULE

SYMBOL	SERVICE	AIR FLOW (CFM)	HEATING CAPACITY (kW)	ELECTRICAL				CONTROL TYPE (NOTE 1)	BASIS OF DESIGN		NOTES
				AMPS	VOLTAGE/PHASE	DISCONNECT BY	CONTROLLER BY		MANUFACTURER	MODEL	
EUH-1	MECHANICAL ROOM	700	5	6.4	480/3	MFR	MFR	EUH-A	QMARK	QWD	2,3,4
EUH-2	CHEMICAL STORAGE	700	5	6.4	480/3	MFR	MFR	EUH-A	QMARK	QWD	2,3,4
EUH-3	SODA ASH	700	5	6.4	480/3	MFR	MFR	EUH-A	QMARK	QWD	2,3,4
EUH-4	PROCESS ROOM	700	5	6.4	480/3	MFR	MFR	EUH-A	QMARK	QWD	2,3,4
EUH-5	PROCESS ROOM	700	5	6.4	480/3	MFR	MFR	EUH-A	QMARK	QWD	2,3,4
EUH-6	PROCESS ROOM	700	5	6.4	480/3	MFR	MFR	EUH-A	QMARK	QWD	2,3,4
EUH-7	PROCESS ROOM	700	5	6.4	480/3	MFR	MFR	EUH-A	QMARK	QWD	2,3,4
EUH-8	PROCESS ROOM	700	5	6.4	480/3	MFR	MFR	EUH-A	QMARK	QWD	2,3,4
EUH-9	CONTROL ROOM	700	3	4	480/3	MFR	MFR	EUH-A	QMARK	QWD	2,3,4

NOTES:
1. PROVIDE WALL OR CEILING BRACKET.
2. PROVIDE WITH UNIT MOUNTED THERMOSTAT.
3. SCHEDULED CAPACITIES REFLECT A PROJECT ELEVATION OF 8,043 FT.

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I & C	C. OPPEGARD
DRAWN BY	Y. AL MILAIFY
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT
PLANT

MEMBRANE TREATMENT BUILDING
MECHANICAL SCHEDULES I

0 1" 2"

FILENAME 10348601_05MP - MEMBRANE TREATMENT.rvt

SCALE

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AIR FLOW VENTILATION SCHEDULE

ROOM NO.	ROOM NAME	AREA (SQ.FT.)	AVG. HT. (FT)	VOLUME (CU.FT)	CFM/SQ.FT	CFM REQUIRED	CFM SCHEDULED	NOTES
110	CHEMICAL STORAGE	700	11.0	7700	1.0	700	700	1
111	SODA ASH	250	11.0	2750	1.0	250	250	1
106	PROCESS ROOM	4450	14.0	62300	1.0	4450	4450	2

NOTES:
1. CALCULATION BASED ON IBC-2018 REQUIREMENT FOR CLASS H4 OCCUPANCY.
2. VENTILATION PROVIDED FOR THERMAL COMFORT.

LOUVER SCHEDULE

SYMBOL	SERVICE	AIRFLOW (CFM)	SIZE WxH (IN)	MOUNTING HEIGHT (FT)	MAX VELOCITY (FPM)	MIN. FREE AREA (SQ.FT.)	MAX. PRESSURE LOSS (IN.W.G.)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
L-1	CHEMICAL STORAGE	700	24x24	8	448	1.89	0.03	RUSKIN	ELF6375DX	1,2,3,4
L-2	SODA ASH	250	24x24	8	448	1.89	0.03	RUSKIN	ELF6375DX	1,2,3,4
L-3	PROCESS ROOM	2,225	36x36	8	462	4.8	0.03	RUSKIN	ELF6375DX	1,2,3,4
L-4	PROCESS ROOM	2,225	36x36	8	462	4.8	0.03	RUSKIN	ELF6375DX	1,2,3,4

NOTES:
1. EXACT COLOR TO BE DETERMINED BY ARCHITECT.
2. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
3. PROVIDE WITH ALUMINUM INSECT SCREEN.
4. PROVIDE WITH PVDF COATING (KYNAR 500, HYLAR 5000 OR DURANAR).

FAN SCHEDULE

SYMBOL	SERVICE	TYPE	AIRFLOW (CFM)	EXT. STATIC PRESSURE (IN. WC.)	IMPELLER SIZE (IN.)	RPM (NOTE 1)	DRIVE	SONES	ELECTRICAL					CONTROL TYPE (NOTE 3)	BASIS OF DESIGN		WEIGHT (LBS)	NOTES
									BHP (NOTE 2)	MHP (NOTE 2)	VOLTAGE/PHASE	DISCONNECT BY	CONTROLLER/STARTER BY/TYPE		MODEL	MANUFACTURER		
EF-1	CHEMICAL STORAGE	ROOF MOUNTED CENTRIFUGAL UPBLAST	700	0.75	13.5	1,820	DIRECT	20	0.385	0.4	208/1	MFR	MFR/NOTE 6	EF-B	ACRU-D VF	COOK	44	4,5
EF-2	SODA ASH	ROOF MOUNTED CENTRIFUGAL UPBLAST	250	0.75	10	2,032	DIRECT	14	0.155	0.2	208/1	MFR	MFR/NOTE 6	EF-B	ACRU-D VF	COOK	34	4,5
EF-3	PROCESS ROOM	ROOF MOUNTED CENTRIFUGAL UPBLAST	4,450	0.75	18	1,387	DIRECT	21	1.24	1.5	208/3	MFR	MFR/NOTE 6	EF-B	ACRU-D VF	COOK	108	4,5

NOTES:
1. FAN RPM SHALL NOT EXCEED 110% OF SCHEDULED VALUE.
2. NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR NAME PLATE RATING.
3. REFER TO 03M702 FOR DESCRIPTION OF CONTROL TYPE.
4. PROVIDE WITH MANUFACTURER PROVIDED MOTORIZED DAMPER. MOTORIZED DAMPER SHALL HAVE A MAXIMUM LEAKAGE RATE OF 3 CFM/ SQ. FT. WITH A DIFFERENTIAL PRESSURE OF 1 INCH WATER GAGE ACROSS THE DAMPER.
5. PROVIDE WITH 30 IN. TALL INSULATED CURB.

GRILLES, REGISTERS, AND DIFFUSERS SCHEDULE

SYMBOL	MATERIAL	TYPE	MARGIN (NOTE 1)	INLET SIZE (INCHES)	FACE SIZE (INCHES)	FINISH	MANUFACTURER	MODEL	NOTES
EG-1	ALUMINUM	DUCT MOUNTED	SEE PLANS	SEE PLANS	INLET +2"	MILL	TITUS	350RL	2

NOTES:
1. CONTRACTOR SHALL DETERMINE PROPER MARGIN STYLE TO MATCH CEILING CONSTRUCTION.
2. PROVIDE WITH OPPOSED BLADE DAMPER.

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PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Y. AL MILAIFY
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR
CONSTRUCTION OR
RECORDING

TOWN OF MINTURN

WATER TREATMENT
PLANT

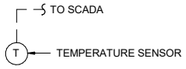
MEMBRANE TREATMENT BUILDING
MECHANICAL SCHEDULES II

0 1" 2"

FILENAME 10348601_05MP - MEMBRANE TREATMENT.rvt

SCALE

SHEET 05M-602

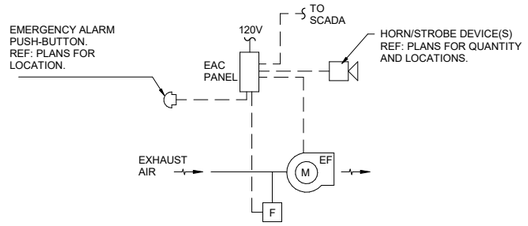


SEQUENCE OF OPERATION:
PROVIDE ADDITIONAL TEMPERATURE SENSOR IN SERVED ZONE TO MONITOR TEMPERATURE FROM SCADA CONTROL.

ELECTRICAL ROOM: SEND AN ALARM IF THE SPACE TEMPERATURE EXCEEDS 85°F (ADJ.).
FOR ALL OTHER SPACES: SEND AN ALARM IF THE SPACE TEMPERATURE DROPS BELOW 40°F (ADJ.)

SCADA SYSTEM CONNECTIONS:
- TO SCADA - ROOM TEMPERATURE (°F)

1 TEMPERATURE MONITORING
NTS



SYSTEM DESCRIPTION:
SYSTEM CONSISTS OF A WALL MOUNTED EXHAUST FAN SERVING ROOM WITH ONE OR MORE HORN/STROBE ALARM DEVICES TO INDICATE INADEQUATE FLOW.

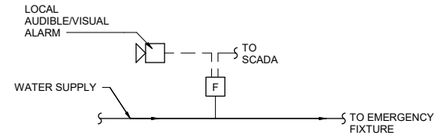
SEQUENCE OF OPERATION:
THE EXHAUST FAN SHALL OPERATE CONTINUOUSLY AT A CONSTANT SPEED 24/7.

IF THE EMERGENCY ALARM PUSH-BUTTON IS ACTIVATED, THE EXHAUST FAN SHALL BE SHUT DOWN.

IF THE FLOW SWITCH IS NOT ACTIVATED FOR AT LEAST 0.5 SECONDS (ADJ.), INDICATING INADEQUATE FLOW, OR IF THE EMERGENCY ALARM IS ACTIVATED MANUALLY, AN ALARM SHALL BE GENERATED AT THE SCADA SYSTEM OPERATOR WORKSTATION, AND THE ASSOCIATED HORN/STROBE DEVICES SHALL BE ACTIVATED. ALARM MUST BE RESET MANUALLY.

SCADA SYSTEM CONNECTIONS:
- TO SCADA - VENTILATION ALARM ACTIVATED

2 EXHAUST FAN CONTROL SEQUENCE - EF-A
NTS



SYSTEM DESCRIPTION:
EMERGENCY FIXTURE FLOW SWITCH ALARM.

SEQUENCE OF OPERATION:
WHEN THE ASSOCIATED EMERGENCY SHOWER, EYEWASH, OR SHOWER/EYEWASH COMBINATION UNIT IS ACTIVATED, A LOCAL AUDIBLE AND VISUAL ALARM SHALL BE ACTIVATED AND THE ALARM SHALL BE SENT TO THE SCADA SYSTEM. THE SYSTEM SHALL BE EQUIPPED WITH A BUTTON TO SILENCE THE LOCAL ALARM.

SCADA SYSTEM CONNECTIONS:
- TO SCADA - EMERGENCY FIXTURE USAGE ALARM

3 EMERGENCY FIXTURE CONTROL SEQUENCE
NTS

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TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING
MECHANICAL CONTROLS

0 1" 2"

FILENAME: 10348601_05MP - MEMBRANE TREATMENT.rvt
SCALE: NTS

SHEET
05M-701

Autodesk Docs://10348601_Minturn_WTP_Design_2022 ACC/10348601_05MP - MEMBRANE TREATMENT.rvt
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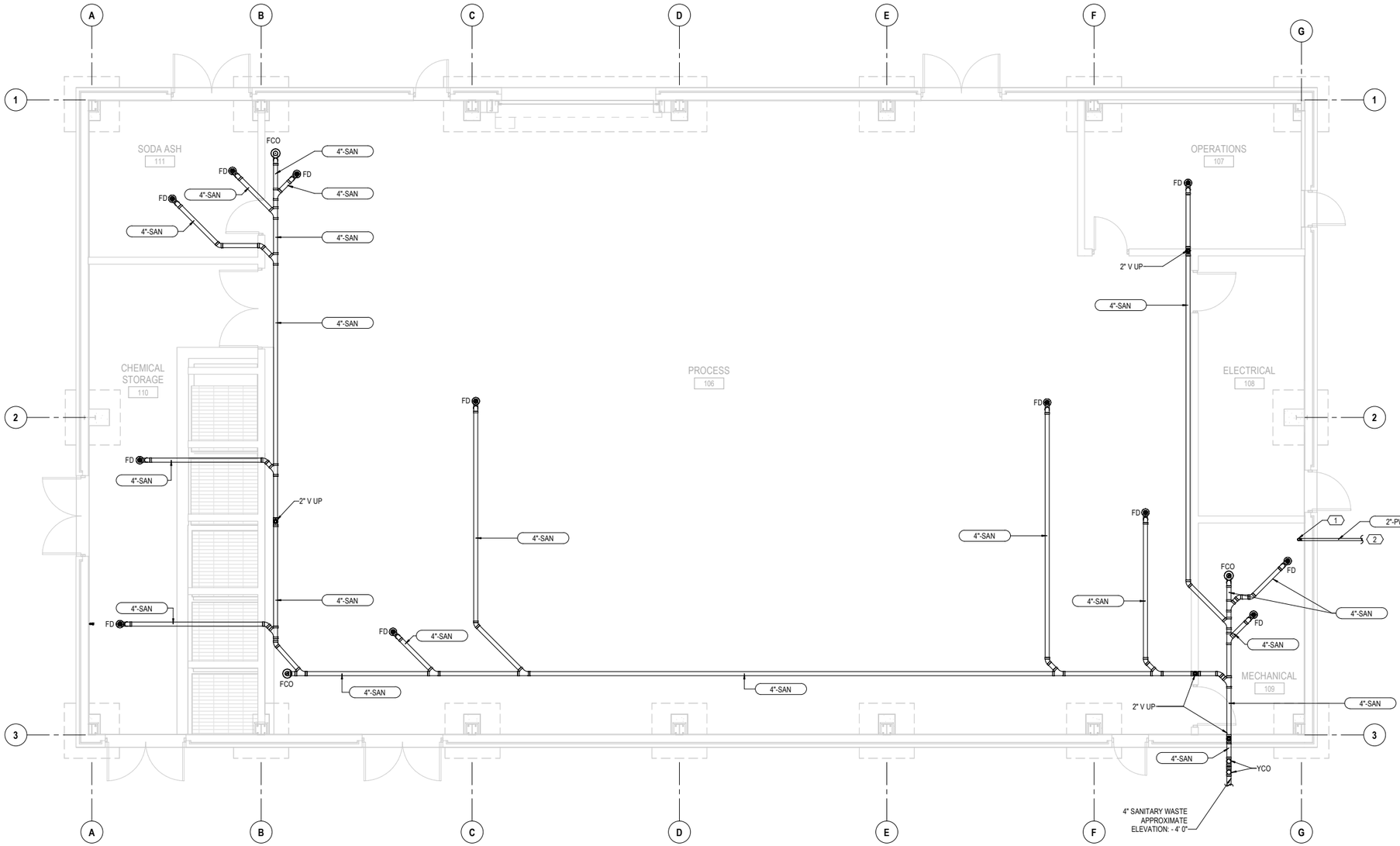
KEYNOTES (##)

1 2" CW UP TO FLOOR ABOVE.

2 REFER TO CIVIL SITE PLAN FOR CONTINUATION.



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TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING UNDERFLOOR PLUMBING PLAN

0 1" 2"

FILENAME 10348601_05MP - MEMBRANE TREATMENT.rvt

SCALE 3/16" = 1'-0"

SHEET **05P-101**

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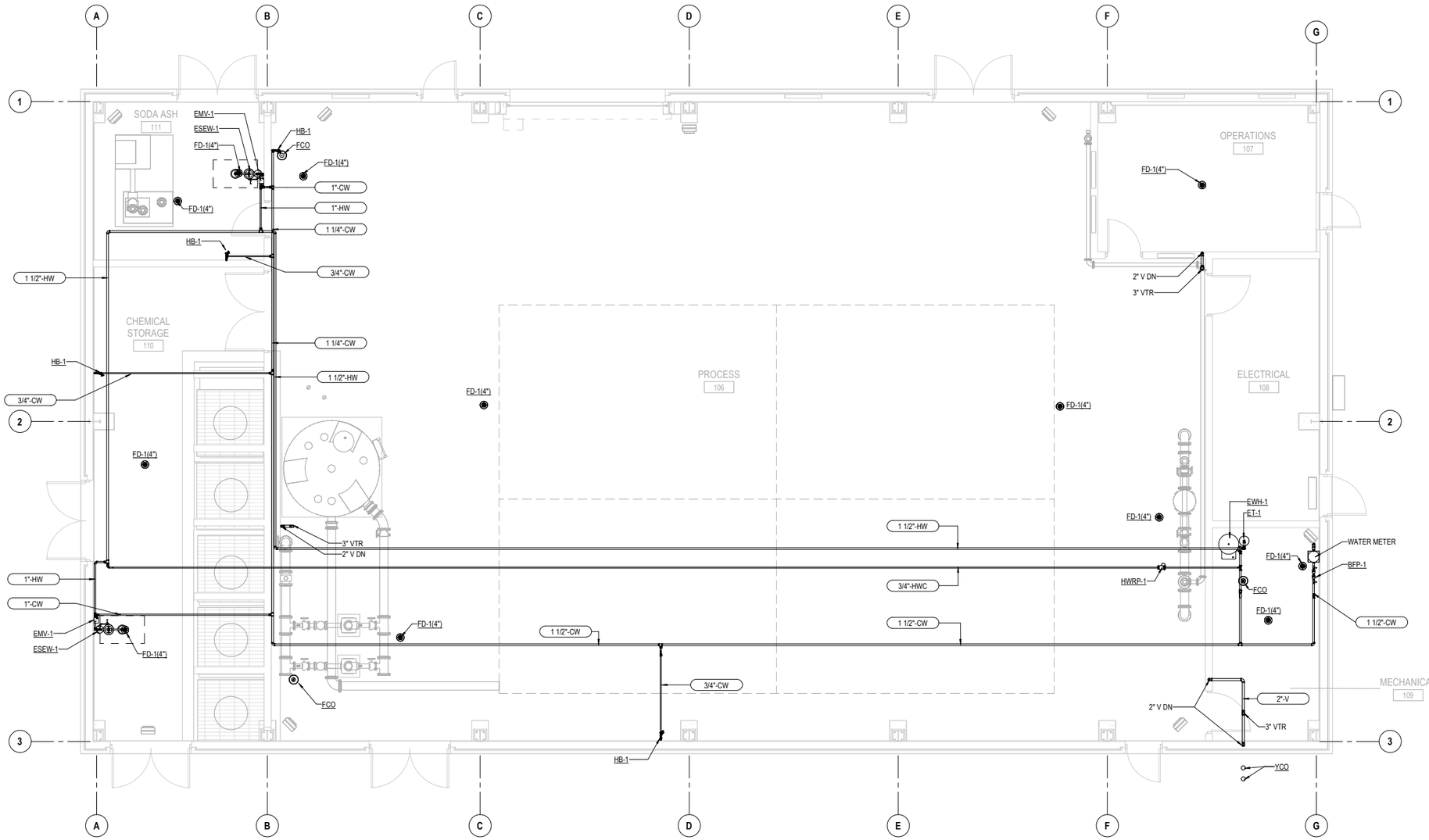

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TOWN OF MINTURN

WATER TREATMENT
PLANT

MEMBRANE TREATMENT BUILDING FIRST FLOOR PLUMBING PLAN

0 1" 2"

FILENAME 10348601_05MP - MEMBRANE TREATMENT.rvt

SCALE 3/16" = 1'-0"

SHEET 05P-102

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PLUMBING MATERIAL LIST

CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE. THESE ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY DESIRED. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESCRIPTION OF MATERIAL ON THESE PLANS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE MATERIAL DESCRIPTION TAKES PRECEDENCE OVER THE CATALOG. THE FIRST MANUFACTURER LISTED IS THE ACCEPTABLE. CONTRACTOR SHALL VERIFY THAT FIXTURES SUPPLIED ARE APPROVED WITH ALL APPLICABLE STATE, LOCAL, GOVERNING AUTHORITIES AND THE 2021 INTERNATIONAL PLUMBING CODE.

TAG NAME	DESCRIPTION	MANUFACTURER AND MODEL
BFP-1	REDUCED PRESSURE BACK FLOW PREVENTER - LEAD FREE BRONZE CONSTRUCTION, SIZE SAME AS PIPE, NON-CORROSIVE INTERNAL PARTS, STAINLESS STEEL SPRINGS, DIFFERENTIAL PRESSURE RELIEF VALVE BETWEEN SPRING-LOADED CHECK VALVES, BALL STYLE SHUT-OFF VALVES ON INLET AND OUTLET OF UNIT, AIR GAP DRAIN FITTING, TEST PORTS WITH SHUT-OFF VALVES, RATED FOR 175 PSI AT 33°F TO 140°F, 15 PSI (MAXIMUM) PRESSURE DROP AT 10 FPS, FACTORY TESTED, ALL PARTS TO BE SERVICEABLE WITHOUT REMOVING UNIT FROM LINE, APPROVED BY USC FCCC & HR, AWWA C511-92, ASSE 1013, IAPMO AND SBCCI LISTED. MOUNT AT 60" (MAXIMUM) ABOVE FINISHED FLOOR. ROUTE DRAIN PIPE FROM AIR GAP FITTING TO FLOOR DRAIN. PROVIDE BRONZE OR EPOXY COATED STRAINER UPSTREAM OF EACH UNIT AND ADDITIONAL VALVE UPSTREAM OF EACH STRAINER. FLOW PRESSURE DROP CURVES SHALL BE SUBMITTED.	WATTS (LF009), WILKINS, FEBCO, OR APPROVED EQUAL.
EMV-1	EMERGENCY MIXING VALVE - THERMOSTATIC MIXING VALVE PIPED ASSEMBLY FOR COMBINATION SHOWER/EYEWASH FIXTURE, SS CABINET, CHROME PLATED BRONZE BODY CONSTRUCTION, COLD WATER BYPASS, OUTLET THERMOMETER, INTEGRAL CHECKSTOPS, INLET AND OUTLET ISOLATION VALVES, CABINET MOUNTING BRACKET. DUAL THERMOSTATIC MIXING AND PRESSURE REGULATING VALVES TO DELIVER MINIMUM 25 GPM OF TEMPERED WATER (65-90°F) WITH 10 PSI PRESSURE DIFFERENTIAL. UNIT SHALL MEET ANSI Z358.1. SET TO 80°F. CABINET SHALL BE SURFACE MOUNTED 18 GAUGE STAINLESS STEEL WITH 16 GAUGE LOCKING DOOR TO ENCLOSE MIXING VALVE, ISOLATION VALVES, AND THERMOMETER.	BRADLEY (S19-2150) OR APPROVED EQUAL.
ESEW-1	EMERGENCY SHOWER AND EYE/FACEWASH - COMBINATION UNIT, FREESTANDING, FLOOR MOUNTED WITH BACK INLET, 316 SS SHOWER HEAD, PIPING, FITTINGS, STAY-OPEN BALL VALVE, AND PULL HANDLE. MINIMUM FLOW RATE OF DRENCH SHOWER SHALL BE 20 GPM AT 30PSI ACTIVATION TIME SHALL BE 1 SECOND OR LESS. PROVIDE WITH MV-1. 316 SS EYE/FACE WASH SPRAY HEADS, BOWL, AND COVER. MINIMUM FLOW RATE OF EYE/FACE WASH SHALL BE 3.0 GPM AT 30PSI ACTIVATION TIME SHALL BE 1 SECOND OR LESS. UNIVERSAL IDENTIFICATION SIGN, ANSI Z358.1-2004 COMPLIANT. EMERGENCY SIGNALING SYSTEM - AUDIBLE AND VISUAL ALARM SYSTEM WITH STAINLESS STEEL FLOW SWITCH FOR USE WITH EYE/FACE WASH UNITS. SYSTEM SHALL FEATURE AMBER FLASHING SIGNAL LIGHT, AUDIBLE ALARM WITH REMOTE SILENCE SWITCH, AND NEMA 4X ENCLOSURE. PROVIDE DRY CONTACTS FOR CONNECTION TO SCADA SYSTEM. MOUNT ALARM BEACON ABOVE EMERGENCY FIXTURE. COORDINATE FINAL LOCATION OF SILENCE SWITCH WITH USER. REFER TO 14M701 FOR EMERGENCY FIXTURE CONTROL SEQUENCE FOR ADDITIONAL INFORMATION. ELECTRICAL REQUIREMENTS: 115V-1 PHASE, MAX 70 WATTS.	ESEW - HAWS (8356WCC), BRADLEY, ACORN SAFETY, GUARDIAN, ENCON, OR APPROVED EQUAL. ALARM - BRADLEY (S19-314DCFW), HAWS, OR APPROVED EQUAL.
FCO	FLOOR CLEANOUT - ROUND, DURA-COATED CAST IRON, SIZE AS LISTED ON DRAWINGS, DOUBLE FLANGED HOUSING, HEAVY DUTY SECURED SCORIATED DURA-COATED CAST IRON COVER, LIFTING DEVICE, BRONZE CLEANOUT PLUG WITH GAS/WATER-TIGHT SEAL.	ZURN (Z1474), SMITH, WADE, JOSAM, WATTS, OR APPROVED EQUAL.
FD-1	CAST IRON TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEEP HOLES, REVERSIBLE CLAMPING COLLAR, NICKEL BRONZE ADJUSTABLE STRAINER. DIMENSIONS OF TOP STRAINER: 2" OUTLET WITH A 5" STRAINER, 3" OR 4" OUTLET WITH 8" STRAINER, 6" OUTLET WITH A 10" STRAINER. PROVIDE WITH TG-1. INSTALL TG-1 IN FD.	ZURN (Z1727), SMITH, WADE, JOSAM, WATTS, MIFAB, OR APPROVED EQUAL.
HB-1	HOSE BIBB - INDOOR WALL HYDRANT, BRASS CONSTRUCTION, CHROME FINISH, VACUUM BREAKER, 3/"4" MALE HOSE THREAD, METAL WHEEL HANDLE. INSTALL IN ACCESSIBLE LOCATION, 18" AFF.	WOODFORD (24), CHICAGO FAUCET, ACORN, PRIER, T&S BRASS, MIFAB, OR APPROVED EQUAL.
TG-1	TRAP GUARD- SMOOTH, SOFT, FLEXIBLE, ELASTOMERIC PVC MATERIAL MOLDED INTO SHAPE OF DUCK'S BILL, OPEN ON TOP WITH CURL CLOSURE AT BOTTOM. ALLOWS WASTEWATER TO OPEN AND ADEQUATELY DISCHARGE FLOOR DRAIN THROUGH ITS INTERIOR, CLOSES AND RETURNS TO ORIGINAL MOLDED SHAPE AFTER WASTEWATER DISCHARGE IS COMPLETE TO ELIMINATE WASTEWATER SMELLS FROM ENTERING THE SPACE. COMPLIANCE WITH ASME A112.6.3, NSF/ANSI 14, AND CSA B79. INSTALL IN FD-1.	ZURN (Z1727), SMITH, WADE, JOSAM, WATTS, MIFAB, OR APPROVED EQUAL.
WHA-1	WATER HAMMER ARRESTOR - HERMETICALLY SEALED BELLOWS TYPE, PRE-CHARGED, ALL STAINLESS STEEL CONSTRUCTION, ASSE 1010 APPROVED, PDI CERTIFIED. WHA-1 RATED FOR 1-11 FIXTURE UNITS.	ZURN (Z1700) OR APPROVED EQUAL.
YCO	YARD CLEANOUT - ROUND, DURA-COATED CAST IRON, SIZE AS LISTED ON DRAWINGS, DOUBLE FLANGED HOUSING, HEAVY DUTY SECURED SCORIATED DURA-COATED CAST IRON COVER, LIFTING DEVICE, BRONZE CLEANOUT PLUG WITH GAS/WATER-TIGHT SEAL.	ZURN (Z1474), SMITH, WADE, JOSAM, WATTS, OR APPROVED EQUAL.

ELECTRIC HOT WATER HEATER SCHEDULE

SYMBOL	SERVICE	MIN. WORKING PRESSURE (PSI)	STORAGE CAPACITY (GAL)	RECOVERY AT 100 DEGREE RISE (GPH)	ELECTRICAL (NOTE 3)					DRY WEIGHT (LBS.)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
					NUMBER OF SIMULANEOUS ELEMENTS	KW PER ELEMENT	VOLT-PHASE	DISCONNECT BY	CONTROLLER/STARTER BY				
EWH-1	EMERGENCY EYEWASH/SHOWER	150	80	111	1	27.0	480/3	EC	MFR	279	A.O. SMITH	DRE-80-27	1,2

NOTES:
1. PROVIDE WITH HANDHOLE CLEANOUT.
2. SET WATER TEMPERATURE AT 140°F.
3. REFER TO THE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

EXPANSION TANK SCHEDULE

SYMBOL	SERVICE	MIN. WORKING PRESSURE (PSI)	MIN. WORKING TEMP. (DEG. F.)	MIN. ACCEPTANCE VOLUME (GAL)	TANK VOLUME (GAL)	PRE-CHARGE PRESSURE (PSIG)	WEIGHT (LBS)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
ET-1	EWH-1/EWH-2	150	200	3	6	NOTE 2	26	AMTROL	ST-12C-DD	1

NOTES:
1. WELDED BLACK STEEL CONSTRUCTION, ASME STAMPED, GUARANTEED AIRTIGHT AND LEAKPROOF, STAINLESS STEEL SYSTEM CONNECTION, HEAVY DUTY BUTYL DIAPHRAGM AND RIGID POLYPROPYLENE LINER MECHANICALLY BONDED TO TANK TO PROVIDE A 100% NON-CORROSIVE WATER RESERVOIR, DIAPHRAGM AND LINER SHALL BE APPROVED FOR USE IN POTABLE WATER SYSTEMS, ALL WETTED SCHRADER AIR VALVE FOR FIELD CHARGING. COMPONENTS OF FDA APPROVED MATERIALS.
2. FACTORY PRE-CHARGED TO 55 PSIG. PLUMBING CONTRACTOR SHALL DETERMINE EXACT INCOMING WATER PRESSURE AND UPDATE PRE-CHARGE PRESSURE TO MATCH IN THE FIELD.

HOT WATER RECIRCULATION PUMP SCHEDULE

SYMBOL	SERVICE	FLOW RATE (GPM)	PUMP FT. HEAD AT DESIGN	RPM	ELECTRICAL (NOTE 3)				WEIGHT (LBS)	CONTROL TYPE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
					MHP	VOLT-PHASE	DISCONNECT BY	CONTROLLER/STARTER BY					
HWRP-1	ESEW-1/ESEW-2	2.0	2	3,300	0.167	115/1	EC	MFR	20	NOTE 2	BELL AND GOSSETT	PL-36	1

NOTES:
1. LEAD FREE BRONZE CONSTRUCTION, PERMANENTLY LUBRICATED SEALED BEARINGS, MECHANICAL SEAL, OIL LUBRICATED, OPEN DRIP-PROOF NON OVERLOADING MOTOR WITH THERMAL OVERLOAD PROTECTION, FLANGED CONNECTIONS, RATED FOR 125 PSIG AT 225°F, UL LISTED. PROVIDE WITH VIBRATION ISOLATION HANGERS PER PUMP MFR.
2. PROVIDE WITH AQUASTAT - LINE VOLTAGE, ADJUSTABLE SETTING OF 90-180°F WITH STRAP-ON REMOTE SENSOR BULB, UL LISTED. PROVIDE WITH TRANSFORMER IF REQUIRED. INSTALL PER MANUFACTURERS INSTRUCTIONS. SET FOR PUMP TO OPERATE WHEN REMOTE SENSOR BULB TEMPERATURE IS AT OR BELOW 130°F (ADJ.) AND RUN UNTIL IT REACHES 135°F (ADJ.). BASIS OF DESIGN MANUFACTURER SAME AS PUMP MANUFACTURER.
3. REFER TO THE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

PLUMBING FIXTURE ROUGH-IN SCHEDULE

FIXTURE DESCRIPTION	DOMESTIC CW (NOTE 1)	DOMESTIC HW (NOTE 1)	TEPID WATER	SANITARY (NOTE 1)	VENT (NOTE 1)
EMERGENCY SHOWER/EYEWASH	1"	1"	1"	-	-
FLOOR DRAIN	-	-	-	NOTE 2	NOTE 2
HOSE BIBB	3/4"	-	-	-	-

NOTES:
1. SIZES SHOWN ARE MINIMUMS. SIZES SHOWN ON THE DRAWING THAT ARE LARGER THAN THE SIZES LISTED IN THE SCHEDULE SHALL DICTATE THE ROUGH-IN SIZE.
2. REFER TO PLANS FOR EXACT SIZE.

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WATER TREATMENT
PLANT

MEMBRANE TREATMENT BUILDING
PLUMBING SCHEDULES

0 1" 2"

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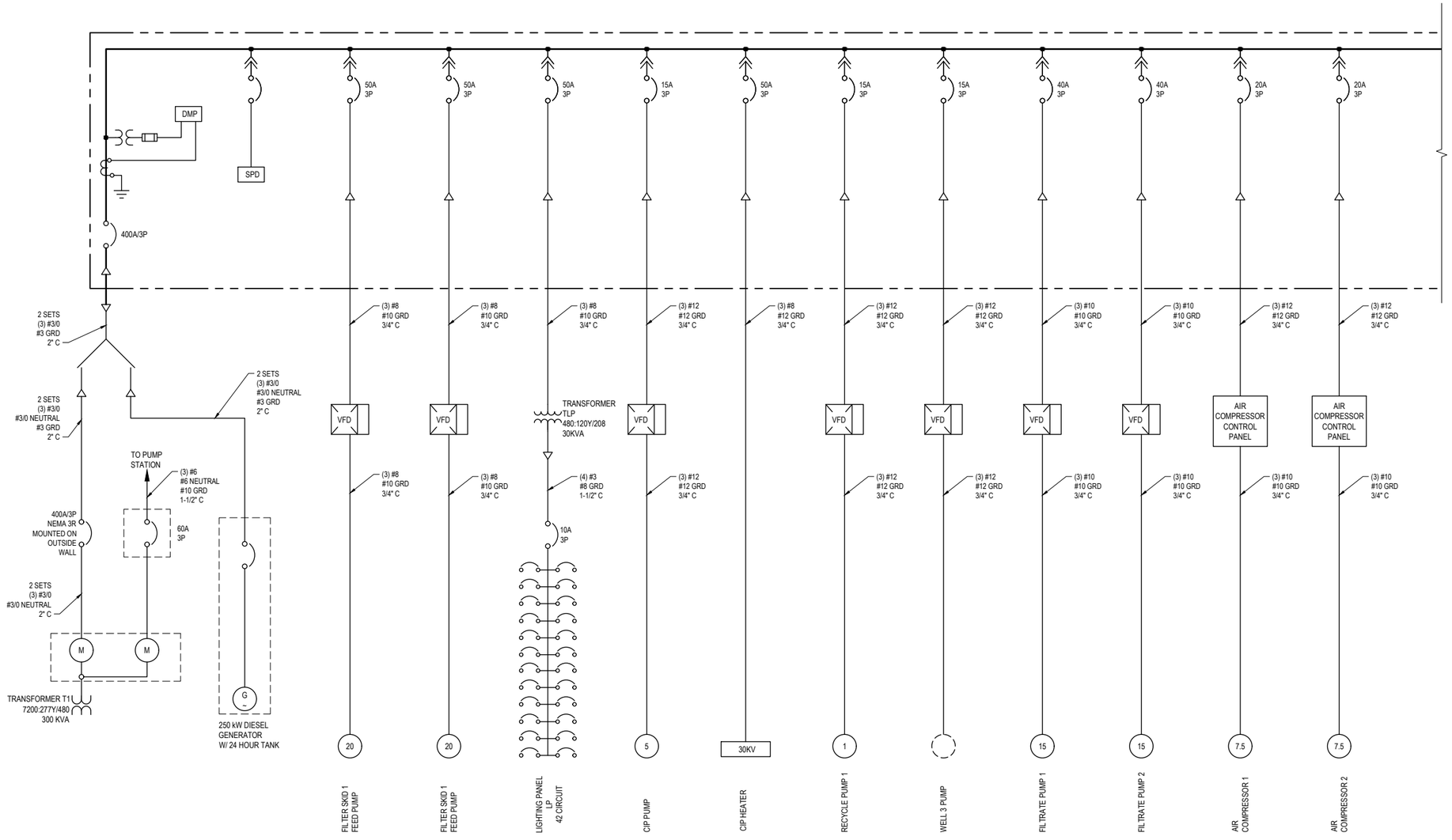
SCALE

SHEET 05P-601



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TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING ONE-LINE DIAGRAM 1

0 1" 2"

FILENAME 05E-601.DWG

SCALE NOT TO SCALLE

SHEET **05E-601**

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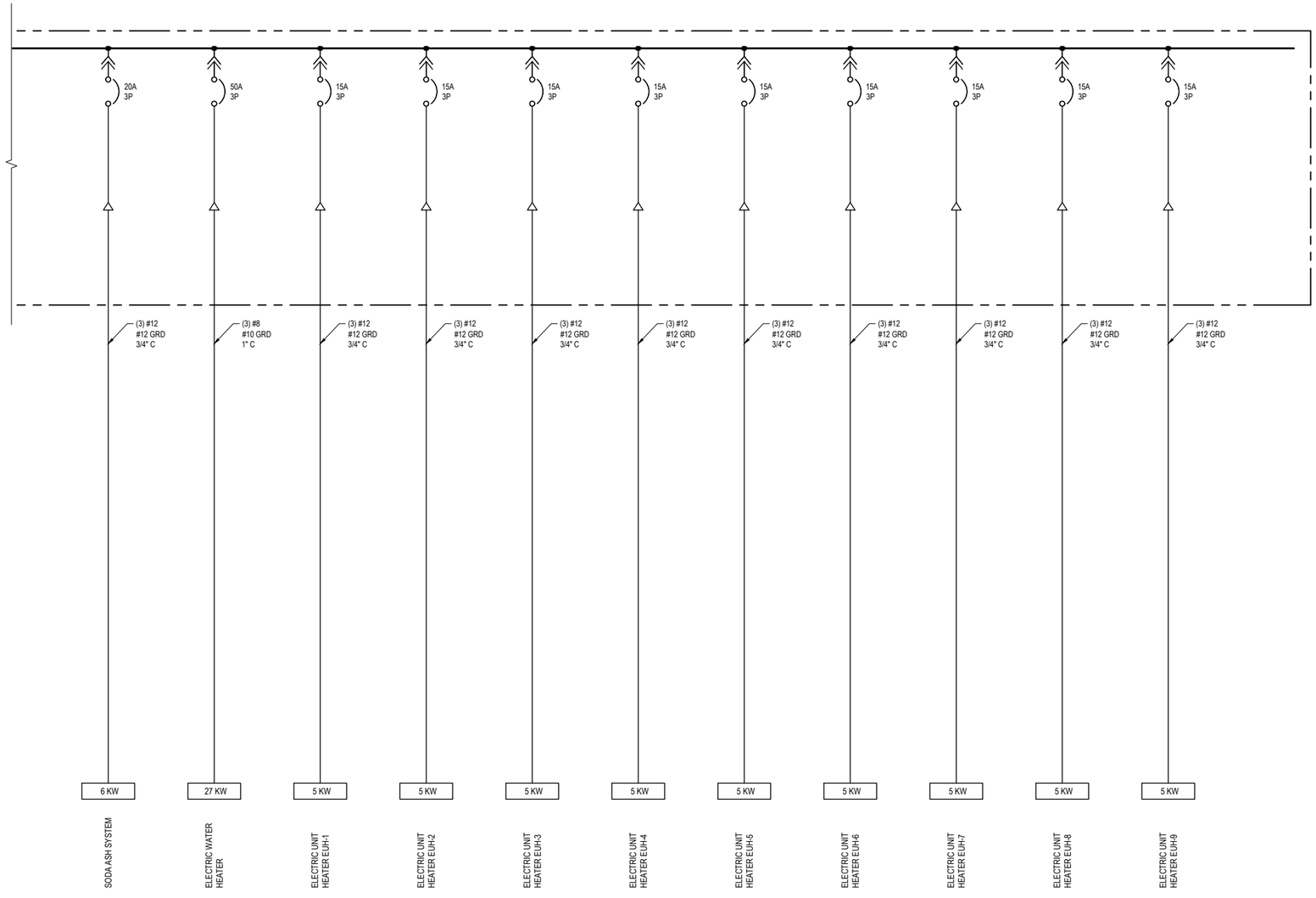

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TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING ONE-LINE DIAGRAM 1

0 1" 2"

FILENAME 05E-602.DWG

SCALE NOT TO SCALLE

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1	2		3		4	
AM / VM	50A/3P FILTER 1 FEED PUMP	50A/3P FILTER 2 FEED PUMP	20A/3P SODA ASH SYSTEM	25A/3P ELECTRIC WATER HEATER	SPACE	SPACE
TVSS	50A/3P LP XFMR	15A/3P CIP PUMP	20A/3P UNIT HEATER UH-1	20A/3P UNIT HEATER UH-2	SPACE	SPACE
400A MAIN BREAKER	50A/3P CIP HEATER	15A/3P WELL 3 PUMP	20A/3P UNIT HEATER UH-3	20A/3P UNIT HEATER UH-4	SPACE	SPACE
	15A/3P WELL 4 PUMP	15A/3P OTHER PUMP	20A/3P UNIT HEATER UH-5	20A/3P UNIT HEATER UH-6	SPACE	SPACE
	xxA/3P EFFLUENT PUMP 1	xxA/3P EFFLUENT PUMP 1	20A/3P UNIT HEATER UH-7	20A/3P UNIT HEATER UH-8	SPACE	SPACE
	20A/3P AIR CMPRSR 1	20A/3P AIR CMPRSR 2	40A/3P AC COND'R	20A/3P SPARE	SPACE	SPACE

20	20	20	20

80

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MEMBRANE TREATMENT BUILDING MCC ELEVATION

0 1" 2"

FILENAME 05E-603.DWG

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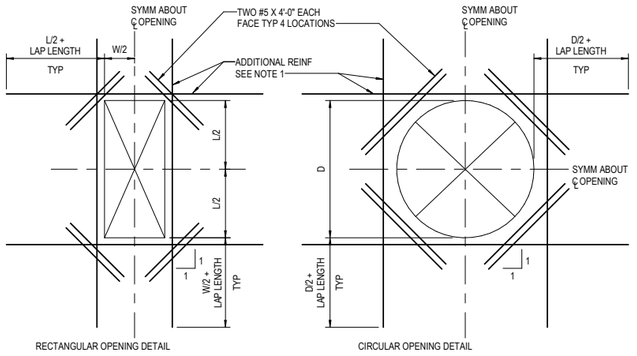
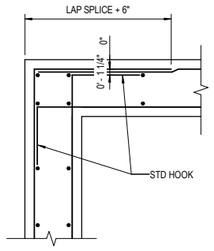
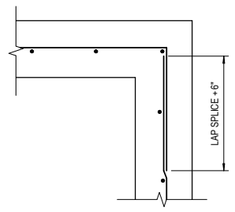


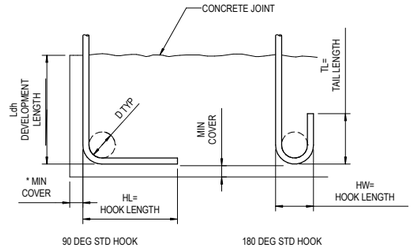
NOTES:

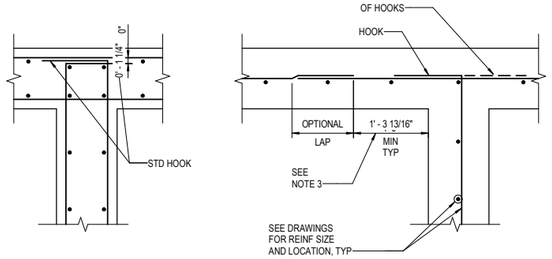
1. PROVIDE ADDITIONAL REINFORCING THE SAME SIZE AS DISCONTINUOUS REINFORCEMENT AT OPENING. QUANTITY OF REINFORCING IN EACH DIRECTION SHALL BE EQUAL TO OR ONE GREATER THAN THE NUMBER OF DISCONTINUOUS BARS. PLACE 1/2 OF ADDITIONAL REINFORCING BARS EACH SIDE OF OPENING, PLACE ADDITIONAL REINFORCEMENT AT 3" OC (TYPICAL BOTH DIRECTIONS AND ALL LAYERS OF REINFORCEMENT). START FIRST BAR 2" CLEAR TO OPENING.
2. EXTEND ADDITIONAL REINFORCING BEYOND EDGE OF OPENING AS SHOWN ABOVE. ADDITIONAL BARS MAY TERMINATE AT THE END OF THE WALL WITH A STANDARD HOOK WHERE THE LENGTH OF THE WALL WILL NOT PERMIT BARS TO EXTEND AS SHOWN ABOVE.
3. TYPICAL WALL OR SLAB REINFORCING NOT SHOWN FOR CLARITY. TERMINATE TYPICAL REINFORCING 2" CLEAR TO OPENING.
4. OPENINGS 12" OR LESS IN SLABS AND WALLS, NO EXTRA REBARS ARE REQUIRED UNLESS SHOWN OTHERWISE. TYPICAL REINFORCING SHALL BE RESPACED (NOT CUT) TO ALLOW FOR OPENINGS TO BE MADE.
5. UNLESS SHOWN OTHERWISE ON DRAWINGS, PROVIDE EXTRA REINFORCING AROUND OPENINGS AS SHOWN AND INDICATED ABOVE.
6. PROVIDE ADDITIONAL DOWELS PER NOTE 1 ABOVE FOR ALL OPENINGS NEAR THE FLOOR SLAB, BASE SLAB, OR CORNERS.

1 EXTRA REINFORCING AROUND OPENINGS
12" = 1'-0"









NOTES:

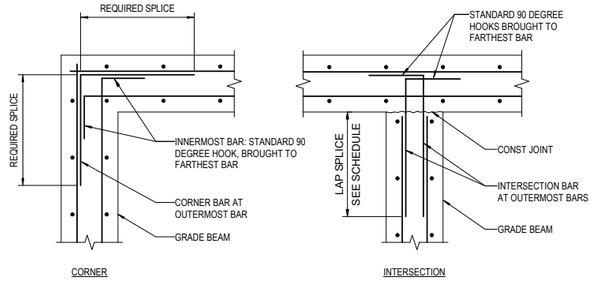
1. ALL HOOKS SHALL BE STD 90 DEGREE HOOKS.
2. SEE DRAWINGS FOR ADDITIONAL HORIZONTAL BARS. STAGGER BETWEEN TYPICAL REINF SPACING, EXTEND TO 1/5 OF DISTANCE TO NEAREST ADJACENT WALL IN EACH DIRECTION, UNO.
3. OPTIONAL LAP LOCATION. APPLIES TO BOTH DOUBLE AND SINGLE LAYER CONDITIONS TYP.

4 WALL REINFORCEMENT AT CORNERS AND INTERSECTIONS
3/4" = 1'-0"

BAR SIZE GRADE 60	HL	HW	TL	D	f'c=4.0 OR 4.5 KSI
					Ldh *
#3	6"	3"	3"	2 1/4"	6"
#4	8"	4"	4 1/2"	3"	7"
#5	10"	5"	5"	3 3/4"	9"
#6	1'-0"	6"	6"	4 1/2"	10"
#7	1'-2"	7"	7"	5 1/4"	12"
#8	1'-4"	8"	8"	6"	14"
#9	1'-7"	11 3/4"	10 1/2"	9 1/2"	15"
#10	1'-10"	1'-1 1/4"	11 1/2"	10 3/4"	17"
#11	2'-0"	1'-2 3/4"	1'-1"	12"	19"

* COMPLYING WITH MINIMUM COVER REQUIREMENTS OF ACI 318, 12.5.3. OTHERWISE Ldh MUST BE RE-CALCULATED.

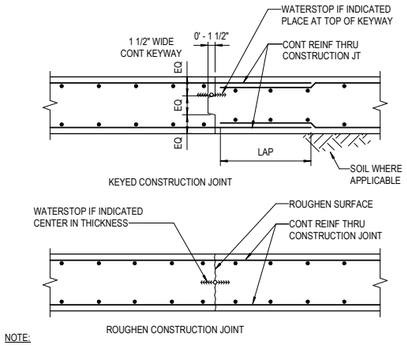
5 REINFORCING HOOK SCHEDULE
12" = 1'-0"



NOTE:

1. CORNER BARS AND INTERSECTION BARS TO BE SAME SIZE AND SPACING AS HORIZONTAL BARS.

2 CONCRETE BEAM REINFORCING
3/4" = 1'-0"



NOTE:

1. SEE SPECIFICATION FOR REQUIREMENT TO TIE WATERSTOPS IN PLACE TO PREVENT MOVEMENT OR FOLDING OVER.

3 CONSTRUCTION JOINT (CJ)
3/4" = 1'-0"

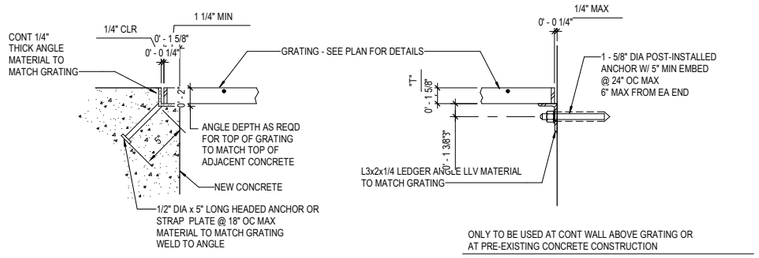
LAP SPLICE AND EMDEDMENT LENGTHS f'c =4.0 ksi fy = 60 ksi f'c =4.5 ksi		
BAR	BARS SPACED GREATER THAN 4"	BARS SPACED LESS THAN OR EQUAL TO 4"
#3	14"	20"
#4	19"	32"
#5	29"	46"
#6	39"	62"
#7	55"	87"
#8	69"	107"
#9	76"	116"
#10	97"	140"
#11	120"	146"

NOTES:

1. PROVIDE MINIMUM LAP SPLICE LENGTHS AND EMBEDMENTS PER TABLE UNLESS NOTED OTHERWISE. EMBEDMENT LENGTH EQUALS THE LAP SPLICE LENGTH UNLESS OTHERWISE NOTED.
2. BAR SPACING AT LAP SPLICE IS THE MINIMUM CLEAR DISTANCE BETWEEN LAPPED BARS PLUS ONE BAR DIAMETER.
3. ALL SPLICES TO BE CONTACT SPLICES AND WIRED TOGETHER UNLESS OTHERWISE APPROVED BY THE ENGINEER.

6 CONCRETE REINFORCING LAP AND EMBEDMENT SCHEDULE
12" = 1'-0"

7 NOT USED
NOT TO SCALE



NOTES:

1. GRATING SIZE PER CONTRACT DOCUMENTS.
2. ALL ENDS AND OPENINGS SHALL BE BANDED, SEE SPECIFICATION.
3. ATTACH GRATING TO ALL SUPPORT ANGLES WITH BOLTED CLIPS, SPACED AT 2'-0" MAX CENTERS.
4. PROVIDE DISSIMILAR MATERIAL PROTECTION FOR ALUMINUM IN CONTACT WITH CONCRETE PER SPECIFICATION.

8 GRATING AND SUPPORT
1 1/2" = 1'-0"

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	J. CORONADO
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	R. NELSON
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

GENERAL DETAILS
STRUCTURAL DETAILS 1

0 1" 2"

FILENAME 10348601_05S-MEMBRANE TREATMENT.rvt
SCALE As indicated

SHEET **90S-501**

Autodesk Docs://10348601_Minturn_WTP_Design_2022 ACC/10348601_05S-MEMBRANE TREATMENT.rvt
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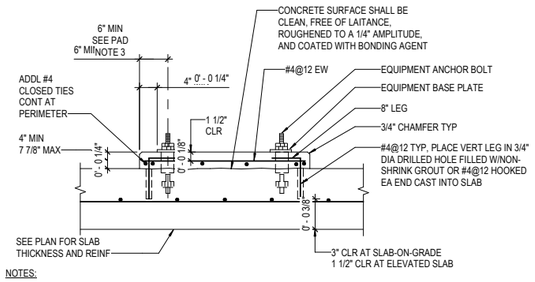


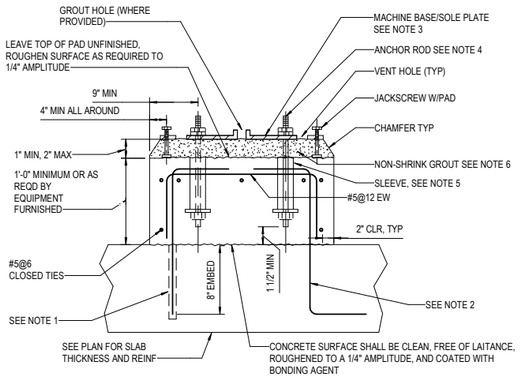
NOTES:

1. PROVIDE ABOVE PAD UNDER ALL ELECTRICAL AND MECHANICAL EQUIPMENT SUPPORTED ON STRUCTURAL SLABS. ALSO PROVIDE FOR EQUIPMENT WEIGHING LESS THAN 5000 POUNDS WHICH ARE SUPPORTED ON GRADE, OR WHERE SPECIFICALLY NOTED ON PLANS PER DETAIL X THIS SHEET. FOR PAD HEIGHT GREATER THAN 8", SEE DETAIL X THIS SHEET.
2. PAD THICKNESS SHALL BE A MINIMUM OF 4". CONTRACTOR SHALL VERIFY THE PAD DIMENSIONS.
3. PROVIDE EMBEDDED CHANNELS FOR ANCHORING ELECTRICAL EQUIPMENT WHERE REQUIRED.

PAD NOTES:

1. EQUIPMENT PAD DETAILS ON THIS SHEET APPLY FOR SUPPORT OF ALL EQUIPMENT UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. BEFORE EQUIPMENT SUPPORT PADS ARE CAST, THE PAD SIZES AND REINFORCING SHALL BE APPROVED BY THE ENGINEER AS BEING CAPABLE OF SUPPORTING EQUIPMENT TO BE PLACED THEREON. EQUIPMENT BASE DIMENSIONS SHALL BE THE LARGER OF AS DETERMINED BY THE EQUIPMENT MANUFACTURER OR AS INDICATED ON THE DRAWINGS. SUBMIT ALL EQUIPMENT DIMENSIONS AND LOADS TO ENGINEER.
3. 6" MINIMUM PAD EDGE DIMENSION TO EQUIPMENT ANCHOR BOLT APPLIES FOR ALL NON-ELECTRICAL EQUIPMENT SUPPORT PADS. AT ELECTRICAL EQUIPMENT, PROVIDE 1" FROM EDGE OF EQUIPMENT TO EDGE OF PAD.
4. THE SIZE, NUMBER, TYPE, LOCATION AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE AS DETERMINED BY THE EQUIPMENT MANUFACTURER AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE EQUIPMENT BASE IS BEING CAST, SEE DETAIL X/00S50X.
5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE, TOLERANCE IS 1/8" ACROSS PLAN DIAGONALS.

1 SHALLOW EQUIPMENT PAD
12" = 1'-0"

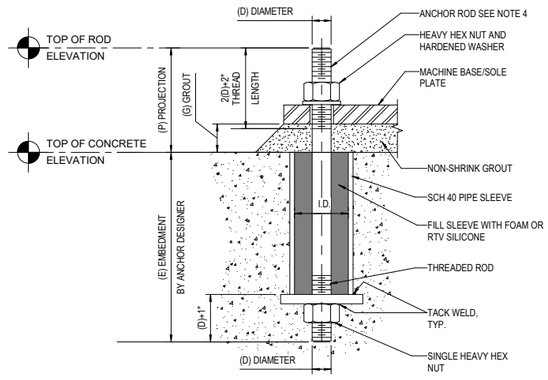


CONCRETE EQUIPMENT PAD

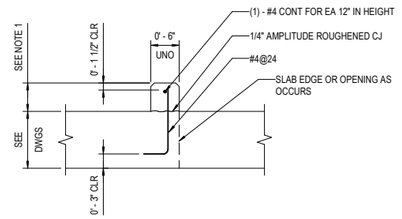
NOTES:

1. DRILL INTO SLAB TO INDICATED DEPTH AT 8" ON CENTER AROUND PERIMETER OF CONCRETE EQUIPMENT SUPPORT BASE AND SET #5 DOWEL HOOKED AS SHOWN USING ADHESIVE FOR CONCRETE ANCHORS. THICKNESS TO BE COORDINATED WITH EQUIPMENT SUPPLIER. THICKEN SLAB ON GRADE BELOW EQUIPMENT PAD AS REQUIRED TO MAINTAIN MINIMUM 3" COVER ON EQUIPMENT ANCHOR BOLTS.
2. FOR CONCRETE EQUIPMENT SUPPORT BASES ON NEW SLABS, PROVIDE #5 DOWELS HAVING TWO HOOKED ENDS AT 12" ON CENTER AROUND PERIMETER, MINIMUM.
3. MACHINE BASE/SOLE PLATE DIMENSION SHALL BE AS REQUIRED BY THE APPROVED SHOP DRAWINGS.
4. ANCHOR ROD AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER. RODS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE EQUIPMENT SUPPORT BASE IS BEING CAST IN PLACE. TAPE OR GREASE ALL PORTIONS OF THE ANCHOR ROD THAT EXTENDS ABOVE THE TOP OF CONCRETE TO THE TOP OF THE BASE PLATE SO THAT THE GROUT WILL NOT BOND TO THE ANCHOR ROD.
5. SLEEVES SHALL BE STEEL PIPES AS SHOWN IN POST TENSIONED ANCHOR ROD DETAIL.
6. GROUT VENT HOLES SHALL BE INSTALLED IN ALL EQUIPMENT BASE PLATES THAT ARE LARGER THAN 12" WIDE SO THAT GROUT IS ABLE TO COMPLETELY FILL IN UNDER THE ENTIRE BASE PLATE.
7. ONCE NON-SHRINK GROUT HAS REACHED DESIGN STRENGTH, BACK OFF JACK SCREWS AND POST TENSION ANCHORS TO REQUIRED TENSION LOAD SPECIFIED BY ANCHOR DESIGNER.
8. FOLLOWING CONSTRUCTION, CARE SHOULD BE TAKEN TO ENSURE THAT REQUIRED TENSION IS MAINTAINED WITHIN THE ANCHOR FOR FULL DURATION OF EQUIPMENT LIFESPAN. THIS SHALL INCLUDE ANNUAL TENSION CHECKS OF THE ANCHORS FOR THE FIRST 5 YEARS OF OPERATION, FOLLOWED BY TENSION CHECKS EVERY 3 YEARS.
9. FOR EQUIPMENT 50 HP AND BELOW, ANCHOR SLEEVES MAY BE OMITTED.
10. WHERE EQUIPMENT SKIDS ARE PROVIDED FOR EQUIPMENT MOUNTING, SKIDS SHALL BE FILLED WITH GROUT AFTER INSTALLATION , UNLESS NOTED OTHERWISE BY THE MANUFACTURER.
11. EQUIPMENT PAD SHOW APPLIES FOR ROTATING EQUIPMENT WHERE SPECIFICALLY REFERENCED ON THE DRAWINGS.

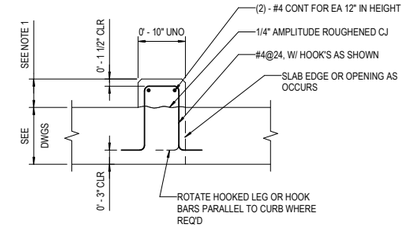
2 CONCRETE PAD FOR DYNAMIC EQUIPMENT
12" = 1'-0"



POST TENSIONED ANCHOR ROD



CURBS LESS THAN 10" WIDE

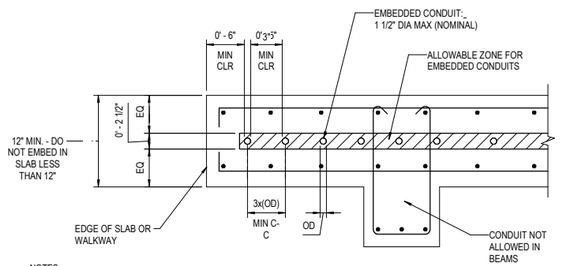


CURBS 10" WIDE AND WIDER

NOTES:

1. CURB SHALL BE 6" MINIMUM AT FLOORS AND 12" MINIMUM AT ROOFS UNLESS NOTED OTHERWISE IN THE DRAWINGS.
2. PLACE STRIP-TYPE WATERSTOP AT CJ WHERE CURB IS REQUIRED FOR CONTAINMENT.
3. COORDINATE ROOF CURB WIDTHS WITH HATCHES AND EQUIPMENT.

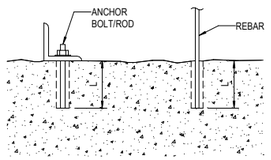
4 CONCRETE CURB
3/4" = 1'-0"



NOTES:

1. ALL CONDUITS SHALL BE SUPPORTED IN CHAIRS OR BOLSTERS.
2. CROSSING CONDUITS NOT ALLOWED.
3. EMBEDDED CONDUITS NOT ALLOWED IN WATER BEARING WALLS AND SLABS.
4. SUBMIT CONDUIT LAYOUT PER SPECIFICATION.

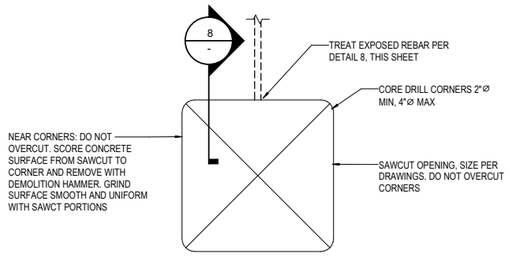
5 TYPICAL CONDUITS EMBEDDED IN SLAB
1" = 1'-0"



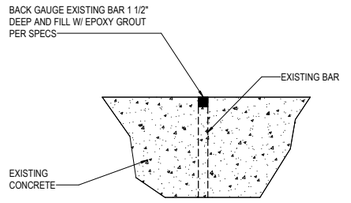
1. EPOXY SHALL BE PER SPECIFICATIONS.
2. EMBEDMENT LENGTHS SHOWN ARE MINIMUM. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
3. DO NOT USE ADHESIVE ANCHORS FOR UPWARDLY INCLINED APPLICATIONS.
4. EMBED LENGTHS SHOWN REFLECT CRACKED CONCRETE, SEISMIC LOADING CONDITIONS USING HIT-HY 200 ADHESIVE. FOR ADHESIVE WITH A LOWER BOND STRENGTH CONSULT ENGINEER FOR ALTERNATE EMBEDMENT.
5. FOR ANCHORS WITH 1.5L OF EDGE, CONSULT ENGINEER.

ADHESIVE ANCHOR SCHEDULE			
REINFORCING BARS		ANCHOR BOLTS/RODS	
BAR SIZE	EMBEDMENT LENGTH (L)	DIA (IN)	EMBEDMENT LENGTH (L)
#3	4"	3/8"	5"
#4	5"	1/2"	6"
#5	6"	5/8"	7"
#6	7"	3/4"	8"
#7	8"	7/8"	9"
#8	9"	1"	10"

6 ADHESIVE ANCHOR
1 1/2" = 1'-0"



7 TYP SAWCUT OPENING IN EXISTING CONCRETE
1" = 1'-0"



8 TYPICAL AT ALL SAWCUT WALLS AND EXPOSED REBAR
1/2" = 1'-0"

ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER	JARROD C. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	J. CORONADO
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	R. NELSON
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

GENERAL DETAILS
STRUCTURAL DETAILS 2

0 1" 2"

FILENAME: 10348601_05S-MEMBRANE TREATMENT.rvt
SCALE: As indicated
SHEET: **90S-502**

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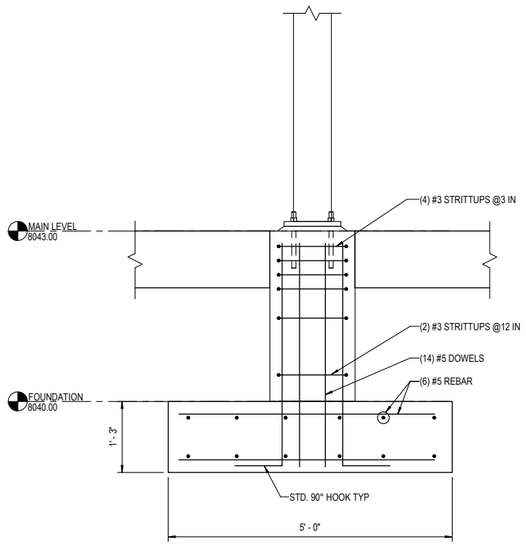
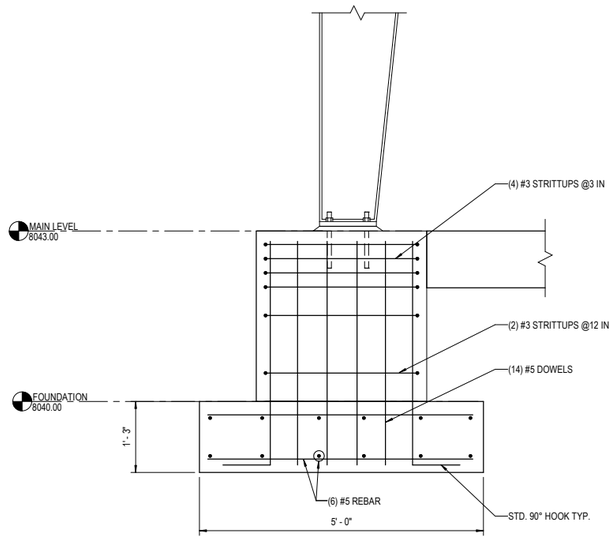
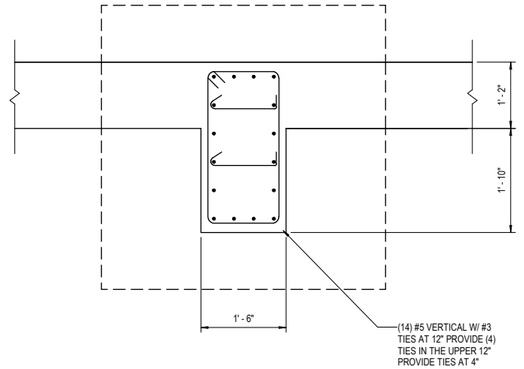


1 05S-101 TYPICAL PEDESTAL DETAIL
3/4" = 1'-0"



2 05S-101 PEDESTAL AND GRADE BEAM
3/4" = 1'-0"



3 05S-101 PEDESAL REINFORCEMENT DETAIL
3/4" = 1'-0"

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	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	JAROD C. LIMKE
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MECHANICAL	K. CHAUDHARI
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DRAWN BY	R. NELSON
PROJECT NUMBER	10348601

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TOWN OF MINTURN

WATER TREATMENT PLANT

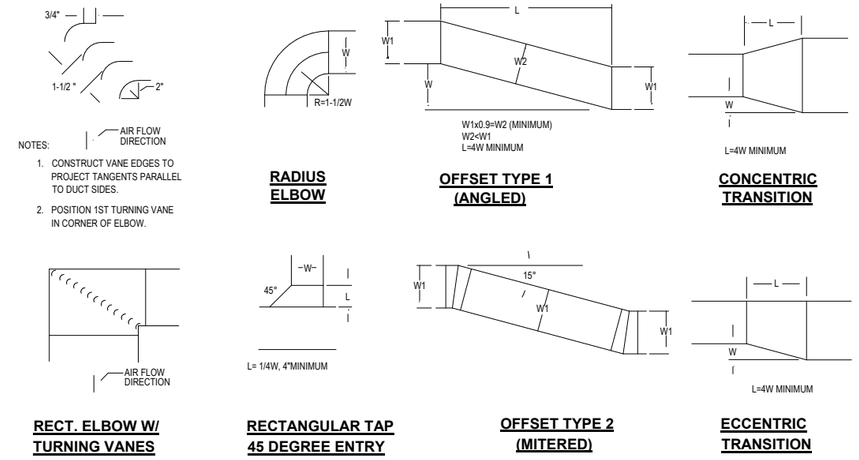
MEMBRANE TREATMENT BUILDING STRUCTURAL DETAILS

0 1" 2"

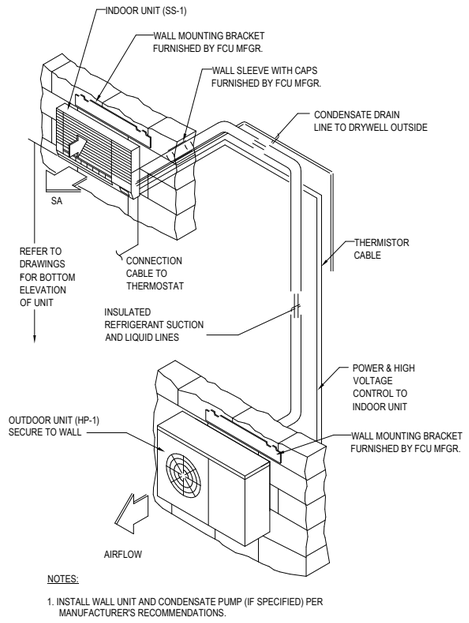
FILENAME 10348601_05S-MEMBRANE TREATMENT.rvt

SCALE 3/4" = 1'-0"

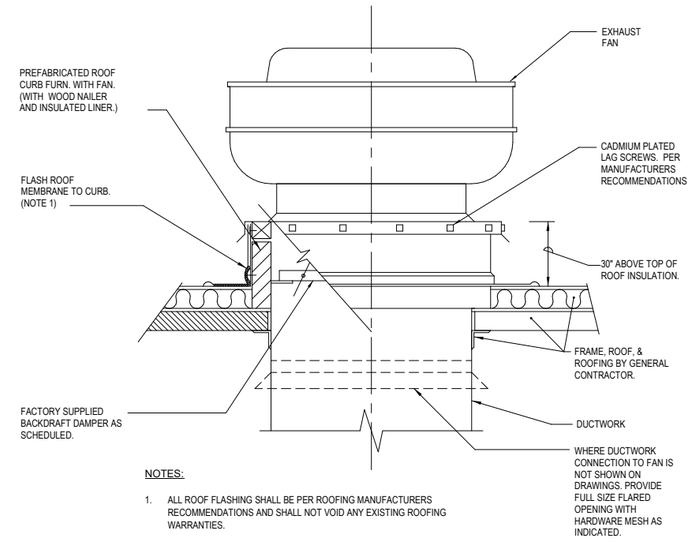
SHEET **90S-503**



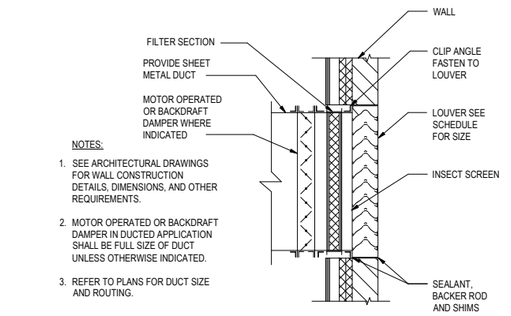
1 STANDARD DUCT CONSTRUCTION DETAILS
NTS



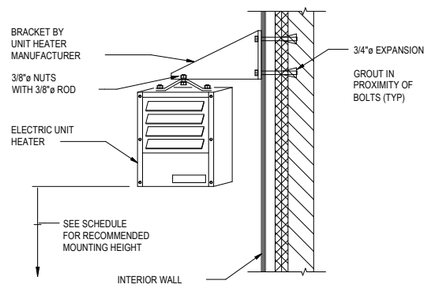
2 DUCTLESS SPLIT SYSTEM DETAIL
NTS



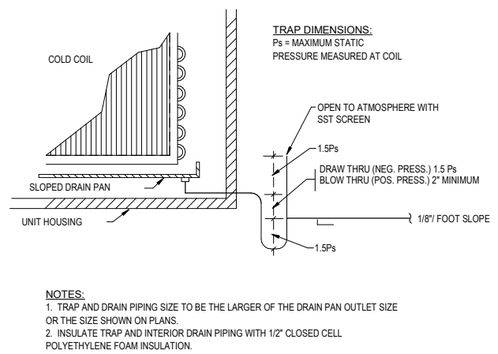
3 UPBLAST EXHAUST FAN DETAIL
NTS



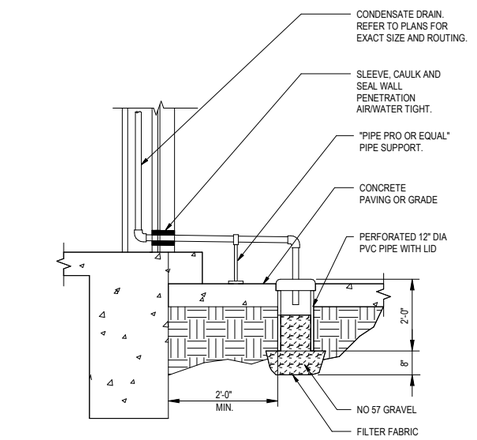
4 DUCTED LOUVER IN WALL DETAIL
NTS



5 ELECTRIC UNIT HEATER DETAIL
NTS



6 CONDENSATE DRAIN TRAP DETAIL
NTS



7 CONDENSATE DRYWELL DETAIL
NTS

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	J. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Y. AL MILAIFY
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

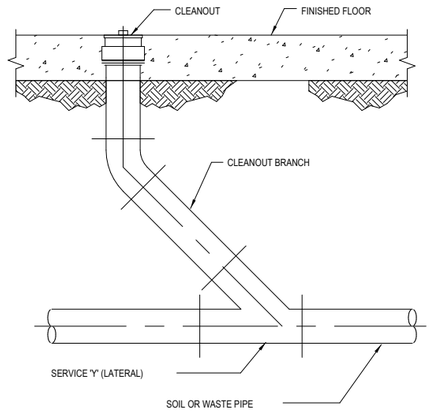
GENERAL DETAILS
MECHANICAL DETAILS

0 1" 2"

FILENAME 10348601_05MP - MEMBRANE TREATMENT.rvt

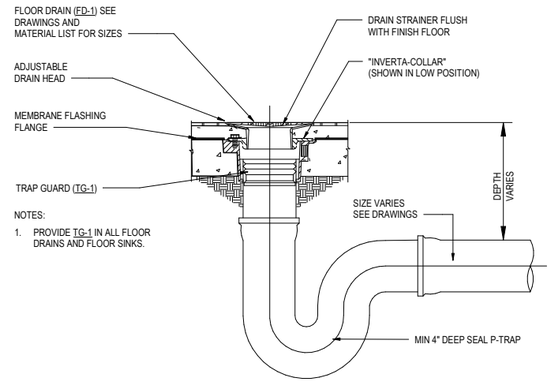
SCALE NTS

SHEET 90M-501



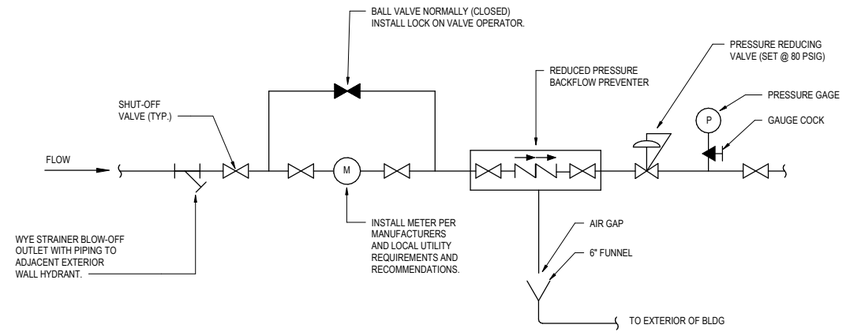
NOTES:
1. PLUG END OF LINE WITH MECHANICAL PIPE PLUG.

1 FLOOR CLEANOUT INSTALLATION DETAIL
NTS



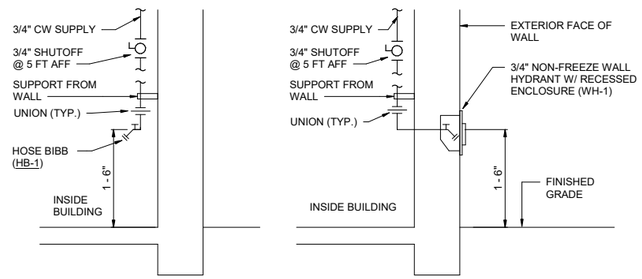
NOTES:
1. PROVIDE TG-1 IN ALL FLOOR DRAINS AND FLOOR SINKS.

2 FLOOR DRAIN INSTALLATION DETAIL
NTS

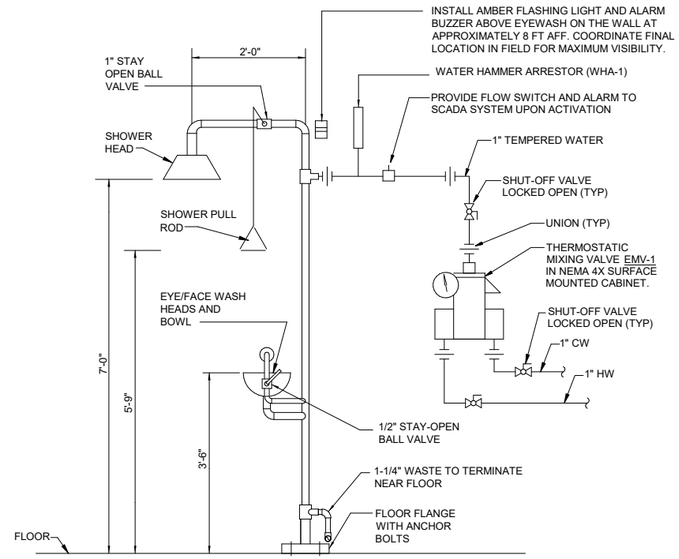


NOTES:
1. BY-PASS AROUND METER SIZE SHALL BE ONE PIPE SIZE SMALLER THAN SERVICE SIZE.
2. BY-PASS MUST BE INSTALLED TO ALLOW MIN. 18" CLEAR SPACING AROUND METER.
3. COORDINATE WATER SERVICE TIE-IN POINT WITH LOCAL MUNICIPALITY TO ADJACENT FIRE RISER WITH FPC.

3 WATER SERVICE ENTRANCE DETAIL
NTS

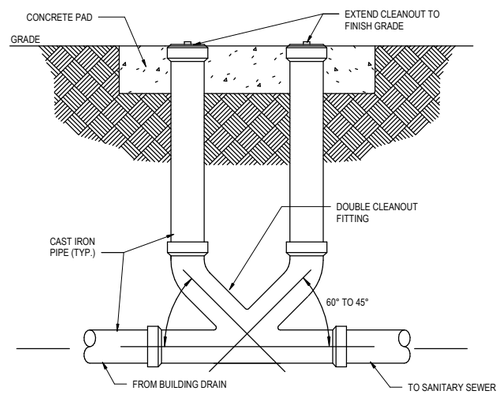


4 HOSE BIBB AND WALL HYDRANT DETAIL
NTS



NOTES:
1. THE WAY THE ESEW IS SHOWN IS GENERIC. REFER TO P-601 FOR DESCRIPTION OF ESEW.
2. LOCATE FLOOR DRAIN TO THE SIDE OF THE EYEWASH STATION (OPPSITE THE DOOR) AND WITHIN 18 INCHES OF EYEWASH STATIONS. DO NOT LOCATE FLOOR DRAIN UNDER SHOWER OR BOWL. PROVIDE STAINLESS STEEL UNISTRUT ANCHORED TO FLOOR SUPPORT EYEWASH DRAIN PIPE. (ALL HARDWARE AND ANCHORS SHALL BE STAINLESS STEEL).

5 EMERGENCY EYEWASH DETAIL
NTS



6 DOUBLE GRADE CLEANOUT DETAIL
12" = 1'-0"

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

PROJECT MANAGER	J. LIMKE
PROJECT ENGINEER	M. LARSON
STRUCTURAL	C. MULDERICK
ARCHITECTURAL	R. McKINLEY
PROCESS	S. SCHUMACHER
MECHANICAL	K. CHAUDHARI
I & C	C. OPPEGARD
DRAWN BY	Y. AL MILAIFY
PROJECT NUMBER	10348601

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

GENERAL DETAILS
PLUMBING DETAILS I

0 1" 2"

FILENAME 10348601_05MP - MEMBRANE TREATMENT.rvt
SCALE 12" = 1'-0"

SHEET 90P-501

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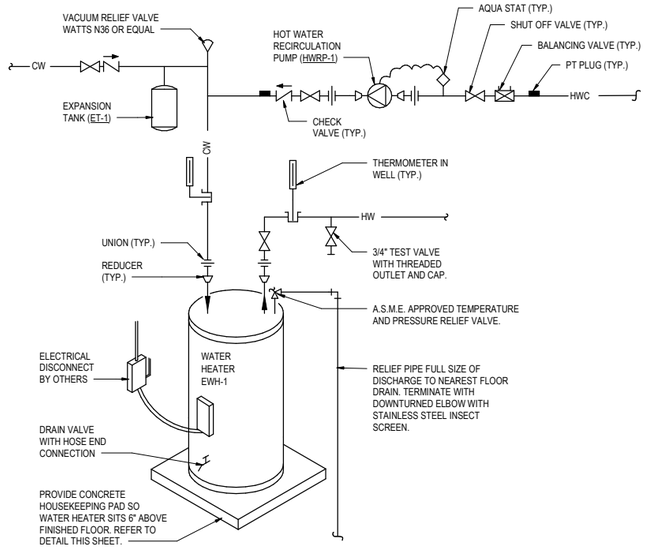

NOTES:

1. ROUTE/EXTEND NEW HOT/COLD WATER PIPING TO WATER HEATER.
2. REFER TO PLANS FOR ADDITIONAL PIPE SIZES.

1 ELECTRIC WATER HEATER DETAIL

NTS

ISSUE	DATE	DESCRIPTION
	08/2024	30% ISSUED FOR REVIEW

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DRAWN BY	Y. AL MILAIFY
PROJECT NUMBER	10348601

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TOWN OF MINTURN

WATER TREATMENT PLANT

MEMBRANE TREATMENT BUILDING PLUMBING DETAILS II

0 1" 2"

FILENAME	10348601_05MP - MEMBRANE TREATMENT.rvt
SCALE	NTS

SHEET **90P-502**

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