CITY OF SPRING VALLEY, MINNESOTA

CONSTRUCTION PLANS FOR

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

2026

RESOURCE LIST

CITY OF SPRING VALLEY

City Hall
201 South Broadway
Spring Valley, MN 55975
507-346-7249

City Clerk:
Deb Zimmer

Mayor:
Justin Mlinar

City Council Members:
John Dols
Luan Ruesink
Chris Danielson
Brent Kohn

SPRING VALLEY WWTF
Public Works Director:
Chad Hindt
507-696-0585

City Engineer: (Consultant)
Drew Weber P.E.
Bolton & Menk Inc.
2900 43rd Street NW, Suit 100
Rochester, MN 55907
507-208-4332

Project Engineer: (Consultant)
Jake Pichlemann, P.E.
Bolton & Menk, Inc.
612-750-6505

UTILITIES

MiEnergy Cooperative
800-432-2285

Spring Valley Public Utilites
507-346-7622

Minnesota Energy Resources
800-432-9508

Century Link
800-201-4099

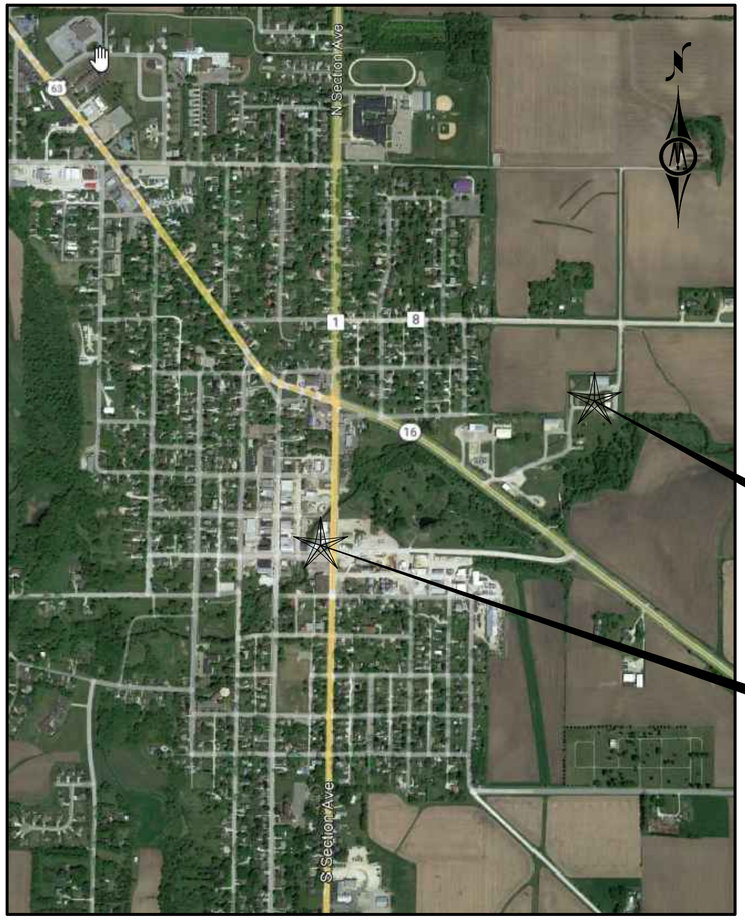
Mediacom Cable
855-224-2253

NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

MAP LEGEND

PROJECT LOCATION



WASTEWATER TREATMENT FACILITY
PROJECT LOCATION
900 E FARMER ST.
SPRING VALLEY, MN 55975

MAIN LIFT STATION
PROJECT LOCATION
104 S SECTION AVE
SPRING VALLEY, MN 55975

TBM=1333.94
TOP NUT HYDRANT AT NORTH END OF MLINAR AVE (APPROX. 150' NORTH OF NORTHRIDGE LN AND MLINAR AVE INSTERSECTION)

PROJECT DATUM:
HORIZONTAL: 2011 Fillmore County Coordinate System
VERTICAL: NAVD 1988 in Feet

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

SIGNATURE: _____ TYPED OR PRINTED NAME: Jake R. Pichelmann

DATE 3-29-2026 LIC. NO. 54296

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DESIGNED	NO.	ISSUED FOR	DATE
JIL/LLT	A	MPCA	3-28-25
DRAWN	0	BID	9-29-26
WRH			
CHECKED			
JRP			
CLIENT PROJ. NO.			
0M2.131536			

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
TITLE SHEET AND LOCATION MAP

SHEET 1.01

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

SIGNATURE: _____ TYPED OR PRINTED NAME: Jake R. Pichelmann

DATE 9-29-2026 LIC. NO. 54296

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JIL/LLT	A	MPCA	3-28-25
DRAWN WRH	0	BID	9-29-26
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
SHEET INDEX

SHEET 1.02

A	ACRE, ANGLE
AB	ANCHOR BOLT
ABBR	ABBREVIATION
ABUT	ABUTMENT
AC	ACTIVATED CARBON, ASPHALT CONCRETE
A/C	AIR CONDITIONING
ACOUS	ACOUSTIC, ACOUSTICAL
ACP	ASPHALTIC CONCRETE PAVEMENT, ASBESTOS CEMENT PIPE
ADJ	ADJUST, ADJACENT
AER	AERATION
AGG	AGGREGATE
AL	ALUMINUM, ALUM
ALT	ALTERNATE
ALUM	ALUMINUM
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE (FORMERLY A.S.A.)
API	AMERICAN PETROLEUM INSTITUTE
APP	APPROACH
APPD	APPROVED
APPROX	APPROXIMATE
APR	APRON
ARC L	ARCH LENGTH
ARCH	ARCHITECTURAL
ASA	AMERICAN STANDARDS ASSOCIATION (NOW ANSI)
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
ATM	ATMOSPHERE
AVAR	AIR VACUUM AND AIR RELEASE VALVE
AWWA	AMERICAN WATER WORKS ASSOCIATION
AZ	AZIMUTH
BAL	BALANCE
BC	BEGIN CURVE, BOLT CIRCLE, BETWEEN CENTERS
BCR	BEGIN CURVE RETURN
BD	BOARD
BE	BOX ELDER
BEG	BEGIN
BET	BETWEEN
BF	BLIND FLANGE
BFP	BACK FLOW PREVENTER
BHP	BRAKE HORSEPOWER
BIT	BITUMINOUS
BLDG	BUILDING
BLD FLG	BLIND FLANGE
BLK	BLACK, BLOCK
BLKG	BLOCKING
BM	BEAM, BENCH MARK
BO	BLOW OFF ASSEMBLY
BOD	BIOCHEMICAL OXYGEN DEMAND
BORR	BORROW
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
BR	BRIDGE, BASE OF RAIL
BRG	BEARING
B & S	BELL AND SPIGOT
BS	BACK SIGHT, BOTTOM SLOPE
BSMT	BASEMENT
BTM PL	BOTTOM PLATE
BTU	BRITISH THERMAL UNIT
BV	BUTTERFLY VALVE
BVC	BEGIN VERTICAL CURVE
BWV	BACK WATER VALVE
C	CENTIGRADE, CURVE, CUT
CAB	CABINET
CAP	CAPACITY
CAR	COUNTY AID ROAD
CB	CATCH BASIN, CHALK BOARD
CC	CENTER TO CENTER
CD	CEILING DIFFUSER
CEM	CEMETERY, CEMENT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
C & G	CURB AND GUTTER
CHAN	CHANNEL
CHEM	CHEMICAL
CHG	CHANGE
CHK V	CHECK VALVE
CHXD PL	CHECKERED PLATE
CI	CAST IRON
CIP	CAST IRON PIPE
CL	CHLORINE GAS, CHLORINATOR, CHAIN LINK, CLEARANCE, CENTERLINE
CLG,CLNG	CEILING
CLR	CLEAR
CM	CENTIMETER
CML & C	CEMENT MORTAR LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMP-A	CORRUGATED METAL PIPE ARCH
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COM	COMPRESSOR
COMP	COMPACT
CONC	CONCRETE, CONCENTRIC
CONN	CONNECTION
CONST	CONSTRUCTION, CONSTRUCT
CONT	CONTINUED, CONTINUOUS
CONTR	CONTRACTOR
COR	CORNER
CORD	COUNTY ROAD
COTG	CLEAN-OUT TO GRADE
CP	CATTLE PASS
CPLG	COUPLING
CRK	CREEK
CS	CAUSTIC SODA, CAST STEEL, CURVE SPIRAL
C.S.A.H.	COUNTY STATE AID HIGHWAY
CT	CERAMIC TILE
CTR	CENTER
CTSK	COUNTERSINK
CTWD	COTTONWOOD
CU	COPPER, CUBIC
CU FT	CUBIC FOOT
CU YD	CUBIC YARD
CULT	CULTIVATED FIELD
CULV	CULVERT
CY	CUBIC YARD
CYL	CYLINDER
DC	DEGREE OF CURVE
DBLK	DITCH BLOCK
DAMP	DAMPER
DEP	DEPARTURE
DES	DESIGN, DESIRABLE
DET	DETAIL
DF	DRINKING FOUNDATION
DG	DOOR GRILLE, DITCH GRADE
DI	DUCTILE IRON
DIA	DIAMETER
DIAPH	DIAPHRAGM
DIP	DUCTILE IRON PIPE
DIST	DISTANCE, DISTRICT
DIV	DIVISION
DISCH	DISCHARGE
DISP	DISPENSER
DN	DOWN, DECANT
DO	DISSOLVED OXYGEN
DR	DOOR, DRAIN
DRWY	DRIVEWAY
DS	DRENCH SHOWER AND EYE WASH
DWG	DRAWING
DIFF	DIFFUSER, DIFFERENTIAL
E	EAST, RATE OF SUPERELEVATION, EXTERNAL DISTANCE
EA	EACH
EBL	EAST BOUND LANE
EC	END CURVE
ECC	ECCENTRIC
ECR	END CURB RETURN
EF	EACH FACE, EXHAUST FAN
EFF	EFFLUENT
EG	EXHAUST GRILLE
EL	ELEVATION
ELEC	ELECTRICAL, ELECTRONIC
ELEV	ELEVATION
EMB	EMBANKMENT
ENG	ENGINE
ENGR	ENGINEER
ENT	ENTRANCE
EQ	EQUAL
EQUA	EQUATION
EQUIP	EQUIPMENT
ER	EDGE OF ROAD
EST	ESTIMATE
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY, EYE WASH
EXC	EXCAVATION
EXH	EXHAUST
EX-HY	EXTRA HEAVY
EXIST	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXT	EXTERIOR, EXTENSION
F	FAHRENHEIT, FINISH
FA	FEDERAL AID
FABR	FABRICATION, FABRICATE, FABRICATED
FAI	FRESH AIR INTAKE
FAI	FEDERAL AID INTERSTATE
FAP	FEDERAL AID PRIMARY
FAS	FEDERAL AID SECONDARY
FAU	FEDERAL AID URBAN
FB	FLAT BAR, FLOOR BEAM, FIELD BOOK
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FDR	FEEDER
FE	FIRE EXTINGUISHER, FINAL EFFLUENT, FLOW ELEMENT
FE COR	FENCE CORNER
FED	FEDERAL
FF	FLAT FACE, FAR FACE, FINISHED FLOOR
F TO F	FACE TO FACE
FG	FINISHED GRADE
FH	FIRE HYDRANT
FHDWL	HEAD WALL
F & I	FURNISH AND INSTALL
FIG	FIGURE
FIN	FINISHED
FL	FLOWLINE, FLOOR
FLEX	FLEXIBLE
FLOCC	FLOCCULATOR, FLOCCULATION
FLG	FLANGE
FLGD	FLANGED
FLR	FLOOR
FME	FARM ENTRANCE
FMH	FLEXIBLE METAL HOSE
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FP	FENCE POST
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FR	FRAME
FR	FRONTAGE ROAD
FS	FAR SIDE, FLOOR SINK, FINISHED SURFACE, FORGED STEEL, FROTH SPRAY, FORE SIGHT, FLOW SWITCH
FT	FEET, FOOT
FTG FTNG	FOOTING
FUT	FUTURE
FWD	FORWARD
GA	GAGE, GAUGE
GAL	GALLON
GALV	GALVANIZED IRON
GAR	GARAGE
GDE	GRADE
GEN	GENERAL, GENERATOR
GFA	GROOVED FLANGE ADAPTOR
GI	GALVANIZED IRON
GLV	GLOBE VALVE
GP	GUY POLE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GUARDRAIL
GR	GRAVEL
GRAN	GRANULAR
GRD	GRADE, GROUND
GR BRK	GRADE BREAK, GRADE CHANGE
GV	GATE VALVE
GYP	GYPSUM
H20	WATER
H	HAUL
HB	HOSE BIBB
HDR	HEADER
HEX	HEXAGONAL
Hg	MERCURY
HI	HEIGHT OF INSTRUMENT
HMS	HOLLOW METAL STEEL
HO	HOUSE
H, HOR	HORIZONTAL
HORIZ	HORIZONTAL
HP	HORSEPOWER, HIGH PRESSURE
HR	HEATING RETURN, HOUR
HT	HEIGHT
HTG	HEATING
HTR	HEATER
H & V	HEATING AND VENTILATION
HW	HOT WATER, HIGH WATER
H.W. EL.	HIGH WATER ELEVATION
H.W.L.	HIGH WATER LEVEL
HWL	HIGH WATER LEVEL
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HWO	HANDWHEEL OPERATED
HWY	HIGHWAY
HYD	HYDRAULIC, HYDRANT
IBC	INTERNATIONAL BUILDING CODE
IC	INTERIOR ANGLE OF CURVE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IH	INTERSTATE HIGHWAY
IN	INCH
INCL	INCLUDE
INFL	INFLUENT
INFO	INFORMATION
INL	INLET
INP	IN PLACE
INSL	INSULATION, INSULATED
INSUL	INSULATION
INST	INSTALL
INSTR	INSTRUMENT
INV	INVERT ELEVATION
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRRG	IRRIGATION
JAN	JANITOR
JCT	JUNCTION
J & A	JACK AND AUGER
JNT, JT	JOINT
JSTS	JOISTS
KG	KILOGRAM
KM	KILOMETER
KV	KILOVOLT
KW	KILOWATT
KWH	KILOWATT HOUR
L	LITER, LENGTH, LENGTH OF CURVE
LAB	LABORATORY
LAT	LATITUDE
LAV	LAVATORY
LB	POUND
LDG	LOADING
LEV	LEVEL
LF	LINEAR FEET
LIN	LINEAR
LO	LEVEL OUT
LOR	LINE-OFFICE REVISION
LOS	LENGTH OF OFFSET SPIRAL
LP	LOW POINT, LIGHT POLE
LOC	LOCATION
LT	LEFT
LWL	LOW WATER LEVEL
LWR	LOWER
M	METER
M	MIDDLE ORDINATE (CIRCULAR CURVE), MAXIMUM OFFSET (VERTICAL CURVE)
MAG	MAGNETIC
MAN	MANUAL
MAINT	MAINTENANCE
MACH	MACHINE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MEMB	MEMBRANE
MET	METAL
MFR, MFGR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MI	MALLEABLE IRON, MILE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MK	MARK
ML	MATCH LINE, MEDIAN LINE
MM	MILLIMETER
MNDOT	MINNESOTA DEPARTMENT OF TRANSPORTATION
MO	MOTOR OPERATED, MASONRY OPENING
MOD	MODEL
MON	MONUMENT
MPH	MILES PER HOUR
MS	MOP SINK
MTC	MECHANICAL-TYPE-COUPLING
MTD	MOUNTED
MTL	MATERIAL
MTR	MOTOR
N	NORTH
NAT	NATURAL
NBL	NORTH BOUND LANE
NBS	NATIONAL BUREAU OF STANDARDS
NC	NORMALLY CLOSED
NE	NORTH EAST
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NF	NEAR FACE
NIC	NOT IN CONTACT
NO	NUMBER, NORMALLY OPEN
NPS	NOMINAL PIPE SIZE (FORMERLY I.P.S.)
NPT	NATIONAL PIPE THREAD
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE
NW	NORMAL WATER, NORTH WEST
N & D	NEAR SIDE
OBLIT	OBLITERATE
OC	OVER CROSSING, ON CENTER
O.C.E.W.	ON CENTER EACH WAY
OD	OUTSIDE DIAMETER
OF	OVERFLOW, OUTSIDE FACE
OH	OVERHEAD
OPER	OPERATOR, OPERATING
OPNG	OPENING
ORP	OXIDATION-REDUCTION POTENTIAL
OS & Y	OUTSIDE SCREW AND YOKE
OUT	OUTLET
OWG	OIL, WATER, GAS
OZ	OUNCE
P	POLE, PAGE, PLACE
PAVMT	PAVEMENT
PC	PRIMARY CLARIFIER, PORTLAND CEMENT, POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PCOTG	PRESSURE CLEANOUT TO GRADE
PE	PLANT EFFLUENT, POLYELECTROLYTE, POLYMER
PE	PROJECT ENGINEER, PROFESSIONAL ENGINEER, POLYETHYLENE
PERF	PERFORATED
PERMISS	PERMISSIBLE
PER PERIM	PERIMETER
PG	PRESSURE GAGE
pH	HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT, POINT OF INTERSECTION, PRESSURE INDICATOR
PL	PLATE, PROPERTY LINE, PLACE
PLAS	PLASTER, PLASTIC
PLY WD	PLYWOOD
PLF	POUNDS PER LINEAR FOOT
PLT	PLANT
PNEU	PNEUMATIC
POC	POINT OF CURVE
POP	POPLAR
POST	POINT ON SEMI TANGENT
POT	POINT ON TANGENT
PP	POWER POLE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PR	PAIR
PRC	POINT OF REVERSE CURVE
PRESS	PRESSURE
PROJ	PROJECT
PROP	PROPERTY
PROV	PROVISIONS
PRV	PRESSURE REGULATING, RELIEF, REDUCING VALVE
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT, POINT OF TANGENCY
PTDF	PRESSURE TREATED DOUGLAS FIR
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
Q	DISCHARGE CFS.
QUANT	QUANTITY
R	RADIUS, RISER, RANGE, ROCK, RETURN, RATE OF SLOPE, RING
RAD	RADIALLY
RAG	RETURN AIR GRILLE
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCCP	REINFORCED CONCRETE CULVERT PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN, ROUND, OR ROAD
RDWD	REDWOOD
RDWY	ROADWAY
RECIRC	RECIRCULATING
RECONST.	RECONSTRUCT
RED	REDUCER, REDUCING
REF	REFERENCE, REFER
REFR	REFRIGERATOR
RF	ROOF
REG	REGULATING
REINF	REINFORCE, REINFORCED
REM	REMOVE
RE-STL	REINFORCING STEEL
RET W	RETAINING WALL
REQ, REQD	REQUIRED
REV	REVISION
RM	ROOM
ROW	RIGHT OF WAY
RPM	REVOLUTIONS PER MINUTE, REINFORCED PLASTIC MORTAR
RR	RAILROAD
RT	RIGHT
R/W	RIGHT OF WAY
RWL	RAINWATER LEADER
RY	RAILWAY
S	SOUTH, SCUM, SINK, SECOND, SLOPE, SAND
SA	SAMPLE
SALV	SALVAGED
SAN	SANITARY
SAR	STATE AID ROAD
SBL	SOUTH BOUND LANE
SC	SPARE CHEMICAL, SECONDARY CLARIFIER
SCD	SCREWED
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SCHED	SCHEDULE
SCP	SECTIONAL CONCRETE PIPE
SCPA	SECTIONAL CONCRETE PIPE ARCH
SD	SERVICE DRIVE
SDR	STORM DRAINS
SE	SOUTHEAST
SEC	SECONDARY
SECT	SECTION
SER	SERIES
SETT	SETTLING
SF	STORY FRAME
SFCE	SURFACE
S-G	SAND AND GRAVEL
SH	SHOWER
SHLD	SHOULDER
SHT	SHEET
SIM	SIMILAR
SL	SLUDGE, SLOPE
SO	SOUTH
SO VALVE	SHUT OFF VALVE
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SPEC'D	SPECIFIED
SPK	SPIKE
SQ	SQUARE
SQYD	SQUARE YARD
SS	SANITARY SEWER, STAINLESS STEEL, SERVICE SINK
SSU	SECONDS SAYBOLT UNIVERSAL
ST	STREET, STONE, STEEL, STUCCO, STATE
STA	STATION
STC	SLEEVE-TYPE COUPLING
STD	STANDARD
STK	STAKE
STL	STEEL
STM	STORM
STN	STAINLESS
STN STL	STAINLESS STEEL
STP	STUMP
STRUCT	STRUCTURAL, STRUCTURE
SUCT	SUCTION
SUPER	SUPER ELEVATION
SUPP	SUPPLIER, SUPPLY
SURF	SURFACE
SV	SOLENOID VALVE
SW	SIDEWALK, SOUTH WEST
SWR	SIDEWALL REGISTER, SEWER
SYM	SYMMETRICAL, SYMBOL
SYST	SYSTEM
T	THERMOSTAT, TREAD OF STAIR, TOP, TANGENT
T & B	TOP AND BOTTOM
T & G	TONGUE AND GROOVE
TAN	TANGENT
TB	TACK BOARD
TBE	THREAD BOTH ENDS
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TEL	TELEPHONE
TEMP CONN	TEMPORARY CONNECTION
T.F.	TOP OF FOOTING
TFE	TOP OF FOOTING ELEVATION
TH	TRUNK HIGHWAY
THR'D	THREADED
TK	TANK
TOE	THREAD ONE END
TOPOG	TOPOGRAPHY
TP	TELEPHONE POLE, TELEGRAPH POLE
TR	TREE, TRENCH, TRACK
TRANS	TRANSITION, TRANSMITTED
TRANSV	TRANSVERSE
TS	TANGENT TO SPIRAL, TOPSOIL, TOP SLOPE
TTH	TEMPORARY TRUNK HIGHWAY
TV	THERMOSTATIC VALVE
TW	TOP OF WALL, THERMOMETER WELL
TWP	TOWNSHIP
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UC	UNDER-CROSSING
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNADJ	UNADJUSTED
UR	URINAL
USGS	U.S. GEOLOGICAL SURVEY
UW	UTILITY
V	VACUUM, VALVE, VERTICAL, VENT, VOLT, VOLUME
VAR	VARIES, VARIABLE
VB	VAPOR BARRIER
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VIT	VITRIFIED
VM	VEHICULAR MEASURE
VOL	VOLUME
VTC	VENT TO CEILING
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
VTR	VENT THROUGH ROOF
W	WEST, WASTE, WATER
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WBL	WEST BOUND LANE
WC	WATER COLUMN, WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WDW	WINDOW
W'MN	WATER MAIN
W/O	WITHOUT
WS	WATER SURFACE
WSTP	WATER STOP
WT	WEIGHT
WWM	WELDED WIRE MESH
X-OVER	CROSSOVER
X-RD	CROSS ROAD
XS	EXTRA STRONG
XSECT	CROSS SECTION
YD	YARD
YH	YARD HYDRANT

NOTE: SEE PIPING SCHEDULE FOR ADDITIONAL ABBREVIATIONS

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ABBREVIATIONS

SHEET 1.03

PIPING & FITTING SYMBOLS

- AC — Air Cock
- P — Air Operation
- BP — Backflow Preventer
- Blind Flange
- Drip Trap
- Exhaust to Atmosphere (Inside)
- Exhaust to Atmosphere (Outside)
- FT — Flame Trap
- FC — Flame Cell
- Flanged Coupling Adapter (F.C.A.)
- Flexible Hose
- 4"F.D. — Floor Drain - Size
- Harnessed Sleeve Coupling (H.S.C.) / Sleeve Coupling (S.C.)
- HB — Hose Bib
- 1-1/2" Hose Gate
- FE X — Meter
- M — Motor Operation
- N.C. — Normally Closed
- N.O. — Normally Open
- Orifice
- Pump

Pipe & Joint Designations

- Bell & Spigot Joint
- Flanged Adapter
- Flanged Joint Fitting
- Mechanical Joint Fitting
- Wall Pipe
- Wall Sleeve
- Quick Disconnect Coupling
- Reducer
- Removable Cap
- Removable Plug
- Rupture Disc
- ST — Sediment Trap
- Sight Flow Indicator
- Union

VALVE SYMBOLS

Process Flow Diagram	Plan Process Drawings
Angle Valve	Ball Valve
Ball Valve	Butterfly Valve
Butterfly Valve	Check Valve
Check Valve	Gate Valve
Diaphragm Valve	Plug Valve
Gate Valve	
Globe Valve	
Hose Gate Valve	
Knife Gate Valve	
Needle Valve	
Pinch Valve	
Plug Valve	
RPZ (Reduced Pressure Zone)	
PRV — Pressure Regulating Valve	
PT — Pressure/Temperature Relief Valve	
Relief or Safety Valve	
Shear, Slide, Sluice or Stop Gate	
3-Way Plug Valve (2-Port)	
3-Way Plug Valve (3-Port)	
3-Way Valve	
3-Way Plug Valve (4-Port)	
V — Vent	
Yard Hydrant	
Y-Type Strainer	

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER: MEASURED OR INITIATING VARIABLE	FIRST LETTER: MODIFIER	SUCCEEDING LETTERS: READOUT OR PASSIVE FUNCTION	SUCCEEDING LETTERS: OUTPUT FUNCTION	SUCCEEDING LETTERS: MODIFIER
A	Analysis		Alarm		
B	Burner Flame				
C	Conductivity (Electrical)			Control	
D	Density (Mass) or Specific Gravity	Differential			
E	Voltage (EMF)		Primary Element		
F	Flow Rate	Ratio (Fraction)			
G	Gauging (Dimensional)		Glass		
H	Hand (Manually Initiated)				High
I	Current (Electrical)		Indicate		
J	Power	Scan			
K	Time or Time-Schedule			Control Station	
L	Level		Light (Pilot)		Low
M	Moisture or Humidity				Middle or Intermediate
N					
O			Orifice (Restriction)		
P	Pressure or Vacuum		Point (Test) Connection)		
Q	Quantity or Event	Integrate or Totalize	Meter		
R	Radioactivity		Record or Print		
S	Speed or Frequency			Switch	
T	Temperature		Totalizing	Transmit	
U					
V	Viscosity			Valve, Damper or Louver	
W	Weight or Force		Well		
X					
Y				Relay or Compute	
Z	Position			Drive, Actuate or Unclassified Final Control Element	

INSTRUMENT IDENTIFICATION

- FE 3
  - Identification Letters (See Table)
  - Instrument Number
- Locally Mounted Instrument
- Mounted On Board

VALVE OPERATORS

C	Cylinders	HW	Handwheel
CW	Chainwheel	L	Lever
D	Diaphragm	M	Motor
E	Electric	P	Pneumatic
F	Float	S	Solenoid
H	Hydraulic		

Soil Boring

PIPING SCHEDULE

PIPING SYSTEM DESIGNATION	FLUID
A	Aeration
CA	Compressed Air
CG	Chlorine Gas
CS	Chlorine Solution
DG	Digester Gas
DS	Digester Sludge
FC	Ferric Chloride
GW	Grit Washing
GS	Grit Separation
HW	Hot Water
LR	Lagoon Return
NG	Natural Gas
NP	Non-Potable Water
NR	Noxic Return
P	Polymer
PD	Plant Drain
PP	Process Piping
PS	Primary Sludge
PW	Potable Water
R	Recirculation
RAS	Return Activated Sludge
S	Sample
SC	Scum
SD	Sanitary Drain
SN	Supernatant
SR	Sludge Recirculation
SS	Secondary Sludge
ST	Sludge Transfer
UW	Utility Water (Non-Potable Plant Water)
WAS	Waste Activated Sludge
WW	Waste Water

EQUIPMENT SCHEDULE

DESIGNATION	EQUIPMENT TYPE
F	Fan
ME	Miscellaneous Equipment
P	Pump
S	Special
SG	Stop Gate, shear gate, sluice gate, slide gate, flap gate
UH	Unit Heater
V	Valve (Valves 4" Diameter and Larger Included in Schedule

EQUIPMENT IDENTIFICATION

- ME - DS - 2
  - Equipment Number
  - Piping System
  - Schedule Identification

PIPE IDENTIFICATION

- 6 - DS - (1)
  - Piping Design Table
  - Piping System (See Piping Schedule)
  - Pipe Size In Inches

STANDARD DETAIL IDENTIFICATION

(1) DETAIL CALL OUT ON DRAWING M-2 AS:

STANDARD DETAIL NUMBER — 1 / X.XX — DRAWING ON WHICH DETAIL IS SHOWN *

* NOTE: IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON THE SAME DRAWING, DRAWING NUMBER IS REPLACED BY A LINE.

PIPE DESIGN TABLE

PDT NO.	PIPE MATERIAL	FITTING MATERIAL
1	Class (as Specified) for Ductile Iron ANSI A21.51/AWWA C151 Flanged or Mechanical Joints as Indicated. Class (as Specified) for Threaded Flange	Class 125 Ductile or Cast Iron, ANSI A21.10/AWWA C110 Flanged or Mechanical Joint as Indicated
2	Standard Weight Carbon Steel, ASTM A120, Black	3-Inch and Smaller - 150 lb. Malleable Iron, ANSI B16.3 Banded, Screwed, 3-1/2 Inch and Larger - Standard Weight -ASTM A234 ANSI B16.9 Welded Steel or 125 lb. Flanged Cast Iron as Indicated
3	Standard Weight Carbon Steel, ASTM A120, Galvanized	3-Inch and Smaller - 150 lb. Malleable Iron, ANSI B16.3 Banded, Screwed, Galvanized 3-1/2 Inch and Larger - 125 lb. Cast Iron Flanged or Mechanical Coupling as Indicated
4	Copper, ASTM B88 Buried Service - Type K, Soft Temper Exposed Service - Type L, Hard Temper	Wrought Copper or Cast Bronze Solder Joint, ANSI B16.22, 150 psi
5	Polyvinyl Chloride, Schedule 80, Normal Impact ASTM D1785	Schedule 80 Polyvinyl Chloride, Socket Solvent Weld Joints, ASTM D2467
6	Fiberglass Reinforced Plastic (FRP) ASTM D2996	Epoxy Resin Fragment Wound or Molded Type - 150 psi @ 200 F
7	Linear Low Density Poly-ethylene Tubing, Vacuum Rated, Installed Inside 3" Schedule 80 PVC Pipe	Compression Fitting
8	Cast Iron Soil ANSI A112.5.1, Service Weight, Bell and Spigot or Hubless	Cast Iron Soil ANSI A112.5.1, Service Weight, Bell and Spigot or Hubless
9	Class (as Specified) for Ductile Iron ANSI A21.51/AWWA C151, Bell and Spigot	Class 125 Ductile or Cast Iron, ANSI A21.10/AWWA C110, Mechanical Joint
10	Polyvinyl Chloride Sewer Pipe, Bell and Spigot ASTM D-3034	Polyvinyl Chloride, Bell and Spigot, ASTM D-3034
11	Standard Weight Steel, ASTM A53, Seamless. (10 Mil Polyethylene or PVC Coated @ Exterior)	Standard Weight, Butt Weld Steel ANSI B16.9 ASTM A234
12	Polyvinyl Chloride Pressure Pipe ASTM D2241 (C900) with Bell & Spigot Ends. Wall thickness as Specified	Class 125 Ductile Iron or ANSI A21.10/ AWWA C110, Flanged or Mechanical Joints as Indicated
13	Polypropylene, ASTM D2146 Schedule 40 with Heat Fused Joints	Polypropylene, Schedule 40 Drainage Type with Heat Fused Socket Joints
14	Stainless Steel AISI Type 304, ASTM A312 Schedule 5S	Stainless Steel AISI Type 316 ANSI B16.9 Butt-Welded Schedule 5S or 150 lb Flanged
15	Welded Steel, AWWA C200 with Specified Wall Thickness. Epoxy/Cement Mortar Lined for Potable Water Service	ASTM A234, Grade B, Seamless or Butt-welded. Fittings 14-inches and Larger Mitered to Conform to AWWA C208 Table 2 with Butt-Weld Ends
16	Class (as Specified) for Ductile Iron ANSI A21.51/AWWA C151 Glass Lined Flanged or Mechanical Joints as Indicated Class (as specified) for Threaded Flange	Class 125 Ductile or Cast Iron ANSI A21.51/AWWA C151 Glass Lined Flanged or Mechanical Joints as Indicated

SECTION AND DETAIL IDENTIFICATION

SECTION IDENTIFICATION

(1) SECTION CUT ON DRAWING M-1 AS:

SECTION NUMBER — 2 / M-2 — DRAWING ON WHICH SECTION APPEARS *

(2) ON DRAWING M-2 THIS SECTION IS IDENTIFIED AS:

SECTION NUMBER — 2 / M-1 — SECTION — DRAWING ON WHICH SECTION WAS TAKEN *

DETAIL IDENTIFICATION

(1) DETAIL CALL OUT ON DRAWING M-2 AS:

DETAIL NUMBER — 1 / M-1 — DRAWING ON WHICH DETAIL IS SHOWN *

(2) ON DRAWING M-1 THIS DETAIL IS IDENTIFIED AS:

DETAIL NUMBER — 1 / M-2 — DETAIL — DRAWING ON WHICH DETAIL IS CALLED OUT *

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
LEGEND

SHEET 1.04

DESCRIPTION	VALUE	
WASTEWATER TREATMENT FACILITY IMPROVEMENTS		
DESIGN YEAR	2045	
DESIGN POPULATION	2,670	
1% (100-YR) FLOOD ELEVATION	1263.3-FT	
INFLUENT DESIGN CRITERIA		
DESIGN FLOWS AND LOADINGS		
AVE DRY WEATHER FLOW (ADW)	0.55 MGD	380 GPM
AVE WET WEATHER FLOW (AWW)	0.94 MGD	650 GPM
MAX WET WEATHER FLOW (MWW)	1.66 MGD	1,150 GPM
PEAK HOURLY FLOW (PHWW)	1.98 MGD	1,375 GPM
PEAK INSTANTANEOUS FLOW (PIWW)	1.98 MGD	1,375 GPM
TOTAL FACILITY INFLUENT		
CARBONACEOUS BIOCHEMICAL	176 MG/L	1,375 LB/DAY
1 OXYGEN DEMAND (CBOD5)		
TOTAL SUSPENDED SOLIDS (TSS)	150 MG/L	1,170 LB/DAY
TOTAL KJELDAHL NITROGEN (TKN)	20 MG/L	156 LB/DAY
TOTAL PHOSPHORUS (P)	2.7 MG/L	21 LB/DAY
EFFLUENT DESIGN CRITERIA (NPDES/SDS PERMIT MN0051934)		
RECEIVING STREAM	SPRING VALLEY CREEK	
RECEIVING STREAM CLASSIFICATION	1B, 2Ag, 3, 4A, 5, 6	
0 30-DAY AVERAGE		
CARBONACEOUS BIOCHEMICAL	15 MG/L	53.1 KG/DAY
OXYGEN DEMAND (CBOD5)		
TOTAL SUSPENDED SOLIDS (TSS)	30 MG/L	106.1 KG/DAY
TOTAL NITROGEN (AS N)	10 MG/L	--
AMMONIA NITROGEN (AS N)		
JANUARY-MARCH	8.0 MG/L	28.0 KG/DAY
APRIL-MAY	4.0 MG/L	14.0 KG/DAY
JUNE-SEPTEMBER	1.0 MG/L	4.0 KG/DAY
OCTOBER-NOVEMBER	4.0 MG/L	14.0 KG/DAY
DECEMBER	8.0 MG/L	28.0 KG/DAY
30-DAY GEOMETRIC MEAN		
FECAL COLIFORM (APR-OCT)	200 #/100 ML	
DAILY MINIMUM, MAXIMUM		
DISSOLVED OXYGEN	7.0 MG/L	
PH	6.5 - 9.0 SU	
BIOSOLIDS DESIGN CRITERIA		
ANNUAL AVERAGE		
CBOD5 REMOVAL (WAS)	900 - 1,200 LB/DAY	
CHEMICAL P PRECIPITATE	NA	
TOTAL AVERAGE DAILY	900 - 1,200 LB/DAY	
TOTAL ANNUAL	160 - 220 DRY TON/YR	
MAIN LIFT STATION (COLLECTION SYSTEM)		
MAIN LIFT PUMPS (P-WW-1, P-WW-2)		
TYPE	SUBMERSIBLE	
NUMBER	2	
CAPACITY (EACH)	700 GPM AT 13-FT TDH	
CAPACITY (FIRM)	700 GPM	
MOTOR SIZE	20 HP	
DRIVE	CONSTANT SPEED	
PRELIMINARY TREATMENT BLDG LIFT PUMPS		
INFLUENT LIFT PUMPS (P-PP-1, P-PP-2, P-PP-3, P-PP-4, P-PP-5, P-PP-6)		
TYPE	SUBMERSIBLE	
NUMBER	6	
CAPACITY (EACH)	275 GPM AT 29-FT TDH	
CAPACITY (FIRM)	1,375 GPM (1.98 MGD)	
MOTOR SIZE	5 HP	
DRIVE	CONSTANT SPEED	

DESCRIPTION	VALUE
SCREENING	
MECHANICAL FINE SCREEN (ME-FS-1)	
TYPE	FINE SCREEN
NUMBER OF UNITS	1
SCREEN SIZE	1/4-IN PERFORATIONS
CAPACITY	2.0 MGD
MOTOR SIZE	1.0 HP
MANUAL BAR SCREEN	
CLEAR OPENING SIZE	1.25-IN
BAR SIZE	2.0-IN X 0.25-IN
BAR SPACING	1.5-IN OC
GRIT REMOVAL	
GRIT SYSTEM (ME-GC-1)	
TYPE	CHAIN AND SCRAPTER
CHANNEL WIDTH	1-FT 9-IN
DESIGN VELOCITY	10.0 FT/MIN
RATED CAPACITY	2.0 MGD
MOTOR SIZE	0.5 HP
ACTIVATED SLUDGE PROCESS DESIGN	
SELECTOR BASINS	
TYPE	CONCRETE; COMPLETE MIX
NUMBER	3
DIMENSIONS	53-FT X 37-FT; BAFFLED
SIDE WATER DEPTH	17.5-FT
VOLUME	0.25 MG
HYDRAULIC RETENTION TIME (HRT)	
AT ADW = 0.55 MGD	10.9 HR
AT AWW = 0.94 MGD	5.6 HR
AT MWW = 1.66 MGD	3.6 HR
SELECTOR BASIN JET MIX PUMPING (P-MX-1, P-MX-2, P-MX-3)	
TYPE	SUBMERSIBLE
NUMBER	3
CAPACITY (EACH)	810 GPM AT 18-FT TDH
MOTOR SIZE	10 HP
DRIVE	CONSTANT SPEED
AERATION BASINS	
TYPE	CONCRETE
NUMBER	2
DIMENSIONS (OVERALL)	139-FT 0-IN x 72-FT 4-IN; BAFFLED
AERATION AREA (EA)	7,860 SF
SIDE WATER DEPTH	17.0-FT
VOLUME (EA)	0.50 MG
VOLUME (TOTAL)	1.00 MG
HYDRAULIC RETENTION TIME (HRT)	
AT ADW = 0.55 MGD	43.6 HR
AT AWW = 0.94 MGD	25.5 HR
AT MWW = 1.66 MGD	14.5 HR
SOLIDS RETENTION TIME (SRT)	20 DAY
ORGANIC LOADING RATE (OLR)	8-15 LB/1000 CF
MIXED LIQUOR SUSPENDED	
SOLIDS (MLSS)	2,500-4,500 MG/L
ACTIVATED SLUDGE AERATION SYSTEM DESIGN	
MAX ACTUAL OXYGENATION RATE (AOR)	2,700 LB O2/DAY
MAX WATER TEMPERATURE	25 DEG C
ALPHA FACTOR	0.45
BETA FACTOR	0.95
MINIMUM DISSOLVED OXYGEN	2.0 MG/L
STD OXYGEN TRANSFER EFF (SOTE)	17.0%
AIR FLOW RATE (MAXIMUM)	3,200 SCFM
AIR FLOW RATE (FIRM)	2,400 SCFM

DESCRIPTION	VALUE
ACTIVATED SLUDGE (CONT'D)	
AERATION BLOWERS (ME-A-1, ME-A-2, ME-A-5, ME-A-6)	
TYPE	POSITIVE DISPLACEMENT
NUMBER	4
CAPACITY (EACH)	806 SCFM AT 8.5 PSIG
CAPACITY (FIRM FOR ACTIVATED SLUDGE	2,400 SCFM
MOTOR SIZE	50 HP
DRIVE	VARIABLE SPEED
RETURN ACTIVATED SLUDGE (RAS)	
CAPACITY (50-150% AWW OR 85% MWW)	325 - 975 GPM
MIXED LIQUOR RETURN (MLR)	
CAPACITY (0-300% AWW OR 175% MWW)	0 - 2,000 GPM
COMBINED NITRATE RETURN (RAS + MLR)	
CAPACITY (50-450% AWW)	325 - 2,975 GPM
TOTAL NITRATE REMOVAL CAPACITY	33-80%
MIXED LIQUOR RETURN	
MIXED LIQUOR RETURN PUMPS (P-MLR-1, P-MLR-2)	
TYPE	SUBMERSIBLE
NUMBER	2
CAPACITY (EACH)	2,000 GPM AT 10-FT TDH
MOTOR SIZE	15 HP
DRIVE	VARIABLE SPEED
RETURN AND WASTE ACTIVATED SLUDGE PUMPS (RAS/WAS)	
RAS/WAS PUMPS (P-RAS-1, P-RAS-2, P-RAS-3, P-RAS-4)	
TYPE	SUBMERSIBLE
NUMBER	4
CAPACITY (EACH)	325 GPM AT 51-FT TDH
CAPACITY (FIRM)	975 GPM
MOTOR SIZE	10 HP
DRIVE	VARIABLE SPEED
SCUM PUMP	
SCUM PUMPS (P-SC-1)	
TYPE	SUBMERSIBLE
NUMBER	1
CAPACITY (EACH)	75 GPM AT 39-FT TDH
MOTOR SIZE	5 HP
DRIVE	CONSTANT SPEED
FINAL CLARIFICATION	
CLARIFIERS	
NUMBER	2
TYPE	CIRCULAR, CENTER FEED
SLUDGE WITHDRAWL	SUCTION TUBE
DIAMETER	45-FT
SIDE WATER DEPTH	14-FT
SURFACE AREA (EACH)	1590 SF
SURFACE AREA (TOTAL)	3181 SF
WEIR LENGTH (EACH)	125-FT
WEIR LENGTH (TOTAL)	250-FT
HYDRAULIC LOADING RATE (HLR)	
MAX	1,000 GPD/SF
AT AWW = 0.94 MGD	300 GPD/SF
AT PHWW = 1.98 MGD	620 GPD/SF
SOLIDS LOADING RATE (SLR)	
MAX AT AWW	30 LB/DAY/SF
MAX AT PHWW	50 LB/DAY/SF
AWW: 0.94 MG, 150% RAS, 4,500 MG/L	28 LBS/DAY/SF
PHWW: 1.98 MG, 70% RAS, 4,500 MG/L	40 LBS/DAY/SF
WEIR LOADING RATE	
MAX AT PHWW	15,000 GPD/FT
AT AWW = 0.94 MGD	3840 GPD/FT
AT PHWW = 1.98 MGD	8080 GPD/FT

DESCRIPTION	VALUE
DISINFECTION	
TYPE	CHLORINATION/DECHLORINATION
NUMBER	2
LENGTH	120.0-FT
WIDTH	3.0-FT
DEPTH	4.0-FT
CHLORINATION VOLUME (TOTAL)	0.022 MG
DECHLORINATION VOLUME (TOTAL)	720 GAL
LENGTH:WIDTH RATIO	40 : 1
CHLORINATION	
NUMBER	2
TYPE	GAS / VACUUM EJECTOR
CAPACITY (EA)	6.25 LB/HR
MAX DOSE AT AWW = 0.94 MGD	12.2 MG/L
MAX DOSE AT PHWW = 1.98 MGD	9.1 MG/L
HRT AT AWW = 0.94 MGD	33.7 MIN
HRT AT PHWW = 1.98 MGD	16.0 MIN
DECHLORINATION	
NUMBER	2
TYPE	GAS / VACUUM EJECTOR
CAPACITY (EA)	1.25 LB/HR
HRT AT AWW = 0.94 MGD	66 SEC
HRT AT PHWW = 1.98 MGD	31 SEC
UTILITY WATER PUMPS (P-UW-1, P-UW-2)	
NUMBER	2
TYPE	SUBMERSIBLE
CAPACITY (EA)	15 GPM AT 25-FT TDH
MOTOR SIZE	3
DRIVE	VARIABLE SPEED
UTILITY WATER BOOSTSER PUMP (P-UW-3)	
NUMBER	1
TYPE	IN-LINE CENTRIFUGAL
CAPACITY (EA)	15 GPM AT 25-FT TDH
MOTOR SIZE	3
DRIVE	VARIABLE SPEED
EFFLUENT REAERATION	
TYPE	FINE BUBBLE DIFFUSED AERATION
REAERATION BASIN	
LENGTH	12-FT
WIDTH	12-FT
DEPTH	15-FT
VOLUME	0.016 MG
HYDRAULIC RETENTION TIME	
AT AWW = 0.94 MGD	24 MIN
AT PHWW = 1.98 MGD	12 MIN
REAERATION SYSTEM DESIGN	
MAX ACTUAL OXYGENATION RATE (AOR)	50-110 LB O2/DAY
MAX WATER TEMPERATURE	25 DEG C
ALPHA FACTOR	0.85
BETA FACTOR	0.95
MINIMUM DISSOLVED OXYGEN	7.0 MG/L
STD OXYGEN TRANSFER EFF (SOTE)	14.8%
AIR FLOW RATE (AWW)	90 SCFM
AIR FLOW RATE (PHWW)	190 SCFM
REAERATION BLOWER (ME-A-7)	
TYPE	POSITIVE DISPLACEMENT
NUMBER	1
CAPACITY (EACH)	200 SCFM AT 7.5 PSI
MOTOR SIZE	15 HP
DRIVE	VARIABLE SPEED

DESCRIPTION	VALUE
WASTE ACTIVATED SLUDGE (WAS) PRODUCTION	
MASS	900 - 1,200 LB/DAY
VOLUME AT 0.5-1.0 PERCENT	10,000-30,000 GPD
VOLUME AT 3.0 PERCENT	4,000-5,000 GPD
EST PUMPING TIME/DAY AT 325 GPM	30 - 90 MIN/DAY
AEROBIC SLUDGE TANKS	
TYPE	CONCRETE, SLOPED BOTTOM AERATED
NUMBER	2
DIMENSIONS	48-FT X 48-FT X 17.5-FT DEEP
VOLUME (EACH)	0.30 MG
VOLUME (TOTAL)	0.60 MG
HRT AT 10,000 GPD	60 DAYS
COARSE BUBBLE MIXING/AERATION	
20 SCFM/1000 CF	800 SCFM EACH
DIGESTER BLOWERS (ME-A-3, ME-A-4)	
TYPE	POSITIVE DISPLACEMENT
NUMBER	2
CAPACITY (EACH)	806 SCFM AT 8.5 PSIG
MOTOR SIZE	50 HP
DRIVE	VARIABLE SPEED
SLUDGE MIXING/LOADOUT PUMPS	
SLUDGE MIXING/LOADOUT PUMPS (P-ST-1, P-ST-2)	
TYPE	CENTRIFUGAL, SELF-PRIMING
NUMBER	2
CAPACITY (EACH)	500 GPM AT 25-FT TDH
MOTOR SIZE	10 HP
DRIVE	VARIABLE SPEED
INSTRUMENATION	
FLOW METERS	
INFLUENT FLOW (FE-1)	PARSHALL FLUME
EFFLUENT FLOW (FE-2)	0 - 2,000 GPM 10-IN
MIXED LIQUOR RETURN (FE-3)	0 - 1,500 GPM 8-IN
RAS FROM CLARIFIER NO. 1 (FE-4)	0 - 1,000 GPM 6-IN
RAS FROM CLARIFIER NO. 2 (FE-5)	0 - 1,000 GPM 6-IN
RAS TO SELECTOR BASINS (FE-6)	0 - 1,000 GPM 6-IN
WAS TO DIGESTERS (FE-7)	0 - 500 GPM 4-IN
SLUDGE TANK NO. 1 DECANT (FE-8)	0 - 500 GPM 4-IN
SLUDGE TANK NO. 2 DECANT (FE-9)	0 - 500 GPM 4-IN
SLUDGE LOADOUT (FE-10)	0 - 1000 GPM 6-IN
LEVEL MEASUREMENT	
MAIN LIFT STATION	SUB. PRESSURE W/ FLOAT BACKUP
PRELIMINARY TREATMENT WET WELL	FLOATS
FINE SCREEN	-- BY SCREEN MANF --
INFLUENT PARSHALL FLUME	RADAR
MIXED LIQUOR RETURN	RADAR
RAS/WAS WET WELL NO. 1	LOW LEVEL FLOAT
RAW/WAS WET WELL NO. 2	LOW LEVEL FLOAT
SCUM SUMP	SUB. PRESSURE W/ FLOAT BACKUP
DIGESTER NO. 1	SUB. PRESSURE W/ FLOAT BACKUP
DIGESTER NO. 2	SUB. PRESSURE W/ FLOAT BACKUP
INSTRUMENTATION	
INFLUENT CHANNEL	PH/TEMP
ANOXIC BASIN - CENTER	DO/ORP/PH
ANOXIC BASIN - WEST	DO/ORP/PH
ANOXIC BASIN - EAST	DO/ORP/PH
AERATION BASIN NO. 1A (NW)	DO
AERATION BASIN NO. 2A (NE)	DO
AERATION BASIN NO. 1B (SW)	DO
AERATION BASIN NO. 2B (SE)	DO
EFFLUENT CHANNEL	PH/TEMP
*DISSOLVED OXYGEN (DO)	
*OXYGEN REDUCTION POTENTIAL (ORP)	

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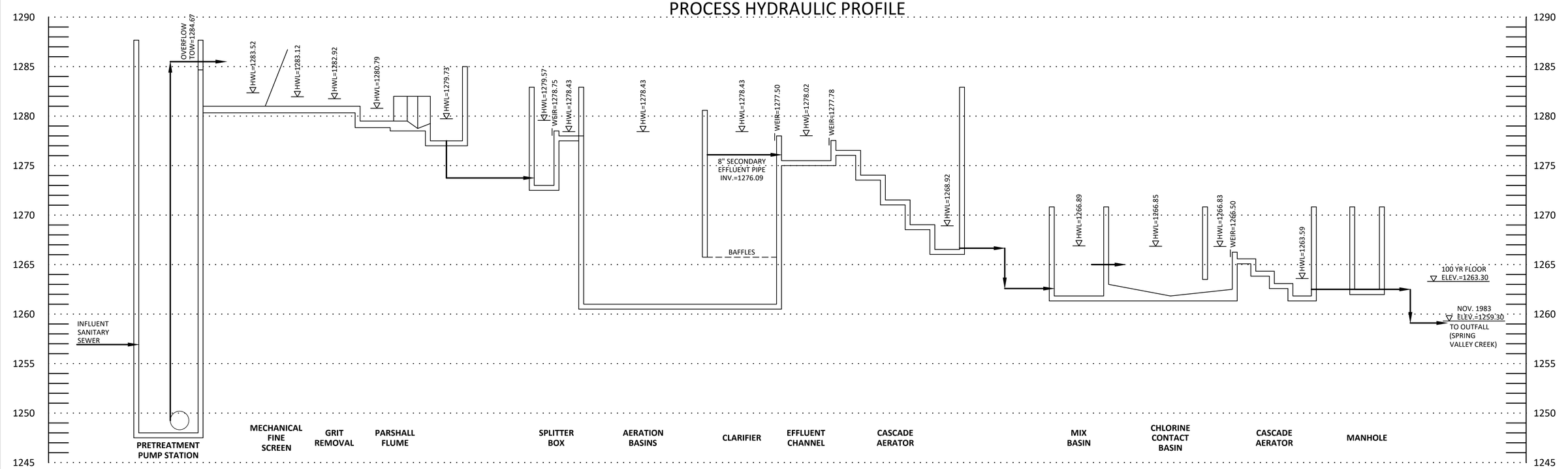
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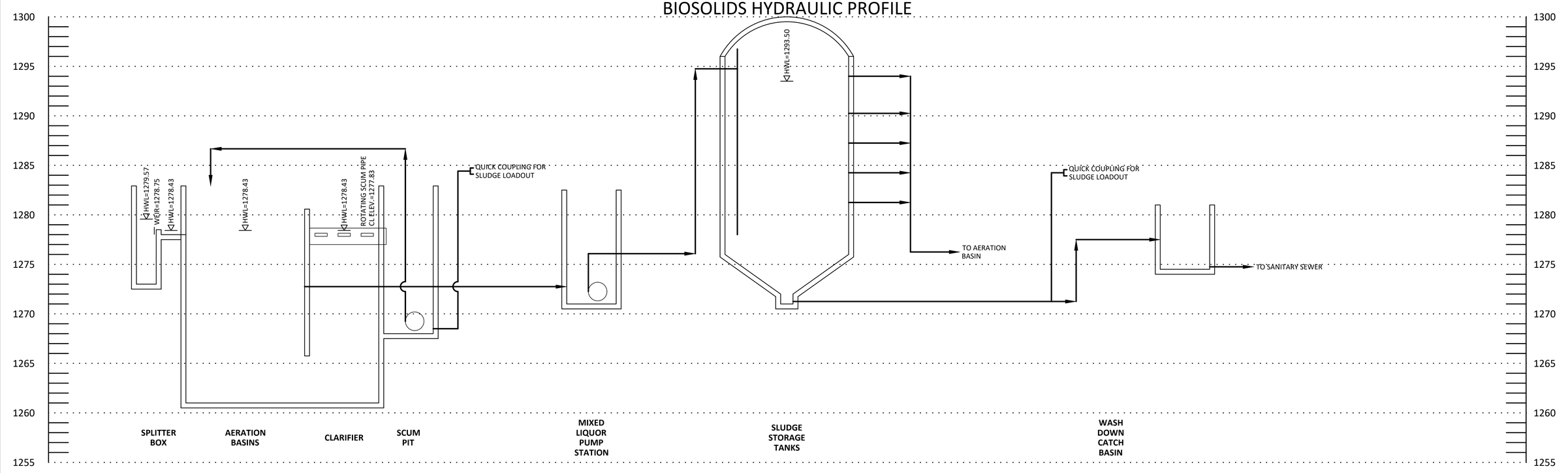
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
DESIGN DATA

SHEET 1.05

PROCESS HYDRAULIC PROFILE



BIOSOLIDS HYDRAULIC PROFILE



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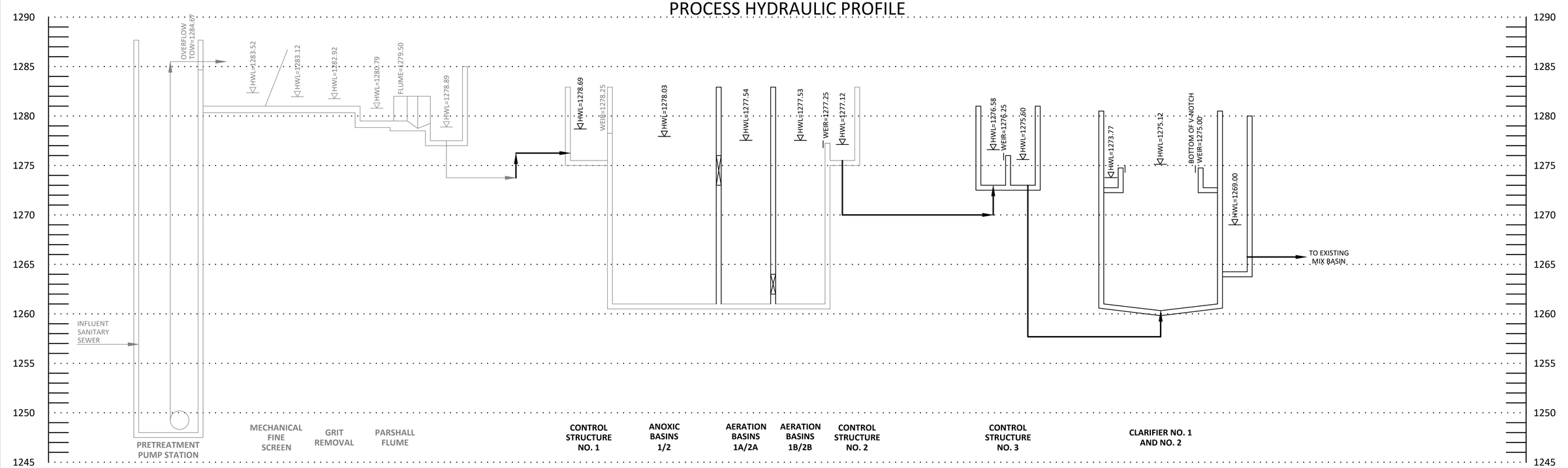
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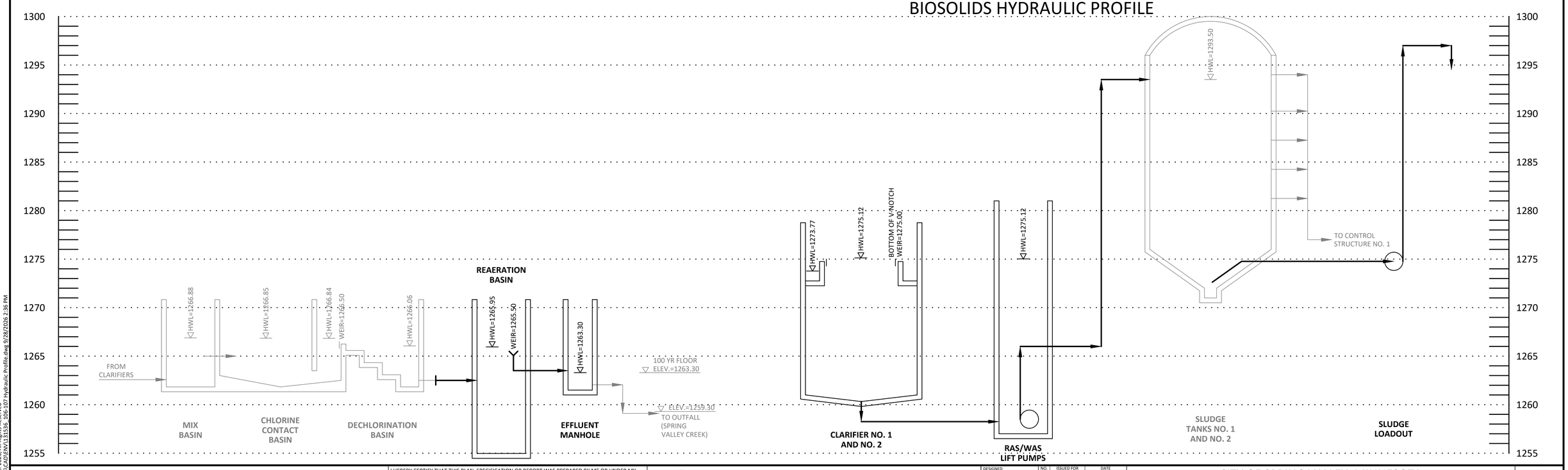
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING PROCESS AND BIOSOLIDS HYDRAULIC PROFILE

SHEET 1.06

PROCESS HYDRAULIC PROFILE



BIOSOLIDS HYDRAULIC PROFILE



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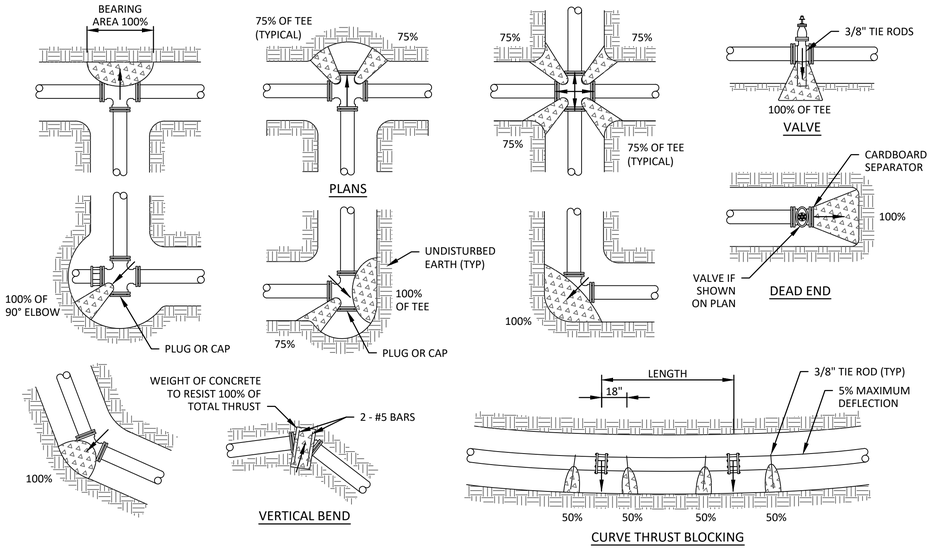
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED PROCESS AND BIOSOLIDS HYDRAULIC PROFILE

SHEET 1.07



100% BEARING AREA (SQ. FT.)

PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22 1/2° ELBOW
4	2.4	3.4	1.9	0.9
6	4.9	6.9	3.8	1.9
8	8.4	11.8	6.4	3.4
10	13.7	19.3	10.5	5.4
12	19.4	27.3	14.9	7.7
14	26.3	37.0	20.1	10.3
16	34.0	47.9	26.2	13.3
18	43.9	61.8	33.7	17.2
20	54.3	76.4	41.7	21.2
24	77.9	109.8	59.8	30.5

NOTE:
BEARING AREAS ARE BASED ON 250 lb. MAXIMUM PRESSURE AND SOIL BEARING STRENGTH OF 2000 lb./SQ. FT.

NOTE:
FIGURE (100%) AT THRUST BLOCK INDICATES PER CENT OF TOTAL THRUST TO BE APPLIED FOR BEARING AREA.

NOTE:
ARROWS (⟵) INDICATE THRUST DIRECTION.

NOTE:
CONCRETE FOR THRUST BLOCKS TO BE 2000 P.S.I.

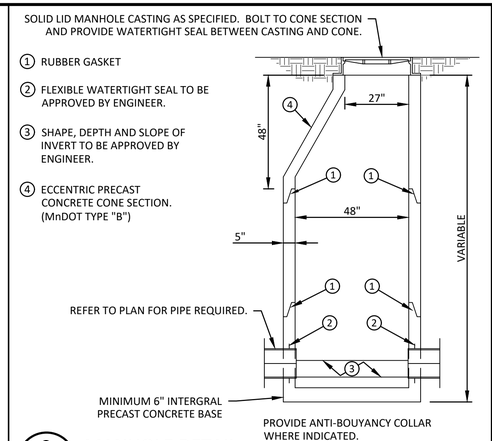
NOTES:
1. RESTRAINING RODS ARE REQUIRED AT ALL TEES AND AT BENDS DEFLECTING 22 1/2° OR MORE.
2. WRAP THE PIPE WITH POLYETHYLENE WRAPPING PRIOR TO POURING THE THRUST BLOCK.
3. SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL. IN ABSENCE OF A SOILS REPORT, AN AVERAGE SOIL (SPADEABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2000 P.S.I.
4. THRUST BLOCKS ARE NOT REQUIRED ON P.V.C. WITH SOLVENT WELDED JOINTS.

SIDE THRUST PER 100 lb./SQ.IN. PRESSURE PER DEGREE OF DEFLECTION

PIPE SIZE	SIDE THRUST-lb.	PIPE SIZE	SIDE THRUST-lb.
4	35	14	377
6	72	16	486
8	122	18	665
10	197	20	790
12	278	24	1150

MULTIPLY THRUST BY DEGREE OF DEFLECTION TO OBTAIN TOTAL THRUST

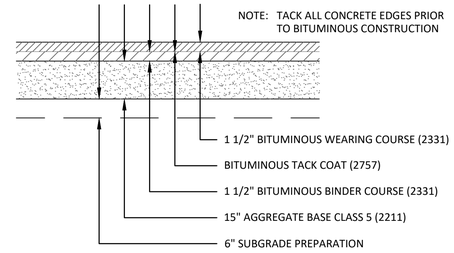
1 1.08 CONCRETE THRUST BLOCKS FOR DUCTILE IRON AND PVC PIPE
NOT TO SCALE



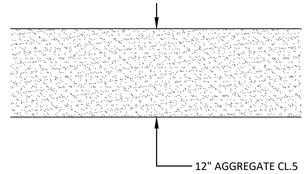
2 1.08 MANHOLE DETAIL
NOT TO SCALE

NOTE: SLOPE AND WIDTH AS SHOWN ON PLANS OR AS DIRECTED.

NOTE: NUMBERS IN PARENTHESIS ( ) INDICATE MnDOT SPEC REFERENCE

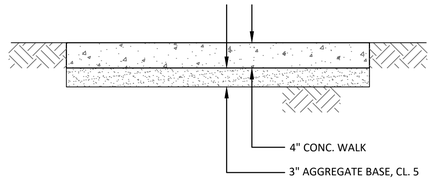


3 1.08 BITUMINOUS ROADWAY SECTION
NOT TO SCALE

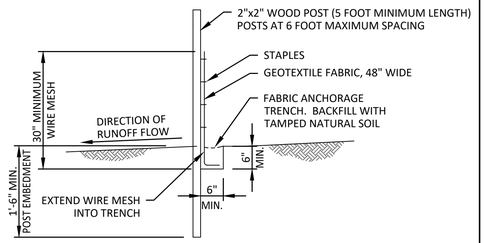


4 1.08 GRAVEL ROADWAY PATCH SECTION
NOT TO SCALE

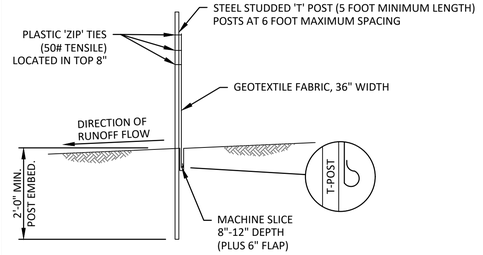
NOTE: SLOPE AND WIDTH AS SHOWN ON PLANS OR AS DIRECTED.
PLACE PREFORMED EXPANSION JOINT MATERIAL ALONG ALL BUILDINGS AND CONC. STRUCTURES



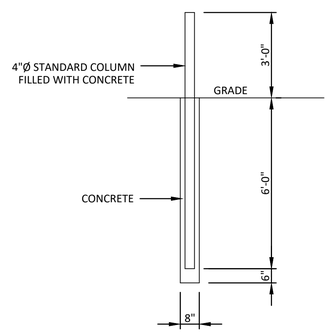
5 1.08 CONCRETE WALK SECTION
NOT TO SCALE



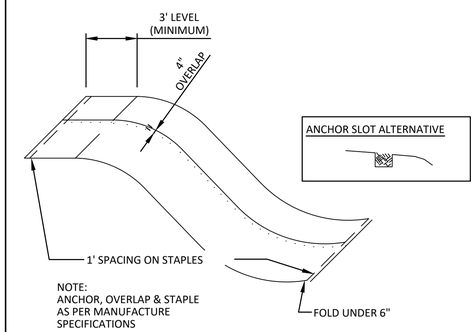
6 1.08 SILT FENCE - PREASSEMBLED
NOT TO SCALE



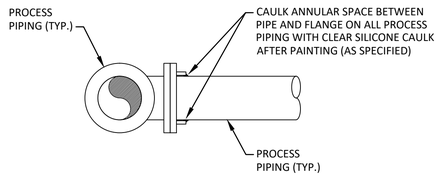
7 1.08 SILT FENCE - MACHINE SLICED
NOT TO SCALE



8 1.08 GUARDPOST DETAIL
NOT TO SCALE



9 1.08 EROSION CONTROL BLANKET INSTALLATION
NOT TO SCALE



10 1.08 CAULKING OF ANNULAR SPACE BETWEEN PIPE AND FLANGE
NOT TO SCALE

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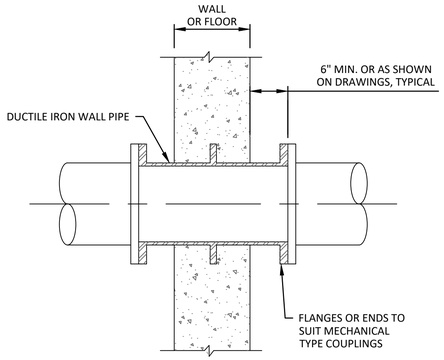
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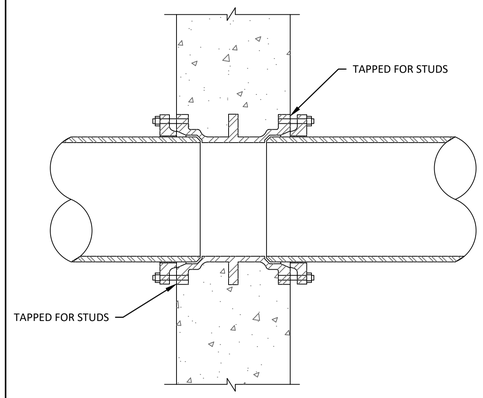
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
STANDARD DETAILS

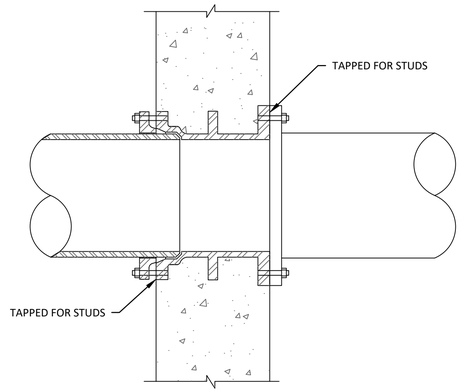
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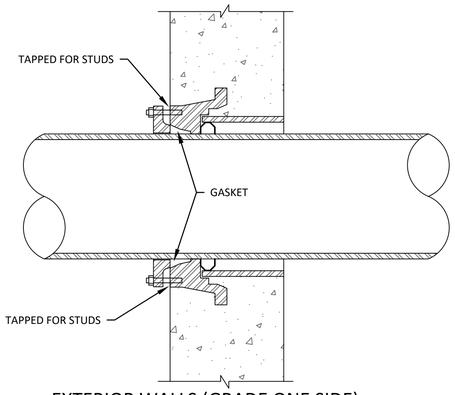
1 / 1.09 DUCTILE IRON WALL PIPE
NOT TO SCALE



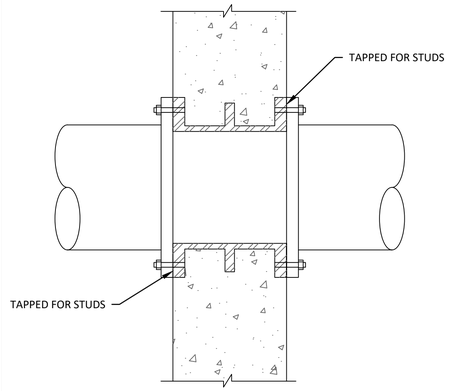
2 / 1.09 M.J. - M.J. WALL PIPE DETAIL
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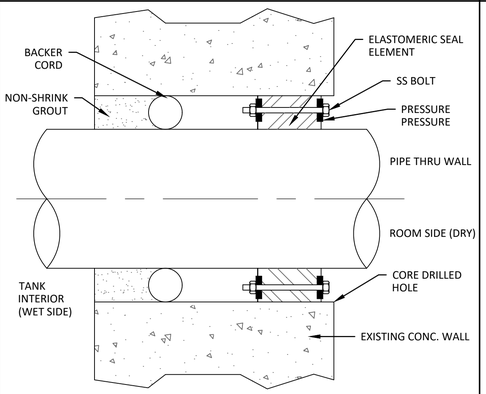
3 / 1.09 F-M.J. WALL PIPE DETAIL
NOT TO SCALE



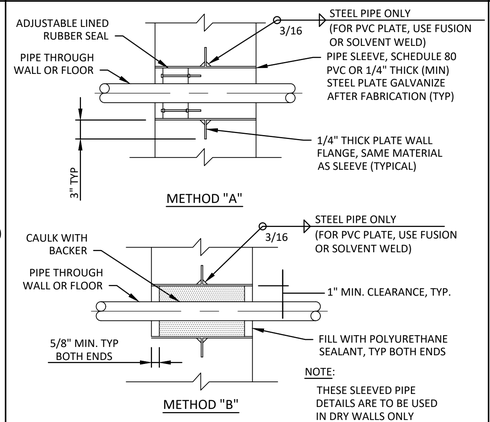
4 / 1.09 EXTERIOR WALLS (GRADE ONE SIDE)
M.J. - M.J. WALL PIPE DETAIL
NOT TO SCALE



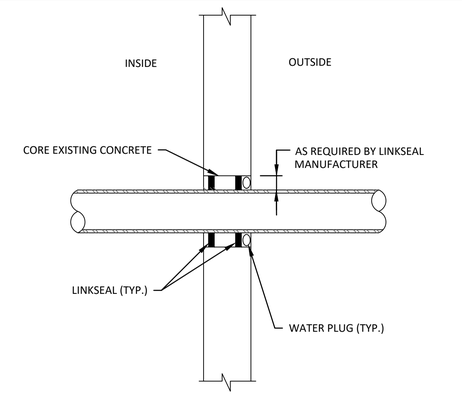
5 / 1.09 F-F WALL PIPE DETAIL
NOT TO SCALE



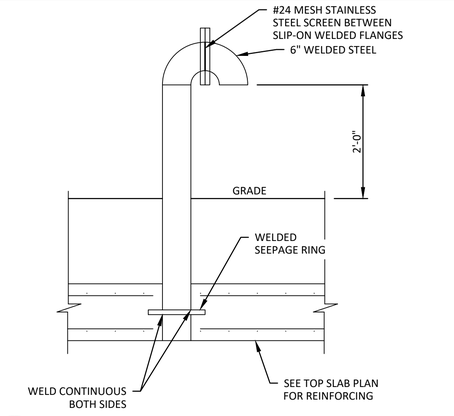
6 / 1.09 WALL PENETRATIONS CONSTRUCTED
IN EXISTING STRUCTURES
NOT TO SCALE



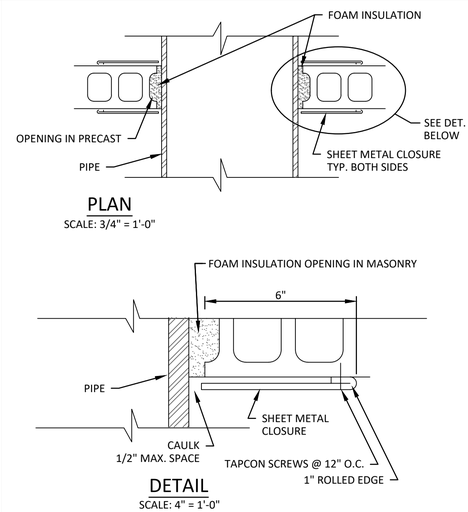
7 / 1.09 SLEEVED PIPE OPENING 3" AND SMALLER
NOT TO SCALE

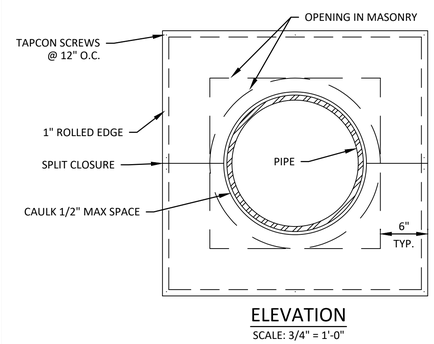


8 / 1.09 WALL PIPES IN EXISTING STRUCTURES
NOT TO SCALE

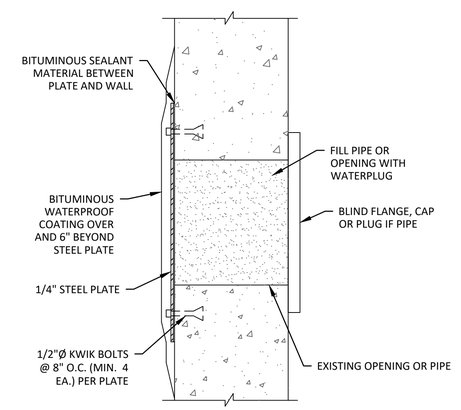


9 / 1.09 VENT
NOT TO SCALE

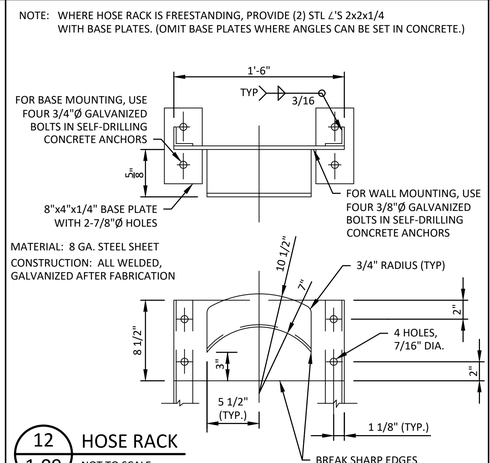




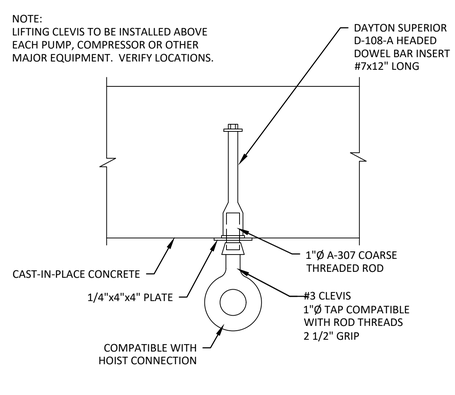
10 / 1.09 OPENING CLOSURE AT MASONRY OPENINGS
NOT TO SCALE



11 / 1.09 SEALING OF EXISTING OPENINGS
NOT TO SCALE



12 / 1.09 HOSE RACK
NOT TO SCALE



13 / 1.09 LIFTING HOOK IN CONCRETE
NOT TO SCALE

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SIGNATURE: [signature] TYPED OR PRINTED NAME: Jake R. Pichelmann

DATE: 9-29-2026 LIC. NO.: 54296

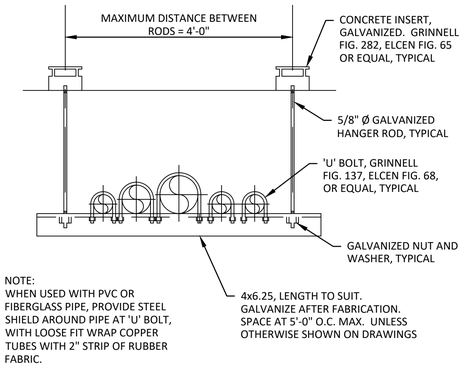
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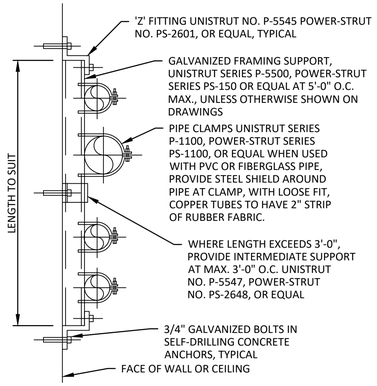
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
STANDARD DETAILS

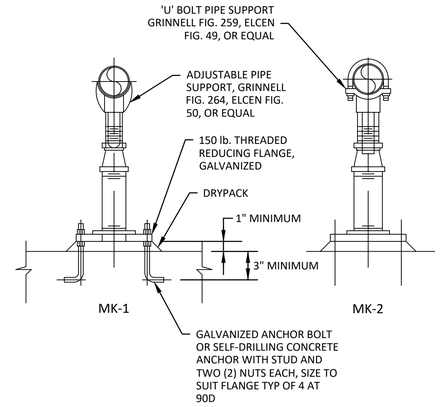
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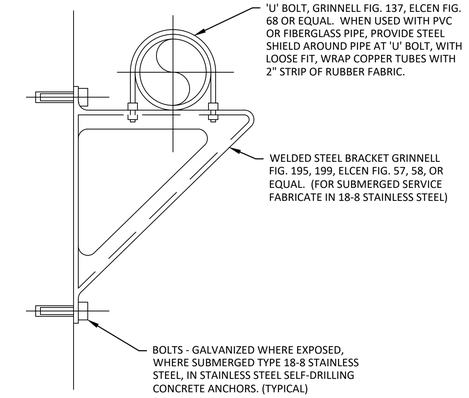
1 / 1.10 TRAPEZE PIPE HANGER
NOT TO SCALE



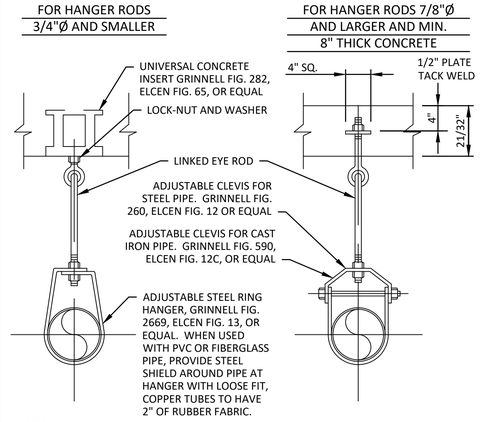
2 / 1.10 FLUSH MOUNTED PIPE SUPPORT
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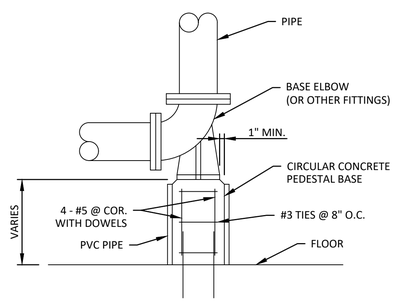
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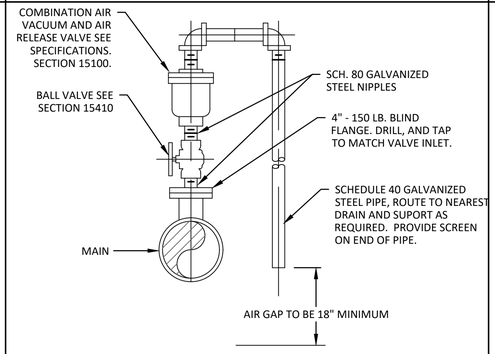
4 / 1.10 PIPE BRACKET
NOT TO SCALE



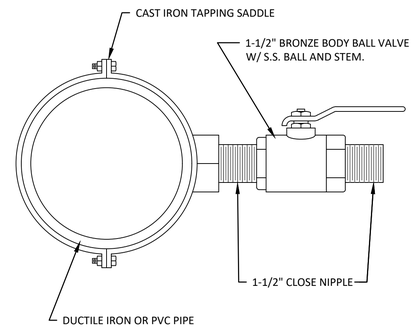
5 / 1.10 PIPE BRACKET
NOTE: 4" SQ. BEARING PLATE ALLOW 3800 lb. LOAD MAX. CONCRETE INSERT ALLOW 1400 lb. LOAD MAX.
NOT TO SCALE



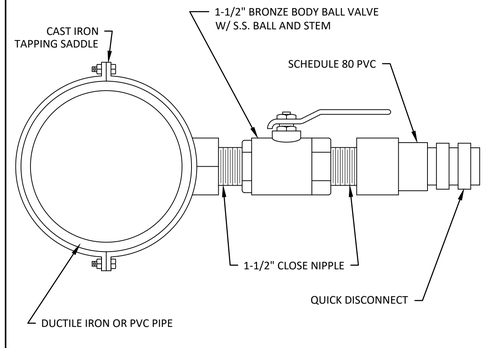
6 / 1.10 CONCRETE PEDESTAL BASE
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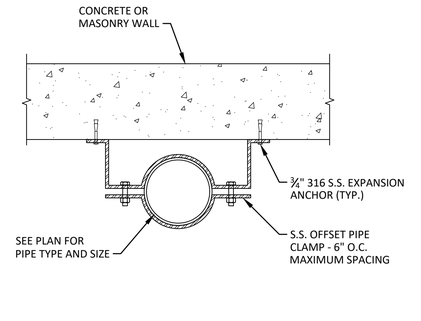
7 / 1.10 AIR-VACUUM AND AIR-RELEASE VALVE ASSEMBLY 3" AND SMALLER
NOT TO SCALE



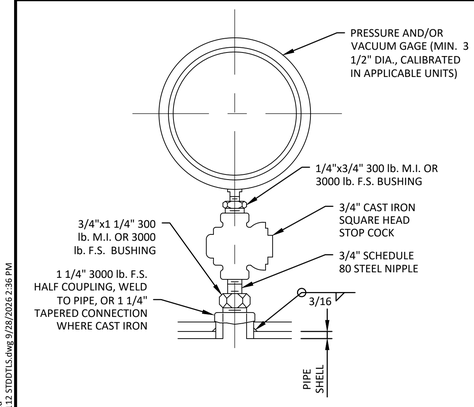
8 / 1.10 SAMPLE LINE CONNECTION
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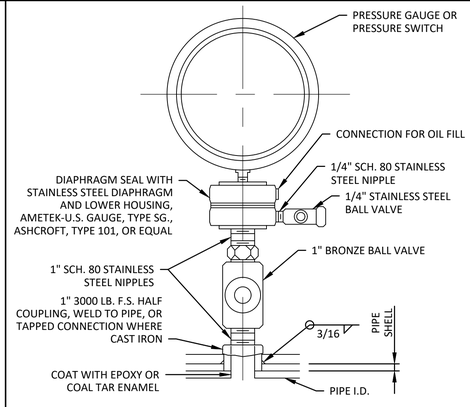
9 / 1.10 FLUSH OUT CONNECTION
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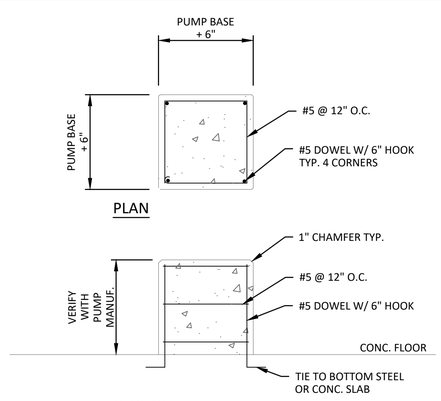
10 / 1.10 VERTICAL PIPE SUPPORT
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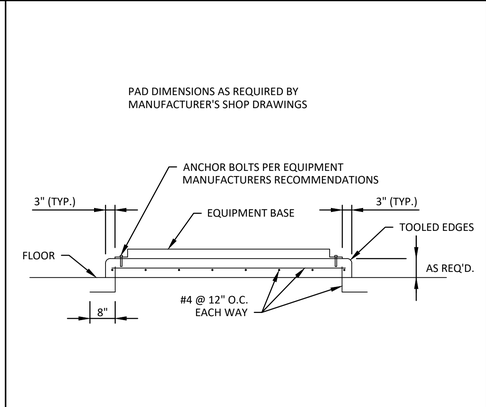
11 / 1.10 AIR PRESSURE AND/OR VACUUM GAUGE IN PIPE
NOT TO SCALE



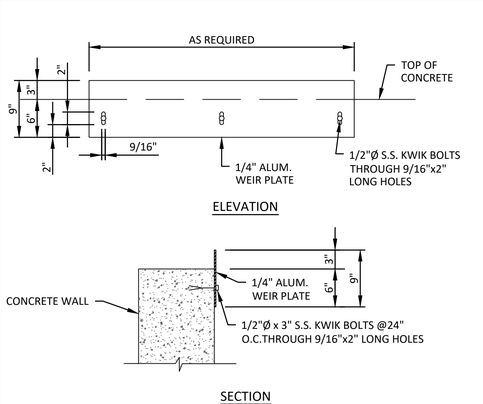
12 / 1.10 PRESSURE GAUGE OR PRESSURE SWITCH WITH DIAPHRAGM SEAL
NOT TO SCALE



13 / 1.10 CONCRETE PUMP BASE
NOT TO SCALE



14 / 1.10 CONCRETE EQUIPMENT BASE
NOT TO SCALE



15 / 1.10 WEIR PLATE
NOT TO SCALE

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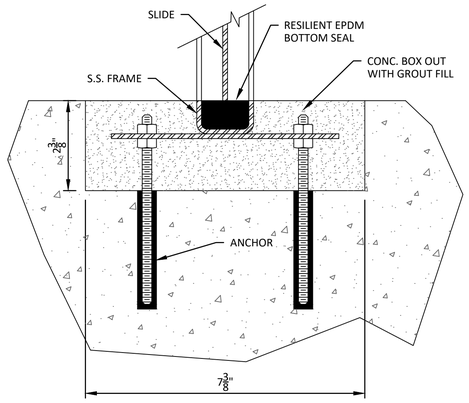
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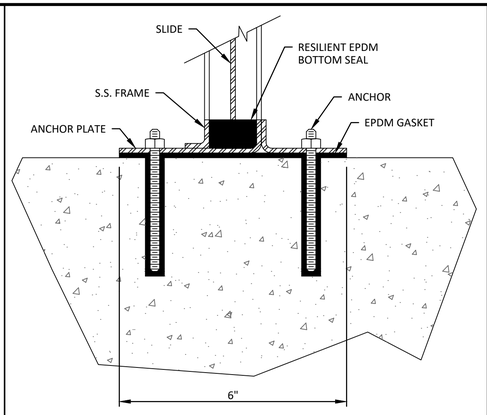
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CITY OF SPRING VALLEY, MINNESOTA
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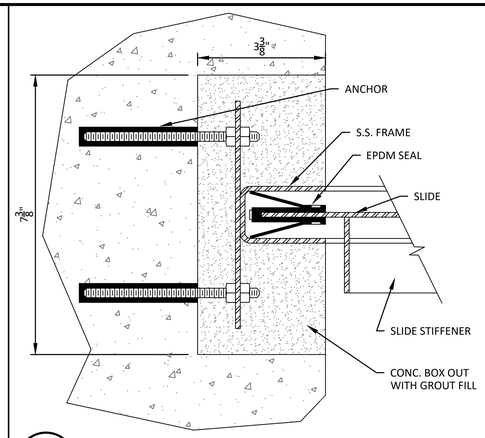
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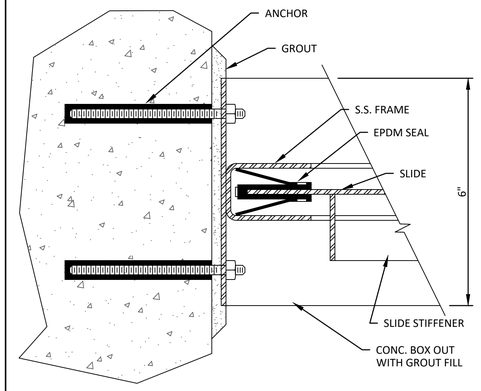
1 1.11 SLIDE GATE-RECESSED BOTTOM
NOT TO SCALE



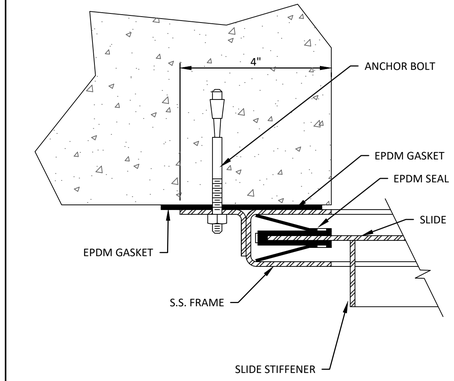
2 1.11 SLIDE GATE-SURFACE MOUNTED BOTTOM
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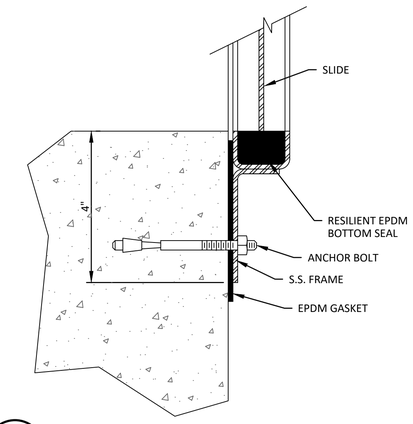
3 1.11 SLIDE GATE-RECESSED SIDE
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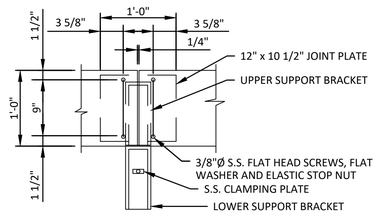
4 1.11 SLIDE GATE-SURFACE MOUNT SIDE
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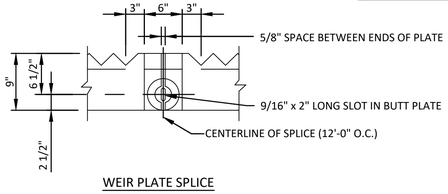
5 1.11 SLIDE GATE-WALL MOUNT SIDE
NOT TO SCALE



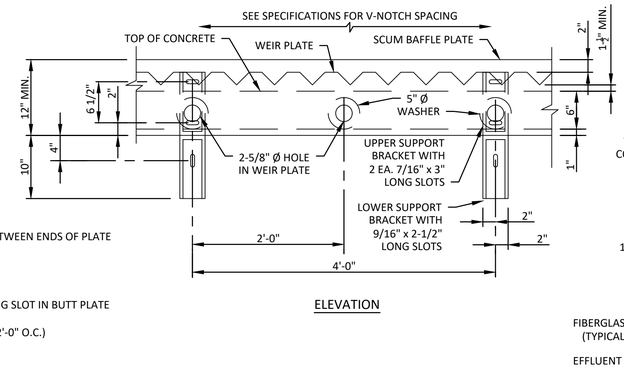
6 1.11 SLIDE GATE-WALL MOUNT BOTTOM
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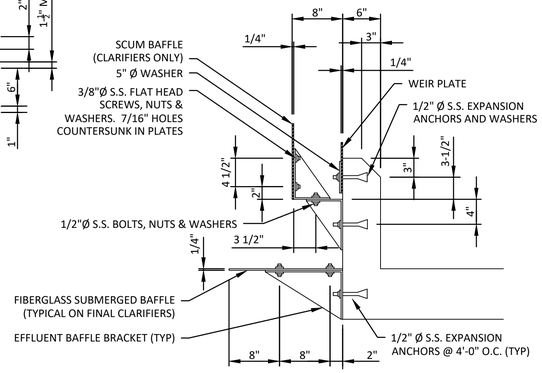
SCUM BAFFLE SPLICE



WEIR PLATE SPLICE

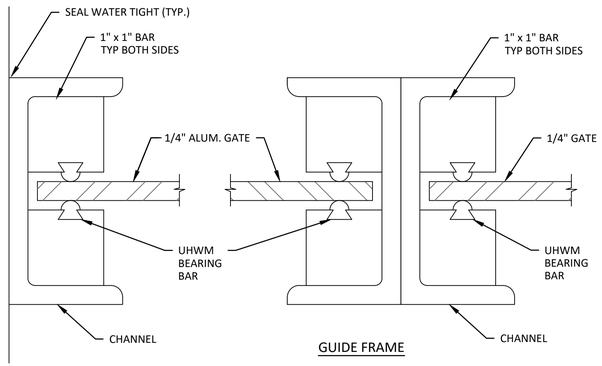


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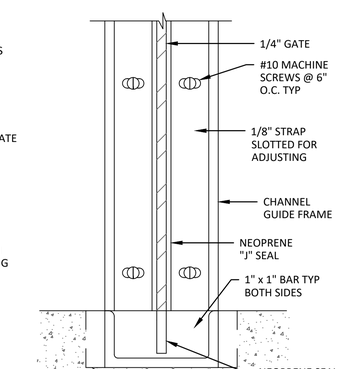


SECTION

7 1.11 SCUM BAFFLE AND WEIR PLATE
NOT TO SCALE



GUIDE FRAME

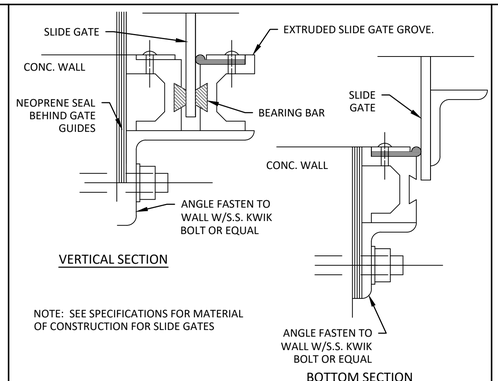


GUIDE FRAME

NOTE: ALL ALUMINUM CONSTRUCTION (6061-T6)
ALL ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METAL TO BE COATED WITH BITUMINOUS PAINT. FASTENERS 18-8 TYPE 304 S.S.

SEE SPECIFICATIONS FOR MATERIAL OF CONSTRUCTION FOR SLIDE GATES

8 1.11 SLIDE GATE
NOT TO SCALE

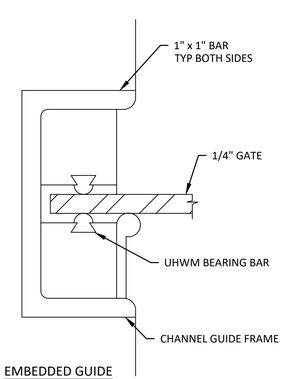


VERTICAL SECTION

NOTE: SEE SPECIFICATIONS FOR MATERIAL OF CONSTRUCTION FOR SLIDE GATES

BOTTOM SECTION

9 1.11 WALL MOUNTED SLIDE GATE
NOT TO SCALE



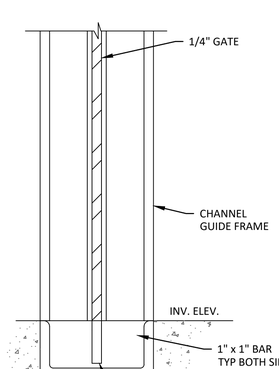
EMBEDDED GUIDE

NOTE: ALL ALUMINUM CONSTRUCTION (6061-T6)

ALL ALUMINUM IN CONTACT W/ CONCRETE OR DISSIMILAR METAL TO BE COATED W/ BITUMINOUS PAINT

FASTENERS 18-8 TYPE 304 S.S.

SEE SPECIFICATIONS FOR MATERIAL OF CONSTRUCTION FOR SLIDE GATES



FLUSH BOTTOM CLOSURE

10 1.11 SLIDE GATE
NOT TO SCALE

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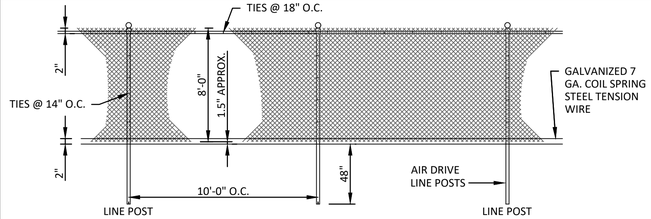
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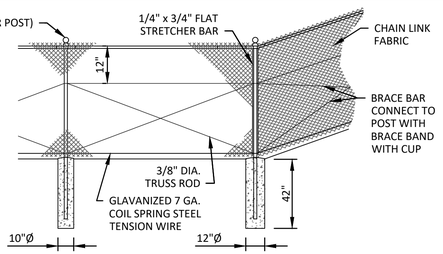
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JRP			
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
STANDARD DETAILS

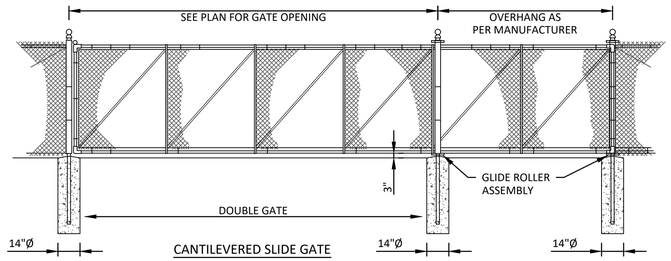
SHEET 1.11



LINE SECTION

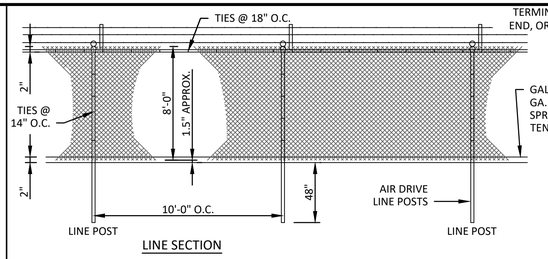


PULL, END OR CORNER POST
AND ADJACENT LINE POST

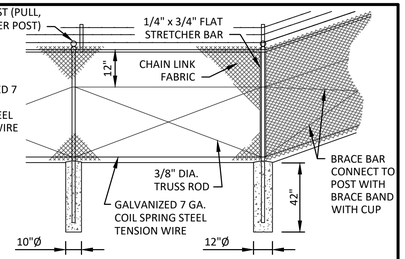


CANTILEVERED SLIDE GATE

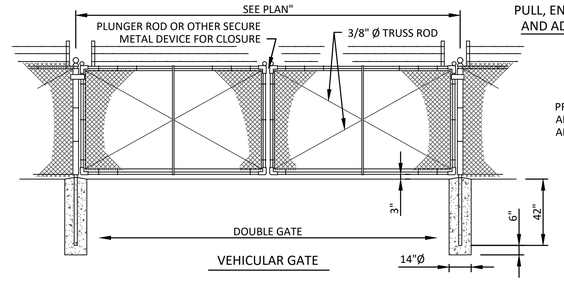
1 / 1.12 FENCE DETAIL
NOT TO SCALE



LINE SECTION



PULL, END OR CORNER POST
AND ADJACENT LINE POST



VEHICULAR GATE

PROVIDE 3 STRANDS OF BARBED WIRE ANGLED OUT AT TOP OF FENCING AND AT TOP OF GATE (TYPICAL)

2 / 1.12 FENCE DETAIL
NOT TO SCALE

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SIGNATURE: _____ TYPED OR PRINTED NAME: Jake R. Pichelmann

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
STANDARD DETAILS

SHEET 1.12

EXISTING TOPOGRAPHIC SYMBOLS

- ACCESS GRATE
- AIR CONDITION UNIT
- ANTENNA
- AUTO SPRINKLER CONNECTION
- BARRICADE PERMANENT
- BASKETBALL POST
- BENCH
- BIRD FEEDER
- BOLLARD
- BUSH
- CATCH BASIN RECTANGULAR CASTING
- CATCH BASIN CIRCULAR CASTING
- CURB STOP
- CLEAN OUT
- CULVERT END
- DRINKING FOUNTAIN
- DOWN SPOUT
- ELECTRIC CAR CHARGE STATION
- FILL PIPE
- FIRE HYDRANT
- FLAG POLE
- FLARED END / APRON
- FUEL PUMP
- GRILL
- GUY WIRE ANCHOR
- HANDHOLE
- HANDICAP SPACE
- IRRIGATION SPRINKLER HEAD
- IRRIGATION VALVE BOX
- LIFT STATION CONTROL PANEL
- LIFT STATION
- LIGHT POLE
- MAILBOX
- MANHOLE-COMMUNICATION
- MANHOLE-ELECTRIC
- MANHOLE-GAS
- MANHOLE-HEAT
- MANHOLE-RECLAIMED WATER
- MANHOLE-SANITARY SEWER
- MANHOLE-STORM SEWER
- MANHOLE-UTILITY
- MANHOLE-WATER
- METER
- DRIVE-THRU MICROPHONE
- PARKING METER
- PAVEMENT MARKING
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC
- PEDESTRIAN PUSH BUTTON
- PICNIC TABLE
- POLE-UTILITY
- POST
- RAILROAD SIGNAL POLE
- REGULATION STATION GAS
- SATELLITE DISH
- SIGN TRAFFIC
- SIGNAL CONTROL CABINET
- SOIL BORING
- SIREN
- TELEPHONE BOOTH
- TILE INLET
- TILE OUTLET
- TILE RISER
- TRANSFORMER-ELECTRIC
- TREE-CONIFEROUS
- TREE-DEAD
- TREE-DECIDUOUS
- TREE STUMP
- TRAFFIC ARM BARRIER
- TRAFFIC SIGNAL
- TRASH CAN
- UTILITY MARKER
- VALVE
- VALVE POST INDICATOR
- VALVE VAULT
- VAULT
- VENT PIPE
- WATER SPIGOT
- WELL
- WETLAND DELINEATED MARKER
- WETLAND
- WET WELL
- YARD HYDRANT

PROPOSED TOPOGRAPHIC SYMBOLS

- CLEANOUT
- MANHOLE
- LIFT STATION
- STORM SEWER CIRCULAR CASTING
- STORM SEWER RECTANGULAR CASTING
- STORM SEWER FLARED END / APRON
- STORM SEWER OUTLET STRUCTURE
- STORM SEWER OVERFLOW STRUCTURE
- CURB BOX
- FIRE HYDRANT
- WATER VALVE
- WATER REDUCER
- WATER BEND
- WATER TEE
- WATER CROSS
- WATER SLEEVE
- WATER CAP / PLUG
- RIP RAP
- DRAINAGE FLOW
- TRAFFIC SIGNS

SURVEY SYMBOLS

- BENCHMARK LOCATION
- CONTROL POINT
- MONUMENT FOUND
- CAST IRON MONUMENT
- STONE MONUMENT

EXISTING TOPOGRAPHIC LINES

- RETAINING WALL
- FENCE
- FENCE-DECORATIVE
- GUARD RAIL
- TREE LINE
- BUSH LINE

SURVEY LINES

- CONTROLLED ACCESS
- BOUNDARY
- CENTERLINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- SETBACK LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- TEMPORARY EASEMENT

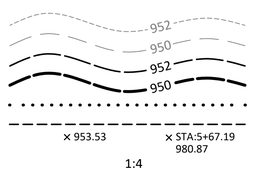
EXISTING UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE
- RECLAIMED WATER

PROPOSED UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE
- PIPE CASING
- TRENCHLESS PIPE (PLAN VIEW)
- TRENCHLESS PIPE (PROFILE VIEW)

GRADING INFORMATION



- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- PROPOSED GRADING LIMITS / SLOPE LIMITS
- PROJECT LIMITS
- PROPOSED SPOT ELEVATION
- RISE:RUN (SLOPE)

HATCH PATTERNS

- BITUMINOUS
- GRAVEL
- CONCRETE

EXISTING PRIVATE UTILITY LINES

NOTE:
EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINE FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".

- UNDERGROUND FIBER OPTIC
- UNDERGROUND ELECTRIC
- UNDERGROUND GAS
- UNDERGROUND COMMUNICATION
- OVERHEAD ELECTRIC
- OVERHEAD COMMUNICATION
- OVERHEAD UTILITY

UTILITIES IDENTIFIED WITH A QUALITY LEVEL :

LINE TYPES FOLLOW THE FORMAT: UTILITY TYPE - QUALITY LEVEL
EXAMPLE: G-A G-A UNDERGROUND GAS, QUALITY LEVEL A
UTILITY QUALITY LEVEL (A,B,C,D) DEFINITIONS CAN BE FOUND IN CI/ASCE 38-22.

UTILITY QUALITY LEVELS:

QUALITY LEVEL D: PROVIDES THE MOST BASIC LEVEL OF INFORMATION. IT INVOLVES COLLECTING DATA FROM EXISTING UTILITY RECORDS. RECORDS MAY INCLUDE AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICES MAPS, EXISTING GEOGRAPHIC INFORMATION SYSTEM DATABASES, CONSTRUCTION PLANS, ETC.

QUALITY LEVEL C: INVOLVES SURVEYING VISIBLE SUBSURFACE UTILITY STRUCTURES SUCH AS MANHOLES, HAND-HOLES, UTILITY VALVES AND METERS, FIRE HYDRANTS, PEDESTALS AND UTILITY MARKERS, AND THEN CORRELATING THE INFORMATION WITH EXISTING UTILITY RECORDS TO CREATE COMPOSITE DRAWINGS. INCLUDES QUALITY LEVEL D ACTIVITIES.

QUALITY LEVEL B: INVOLVES DESIGNATING THE HORIZONTAL POSITION OF SUBSURFACE UTILITIES THROUGH SURFACE DETECTION METHODS AND COLLECTING THE INFORMATION THROUGH A SURVEY METHOD. INCLUDES QUALITY LEVEL C AND D TASKS.

QUALITY LEVEL A: PROVIDES THE HIGHEST LEVEL OF ACCURACY. IT INVOLVES LOCATING OR POTHOLING UTILITIES AS WELL AS ACTIVITIES IN QUALITY LEVELS B, C, AND D. THE LOCATED FACILITY INFORMATION IS SURVEYED AND MAPPED AND THE DATA PROVIDES PRECISE PLAN AND PROFILE INFORMATION.

ABBREVIATIONS

A	ALGEBRAIC DIFFERENCE	GRAV	GRAVEL	RSC	RIGID STEEL CONDUIT
ADJ	ADJUST	GU	GUTTER	RT	RIGHT
ALT	ALTERNATE	GV	GATE VALVE	SAN	SANITARY SEWER
B-B	BACK TO BACK	HDPE	HIGH DENSITY POLYETHYLENE	SCH	SCHEDULE
BIT	BITUMINOUS	HH	HANDHOLE	SERV	SERVICE
BLDG	BUILDING	HP	HIGH POINT	SHLD	SHOULDER
BMP	BEST MANAGEMENT PRACTICE	HWL	HIGH WATER LEVEL	STA	STATION
BR	BEGIN RADIUS	HYD	HYDRANT	STD	STANDARD
BV	BUTTERFLY VALVE	I	INVERT	STM	STORM SEWER
CB	CATCH BASIN	K	CURVE COEFFICIENT	TC	TOP OF CURB
C&G	CURB AND GUTTER	L	LENGTH	TE	TEMPORARY EASEMENT
CIP	CAST IRON PIPE	LO	LOWEST OPENING	TEMP	TEMPORARY
CIPP	CURED-IN-PLACE PIPE	LP	LOW POINT	TNH	TOP NUT HYDRANT
CL	CENTER LINE	LT	LEFT	TP	TOP OF PIPE
CL.	CLASS	MAX	MAXIMUM	TYP	TYPICAL
CLVT	CULVERT	MH	MANHOLE	VCP	VITRIFIED CLAY PIPE
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM	VERT	VERTICAL
C.O.	CHANGE ORDER	MR	MID RADIUS	VPC	VERTICAL POINT OF CURVE
COMM	COMMUNICATION	NIC	NOT IN CONTRACT	VPI	VERTICAL POINT OF INTERSECTION
CON	CONCRETE	NMC	NON-METALLIC CONDUIT	VPT	VERTICAL POINT OF TANGENT
CSP	CORRUGATED STEEL PIPE	NTS	NOT TO SCALE	WM	WATERMAIN
DIA	DIAMETER	NWL	NORMAL WATER LEVEL		
DIP	DUCTILE IRON PIPE	OHW	ORDINARY HIGH WATER LEVEL		
DWY	DRIVEWAY	PC	POINT OF CURVE	AC	ACRES
E	EXTERNAL CURVE DISTANCE	PCC	POINT OF COMPOUND CURVE	CF	CUBIC FEET
ELEC	ELECTRIC	PE	PERMANENT EASEMENT	CV	COMPACTED VOLUME
ELEV	ELEVATION	PED	PEDESTRIAN, PEDESTAL	CY	CUBIC YARD
EOF	EMERGENCY OVERFLOW	PERF	PERFORATED PIPE	EA	EACH
ER	END RADIUS	PERM	PERMANENT	EV	EXCAVATED VOLUME
ESMT	EASEMENT	PI	POINT OF INTERSECTION	LB	POUND
EX	EXISTING	PL	PROPERTY LINE	LF	LINEAR FEET
FES	FLARED END SECTION	PRC	POINT OF REVERSE CURVE	LS	LUMP SUM
F-F	FACE TO FACE	PT	POINT OF TANGENT	LV	LOOSE VOLUME
FF	FINISHED FLOOR	PVC	POLYVINYL CHLORIDE PIPE	SF	SQUARE FEET
F&I	FURNISH AND INSTALL	PVMT	PAVEMENT	SV	STOCKPILE VOLUME
FM	FORCEMAIN	R	RADIUS	SY	SQUARE YARD
FO	FIBER OPTIC	R/W	RIGHT-OF-WAY		
F.O.	FIELD ORDER	RCP	REINFORCED CONCRETE PIPE		
GRAN	GRANULAR	RET	RETAINING		

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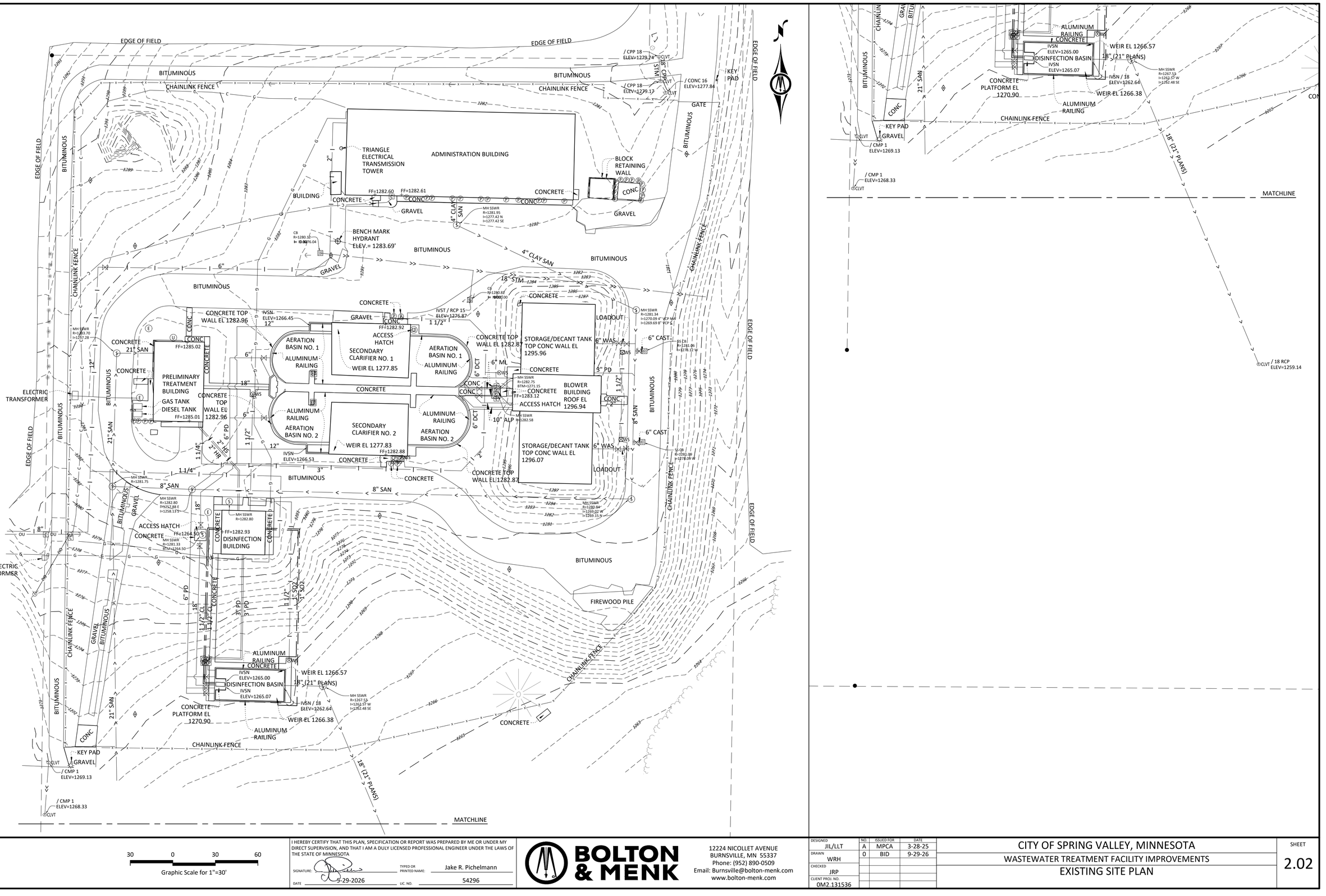
DREW P. WEBER
LIC. NO. 58643 DATE 9/29/2026

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
CIVIL SITE LEGEND

SHEET 2.01



0 30 60

Graphic Scale for 1"=30'

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING SITE PLAN

SHEET 2.02

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REMOVAL LEGEND

- CLEAR & GRUB TREE (BY OTHERS)
- SAWCUT PAVEMENT (FULL DEPTH)
- REMOVE BIT PAVEMENT
- RECLAIM BIT PAVEMENT
- REMOVE CONCRETE
- GRAVEL GRADING LIMITS
- REMOVE SANITARY PIPE
- REMOVE WATERMAIN PIPE
- REMOVE STORM SEWER PIPE

GENERAL NOTE:

SEE SHEET SERIES 3 - 7 FOR OTHER WORK NOT DESIGNATED AS SHEET SERIES 2 - SITE WORK.

REMOVE RETAINING WALL
PROTECT FENCE & GATE
PROTECT BOLLARDS
DOG KENNEL TO BE RELOCATED BY OTHERS
REMOVE CONCRETE DRIVEWAY
REMOVE 1 EA HYDRANT
REMOVE 1 EA GATE VALVE
REMOVE 425 LF WATERMAIN
REMOVE 1 EA STORM CATCH BASIN
REMOVE 1 EA SANITARY MANHOLE
REMOVE 145 LF SANITARY SEWER
REMOVE 145 LF STORM SEWER
REMOVE CONCRETE SIDEWALK
REMOVE 1 EA STORM CATCH BASIN
REMOVE 1 EA SANITARY MANHOLE
REMOVE 134 LF SANITARY SEWER
REMOVE CONCRETE SIDEWALK
REMOVE CONCRETE SIDEWALK
PROTECT FUEL TANKS
REMOVE 4 EA BOLLARDS
REMOVE 144 LF SANITARY SEWER
REMOVE 1 EA SANITARY MANHOLE
REMOVE CONCRETE SIDEWALK
REMOVE BITUMINOUS PAVEMENT
TO BE RELOCATED BY OTHERS
CLEAR AND GRUB BY OTHERS
SALVAGE 158 LF OF FENCING
REMOVE CONCRETE SIDEWALK
REMOVE CONCRETE PAVEMENT

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
WWTF SITE
DEMOLITION PLAN

SHEET 2.03

CONNECT TO EXISTING 18". FIELD VERIFY SIZE, LOCATION AND ELEVATION.

CONCRETE TOP WALL EL 1282.96

IVSN ELEV=1266.45

CONTROL STRUCTURE NO. 1

CONC FF=1282.92

18-PP- (1)

8-RAS- (1)

6-SN- (1)

10-ML- (1)

18" STM

MH SSWR R=1283.70 I=1257.28

CONCRETE 21" SAN

FF=1285.02

CONCRETE

PRELIMINARY TREATMENT BUILDING

GAS TANK

DIESEL TANK

FF=1285.01

ELECTRIC TRANSFORMER

EDGE OF FIELD

BITUMINOUS

21" SAN

AERATION BASIN NO. 1A (WEST)

ANOXIC BASIN NO. 1

ANOXIC BASIN NO. 2

AERATION BASIN NO. 1B (EAST)

CONCRETE TOP WALL EL 1282.87

STORAGE/DECANT TANK TOP CONC WALL EL 1295.96

6" WAS

3" PD

SLUDGE LOADOUT

BLOWER BUILDING ROOF EL 1296.94

FF=1283.12

2"

8" SAN

1 1/2"

AERATION BASIN NO. 2A (WEST)

AERATION BASIN NO. 2B (EAST)

STORAGE/DECANT TANK TOP CONC WALL EL 1296.07

CONCRETE TOP WALL EL 1282.96

18"

6" PD

2" HS

2" HR

1 1/4"

CONNECT TO EXISTING 18". FIELD VERIFY SIZE, LOCATION AND ELEVATION.

IVSN ELEV=1266.53

CONTROL STRUCTURE NO. 2

FF=1282.88

3"

MH SSWR R=1281.75

8" SAN

MH SSWR R=1282.80 I=1257.88 E I=1258.13 S

ACCESS HATCH

FF=1264.50

MH SSWR R=1281.33 BTM=1264.50

FF=1282.93

DISINFECTION BUILDING

CONCRETE

CLARIFIER NO. 1

6-RAS- (1)

6-HS- (1)

4-SC- (1)

ELECTRICAL BUILDING

RAS LIFT STATION

CONTROL STRUCTURE NO. 3

SCUM MH

4-PP- (1)

3-RAS- (1)

6-HS- (1)

CLARIFIER NO. 2

1-1/2" CHLORINE

1" SO2

4-A- (1)

3" PD

IVSN ELEV=1265.00

DISINFECTION BASIN

IVSN ELEV=1265.07

18" (21" PLANS)

MH SSWR R=1267.53 I=1262.57 W I=1262.48 SE

IVSN 18 ELEV=1262.64

CONCRETE PLATFORM EL 1270.90

REAERATION BASIN

CHAINLINK FENCE

KEY PAD

GRAVEL

CLVT

CMP 1 ELEV=1269.13

CMP 1 ELEV=1268.33

FIELD VERIFY SIZE, LOCATION AND ELEVATION OF EXISTING OUTFALL SEWER)

CONCRETE

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20 0 20 40 60

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED SITE PIPING PLAN

SHEET 2.04

LEGEND

- BITUMINOUS PAVEMENT (INSET A)
- BITUMINOUS PAVEMENT (INSET B)
- 8" CONCRETE PAVEMENT
- GRAVEL SURFACE
- BIT TRAIL (INSET C)
- 6" CONCRETE SIDEWALK

KEYNOTES:

1. DRIVEOVER CURB AND GUTTER (SEE DETAIL)
2. CONCRETE VALLEY GUTTER (SEE DETAIL)
3. ADJUST STRUCTURE (SEE DETAIL)
4. ADJUST STRUCTURE - FLOATING CASTING (SEE DETAIL)

BITUMINOUS
CHAINLINK FENCE
GATE
ADMINISTRATION BUILDING
E1H
15' JOINT SPACING (TYP. UNLESS NOTED OTHERWISE)
LT2U/L1TU (TYP.)
L3U
CONTROL STRUCTURE NO. 1
AERATION BASIN NO. 1A (WEST)
ANOXIC BASIN NO. 1
ANOXIC BASIN NO. 2
AERATION BASIN NO. 1B (EAST)
STORAGE/DECANT TANK TOP CONC WALL EL 1295.96
BLOWER BUILDING ROOF EL 1296.94
SLUDGE LOADOUT
PRELIMINARY TREATMENT BUILDING
GAS TANK
DIESEL TANK
AERATION BASIN NO. 2A (WEST)
AERATION BASIN NO. 2B (EAST)
CONTROL STRUCTURE NO. 2
STORAGE/DECANT TANK TOP CONC WALL EL 1296.07
ELECTRICAL BUILDING
CLARIFIER NO. 1
RAS LIFT STATION CONTROL STRUCTURE NO. 3
SCUM MH
CLARIFIER NO. 2
DISINFECTION BUILDING
DISINFECTION BASIN
REAERATION BASIN
INSTALL 6" PVC DRAIN TILE EL. = 1263.30'
INSTALL 6" PVC DRAIN TILE EL. = 1263.60'
RE-INSTALL FENCE MATCH EXISTING FENCE DIMENSIONS & MATERIAL
10' VEHICULAR GATE
DAYLIGHT DRAIN TILE EL. = 1263.60 (6" CONCRETE HEADWALL)
EDGE OF FIELD
CONCRETE
BUILDING

HORZ. SCALE 0 25 50 FEET

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DREW P. WEBER
LIC. NO. 58643 DATE 9/29/2026

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ROCHESTER, MN 55901
Phone: (507) 208-4332
Email: Rochester@bolton-menk.com
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
WWTF SITE
SITE PLAN

SHEET 2.05

GENERAL GRADING PLANT NOTES:

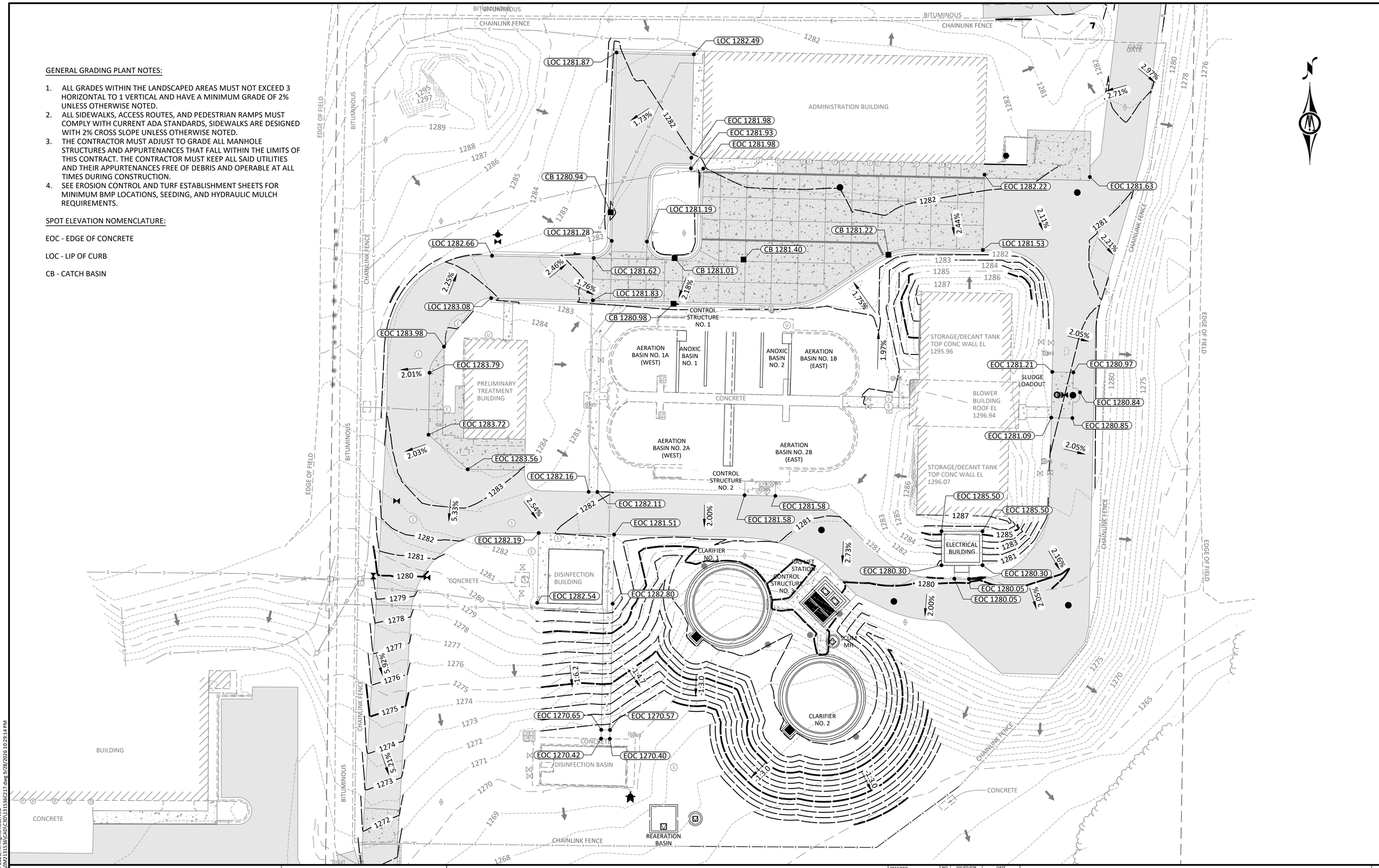
1. ALL GRADES WITHIN THE LANDSCAPED AREAS MUST NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL AND HAVE A MINIMUM GRADE OF 2% UNLESS OTHERWISE NOTED.
2. ALL SIDEWALKS, ACCESS ROUTES, AND PEDESTRIAN RAMPS MUST COMPLY WITH CURRENT ADA STANDARDS, SIDEWALKS ARE DESIGNED WITH 2% CROSS SLOPE UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR MUST ADJUST TO GRADE ALL MANHOLE STRUCTURES AND APPURTENANCES THAT FALL WITHIN THE LIMITS OF THIS CONTRACT. THE CONTRACTOR MUST KEEP ALL SAID UTILITIES AND THEIR APPURTENANCES FREE OF DEBRIS AND OPERABLE AT ALL TIMES DURING CONSTRUCTION.
4. SEE EROSION CONTROL AND TURF ESTABLISHMENT SHEETS FOR MINIMUM BMP LOCATIONS, SEEDING, AND HYDRAULIC MULCH REQUIREMENTS.

SPOT ELEVATION NOMENCLATURE:

EOC - EDGE OF CONCRETE

LOC - LIP OF CURB

CB - CATCH BASIN



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HORZ. SCALE 0 25 50 FEET

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
WWTF SITE
GRADING PLAN

SHEET 2.06

GENERAL UTILITY NOTES:

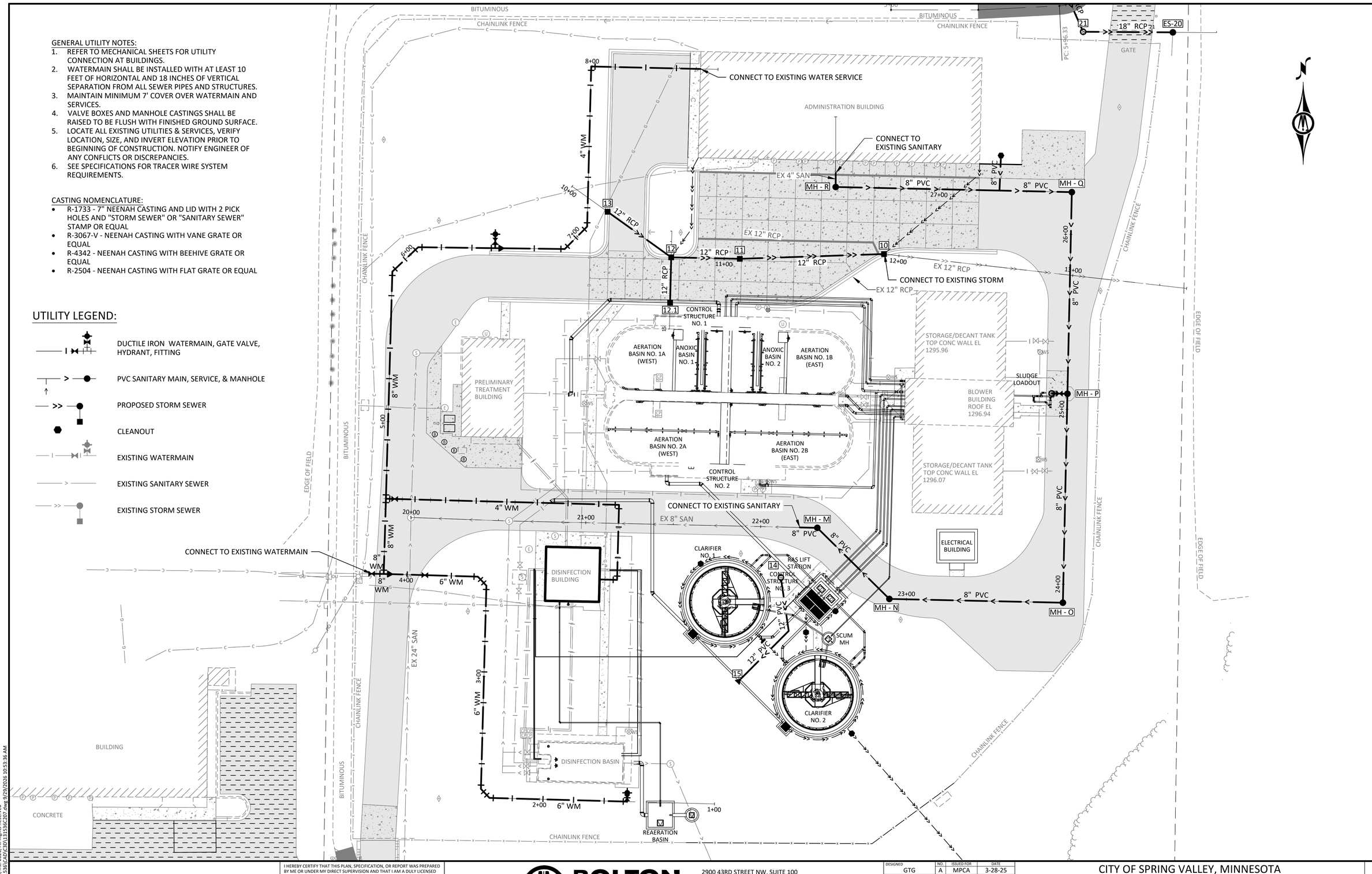
1. REFER TO MECHANICAL SHEETS FOR UTILITY CONNECTION AT BUILDINGS.
2. WATERMAIN SHALL BE INSTALLED WITH AT LEAST 10 FEET OF HORIZONTAL AND 18 INCHES OF VERTICAL SEPARATION FROM ALL SEWER PIPES AND STRUCTURES.
3. MAINTAIN MINIMUM 7' COVER OVER WATERMAIN AND SERVICES.
4. VALVE BOXES AND MANHOLE CASTINGS SHALL BE RAISED TO BE FLUSH WITH FINISHED GROUND SURFACE.
5. LOCATE ALL EXISTING UTILITIES & SERVICES, VERIFY LOCATION, SIZE, AND INVERT ELEVATION PRIOR TO BEGINNING OF CONSTRUCTION. NOTIFY ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.
6. SEE SPECIFICATIONS FOR TRACER WIRE SYSTEM REQUIREMENTS.

CASTING NOMENCLATURE:

- R-1733 - 7" NEENAH CASTING AND LID WITH 2 PICK HOLES AND "STORM SEWER" OR "SANITARY SEWER" STAMP OR EQUAL
- R-3067-V - NEENAH CASTING WITH VANE GRATE OR EQUAL
- R-4342 - NEENAH CASTING WITH BEEHIVE GRATE OR EQUAL
- R-2504 - NEENAH CASTING WITH FLAT GRATE OR EQUAL

UTILITY LEGEND:

- DUCTILE IRON WATERMAIN, GATE VALVE, HYDRANT, FITTING
- PVC SANITARY MAIN, SERVICE, & MANHOLE
- PROPOSED STORM SEWER
- CLEANOUT
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER



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HORZ. SCALE: 0 25 50 FEET

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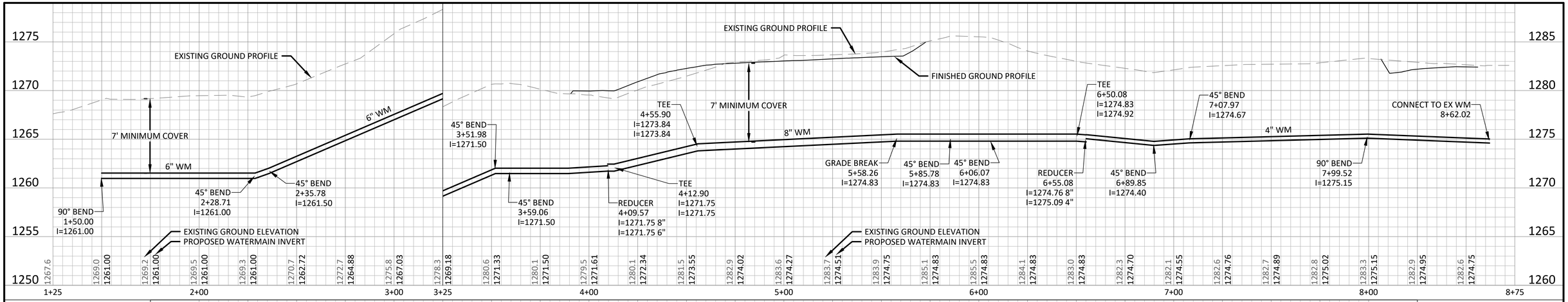
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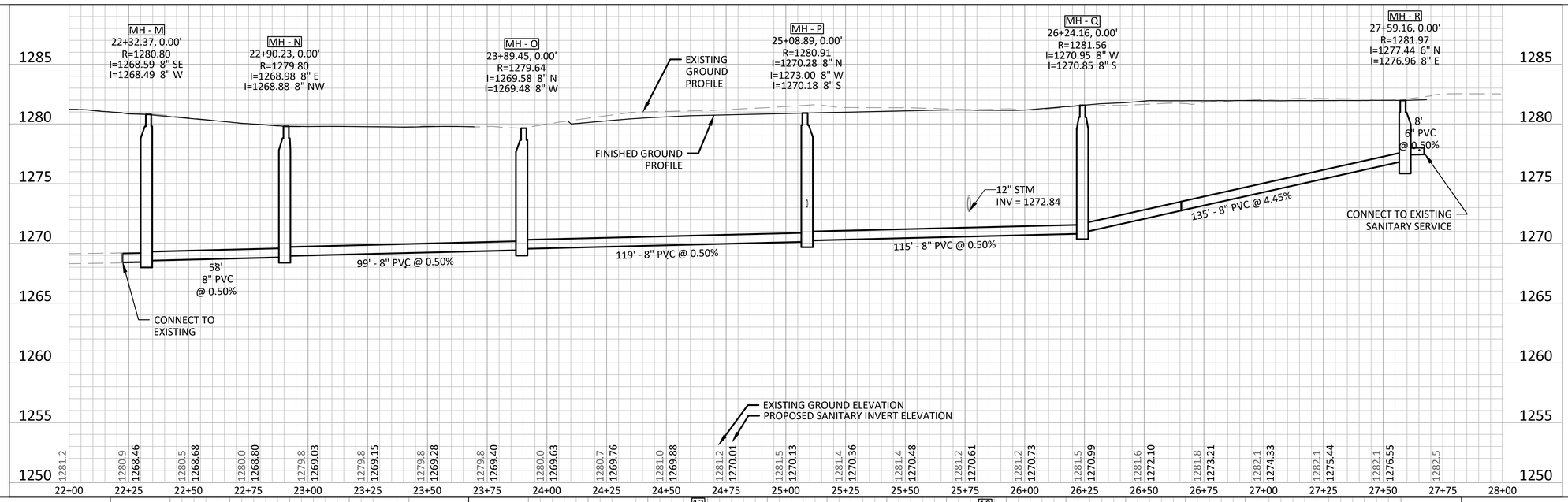
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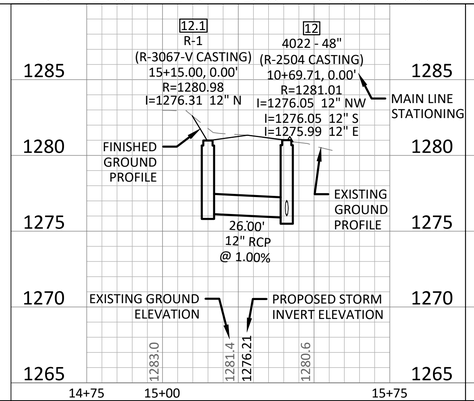
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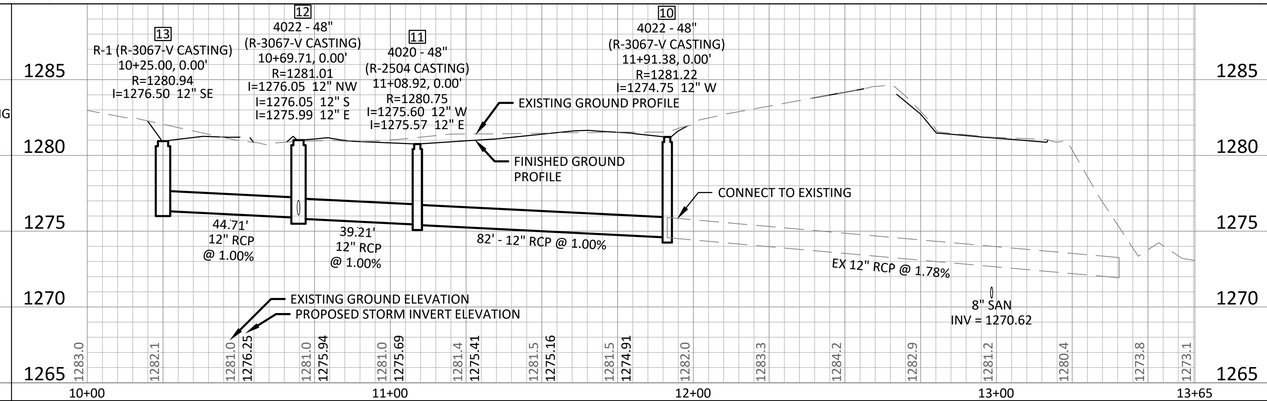
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
WWTF SITE
UTILITY PLAN

SHEET 2.07









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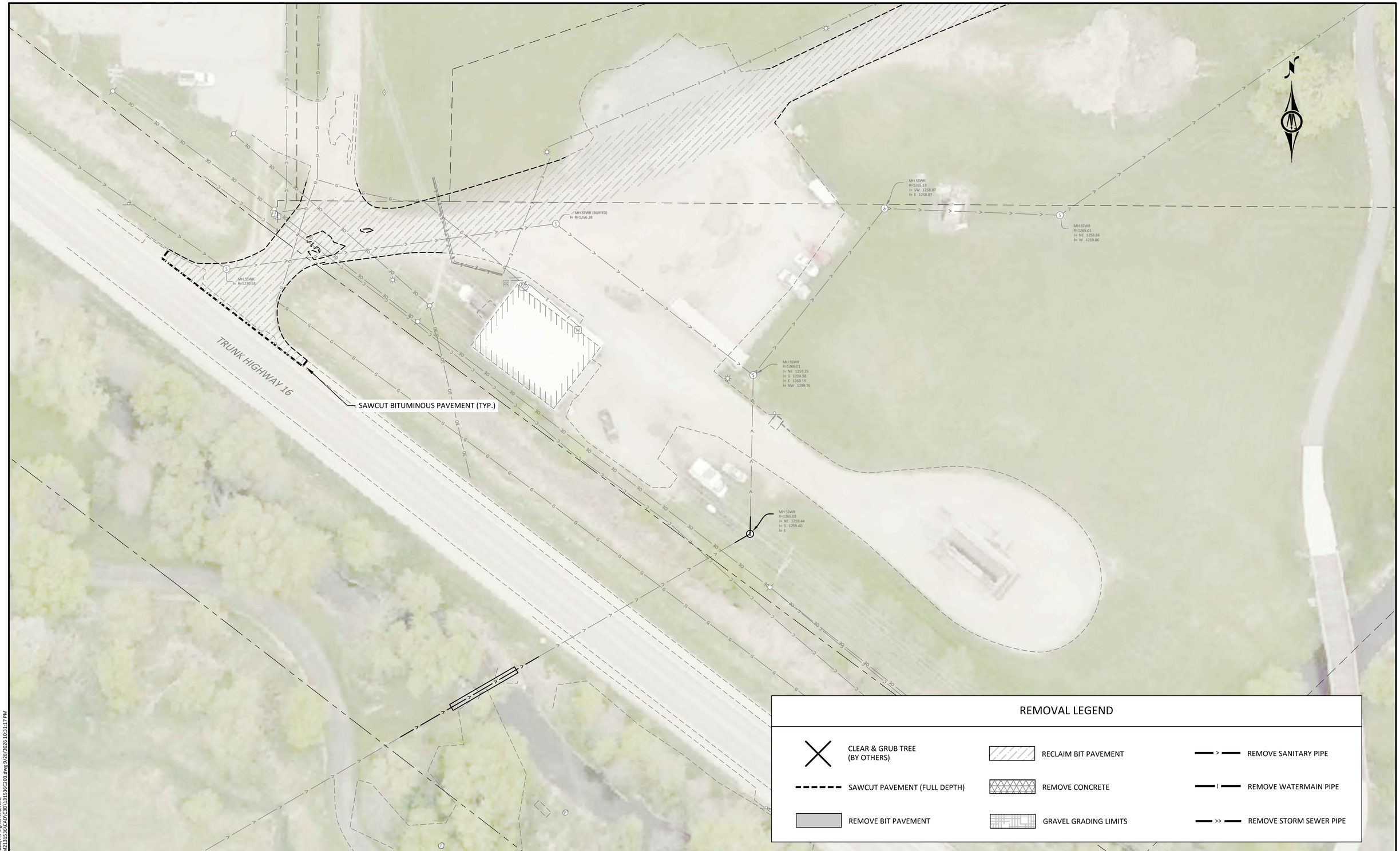
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
WWTF SITE
UTILITY PROFILE

SHEET 2.08



REMOVAL LEGEND

- CLEAR & GRUB TREE (BY OTHERS)
- SAWCUT PAVEMENT (FULL DEPTH)
- REMOVE BIT PAVEMENT
- RECLAIM BIT PAVEMENT
- REMOVE CONCRETE
- GRAVEL GRADING LIMITS
- REMOVE SANITARY PIPE
- REMOVE WATERMAIN PIPE
- REMOVE STORM SEWER PIPE

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HORZ. 0 30 60
SCALE FEET

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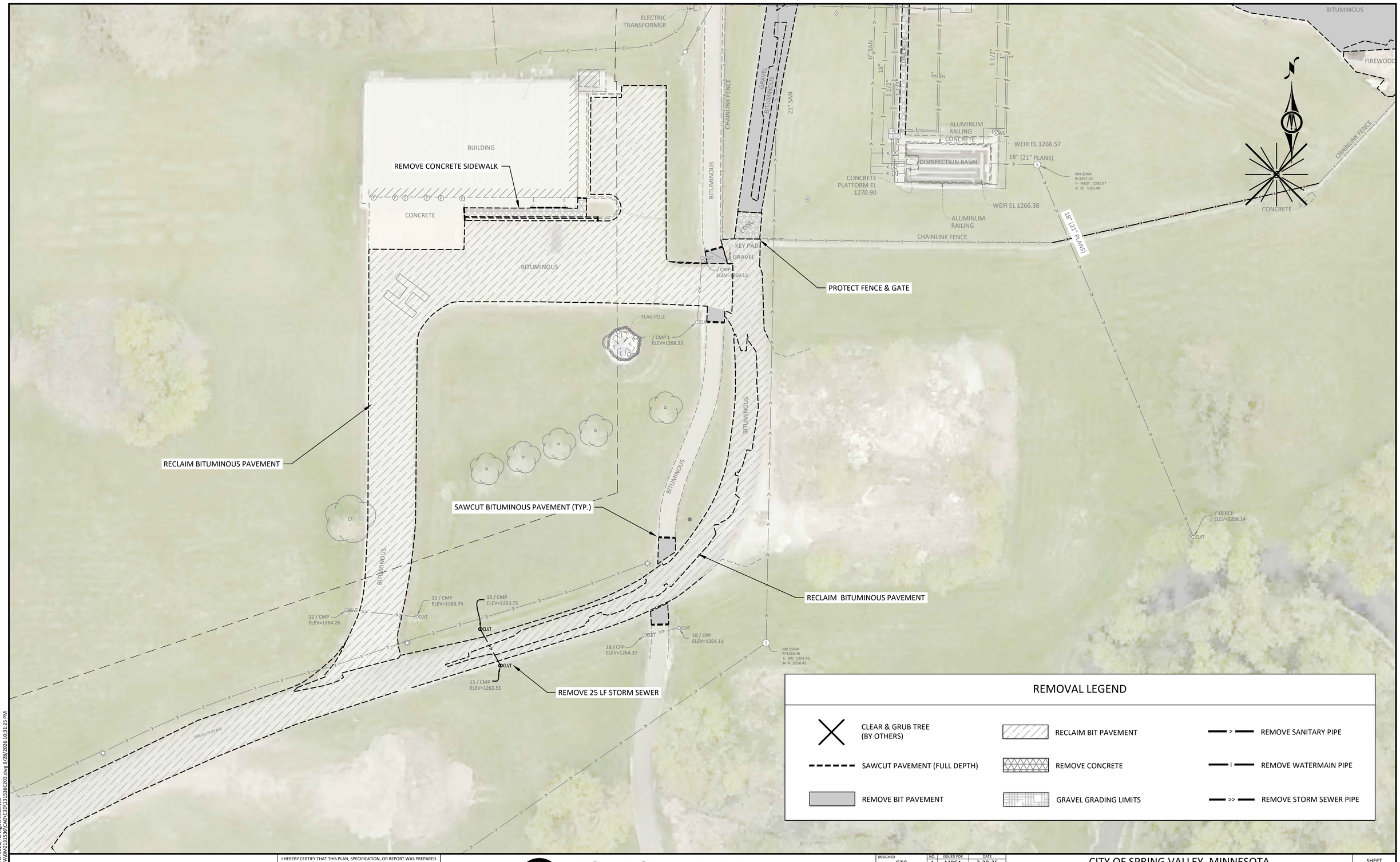
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
WWTF SITE
EXISTING CONDITIONS AND DEMOLITION

SHEET 2.09



REMOVAL LEGEND

- CLEAR & GRUB TREE (BY OTHERS)
- SAWCUT PAVEMENT (FULL DEPTH)
- REMOVE BIT PAVEMENT
- RECLAIM BIT PAVEMENT
- REMOVE CONCRETE
- GRAVEL GRADING LIMITS
- REMOVE SANITARY PIPE
- REMOVE WATERMAIN PIPE
- REMOVE STORM SEWER PIPE

HORZ. SCALE 0 25 50 FEET

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CITY OF SPRING VALLEY, MINNESOTA
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WWTF SITE
EXISTING CONDITIONS AND DEMOLITION

SHEET 2.10

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REMOVAL LEGEND

- CLEAR & GRUB TREE (BY OTHERS)
- SAWCUT PAVEMENT (FULL DEPTH)
- REMOVE BIT PAVEMENT
- RECLAIM BIT PAVEMENT
- REMOVE CONCRETE
- GRAVEL GRADING LIMITS
- REMOVE SANITARY PIPE
- REMOVE WATERMAIN PIPE
- REMOVE STORM SEWER PIPE

CLEAR & GRUB TREE BY OTHERS (TYP.)

SAWCUT BITUMINOUS PAVEMENT (TYP.)

RECLAIM BITUMINOUS PAVEMENT

EAST FARMER STREET

JEFFERSON STREET

ADMINISTRATION BUILDING

SECONDARY CLARIFIER NO. 1

AERATION BASIN NO. 1

STORAGE/DECANT TANK

BLOWER BUILDING

BENCH MARK HYDRANT ELEV= 1283.69'

TRIANGLE ELECTRICAL TRANSMISSION TOWER

BLOCK RETAINING WALL

CHAINLINK FENCE

EDGE OF FIELD

KEY PAD

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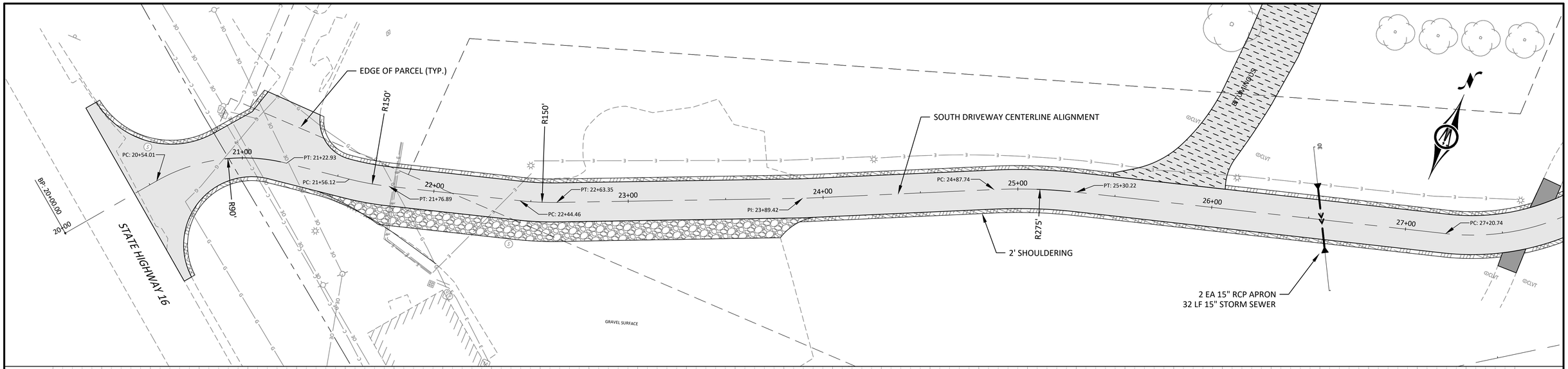
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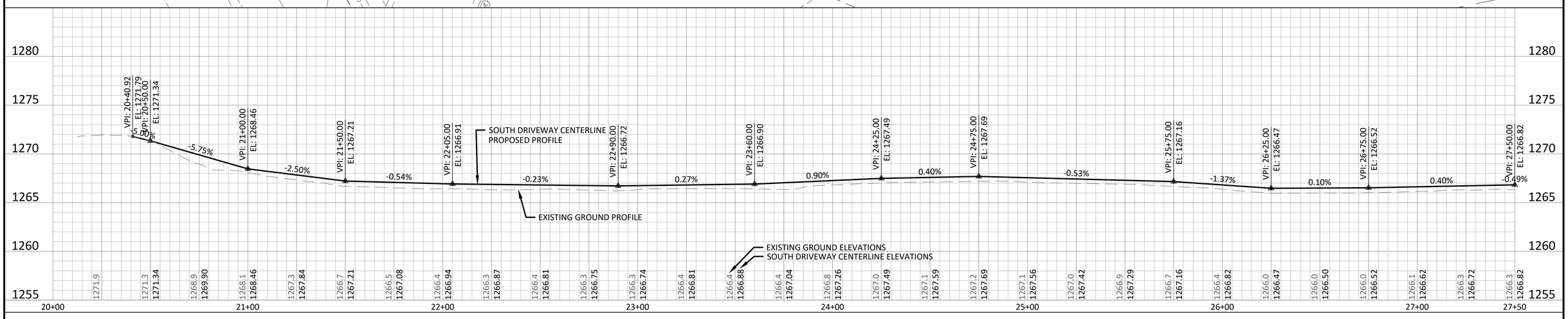
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
WWTF SITE
EXISTING CONDITIONS AND DEMOLITION

SHEET 2.11

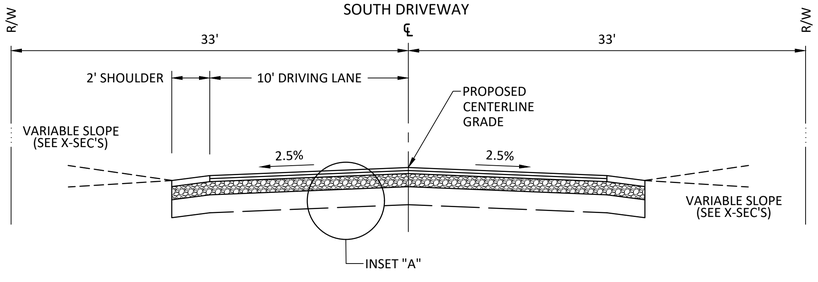


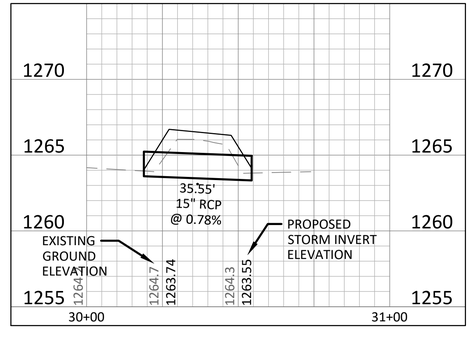


LEGEND

- BITUMINOUS PAVEMENT (INSET A)
- BITUMINOUS PAVEMENT (INSET B)
- 8" CONCRETE PAVEMENT
- GRAVEL SURFACE
- BIT TRAIL (INSET C)
- 6" CONCRETE SIDEWALK

TYPICAL SECTION





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HORZ. 0 25 50 SCALE FEET

VERT. 0 5 10 SCALE FEET

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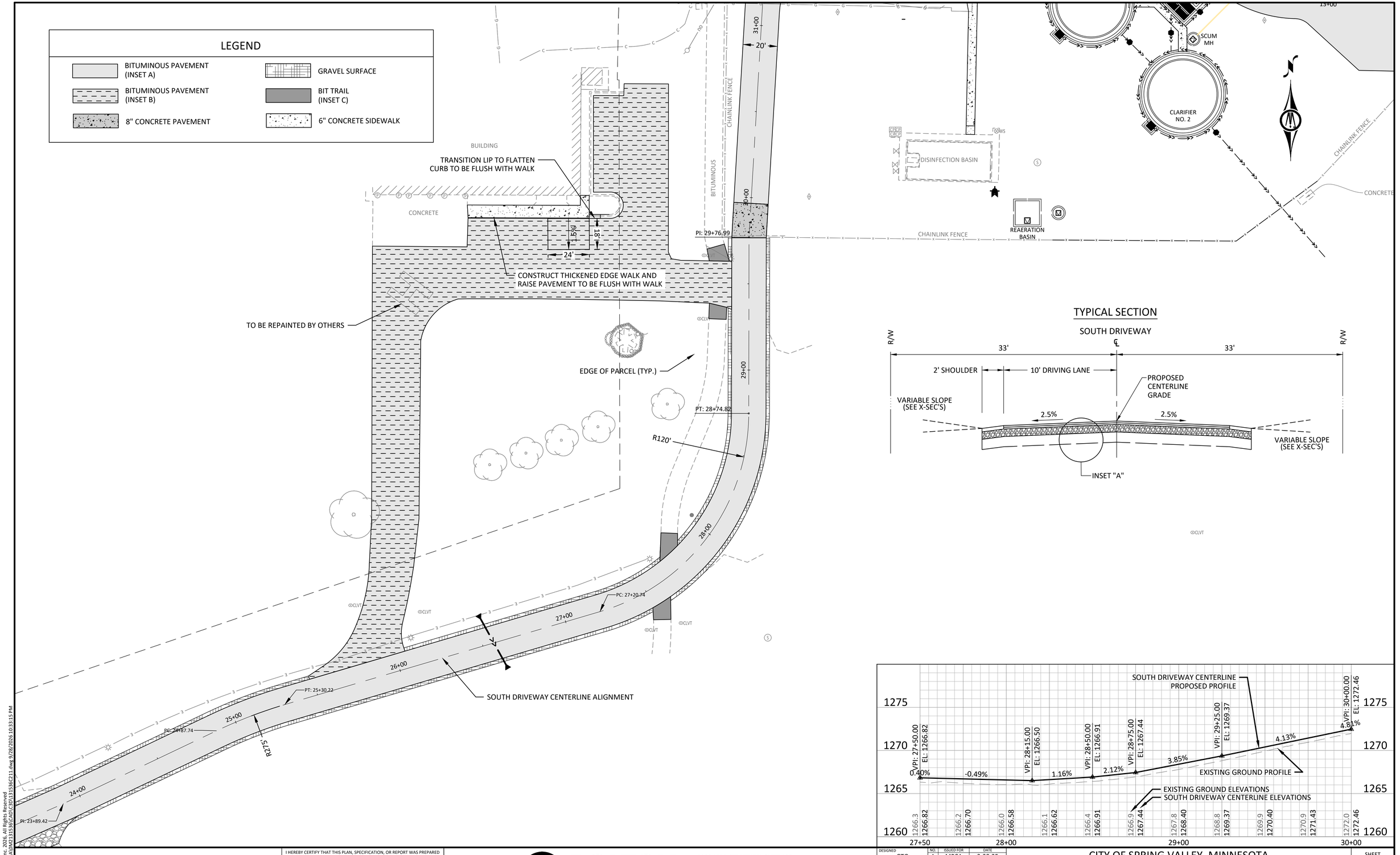
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
WWTF SITE
SOUTH DRIVEWAY PLAN & PROFILE

SHEET 2.12

LEGEND

- BITUMINOUS PAVEMENT (INSET A)
- BITUMINOUS PAVEMENT (INSET B)
- 8" CONCRETE PAVEMENT
- GRAVEL SURFACE
- BIT TRAIL (INSET C)
- 6" CONCRETE SIDEWALK



TYPICAL SECTION

HORZ. SCALE 0 25 50 FEET

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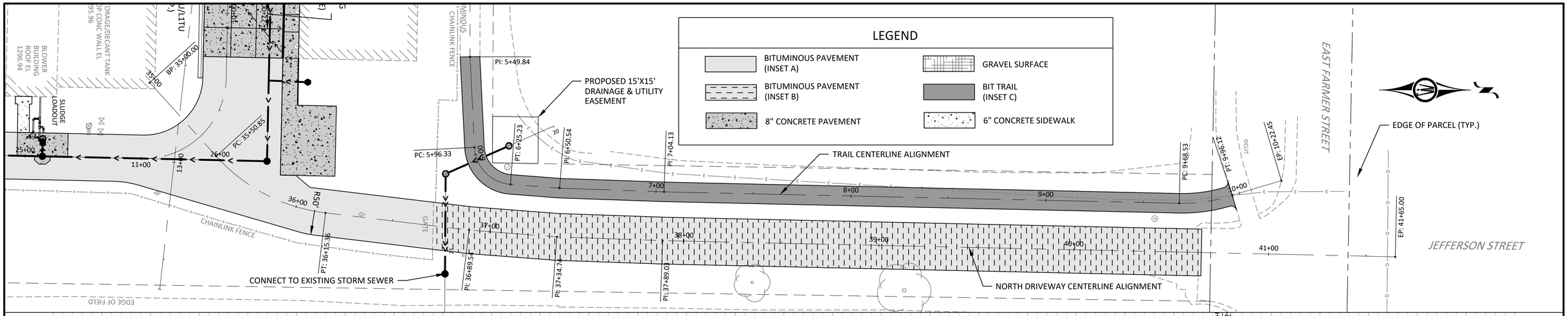
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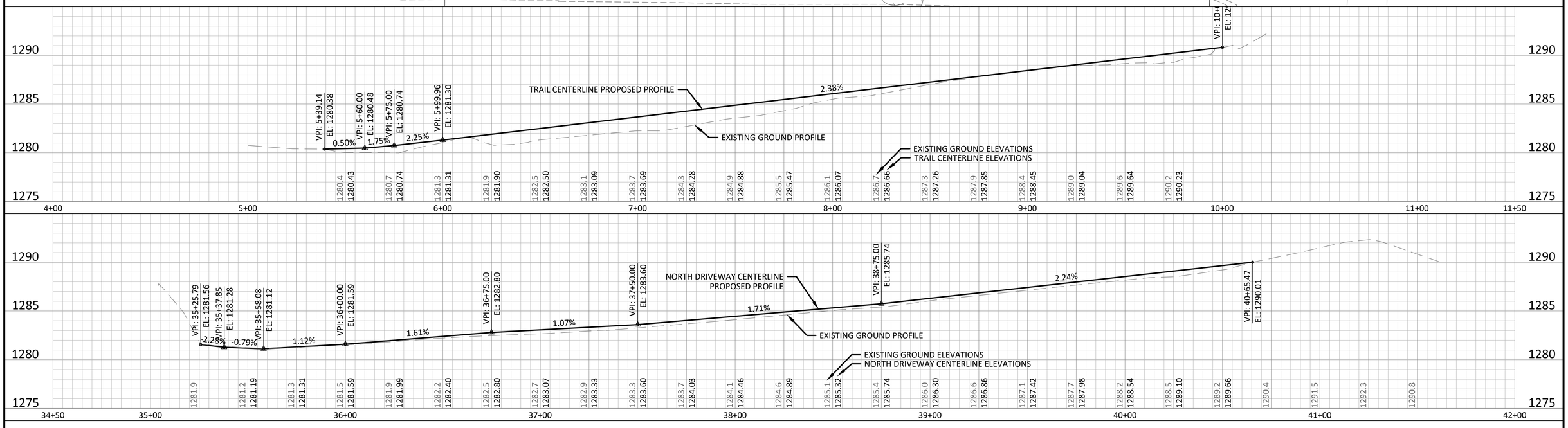
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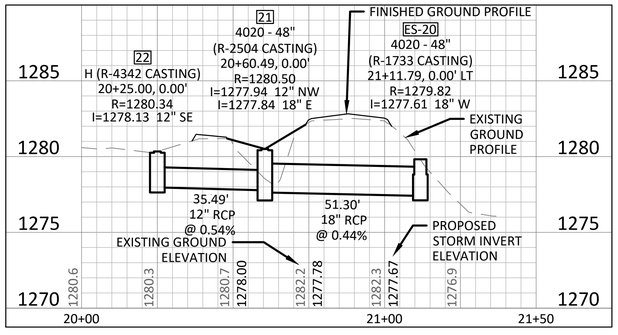
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SOUTH DRIVEWAY PLAN & PROFILE

SHEET 2.13





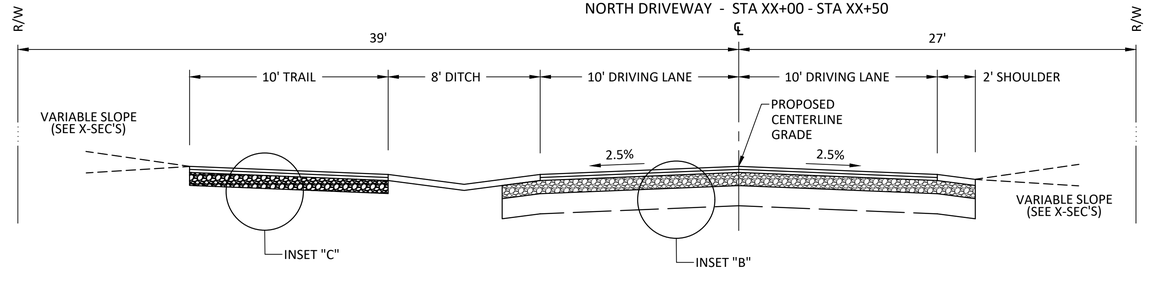


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- R-3067-V - NEENAH CASTING WITH VANE GRATE OR EQUAL
- R-4342 - NEENAH CASTING WITH BEEHIVE GRATE OR EQUAL
- R-2504 - NEENAH CASTING WITH FLAT GRATE OR EQUAL

TYPICAL SECTION

NORTH DRIVEWAY - STA XX+00 - STA XX+50



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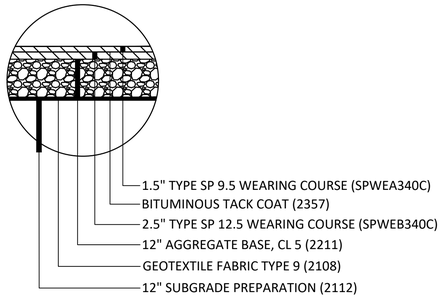
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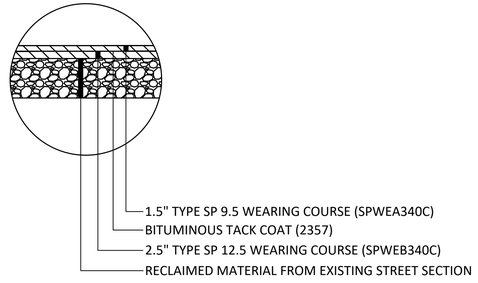
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WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
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NORTH DRIVEWAY PLAN & PROFILE

SHEET 2.14



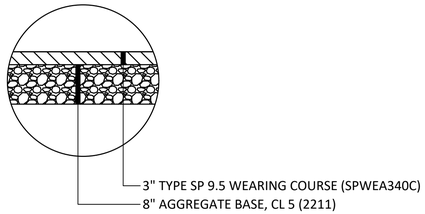
INSET A - BITUMINOUS PAVEMENT

NOT TO SCALE



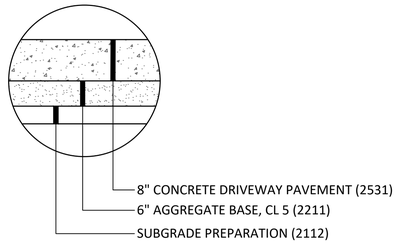
INSET B - BITUMINOUS PAVEMENT

NOT TO SCALE



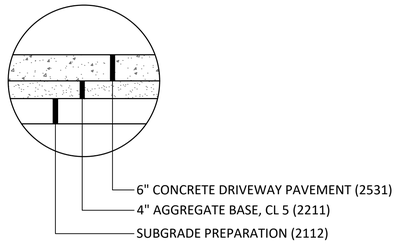
INSET C - BITUMINOUS PAVEMENT (TRAIL)

NOT TO SCALE



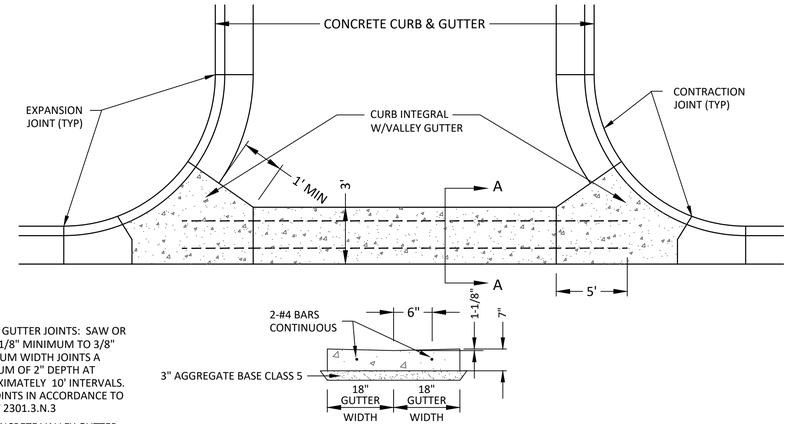
CONCRETE PAVEMENT TYPICAL SECTION

NOT TO SCALE



CONCRETE SIDEWALK TYPICAL SECTION

NOT TO SCALE



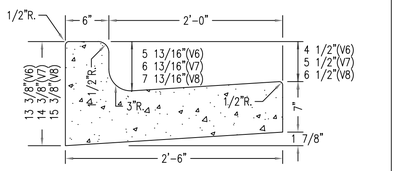
SECTION A

NOTE:

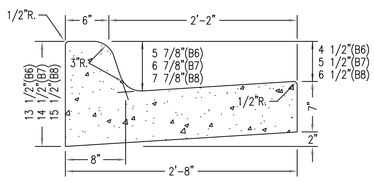
1. VALLEY GUTTER JOINTS: SAW OR SCORE 1/8" MINIMUM TO 3/8" MAXIMUM WIDTH JOINTS A MINIMUM OF 2" DEPTH AT APPROXIMATELY 10' INTERVALS. SEAL JOINTS IN ACCORDANCE TO MnDOT 2301.3.N.3
2. THE CONCRETE VALLEY GUTTER SHALL BE CONSTRUCTED ON 3" AGGREGATE BASE, CLASS 5

CONCRETE VALLEY GUTTER

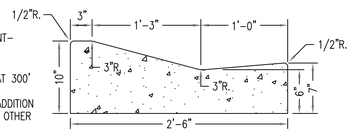
NOT TO SCALE



DESIGN "V"(VERTICAL)



DESIGN "B"(BATTERFACE)



DESIGN "D"(DRIVEOVER)

NOTES

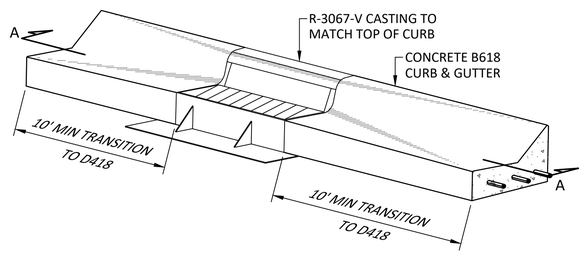
1. CONCRETE MIX: MANUAL PLACEMENT–MN/DOT SPEC. 3F52, SLIP–FORM PLACEMENT–MN/DOT SPEC. 3F32.
2. PROVIDE 1/2" EXPANSION JOINT AT 300' MAXIMUM SPACING AND TO MATCH PAVEMENT EXPANSION JOINTS IN ADDITION TO EXPANSION JOINTS SHOWN ON OTHER DETAIL PLATES.
3. PROVIDE CONTRACTION JOINTS @ 9' MAXIMUM SPACING, SAW CUT 2" MINIMUM DEPTH.
4. ALL CONCRETE CURB & GUTTER SHALL BE PLACED ON A MINIMUM OF A 4" AGGREGATE BASE.
5. SILL REQUIRED FOR DESIGN "V" AND "B", WHEREVER SIDEWALK ABUTS CURB. SEE S.D.P. 2–02.

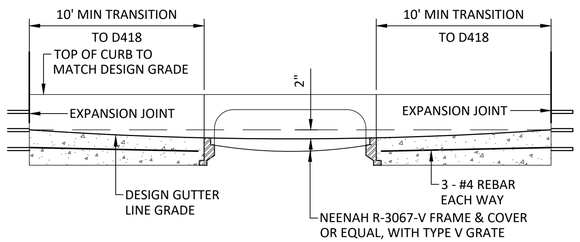
DEPARTMENT OF PUBLIC WORKS
CITY OF ROCHESTER, MINNESOTA

CONCRETE CURB & GUTTER

ASST. CITY ENGINEER	DIRECTOR		
SHT 1 OF 1 SHTS	DATE REVISED 3/23/18	PLATE NO. 2–01	REV. G

NOTE:
DRIVEOVER CURB & GUTTER TO BE FORMED INTO A B618 TYPE AT CATCHBASIN

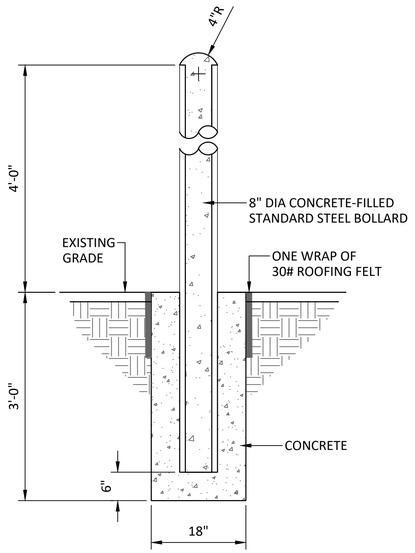




SECTION A-A

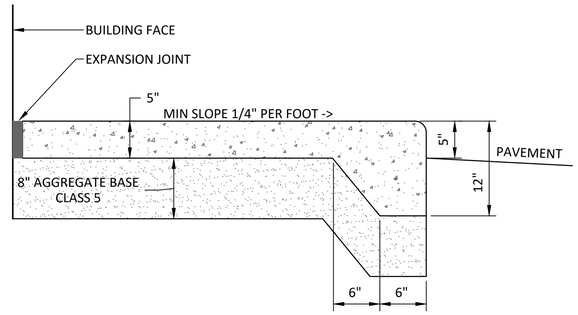
CATCHBASIN - CURB DETAIL
FOR R-3067-V IN MOUNTABLE CURB

NOT TO SCALE



BOLLARD GUARD POST

NOT TO SCALE



THICKENED EDGE
CONCRETE SIDEWALK

NOT TO SCALE

NOTE: SEE SHEET 2.22 & 2.23 FOR UTILITY DETAILS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DREW P. WEBER
LIC. NO. 58643 DATE 9/29/2026

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CLIENT PROJ. NO. 0M2.131536			

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
WWTF SITE
SITE PLAN DETAILS

SHEET 2.15

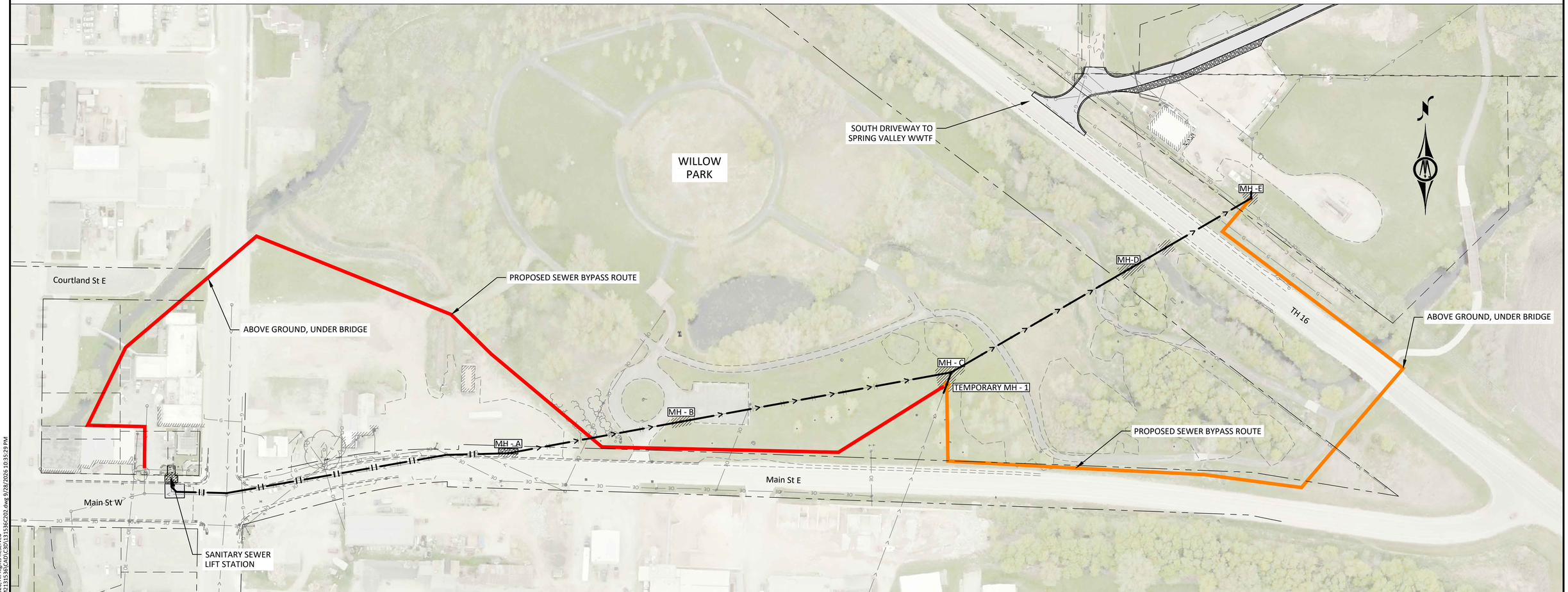
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TEMPORARY CONVEYANCE NOTES:

1. NEW FORCEMAIN SHALL BE TESTED AND FULLY OPERATIONAL PRIOR TO REMOVAL OF BYPASS PUMPING SETUP.
2. RAMP DRIVEWAYS AS REQUIRED FOR BYPASSING PUMPING.
3. BYPASS PUMPING PITS SHALL BE DUG AND PIPING IN PLACE AND FULLY TESTED PRIOR TO DISCONNECTING EXISTING FORCEMAIN TO MINIMIZE DOWN TIME AND PREVENT SEWAGE BACKUP.
4. MAINTAIN EXISTING SANITARY FLOW AT ALL TIMES. CONTRACTOR SHALL SUBMIT IN WRITING THEIR BACKUP PLAN IF PUMPS ARE NOT SUFFICIENT OR QUIT WORKING PRIOR TO SWITCHING TO BYPASS SYSTEM.
5. CONTRACTOR MUST NOTIFY PROPERTY OWNERS OF ACCESS IMPACTS ASSOCIATED WITH TEMPORARY CONVEYANCE PIPING PRIOR TO INSTALLATION.
6. ANY COSTS RELATED TO PAVEMENT REMOVAL AND RESTORATION BEYOND THOSE IDENTIFIED IN THE PLANS FOR TEMPORARY CONVEYANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

GENERAL NOTES:

1. TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL. SIGN DISTANCES SHALL BE AS SPECIFIED IN THE LAYOUT.
2. EXPECTED EXCAVATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR MUST DETERMINE THE AMOUNT OF EXCAVATIONS REQUIRED TO PERFORM THE WORK NEEDED FOR THEIR PIPE BURSTING TAIL PIT AND CIPP LINER PRODUCT. THE CONTRACTOR MUST UTILIZE TRENCH BOXES AND TEMPORARY SHORING AS REQUIRED TO GENERALLY MATCH THE APPROXIMATE LIMITS SUCH THAT TRAFFIC OPERATIONS SUITABLE FOR LOCAL ACCESS IS MAINTAINED ON A PAVED SURFACE DURING UTILITY CONSTRUCTION.
3. EXISTING UTILITY LOCATIONS AND DEPTHS ARE SHOWN IN AN APPROXIMATE MANNER ONLY. CONTRACTOR MUST FIELD VERIFY ACTUAL LOCATIONS WHEN DETERMINING PIT LOCATIONS.
4. CONTRACTOR TO RESTORE ALL TURF, PAVEMENT, OR OTHER FACILITIES IMPACTED BY PIPE STAGING AND LAYDOWN REGARDLESS OF FINAL PIPE STAGING LOCATIONS.
5. ALL BMPs AND TRAFFIC CONTROL SHALL BE INCLUDED IN LUMP SUM PRICE. CONTRACTOR TO SUBMIT TRAFFIC CONTROL PLANS PRIOR TO BEGINNING ANY WORK.



HORZ. 0 75 150
SCALE FEET

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
COLLECTION SYSTEM
LOCATION PLAN

SHEET 2.16

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REMOVAL LEGEND

- CLEAR & GRUB TREE (BY OTHERS)
- SAWCUT PAVEMENT (FULL DEPTH)
- REMOVE BIT PAVEMENT
- RECLAIM BIT PAVEMENT
- REMOVE CONCRETE
- GRAVEL GRADING LIMITS
- REMOVE SANITARY PIPE
- REMOVE WATERMAIN PIPE
- REMOVE STORM SEWER PIPE

WILLOW PARK

REMOVE 30 LF DIP SANITARY FORCEMAIN

REMOVE 240 LF SLIP LINED 6" HDPE FROM 10" VCP

REMOVE CONCRETE SIDEWALK

REMOVE 30 LF DIP SANITARY FORCEMAIN

CLEAR AND GRUB BY OTHERS

REMOVE 25 LF DIP SANITARY FORCEMAIN

PARCEL LINE (TYP.)

STATE HIGHWAY NO. 63

EAST MAIN STREET

WEST MAIN STREET

BITUMINOUS

CONCRETE

BUILDING

MH SSWR R=1273.31 In S 1260.46 In W 1260.48

MH SSWR R=1272.28 In N 1260.24 In S 1260.33 In E 1260.10

MH SSWR R=1272.24 In E 1260.49 In N 1260.45 In W 1262.00

MH SSWR R=1272.12 In S 1262.44 In W 1260.98 In E 1261.01

MH SSWR R=1273.72 In N 1263.28 In S 1263.29

CB R=1270.86 In S 1267.

CB R=1271.18 In N 1267.58 In SE 1267.48

CB R=1272.06 In NW 1267.10 In S 1267.46 In S 1268.86

CB R=1271.69 In S 1268.29

CB R=1269.68 In W 1265.63 In S 1265.73 In E 1266.68

MH SSWR R=1270.42 In W 1265.48 In N 1265.48 In E 1269.48

CB R=1269.70 In NW 1266.00 In SE 1266.80

CB R=1269.12 In E 1266.59

CB R=1268.89 In N 1265.79 In W 1265.89

CB R=1268.89 In S 1265.56 In NW 1265.51

MH SSWR R=1277.70

RCLVT

/ 21-24IN ICE FROZE IN IT SHOT TOP ELEV=1267.27

HORZ. SCALE 0 30 60 FEET

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
COLLECTION SYSTEM
EXISTING CONDITIONS AND DEMOLITION

SHEET 2.17

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REMOVAL LEGEND

CLEAR & GRUB TREE (BY OTHERS)	RECLAIM BIT PAVEMENT	REMOVE SANITARY PIPE
SAWCUT PAVEMENT (FULL DEPTH)	REMOVE CONCRETE	REMOVE WATERMAIN PIPE
REMOVE BIT PAVEMENT	GRAVEL GRADING LIMITS	REMOVE STORM SEWER PIPE

REMOVE 15 LF SANITARY SEWER

REMOVE 34 LF SANITARY SEWER

STATE HIGHWAY 16

SPRING VALLEY CREEK

REMOVE 45 LF 16" HDPE FROM INSIDE OF 18" DIP
PROTECT EXISTING 18" DIP

WILLOW PARK

REMOVE 1 EA SANITARY MANHOLE

REMOVE 40 LF DIP SANITARY FORCEMAIN

MH SSWR
R=1268.68
I= W 1261.99
I= SW 1261.97
I= NE 1261.71

REMOVE 55 LF SANITARY SEWER

REMOVE STUMPS 2 EA

REMOVE 385 LF SLIP LINED 6" HDPE FROM 10" VCP

BITUMINOUS SURFACE

EAST MAIN STREET

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HORZ. SCALE 0 30 60 FEET

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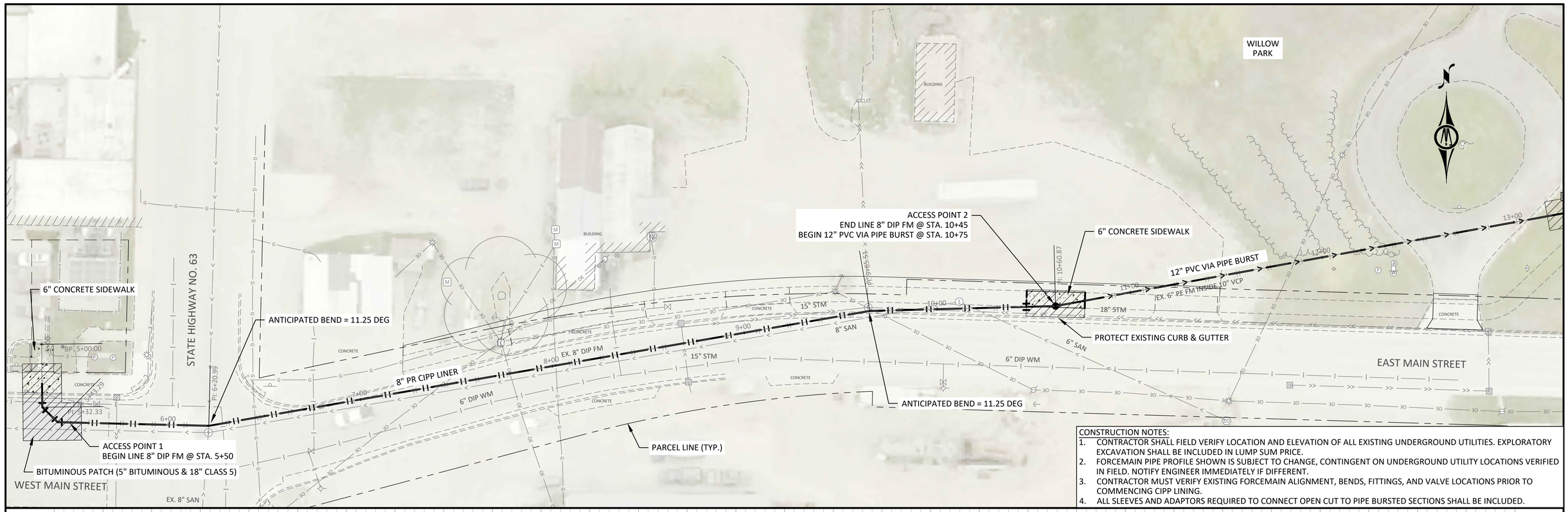
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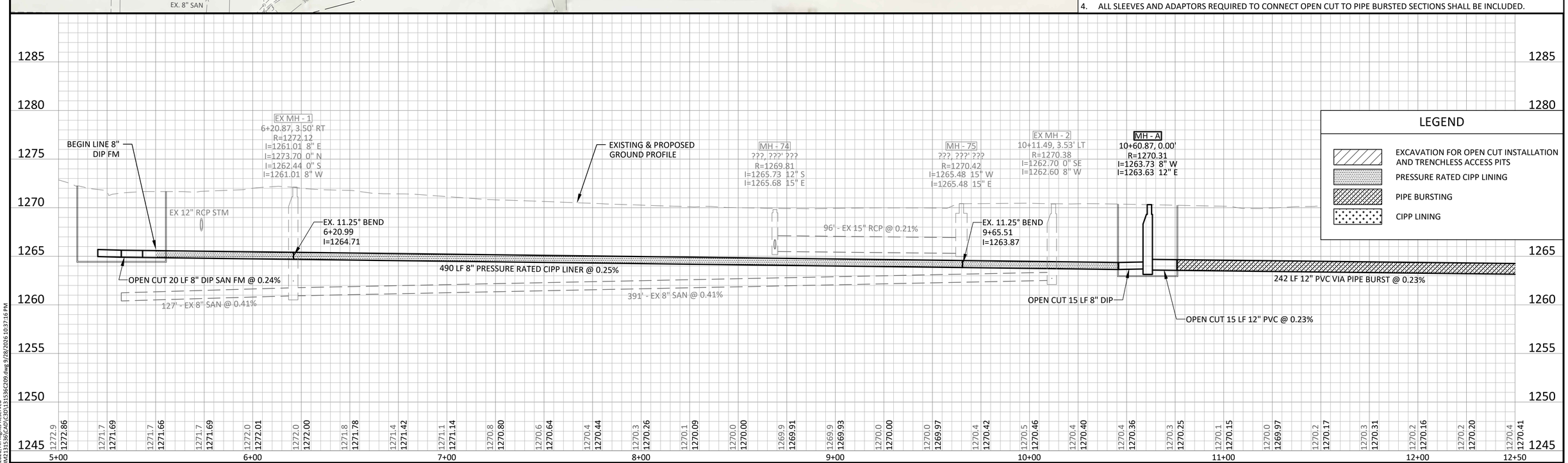
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
COLLECTION SYSTEM
EXISTING CONDITIONS AND DEMOLITION

SHEET 2.18



CONSTRUCTION NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UNDERGROUND UTILITIES. EXPLORATORY EXCAVATION SHALL BE INCLUDED IN LUMP SUM PRICE.
2. FORCEMAIN PIPE PROFILE SHOWN IS SUBJECT TO CHANGE, CONTINGENT ON UNDERGROUND UTILITY LOCATIONS VERIFIED IN FIELD. NOTIFY ENGINEER IMMEDIATELY IF DIFFERENT.
3. CONTRACTOR MUST VERIFY EXISTING FORCEMAIN ALIGNMENT, BENDS, FITTINGS, AND VALVE LOCATIONS PRIOR TO COMMENCING CIPP LINING.
4. ALL SLEEVES AND ADAPTORS REQUIRED TO CONNECT OPEN CUT TO PIPE BURSTED SECTIONS SHALL BE INCLUDED.



LEGEND

- EXCAVATION FOR OPEN CUT INSTALLATION AND TRENCHLESS ACCESS PITS
- PRESSURE RATED CIPP LINING
- PIPE BURSTING
- CIPP LINING

HORZ. SCALE 0 25 50 FEET

VERT. SCALE 0 5 10 FEET

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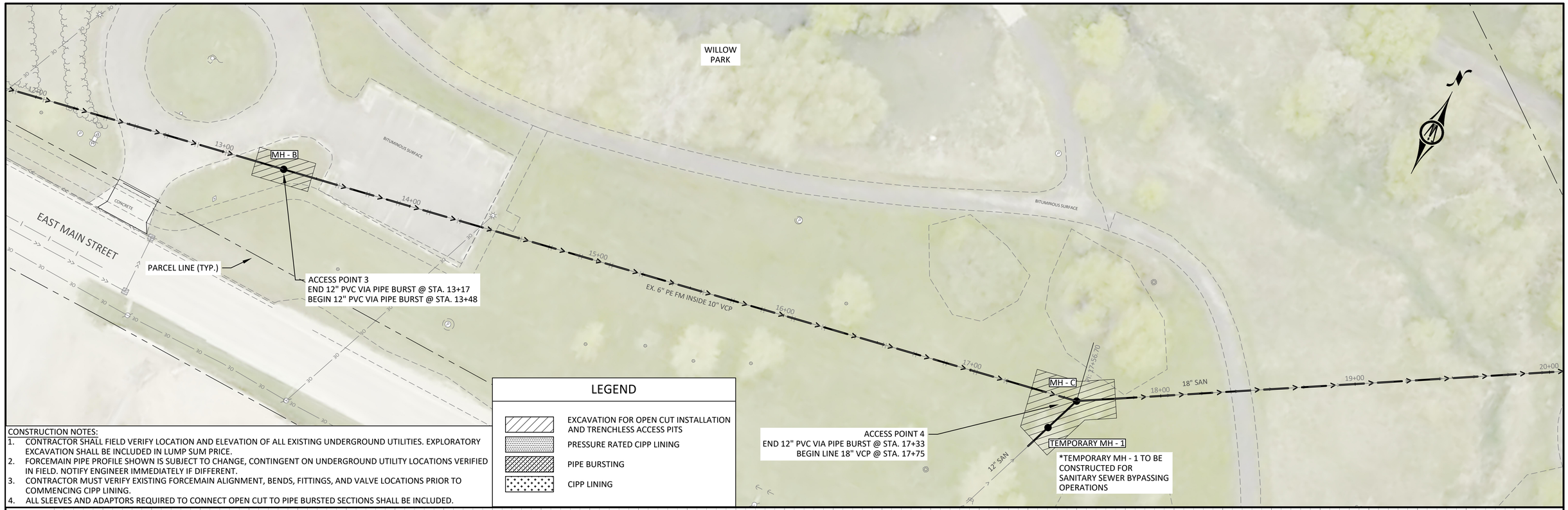
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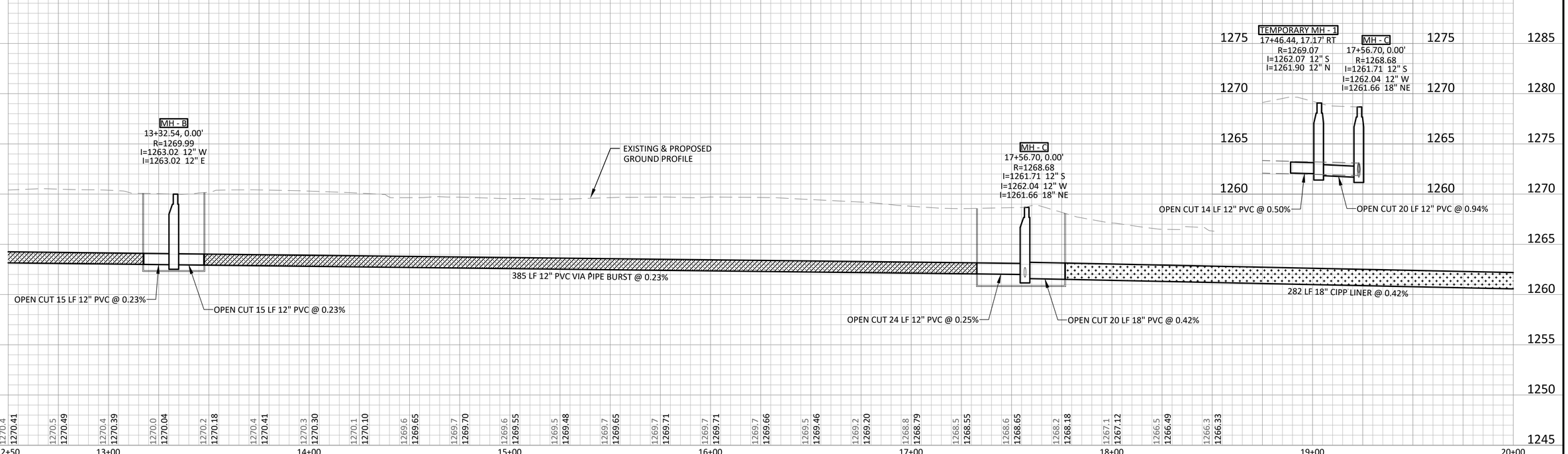
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WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
COLLECTION SYSTEM
FORCEMAIN & LINING PLAN & PROFILE

SHEET 2.19

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CONSTRUCTION NOTES:
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3. CONTRACTOR MUST VERIFY EXISTING FORCEMAIN ALIGNMENT, BENDS, FITTINGS, AND VALVE LOCATIONS PRIOR TO COMMENCING CIPP LINING.
4. ALL SLEEVES AND ADAPTORS REQUIRED TO CONNECT OPEN CUT TO PIPE BURSTED SECTIONS SHALL BE INCLUDED.



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HORZ. SCALE 0 25 50 FEET
VERT. SCALE 0 5 10 FEET

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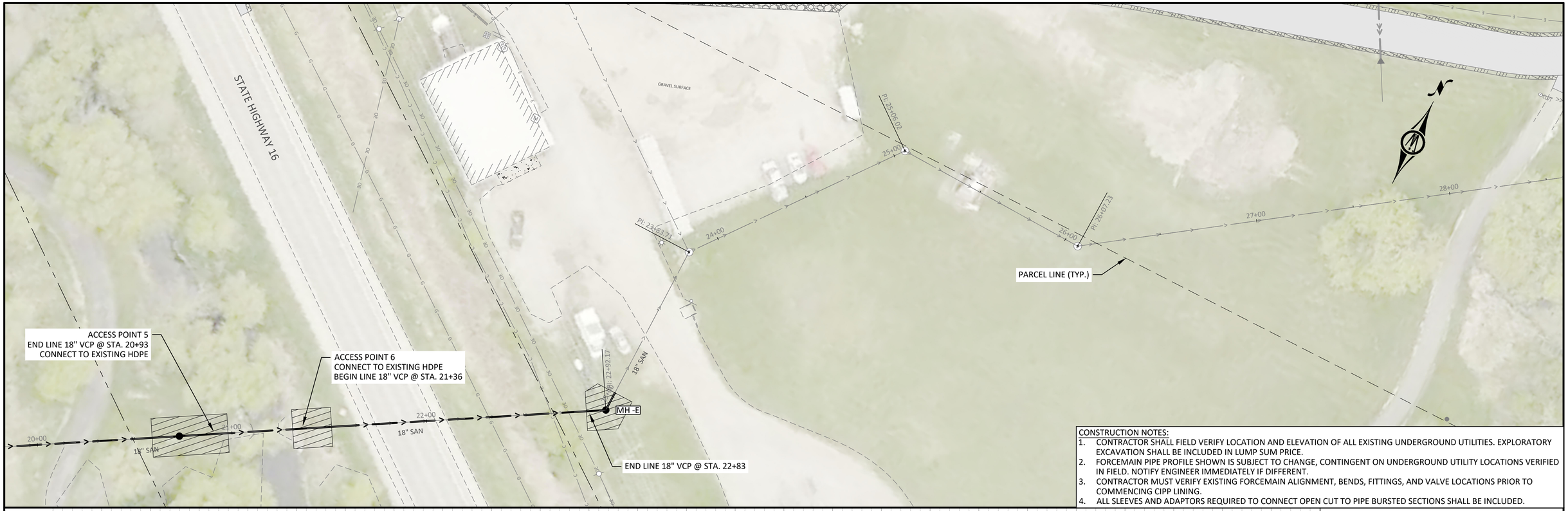
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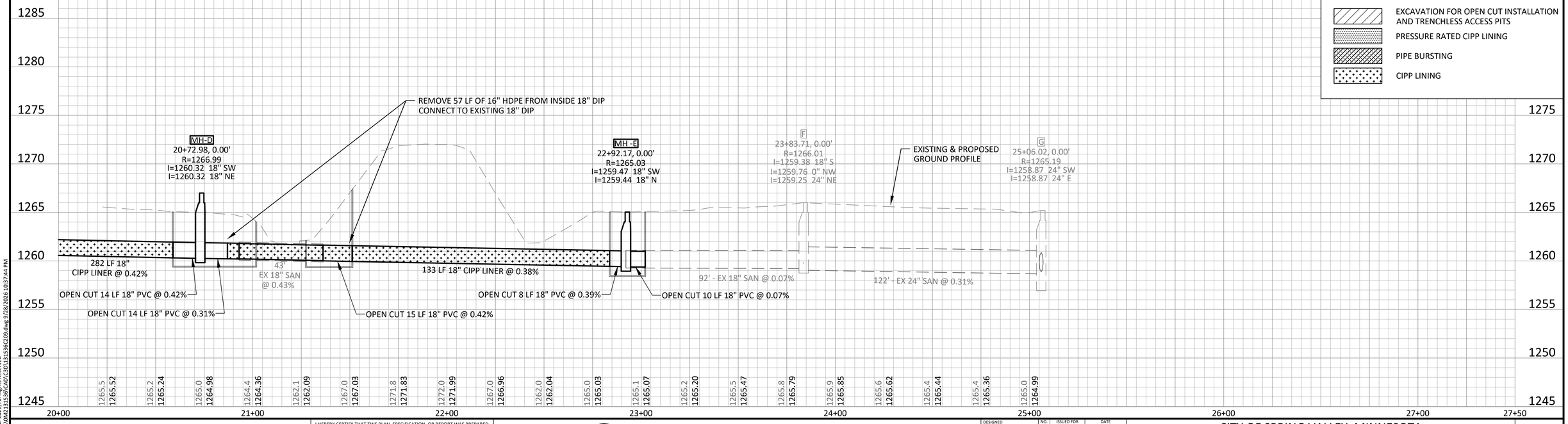
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WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
COLLECTION SYSTEM
FORCEMAIN & LINING PLAN & PROFILE

SHEET 2.20



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LEGEND

- EXCAVATION FOR OPEN CUT INSTALLATION AND TRENCHLESS ACCESS PITS
- PRESSURE RATED CIPP LINING
- PIPE BURSTING
- CIPP LINING

HORZ. SCALE 0 25 50 FEET

VERT. SCALE 0 5 10 FEET

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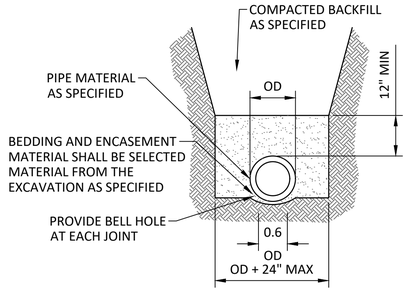
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SHEET 2.21

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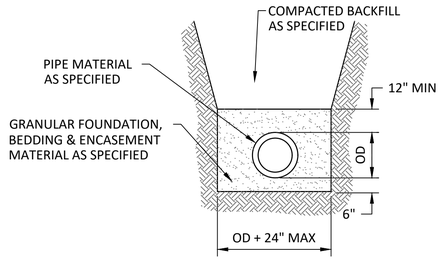
NON-RIGID SANITARY SEWER TRENCH

NOT TO SCALE



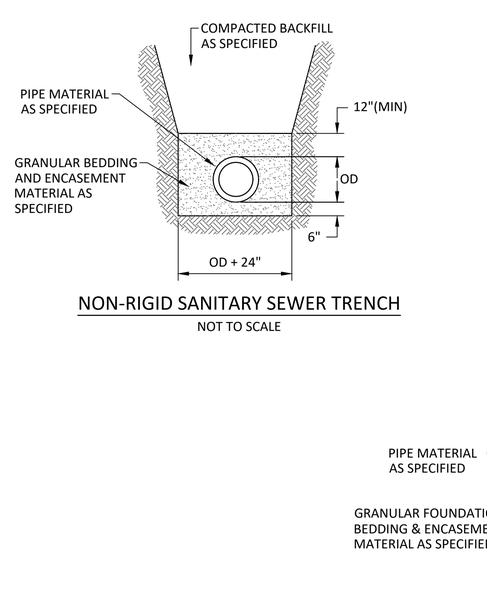
DUCTILE IRON PIPE TRENCH

NOT TO SCALE



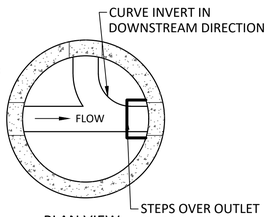
NON-RIGID STORM SEWER TRENCH

NOT TO SCALE



SANITARY MANHOLE

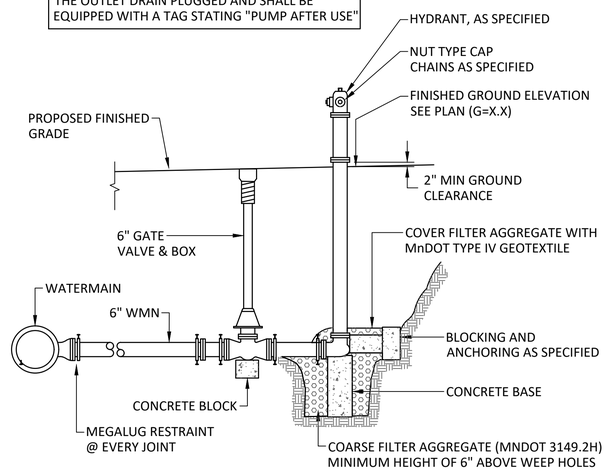
NOT TO SCALE



PLAN VIEW

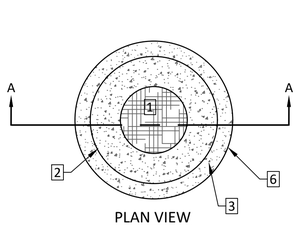
1. RUBBER GASKET (TYPICAL)
2. FLEXIBLE WATERTIGHT SEAL TO BE APPROVED BY ENGINEER
3. SHAPE, DEPTH AND SLOPE OF INVERT TO BE APPROVED BY ENGINEER
4. STEEL REINFORCED PLASTIC STEPS SHALL BE A POLYPROPYLENE PLASTIC REINFORCED WITH A NO. 2 DEFORMED STEEL ROD GRADE 60
5. MnDOT TYPE "B" ECCENTRIC PRECAST CONCRETE CONE SECTION TYPICAL FOR ALL MANHOLES
6. PLACE INTERIOR CHIMNEY SEAL (WHEN SPECIFIED)
7. 8" WIDE, ¼" THICK BITUMINOUS MASTIC WRAP FULL CIRCUMFERENCE (WHEN SPECIFIED)

HYDRANTS LOCATED WHERE THE GROUNDWATER TABLE IS ABOVE THE DRAIN OUTLET SHALL HAVE THE OUTLET DRAIN PLUGGED AND SHALL BE EQUIPPED WITH A TAG STATING "PUMP AFTER USE"



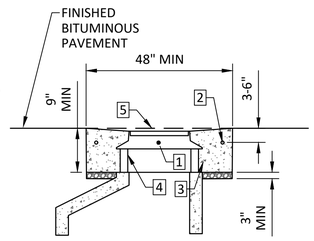
HYDRANT INSTALLATION, MEGALUGS

NOT TO SCALE



PLAN VIEW

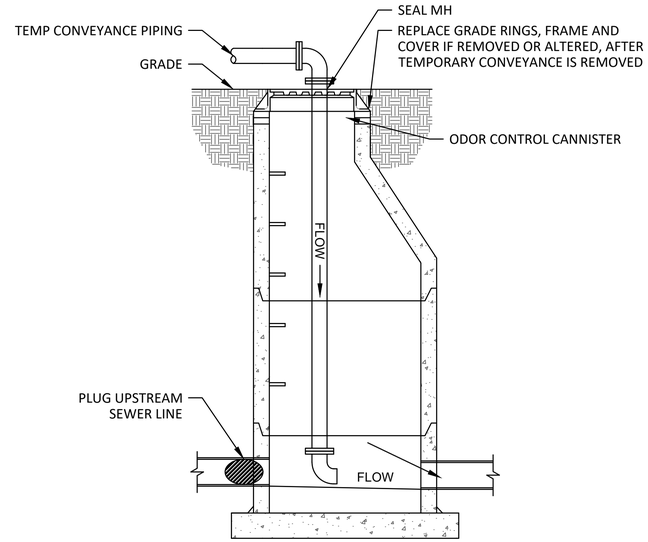
SECTION A-A



1. MANHOLE CASTING
2. REINFORCEMENT; EPOXY COATED NO. 3 BAR
3. CONCRETE PAVEMENT HIGH EARLY MIX
4. HDPE ADJUSTING RINGS, VYLON® PIPE OR APPROVED EQUAL
5. CASTING TO BE ¼" TO ½" BELOW FINISHED BITUMINOUS PAVEMENT
6. SIKA SIKAFLEX NP1 BLACK 30CTR300 OR APPROVED EQUAL TO BE USED ON OUTER EDGE OF CONCRETE

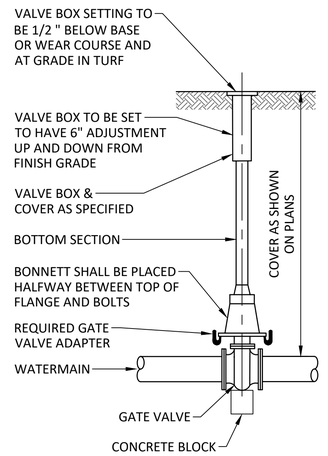
SANITARY SEWER AND STORM SEWER MANHOLE CHIMNEY AND SURFACE ADJUSTMENT

NOT TO SCALE



TEMPORARY CONVEYANCE - DISCHARGE

NOT TO SCALE



NOTES:

1. VALVE BOX SHALL BE CENTERED ON OPERATING NUTS, STRAIGHT, FREE FROM DEBRIS, AND ALL SECTIONS UNBROKEN
2. VALVES IN EASEMENTS SHALL HAVE CHANNEL POST WITNESS MARKERS WITH REFLECTIVE "GV" SIGN
3. DEEP VALVES SHALL HAVE NUT EXTENSIONS INSTALLED TO ELEVATION TO ACCOMMODATE STANDARD 10' KEY; BOTTOM NUT SHALL BE BOLTED TO VALVE NUT AND ONLY ONE SECTION
4. COMPACTION WITH MECHANICAL TAMPER AROUND VALVE BOX SHALL BE PLACED AND COMPACTED WITH 2' LIFTS TO ACHIEVE 95% COMPACTION
5. GATE VALVES LOCATED WITHIN THE CONCRETE SIDEWALK SHALL INCLUDE A METAL SEPARATOR BETWEEN THE VALVE BOX AND THE CONCRETE

GATE VALVE BOX INSTALLATION

NOT TO SCALE

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DREW P. WEBER

LIC. NO. 58643 DATE 9/29/2026

BOLTON & MENK

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DESIGNED	NO.	ISSUED FOR	DATE
GTG	A	MPCA	3-28-25
DRAWN	0	BID	9-29-26
GTG			
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DPW			
CLIENT PROJ. NO.			
0M2.131536			

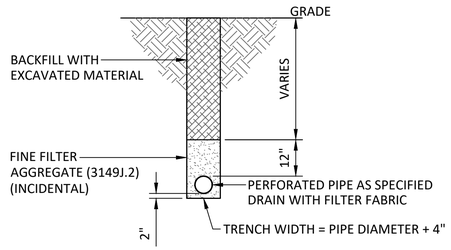
CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILTIY IMPROVEMENTS

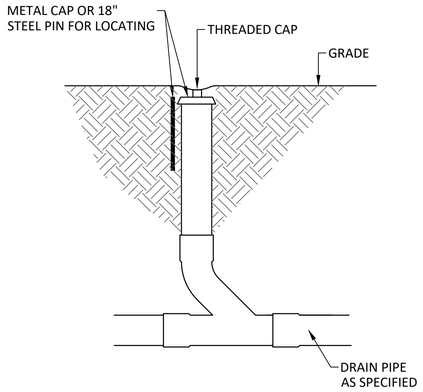
COLLECTION SYSTEM

DETAILS

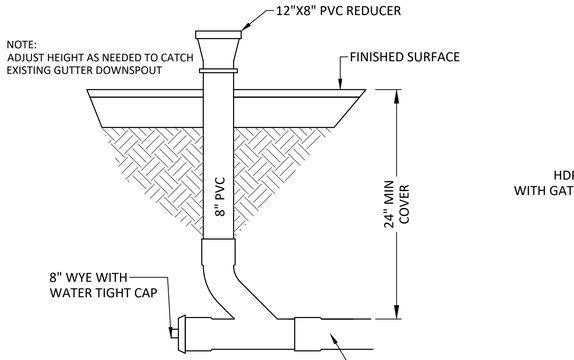
SHEET 2.22



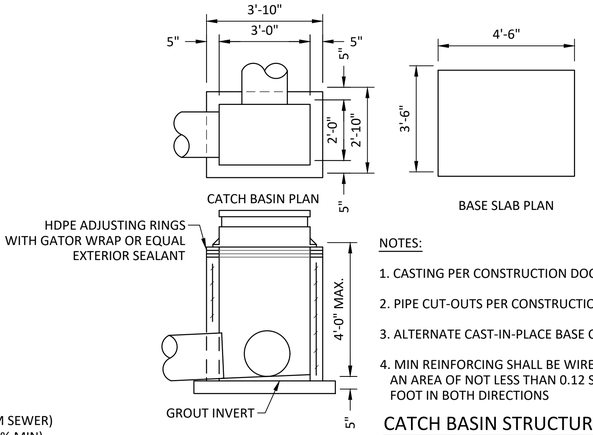
SUBSURFACE PIPE DRAIN
NOT TO SCALE



SUBSURFACE DRAIN CLEANOUT
NOT TO SCALE



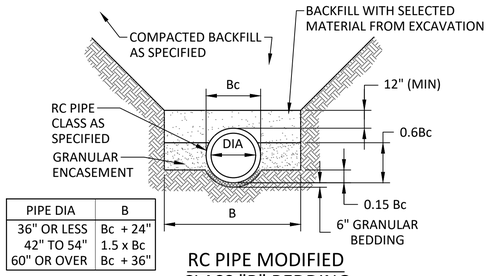
8" ROOF DRAIN CONNECTION
NOT TO SCALE



NOTES:

1. CASTING PER CONSTRUCTION DOCUMENTS
2. PIPE CUT-OUTS PER CONSTRUCTION DOCUMENTS
3. ALTERNATE CAST-IN-PLACE BASE CAN BE USED
4. MIN REINFORCING SHALL BE WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.12 SQ IN PER FOOT IN BOTH DIRECTIONS

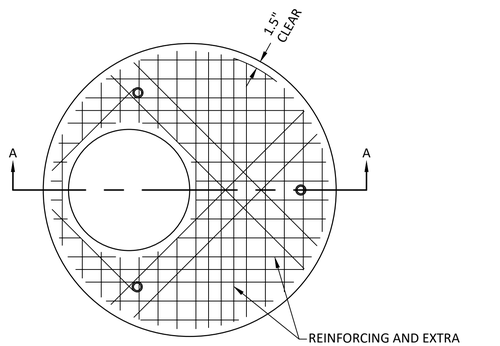
CATCH BASIN STRUCTURE DESIGN R-1 (2'x3')
NOT TO SCALE



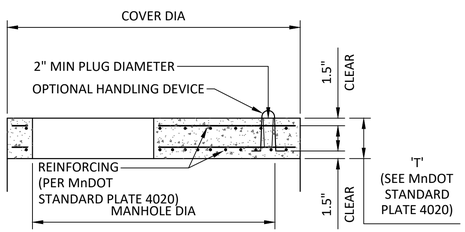
PIPE DIA	B
36" OR LESS	Bc + 24"
42" TO 54"	1.5 x Bc
60" OR OVER	Bc + 36"

RC PIPE MODIFIED CLASS "B" BEDDING
NOT TO SCALE

TYPICAL DESIGN 4020 MANHOLE/CATCH BASIN



PLAN OF COVER
TOP BARS NOT SHOWN



SECTION A-A

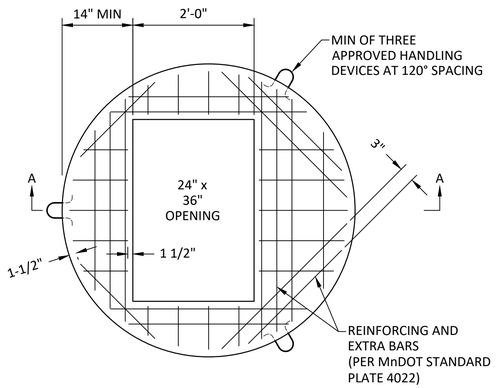
NOTES:

1. AASHTO HS 25 LOADING MAX FILL HEIGHT 15'
2. THE # 4020 SHALL BE PERMANENTLY MARKED ON THE TOP COVER
3. EQUIVALENT STEEL AREAS IN WIRE MESH MAY BE USED
4. REINFORCEMENT PER SPEC 3301, GRADE 60 A SINGLE HOOP OF 8ga STEEL WIRE

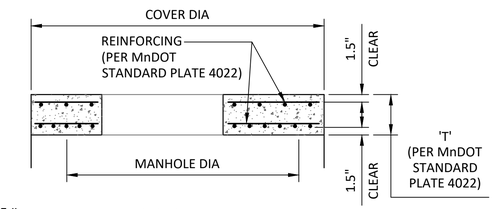
DESIGNATION:
DESIGN DIAMETER - STANDARD PLATE #
DESIGN 48-4020

STORM SEWER STRUCTURE DESIGN 4020
NOT TO SCALE

TYPICAL DESIGN 4022 CATCH BASIN



PLAN OF COVER
TOP BARS NOT SHOWN



SECTION A-A

NOTES:

1. AASHTO HS 25 LOADING MAX FILL HEIGHT 15'
2. THE # 4022 SHALL BE PERMANENTLY MARKED ON THE TOP COVER
3. EQUIVALENT STEEL AREAS IN WIRE MESH MAY BE USED
4. REINFORCEMENT PER SPEC 3301, GRADE 60 A SINGLE HOOP OF 8ga STEEL WIRE

DESIGNATION:
DESIGN DIAMETER - STANDARD PLATE #
DESIGN 48-4020

STORM SEWER STRUCTURE DESIGN 4022
NOT TO SCALE

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DRAWN	GTG
CHECKED	DPW
CLIENT PROJ. NO.	0M2.131536

NO.	ISSUED FOR	DATE
A	MPCA	3-28-25
0	BID	9-29-26

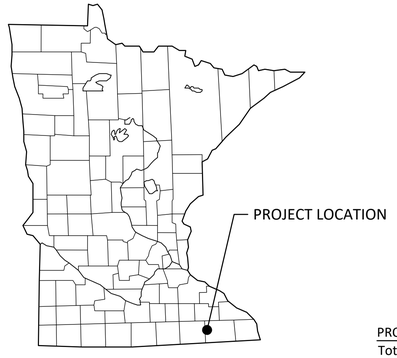
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
COLLECTION SYSTEM
DETAILS

SHEET
2.23

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

WASTEWATER TREATMENT FACILITY IMPROVEMENTS - 2027

CITY OF SPRING VALLEY
FILLMORE COUNTY, MINNESOTA



RESPONSIBLE PARTIES:
The Contractor and Owner will be joint applicants under the MPCA's General Stormwater Permit for Construction Activity as required by the National Pollutant Discharge Elimination System (NPDES) Phase II program.

The Contractor shall provide one or more trained Construction SWPPP Manager(s) knowledgeable and experienced in the application of erosion prevention and sediment control BMPs that will oversee the implementation of the SWPPP, and the installation, inspection and maintenance of the erosion prevention and sediment control BMPs.

A Construction SWPPP Manager must be available for an on-site inspection within 72 hours upon request by the MPCA.

	COMPANY	CONTACT PERSON	PHONE
OWNER:	City of Spring Valley, MN	Chad Hindt	507-346-7367
SWPPP DESIGNER:	Bolton & Menk, Inc.	Jordan Pankonin	507-735-2742
CONTRACTOR:	TBD	TBD	TBD
CONSTRUCTION SWPPP MANAGER:	TBD	TBD	TBD
PARTY RESPONSIBLE FOR LONG TERM O&M:	City of Spring Valley, MN	Chad Hindt	507-346-7367

The SWPPP Designer, Construction SWPPP Manager, and BMP Installer must have appropriate training. Documentation showing training commensurate with the job duties and responsibilities is required to be included in the SWPPP prior to any work beginning on the site. Training documentation for the SWPPP Designer is included on the Narrative sheet. The Contractor shall attach training documentation to this SWPPP for the Construction SWPPP Manager and BMP Installer prior to the start of construction. This information shall be kept up to date until the project NOT is filed.

ADDITIONAL COMPENSATION
Payment for all work associated with Erosion and Sediment Control shall be as described in the Project Manual. Unless otherwise authorized by the Owner no additional payment shall be made for any work required to administer and maintain the site erosion and sediment control in compliance with the Minnesota Pollution Control Agency (MPCA) - General Stormwater Permit for Construction Activity (MN R100001) including but not limited to inspection, maintenance, and removal of BMPs or addition of BMPs to accommodate Contractor phasing.

DOCUMENT RETENTION
Permittees must make the SWPPP, including all inspection reports, maintenance records, training records and other information required by this permit, available to federal, state, and local officials within three (3) days upon request for the duration of the permit and for three (3) years following the NOT.

GENERAL STORMWATER DISCHARGE REQUIREMENTS
All requirements listed in Section 5.1 of the Permit for the design of the permanent stormwater management system and discharge have been included in the preparation of this SWPPP. These include but are not limited to:

1. The expected amount, frequency, intensity, and duration of precipitation.
2. The nature of stormwater runoff and run-on at the site
3. Peak flow rates and stormwater volumes to minimize erosion at outlets and downstream channel and stream bank erosion.
4. The range of soil particle sizes expected to be present on the site.

Permanent stormwater treatment systems for this project have been designed in accordance with the guidance in the MN Stormwater Manual in place at the time of bidding. Copies of the design information and calculations are part of this SWPPP and will be provided in digital format upon written request to the Engineer.

LEGEND

- 1-MILE BOUNDARY
- PROJECT BOUNDARY
- IMPAIRED, SPECIAL OR PROTECTED WATERS
- NATIONAL WETLANDS INVENTORY
- CALCAREOUS FEN
- RECEIVING WATERS

PROJECT AREAS:

Total Project Size (disturbed area) =	5.5	ACRES
Existing area of impervious surface =	2.2	ACRES
Post construction area of impervious surface =	2.7	ACRES
Total new impervious surface area created =	0.5	ACRES

Planned Construction Start Date:	MARCH 2027
Estimated Construction Completion Date:	JUNE 2029

PERMANENT STORMWATER MANAGEMENT SYSTEM:
Type of storm water management used if more than 1 acre of new impervious surface is created:

	Wet Sedimentation Basin
	Infiltration/Filtration
	Regional Pond
X	Permanent Stormwater Management Not Required

(Less than 1 acre of new impervious surface created)

PROJECT LOCATION:

COUNTY	TOWNSHIP	RANGE	SECTION	LATITUDE	LONGITUDE
FILLMORE	T103N	R13W	27, 33, 34	43.6905°	-92.3808°

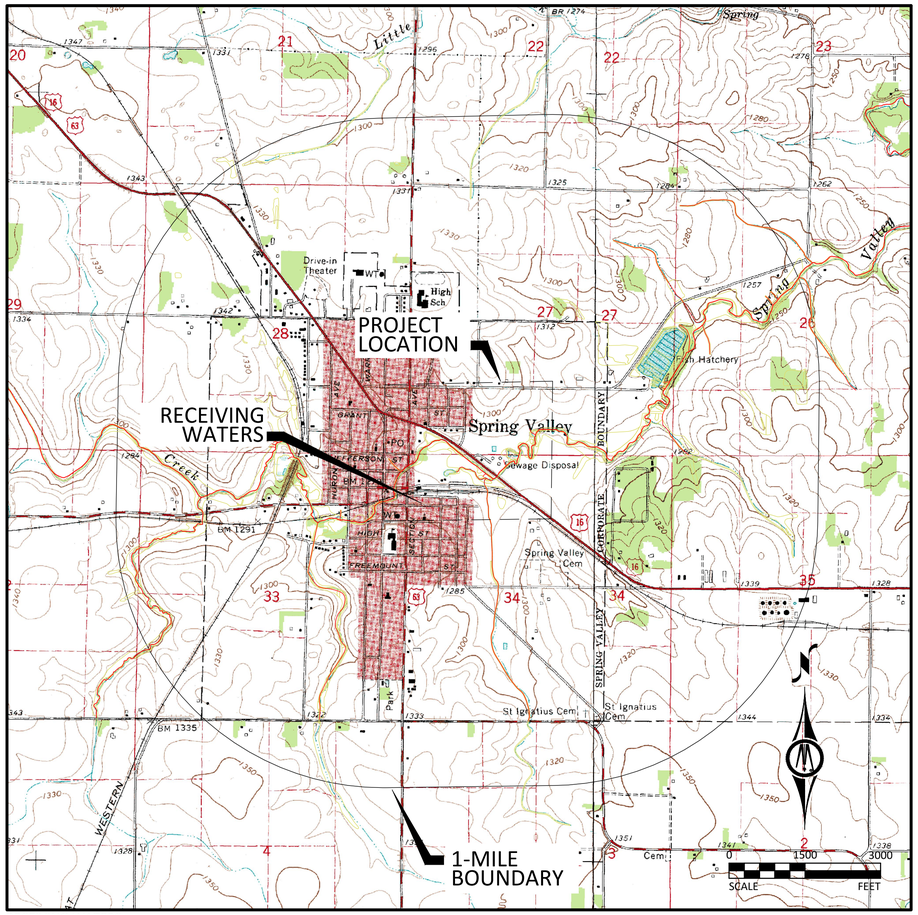
BMP SUMMARY	QUANTITY	UNIT
MACHINE SLICED SILT FENCE	1600	LF
SEED & FERTILIZE	14,000	SY
HYDROMULCH	14,000	SY
ROLLED EROSION PREVENTION CATEGORY 35	600	SY
SEDIMENT CONTROL LOG TYPE STRAW	1600	LF
INLET PROTECTION	15	EA
RAPID STABILIZATION METHOD 3 OR 4 (50% OF FINAL SEEDING)	7,000	SY
STABILIZED CONSTRUCTION EXIT	2	EA
FLOTATION SILT CURTAIN, TYPE MOVING WATER	100	LF

DESCRIPTION OF CONSTRUCTION ACTIVITIES AND STORMWATER MANAGEMENT:
Construction activities include: Removals, site grading, sanitary sewer and watermain construction, pipe bursting, CIPP lining, storm sewer construction, concrete curb, concrete sidewalk, temporary erosion and sediment control, wastewater treatment facility construction, concrete pavement, bituminous trail, bituminous pavement, and permanent stabilization.

As this is project is spread out, there are a few stormwater systems that exist.

- Area A: Stormwater currently flows south and east across the north driveway. After construction is complete, stormwater will continue as it currently does.
- Area B: Stormwater collects in the parking lot storm sewer structures on the south side of the admin building and is piped to the east, and eventually flows into the Spring Valley Creek. After construction is complete, stormwater will continue as it currently does.
- Area C: Stormwater for the remainder of the WWTF site and south driveway sheet flow to the south and east and eventually flow into the Spring Valley Creek. After construction is complete, stormwater will continue as it currently does.
- Area D: Stormwater for the open cut areas along Willow Park and Main Street between N Valley Alley and TH 16 currently flow into the Main Street storm sewer system or into the unnamed creeks and eventually the Spring Valley Creek in Willow Park. After construction is complete, stormwater will continue as it currently does.

This project includes the stormwater management BMPs listed in the BMP Summary Table above.



RECEIVING WATERS:
Receiving waters, including surface water, wetlands, Public Waters, and stormwater ponds, within 1-mile of the project boundary are identified on the USGS 7.5 min quad map above. Receiving waters that are impaired, the impairment, and WLA are listed as follows. All specific BMPs relative to construction activities listed in the permit for special, prohibited, restricted, or impaired have been incorporated into this plan. All specific BMPs listed in approved TMDLs and those BMPs listed for construction related waste load allocations have also been incorporated.

NAME OF WATER BODY	TYPE (ditch, pond, wetland, lake, etc.)	Special, Prohibited, Restricted Water [1]	Flows to Impaired Water Within 1-Mile [2]	USEPA Approved Construction Related TMDL [3]
SPRING VALLEY CREEK	CREEK	SPECIAL	YES	TSS
UNNAMED CREEK (2)	CREEK	SPECIAL	YES	NO

[1] Special, prohibited, and restricted waters are listed in Section 23 of the MN Construction Stormwater General Permit (MNR100001).
[2] Identified as impaired under section 303 (d) of the federal Clean Water Act for phosphorus, turbidity, TSS, dissolved oxygen, and/or aquatic biota.
[3] Construction Related TMDLs include those related to: phosphorus, turbidity, TSS, dissolved oxygen, and/or aquatic biota.

IMPLEMENTATION SCHEDULE AND PHASING: The Contractor is required to provide an updated schedule and site management plan meeting the minimum requirements of Section 1717 of the Minnesota Standard Specifications for Construction.

1) Submit SWPPP Updates to Engineer. Submittal shall include any requested changes to the SWPPP, including but not limited to: Trained Personnel, Locations for Stockpiles, Concrete Washout, Sanitation Facilities, Types and Locations of Erosion & Sediment Control. Failure to submit updates shall be considered acceptance of the SWPPP as designed with no changes.
2) Install perimeter sediment control, inlet protection, and construction exit.
3) Remove existing pavement surfacing.
4) Construct public utilities and grading.
5) Construct new surface improvements.
6) Complete final stabilization of all disturbed areas.
7) Complete temporary stabilization for disturbed areas as needed, followed by final stabilization when work completed.
8) Add additional temporary BMPs as necessary during construction based on inspection reports.
9) Ensure final stabilization measures are complete.
10) Provide digital copy of all Field SWPPP Documentation including Inspection Reports and SWPPP Revisions to the Owner.
11) Submit Notice of Termination (NOT) to MPCA. NOTE: The NOT must be submitted to MPCA before Final Stabilization is considered complete.

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H:\SPVA\0M2131536\CAD\C3D\131536C2XX (SWPPP Plan).dwg 9/28/2026 10:38:03 PM

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GTG			
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DPW			
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0M2.131536			

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
STORMWATER POLLUTION PREVENTION PLAN
SWPPP PLAN

SHEET 2.24

Information contained in this SWPPP narrative sheet summarizes requirements of the GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM PROGRAM - Permit No: MN RI0000I (Permit) as they apply to this project. All provisions of the Permit including those not specifically cited herein shall apply to this project. The Contractor is responsible to be familiar with and comply with all conditions of the permit. The full text of the Permit is available at: https://www.pca.state.mn.us/sites/default/files/wq-strm2-80a.pdf

SWPPP AMENDMENTS AND SUBMITTALS

Contractor must prepare and submit to the Engineer a SWPPP amendment as necessary to include additional Best Management Practices (BMPs) to correct problems identified or address the following situations.

1. Contact information and training documentation for Construction SWPPP Manager and BMP Installer,
2. There is a change in construction method of phasing, operation, maintenance, weather or seasonal conditions not anticipated during the design of the SWPPP including but not limited to:
   a. Types and/or Locations of BMPs
   b. Material Storage and Spill Response
   c. Fueling Plans
   d. Locations for Stockpiles, Concrete Washout, and Sanitation Facilities and
   e. Project Phasing
3. It is determined that the SWPPP is not achieving objectives of minimizing pollutants in stormwater discharges associated with construction activity, or
4. The SWPPP is not consistent with the terms and conditions of the permit.

The Contractor may implement SWPPP amendments immediately and is not required to wait for Engineer review of the submittal. The responsibility for completeness of SWPPP amendments and compliance with the Permit lies with the Contractor. Review, comment, or lack of comment by the Engineer on a SWPPP amendment shall not absolve the responsibilities of the Contractor in any way.

If a change order is issued for a design change the SWPPP amendment will be prepared by the Engineer and included in the change order.

In addition to SWPPP amendments, the Contractor shall submit to the Engineer Weekly Erosion and Sediment Control Schedule meeting the requirements of MnDOT 1717.

The Contractor shall keep copies of all SWPPP amendments, Weekly Erosion and Sediment Control Schedules, inspection logs, and maintenance logs with the field copy of the SWPPP. A PDF copy of these documents will be provided along with a copy of the final Field Copy of the SWPPP to the Engineer along with the signed Notice of Termination when final stabilization is complete.

EROSION PREVENTION PRACTICES

Stormwater conveyance channels shall be routed around unstabilized areas. Erosion controls and velocity dissipation devices shall be used at outlets within and along the length of any constructed conveyance channel.

The normal wetted perimeter of all ditches or swales, including storm water management pond slopes, that drain waters from the site must be stabilized within 200' of any property edge or discharge point, including storm sewer inlets, within 24 hours of connection.

Temporary or permanent ditches or swales used as sediment containment during construction do not need to be stabilized during temporary period of use and shall be stabilized within 24 hours after no longer used as sediment containment.

Mulch, hydromulch, tackifier, or similar practice shall not be used in any portion of the wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than 2 percent.

Energy dissipation shall be installed at all temporary or permanent pipe outlets within 24 hours of connection to a surface water or permanent stormwater treatment system.

The Contractor shall phase construction and use construction methods to the extent practical to minimize exposed soils. The project phasing shall be documented in the Weekly Erosion and Sediment Control Schedule.

SEDIMENT CONTROL PRACTICES

Down gradient BMPs including perimeter BMPs must be in place before up gradient land- disturbing activities begin and shall remain in place until final stabilization.

All BMPs that have been adjusted or removed to accommodate short-term activities shall be re-installed or replaced the earlier of the end of the work day or before the next precipitation event even if the activity is not complete.

Inlet BMPs may be removed for specific safety concerns. The BMPs shall be replaced as soon as the safety concern is resolved. The removal shall be documented in the SWPPP as a SWPPP amendment.

Temporary stockpiles must have sediment control BMPs. The Contractor shall prepare and submit to the Engineer a SWPPP amendment showing the location of temporary stockpiles and the BMPs for each stockpile. The SWPPP amendment must meet the minimum requirements of Section 9 of the Permit.

Soil compaction shall be minimized and topsoil shall be preserved, unless infeasible or if construction activities dictate soil compaction or topsoil stripping.

The use of polymers, flocculants, or other sedimentation treatment chemicals are not proposed as part of this SWPPP as designed by the Engineer. If methods or phasing of construction require the use of any of these chemicals, the Contractor shall prepare and submit to the Engineer a SWPPP amendment that meets the minimum requirements of Section 9 of the Permit.

TEMPORARY SEDIMENTATION BASINS

A temporary sedimentation basin has not been included in this SWPPP as designed by the Engineer. If a basin is later determined to be desirable or necessary the Contractor shall prepare and submit to the Engineer a SWPPP amendment. Temporary sedimentation basins shall meet or exceed the minimum requirements of Section 14 of the Permit and shall include a basin draining plan meeting or exceeding the minimum requirements of Section 10 of the Permit. Where the site discharges to Special and/or Impaired Waters the SWPPP amendment shall also meet or exceed the minimum requirements of Section 23 of the permit.

DEWATERING

A dewatering plan has not been included in this SWPPP as designed by the Engineer. If dewatering is required for this project, the Contractor shall prepare and submit to the Engineer a SWPPP amendment. All dewatering shall meet or exceed the minimum requirements of Section 10 of the Permit.

POLLUTION PREVENTION

Products and materials that have the potential to leach pollutants that are stored on the site must be stored in a manner designed to minimize contact with stormwater. Materials that are not a source of potential contamination to stormwater or that are designed for exposure to stormwater are not required to be covered.

Hazardous materials including but not limited to pesticides, fertilizer, petroleum products, curing compounds and toxic waste must be properly stored and protected from stormwater exposure as recommended by the manufacturer in an access restricted area.

Solid waste must be stored, collected and disposed of in compliance with Minnesota Administrative Rules Chapter 7035.

Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. CH 7041.

Exterior vehicle or equipment washing on the project site shall be limited to a defined area of the site. No engine degreasing is allowed on site. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

The Contractor shall prepare and submit a SWPPP amendment detailing the location and BMPs proposed for storage of materials, solid waste, portable toilets, and exterior vehicle or equipment washing on the site. The SWPPP amendment shall include a spill prevention and response plan that is appropriate for the materials proposed to be on the site. The SWPPP amendment shall meet or exceed the minimum requirements of Section 12 of the Permit.

INSPECTION & MAINTENANCE

A trained person shall routinely inspect the entire construction site at the time interval indicated on this sheet of the SWPPP during active construction and within 24-hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection that occurs within 24-hours after a rainfall event, the next inspection must be conducted at the time interval indicated in the Receiving Waters Table found on the SITE PLAN AND INFORMATION SHEET of the SWPPP.

All inspections and maintenance conducted during construction must be recorded on the day it is completed and must be retained with the SWPPP. Inspection report forms are available in the Project Specifications. Inspection report forms other than those provided shall be approved by the engineer.

The Contractor may request a change in inspection schedule for the following conditions:

a. Inspections of areas with permanent cover to be reduced to once per month,
b. Inspections of areas that have permanent cover and have had no construction activity for 12 months to be suspended until construction resumes,
c. Inspections of areas where construction is suspended due to frozen ground conditions, inspections to be suspended until the earlier of within 24 hours of runoff occurring, or upon resuming construction.

No change in inspection schedule shall occur until authorized by the Engineer.

Inspections must include:

1. All erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness.
2. Surface waters, including drainage ditches and conveyance systems for evidence of erosion and sediment deposition.
3. Construction site vehicle exit locations, streets and curb and gutter systems within and adjacent to the project for sedimentation from erosion or tracked sediment from vehicles.
4. Infiltration areas to ensure that no sediment from ongoing construction activity is reaching the infiltration area and that equipment is not being driven across the infiltration area.

All non-functioning BMPs and those BMPs where sediment reaches one-half (1/2) of the depth of the BMP, or in the case of sediment basins one-half (1/2) of the storage volume, must be repaired, replaced, or supplemented by the end of the next business day after discovery, or as soon as field conditions allow.

Permittees must repair, replace or supplement all nonfunctional BMPs with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow.

Any sediment that escapes the site must be removed and the area stabilized within 7 calendar days of discovery unless precluded by legal, regulatory, or physical access in which case the work shall be completed within 7 calendar days of authorization. Paved surfaces such as streets shall have any escaped or tracked sediment removed by the end of the day that it is discovered. Sediment release, other than paved surfaces that can be cleaned up with street sweeping shall be reported immediately upon discovery to the Engineer.

PUBLIC WATER RESTRICTIONS:

For public waters that have been promulgated "work in water restrictions" during fish spawning time frames, all exposed soil areas that are within 200 feet of the water's edge, and drain to these waters must complete stabilization within 24-hours during the time period. MN DNR permits are not valid for work in waters that are designated as infested waters unless accompanied by an Infested Waters Permit or written notification has been obtained from MN DNR stating that such permit is not required. There is no exception for pre-existing permits. If a MN DNR Permit has been issued for the project and the water is later designated as infested, the Contractor shall halt all work covered by the MN DNR Permit until an Infested Waters Permit is obtained or that written notification is obtained stating that such permit is not required.

FINAL STABILIZATION

Final Stabilization is not complete until all the following requirements have been met:

1. Substantial Completion has been reached and no ground disturbing activities are anticipated.
2. Permanent cover has been installed with an established minimum uniform perennial vegetation density of 70 percent of its expected final growth. Vegetation is not required in areas where no vegetation is proposed by this project such as impervious surfaces or the base of a sand filter.
3. Accumulated sediment has been removed from all permanent stormwater treatment systems as necessary to ensure the system is operating as designed.
4. All sediment has been removed from conveyance systems
5. All temporary synthetic erosion prevention and sediment control BMPs have been removed. BMPs designated on the SWPPP to remain to decompose on-site may remain.
6. For residential construction only, permit coverage terminates on individual lots if the structures are finished and temporary erosion prevention and downgradient perimeter control is complete, the residence sells to the homeowner, and the permittee distributes the MPCA's "Homeowner Fact Sheet" to the homeowner.
7. For agricultural land only (e.g., pipelines across cropland), the disturbed land must be returned to its preconstruction agricultural use prior to submitting the NOT.

SITE STABILIZATION COMPLETION:

Stabilization of exposed soils shall begin immediately and shall be completed after the construction activity has temporarily or permanently ceased no later than:	7 calendar days

SITE INSPECTION INTERVAL:

A trained person shall routinely inspect the entire construction site during active construction at an interval of no more than:	7 calendar days

SPECIAL ENVIRONMENTAL CONSIDERATIONS AND PERMITS:

1)	Was an environmental review required for this project or any part of a common plan of development or sale that includes all or any portion of this project?	NO
2)	Does any portion of the site have the potential to affect threatened or endangered species or their critical habitat?	NO
3)	Does any portion of this site discharge to a Calcareous fen.	NO
4)	Will any portion of the site potentially affect properties listed on the National Register of Historic Places or a known or discovered archeological site?	NO
5)	Have any Karst features have been identified in the project vicinity?	NO
6)	Is compliance with temporary or permanent stormwater management design requirements infeasible for this project?	NO
7)	Has the MN DNR promulgated "work in water restrictions" for any Public Water this site disharges to during fish spawning?	NO

TYPE OF PERMIT	PERMITTING AGENCY	PERMIT STATUS AND CONDITIONS
Construction Stormwater NPDES	MPCA	PENDING
WWTF NPDES-SDS	MPCA	ISSUED - SEE PERMIT FOR CONDITIONS
PUBLIC WATERS WORK	MNDNR	TBD

SWPPP DESIGNER TRAINING DOCUMENTATION:

UNIVERSITY OF MINNESOTA
Jordan T. Pankonin
Design of Construction SWPPP (May 31 2024)

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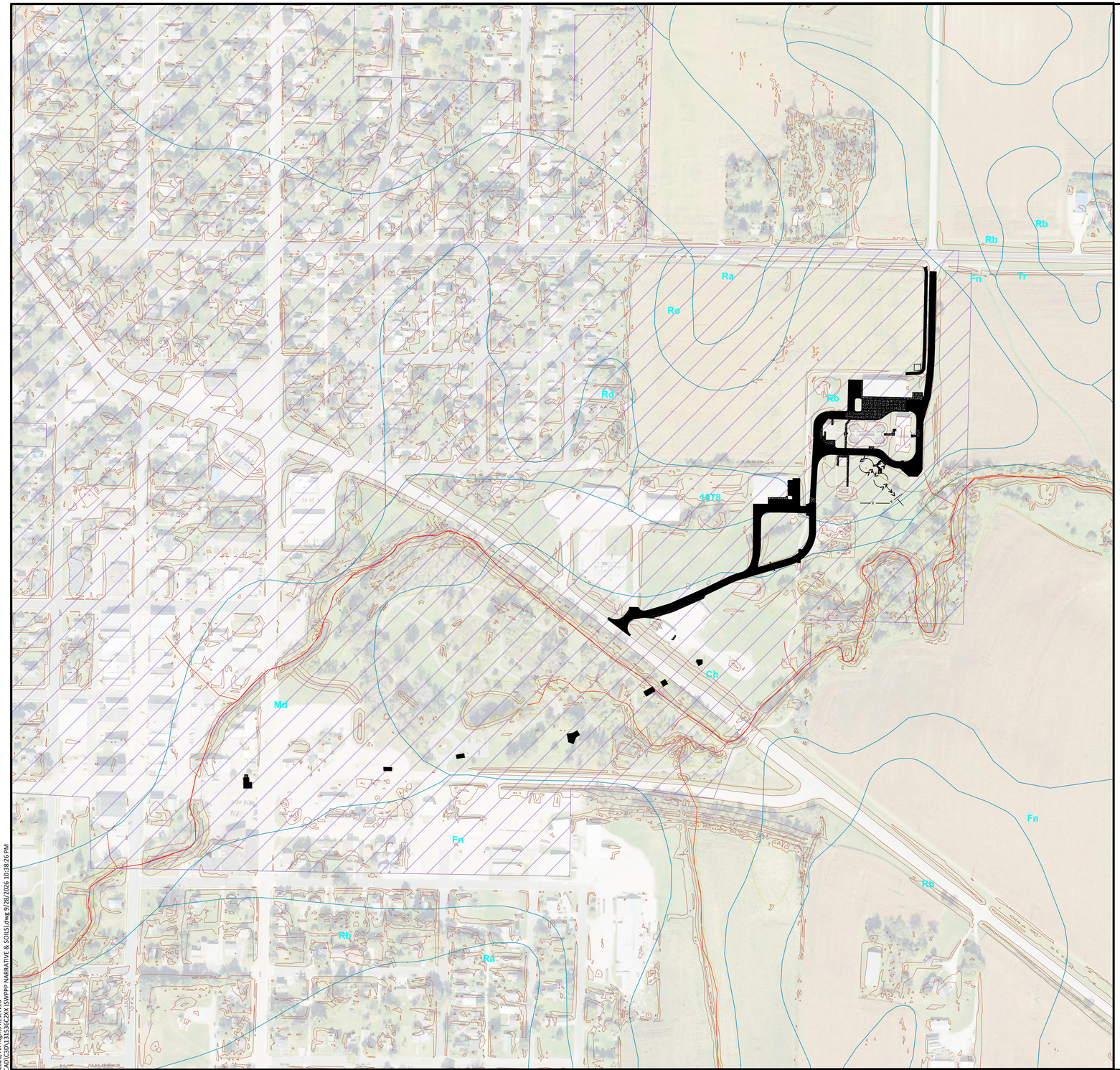
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DREW P. WEBER
LIC. NO. 58643 DATE 9/29/2026

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
STORMWATER POLLUTION PREVENTION PLAN
SWPPP NARRATIVE

SHEET 2.25



LEGEND

- PROJECT AREA
- SOIL TYPE
- IMPAIRED AND/OR SPECIAL WATERS
- NATIONAL WETLANDS INVENTORY
- DWSMA, LOW VULNERABILITY
- STEEP SLOPES (>33.3%)

0 100 400
SCALE FEET

SOIL TYPE SUMMARY

Map Unit Symbol	Soil Name	Hyd. Soil Group	Erodibility
1078	ANTHROPORTIC UDORTHENTS	C	NHEL
CH	CLYDE SILTY CLAY LOAM, OVERWASH	B/D	PHEL
MD	MIXED ALLUVIAL LAND	B/D	NHEL
RB	RACINE AND OSTRANDER SILT LOAMS	C	PHEL

NHEL - Not Highly Erodible Land
PHEL - Potentially Highly Erodible Land
HEL - Highly Erodible Land

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	SHEET NO.
SITE MAP	2.29 - 2.33
DIRECTION OF FLOW	2.29 - 2.33
FINAL STABILIZATION	2.29 - 2.33
SOILS	2.26
DRAINAGE STRUCTURES	2.08, 2.12 - 2.14
STORM SEWER PLAN & PROFILE SHEETS	2.08, 2.12 - 2.14
EROSION & SEDIMENT CONTROL DETAILS	2.27 - 2.28
EROSION CONTROL TABULATION	2.24
TURF ESTABLISHMENT TABULATION	2.24
NARRATIVE & NOTES	2.25

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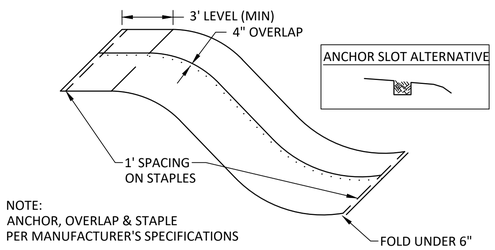
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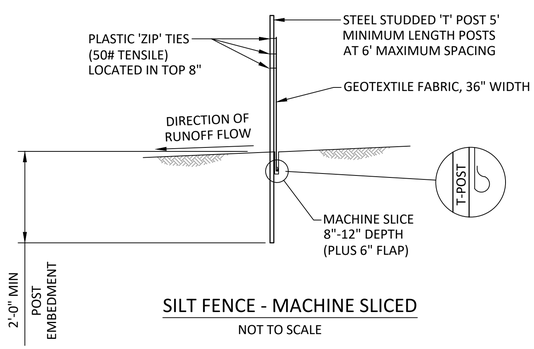
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
STORMWATER POLLUTION PREVENTION PLAN
SWPPP SOILS

SHEET 2.26

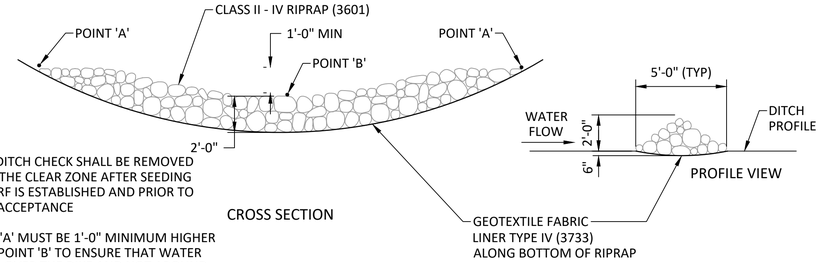


NOTE:
ANCHOR, OVERLAP & STAPLE
PER MANUFACTURER'S SPECIFICATIONS

EROSION CONTROL BLANKET INSTALLATION
NOT TO SCALE



SILT FENCE - MACHINE SLICED
NOT TO SCALE

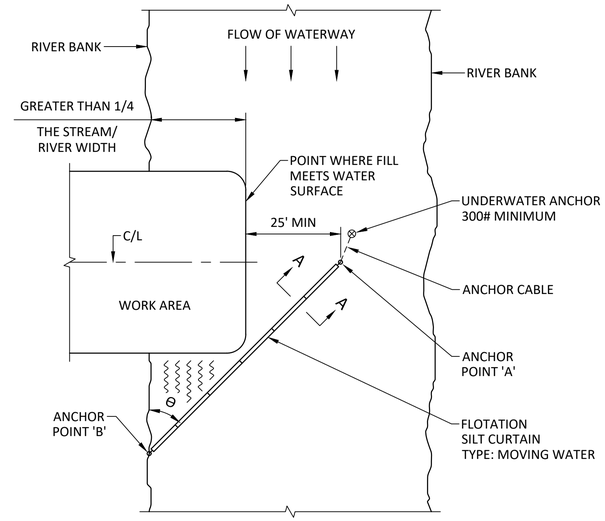


NOTE:
ROCK DITCH CHECK SHALL BE REMOVED FROM THE CLEAR ZONE AFTER SEEDING OR TURF IS ESTABLISHED AND PRIOR TO FINAL ACCEPTANCE

POINT 'A' MUST BE 1'-0" MINIMUM HIGHER THAN POINT 'B' TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

CROSS SECTION

DITCH CHECK - ROCK
NOT TO SCALE

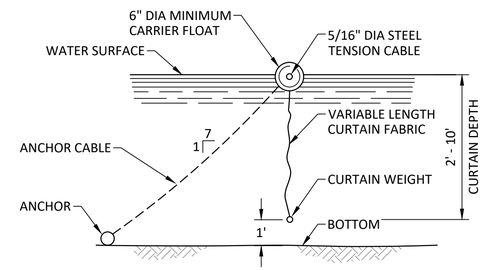


∠ θ	RIVER VELOCITY
45°	SLOW, LESS THAN 3 FT/SEC
35°	MODERATE, 3 - 5 FT/SEC

PLAN VIEW

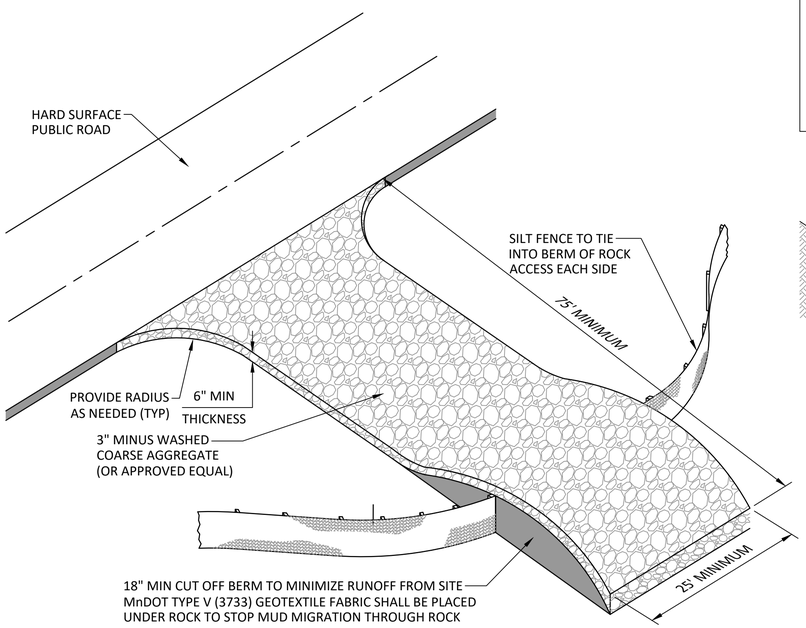
DESIGN GUIDELINES:
WHEN TEMPORARY FILL ENCROACHES MORE THAN 1/4 BUT LESS THAN 1/3 THE WIDTH OF THE STREAM

MAXIMUM WATER DEPTH: 11 FT
MINIMUM WATER DEPTH: 3 FT
MAXIMUM WATER VELOCITY: 5 FT/SEC

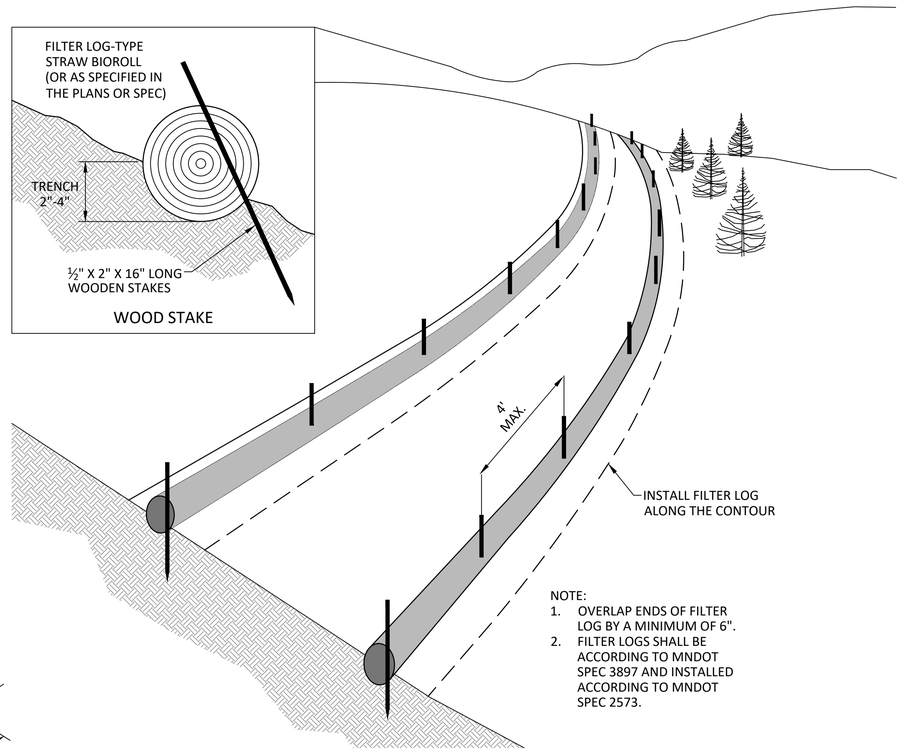


SECTION A-A

SILT FENCE FLOTATION SILT CURTAIN
NOT TO SCALE



ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE



NOTE:
1. OVERLAP ENDS OF FILTER LOG BY A MINIMUM OF 6".
2. FILTER LOGS SHALL BE ACCORDING TO MNDOT SPEC 3897 AND INSTALLED ACCORDING TO MNDOT SPEC 2573.

PERIMETER PROTECTION-FILTER LOG
NOT TO SCALE

NOTE
DETAILS ON THIS PAGE ARE PROVIDED AS OPTIONS.
OTHER BMPs MAY ALSO BE USED PROVIDED THEY MEET THE REQUIREMENTS OF THE NPDES CONSTRUCTION STORMWATER PERMIT.

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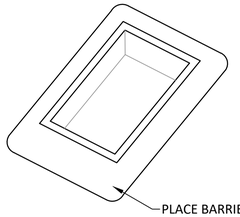
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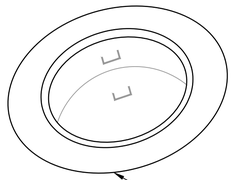
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
STORMWATER POLLUTION PREVENTION PLAN
SWPPP DETAILS

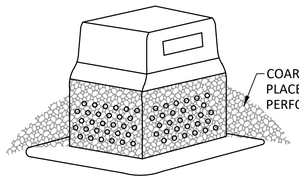
SHEET 2.27



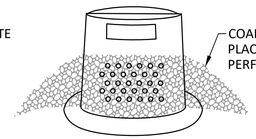
PLACE BARRIER FRAME
ATOP PRE-CAST TOP SLAB



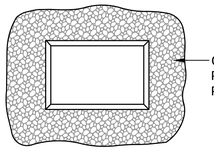
PLACE BARRIER FRAME
ATOP PRE-CAST TOP SLAB



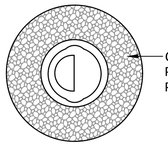
COARSE FILTER AGGREGATE
PLACED TO COVER
PERFORATIONS



COARSE FILTER AGGREGATE
PLACED TO COVER
PERFORATIONS

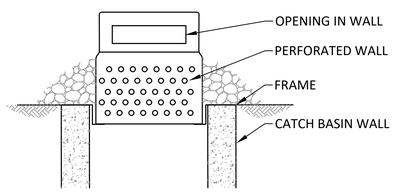


COARSE FILTER AGGREGATE
PLACED TO COVER
PERFORATIONS



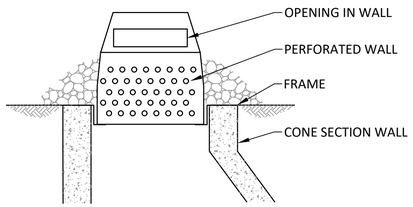
COARSE FILTER AGGREGATE
PLACED TO COVER
PERFORATIONS

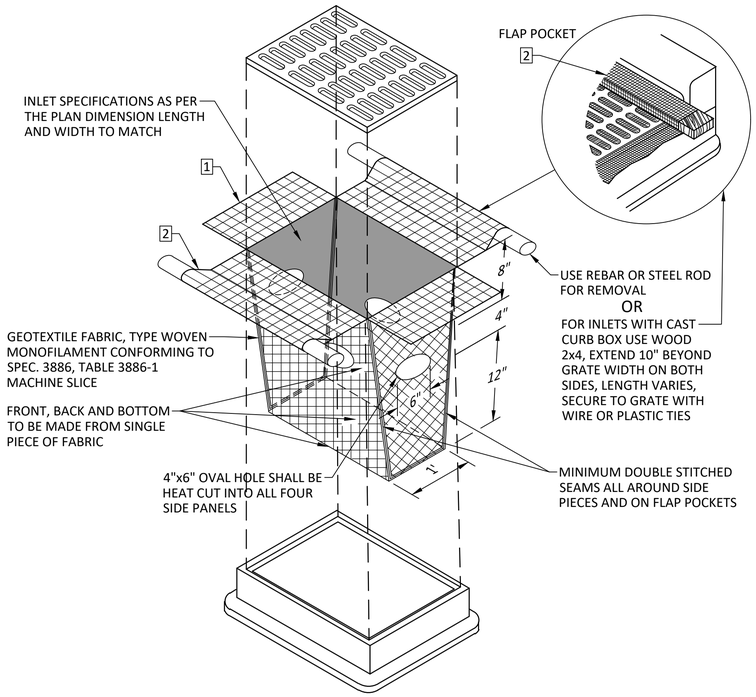
TOP VIEW



INLET PROTECTION
PERFORATED WALL
NOT TO SCALE

TOP VIEW





INLET PROTECTION NOTES:

1 INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER. MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENTS EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL IN THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

2 FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2x4.

INSTALLATION NOTES:

DO NOT INSTALL PROTECTION IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
GEOTEXTILE BAG
NOT TO SCALE

NOTE
DETAILS ON THIS PAGE ARE PROVIDED AS OPTIONS.
OTHER BMPs MAY ALSO BE USED PROVIDED THEY MEET THE
REQUIREMENTS OF THE NPDES CONSTRUCTION STORMWATER PERMIT.

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
STORMWATER POLLUTION PREVENTION PLAN
SWPPP DETAILS

SHEET
2.28

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL ON THIS PROJECT. THE EROSION CONTROL DEVICES SHOWN IN THESE DRAWINGS ARE THE MINIMUM REQUIREMENTS. CONSTRUCT EROSION CONTROL DEVICES AS SHOWN AND AS NECESSARY TO PREVENT RUNOFF, TRACKING, AND LOSS OF SOIL MATERIALS FOR DISTURBED AREAS ON THE PROJECT SITE. NO ADJUSTMENT FOR PAYMENT WILL BE MADE FOR ADDITIONAL BMP'S REQUIRED TO MEET PROJECT AND PERMIT REQUIREMENTS.
2. SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSTALLED AND FUNCTIONAL BEFORE ANY LAND IS DISTURBED ON THE SITE. SEE DETAIL SHEETS FOR EROSION AND SEDIMENT CONTROL DEVICES STANDARD DETAILS.
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SPRING VALLEY CREEK

WILLOW PARK

CONTRACTOR ACCESS TO MH-C

MH - C

MH - B

MH - A

EAST MAIN STREET

WEST MAIN STREET

STATE HIGHWAY 63

1272

1270

1268

LEGEND

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- FLOATATION SILT CURTAIN
- MS — SILT FENCE
- SEDIMENT CONTROL LOG TYPE - STRAW
- RANDOM RIPRAP

HORZ. SCALE 0 50 100 FEET

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DREW P. WEBER
LIC. NO. 58643 DATE 9/29/2026

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DRAWN GTG	0	BID	9-29-26
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CLIENT PROJ. NO. 0M2.131536			

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
STORMWATER POLLUTION PREVENTION PLAN
EROSION CONTROL & TURF ESTABLISHMENT

SHEET 2.29

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SOUTH WWTF DRIVEWAY

STATE HIGHWAY 16

WILLOW PARK

SPRING VALLEY CREEK

ALL EXPOSED SOILS WITHIN 200 LF OF TROUT STREAMS OF SHALL BE STABILIZED WITHIN 24 HOURS AFTER WORK TEMPORARILY OR PERMANENTLY CEASES (PER SWPPP REQUIREMENTS)

MH-D

MH -E

1267 1266 1270 1272 1265 1261

LEGEND

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- MS — SILT FENCE
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- RANDOM RIPRAP

HORZ. 0 25 50 SCALE FEET

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
STORMWATER POLLUTION PREVENTION PLAN
EROSION CONTROL & TURF ESTABLISHMENT

SHEET 2.30

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SPRING VALLEY AMBULANCE SERVICE DRIVEWAY

SOUTH WWTF DRIVEWAY

ES - 31

ES - 30

1270 1275 1265 1267

LEGEND

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- SEDIMENT CONTROL LOG TYPE - STRAW
- RANDOM RIPRAP

HORZ. 0 25 50 SCALE FEET

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
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SHEET 2.31

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HYDRAULIC APPLICATIONS IN TIGHT SPACES OR NEXT TO BUILDINGS MAY SUBSTITUTE STABILIZED FIBER MATRIX FOR A ROLLED EROSION PREVENTION PRODUCT APPROVED BY THE ENGINEER. SEED MIX WILL REMAIN SOUTHERN BOULEVARD NEAR THE WWTF AREA.

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SPRING VALLEY AMBULANCE SERVICE DRIVEWAY

MH - R
MH - Q
MH - P
MH - M
MH - N
MH - O
MH - 117

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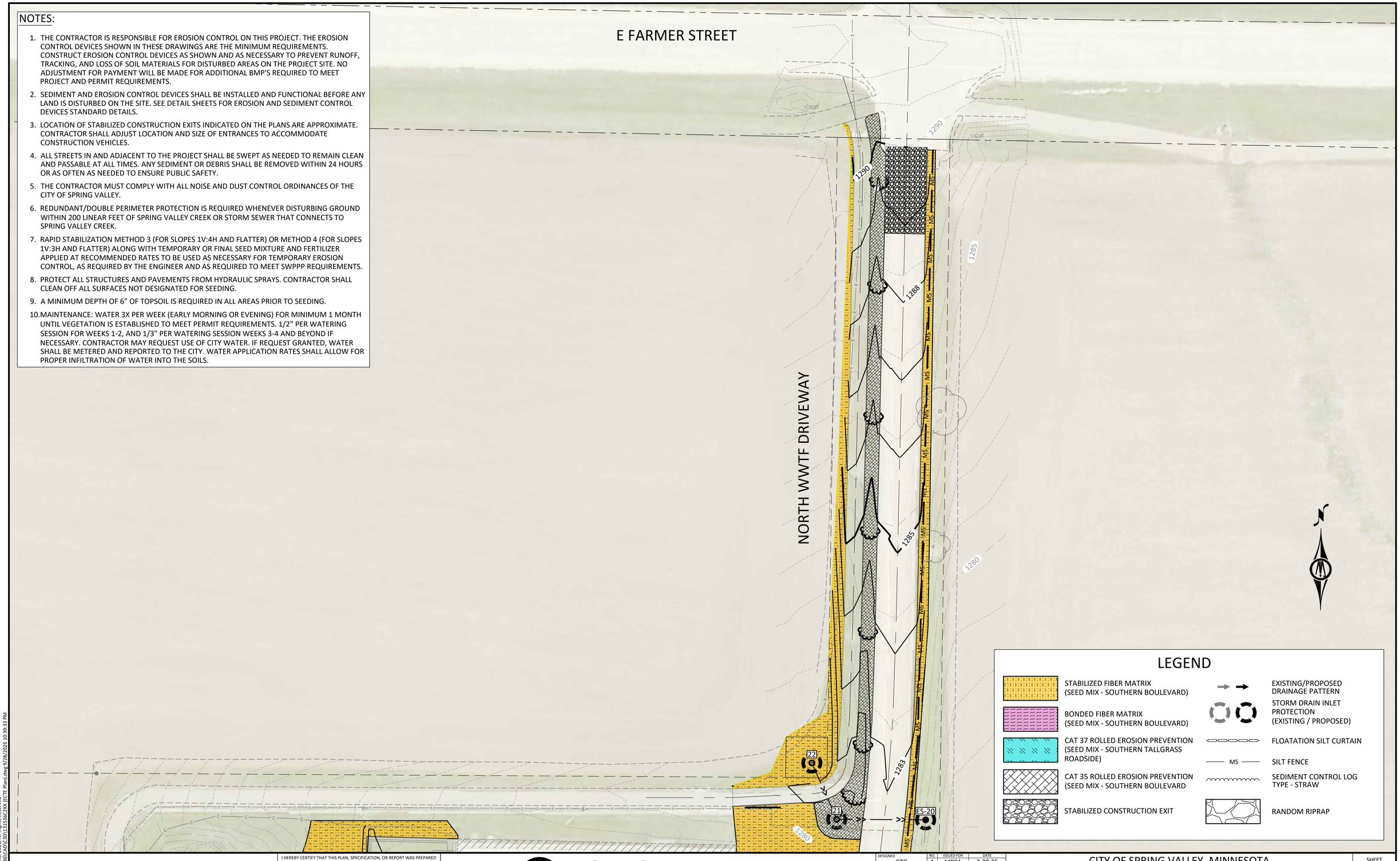
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILTIY IMPROVEMENTS
STORMWATER POLLUTION PREVENTION PLAN
EROSION CONTROL & TURF ESTABLISHMENT

SHEET 2.32

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SHEET 2.33

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STRUCTURAL NOTES

GENERAL

1. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STANDARD STRUCTURAL NOTES.

2. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES, SPECIFICATIONS, AND DESIGN MANUAL (LATEST EDITION UNLESS NOTED):
   a. 2020 MINNESOTA BUILDING CODE
   b. AMERICAN CONCRETE INSTITUTE (ACI)
   c. PRESTRESSED CONCRETE INSTITUTE (PCI)
   d. CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE (FOR PLACING & DETAILING OF ALL REINFORCING)
   e. THE MASONRY SOCIETY (TMS)
   f. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
   g. AMERICAN WELDING SOCIETY (AWS) STANDARDS FOR WELDING AS MODIFIED BY A.I.S.C. SPEC.
   h. STEEL DECK INSTITUTE (SDI)
   i. AMERICAN IRON & STEEL INSTITUTE (AISI) COLD-FORMED STEEL MANUAL
   h. STATE AND FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS

3. REFER TO SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE NOTES OR DRAWINGS.

4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK; AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED, IN WRITING, OF ANY DISCREPANCIES.

5. IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAWINGS.

6. TYPICAL DETAILS SHALL BE USED WHENEVER APPLICABLE.

7. ALL OMISSIONS AND CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF, AND RESOLVED WITH THE ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.

8. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN THE AREA TO BE EXCAVATED BEFORE BEGINNING EXCAVATION.

9. NO PIPES, DUCTS, SLEEVES, CHASES, ETC., SHALL BE PLACED IN SLABS OR WALLS, NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC.

10. RECESSES, DEPRESSIONS, DIMENSIONS, ELEVATIONS, OPENINGS, EQUIPMENT SUPPORTS, AND DETAILS SHALL BE VERIFIED BY REFERENCE TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. OPENINGS, REQUIRED BUT NOT SHOWN, MUST BE PLACED BETWEEN STRUCTURAL MEMBERS.

11. TEMPORARY BRACING:
    a. PROVIDE TEMPORARY LATERAL SUPPORT FOR ALL WALLS WHERE GRADE VARIES ON THE TWO SIDES UNTIL PERMANENT STRUCTURAL SUPPORT SYSTEM IS IN PLACE.

    b. PROVIDE TEMPORARY BRACING FOR ALL BUILDING ELEMENTS AND COMPONENTS UNTIL THE STRUCTURE IS SUFFICIENTLY COMPLETE TO PROVIDE PERMANENT BRACING.

DESIGN DATA

1. DESIGN RISK CATEGORY III

2. WIND DESIGN DATA:
   BASIC WIND SPEED ..... V_{ULT} - 120 MPH
   V_{ASD} = 93 MPH
   WIND EXPOSURE C
   INTERNAL PRESSURE COEFFICIENT ..... GCpi = ±0.18

3. ROOF SNOW LOAD DATA:
   GROUND SNOW ..... P_g = 50 PSF
   FLAT ROOF SNOW LOAD ..... P_f = 38.5 PSF
   IMPORTANCE FACTOR ..... I_s = 1.1
   EXPOSURE FACTOR ..... C_e = 1.0
   THERMAL FACTOR ..... C_t = 1.0
   SLOPE FACTOR ..... C_s = 1.0

4. EARTHQUAKE DESIGN DATA:
   EQUIVALENT LATERAL FORCE PROCEDURE
   - IMPORTANCE FACTOR ..... I_e = 1.25
   - MAPPED SPECTRAL RESPONSE ACCELERATIONS ..... S_s = 0.049, S_1 = 0.038
   - SITE CLASS ..... D
   - DESIGN SPECTRAL RESPONSE ACCELERATIONS ..... S_{DS} = 0.052, S_{D1} = 0.061
   - SEISMIC DESIGN CATEGORY ..... A

   SEISMIC DESIGN NOT REQUIRED PER ASCE 7-16, SECTION 11.7

FOOTINGS AND FOUNDATIONS

1. NET ALLOWABLE SOIL BEARING PRESSURE:
   a. Fp = 1500 psf (TYP. U.N.O.)
   b. Fp = 4000psf (CONTROL STRUCTURE/RAS LIFT STATION & CLARIFIER)

2. FOOTINGS, FOUNDATIONS AND OTHER ITEMS RELATED TO THE SOILS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE SOILS REPORT.

3. THE NET ALLOWABLE SOIL BEARING PRESSURE SHALL BE FIELD VERIFIED BY SOILS ENGINEER PRIOR TO PLACING FOOTINGS.

4. ALL SITE SOIL WORK SHALL BE DONE UNDER THE DIRECT OBSERVATION OF A SOILS ENGINEER.

5. WATER LEVELS ARE SUBJECT TO SEASONAL AND/OR ANNUAL VARIATIONS. IF NECESSARY A DEWATERING SYSTEM OF SUFFICIENT CAPACITY SHALL BE INSTALLED AND OPERATED TO MAINTAIN THE CONSTRUCTION AREA FREE OF WATER AT ALL TIMES.

6. MINIMUM DEPTH FROM EXTERIOR GRADE TO BOTTOM OF FOOTING NOT ADJACENT TO HEATED SPACE SHALL BE 60 INCHES.

7. PROTECT FOUNDATION EXCAVATIONS FROM FROST; DO NOT PLACE CONCRETE ON FROZEN GROUND.

8. FOUNDATION EXCAVATIONS SHALL BE KEPT FREE OF LOOSE MATERIAL AND STANDING WATER AND SHALL BE CHECKED AND APPROVED BY THE SOILS ENGINEER BEFORE THE PLACEMENT OF ANY CONCRETE.

9. WALL FOOTINGS ARE CONTINUOUS POURED CONCRETE WITH CONTINUOUS REINFORCING PLACED 3" CLEAR OF BOTTOM AND SIDES.

10. PROVIDE 24 DIA. LAP AT SPLICES AND FULL CROSSING LAP AT CORNERS AND INTERSECTIONS OF STRIP FOOTINGS.

11. UNLESS OTHERWISE NOTED, WALL FOOTINGS ARE CENTERED UNDER WALLS AND COLUMN FOOTINGS UNDER COLUMNS.

12. FOOTINGS FOR WALLS NOT NOTED SHALL BE 12" THICK WITH A MINIMUM PROJECTION OF 4" EACH SIDE WITH 2-#5 CONTINUOUS.

13. BOTH SIDES OF FOUNDATION WALLS SHALL BE BACKFILLED SIMULTANEOUSLY SO AS TO PREVENT OVERTURNING OR LATERAL MOVEMENT OF WALLS.

REINFORCED CONCRETE

1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 (LATEST EDITION) "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED BY THESE NOTES.

2. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c), AS FOLLOWS:

	f'c (P.S.I.) 28 DAYS
FOOTINGS	3,000
INTERIOR SLABS ON GRADE	4,000
TREATMENT STRUCTURES, CONCRETE	
TOP SLABS, BASE SLABS & WALLS	4,000 (AIR ENTRAINED)
EXTERIOR WALLS & SITEWORK	4,000 (AIR ENTRAINED)
MASONRY COREFILLING	3,000
TOPPING SLABS	3,000

3. CONTRACTOR SHALL SUBMIT MIX DESIGNS FOR APPROVAL 14 DAYS PRIOR TO FABRICATION AND INSTALLATION. ALL CONCRETE MIXES SHALL BE DESIGNED AND CERTIFIED BY A MATERIALS TESTING LABORATORY.

4. REFER TO DRAWINGS OF OTHER DISCIPLINES FOR MOLDS, GROOVES, CLIPS, ORNAMENTS, GROUNDS, ETC. REQUIRED TO BE CAST INTO CONCRETE.

5. PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 3/4" CHAMFER.

6. NO CONDUIT PLACED IN A CONCRETE SLAB SHALL HAVE AN OUTSIDE DIAMETER GREATER THAN 1/3 THE THICKNESS OF THE SLAB. NO CONDUIT SHALL BE EMBEDDED IN A SLAB THAT IS LESS THAN 3-1/2" THICK. EXCEPT FOR LOCAL OFFSETS, MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 6".

7. UNLESS OTHERWISE NOTED, USE 6" CONCRETE SLABS ON GRADE REINFORCED W/ #4 @ 12"O .C. EA. WAY CENTERED

PRECAST AND PRESTRESSED CONCRETE UNITS

1. THE DESIGN OF ALL PRECAST AND PRESTRESSED CONCRETE UNITS SHALL CONFORM TO A.C.I. 318.

2. SUBMIT COMPLETE SHOP DRAWINGS FOR APPROVAL, SHOWING THE ERECTION PLAN, ALL BEARING CONDITIONS, AND ANCHORAGE DETAILS.

3. SUBMIT CALCULATIONS AND DRAWINGS CERTIFIED BY A PROFESSIONAL ENGINEER FOR PRECAST AND PRESTRESSED UNITS AND ANCHORAGES.

4. UNITS AND BUILDING SHELL SHALL BE DESIGNED FOR THE LOADS INDICATED IN ADDITION TO ALL OTHER DEAD LOADS.

5. UPON INSTALLATION, PRECAST AND PRESTRESSED ROOF UNITS SHALL BE ESSENTIALLY PAST THE EFFECTS OF DEFORMATION DUE TO CREEP, AND SHALL HAVE CAMBER NOT OVER 1/360 OF THE SPAN. SUCH CAMBER SHALL BE UNIFORM FROM UNIT TO UNIT.

6. ALL HEADERS AT OPENINGS IN PRECAST AND PRESTRESSED CONCRETE SHALL BE FURNISHED BY SUPPLIER.

7. PLACE MECHANICAL OPENINGS NOT SHOWN ON PLANS BETWEEN WEBS IN PRECAST UNITS. VERIFY SIZE AND LOCATION WITH PRECAST SUPPLIER.

8. ALL LOADS TO PRECAST INDICATED ON DRAWINGS ARE ULTIMATE LOADS.

REINFORCING STEEL

1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 (LATEST EDITION) "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED BY THESE NOTES.

2. BAR REINFORCEMENT SHALL BE: ASTM A615, GRADE 60.

3. WELDED WIRE FABRIC SHALL MEET ASTM A1064.

4. CONTRACTOR SHALL SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL BEFORE FABRICATION AND INSTALLATION.

5. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, AND INSERTS SHALL BE SECURED IN POSITION WITH WIRE POSITIONERS BEFORE PLACING CONCRETE OR GROUT.

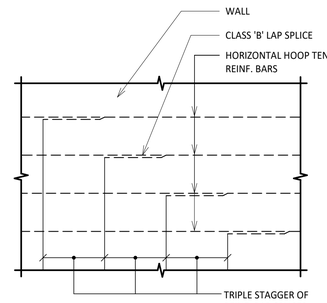
6. DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE, SIZE, AND SPACING AS VERTICAL WALL REINFORCING.

7. MINIMUM LAP SPLICES OF REINFORCING BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
   a. CONCRETE: CLASS B AS DEFINED IN ACI 318-14 OR CHART BELOW.

CONCRETE REINFORCING LAP SPLICE LENGTHS (2" CLR)	
BAR SIZE	LAP LENGTH (INCHES)
#3	17
#4	23
#5	28
#6	34
#7	49
#8	56

8. REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING AMOUNTS OF COVER FOR CAST-IN-PLACE CONCRETE:
   a. CONCRETE PLACED AGAINST EARTH ..... 3"
   b. CONCRETE SURFACE (FORMED) EXPOSED TO EARTH OR WEATHER:
      - #6 THROUGH #18 BARS ..... 2"
      - #5 BAR AND SMALLER ..... 2"
      - STIRRUPS & TIES ..... 2"

9. IN CIRCULAR TANKS STAGGER SPLICES IN HORIZONTAL BARS AS SHOWN BELOW (TRIPLE STAGGER). STAGGER SHALL BE THE GREATER OF EITHER THE LAP OR 3'-0".



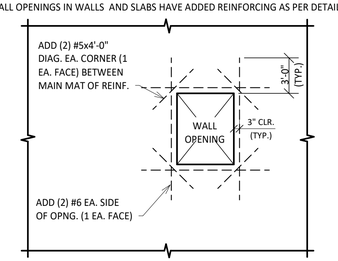
10. FIRST BAR SPACING IN SLABS, WALLS, MATS & FOOTINGS TO BE 3" CLR. FROM EDGE. CRSI APPENDIX C DOES NOT APPLY.

CAST-IN-PLACE CONCRETE WALLS

1. UNLESS OTHERWISE NOTED ON PLANS OR SECTIONS, REINFORCE CAST-IN-PLACE CONCRETE WALLS WITH #5 @ 12" O.C. HORIZONTALLY, AND #5 @ 12" O.C. VERTICALLY EACH FACE.

2. PROVIDE #5x5'-0" (2'-6" EACH LEG) CORNER BARS AT 12" O.C. HORIZONTAL REINFORCING AT OUTSIDE CORNER OF WALL AND EACH FACE AT INTERSECTIONS WITH (3) #5 VERTICAL SUPPORT BARS.

3. ALL OPENINGS IN WALLS AND SLABS HAVE ADDED REINFORCING AS PER DETAIL BELOW:



4. WALL REINFORCING IS CONTINUOUS THROUGH COLUMNS AND PIERS.

STRUCTURAL STEEL

1. STEEL PROPERTIES:

	Fy (PSI)	ASTM
STRUCTURAL WIDE FLANGE SHAPES	50,000	A992
OTHER STRUCTURAL SHAPES & PLATES, ETC.	36,000	A36
HIGH STRENGTH BOLTS, U.N.O.	92,000	A325
ANCHOR RODS (TENSILE STRENGTH)	36,000	F1554
WELDING ELECTRODES	E70XX	A233
HSS ROUND	46,000	A500 GRADE C
HSS RECTANGULAR/SQUARE	50,000	A500 GRADE C
STAINLESS STEEL	30,000	TYPE 316

   WEDGE ANCHORS SHALL BE STAINLESS STEEL HILTI KWIK BOLT TZ2, SIMPSON STRONG-BOLT 2, OR PREAPPROVED EQUAL.
   SCREW ANCHORS SHALL BE STAINLESS STEEL HILTI KH-EZ, SIMPSON TITEN HD, OR PREAPPROVED EQUAL.
   ADHESIVE FOR CONCRETE APPLICATIONS SHALL BE HILTI HIT-HY 200, SIMPSON AT-3G, SIMPSON SET-3G, OR PREAPPROVED EQUAL.
   ADHESIVE FOR MASONRY APPLICATIONS SHALL BE HILTI HIT-HY 270, SIMPSON SET-XP, OR PREAPPROVED EQUAL.

2. STRUCTURAL STEEL SUPPLIER SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.

3. STRUCTURAL STEEL DESIGN AND CONSTRUCTION SHALL CONFORM TO AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" LATEST EDITIONS.

4. PAINT ALL STEEL PER SPECIFICATIONS.

5. HOT DIP GALVANIZE ALL EXTERIOR STEEL AND AS NOTED ON PLAN PER ASTM A123 AND ASTM A153.

6. BOLTED CONNECTIONS SHALL BE BEARING-TYPE WITH JOINTS. BOLTS SHALL BE 3/4" DIA. ASTM F3125 GRADE A325 THREADS INCLUDED IN THE SHEAR PLANE. BOLTS NEED TO BE TIGHTENED IN PROPERLY ALIGNED HOLES TO A SNUG TIGHT CONDITION AS DEFINED BY THE LATEST EDITION OF AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM HIGH-STRENGTH BOLTS" U.N.O. ALL BEARING-TYPE CONNECTIONS SHALL HAVE STANDARD DIAMETER HOLE. THE USE OF SHORT OR LONG SLOTTED HOLES IS NOT PERMITTED FOR BEARING-TYPE CONNECTIONS.

7. CONNECTIONS SHALL BE AS SHOWN ON THE DRAWINGS.

8. SLOTTED HOLES INDICATED IN THE DRAWINGS ARE INTENDED TO ALLOW MOVEMENT AND SHOULD BE INSTALLED AS INDICATED. WHERE SLOTTED HOLES WERE NOT DETAILED, BUT CHOSEN BY THE FABRICATOR FOR ERECTION TOLERANCE OR OTHERWISE, SLIP-CRITICAL JOINTS, INCLUDING CLASS B FAYING SURFACES & PRETENSIONED ASTM F3125 GRADE A325 BOLTS ARE REQUIRED IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS".

9. ALL BEAMS SHALL BE MARKED AND ERECTED WITH NATURAL CAMBER UPWARD.

10. THE STEEL ERECTOR SHALL PROVIDE TEMPORARY SUPPORTS UNTIL FINAL STABILITY IS ESTABLISHED. AS A MINIMUM, TEMPORARY SUPPORTS SHALL BE PROVIDED AT EA. GRID IN BOTH DIRECTIONS.

COLD-FORMED STEEL FRAMING

1. DESIGN STRESSES:
   Fy = 33,000 P.S.I. (STUDS/JOISTS 18ga. & 20ga.)
   Fy = 50,000 P.S.I. (STUDS/JOISTS 12ga., 14ga. & 16ga.)
   Fy = 33,000 P.S.I. (TRACKS)

2. DESIGN STEEL THICKNESS:

GAUGE	MILS	INCHES
20	33	0.0346
18	43	0.0451
16	54	0.0566
14	68	0.0713
12	97	0.1017

3. PROVIDE STUDS WITH DEPTH AND THICKNESS INDICATED, AND 1 5/8" FLANGE WIDTH UNLESS NOTED, WHICH MEETS OR EXCEEDS STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) SECTION PROPERTIES.

4. TRACKS AND RUNNERS SHALL BE 14ga. UNLESS NOTED.

5. DESIGN, MANUFACTURE, AND INSTALLATION OF LIGHT GAUGE, COLD-FORMED STEEL JOISTS, PURLINS, STUDS, AND WALL GIRTS SHALL CONFORM WITH THE LATEST EDITION OF THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS ISSUED BY THE AISI.

6. ALL COLD-FORMED PRODUCTS SHALL BE MANUFACTURED BY CURRENT STEEL FRAMING INDUSTRY ASSOCIATION (SFIA) MEMBERS & CERTIFIED UNDER THE SFIA CODE COMPLIANCE CERTIFICATION PROGRAM.

7. STRUCTURAL LIGHT GAUGE STUDS, TRACK, BRIDGING, AND ACCESSORIES SHALL BE FABRICATED FROM STEEL AND GALVANIZED AS PER AISI SPECIFICATIONS.

8. ALL WELDING SHALL BE IN CONFORMANCE WITH AWS D1.3.

9. ALL WELDS SHALL BE TOUCHED UP WITH A ZINC-RICH PAINT.

10. PROVIDE FOR POSSIBLE VERTICAL MOVEMENT OF FLOORS AND ROOF AT PARTITION WALLS.

11. TEMPORARY BRACING SHALL BE PROVIDED AS REQUIRED UNTIL ERECTION IS COMPLETE AND SAFELY SECURED TO STRUCTURE.

12. NON-BEARING METAL STUD LINTELS:
    a. OPENING UP TO 6'-0" HAVE (2) 600S162-43
    b. OPENING 6'-0" TO 10'-0" HAVE (2) 800S162-43

CONCRETE MASONRY

1. CONCRETE MASONRY WALLS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF f'm = 1900 P.S.I.

2. MORTAR SHALL BE TYPE "M" BELOW GRADE, TYPE "S" ABOVE GRADE CONFORMING TO ASTM C270.

3. WHERE NO FOOTING OR FOUNDATION WALL IS SHOWN UNDER A MASONRY WALL, FLOORS UNDER SUCH WALL SHALL INCLUDE A 24" WIDE x 12" THICK THICKENED SLAB W/ (2) #5 CONT.

4. REINFORCED CONCRETE BLOCK WALLS:
   a. SEE PLANS FOR LOCATION OF REINFORCED WALLS.
   b. PROVIDE DOWELS BETWEEN FOUNDATIONS & WALLS EQUAL TO THE SIZE AND SPACING OF THE VERTICAL REINFORCING U.N.O.
   c. VERTICAL STEEL SHALL BE CONTINUOUS WITH 2'-6" LAP AT SPLICES UNLESS NOTED.
   d. WHEN ONE BAR IN A SINGLE CORE, PLACE IN CENTER UNLESS NOTED OTHERWISE.
   e. WHEN TWO BARS IN A SINGLE CORE, PLACE ONE NEAR EACH FACE.
   f. RUN BOND BEAM REINFORCEMENT CONTINUOUS THROUGH CONTROL JOINTS
   g. DISCONTINUE JOINT REINFORCING AT CONTROL JOINTS U.N.O.
   h. FILL BLOCK CORE AT VERTICAL STEEL WITH 3000 P.S.I. GROUT, RODDED OR VIBRATED IN PLACE.
   i. WALL CONSTRUCTION SHALL NOT EXCEED HEIGHTS OF 4'-0" BEFORE PLACEMENT OF CORE GROUT UNLESS CLEANOUT HOLES ARE PROVIDED AT THE BOTTOM OF EACH GROUT LIFT, THEN A MAXIMUM HEIGHT OF 8'-0" BEFORE PLACEMENT OF CORE GROUT.

5. UNLESS NOTED OTHERWISE ALL MASONRY WALL LINTELS SHOULD BEAR ON SOLID MASONRY 8" EACH END AND FILL (3) COURSES BELOW LINTEL BRG. SOLID WITH CONCRETE

6. UNLESS NOTED OTHERWISE ALL STEEL BEAMS SHALL BEAR 8" INTO MASONRY WALL AND FILL (3) COURSES BELOW BEAM BEARING SOLID WITH CONCRETE

7. CONCRETE BLOCK WALL LINTELS:
   a. ALL OPENINGS IN CONCRETE BLOCK WALL NOT SPECIFICALLY INDICATED TO HAVE OTHER TYPES OF LINTELS SHALL HAVE REINFORCED BLOCK LINTELS AS FOLLOWS:
      - SPANS UP TO 6'-0" HAVE 8" DEEP LINTEL BLOCKS.
      - SPANS 6'-1" TO 10'-0" TO HAVE 16" DEEP LINTEL BLOCKS.
      - 4 & 6" WIDE UNITS TO HAVE 1-#5 BTM.
      - 8, 10, & 12" WIDE UNITS TO HAVE 2-#5 BTM.
   b. WHERE LINTEL IS CONTINUOUS OVER TWO OPENINGS WITH INTERMEDIATE SUPPORT, USE 1-#5 TOP AND 1-#5 BOTTOM.
   c. ALL BLOCK LINTELS TO BE FILLED WITH 3,000 P.S.I. CONCRETE.
   d. EXTEND ALL LINTELS A MINIMUM OF 8" BEYOND EACH EDGE OF OPENING. WHERE LINTEL BEARS ON CONCRETE BLOCK, FILL THREE COURSES OF BLOCK MINIMUM WITH CONCRETE.
   e. IF OPENING OCCURS NEXT TO CONCRETE WALL OR COLUMN, BOLT ANGLE TO COLUMN AND REST LINTEL ON ANGLE. OBTAIN ANGLE SIZE AND BOLT REQUIREMENTS FROM ENGINEER.
   f. IF OPENING OCCURS NEXT TO STEEL COLUMN, WELD ANGLE TO COLUMN AND REST LINTEL ON ANGLE. OBTAIN ANGLE SIZE AND WELD REQUIREMENTS FROM ENGINEER.

8. MASONRY VENEER-FACED LINTELS WITH CONCRETE BLOCK BACK-UP:
   a. ALL VENEER OPENINGS IN MASONRY VENEER-FACED BLOCK WALLS NOT SPECIFICALLY INDICATED TO HAVE OTHER LINTELS SHALL HAVE STEEL ANGLE OR BENT PLATE LINTELS AS FOLLOWS:
      - SPANS TO 4'-0" SHALL HAVE 4" VERTICAL LEG MINIMUM
      - SPANS 4'-1" TO 8'-0" SHALL HAVE 6" VERTICAL LEG MINIMUM.
      - HORIZONTAL LEG OF ANGLE OR BENT PLATE SHALL EXTEND TO BETWEEN 1/2" AND 1" CLEAR OF OUTSIDE FACE OF VENEER.
      - ANGLE OR BENT PLATE THICKNESS SHALL BE 3/8".
      - BEAR ANGLES 6" EA. END.
      - BOLT VERTICAL LEG TO REINFORCED BLOCK WITH 1/2"x5" WEDGE ANCHORS AT 2'-8" O.C. MAX. AND EACH. END. LOCATE BOLTS 1 1/2" DOWN FROM TOP OF ANGLE.

ALUMINUM

1. PROVIDE ALLOY 6061-T6 UNLESS NOTED OTHERWISE.

2. PROVIDE 4043 MINIMUM FILLER METAL FOR WELDING UNLESS ALUMINUM IS TO BE ANODIZED. PROVIDE 5356 FILLER METAL FOR WELDING OF ALUMINUM THAT WILL BE ANODIZED.

STEEL DECKING

1. STEEL DECK SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.

2. STEEL DECKING SHALL BE OF THE TYPES AND GAUGES INDICATED ON THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE WITH STEEL DECK INSTITUTE (SDI) SPECIFICATIONS.

4. STEEL DECKING SHALL BE FABRICATED OF STEEL CONFORMING TO ASTM A1008, AND SHALL BE PAINTED WITH MANUFACTURER'S BAKED ON RUST INHIBITIVE PAINT.

5. ALL WELDING SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF AWS D1.3 USING E60XX OR E70XX ELECTRODES AND SHALL BE PERFORMED BY CERTIFIED LIGHT GAUGE WELDERS EXPERIENCED IN WELDING LIGHT GAUGE STRUCTURAL METAL.

6. DELIVER DECKING TO JOB SITE FREE FROM OIL, GREASE, ETC.

7. OPENINGS LARGER THAN 12" IN STEEL DECK BETWEEN STRUCTURAL MEMBERS SHALL HAVE AN ANGLE 3x3x1/4" EACH SIDE CONNECTED TO STRUCTURAL MEMBERS.

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LSE JOB#: 23-312

LSEngineers
234 N. Main St.
LeSueur, MN 56058

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

SIGNATURE: Matthew A Duff — TYPED OR PRINTED NAME: Matthew A Duff

DATE 9/29/26 — LIC NO. 58678

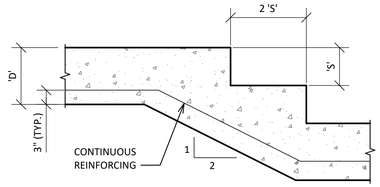
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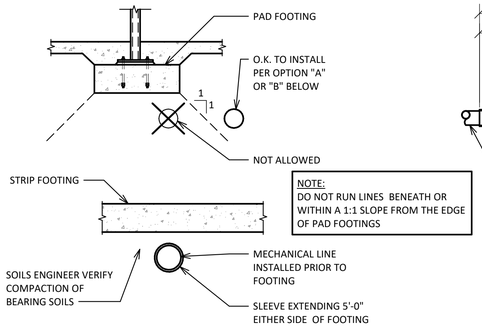
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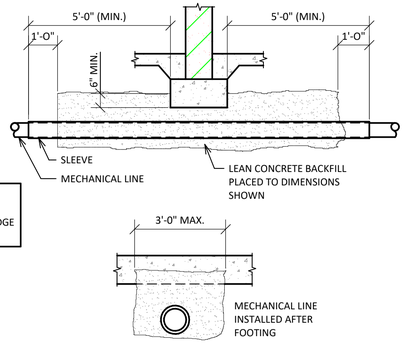
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
STRUCTURAL NOTES

SHEET 3.01

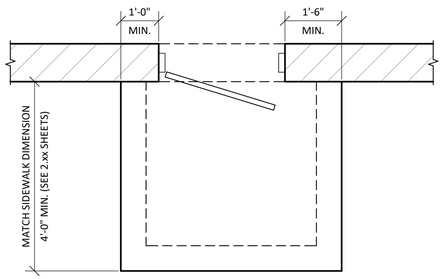


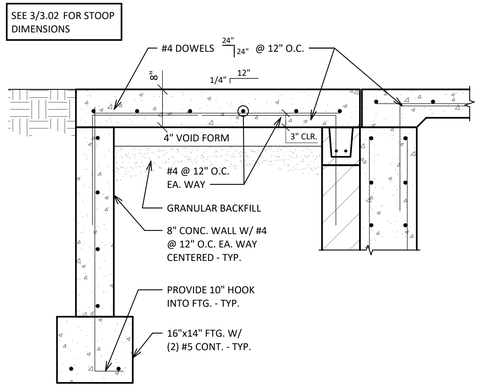


OPTION "A": INSTALLED PRIOR TO FOOTING



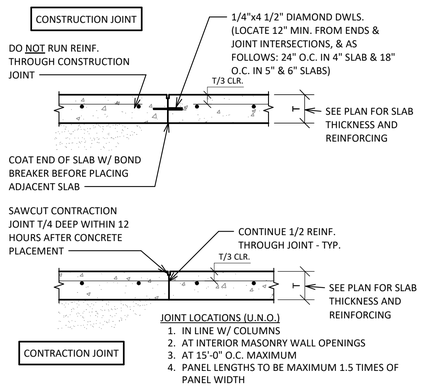
OPTION "B": INSTALLED AFTER FOOTING





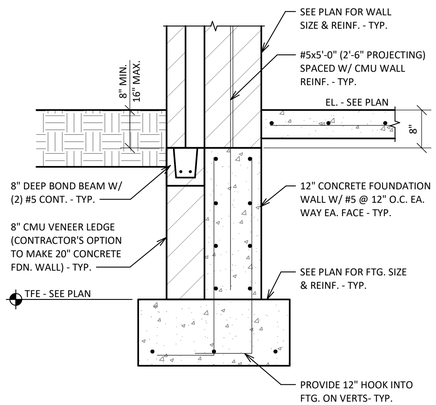
1 3.02 STEPPED FOOTING DETAIL

NO SCALE



2 3.02 CONTRACTOR'S OPTIONS AT MECH. LINES BENEATH FTG.

NO SCALE



3 3.02 STOOP PLAN

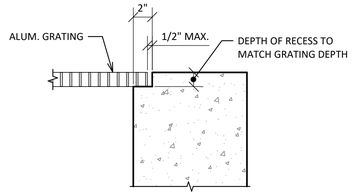
1/2" = 1'-0"

0 1'-6" 3' 4'-6"

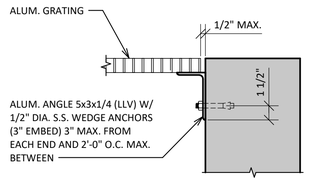
4 3.02 STOOP SECTION

3/4" = 1'-0"

0 1' 2' 3'



TYP. @ CONCRETE WALL



TYP. @ EXISTING CONCRETE WALL

5 3.02 SLAB JOINT DETAIL

NO SCALE

6 3.02 EXTERIOR WALL SECTION

3/4" = 1'-0"

0 1' 2' 3'

7 3.02 GRATING SUPPORT DETAIL

1 1/2" = 1'-0"

0 1/2' 1' 1 1/2'

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SIGNATURE: Matthew A Duff — TYPED OR PRINTED NAME: Matthew A Duff

DATE 9/29/26 — LIC NO. 58678

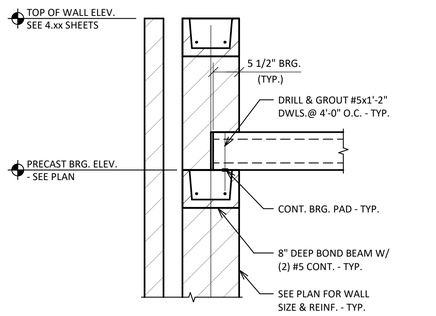
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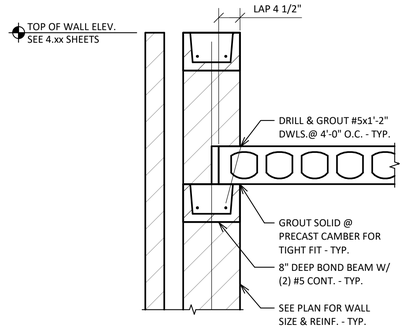
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
DETAILS

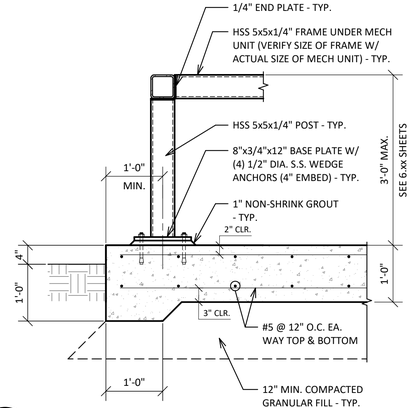
SHEET 3.02



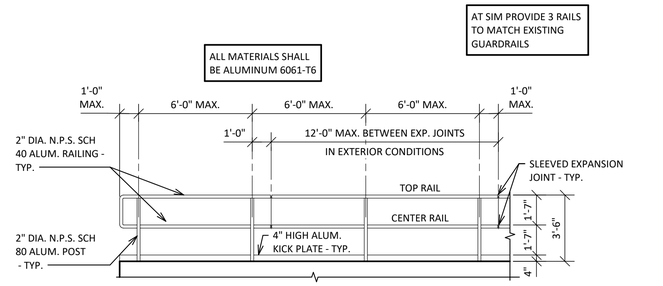
1 3.03 SECTION
3/4" = 1'-0"
0 1' 2' 3'



2 3.03 SECTION
3/4" = 1'-0"
0 1' 2' 3'

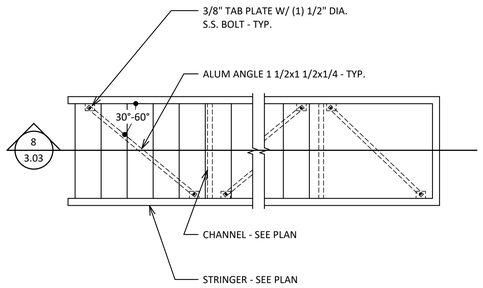


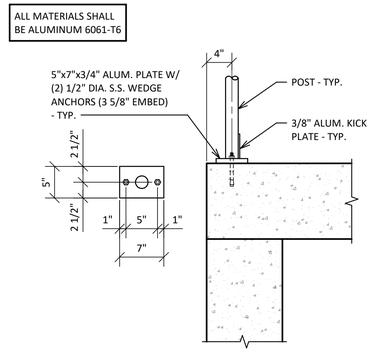
3 3.03 SECTION
3/4" = 1'-0"
0 1' 2' 3'

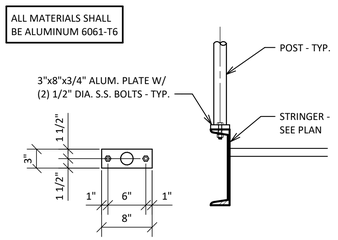


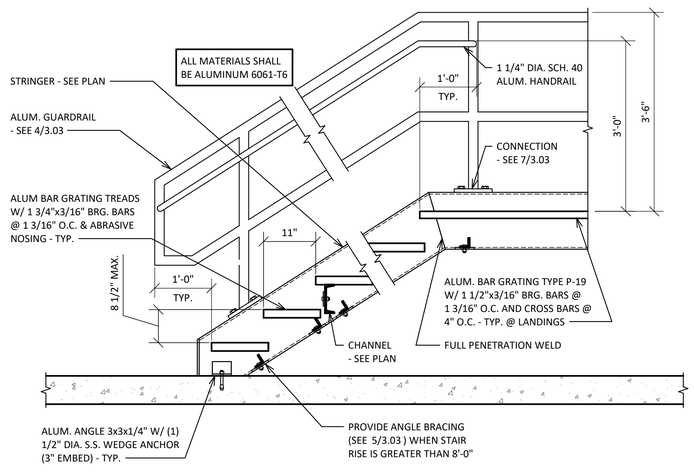
4 3.03 TYPICAL RAILING ELEVATION
1/4" = 1'-0"
0 3' 6' 9'

SEE 4.xx SHEETS FOR STAIR AND
GUARDRAIL DIMENSIONS - TYP.





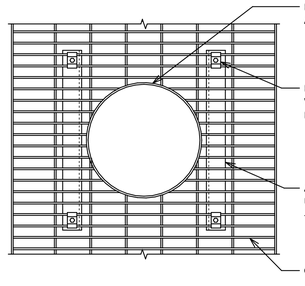


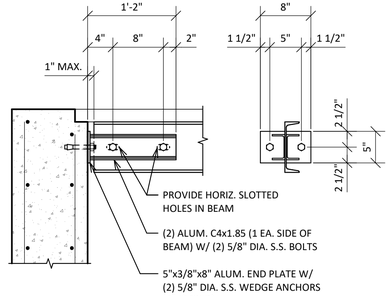


5 3.03 TYPICAL STAIR FRAMING PLAN
3/8" = 1'-0"
0 2' 4' 6'

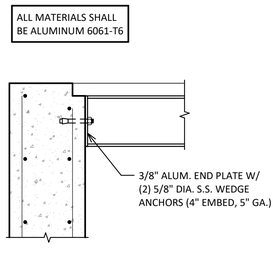
6 3.03 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"

7 3.03 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"





SLIP CONNECTION



FIXED CONNECTION

8 3.03 TYPICAL STAIR SECTION
3/4" = 1'-0"
0 1' 2' 3'

9 3.03 TYPICAL GRATING OPENING SUPPORT
1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'

10 3.03 FIXED/SLIP CONNECTION DETAIL
1" = 1'-0"
0 9" 1'-6" 2'-3"

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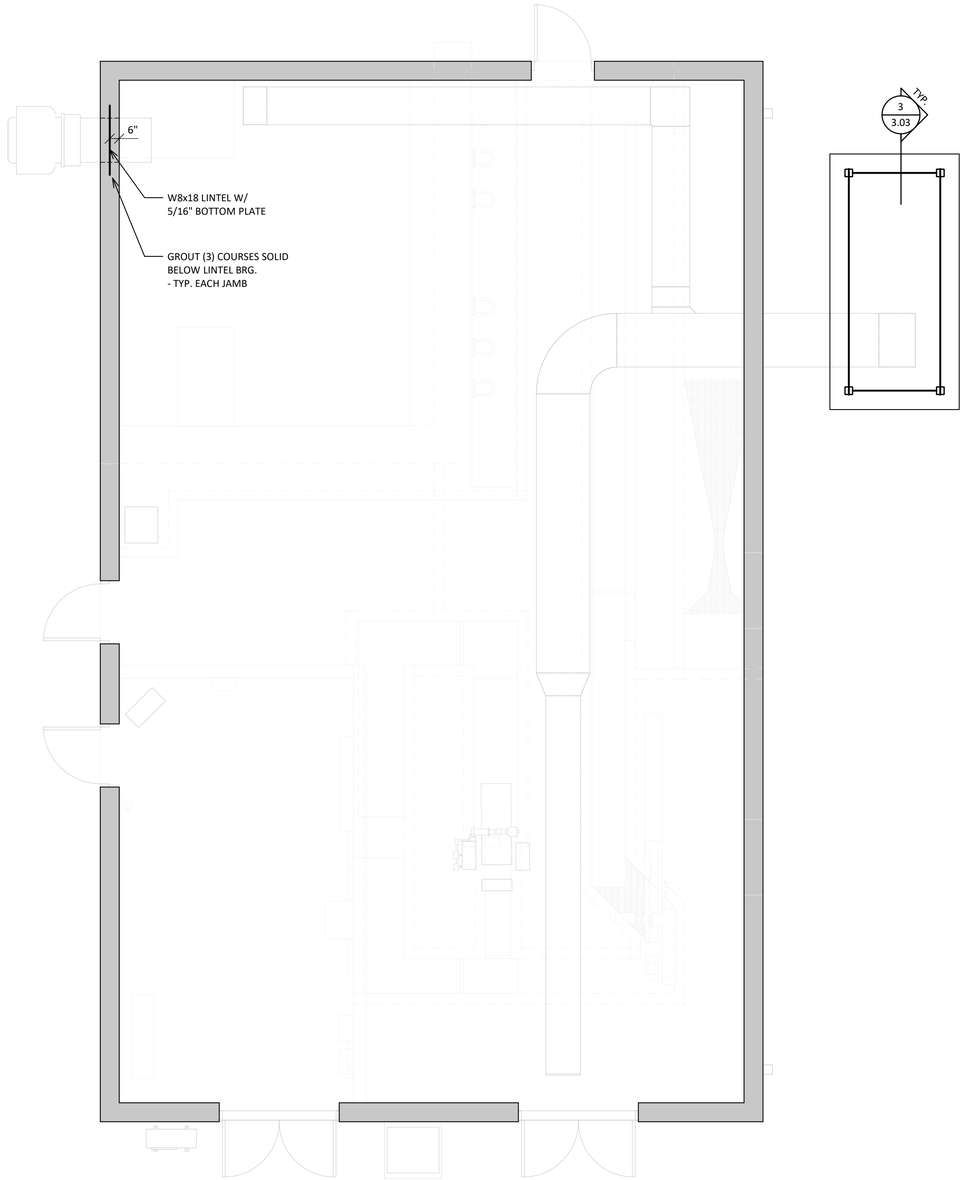
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
DETAILS

SHEET
3.03



1 / 3.04 PLAN

1/4" = 1'-0"

0 3' 6' 9'

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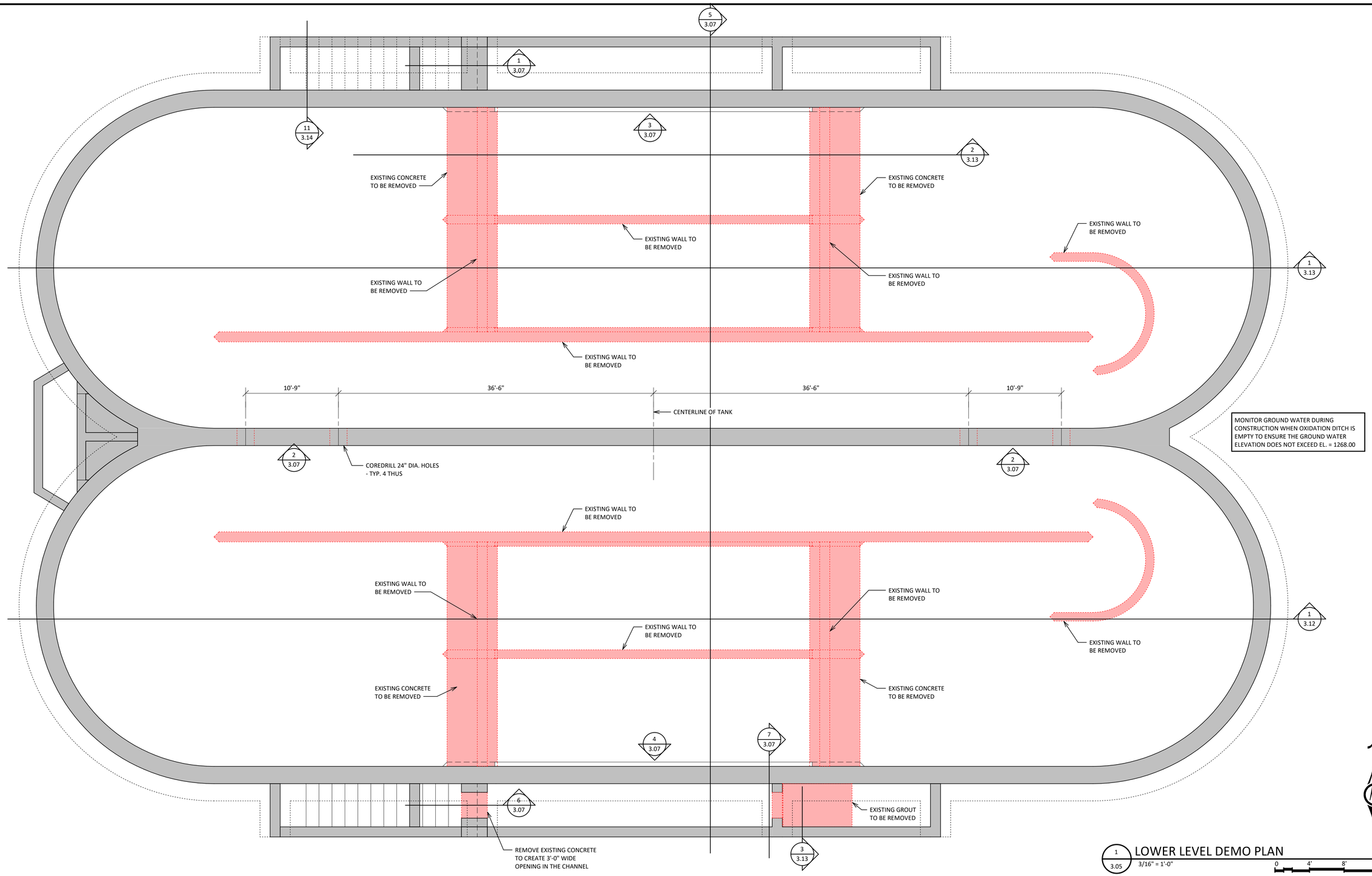
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED PRETREATMENT BUILDING
PLAN

SHEET 3.04



MONITOR GROUND WATER DURING CONSTRUCTION WHEN OXIDATION DITCH IS EMPTY TO ENSURE THE GROUND WATER ELEVATION DOES NOT EXCEED EL. = 1268.00

1 / 3.05 LOWER LEVEL DEMO PLAN

3/16" = 1'-0"

0 4' 8' 12'

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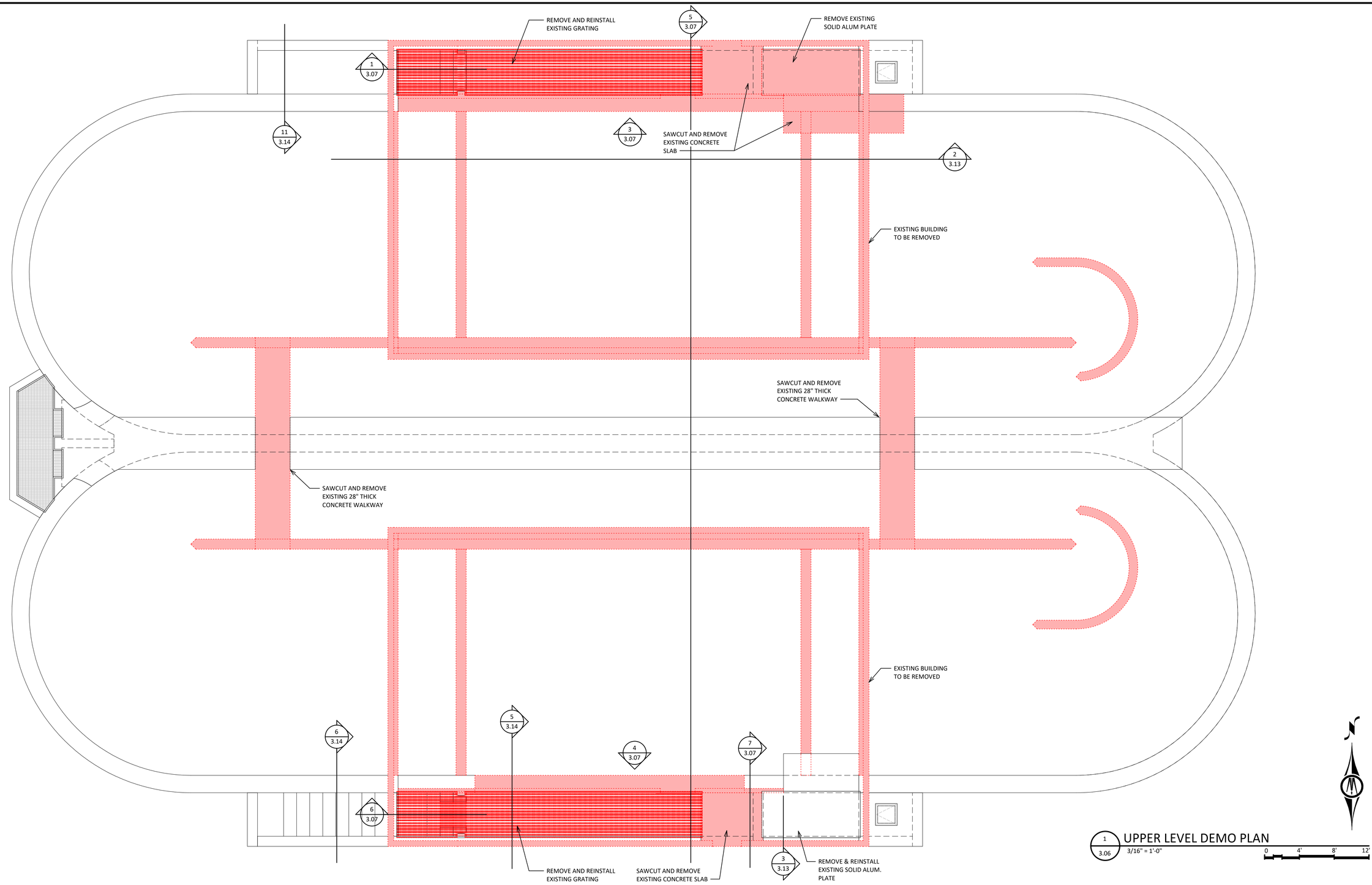
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING OXIDATION DITCH
LOWER LEVEL DEMO PLAN

SHEET 3.05



1 3.06 UPPER LEVEL DEMO PLAN

3/16" = 1'-0"

0 4' 8' 12'

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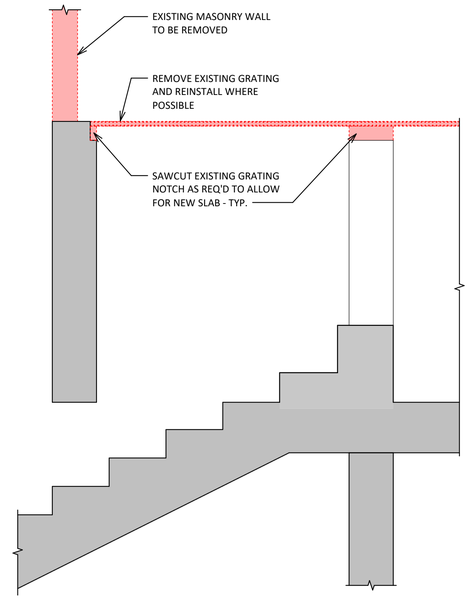
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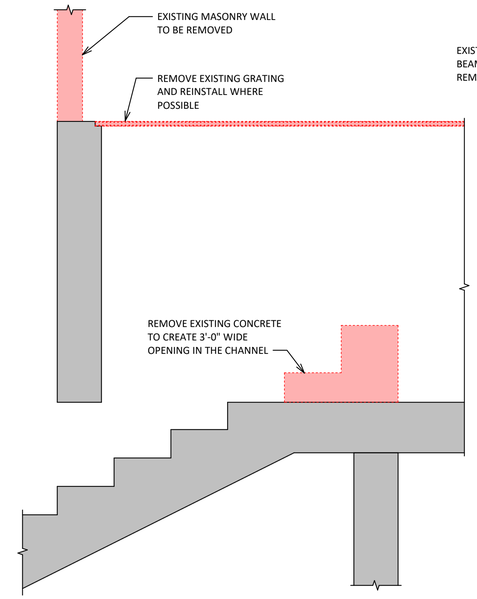
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING OXIDATION DITCH
UPPER LEVEL DEMO PLAN

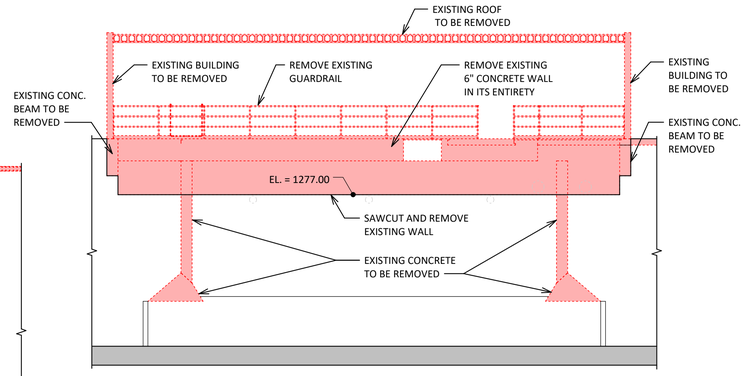
SHEET 3.06



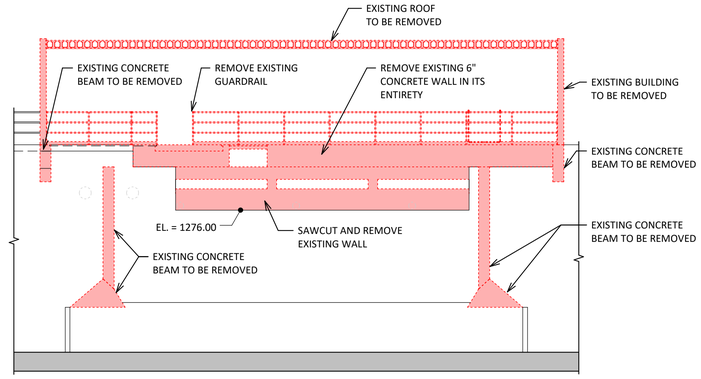
1 3.07 SECTION
1/2" = 1'-0"
0 1'-6" 3' 4'-6"



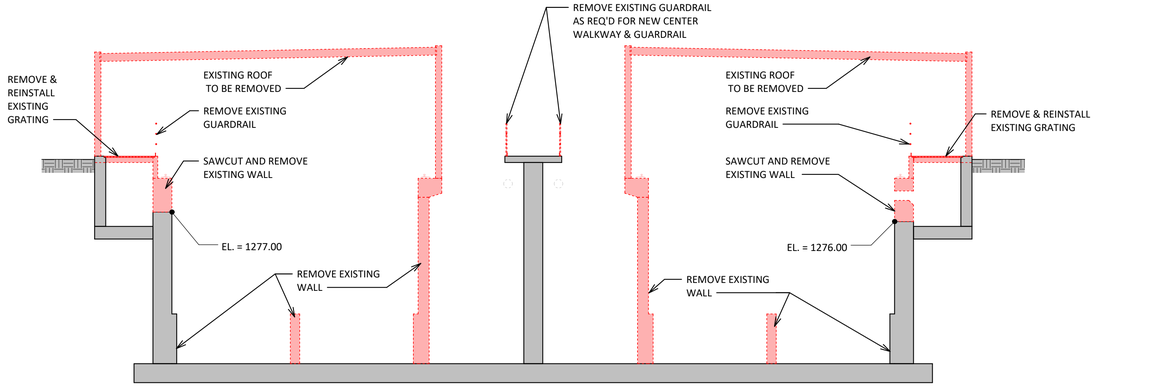
6 3.07 SECTION
1/2" = 1'-0"
0 1'-6" 3' 4'-6"



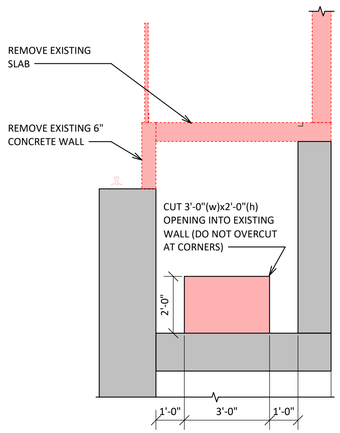
3 3.07 SECTION
1/8" = 1'-0"
0 6' 12' 18'



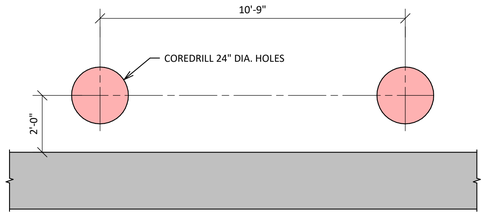
4 3.07 SECTION
1/8" = 1'-0"
0 6' 12' 18'



5 3.07 SECTION
1/8" = 1'-0"
0 6' 12' 18'



7 3.07 SECTION
3/8" = 1'-0"
0 2' 4' 6'



2 3.07 SECTION
3/8" = 1'-0"
0 2' 4' 6'

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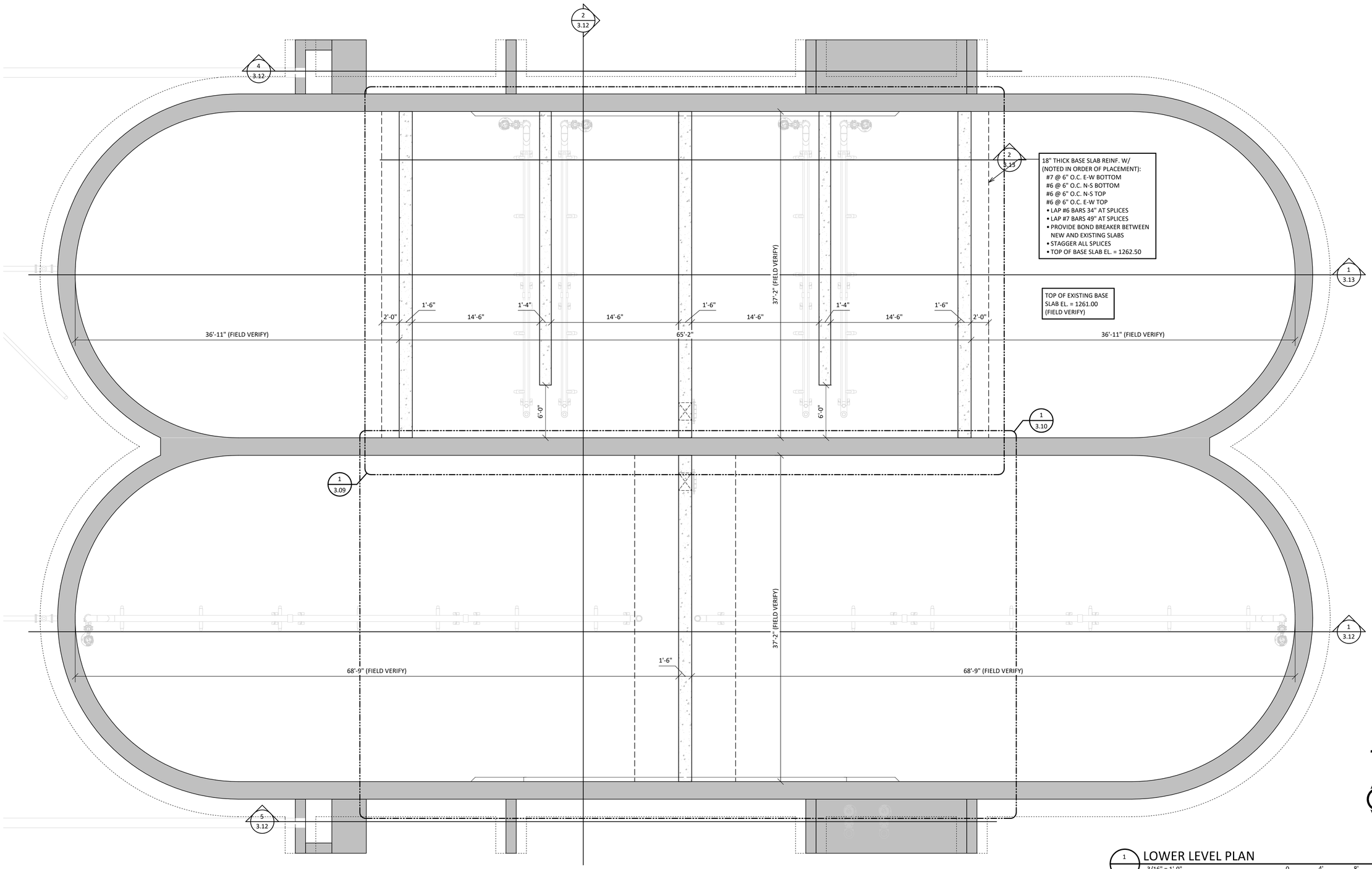
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING OXIDATION DITCH
DEMO SECTIONS

SHEET 3.07



1 / 3.08 LOWER LEVEL PLAN

3/16" = 1'-0"

0 4' 8' 12'

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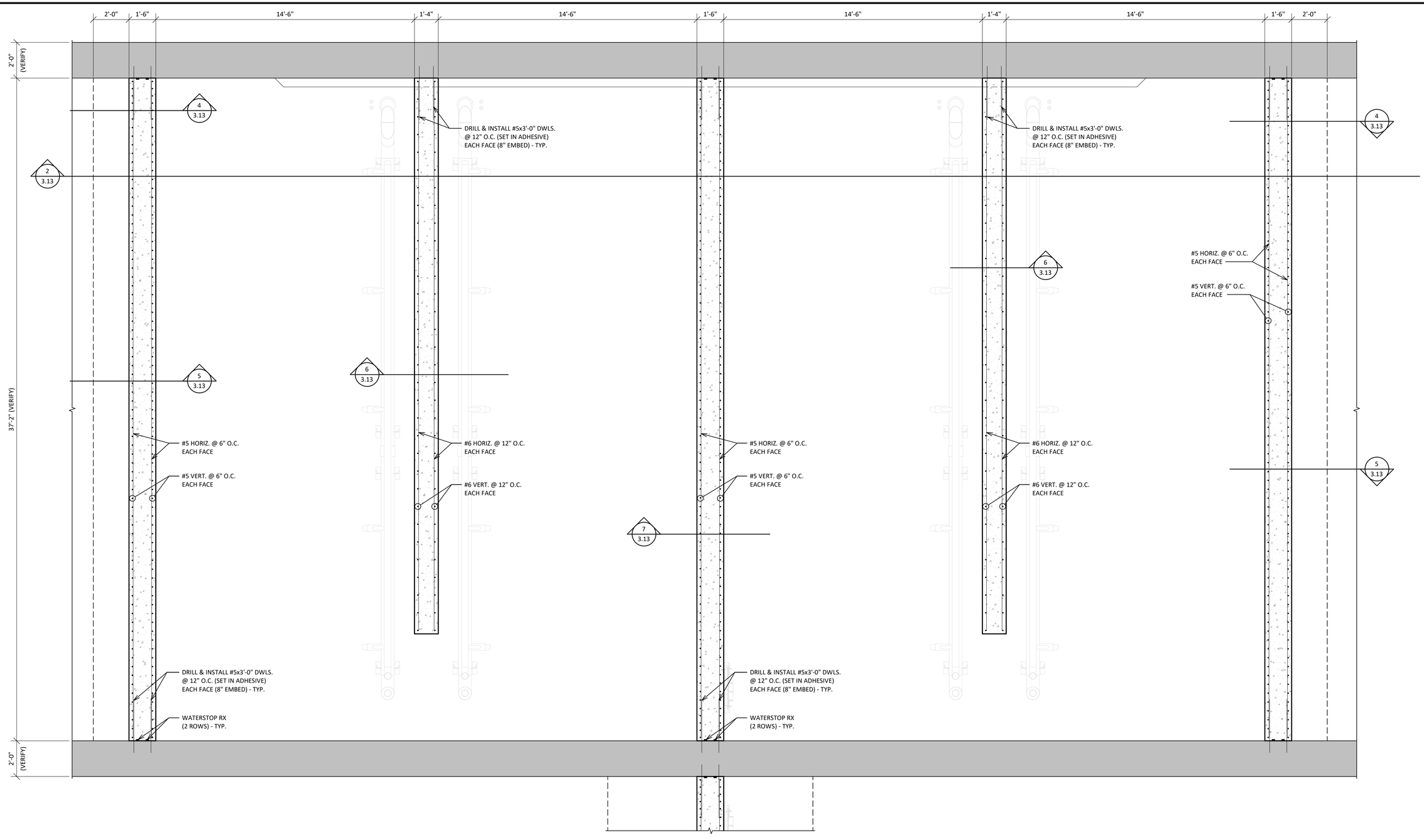
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED ANOXIC/AEROBIC BASINS
LOWER LEVEL PLAN

SHEET 3.08



1 / 3.09 WALL PLAN

3/8" = 1'-0"

0 2' 4' 6'

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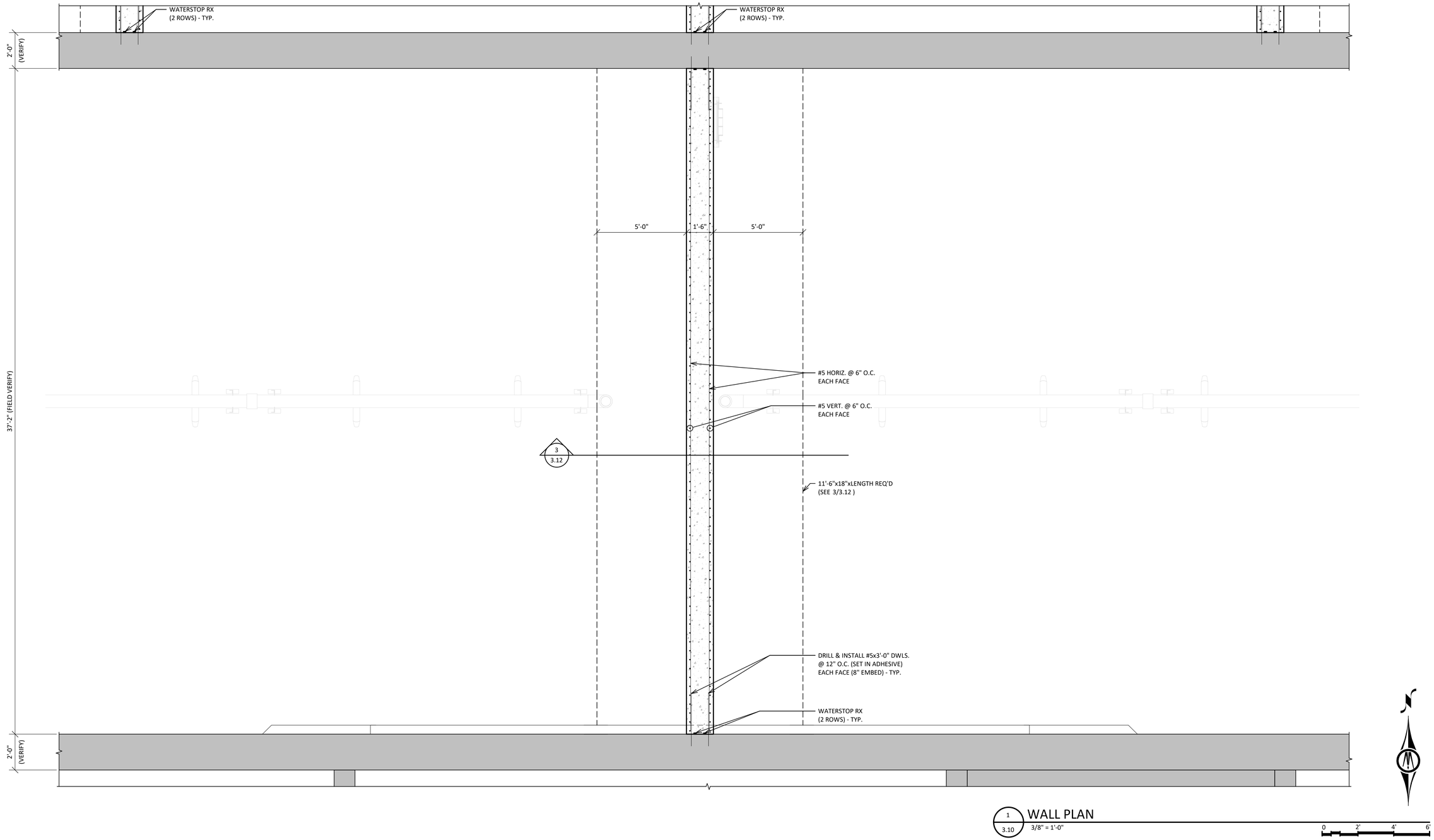
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED ANOXIC/AEROBIC BASINS
WALL PLAN

SHEET 3.09



1 / 3.10 WALL PLAN

3/8" = 1'-0"

0 2' 4' 6'

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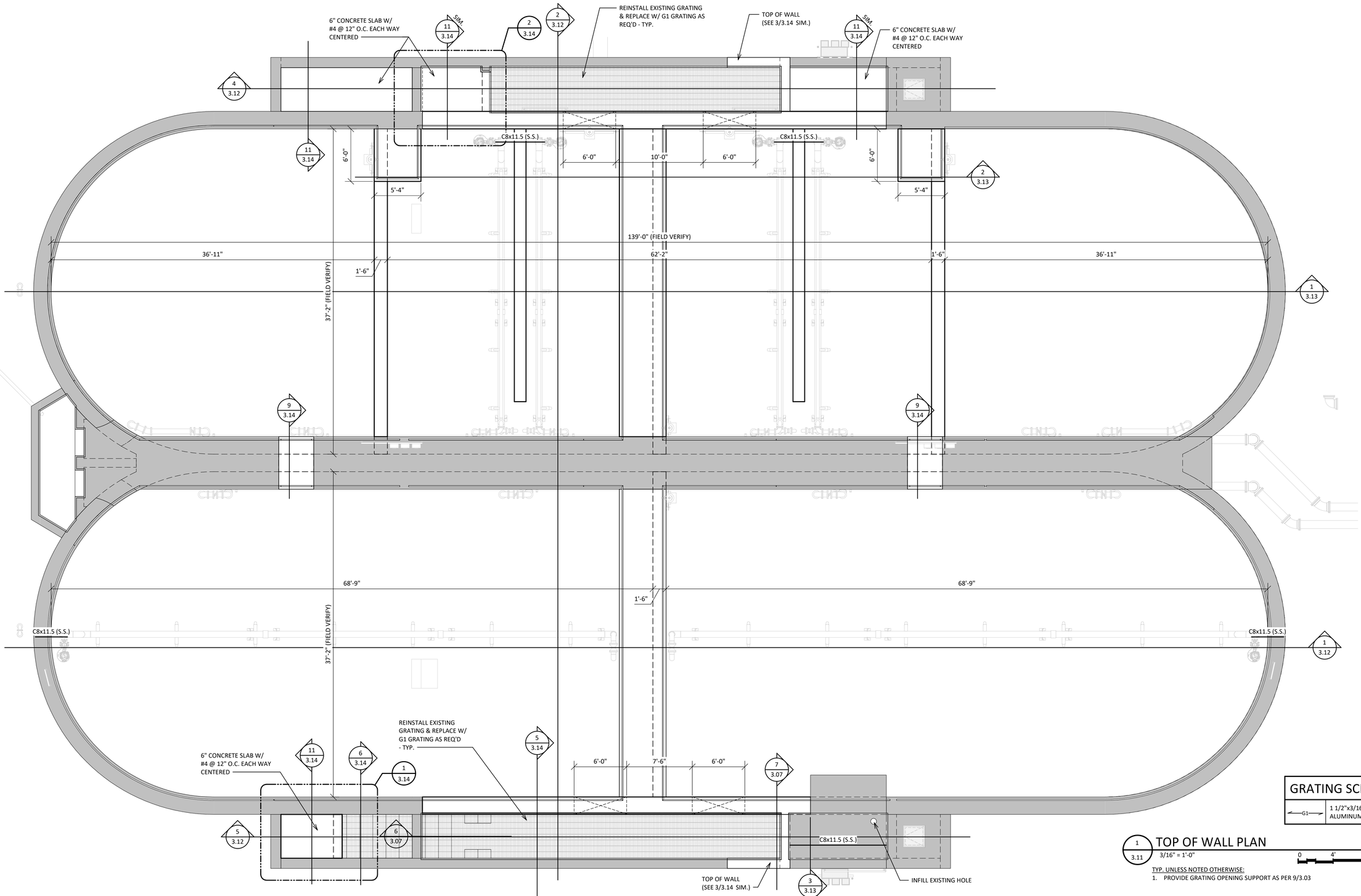
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED ANOXIC/AEROBIC BASINS
WALL PLAN

SHEET 3.10



GRATING SCHEDULE

G1	1 1/2"x3/16" TYPE P-19 ALUMINUM GRATING

1 / 3.11 TOP OF WALL PLAN

3/16" = 1'-0"

0 4' 8' 12'

TYP. UNLESS NOTED OTHERWISE:

1. PROVIDE GRATING OPENING SUPPORT AS PER 9/3.03

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SIGNATURE: Matthew A Duff — TYPED OR PRINTED NAME: Matthew A Duff

DATE 9/29/26 — LIC NO. 58678

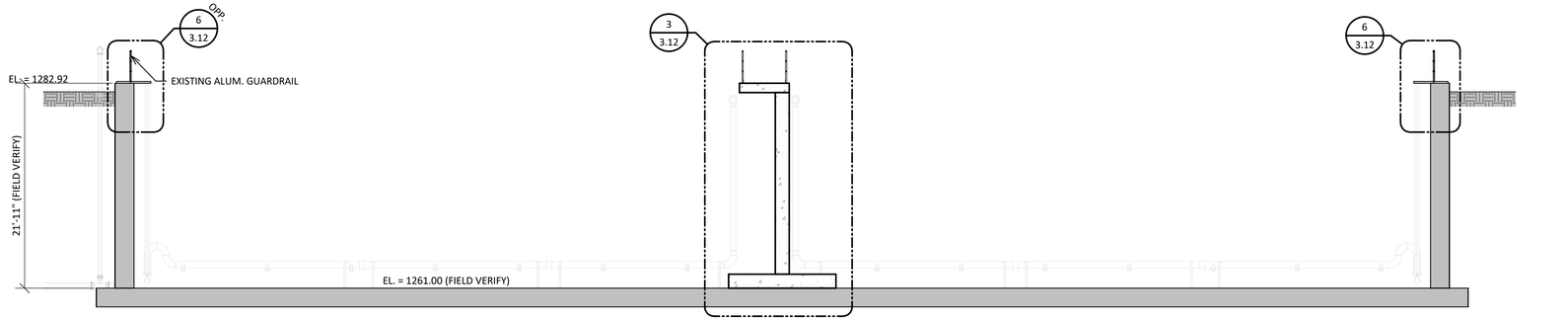
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0	BID	9/29/26

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED ANOXIC/AEROBIC BASINS
TOP OF WALL PLAN

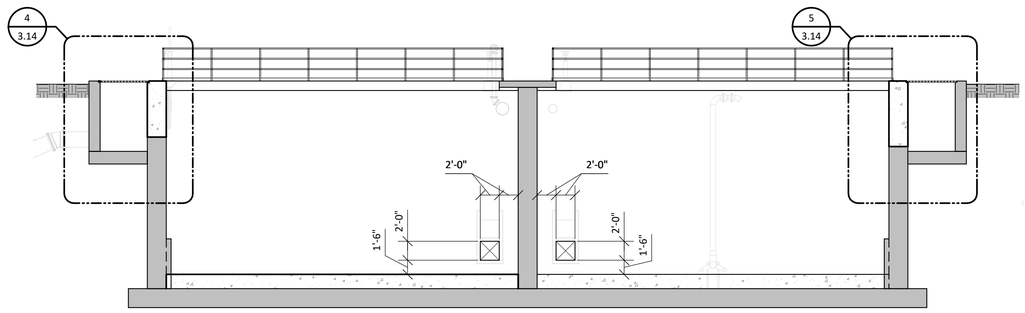
SHEET 3.11

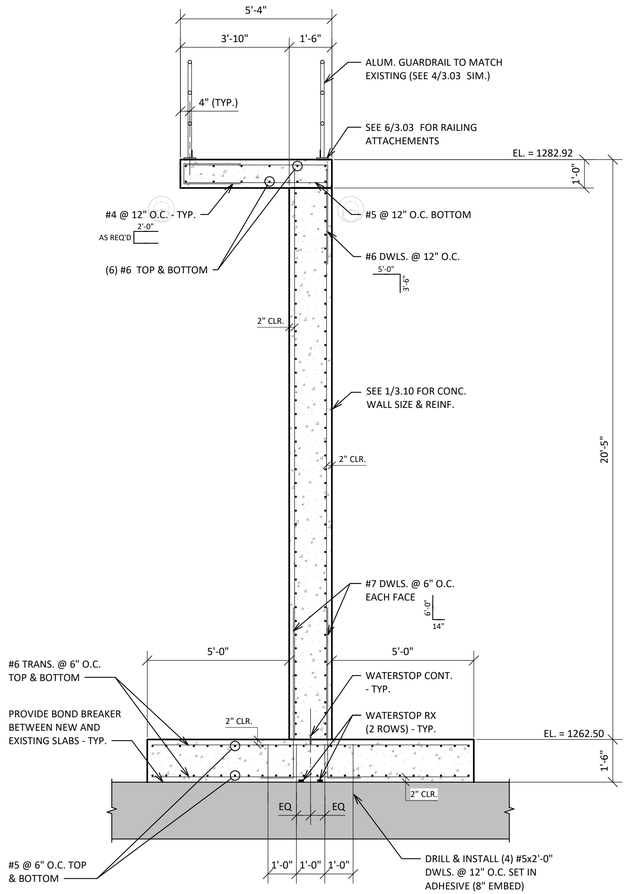


1 3.12 SECTION

1/8" = 1'-0"

0 6' 12' 18'

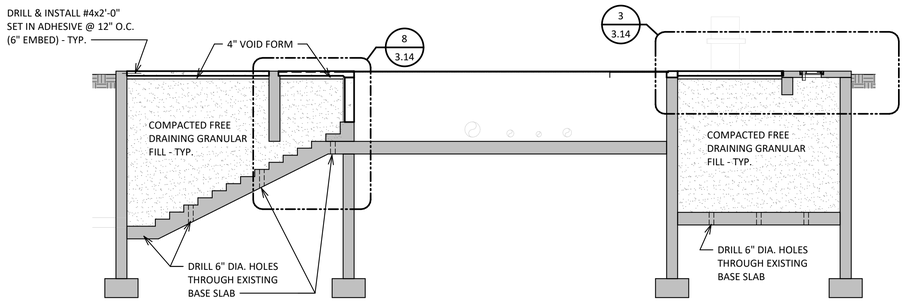




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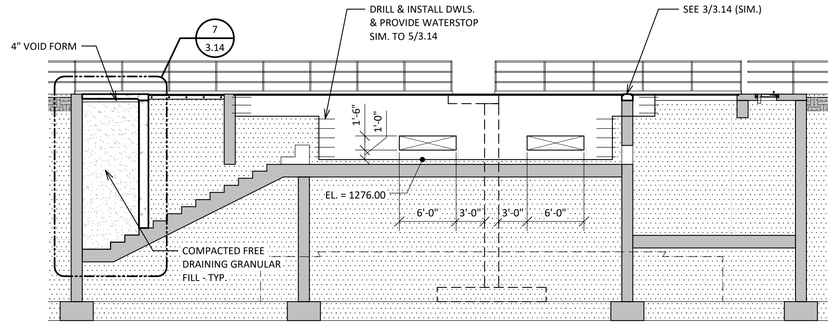
0 6' 12' 18'

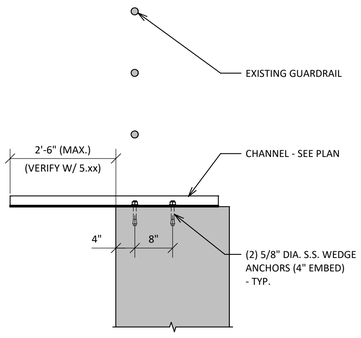


3 3.12 SECTION

3/8" = 1'-0"

0 2' 4' 6'





4 3.12 SECTION

1/8" = 1'-0"

0 6' 12' 18'

5 3.12 SECTION

1/8" = 1'-0"

0 6' 12' 18'

6 3.12 SECTION

3/4" = 1'-0"

0 1' 2' 3'

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LeSueur, MN 56058

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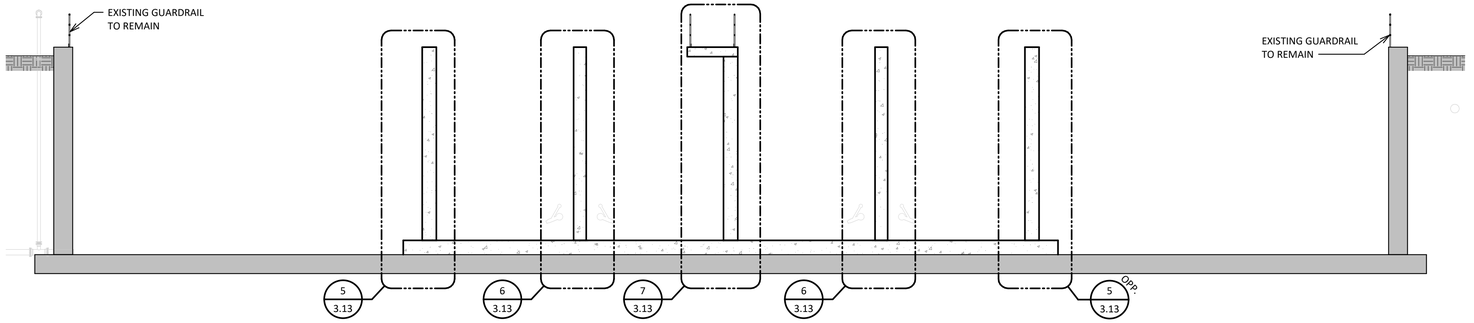
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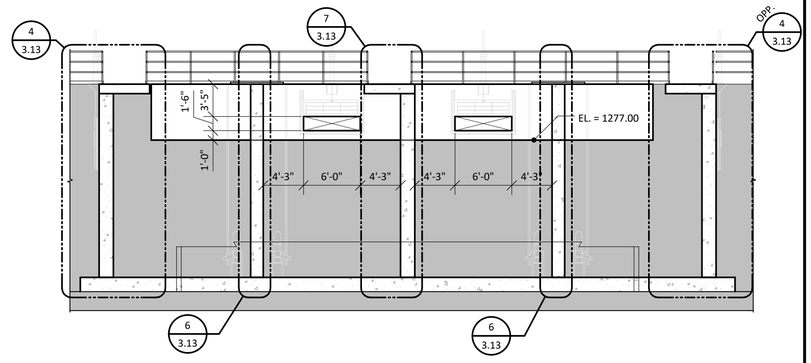
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED ANOXIC/AEROBIC BASINS
SECTIONS

SHEET 3.12



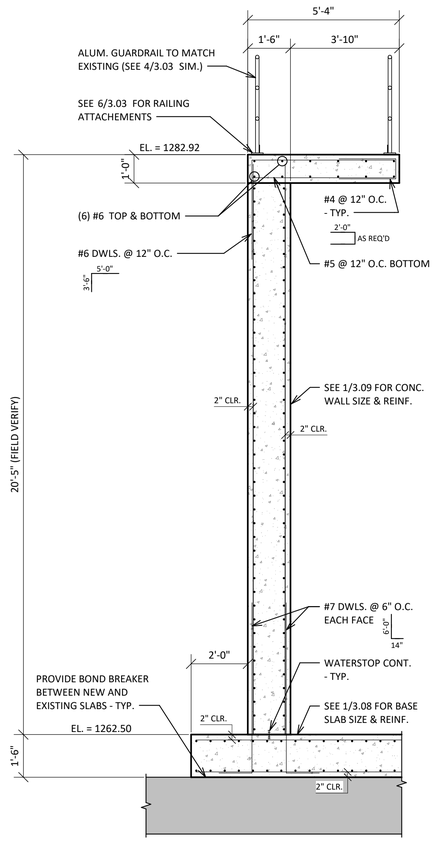
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1/8" = 1'-0"

0 6' 12' 18'



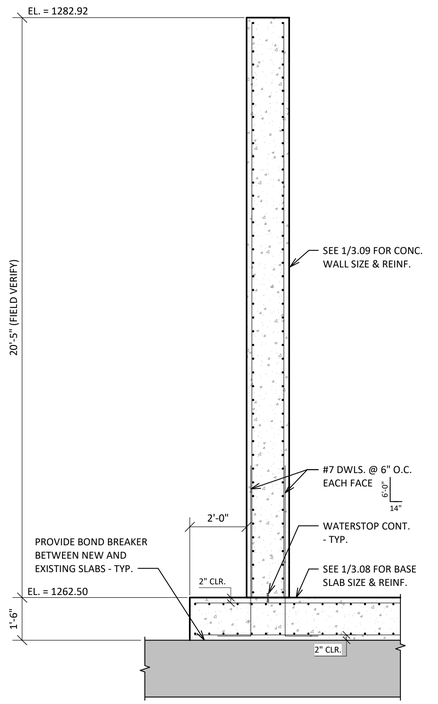
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1/8" = 1'-0"

0 6' 12' 18'



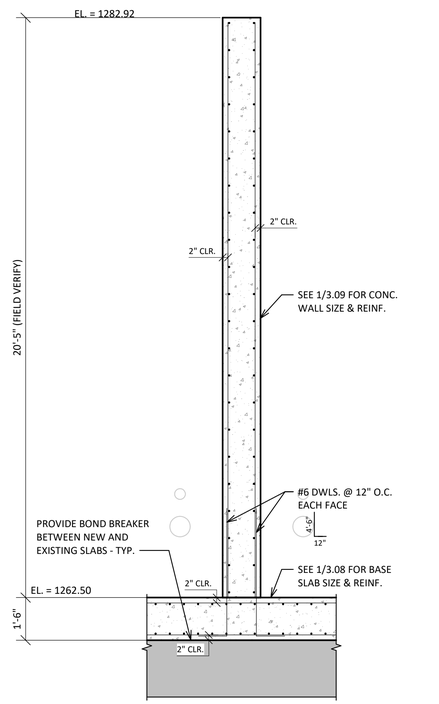
4 / 3.13 SECTION
3/8" = 1'-0"

0 2' 4' 6'



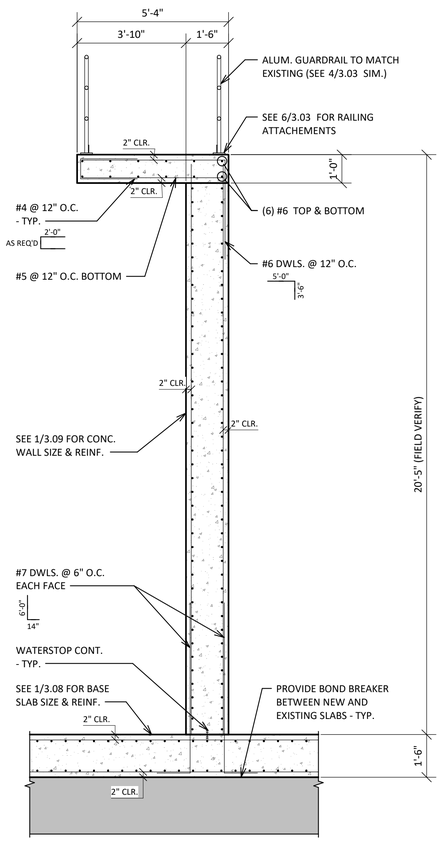
5 / 3.13 SECTION
3/8" = 1'-0"

0 2' 4' 6'



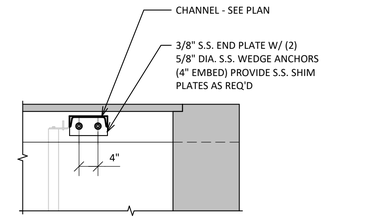
6 / 3.13 SECTION
3/8" = 1'-0"

0 2' 4' 6'



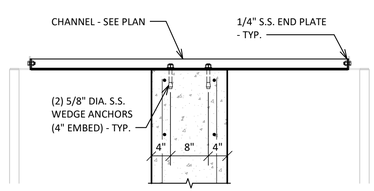
7 / 3.13 SECTION
3/8" = 1'-0"

0 2' 4' 6'



3 / 3.13 SECTION
3/4" = 1'-0"

0 1' 2' 3'



8 / 3.13 SECTION
3/4" = 1'-0"

0 1' 2' 3'

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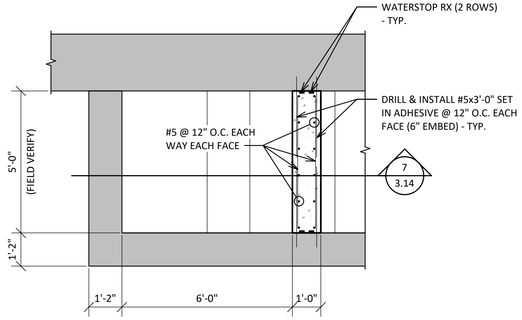
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED ANOXIC/AEROBIC BASINS
SECTIONS

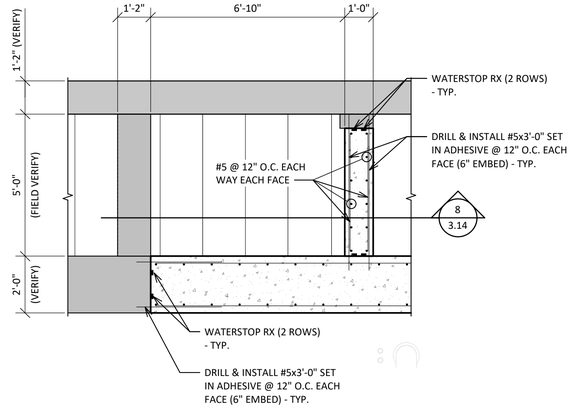
SHEET 3.13



1 3.14 ENLARGED WALL PLAN

3/8" = 1'-0"

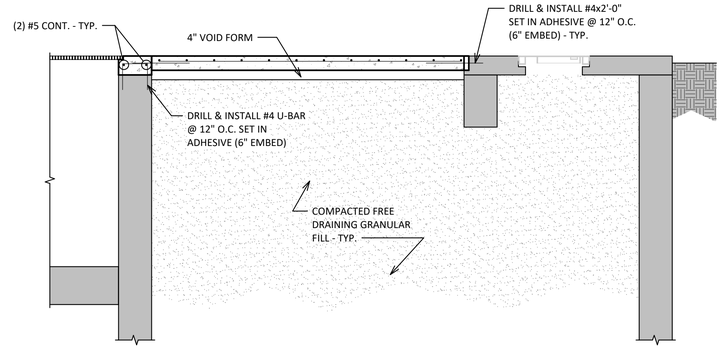
0 2' 4' 6'



2 3.14 ENLARGED WALL PLAN

3/8" = 1'-0"

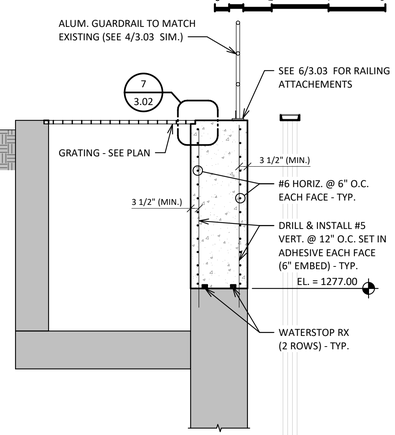
0 2' 4' 6'



3 3.14 SECTION

3/8" = 1'-0"

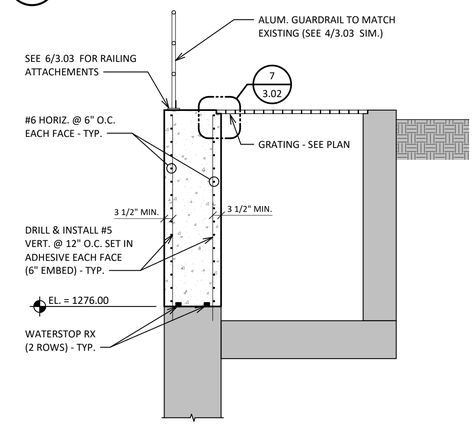
0 2' 4' 6'



4 3.14 SECTION

3/8" = 1'-0"

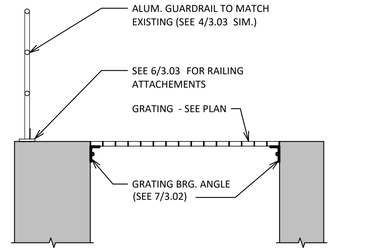
0 2' 4' 6'



5 3.14 SECTION

3/8" = 1'-0"

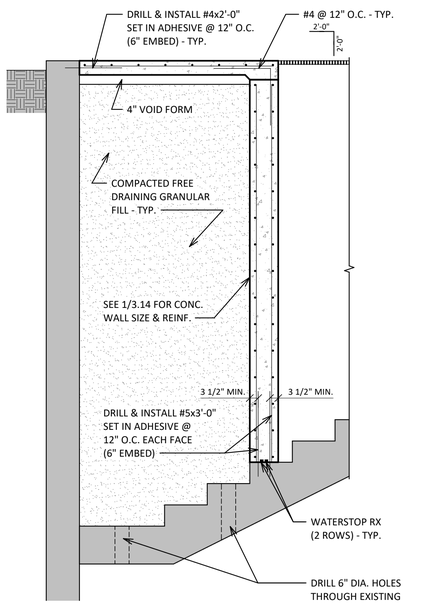
0 2' 4' 6'



6 3.14 SECTION

1/2" = 1'-0"

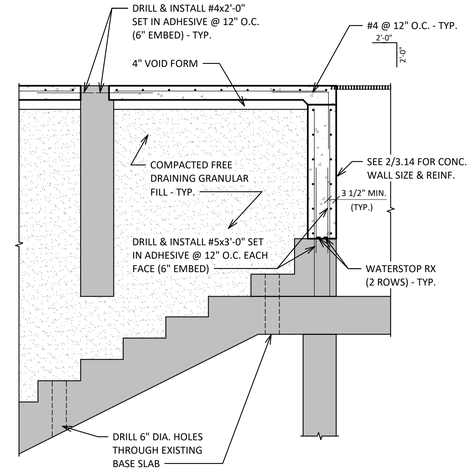
0 1'-6" 3' 4'-6"



7 3.14 SECTION

3/8" = 1'-0"

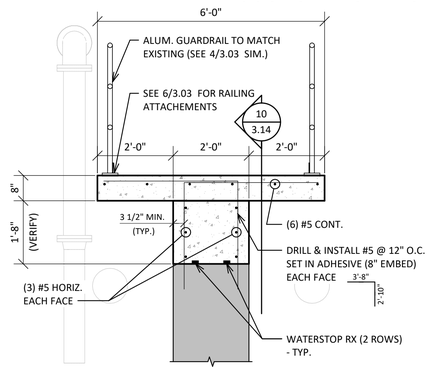
0 2' 4' 6'



8 3.14 SECTION

3/8" = 1'-0"

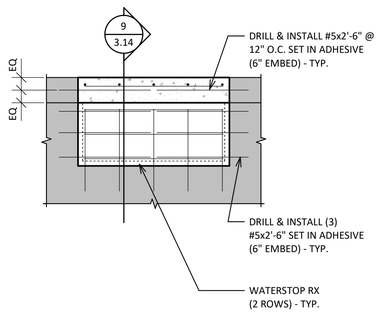
0 2' 4' 6'



9 3.14 SECTION

1/2" = 1'-0"

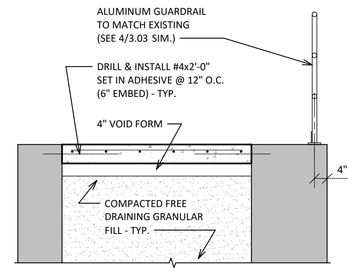
0 1'-6" 3' 4'-6"



10 3.14 SECTION

1/2" = 1'-0"

0 1'-6" 3' 4'-6"



11 3.14 SECTION

1/2" = 1'-0"

0 1'-6" 3' 4'-6"

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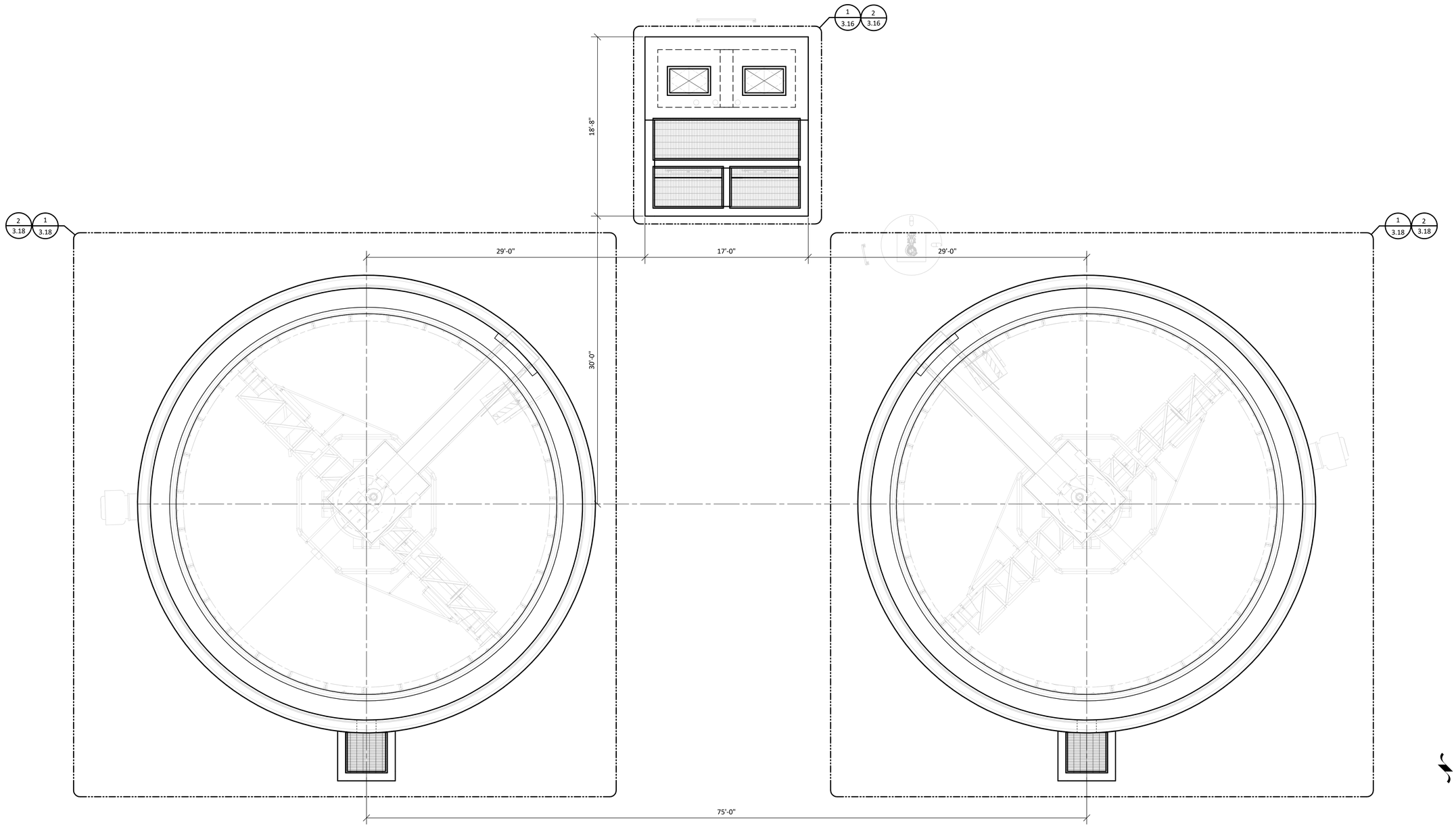
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED ANOXIC/AEROBIC BASINS
SECTIONS

SHEET 3.14



1 3.15 OVERALL PLAN

3/16" = 1'-0"

0 4' 8' 12'

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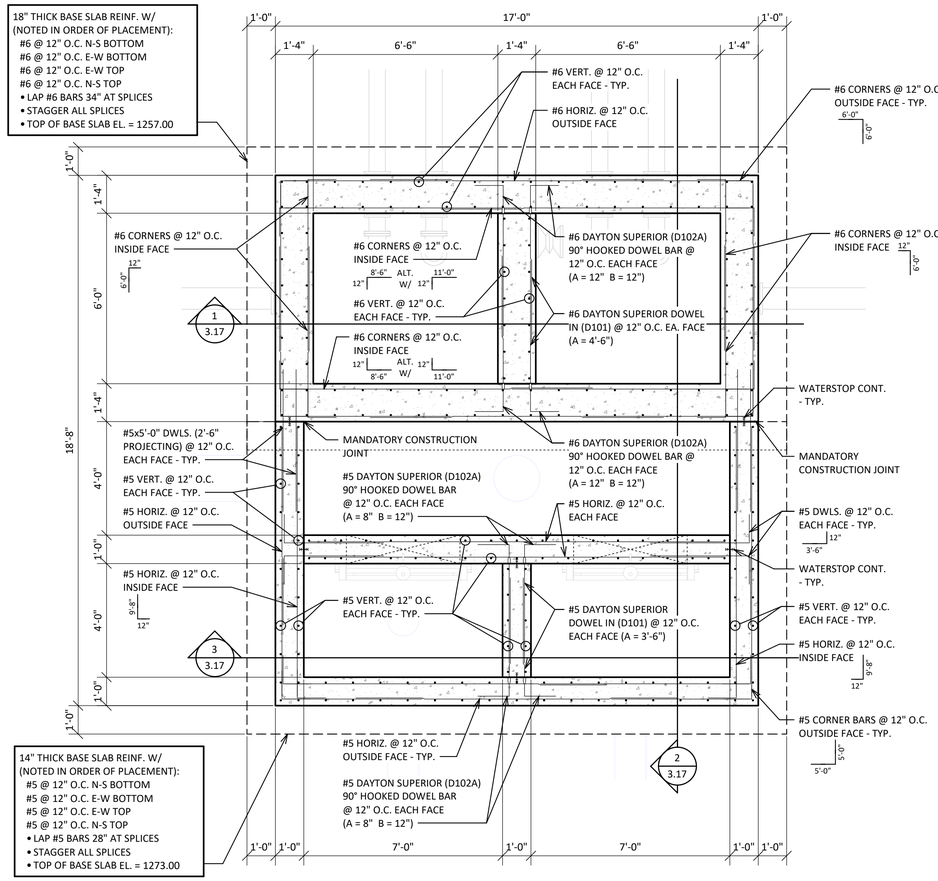
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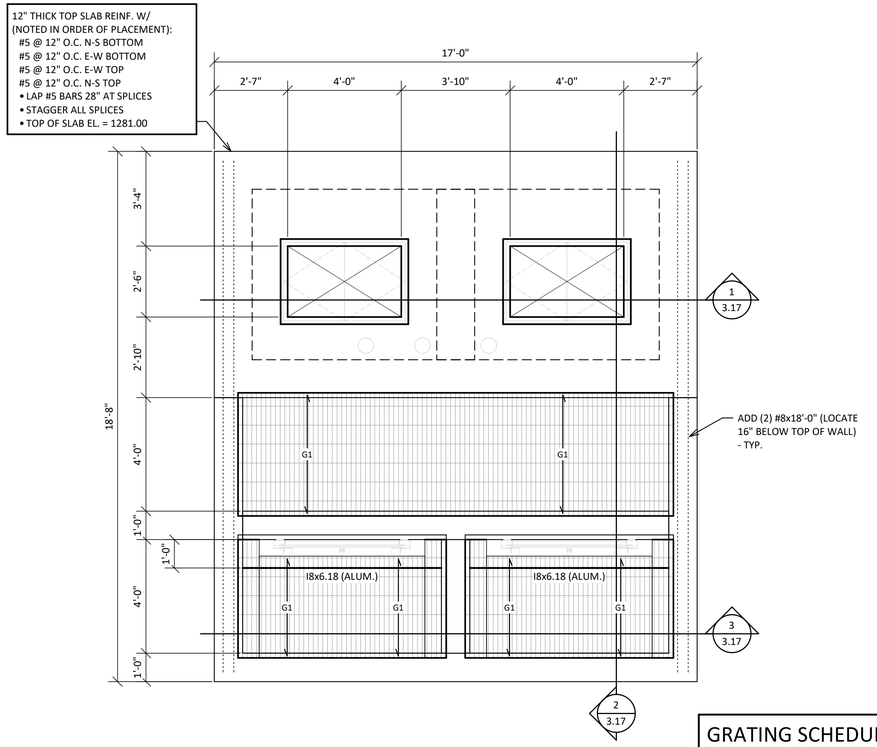
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
CONTROL STRUCTURE NO.3 AND RAS LIFT STATION
OVERALL PLAN

SHEET 3.15





PLAN NORTH TRUE NORTH

GRATING SCHEDULE

G1	1 1/2"x3/16" TYPE P-19 ALUMINUM GRATING

1 3.16 WALL PLAN

3/8" = 1'-0"

0 2' 4' 6'

2 3.16 TOP OF WALL PLAN

3/8" = 1'-0"

0 2' 4' 6'

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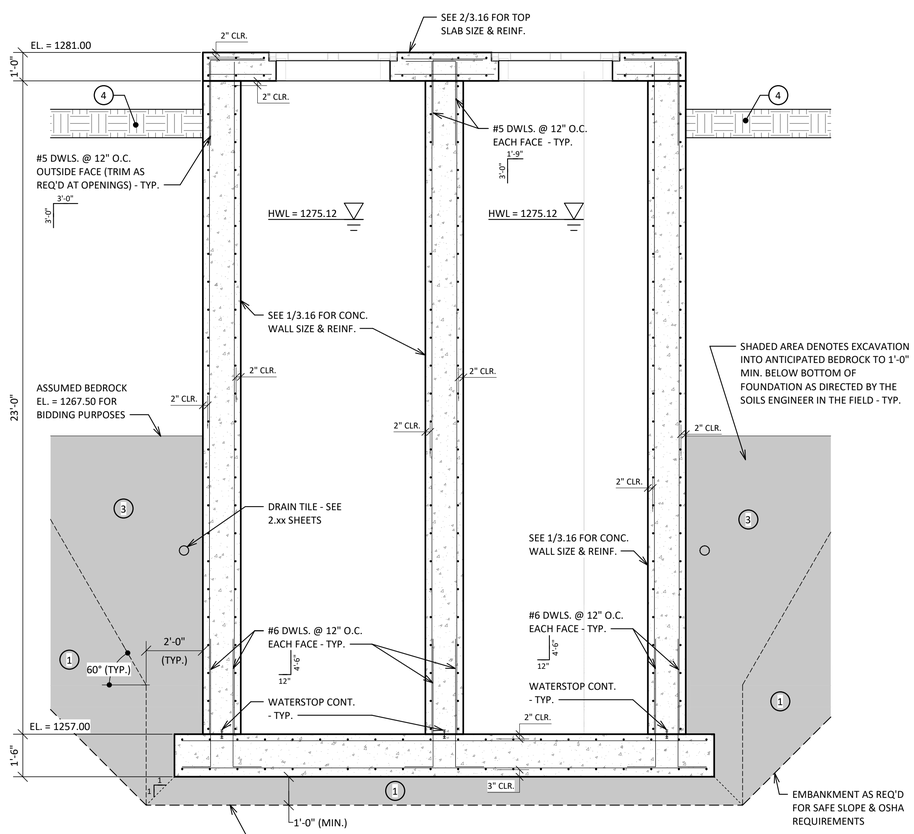
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
CONTROL STRUCTURE NO.3 AND RAS LIFT STATION
PLANS

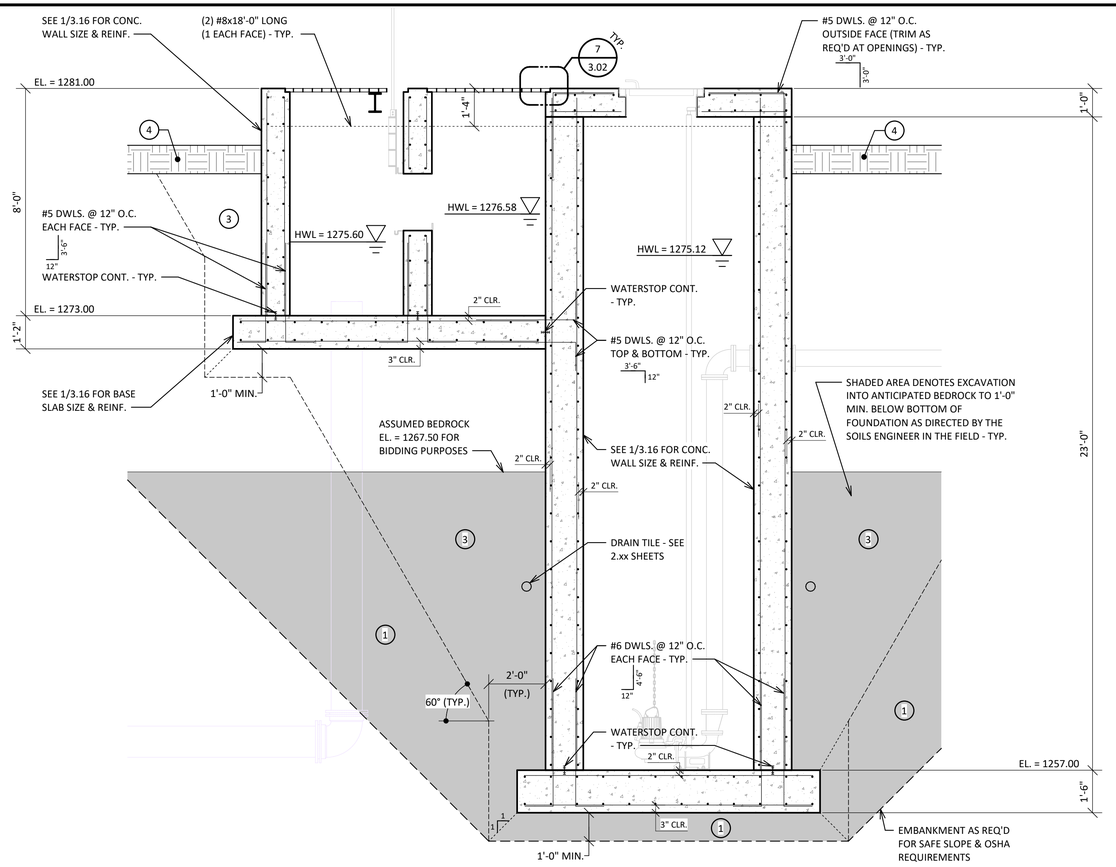
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1 3.17 SECTION

3/8" = 1'-0"

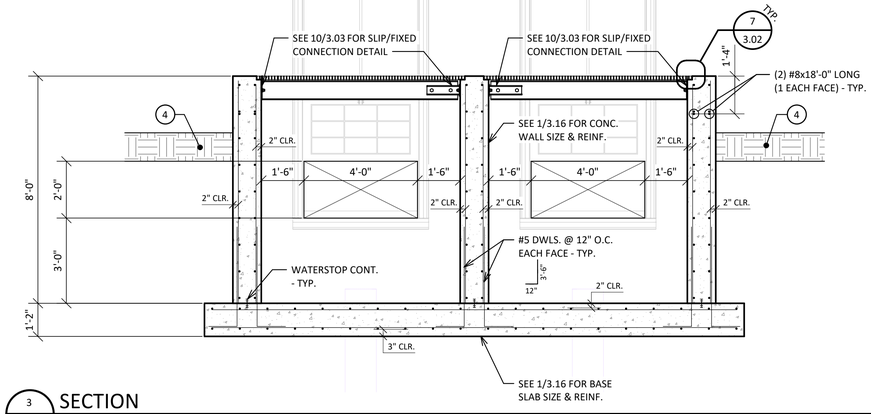
0 2' 4' 6'



2 3.17 SECTION

3/8" = 1'-0"

0 2' 4' 6'



3 3.17 SECTION

3/8" = 1'-0"

0 2' 4' 6'

FILL SCHEDULE

MARK	MATERIAL
1	GRANULAR FILL WITH LESS THAN 15% PASSING THE #200 SIEVE
2	6" MINIMUM LAYER OF CLEAN FILL WITH LESS THAN 5% PASSING THE #200 SIEVE
3	FREE DRAINING GRANULAR FILL WITH A MAXIMUM SIZE OF 2", LESS THAN 40% PASSING THE #40 SIEVE, AND LESS THAN 5% PASSING THE #200 SIEVE
4	12" THICK LEAN CLAY CAP W/ A MAXIMUM PARTICLE SIZE OF 3", A LIQUID LIMIT LESS THAN 45, PLASTICITY INDEX LESS THAN 22, & LESS THAN 15% RETAINED ON THE #200 SIEVE

NOTE: FINE GRAINED AND GRANULAR MATERIAL SHOULD NOT BE INTERLAYERED

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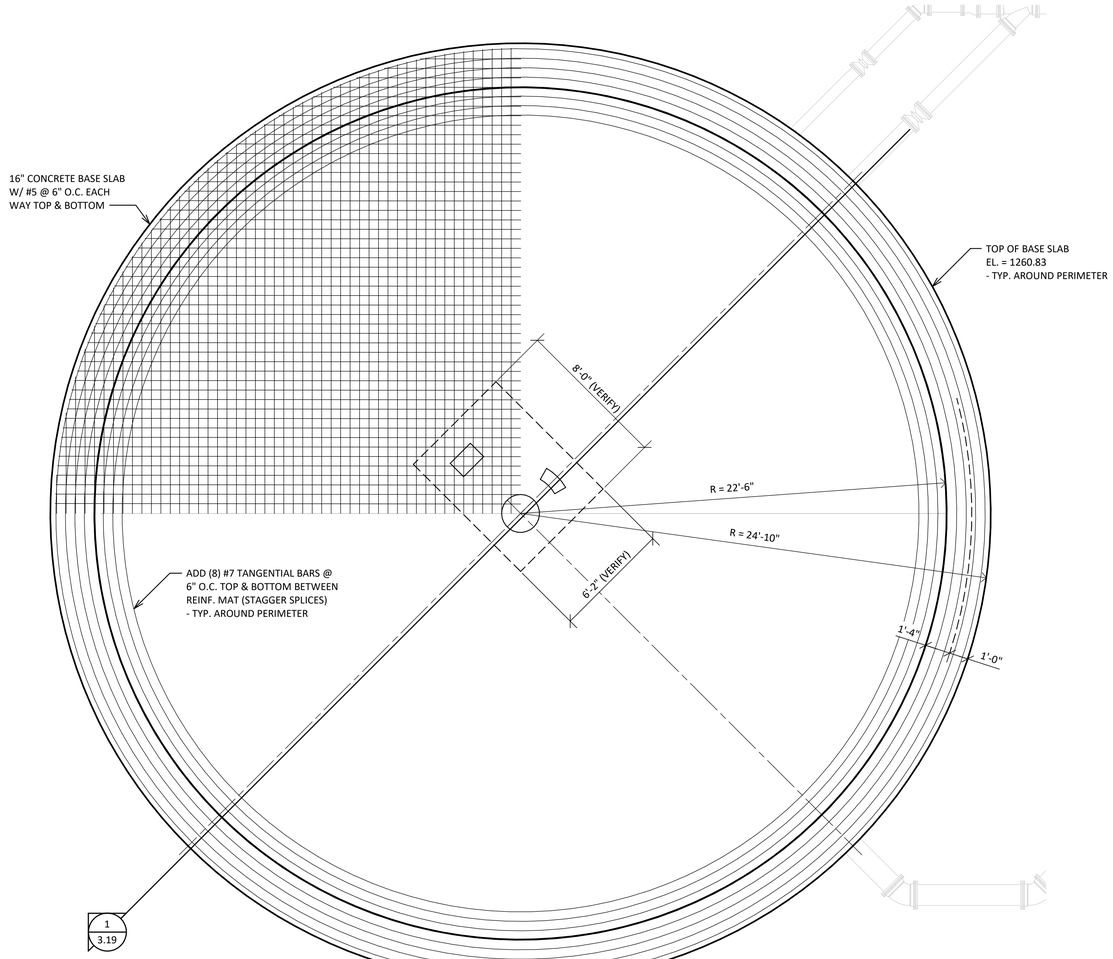
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CONTROL STRUCTURE NO.3 AND RAS LIFT STATION
SECTIONS

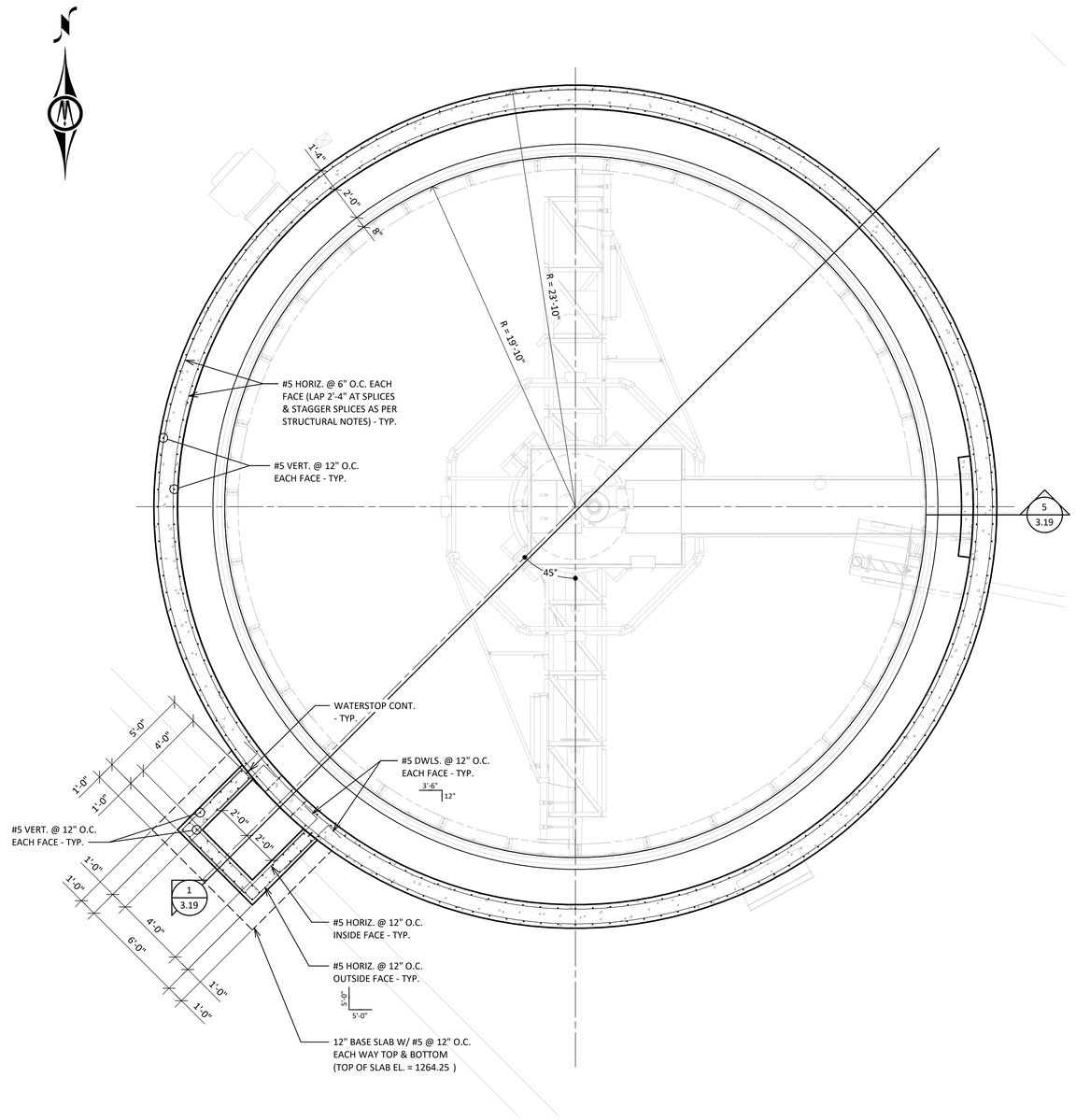
SHEET 3.17



1 3.18 BASE SLAB PLAN

1/4" = 1'-0"

0 3' 6' 9'



2 3.18 WALL PLAN

1/4" = 1'-0"

0 3' 6' 9'

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DATE 9/29/26 LIC NO. 58678

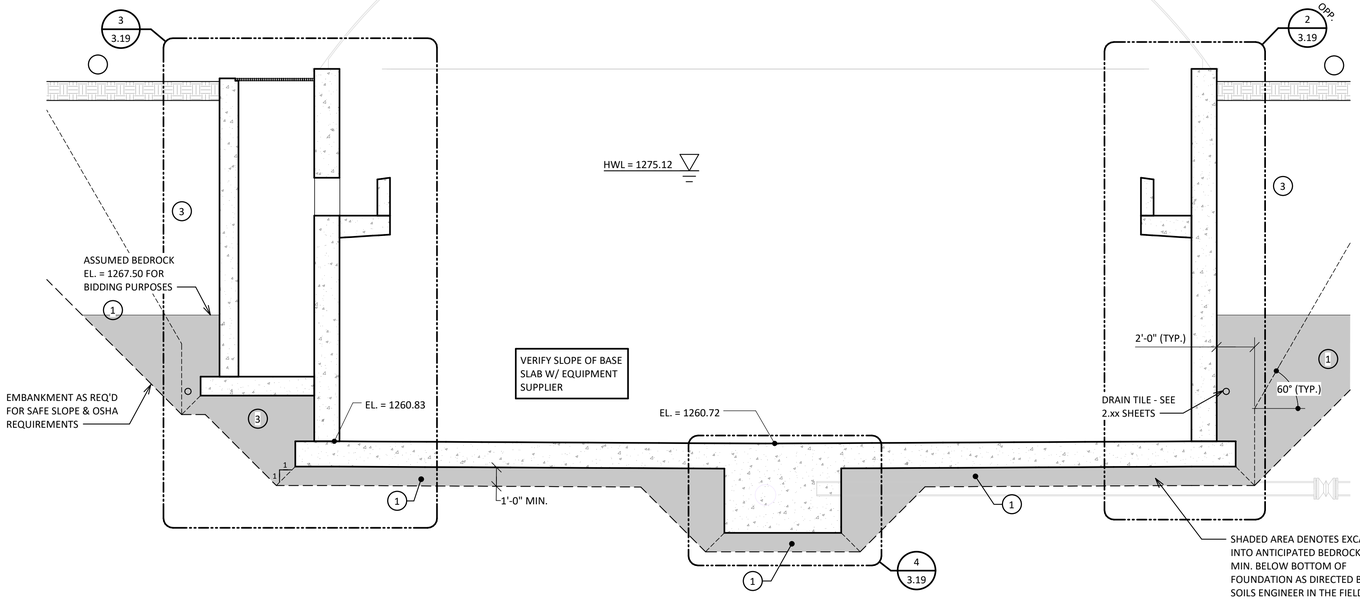
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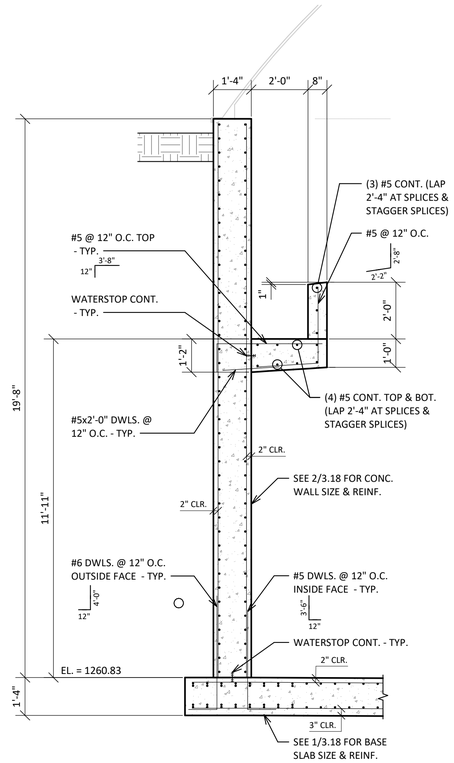
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DRAWN DWR
CHECKED BJS
CLIENT PROJ. NO. 0M.2131536

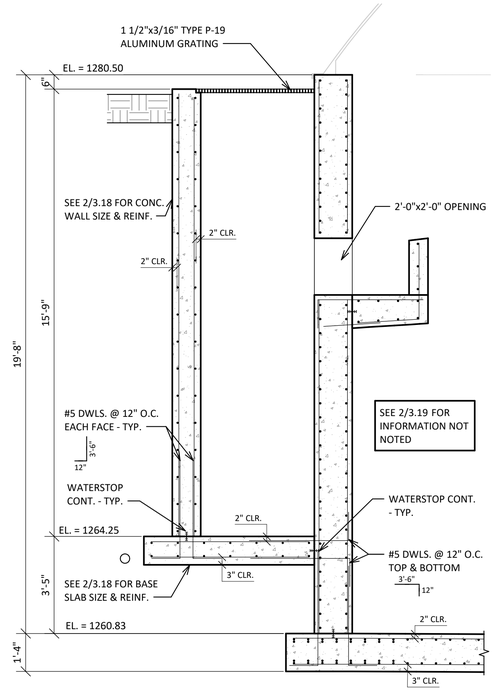
NO.	ISSUED FOR	DATE
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
CLARIFIERS
PLANS

SHEET 3.18



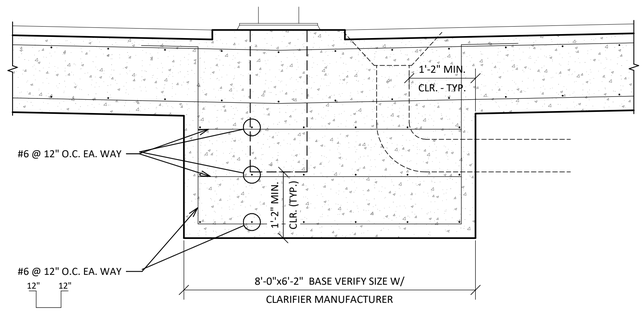




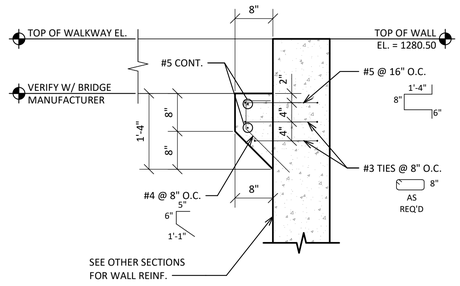
1 / 3.19 SECTION
1/4" = 1'-0"
0 3' 6' 9'

2 / 3.19 SECTION
3/8" = 1'-0"
0 2' 4' 6'

3 / 3.19 SECTION
3/8" = 1'-0"
0 2' 4' 6'



NOTE: PROVIDE HAUNCH FOR WIDTH OF BRIDGE PLUS 8" EA. SIDE



4 / 3.19 SECTION
3/4" = 1'-0"
0 1' 2' 3'

5 / 3.19 SECTION @ HAUNCH
3/4" = 1'-0"
0 1' 2' 3'

FILL SCHEDULE

MARK	MATERIAL
1	GRANULAR FILL WITH LESS THAN 15% PASSING THE #200 SIEVE
2	6" MINIMUM LAYER OF CLEAN FILL WITH LESS THAN 5% PASSING THE #200 SIEVE
3	FREE DRAINING GRANULAR FILL WITH A MAXIMUM SIZE OF 2", LESS THAN 40% PASSING THE #40 SIEVE, AND LESS THAN 5% PASSING THE #200 SIEVE
4	12" THICK LEAN CLAY CAP W/ A MAXIMUM PARTICLE SIZE OF 3", A LIQUID LIMIT LESS THAN 45, PLASTICITY INDEX LESS THAN 22, & LESS THAN 15% RETAINED ON THE #200 SIEVE

NOTE: FINE GRAINED AND GRANULAR MATERIAL SHOULD NOT BE INTERLAYERED

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DATE 9/29/26
LIC NO. 58678

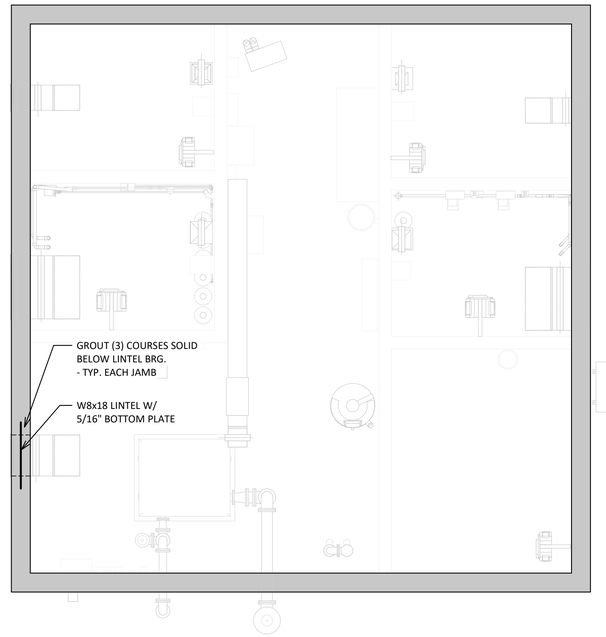
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
CLARIFIERS
SECTIONS

SHEET 3.19



1 / 3.20 PLAN

1/4" = 1'-0"

0 3' 6' 9'

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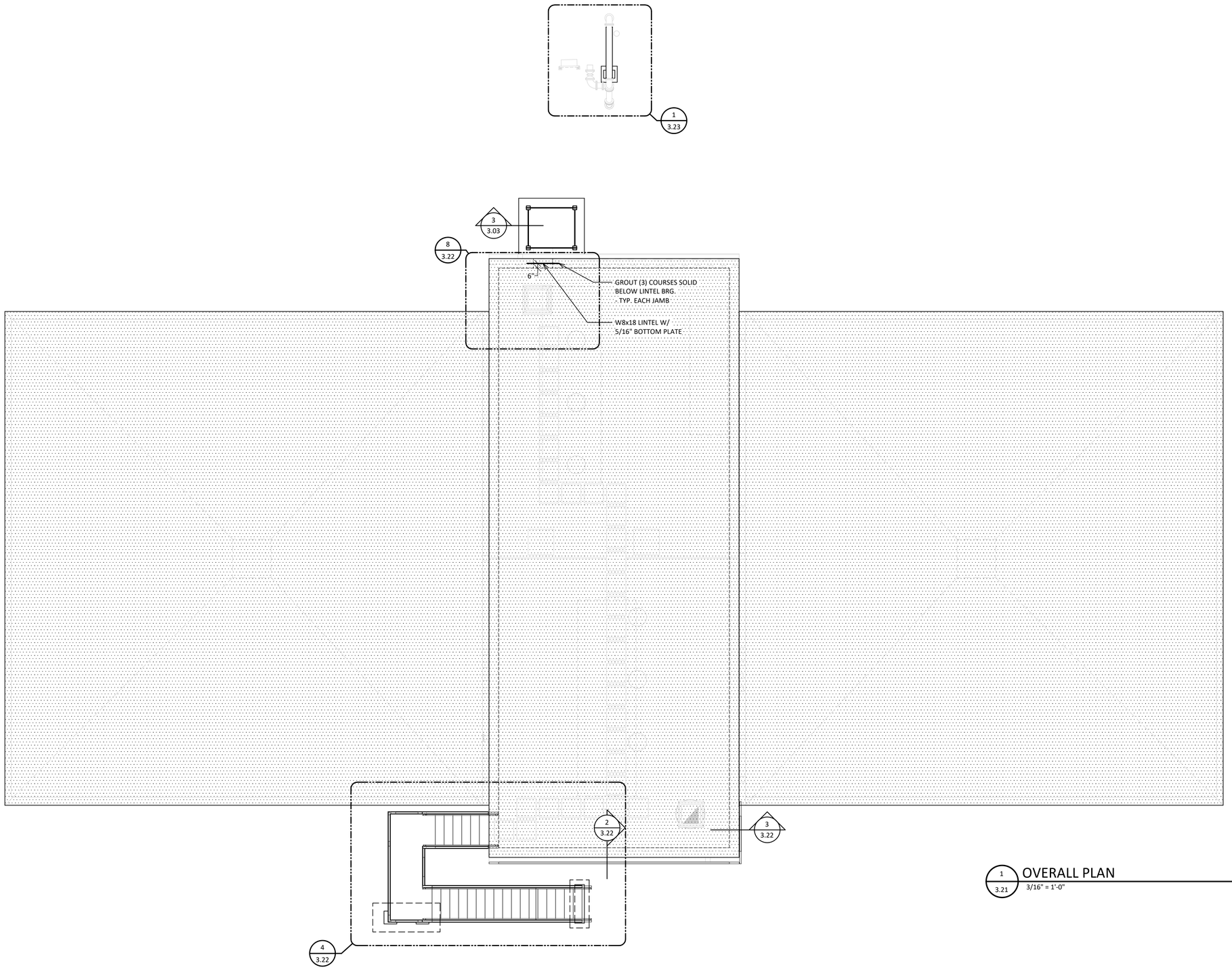
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED DISINFECTION BUILDING
PLAN

SHEET 3.20



1 / 3.21 OVERALL PLAN

3/16" = 1'-0"

0 4' 8' 12'

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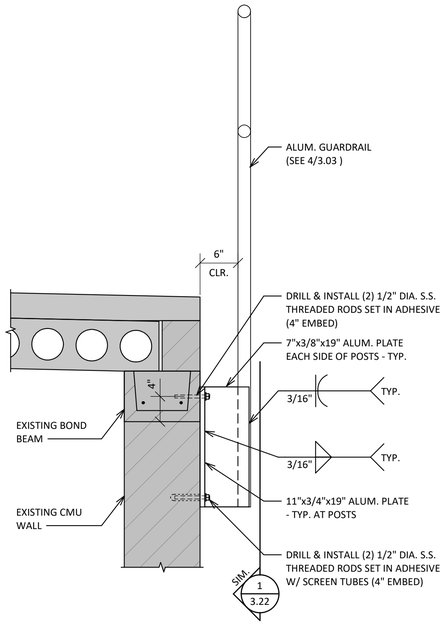
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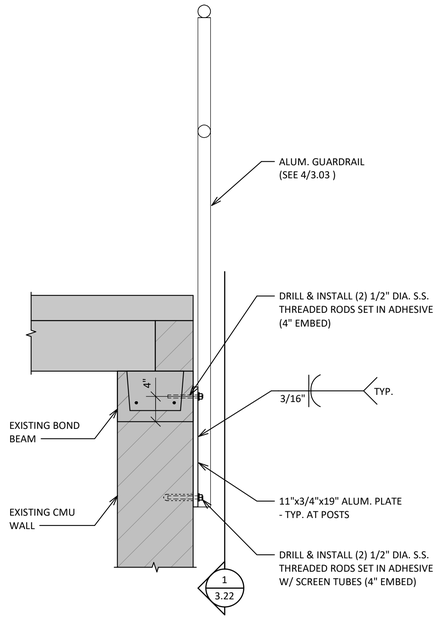
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED DIGESTER BUILDING
OVERALL PLAN

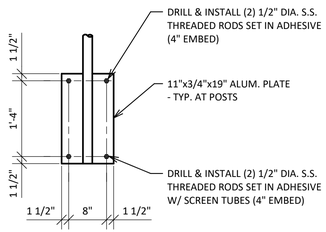
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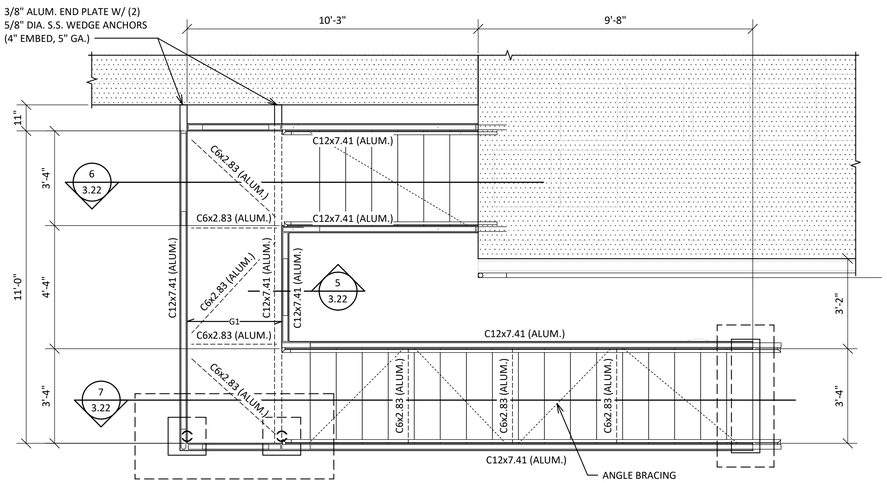
2 / 3.22 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"



3 / 3.22 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"

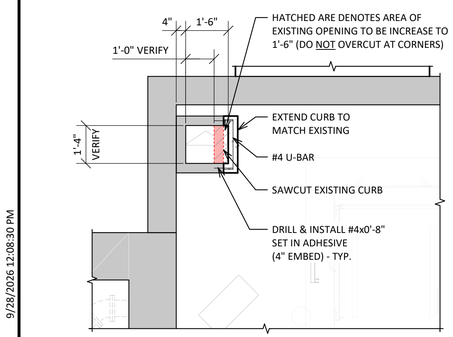


1 / 3.22 SECTION
3/4" = 1'-0"
0 1' 2' 3'

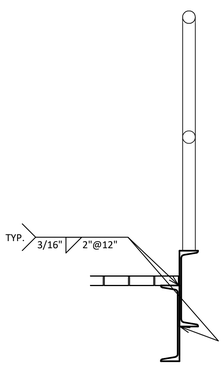


GRATING SCHEDULE	
G1	1 1/2"x3/16" TYPE P-19 ALUMINUM GRATING

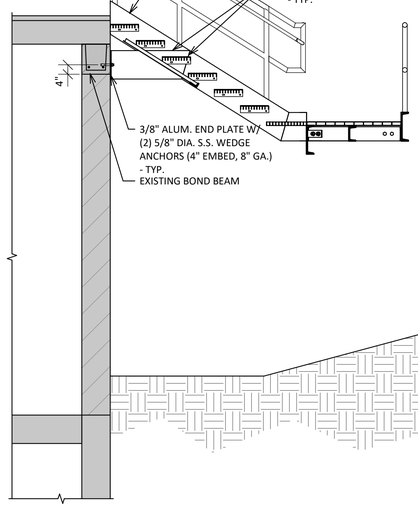
4 / 3.22 STAIR FRAMING PLAN
3/8" = 1'-0"
0 2' 4' 6'



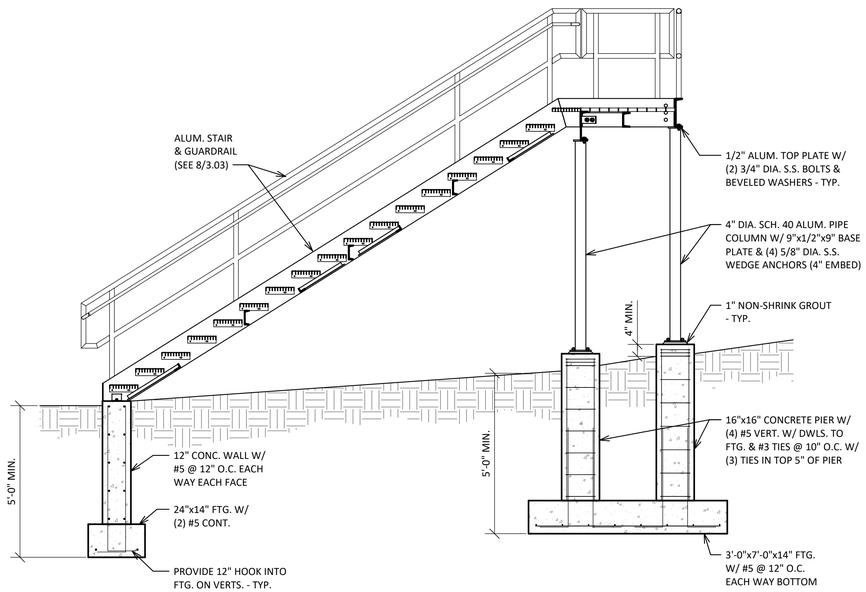
8 / 3.22 PLAN
3/8" = 1'-0"
0 2' 4' 6'



5 / 3.22 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"



6 / 3.22 SECTION
3/8" = 1'-0"
0 2' 4' 6'



7 / 3.22 SECTION
3/8" = 1'-0"
0 2' 4' 6'

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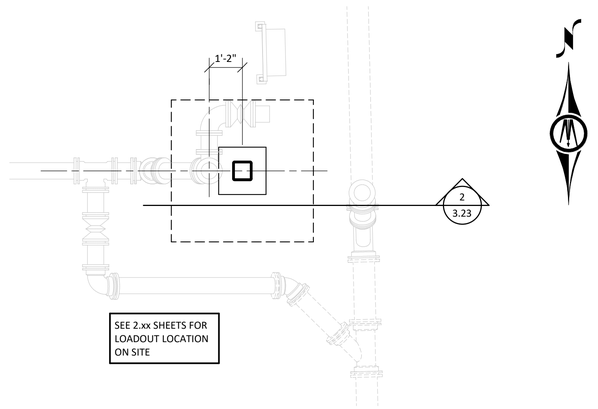
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED DIGESTER BUILDING
STAIR FRAMING PLAN & SECTIONS

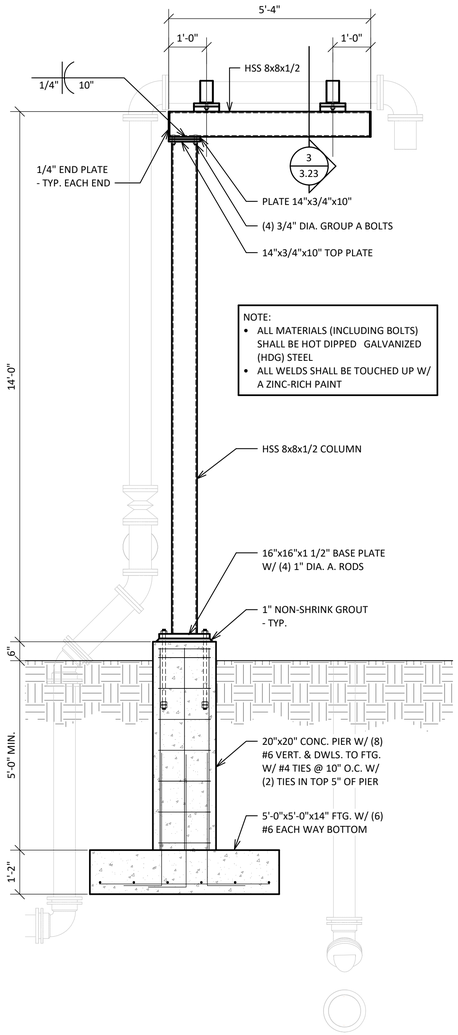
SHEET 3.22

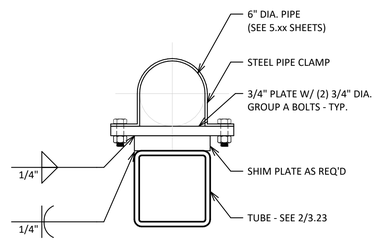


1 3.23 FOUNDATION PLAN

3/8" = 1'-0"

0 2' 4' 6'





2 3.23 SECTION

1/2" = 1'-0"

0 1'-6" 3' 4'-6"

3 3.23 SECTION

1 1/2" = 1'-0"

0 1/2' 1' 1 1/2'

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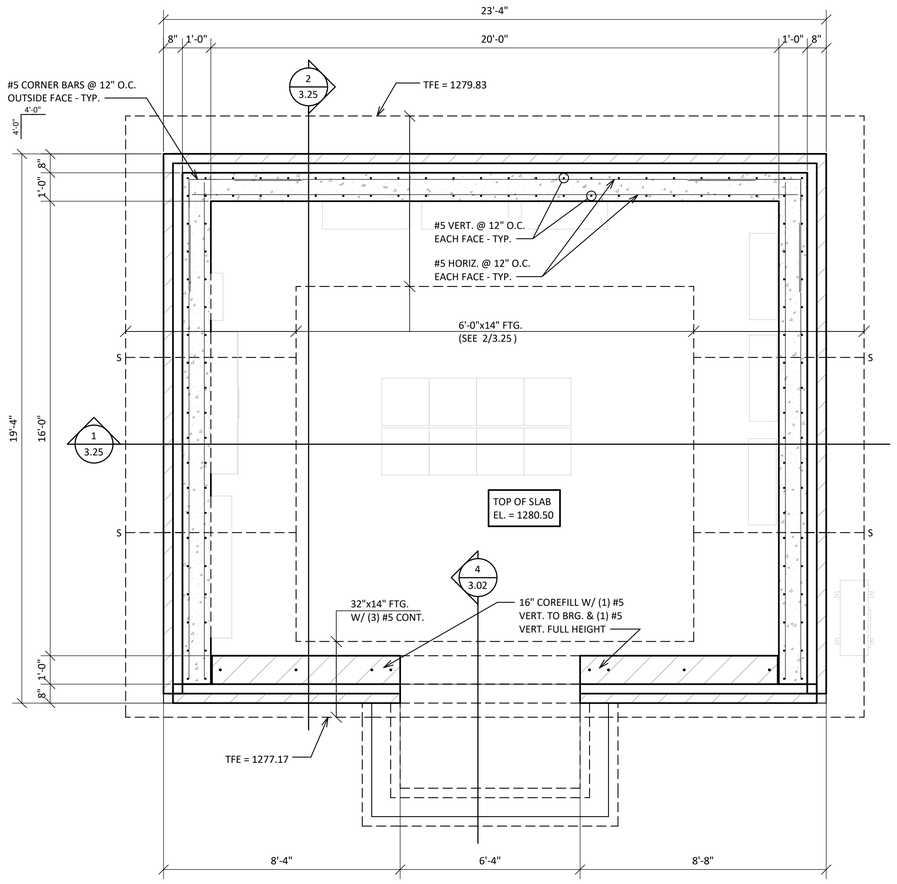
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED SLUDGE LOADOUT
PLAN AND SECTIONS

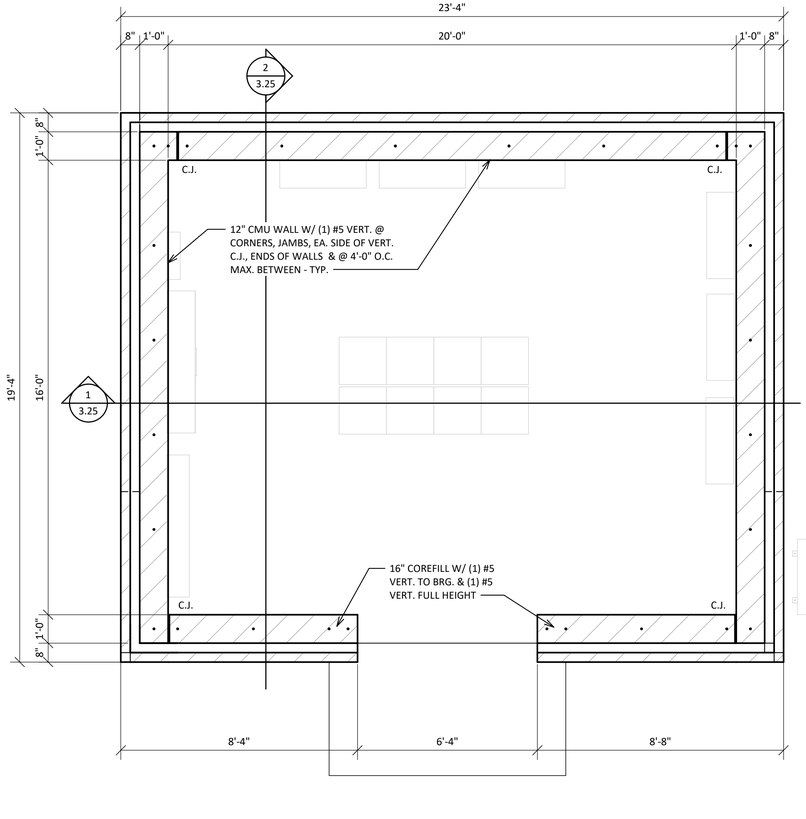
SHEET 3.23



1 / 3.24 FOUNDATION PLAN

3/8" = 1'-0"

0 2' 4' 6'



2 / 3.24 WALL FRAMING PLAN

3/8" = 1'-0"

0 2' 4' 6'

TYPICAL UNLESS NOTED OTHERWISE:

1. 6" CONCRETE SLAB ON GRADE W/ #4 @ 12" O.C. EA. WAY CENTERED (SEE PLAN FOR TOP OF SLAB ELEV.)
2. CONTRACTOR LAYOUT SLAB CONTRACTION JOINTS FOR 6" CONCRETE SLAB ON GRADE AS PER 5/3.02 AND SUBMIT FOR APPROVAL.
3. SEE 1/3.02 FOR STEPPED FOOTING DETAIL
4. SEE 2/3.02 FOR CONTRACTORS OPTIONS AT MECH LINES BENEATH FOOTINGS.
5. SEE 7.xx SHEETS FOR UNDERGROUND GROUNDING SYSTEMS

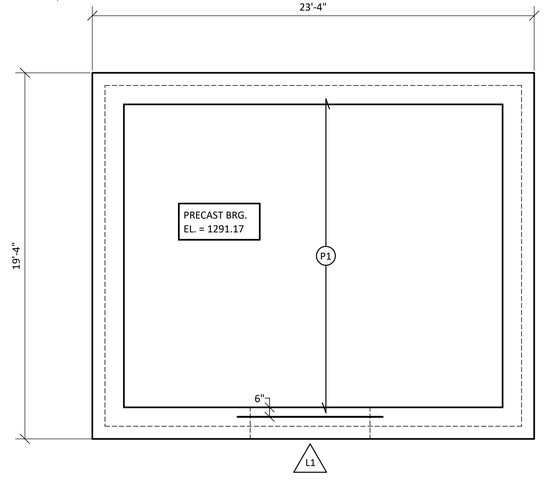
FRAMING SCHEDULE

P1	8" PRECAST PLANK DESIGNED FOR SUPERIMPOSED LOAD = 98 psf (ULT) • DEAD = 36 psf (ULT) • SNOW = 62 psf (ULT)

LINTEL SCHEDULE

MARK	LINTEL
L1	W8x24 W/ 5/16" BOTTOM PLATE

NOTE:
1. BOTTOM PLATE TO BE NOMINAL WALL THICKNESS - 1". EXTEND BOTTOM PLATE TO ENDS OF LINTEL - TYP.
2. UNLESS NOTED OTHERWISE STEEL LINTEL IS CENTERED IN CMU WALL
3. ALL EXTERIOR WALL LINTELS TO BE HOT DIPPED GALVANIZED (HDG).



3 / 3.24 ROOF FRAMING PLAN

1/4" = 1'-0"

0 3' 6' 9'

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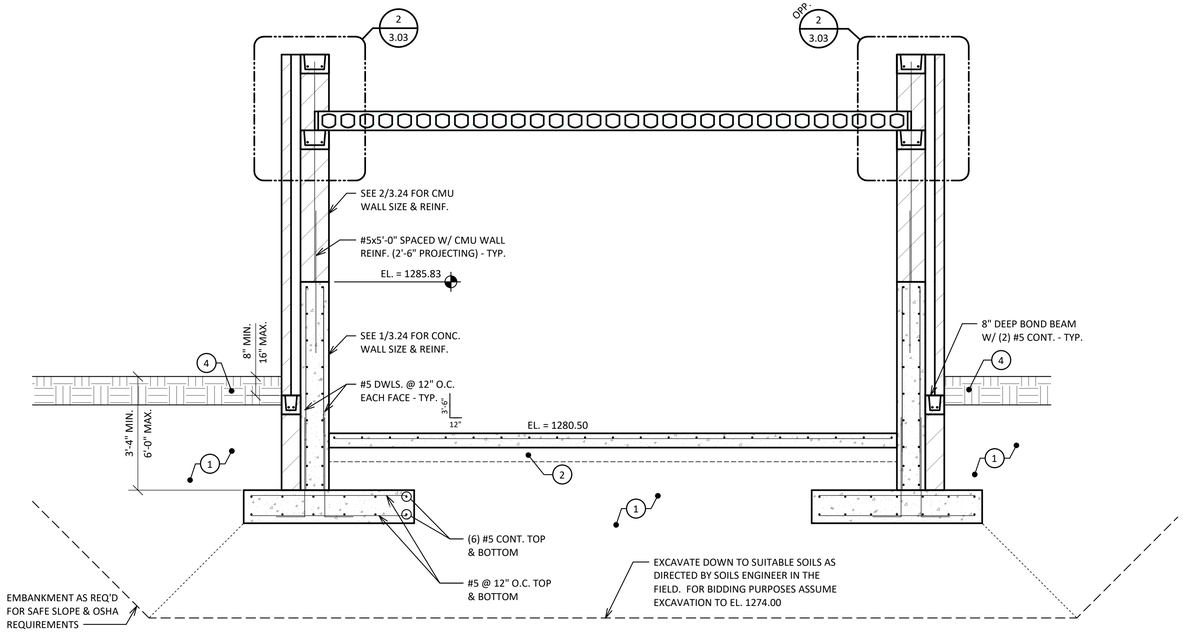
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL BUILDING
PLANS

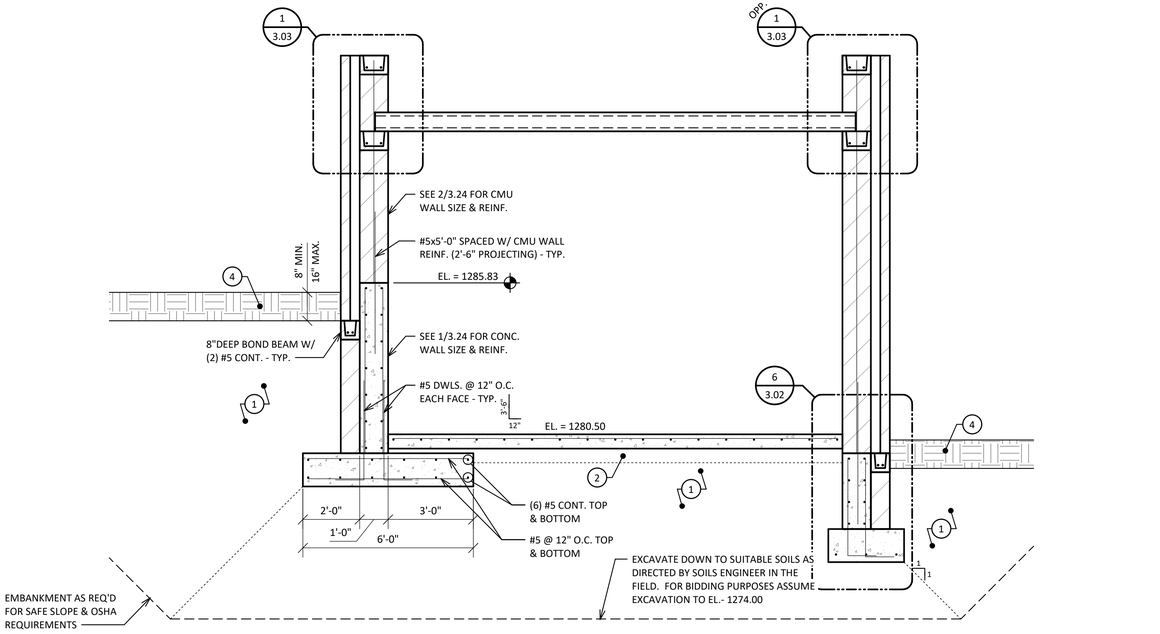
SHEET
3.24



1 / 3.25 SECTION

3/8" = 1'-0"

0 2' 4' 6'



2 / 3.25 SECTION

3/8" = 1'-0"

0 2' 4' 6'

FILL SCHEDULE

MARK	MATERIAL
1	GRANULAR FILL WITH LESS THAN 15% PASSING THE #200 SIEVE
2	6" MINIMUM LAYER OF CLEAN FILL WITH LESS THAN 5% PASSING THE #200 SIEVE
3	FREE DRAINING GRANULAR FILL WITH A MAXIMUM SIZE OF 2", LESS THAN 40% PASSING THE #40 SIEVE, AND LESS THAN 5% PASSING THE #200 SIEVE
4	12" THICK LEAN CLAY CAP W/ A MAXIMUM PARTICLE SIZE OF 3", A LIQUID LIMIT LESS THAN 45, PLASTICITY INDEX LESS THAN 22, & LESS THAN 15% RETAINED ON THE #200 SIEVE

NOTE: FINE GRAINED AND GRANULAR MATERIAL SHOULD NOT BE INTERLAYERED

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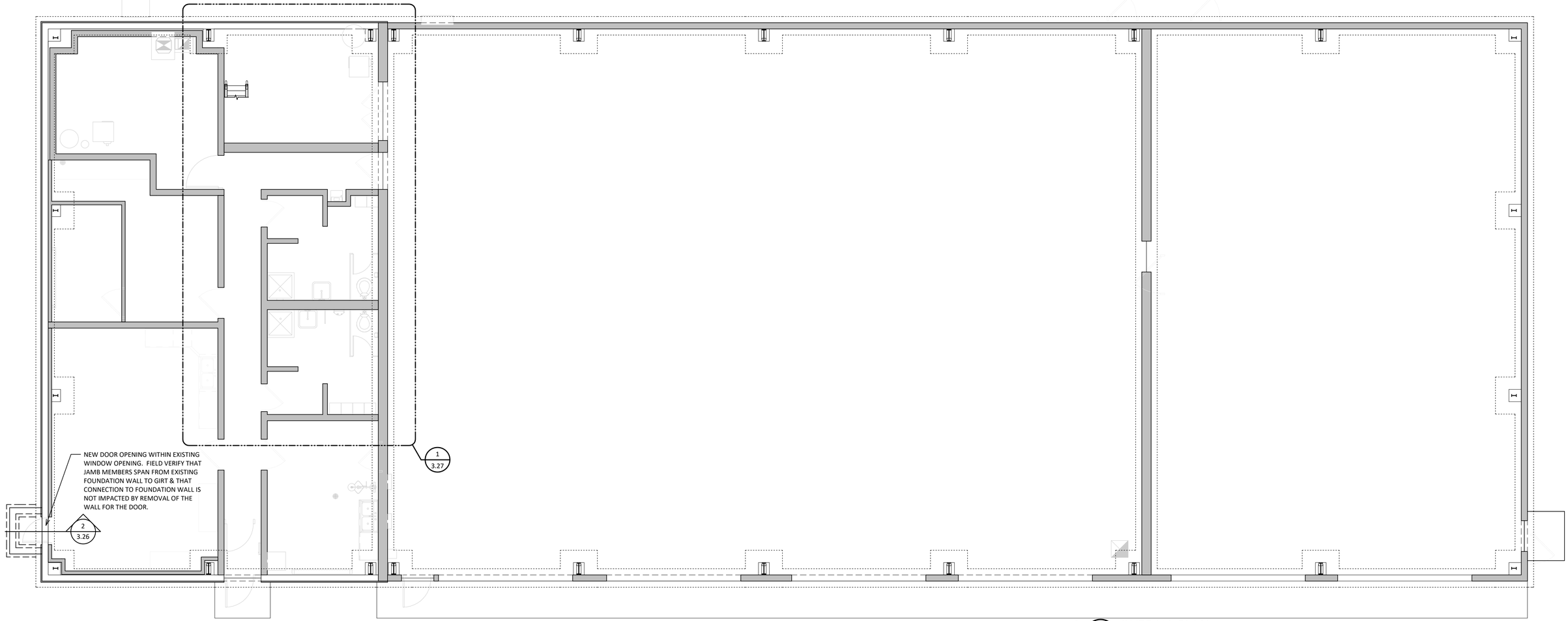
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL BUILDING
SECTIONS

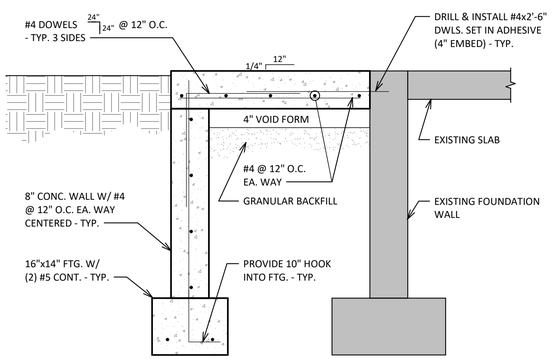
SHEET
3.25



1 / 3.26 OVERALL PLAN

3/16" = 1'-0"

0 4' 8' 12'



2 / 3.26 SECTION

3/4" = 1'-0"

0 1' 2' 3'

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LSE JOB#: 23-312

LSEngineers
234 N. Main St.
LeSueur, MN 56058

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

SIGNATURE: Matthew A Duff

TYPED OR PRINTED NAME: Matthew A Duff

DATE: 9/29/26

LIC NO.: 58678

BOLTON & MENK

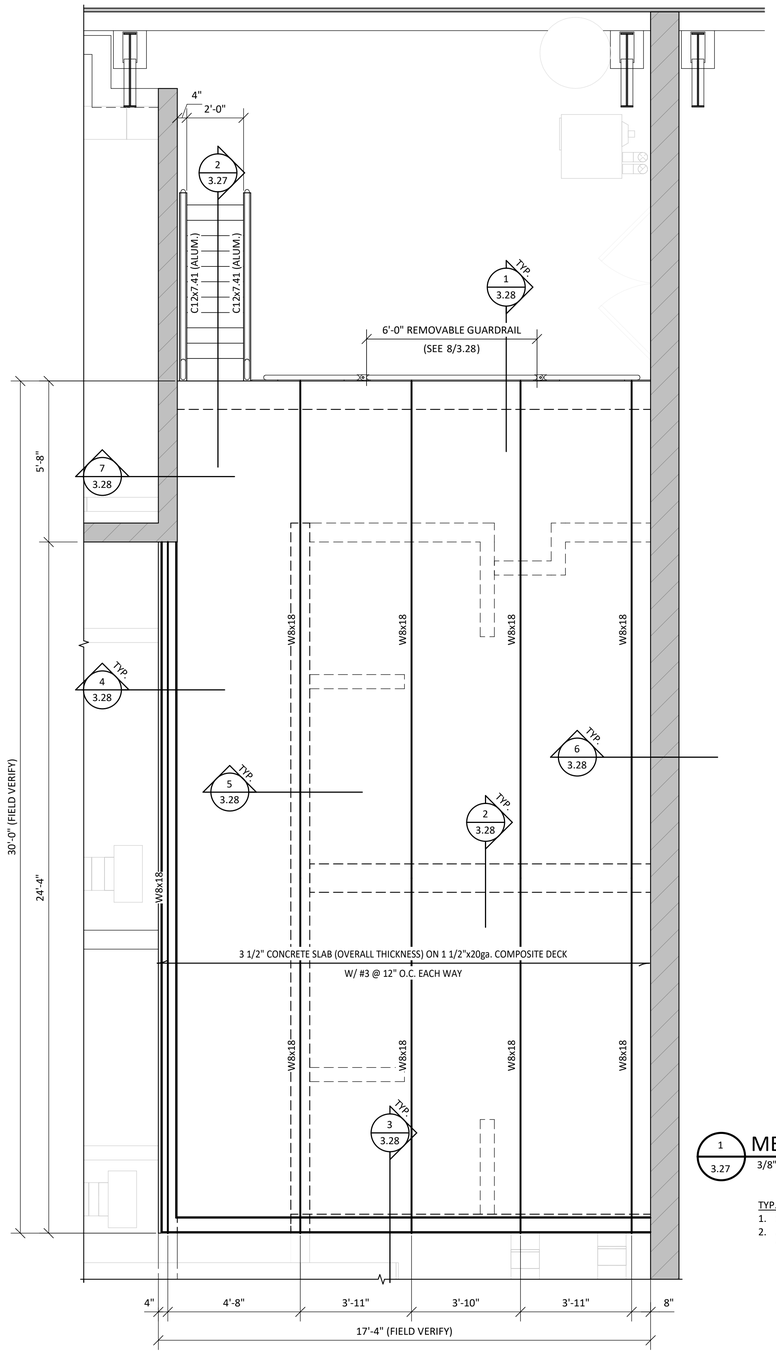
1960 PREMIER DRIVE
MANKATO, MINNESOTA 56001
Phone: (507) 625-4171
Email: mankato@bolton-menk.com
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CLIENT PROJ. NO.	0M.2131536

NO.	ISSUED FOR	DATE
A	MPCA	3/28/25
0	BID	9/29/26

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING ADMIN BUILDING
OVERALL PLAN

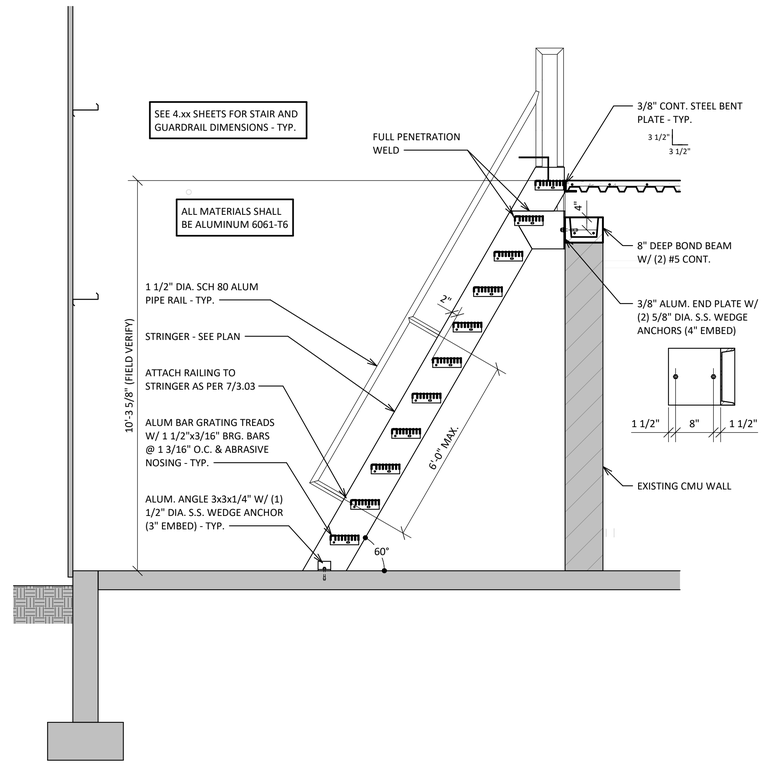
SHEET 3.26



1 / 3.27 MEZZANINE FRAMING PLAN

3/8" = 1'-0"

0 2' 4' 6'



2 / 3.27 SECTION

1/2" = 1'-0"

0 1'-6" 3' 4'-6"

TYP. UNLESS NOTED OTHERWISE:

1. SPAN COMPOSITE DECK FULL LENGTH
2. ATTACH DECK TO BEAMS W/ 5/8" DIA. PUDDLE WELDS @ 6" O.C. ALL SUPPORTS

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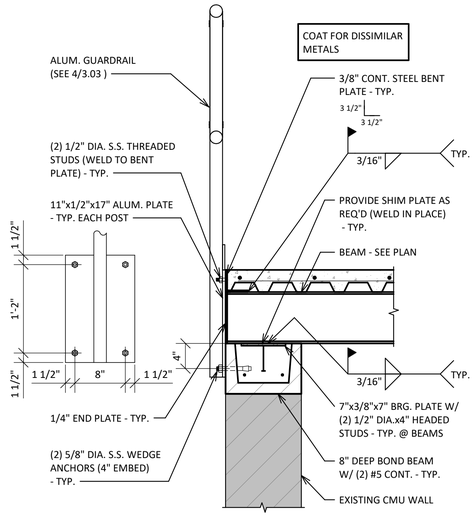
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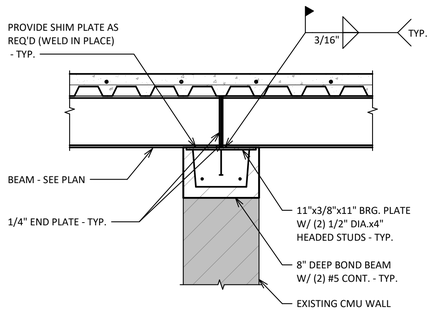
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EXISTING ADMIN BUILDING
MEZZANINE FRAMING PLAN

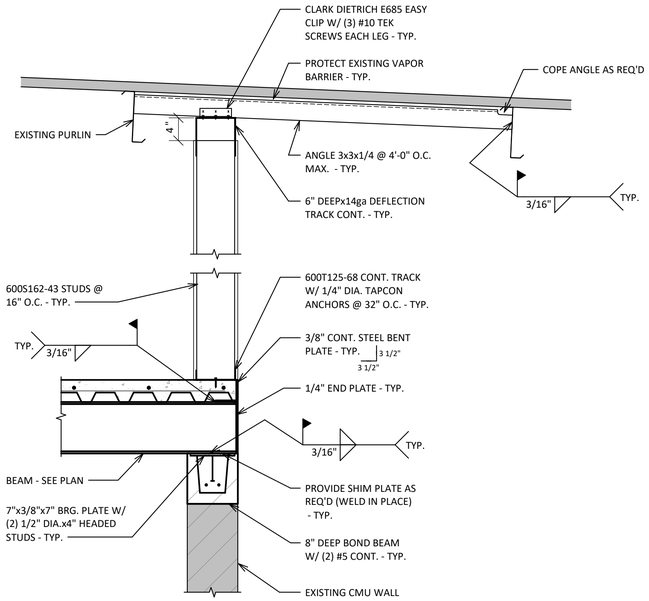
SHEET 3.27



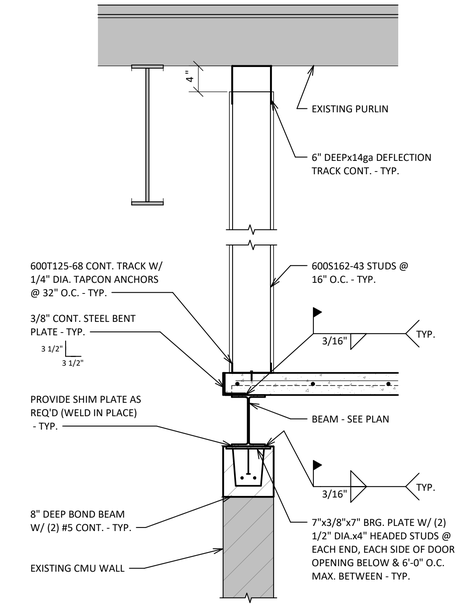
1 3.28 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"



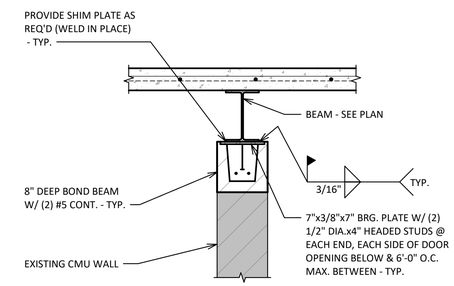
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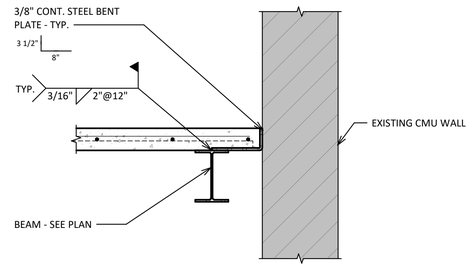
3 3.28 SECTION
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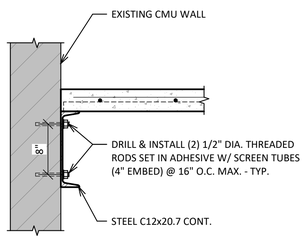
4 3.28 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"



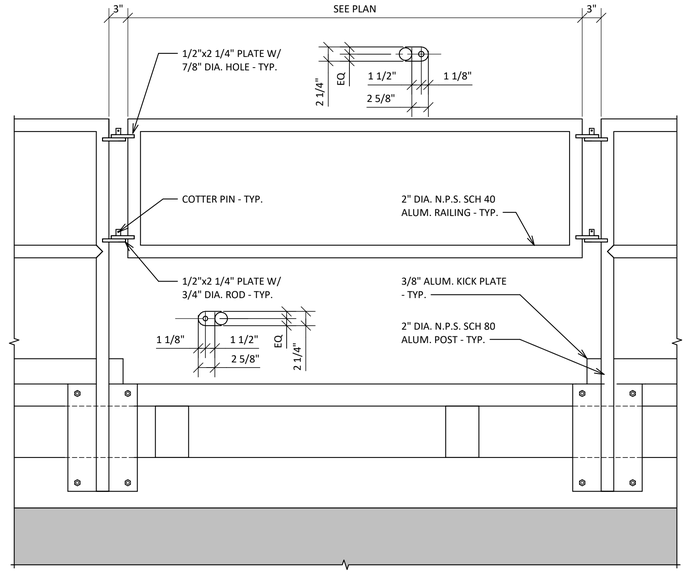
5 3.28 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"



6 3.28 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"



7 3.28 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"



8 3.28 SECTION
1" = 1'-0"
0 9" 1'-6" 2'-3"

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING ADMIN BUILDING
SECTIONS

SHEET
3.28

GENERAL NOTES:

1. TYPICAL STRUCTURAL DETAILS AND NOTES SHALL APPLY UNLESS NOTED OTHERWISE ON THE DRAWINGS.
2. EXAMINE SITE AND DRAWINGS TO DETERMINE LOCATIONS AND DIMENSIONS OF UTILITIES, AND SITE IMPROVEMENTS.
3. BEFORE CONSTRUCTION FABRICATION AND ERECTION OF ANY MATERIALS, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS AND CONDITIONS AS SHOWN ON THE DRAWINGS AND REPORT DISCREPANCIES TO THE ENGINEER AT ONCE FOR RESOLUTION.
4. ALL DIMENSIONS, LOCATIONS, ELEVATIONS AND CONDITIONS OF EXISTING STRUCTURES SHOWN ON THE CONTRACT DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
5. THE STRUCTURAL DESIGN IS BASED ONLY ON THE STRUCTURE IN ITS COMPLETED STATE. CONTRACTORS AND THEIR SUBCONTRACTORS SHALL TAKE WHATEVER PRECAUTIONS ARE NECESSARY TO WITHSTAND ALL HORIZONTAL AND VERTICAL LOADING THAT MAY BE ENCOUNTERED DURING THE CONSTRUCTION PROCESS PRIOR TO THE COMPLETION OF THE STRUCTURE.
6. ALL MNDOT REFERENCES IN DRAWINGS & SPECIFICATIONS REFER TO THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION", 2018 EDITION.
7. WRITTEN DISTANCES & ELEVATIONS SHALL GOVERN OVER SCALED DISTANCES & ELEVATIONS.
8. ELEVATIONS ARE BASED ON THE BENCH MARKS NOTED ON THE DRAWINGS.

INTERPRETATION OF CONFLICT NOTES:

1. SHOULD CONFLICT OCCUR IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REQUEST INTERPRETATION BEFORE PROCEEDING WITH THE ASSOCIATED WORK. ALL SUCH REQUESTS SHALL FIRST BE PRECEDED BY A DILIGENT INVESTIGATION INTO THE CONTRACT DOCUMENTS. EVIDENCE OF SUCH INVESTIGATION SHALL BE COMBINED IN ALL REQUESTS FOR INTERPRETATIONS SUBMITTED.
2. IF THE CONTRACTOR FAILS TO MAKE SUCH A REQUEST, NO EXCUSE WILL THEREAFTER BE ENTERTAINED FOR FAILURE TO CARRY OUT THE WORK IN A SATISFACTORY MANNER. SHOULD CONFLICTS OCCUR IN OR BETWEEN DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR IS DEEMED TO HAVE ESTIMATES ON THE MORE EXPENSIVE WAY OF DOING THE WORK UNLESS HAVING ASKED FOR, AND OBTAINED, WRITTEN DECISION BEFORE SUBMISSION OF PROPOSAL AS TO WHICH METHOD OF MATERIALS WILL BE REQUIRED.

NEW WORK IN CONJUNCTION WITH EXISTING CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL VERIFY BY FIELD VERIFYING, ALL SIZES, DIMENSIONS, ELEVATIONS, LOCATIONS, ETC. OF ELEMENTS OF THE EXISTING CONSTRUCTION WHICH ARE RELATIVE TO THE NEW CONSTRUCTION PRIOR TO COMMENCING RELATED TO NEW WORK.
2. ALL DIMENSIONS INVOLVING NEW WORK TYING INTO OR GOVERNED BY EXISTING CONSTRUCTION SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND FURNISHED TO THE SUBCONTRACTOR PRIOR TO FABRICATION OF ANY WORK. THE VERIFIED DIMENSIONS SHALL APPEAR AND BE NOTED AS SUCH ON THE FIRST SHOP DRAWING SUBMITTED.
3. THE ENGINEER HAS MADE ASSUMPTIONS CONCERNING THE SOUNDNESS OF THE EXISTING BUILDING AND THESE ASSUMPTIONS ARE THAT THIS BUILDING WAS DESIGNED AND CONSTRUCTED IN CONFORMITY WITH GOOD DESIGN AND CONSTRUCTION PRACTICES. THE CONTRACTOR SHALL TAKE PRECAUTIONS CONCERNING PRESERVATION OF THE BUILDING DURING DEMOLITION AND NEW CONSTRUCTION WORK. FURTHER THEY SHALL AGREE TO ASSUME ALL RESPONSIBILITY FOR THE PRESERVATION OF THIS PROPERTY.
4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN CONSTRUCTION DOCUMENTS AND ACTUAL FIELD CONDITIONS.
5. ALL HOLES THROUGH EXISTING CONCRETE OR MASONRY CONSTRUCTION SHALL BE CORED DRILLED OR SAW CUT. NEW OPENINGS MUST BE MADE WITH ENGINEER'S APPROVAL.
6. CUTTING OF EXISTING STRUCTURAL STEEL IS PROHIBITED WITHOUT APPROVAL FROM THE ENGINEER OF RECORD.

EXISTING CONSTRUCTION NOTES:

1. BEFORE FABRICATION AND ERECTION OF ANY MATERIALS, FIELD VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS, AND CONDITIONS AS SHOWN ON THE DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
2. CONTRACTOR IS SOLELY RESPONSIBLE FOR PROTECTION OF EXISTING BUILDING DURING ALL PHASES OF CONSTRUCTION.
3. PROVIDE ALL SHORING, BRACING, ETC., AS REQUIRED TO TEMPORARILY SUPPORT THE EXISTING STRUCTURE DURING REMOVAL OF EXISTING STRUCTURAL ELEMENTS.

GENERAL SYMBOLS:

DETAIL TITLE — 1 / A101 View Name, SCALE: 1/8" = 1'-0"

BUILDING SECTION — Ref 1 / A101 ... Ref 1 / A101

WALL SECTION — Ref 1 / A101

DETAIL SECTION — SIM 1 / A101

EXTERIOR ELEVATION — ELEVATION NUMBER, SHEET NUMBER; Ref 1 / A101

INTERIOR ELEVATION — ELEVATION NUMBER, SHEET NUMBER; 1 / A101 / 1

NORTH ARROW — PLACE IN TRUE NORTH DIRECTION ON SHEET

ARCH SCALE BAR — 0" 1' 2", SCALE 1" = 1'-0" FEET

PRIMARY ELEVATION — T.O. SLAB, VARIES SEE PLAN

SECONDARY ELEVATION — T.O. SLAB, VARIES SEE PLAN

GRID LINE — 0

MATCHLINE — SEE SHEET 1 / A101 / SEE SHEET 1 / A101

DOOR TAG (SIMPLE) — 101

DOOR TAG — 172A (3'-0" x 6'-10"); A: WD; T: HM; STAN: PT-8; 1-HR: IL

WALL TAG — 2.4C

WINDOW TAG — 1t

FURNITURE TAG — 1i

CEILING TAG — 1i / 1' - 0" AFF

KEYNOTE — ##

REVISION TAG — 1

CENTERLINE

ROOM TAG (SIMPLE) — Room Name / 101

ROOM TAG (FINISHES) — 101

F	Floor Finish
B	Base Finish
W	Wall Finish
C	Ceiling Finish

OCCUPANCY TAG — #### / ##.##" / ##"

EGRESS PATH TAG — 1i / Length

HATCH PATTERNS:

- ACOUSTIC TILE
- ASPHALT CONCRETE
- BLANKET INSULATION
- CARPET (LARGE SCALE)
- CERAMIC TILE
- CONCRETE
- CONCRETE MASONRY UNIT
- EARTH
- WOOD SHEATHING
- METAL
- GYPSUM BOARD
- QUARRY TILE
- RIGID INSULATION
- STONE - EXTERIOR
- SOLID WOOD
- GASKET (LARGE SCALE)
- EXISTING CONSTRUCTION
- GRANULAR MATERIAL
- WOOD BLOCKING - CONTINUOUS
- WOOD BLOCKING - INTERRUPTED

NOTE: NOTIFY ARCHITECT IMMEDIATEY OF ANY UNCLEAR MATERIAL DESIGNATIONS

ARCHITECTURAL MATERIAL ID LEGEND

Code	Material
(ACT-1)	24" x 24" ACOUSTIC CEILING TILE
(APP-1)	REFRIGERATOR, FRENCH DOOR
(APP-2)	REFRIGERATOR, SINGLE DOOR
(EPDM-1)	REINFORCED EPDM ROOFING, 5/8" COVER BOARD, POLYISO INSULATION, VAPOR BARRIER. FULLY ADHERED. 20 YEAR WARRANTY.
(EPX-1)	SOLID EPOXY RESIN, CHEMICAL-RESISTANT, NON-POROUS WORK SURFACE WITH INTEGRAL BACKSPLASH. COLOR SELECTED BY ARCHITECT FROM MFR'S STANDARD RANGE.
(GL-1T)	1" CLEAR INSULATED TEMPERED GLASS
(HDPL-1)	HIGH-DENSITY, CHEMICAL-RESISTANT CASEWORK; COLOR SELECTED BY ARCHITECT FROM MFR'S STANDARD RANGE.
(INSL-1)	EXTRUDED-POLYSTYRENE BOARD, 25 PSI
(PT-1)	WALL PAINT, INTERIOR-GRADE LATEX, SATIN FINISH; COLOR SELECTION BY ARCHITECT/ENGINEER.
(RB-1)	4" HIGH RESILIENT WALL BASE; COLOR SELECTED BY ARCHITECT FROM MFR'S STANDARD RANGE.
(RWP-1)	2'-0" X 2'-0" RUBBER ROOF WALKWAY PAD. PROVIDE AT DESIGNATED MAINTENANCE ACCESS ROUTES AND ROOFTOP EQUIPMENT SERVICE LOCATIONS. INSTALL PER ROOFING MANUFACTURER'S REQUIREMENTS.
(SMF-1)	PREFINISHED GALVANIZED STEEL FLASHING, 20 GA, COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(SMF-10)	PREFINISHED GALVANIZED STEEL ROOF GUTTER, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(SMF-11)	GUTTER DOWNSPOUT, PREFINISHED GALVANIZED STEEL, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(WSHG-1)	3/4" WOOD SHEATHING, C-D, TOUCH SANDED, EXTERIOR EXPOSURE.

INTERIOR WALL TYPES

8._ — (CMU-1)

TYPE	NOM. DEPTH	PARTITION DEPTH	NOTES
8.4	4"	3 5/8"	--
8.6	6"	5 5/8"	--
8.8	8"	7 5/8"	--
8.10	10"	9 5/8"	--
8.12	12"	11 5/8"	--

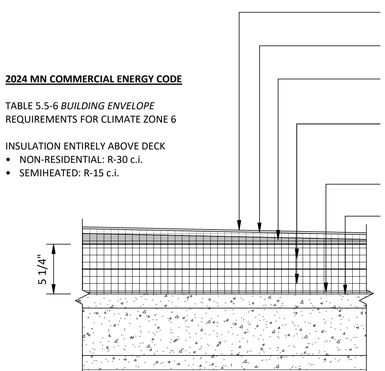
1._ — 1.X — (GBD-1); (MST-1) @1'-4" OC MAX; (INSL-15) WHERE INDICATED

TYPE	STUD DEPTH	PARTITION DEPTH	NOTES
1.1	2 1/2"	3 1/8"	--
1.3	3 5/8"	4 1/4"	--

2024 MN COMMERCIAL ENERGY CODE

TABLE 5.5-6 *BUILDING ENVELOPE* REQUIREMENTS FOR CLIMATE ZONE 6

INSULATION ENTIRELY ABOVE DECK
- NON-RESIDENTIAL: R-30 c.i.
- SEMIHEATED: R-15 c.i.



ROOF MEMBRANE: REINFORCED 60 MIL EPDM. FULLY ADHERED
COVER BOARD: 1/2" HIGH DENSITY ROOF COVER BOARD. SET IN ADHESIVE
TAPERED RIGID INSULATION: 1/4" : 1' - 0" TAPERED POLYISOCYANURATE INSULATION SET ADHESIVE (1/2" MIN THICKNESS)
RIGID INSULATION: (2) LAYERS OF 2 5/8" POLYISOCYANURATE INSULATION SET IN ADHESIVE, AS REQUIRED TO MEET MINIMUM R-VALUES
ROOF VAPOR RETARDER: SELF-ADHERING FIBER GLASS REINFORCED, SBS BASE SHEET
ROOF STRUCTURE: ***PRECAST PLANKS***, GROUT JOINTS, ASPHALTIC CONCRETE PRIMER

(EPDM-1a)

(EPDM-1b)

(R.1)

b - NO INSULATION PROVIDED AT NONCONDITIONED SPACE
c - ROOF SYSTEM INSTALLED ON EXISTING ROOF STRUCTURE, EXISTING STRUCTURE DEMOLISHED TO DECK

ROOF TYPE
1 1/2" = 1'-0"

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MEAGAN MCCOLLOCH-VENCIL
LIC. NO. 59584 DATE 9/29/26

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
GENERAL NOTES AND LEGENDS

SHEET 4.01

STANDARD ABBREVIATIONS NOTES:

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
AB	ANCHOR BOLTS
ABD	ABANDONED
ABT	ABOUT
ACI	AMERICAN CONCRETE INSTITUTE
ADD'L	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AVE	AVENUE
@	AT
BF	BLIND FLANGE
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM / BENCHMARK
BOC	BOTTOM OF CONCRETE
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
C	STEEL CHANNEL
CAR	COUNCIL'S AUTHORIZED REPRESENTATIVE
CB	CATCH BASIN
CBL	CABLE
CCW	COUNTER-CLOCKWISE
CF	CUBIC FEET
CIP	CAST IRON PIPE OR CAST IN PLACE
CJ	CONSTRUCTION JOINT
CL	CENTERLINE OR CLASS
CLR	CLEARANCE
CM	COMMUNICATION
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DEMO	DEMOLISH
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DN	DOWN
DWG	DRAWING
DWL	DOWEL
DMH	DRAINAGE MANHOLE
DXS	DOUBLE EXTRA STRONG
E	EAST
EA	EACH
EF	EACH FACE
ELEV, EL	ELEVATION
ELEC	ELECTRIC
EJ	EXPANSION JOINT
EMBED	EMBEDMENT
E/O	EDGE OF
EQ	EQUAL
EST	ESTIMATE OR ESTIMATED
EW	EACH WAY
EXIST OR (E)	EXISTING
EXP	EXPANSION
EXP JT, EJ	EXPANSION JOINT
FD	FLOOR DRAIN
FF	FAR FACE / FINISH FLOOR
FG	FIBER GLASS
FM	FORCE MAIN
FLR	FLOOR
FND	FOUNDATION
FOC	FIBER OPTIC CABLE
FOS	FACE OF STUD
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FOOTING STEP OR FAR SIDE
FTG	FOOTING
FT	FEET
G	GAS
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GLUE LAMINATED
GPM	GALLONS PER MINUTE
GSP	GALVANIZED STEEL PIPE
GW	GROUNDWATER
GYP BD	GYPSUM BOARD
H	HIGH
HCP	HOLLOW CORE PLANK
HOR	HORIZONTAL
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL SECTION
HYD	HYDRANT
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER IN INCHES
IJ	ISOLATION JOINT
INT	INTERIOR
INV	INVERT
IPS	IRON PIPE SIZE
JBE	JOIST BEARING ELEVATION
JST	JOIST
JT	JOINT
KIP	KIP
KSI	KIPS PER SQ INCH
KW	KEYWAY
L	STEEL ANGLE
LB	LOAD BEARING
LIN	LINEAR
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
MAX	MAXIMUM
MEAS	MEASURED
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
MISC	MISCELLANEOUS
MMUTCD	MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
MO	MASONRY OPENING
N	NORTH
NA	NOT APPLICABLE
NE	NORTHEAST
NF	NEAR FACE
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OHW	OVERHEAD WIRE
OPNG	OPENING
OPP	OPPOSITE
OPP HD	OPPOSITE HAND
P, PL	PLATE
PCF	POUNDS PER CUBIC FOOT
PGL	PROFILE GRADE LINE
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PP	POWER POLE
PREFAB	PREFABRICATED
PROJ	PROJECTION
PROP	PROPOSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	POINT / PRESSURE TREATED
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD / ROOF DRAIN
REINF	REINFORCED, REINFOCEMENT
REQ	REQUIRED
REV	REVISION
RR	RAILROAD
RT	RIGHT
RW	RETAINING WALL
R/W	RIGHT OF WAY
S	SOUTH
SAN	SANITARY
SCH	SCHEDULE
SD	STORM DRAIN
SE	SOUTHEAST
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SI	SQUARE INCH
SIM	SIMILAR
SOG	SLAB ON GRADE
SPCS	SPACES
SPNG	SPACING
SPEC	SPECIFICATION
SS	SANITARY SEWER OR STAINLESS STEEL
STA	STATION
STD	STANDARD
STD WT	STANDARD WEIGHT PIPE
STIR	STIRRUP
STL	STEEL
SW	SOUTHWEST
SYMM, SYM	SYMMETRIC OR SYMMETRICAL
T	TOP
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TBR	TO BE REMOVED
TDI	THREADED DOWEL INSERTS
TEL	TELEPHONE, TELECOMMUNICATIONS
TELE	TELECOMMUNICATIONS
TEMP	TEMPORARY
TMH	TELEPHONE MANHOLE
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF SLAB OR TOP OF STEEL
TOW	TOP OF WALL
TRANS	TRANSVERSE
TS	TUBE STEEL
TSE	TOP OF SLAB ELEVATION
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UNO	UNLESS NOTED OTHERWISE
VB	VAPOR BARRIER
VR	VAPOR RETARDER
VERT	VERTICAL
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WEST OR WIDTH
W/	WITH
WF	WIDE FLANGE
WHS	WELDED HEADED STUD
WM	WATER MAIN
W/O	WITHOUT
WP	WORKING POINT
WS	WATERSTOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC
XS	EXTRA STRONG

T	TOP
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TBR	TO BE REMOVED
TDI	THREADED DOWEL INSERTS
TEL	TELEPHONE, TELECOMMUNICATIONS
TELE	TELECOMMUNICATIONS
TEMP	TEMPORARY
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TSE	TOP OF SLAB ELEVATION
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UNO	UNLESS NOTED OTHERWISE
VB	VAPOR BARRIER
VR	VAPOR RETARDER
VERT	VERTICAL
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WEST OR WIDTH
W/	WITH
WF	WIDE FLANGE
WHS	WELDED HEADED STUD
WM	WATER MAIN
W/O	WITHOUT
WP	WORKING POINT
WS	WATERSTOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC
XS	EXTRA STRONG

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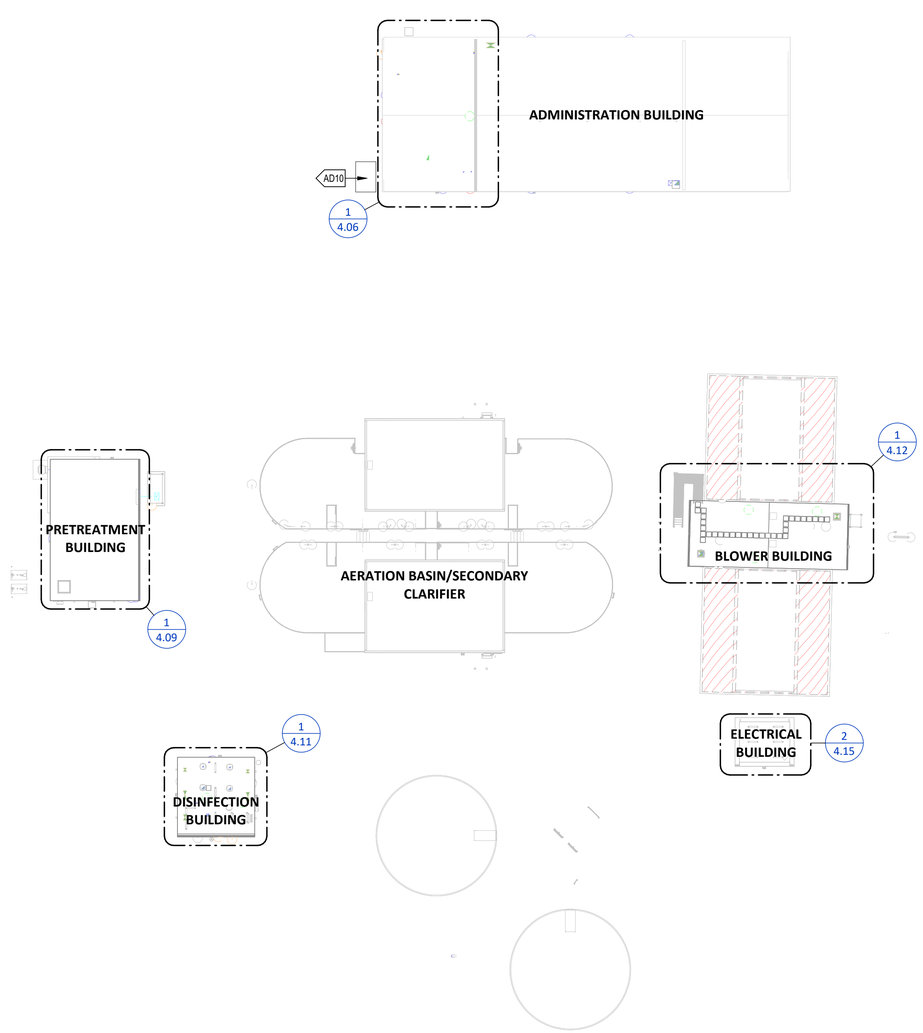
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
STANDARD ABBREVIATIONS

SHEET 4.02



1 / 4.03 ARCHITECTURAL SITE PLAN
1" = 30'-0"

SITE PLAN GENERAL NOTES

A. THE INTENT OF THIS DRAWING IS TO COVER ARCHITECTURAL SITE ITEMS. ALL OTHER INFORMATION, WHICH MAY NOT BE SHOWN HERE IS DETAILED AND SPECIFIED AS PART OF THE LANDSCAPE, CIVIL, AND/OR ELECTRICAL DRAWINGS.
B. REFER TO CIVIL DRAWINGS FOR FINISH FLOOR ELEVATIONS.
C. FOR EXACT PLACEMENT AND LOCATION OF EXTERIOR ELEMENTS REFER TO CIVIL DRAWINGS.
D. SITE LAYOUT IS SHOWN FOR REFERENCE ONLY.
E. REPORT CONFLICTS AND/OR DISCREPANCIES IN PLANS TO THE ARCHITECT FOR CLARIFICATION PRIOR TO STARTING THE WORK.

Keynote Legend

Keynote	Description
AD10	RELOCATE EXISTING DOG KENNEL TO LOCATION COORDINATED WITH OWNER. PROTECT KENNEL FROM DAMAGE DURING REMOVAL AND REINSTALLATION.

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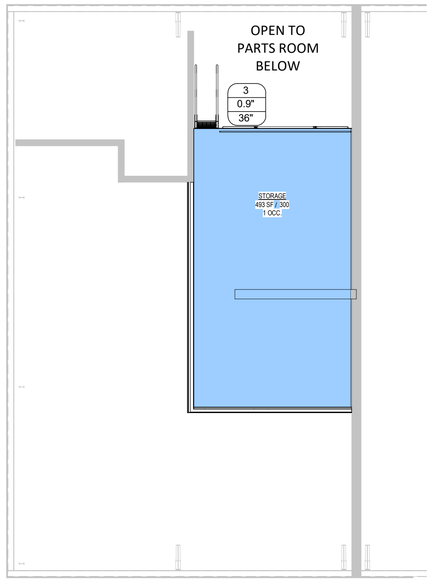
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Checker			
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ARCHITECTURAL SITE PLAN

SHEET 4.03



NORTH

1 / 4.04 ADMINISTRATIVE BUILDING - CODE REFERENCE PLAN
1/8" = 1'-0"

0" 8' 16'
SCALE 1/8" = 1'-0" FEET

CODE SUMMARY ANALYSIS

2020 MINNESOTA CONSERVATION CODE

SECTION 603 ALTERATION - LEVEL 2
603.1 Scope. Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

SECTION 704 MEANS OF EGRESS
704.1 General. Alterations shall be done in a manner that maintains the level of fire protection provided for the means of egress.

SECTION 705 REROOFING.
705.1 - General. Exception: Reroofing shall not be required to meet the minimum design slope requirement of 1/4 unit vertical in 12 unit horizontal in Section 1507 for roofs that provide positive roof drainage. Recovering ... shall not be required to meet the requirement for secondary (emergency overflow) drains ... for roofs that provide positive roof drainage.

705.3 Roof replacement. Roof replacement shall include the removal of all existing layers of roof coverings down to the roof deck.

705.3.1.1 A roof recover shall not be permitted where any of the following conditions occur:
1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is slate, clay, cement, asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

SECTION 801 GENERAL
801.2 In addition to the requirements of this chapter, all work shall comply with the requirements of Chapter 7.

SECTION 802 BUILDING ELEMENTS AND MATERIALS
802.1 The requirements of this section shall be limited to work areas in which Level 2 alterations are being performed.

SECTION 805 MEANS OF EGRESS
805.1 The requirements of this section shall be limited to work areas that include exits or corridors in which Level 2 alterations are being performed.

2020 MINNESOTA ACCESSIBILITY CODE FOR EXISTING BUILDINGS

305.3 Extent of application. An Alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction.

305.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the IBC unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

305.7 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities, parking facilities, and drinking fountains serving the area of primary function.
Exceptions:
1. The costs of providing the accessible route are not required to exceed 20% of the costs of the alterations affecting the area of primary function.

2020 MINNESOTA ACCESSIBILITY CODE

1103.2.9 - EQUIPMENT SPACES. Spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment are not required to comply with this chapter.

1104.4.1 General. Exception: An accessible route is not required to stories... that have an occupant load of not more than 30 and are located above or below accessible levels.

MN RULES 1303.1500

1303.1500 Recycling. Space must be provided for the collection, separation and temporary storage of recyclable materials within or adjacent to all new or significantly remodeled buildings or structures that contain 1,000 square feet or more. ***Work is not significant.**

2024 MINNESOTA STATE ENERGY CODE

MN ENERGY CODE PATHWAY: 2019 ASHRAE 90.1 AS AMENDED BY MN
CLIMATE ZONE: 6A

ROOF INSULATION ABOVE DECK	R-VALUE 30 CI MIN	U-0.032 MAX
OPAQUE DOORS SWINGING	U-0.370 MAX	
NONSWINGING	U-0.310 MAX	

5.1.3 Envelope Alterations. Alterations to the building envelope shall comply with the requirements of Section 5 for insulation, air leakage and fenestration applicable to *those specific portions of the building* that are being altered.
Exception 9: Where insulation is provided **above the roof deck**, and the required R-value for a roof replacement cannot be provided because of existing structural capacity limitations or because of the **thickness limitations** that occur with the existing rooftop conditions, including heating ventilation, and air conditioning equipment curbs, low door or glazing heights, parapet heights, or **proper roof flashing heights**, **the maximum insulation compatible** with the available space and existing roof top conditions shall be installed, as approved by the building official. New insulation shall have the **highest R-value per inch available**, and in no case shall the R-value of the roof insulation be reduced or the U-factor of the roof assembly be increased as part of the roof replacement.

5.4.3.1.1 Whole-Building Air Leakage. Whole building pressurization testing shall be conducted in accordance with ASTM E779 or ASTM E1827 by an independent third party. The measured air leakage rate of the building envelope shall not exceed 0.40 cmf/ft^2 under a pressure differential of 0.3 inches of water, with this air leakage rate normalized by the sum of the above-grade and below-grade building envelope areas of the conditioned space and semiheated space.

2020 MINNESOTA STATE BUILDING CODE

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION (EXISTING)
SECTION 304 - Business Group B (Office)
SECTION 311 - Storage Group S-2 (Low Hazard Storage, Parking Garages)

CHAPTER 4 - SPECIAL DETAILING REQUIREMENTS
SECTION 406 - Motor-Vehicle-Related Occupancies
406.6 Enclosed Parking Garages.
406.6.1 Heights and Areas. Enclosed vehicle parking garages and portions thereof that do not meeting the definition of an open parking garage shall be limited to the allowable heights and areas specified in Sections 504 and 506 as modified by Section 507. Roof parking is permitted.

406.6.3 Automatic Sprinkler System. An enclosed parking garage shall be equipped with an automatic sprinkler system in accordance with Section 903.2.10

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS
SECTION 503 General Building Height and Area Limitations
NOTE: Proposed work does not increase building square footage or height.

S-2 (LOW HAZARD STORAGE) MAIN LEVEL ***EXISTING**	7,369 SF
S-2 (LOW HAZARD STORAGE) MEZZANINE (24%)	493 SF
B (BUSINESS OFFICE) MAIN LEVEL ***EXISTING**	2,042 SF
EXISTING TOTAL BUILDING OCCUPIED SQUARE FOOTAGE	9,411 SF
EXISTING TOTAL BUILDING FOOTPRINT	9,904 SF

SECTION 505.2.1 - Area limitation. The aggregate area of a mezzanine within a room shall not be greater than 1/3 (33%) of the floor area of that room or space in which they are located.

SECTION 903.2.10 Group S-2 Enclosed parking garages. An automatic sprinkler system shall be provided throughout buildings classified as S-2 occupancy ... where either of the following conditions exists.
1. Where the fire area exceeds 12,000 square feet.
2. Where the fire area is located below other groups.
***None of these conditions exists, sprinkler not required.**
NOTE: Proposed work does not increase building square footage, height, or occupant load.

CHAPTER 10 - MEAN OF EGRESS
SECTION 1004 OCCUPANT LOAD
1004.1 Design Occupant Load
Table 1004.5 Maximum Floor Area Allowances per Occupant
Parking garage areas = 300 gross
Business = 150 gross

TOTAL BUILDING (GROSS) = 9,904 SF	OCCUPANT LOAD = SEE PLAN

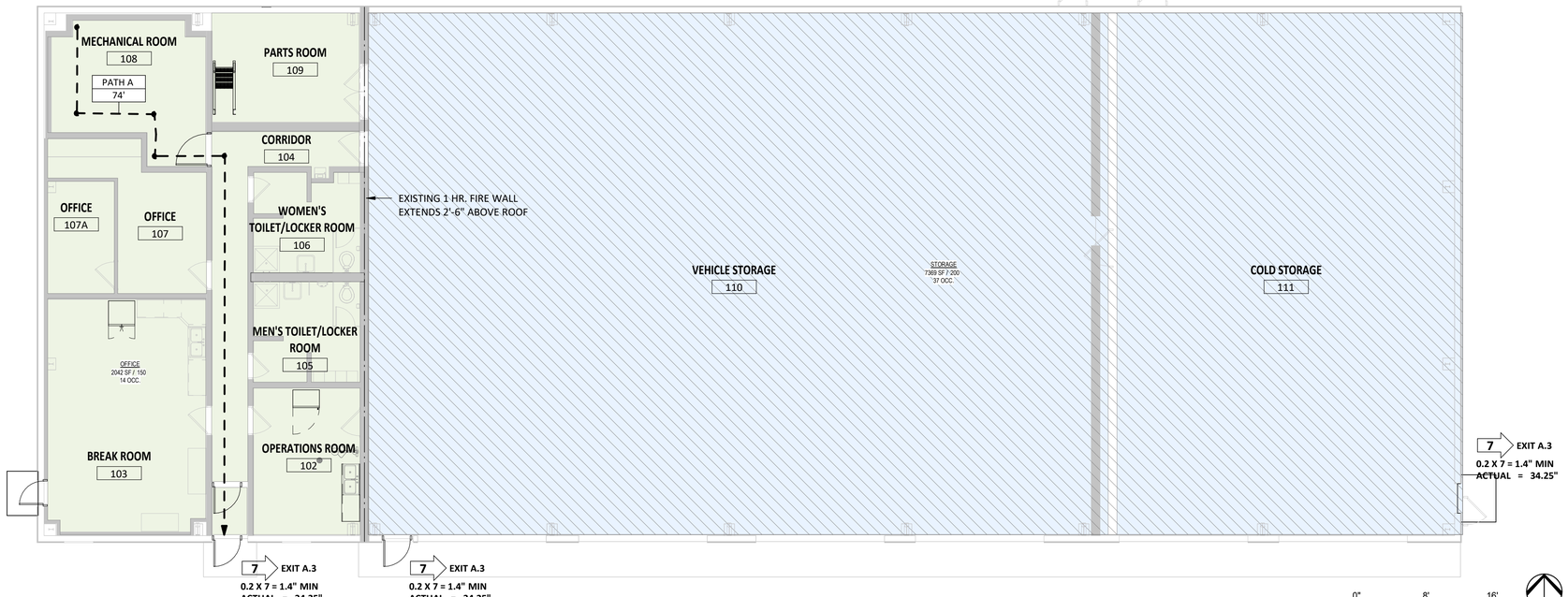
SECTION 1005 Means of Egress Sizing
Table 1005.3.2 Other egress components (Without Sprinkler System)
Inches per occupant = 0.20 @ Egress Components (Doors)
Inches per occupant = 0.30 @ Stairways

SECTION 1006.3.3 Single Exits (B-Occupancy)
A single exit or access to a single exit shall be permitted from any story or occupied roof where one of the following conditions exists:
Exception 1: The occupant load and common path of travel distance do not exceed the values in Table 1006.3.3(1) or 1006.3.3(2).

SECTION 1009 Accessible Means of Egress
Exception 3: Accessible means of egress is not required for alterations to existing buildings.

SECTION 1017 Exit Access Travel Distance
Table 1017.2 Exit Access Travel Distance:
F-1 Occupancy, Maximum travel distance = 300' (without sprinkler system)
EXISTING TO REMAIN

CHAPTER 29 - PLUMBING FIXTURES
**Existing plumbing fixtures to remain, no work proposed.*



0" 8' 16'
SCALE 1/8" = 1'-0" FEET

NORTH

2 / 4.04 ADMINISTRATIVE BUILDING - CODE REFERENCE PLAN
1/8" = 1'-0"

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ADMINISTRATIVE BUILDING - CODE ANALYSIS & REFERENCE PLAN

SHEET 4.04



1 / 4.05 ADMINISTRATION BUILDING - DEMOLITION PLAN LEVEL 1, AREA A
1/4" = 1'-0"

DEMOLITION PLAN LEGEND

- EXISTING WALLS TO REMAIN
- WALLS TO BE DEMOLISHED
- NO ARCHITECTURAL/INTERIORS SCOPE
- ITEM TO BE DEMOLISHED

Keynote Legend

Keynote	Description
AD01	REMOVE EXISTING DOOR AND FRAME. FRAMED OPENING TO REMAIN AS IS TO RECIEVE NEW DOOR, FRAME, AND DOOR HARDWARE.
AD04	REMOVE EXISTING CASEWORK, WALL-MOUNTED CABINETS, COUNTERTOPS, ACCESSORIES, AND ASSOCIATED SUPPORTS SHOWN IN HATCHED AREA. DISCONNECT AND REMOVE UTILITIES SERVING CASEWORK. PREPARE ADJACENT SURFACES FOR NEW WORK.
AD05	REMOVE EXISTING FLOOR TILE, ADHESIVE, AND RELATED FLOORING MATERIALS. GRIND, SMOOTH, PATCH AND SEAL EXPOSED CONCRETE FLOOR SLAB.
AD06	DISCONNECT, REMOVE, AND DISPOSE OF EXISTING EYEWASH/SHOWER ASSEMBLY AND ASSOCIATED PLUMBING PIPING, VALVES, SUPPORTS, AND ACCESSORIES. CAP UTILITIES BELOW FLOOR AND BEHIND WALLS AS REQUIRED. SEE PLUMBING. COORDINATE REMOVALS WITH NEW WORK.
AD07	REMOVE EXISTING FUME HOOD, ASSOCIATED SERVICE FIXTURES, EXHAUST DUCTWORK, CONTROLS, SUPPORTS, AND RELATED ACCESSORIES. DISCONNECT AND REMOVE UTILITIES SERVING THE FUME HOOD. CAP AND SEAL ABANDONED PLUMBING, GAS, ELECTRICAL, AND DUCTWORK AT THEIR SOURCE OR BELOW FLOOR/BEHIND WALL AS APPLICABLE. PATCH AND REPAIR ADJACENT FINISHES TO MATCH EXISTING. SEE MECHANICAL.
AD08	REMOVE EXISTING SINK, FAUCET, TRAP, CARRIERS, SUPPORTS, AND ASSOCIATED ACCESSORIES. DISCONNECT AND REMOVE ASSOCIATED DOMESTIC WATER, WASTE, VENT, AND SPECIALTY PIPING AS REQUIRED. CAP WATER, WASTE, VENT, AND ANY ABANDONED UTILITY CONNECTIONS BELOW FLOOR AND WITHIN WALL CAVITIES. SEE PLUMBING. PATCH AND REPAIR ADJACENT WALLS, FLOORS, CASEWORK, AND FINISHES AFFECTED BY DEMOLITION.
AD09	REMOVE EXISTING WALL CONSTRUCTION AS REQUIRED FOR NEW DOOR OPENING. COORDINATE DEMOLITION AND INSTALLATION OF NEW DOOR, FRAME, INFILL FRAMING, FLASHING, AND FINISH REPAIRS. PATCH ADJACENT MATERIALS TO MATCH EXISTING. VERIFY DOOR OPENING DIMENSIONS AND EXISTING CONDITIONS PRIOR TO DEMOLITION.
AD10	RELOCATE EXISTING DOG KENNEL TO LOCATION COORDINATED WITH OWNER. PROTECT KENNEL FROM DAMAGE DURING REMOVAL AND REINSTALLATION.
AF01	PATCH AND PREP ALL WALLS FOR NEW PAINT. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.

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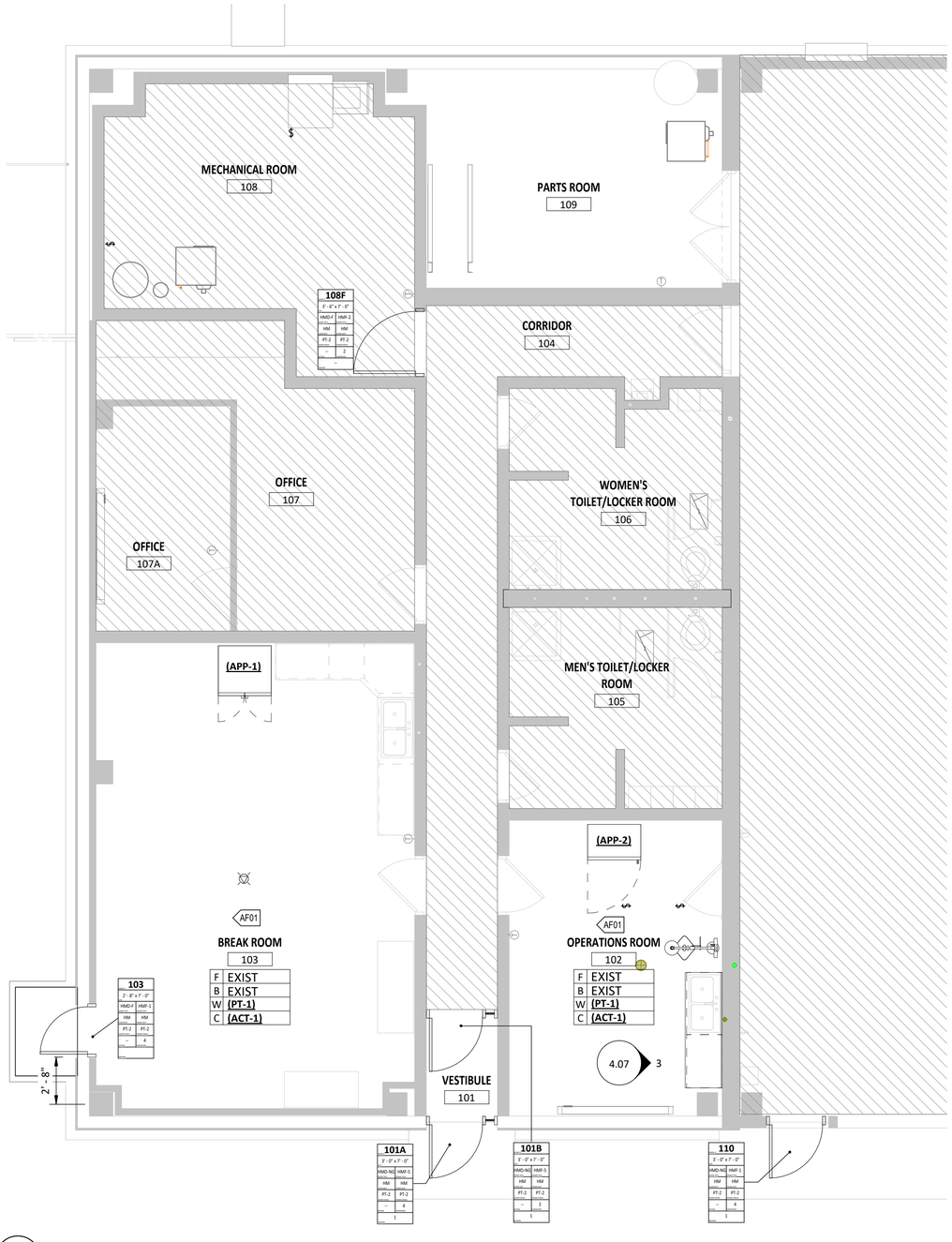
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ADMINISTRATIVE BUILDING - DEMOLITION PLAN

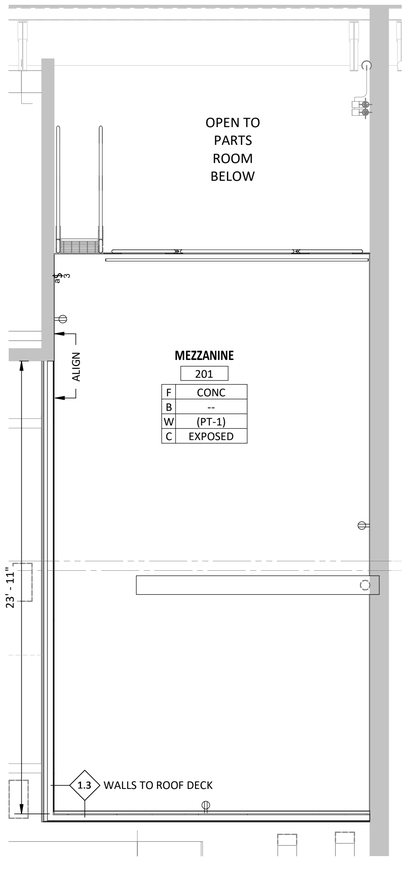
SHEET 4.05



1 4.06 ADMINISTRATION BUILDING - FLOOR PLAN LEVEL 1, AREA A
1/4" = 1'-0"

NORTH

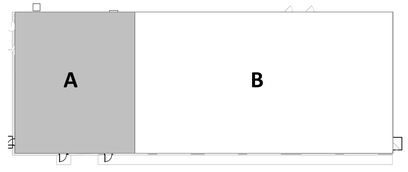
SCALE 1/4" = 1'-0" 0" 4' 8' FEET



2 4.06 ADMINISTRATION BUILDING - FLOOR PLAN LEVEL 2, MEZZANINE
1/4" = 1'-0"

NORTH

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



3 4.06 ADMINISTRATION BUILDING - KEY PLAN
1/32" = 1'-0"

NORTH

MATERIAL ID LEGEND

Code	Material
(ACT-1)	24" x 24" ACOUSTIC CEILING TILE
(APP-1)	REFRIGERATOR, FRENCH DOOR
(APP-2)	REFRIGERATOR, SINGLE DOOR
(PT-1)	WALL PAINT, INTERIOR-GRADE LATEX, SATIN FINISH; COLOR SELECTION BY ARCHITECT/ENGINEER.

PLAN LEGEND

EXISTING WALLS TO REMAIN

NEW WALLS

NO ARCHITECTURAL/INTERIORS SCOPE

Keynote Legend

Keynote	Description
AF01	PATCH AND PREP ALL WALLS FOR NEW PAINT. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.

DOOR SCHEDULE - ADMINISTRATION

DOOR #	DOOR WIDTH	DOOR HEIGHT	DOOR MAT'L	DOOR TYPE	FRAME MAT'L	FRAME TYPE	HARDWARE GROUP
101A	3'-0"	7'-0"	HM	HMD-NG	HM	HMF-5	4
101B	3'-0"	7'-0"	HM	HMD-NG	HM	HMF-5	2
103	2'-8"	7'-0"	HM	HMD-F	HM	HMF-5	4
108F	3'-0"	7'-0"	HM	HMD-F	HM	HMF-2	3
110	3'-0"	7'-0"	HM	HMD-NG	HM	HMF-1	4

DOOR SCHEDULE NOTES

1. REPLACE DOOR AND FRAME IN EXISTING OPENING. FIELD VERIFY EXISTING OPENING AND ANY SIDELITE DIMENSIONS.
2. PAIR DOORS, PROVIDE FLUSH BOLT WITH ASTRAGAL UNLESS NOTED OTHERWISE.

HARDWARE GROUP 01
EXTERIOR DOUBLE DOOR

6 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	LOCKSET
1 EA	HOLD OPEN (INACTIVE DOOR)
1 EA	SURFACE CLOSER (ACTIVE DOOR)
2 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	FLUSH BOLT (TOP AND BOTTOM OF INACTIVE DOOR)
2 EA	DOOR SWEEPS
1 EA	ASTRAGAL
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED.

HARDWARE GROUP 02
INTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY
1 EA	LATCH SET
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE

FUNCTION: PASSAGE LATCH; LATCHBOLT RETRACTED BY LEVER FROM EITHER SIDE AT ALL TIMES.

HARDWARE GROUP 03
INTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY
1 EA	LOCKSET
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	THRESHOLD
1 EA	DOOR SWEEP
1 SET	WEATHERSTRIPPING

FUNCTION: CLASSROOM LOCK; OUTSIDE LEVER LOCKED OR UNLOCKED WITH A KEY. INSIDE LEVER ALWAYS UNLOCKED.

HARDWARE GROUP 04
EXTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	LOCKSET
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED.

HARDWARE GROUP 05
EXTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	EXIT DEVICE W/EXTERIOR LEVER
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. PANIC EXIT DEVICE ON UNSECURE SIDE.

HARDWARE GROUP 06
EXTERIOR DOUBLE DOOR

6 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	EXIT DEVICE W/EXTERIOR LEVER
1 EA	SURFACE CLOSER
1 EA	MULLION
2 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. PANIC EXIT DEVICE ON UNSECURE SIDE.

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6" 1' 2' 4' 6'
Graphic Scale for 1/4"=1'-0"

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MEAGAN MCCOLLOCH-VENCIL
LIC. NO. 59584 DATE 9/29/26

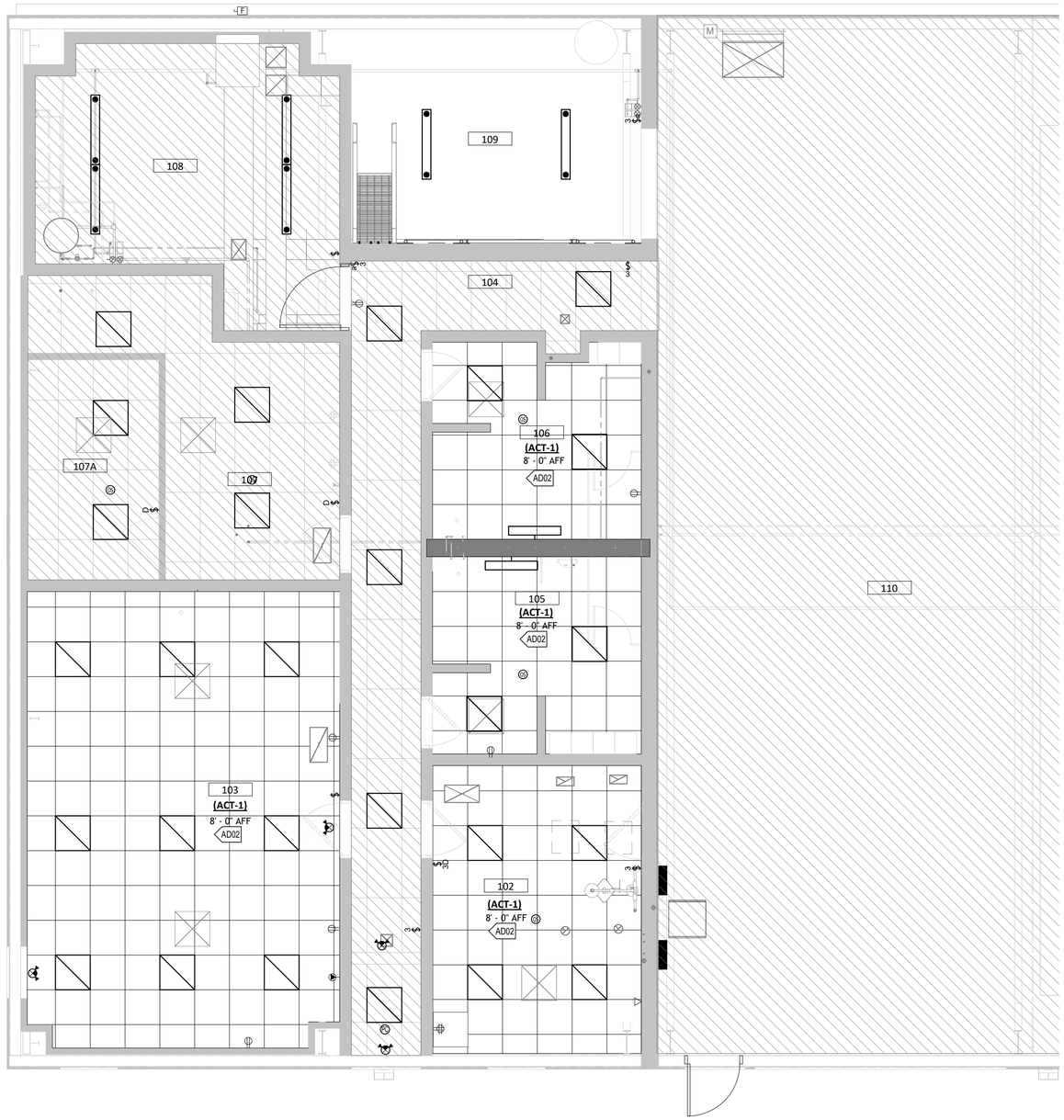
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ADMINISTRATIVE BUILDING - FLOOR PLAN

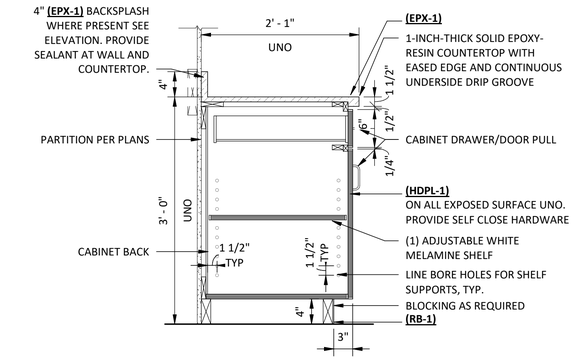
SHEET 4.06



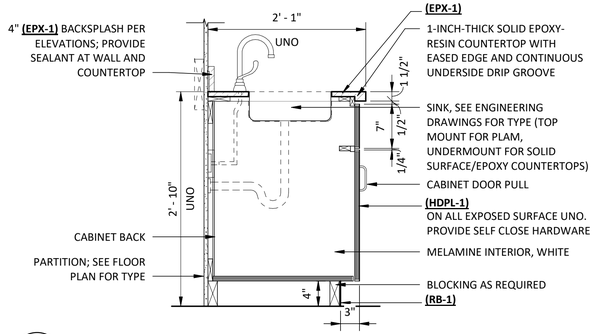
1 / 4.07 ADMINISTRATION BUILDING - REFLECTED CEILING PLAN LEVEL 1, AREA A
1/4" = 1'-0"

NORTH

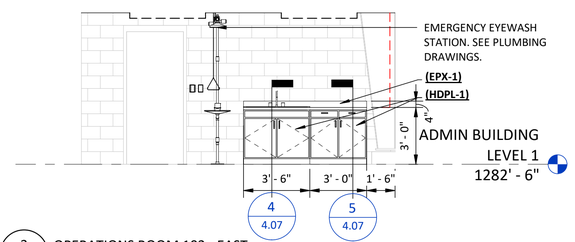
SCALE 1/4" = 1'-0" 0" 4' 8' FEET



5 / 4.07 SECTION - BASE WITH 1 DOOR/1 DRAWER
1" = 1'-0"



4 / 4.07 SECTION - BASE W/SINK
1" = 1'-0"



ADMIN BUILDING
LEVEL 1
1282' - 6"

3 / 4.07 OPERATIONS ROOM 102 - EAST
1/4" = 1'-0"

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

REFLECTED CEILING PLAN LEGEND

ACOUSTICAL CEILING TILE

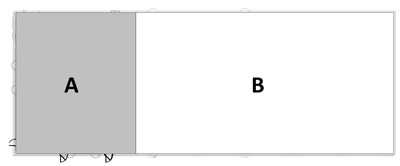
NO ARCHITECTURAL/INTERIORS SCOPE

Keynote Legend

Keynote	Description
AD02	REMOVE EXISTING ACOUSTICAL TILE CEILING SYSTEM IN ITS ENTIRETY. PREP SPACE FOR INSTALLATION OF NEW ACOUSTICAL CEILING TILE AND GRID SYSTEM. CAREFULLY REMOVE, SALVAGE, STORE AND PROTECT ANY EXISTING CEILING ELEMENTS WHICH ARE INTENDED TO BE REINSTALLED. SEE MECHANICAL AND ELECTRICAL FOR LOCATION OF CEILING MOUNTED ITEMS.

MATERIAL ID LEGEND

Code	Material
(ACT-1)	24" x 24" ACOUSTIC CEILING TILE
(EPX-1)	SOLID EPOXY RESIN, CHEMICAL-RESISTANT, NON-POROUS WORK SURFACE WITH INTEGRAL BACKSPLASH. COLOR SELECTED BY ARCHITECT FROM MFR'S STANDARD RANGE.
(HDPL-1)	HIGH-DENSITY, CHEMICAL-RESISTANT CASEWORK; COLOR SELECTED BY ARCHITECT FROM MFR'S STANDARD RANGE.
(RB-1)	4" HIGH RESILIENT WALL BASE; COLOR SELECTED BY ARCHITECT FROM MFR'S STANDARD RANGE.



2 / 4.07 ADMINISTRATION BUILDING - KEY PLAN
1/32" = 1'-0"

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Meagan Mccolloch-Vencil

MEAGAN MCCOLLOCH-VENCIL
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ADMINISTRATIVE BUILDING - RCP AND INTERIOR ELEVATIONS

SHEET 4.07

CODE SUMMARY ANALYSIS

2020 MINNESOTA CONSERVATION CODE

SECTION 602 ALTERATION - LEVEL 1
602.1 Scope. Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment or fixtures using new materials, elements, equipment or fixtures that serve the same purpose.

SECTION 704 MEANS OF EGRESS
704.1 General. Alterations shall be done in a manner that maintains the level of fire protection provided for the means of egress.

SECTION 705 REROOFING.
705.1 - General. Exception: Reroofing shall not be required to meet the minimum design slope requirement of 1/4 unit vertical in 12 unit horizontal in Section 1507 for roofs that provide positive roof drainage. Recovering ... shall not be required to meet the requirement for secondary (emergency overflow) drains ... for roofs that provide positive roof drainage.

705.3 Roof replacement. Roof replacement shall include the removal of all existing layers of roof coverings down to the roof deck.

705.3.1.1 A roof recover shall not be permitted where any of the following conditions occur:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is slate, clay, cement, asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

2020 MINNESOTA ACCESSIBILITY CODE FOR EXISTING BUILDINGS

305.3 Extent of application. An Alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction.

305.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the IBC unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

305.7 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities, parking facilities, and drinking fountains serving the area of primary function.
Exceptions:

1. The costs of providing the accessible route are not required to exceed 20% of the costs of the alterations affecting the area of primary function.

MN RULES 1303.1500

1303.1500 Recycling. Space must be provided for the collection, separation and temporary storage of recyclable materials within or adjacent to all new or significantly remodeled buildings or structures that contain 1,000 square feet or more. ***Work is not significant.**

2024 MINNESOTA STATE ENERGY CODE

MN ENERGY CODE PATHWAY: 2019 ASHRAE 90.1 AS AMENDED BY MN
CLIMATE ZONE: 6A

ROOF INSULATION ABOVE DECK	R-VALUE 30 CI MIN		U-0.032 MAX
OPAQUE DOORS SWINGING	U-0.370 MAX		
NONSWINGING	U-0.310 MAX		
FENESTRATION	ASSEMBLY	SHGC	VT/SHGC
FIXED	U-0.340	U-0.380	1.10

5.1.3 Envelope Alterations. Alterations to the building envelope shall comply with the requirements of Section 5 for insulation, air leakage and fenestration applicable to *those specific portions of the building* that are being altered.
Exception 9: Where insulation is provided **above the roof deck**, and the required R-value for a roof replacement cannot be provided because of existing structural capacity limitations or because of the **thickness limitations** that occur with the existing rooftop conditions, including heating ventilation, and air conditioning equipment curbs, low door or glazing heights, parapet heights, or **proper roof flashing heights**, **the maximum insulation compatible** with the available space and existing roof top conditions shall be installed, as approved by the building official. New insulation shall have the **highest R-value per inch available**, and in no case shall the R-value of the roof insulation be reduced or the U-factor of the roof assembly be increased as part of the roof replacement.

5.4.3.1.1 Whole-Building Air Leakage. Whole building pressurization testing shall be conducted in accordance with ASTM E779 or ASTM E1827 by an independent third party. The measured air leakage rate of the building envelope shall not exceed 0.40 cmf/ft^2 under a pressure differential of 0.3 inches of water, with this air leakage rate normalized by the sum of the above-grade and below-grade building envelope areas of the conditioned space and semiheated space.

2020 MINNESOTA STATE BUILDING CODE

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION (EXISTING)
SECTION 306 - Moderate-Hazard Factory Group F-1

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS
SECTION 503 General Building Height and Area Limitations
NOTE: Proposed work does not increase building square footage or height.

F-1 (MODERATE HAZARD INDUSTRIAL) MAIN LEVEL ***EXISTING**	1,782 SF
EXISTING TOTAL OCCUPIED SQUARE FOOTAGE	1,782 SF
EXISTING TOTAL BUILDING FOOTPRINT	1,960 SF

CHAPTER 10 - MEAN OF EGRESS
SECTION 1004 OCCUPANT LOAD
1004.1 Design Occupant Load
Table 1004.5 Maximum Floor Area Allowances per Occupant
Industrial l areas = 100 gross

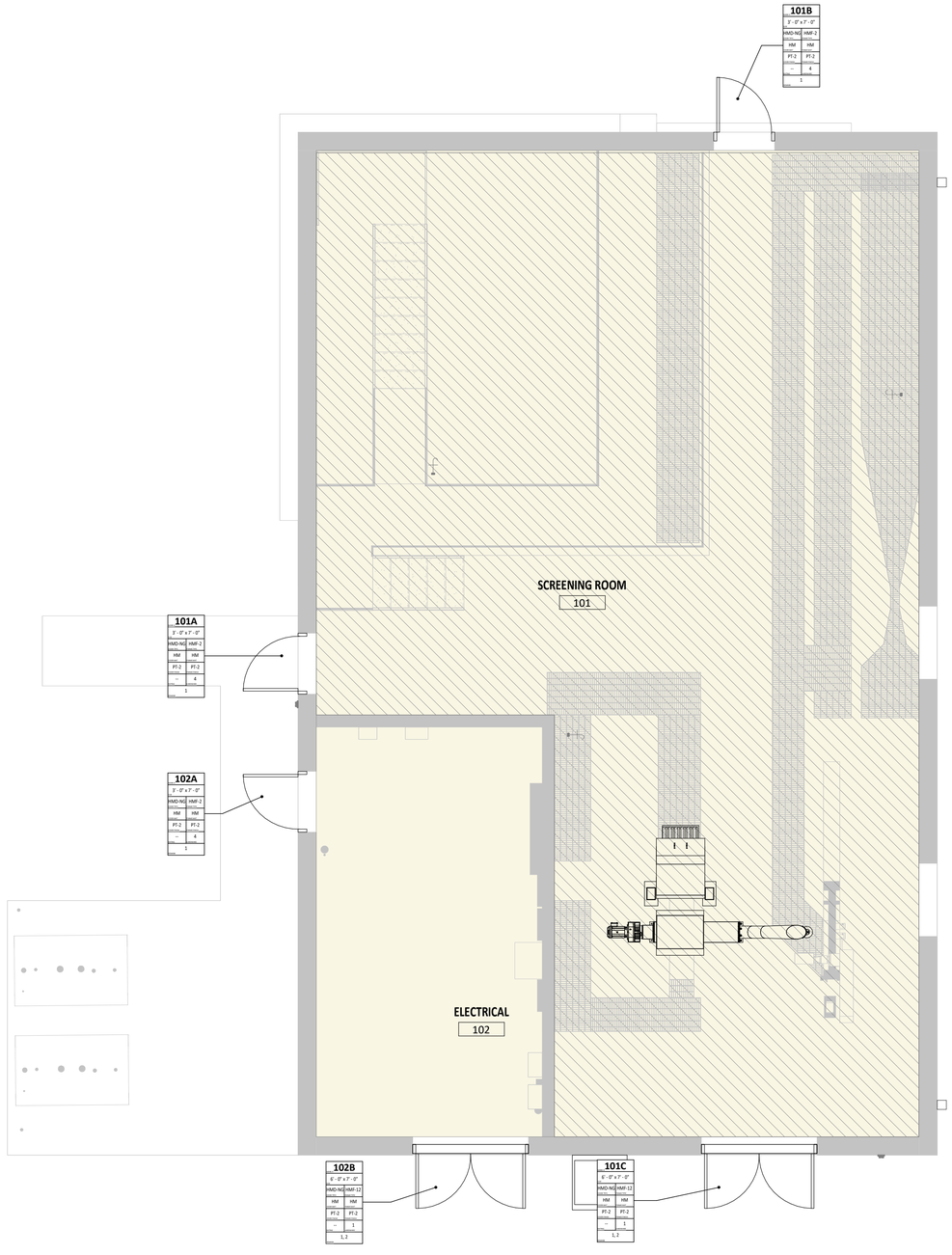
TOTAL BUILDING (GROSS) = 1,781 SF	OCCUPANT LOAD PER PLAN

SECTION 1005 Means of Egress Sizing
Table 1005.3.2 Other egress components (Without Sprinkler System)
Inches per occupant = 0.20 @ Egress Components (Doors)
Inches per occupant = 0.30 @ Stairways

SECTION 1009 Accessible Means of Egress
Exception 3: Accessible means of egress is not required for alterations to existing buildings.

SECTION 1017 Exit Access Travel Distance
Table 1017.2 Exit Access Travel Distance:
F-1 Occupancy, Maximum travel distance = 300'
(without sprinkler system)
EXISTING TO REMAIN

CHAPTER 29 - PLUMBING FIXTURES
**Existing plumbing fixtures to remain, no work proposed.*
**Proposed work does not affect occupant load.*



1 / 4.08 PRETREATMENT BUILDING - FLOOR PLAN LEVEL 1
1/4" = 1'-0"

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

DOOR SCHEDULE - PRETREATMENT

DOOR #	DOOR WIDTH	DOOR HEIGHT	DOOR MAT'L	DOOR TYPE	FRAME MAT'L	FRAME TYPE	HARDWARE GROUP
101A	3'-0"	7'-0"	HM	HMD-NG	HM	HMF-2	4
101B	3'-0"	7'-0"	HM	HMD-NG	HM	HMF-2	4
101C	6'-0"	7'-0"	HM	HMD-NG	HM	HMF-12	1
102A	3'-0"	7'-0"	HM	HMD-NG	HM	HMF-2	4
102B	6'-0"	7'-0"	HM	HMD-NG	HM	HMF-12	1

PLAN LEGEND

EXISTING WALLS TO REMAIN
NEW WALLS
NO ARCHITECTURAL/INTERIORS SCOPE

Keynote Legend

Keynote	Description

DOOR SCHEDULE NOTES

1. REPLACE DOOR AND FRAME IN EXISTING OPENING. FIELD VERIFY EXISTING OPENING AND ANY SIDELITE DIMENSIONS.
2. PAIR DOORS, PROVIDE FLUSH BOLT WITH ASTRAGAL UNLESS NOTED OTHERWISE.

HARDWARE GROUP 01
EXTERIOR DOUBLE DOOR

6 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	LOCKSET
1 EA	HOLD OPEN (INACTIVE DOOR)
1 EA	SURFACE CLOSER (ACTIVE DOOR)
2 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	FLUSH BOLT (TOP AND BOTTOM OF INACTIVE DOOR)
2 EA	DOOR SWEEPS
1 EA	ASTRAGAL
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED.

HARDWARE GROUP 03
INTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY
1 EA	LOCKSET
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	THRESHOLD
1 EA	DOOR SWEEP
1 SET	WEATHERSTRIPPING

FUNCTION: CLASSROOM LOCK; OUTSIDE LEVER LOCKED OR UNLOCKED WITH A KEY. INSIDE LEVER ALWAYS UNLOCKED.

HARDWARE GROUP 06
EXTERIOR DOUBLE DOOR

6 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	EXIT DEVICE W/EXTERIOR LEVER
1 EA	SURFACE CLOSER
1 EA	MULLION
2 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. PANIC EXIT DEVICE ON UNSECURE SIDE.

HARDWARE GROUP 02
INTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY
1 EA	LATCH SET
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE

FUNCTION: PASSAGE LATCH; LATCHBOLT RETRACTED BY LEVER FROM EITHER SIDE AT ALL TIMES.

HARDWARE GROUP 04
EXTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	LOCKSET
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED.

HARDWARE GROUP 05
EXTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	EXIT DEVICE W/EXTERIOR LEVER
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. PANIC EXIT DEVICE ON UNSECURE SIDE.

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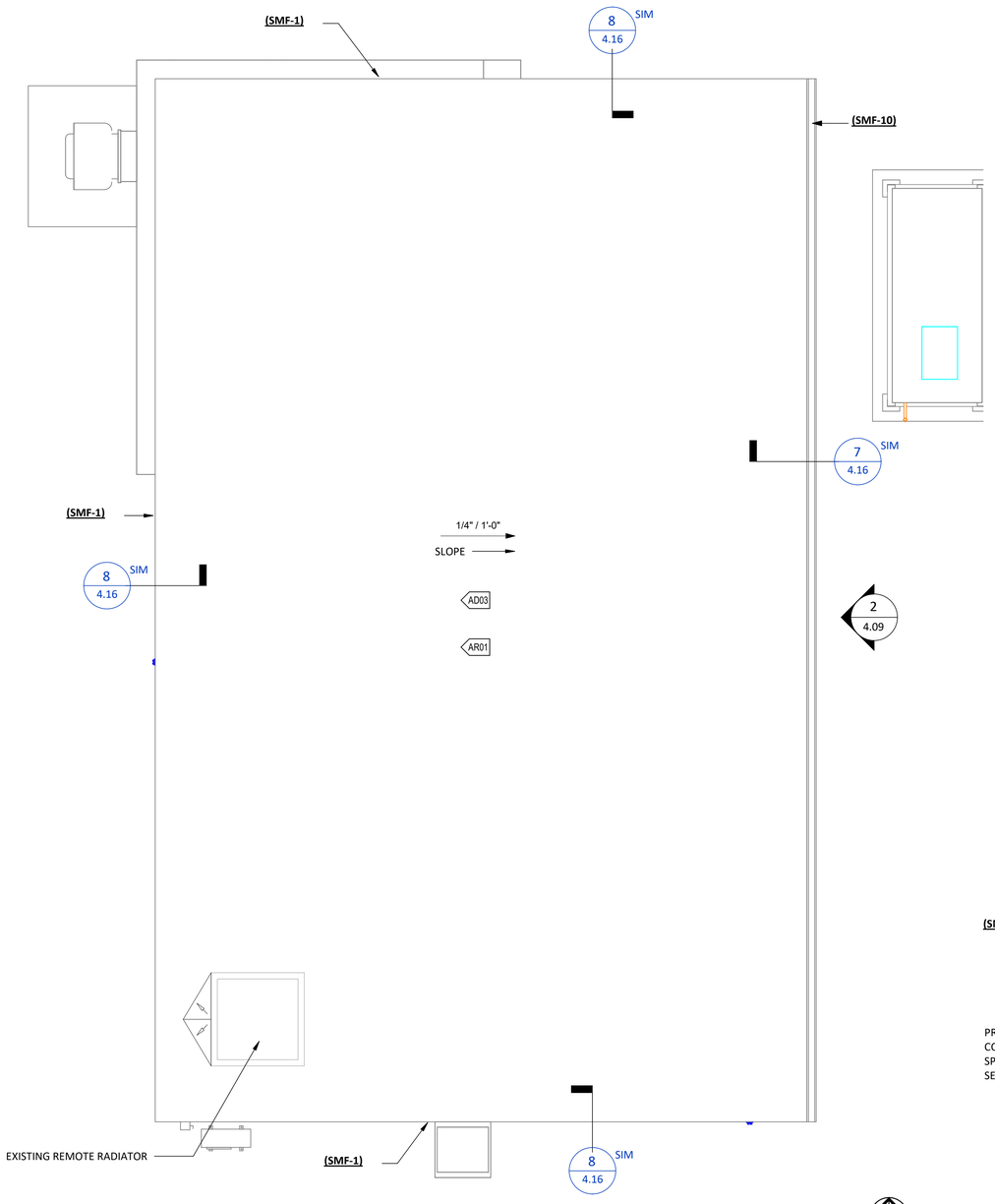
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PRETREATMENT BUILDING - CODE ANALYSIS & FLOOR PLAN

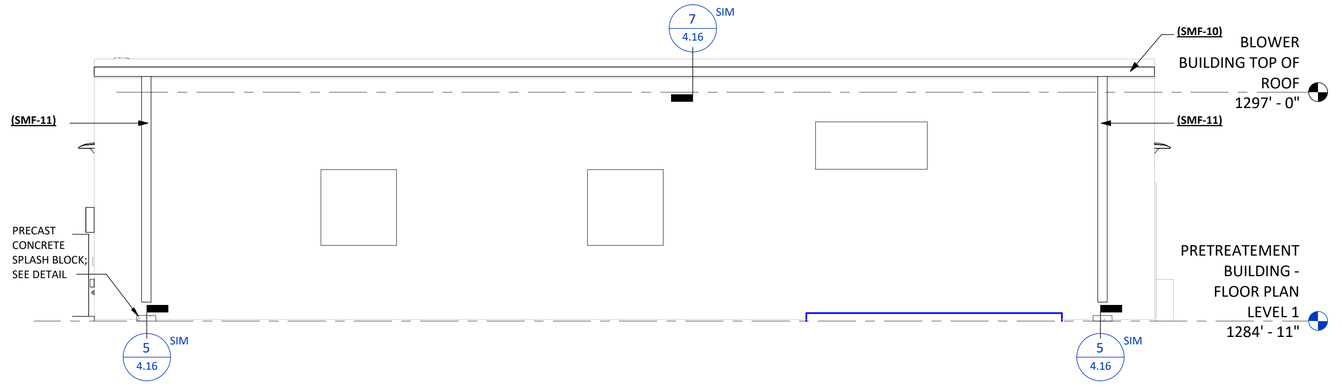
SHEET 4.08



1 4.09 PRETREATMENT BUILDING - ROOF PLAN
1/4" = 1'-0"

NORTH

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



2 4.09 PRETREATMENT BUILDING - EAST
1/4" = 1'-0"

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

ROOF PLAN GENERAL NOTES

1. INSTALL ROOFING IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS TO ACHIEVE SPECIFED WARRANTY.
2. FOLLOW MANUFACTURER'S STANDARD INSTALLATION DETAILS AND REQUIREMENTS AT ALL CONDITIONS NOT SPECIFICALLY DETAILED BY ARCHITECT.
3. SEE MECHANICAL, ELECTRICAL, PLUMBING AND STRUCTURAL DRAWINGS ADDITIONAL INFORMATION REGARDING ROOFTOP EQUIPMENT AND FOR PENETRATIONS NOT INDICATED ON THIS DRAWINGS.
4. CONTRACTOR SHALL ACCOUNT FOR ALL FIELD CONDITIONS THAT COULD AFFECT DRAINAGE OF ROOF SURFACES TO ACHIEVE INTENDED DRAINAGE.
5. PROVIDE CRICKETS WHERE NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
6. ENSURE ALL EXISTING VENTS, EXHAUST FANS, SUPPORTS AND OTHER ITEMS THAT PENETRATE ROOF MAINTAIN ADEQUATE CLEARANCE ABOVE FINISHED SURFACE OF ROOFING MEMBRANE. MODIFY ANY PENETRATIONS THAT DO NOT MEET MINIMUM CLEARANCE REQUIREMENTS.
7. EXISTING ROOF DECK ELEVATIONS AND DRAINAGE PATTERNS SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF TAPERED INSULATION.

Keynote Legend

Keynote	Description
AD03	REMOVE EXISTING MEMBRANE ROOFING SYSTEM, BALLAST, INSULATION, METAL GUTTERS AND DOWNSPOUT, SHEET METAL FLASHING AND GRAVEL STOP; PREP ROOF STRUCTURE FOR INSTALLATION OF NEW MEMBRANE ROOFING AND INSULATION SYSTEM.
AR01	ENSURE ALL VENTS, EXHAUST FANS, SUPPORTS AND OTHER ITEMS THAT PENETRATE ROOF MAINTAIN ADEQUATE CLEARANCE ABOVE FINISHED SURFACE OF NEW ROOFING MEMBRANE.

MATERIAL ID LEGEND

Code	Material
(SMF-1)	PREFINISHED GALVANIZED STEEL FLASHING, 20 GA, COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(SMF-10)	PREFINISHED GALVANIZED STEEL ROOF GUTTER, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(SMF-11)	GUTTER DOWNSPOUT, PREFINISHED GALVANIZED STEEL, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.

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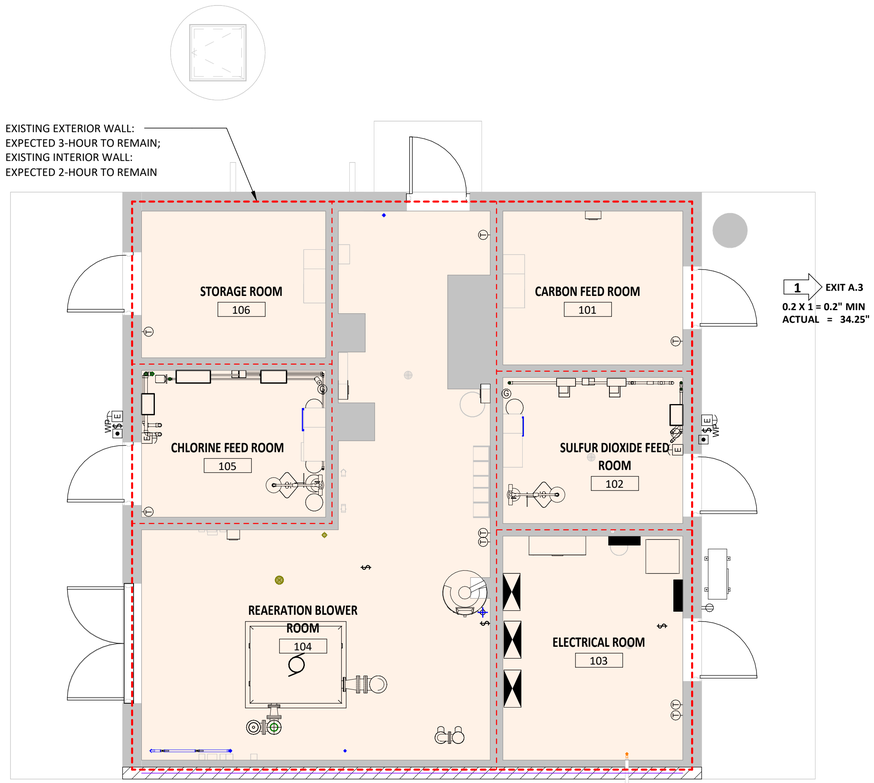
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PRETREATMENT BUILDING - ROOF PLAN AND ELEVATION

SHEET 4.09

CHEMICAL ROOM CODE REVIEW

CHEMICAL NAME	CHEMICAL NAME	CHEMICAL CLASS	MAXIMUM BULK STORAGE	MAXIMUM ALLOWABLE QUANTITIES - Table 307.1.(1) - MEASURED IN SOLID (POUNDS), LIQUID (GALLONS), GAS (CUBIC FEET)							
				STORAGE			USE - CLOSED SYSTEM			GROUP IF EXCEEDED	EXCEEDS
				SOLID	LIQUID	GAS	SOLID	LIQUID	GAS		
CHLORINE	CHLORINE LIQUID	CLASS 3 OXIDIZER (NOTES E,G, K)	1,015 GALLONS (*ETR)	220	22	(N/A)	220	22	(N/A)	H-2	YES
SULFUR DIOXIDE	- - -	CLASS 3 OXIDIZER	250 GALLONS (*ETR)	220	22	(N/A)	220	22	(N/A)	H-2	NO

D. MAXIMUM ALLOWABLE QUANTITIES SHALL BE INCREASED 100% IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1.
E. MAXIMUM ALLOWABLE QUANTITIES SHALL BE INCREASED 100% WHEN STORED IN APPROVED STORAGE CABINETS, DAY BOXES, OR EXHAUSTED ENCLOSURES IN ACCORDANCE WITH SECTION 5003.9.10 OF THE INTERNATIONAL FIRE CODE.
* WHERE BOTH D & E APPLY, THE INCREASE SHALL BE APPLIED ACCUMULATIVELY.
G. ALLOWED ONLY IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1.
K. A MAXIMUM QUANTITY OF 220 POUNDS OF SOLID OR 22 GALLONS OF LIQUID CLASS 3 OXIDIZERS IS ALLOWED WHEN SUCH MATERIALS ARE NECESSARY FOR MAINTENANCE PURPOSES, OPERATION OR SANITATION OF EQUIPMENT WHEN THE STORAGE CONTAINERS AND THE MANNER OF STORAGE ARE APPROVED.



1 / 4.10 DISINFECTION BUILDING
1/4" = 1'-0"

CODE SUMMARY ANALYSIS

2020 MINNESOTA CONSERVATION CODE

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602.1 Scope. Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment or fixtures using new materials, elements, equipment or fixtures that serve the same purpose.

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703.1 General. Alterations shall be done in a manner that maintains the level of fire protection provided.

SECTION 704 MEANS OF EGRESS
704.1 General. Alterations shall be done in a manner that maintains the level of fire protection provided for the means of egress.

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705.1 - General. Exception: Reroofing shall not be required to meet the minimum design slope requirement of 1/4 unit vertical in 12 unit horizontal in Section 1507 for roofs that provide positive roof drainage. Recovering ... shall not be required to meet the requirement for secondary (emergency overflow) drains ... for roofs that provide positive roof drainage.

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3. Where the existing roof has two or more applications of any type of roof covering.

2024 MINNESOTA STATE ENERGY CODE

MN ENERGY CODE PATHWAY: 2019 ASHRAE 90.1 AS AMENDED BY MN
CLIMATE ZONE: 6A

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OPAQUE DOORS SWINGING	U-0.370 MAX		
NONSWINGING	U-0.310 MAX		
FENESTRATION	ASSEMBLY	SHGC	VT/SHGC
FIXED	U-0.340	U-0.380	1.10

5.1.3 Envelope Alterations. Alterations to the building envelope shall comply with the requirements of Section 5 for insulation, air leakage and fenestration applicable to *those specific portions of the building* that are being altered.
Exception 9: Where insulation is provided **above the roof deck**, and the required R-value for a roof replacement cannot be provided because of existing structural capacity limitations or because of the **thickness limitations** that occur with the existing rooftop conditions, including heating ventilation, and air conditioning equipment curbs, low door or glazing heights, parapet heights, or **proper roof flashing heights**, **the maximum insulation compatible** with the available space and existing roof top conditions shall be installed, as approved by the building official. New insulation shall have the **highest R-value per inch available**, and in no case shall the R-value of the roof insulation be reduced or the U-factor of the roof assembly be increased as part of the roof replacement.

5.4.3.1.1 Whole-Building Air Leakage. Whole building pressurization testing shall be conducted in accordance with ASTM E779 or ASTM E1827 by an independent third party. The measured air leakage rate of the building envelope shall not exceed 0.40 cmf/ft^2 under a pressure differential of 0.3 inches of water, with this air leakage rate normalized by the sum of the above-grade and below-grade building envelope areas of the conditioned space and semiheated space.

MN RULES 1303.1500

1303.1500 Recycling. Space must be provided for the collection, separation and temporary storage of recyclable materials within or adjacent to all new or significantly remodeled buildings or structures that contain 1,000 square feet or more. ***Work is not significant.**

2020 MINNESOTA ACCESSIBILITY CODE FOR EXISTING BUILDINGS

305.3 Extent of application. An Alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction.

305.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the IBC unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

2020 MINNESOTA ACCESSIBILITY CODE

1103.2.9 - EQUIPMENT SPACES. Spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment are not required to comply with this chapter.

2020 MINNESOTA STATE BUILDING CODE

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION (EXISTING)
SECTION 307 - High Hazard H

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS
SECTION 503 General Building Height and Area Limitations
Existing Construction Type II-B - Not Sprinkled
Occupancy Group H
*Table 504.3 and 504.4 Allowable Height and Stories = 55' (1 story)
*Table 506.2 Allowable Area = 7,000 SF
NOTE: Proposed work does not increase building square footage, height, or occupant load.

H-2 (HAZARD GROUP) ***EXISTING**	829 SF
EXISTING TOTAL BUILDING OCCUPIED SQUARE FOOTAGE	751 SF
EXISTING TOTAL BUILDING FOOTPRINT	948 SF

CHAPTER 10 - MEAN OF EGRESS
SECTION 1004 OCCUPANT LOAD
1004.1 Design Occupant Load
Table 1004.5 Maximum Floor Area Allowances per Occupant
Equipment & mechanical areas = 300 gross

TOTAL BUILDING (GROSS) = 751 SF	OCCUPANT LOAD = SEE PLAN

SECTION 1005 Means of Egress Sizing
Table 1005.3.2 Other egress components (Without Sprinkler System)
Inches per occupant = 0.20 @ Egress Components (Doors)
Inches per occupant = 0.30 @ Stairways

SECTION 1009 Accessible Means of Egress
Exception 3: Accessible means of egress is not required for alterations to existing buildings.

SECTION 1017 Exit Access Travel Distance
Table 1017.2 Exit Access Travel Distance:
H-2 Occupancy, Maximum travel distance = 100' (without sprinkler system)
EXISTING TO REMAIN

CHAPTER 29 - PLUMBING FIXTURES
**Existing plumbing fixtures to remain, no work proposed.*
**Proposed work does not affect occupant load.*

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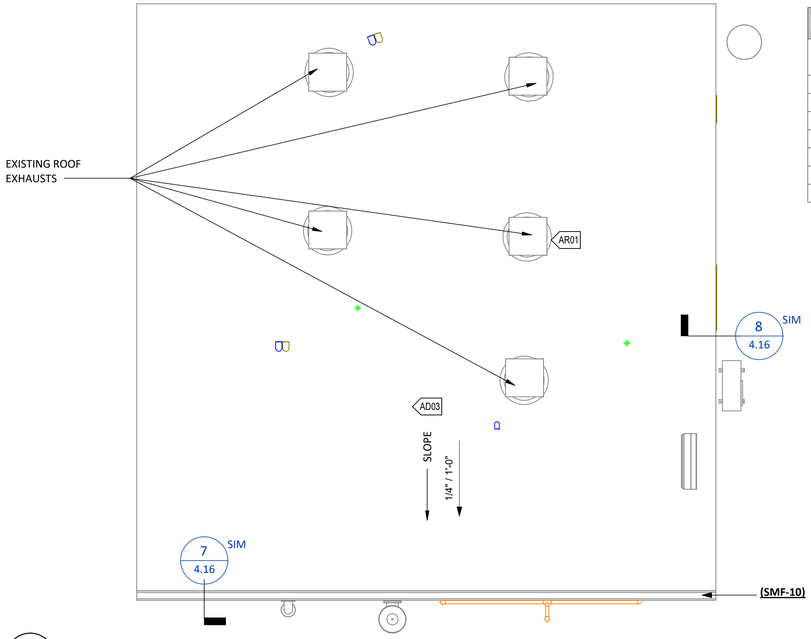
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CLIENT PROJ. NO. 0M2.131536

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0	BID	9-29-26

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
DISINFECTION BUILDING - CODE ANALYSIS & REFERENCE PLAN

SHEET 4.10



1 / 4.11 DISINFECTION BUILDING - ROOF PLAN
1/4" = 1'-0"

DOOR SCHEDULE - DISINFECTION

DOOR #	DOOR WIDTH	DOOR HEIGHT	DOOR MAT'L	DOOR TYPE	FRAME MAT'L	FRAME TYPE	HARDWARE GROUP
101	3'-0"	7'-0"	HM	HMD-HG	HM	HMF-2	5
102	3'-0"	7'-0"	HM	HMD-HG	HM	HMF-2	5
103	3'-0"	7'-0"	HM	HMD-NG	HM	HMF-2	4
104A	3'-0"	7'-0"	HM	HMD-NG	HM	HMF-2	5
104B	6'-0"	7'-0"	HM	HMD-NG	HM	HMF-12	1
105	3'-0"	7'-0"	HM	HMD-HG	HM	HMF-2	5
106	3'-0"	7'-0"	HM	HMD-HG	HM	HMF-2	5

DOOR SCHEDULE NOTES

1. REPLACE DOOR AND FRAME IN EXISTING OPENING. FIELD VERIFY EXISTING OPENING AND ANY SIDELITE DIMENSIONS.
2. PAIR DOORS, PROVIDE FLUSH BOLT WITH ASTRAGAL UNLESS NOTED OTHERWISE.

HARDWARE GROUP 01
EXTERIOR DOUBLE DOOR

6 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	LOCKSET
1 EA	HOLD OPEN (INACTIVE DOOR)
1 EA	SURFACE CLOSER (ACTIVE DOOR)
2 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	FLUSH BOLT (TOP AND BOTTOM OF INACTIVE DOOR)
2 EA	DOOR SWEEPS
1 EA	ASTRAGAL
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED.

HARDWARE GROUP 02
INTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY
1 EA	LATCH SET
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE

FUNCTION: PASSAGE LATCH; LATCHBOLT RETRACTED BY LEVER FROM EITHER SIDE AT ALL TIMES.

HARDWARE GROUP 03
INTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY
1 EA	LOCKSET
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	THRESHOLD
1 EA	DOOR SWEEP
1 SET	WEATHERSTRIPPING

FUNCTION: CLASSROOM LOCK; OUTSIDE LEVER LOCKED OR UNLOCKED WITH A KEY. INSIDE LEVER ALWAYS UNLOCKED.

HARDWARE GROUP 04
EXTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	LOCKSET
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED.

HARDWARE GROUP 05
EXTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	EXIT DEVICE W/EXTERIOR LEVER
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. PANIC EXIT DEVICE ON UNSECURE SIDE.

HARDWARE GROUP 06
EXTERIOR DOUBLE DOOR

6 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	EXIT DEVICE W/EXTERIOR LEVER
1 EA	SURFACE CLOSER
1 EA	MULLION
2 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. PANIC EXIT DEVICE ON UNSECURE SIDE.

ROOF PLAN GENERAL NOTES

1. INSTALL ROOFING IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS TO ACHIEVE SPECIFED WARRANTY.
2. FOLLOW MANUFACTURER'S STANDARD INSTALLATION DETAILS AND REQUIREMENTS AT ALL CONDITIONS NOT SPECIFICALLY DETAILED BY ARCHITECT.
3. SEE MECHANICAL, ELECTRICAL, PLUMBING AND STRUCTURAL DRAWINGS ADDITIONAL INFORMATION REGARDING ROOFTOP EQUIPMENT AND FOR PENETRATIONS NOT INDICATED ON THIS DRAWINGS.
4. CONTRACTOR SHALL ACCOUNT FOR ALL FIELD CONDITIONS THAT COULD AFFECT DRAINAGE OF ROOF SURFACES TO ACHIEVE INTENDED DRAINAGE.
5. PROVIDE CRICKETS WHERE NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
6. ENSURE ALL EXISTING VENTS, EXHAUST FANS, SUPPORTS AND OTHER ITEMS THAT PENETRATE ROOF MAINTAIN ADEQUATE CLEARANCE ABOVE FINISHED SURFACE OF ROOFING MEMBRANE. MODIFY ANY PENETRATIONS THAT DO NOT MEET MINIMUM CLEARANCE REQUIREMENTS.
7. EXISTING ROOF DECK ELEVATIONS AND DRAINAGE PATTERNS SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF TAPERED INSULATION.

PLAN LEGEND

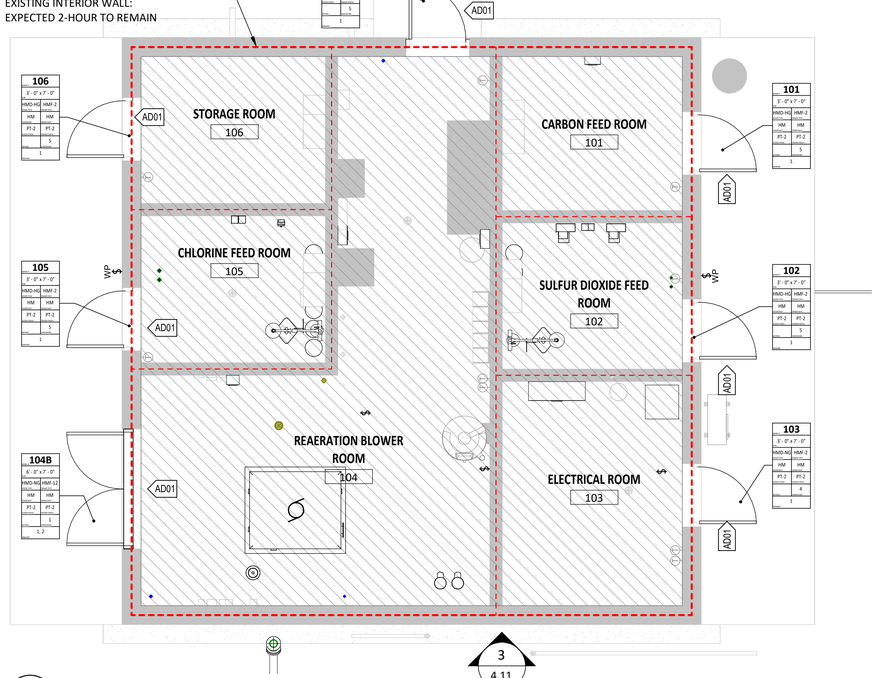
- EXISTING WALLS TO REMAIN
- NEW WALLS
- NO ARCHITECTURAL/INTERIORS SCOPE

Keynote Legend

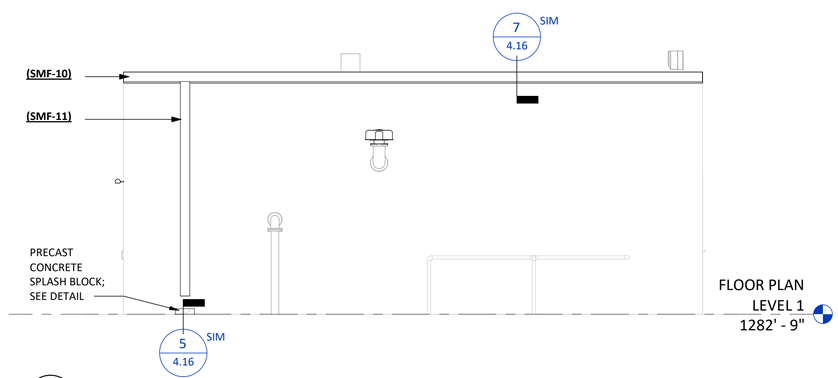
Keynote	Description
AD01	REMOVE EXISTING DOOR AND FRAME. FRAMED OPENING TO REMAIN AS IS TO RECIEVE NEW DOOR, FRAME, AND DOOR HARDWARE.
AD03	REMOVE EXISTING MEMBRANE ROOFING SYSTEM, BALLAST, INSULATION, METAL GUTTERS AND DOWNSPOUT, SHEET METAL FLASHING AND GRAVEL STOP; PREP ROOF STRUCTURE FOR INSTALLATION OF NEW MEMBRANE ROOFING AND INSULATION SYSTEM.
AR01	ENSURE ALL VENTS, EXHAUST FANS, SUPPORTS AND OTHER ITEMS THAT PENETRATE ROOF MAINTAIN ADEQUATE CLEARANCE ABOVE FINISHED SURFACE OF NEW ROOFING MEMBRANE.

MATERIAL ID LEGEND

Code	Material
(SMF-10)	PREFINISHED GALVANIZED STEEL ROOF GUTTER, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(SMF-11)	GUTTER DOWNSPOUT, PREFINISHED GALVANIZED STEEL, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.



2 / 4.11 DISINFECTION BUILDING - FLOOR PLAN LEVEL 1
1/4" = 1'-0"



3 / 4.11 DISINFECTION BUILDING - SOUTH
1/4" = 1'-0"

6" 1' 2' 4' 6'
Graphic Scale for 1/4"=1'-0"

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LIC. NO. 59584 DATE 9/29/26

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
DISINFECTION BUILDING - FLOOR PLAN, ROOF PLAN AND ELEVATION

SHEET 4.11

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DOOR SCHEDULE - BLOWER BUILDING

	DOOR				FRAME		HARDWARE
DOOR #	WIDTH	HEIGHT	MAT'L	TYPE	MAT'L	TYPE	GROUP
101A	3'-0"	7'-0"	HM	HMD-NG	HM	HMF-2	5
101B	6'-0"	7'-0"	HM	HMD-NG	HM	HMF-12	6

DOOR SCHEDULE NOTES

1. REPLACE DOOR AND FRAME IN EXISTING OPENING. FIELD VERIFY EXISTING OPENING AND ANY SIDELITE DIMENSIONS.
2. PAIR DOORS, PROVIDE FLUSH BOLT WITH ASTRAGAL UNLESS NOTED OTHERWISE.

HARDWARE GROUP 05
EXTERIOR SINGLE DOOR

3 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	EXIT DEVICE W/EXTERIOR LEVER
1 EA	SURFACE CLOSER
1 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. PANIC EXIT DEVICE ON UNSECURE SIDE.

HARDWARE GROUP 06
EXTERIOR DOUBLE DOOR

6 EA	BUTT HINGES, STAINLESS STEEL, HEAVY DUTY, NON-REMOVEABLE PIN
1 EA	EXIT DEVICE W/EXTERIOR LEVER
1 EA	SURFACE CLOSER
1 EA	MULLION
2 EA	10" KICK PLATE
1 EA	RAIN DRIP
1 SET	WEATHERSTRIPPING
1 EA	DOOR SWEEP
1 EA	THRESHOLD, THERMALLY BROKEN

FUNCTION: STOREROOM LOCK; OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. PANIC EXIT DEVICE ON UNSECURE SIDE.



1 / 4.12 BLOWER/DIGESTER BUILDING - FLOOR PLAN LEVEL 1
1/4" = 1'-0"

CODE SUMMARY ANALYSIS

2024 MINNESOTA STATE ENERGY CODE

MN ENERGY CODE PATHWAY: 2019 ASHRAE 90.1 AS AMENDED BY MN
CLIMATE ZONE: 6A

ROOF INSULATION ABOVE DECK	R-VALUE 30 CI MIN		U-0.032 MAX
OPAQUE DOORS SWINGING	U-0.370 MAX		
NONSWINGING	U-0.310 MAX		
FENESTRATION	ASSEMBLY	SHGC	VT/SHGC
FIXED	U-0.340	U-0.380	1.10

5.1.3 Envelope Alterations. Alterations to the building envelope shall comply with the requirements of Section 5 for insulation, air leakage and fenestration applicable to *those specific portions of the building* that are being altered.
Exception 9: Where insulation is provided **above the roof deck**, and the required R-value for a roof replacement cannot be provided because of existing structural capacity limitations or because of the **thickness limitations** that occur with the existing rooftop conditions, including heating ventilation, and air conditioning equipment curbs, low door or glazing heights, parapet heights, or **proper roof flashing heights**, **the maximum insulation compatible** with the available space and existing roof top conditions shall be installed, as approved by the building official. New insulation shall have the **highest R-value per inch available**, and in no case shall the R-value of the roof insulation be reduced or the U-factor of the roof assembly be increased as part of the roof replacement.

5.4.3.1.1 Whole-Building Air Leakage. Whole building pressurization testing shall be conducted in accordance with ASTM E779 or ASTM E1827 by an independent third party. The measured air leakage rate of the building envelope shall not exceed 0.40 cmf/ft^2 under a pressure differential of 0.3 inches of water, with this air leakage rate normalized by the sum of the above-grade and below-grade building envelope areas of the conditioned space and semiheated space.

2020 MINNESOTA STATE BUILDING CODE

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION (EXISTING)
SECTION 306 - Moderate-Hazard Factory Group F-1

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS
SECTION 503 General Building Height and Area Limitations
NOTE: Proposed work does not increase building square footage or height.

F-1 (MODERATE HAZARD INDUSTRIAL) MAIN LEVEL***EXISTING***	1,446 SF
EXISTING TOTAL OCCUPIED SQUARE FOOTAGE	1,446 SF
EXISTING TOTAL BUILDING FOOTPRINT	1,618 SF

CHAPTER 10 - MEAN OF EGRESS
SECTION 1004 OCCUPANT LOAD
1004.1 Design Occupant Load
Table 1004.5 Maximum Floor Area Allowances per Occupant
Industrial areas = 100 gross

TOTAL BUILDING (GROSS) = 1,446 SF	OCCUPANT LOAD PER PLAN

SECTION 1005 Means of Egress Sizing
Table 1005.3.2 Other egress components (Without Sprinkler System)
Inches per occupant = 0.20 @ Egress Components (Doors)
Inches per occupant = 0.30 @ Stairways

SECTION 1009 Accessible Means of Egress
Exception 3: Accessible means of egress is not required for alterations to existing buildings.

SECTION 1017 Exit Access Travel Distance
Table 1017.2 Exit Access Travel Distance:
F-1 Occupancy, Maximum travel distance = 300' (without sprinkler system)
EXISTING TO REMAIN

CHAPTER 29 - PLUMBING FIXTURES
**Existing plumbing fixtures to remain, no work proposed.*
**Proposed work does not affect occupant load.*

2020 MINNESOTA CONSERVATION CODE

SECTION 602 ALTERATION - LEVEL 1
602.1 Scope. Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment or fixtures using new materials, elements, equipment or fixtures that serve the same purpose.

SECTION 704 MEANS OF EGRESS
704.1 General. Alterations shall be done in a manner that maintains the level of fire protection provided for the means of egress.

SECTION 705 REROOFING.
705.1 - General. Exception: Reroofing shall not be required to meet the minimum design slope requirement of 1/4 unit vertical in 12 unit horizontal in Section 1507 for roofs that provide positive roof drainage. Recovering ... shall not be required to meet the requirement for secondary (emergency overflow) drains ... for roofs that provide positive roof drainage.

705.3 Roof replacement. Roof replacement shall include the removal of all existing layers of roof coverings down to the roof deck.

705.3.1.1 A roof recover shall not be permitted where any of the following conditions occur:
1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is slate, clay, cement, asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

2020 MINNESOTA ACCESSIBILITY CODE FOR EXISTING BUILDINGS

305.3 Extent of application. An Alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction.

305.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the IBC unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

305.7 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities, parking facilities, and drinking fountains serving the area of primary function.
Exceptions:
1. The costs of providing the accessible route are not required to exceed 20% of the costs of the alterations affecting the area of primary function.

MN RULES 1303.1500

1303.1500 Recycling. Space must be provided for the collection, separation and temporary storage of recyclable materials within or adjacent to all new or significantly remodeled buildings or structures that contain 1,000 square feet or more. ***Work is not significant.**

Keynote Legend

Keynote	Description
AD01	REMOVE EXISTING DOOR AND FRAME. FRAMED OPENING TO REMAIN AS IS TO RECIEVE NEW DOOR, FRAME, AND DOOR HARDWARE.

PLAN LEGEND

- EXISTING WALLS TO REMAIN
- NEW WALLS
- NO ARCHITECTURAL/INTERIORS SCOPE

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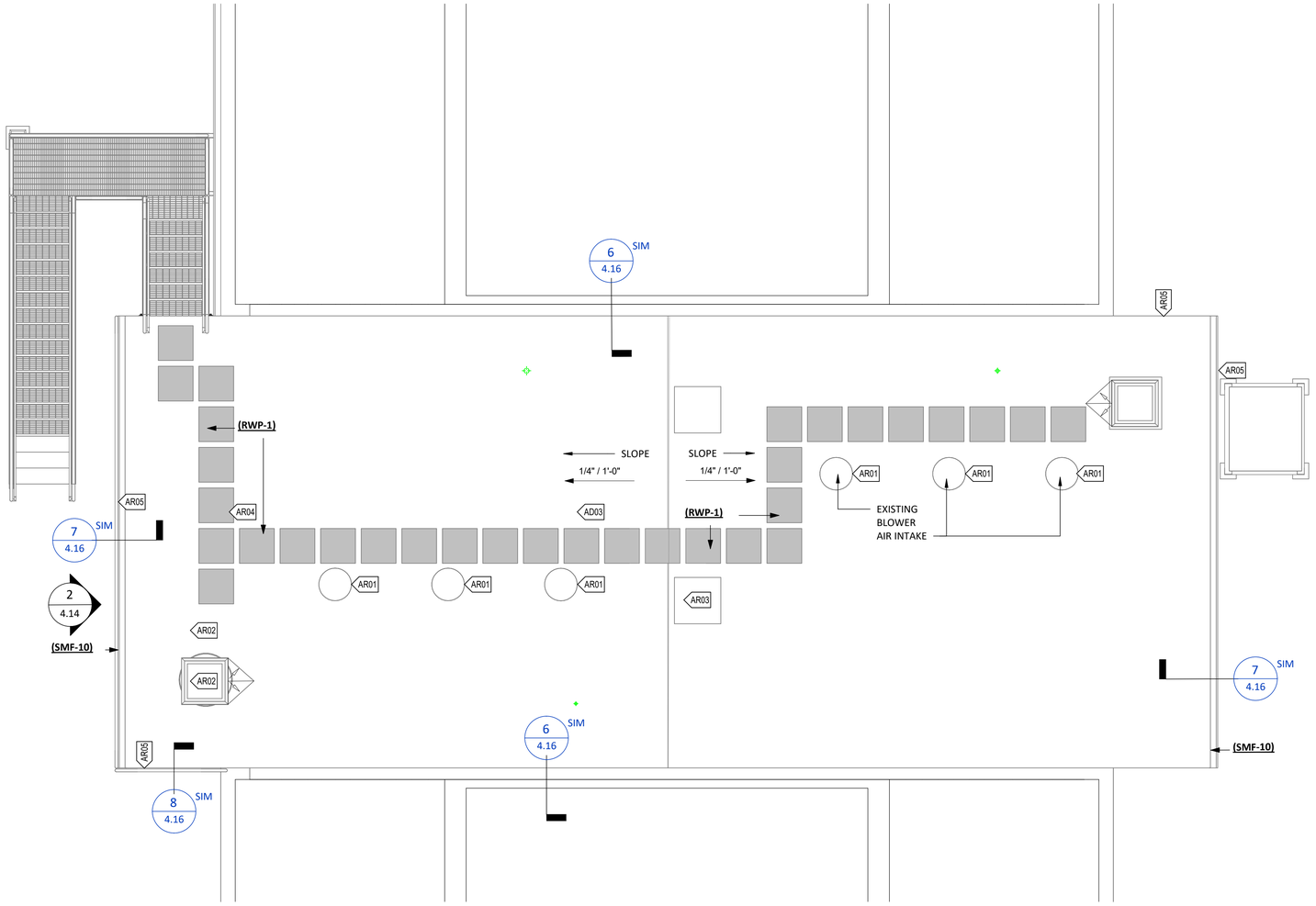
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
BLOWER/DIGESTER BUILDING - CODE ANALYSIS & FLOOR PLAN

SHEET 4.12



3 / 4.13 BLOWER/DIGESTER BUILDING - ROOF PLAN
1/4" = 1'-0"

ROOF PLAN GENERAL NOTES

1. INSTALL ROOFING IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS TO ACHIEVE SPECIFED WARRANTY.
2. FOLLOW MANUFACTURER'S STANDARD INSTALLATION DETAILS AND REQUIREMENTS AT ALL CONDITIONS NOT SPECIFICALLY DETAILED BY ARCHITECT.
3. SEE MECHANICAL, ELECTRICAL, PLUMBING AND STRUCTURAL DRAWINGS ADDITIONAL INFORMATION REGARDING ROOFTOP EQUIPMENT AND FOR PENETRATIONS NOT INDICATED ON THIS DRAWINGS.
4. CONTRACTOR SHALL ACCOUNT FOR ALL FIELD CONDITIONS THAT COULD AFFECT DRAINAGE OF ROOF SURFACES TO ACHIEVE INTENDED DRAINAGE.
5. PROVIDE CRICKETS WHERE NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
6. ENSURE ALL EXISTING VENTS, EXHAUST FANS, SUPPORTS AND OTHER ITEMS THAT PENETRATE ROOF MAINTAIN ADEQUATE CLEARANCE ABOVE FINISHED SURFACE OF ROOFING MEMBRANE. MODIFY ANY PENETRATIONS THAT DO NOT MEET MINIMUM CLEARANCE REQUIREMENTS.
7. EXISTING ROOF DECK ELEVATIONS AND DRAINAGE PATTERNS SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF TAPERED INSULATION.

MATERIAL ID LEGEND

Code	Material
(RWP-1)	2'-0" X 2'-0" RUBBER ROOF WALKWAY PAD. PROVIDE AT DESIGNATED MAINTENANCE ACCESS ROUTES AND ROOFTOP EQUIPMENT SERVICE LOCATIONS. INSTALL PER ROOFING MANUFACTURER'S REQUIREMENTS.
(SMF-10)	PREFINISHED GALVANIZED STEEL ROOF GUTTER, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.

Keynote Legend

Keynote	Description
AD03	REMOVE EXISTING MEMBRANE ROOFING SYSTEM, BALLAST, INSULATION, METAL GUTTERS AND DOWNSPOUT, SHEET METAL FLASHING AND GRAVEL STOP; PREP ROOF STRUCTURE FOR INSTALLATION OF NEW MEMBRANE ROOFING AND INSULATION SYSTEM.
AR01	ENSURE ALL VENTS, EXHAUST FANS, SUPPORTS AND OTHER ITEMS THAT PENETRATE ROOF MAINTAIN ADEQUATE CLEARANCE ABOVE FINISHED SURFACE OF NEW ROOFING MEMBRANE.
AR02	MAINTAIN MINIMUM 5'-0" CLEARANCE FROM EXHAUST FAN TO ANY OPENINGS AT COVER OF ADJACENT SLUDGE TANK.
AR03	MAINTAIN MINIMUM 5'-0" CLEARANCE FROM MAU TO ANY OPENINGS AT COVER OF ADJACENT SLUDGE TANK.
AR04	PROVIDE FACTORY-FABRICATED, SLIP-RESISTANT ROOF WALKWAY PADS AT DESIGNATED ROUTE AND ROOFTOP EQUIPMENT REQUIRING ROUTINE SERVICE. INSTALL IN ACCORDANCE WITH ROOFING MANUFACTURER'S WRITTEN REQUIREMENTS AND IN A MANNER THAT MAINTAINS THE ROOFING WARRANTY.
AR05	PROVIDE OSHA-COMPLIANT GUARDRAIL AT ROOF EDGES WITHIN 10'-0" OF DESIGNATED MAINTENANCE ACCESS ROUTES AND WALKWAY PADS, AND AS INDICATED. SEE STRUCTURAL DRAWINGS FOR GUARDRAIL DESIGN AND ATTACHMENT DETAILS.

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6" 1' 2' 4' 6'
Graphic Scale for 1/4"=1'-0"

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MEAGAN MCCOLLOCH-VENCIL
LIC. NO. 59584 DATE 9/29/26

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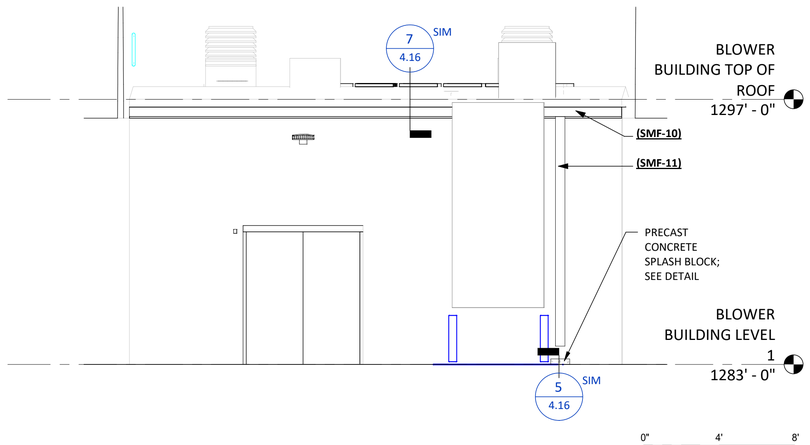
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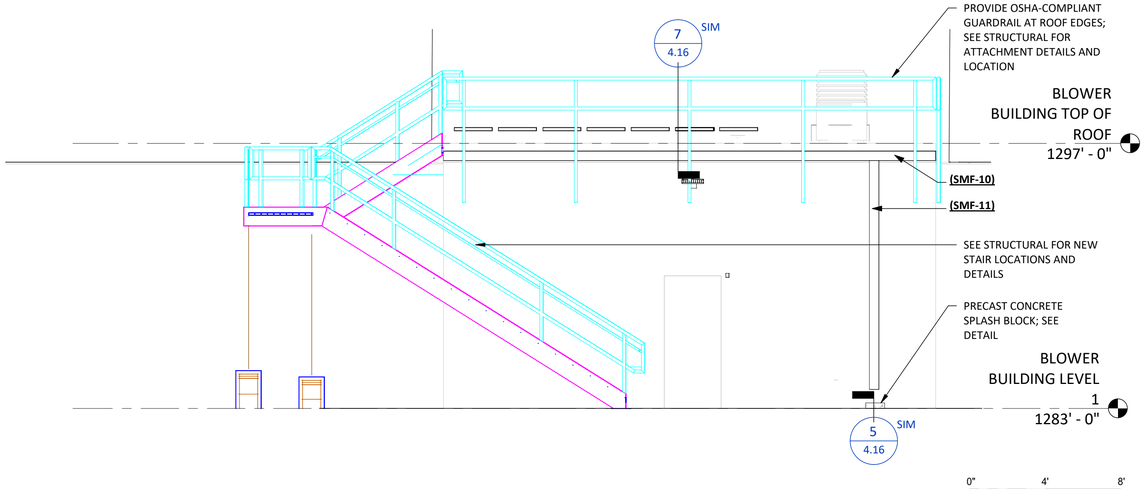
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
BLOWER/DIGESTER BUILDING - ROOF PLAN

SHEET 4.13

MATERIAL ID LEGEND	
Code	Material
(SMF-10)	PREFINISHED GALVANIZED STEEL ROOF GUTTER, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(SMF-11)	GUTTER DOWNSPOUT, PREFINISHED GALVANIZED STEEL, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.



1 / 4.14 BLOWER BUILDING - EAST
1/4" = 1'-0"



2 / 4.14 BLOWER BUILDING - WEST
1/4" = 1'-0"

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
BLOWER/DIGESTER BUILDING - ELEVATIONS

SHEET
4.14

CODE SUMMARY ANALYSIS

2020 MINNESOTA STATE BUILDING CODE

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION
SECTION 306 - Factory Group F-1 (Moderate Hazard Factory Industrial)

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS
SECTION 503 General Building Height and Area Limitations
Construction Type II-B
Occupancy Group F-1 - Sprinkled - NS (Not Sprinkled)
*Table 504.3 and 504.4 Allowable Height and Stories = 55' (2 stories)
*Table 506.2 Allowable Area = 15,500 sf

F-1 (MODERATE HAZARD FACTORY INDUSTRIAL) MAIN LEVEL	288 SF
PROPOSED TOTAL BUILDING OCCUPIED SQUARE FOOTAGE	**288 SF**
PROPOSED TOTAL BUILDING FOOTPRINT	**419 SF**

CHAPTER 6 - TYPES OF CONSTRUCTION
SECTION 602 Construction Classification - Type II-B (Section 602.2)
Table 601 - Fire-Resistance Rating Requirements for Building Elements (hours)

Structural Frame	0 HR
Bearing Walls	0 HR
Nonbearing Walls and Partitions	0 HR
Floor Construction	0 HR
Roof Construction	0 HR

CHAPTER 8 - INTERIOR FINISHES
TABLE 803.13 INTERIOR WALL AND CEILING FINISH REQUIREMENTS

	F-1
Interior exit stairways...	Class B
Corridors and enclosure...	Class C
Rooms and Enclosed spaces	Class C

Class A = Flame spread index 0-25 = Smoke developed index 0-450
Class B = Flame spread index 26-75 = Smoke developed index 0-450
Class C = Flame spread index 76-200 = Smoke developed index 0-450

CHAPTER 9 - FIRE PROTECTION SYSTEMS
SECTION 903.2.4 Group F-1. An automatic sprinkler system shall be provided throughout all buildings containing a group F-1 occupancy where one of the following conditions exists.
1. A Group F-1 fire area exceeds 12,000 square feet.
2. A Group F-1 fire area is located more than 3 stories above grade plane.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet.
4. A Group F-1 occupancy used for the manufacture of upholstered furniture exceeds 2,500 square feet.

***Neither condition exists, sprinkler not required.**

SECTION 907.2.4 Group F. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed Group F occupancies where both of the following conditions exist:
1. The Group F occupancy is two or more stories in height.
2. The Group F occupancy has a combined occupant load of 500 or more above or below the lowest level of discharge

***Neither condition exists, fire alarm not required.**

CHAPTER 10 - MEAN OF EGRESS
SECTION 1004 OCCUPANT LOAD
1004.1 Design Occupant Load
Table 1004.5 Maximum Floor Area Allowances per Occupant
Industrial areas = 100 gross

TOTAL BUILDING (GROSS) = 288 SF	OCCUPANT LOAD = SEE PLAN

SECTION 1005 Means of Egress Sizing
Table 1005.3.2 Other egress components (Without Sprinkler System)
Inches per occupant = 0.20 @ Egress Components (Doors)
Inches per occupant = 0.30 @ Stairways

SECTION 1006.2.1 Spaces with One Exit or Exit Access Doorway Exit Access
Table 1006.2.1 Common path of egress travel (without Sprinkler System):
F-1 Occupancy (less than 30 occ) = Shall not exceed 75 feet
Compliant

SECTION 1006.3.3 Single Exits. A single exist shall be permitted from any story where the one of the following conditions exists:
1. The occupant load and common path of egress travel distance do not exceed the values in Table 1006.3.3(2).

SECTION 1017 Exit Access Travel Distance
Table 1017.2 Exit Access Travel Distance:
F-1 Occupancy, Maximum travel distance = 300' (without sprinkler system)
Compliant

CHAPTER 12 - INTERIOR ENVIRONMENT
SECTION 1203 Equipment and systems. Interior spaces intended for human occupancy shall be provided heating systems capable of maintaining an indoor temperature of not less than 68°F at a point 3 feet above the floor on the design heating day.
Exceptions: Space heating systems are not required for: Occupancy groups F, H, S or U.

CHAPTER 29 - PLUMBING FIXTURES
- 2020 International Building Code (Table 2902.1)

TOTAL OCCUPANT LOAD = 4 Occupants

F-1 Occupancy - Primary Occupancy
WATER CLOSETS REQUIRED: 1 per 100 = 1 required
LAVATORIES REQUIRED: 1 per 100 = 1 required

DRINKING FOUNTAINS REQUIRED:
Table 2902.1 - Note h: A drinking fountain shall not be required in buildings or tenant spaces having an occupant load of less than 50.

SERVICE SINKS REQUIRED: 1 required
Per Section 2902.1 Minimum number of Fixtures. With no water required to building, requested no service sink requirement.

2902.3.3 Location of toilet facilities in occupancies other than malls. In occupancies other than covered and open mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 500 feet.
Exception: The location and maximum distances of travel to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum distance of travel are approved.

* Toilet is provided in control building, most of the facility is within 500' of the control building. Remainder of facility is within 700' of the control building.

2024 MINNESOTA STATE ENERGY CODE

MN ENERGY CODE PATHWAY: SEMI-HEATED — 2019 ASHRAE 90.1 AS AMENDED BY MN
CLIMATE ZONE: 6A

ROOF INSULATION ABOVE STRUCTURE	R-VALUE 15 CI MIN	U-0.063
ABOVE GRADE WALL INSULATION MASS WALL	R-VALUE 5.7 CI MIN	U-0.151
BELOW GRADE WALL INSULATION BELOW GRADE WALL	R-VALUE 7.5 CI MIN	C-0.119
SLAB EDGE INSULATION COMM, W/O IN FLOOR HEAT	NO REQUIREMENT	F-0.730
OPAQUE DOORS NONSWINGING	U-0.310	
SWINGING	U-0.370	

5.4.3.1.1 Whole-Building Air Leakage. Whole building pressurization testing shall be conducted in accordance with ASTM E779 or ASTM E1827 by an independent third party. The measured air leakage rate of the building envelope shall not exceed 0.40 cmf/ft² under a pressure differential of 0.3 inches of water, with this air leakage rate normalized by the sum of the above-grade and below-grade building envelope areas of the conditioned space and semiheated space.

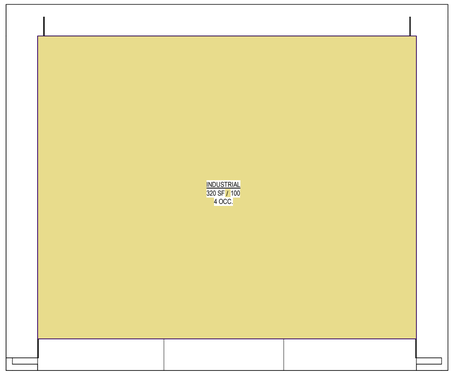
2020 MINNESOTA ACCESSIBILITY CODE

1103.2.9 - EQUIPMENT SPACES. Spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment are not required to comply with this chapter.

MN RULES 1303.1500

1303.1500 Recyling. Space must be provided for the collection, separation and temporary storage of recyclable materials within or adjacent to all new or significantly remodeled buildings or structures that contain 1,000 square feet or more.

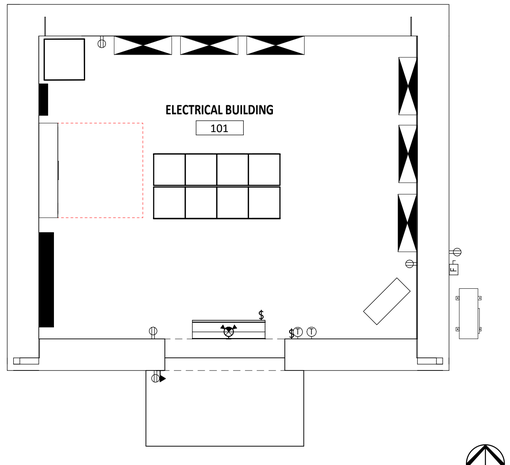
***Work is less than 1,000 square feet**



1 / 4.15 ELECTRICAL BUILDING - CODE REFERENCE PLAN
1/4" = 1'-0"

NORTH

0" 8' 16'
SCALE 1/8" = 1'-0" FEET



2 / 4.15 ELECTRICAL BUILDING - FLOOR PLAN LEVEL 1
1/4" = 1'-0"

NORTH

0" 8' 16'
SCALE 1/8" = 1'-0" FEET

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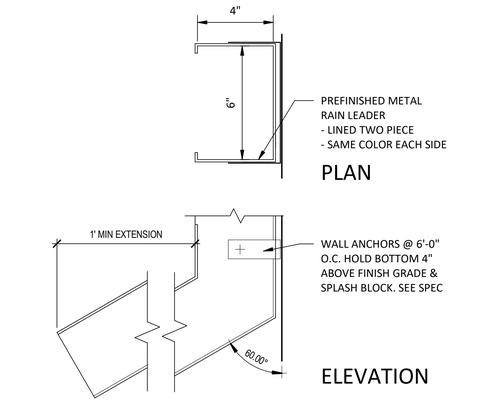
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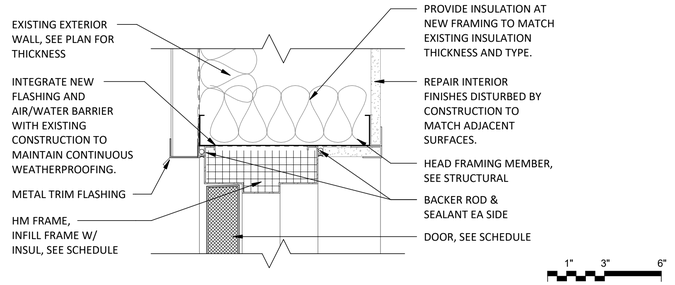
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL BUILDING - CODE ANALYSIS & CODE REFERENCE PLAN

SHEET 4.15



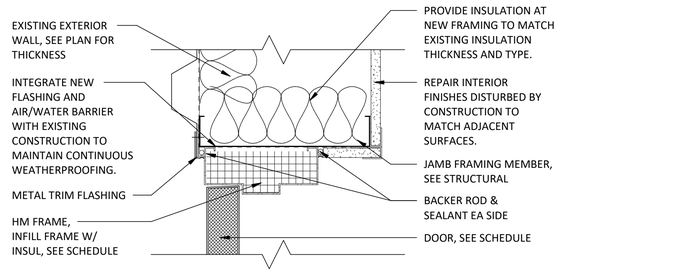
1 4.16 DOWNSPOUT GUTTER
3" = 1'-0"

1" 3" 6"
Graphic Scale for 3"=1'-0"



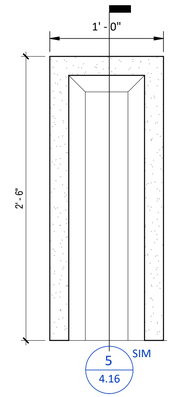
2 4.16 DETAILS - DOOR HEAD AT EXISTING EXTERIOR WALL
3" = 1'-0"

1" 3" 6"
Graphic Scale for 3"=1'-0"

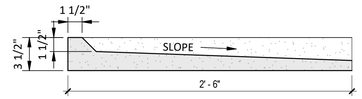


3 4.16 DETAIL - DOOR JAMB AT EXISTING EXTERIOR WALL
3" = 1'-0"

1" 3" 6"
Graphic Scale for 3"=1'-0"

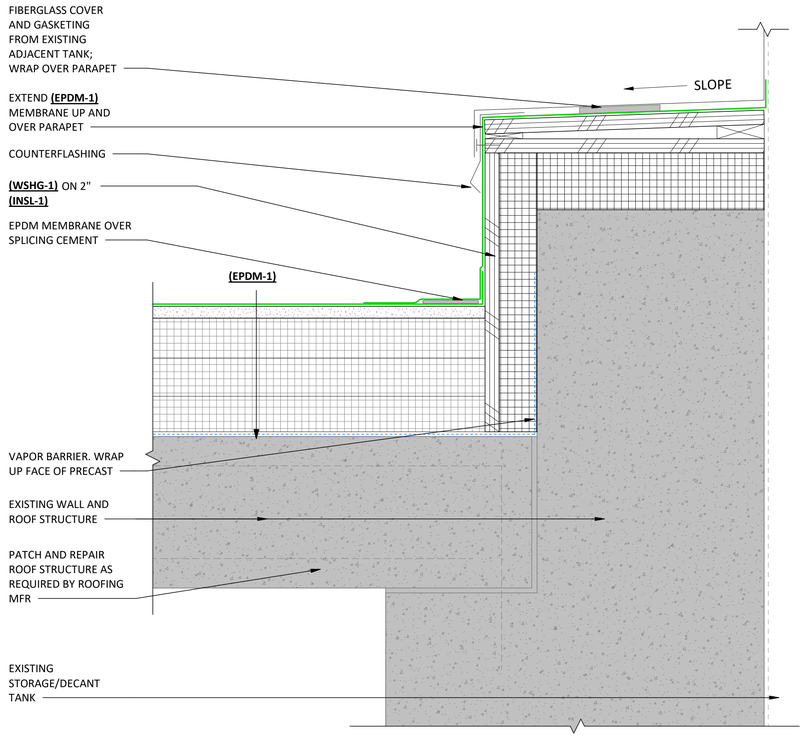


4 4.16 PRECAST SPLASH BLOCK PLAN
1 1/2" = 1'-0"



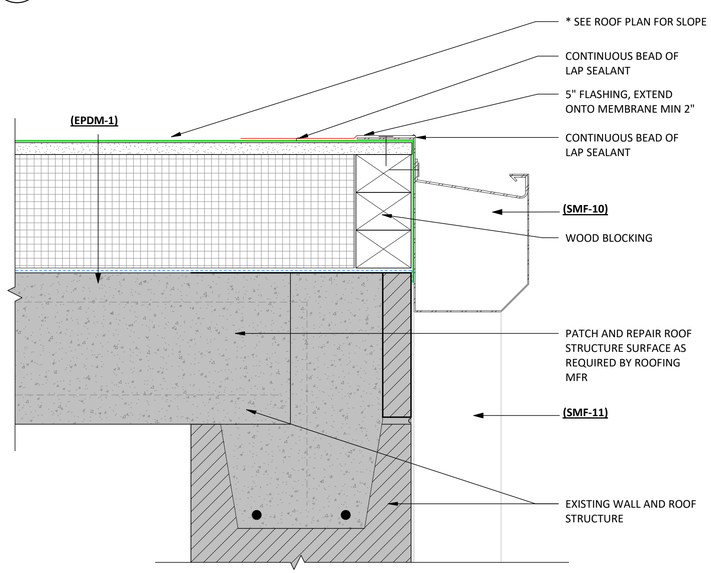
5 4.16 PRECAST SPLASH BLOCK SECTION
1 1/2" = 1'-0"

MATERIAL ID LEGEND	
Code	Material
(EPDM-1)	REINFORCED EPDM ROOFING, 5/8" COVER BOARD, POLYISO INSULATION, VAPOR BARRIER. FULLY ADHERED. 20 YEAR WARRANTY.
(INSL-1)	EXTRUDED-POLYSTYRENE BOARD, 25 PSI
(SMF-1)	PREFINISHED GALVANIZED STEEL FLASHING, 20 GA, COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(SMF-10)	PREFINISHED GALVANIZED STEEL ROOF GUTTER, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(SMF-11)	GUTTER DOWNSPOUT, PREFINISHED GALVANIZED STEEL, 20 GA. COLOR SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.
(WSHG-1)	3/4" WOOD SHEATHING, C-D, TOUCH SANDED, EXTERIOR EXPOSURE.



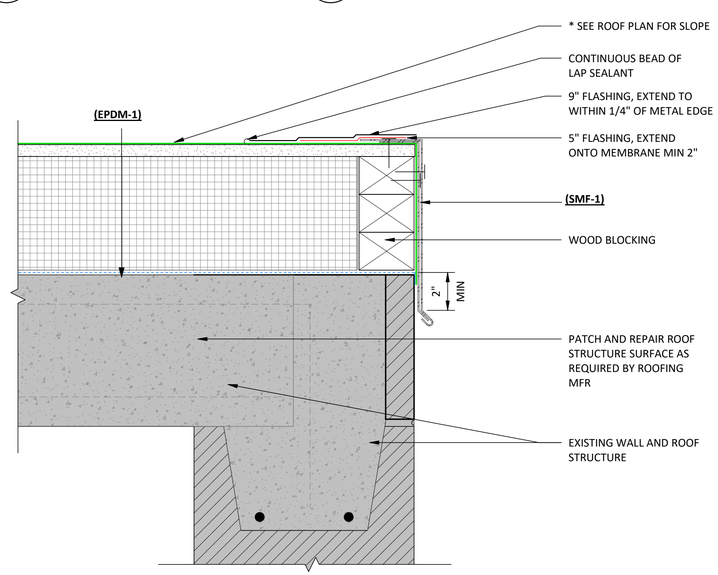
6 4.16 SECTION DETAIL - ROOF EDGE AT EXISTING TANK
3" = 1'-0"

1" 3" 6"
Graphic Scale for 3"=1'-0"



7 4.16 SECTION DETAIL - ROOF EDGE WITH GUTTER
3" = 1'-0"

1" 3" 6"
Graphic Scale for 3"=1'-0"



8 4.16 SECTION DETAIL - TYP ROOF EDGE
3" = 1'-0"

1" 3" 6"
Graphic Scale for 3"=1'-0"

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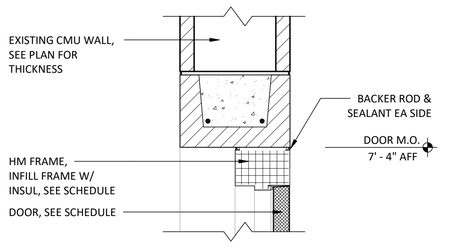
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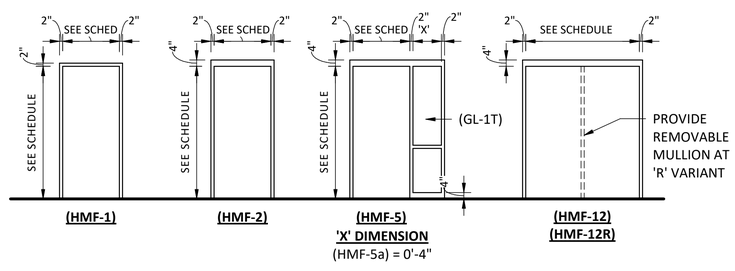
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXTERIOR DETAILS

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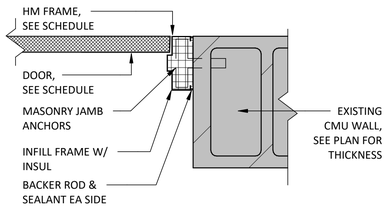


3 4.17 HM DOOR HEAD (CMU)
1 1/2" = 1'-0"

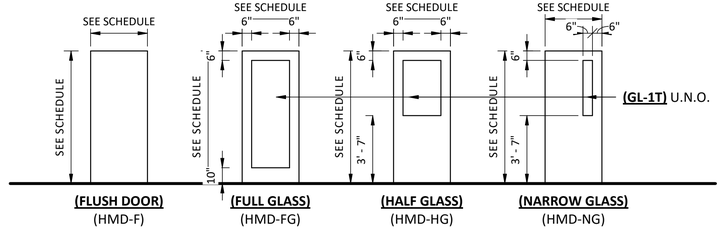


Graphic Scale for 1 1/2"=1'-0" (3" 6" 1')

4 4.17 DOOR FRAME TYPES
1/4" = 1'-0"



1 4.17 HM DOOR JAMB (CMU)
1 1/2" = 1'-0"



Graphic Scale for 1 1/2"=1'-0" (3" 6" 1')

2 4.17 DOOR PANEL TYPES
1/4" = 1'-0"

GLAZING SCHEDULE

(GL-1T) 1" INSULATED TEMPERED GLASS

NOTE: PROVIDE TEMPERED GLASS AS REQ'D BY CODE OR AS NOTED

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
DOOR SCHEDULE AND DETAILS

SHEET 4.17

EXISTING SANITARY SEWER
21-PP- ( )
MANHOLE B
21-PP- (1)
MANHOLE 1
21-PP- (1)
PLANT DRAIN WASTE FROM FACILITY
8-SAN- ( )
SG
P-PP
6-PP- (1)
PRETREATMENT LIFT STATION
4-PD- (1)
CHANNEL
SG
MECHANICAL FINE SCREEN
ME-FS-1
M
MANUAL BAR SCREEN
BYPASS CHANNEL
GRIT COLLECTOR
ME-GC-1
SG-10
AIT-1
PH/TEMP
FE 1
6" PARSHALL FLUME
18-PP- (1)
SCREENINGS TO LANDFILL
GRIT TO LANDFILL

AIR HEADER FROM BLOWERS
E
10-A- (1)
ME-MX
V-A
TO MIXED LIQUOR WELL NO. 1
6-ML- (1)
A
FROM DECANT TANK NO. 1
C
AERATION BASIN NO. 1
SECONDARY CLARIFIER NO. 1
CASCADE AERATION
V-PD
6-PD- (1)
PLANT DRAIN TO WASTE
4-SC- (1)
P-SN
6-SC- (1)
SLUDGE LOADOUT QUICK CONNECT
SCUM PIT NO. 1
12-PP- (1)
CHANNEL
18-PP- (1)
CONTROL STRUCTURE NO. 1
AIR HEADER FROM BLOWERS
F
TO MIXED LIQUOR WELL NO. 2
6-ML- (1)
B
FROM DECANT TANK NO. 2
D
AERATION BASIN NO. 2
SECONDARY CLARIFIER NO. 2
CASCADE AERATION
SCUM PIT NO. 2

18-PP- (1)
V-PP
FE 2
10-PP- (1)
18-PP- (1)
6-PD- (1)
3-UW- (1)
STRAINER
V-UW
UTILITY WATER
SO2
P-UW
CHLORINE
CASCADE AERATION
21-PP- (1)
OUTFALL TO SPRING VALLEY CREEK
PLANT DRAIN TO WASTE

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SIGNATURE: _____ TYPED OR PRINTED NAME: Jake R. Pichelmann

DATE: 9-29-2026 LIC. NO.: 54296

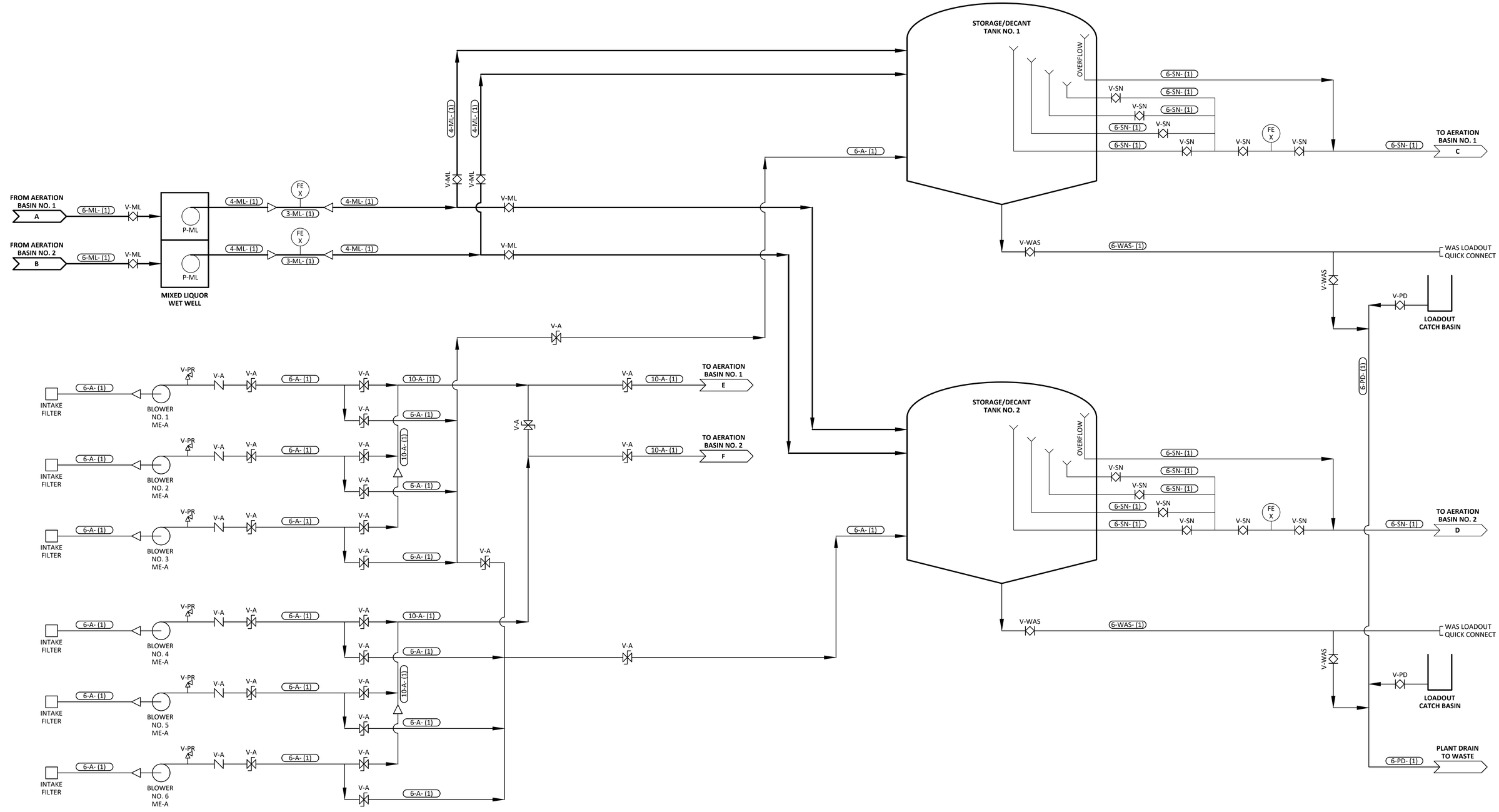
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING PROCESS FLOW DIAGRAM NO. 1

SHEET 5.01



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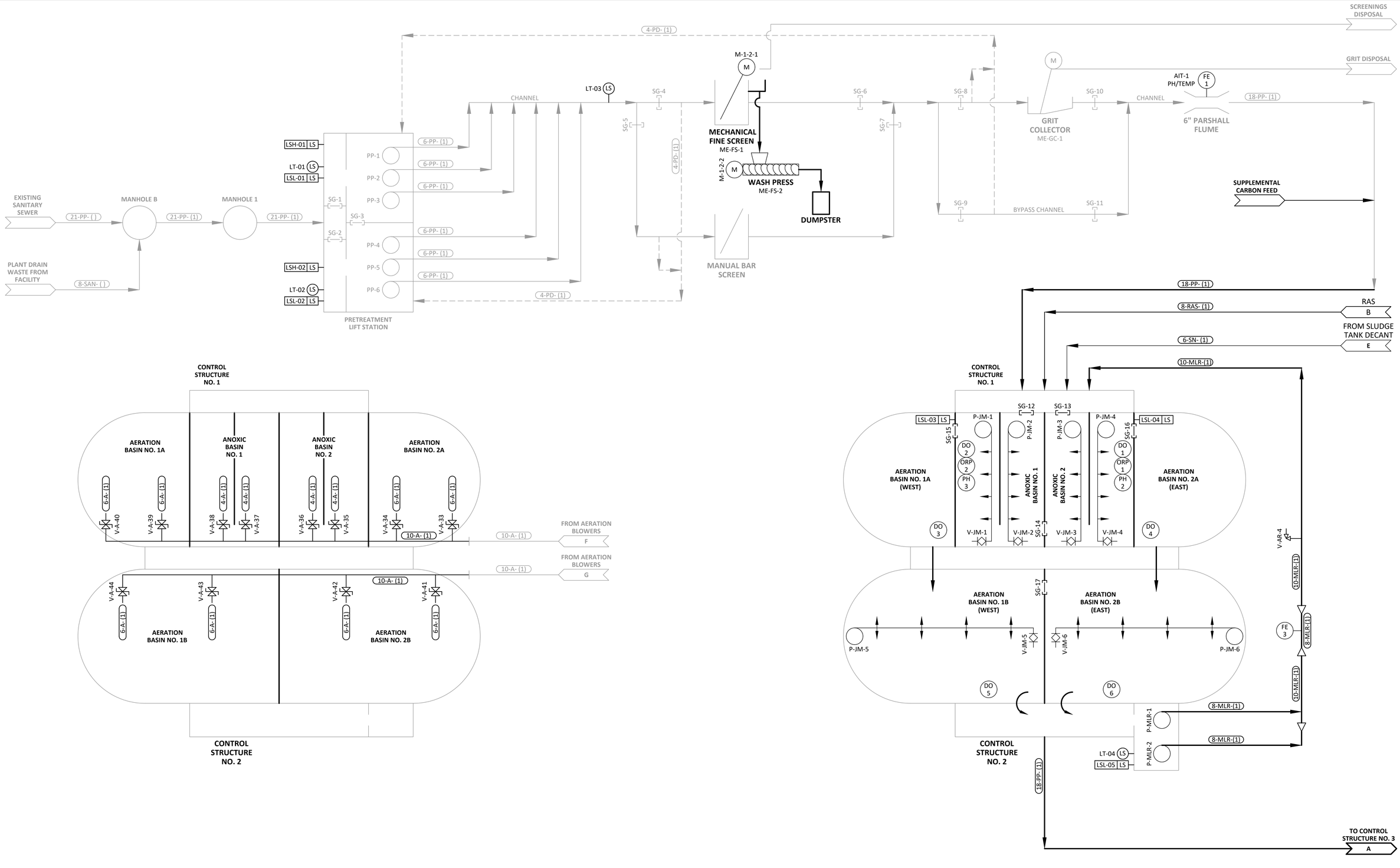
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CHECKED	JRP
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0	BID	9-29-26

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING PROCESS FLOW DIAGRAM NO. 2

SHEET 5.02



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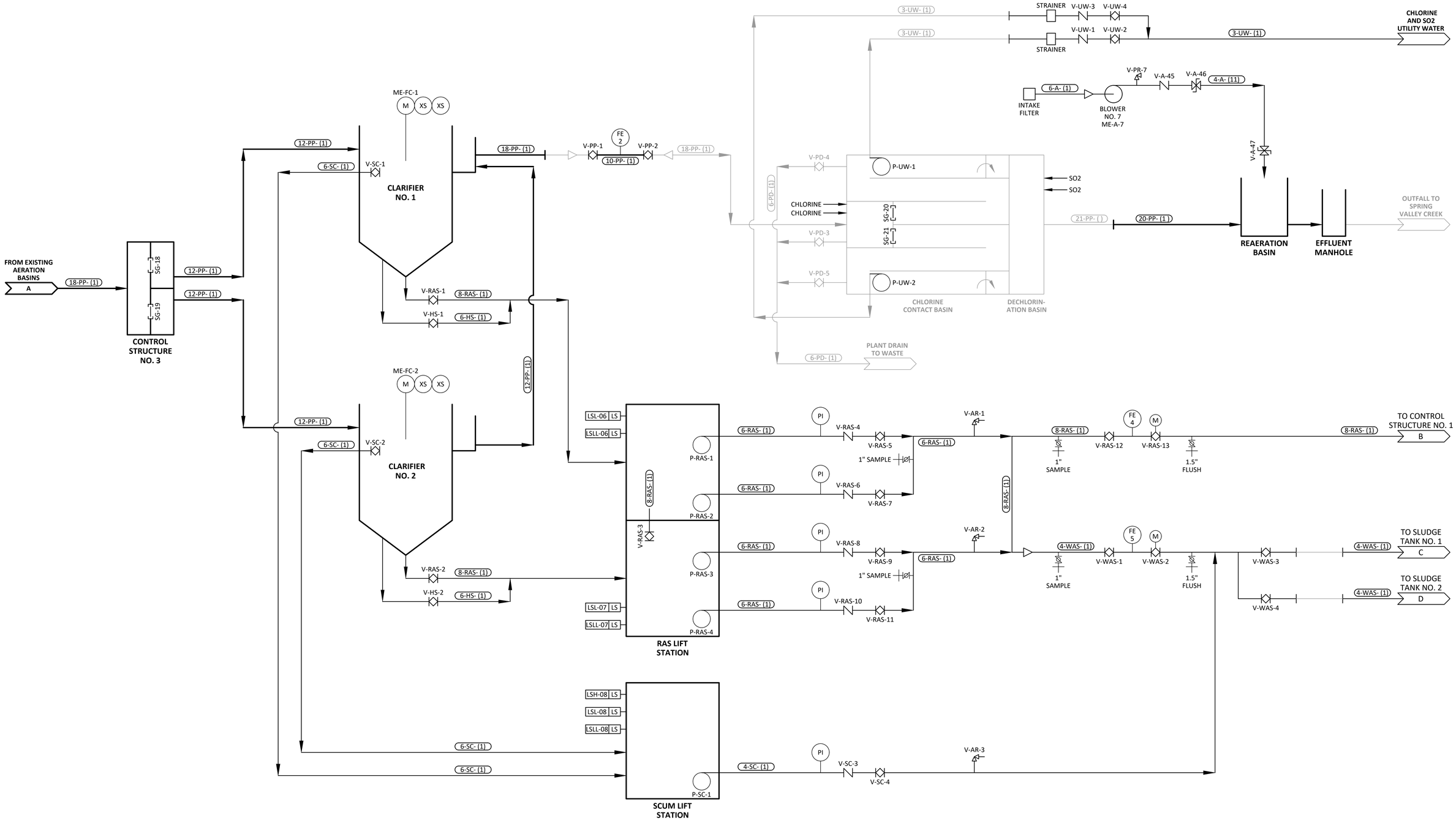
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED PROCESS FLOW DIAGRAM NO. 1

SHEET 5.03



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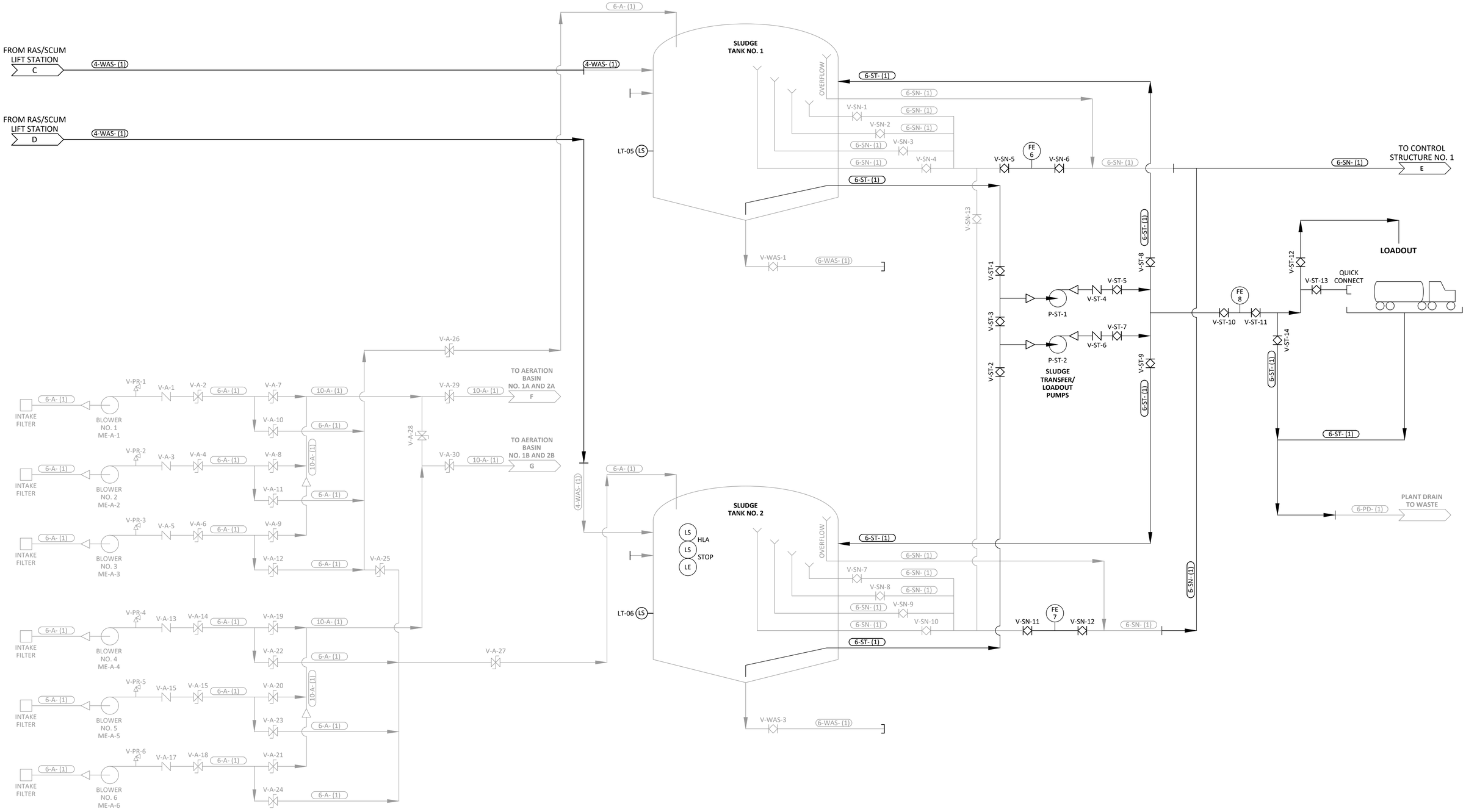
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED PROCESS FLOW DIAGRAM NO. 2

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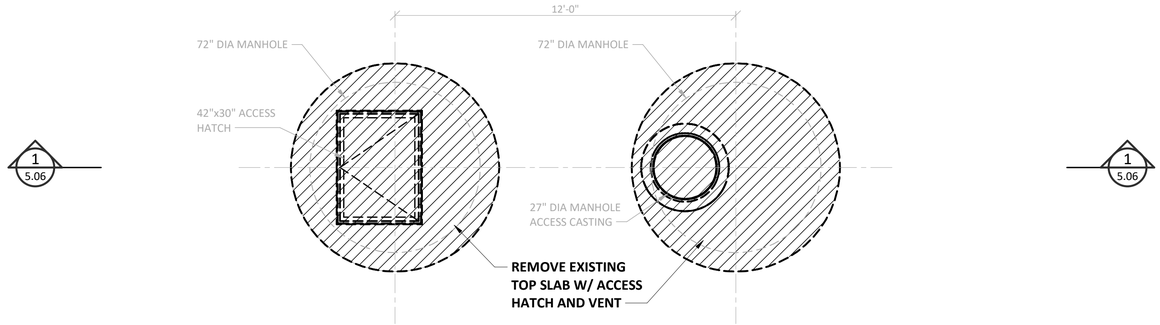
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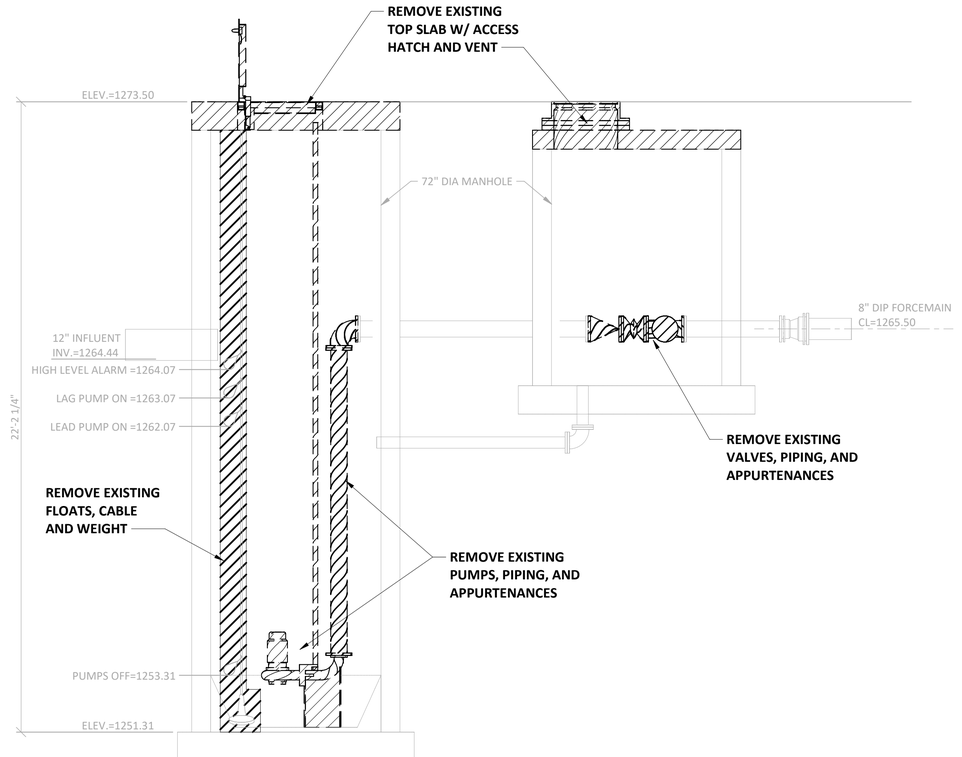
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PROPOSED PROCESS FLOW DIAGRAM NO. 3

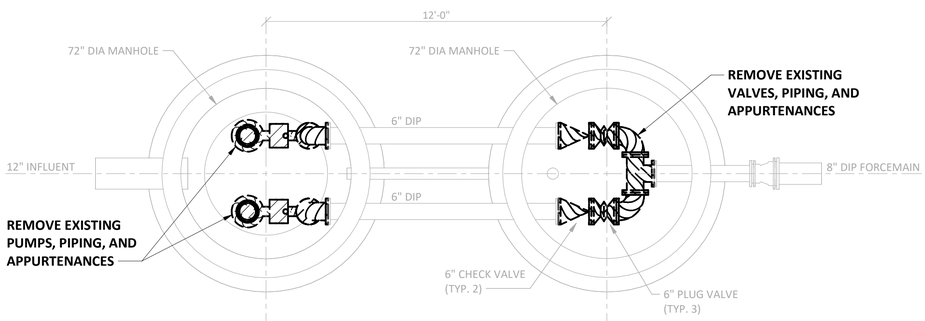
SHEET 5.05



TOP SLAB PLAN

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





PLAN

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

1 / 5.06 SECTION

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

Graphic Scale for 3/8"=1'-0"

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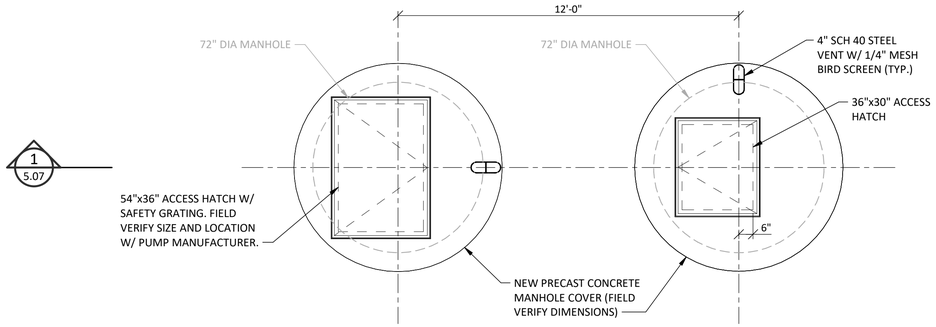
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING MAIN LIFT STATION DEMOLITION
PLAN, TOP SLAB PLAN AND SECTION

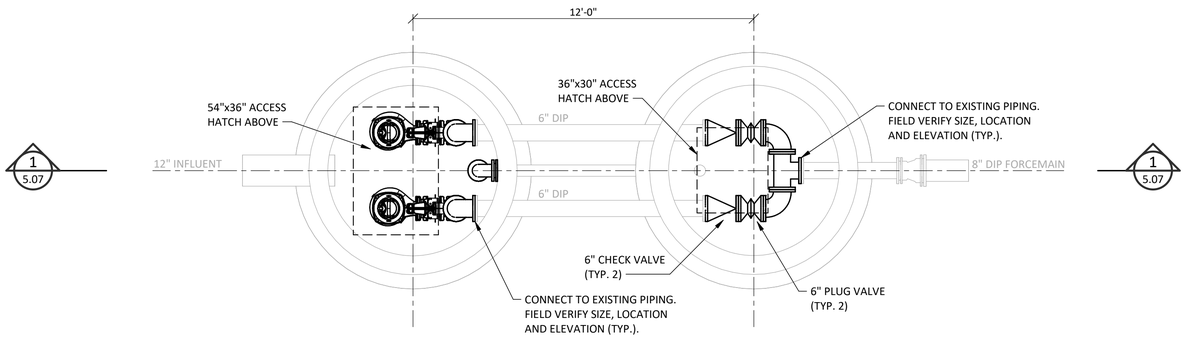
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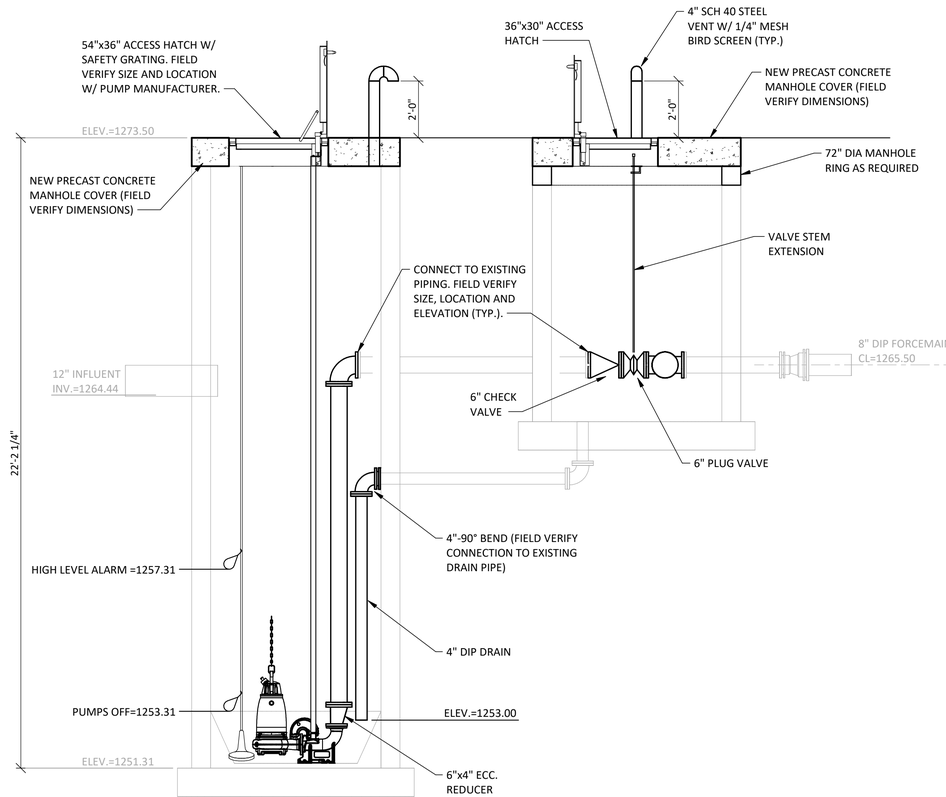
TOP SLAB PLAN

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



PLAN

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



SECTION

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

0' 1' 2' 3' 4' 6' 8'

Graphic Scale for 3/8"=1'-0"

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C	MPCA	6-26-25
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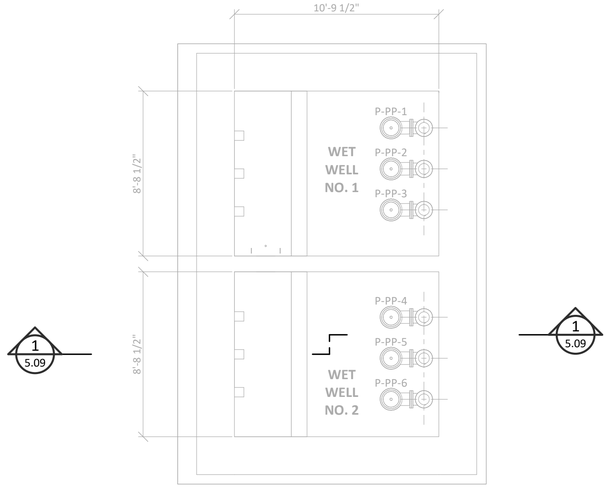
CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

EXISTING MAIN LIFT STATION
PROPOSED
PLAN, TOP SLAB PLAN AND SECTION

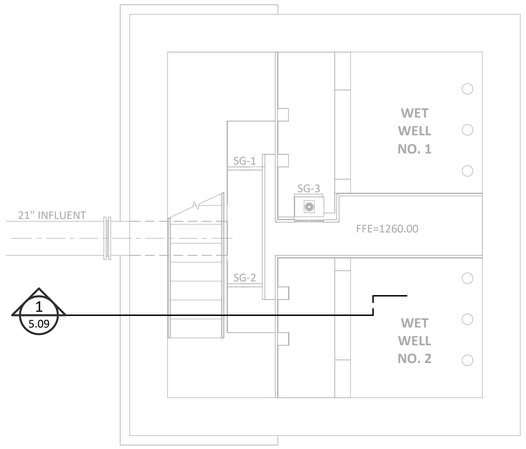
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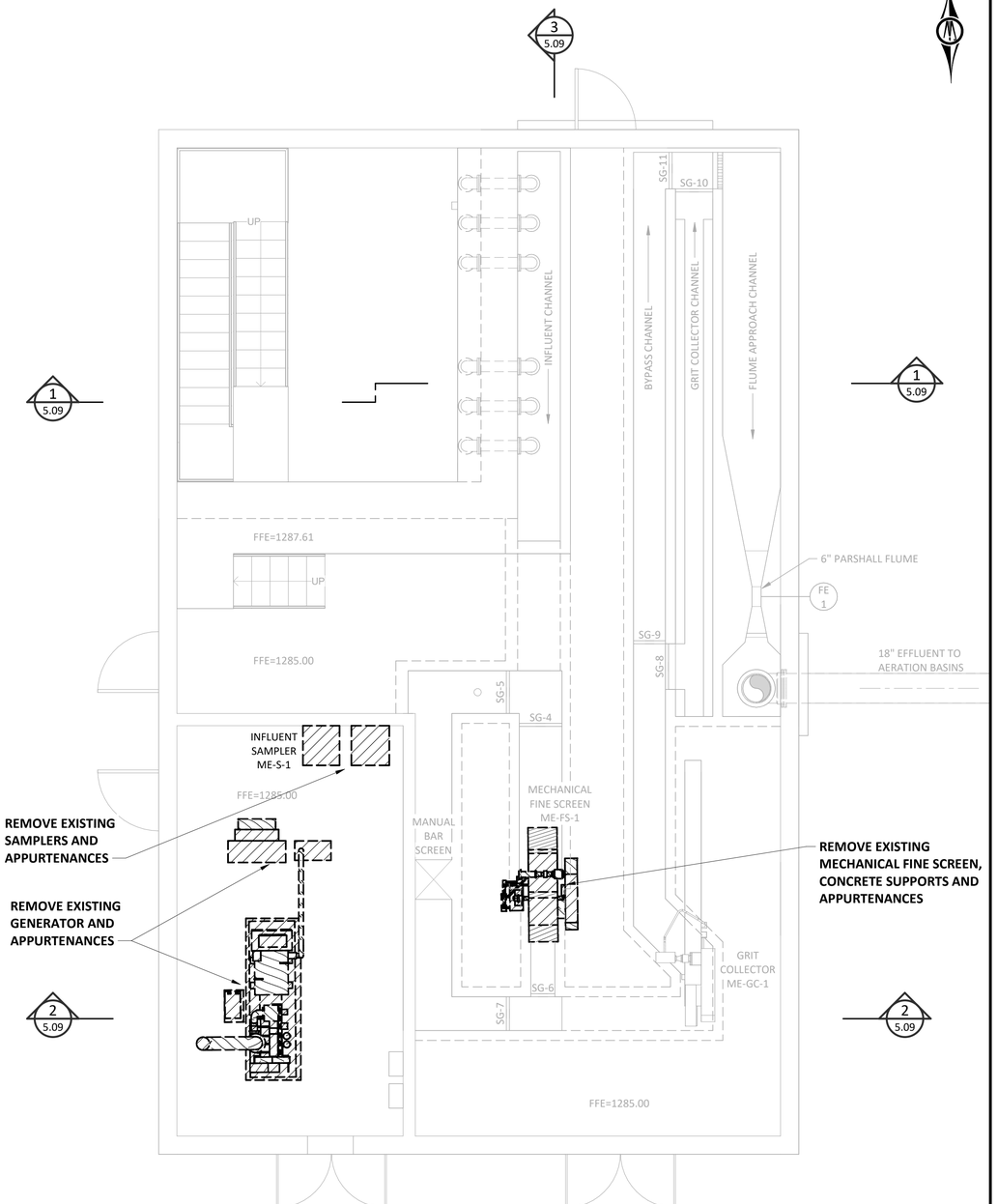
WET WELL PLAN

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



LOWER LEVEL PLAN

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



MAIN LEVEL PLAN

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

0' 1' 2' 3' 4' 6' 8' 12'

Graphic Scale for 1/4"=1'-0"

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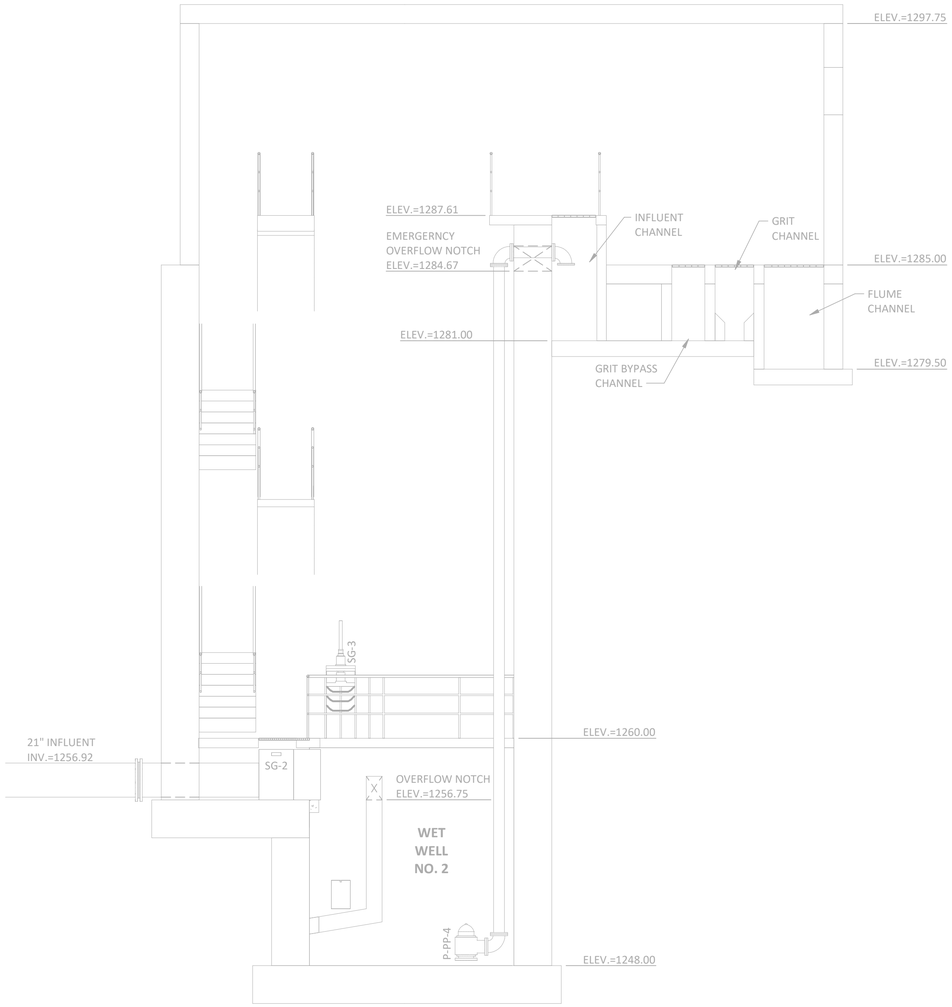
CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

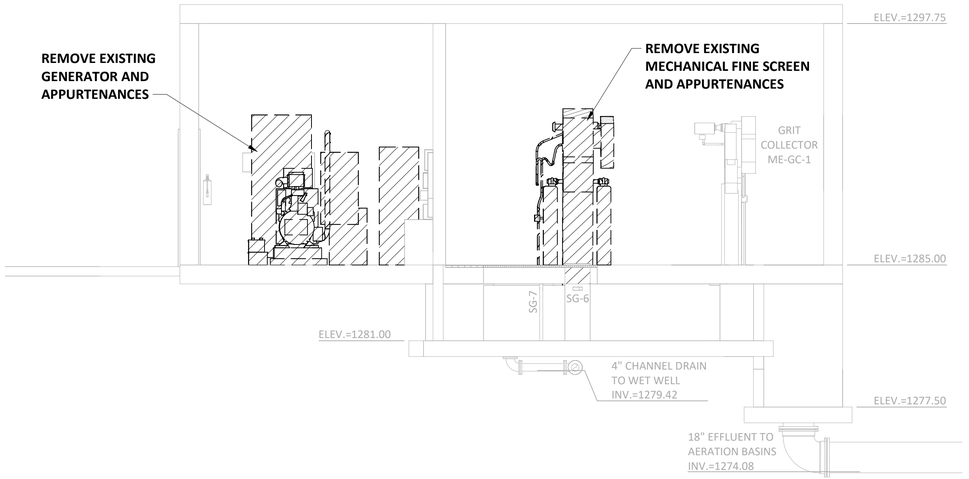
EXISTING PRETREATMENT BUILDING
DEMOLITION
WET WELL, LOWER LEVEL AND MAIN LEVEL PLAN

SHEET 5.08

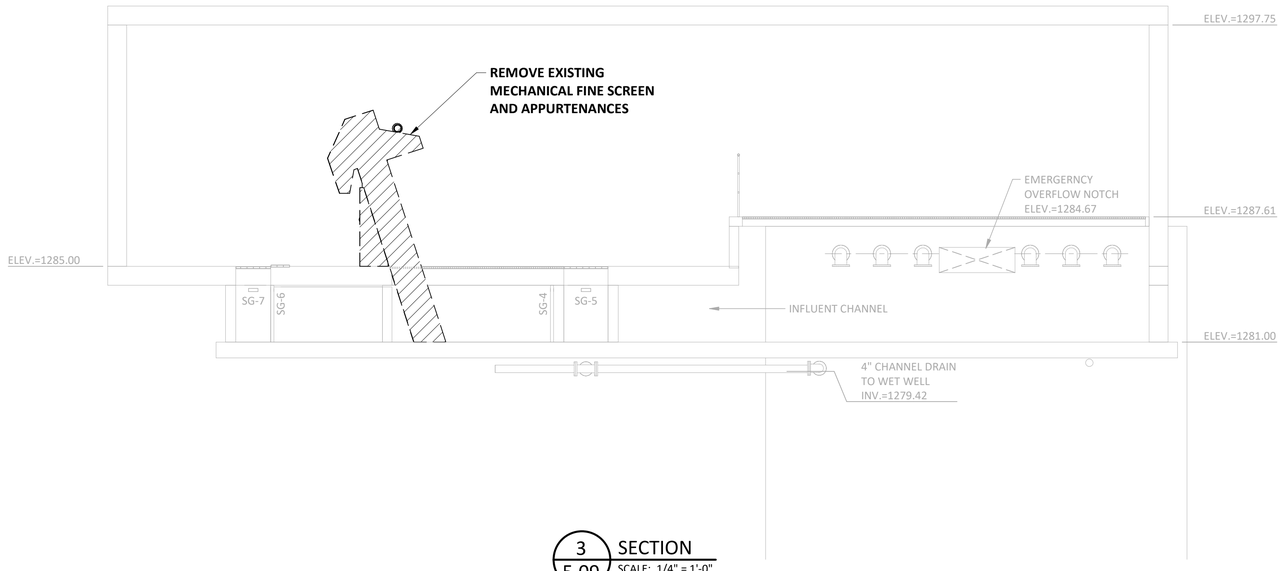
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1 / 5.09 SECTION
SCALE: 1/4" = 1'-0"



2 / 5.09 SECTION
SCALE: 1/4" = 1'-0"



3 / 5.09 SECTION
SCALE: 1/4" = 1'-0"

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0' 1' 2' 3' 4' 6' 8' 12'
Graphic Scale for 1/4"=1'-0"

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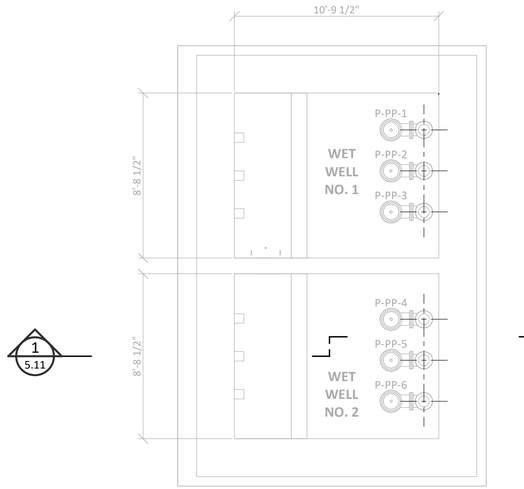
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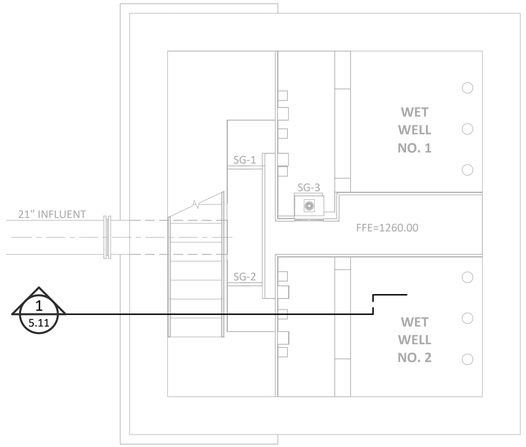
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING PRETREATMENT BUILDING
DEMOLITION
SECTIONS

SHEET 5.09



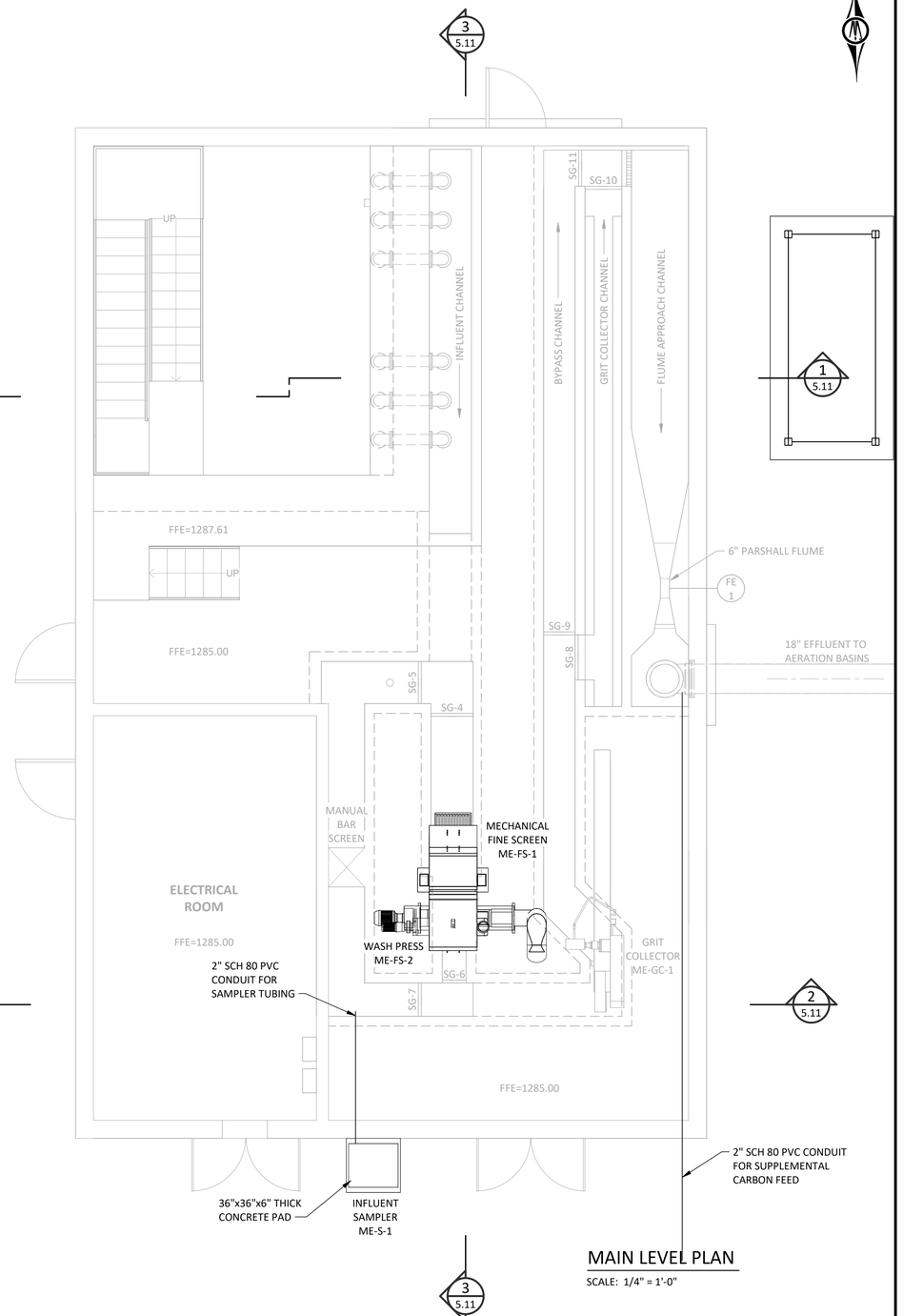
WET WELL PLAN

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



LOWER LEVEL PLAN

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



MAIN LEVEL PLAN

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

0' 1' 2' 3' 4' 6' 8' 12'

Graphic Scale for 1/4"=1'-0"

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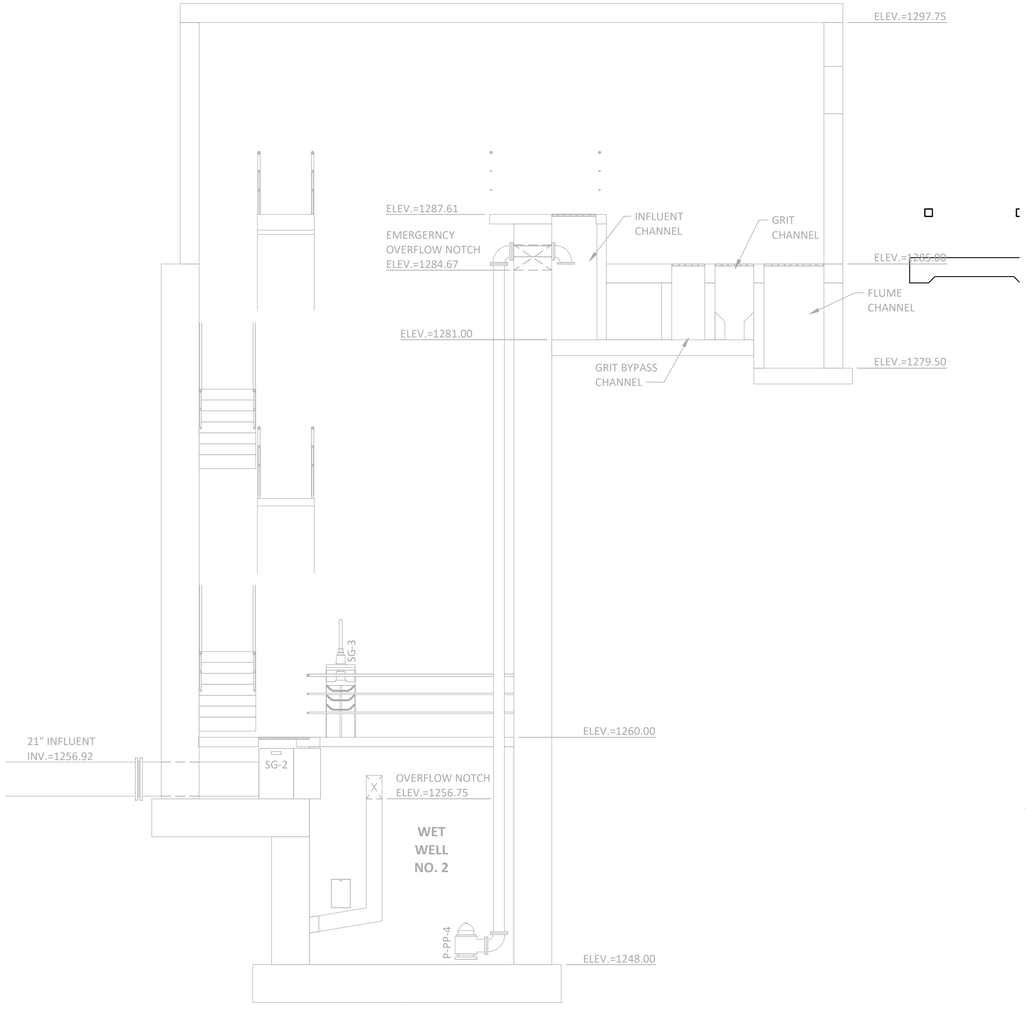
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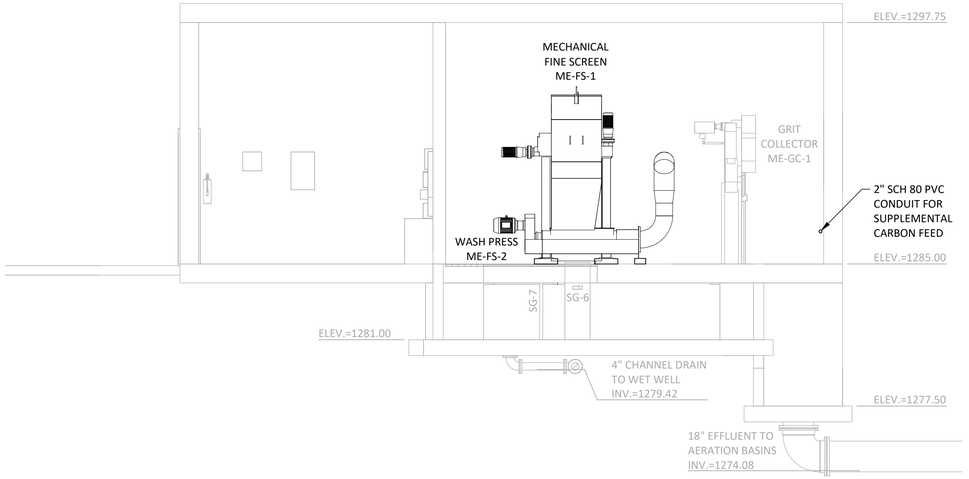
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING PRETREATMENT BUILDING
PROPOSED
WET WELL, LOWER LEVEL AND MAIN LEVEL PLAN

SHEET 5.10

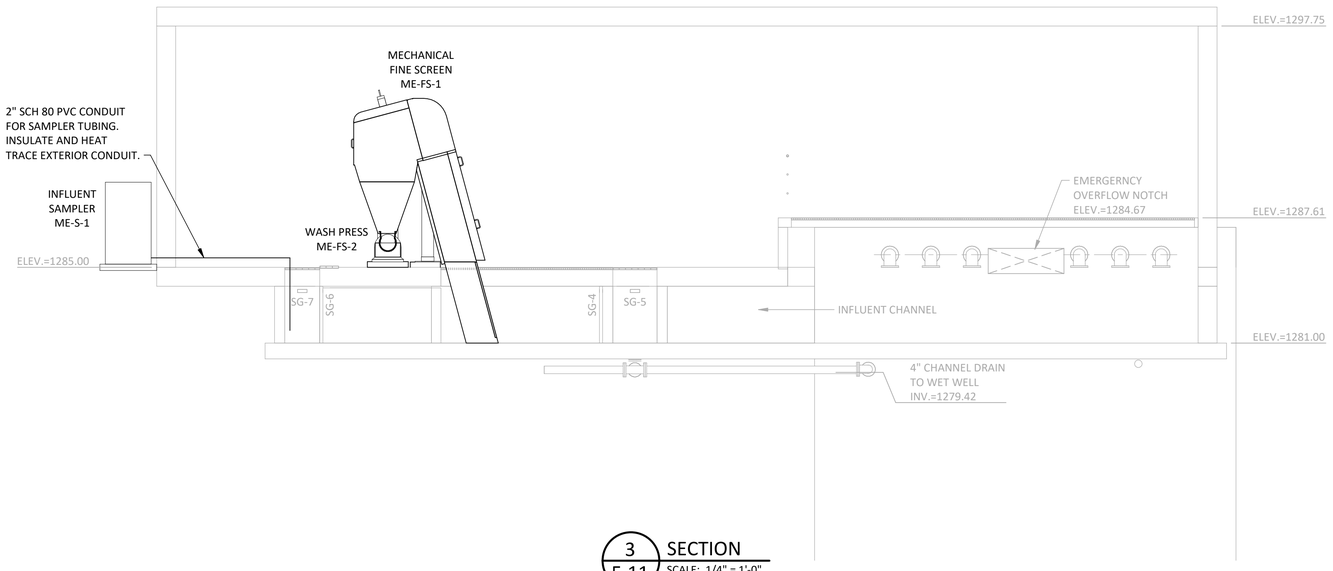
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1 / 5.11 SECTION
SCALE: 1/4" = 1'-0"



2 / 5.11 SECTION
SCALE: 1/4" = 1'-0"



3 / 5.11 SECTION
SCALE: 1/4" = 1'-0"

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0' 1' 2' 3' 4' 6' 8' 12'
Graphic Scale for 1/4"=1'-0"

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING PRETREATMENT BUILDING
PROPOSED
SECTIONS

SHEET 5.11

REMOVE EXISTING LOADOUT PIPING

REMOVE EXISTING PUMP, PIPING, AND APPURTENANCES

ABANDON IN PLACE

12" TO METER VAULT

CASCADE AERATOR

EFFLUENT CHANNEL

SCUM PIT

TRAVELING BRIDGE

ROTATING SCUM PIPE

SECONDARY CLARIFIER NO. 1

6" PLANT DRAIN TO SANITARY SEWER

AERATION BASIN NO. 1

8" SUMBERGED ORIFICE

4" DRAIN

37'-2"

FILL EXISTING CONTROL STRUCTURE NO. 1 TO TOP OF WALL AND ALL WALL OPENINGS WITH GROUT

REMOVE EXISTING PIPING

6" FROM DECANT TANK NO. 1

ABANDON IN PLACE

REMOVE EXISTING MIXERS, AND APPURTENANCES

REMOVE EXISTING AERATION PIPING, EQUIPMENT, AND APPURTENANCES

REMOVE EXISTING AERATION PIPING TO HERE

6" TO MIXED LIQUOR WET WELL

18" INFLUENT FROM PRETREATMENT BUILDING

CONTROL STRUCTURE NO. 1

10'-0"

REMOVE EXISTING PIPING AS REQUIRED FOR FUTURE CONNECTION

REMOVE EXISTING GRATING, SLIDE GATES AND APPURTENANCES

REMOVE EXISTING PIPING

10" AIR FROM BLOWER BUILDING

6" FROM DECANT TANK NO. 2

6" PLANT DRAIN TO SANITARY SEWER

AERATION BASIN NO. 2

TRAVELING BRIDGE

8" SUMBERGED ORIFICE

ROTATING SCUM PIPE

37'-2"

R 18'-7"

REMOVE EXISTING BUILDING, CLARIFIER AND SCUM EQUIPMENT, WALLS AND WALKWAYS AS NOTED. SEE STRUCTURE SHEETS FOR DETAIL.

SECONDARY CLARIFIER NO. 2

ABANDON IN PLACE

12" TO METER VAULT

CASCADE AERATOR

EFFLUENT CHANNEL

SCUM PIT

REMOVE EXISTING LOADOUT PIPING

REMOVE EXISTING PUMP, PIPING, AND APPURTENANCES

PLAN

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

0' 2' 4' 6' 8' 12' 16'

Graphic Scale for 3/16"=1'-0"

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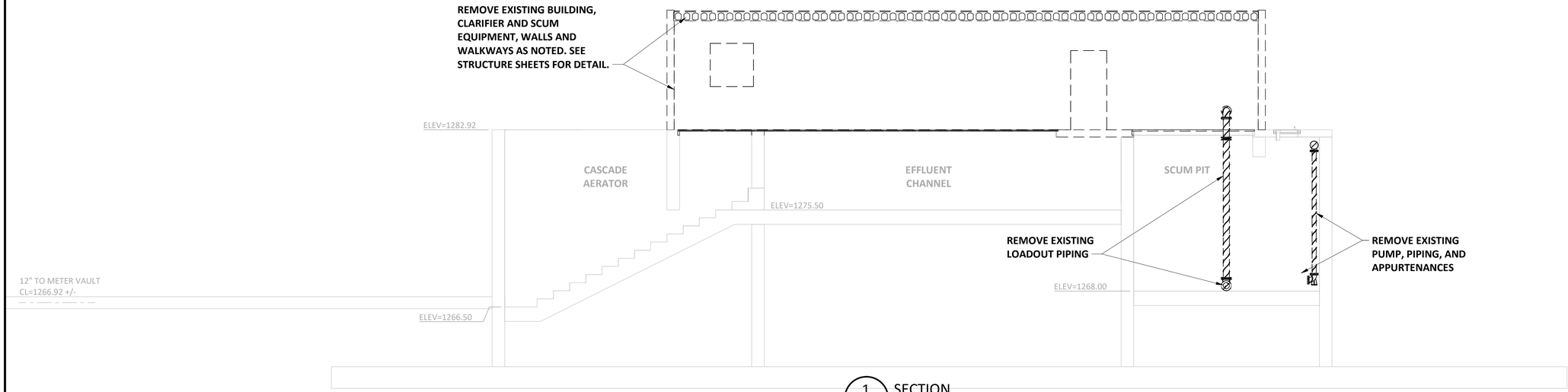
WASTEWATER TREATMENT FACILITY IMPROVEMENTS

EXISTING OXIDATION DITCH
DEMOLITION
OVERALL PLAN

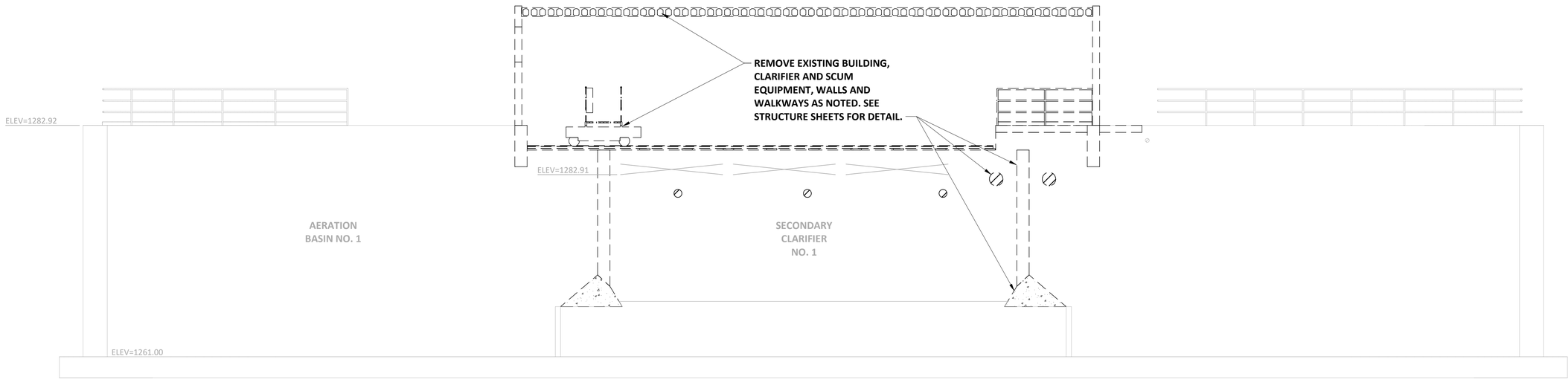
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1 / 5.13 SECTION
SCALE: 3/16" = 1'-0"



0' 1' 2' 3' 4' 6' 8' 12'
Graphic Scale for 1/4"=1'-0"

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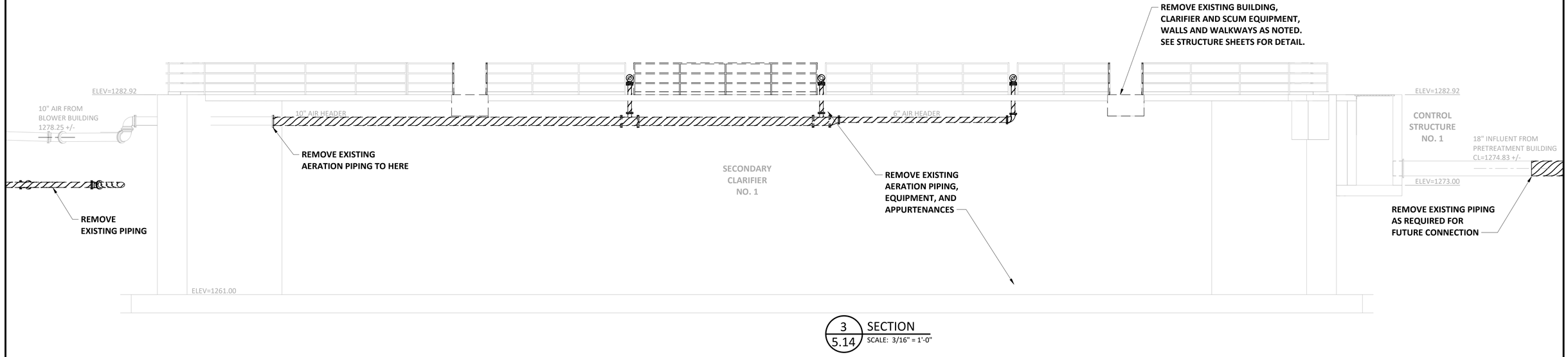
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DRAWN	NLH
CHECKED	JRP
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NO.	ISSUED FOR	DATE
A	MPCA	3-28-25
0	BID	9-29-26

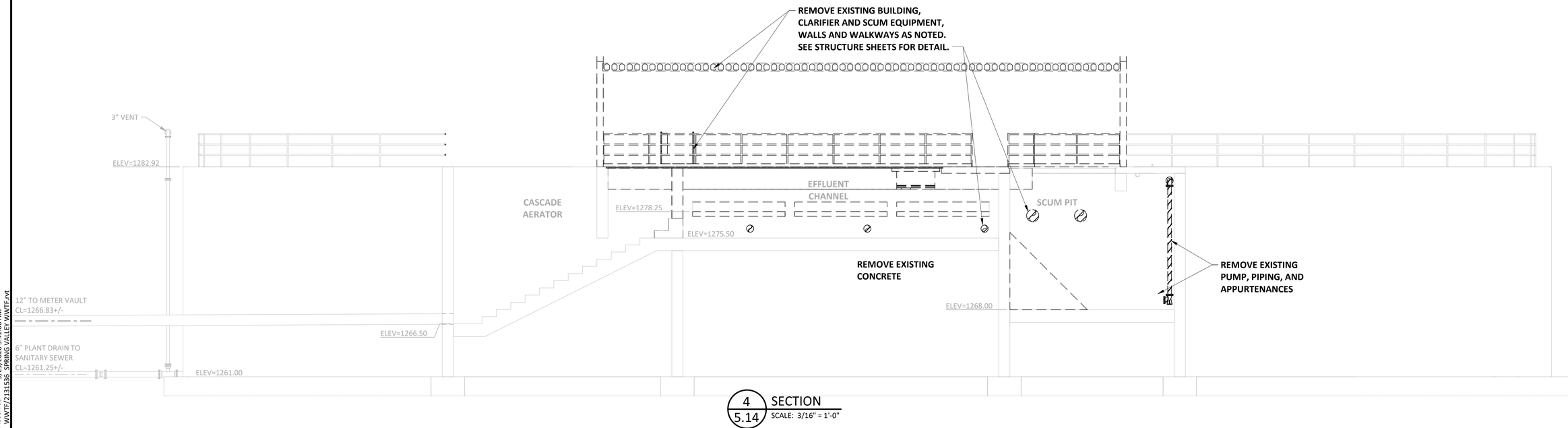
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING OXIDATION DITCH
DEMOLITION
SECTIONS

SHEET 5.13

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3 / 5.14 SECTION
SCALE: 3/16" = 1'-0"



4 / 5.14 SECTION
SCALE: 3/16" = 1'-0"

0' 1' 2' 3' 4' 6' 8' 12'
Graphic Scale for 1/4"=1'-0"

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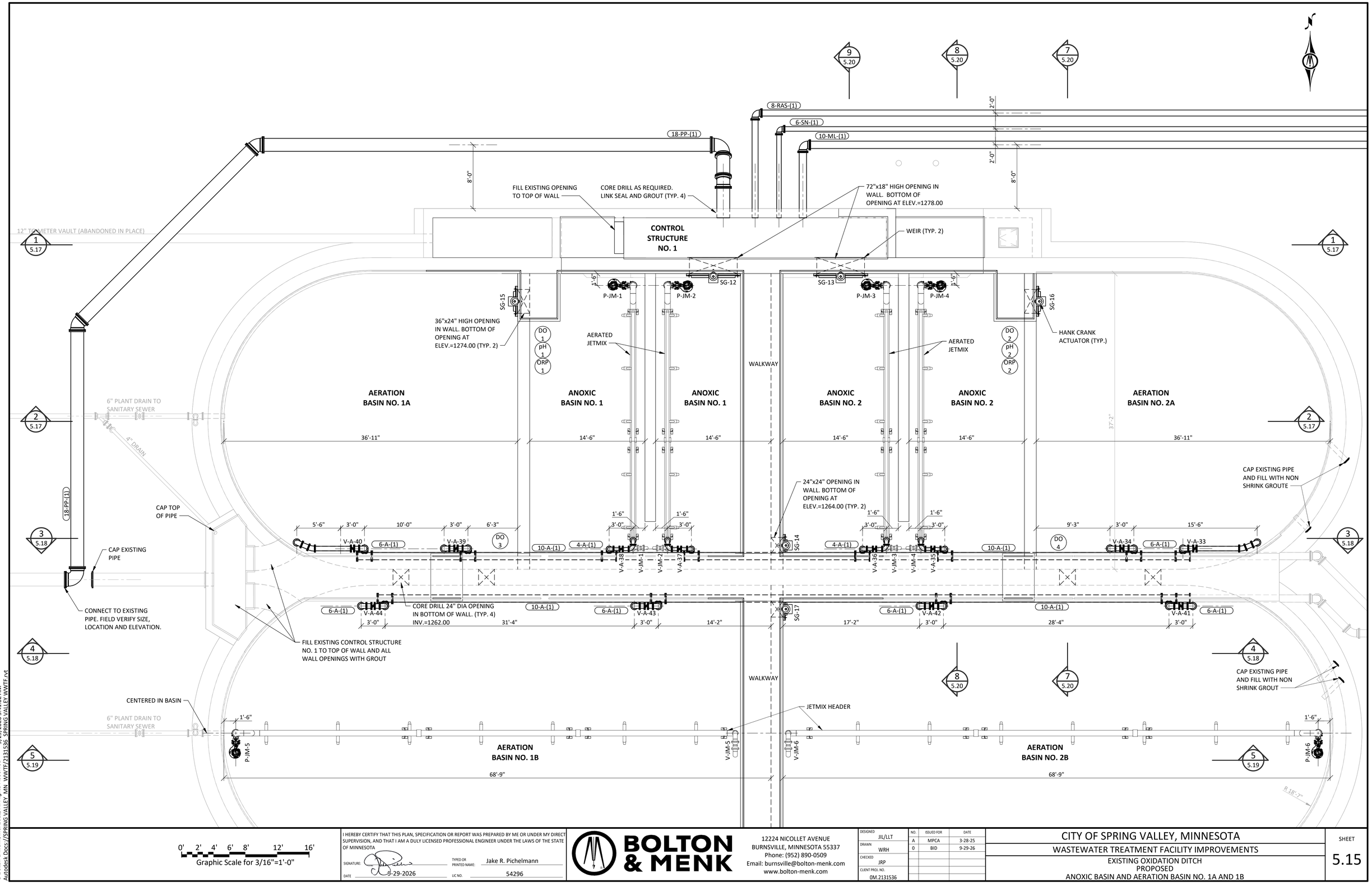
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING OXIDATION DITCH
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0' 2' 4' 6' 8' 12' 16'
Graphic Scale for 3/16"=1'-0"

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING OXIDATION DITCH
PROPOSED
ANOXIC BASIN AND AERATION BASIN NO. 1A AND 1B

SHEET 5.15

AERATED JETMIX

AERATED JETMIX

HANK CRANK ACTUATOR (TYP.)

PIPING TO CONTROL STRUCTURE NO. 1

WALKWAY

AERATION BASIN NO. 1A

ANOXIC BASIN NO. 1

ANOXIC BASIN NO. 1

ANOXIC BASIN NO. 2

ANOXIC BASIN NO. 2

AERATION BASIN NO. 2A

6" PLANT DRAIN TO SANITARY SEWER

4" DRAIN

2 5.17

36'-11" | 14'-6" | 14'-6" | 14'-6" | 14'-6" | 36'-11"

2'-0" | 2'-0"

10-ML-(1) | 6-SN-(1) | 8-RAS-(1)

8-RAS-(1)

1'-4"

10-ML-(1)

3 5.18

10-ML-(1)

CAP EXISTING PIPE AND FILL WITH NON SHRINK GROUTE

24"x24" OPENING IN WALL. BOTTOM OF OPENING AT ELEV.=1264.00 (TYP. 2)

CAP TOP OF PIPE

3 5.18

5'-6" | 3'-0" | 10'-0" | 3'-0" | 6'-3"

1'-6" 3'-0" | 1'-6" 3'-0"

1'-6" 3'-0" | 1'-6" 3'-0"

9'-3" | 3'-0" | 15'-6"

V-A-40 | 6-A-(1) | V-A-39 | DO 3 | 10-A-(1) | 4-A-(1) | V-A-38 | V-JM-1 | V-JM-2 | V-A-37 | SG-14 | 4-A-(1) | V-A-36 | V-JM-3 | V-JM-4 | V-A-35 | 10-A-(1) | DO 4 | V-A-34 | 6-A-(1) | V-A-33

6-A-(1) | V-A-44 | 3'-0" | 10-A-(1) | 6-A-(1) | V-A-43 | 3'-0" | SG-17 | 6-A-(1) | V-A-42 | 3'-0" | 10-A-(1) | 6-A-(1) | V-A-41 | 3'-0" | 6-A-(1)

31'-4" | 14'-2" | 17'-2" | 28'-4"

CORE DRILL 24" DIA OPENING IN BOTTOM OF WALL. (TYP. 4) INV.=1262.00

10" AIR FROM BLOWERS

FILL EXISTING CONTROL STRUCTURE NO. 1 TO TOP OF WALL AND ALL WALL OPENINGS WITH GROUT

4 5.18

8 5.20

7 5.20

CAP EXISTING PIPE AND FILL WITH NON SHRINK GROUT

WALKWAY

CENTERED IN BASIN

JETMIX HEADER

6" PLANT DRAIN TO SANITARY SEWER

1'-6" | P-JM-5 | V-JM-5 | V-JM-6 | P-JM-6 | 1'-6"

5 5.19

AERATION BASIN NO. 1B

AERATION BASIN NO. 2B

68'-9" | 68'-9"

37'-2"

R.18'-7"

10 5.20

DO 5 | DO 6

6'-0" | 3'-0" | 3'-0" | 6'-0"

NEW WALL TO TOP OF EXISTING WALL

WEIR (TYP. 2)

6 5.19

12" TO METER VAULT (ABANDONED IN PLACE)

CONTROL STRUCTURE NO. 2

P-MLR-2 | 1'-1" | P-MLR-1

CORE DRILL AS REQUIRED. LINK SEAL AND GROUT

72"x18" HIGH OPENING IN WALL. BOTTOM OF OPENING AT ELEV.=1277.00

CORE DRILL AS REQUIRED. LINK SEAL AND GROUT

8-ML-(1)

10"x8" REDUCER

4'-0" | 3'-3"

3'-0"

10-ML-(1)

10'-0"

9 5.20

18" TO EXISTING METER VAULT

18-PP-(1)

18" FROM CLARIFIERS

18-PP-(1)

18" TO CLARIFIERS

18-PP-(1)

0' 2' 4' 6' 8' 12' 16'

Graphic Scale for 3/16"=1'-0"

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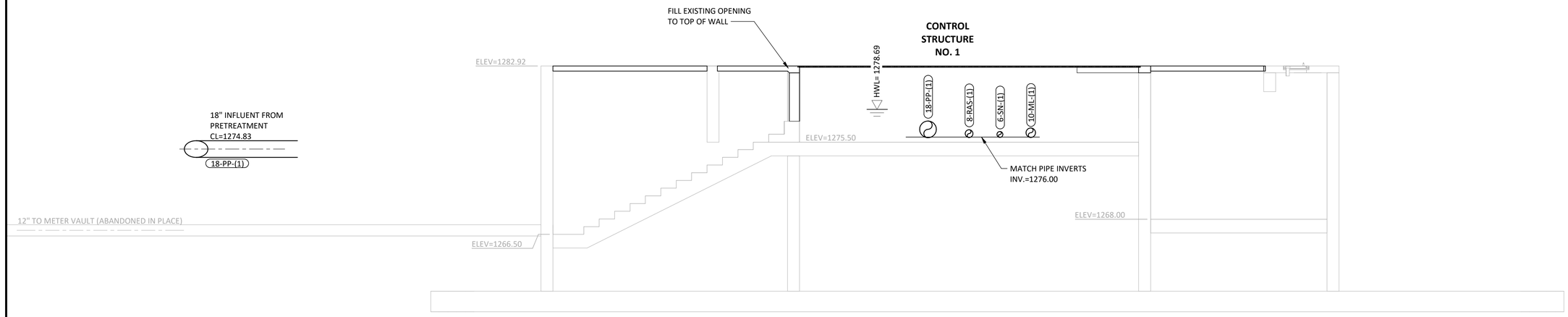
CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

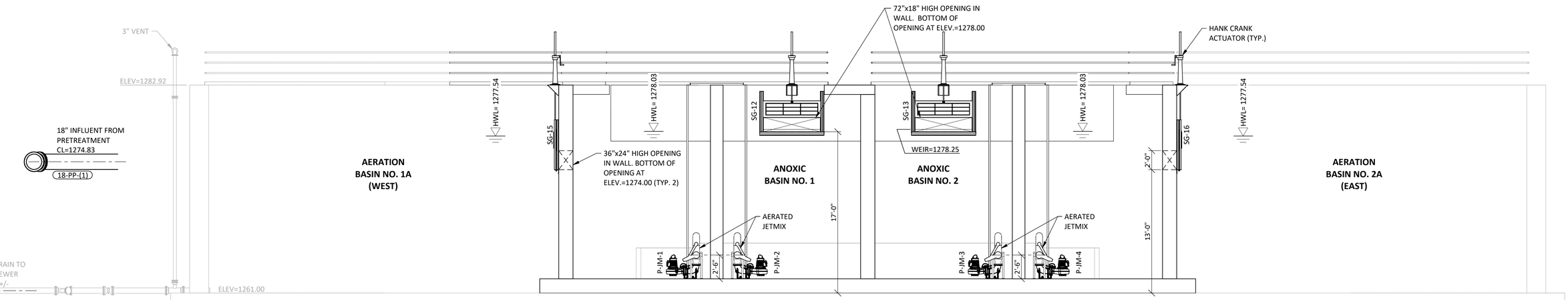
EXISTING OXIDATION DITCH
PROPOSED
AERATION BASINS NO. 2A AND 2B

SHEET 5.16

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1 / 5.17 SECTION
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2 / 5.17 SECTION
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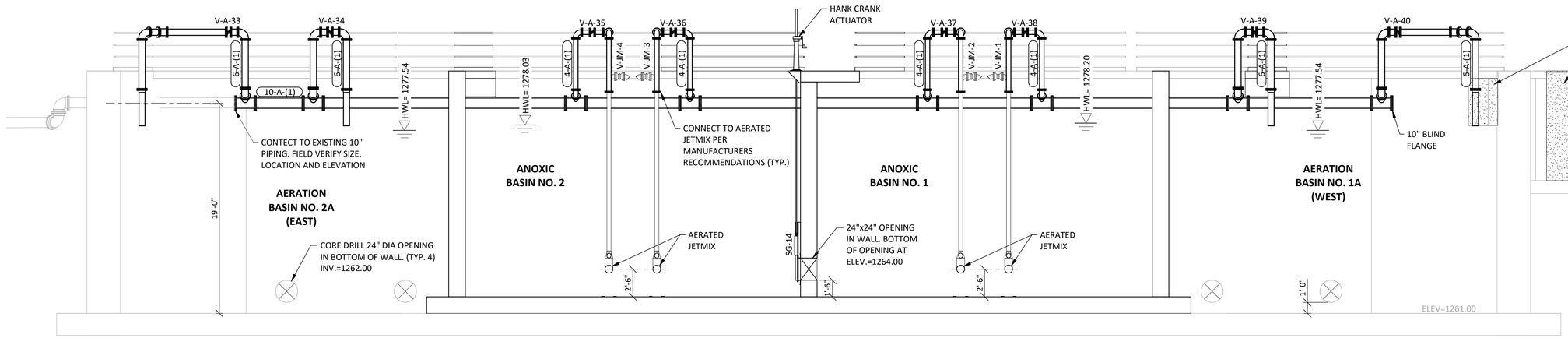
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B	MPCA	6-24-25
0	BID	9-29-26

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING OXIDATION DITCH
PROPOSED
SECTIONS

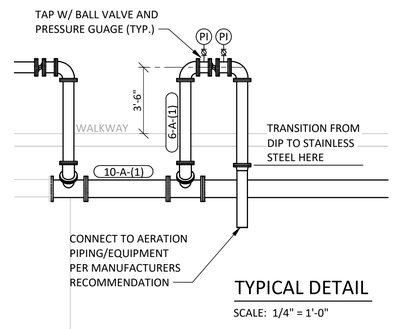
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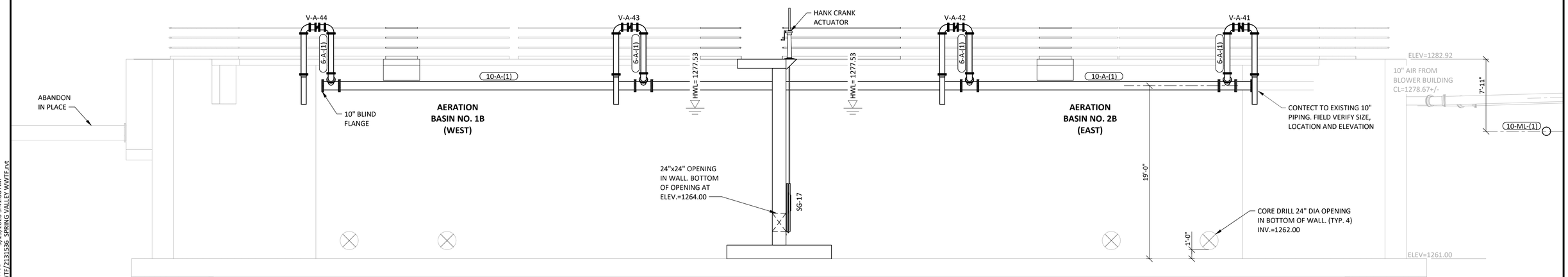


3 / 5.18 SECTION
SCALE: 3/16" = 1'-0"

NOTE: TYPICAL DETAIL FOR ALL AERATION LATERALS. SEE PLAN VIEW FOR LOCATIONS.



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



4 / 5.18 SECTION
SCALE: 3/16" = 1'-0"

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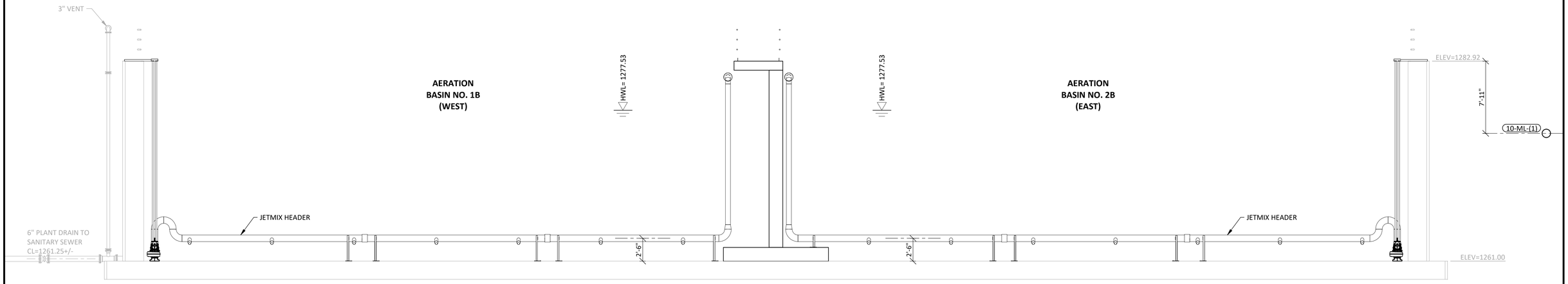
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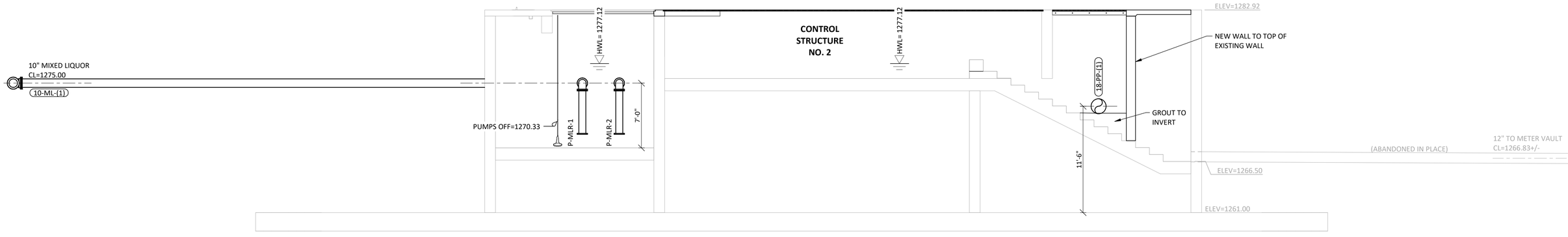
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING OXIDATION DITCH
PROPOSED
SECTIONS

SHEET 5.18



5 / 5.19 SECTION
SCALE: 3/16" = 1'-0"



6 / 5.19 SECTION
SCALE: 3/16" = 1'-0"

0' 2' 4' 6' 8' 12' 16'
Graphic Scale for 3/16"=1'-0"

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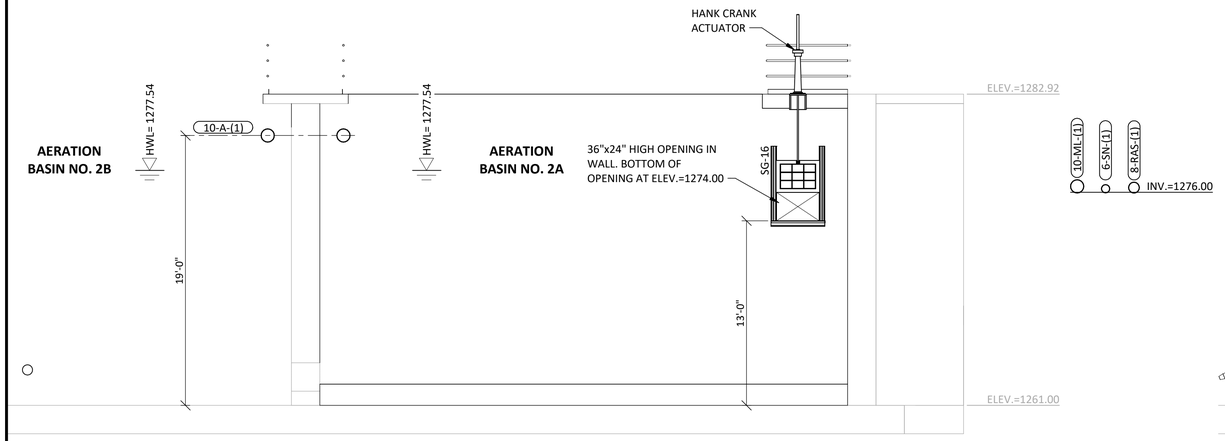
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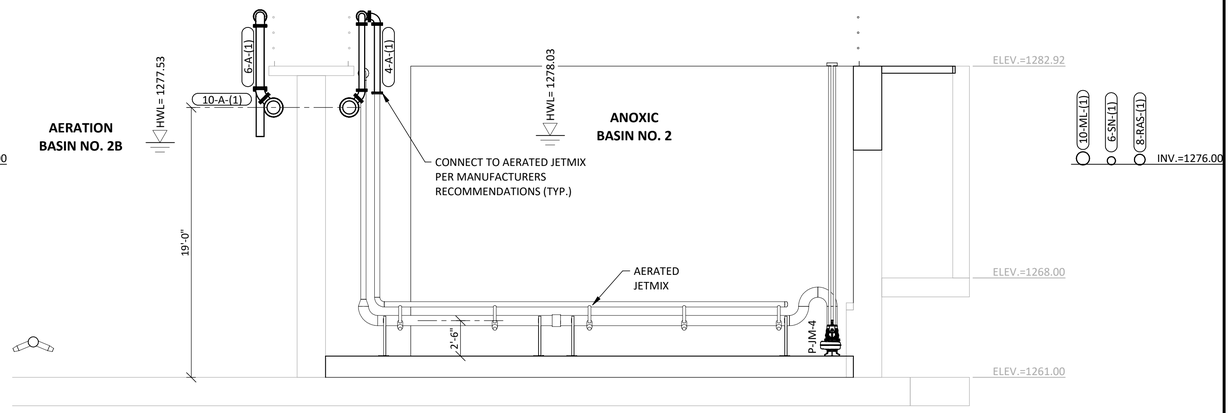
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING OXIDATION DITCH
PROPOSED
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SHEET 5.19

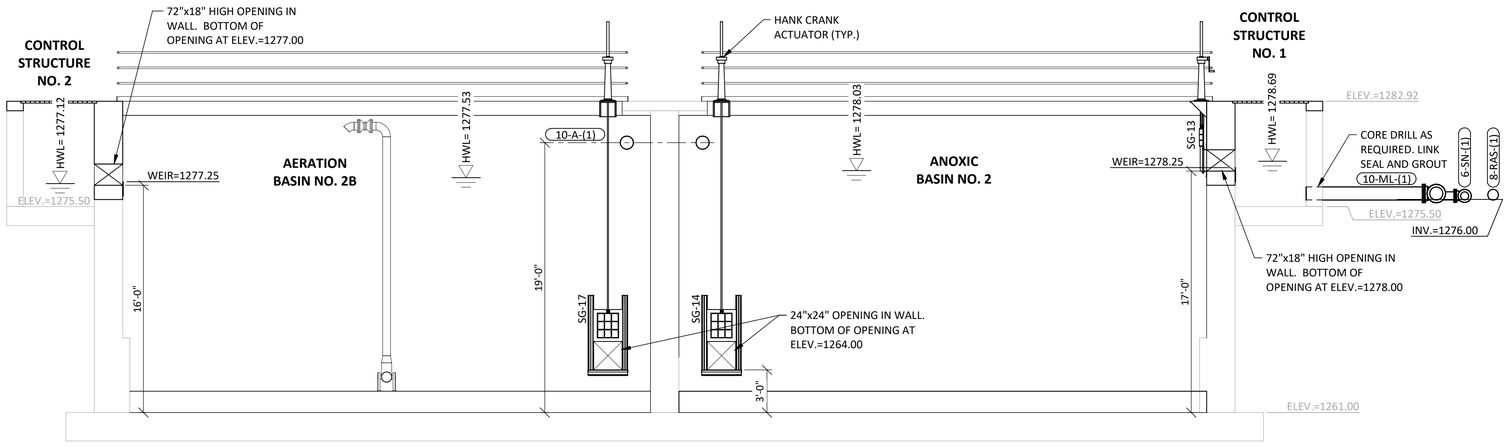
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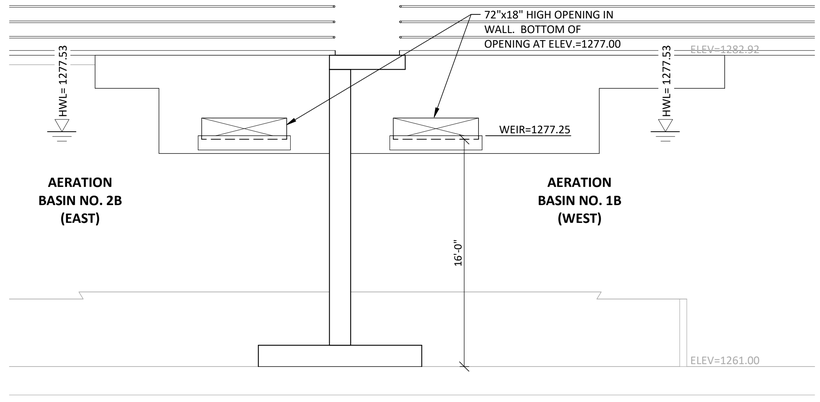
7 / 5.20 SECTION
SCALE: 3/16" = 1'-0"



8 / 5.20 SECTION
SCALE: 3/16" = 1'-0"



9 / 5.20 SECTION
SCALE: 3/16" = 1'-0"



10 / 5.20 SECTION
SCALE: 3/16" = 1'-0"

0' 2' 4' 6' 8' 12' 16'
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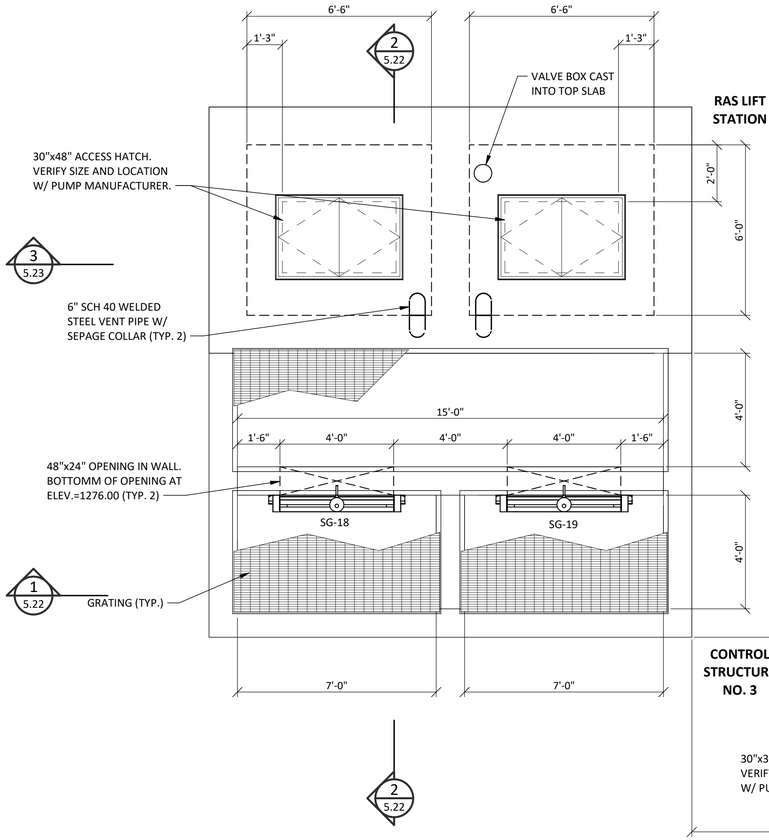
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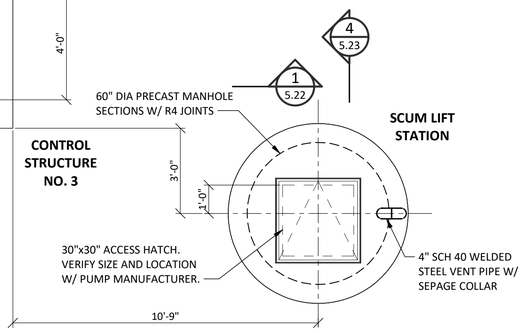
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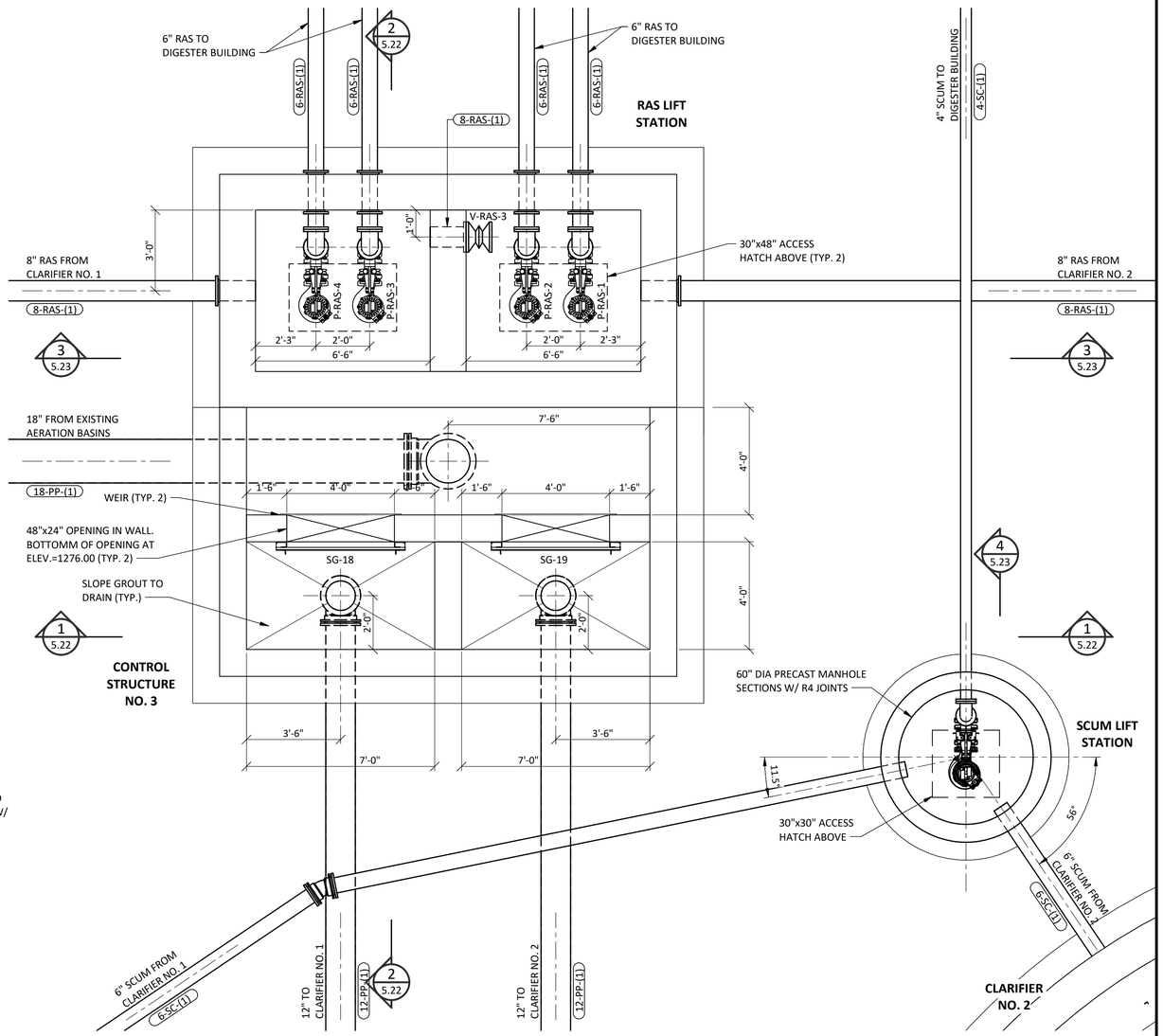
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EXISTING OXIDATION DITCH
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SHEET 5.20

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TOP SLAB PLAN

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

PLAN

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

0' 1' 2' 3' 4' 6' 8'

Graphic Scale for 3/8"=1'-0"

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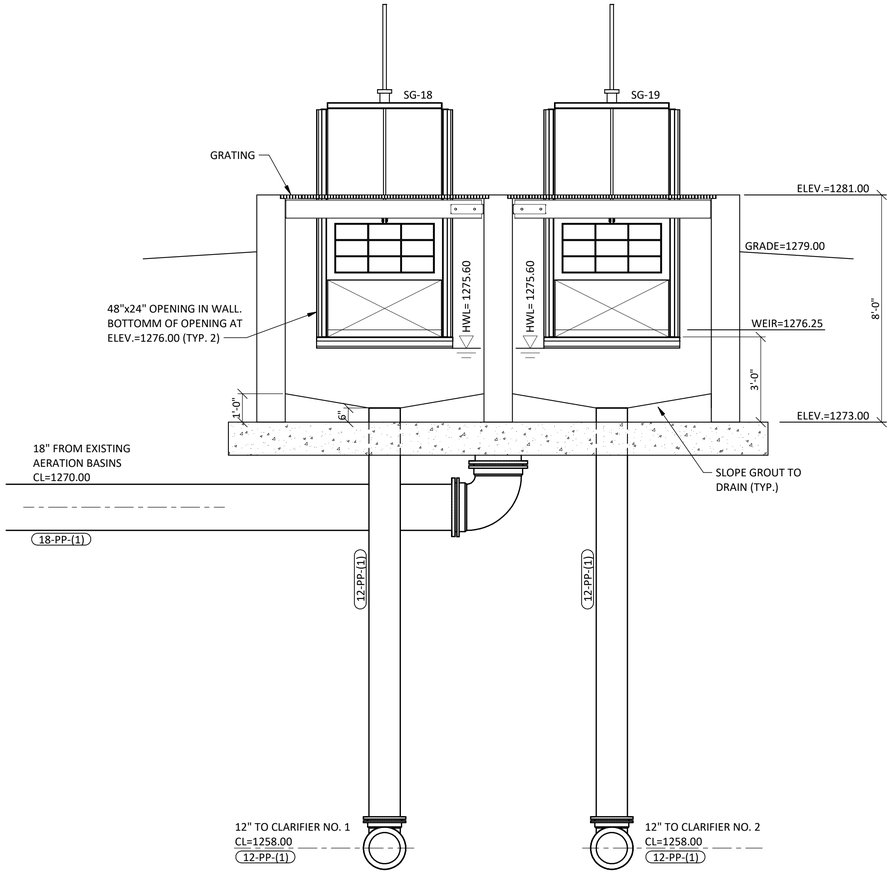
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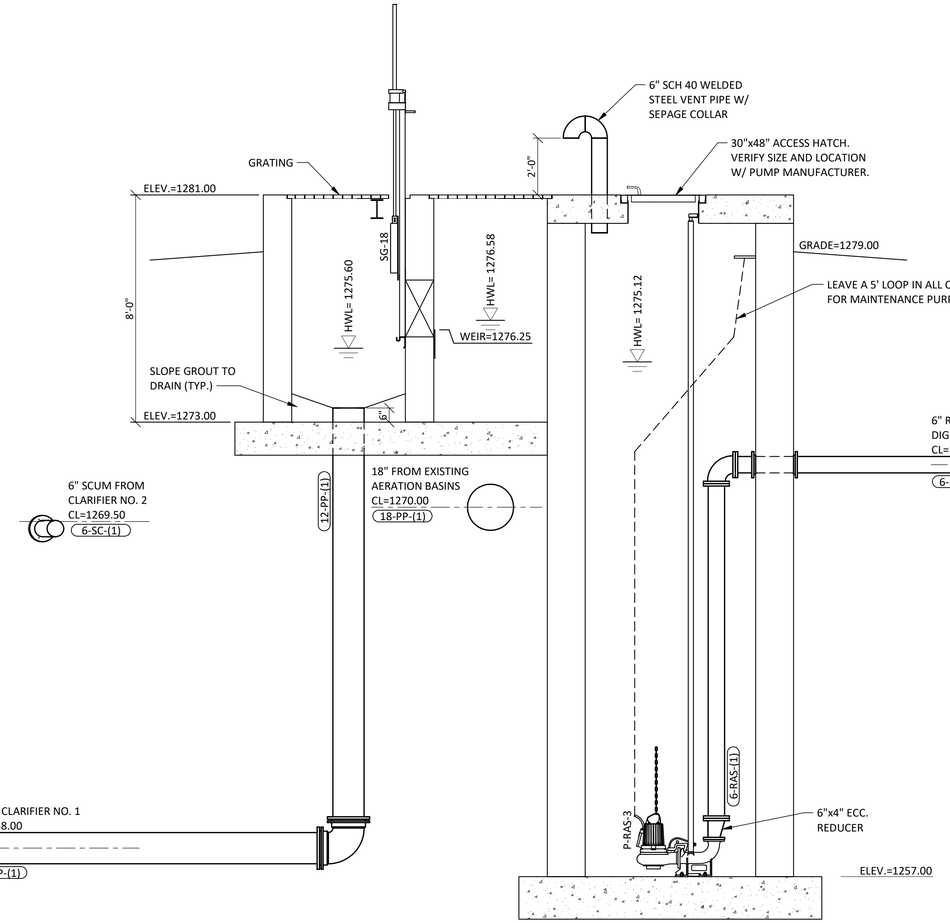
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
CONTROL STRUCTURE NO. 3 AND RAS LIFT STATION
PROPOSED
MAIN LEVEL, LOWER LEVEL, AND TOP SLAB PLANS AND SECTION

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1 / 5.22 SECTION
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2 / 5.22 SECTION
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0' 1' 2' 3' 4' 6' 8'
Graphic Scale for 3/8"=1'-0"

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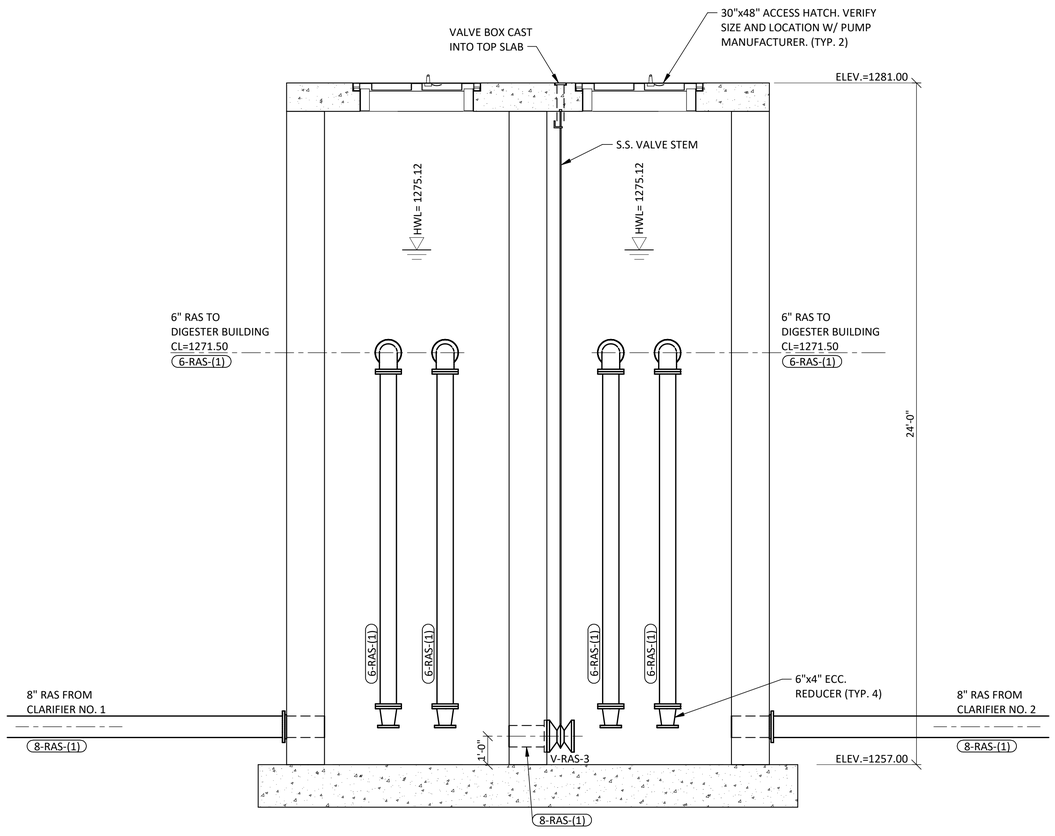
DESIGNED Designer
DRAWN Author
CHECKED Checker
CLIENT PROJ. NO. 0M.2131536

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0	BID	9-29-26

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
CONTROL STRUCTURE NO. 3 AND RAS LIFT STATION
PROPOSED
SECTIONS

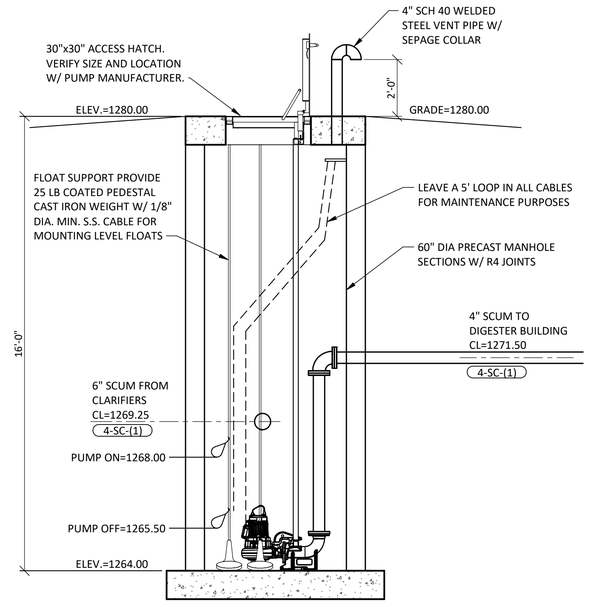
SHEET 5.22

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

NOTE: SOME PIPING ROATED FOR CLARITY.
SEE PLAN VIEW FOR ORIENTATION.



4 SECTION
5.23 SCALE: 3/8" = 1'-0"

0' 1' 2' 3' 4' 6' 8'
Graphic Scale for 3/8"=1'-0"

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
CONTROL STRUCTURE NO. 3 AND RAS LIFT STATION
PROPOSED
SECTIONS

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18" FROM EXISTING AERATION BASINS

18-PP-(1)

8-RAS-(1) — 8" RAS TO RAS LIFT STATION

8"x6" REDUCER

4'-0"

V-HS-2 | 6-HS-(1)

V-RAS-2 | 8-RAS-(1)

33'-6"

GROUT=1273.75

CONTROL STRUCTURE NO. 3
(SEE OTHER DRAWINGS FOR DETAIL)

10'-9"

18'-3"

SCUM MANHOLE
(SEE OTHER DRAWINGS FOR DETAIL)

15'-3"

6-SC-(1)

1 / 5.25

8'-0"

30'-0"

12-PP-(1)

12-PP-(1)

V-SC-2
SCUM FLUSH W/ VALVE
EXT. UP TO BRIDGE

17°

SCUM BEACH

34°

ROTATION

RAS DRAWOFF HOPPER

HEAVY SLUDGE DRAWOFF HOPPER

V-NOTCH WEIR

SCUM BAFFLE

R 22'-6"

2'-0"

CLARIFIER NO. 1

2 / 5.25

1 / 5.25

GROUT=1272.92

8-RAS-(1) — 8" RAS TO RAS LIFT STATION

8"x6" REDUCER

4'-0"

V-RAS-1 | 8-RAS-(1)

V-HS-1 | 6-HS-(1)

GROUT=1273.75

6-SC-(1)

SCUM BEACH

V-SC-1
SCUM FLUSH W/ VALVE
EXT. UP TO BRIDGE

17°

45°

ROTATION

RAS DRAWOFF HOPPER

HEAVY SLUDGE DRAWOFF HOPPER

R 22'-6"

2'-0"

CLARIFIER NO. 2

GROUT=1272.92

18" EFFLUENT TO CHLORINE CONTACT BASIN

18-PP-(1)

INV.=1265.25

INV.=1265.25

18-PP-(1) INV.=1265.25

48"x48" EFFLUENT BOX

24"x24" OPENING IN WALL. BOTTOM OF OPENING AT ELEV.=1272.75

GRATING

2'-0"

75'-0"

24"x24" OPENING IN WALL. BOTTOM OF OPENING AT ELEV.=1272.75

2'-0"

48"x48" EFFLUENT BOX

GRATING

PLAN

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

0' 1' 2' 3' 4' 6' 8' 12'

Graphic Scale for 1/4"=1'-0"

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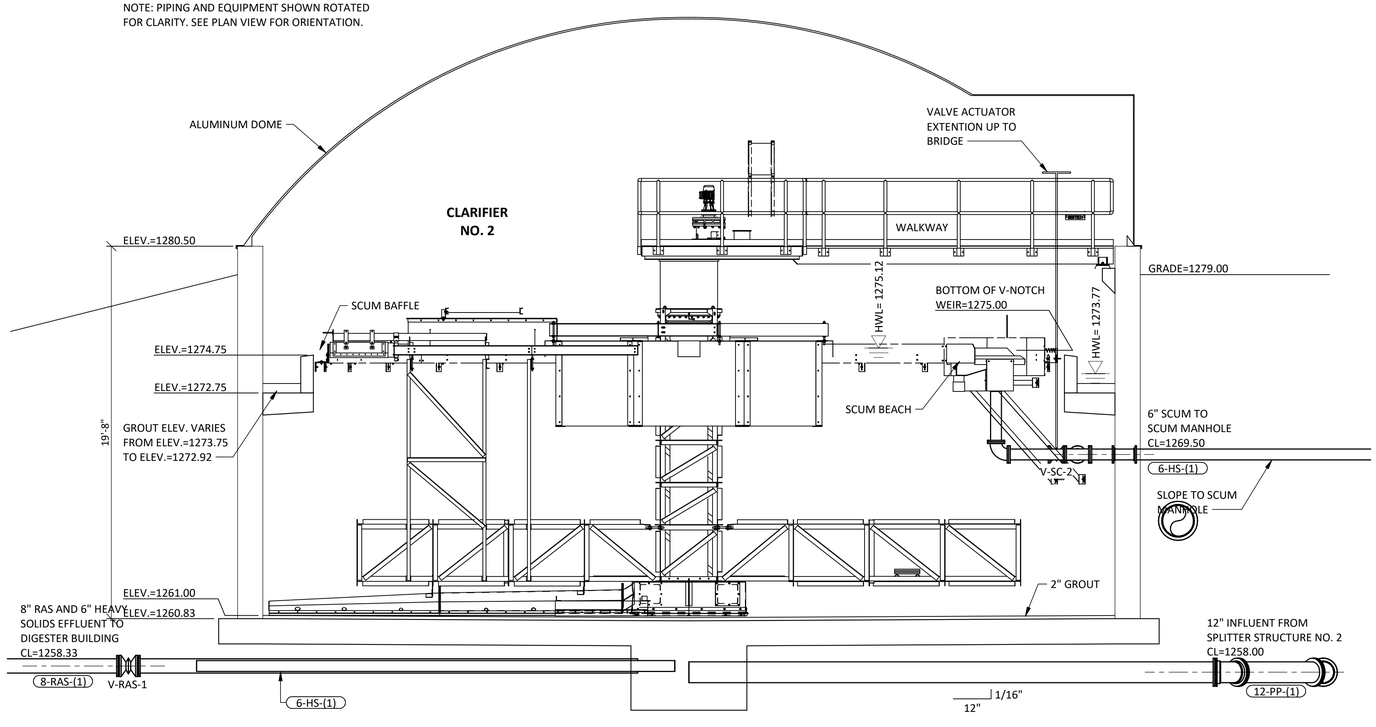
WASTEWATER TREATMENT FACILITY IMPROVEMENTS

CLARIFIERS
PROPOSED
OVERALL PLAN

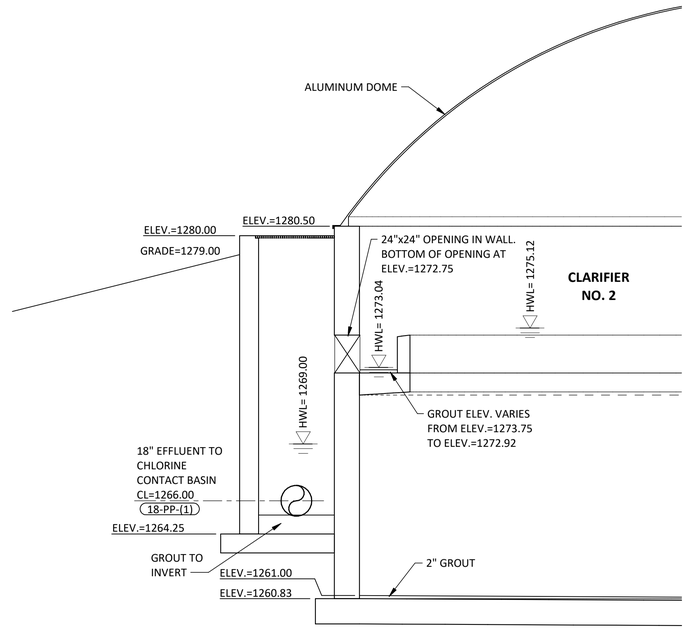
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NOTE: PIPING AND EQUIPMENT SHOWN ROTATED
FOR CLARITY. SEE PLAN VIEW FOR ORIENTATION.



1 5.25 SECTION
SCALE: 1/4" = 1'-0"



2 5.25 SECTION
SCALE: 1/4" = 1'-0"

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0' 1' 2' 3' 4' 6' 8' 12'
Graphic Scale for 1/4"=1'-0"

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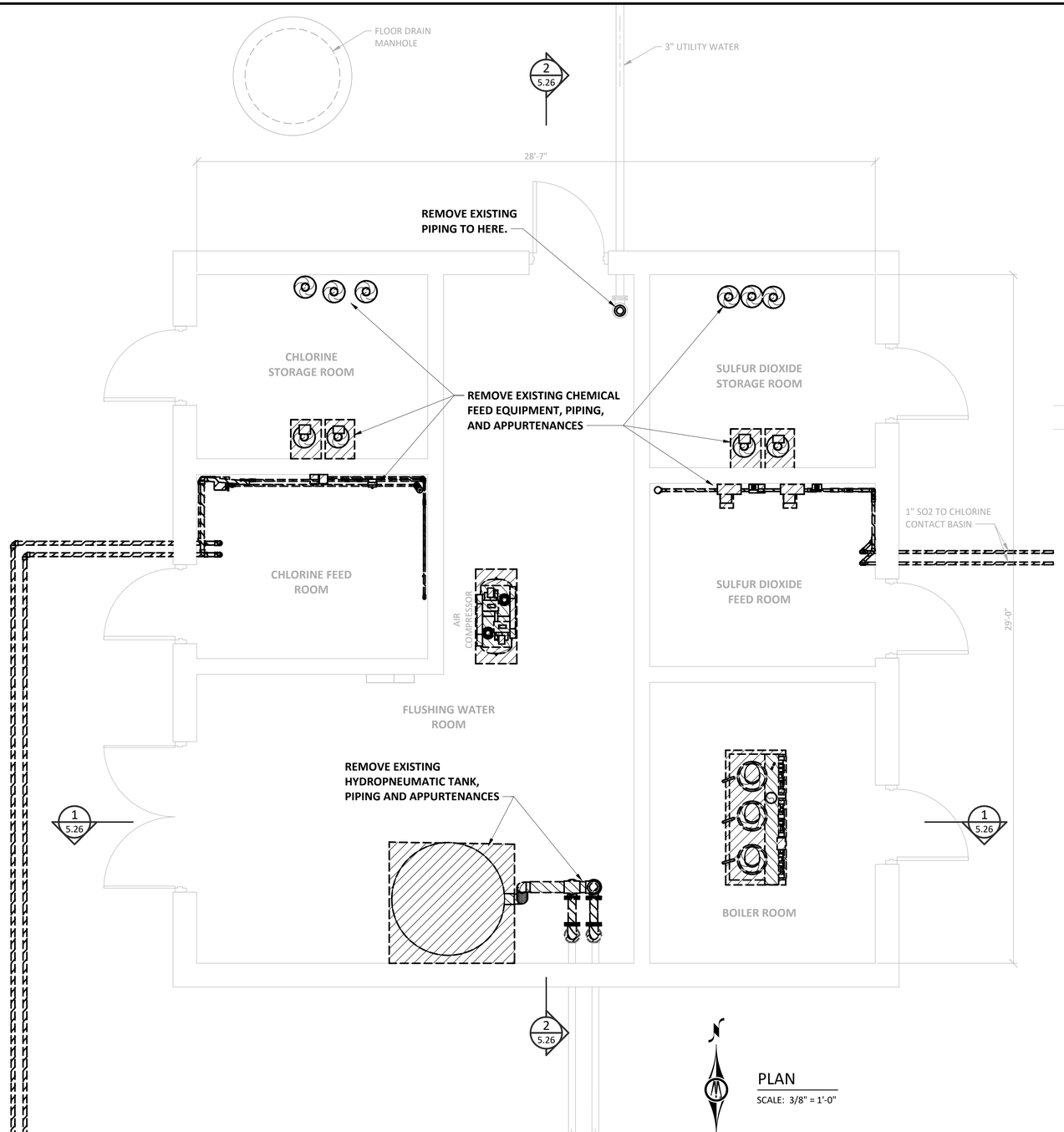
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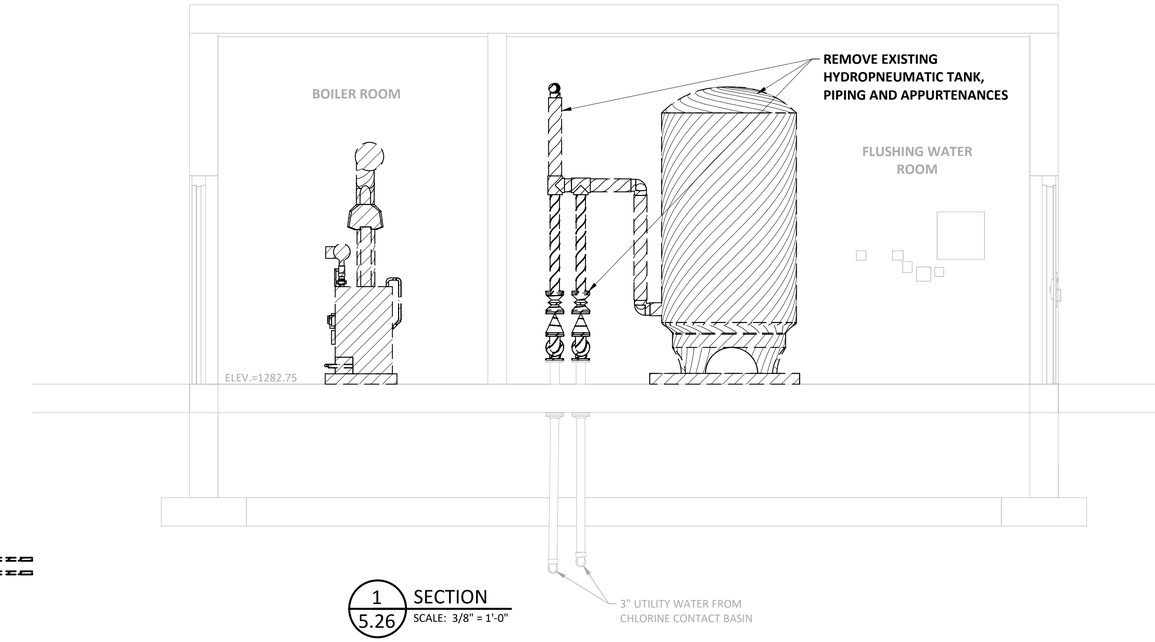
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
CLARIFIERS
PROPOSED
SECTIONS

SHEET
5.25



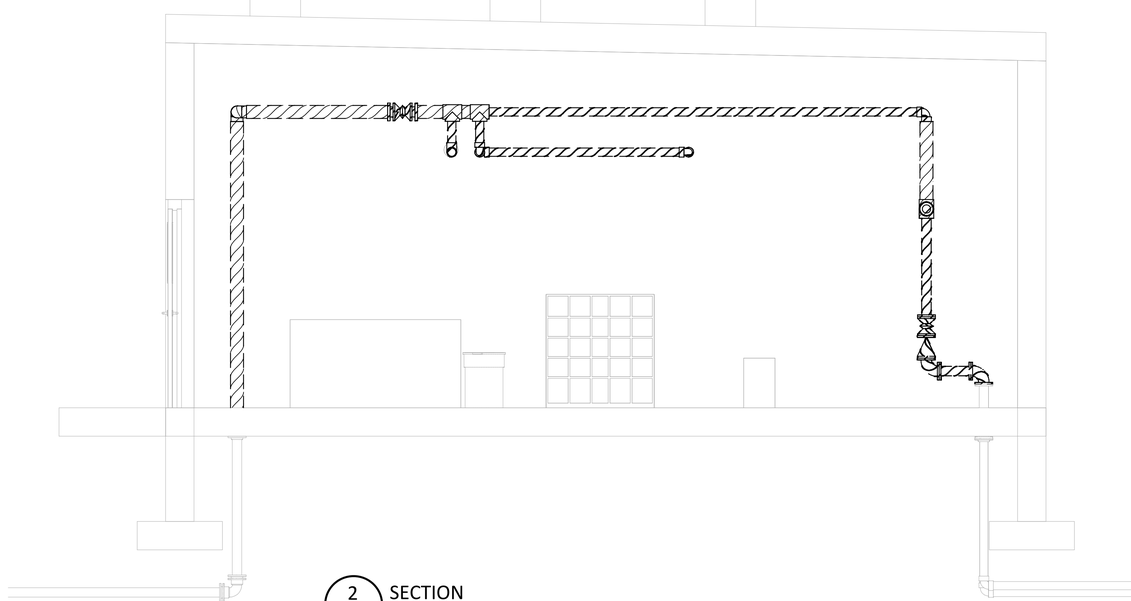
PLAN

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



1 / 5.26 SECTION

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



2 / 5.26 SECTION

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

0' 1' 2' 3' 4' 6' 8'

Graphic Scale for 3/8"=1'-0"

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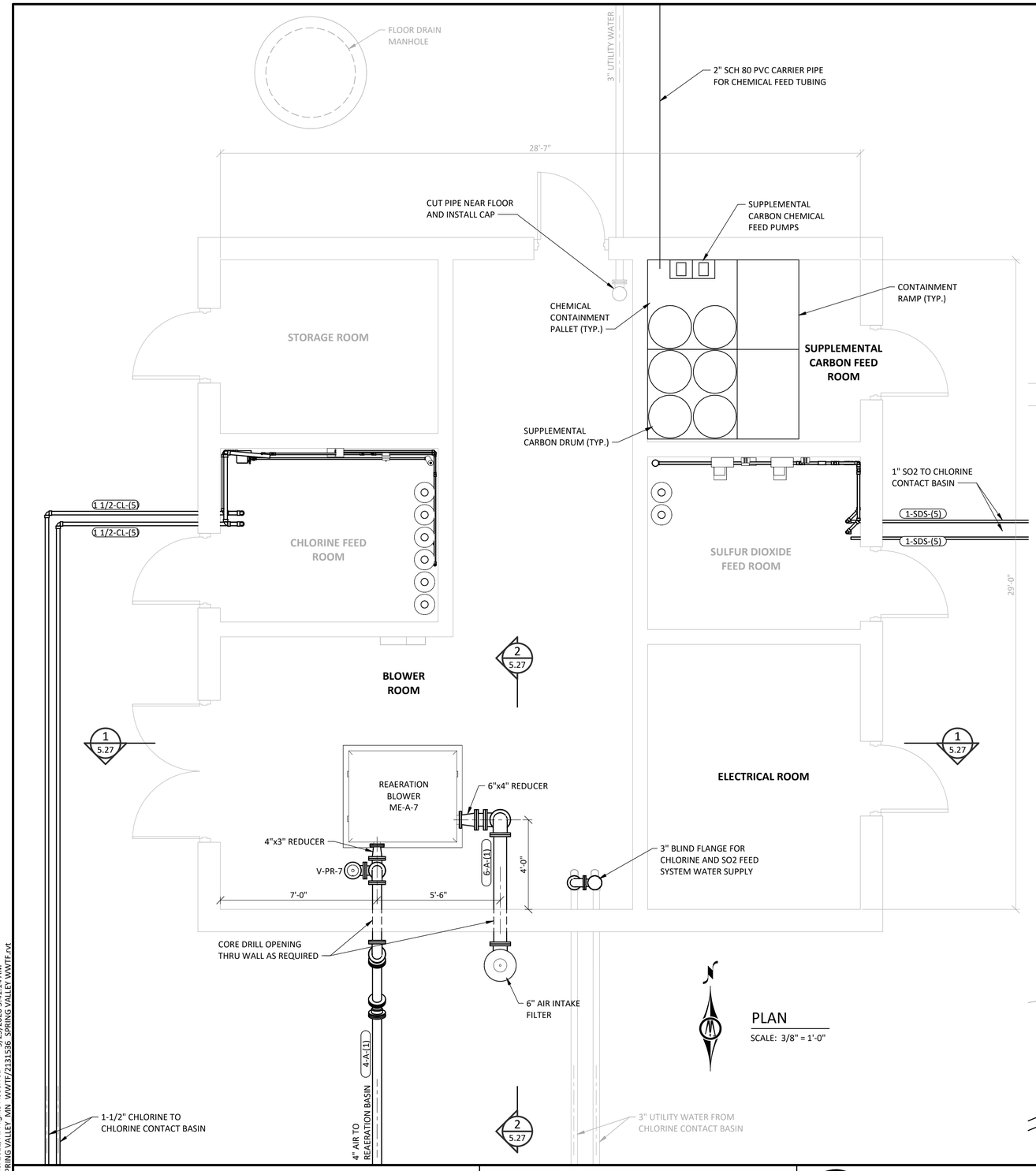
CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

EXISTING DISINFECTION BUILDING DEMOLITION PLAN AND SECTION

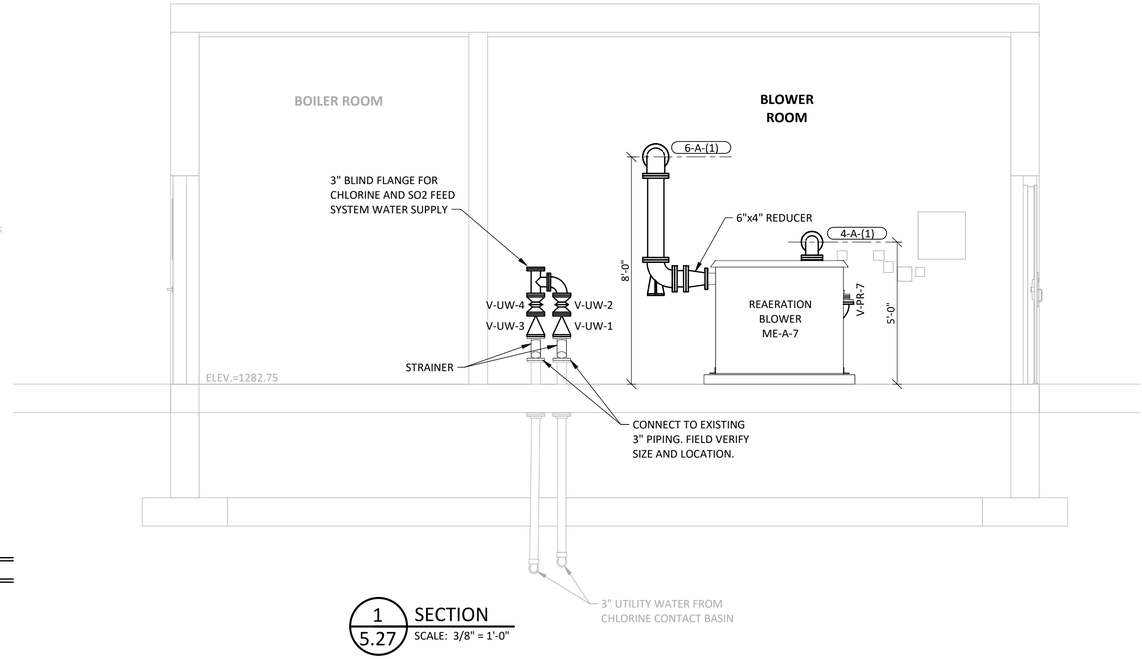
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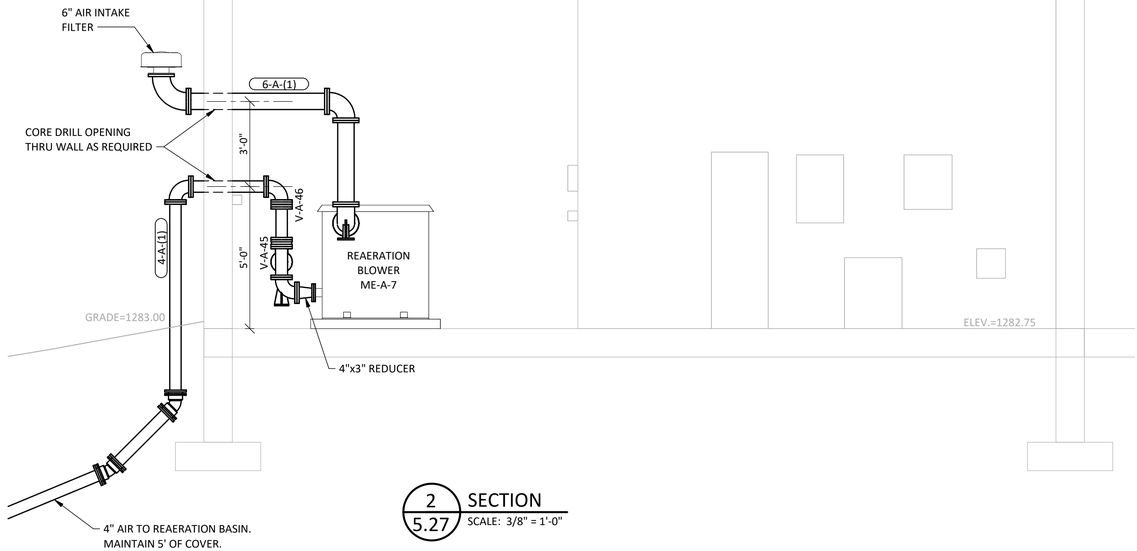
PLAN

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



1 / 5.27 SECTION

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



2 / 5.27 SECTION

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

0' 1' 2' 3' 4' 6' 8'

Graphic Scale for 3/8"=1'-0"

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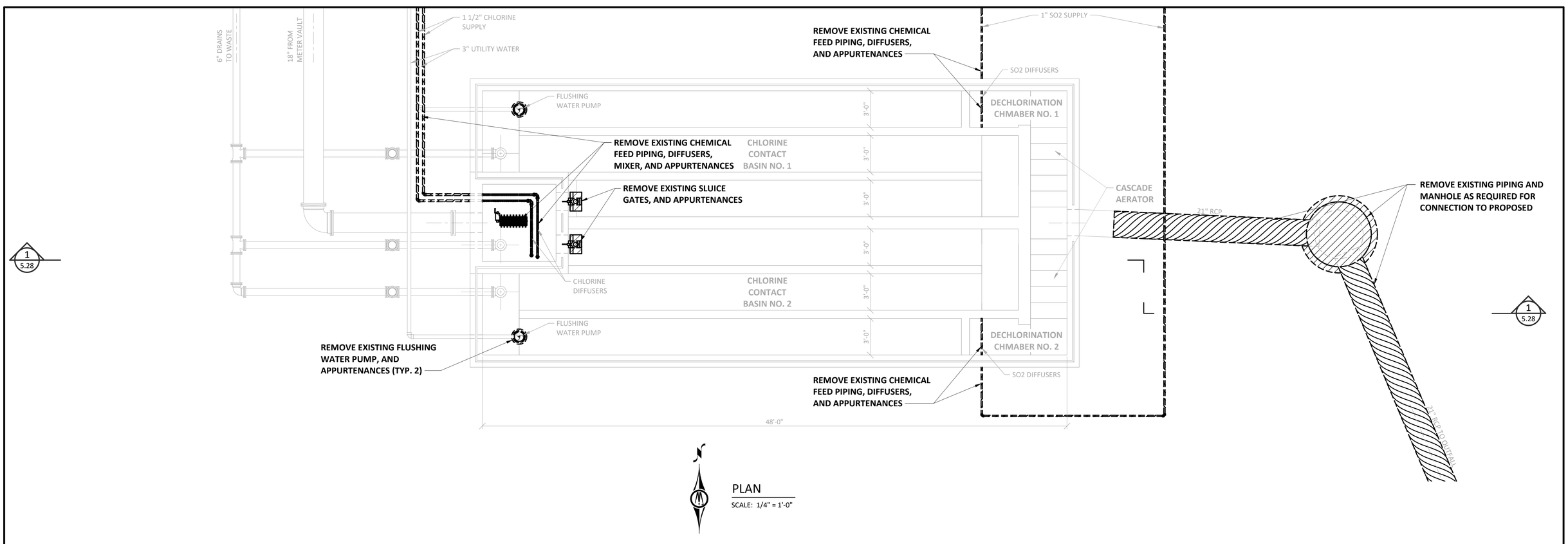
CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

EXISTING DISINFECTION BUILDING
PROPOSED
PLAN AND METER VAULT PLAN

SHEET 5.27

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0' 1' 2' 3' 4' 6' 8' 12'
Graphic Scale for 1/4"=1'-0"

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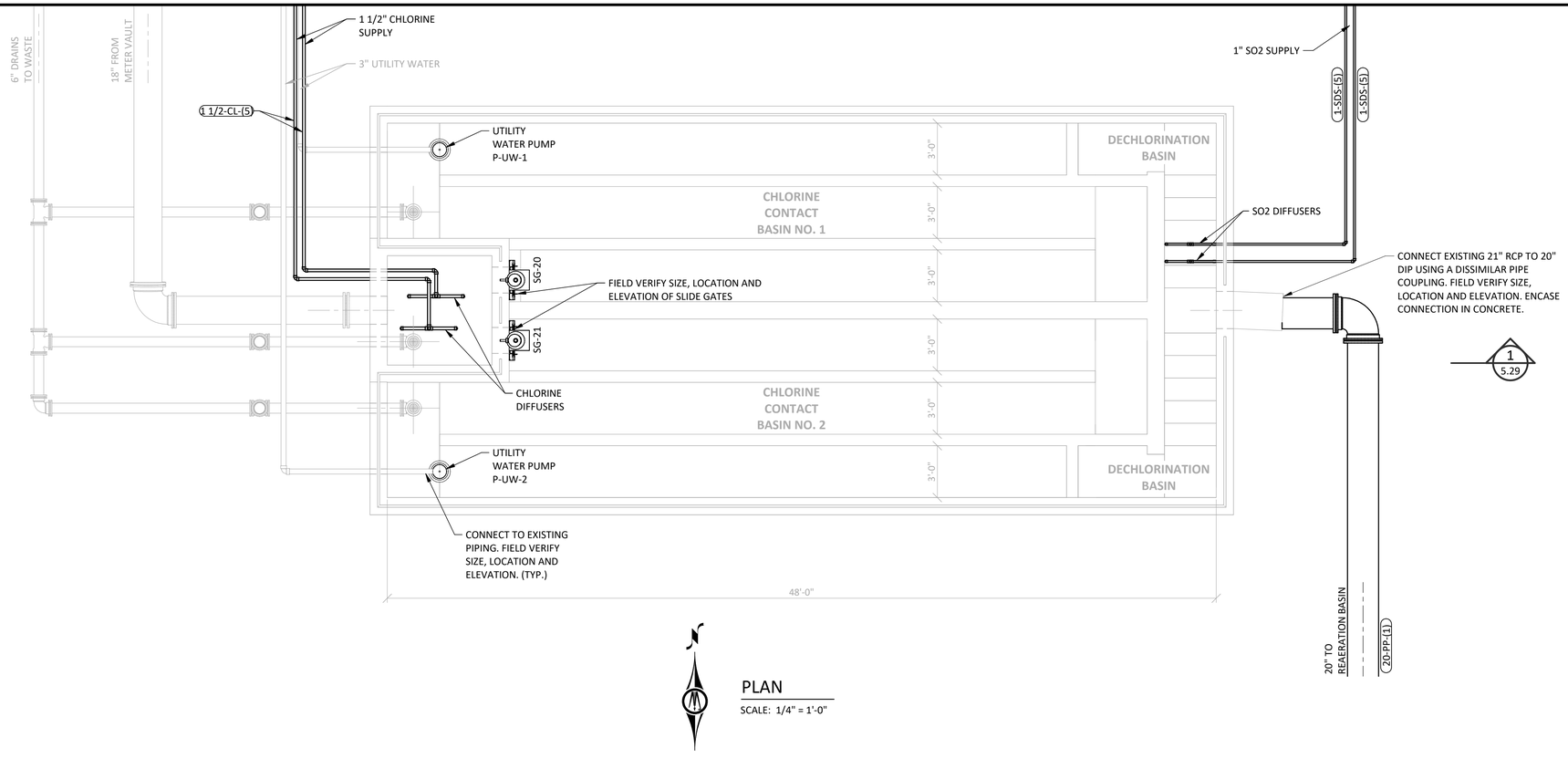
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DISINFECTION BASIN DEMOLITION
PLAN AND SECTION

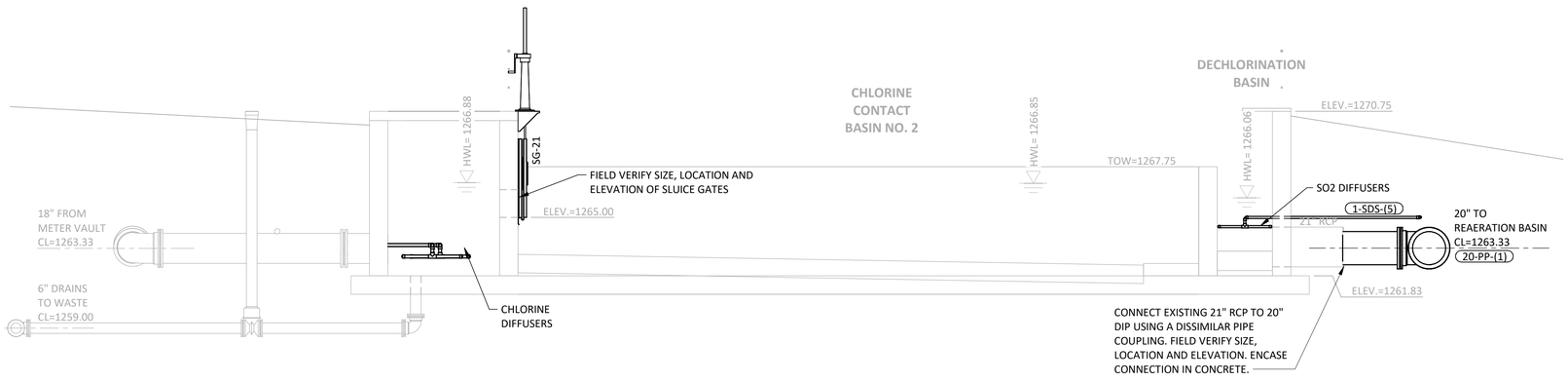
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PLAN

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



1/5.29 SECTION

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

0' 1' 2' 3' 4' 6' 8' 12'

Graphic Scale for 1/4"=1'-0"

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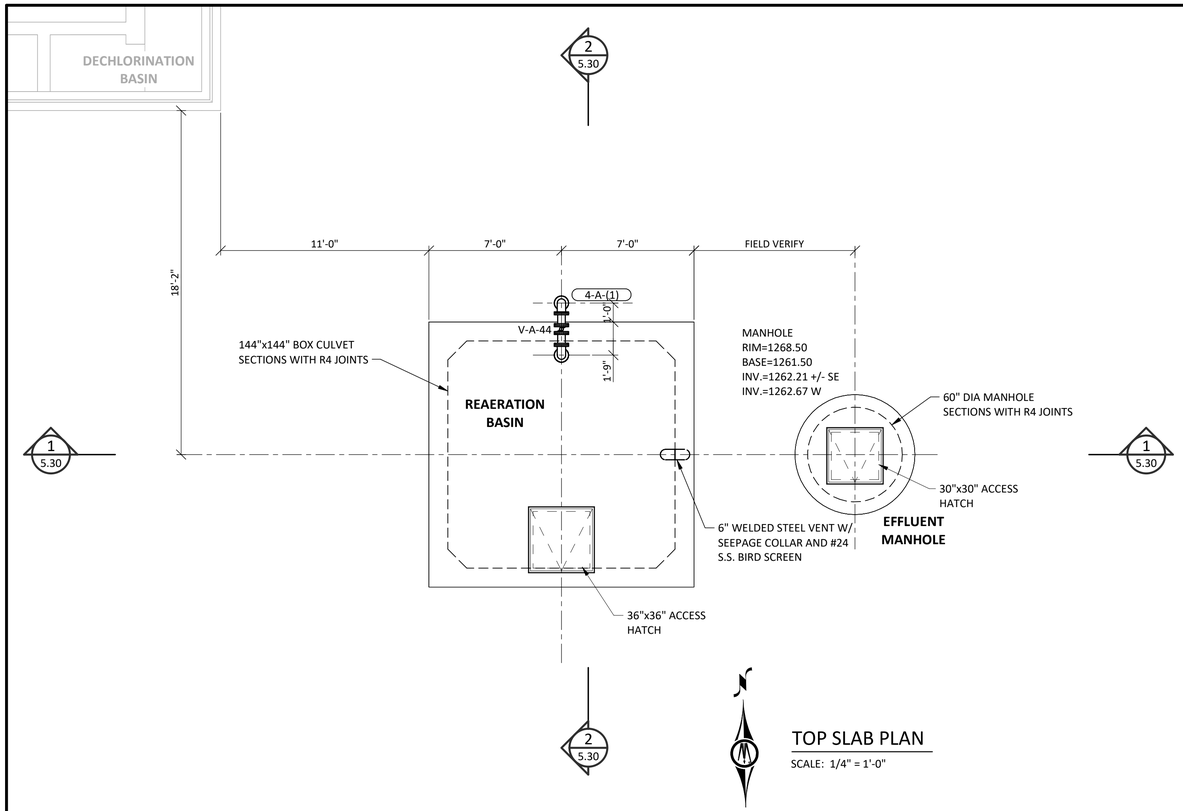
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS

EXISTING DISINFECTION BASIN
PROPOSED
PLAN AND SECTION

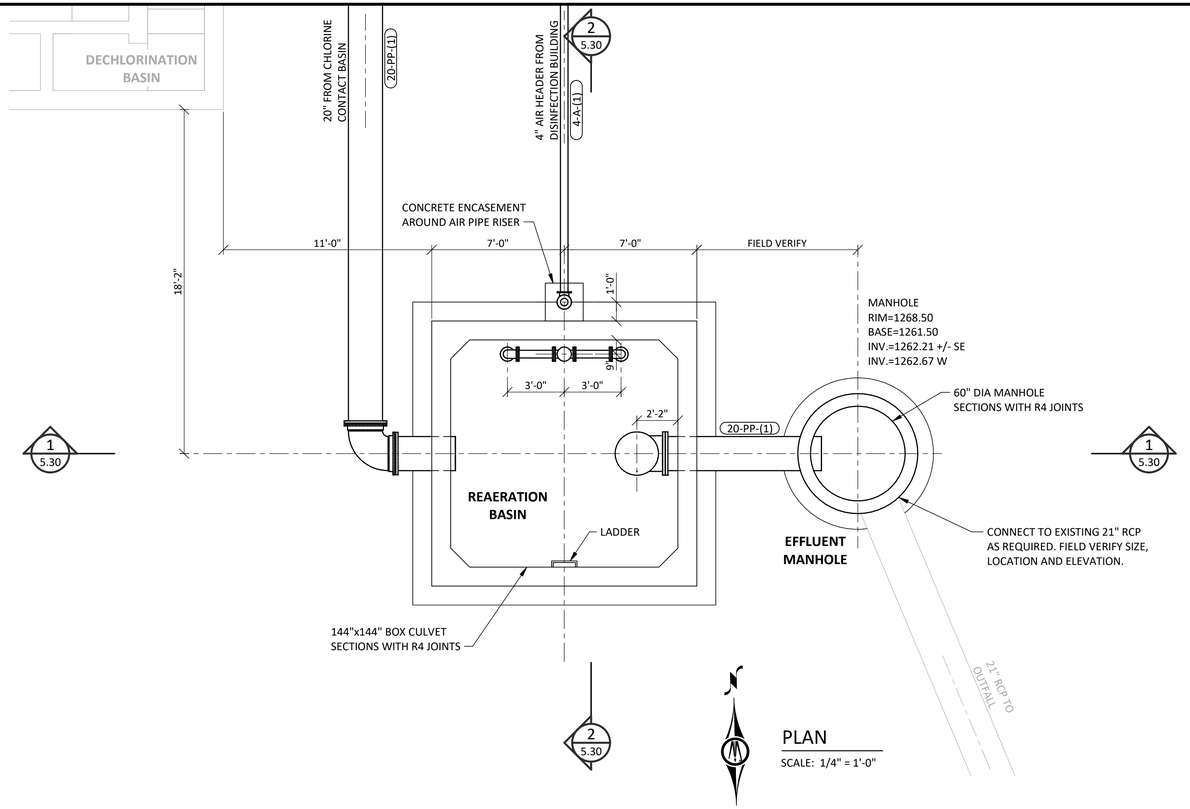
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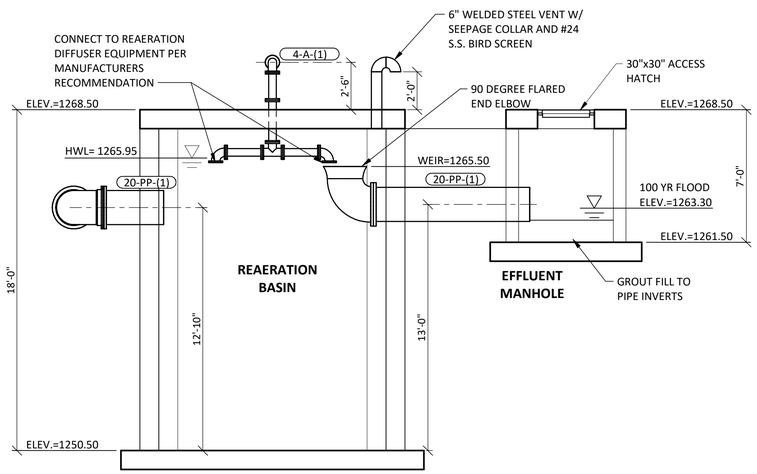
TOP SLAB PLAN

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



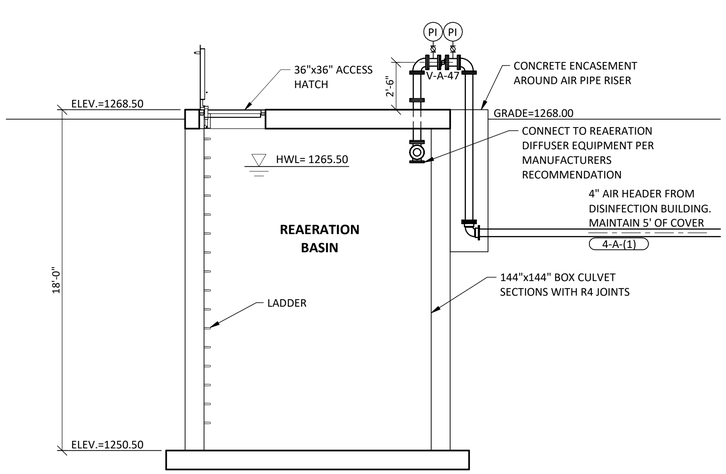
PLAN

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



1 5.30 SECTION

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



2 5.30 SECTION

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

0' 1' 2' 3' 4' 6' 8' 12'

Graphic Scale for 1/4"=1'-0"

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CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

REAERATION BASIN
PROPOSED
PLANS AND SECTIONS

SHEET 5.30

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STORAGE / DECANT
TANK NO. 1

3
5.35

60'-3"

REMOVE
EXISTING PIPING

1
5.33

MIXED LIQUOR
PUMP STATION

BLOWER
NO. 1

BLOWER
NO. 2

BLOWER
NO. 3

MCC

BLOWER
NO. 4

BLOWER
NO. 5

BLOWER
NO. 6

24'-0"

1
5.33

2
5.34

REMOVE EXISTING PUMPS, PIPING,
STRUCTURE, AND APPURTENANCES

2
5.34

STORAGE / DECANT
TANK NO. 2

48'-0"

3
5.35

PLAN

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

0' 1' 2' 3' 4' 6' 8'

Graphic Scale for 3/8"=1'-0"

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
DEMOLITION
MAIN LEVEL PLAN

SHEET
5.31

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STORAGE / DECANT
TANK NO. 1

3
5.35

6" DECANT TO
AERATION BASIN NO. 1

1
5.33

REMOVE EXISTING PUMPS, PIPING,
STRUCTURE, AND APPURTENANCES

REMOVE EXISTING PIPING, VALVES,
METERS, AND APPURTENANCES

2
5.34

6" DECANT TO
AERATION BASIN NO. 2

10" AIR HEADER TO
AERATION BASINS

STORAGE / DECANT
TANK NO. 2

LOWER LEVEL PLAN

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

0' 1' 2' 3' 4' 6' 8'
Graphic Scale for 3/8"=1'-0"

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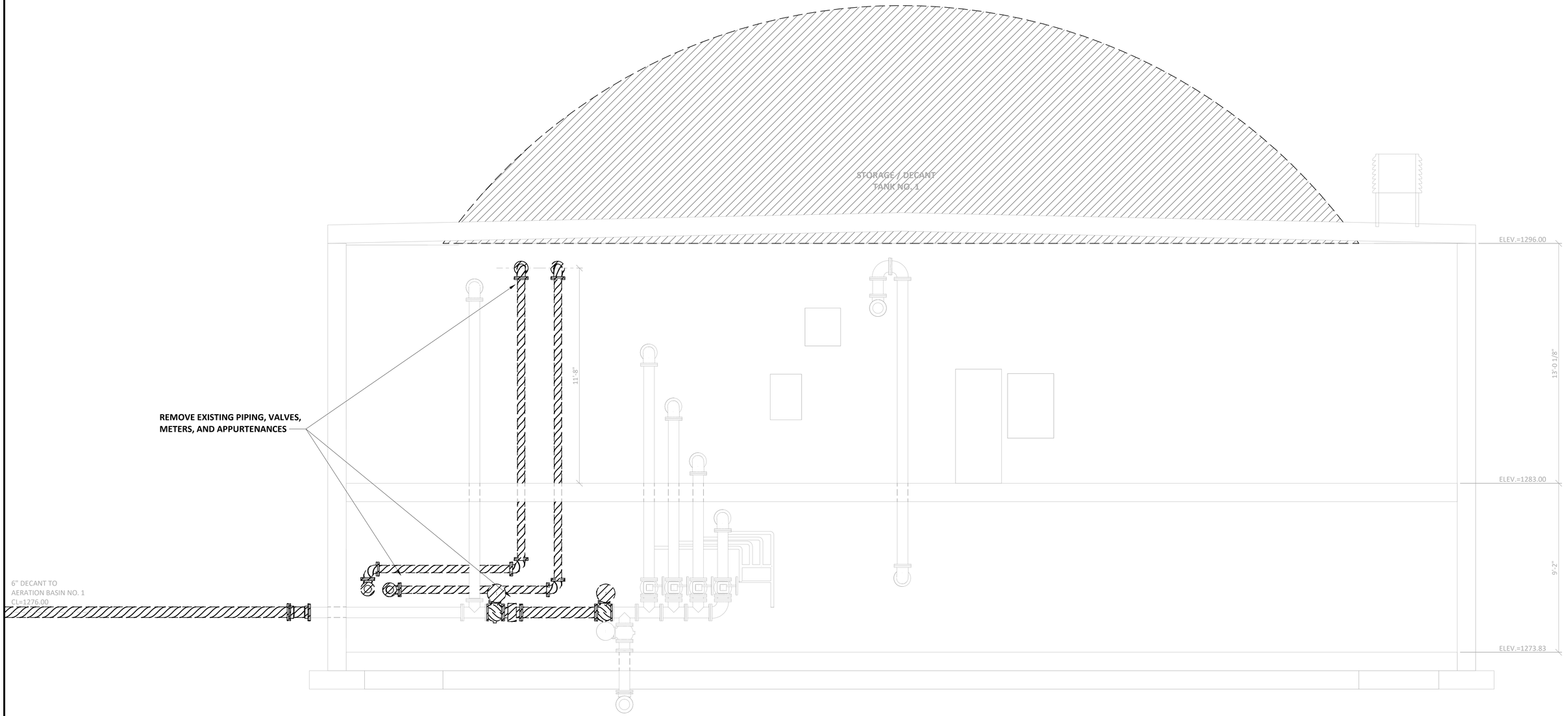
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
DEMOLITION
BASEMENT PLAN

SHEET
5.32

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1 / 5.33 SECTION
SCALE: 3/8" = 1'-0"

0' 1' 2' 3' 4' 6' 8'
Graphic Scale for 3/8"=1'-0"

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SIGNATURE: _____ TYPED OR PRINTED NAME: Jake R. Pichelmann

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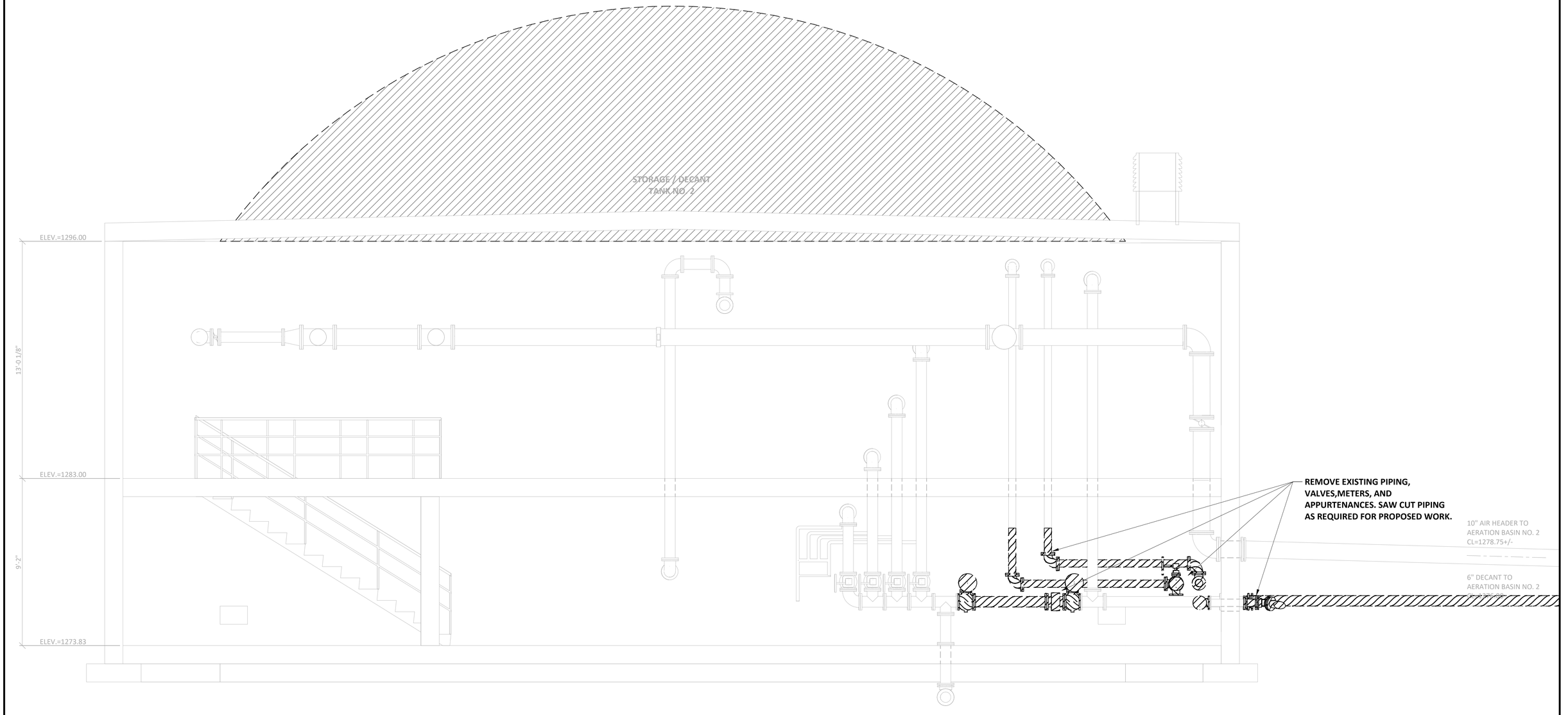
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
DEMOLITION
SECTION

SHEET 5.33

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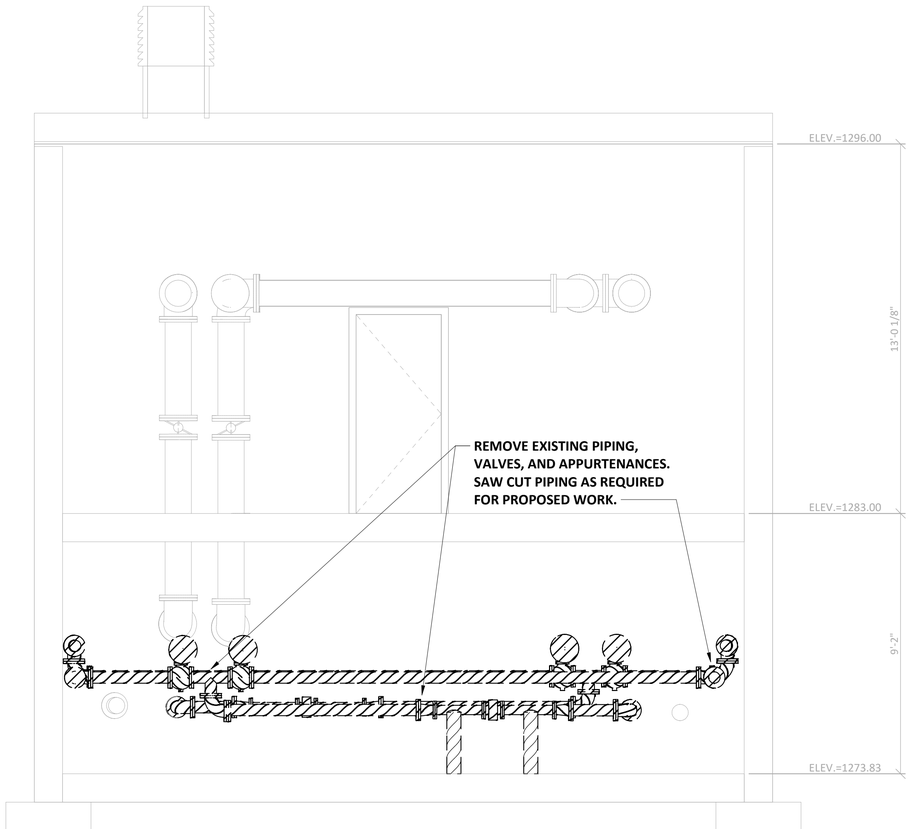
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
DEMOLITION
SECTION

SHEET 5.34

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
DEMOLITION
SECTION

SHEET 5.35

SLUDGE
TANK NO. 1

60'-3"

CONNECT TO EXISTING FLANGE
IN THE WALL. FIELD VERIFY SIZE,
LOCATION AND ELEVATION.

4-MJ-(1)

BLOWER
NO. 1

BLOWER
NO. 2

BLOWER
NO. 3

MCC

BLOWER
NO. 4

BLOWER
NO. 5

BLOWER
NO. 6

24'-0"

11'-5 1/2" +/-

4" BLIND
FLANGE

CONNECT TO EXISTING PIPING.
ROTATE EXISTING 90 ELBOW.
FIELD VERIFY SIZE, LOCATION
AND ELEVATION.

SLUDGE
TANK NO. 2

5 / 5.42 — 4 / 5.42 — 1 / 5.39 — 6 / 5.39 — 2 / 5.40 — 3 / 5.41 — 5 / 5.19

PLAN

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

0' 1' 2' 3' 4' 6' 8'
Graphic Scale for 3/8"=1'-0"

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
PROPOSED
MAIN LEVEL PLAN

SHEET
5.36

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STORAGE / DECANT
TANK NO. 1

STORAGE / DECANT
TANK NO. 2

10" RAS TO CONTROL STRUCTURE NO. 1 (10-RAS-(1))

6" DECANT TO CONTROL STRUCTURE NO. 1

10" MIXED LIQUOR TO CONTROL STRUCTURE NO. 1 (10-ML-(1))

10" MIXED LIQUOR FROM CONTROL STRUCTURE NO. 2 (10-ML-(1))

6" RAS FROM RAS LIFT STATION AND 4" SCUM FROM SCUM LIFT STATION (6-RAS-(1))

CONNECT TO EXISTING.
FIELD VERIFY SIZE,
LOCATION AND ELEVATION.

CONNECT TO EXISTING 6" PIPING.
FIELD VERIFY SIZE, LOCATION AND
ELEVATION (TYP.)

CAP EXISTING 4" PIPING

10" FLANGE COUPLING ADAPTER

8" FLANGE COUPLING ADAPTER (TYP. 4)

CORE DRILL AS REQUIRED.
LINK SEAL AND GROUT (TYP.)

4" FLANGE COUPLING ADAPTER

10"x8" ECC. REDUCER (TYP. 2)

6"x4" ECC. REDUCER (TYP.)

6" SLUDGE TO LOADOUT (6-ST-(1))

V-RAS-4, V-RAS-5, V-RAS-6, V-RAS-7, V-RAS-8, V-RAS-9, V-RAS-10, V-RAS-11

V-SN-5, V-SN-6, V-SN-11, V-SN-12

V-SC-3, V-SC-4

V-ST-1, V-ST-2, V-ST-3

P-ST-1, P-ST-2

FE 3, FE 6, FE 7

1'-0", 10'-8", 6'-9", 3'-4", 2'-0", 4'-6", 2'-4", 4'-0", 4'-10", 2'-6", 3'-0", 8'-0", 6'-0", 11'-6", 1'-2", 3'-10", 7'-2"

PLAN

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

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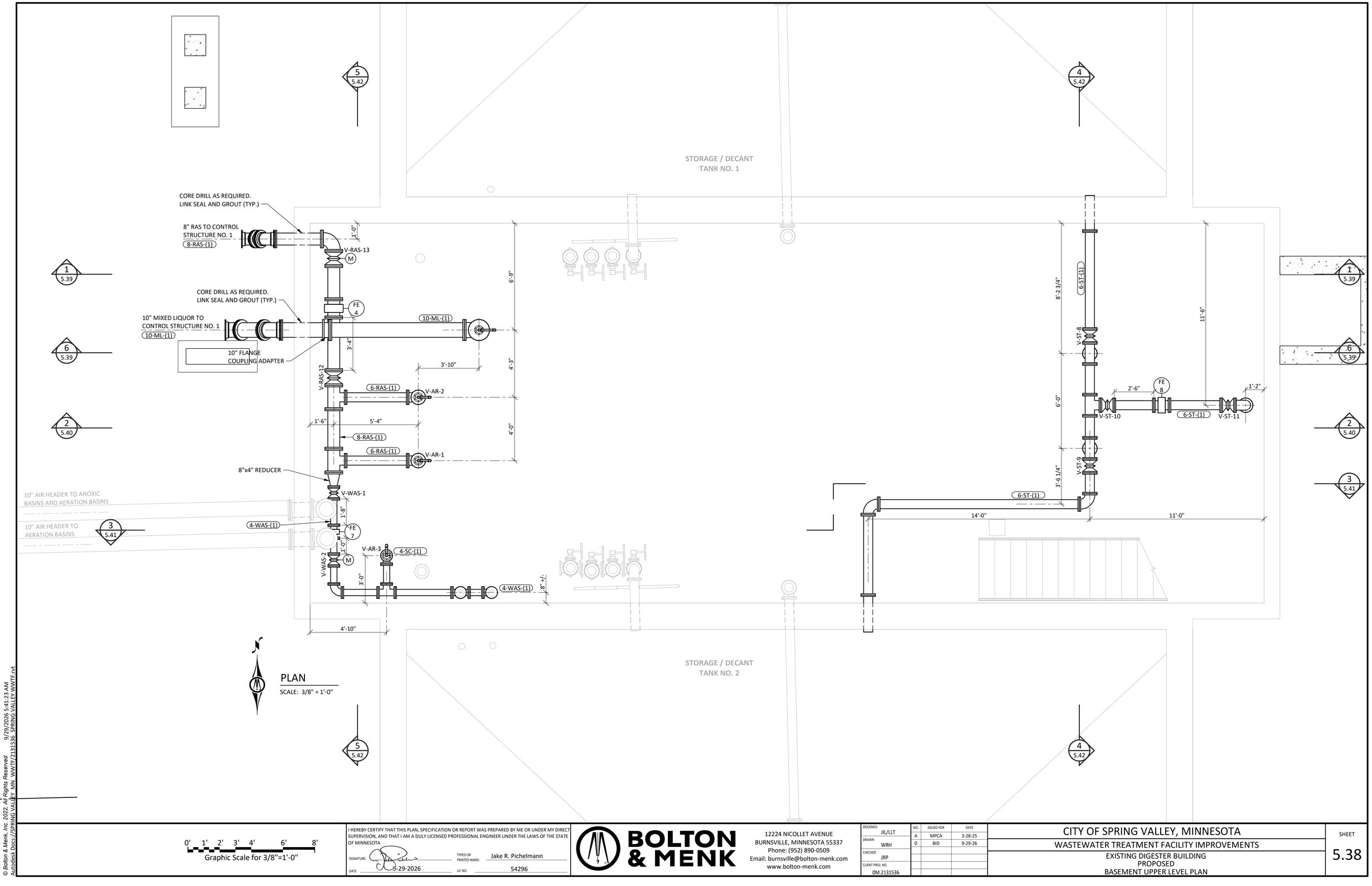
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
PROPOSED
BASEMENT LOWER LEVEL PLAN

SHEET 5.37

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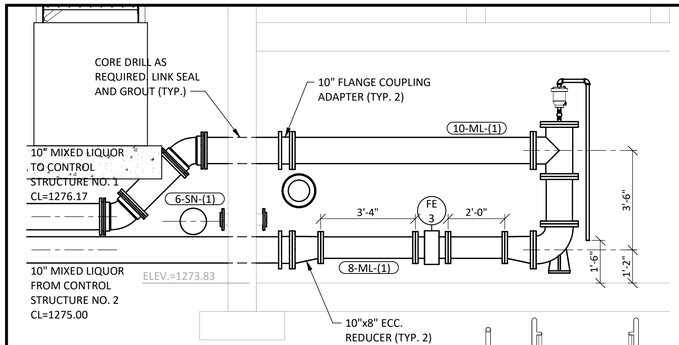
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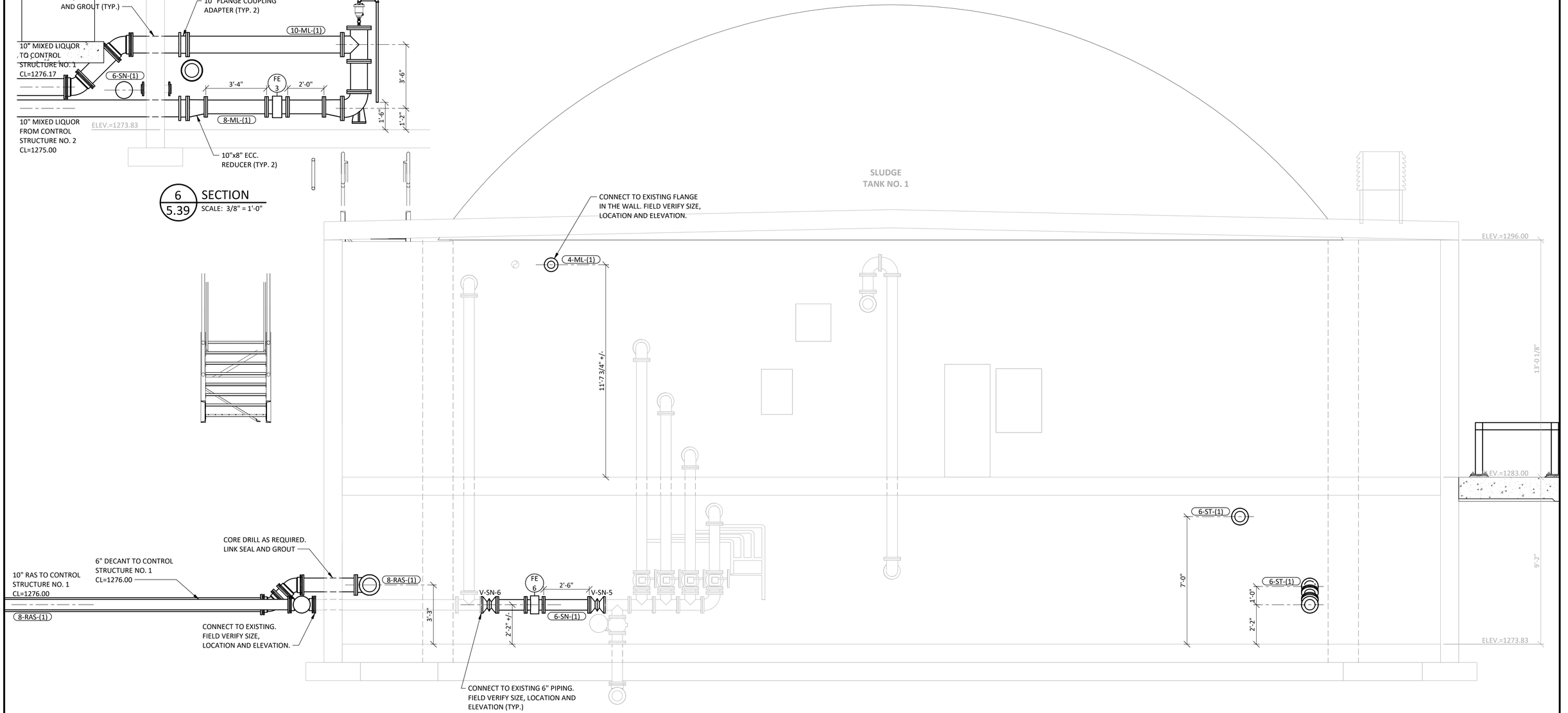
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
PROPOSED
BASEMENT UPPER LEVEL PLAN

SHEET
5.38



6 / 5.39 SECTION
SCALE: 3/8" = 1'-0"



1 / 5.39 SECTION
SCALE: 3/8" = 1'-0"

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Graphic Scale for 3/8"=1'-0"

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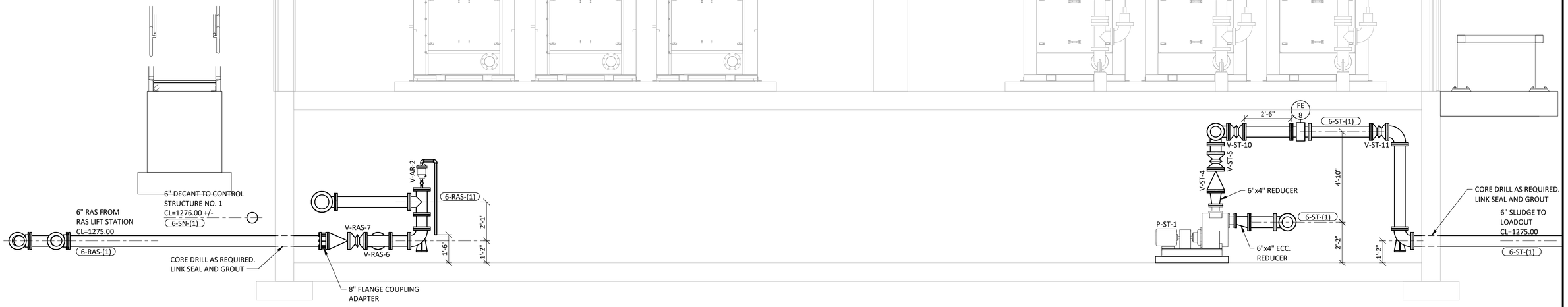
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
PROPOSED
SECTION

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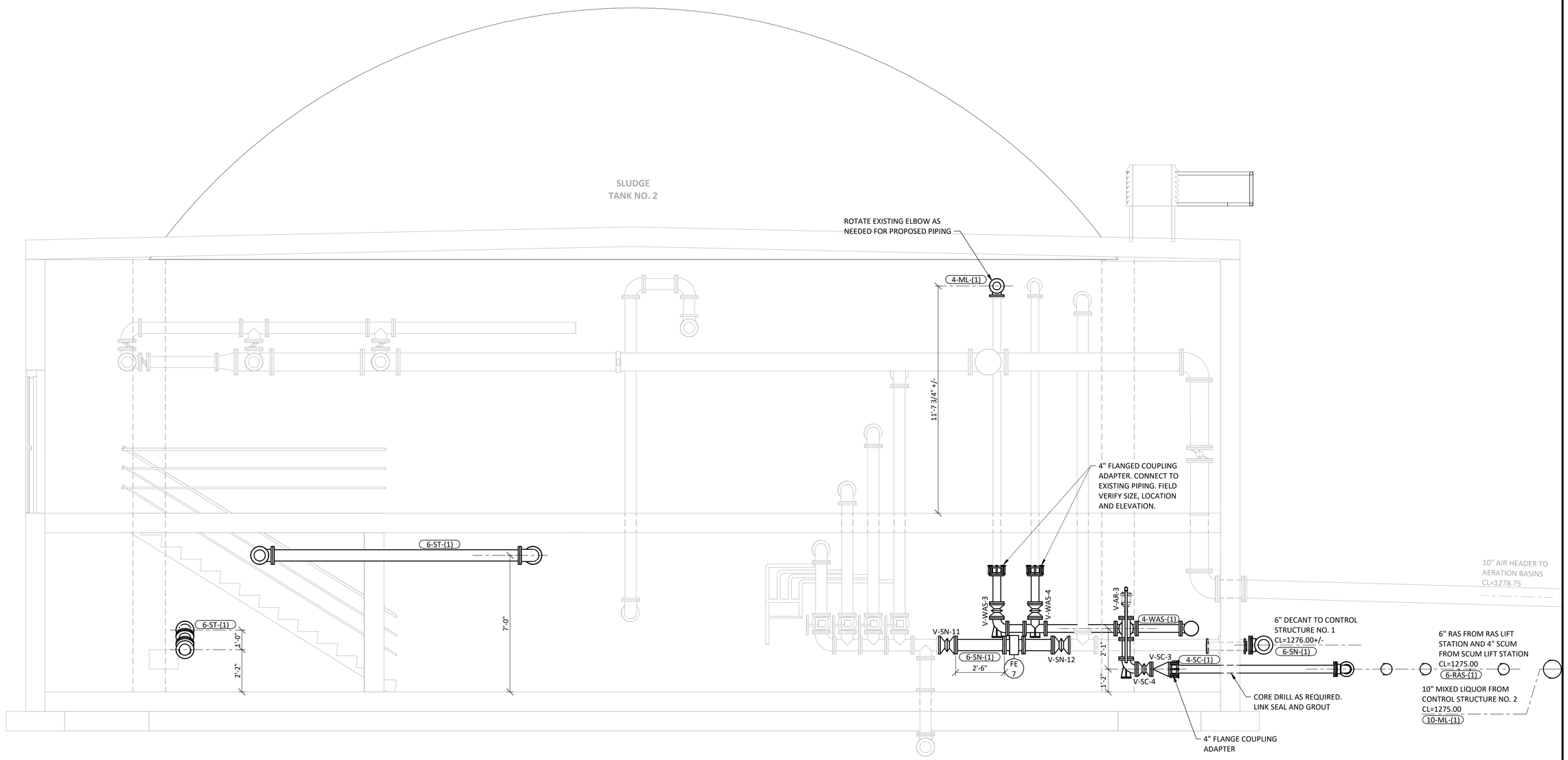
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
PROPOSED
SECTION

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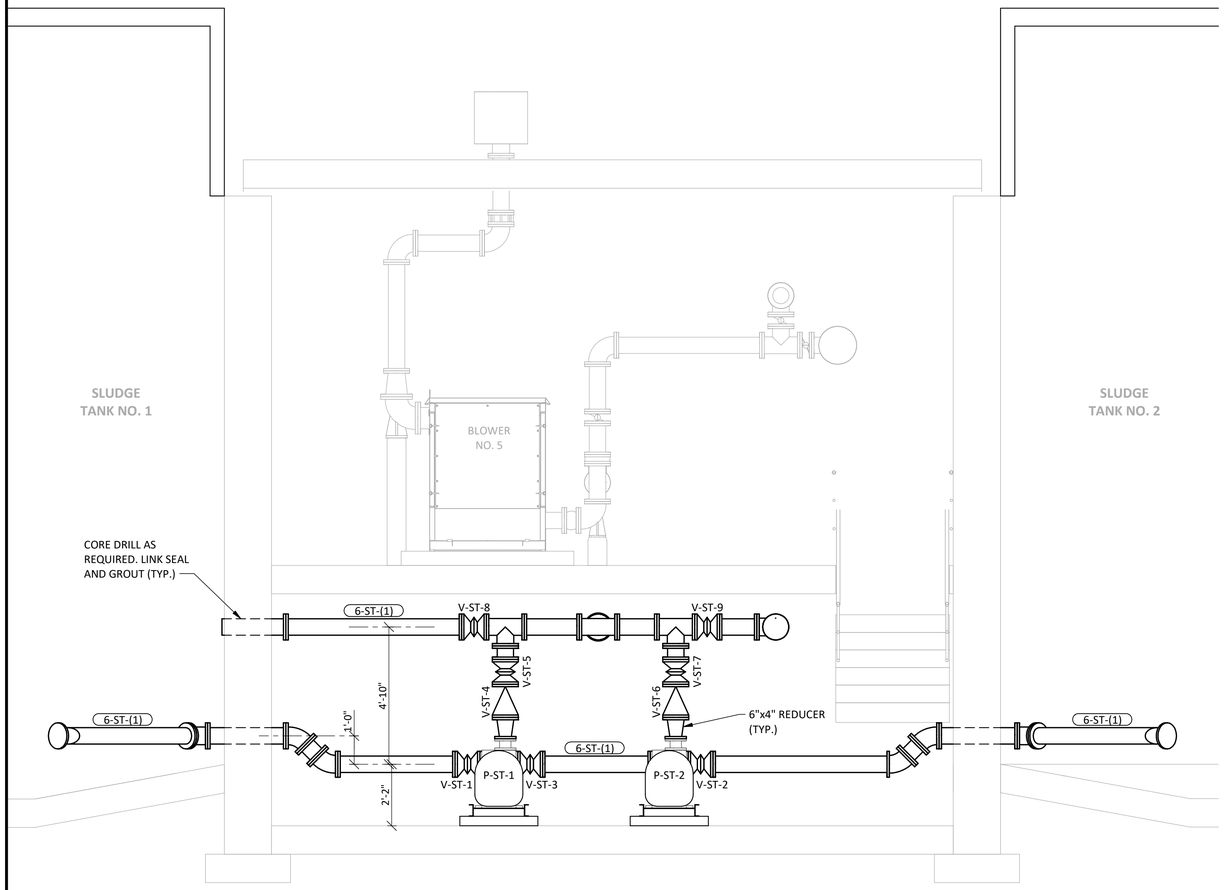
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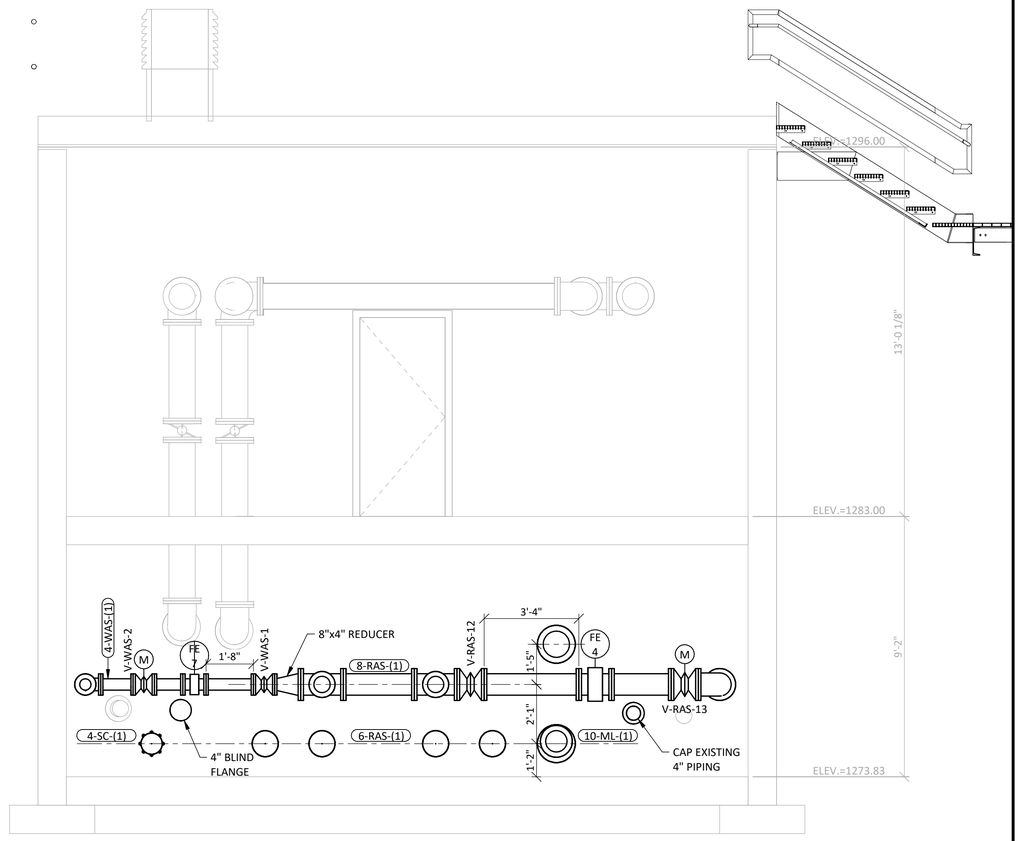
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
PROPOSED
SECTION

SHEET
5.41



4 / 5.42 SECTION
SCALE: 3/8" = 1'-0"



5 / 5.42 SECTION
SCALE: 3/8" = 1'-0"

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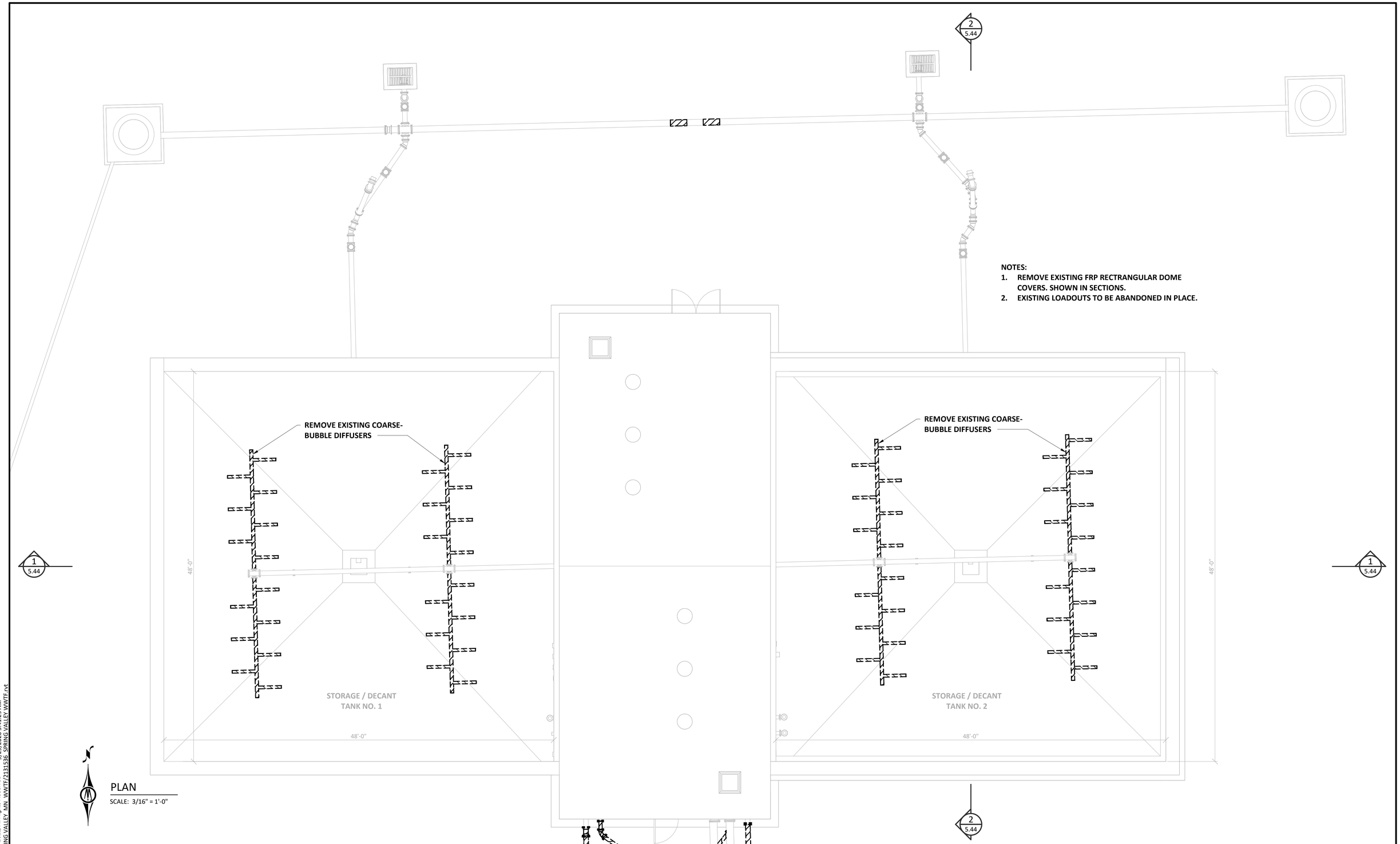
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING DIGESTER BUILDING
PROPOSED
SECTIONS

SHEET
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PLAN

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

0' 2' 4' 6' 8' 12' 16'

Graphic Scale for 3/16"=1'-0"

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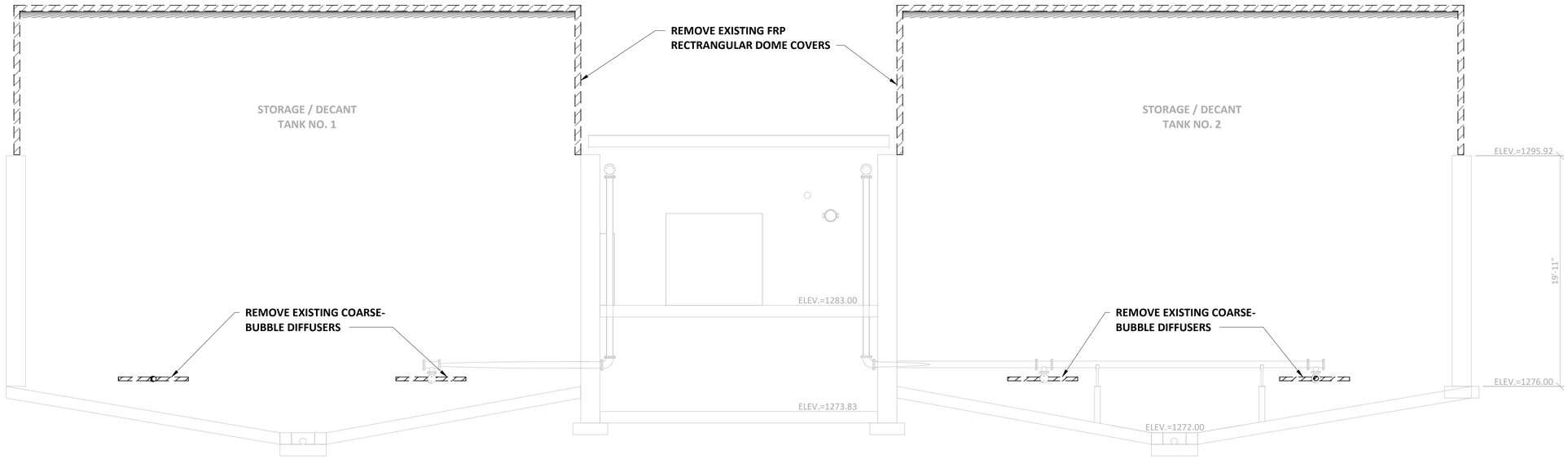
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS

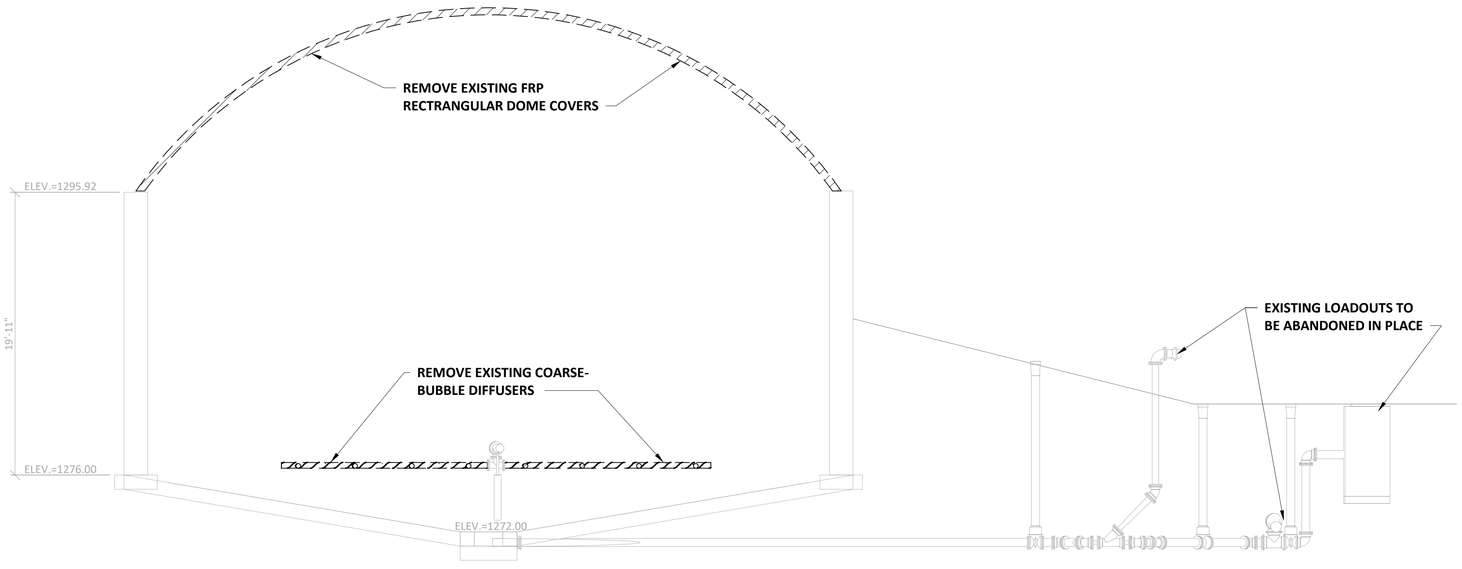
EXISTING STORAGE DECANT TANKS
DEMOLITION
PLAN

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2 / 5.44 SECTION
SCALE: 3/16" = 1'-0"

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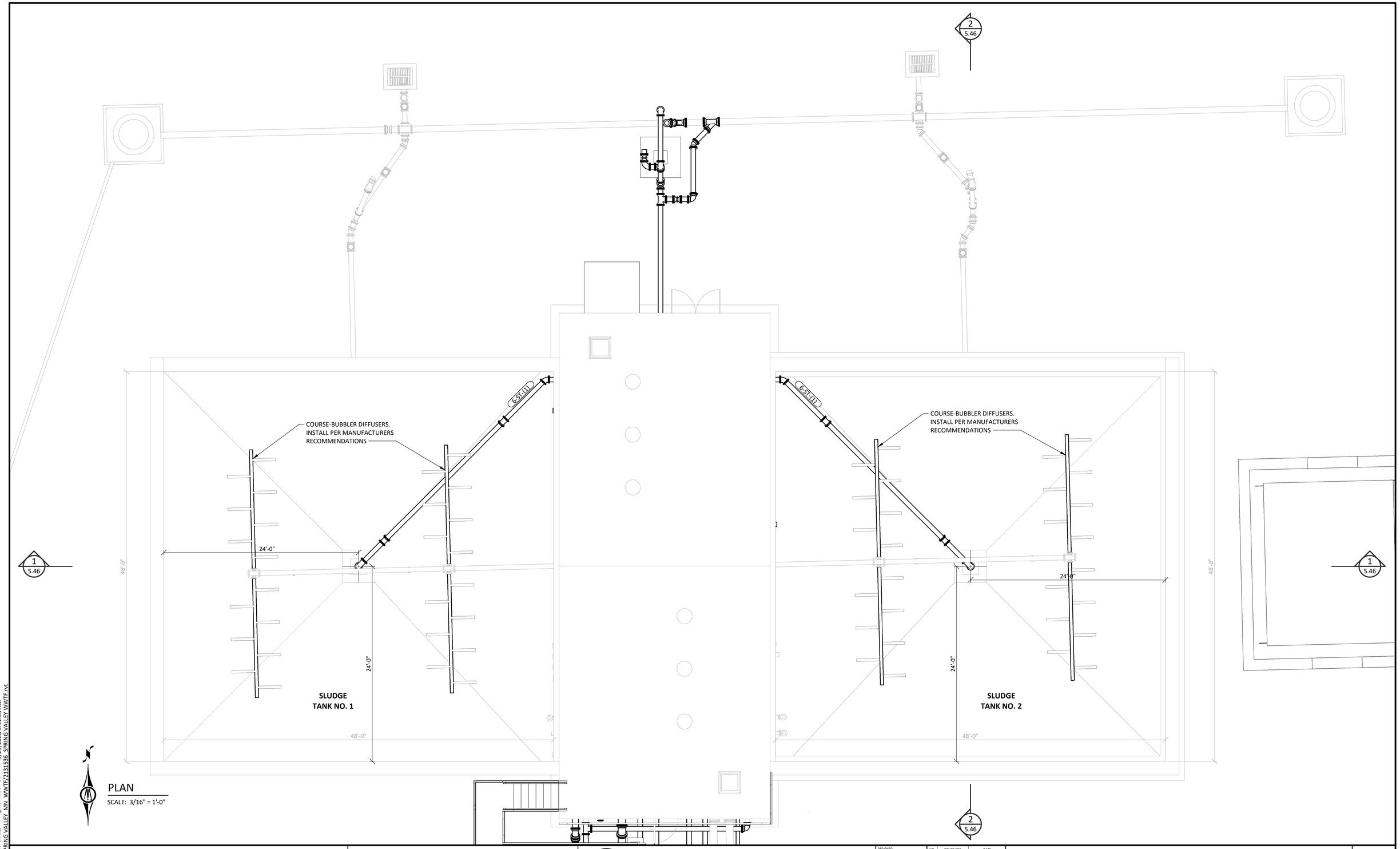
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PLAN

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

0' 2' 4' 6' 8' 12' 16'

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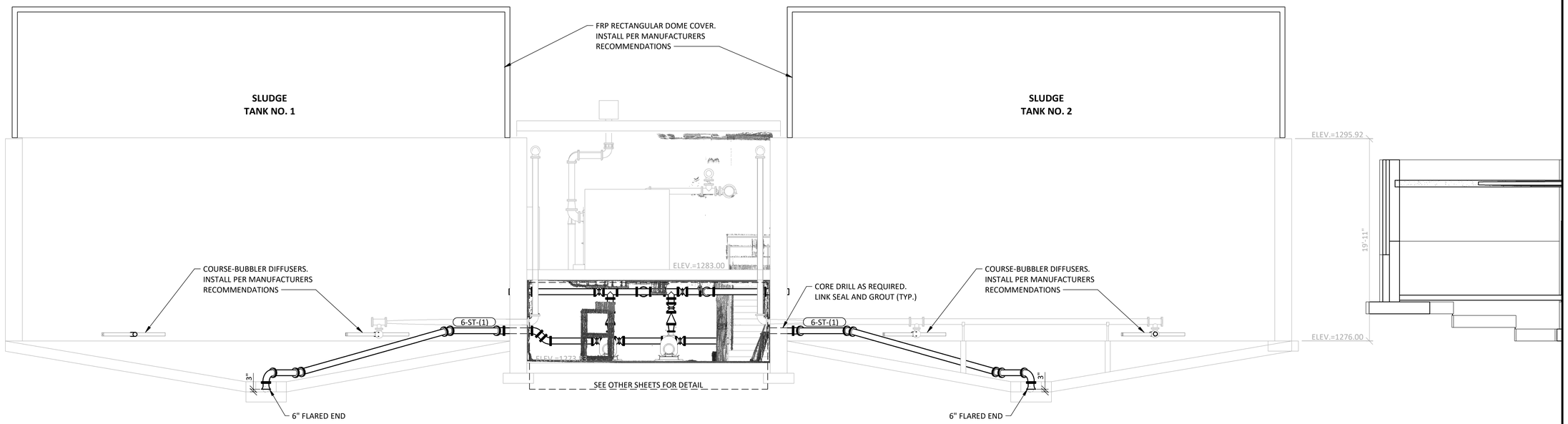
CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

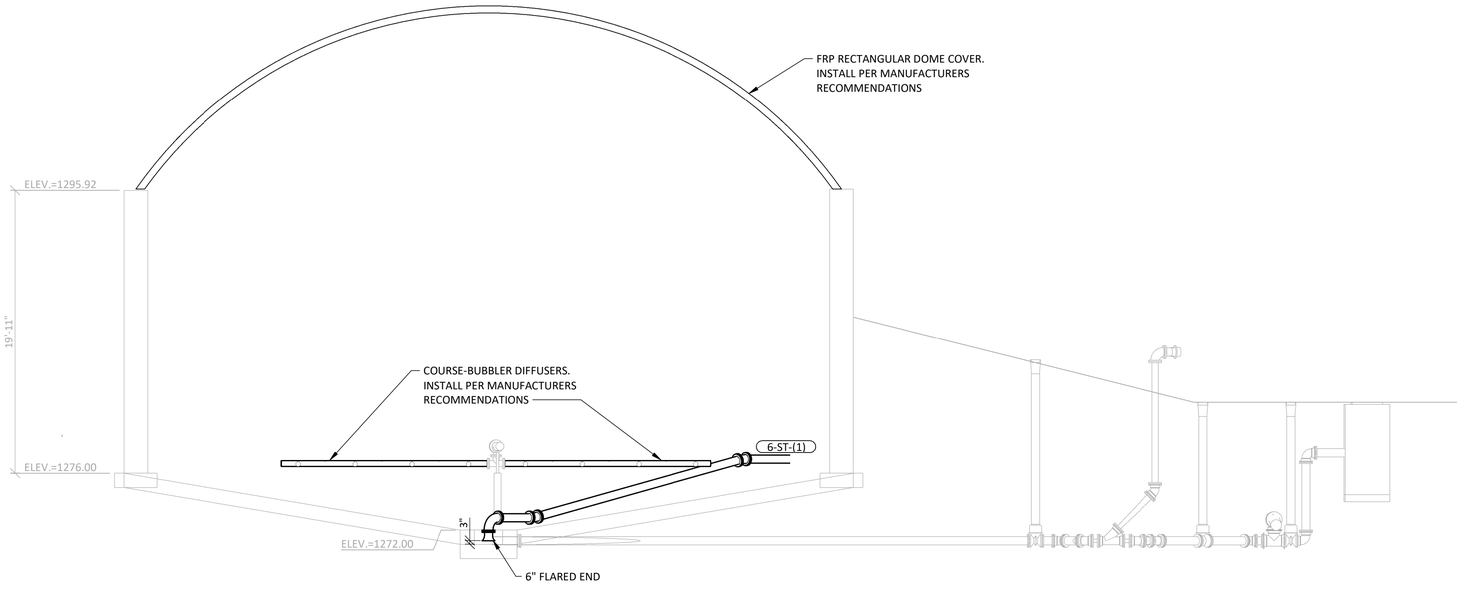
EXISTING SLUDGE TANKS
PROPOSED
PLAN

SHEET 5.45

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1 / 5.46 SECTION
SCALE: 3/16" = 1'-0"



2 / 5.46 SECTION
SCALE: 3/16" = 1'-0"

0' 2' 4' 6' 8' 12' 16'
Graphic Scale for 3/16"=1'-0"

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SIGNATURE: _____ TYPED OR PRINTED NAME: Jake R. Pichelmann

DATE 9-29-2026 LIC NO. 54296

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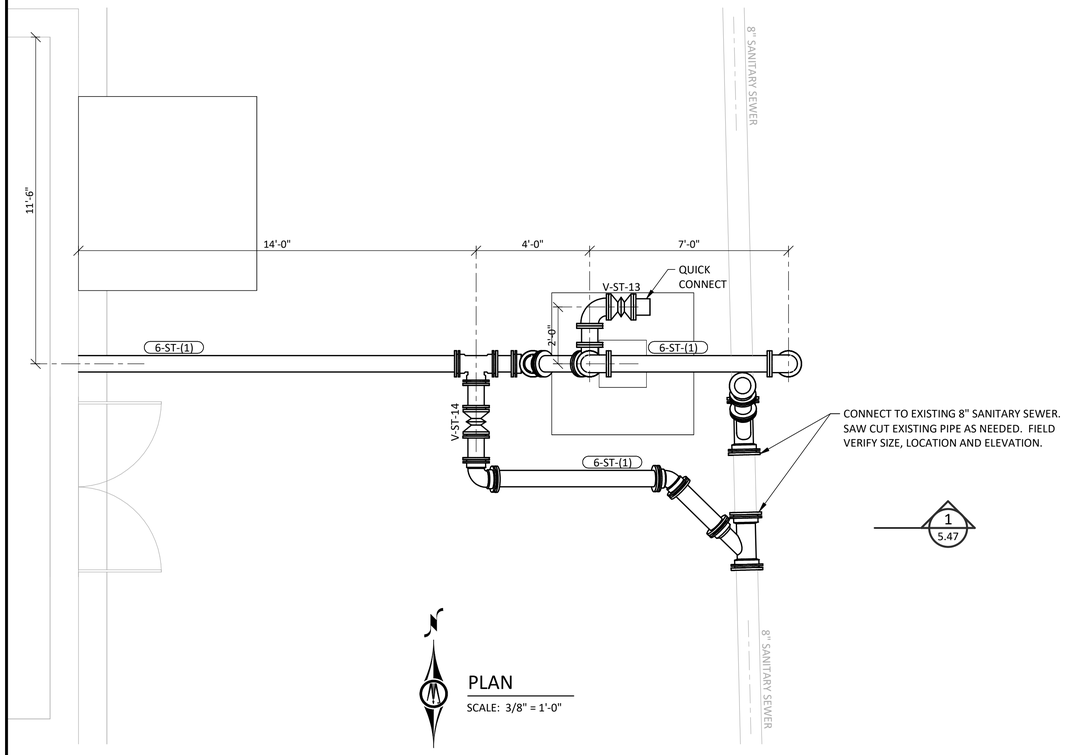
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
EXISTING SLUDGE TANKS
PROPOSED
SECTIONS

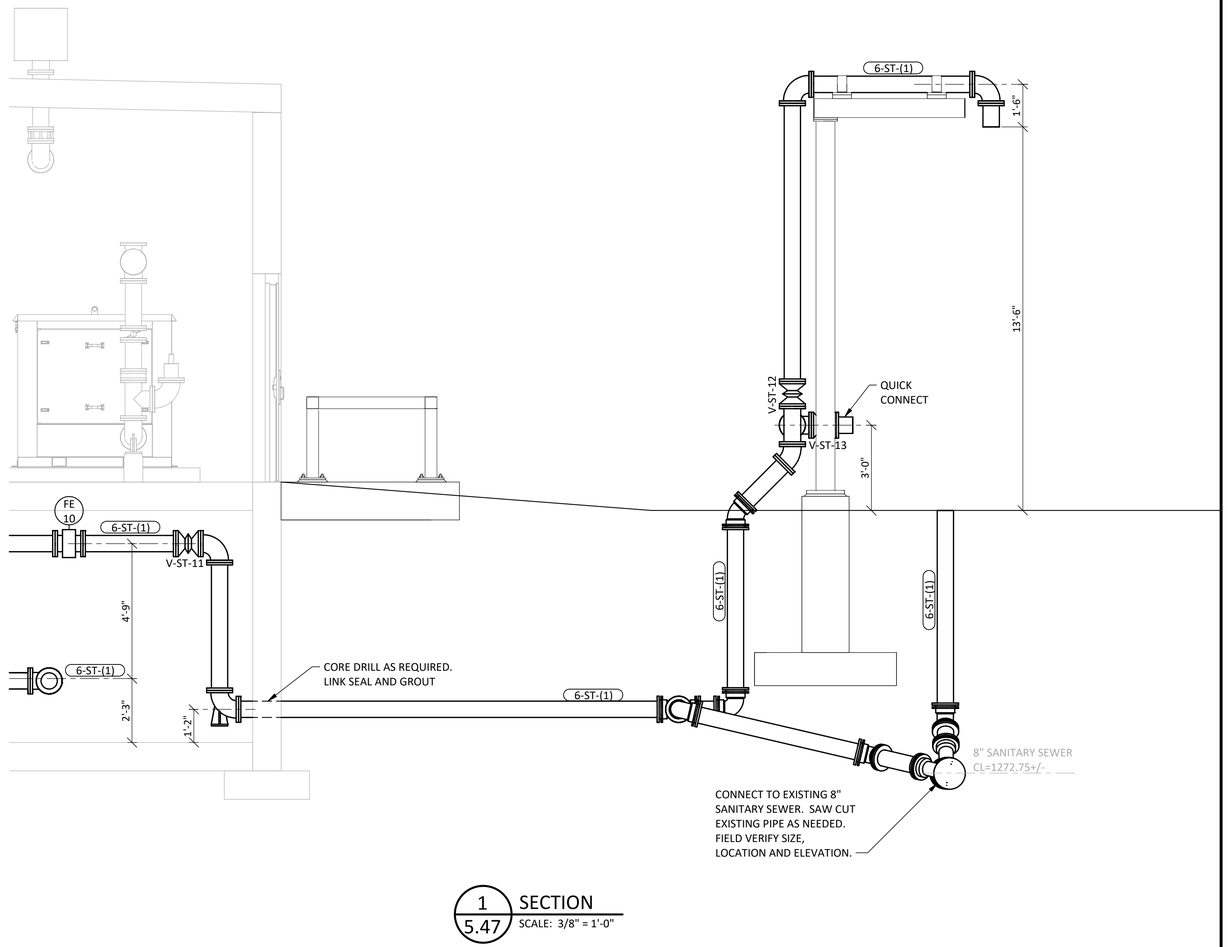
SHEET 5.46

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PLAN

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1 / 5.47 SECTION

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

0' 1' 2' 3' 4' 6' 8'

Graphic Scale for 3/8"=1'-0"

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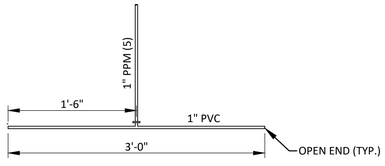
CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

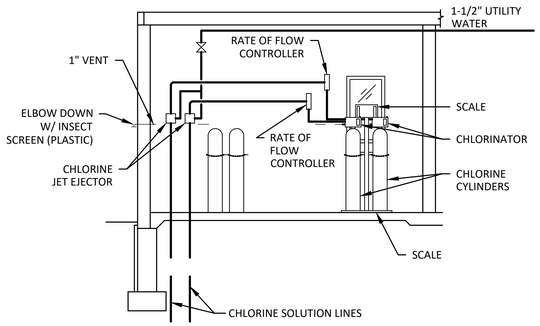
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PROPOSED
PLAN AND SECTION

SHEET 5.47

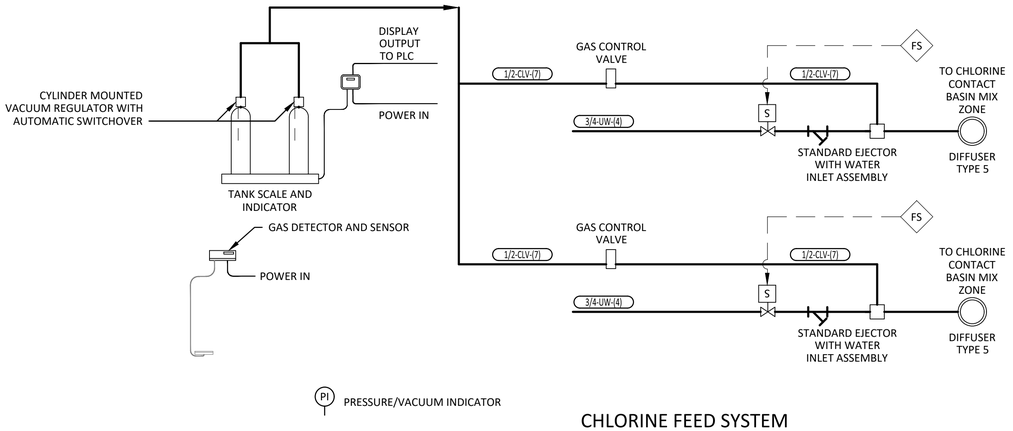
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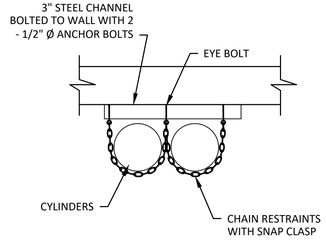
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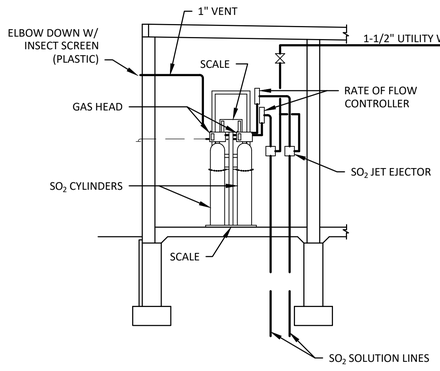
CHLORINE PIPING ELEVATION
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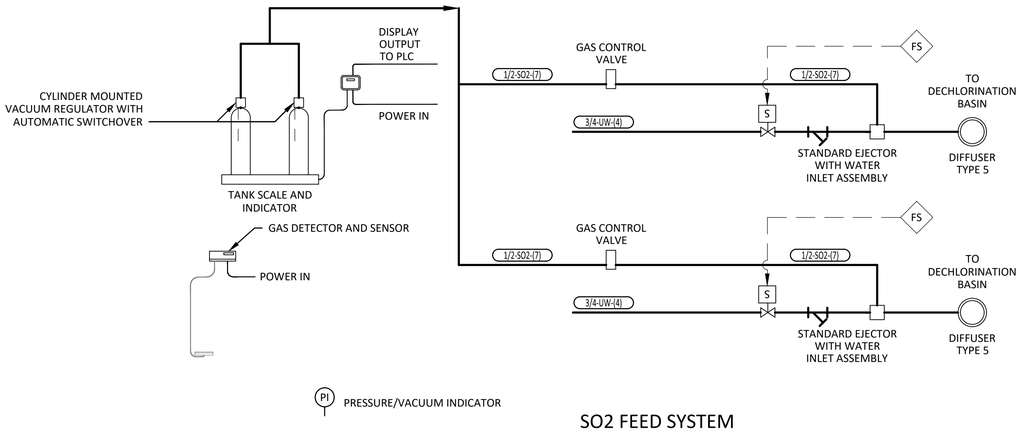
CHLORINE FEED SYSTEM
NO SCALE



CYLINDER STORAGE RACK
SCALE: 3/4" = 1'-0"



SO_2 PIPING ELEVATION
NO SCALE



SO2 FEED SYSTEM
NO SCALE

NOTE: SEE SHEET 1.04 FOR PIPE MATERIAL

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
CHEMICAL DETAILS

SHEET 5.48

GENERAL PLUMBING DEMOLITION NOTES

A. THESE GENERAL DEMOLITION NOTES SHALL APPLY TO ALL PLUMBING DEMOLITION DRAWINGS.
B. DEMOLITION DRAWINGS ARE DIAGRAMMATIC AND ARE BASED ON LIMITED FIELD OBSERVATIONS AND EXISTING RECORD DRAWINGS. PLUMBING CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE 'AS-BUILT' CONDITIONS AND THESE DRAWINGS. PROVIDE ADDITIONAL DEMOLITION AS REQUIRED BASED ON ACTUAL FIELD CONDITIONS.
C. ALL DEMOLITION WORK SHALL BE PERFORMED WITH DUE CARE AND DILIGENCE TO PREVENT THE UNNECESSARY DESTRUCTION AND/OR DAMAGE TO SYSTEMS THAT SHALL REMAIN IN OPERATION AFTER THIS WORK.
D. ALL HATCHED ITEMS DENOTE REMOVAL OR RELOCATION. EXISTING ITEMS TO REMAIN ARE SHOWN LIGHT.
E. EXISTING INSULATION DAMAGED DURING DEMOLITION OR CONSTRUCTION ACTIVITIES SHALL BE REPAIRED WITH SIMILAR MATERIALS.
F. ALL OPENINGS THROUGH WALLS AND FLOOR SLABS NOT BEING RESUED SHALL BE PATCHED WITH LIKE MATERIALS TO MATCH EXISTING. WHERE FIRE RATED ASSEMBLIES ARE OPENED, CUT, OR OTHERWISE DAMAGED THEY SHALL BE REPAIRED AND SEALED.
G. ALL OPENINGS THROUGH ROOF NOT BEING REUSED SHALL BE PATCHED WITH LIKE MATERIALS AND SEALED WATERTIGHT.
H. PLUMBING CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND RE-INSTALLATION OF EXISTING CEILING TILES NOT REMOVED BY THE GENERAL CONTRACTOR. REFER TO ARCHITECTURAL PLANS FOR EXTENT OF CEILING WORK BY THE GENERAL CONTRACTOR. PLUMBING CONTRACTOR SHALL REPLACE ANY EXISTING CEILING TILES OR GRIDS DAMAGED DURING CONSTRUCTION.
I. RELOCATE AS NECESSARY ANY EXISTING DRAIN, WASTE, VENT, AND DOMESTIC WATER PIPING FOUND PASSING THROUGH THE AREA OF CONSTRUCTION WHICH PRESENTLY SERVE OTHER PORTIONS OF THE BUILDING UNAFFECTED BY THIS PROJECT IN ORDER TO MAINTAIN THE CONTINUITY OF EXISTING SYSTEMS AND TO CONCEAL THEM ABOVE NEW CEILINGS.
J. ANY EXISTING DRAIN, WASTE, VENT, AND DOMESTIC WATER PIPING WHICH IS WITHIN THE AREA OF CONSTRUCTION AND SHOWN TO REMAIN BUT FOUND TO BE DAMAGED SHALL BE REPLACED WITH NEW MATERIALS CONFORMING TO THESE CONTRACT DOCUMENTS.
K. ALL EQUIPMENT, DEVICES, AND MATERIALS REMOVED DURING DEMOLITION WORK AND NOT INDICATED TO BE REUSED OR TURNED OVER TO THE OWNER SHALL BECOME THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR FOR DISPOSAL.
L. WHERE PIPING IS SHOWN TO BE DEMOLISHED, IT SHALL BE REMOVED BACK TO THE PIPE MAINS AND CAPPED AT THAT POINT UNLESS NOTED OTHERWISE.
M. RELOCATE, MODIFY, AND/OR RE-ROUTE EXISTING VENT PIPING AND VTR'S AS REQUIRED TO ACCOMMODATE NEW ROOF MOUNTED MECHANICAL EQUIPMENT. COORDINATE WITH DIVISION 23 AND ROOFING CONTRACTOR.

GENERAL PLUMBING NOTES

A. THESE GENERAL NOTES SHALL APPLY TO ALL PLUMBING DRAWINGS.
B. PLUMBING CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE 'AS-BUILT' CONDITIONS AND THESE DRAWINGS.
C. ALL PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH 2020 MINNESOTA PLUMBING CODE (SEE MINNESOTA RULES, CHAPTER 4714).
D. EXISTING ITEMS TO REMAIN ARE SHOWN LIGHT. NEW ITEMS ARE SHOWN DARK.
E. ANY WALL, FLOOR, OR CEILING SURFACE THAT IS DISTURBED DURING THE COURSE OF THIS WORK SHALL BE REPAIRED TO EXISTING OR LIKE-NEW CONDITION.
F. COORDINATE UNDERGROUND PIPING SYSTEMS WITH FOUNDATION CONTRACTOR PRIOR TO INSTALLATION.
G. PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL EQUIPMENT AND PIPING TO FIT WITHIN THE SPACE ALLOWED. PROVIDE PIPE OFFSETS AND TRANSITIONS AS REQUIRED. CUTTING OR OTHERWISE ALTERING STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.
H. ALL PLUMBING EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
I. A CLEANOUT SHALL BE PROVIDED AT THE BASE OF EACH WASTE OR SOIL STACK AND AS REQUIRED BY CODE.
J. SEE PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL PLUMBING FIXTURE CONNECTION SIZE REQUIREMENTS.
K. SEE SHEETS P6.30 AND P6.31 FOR ALL DRAIN, WASTE, VENT, AND DOMESTIC WATER PIPING ISOMETRICS.
L. COORDINATE ALL PLUMBING PIPING AND EQUIPMENT WITH HVAC, ELECTRICAL, AND FIRE SUPPRESSION.
M. CHANGES IN DIRECTION IN DRAINAGE PIPING MUST BE MADE BY APPROPRIATE WYES AND BENDS. SANITARY TEES ARE NOT ALLOWED WHERE THE DIRECTION OF FLOW CHANGES FROM EITHER VERTICAL TO HORIZONTAL OR HORIZONTAL TO HORIZONTAL.
N. ALL HORIZONTAL BRANCH DRAINS SHALL BE UNIFORMLY PITCHED AT 1/4-INCH PER FOOT (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 708.1).
O. THE BUILDING SEWER MUST BE INSTALLED WITH A UNIFORM SLOPE OF AT LEAST 1/4-INCH PER FOOT (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 718.1). WHERE MUNICIPAL SEWER DEPTH, STRUCTURAL FEATURES, OR BUILDING ARRANGEMENT PRECLUDE THIS SLOPE, A SLOPE OF 1/8-INCH PER FOOT MINIMUM MAY BE UTILIZED IF APPROVED BY THE AUTHORITY HAVING JURISDICTION.
P. PLUMBING DESIGN SHALL COMPLY WITH MINNESOTA RULES, CHAPTER 4714, SECTION 711.0 REGARDING SUDS RELIEF.
Q. ALL SINKS, EXCEPT FOR LAVATORIES AND PRIVATE-USE BAR SINKS, MUST BE PROVIDED WITH 2-INCH MINIMUM VERTICAL FIXTURE DRAINS (SEE MINNESOTA RULES, CHAPTER 4714, TABLES 702.1 AND 703.2). LAUNDRY TUBS, DOMESTIC CLOTHES WASHERS, AND URINALS REQUIRE 2-INCH MINIMUM VERTICAL DRAINS.
R. WATER SUPPLY CONNECTIONS TO FIXTURES OR EQUIPMENT WHICH HAVE INLETS BELOW THE SPILL LINE MUST BE PROVIDED WITH AN APPROVED BACKFLOW PREVENTER (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 602.3).
S. THE CONNECTION TO AN AUTOMATIC CLOTHES WASHER MUST BE PROTECTED BY THE USE OF AN AIR GAP OR AN APPROVED BACKFLOW PREVENTER (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 602.3). A CLOTHES WASHER MUST DISCHARGE INDIRECTLY TO A STANDPIPE OR LAUNDRY TUB (SEE MINNESOTA RULES, CHAPTER 4714, TABLE 702.1 AND SECTION 804.1).
T. IN NO CASE SHALL WATER FROM A ROOF BE ALLOWED TO FLOW UPON THE PUBLIC SIDEWALK (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 1101.2).
U. INSTALL CLEANOUTS LOCATED IN SIDEWALK, PAVED OR GREEN AREAS FLUSH WITH FINAL FINISHED SURFACE.
V. WALL HYDRANTS MUST MEET ASSE STANDARD 1019 (SEE MINNESOTA RULES, CHAPTER 4714, TABLE 603.2).
W. EXCEPT AS PROVIDED ELSEWHERE IN THIS CODE, EACH VENT SHALL RISE VERTICALLY TO A POINT NOT LESS THAN 6-INCHES ABOVE THE FLOOD-LEVEL RIM OF THE FIXTURE SERVED BEFORE OFFSETTING HORIZONTALLY, AND WHERE TWO OR MORE VENT PIPES CONVERGE, EACH SUCH VENT PIPE SHALL RISE TO A POINT NOT LESS THAN 6-INCHES IN HEIGHT ABOVE THE FLOOD LEVEL RIM OF THE PLUMBING FIXTURE IT SERVES BEFORE BEING CONNECTED TO ANY OTHER VENT (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 905.3).
X. PROVIDE ISOLATION VALVES AT ALL DOMESTIC WATER BRANCH PIPING RUNOUTS. ALL ISOLATION VALVES SHALL BE LOCATED IN ACCESSIBLE LOCATIONS.
Y. LOCATE GAUGES AND THERMOMETERS FOR EASE OF OBSERVATION.
Z. VALVES SHALL BE INSTALLED PERMITTING THE WATER SUPPLY TO EACH ROOM OR INDIVIDUAL FIXTURE TO BE SHUT OFF WITHOUT DISRUPTING ANY OTHER PORTION OF THE BUILDING.
AA. PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS AND IN WALL STRUCTURES TO ALLOW ADEQUATE ROOM FOR MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEMS. COORDINATE EXACT SIZES AND LOCATIONS OF ACCESS PANELS WITH ARCHITECT DURING THE SHOP DRAWING PROCESS.
BB. PROVIDE HWRC BALANCING ASSEMBLIES AS REQUIRED TO MAINTAIN DOMESTIC HOT WATER FLOW TO ALL APPLICABLE PLUMBING FIXTURES AND AS SHOWN ON DRAWINGS.
CC. INSULATE PIPING PER ENERGY CODE REQUIREMENTS.
DD. VERIFY PLUMBING FIXTURE LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN AND INSTALLATION.
EE. PLUMBING WORK SHALL NOT BE LOCATED OVER ELECTRICAL EQUIPMENT OR PANELS. COORDINATE WITH ELECTRICAL CONTRACTOR TO MAINTAIN ALL CODE REQUIRED ELECTRICAL CLEARANCES.
FF. PAINT ALL VTR'S FLAT BLACK AND TERMINATE NOT LESS THAN 12-INCHES ABOVE ROOF.
GG. OFFSET VENT PIPING AS NEEDED TO BE LOCATED A MINIMUM OF 10-FEET AWAY OR 3-FEET ABOVE OUTSIDE AIR INTAKES AND AS REQUIRED BY CODE.
HH. A BUILDING'S VENT PIPES MUST HAVE A TOTAL CROSS-SECTIONAL AREA NOT LESS THAN THE AREA OF THE LARGEST REQUIRED BUILDING SEWER (SEE MINNESOTA RULES, CHAPTER 4714, SECTION 904.1). VERIFY THAT THIS REQUIREMENT IS MET.
II. FLASH AND SEAL ALL ROOF PENETRATIONS TO MAKE WATERTIGHT.
JJ. THE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PER MINNESOTA RULES, CHAPTER 4714, SECTION 609.9.
KK. THE PLUMBING SYSTEM SHALL BE TESTED IN ACCORDANCE WITH MINNESOTA RULES, CHAPTER 4714, SECTIONS 609.4, 712.0, AND 1107.0.
LL. ALL PLUMBING SYSTEMS SHALL COMPLY WITH THE CURRENT MINNESOTA COMMERCIAL ENERGY CODE.
MM. VERIFY THAT THE EXISTING DRAIN, WASTE, VENT AND DOMESTIC WATER SYSTEMS ARE SIZED TO ACCOMMODATE THE ADDED FIXTURES.
NN. IT IS RECOMMENDED THAT A CLEANOUT BE PROVIDED WHERE NEW WASTE AND VENT PIPING CONNECTS WITH EXISTING PLUMBING TO FACILITATE REQUIRED TESTING OF THE NEW INSTALLATION.
OO. THE ALTERATION AND REUSE OF EXISTING PLUMBING IS NOT ALLOWED UNLESS IT MEETS THE CURRENT RULES SET FORTH IN THE MINNESOTA PLUMBING CODE (SEE MINNESOTA RULES, CHAPTER 4714.0101, SUBPARTS 2 AND 3).
PP. REFER TO ARCHITECTURAL DRAWINGS FOR ALTERNATES AND PHASING OF CONSTRUCTION WORK.
QQ. CLEANOUTS SHALL BE INSTALLED ON KITCHEN SINKS AND URINALS PER MINNESOTA RULES, CHAPTER 4714, SECTION 707.4.3.
RR. BACKWATER VALVES SHALL BE LOCATED IN SANITARY SEWER PIPING SYSTEMS WHERE REQUIRED PER THE 2020 MINNESOTA STATE PLUMBING CODE, CHAPTER 4714, SECTION 710.1 AND SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 710.6. BACKWATER VALVES SHALL BE ACCESSIBLE FOR INSPECTION AND REPAIR AND, UNLESS CONTINUOUSLY EXPOSED, SHALL BE ENCLOSED IN A MASONRY PIT FITTED WITH AN ADEQUATELY SIZED REMOVABLE COVER. BACKWATER VALVES SHALL COMPLY WITH ASME A112.14.1. UNLESS OTHERWISE LISTED, VALVE ACCESS COVERS SHALL BE BOLTED TYPE WITH GASKET, AND EACH VALVE SHALL BEAR THE MANUFACTURER'S NAME CAST INTO THE BODY AND THE COVER.
SS. CLEANOUTS FOR DRAIN THAT PASS THROUGH BACKWATER VALVE SHALL BE CLEARLY IDENTIFIED WITH A LABEL STATING, "BACKWATER VALVE DOWNSTREAM" (SEE MINNESOTA PLUMBING CODE, CHAPTER 4714, SECTION 710.1.

PLUMBING SYMBOLS & ABBREVIATIONS

GENERIC SYMBOLS

- CONNECT TO EXISTING
- EQUIPMENT TO BE DEMOLISHED
- KEYED NOTE (1)
- REVISION (1)

PLUMBING AND PIPING SYMBOLS

- ANGLE VALVE
- BFP — BACKFLOW PREVENTER
- BACK WATER VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE W/DIRECTION INDICATED
- DOUBLE CHECK VALVE
- CLEAN OUT / FLOOR CLEAN OUT
- FLANGE
- FLOOR DRAIN
- FLOW MEASURING & BALANCING DEVICE
- FLOW MEASURING & BALANCING DEVICE, WITH ISOLATION VALVE
- GATE VALVE
- GLOBE VALVE
- HOSE BIBB OR WALL HYDRANT
- PIPE ANCHOR
- PIPE GUIDES
- PIPE CAP
- PIPE DOWN
- PIPE UP
- PLUG VALVE
- PRESSURE GAUGE
- PRESSURE REDUCING VALVE WITH INLET AND OUTLET PRESSURE
- PRIMARY / OVERFLOW ROOF DRAIN
- RPZ — REDUCED PRESSURE BACKFLOW PREVENTOR
- S — SOLENOID VALVE
- STRAINER
- TEMPERATURE GAUGE
- THREADED HOSE CONNECTION
- UNION
- VACUUM BREAKER
- WALL CLEAN OUT
- WATER HAMMER ARRESTOR
- WM — WATER METER

PIPING SYSTEM ABBREVIATIONS

CA	COMPRESSED AIR LINE
CD	CONDENSATE DRAINAGE
CW	COLD WATER (ABOVE GRADE)
SCW	COLD WATER - SOFT
HCW	COLD WATER - HARD
NPW	COLD WATER - NON-POTABLE
E.__	EXISTING TO REMAIN (HALFTONED)
E.__	DEMOLISHED PIPING
FP	FIRE PROTECTION
FLAM	FLAMMABLE WASTE (ABOVE GRADE)
FLAM	FLAMMABLE WASTE (BELOW GRADE)
HW	HOT WATER (120°)
HW-140°	HOT WATER (140°)
HWRC	HOT WATER RECIRCULATION PIPING (120°)
HWRC-140°	HOT WATER RECIRCULATION PIPING (140°)
LPG	LIQUID PROPANE GAS
NG	NATURAL GAS PIPING
OX	OXYGEN PIPING
SAN	SANITARY SEWER LINE (ABOVE GRADE)
SAN	SANITARY SEWER LINE (BELOW GRADE)
BW	SANITARY SEWER LINE BLACK WATER
GW	SANITARY SEWER LINE GRAY WATER
RWL	STORM DRAIN (ABOVE GRADE)
RWL	STORM DRAIN (BELOW GRADE)
ORWL	OVERFLOW STORM DRAIN (ABOVE GRADE)
ORWL	OVERFLOW STORM DRAIN (BELOW GRADE)
TW	TEMPERED WATER
V	VENT

PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BWV	BACK WATER VALVE
BV	BALL VALVE
BF	BUTTERFLY VALVE
CHV	CHECK VALVE
CO	CLEAN OUT
CV	CONTROL VALVE
CWFU	COLD WATER FIXTURE UNITS
DFU	DRAINAGE FIXTURE UNITS
E.___	EXISTING (SAN, HW, CW, ETC.)
FFE	FINISH FLOOR ELEVATION
FCO	FLOOR CLEAN OUT
FTR	FINNED TUBE RADIATION
GM	GAS METER
G	GAS
GV	GATE VALVE
GLV	GLOBE VALVE
HWFU	HOT WATER FIXTURE UNITS
HWV	HOT WATER VALVE
IE	INVERT ELEVATION
NG	NATURAL GAS
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
RPZ	REDUCED PRESSURE BACKFLOW PREVENTOR
R	GAS PRESSURE REGULATOR
SF	SQUARE FEET
SFU	SUPPLY FIXTURE UNITS
ST	STORM SEWER
TYP.	TYPICAL
DN	DOWN
VA	VACUUM LINE
VTR	VENT THRU ROOF
WCO	WALL CLEAN OUT
WM	WATER METER
YCO	YARD CLEAN OUT

PLUMBING FIXTURES AND DRAINS

WC-X	WATER CLOSET
UR-X	URINAL
LAV-X	LAVATORY
S-X	SINK
DF-X	DRINKING FOUNTAIN
EWC-X	ELECTRIC WATER COOLER
BF-X	BOTTLE FILLING STATION
BFWC-X	BOTTLE FILLING WATER COOLER
TMV-X	THERMOSTATIC MIXING VALVE
DW-X	DISHWASHER
WB-X	WASHER BOX
MS-X	MOP SINK
LT-X	LAUNDRY TUB
EEW-X	EMERGENCY EYEWASH
EEWS-X	EMERGENCY EYEWASH / SHOWER
BT-X	TUB / SHOWER
SH-X	SHOWER
H-X	FREEZELESS WALL HYDRANT
HB-X	HOSE BIB
RH-X	FREEZELESS ROOF HYDRANT
FD-X	FLOOR DRAIN
TD-X	TRENCH DRAIN
FS-X	FLOOR SINK
RD-X	ROOF DRAIN
ORD-X	OVERFLOW ROOF DRAIN
DS-X	DOWN SPOUT

SPECIALTY PLUMBING FIXTURES

KE-X	KITCHEN EQUIPMENT

NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THIS PROJECT

COMBINED MECHANICAL SHEET LIST

6.01 PLUMBING SYMBOLS AND LEGEND
6.02 MECHANICAL SYMBOLS AND LEGEND
6.03 PLUMBING DEMO PLAN - ADMINISTRATION BUILDING
6.04 PLUMBING DEMO PLAN - PRETREATMENT BUILDING
6.05 PLUMBING DEMO PLAN - DISINFECTION BUILDING
6.06 MECHANICAL DEMO PLAN - ADMINISTRATION BUILDING
6.07 MECHANICAL DEMO PLAN - ADMINISTRATION BUILDING GARAGE
6.08 MECHANICAL DEMO PLAN - PRETREATMENT BUILDING
6.09 MECHANICAL DEMO PLAN - DISINFECTION BUILDING
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING SYMBOLS AND LEGEND

SHEET 6.01

GENERAL HVAC DEMOLITION NOTES

A. THESE GENERAL DEMOLITION NOTES SHALL APPLY TO ALL HVAC DEMOLITION DRAWINGS.
B. DEMOLITION DRAWINGS ARE DIAGRAMMATIC AND ARE BASED ON LIMITED FIELD OBSERVATIONS AND EXISTING RECORD DRAWINGS. MECHANICAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE 'AS-BUILT' CONDITIONS AND THESE DRAWINGS. PROVIDE ADDITIONAL DEMOLITION AS REQUIRED BASED ON ACTUAL FIELD CONDITIONS.
C. ALL DEMOLITION WORK SHALL BE PERFORMED WITH DUE CARE AND DILIGENCE SO AS TO PREVENT THE UNNECESSARY DESTRUCTION AND/OR DAMAGE TO SYSTEMS THAT SHALL REMAIN IN OPERATION AT THE CONCLUSION OF THIS WORK.
D. ALL HATCHED ITEMS DENOTE REMOVAL OR RELOCATION. EXISTING ITEMS TO REMAIN ARE SHOWN LIGHT.
E. EXISTING INSULATION DAMAGED DURING DEMOLITION OR CONSTRUCTION ACTIVITIES SHALL BE REPAIRED WITH SIMILAR MATERIALS.
F. ALL OPENINGS THROUGH WALLS AND FLOOR SLABS NOT BEING REUSED SHALL BE PATCHED WITH LIKE MATERIALS TO MATCH EXISTING. WHERE FIRE RATED ASSEMBLIES ARE OPENED, CUT, OR OTHERWISE DAMAGED THEY SHALL BE REPAIRED AND SEALED.
G. ALL OPENINGS THROUGH ROOF NOT BEING REUSED SHALL BE PATCHED WITH LIKE MATERIALS AND SEALED WATERTIGHT.
H. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND RE-INSTALLATION OF EXISTING CEILING TILES NOT REMOVED BY THE GENERAL CONTRACTOR. REFER TO ARCHITECTURAL PLANS FOR EXTENT OF CEILING WORK BY THE GENERAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL REPLACE ANY EXISTING CEILING TILES OR GRIDS DAMAGED DURING CONSTRUCTION.
I. EXISTING FIRE SUPPRESSION SYSTEM SHALL REMAIN. FIRE SPRINKLER CONTRACTOR SHALL MODIFY THE FIRE SPRINKLER SYSTEM THROUGHOUT THE REMODELED AREAS TO ACCOMMODATE THE NEW LAYOUT AND TO COMPLY WITH ALL APPLICABLE CODES. REROUTE EXISTING SPRINKLER PIPING, RELOCATE EXISTING SPRINKLER HEADS, AND PROVIDE NEW PIPING AND HEADS AS REQUIRED. COORDINATE ALL FIRE SUPPRESSION WORK WITH OTHER TRADES.
J. RELOCATE AS NECESSARY ANY EXISTING DUCTWORK, PIPING, AND CONTROLS FOUND PASSING THROUGH THE AREA OF CONSTRUCTION WHICH PRESENTLY SERVE OTHER PORTIONS OF THE BUILDING UNAFFECTED BY THIS PROJECT IN ORDER TO MAINTAIN THE CONTINUITY OF EXISTING SYSTEMS AND TO CONCEAL THEM ABOVE NEW CEILINGS.
K. ANY EXISTING DUCTWORK, PIPING, EQUIPMENT, AND DEVICES WHICH ARE WITHIN THE AREA OF CONSTRUCTION AND SHOWN TO REMAIN BUT FOUND TO BE DAMAGED SHALL BE REPLACED WITH NEW MATERIALS CONFORMING TO THESE CONTRACT DOCUMENTS.
L. ALL EQUIPMENT, DEVICES, AND MATERIALS REMOVED DURING DEMOLITION WORK AND NOT INDICATED TO BE REUSED OR TURNED OVER TO THE OWNER SHALL BECOME THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR FOR DISPOSAL.
M. WHERE BRANCH DUCTWORK AND PIPING ARE SHOWN TO BE DEMOLISHED, THEY SHALL BE REMOVED BACK TO DUCT AND PIPE MAINS AND CAPPED AT THAT POINT UNLESS NOTED OTHERWISE.

GENERAL HVAC NOTES

A. THESE GENERAL NOTES SHALL APPLY TO ALL HVAC DRAWINGS.
B. MECHANICAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE 'AS-BUILT' CONDITIONS AND THESE DRAWINGS.
C. EXISTING ITEMS TO REMAIN ARE SHOWN LIGHT. NEW ITEMS ARE SHOWN DARK.
D. EXHAUST AIR DISCHARGE SHALL BE LOCATED A MINIMUM OF 10 FEET HORIZONTALLY FROM OUTSIDE AIR INTAKES AND 3 FEET FROM OPERABLE WINDOWS/DOORS.
E. ALL REQUIRED CONTROL WIRING NOT SHOWN ON ELECTRICAL DRAWINGS SHALL BE INCLUDED AS PART OF THE MECHANICAL WORK. WIRING IN HVAC PLENUM SPACES SHALL BE INSTALLED ACCORDING TO CODE REQUIREMENTS.
F. INSTALL FIRE DAMPERS IN ALL RATED WALL, FLOOR, AND CEILING DUCT PENETRATIONS AS APPLICABLE. INSTALL SMOKE DAMPERS IN ALL DUCT PENETRATIONS THROUGH SMOKE RATED WALLS AS APPLICABLE. WHERE DUCTS PENETRATE WALLS THAT CARRY BOTH SMOKE AND FIRE RATINGS, THE DAMPERS INSTALLED SHALL BE COMBINATION SMOKE AND FIRE DAMPERS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF RATED ASSEMBLIES. PROVIDE ACCESS DOORS IN DUCT AT EACH DAMPER LOCATION. ALL DAMPERS SHALL BE UL 555 LABELED.
G. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
H. ALL BRANCH DUCT SIZES ARE EQUAL TO THE NECK SIZE OF DIFFUSER UNLESS NOTED OTHERWISE.
I. ELBOWS SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT. WHERE SPACE CONDITIONS DO NOT PERMIT THIS RADIUS OR WHERE INDICATED ON DRAWINGS, SQUARE ELBOWS WITH TURNING VANES SHALL BE USED.
J. MAXIMUM LENGTH OF FLEXIBLE DUCTS SHALL BE FIVE FEET.
K. ALL DUCT DIMENSIONS ARE NET CLEAR, INTERIOR DIMENSIONS.
L. ALL DUCT AND PIPE PENETRATIONS OF FIRE AND/OR SMOKE RATED ASSEMBLIES SHALL BE FIRE STOPPED AS REQUIRED PER CODE TO MAINTAIN THE INTEGRITY OF RATED ASSEMBLIES.
M. ANY WALL, FLOOR, OR CEILING SURFACE THAT IS DISTURBED DURING THE COURSE OF THIS WORK SHALL BE REPAIRED TO EXISTING OR LIKE-NEW CONDITION.
N. MECHANICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL EQUIPMENT, DUCTWORK, AND PIPING TO FIT WITHIN THE SPACE ALLOWED BY ARCHITECTURAL AND STRUCTURAL CONDITIONS. PROVIDE PIPE AND DUCT OFFSETS AND TRANSITIONS AS REQUIRED TO ACCOMMODATE STRUCTURE AND ARCHITECTURE. CUTTING OR OTHERWISE ALTERING STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.
O. PROVIDE BALANCING DAMPERS AND BALANCING VALVES AS REQUIRED TO MEET AIR FLOW REQUIREMENTS.
P. PROVIDE SHUTOFF VALVES AT ALL BRANCH PIPING RUNOUTS AND AT INLET AND OUTLET OF EACH PIECE OF MECHANICAL EQUIPMENT.
Q. BALANCE AIR SYSTEMS TO MEET DESIGN FLOW REQUIREMENTS.
R. SEAL AND INSULATE DUCTWORK PER ENERGY CODE REQUIREMENTS. INSULATE PIPING PER ENERGY CODE REQUIREMENTS.
S. LOCATE VALVES, DAMPERS, AND CONTROLS FOR EASE OF ACCESS.
T. LOCATE GAUGES AND THERMOMETERS FOR EASE OF OBSERVATION.
U. PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS AND IN WALL STRUCTURES TO ALLOW ADEQUATE ROOM FOR MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEMS. COORDINATE EXACT SIZES AND LOCATIONS OF ACCESS PANELS WITH ARCHITECT DURING THE SHOP DRAWING PROCESS.
V. COORDINATE FINAL DUCT AND PIPE ROUTING WITH PLUMBING, FIRE SUPPRESSION, AND ELECTRICAL. COORDINATE FINAL GRILLE, REGISTER, AND DIFFUSER LOCATIONS WITH REFLECTED CEILING PLANS, LIGHTING, SPRINKLER HEADS, COMMUNICATION DEVICES, AND FIRE ALARM DEVICES.
W. VERIFY THERMOSTAT LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN AND INSTALLATION.
X. HVAC WORK SHALL NOT BE LOCATED OVER ELECTRICAL EQUIPMENT OR PANELS. COORDINATE WITH ELECTRICAL CONTRACTOR TO MAINTAIN ALL CODE REQUIRED ELECTRICAL CLEARANCES.
Y. ROUTE CONDENSATE PIPING FROM EACH PIECE OF APPLICABLE MECHANICAL EQUIPMENT TO NEAREST FLOOR DRAIN, STANDPIPE, MOP SINK, WALL BOX, OR OTHER CODE-APPROVED PLUMBING RECEPTOR.
Z. ROUTE REFRIGERANT LINE SETS FROM EACH EVAPORATOR COIL TO ASSOCIATED CONDENSING UNIT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
AA. ROUTE COMBUSTION AIR AND FLUE PIPING FROM EACH FURNACE TO EXTERIOR OF BUILDING PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
BB. ANY HVAC EQUIPMENT THAT IS CAPABLE OF PRODUCING CONDENSATE AND IS LOCATED ABOVE A HARD CEILING SHALL BE PROVIDED WITH A SECONDARY OVERFLOW CONDENSATE SWITCH.
CC. ALL MECHANICAL SYSTEMS SHALL COMPLY WITH THE CURRENT MINNESOTA COMMERCIAL ENERGY CODE.

HVAC SYMBOLS & ABBREVIATIONS

MECHANICAL SYMBOLS

- ANGLE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE W/DIRECTION INDICATED
- CONTROL VALVE (2-WAY)
- CONTROL VALVE (3-WAY)
- FIN TUBE RADIATION
- FLANGE
- FLOW MEASURING & BALANCING DEVICE
- FLOW MEASURING & BALANCING DEVICE, WITH ISOLATION VALVE
- GATE VALVE
- GLOBE VALVE
- GAS METER
- PIPE ANCHOR
- PIPE GUIDES
- PIPE CAP
- PIPE DOWN
- PIPE UP
- PLUG VALVE
- PRESSURE GAUGE
- PRESSURE REDUCING VALVE WITH INLET AND OUTLET PRESSURE
- STRAINER
- TEMPERATURE GAUGE
- THREADED HOSE CONNECTION
- TRIPLE DUTY VALVE, WITH COMBINATION SHUT-OFF, BALANCING, AND CHECK VALVE WITH MEASURING CONNECTIONS
- UNION
- ACCESS DOORS, VERTICAL/HORIZONTAL (AD 10/10)
- CARBON DIOXIDE SENSOR (CO2)
- FIRE DAMPER IN DUCT (F)
- FIRE/SMOKE DAMPER IN DUCT (FS)
- FREEZE STAT (T)
- GRAVITY BACKDRAFT DAMPER IN DUCT
- HVAC OCCUPANCY SENSOR (OS)
- MANUAL VOLUME DAMPER IN DUCT
- MOTORIZED OPERATED DAMPER IN DUCT (M)
- SMOKE DAMPER IN DUCT (S)
- THERMOSTAT TO CONTROL EQUIPMENT X (T X)
- RADIUS ROUND ELBOW (RADIUS OF CENTERLINE OF DUCT EQUAL TO 1.5 X DUCT WIDTH OR DIAMETER)
- CO / NO2 GAS DETECTOR (CO NO2)
- SHOE TAKE-OFF (45° ANGLE INLET)
- SPIN-IN TAKE-OFF
- SQUARE (MITERED) ELBOW
- SQUARE (MITERED) ELBOW W/TURNING VANES
- SQUARE TO ROUND TRANSITION, 15° MAXIMUM ANGLE (24X12 – 18"Ø)
- STRAIGHT LATERAL TAKEOFF (ROUND DUCT)
- STRAIGHT TAP TAKE-OFF
- CONCENTRIC TRANSITION, 15° MAXIMUM ANGLE (24X12 – 18X12)
- SWITCH (SW)

GENERIC SYMBOLS

- CONNECT TO EXISTING
- EQUIPMENT TO BE DEMOLISHED
- KEYED NOTE (1)
- REVISION (1)

DUCT SYSTEM SYMBOLS & ABBREVIATIONS



- EXHAUST AIR
- MAKE-UP AIR
- OUTSIDE AIR
- RETURN AIR
- SUPPLY AIR
- TRANSFER AIR

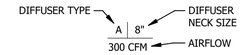


- RECTANGULAR DUCT W/ ACCOUSTICAL LINING
- FLEXIBLE CONNECTION IN DUCT
- FLEXIBLE DUCT

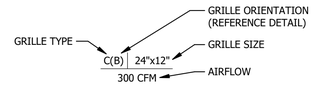
PIPING SYSTEM ABBREVIATIONS

CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CA	COMPRESSED AIR LINE
CD	CONDENSATE DRAINAGE
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
E.__	EXISTING TO REMAIN
E.__	DEMOLISHED PIPING & DUCTWORK
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
GS	GLYCOL SUPPLY
GR	GLYCOL RETURN
HWS	HOT WATER HEATING SUPPLY
HWR	HOT WATER HEATING RETURN
NG	NATURAL GAS PIPING
ING	INTERRUPTIBLE GAS PIPING
FNG	FIRM GAS PIPING
LPG	LIQUID PROPANE GAS
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM SUPPLY
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM SUPPLY
RL	REFRIGERANT LIQUID LINE
RS	REFRIGERANT SUCTION LINE

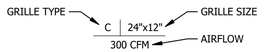
TYPICAL AIR DEVICE TAGS



CEILING MOUNTED DIFFUSERS



DUCT MOUNTED GRILLES



SURFACE MOUNTED GRILLES

MECHANICAL EQUIPMENT TAGS

AC-	AIR CONDITIONING UNIT
AHU-	AIR HANDLING UNIT
AS-	AIR SEPARATOR
B-	BOILER
BB-	BASEBOARD HEATER
CU-	AIR COOLED CONDENSING UNIT
CUH-	CABINET UNIT HEATER
DC-	DUCT MOUNTED COIL
DH-	DEHUMIDIFIER
DSF-	DESTRATIFICATION FAN
EF-	EXHAUST FAN
ERV-	ENERGY RECOVERY VENTILATOR
ET-	EXPANSION TANK
EUH-	ELECTRIC UNIT HEATER
F-	FURNACE
FCU-	FAN COIL UNIT
FTR-	FINNED TUBE RADIATION
GUH-	GAS UNIT HEATER
MAU-	MAKE-UP AIR UNIT
MSI-	MINI SPLIT INDOOR UNIT
MSO-	MINI SPLIT OUTDOOR UNIT
P-	PUMP
PTAC-	PACKAGED TERMINAL AIR CONDITIONER
RTU-	ROOF TOP UNIT
WH-	WATER HEATER
WS-	WATER SOFTENER

MECHANICAL ABBREVIATIONS

Ø	ROUND
AC	AIR CONDITIONING
AD	ACCESS DOORS, VERTICAL/HORIZONTAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
ARCH	ARCHITECT/ARCHITECTURAL
BB	BASEBOARD RADIATION
BWV	BACK WATER VALVE
BV	BALL VALVE
BF	BUTTERFLY VALVE
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CHV	CHECK VALVE
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
CV	CONTROL VALVE
DB/WB	DRY BULB/WET BULB
DEG	DEGREE(S)
DIA	DIAMETER
DN	DOWN
E.___	EXISTING (HWS, SA, NG, ETC.)
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ELEC	ELECTRICAL
ERV	ENERGY RECOVERY VENTILATION
ESP	ENTERING WATER TEMPERATURE
EWT	EXTERNAL STATIC PRESSURE
FFE	FINISH FLOOR ELEVATION
FP	FILLER PANEL
FTR	FINNED TUBE RADIATION
GM	GAS METER
GC	GENERAL CONTRACTOR
GM	GAS METER
GV	GATE VALVE
GLV	GLOBE VALVE
HTG	HEATING
HTR	HEATER
HWV	HOT WATER VALVE
IE	INVERT ELEVATION
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
LVR	LOUVER
MECH	MECHANICAL
MFR	MANUFACTURER
MISC	MISCELLANEOUS
MOD	MOTORIZED OPERATED DAMPER IN DUCT
NC	NOISE CRITERIA
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO2	NITROGEN DIOXIDE
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
PD	PRESSURE DROP
PLBG	PLUMBING
PRV	PRESSURE REDUCING VALVE
R	GAS PRESSURE REGULATOR
RCP	RADIANT CEILING PANEL
RH	RELATIVE HUMIDITY
RPZ	REDUCED PRESSURE BACKFLOW PREVENTER
SF	SQUARE FEET
TD	TEMPERATURE DROP
TYP.	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VAV	VARIABLE AIR VOLUME
ZD	PRESSURE INDEPENDENT ZONE DAMPER

NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THIS PROJECT

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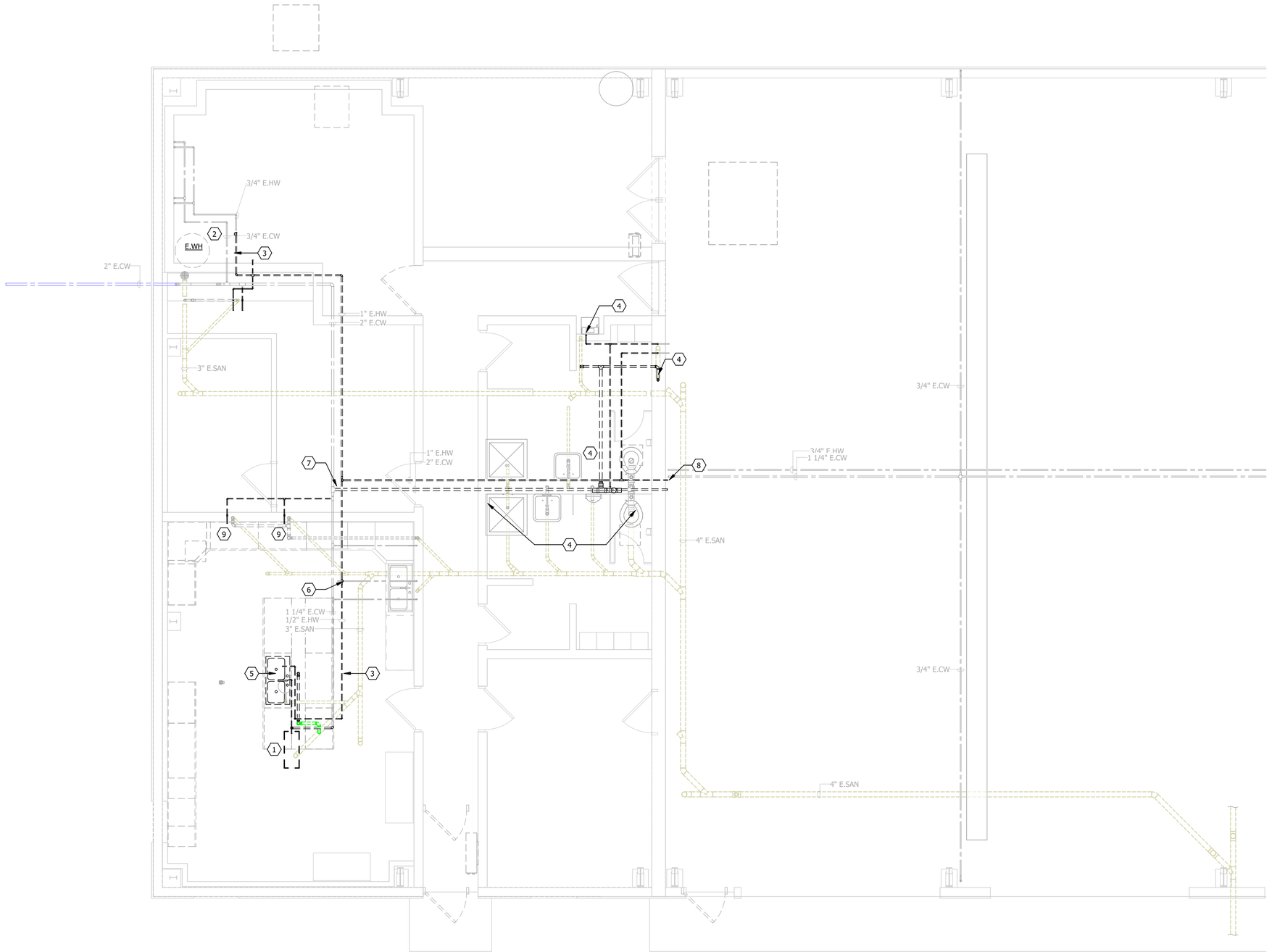
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL SYMBOLS AND LEGEND

SHEET 6.02



KEYED NOTES:

1. REMOVE EXISTING EMERGENCY EYEWASH SHOWER AND ALL ASSOCIATED COMPONENTS, PIPING, HANGERS, AND SUPPORTS TO THE EXTENT INDICATED ON THE PLANS.
2. REMOVE EXISTING WATER HEATER AND ALL ASSOCIATED PIPING, HANGERS, AND SUPPORTS TO THE EXTENT INDICATED ON THE PLANS.
3. REMOVE HOT WATER PIPING MAIN. PREPARE EXISTING TO REMAIN HOT WATER BRANCHES FOR CONNECTION TO NEW.
4. REMOVE VENT AND DOMESTIC WATER PIPING IN BATHROOM AREA FROM JUST BELOW VENT THROUGH ROOF TO A POINT 7'-0" ABOVE FINISH FLOOR TO ACCOMMODATE NEW MEZZANINE. PREPARE EXISTING VENT AND DOMESTIC WATER PIPING FOR CONNECTION TO NEW. PLUMBING FIXTURES TO REMAIN. VENT THROUGH ROOF TO REMAIN, PREPARE FOR CONNECTION TO NEW.
5. REMOVE TWO COMPARTMENT SINK, NEUTRALIZATION TANK AND ASSOCIATED PIPING. CAP PIPING BELOW FINISHED SURFACES.
6. REMOVE HOT WATER MAIN. HOT WATER BRANCH TO REMAIN. PREPARE CONNECTION TO NEW.
7. REMOVE COLD WATER BRANCH. CAP PIPING AT MAIN.
8. COLD AND HOT WATER PIPING IN GARAGE TO REMAIN. PREPARE PIPING FOR CONNECTION TO NEW.
9. REMOVE CUP SINKS. CAP WASTE PIPING BEHIND FINISHED SURFACES. REMOVE COLD WATER LINE BACK TO MAIN.

1 PLUMBING DEMO PLAN ADMINISTRATION BUILDING

1/4" = 1'-0"

0 2' 4' 8'

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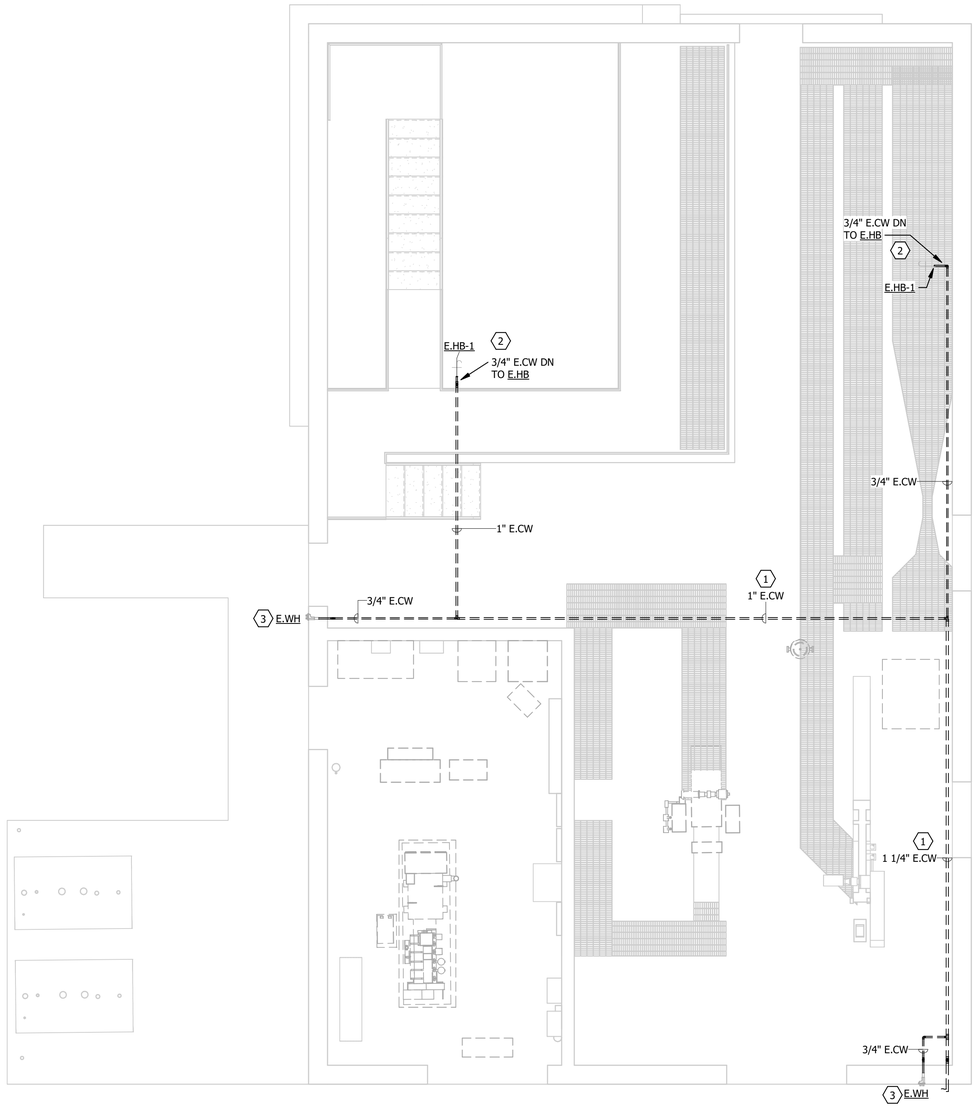
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING DEMO PLAN - ADMINISTRATION BUILDING

SHEET 6.03

KEYED NOTES:

X

1. REMOVE EXISTING COLD WATER PIPING AND ALL ASSOCIATED COMPONENTS, HANGERS, AND SUPPORTS TO THE EXTENT INDICATED ON THE PLANS.
2. REMOVE EXISTING HOSE BIB AND ALL ASSOCIATED PIPING, HANGERS, AND SUPPORTS.
3. REMOCE EXISTING WALL HYDRANT AND ALL ASSOCIATED PIPING, HANGERS, AND SUPPORTS.



N 1 PLUMBING DEMO PLAN PRETREATMENT BUILDING

1/4" = 1'-0"

0 2' 4' 8'

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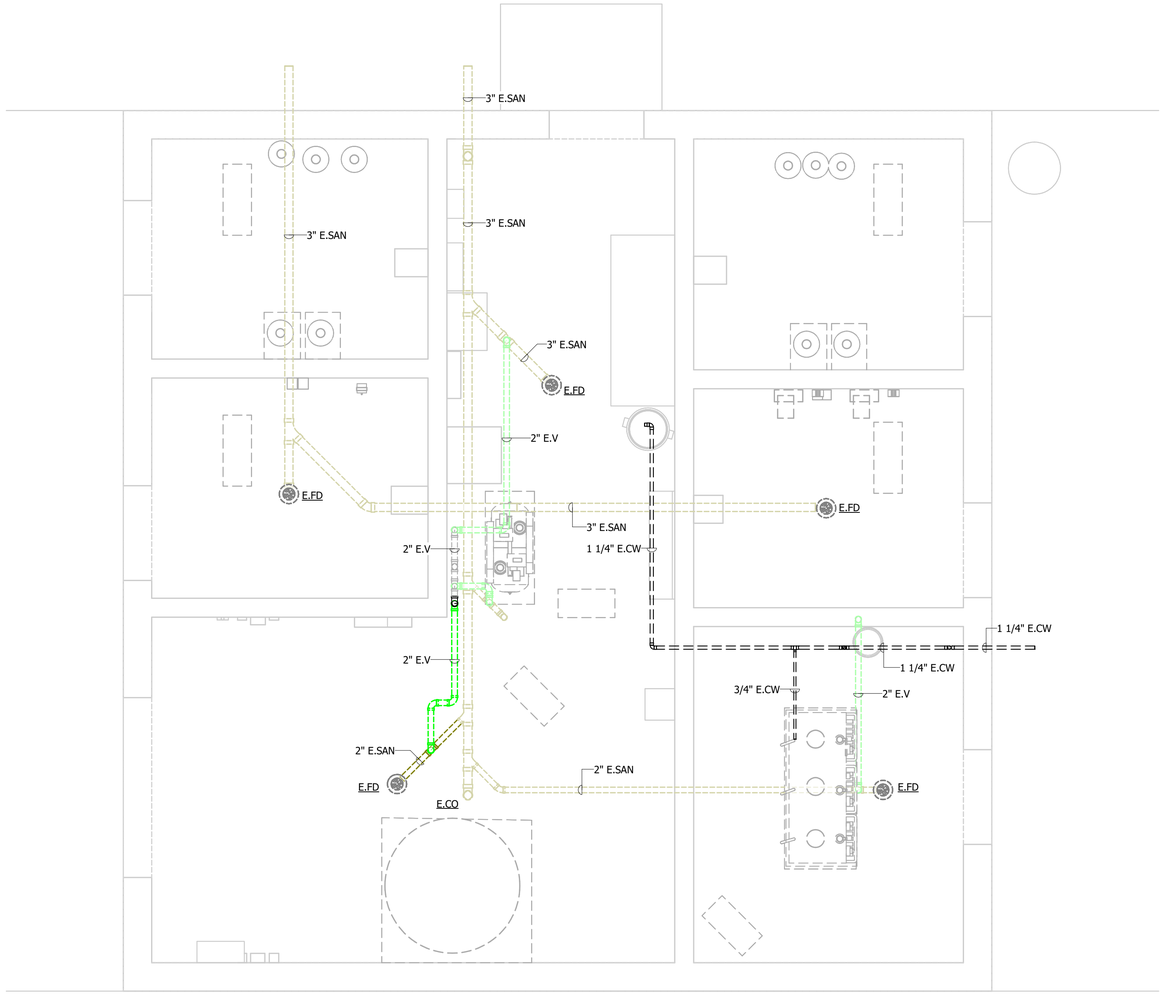
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING DEMO PLAN - PRETREATMENT BUILDING

SHEET 6.04



1 PLUMBING DEMO PLAN DISINFECTION BUILDING

3/8" = 1'-0"

0 1'-4" 2'-8" 5'-4"

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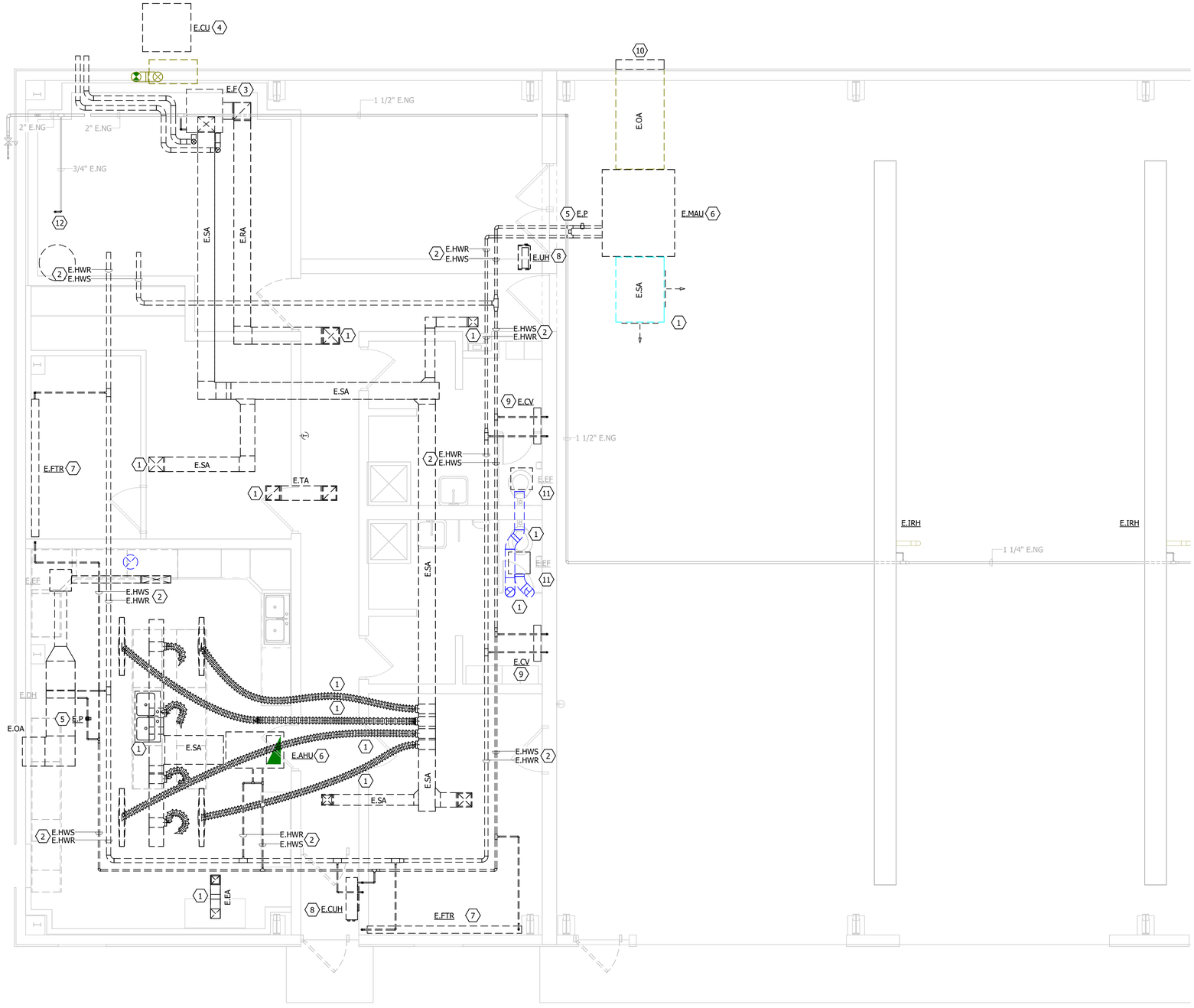
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING DEMO PLAN - DISINFECTION BUILDING

SHEET 6.05



KEYED NOTES:

1. REMOVE EXISTING DUCTWORK AND ALL ASSOCIATED COMPONENTS, GRILLES, DIFFUSERS, HANGERS, AND SUPPORTS TO THE EXTENT INDICATED IN THE DRAWINGS.
2. REMOVE ALL EXISTING ABANDONED HYDRONIC PIPING AND ALL ASSOCIATED COMPONENTS, CONTROLS, HANGERS, AND SUPPORTS.
3. REMOVE EXISTING FURNACE AND ALL ASSOCIATED DUCTWORK, PIPING, COMPONENTS, AND CONTROLS.
4. REMOVE EXISTING CONDENSING UNIT AND ALL ASSOCIATED PIPING, COMPONENTS, AND CONTROLS.
5. REMOVE EXISTING HYDRONIC PUMPS AND ASSOCIATED COMPONENTS.
6. REMOVE EXISTING ABANDONED AIR HANDLING UNIT AND ALL ASSOCIATED DUCTWORK, PIPING, CONTROLS, HANGERS, SUPPORTS, AND ASSOCIATED CONTROL PANEL.
7. REMOVE EXISTING FINNED TUBE RADIATORS AND ALL ASSOCIATED PIPING, CONTROLS, HANGERS, AND SUPPORTS.
8. REMOVE EXISTING CABINET UNIT HEATER/UNIT HEATER, AND ALL ASSOCIATED PIPING, CONTROLS, HANGERS, AND SUPPORTS.
9. REMOVE EXISTING HYDRONIC CONVERCTOR AND ALL ASSOCIATED PIPING, CONTROLS, HANGERS, AND SUPPORTS.
10. REMOVE EXISTING LOUVER AND ALL ASSOCIATED COMPONENTS.
11. REMOVE EXISTING EXHAUST FAN AND ALL ASSOCIATED COMPONENTS.
12. DEMO NG PIPING DROP TO WATER HEATER.

1 MECHANICAL DEMO PLAN ADMINISTRATION BUILDING

1/4" = 1'-0"

0 2' 4' 8'

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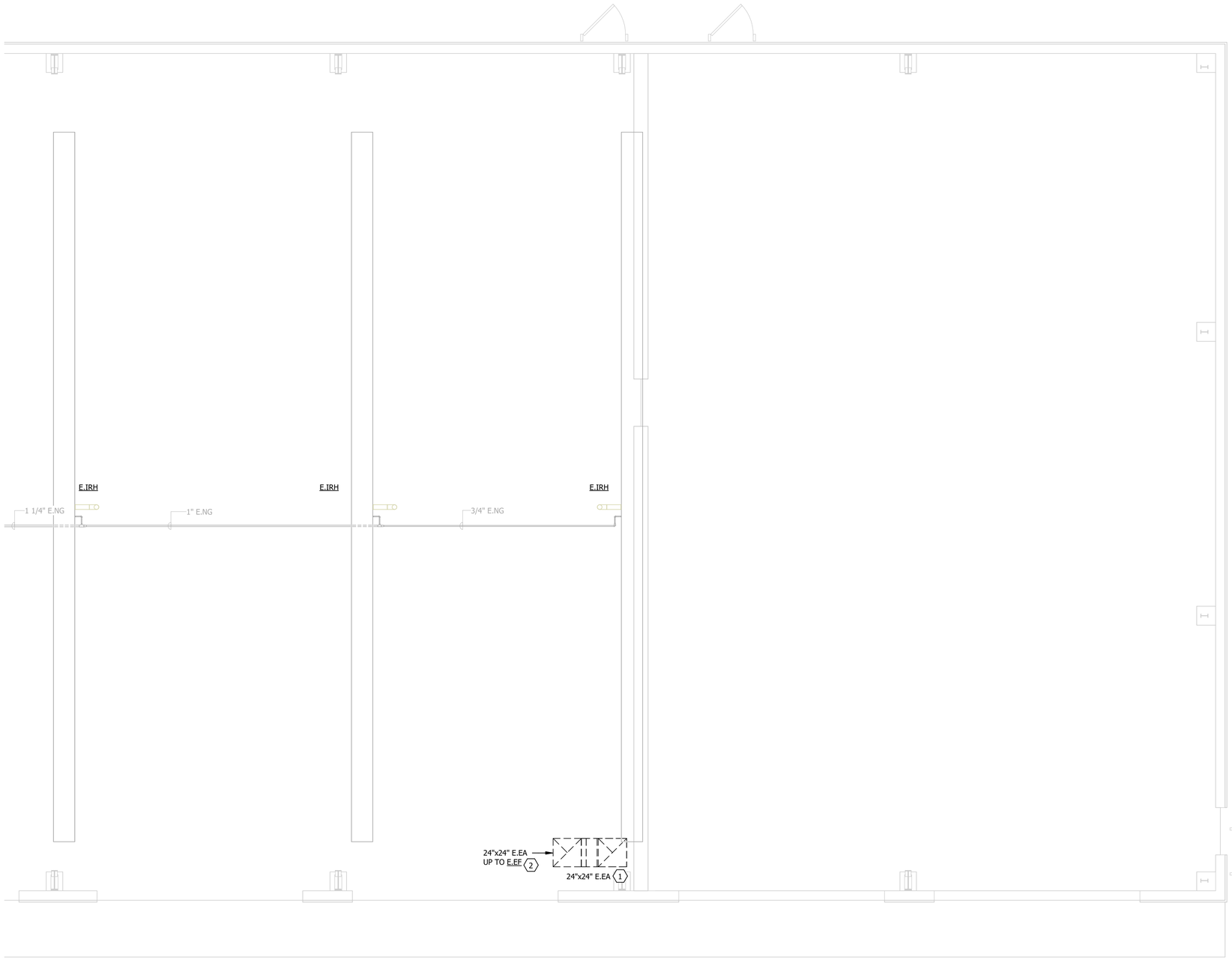
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL DEMO PLAN - ADMINISTRATION BUILDING

SHEET 6.06



KEYED NOTES:

1. REMOVE EXISTING DUCTWORK AND ALL ASSOCIATED COMPONENTS, HANGERS, AND SUPPORTS.
2. REMOVE EXISTING ROOF MOUNTED EXHAUST FAN AND ALL ASSOCIATED COMPONENTS, HANGERS, AND SUPPORTS.

1 MECHANICAL DEMO PLAN ADMINISTRATION BUILDING
1/4" = 1'-0"

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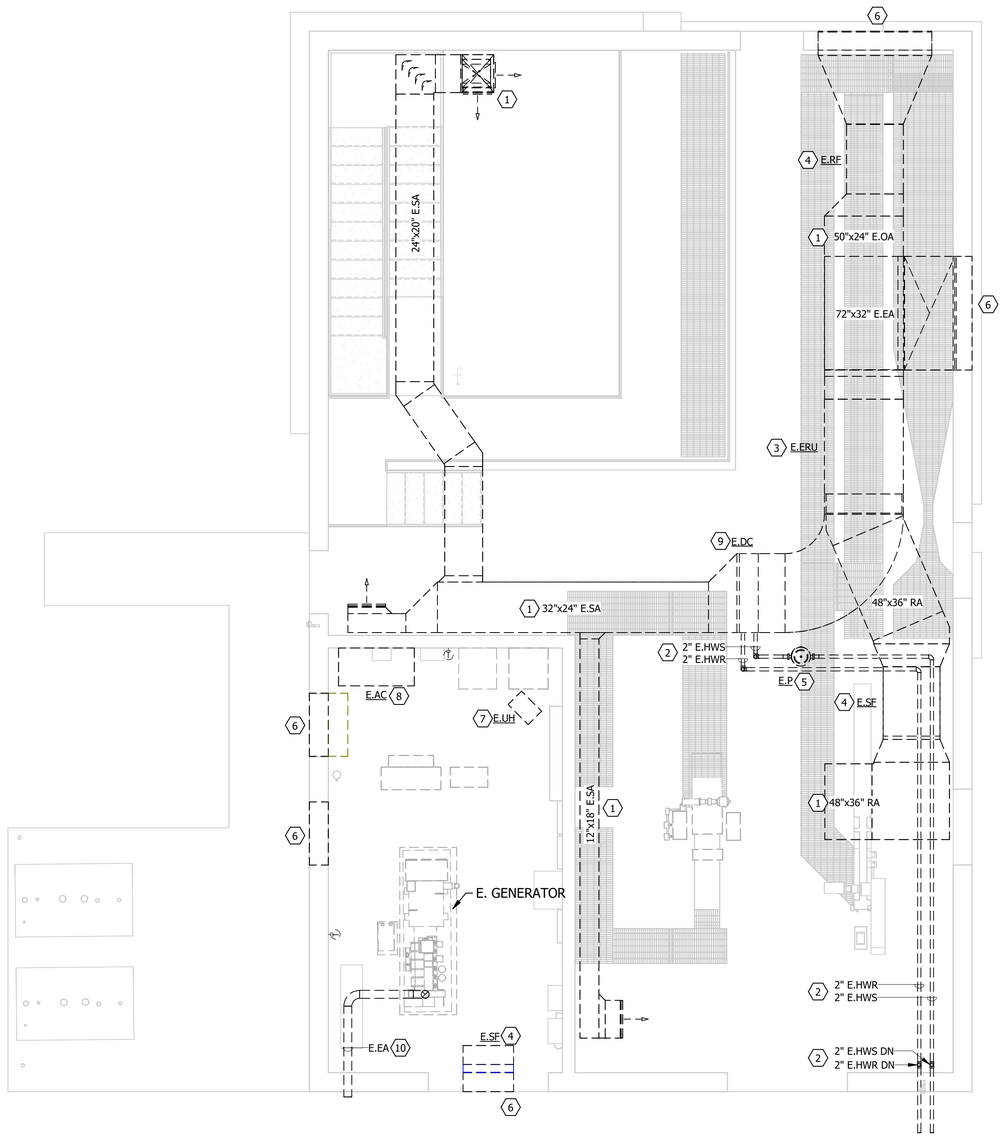
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL DEMO PLAN - ADMINISTRATION BUILDING GARAGE

SHEET
6.07

KEYED NOTES:

1. REMOVE EXISTING DUCTWORK AND ALL ASSOCIATED COMPONENTS, GRILLES, DIFFUSERS, HANGERS, AND SUPPORTS TO THE EXTENT INDICATED IN THE DRAWINGS.
2. REMOVE ALL EXISTING HYDRONIC PIPING AND ALL ASSOCIATED COMPONENTS, CONTROLS, HANGERS, AND SUPPORTS.
3. REMOVE EXISTING ENERGY RECOVERY UNIT AND ALL ASSOCIATED DUCTWORK, COMPONENTS, AND CONTROLS.
4. REMOVE EXISTING FANS AND ALL ASSOCIATED DUCTWORK, COMPONENTS, AND CONTROLS.
5. REMOVE EXISTING HYDRONIC PUMPS AND ASSOCIATED COMPONENTS.
6. REMOVE EXISTING LOUVER AND ALL ASSOCIATED COMPONENTS.
7. REMOVE EXISTING ELECTRIC CABINET UNIT HEATER, AND ALL ASSOCIATED CONTROLS, HANGERS, AND SUPPORTS.
8. REMOVE EXISTING AIR COMPRESSOR AND ALL ASSOCIATED COMPONENTS.
9. REMOVE EXISTING HOT WATER HEATING COIL AND ALL ASSOCIATED HANGERS, SUPPORTS, AND COMPONENTS.
10. REMOVE EXISTING GENERATOR COMBUSTION EXHAUST VENT AND ASSOCIATED HANGERS AND SUPPORTS. COORDINATE WALL PATCHING WITH GC TO MATCH EXISTING CONDITIONS.



N 1 MECHANICAL DEMO PLAN PRETREATMENT BUILDING

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

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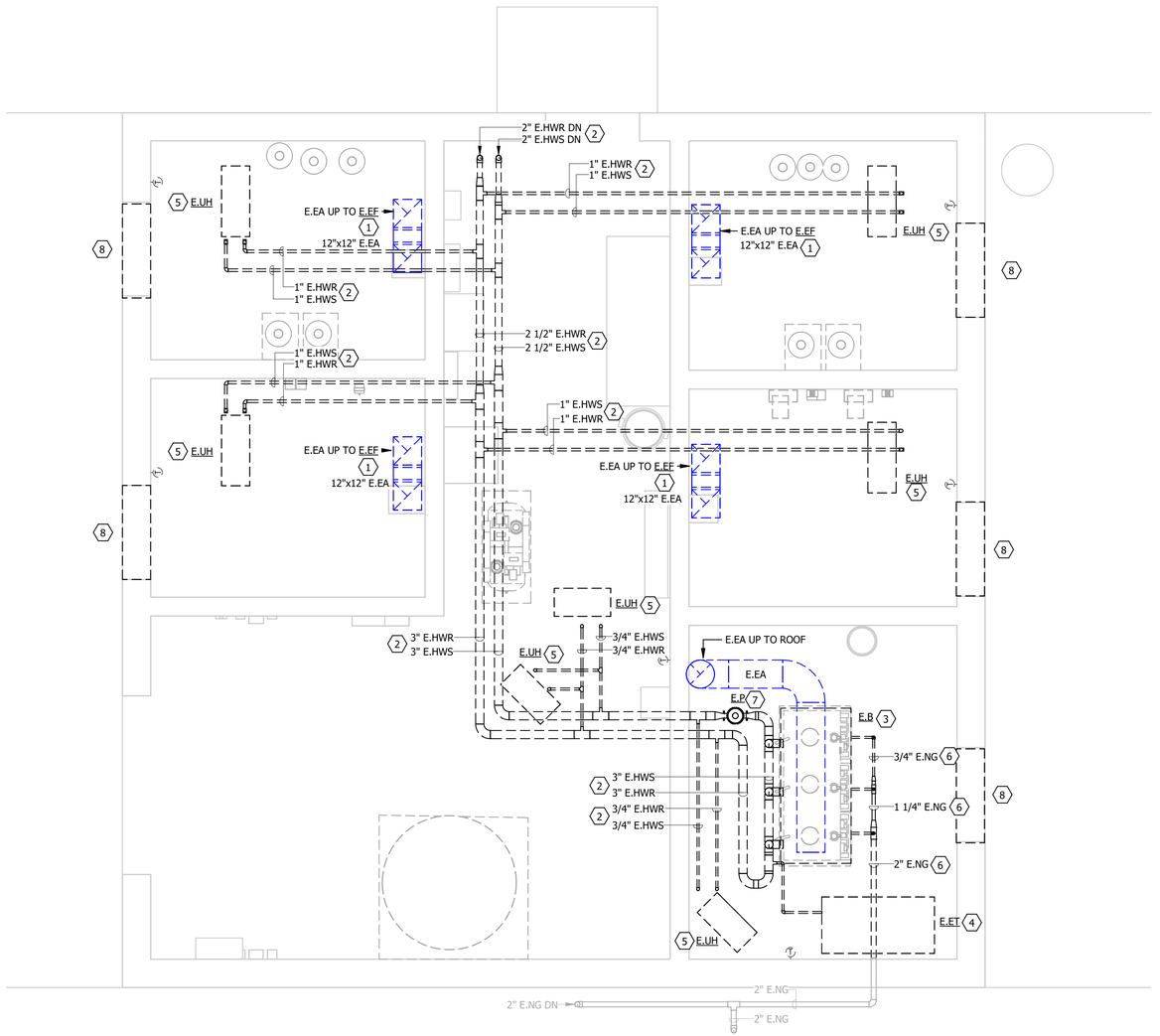
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL DEMO PLAN - PRETREATMENT BUILDING

SHEET
6.08

KEYED NOTES:

1. REMOVE EXISTING DUCTWORK, EXISTING ROOF MOUNTED EXHAUST FAN, AND ALL ASSOCIATED COMPONENTS, GRILLES, DIFFUSERS, HANGERS, AND SUPPORTS TO THE EXTENT INDICATED IN THE DRAWINGS.
2. REMOVE ALL EXISTING HYDRONIC PIPING AND ALL ASSOCIATED COMPONENTS, CONTROLS, HANGERS, AND SUPPORTS.
3. REMOVE EXISTING BOILER SKIDDED SYSTEM AND ALL ASSOCIATED EXHAUST DUCTWORK, PIPING, COMPONENTS, AND CONTROLS.
4. REMOVE EXISTING EXPANSION TANK AND ALL ASSOCIATED PIPING, COMPONENTS, HANGERS, AND SUPPORTS.
5. REMOVE EXISTING UNIT HEATER, AND ALL ASSOCIATED PIPING, CONTROLS, HANGERS, AND SUPPORTS.
6. REMOVE EXISTING NATURAL GAS PIPING AND ALL ASSOCIATED COMPONENTS, HANGERS, AND SUPPORTS.
7. REMOVE EXISTING HYDRONIC PUMP AND ALL ASSOCIATED COMPONENTS, CONTROLS, HANGERS, AND SUPPORTS.
8. REMOVE EXISTING LOUVER AND PREP OPENING FOR INSTALLATION OF NEW LOUVER.



1 MECHANICAL DEMO PLAN DISINFECTION BUILDING

3/8" = 1'-0"

0 1'-6" 3' 6'

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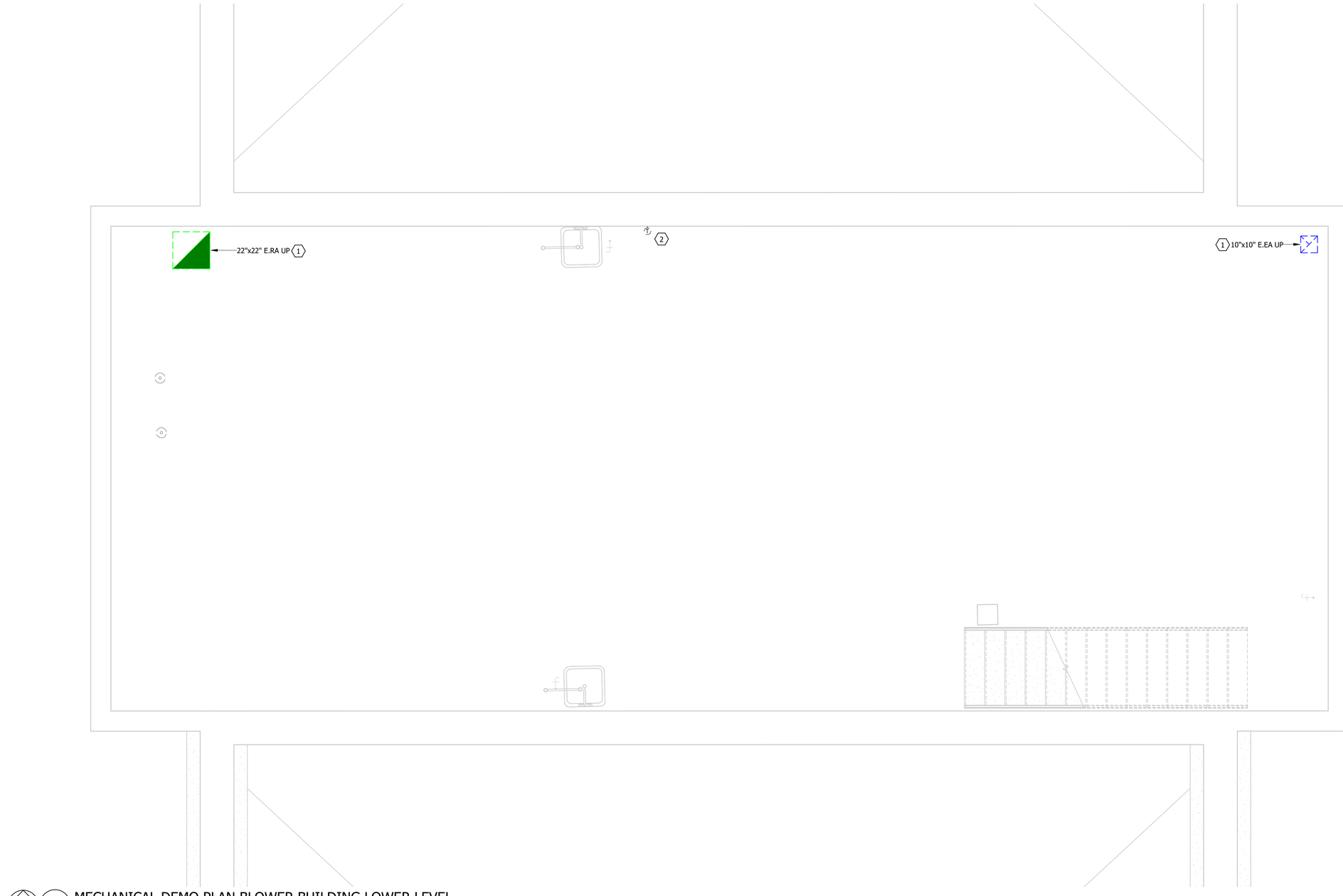
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL DEMO PLAN - DISINFECTION BUILDING

SHEET 6.09

KEYED NOTES:

1. REMOVE EXISTING DUCTWORK AND ALL ASSOCIATED COMPONENTS, GRILLES, DIFFUSERS, HANGERS, AND SUPPORTS TO THE EXTENT INDICATED IN THE DRAWINGS.
2. REMOVE EXISTING THERMOSTAT AND ALL ASSOCIATED COMPONENTS, WIRING, AND CONDUIT.



1 MECHANICAL DEMO PLAN BLOWER BUILDING LOWER LEVEL

3/8" = 1'-0"

0 1'-6" 3' 6'

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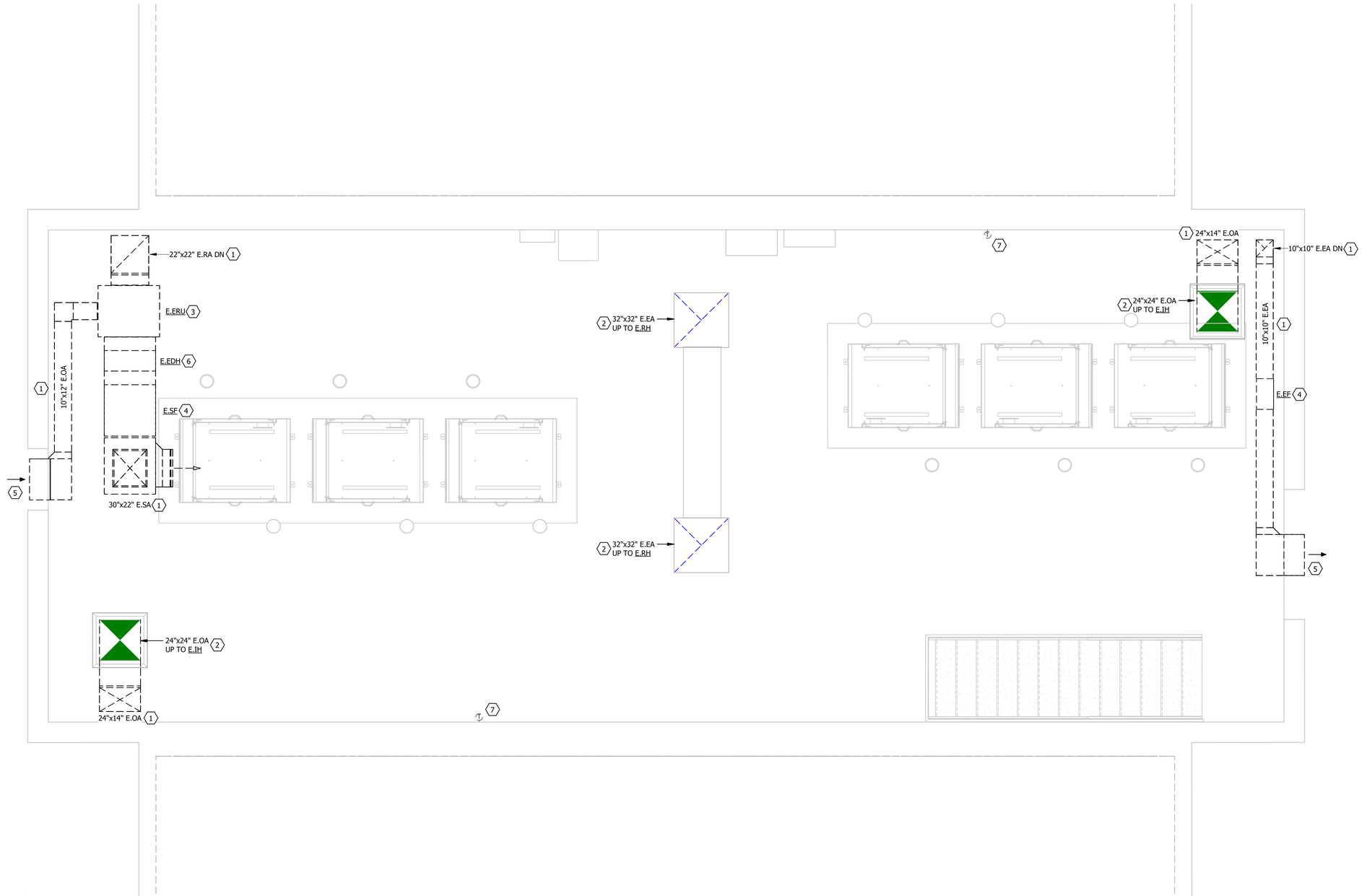
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL DEMO PLAN - BLOWER BUILDING LOWER LEVEL

SHEET
6.10

KEYED NOTES:

1. REMOVE EXISTING DUCTWORK AND ALL ASSOCIATED COMPONENTS, GRILLES, DIFFUSERS, HANGERS, AND SUPPORTS TO THE EXTENT INDICATED IN THE DRAWINGS.
2. REMOVE EXISTING DUCTWORK, AND ASSOCIATED ROOF HOOD. REMOVE ALL ASSOCIATED COMPONENTS, GRILLES, HANGERS, AND SUPPORTS.
3. REMOVE EXISTING ENERGY RECOVERY UNIT AND ALL ASSOCIATED DUCTWORK, COMPONENTS, AND CONTROLS.
4. REMOVE EXISTING FANS AND ALL ASSOCIATED DUCTWORK, COMPONENTS, AND CONTROLS.
5. REMOVE EXISTING LOUVER AND ALL ASSOCIATED COMPONENTS.
6. REMOVE EXISTING DUCT HEATING COIL AND ALL ASSOCIATED HANGERS, SUPPORTS, AND COMPONENTS.
7. REMOVE EXISTING THERMOSTAT AND ALL ASSOCIATED COMPONENTS, WIRING, AND CONDUIT.



1 MECHANICAL DEMO PLAN BLOWER BUILDING UPPER LEVEL

3/8" = 1'-0"

0 1'-6" 3' 6'

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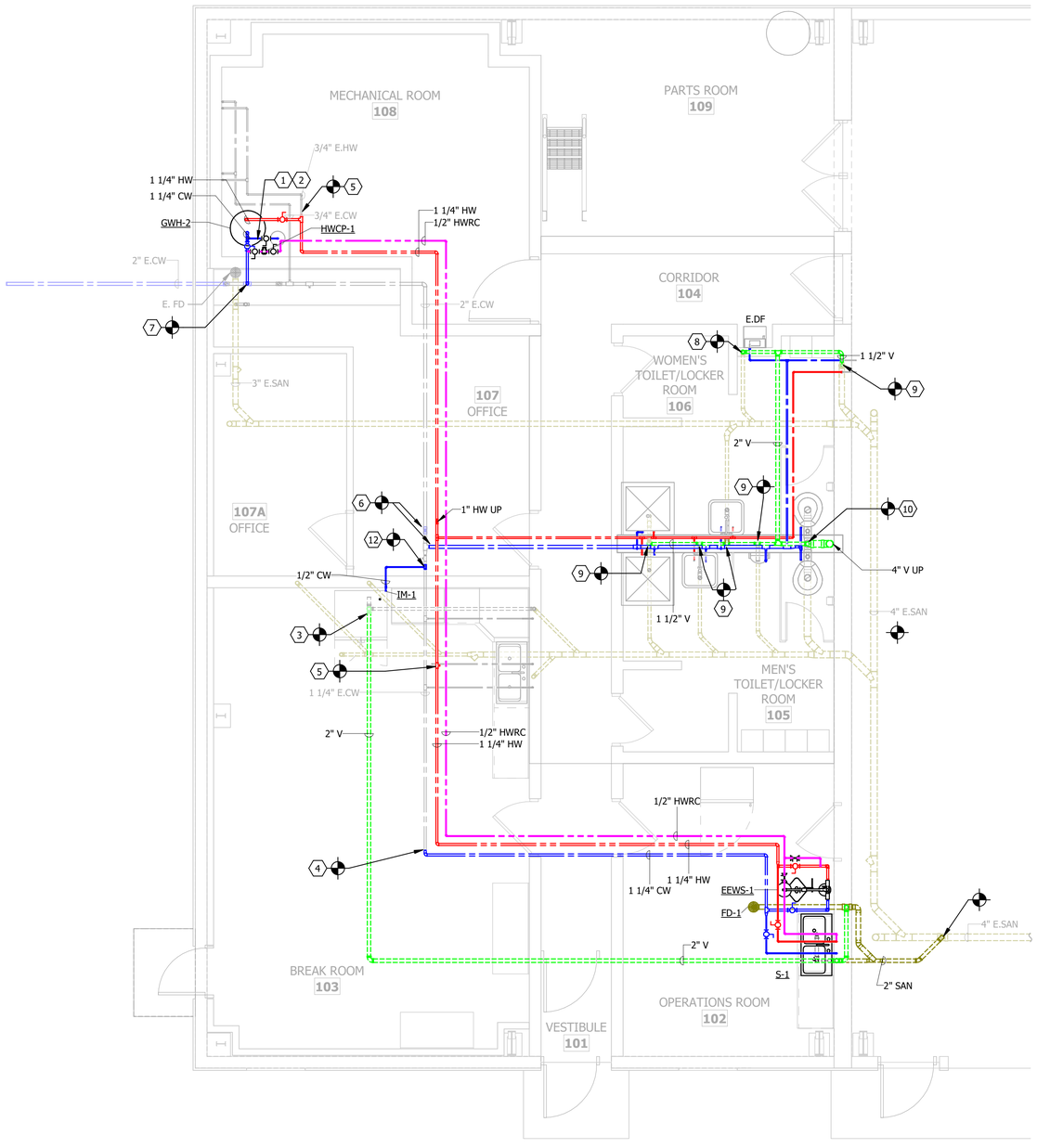
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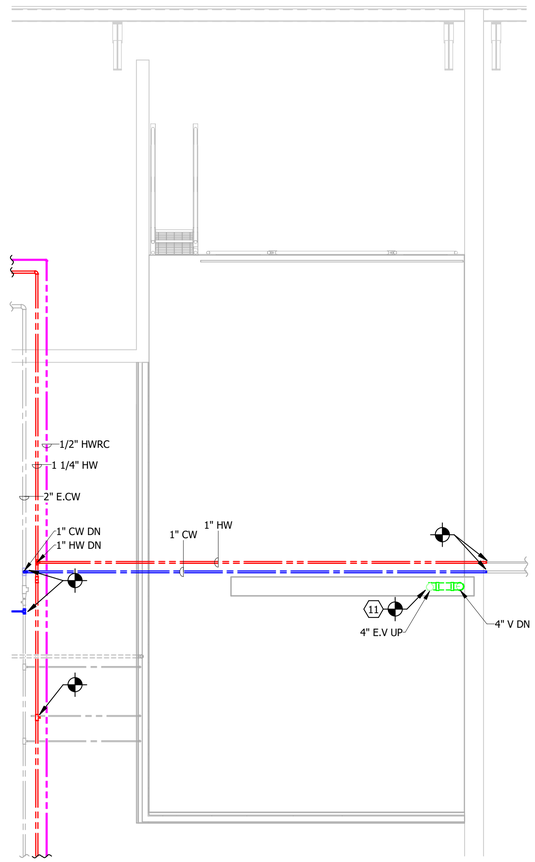
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL DEMO PLAN - BLOWER BUILDING UPPER LEVEL

SHEET 6.11



KEYED NOTES:

1. COORDINATE WITH GENERAL CONTRACTOR FOR HOUSEKEEPING PAD UNDER FLOOR MOUNTED PLUMBING EQUIPMENT.
2. MAINTAIN ALL REQUIRED CLEARANCES FOR EQUIPMENT.
3. CONNECT NEW 2" VENT TO EXISTING 2" VENT THROUGH ROOF.
4. CONNECT NEW 1-1/4" CW TO EXISTING 1-1/4" CW.
5. CONNECT EXISTING 1/2" HW TO NEW 1-1/4" HW.
6. CONNECT EXISTING 1" CW TO NEW 1-1/4" CW.
7. CONNECT NEW 1-1/4" CW TO EXISTING 2" CW.
8. CONNECT NEW 1-1/2" V TO EXISTING 1-1/4" V IN WALL.
9. CONNECT NEW 1-1/2" V TO EXISTING 1-1/2" V IN WALL.
10. CONNECT NEW 2" V TO EXISTING 2" V IN WALL.
11. CONNECT NEW 4" VENT TO EXISTING 4" VENT THROUGH ROOF AT CEILING. HOLD PIPING TIGHT TO STRUCTURE.
12. CONNECT NEW 1/2" COLD WATER TO EXISTING BRANCH MAIN.



N 1 PLUMBING PLAN ADMINISTRATION BUILDING LEVEL 1
1/4" = 1'-0"
0 2' 4' 8'

N 2 PLUMBING PLAN ADMINISTRATION BUILDING LEVEL 2
1/4" = 1'-0"
0 2' 4' 8'

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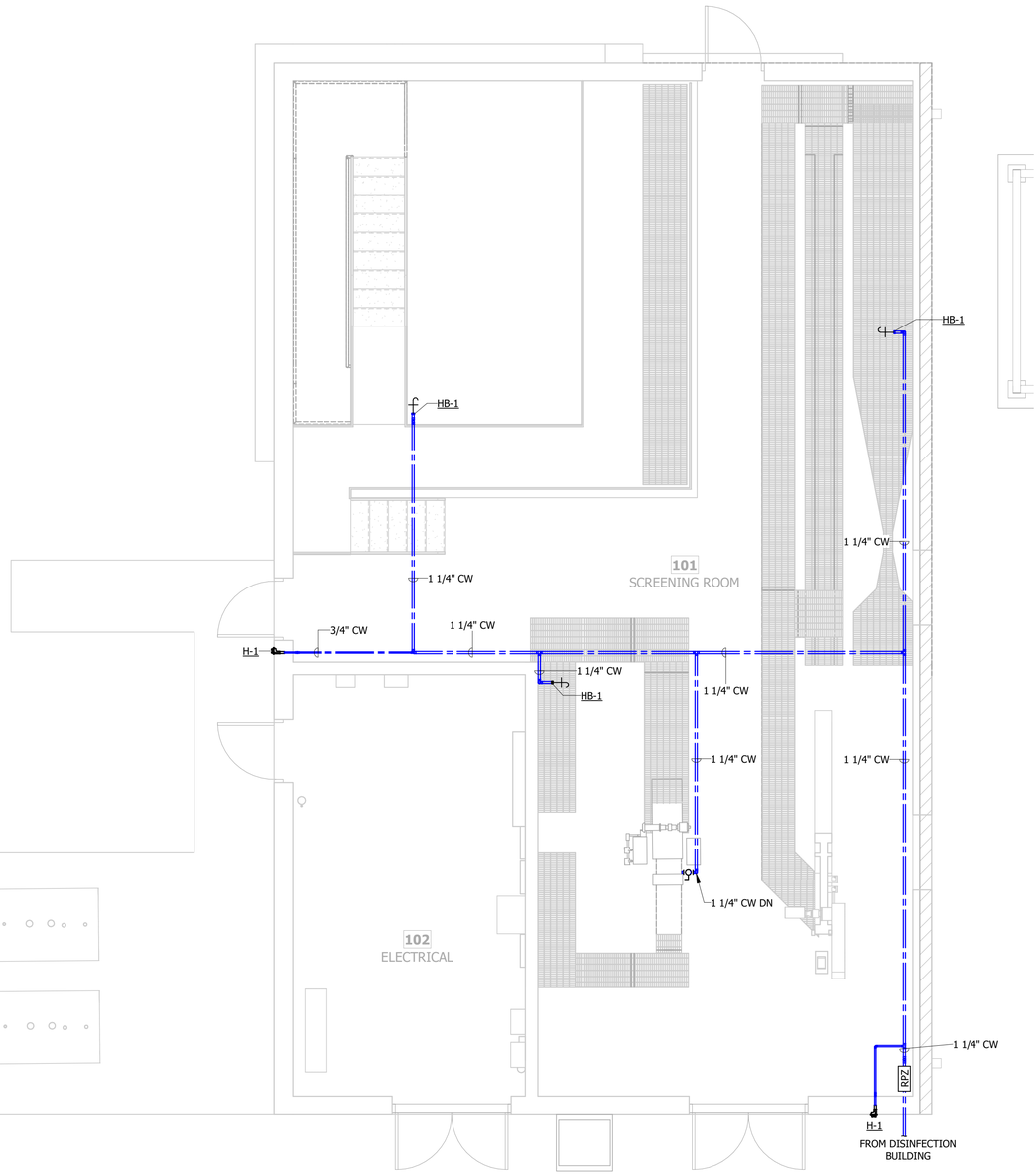
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PLUMBING PLAN - ADMINISTRATION BUILDING

SHEET
6.12



1 PLUMBING PLAN PRETREATMENT BUILDING

1/4" = 1'-0"

0 2' 4' 8'

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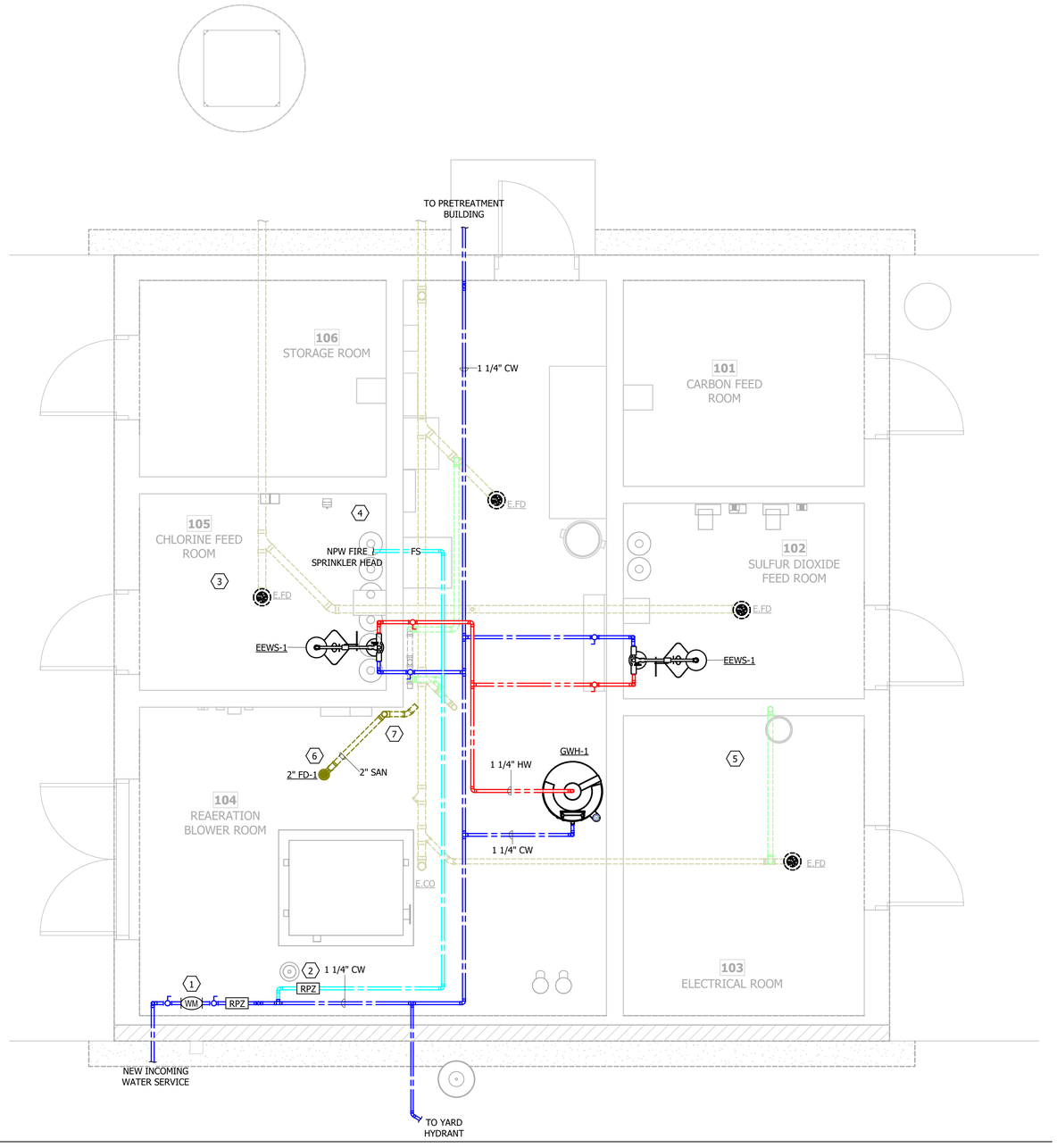
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING PLAN - PRETREATMENT BUILDING

SHEET 6.13



KEYED NOTES:

1. SPACE RESERVED FOR DOMESTIC WATER METER ASSEMBLY. CONTRACTOR TO PROVIDE CITY APPROVED WATER METER.
2. PROVIDE CODE COMPIANT X" RPZ BACKFLOW PREVENTER. ROUTE AIR GAP DISCHARGE TO FLOOR DRAIN.
3. PROVIDE SUPERVISED O.S. & Y SHUT-OFF VALVE AND FLOW ALARM IN FIRE PROTECTION PIPING.
4. PIPING AND ASSOCIATED HANGERS AND SUPPORTS IN THIS AREA SHALL BE CORROSION RESISTANT.
5. SPACE RESERVED FOR ELECTRICAL. DO NOT CROSS. COORDINATE PIPING WITH ELECTRICAL EQUIPMENT.
6. COORDINATE FLOOR DRAIN LOCATION WITH ARCHITECTURAL PLANS.
7. ALL WASTE PIPING WITHIN THE BUILDING MUST BE PITCHED AT 1/4-INCH PER FOOT MINIMUM WHEREVER POSSIBLE. WHERE SITE CONDITIONS PRECLUDE THIS SLOPE, PIPES 4-INCH AND LARGER MAY BE SLOPED AT 1/8-INCH PER FOOT WHERE APPROVED BY THE ADMINISTRATIVE AUTHORITY.

1 PLUMBING PLAN DISINFECTION BUILDING

3/8" = 1'-0"

0 1'-6" 3' 6'

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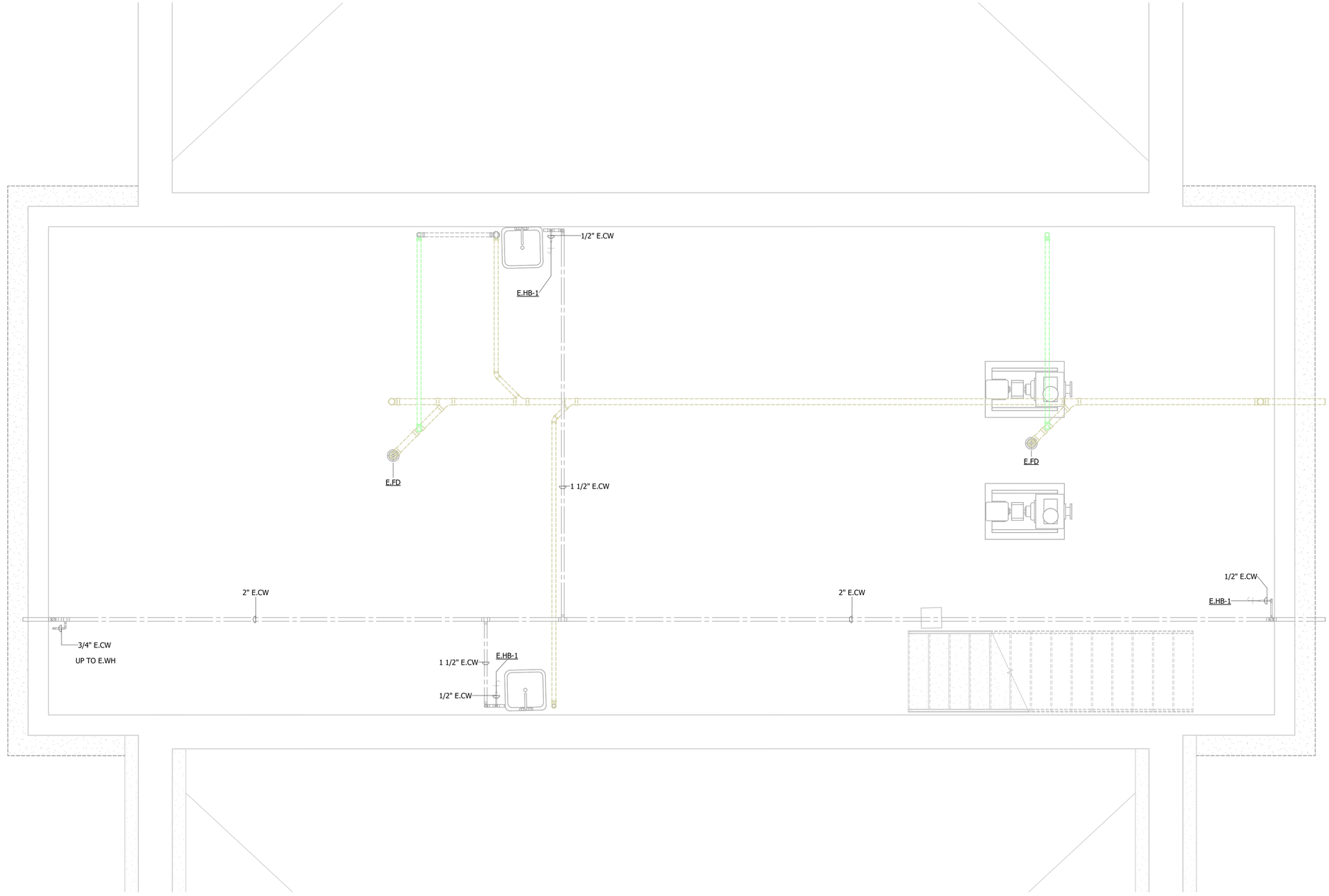
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING PLAN - DISINFECTION BUILDING

SHEET 6.14



1 PLUMBING PLAN BLOWER BUILDING LOWER LEVEL

3/8" = 1'-0"

0 1'-6" 3' 6'

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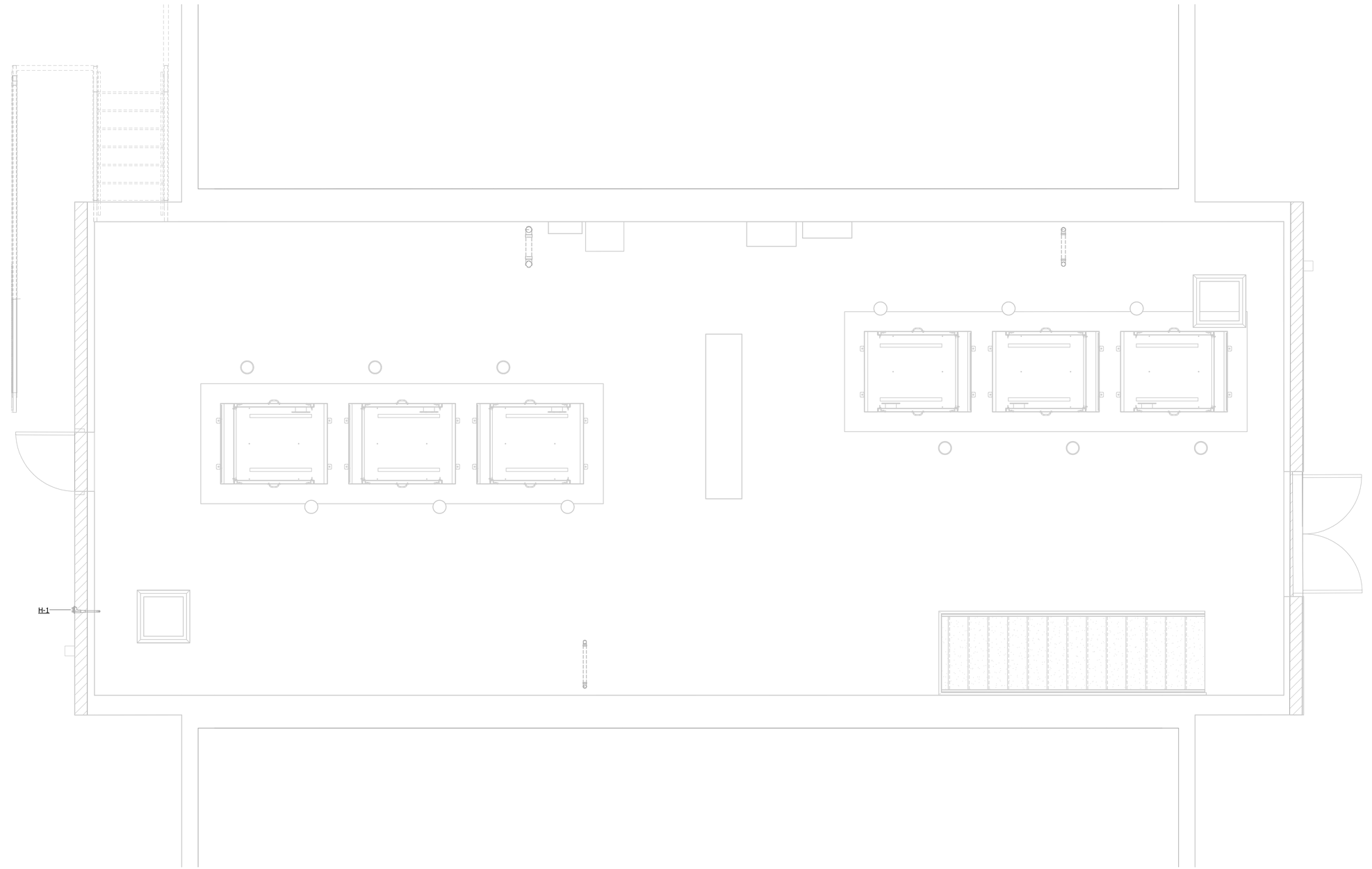
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CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

PLUMBING PLAN - BLOWER BUILDING LOWER LEVEL

SHEET 6.15



1 PLUMBING PLAN BLOWER BUILDING UPPER LEVEL

3/8" = 1'-0" 0 1'-6" 3' 6'

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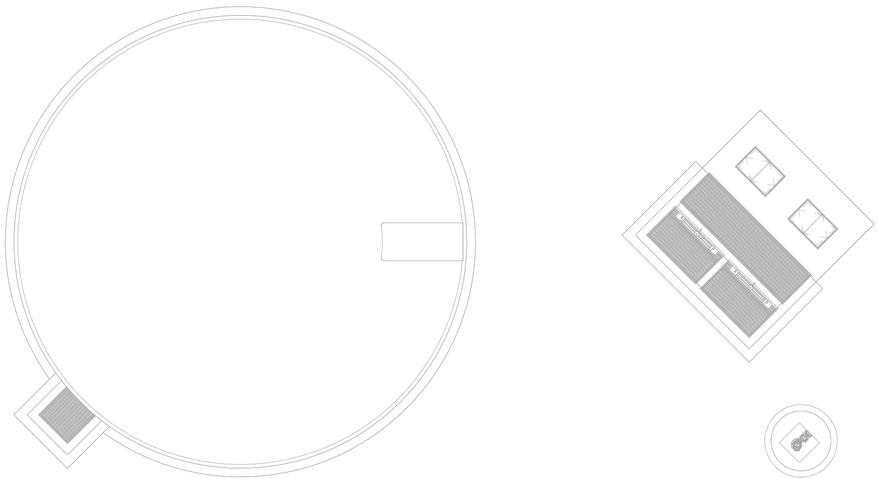
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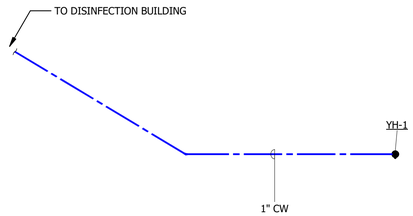
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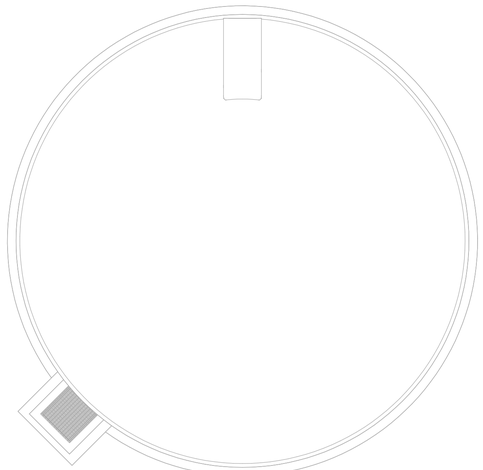
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING PLAN - BLOWER BUILDING UPPER LEVEL

SHEET 6.16







N 1 -03-CLARIFIERS-PLBG PLAN

1/8" = 1'-0"

0 1'-6" 3' 6'

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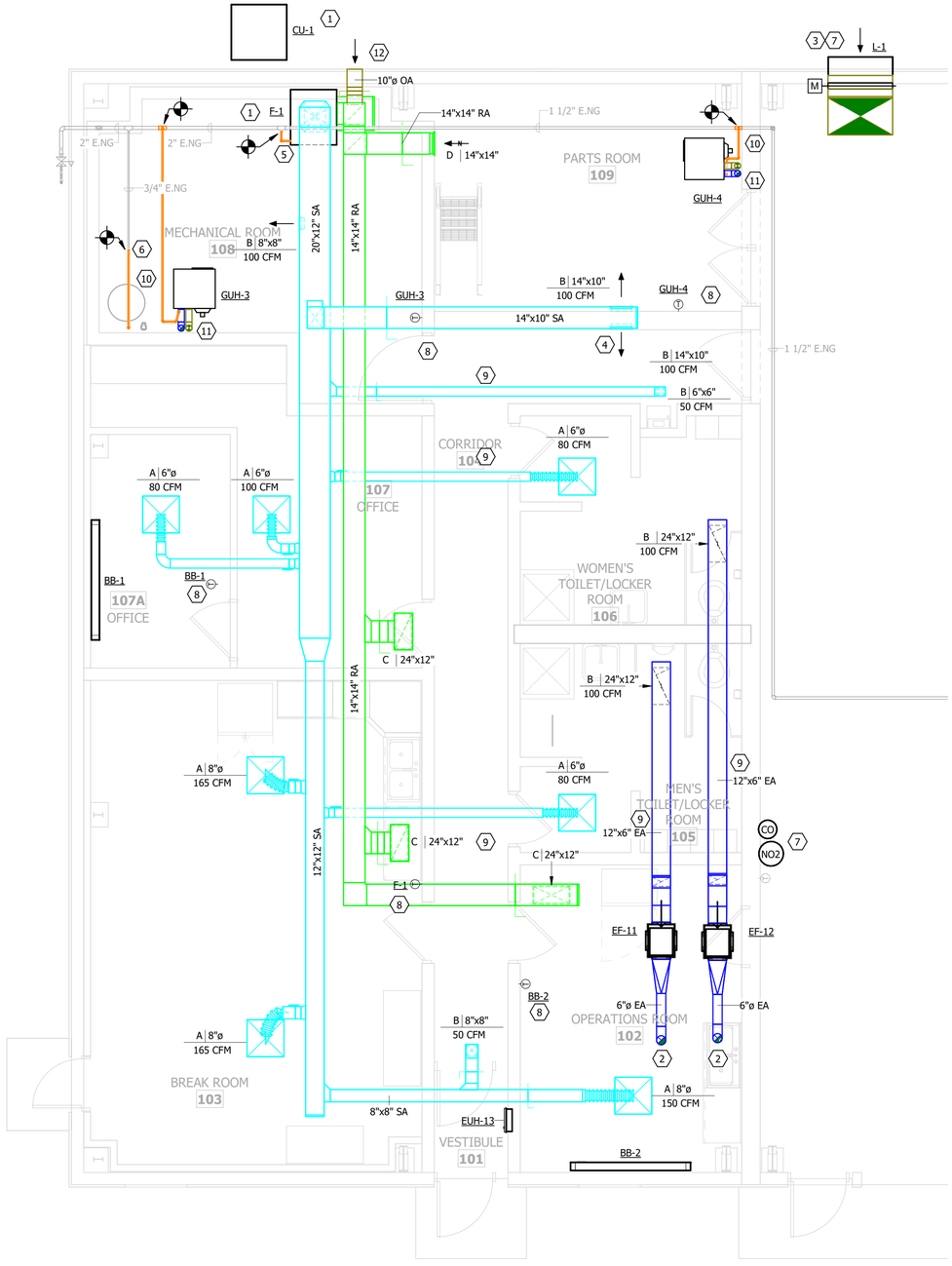
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING PLAN - CLARIFIERS

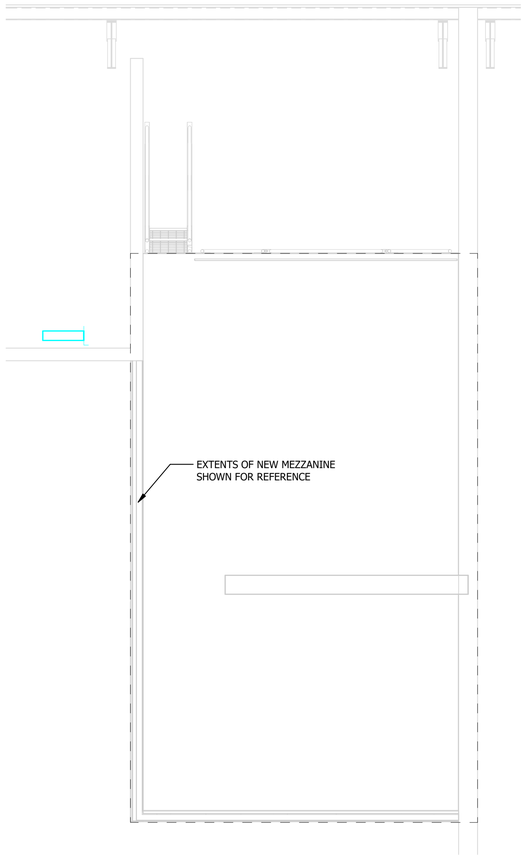
SHEET
6.17



N 1 MECHANICAL PLAN ADMINISTRATION BUILDING LEVEL 1

1/4" = 1'-0"

0 2' 4' 8'



N 2 MECHANICAL PLAN ADMINISTRATION BUILDING LEVEL 2

1/4" = 1'-0"

0 2' 4' 8'

KEYED NOTES:

X

1. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
2. 6" EA UP TO GOOSENECK AT ROOF.
3. INSTALL NEW LOUVER IN EXISTING OPENING. MODIFY OPENING AS REQUIRED. COORDINATE PATCHING WITH ARCHITECTURAL AS REQUIRED.
4. ROUTE BRANCH DUCTWORK TIGHT TO STRUCTURE. DIRECT NEW DIFFUSER TO DISCHARGE AIR ACROSS NEW MEZZANINE.
5. ROUTE NEW 3/4" NG DN TO F-1. CONNECT TO EXISTING NG PIPING IN MECH ROOM.
6. ROUTE NEW 3/4" NG DN TO WH. CONNECT TO EXISTING NG PIPING IN MECH ROOM.
7. CO/NO2 DETECTION CONTROLS SHALL BE INTERLOCKED WITH INTAKE DAMPER AND EXHAUST FAN.
8. COORDINATE FINAL TSTAT LOCATIONS AND MOUNTING HEIGHTS WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
9. ROUTE NEW DUCTWORK IN PLENUM SPACE AT 1ST FLOOR CEILING, BELOW NEW MEZZANINE.
10. ROUTE NEW 3/4" NG TO GAS UNIT HEATER.
11. 4" VENT/FLUE UP TO ROOF AND TERMINATED WITH CONCENTRIC VENT KIT.
12. TERMINATE 10" OA AT WALL CAP.

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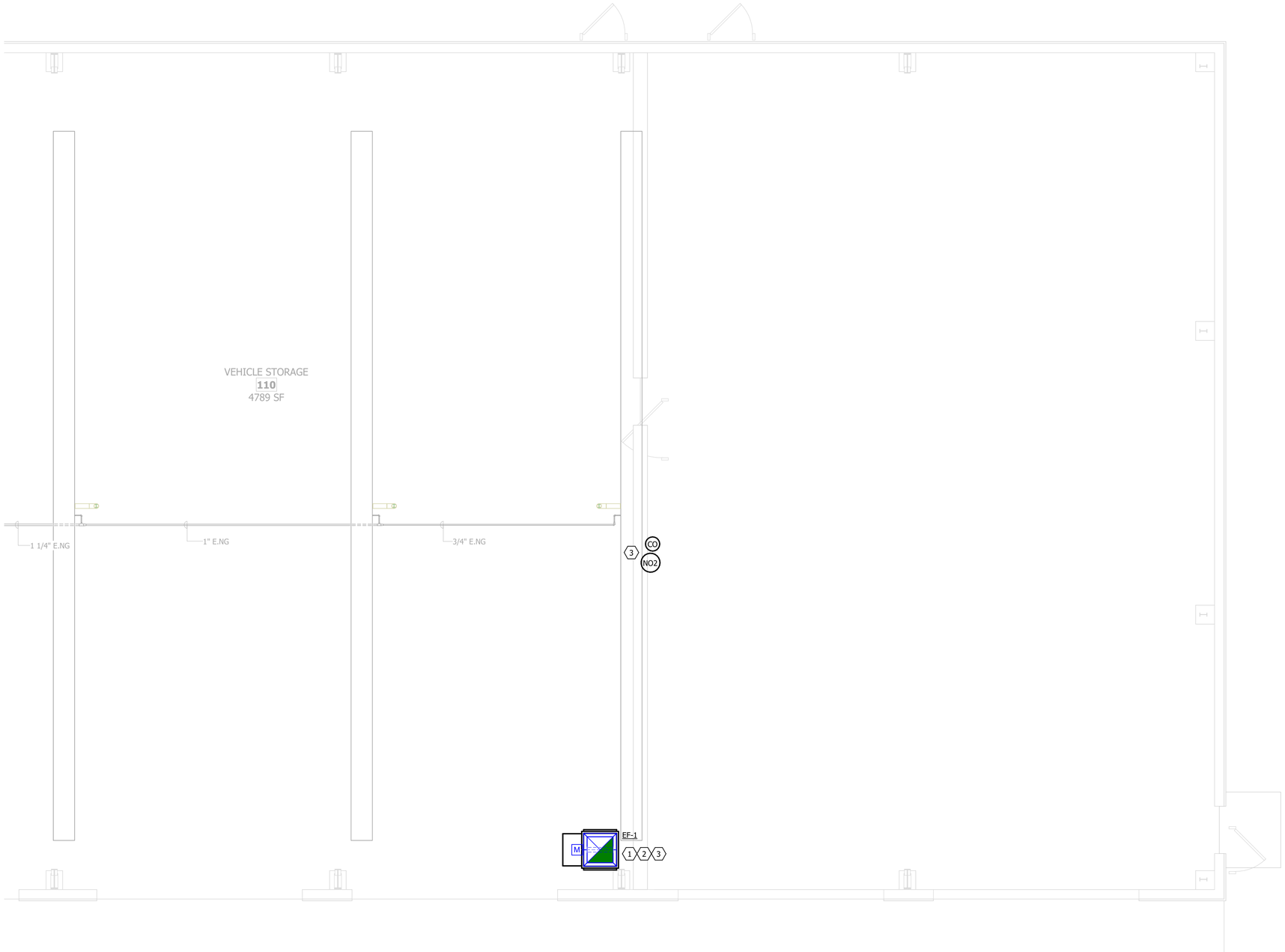
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL PLAN - ADMINISTRATION BUILDING

SHEET
6.18



KEYED NOTES:

1. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
2. ROUTE NEW EXHAUST DUCTWORK UP TO GOOSENECK AT ROOF. REUSE EXISTING PENETRATIONS WHEREVER POSSIBLE.
3. CO/NO2 DETECTION CONTROLS SHALL BE INTERLOCKED WITH INTAKE DAMPER AND EXHAUST FAN.

1 MECHANICAL PLAN ADMINISTRATION BUILDING - GARAGE

1/4" = 1'-0"

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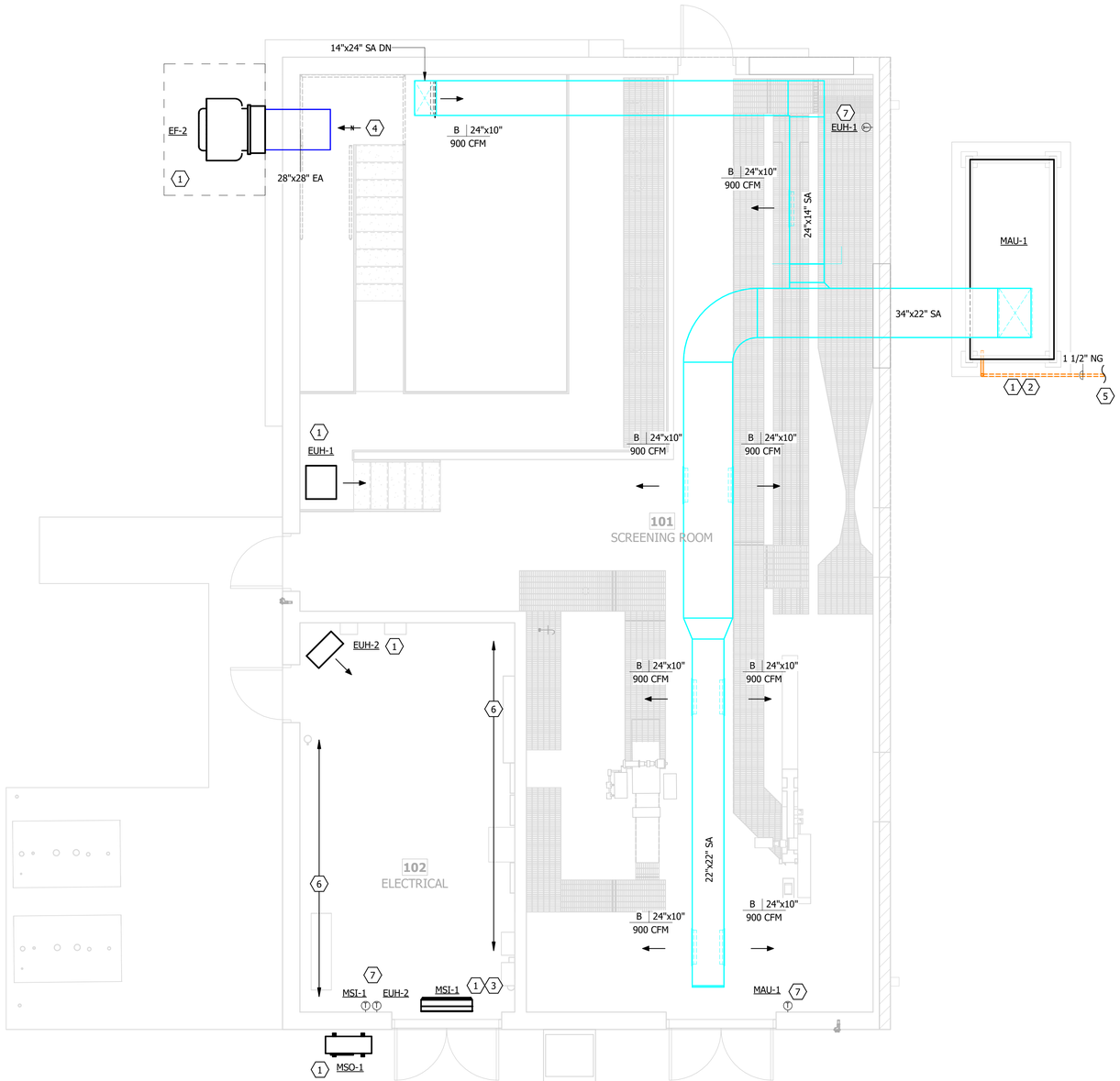
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL PLAN - ADMINISTRATION BUILDING GARAGE

SHEET 6.19



KEYED NOTES:

1. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
2. 36" SUPPORT STAND BY STRUCTURAL. SEE STRUCTURAL FOR DETAIL.
3. ROUTE CONDENSATE TO GRADE.
4. PROVIDE HARDWARE CLOTH AT EXHAUST DUCT TERMINATION.
5. ROUTE NEW BURIED NG LINE TO MAU-1. SEE CIVIL SITE PLAN FOR EXISTING GAS PIPE ROUTING. VERIFY SIZE AND ROUTE BASED ON FIELD CONDITIONS.
6. SPACE RESERVED FOR ELECTRICAL EQUIPMENT. MAINTAIN ALL CODE REQUIRED CLEARANCES.
7. COORDINATE FINAL TSTAT LOCATIONS AND MOUNTING HEIGHTS WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.

1 MECHANICAL PLAN PRETREATMENT BUILDING

1/4" = 1'-0"

0 2' 4' 8'

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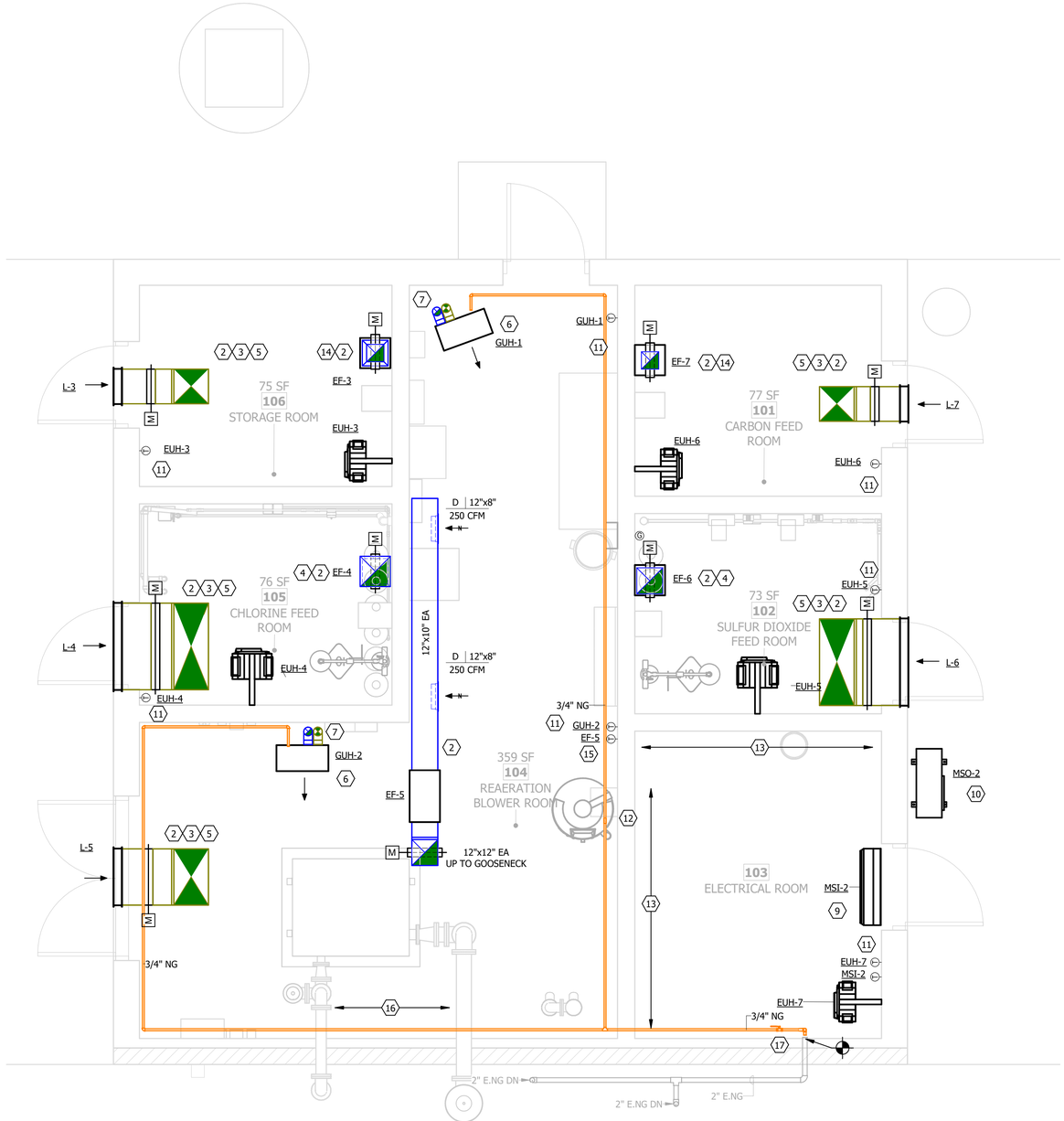
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL PLAN - PRETREATMENT BUILDING

SHEET 6.20



KEYED NOTES:

1. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
2. PROVIDE ALL ALUMINUM DUCTWORK, DIFFUSERS, GRILLES, REGISTERS, FITTINGS, ACCESSORIES, HANGERS, SUPPORTS, AND FASTENERS. COORDINATE DUCTWORK MOUNTING HEIGHTS WITH OTHER TRADES IN FIELD.
3. PROVIDE UPTURNED ELBOW OPENING WITH 1/2" HARDWARE CLOTH COVERING OPEN END OF DUCT 12" MINIMUM BELOW STRUCTURE. HARDWARE CLOTH MATERIAL TO MATCH DUCTWORK MATERIAL.
4. EXTEND EXHAUST INLET DUCTWORK DOWN TO 6 INCHES AFF. 12"X12" EA DN TO FLOOR AND UP TO GOOSENECK AT ROOF. REUSE EXISTING ROOF PENETRATIONS WHEREVER POSSIBLE.
5. PROVIDE ADEQUATE SERVICE CLEARANCE FOR REPLACEMENT OF FILTERS.
6. MOUNT HEATER AT MINIMUM 8'-0" AFF.
7. 4" VENT/FLUE UP TO ROOF AND TERMINATED WITH CONCENTRIC VENT KIT.
8. VERIFY NATURAL GAS SIZING BASED ON FIELD CONDITIONS.
9. ROUTE CONDENSATE TO GRADE.
10. PROVIDE WITH WALL BRACKET AND MOUNT 2'-0" ABOVE GRADE - MIN.
11. COORDINATE FINAL TSTAT LOCATIONS AND MOUNTING HEIGHTS WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
12. 3/4" NG DN TO WH. SEE PLUMBING PLANS FOR MORE INFORMATION.
13. SPACE RESERVED FOR ELECTRICAL EQUIPMENT. MAINTAIN ALL CODE REQUIRED CLEARANCES.
14. EXTEND EXHAUST INLET DUCTWORK DOWN TO 6 INCHES AFF. 8"X8" EA DN TO FLOOR AND UP TO GOOSENECK AT ROOF. REUSE EXISTING ROOF PENETRATIONS WHEREVER POSSIBLE.
15. PROVIDE REVERSE ACTING THERMOSTAT TO MAINTAIN ROOM SETPOINT BELOW 85 DEGF (ADJ.).
16. COORDINATE WITH PROCESS FOR EXTENTS OF BLOWER PIPING INSULATION. INSULATE ALL BLOWER PIPING PER SPECIFICATION SECTION 23 07 00.
17. PROVIDE SHUTOFF VALVE AT ACCESSIBLE LOCATION FOR INCOMING NG PIPING.

1 MECHANICAL PLAN DISINFECTION BUILDING

3/8" = 1'-0" 0 1'-6" 3' 6'

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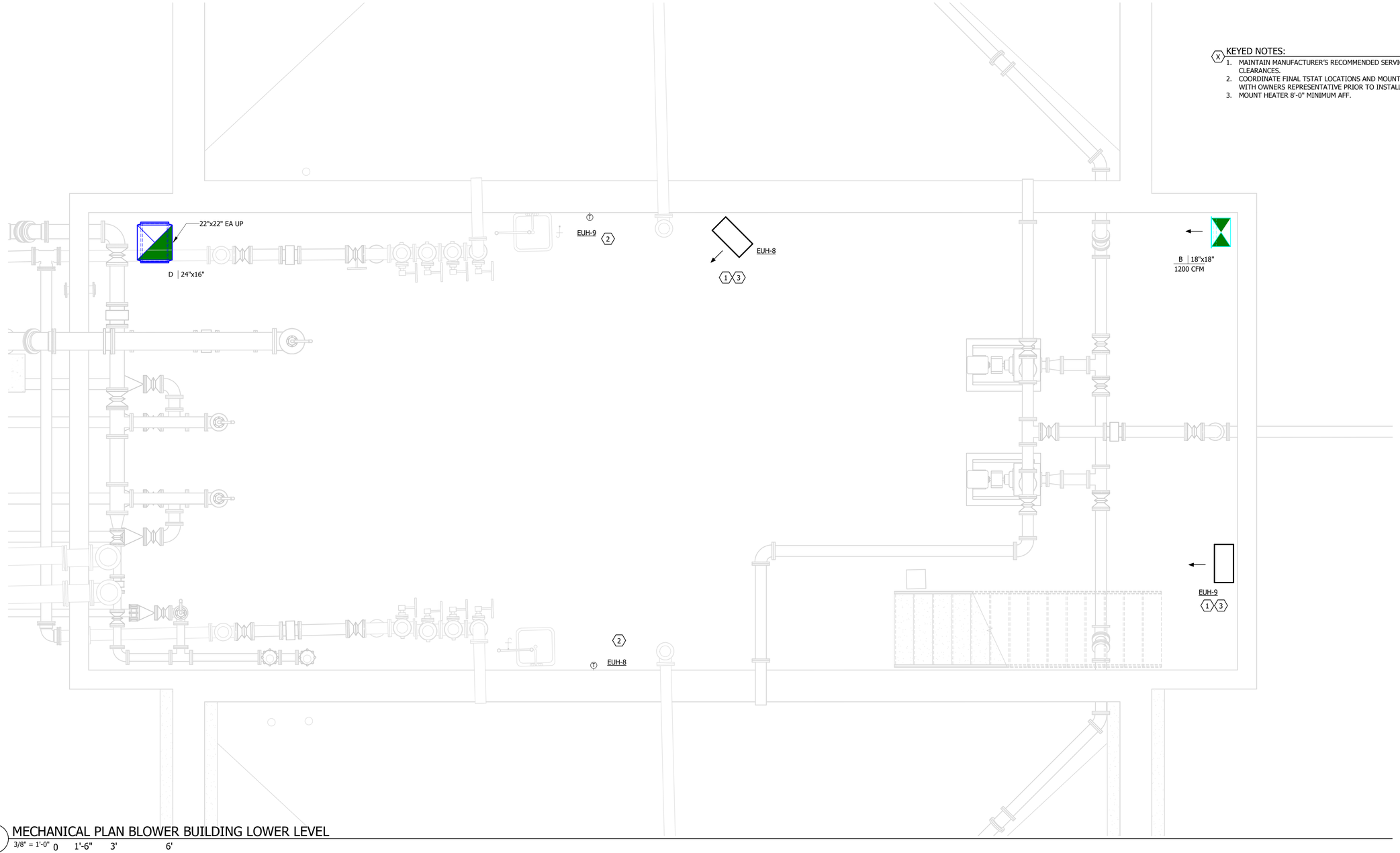
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL PLAN - DISINFECTION BUILDING

SHEET 6.21



KEYED NOTES:

X

1. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
2. COORDINATE FINAL TSTAT LOCATIONS AND MOUNTING HEIGHTS WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
3. MOUNT HEATER 8'-0" MINIMUM AFF.

N 1 MECHANICAL PLAN BLOWER BUILDING LOWER LEVEL

3/8" = 1'-0" 0 1'-6" 3' 6'

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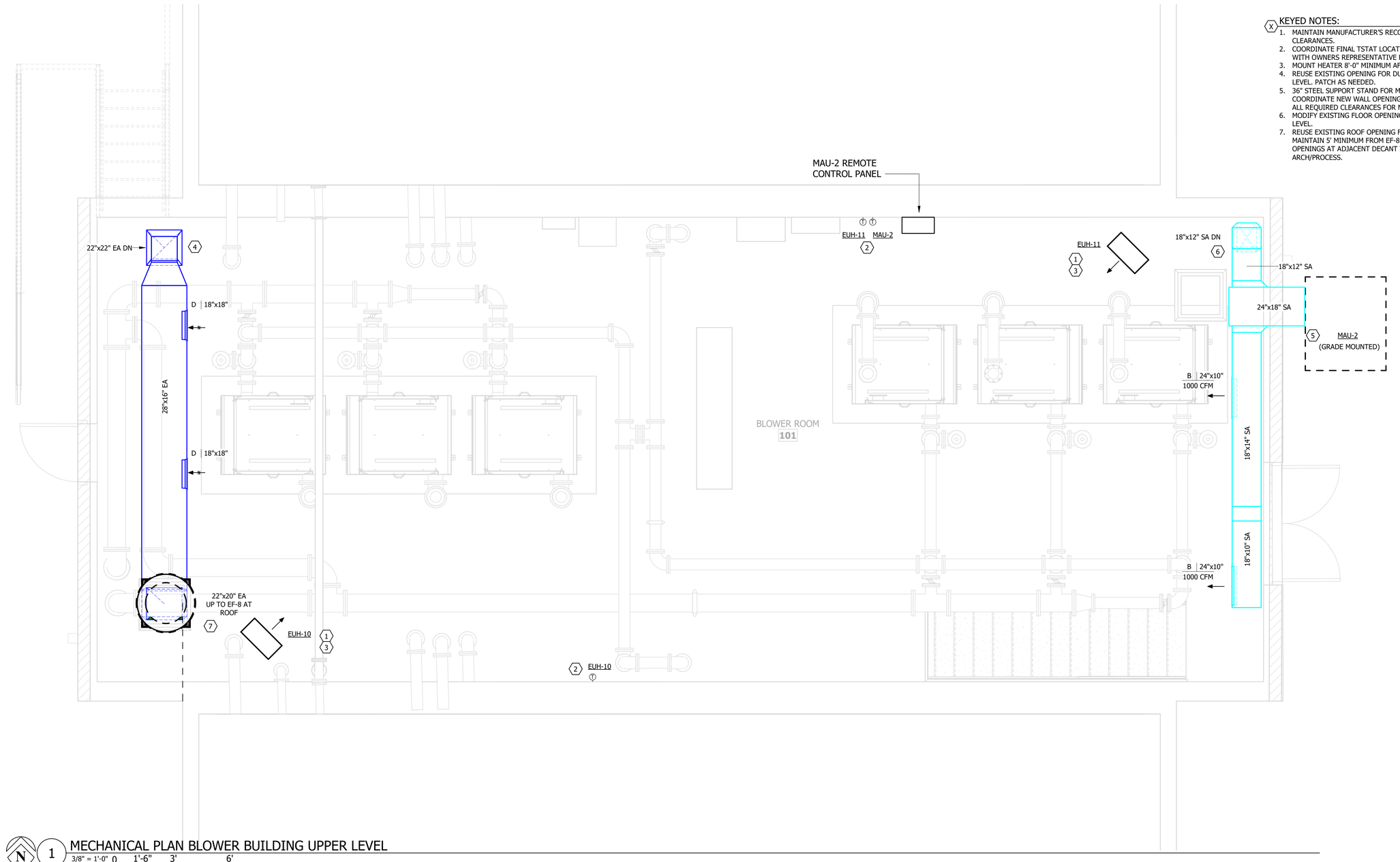
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL PLAN - BLOWER BUILDING LOWER LEVEL

SHEET 6.22



KEYED NOTES:

1. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
2. COORDINATE FINAL TSTAT LOCATIONS AND MOUNTING HEIGHTS WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
3. MOUNT HEATER 8'-0" MINIMUM AFF.
4. REUSE EXISTING OPENING FOR DUCTWORK DOWN TO LOWER LEVEL. PATCH AS NEEDED.
5. 36" STEEL SUPPORT STAND FOR MAU-2 BY STRUCTURAL. COORDINATE NEW WALL OPENING WITH STRUCTURAL. MAINTAIN ALL REQUIRED CLEARANCES FOR MAU-2.
6. MODIFY EXISTING FLOOR OPENING FOR SA DUCT DN TO LOWER LEVEL.
7. REUSE EXISTING ROOF OPENING FOR EF-8 EXHAUST DUCTWORK. MAINTAIN 5' MINIMUM FROM EF-8 AT ROOF TO ANY ACCESS OPENINGS AT ADJACENT DECANT TANK. COORDINATE WITH ARCH/PROCESS.

1 MECHANICAL PLAN BLOWER BUILDING UPPER LEVEL

N

3/8" = 1'-0" 0 1'-6" 3' 6'

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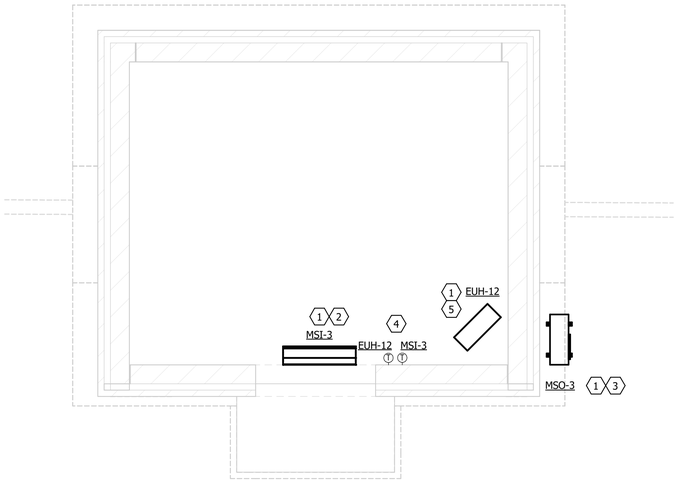
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MECHANICAL PLAN - BLOWER BUILDING UPPER LEVEL

SHEET
6.23

KEYED NOTES:

1. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
2. ROUTE CONDENSATE TO GRADE.
3. PROVIDE WITH WALL BRACKET AND MOUNT 2'-0" ABOVE GRADE - MIN.
4. COORDINATE FINAL TSTAT LOCATIONS AND MOUNTING HEIGHTS WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
5. MOUNT HEATER MINIMUM 8'-0" AFF.



1 MECHANICAL PLAN - BLOWER BUILDING ELEC ROOM
1/4" = 1'-0"

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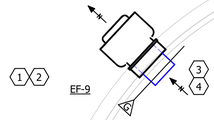
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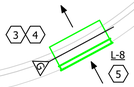
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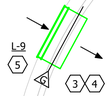
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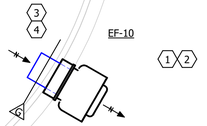
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL PLAN - NEW ELECTRICAL BUILDING

SHEET
6.24









KEYED NOTES:

1. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
2. MOUNT FAN TO EXTERIOR WALL OF CLARIFIER. LOCATE CENTERED IN WALL SECTION WITH CENTERLINE OF FAN AT APPROXIMATELY 7'-0" ABOVE GRADE. COORDINATE EXACT LOCATION OF EXHAUST FAN OPENING AND INSTALLATION WITH DOME SUPPLIER.
3. PROVIDE HARDWARE CLOTH MATCHING DUCT MATERIAL AT MECHANICAL OPENING IN SPACE.
4. PROVIDE CORROSION RESISTANT ALUMINUM OR STAINLESS STEEL DUCTWORK, FITTINGS, DAMPERS, ACCESSORIES, GRILLES, HANGERS, SUPPORTS, AND FASTENERS. COORDINATE DUCTWORK MOUNTING HEIGHTS WITH OTHER TRADES IN FIELD.
5. INSTALL LOUVER CENTERED IN WALL SECTION AT SAME HEIGHT AS EXHAUST FAN. COORDINATE EXACT LOCATION OF LOUVER OPENING AND INSTALLATION WITH DOME SUPPLIER. REFER TO LOUVER DETAIL FOR MORE INFORMATION.

1 MECHANICAL CLARIFIERS

3/16" = 1'-0" 0 2'-8" 5'-4" 10'-8"

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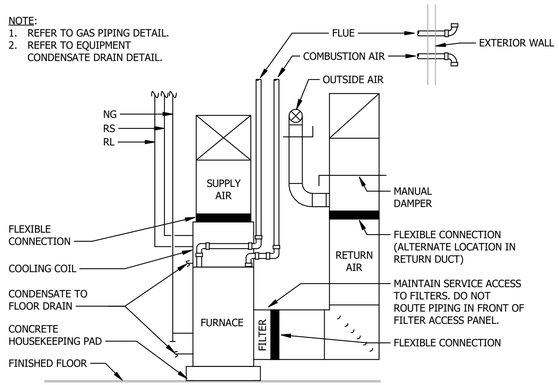
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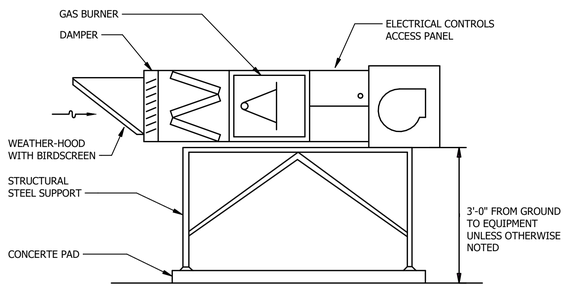
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL PLAN - CLARIFIERS

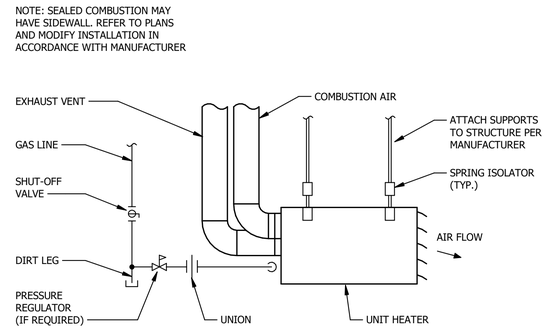
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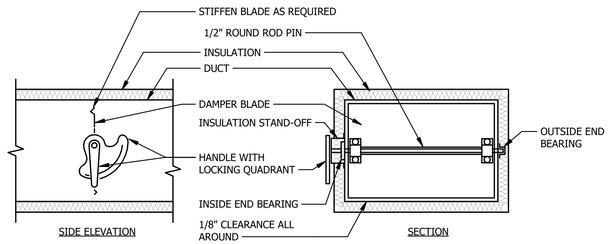
1 FURNACE DETAIL
NO SCALE



2 GAS-FIRED MAKE-UP AIR UNIT ON STEEL SUPPORT DETAIL
NO SCALE

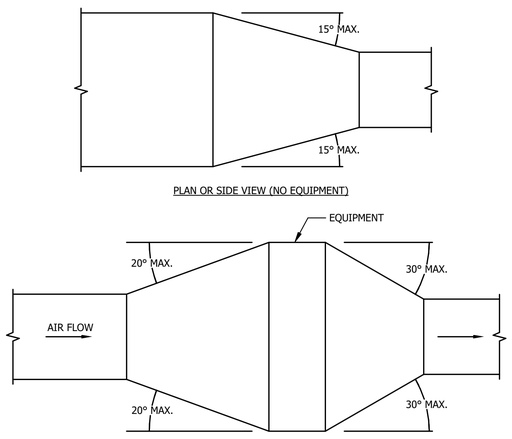


3 GAS-FIRED UNIT HEATER - SEPARATED COMBUSTION
NO SCALE

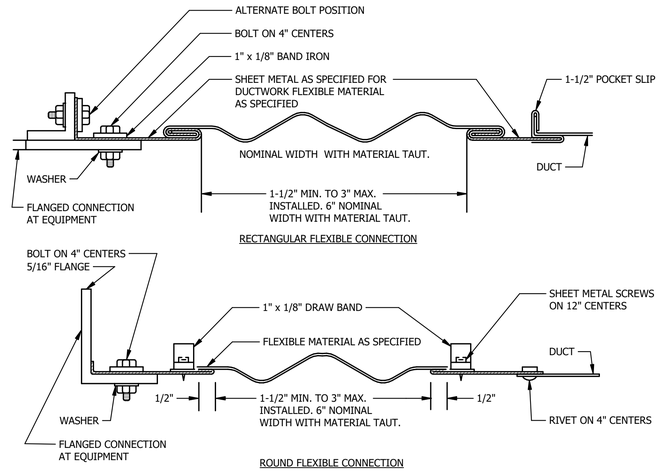


DETAIL NOTES:
1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSULATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

4 VOLUME DAMPER DETAIL
NO SCALE



5 DUCT TRANSITION DETAIL
NO SCALE



NOTE: APPLIES TO ALL FAN POWERED HVAC SYSTEMS UNLESS NOTED OTHERWISE.

6 FLEXIBLE DUCT CONNECTION DETAIL
NO SCALE

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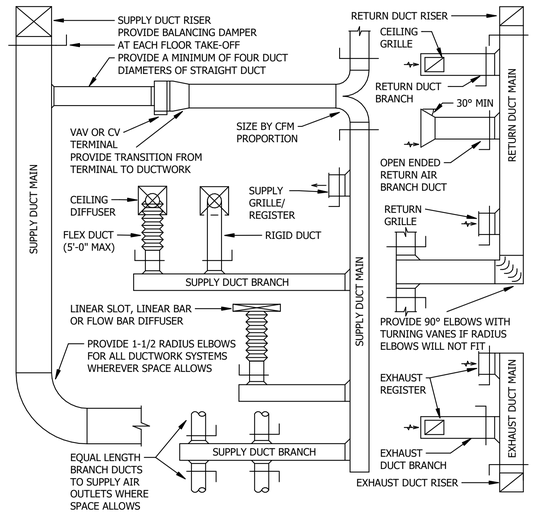
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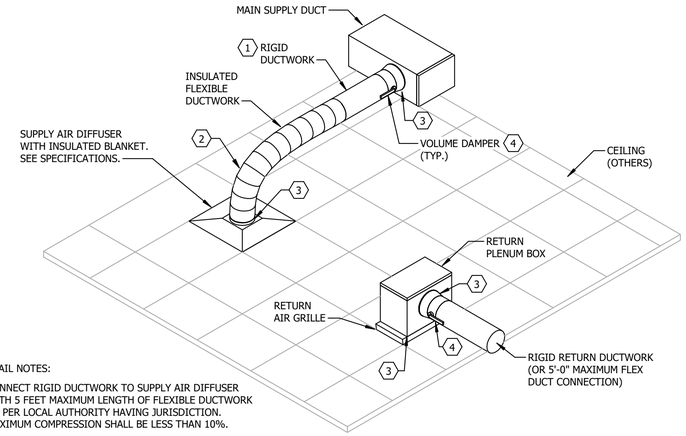
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL DETAILS

SHEET 6.26

NOTES:
1. REFER TO HVAC FLOOR PLANS FOR DUCT SIZES.
2. REFER TO SCHEDULES FOR GRILLES, REGISTERS, DIFFUSERS AND TERMINAL SIZES AND TYPES.
3. PROVIDE A MANUAL TYPE BALANCING DAMPER FOR EACH SUPPLY OUTLET AND RETURN INLET.
4. ALL DUCT RUNOUTS TO DIFFUSERS SHALL BE THE SAME SIZE AS DIFFUSER NECK SIZE UNLESS OTHERWISE NOTED.
5. FLEX DUCT WILL NOT BE ALLOWED ON EXHAUST DUCTWORK SYSTEMS.

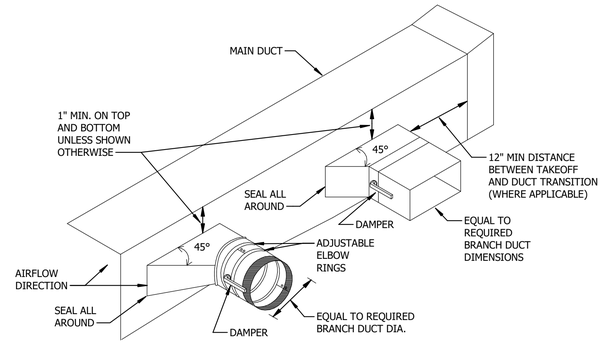


1 DUCT INSTALLATION DIAGRAM
NO SCALE

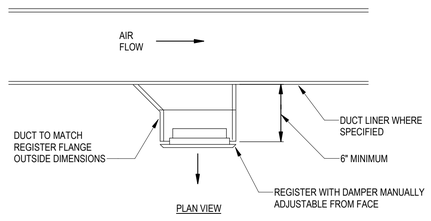


DETAIL NOTES:
1. CONNECT RIGID DUCTWORK TO SUPPLY AIR DIFFUSER WITH 5 FEET MAXIMUM LENGTH OF FLEXIBLE DUCTWORK OR PER LOCAL AUTHORITY HAVING JURISDICTION. MAXIMUM COMPRESSION SHALL BE LESS THAN 10%.
2. FASTEN FLEXIBLE DUCTWORK TO DIFFUSER WITH NYLON TIE STRAPS. PROVIDE FLEXIBLE DUCT SUPPORT IF OFFSET IN ANY DIRECTION WITHIN 1 DUCT DIAMETER OF DIFFUSER.
3. SCREW ALL SEAMS AND SEAL AIRTIGHT.
4. MAINTAIN ACCESS TO BALANCING DAMPERS IN NON-ACT CEILING APPLICATIONS.

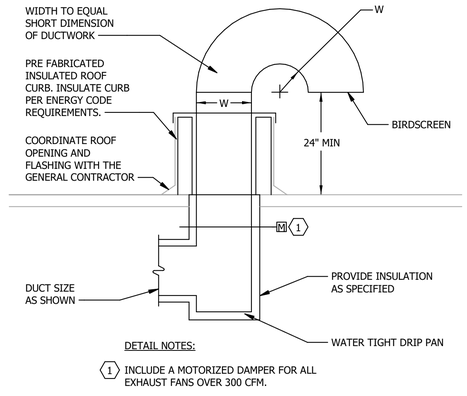
2 CEILING DIFFUSER/GRILLE ASSEMBLY DETAIL
NO SCALE



3 TYPICAL BRANCH TAKEOFF FITTING DETAIL
NO SCALE

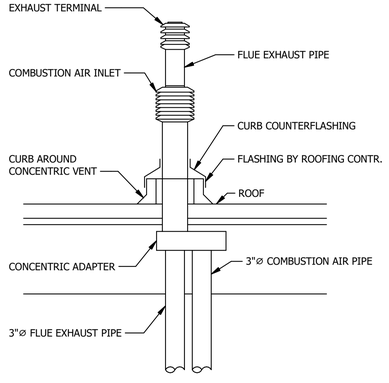


4 TYPICAL DUCT MOUNTED REGISTER (RECTANGULAR DUCT)
NO SCALE

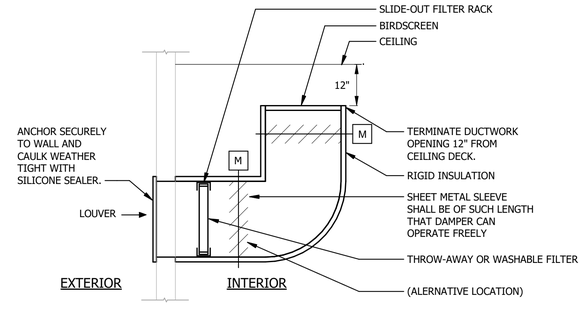


DETAIL NOTES:
1. INCLUDE A MOTORIZED DAMPER FOR ALL EXHAUST FANS OVER 300 CFM.

5 OUTSIDE AIR OR EXHAUST AIR GOOSENECK DETAIL
NO SCALE



6 CONCENTRIC FLUE ROOF TERMINATION
NO SCALE



7 TYPICAL LOUVER AND DAMPER WITH REPLACEABLE FILTER DETAIL
NO SCALE

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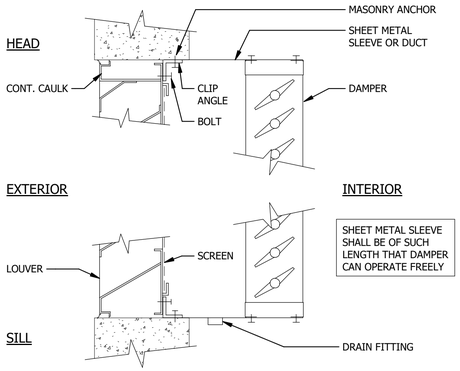
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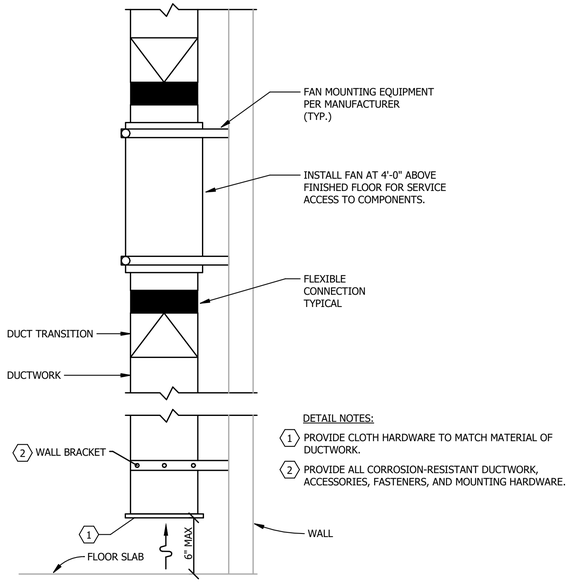
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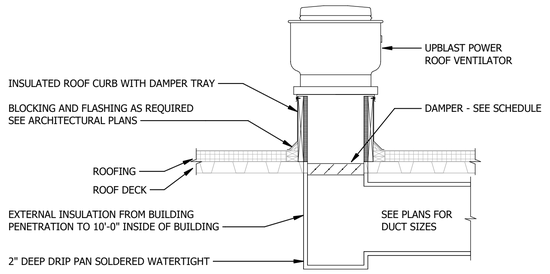


1 TYPICAL LOUVER INSTALLATION
NO SCALE

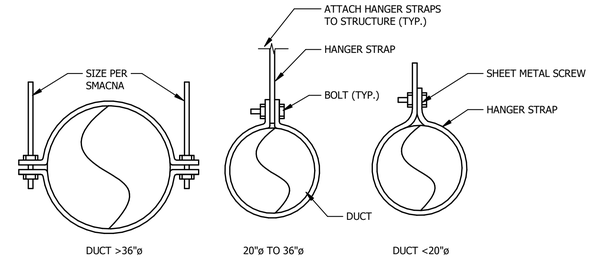


2 CHEMICAL STORAGE EXHAUST DETAIL - INLINE FAN
NO SCALE

NOTE:
1. ROOF CURB PROVIDED BY MECHANICAL CONTRACTOR. COORDINATE INSTALLATION AND FLASHING WITH THE GENERAL CONTRACTOR.
2. MECHANICAL CONTRACTOR SHALL COORDINATE ROOF OPENING AND CURB SIZE REQUIRED FOR DUCT PENETRATION.

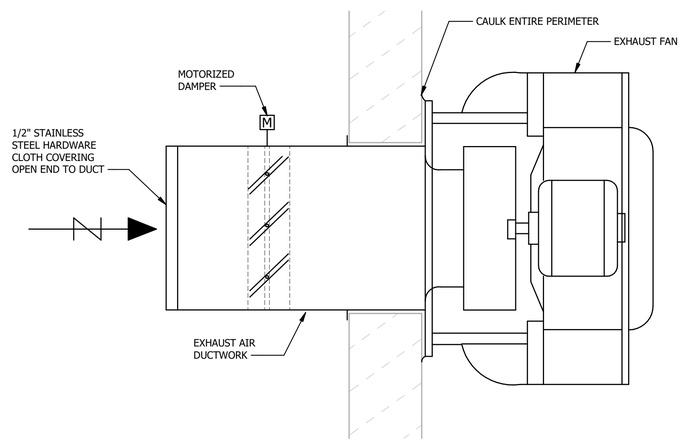


3 EXHAUST FAN - UPBLAST PRV DETAIL
NO SCALE



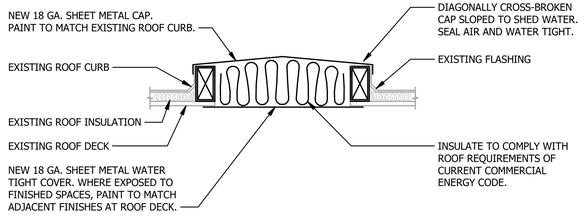
NOTE:
1. MAXIMUM HANGER SPACING AND HANGER STRAP SIZE SHALL BE PER SMACNA GUIDELINES.
2. HANGERS MUST NOT DEFORM DUCT SHAPE.

4 ROUND DUCT HANGER DETAIL
NO SCALE

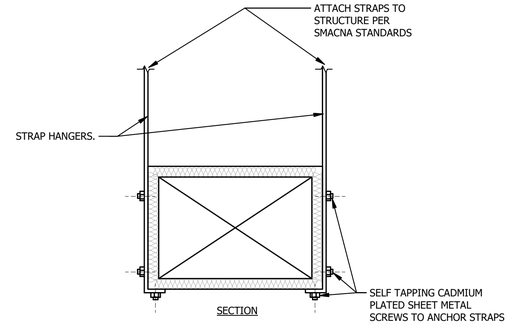


5 EXHAUST FAN - WALL MOUNTED W/ STAINLESS STEEL HARDWARE CLOTH
NO SCALE

NOTE:
THIS DETAIL SHALL ONLY APPLY TO MAXIMUM 36" X 36" OPENINGS.

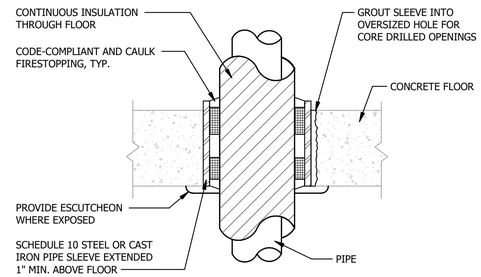


6 CAPPED ROOF CURB DETAIL
NO SCALE



NOTES :
1. MAXIMUM HANGAR SPACING AND HANGAR STRAP SIZE SHALL BE PER SMACNA GUIDELINES.
2. NO POP REVITS ALLOWED.

7 RECTANGULAR DUCT HANGER DETAIL
NO SCALE



8 FLOOR PENETRATION
NO SCALE

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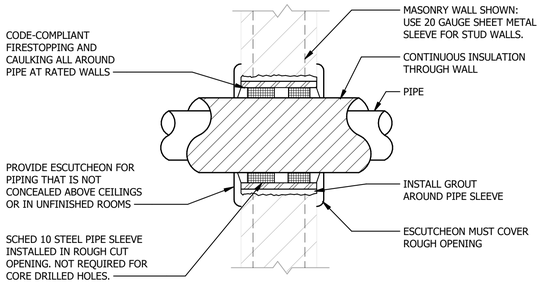
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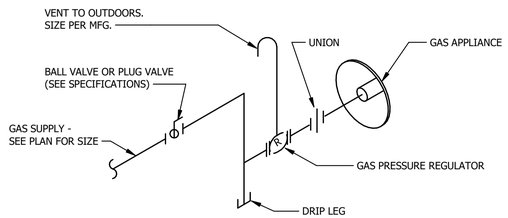
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MECHANICAL DETAILS

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1 WALL PENETRATION
NO SCALE



2 GAS PIPE CONNECTION DETAIL
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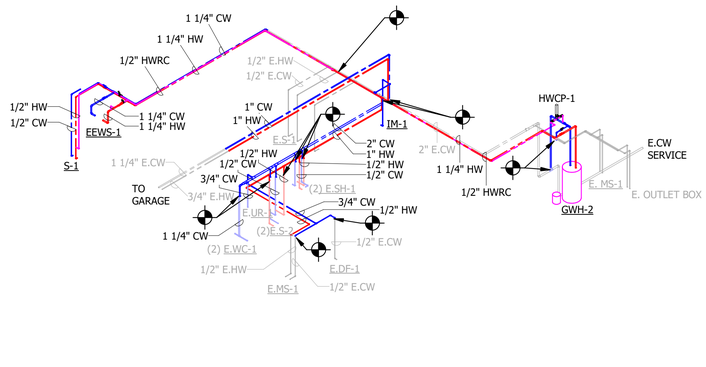
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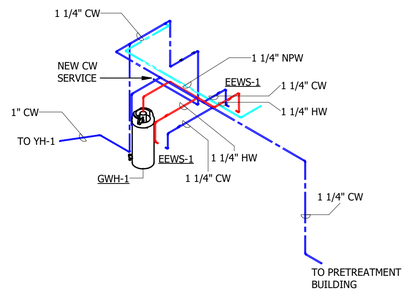
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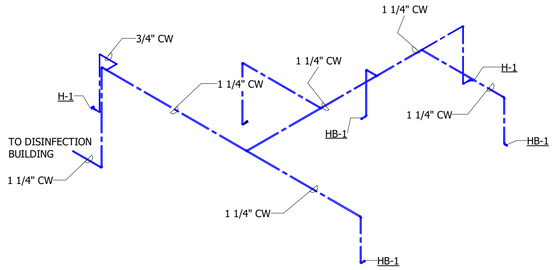
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1 3D DOMESTIC WATER ISOMETRIC - ADMINISTRATION BUILDING



2 3D DOMESTIC WATER ISOMETRIC - DISINFECTION BUILDING



3 3D DOMESTIC WATER ISOMETRIC - PRETREATMENT BUILDING

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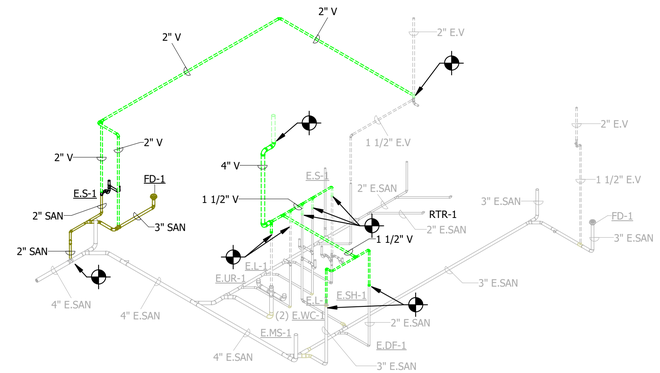
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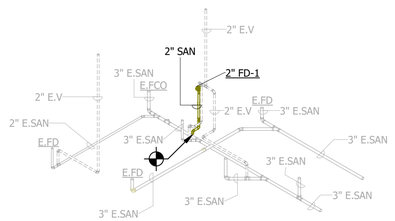
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING ISOMETRICS - DOMESTIC WATER

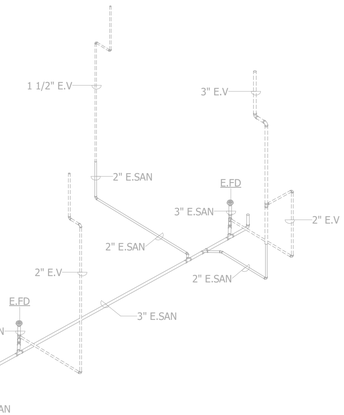
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1 3D DWV ISOMETRIC - ADMINISTRATION BUILDING



2 3D DWV ISOMETRIC - DISINFECTION BUILDING



3 3D DWV ISOMETRIC - PRETREATMENT BUILDING

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING ISOMETRICS - DOMESTIC WASTE & VENT

SHEET 6.31

GAS WATER HEATER SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	STORAGE CAPACITY (GAL)	FUEL DATA			PERFORMANCE DATA		SUPPLY TEMP (°F)	ELECTRICAL DATA							NOTES
						INPUT (MBH)	AFUE	FUEL TYPE	RECOVERY @ 100°F RISE (GPH)	MAX OPER. PRESS. (PSIG)		VOLTAGE	PH	FLA	MCA	MOCP	DISC. BY	STARTER BY	
GWH-1	DISINFECTION BLDG, 104	AO SMITH	BTH-199	GAS WATER HEATER	100	199	97	NG	235	160	120	120 V	1	3	-	20	ELEC	MECH	1,2,3,4,5,6
GWH-2	MECHANICAL ROOM 108	AO SMITH	BTH-250	GAS WATER HEATER	100	250	96	NG	291	160	120	120 V	1	3	-	20	ELEC	MECH	1,2,3,4,5,6

NOTES :
1. PROVIDE DISCONNECT SWITCH AND CONVENIENCE OUTLET. COORDINATE WITH ELECTRICAL.
2. PROVIDE TEMPERATURE AND PRESSURE RELIEF VALVE. PIPE TO NEAREST FLOOR DRAIN.
3. STORE AT 180°F. PROVIDE WITH INTEGRAL THERMOSTATIC MIXING VALVES AND INTEGRAL COLD-WATER BYPASS TO MEET ASSE 1071.
4. PROVIDE HEAT TRAP IF NOT PROVIDED BY MANUFACTURER.
5. PROVIDE 4" THICK CONTINUOUS CONCRETE HOUSEKEEPING PAD FOR UNDER ALL WATER HEATERS.
6. PROVIDE WHEATLEY BDT 16 THERMAL EXPANSION TANK.

HOT WATER RECIRCULATION PUMP SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	FLUID			MOTOR WATTS	SUCTION SIZE (IN)	DISCHARGE SIZE (IN)	ELECTRICAL DATA							CONTROLS	NOTES
					FLOW (GPM)	WPD (FT H2O)	AVG TEMP (°F)				VOLTAGE	PH	FLA	MCA	MOCP	DISC. BY	STARTER BY		
HWCP-1	MECHANICAL ROOM 108	BELL AND GOSSETT	E3-6	HOT WATER RECIRCULATION	2	5	110	28	1/2	1/2	120 V	1	-	-	20	ELEC	DIV 22	DIV 22	1,2,3,4

NOTES :
1. PUMP SHALL BE CONTROLLED BY AQUASTAT SET AT 105°F.
2. PUMP SHALL BE SET TO LOWEST SPEED.
3. PERMANENTLY WIRED, WITH BUILT-IN ADJUSTABLE THERMOSTAT.
4. PUMP SHALL BE BRASS, SUITABLE FOR DOMESTIC WATER USE.

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE DESCRIPTION	WASTE	VENT	HOT	COLD	NOTES	PERFORMANCE
EEWS-1	EMERGENCY EYEWASH/SHOWER (ADA)	2"	1-1/2"	-	-	1,2,5	5 GPM/ 20 GPM
FD-1	ROUND FLOOR DRAIN	-	-	-	-	1,2,3	
H-1	FREEZELESS WALL HYDRANT	-	-	-	3/4"	1,2,4	
HB-1	HOSE BIB	-	-	-	1-1/2"	1,2,4	
IM-1	ICE MACHINE	-	-	-	1/2"	1,2,4	
S-1	2-COMPARTMENT SINK	2"	2"	1/2"	1/2"	1,2	2.2 GPM
YH-1	FREEZELESS ROOF HYDRANT	-	-	-	3/4"	1,2,4	

NOTES:
1. PIPE SIZING TO BE INDICATED IN SCHEDULE, UNLESS OTHERWISE NOTED ON PLAN.
2. VERIFY ROUGH-IN PRIOR TO PURCHASE OF PLUMBING FIXTURE.
3. SIZES SHOWN ON PLANS.
4. FAUCETS EQUIPPED WITH THREADED HOSE CONNECTIONS MUST BE PROVIDED WITH APPROVED BACKFLOW PREVENTERS.
5. PROVIDE THERMOSTATIC MIXING VALVE THAT CONFORMS TO ASSE 1070 AND LIMITS TEMPERED WATER TO A MAX. 110-DEGREES F. (MODEL LEONARD 170A-LF)

SINK: SINGLE BOWL, ADA (S-2)
1. SINK:
   A. ELKAY LUSTERTONE MODEL LRAD221955, 18-GAUGE, TYPE 304 STAINLESS STEEL ADA DROP-IN SINK WITH SATIN FINISH.
2. FAUCET:
   A. CHICAGO MODEL 786-GN8AE3ABCP, CHROME PLATED BRASS, PRESSURE COMPENSATING AERATOR. DECK-MOUNTED MANUAL FAUCET, 2.2 GPM MAX FLOW, RIGID SWING GOOSENECK SPOUT, 4-INCH VANDAL-PROOF WRISTBLADE HANDLES.
3. DRAIN: TYPE 304 STAINLESS STEEL BODY STRAINER WITH TAILPIECE.

EMERGENCY COMBINATION EYEWASH AND SHOWER (EEWS-1) WITH TMV
1. STINGRAY MODEL T5515, FLOOR MOUNTED BARRIER-FREE EYE AND FACE WASH WITH DRENCH SHOWER. STAINLESS STEEL BOWL.
2. CONSTRUCTION: ALL CORROSION RESISTANT WITH SELF-DRAINING, EPOXY COATED PIPING. EYE AND FACE WASH WITH STAINLESS STEEL BOWL, STAINLESS STEEL PUSH HANDLE ACTIVATOR. ABS PLASTIC SHOWERHEAD WITH STAINLESS STEEL PULL HANDLE CONNECTED TO BALL VALVE.
3. PERFORMANCE: EYE/FACE WASH: 4.9 GPM @ 30 PSI, SHOWER: 20 GPM @ 30 PSI.
4. ACCESSORIES: ASSE 1071 COMPLIANT THERMOSTATIC MIXING VALVE.

EXTERIOR WALL HYDRANT (H-1)
1. WOODFORD MODEL 67.
2. AUTOMATIC DRAINING WITH ANTI-SIPHON VACUUM BREAKER (ASSE 1011).
3. ASSE STANDARD 1019-B APPROVED. 3/4" INLET AND OUTLET.
4. HARDENED STAINLESS STEEL OPERATING STEM AND ONE-PIECE VALVE PLUNGER TO CONTROL BOTH FLOW AND DRAIN FUNCTIONS. EXTERIOR FINISH TO BE CHROME PLATED. LOOSE TEE KEY TO BE FURNISHED WITH EACH HYDRANT.

EXTERIOR YARD HYDRANT (YH-1)
1. WOODFORD MODEL Y2, FREEZELESS YARD HYDRANT.
2. BACKFLOW PROTECTED WITH AN ASSE 1052 DOUBLE CHECK BACKFLOW PREVENTER. 1" NPT FEMALE INLET CONNECTION.

INTERIOR HOSE BIBB - STANDARD FLOW (HB-1)
1. CHICAGO MODEL 998-RCF BRONZE OR BRASS WITH INTEGRAL MOUNTING FLANGE, REPLACEABLE HEXAGONAL DISC, HOSE THREAD SPOUT, CHROME PLATED WHERE EXPOSED WITH HAND WHEEL.
2. BACKFLOW PREVENTERS: INTEGRAL VACUUM BREAKER IN CONFORMANCE WITH ASSE 1011.

FLOOR DRAIN (FD-1)
1. MODEL: JOSAM 30000-A
2. CONSTRUCTION: ROUND STRAINER, CAST IRON FLOOR DRAIN WITH NICKEL BRONZE GRATE (ADJUSTABLE).
3. CONFORMANCE: ASME A112.21.1.

ICE MAKER OUTLET BOX (IM-1)
1. MODEL: SIOUX CHIEF 696
2. CONSTRUCTION: ROUND STRAINER, CAST IRON FLOOR DRAIN WITH NICKEL BRONZE GRATE (ADJUSTABLE).
3. CONFORMANCE: VALVE AND ACCESSORIES SHALL BE NSF 61 COMPLAINT,

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
PLUMBING SCHEDULES

SHEET 6.32

MAKE-UP AIR UNIT SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	SUPPLY FAN DATA							HEATING CAPACITY	HEATING					ELECTRICAL DATA						DIMENSIONS			FILTRATION	WEIGHT (LBS)	NOTES
					AIR					MOTOR			AIR																
					FLOW (CFM)	ESP (IN WC)	RPM	BHP	DRIVE TYPE	HP	STARTER TYPE		EAT (°F)	LAT (°F)	FUEL TYPE	STAGES	CONNECTION SIZE (IN)	VOLTAGE	PH	FLA	MCA	MOCP	DISC. BY	STARTER BY	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)			
MAU-1	PRETREATMENT BLDG, EXTERIOR	TITAN	TA-115	HORIZONTAL MAU, TOP DISCHARGE, TWO-SPEED, DIRECT-FIRED GAS HEAT	7200	1.0	1030	5.6	DIRECT	7.5	VFD	633 (MBH)	-20	60	NG	MODULATING	3/4	480 V	3	12	-	20	MFR	MECH	130	58	50	2" CLEANABLE	1355	1,2,3,4,5,6,8,9
MAU-2	BLOWER BUILDING, ROOF	TITAN	TAH-112	HORIZONTAL MAU, BOTTOM DISCHARGE, TWO-SPEED, ELEC HEAT	3200	1.0	1033	1.5	DIRECT	2	VFD	72 (KW)	-20	50	ELEC	SCR	-	480 V	3	90.5	-	125	MFR	MECH	74	56	32	2" CLEANABLE	1400	2,3,4,5,7,8,9

NOTES:
1. PROVIDE LOW-FIRE START.
2. PROVIDE WIRING PACKAGE FOR COMMERCIAL FANS. UNIT SHALL INCLUDE MANUFACTURER PROVIDED SUPPLY FAN VFD. UNIT SHALL ALSO INCLUDE FACTORY MOUNTED EXHAUST FAN VFD TO CONTROL REMOTE EXHAUST FAN. SEE SEQUENCES FOR MORE INFORMATION.
3. PROVIDE FREEZESTAT WITH 10' SENSOR AND LOW TEMP LIGHT ON REMOTE PANEL.
4. PROVIDE WITH 2" V-BANK FILTERS, DISCHARGE DAMPER.
5. PROVIDE FACTORY CONTROLS AND DISCONNECT. SEE SEQUENCES OF OPERATIONS AND UNIT SPECIFICATIONS FOR MORE INFORMATION. COORDINATE WITH ELECTRICAL.
6. PROVIDE WITH 36" STEEL FACTORY SUPPORT STAND.
7. PROVIDE WITH 24" MINIMUM ROOF CURB.
8. PROVIDE WITH INTAKE HOOD AND DISCHARGE DAMPER SECTIONS.
9. MAU-1 TO SCCR RATING TO BE 5 kA. MAU-2 SCCR RATING TO BE 35 kA.

FURNACE SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	SUPPLY FAN					HEATING					COOLING	ELECTRICAL DATA						DIMENSIONS			OUTDOOR AIR (CFM)	CONTROLS	WEIGHT (LBS)	NOTES
				AIR				MOTOR	CAPACITY			FUEL TYPE	STAGES	CAPACITY														
				FLOW (CFM)	ESP (IN WC)	RPM	DRIVE TYPE	HP	INPUT (MBH)	OUTPUT (MBH)	AFUE (%)			(MBH)	VOLTAGE	PH	MCA	MOCP	DISC. BY	STARTER BY	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)				
F-1	ADMIN BUILDING, MECH RM 108	DAIKIN	DM96VE0603BNA	1200	0.7	1075	ECM	1/2	60	57.6	96	NG	2	36	120 V	1	7.8	15	ELEC	MECH	29	18	35	300	TSTAT	117	1,2

NOTES :
1. PROVIDE HOUSEKEEPING PAD.
2. ROUTE CONDENSATE AND COOLING CONDENSATE PIPING TO FLOOR DRAIN AS PER FURNACE DETAIL AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

AIR-COOLED CONDENSING UNIT SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	COOLING			COMPRESSOR		ELECTRICAL DATA							WEIGHT (LBS)	NOTES
				CAPACITY (MBH)	AMBIENT TEMP (°F)	SEER	QTY	TYPE	VOLTAGE	PH	FLA	MCA	MOCP	DISC. BY	STARTER BY		
CU-1	ADMIN BUILDING, GRADE	DAIKIN	DX13SA0364AA	36	95	13	1	SCROLL	480 V	3	0.6	7.9	15	ELEC	MECH	196	1

NOTES:
1. CONDENSING UNIT LOCATION SHALL BE BASED ON MANUFACTURERS CLEARANCE REQUIREMENTS.

BASEBOARD HEATER SCHEDULE - ELEC

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	ELECTRIC HEATING COIL		ELECTRICAL DATA			CONTROLS	WEIGHT (LBS)	NOTES
					HEATING CAPACITY (MBH)	ELEMENT POWER (kW)	VOLTAGE	PH	FLA			
BB-1	OFFICE 107A	QMARK	2500 SERIES	ELECTRIC BASEBOARD HEATER	8630	2.5	208 V	1	12	DIV 23	18.5	1,2.3,4
BB-2	OPERATIONS ROOM 102	QMARK	2500 SERIES	ELECTRIC BASEBOARD HEATER	8630	2.5	208 V	1	12	DIV 23	18.5	1,2.3,4

NOTES:
1. ELECTRIC BASEBOARD HEATER: UNIT IS FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE WITH ELECTRICAL FOR POWER AND CONNECTION REQUIREMENTS.
2. COORDINATE MOUNTING HEIGHTS AND LOCATIONS. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
3. UNIT COLOR SHALL BE WHITE.
4. PROVIDE TAMPER RESISTANT THERMOSTAT IN ENCLOSURE.

EXHAUST FAN SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	AIR					MOTOR	ELECTRICAL DATA							CONTROLS	WEIGHT (LBS)	NOTES
					FLOW (CFM)	ESP (IN WC)	RPM	BHP	DRIVE TYPE	HP	VOLTAGE	PH	FLA	MCA	MOCP	DISC. BY	STARTER BY			
EF-1	ADMIN BUILDING, GARAGE	GREENHECK	SQ-160-VG	INLINE	3750	0.35	1392	0.9	ECM	2	208 V	1	12.5	15.6	25	MFR	MFR	SEE SPEC 23 09 93	135	1,2,3,6,7,8
EF-2	PRETREATMENT BLDG, EXTERIOR	GREENHECK	CUBE-360-VG	CENTRIFUGAL UPBLAST, SIDEWALL MTD	7200	0.35	359	0.77	ECM	1	480 V	3	2.1	2.6	15	MFR	MFR	SEE SPEC 23 09 93	283	1,2,4,9,10,11
EF-3	DISINFECTION BLDG, STORAGE 106	GREENHECK	SQ-120-VG	INLINE	1000	0.35	1137	0.13	ECM	1/2	120 V	1	6.6	8.2	15	MFR	MFR	SEE SPEC 23 09 93	61	1,2,3,6,7,9
EF-4	DISINFECTION BLDG, CHLORINE 105	GREENHECK	SQ-120-VG	INLINE	1000	0.35	1137	0.13	ECM	1/2	120 V	1	6.6	8.2	15	MFR	MFR	SEE SPEC 23 09 93	61	1,2,3,6,7,9
EF-5	DISINFECTION BLDG, 104	GREENHECK	SQ-95-VG	INLINE	500	0.50	1602	0.11	ECM	1/5	120 V	1	2.8	3.5	15	MFR	MFR	SEE SPEC 23 09 93	34	1,2,3,6,7
EF-6	DISINFECTION BLDG, SULFUR DIOXIDE 102	GREENHECK	SQ-120-VG	INLINE	1000	0.35	1137	0.13	ECM	1/2	120 V	1	6.6	8.2	15	MFR	MFR	SEE SPEC 23 09 93	61	1,2,3,6,7,9
EF-7	DISINFECTION BLDG, CARBON FEED 101	GREENHECK	SQ-120-VG	INLINE	1000	0.35	1137	0.13	ECM	1/2	120 V	1	6.6	8.2	15	MFR	MFR	SEE SPEC 23 09 93	61	1,2,3,6,7,9
EF-8	BLOWER BUILDING, ROOF	GREENHECK	CUE-160-VG	CENTRIFUGAL UPBLAST, ROOF MTD	3200	0.75	1356	0.95	ECM	2	208 V	1	12.5	15.6	25	MFR	MFR	SEE SPEC 23 09 93	122	1,2,5,6,9,11
EF-9	CLARIFIER	GREENHECK	CUBE-300	CENTRIFUGAL UPBLAST, SIDEWALL MTD	7250	0.35	527	1.05	BELT	1 1/2	480 V	3	3	3.8	15	ELEC	ELEC	SEE SPEC 23 09 93	228	1,9,10
EF-10	CLARIFIER	GREENHECK	CUBE-300	CENTRIFUGAL UPBLAST, SIDEWALL MTD	7250	0.35	527	1.05	BELT	1 1/2	480 V	3	3	3.8	15	ELEC	ELEC	SEE SPEC 23 09 93	228	1,9,10
EF-11	OPERATIONS ROOM 102	GREENHECK	SQ-70-VG	INLINE	100	0.35	1572	0.03	ECM	FRAC.	120 V	1	1.3	1.6	15	MFR	MFR	LIGHTS	27	1
EF-12	OPERATIONS ROOM 102	GREENHECK	SQ-70-VG	INLINE	100	0.50	1572	0.03	ECM	FRAC.	120 V	1	1.3	1.6	15	MFR	MFR	LIGHTS	27	1

NOTES :
1. PROVIDE BIRDSCREEN (ON GOOSENECK WHERE APPLICABLE).
2. UNLESS OTHERWISE NOTED, PROVIDE WITH MOTORIZED DAMPER FOR UNITS EXCEEDING 300 CFM, BACKDRAFT DAMPER FOR UNITS 300 CFM OR LESS.
3. PROVIDE WITH VIBRATION ISOLATORS FOR FANS MOUNTED FROM STRUCTURE.
4. FAN SHALL BE INTERLOCKED WITH MAU-1. COORDINATE WITH ELECTRICAL FOR WIRED CONNECTIONS.
5. FAN SHALL BE INTERLOCKED WITH MAU-2. COORDINATE WITH ELECTRICAL FOR WIRED CONNECTIONS.
6. PROVIDE REVERSE-ACTING THERMOSTAT FOR EXHAUST FAN. REFER TO SPECIFICATIONS FOR CONTROLS SEQUENCES.
7. INTERLOCK WITH OUTSIDE AIR LOUVER DAMPER FOR MAKEUP VENTILATION. REFER TO SPECIFICATIONS FOR CONTROL SEQUENCES.
8. FAN SHALL BE CAPABLE OF MODULATING TO 50% OR LESS OF DESIGN CAPACITY, PROVIDED ACCEPTABLE CONTAMINANT LEVELS ARE MAINTAINED PER ASHRAE 90.1-2019, SECTION 6.4.3.4.5. SEE MECHANICAL AND ELECTRICAL SPECIFICATIONS FOR MORE INFORMATION.
9. FAN AND ACCESSORIES SHALL BE PROVIDED IN CAST ALUMINUM AND WITH HIGH-STRENGTH CORROSION-RESISTANT COATING.
10. FAN MOTOR CONSTRUCTION SHALL BE EXPLOSION PROOF AND SPARK B RATED, SUITABLE FOR HAZARDOUS LOCATION PER NFPA 820.
11. FAN SHALL BE CAPABLE OF MODULATING TO 50% OR LESS OF DESIGN CAPACITY, PROVIDED ACCEPTABLE CONTAMINANT LEVELS ARE MAINTAINED PER NFPA 820, SPACE IS UNOCCUPIED, AND AMBIENT TEMPERATURE IS BELOW 50 DEGF. SEE MECHANICAL AND ELECTRICAL SPECIFICATIONS FOR MORE INFORMATION.

LOUVER SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	AIRFLOW (CFM)	SP (IN WC)	FACE VELOCITY (FPM)	DIMENSIONS			NOTES
								LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	
L-1	ADMIN BUILDING, GARAGE	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	3750	0.05	589	40	6	40	1,3
L-3	DISINFECTION BLDG, STORAGE 106	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	100	0.01	175	16	6	16	1,2
L-4	DISINFECTION BLDG, CHLORINE 105	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	1000	0.06	623	40	6	16	1,2
L-5	DISINFECTION BLDG, 104	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	500	0.05	546	24	6	16	1,2
L-6	DISINFECTION BLDG, SULFUR DIOXIDE 102	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	1000	0.06	623	40	6	16	1,2
L-7	DISINFECTION BLDG, CARBON FEED 101	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	100	0.01	175	16	6	16	1,2
L-8	CLARIFIER	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	7250	0.09	770	48	6	48	1,3
L-9	CLARIFIER	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	7250	0.09	770	48	6	48	1,3

NOTES:
1. VERIFY LOUVER FINISH WITH ARCHITECT.
2. PROVIDE ACCESSIBLE SLIDE-OUT FILTER RACK SECTION.
3. PROVIDE WITH INSECT SCREEN.

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL SCHEDULES

SHEET 6.33

GAS UNIT HEATER SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	GAS HEATING						ELECTRICAL DATA				CONTROLS	WEIGHT (LBS)	DIMENSIONS			NOTES
					CAPACITY			AIR	FUEL TYPE	STAGES	CONNECTION SIZE (IN)	VOLTAGE	PH	FLA	DISC. BY			LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	
					INPUT (MBH)	OUTPUT (MBH)	AFUE (%)	FLOW (CFM)													
GUH-1	DISINFECTION BLDG, 104	REZNOR	UDXC-30	POWER VENTED	30	24.6	82	456	NG	1	1/2	120 V	1	1.3	MFR	TSTAT	47	22	16	19	1,2
GUH-2	DISINFECTION BLDG, 104	REZNOR	UDXC-30	POWER VENTED	30	24.6	82	456	NG	1	1/2	120 V	1	1.3	MFR	TSTAT	47	22	16	19	1,2
GUH-3	ADMIN BUILDING, MECH RM 108	REZNOR	UDXC-30	POWER VENTED	30	24.6	82	456	NG	1	1/2	120 V	1	1.3	MFR	TSTAT	47	22	16	19	1,2
GUH-4	ADMIN BUILDING, PARTS ROOM	REZNOR	UDXC-30	POWER VENTED	30	24.6	82	456	NG	1	1/2	120 V	1	1.3	MFR	TSTAT	47	22	16	19	1,2

NOTES:
1. PROVIDE GAS PRESSURE REGULATOR AND SINGLE STAGE REMOTE MOUNTED THERMOSTAT.
2. PROVIDE 30-DEGREE DOWNWARD DEFLECTOR HOOD AND VENT KIT AS NEEDED FOR FLUE GAS VENTING.

NATURAL GAS LOAD SCHEDULE

UNIT TAG	UNIT LOCATION	HEATING INPUT (MBH)
F-1	ADMIN BUILDING, MECH RM 108	60.0
MAU-1	PRETREATMENT BLDG, EXTERIOR	633.0
GUH-1	DISINFECTION BLDG, 104	30.0
GUH-2	DISINFECTION BLDG, 104	30.0
GUH-4	ADMIN BUILDING, PARTS ROOM	30.0
GUH-3	ADMIN BUILDING, MECH RM 108	30.0
		813.0

UNIT HEATER SCHEDULE - ELEC

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	ELECTRIC HEATING COIL				ELECTRICAL DATA				CONTROLS	WEIGHT (LBS)	NOTES
					HEATING CAPACITY (MBH)	AIR FLOW (CFM)	ELEMENT POWER (kW)	STAGES	VOLTAGE	PH	FLA	DISC. BY			
EUH-1	PRETREATMENT BLDG, SCREENING ROOM 101	QMARK	GUX-233-FB-0156U	EXPLOSION PROOF, WALL MOUNTED	51.2	1800	15	1	480 V	3	19	ELEC	TSTAT	169	1,2,3
EUH-2	PRETREATMENT BLDG, ELEC 102	QMARK	MUH03-41	WALL MOUNTED	10.2	350	3	1	480 V	3	3.6	ELEC	TSTAT	27	1,2,3
EUH-3	DISINFECTION BLDG,CHLORINE 106	QMARK	MUH03-41	WALL MOUNTED	10.2	350	3	1	480 V	3	3.6	MFR	TSTAT	27	1,2,3
EUH-4	DISINFECTION BLDG, CHLORINE 105	QMARK	MUH-20-4	WALL MOUNTED	68.2	1320	20	2	480 V	3	24	ELEC	TSTAT	60	1,2,3
EUH-5	DISINFECTION BLDG, SULFUR DIOXIDE 102	QMARK	MUH-20-4	WALL MOUNTED	68.2	1320	20	2	480 V	3	24	ELEC	TSTAT	60	1,2,3
EUH-6	DISINFECTION BLDG, SULFUR DIOXIDE 101	QMARK	MUH03-41	WALL MOUNTED	10.2	350	3	1	480 V	3	3.6	ELEC	TSTAT	27	1,2,3
EUH-7	DISINFECTION BLDG, BOILER RM 103	QMARK	MUH03-41	WALL MOUNTED	10.2	350	2.2	1	480 V	3	3.6	ELEC	TSTAT	27	1,2,3
EUH-8	BLOWER BUILDING, LOWER LEVEL	QMARK	MUH-10-4	WALL MOUNTED	34.1	650	10	2	480 V	3	12	ELEC	TSTAT	38	1,2,3,6
EUH-9	BLOWER BUILDING, LOWER LEVEL	QMARK	MUH-10-4	WALL MOUNTED	34.1	650	10	2	480 V	3	12	ELEC	TSTAT	38	1,2,3,6
EUH-10	BLOWER BUILDING, UPPER LEVEL	QMARK	MUH-10-4	WALL MOUNTED	34.1	650	10	2	480 V	3	12	ELEC	TSTAT	38	1,2,3,6
EUH-11	BLOWER BUILDING, UPPER LEVEL	QMARK	MUH-10-4	WALL MOUNTED	34.1	650	10	2	480 V	3	12	ELEC	TSTAT	38	1,2,3
EUH-12	NEW ELECTRICAL BUILDING	QMARK	MUH03-41	WALL MOUNTED	10.2	350	3	1	480 V	3	3.6	ELEC	TSTAT	27	1,2,3
EUH-13	ADMIN BUILDING, VESTIBULE 101	QMARK	CWH3150F	FAN FORCED WALL MTD	5.1	100	1.5	1	120 V	1	12.5	MFR	INTEGRAL	25	1,2,4,5

NOTES :
1. UNIT IS FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE WITH ELECTRICAL FOR POWER AND CONNECTION REQUIREMENTS.
2. PROVIDE MOUNTING BRACKET AS REQUIRED. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. PROVIDE REMOTE, WALL-MOUNTED THERMOSTAT.
4. PROVIDE INTEGRAL THERMOSTAT.
5. PROVIDE WALL SLEEVE, SEAL AND TRIM FOR A FULLY RECESSED UNIT.
6. UNIT PROVIDED AS SUPPLEMENTAL HEAT TO MAU-2. SETPOINT FOR EUH TO BE ~10 DEGF (ADJ.) LESS THAN SETPOINT OF MAU-2.

GRILLES, REGISTERS, & DIFFUSERS SCHEDULE

UNIT TAG	TYPE	MANUFACTURER	MODEL	DESCRIPTION	MATERIAL	FINISH	ACCESSORIES
A	CEILING DIFFUSER	TITUS	TMS	LAY-IN STEEL SQUARE CONE	STEEL	WHITE	SHEET ROCK FRAME AS REQUIRED
B	SUPPLY GRILLE	TITUS	300RL	LOUVERED FACE	STEEL	WHITE	-
C	RETURN GRILLE	TITUS	50F	LAY-IN EGG CRATE FACE	ALUMINUM	WHITE	-
D	RETURN/EXHAUST GRILLE	TITUS	350RL	LOUVERED FACE	STEEL	WHITE	-

MINI SPLIT INDOOR UNIT SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	COOLING		HEATING			ELECTRICAL DATA		CONTROLS	SOUND DATA (dB(A))	WEIGHT (LBS)	NOTES
					AIRFLOW (CFM)	CAPACITY (MBH)	CAPACITY @ 47 DEGF (MBH)	HSPF	TYPE	VOLTAGE	PH				
MSI-1	PRETREATMENT BLDG, ELEC 102	HAIER	QS12WB2BEA	HEAT PUMP	360	11.8	13	9.5	HEAT PUMP	120 V	1	TSTAT	36	27	1,2
MSI-2	DISINFECTION BLDG, BOILER RM 103	HAIER	QS12WB2BEA	HEAT PUMP	360	11.8	13	9.5	HEAT PUMP	120 V	1	TSTAT	36	27	1,2
MSI-3	NEW ELEC BUILDING	HAIER	QS36WB2BEA	HEAT PUMP	840	32.4	36	9.5	HEAT PUMP	208 V	1	TSTAT	56	56	1,2

NOTES :
1. INDOOR UNIT POWER PROVIDED BY OUTDOOR UNIT.
2. ROUTE CONDENSATE TO GRADE. CONDENSATE PIPING TO BE PVC OR PER MANUFACTURER.

MINI SPLIT OUTDOOR UNIT SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	SERVES	COOLING			HEATING			ELECTRICAL DATA						SOUND DATA (dB(A))	WEIGHT (LBS)	NOTES
						AMBIENT TEMP (°F)	CAPACITY (MBH)	SEER2	CAPACITY (MBH)	HSPF2	TYPE	VOLTAGE	PH	MCA	MOCP	DISC. BY	STARTER BY			
MSO-1	PRETREATMENT BLDG, EXTERIOR	HAIER	1Q12FF3BEA	HEAT PUMP	MSI-1	95	11.8	21	13	9.5	HEAT PUMP	208 V	1	12	15	ELEC	MFR	55	83	1,2,3
MSO-2	DISINFECTION BLDG, EXTERIOR	HAIER	1Q12FF3BEA	HEAT PUMP	MSI-2	95	11.8	21	13	9.5	HEAT PUMP	208 V	1	12	15	ELEC	MFR	55	83	1,2,3
MSO-3	NEW ELEC BUILDING, EXTERIOR	HAIER	1Q3036FF2BEA	HEAT PUMP	MSI-3	95	32.4	18	36	9.5	HEAT PUMP	208 V	1	25	35	ELEC	MFR	56	167	1,2,3

NOTES :
1. CONDENSING UNIT LOCATION SHALL BE BASED ON MANUFACTURER'S CLEARANCE REQUIREMENTS.
2. OUTDOOR UNIT PROVIDES POWER TO INDOOR UNIT.
3. PROVIDE WIND BAFFLES FOR LOW AMBIENT COOLING.

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
MECHANICAL SCHEDULES

SHEET
6.34

ELECTRICAL ABBREVIATIONS

1P	1 POLE (2P, 3P, 4P, ETC.)	MC	MECHANICAL CONTRACTOR
A, AMP	AMPERE	MCB	MAIN CIRCUIT BREAKER
AC	ABOVE COUNTER	MCC	MOTOR CONTROL CENTER
ACLG	ABOVE CEILING	MCCB	MOLDED CASE CIRCUIT BREAKER
ADO	AUTOMATIC DOOR OPENER	MCP	MOTOR CIRCUIT PROTECTOR
AFF	ABOVE FINISHED FLOOR	MDP	MAIN DISTRIBUTION PANEL
AFG	ABOVE FINISHED GRADE	MFR	MANUFACTURER
AFI	ARC FAULT CIRCUIT INTERRUPTER	MFS	MAIN FUSED DISCONNECT SWITCH
AHU	AIR HANDLING UNIT	MH	MANHOLE
AL	ALUMINUM	MIC	MICROPHONE
ALT	ALTERNATE	MIN	MINIMUM
AMP	AMPERE	MLO	MAIN LUGS ONLY
AMPL	AMPLIFIER	MMS	MANUAL MOTOR STARTER
ANN	ANNUNCIATOR	MOA	MULTIOUTLET ASSEMBLY
APPX	APPROXIMATELY	MSP	MOTOR STARTER PANELBOARD
AQ-ST	AQUASTAT	MSB	MAIN SWITCHBOARD
ARCH	ARCHITECT, ARCHITECTURAL	MSD	MAIN SERVICE DISCONNECT
ATS	AUTOMATIC TRANSFER SWITCH	MSS	MOTOR STARTER SWITCH
AUTO	AUTOMATIC	MT	MOUNT
AUX	AUXILIARY	MTS	MANUAL TRANSFER SWITCH
AV	AUDIO VISUAL	MTR	MOTOR, MOTORIZED
AWG	AMERICAN WIRE GAUGE	N.C.	NORMALLY CLOSED
BATT	BATTERY	NEC	NATIONAL ELECTRICAL CODE
BD	BOARD	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
BLDG	BUILDING		
BMS	BUILDING MANAGEMENT SYSTEM		
C	CONDUIT		
CAB	CABINET	NIC	NOT IN CONTRACT
CATV	CABLE TELEVISION	NL	NIGHT LIGHT
CB	CIRCUIT BREAKER	N.O.	NORMALLY OPEN
CCTV	CLOSED CIRCUIT TELEVISION	NPF	NORMAL POWER FACTOR
CKT	CIRCUIT	NTS	NOT TO SCALE
CLG	CEILING	OC	ON CENTER
COMB	COMBINATION	OH	OVERHEAD
CMPR	COMPRESSOR	OL	OVERLOADS
CONN	CONNECTION	PA	PUBLIC ADDRESS
CONT	CONTINUATION OR CONTINUOUS	PB	PULL BOX OR PUSHBUTTON
CP	CONTROL PANEL	PED	PEDESTAL
CT	CURRENT TRANSFORMER	PF	POWER FACTOR
CTR	CENTER	PH	PHASE
CU	COPPER	PM	POWER METER
DEPT	DEPARTMENT	PNL	PANEL
DIA	DIAMETER	PP	POWER POLE
DISC	DISCONNECT	PRI	PRIMARY
DN	DOWN	PRV	POWER ROOF VENTILATOR
DPR	DAMPER	PVC	POLYVINYL CHLORIDE (CONDUIT)
DS	SAFETY DISCONNECT SWITCH		
DT	DOUBLE THROW	PWR	POWER
DWG	DRAWING	RCPT	RECEPTACLE
EC	ELECTRICAL CONTRACTOR	RM	ROOM
ELEC	ELECTRIC, ELECTRICAL	RSC	RIGID STEEL CONDUIT
ELEV	ELEVATOR	RTU	ROOF TOP UNIT
ELU	EMERGENCY LIGHTING UNIT	SCCR	SHORT-CIRCUIT CURRENT RATING
EM	EMERGENCY		
EMS	ENERGY MANAGEMENT SYSTEM	SEC	SECONDARY
EMT	ELECTRICAL METALLIC TUBING	SHT	SHEET
EP	ELECTRIC PNEUMATIC	SIM	SIMILAR
EQUIP	EQUIPMENT	SPEC	SPECIFICATION
EWC	ELECTRIC WATER COOLER	SPKR	SPEAKER
EXIST	EXISTING	SP	SPARE
EXH	EXHAUST	SPD	SURGE PROTECTION DEVICE
EXP	EXPLOSION PROOF	SPP	SINGLE-POINT POWER
FA	FIRE ALARM	SS	STAINLESS STEEL
FACP	FIRE ALARM CONTROL PANEL	SSW	SELECTOR SWITCH
FCU	FAN COIL UNIT	S/S	STOP/START PUSHBUTTONS
FIXT	FIXTURE	STA	STATION
FLR	FLOOR	STD	STANDARD
FLUOR	FLUORESCENT	SURF	SURFACE MOUNTED
FUDS	FUSED SAFETY DISCONNECT SWITCH	SW	SWITCH
		SB	SWITCHBOARD
GA	GAUGE	SYM	SYMMETRICAL
GALV	GALVANIZED	SYS	SYSTEM
GC	GENERAL CONTRACTOR	TC	TIME CLOCK
GEN	GENERATOR	TEL	TELEPHONE
GFI	GROUND FAULT CIRCUIT INTERRUPTER	TERM	TERMINAL
		TL	TWIST LOCK
GFP	GROUND FAULT PROTECTOR	TR	TAMPER RESISTANT
GND	GROUND	T-STAT	THERMOSTAT
GYP BD	GYPSUM BOARD	TTC	TELEPHONE TERMINAL CABINET
HMCP	MOTOR PROTECTION CIRCUIT BREAKER	TV	TELEVISION
		TVTC	TELEVISION TERMINAL CABINET
HOA	HANDS-OFF-AUTOMATIC SWITCH		
HORIZ	HORIZONTAL		
HMCP	MOTOR PROTECTION CIRCUIT BREAKER	TYP	TYPICAL
		UC	UNDER COUNTER
HP	HORSEPOWER	UE	UNDERGROUND ELECTRICAL
HT	HEIGHT	UG	UNDERGROUND
HTG	HEATING	UH	UNIT HEATER
HTR	HEATER	UT	UNDERGROUND TELEPHONE
HV	HIGH VOLTAGE	UTIL	UTILITY
HVAC	HEATING, VENTILATING AND AIR CONDITIONING	UV	ULTRAVIOLET
		V	VOLT
IG	ISOLATED GROUND	VA	VOLT-AMPERES
IMC	INTERMEDIATE METAL CONDUIT	VERT	VERTICAL
INCAND	INCANDESCENT	VFD	VARIABLE FREQUENCY DRIVE
IR	INFRARED	VOL	VOLUME
I/W	INTERLOCK WITH	W	WATT
J-BOX	JUNCTION BOX	W/	WITH
KAIC	KILO-AMPS INTERRUPTING CAPACITY	WG	WIRE GUARD
		WH	WATER HEATER
KV	KILOVOLT	W/O	WITHOUT
KVA	KILOVOLT-AMPERE	WP	WEATHERPROOF
KVAR	KILOVOLT-AMPERE REACTIVE	XFMR	TRANSFORMER
KW	KILOWATT	XFR	TRANSFER
KWH	KILOWATT HOUR	∠	ANGLE
LOC	LOCATE OR LOCATION	@	AT
LT	LIGHT	▲	DELTA
LTG	LIGHTING	'	FEET
LTNG	LIGHTNING	"	INCHES
LV	LOW VOLTAGE	#	NUMBER
MAX	MAXIMUM	Ø	PHASE
MAG.S	MAGNETIC STARTER	C	CENTER LINE
M/C	MOMENTARY CONTACT	P	PLATE

ELECTRICAL SYMBOL LEGEND

LIGHTING FIXTURE SYMBOLS

- RECESSED
- SURFACE
- EMERGENCY EGRESS
- CRITICAL POWER
- NIGHT LIGHT
- PENDANT MOUNTED
- WALL MOUNTED
- NOTE: A FIXTURE MAY CONTAIN MULTIPLE SYMBOL TYPES
- TAPE LIGHTING
- TRACK LIGHTING
- EMERGENCY LIGHTING UNIT CEILING MOUNTED
- EMERGENCY LIGHTING UNIT WALL MOUNTED
- EMERGENCY LIGHTING UNIT REMOTE HEAD
- EXIT LIGHT CEILING MOUNTED
- EXIT LIGHT WALL MOUNTED
- EXIT LIGHT/ EMERGENCY LIGHTING UNIT NOTE: SHADING AND ARROWS INDICATE FACES AND DIRECTIONAL CHEVRONS ON EXIT SIGNS
- POLE/AREA LIGHT
- FLOOD LIGHT
- POST-TOP LIGHT
- DIRECTIONAL INDICATOR
- BOLLARD LIGHT
- EXTERIOR WALL PACK

LIGHTING CONTROL SYMBOLS

- $ SINGLE-POLE SWITCH
- $2 TWO-POLE SWITCH
- $3 THREE-POLE SWITCH
- SWITCH MODIFIERS:
  - 3: 3-WAY
  - 4: 4-WAY
  - K: KEYED
  - D: DIMMING
  - T: TIMER
  - OS: OCCUPANCY SENSOR
  - VS: VACANCY SENSOR
  - AC: ABOVE-COUNTER
  - LV: LOW-VOLTAGE
  - M: MOTOR-RATED
- CONTACTOR
- OCCUPANCY SENSOR CEILING MOUNTED
- OCCUPANCY SENSOR WALL MOUNTED
- DAYLIGHT SENSOR CEILING MOUNTED
- DAYLIGHT SENSOR WALL MOUNTED

LIGHTING TAGS

- TOP VALUE: FIXTURE TYPE ID
- BOTTOM VALUE, LOWERCASE LETTER: SWITCH ID
- BOTTOM VALUE, NUMBER(S): CIRCUIT NUMBER
- BOTTOM VALUE, UPPERCASE LETTER(S): PANEL DESIGNATION (ON PANEL SCHEDULE)

ABSENCE OF A SWITCH DESIGNATION ON A LIGHTING FIXTURE INDICATES SPACE HAS A SINGLE SWITCHING ZONE AND LUMINAIRE IS CONTROLLED BY THE LIGHTING DEVICE(S) SHOWN IN THE SPACE.

$a SWITCH ID INDICATED BY A LOWERCASE LETTER. SWITCH IDS ARE UNIQUE PER SPACE. A SWITCH WITH AN ID "a" CONTROLS ALL DEVICES WITHIN THE SPACE IN WHICH IT IS LOCATED TAGGED WITH "a". A SWITCH WITHOUT A TAGGED ID CONTROLS ALL LIGHTING FIXTURES WITHIN A SPACE. ID TAGS MAY BE USED ON CONTROL DEVICES OTHER THAN SWITCHES, SUCH AS OCCUPANCY SENSORS, DAYLIGHT SENSORS, SWITCHED RECEPTACLES, OR CONTACTORS.

WIRING

- SOLID, ARCED LINES CONNECTING EQUIPMENT, DEVICES, OR FIXTURES INDICATE POWER CIRCUITING. LINE INTENDED TO INDICATE TO WHAT DEVICES ARE CONNECTED. ACTUAL CONNECTIONS, CIRCUIT ROUTING, INSTALLATION, JUNCTION BOXES, ETC. SHALL BE FIELD-DETERMINED BY THE CONTRACTOR.
- EXPOSED CONDUIT AND WIRE RUN.
- CONCEALED/UNDERGROUND CONDUIT AND WIRE RUN
- XXX-X-X CONDUIT TAG (REFER TO SCHEDULE)

POWER SYMBOLS

WALL	CEILING	FLOOR	
			SIMPLEX RECEPTACLE
			DUPLEX RECEPTACLE
			DOUBLE DUPLEX RECEPTACLE
			SPECIAL RECEPTACLE
			SWITCHED RECEPTACLE
			CRITICAL/HOSPITAL RECEPTACLE
			EMERGENCY RECEPTACLE
		J	JUNCTION BOX

- MULTIOUTLET ASSEMBLY - FILLED SQUARES INDICATE 120V OUTLET OPEN SQUARES INDICATE WITH USB
- RETRACTABLE CORD REEL & RECEPTACLE
- DROP CORD CEILING MOUNTED
- F1 FLOOR BOX, SEE SCHEDULE FOR TYPE
- E EMERGENCY STOP PUSH BUTTON
- AD AUTOMATIC DOOR PUSH PLATE
- M POWER METER
- TC TIME CLOCK
- PP POWER POLE
- F SAFETY SWITCH, FUSED
- CB SAFETY SWITCH, CIRCUIT BREAKER
- SAFETY SWITCH, UNFUSED
- MOTOR CONTROLLER
- COMBINATION MOTOR CONTROLLER
- CONTACTOR
- MOTOR

POWER DEVICE AND EQUIPMENT TAGS

- A2 / G/48"/WP — ELECTRICAL DEVICE TAGS: PANEL DESIGNATOR AND CIRCUIT NUMBER(S) ARE INDICATED ON TOP OF LINE. OPTIONAL LABELS ARE LISTED BELOW OR NEAR SYMBOL.
- AHU-1 B1,3,5 — EQUIPMENT TAGS: PANEL DESIGNATOR AND CIRCUIT NUMBER(S) ARE INDICATED ON TOP OF LINE. EQUIPMENT ID IS INDICATED BELOW THE LINE.

POWER DISTRIBUTION EQUIPMENT

SB(A) — LP-1-1(E), LP-1-2(D), LC-1-2(C), DP-1-2(B)

MCC(A)

ATS

- SB - SWITCHBOARD
- MCC - MOTOR CONTROL CENTER
- DP - DISTRIBUTION PANEL
- LP - LIGHTING PANEL
- LC - LOAD CENTER
- ATS - AUTOMATIC TRANSFER SWITCH

- BUILDING OR FLOOR IDENTIFIER
- LP-1-1(E) — PANEL CIRCUIT DESIGNATOR (PANEL ID); PANEL NUMBER; PANEL TYPE
- DP-1-1-1(B) — PANEL CIRCUIT DESIGNATOR (PANEL ID); PANEL NUMBER; FLOOR IDENTIFIER; PANEL TYPE
- LC-A1 — PANEL IDENTIFIER; PANEL TYPE

DOOR INDICATES FRONT OF RECESSED PANEL. PANEL WITHOUT DOOR INDICATES SURFACE MOUNTED PANEL. PANELBOARDS ARE ASSIGNED AN ABBREVIATED PANEL CIRCUIT DESIGNATOR (PANEL ID) FOR USE WITH CIRCUIT NUMBERS. PANEL ID IS LISTED WITHIN THE PANEL SCHEDULE.

EQUIPMENT IS TAGGED WITH PANEL NAME AND WITH PANEL ID IN PARENTHESES. PANEL ID IS INTENDED AS A DESIGN DOCUMENTATION AID ONLY. DO NOT INCLUDE PANEL ID IN CIRCUIT DIRECTORIES OR LABELS.

DEVICES AND FIXTURE ARE TAGGED WITH PANEL ID AND CIRCUIT NUMBER. FOR EXAMPLE A DEVICE TAGGED WITH "A2" INDICATED THAT THE DEVICE IS CIRCUITED TO PANEL ID "A," CIRCUIT NUMBER "2". THE PANEL SCHEDULE CIRCUIT NUMBER CONTAINS BOTH THE PANEL ID AND CIRCUIT NUMBER.

- T-1-1 — BUILDING OR FLOOR IDENTIFIER; TRANSFORMER NUMBER; TRANSFORMER: TYPICALLY TRANSFORMER NAME BEGIN WITH OR CONTAIN THE LETTER "T".

TELECOM SYMBOLS

WALL	CEILING	FLOOR	
			DATA OUTLET
			TELEPHONE OUTLET
			DATA/TELEPHONE OUTLET
			WIRELESS ACCESS POINT
			TELEVISION OUTLET

- #/▽#" DATA OUTLET MODIFIERS: #: NUMBER OF PORTS ##": HEIGHT AFF OC AC: ABOVE COUNTER

NURSE CALL SYMBOLS

WALL	CEILING	
1 N	1 N	NURSE CALL CORRIDOR LIGHT
B		NURSE CALL DEVICE B: CODE BLUE D: DUTY STATION E: EMERGENCY P: PATIENT CALL S: STAFF

- XXXX NURSE CALL CONTROL UNIT NCAP: NURSE CALL ANNUNCIATOR PANEL NCHS: NURSE CALL HOST CONTROLLER NCPA: NURSE CALL POWER SUPPLY NCTC: NURSE CALL TERMINAL CABINET NCUPS: NURSE CALL UNINTERRUPTIBLE POWER SUPPLY

SECURITY SYMBOLS

- SECURITY CAMERA PLZ: PAN/TILT/ZOOM
- CR CARD READER
- CK CARD READER WITH KEYPAD
- K KEYPAD
- EH ELECTRIC DOOR ACCESS HARDWARE (REFER TO DOOR SCHEDULES)
- IC INTERCOM
- ML MAGNETIC LOCK
- MD MOTION DETECTOR
- CLOSED CIRCUIT TV OUTLET
- XXX SECURITY CONTROL UNIT SP: SECURITY PANEL SPS: SECURITY POWER SUPPLY UNIT

CONSTRUCTION PHASING

(TYPICAL ALL SYMBOLS AND EQUIPMENT, UNLESS NOTED OTHERWISE)

- EXISTING TO REMAIN
- EXISTING TO BE DEMOLISHED
- NEW

MISCELLANEOUS

- AREA NOT IN CONTRACT
- # KEYNOTE
- 1 / E702 CALLOUT: TOP VALUE: DETAIL NUMBER ON SHEET BOTTOM VALUE: SHEET NUMBER OF DETAIL
- ROOM / XX ROOM NAME AND NUMBER

GENERAL DEVICE ABBREVIATIONS

WP = WEATHER PROOF WHILE IN-USE COVER
AC= ABOVE COUNTER
G = GROUND FAULT CIRCUIT INTERRUPTER (GFCI)
U = USB
OC = OCCUPANCY CONTROLLED
HH - IN-USE HAND HOLE
X" = MOUNTING HEIGHT AFF

FIRE ALARM SYMBOLS

- F MANUAL PULL STATION
- F HORN, WALL
- P HORN, CEILING
- F STROBE, WALL
- P STROBE, CEILING
- P HORN/STROBE, CEILING
- S SPEAKER, WALL
- S SPEAKER, CEILING
- S SPEAKER/STROBE, CEILING
- S SMOKE DETECTOR
- H HEAT DETECTOR
- C CARBON MONOXIDE DETECTOR
- D DUCT SMOKE DETECTOR
- S/H/C COMBINATION DETECTOR (UP TO THREE)
- TS TAMPER SWITCH
- FS FLOW SWITCH
- DH DOOR HOLDER
- DCL DOOR CLOSER
- XXXX FIRE ALARM CONTROL UNIT FAA: FIRE ALARM ANNUNCIATOR FACP: FIRE ALARM CONTROL PANEL NACP: NOTIFICATION APPLIANCE CIRCUIT PANEL
- XX SUPERVISORY OR INTERFACE DEVICE PS: PRESSURE SWITCH R: NON-ADDRESSIBLE RELAY VS: VALVE SUPERVISORY SWITCH WF:WATER FLOW SWITCH PIV: POST INDICATOR VALVE SUPERVISORY
- 'xcd' CANDELA RATING

CONTROL

- XX ANALOG DEVICE
- XX DIGITAL DEVICE
- LOCAL CONTROL STATION (REFER TO CONTRACT DOCUMENTS FOR TYPE AND QUANTITY OF DEVICES)

CONTROL DEVICE SCHEDULE		
SYMBOL TEXT	ANALOG DEVICE	DIGITAL DEVICE
D		MOTORIZED DAMPER
DO	DISSOLVED OXYGEN SENSOR	
DC		DOOR CONTACT
F	FLOW METER/FLOW TUBE	FLOW SWITCH
FF		FLOOD FLOAT
L	LEVEL TRANSDUCER	LEVEL (FLOAT) SWITCH
LS		LIMIT SWITCH
P	PRESSURE TRANSDUCER	PRESSURE SWITCH
S		SOLENOID
T	TEMP. TRANSDUCER	THERMOSTAT/TEMP. SWITCH
TB	TURBIDITY SENSOR	
V	ELECTRIC VALVE ACTUATOR - MODULATING	ELECTRIC VALVE ACTUATOR - OPEN/CLOSE

- SCP-1 CONTROL PANEL SYMBOL SCP - SUPERVISORY OR SCADA CONTROL PANEL RTU - REMOTE TELEMETRY UNIT TX - REMOTE TRANSMITTER CONTROL PANEL IDENTIFIER

ONE-LINE DIAGRAM SYMBOLS

- ATS AUTOMATIC TRANSFER SWITCH (ATS) MANUAL TRANSFER SWITCH (MTS)
- 0 A / 1 P CIRCUIT BREAKER
- 'X' 0 A, 1 P, 0 KAIC DISCONNECT SAFETY SWITCH 'X': F - FUSE CB - CIRCUIT BREAKER

ONE-LINE DIAGRAM SYMBOLS

- DV/DT FILTER DV/DT FILTER
- NEMA 'x' MOTOR CONTROL STARTER NEMA 'x' - RATED SIZE
- NEMA 'x' COMBINATION MOTOR CONTROL STARTER NEMA 'x' - RATED SIZE
- SSRV MOTOR CONTROL SOFT STARTER
- VFD VFD MOTOR CONTROLLER
- HP 'X' MOTOR
- 'x'kW 'X' PANEL / ELECTRIC UNIT HEATER
- T-1-1 15kVA 480V: 208Y/120V TRANSFORMER
- M UTILITY METER
- PM POWER METER
- PH PHASE MONITOR
- SPD SURGE PROTECTION DEVICE (SPD)
- 480V, 3PH, 60HZ FROM UTILITY UTILITY CONNECTION
- GENERATOR STANDBY ENGINE GENERATOR
- GENERATOR RECEPTACLE PORTABLE GENERATOR RECEPTACLE

ELECTRICAL GENERAL NOTES

A. COORDINATE LOCATIONS OF DEVICES WITH ALL DISCIPLINE'S ELEVATIONS AND DETAILS. OTHER DISCIPLINE'S ELEVATIONS AND DETAILS TAKE PRECEDENCE OVER LOCATIONS SHOWN ON THE ELECTRICAL DRAWINGS.
B. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE INSTALLATION OF ELECTRICAL SYSTEMS AND THOSE REQUIRING ELECTRICAL CONNECTIONS TO MAINTAIN NEC REQUIRED CLEARANCES, INCLUDING, BUT NOT LIMITED TO, AREAS ABOVE ACCESSIBLE CEILINGS.
C. COORDINATE WITH OTHER TRADES FOR PROPER INSTALLATION OF EQUIPMENT. CONSULT THE DRAWINGS OF OTHER TRADES OR CRAFTS TO AVOID CONFLICTS WITH EQUIPMENT, ETC. CONFLICTS SHALL BE RESOLVED PRIOR TO ROUGH-IN AND AT NO ADDITIONAL COST TO THE OWNER.
D. LEAVE THE SITE CLEAN AND READY FOR OCCUPANCY. REMOVE DIRT, DEBRIS, TOOLS, EMPTY CARTONS, WIRE SCRAPS, AND CONDUIT, AND MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THIS DIVISION OF THE WORK DURING CONSTRUCTION. COMPONENTS SHALL BE FREE OF DUST, GRIT, AND FOREIGN MATERIALS AND LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK.
E. PERFORM WORK TO COMPLY WITH THE STANDARD PRACTICES FOR GOOD WORKMANSHIP PUBLISHED BY NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA). COMPLY WITH THE LATEST ENFORCED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), LOCAL CODES, AMENDMENTS, AND ORDINANCES.
F. FIELD COORDINATE ALL EQUIPMENT LOCATIONS ALONG WITH THE CONNECTION REQUIREMENTS AND CONTROL WIRING PRIOR TO ISSUING SUBMITTALS. ADJUST CORRESPONDING CIRCUIT BREAKER RATINGS AND BRANCH CIRCUITING ACCORDINGLY.

ELECTRICAL REMODEL NOTES

A. EXISTING INFORMATION INDICATED ON THESE PLANS MAY NOT REPRESENT ALL EXISTING CONDITIONS. THE CONTRACTOR SHALL BECOME FAMILIAR WITH EXISTING CONDITIONS, SCOPE OF PHASING, AND PROJECT INTENT PRIOR TO BID SUBMISSION. NO EXTRA WILL BE ALLOWED DUE TO THE LACK OF KNOWLEDGE OF EXISTING CONDITIONS TO COORDINATE RELOCATION AND DEMOLITION OF ELECTRICAL SYSTEMS.
B. COORDINATE WORK IN PHASES WITH CONTRACT DOCUMENTS, GENERAL CONTRACTOR, CONSTRUCTION MANAGER, AND OWNER REPRESENTATIVE TO FACILITATE DEMOLITION AND NEW CONSTRUCTION.

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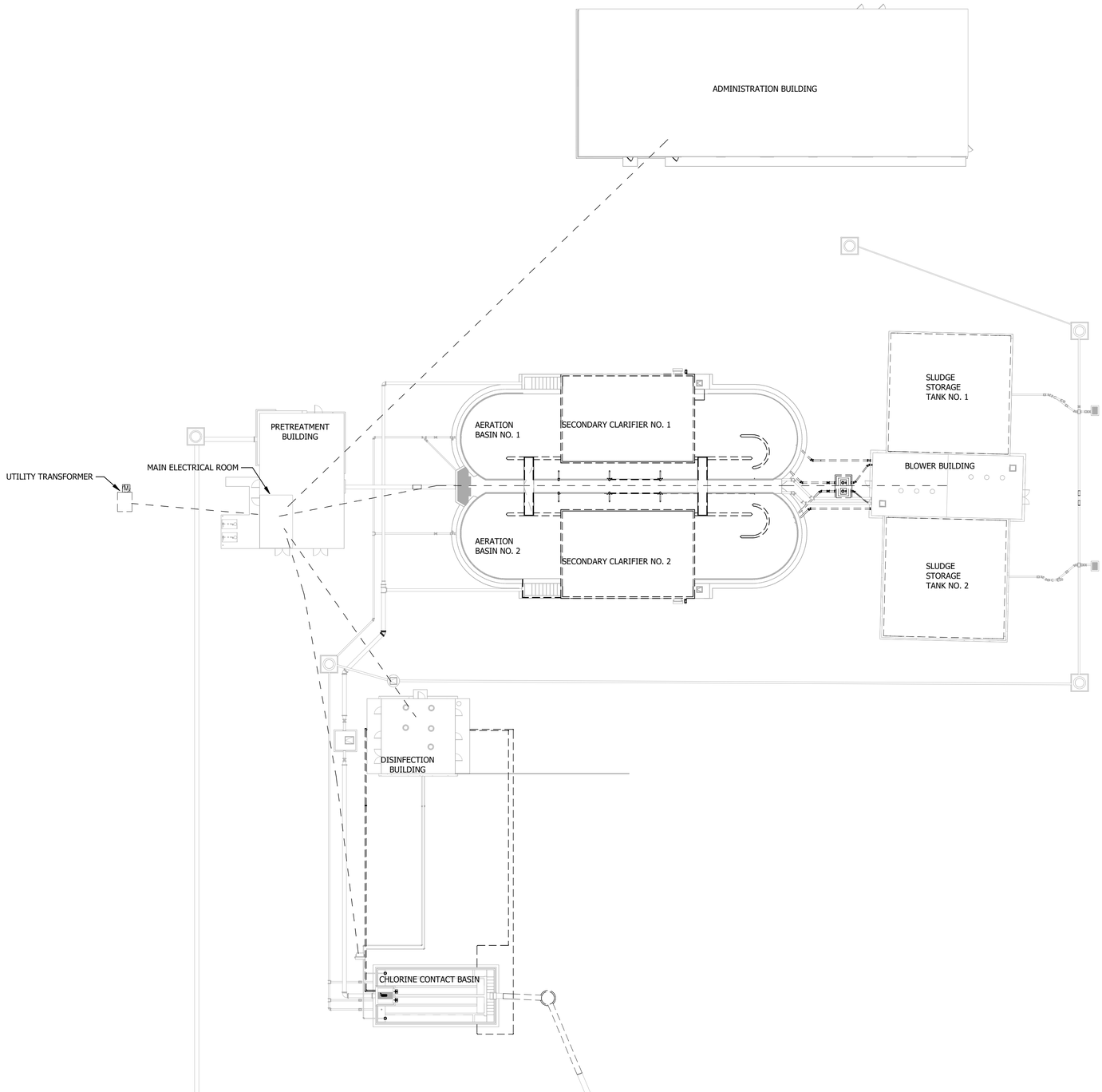
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL SYMBOLS AND ABBREVIATIONS

SHEET 7.01

GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT SHOWN IN DARK/DASHED (BLACK) LINES SHALL BE DEMOLISHED, ALL EQUIPMENT SHOWN IN LIGHT (GRAY) LINES IS EXISTING EQUIPMENT TO REMAIN AS IS. UNLESS NOTED OTHERWISE.



N

1 ELECTRICAL DEMO SITE PLAN

0 7.5' 25' 50'

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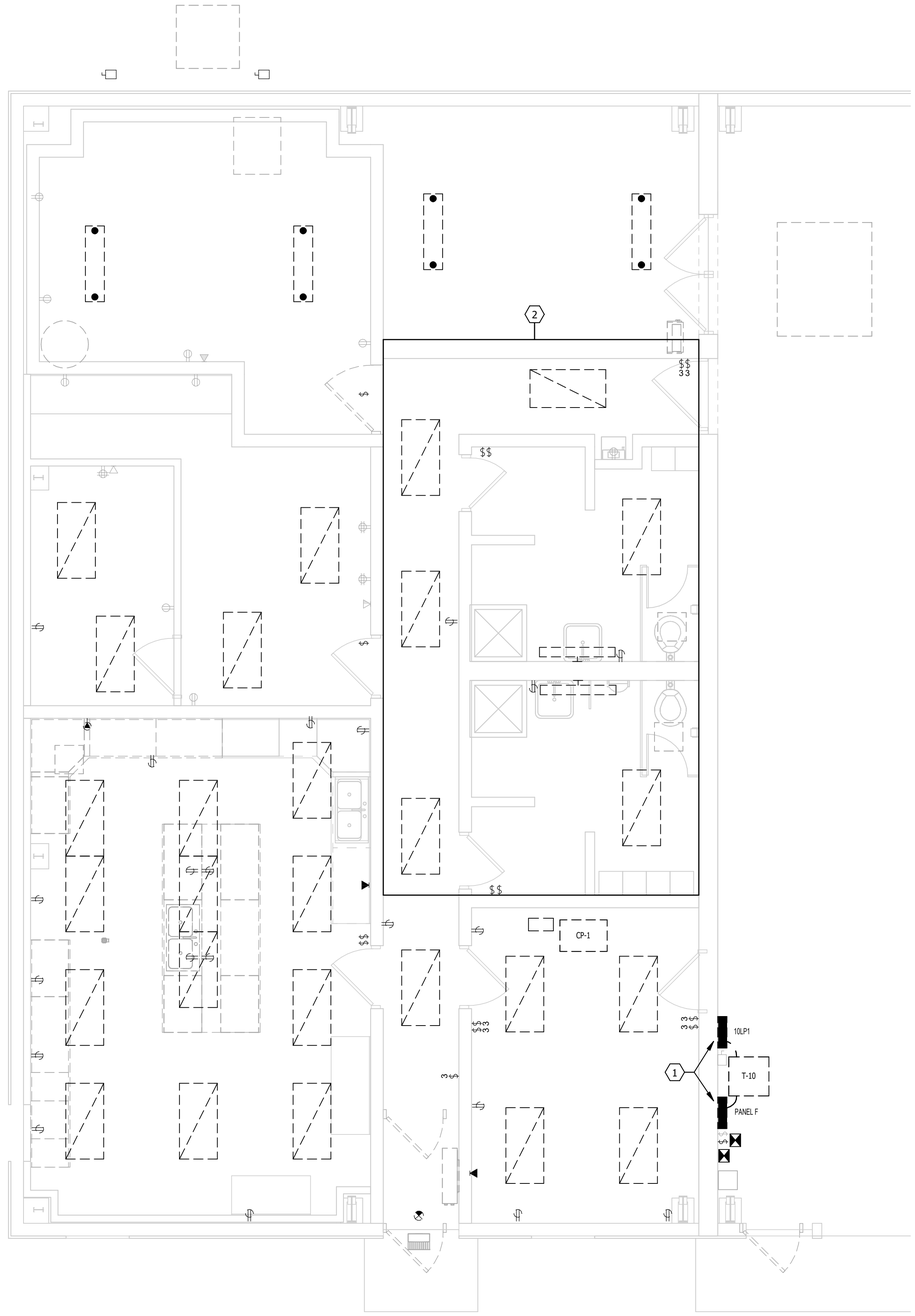
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DEMOLITION SITE PLAN

SHEET
7.02



GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT SHOWN IN DARK/DASHED (BLACK) LINES SHALL BE DEMOLISHED, ALL EQUIPMENT SHOWN IN LIGHT (GRAY) LINES IS EXISTING EQUIPMENT TO REMAIN AS IS. UNLESS NOTED OTHERWISE.

(X) KEYED NOTES:

1. PANELBOARD SHALL BE REMOVED. NEW PANELBOARD TO BE PROVIDED IN SAME LOCATION. EXISTING ELECTRICAL LOADS, EXCLUDING THOSE BEING REMOVED, SHALL BE RECONNECTED TO THE NEW PANELBOARD. PROVIDE SURFACE MOUNTED JUNCTION BOX, CONDUIT, AND WIRE AS NEEDED.
2. DIVISION 26 SHALL COORDINATE ELECTRICAL DEMOLITION AND MODIFICATIONS WITH NEW MEZZANINE CONSTRUCTION. FIELD-VERIFY EXISTING CONDUITS AND CONDUCTORS WITHIN THE AREA OF WORK. REMOVE, REROUTE, EXTEND, AND/OR REPLACE CONDUITS AND CONDUCTORS AS NECESSARY TO ACCOMMODATE THE NEW MEZZANINE. MAINTAIN CIRCUIT CONTINUITY AND RESTORE ALL AFFECTED SYSTEMS TO FULL OPERATION.

1 ELECTRICAL DEMO PLAN ADMINISTRATION BUILDING

N 0 2' 4' 8'

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DEMO PLAN - ADMINISTRATION BUILDING

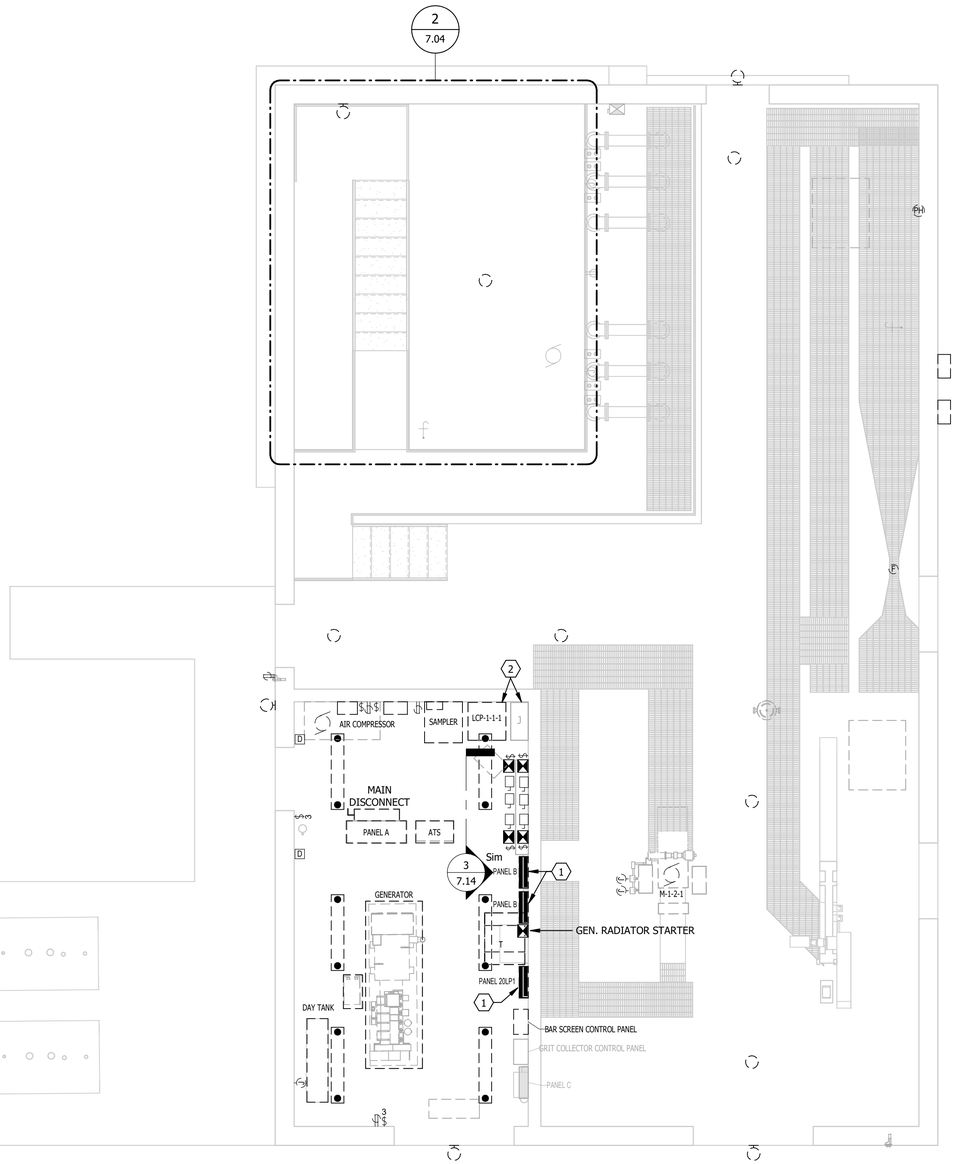
SHEET 7.03

GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT SHOWN IN DARK/DASHED (BLACK) LINES SHALL BE DEMOLISHED, ALL EQUIPMENT SHOWN IN LIGHT (GRAY) LINES IS EXISTING EQUIPMENT TO REMAIN AS IS. UNLESS NOTED OTHERWISE.

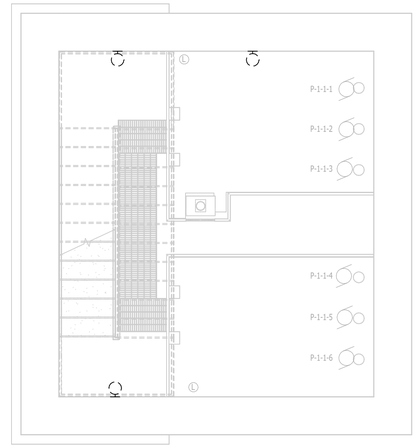
KEYED NOTES:

1. PANELBOARD SHALL BE REMOVED. NEW PANELBOARD TO BE PROVIDED IN SAME LOCATION. EXISTING ELECTRICAL LOADS, EXCLUDING THOSE BEING REMOVED, SHALL BE RECONNECTED TO THE NEW PANELBOARD. PROVIDE SURFACE MOUNTED JUNCTION BOX AND EXTEND CONDUIT AND WIRES AS NEEDED TO NEW EQUIPMENT.
2. CONTROL PANEL SHALL BE REPLACED WITH NEW. PROTECT EXISTING SIGNAL JUNCTION BOX AND EXTEND EXISTING SIGNAL WIRING TO NEW CONTROL PANEL. PROVIDE SURFACE MOUNTED JUNCTION BOX FOR SIGNAL WIRING ENTERING FROM ABOVE THE CONTROL PANEL AND EXTEND WIRING TO THE NEW CONTROL PANEL. SALVAGE EXISTING RAW WATER PUMP PROTECTION MODULES (TOTAL OF SIX) AND REINSTALL IN NEW CONTROL PANEL.
3. PROTECT EXISTING WIREWAY AND FIELD WIRING FROM WIREWAY TO MOTORS, FOR REUSE WITH NEW COMBINATION STARTERS.



1 ELECTRICAL DEMO PLAN PRELIMINARY TREATMENT BUILDING

0 2' 4' 8'



2 ELECTRICAL DEMO PLAN PRELIMINARY TREATMENT BASEMENT

0 2' 4' 8'

3 EXISTING STARTER ELEVATION
NO SCALE

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DEMO PLAN - PRELIMINARY TREATMENT BUILDING

SHEET 7.04

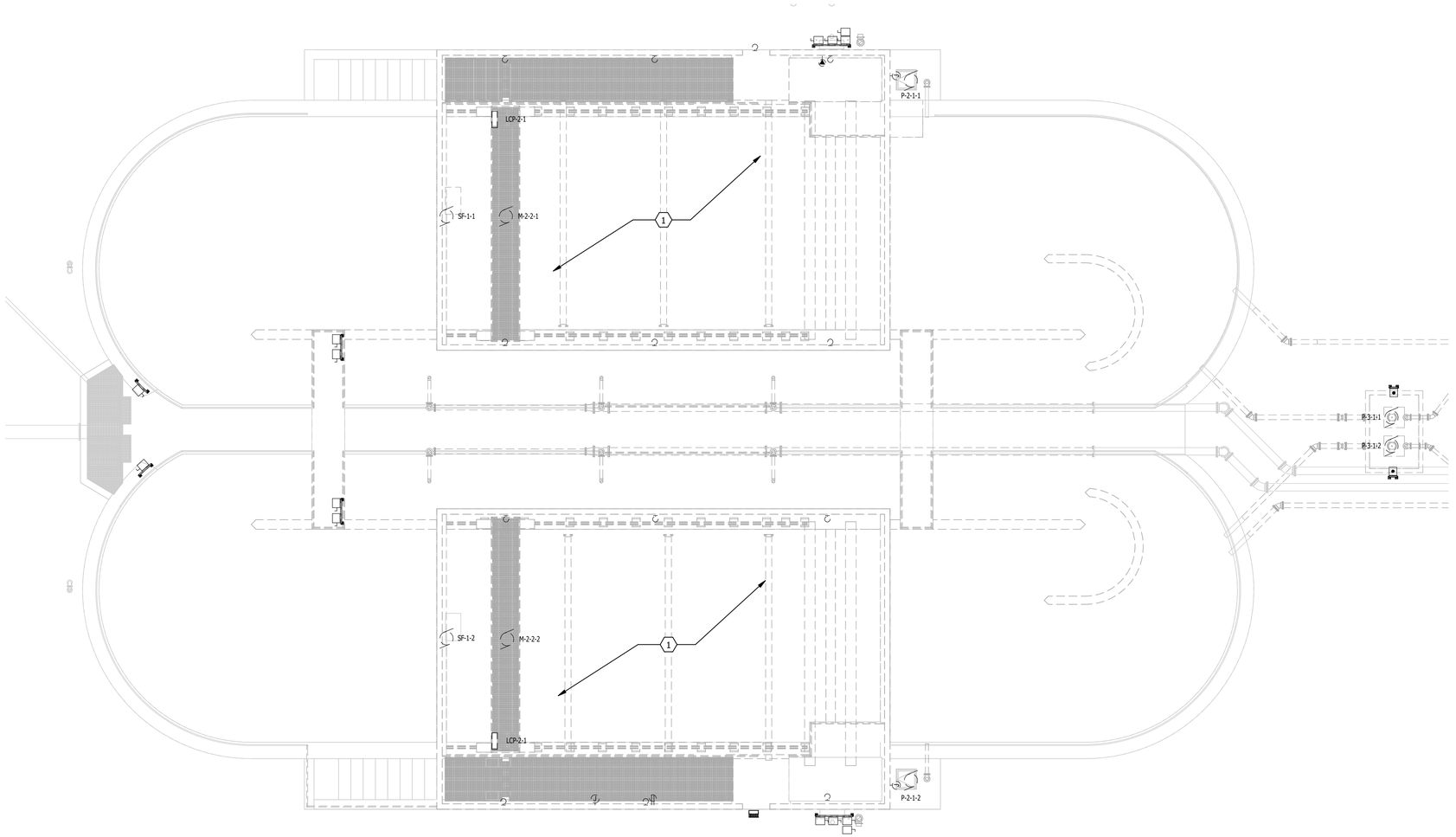
GENERAL NOTES:

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2. ALL DEVICES SHALL BE DEMOLISHED COMPLETELY BACK TO SOURCE OR LAST ACTIVE DEVICE.

KEYED NOTES:

(X)

1. CLARIFIER BUILDING, ELECTRICAL EQUIPMENT, WIRING AND DEVICES TO BE DEMOLISHED.



N 1 ELECTRICAL DEMO PLAN AERATION BASIN & SECONDARY CLARIFIER

0 4' 8' 16'

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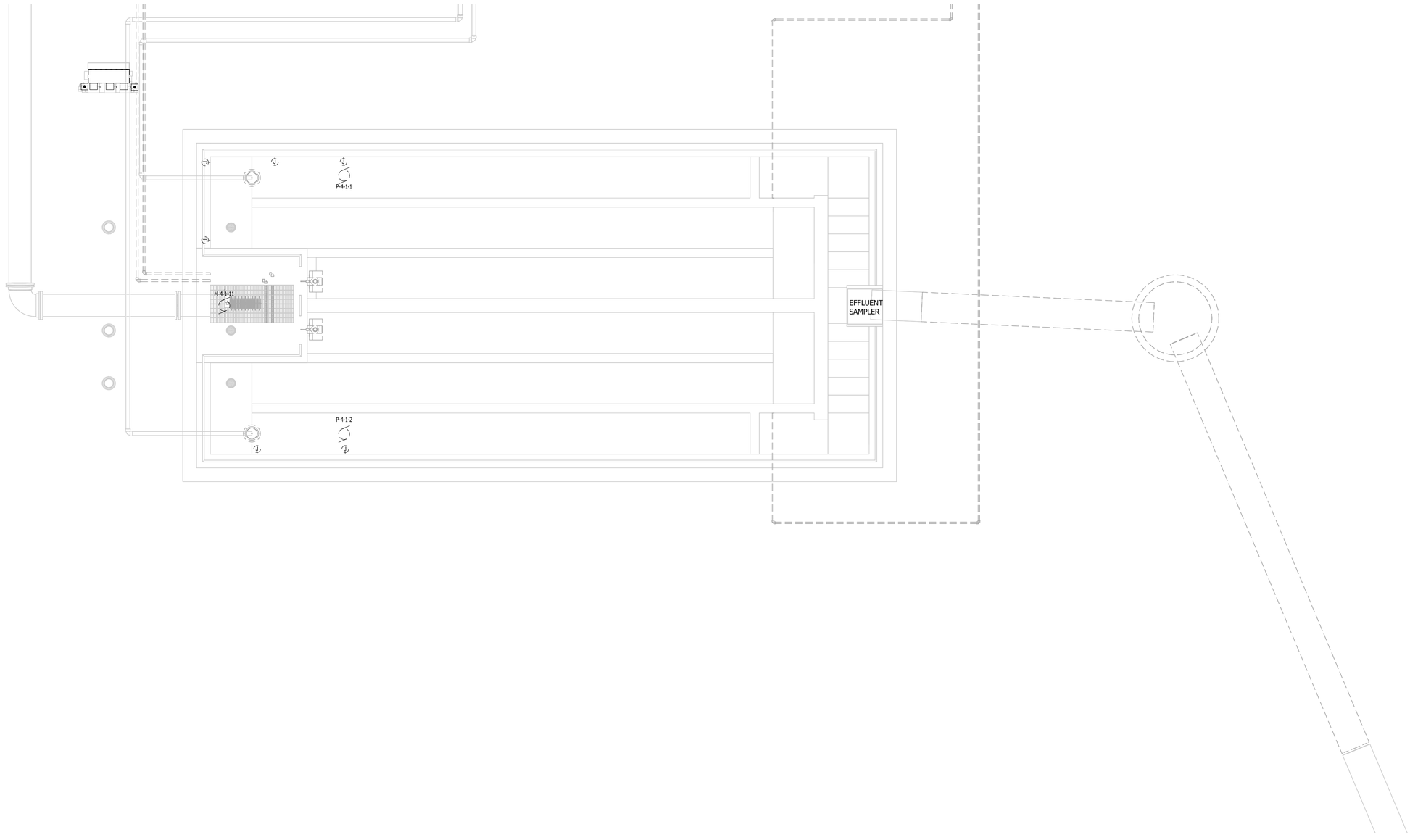
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ELECTRICAL DEMO PLAN - AERATION BASIN & SECONDARY CLARIFIER

SHEET 7.05

GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT SHOWN IN DARK/DASHED (BLACK) LINES SHALL BE DEMOLISHED, ALL EQUIPMENT SHOWN IN LIGHT (GRAY) LINES IS EXISTING EQUIPMENT TO REMAIN AS IS. UNLESS NOTED OTHERWISE.



N

1 ELECTRICAL DEMO PLAN CHLORINE CONTACT BASIN

0 2' 4' 8'

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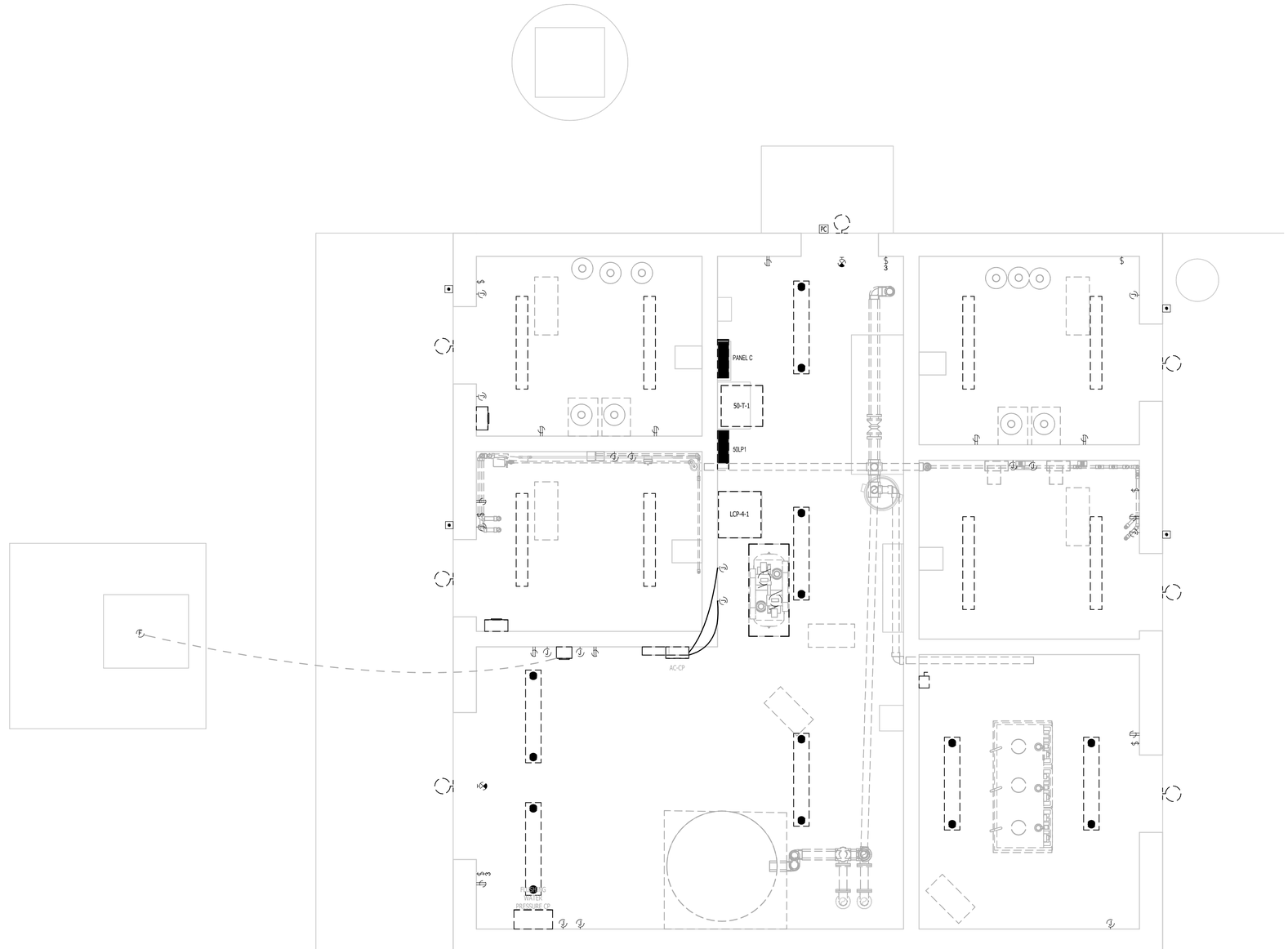
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DEMO PLAN - CHLORINE CONTACT BASIN

SHEET 7.06

GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT SHOWN IN DARK/DASHED (BLACK) LINES SHALL BE DEMOLISHED, ALL EQUIPMENT SHOWN IN LIGHT (GRAY) LINES IS EXISTING EQUIPMENT TO REMAIN AS IS. UNLESS NOTED OTHERWISE.



N 1 ELECTRICAL DEMO PLAN DISINFECTION BUILDING

0 1'-6" 3' 6'

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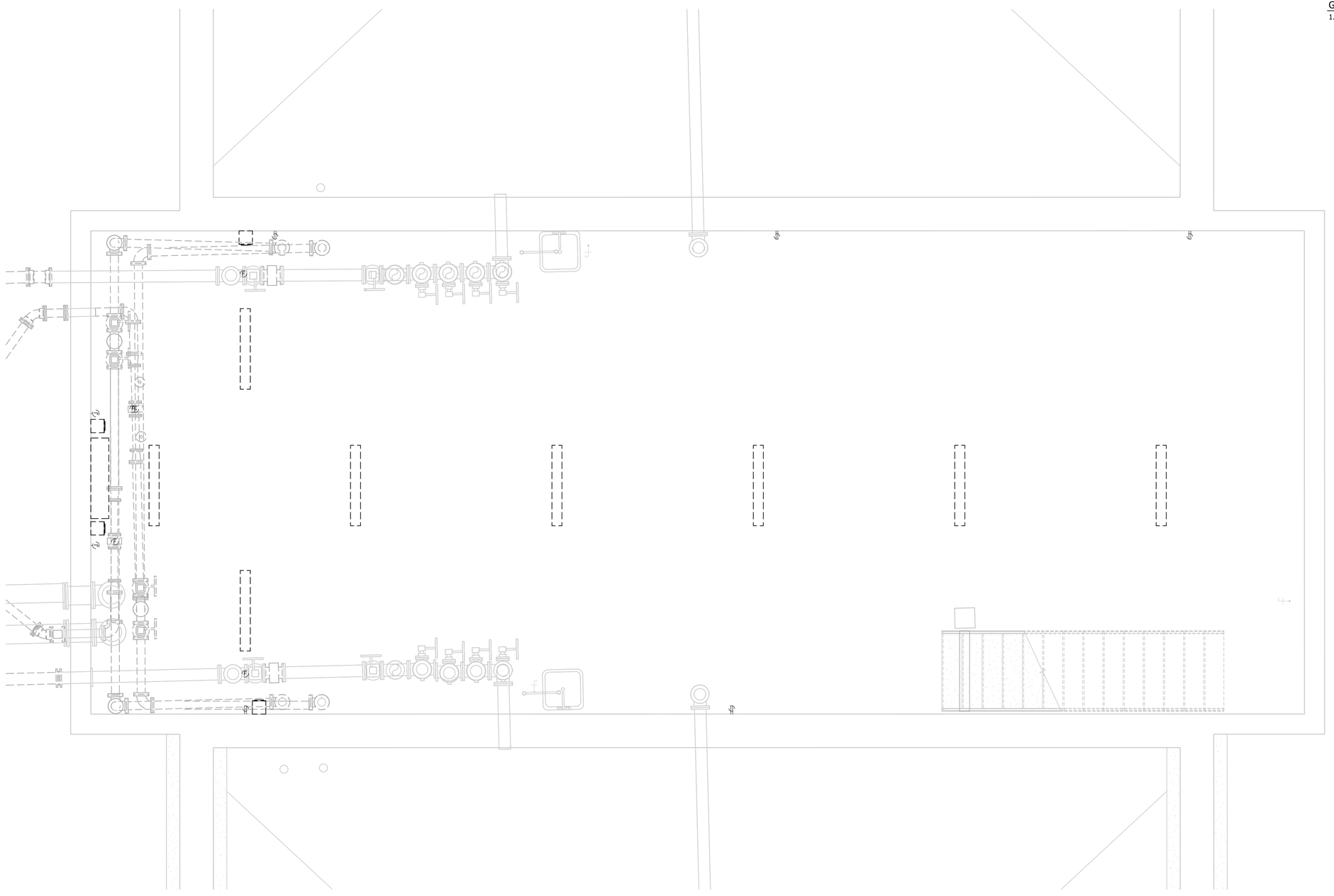
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DEMO PLAN - DISINFECTION BUILDING

SHEET 7.07

GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT SHOWN IN DARK/DASHED (BLACK) LINES SHALL BE DEMOLISHED, ALL EQUIPMENT SHOWN IN LIGHT (GRAY) LINES IS EXISTING EQUIPMENT TO REMAIN AS IS. UNLESS NOTED OTHERWISE.



N

1 ELECTRICAL DEMO PLAN BLOWER BUILDING LOWER LEVEL

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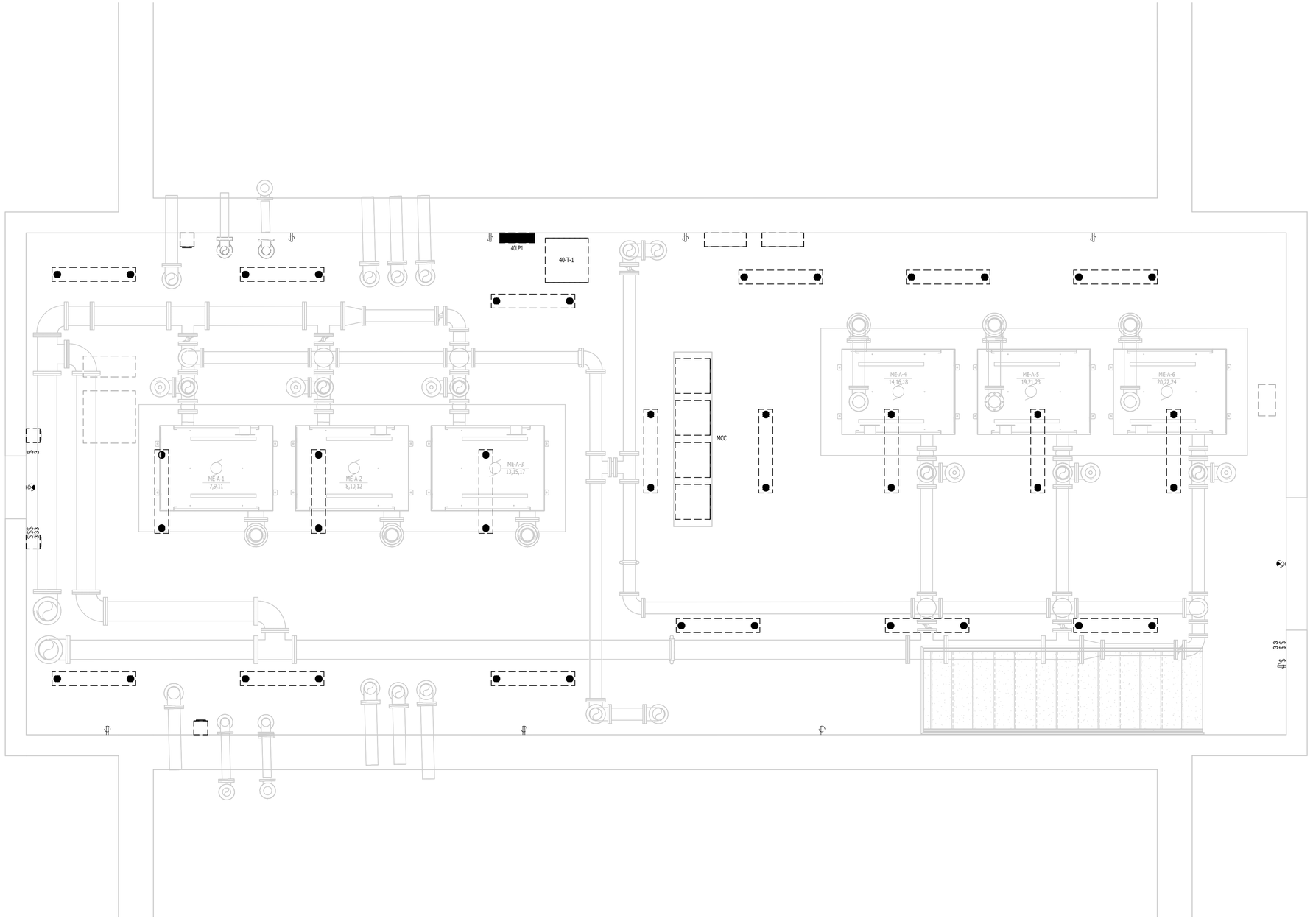
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DEMO PLAN - BLOWER BUILDING LOWER LEVEL

SHEET 7.08

GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT SHOWN IN DARK/DASHED (BLACK) LINES SHALL BE DEMOLISHED, ALL EQUIPMENT SHOWN IN LIGHT (GRAY) LINES IS EXISTING EQUIPMENT TO REMAIN AS IS. UNLESS NOTED OTHERWISE.



1 ELECTRICAL DEMO PLAN BLOWER BUILDING UPPER LEVEL

N

0 1'-6" 3' 6'

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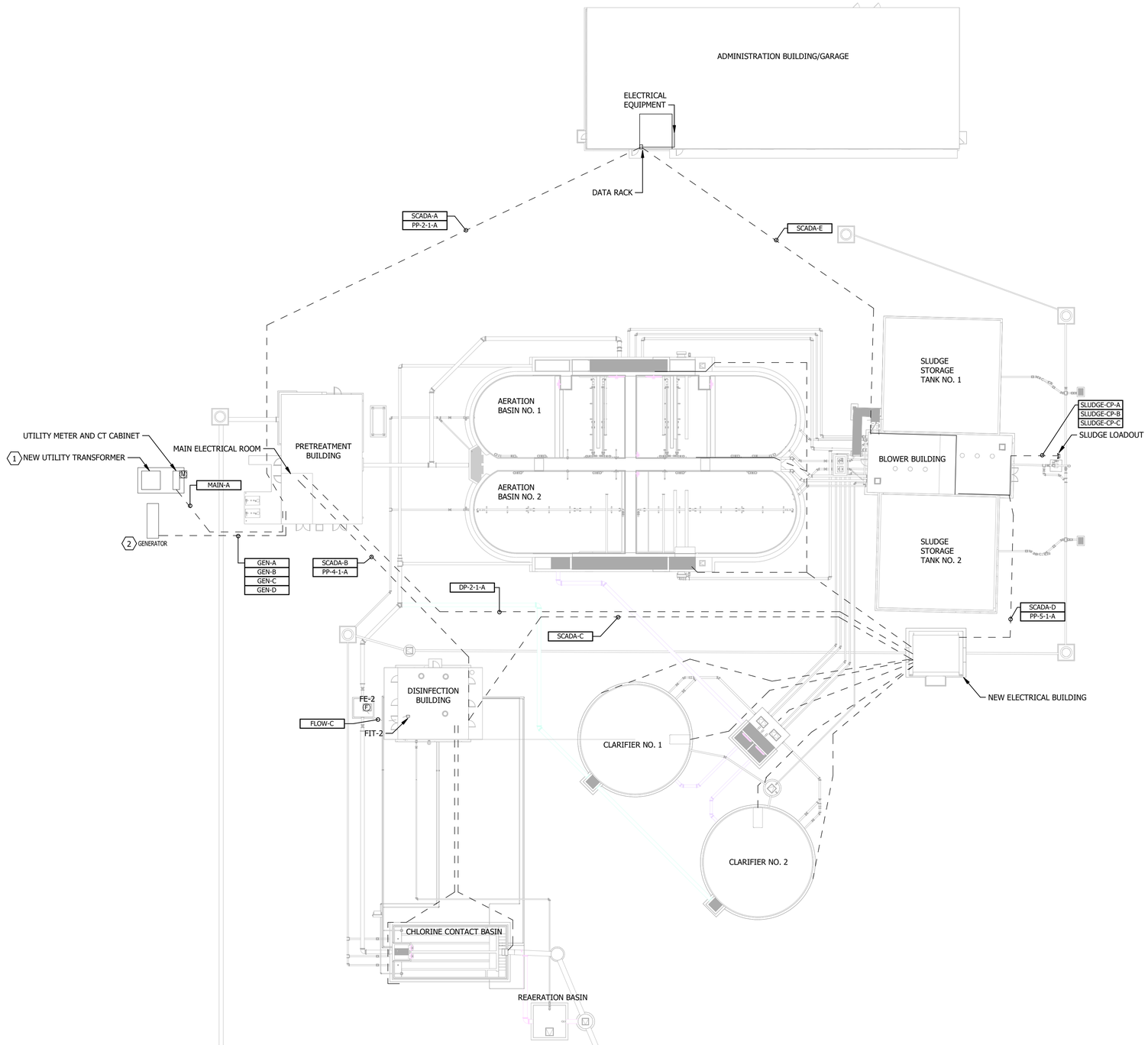
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DEMO PLAN - BLOWER BUILDING UPPER LEVEL

SHEET 7.09



GENERAL NOTES:

1. YARD CONDUIT ROUTING AND EQUIPMENT LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL CONFIRM LOCATION OF CONDUITS AND EQUIPMENT PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH OTHER DISCIPLINES.

(X) KEYED NOTES:

1. CONTRACTOR TO COORDINATE FINAL LOCATION OF THE TRANSFORMER WITH THE UTILITY. PROVIDE TRANSFORMER PAD AND EQUIPMENT AS PER UTILITY REQUIREMENTS.
2. COORDINATE FINAL LOCATION OF THE BACKUP GENERATOR IN FIELD. PROVIDE GENERATOR PAD AS PER MANUFACTURER REQUIREMENTS.

1 ELECTRICAL SITE PLAN

N

0 7.5' 25' 50'

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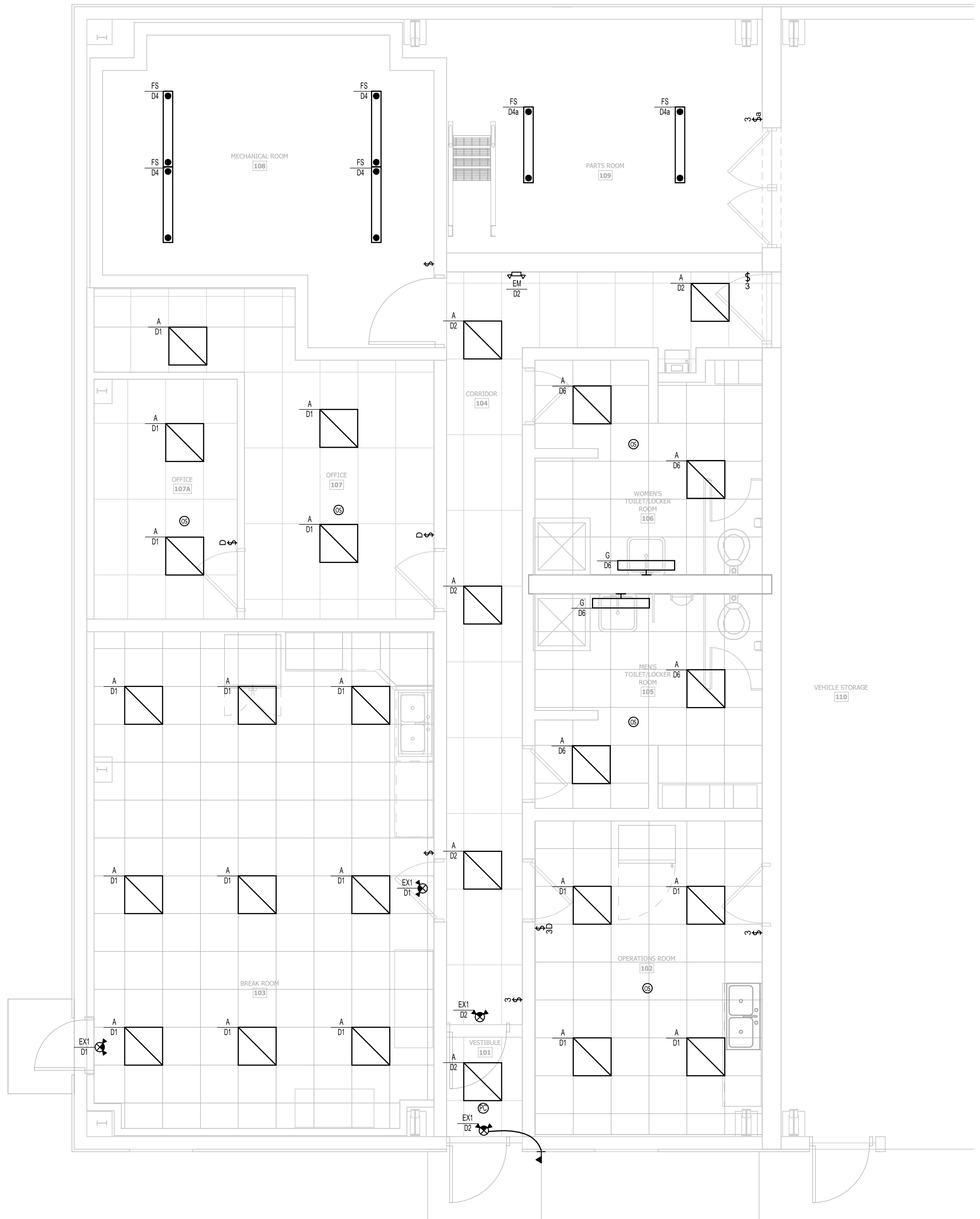
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL SITE PLAN

SHEET 7.10

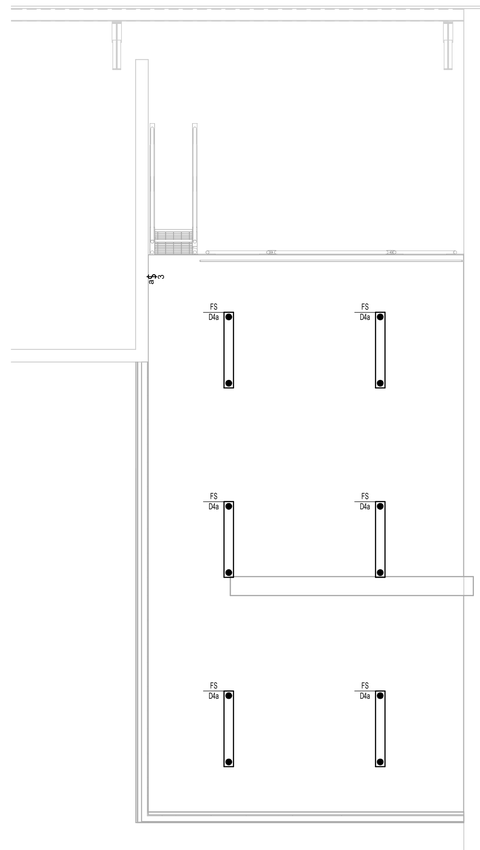
GENERAL NOTES:

1. ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL SHOWN WITH LIGHT (GRAY) LINES REPRESENT EXISTING TO REMAIN. UNLESS NOTED OTHERWISE.



1 LIGHTING PLAN ADMINISTRATION BUILDING LEVEL 1

0 2' 4' 8'



2 LIGHTING PLAN ADMINISTRATION BUILDING MEZZANINE

0 2' 4' 8'

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
LIGHTING PLAN - ADMINISTRATION BUILDING

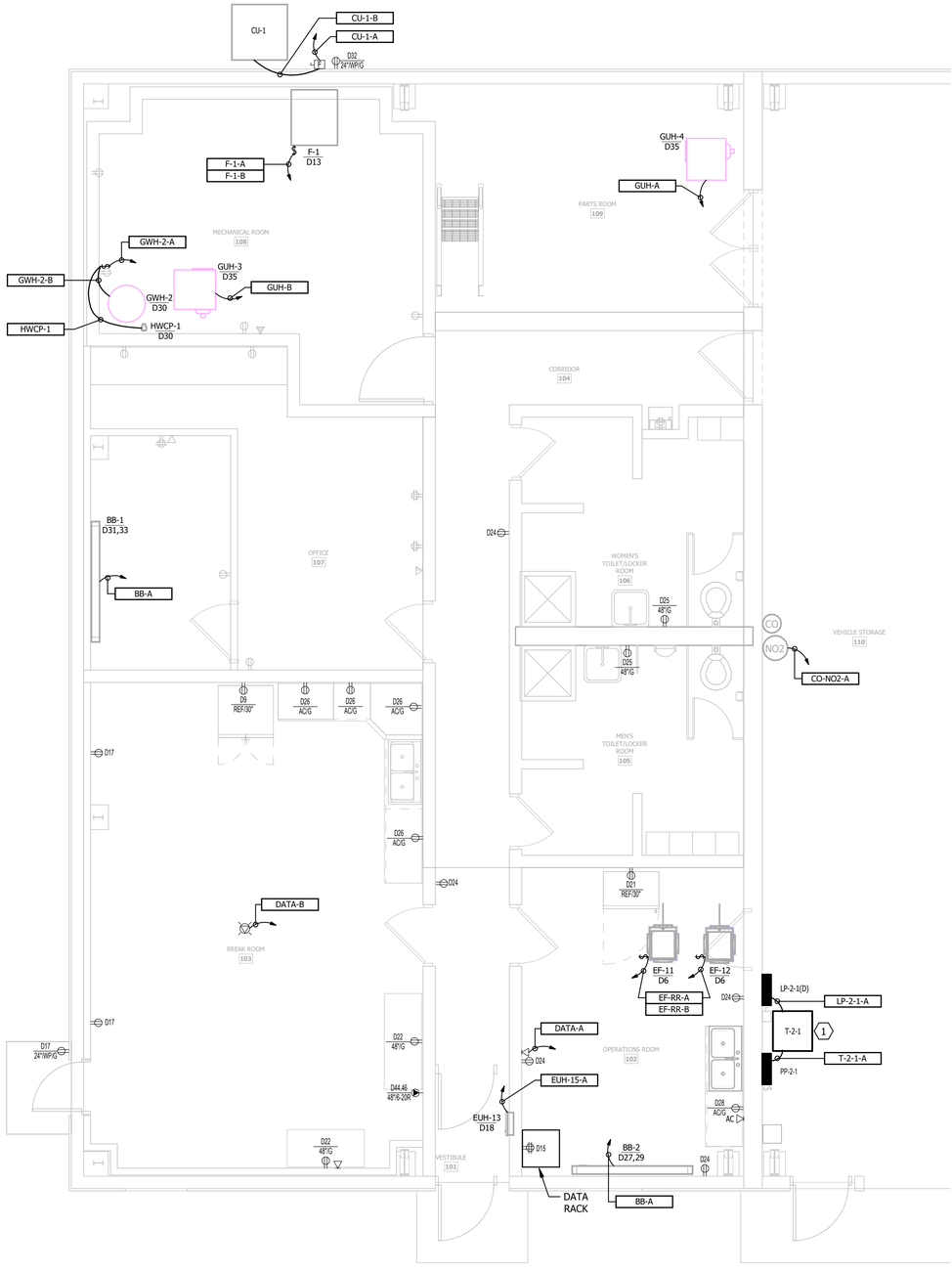
SHEET 7.11

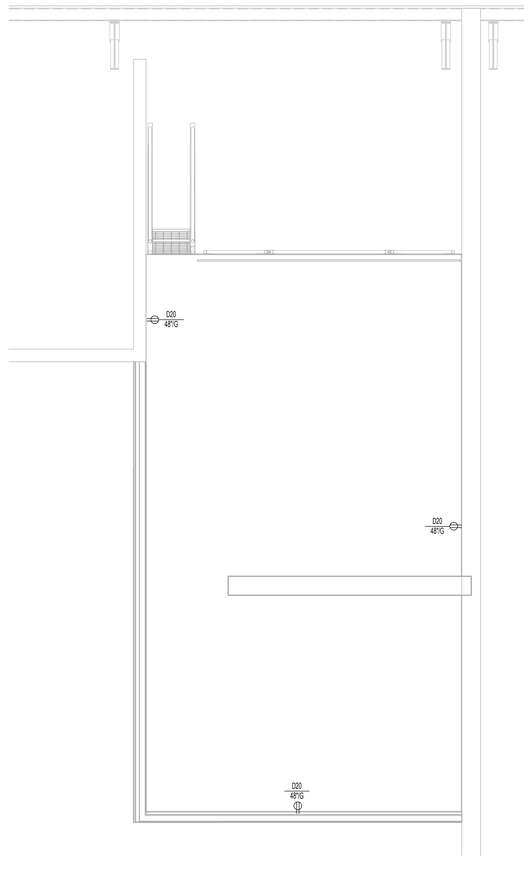
GENERAL NOTES:

1. ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL SHOWN WITH LIGHT (GRAY) LINES REPRESENT EXISTING TO REMAIN. UNLESS NOTED OTHERWISE.

(X) KEYED NOTES:

1. TRANSFORMER SHALL BE WALL MOUNTED.





N 1 POWER & SYSTEMS PLAN ADMINISTRATION BUILDING LEVEL 1

0 2' 4' 8'

N 2 POWER & SYSTEMS PLAN ADMINISTRATION BUILDING MEZZANINE

0 2' 4' 8'

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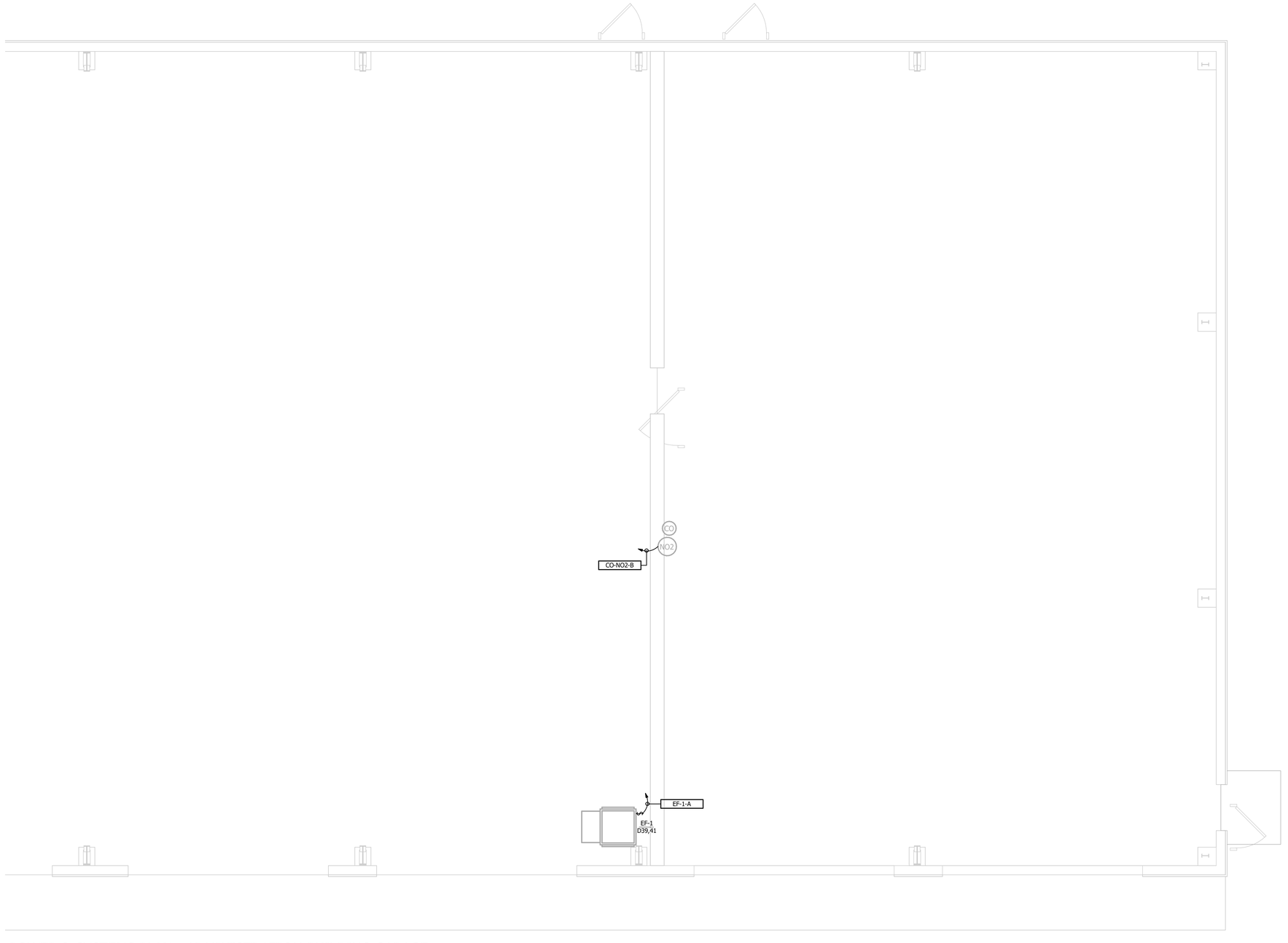
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
POWER & SYSTEMS PLAN - ADMINISTRATION BUILDING

SHEET 7.12



N 1 POWER & SYSTEMS PLAN - ADMINISTRATION BUILDING GARAGE

0 2' 4' 8'

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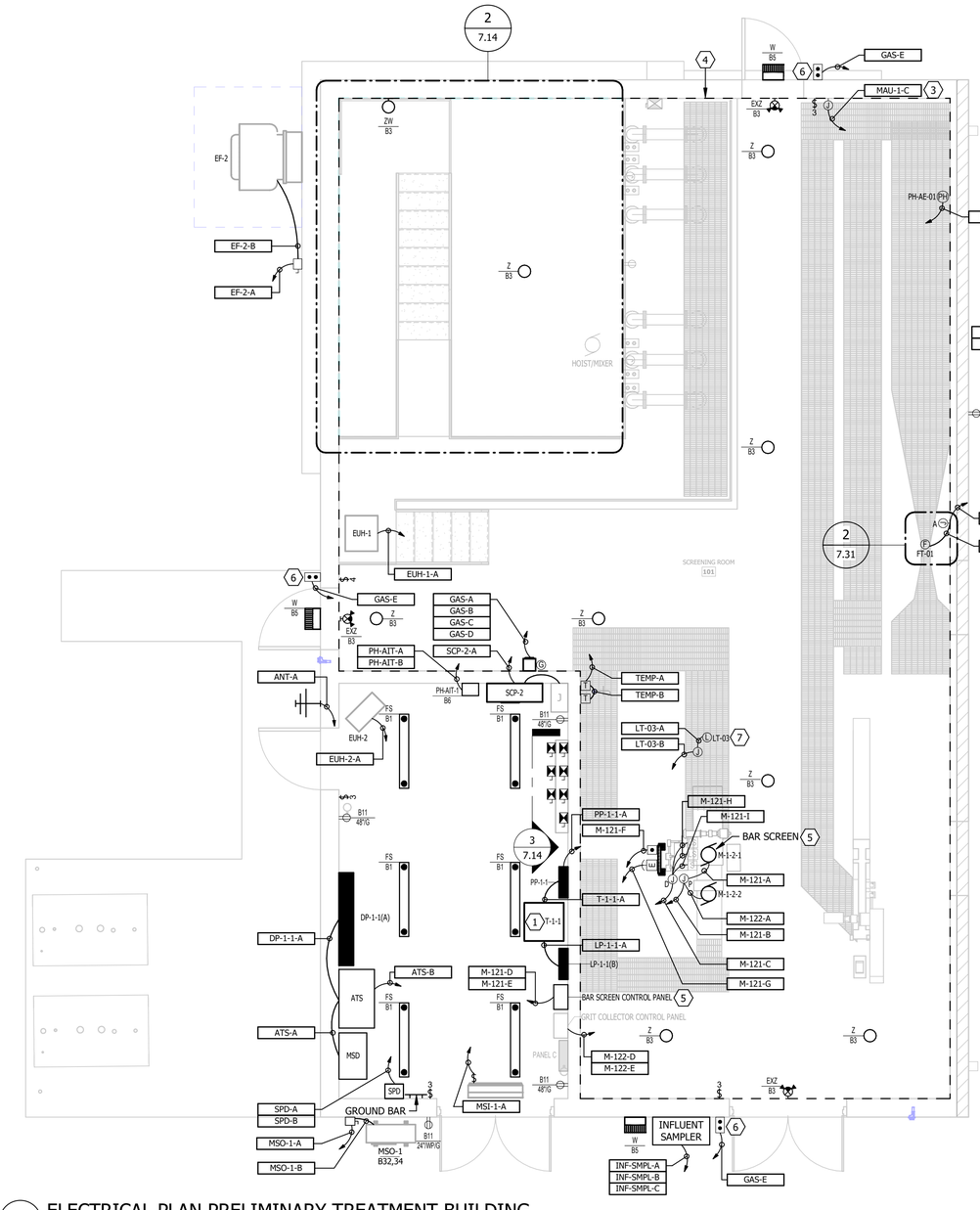
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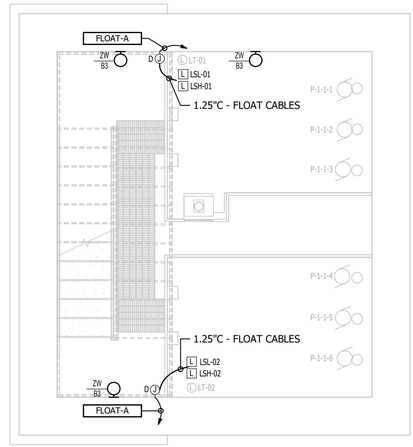
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
POWER & SYSTEMS PLAN - ADMINISTRATION BUILDING GARAGE

SHEET 7.13



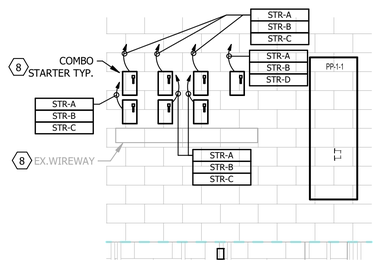
1 ELECTRICAL PLAN PRELIMINARY TREATMENT BUILDING

N 0 2' 4' 8'



2 ELECTRICAL PLAN PRELIMINARY TREATMENT BASEMENT

N 0 2' 4' 8'



3 STARTER ELEVATION

0 2' 4' 8'

GENERAL NOTES:

1. ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL WORK SHOWN WITH LIGHT (GRAY) LINES REPRESENTS EXISTING EQUIPMENT TO REMAIN AS IS, UNLESS NOTED OTHERWISE.
2. ALL INSTALLATIONS IN CLASS 1, DIVISION I AND CLASS 1, DIVISION II LOCATIONS SHALL MEET THE NEC INSTALLATION AND EQUIPMENT RATING REQUIREMENTS FOR A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION.
3. COORDINATE EXACT LIGHT FIXTURE LOCATION IN THE FIELD TO AVOID CONFLICT WITH OTHER DISCIPLINES.
3. ALL BUILDING MOUNTED LIGHT FIXTURES SHALL BE MOUNTED AT 9'-0" FROM LEVEL GRADE, UNLESS NOTED OTHERWISE.
4. REUSE EXISTING CONDUITS FOR NEW LIGHTING. PROVIDE NEW CONDUIT SEALING FITTINGS AND SEALING COMPOUND AS REQUIRED FOR THE CLASSIFIED LOCATION.

KEYED NOTES:

X

1. TRANSFORMER SHALL BE TRAPEZE MOUNTED, REFER TO MOUNTING DETAIL ON SHEET 7.32.
2. REUSE EXISTING CONDUIT BETWEEN SENSOR AND ANALYZER, PROVIDE NEW SEALING FITTING AND COMPOUND AS REQUIRED.
3. PROVIDE 120VAC INTERPOSING RELAY. ENERGIZE RELAY COIL FROM SWITCHED LIGHTING CIRCUIT. CONNECT NORMALLY OPEN DRY CONTACT TO MAU CONTROL PANEL TO PROVIDE "OCCUPANCY" SIGNAL.
4. WITH SPECIFIED VENTILATION THE AREA IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. THE AREA 3' FROM VENT IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
5. BAR SCREEN EQUIPMENT SUPPLIED BY PACKAGE SYSTEM SUPPLIER AND INSTALLED UNDER DIVISION 26. PRIOR TO INSTALLATION CONTRACTOR TO CONFIRM EXACT NUMBER OF EQUIPMENT WITH PACKAGE SYSTEM SUPPLIER. PROVIDE ADDITIONAL WIRES AND CONDUIT IF NECESSARY WITHOUT ADDITIONAL COST.
6. GAS DETECTION GO, NO-GO INDICATION STATION.
7. COORDINATE THE EXACT LOCATION OF INFLUENT RADAR LEVEL TRANSMITTER IN FIELD.
8. RECONNECT EXISTING MOTOR FIELD WIRING TO NEW COMBINATION STARTERS. PROVIDE NEW CONDUIT AND WIRING BETWEEN EXISTING WIREWAY AND NEW COMBINATION STARTERS AS REQUIRED. THIS APPLIES TO THE FOLLOWING EQUIPMENT:
   A. RAW WATER PUMP 1 (P-1-1-1)
   B. RAW WATER PUMP 2 (P-1-1-2)
   C. RAW WATER PUMP 3 (P-1-1-3)
   D. RAW WATER PUMP 4 (P-1-1-4)
   E. RAW WATER PUMP 5 (P-1-1-5)
   F. RAW WATER PUMP 6 (P-1-1-6)
   G. GRIT COLLECTOR MOTOR (M-1-3-1)

   REFER TO ONE-LINE FOR MORE INFORMATION.

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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL PLAN - PRELIMINARY TREATMENT BUILDING

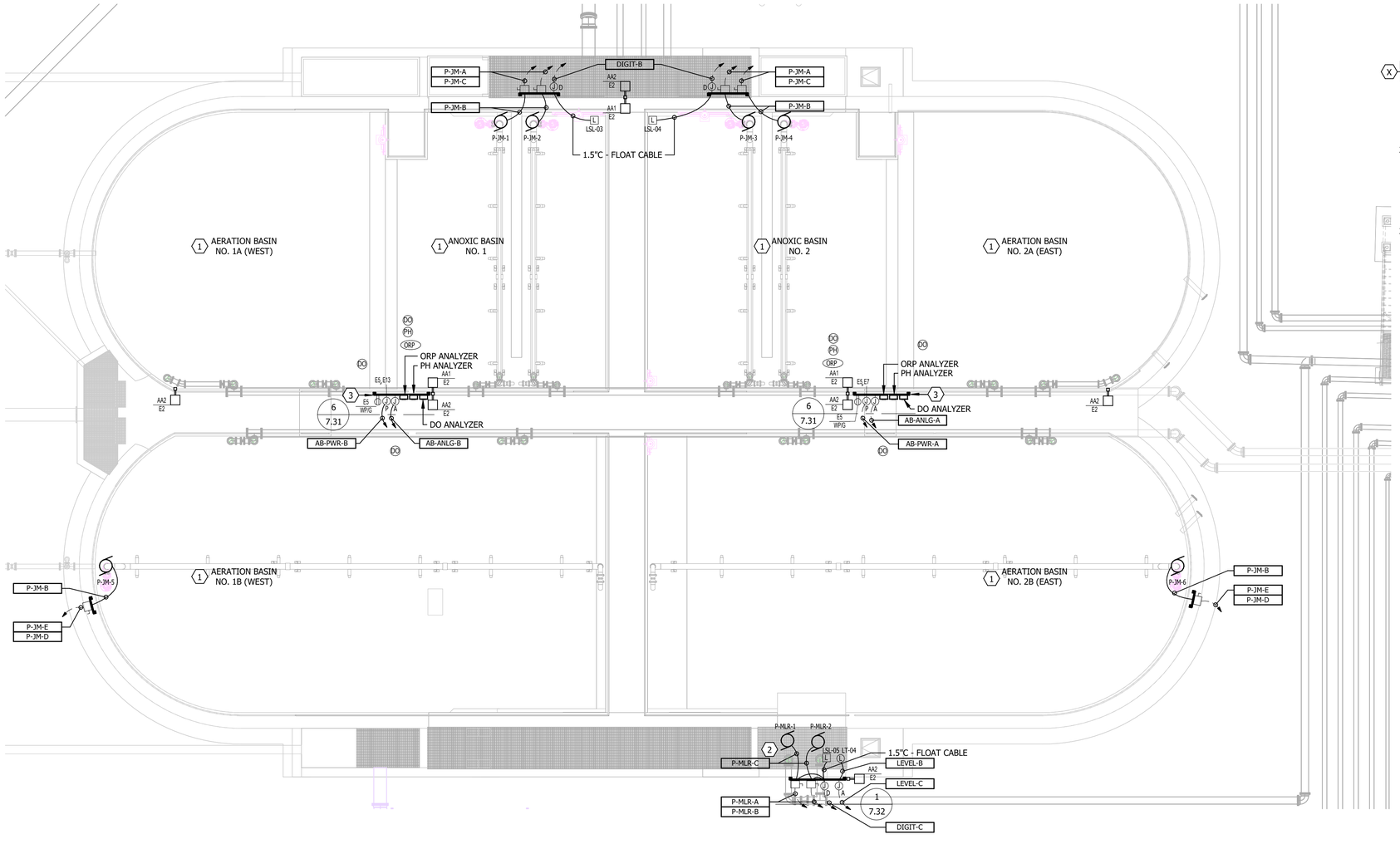
SHEET 7.14

GENERAL NOTES:

1. ALL INSTALLATIONS IN CLASS 1, DIVISION I AND CLASS 1, DIVISION II LOCATIONS SHALL MEET THE NEC INSTALLATION AND EQUIPMENT RATING REQUIREMENTS FOR A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION.
2. EQUIPMENT CABLES AND HANGING HARDWARE LOCATED WITHIN TANK ARE TO BE MOUNTED ACCESSIBLE FROM TANK EDGE/HATCH. CONDUITS ENTERING THE TANK SHALL BE MOUNTED IN SUCH A MANNER THE CONDUIT OPENING/END IS EASILY ACCESSIBLE FROM THE TANK EDGE/HATCH AND REACHABLE WITHOUT ENTERING THE TANK.
3. EQUIPMENT LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FINAL LOCATIONS OF ANALYZER SENSORS AND TRANSMITTERS IN THE FIELD WITH THE PROCESS ENGINEER.
4. ROUTE CONDUITS ALONG AND SECURE TO THE BASIN WALL OR TO THE BASIN-SIDE EDGE OF THE CATWALK STRUCTURE. DO NOT SUPPORT CONDUITS FROM HANDRAILS OR ROUTE CONDUITS ACROSS WALKING SURFACES OR ACCESS PATHS. MAINTAIN UNOBSTRUCTED ACCESS AND ELIMINATE TRIPPING HAZARDS.

(X) KEYED NOTES:

1. THE TANK INTERIOR IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. THE AREA 18" ABOVE TANK WALLS TO GRADE AND 18" FROM EDGES OF THE WALL IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. THE AREA 18" ABOVE TANK WALLS TO GRADE EXTENDING 18" TO 10' HORIZONTALLY FROM THE TANK WALLS IS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
2. MIXED LIQUOR PIT INTERIOR IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA 18" ABOVE THE HATCH AND WITHIN 3' OF THE HATCH EDGE IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. AREA 3' FROM VENT IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA BETWEEN 3' AND 5' FROM VENT OPENING IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
3. DIVISION 26 SHALL PROVIDE 316SS UNISTRUT SUPPORT FOR MOUNTING PROCESS INSTRUMENTATION. MOUNT TRANSMITTERS AT A READILY VISIBLE AND ACCESSIBLE HEIGHT FROM ADJACENT WALKWAY. ANALYZER TRANSMITTERS SHALL BE PLACED INSIDE WEATHER PROTECTIVE ENCLOSURE, SEE DETAIL ON SHEET 7.31. FOR CLARITY NOT ALL EQUIPMENT WIRING IS SHOWN ON PLAN.
   ORP ANALYZER TRANSMITTER:
   A. 0.75"C-MANUFACTURER CABLE TO EACH SENSOR.
   B. 0.75"C-2#12,1#12G TO POWER J-BOX.
   C. 0.75"C-1-2/C#16 SHIELDED TO ANALOG J-BOX.
   PH ANALYZER TRANSMITTER:
   A. 0.75"C-MANUFACTURER CABLE TO EACH SENSOR.
   B. 0.75"C-2#12,1#12G TO POWER J-BOX.
   C. 0.75"C-1-2/C#16 SHIELDED TO ANALOG J-BOX.
   DO ANALYZER TRANSMITTER:
   A. 0.75"C-MANUFACTURER CABLE TO EACH SENSOR.
   B. 0.75"C-2#12,1#12G TO POWER J-BOX.
   C. 0.75"C-3-2/C#16 SHIELDED TO ANALOG J-BOX.



N 1 ELECTRICAL PLAN - AERATION BASIN

0 4' 8' 16'

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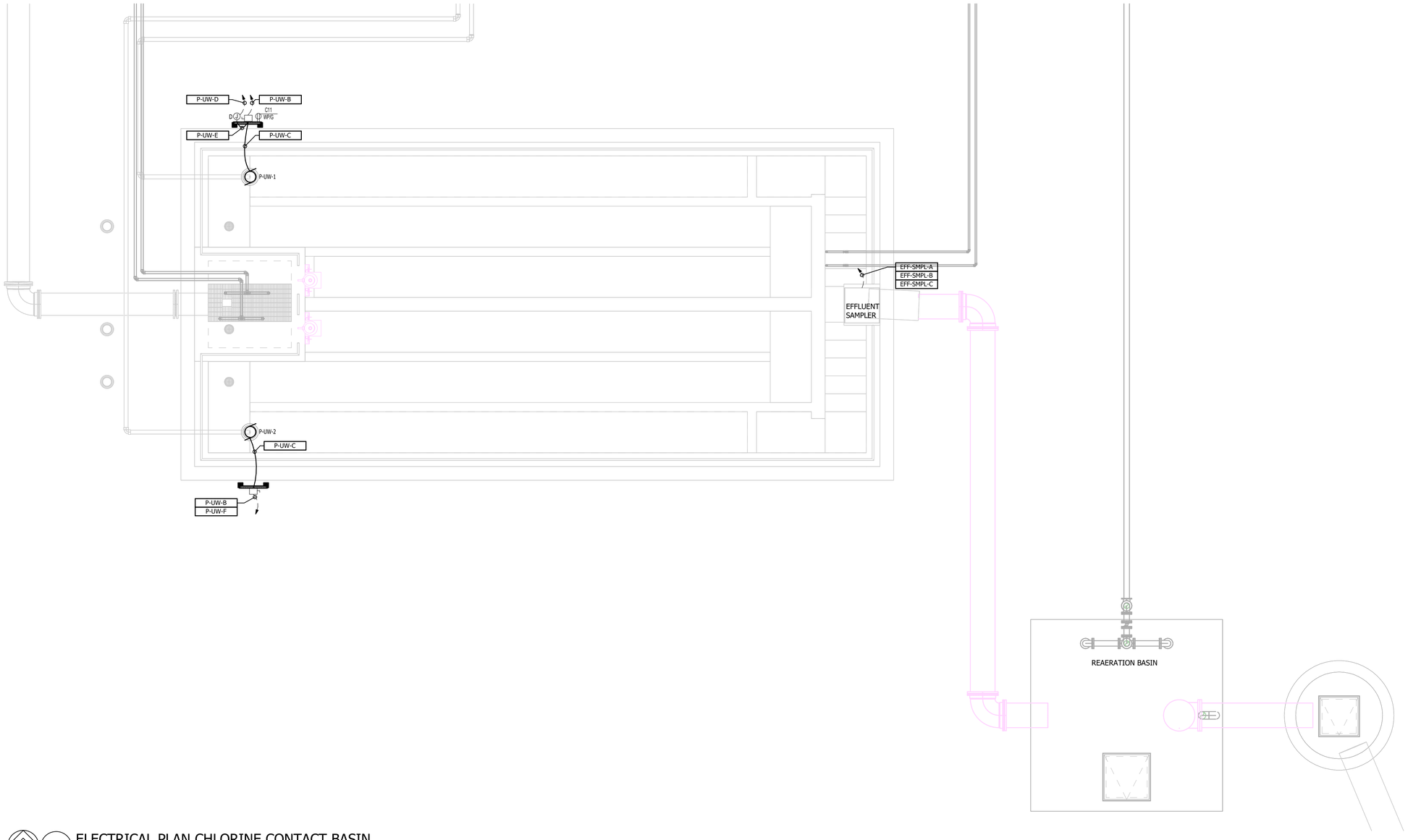
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL PLAN - AERATION BASIN & SECONDARY CLARIFIER

SHEET 7.15

GENERAL NOTES:

1. PUMP CABLES AND MOUNTING HARDWARE LOCATED WITHIN TANK ARE TO BE MOUNTED ACCESSIBLE FROM TANK EDGE OF THE TANK. CONDUITS ENTERING THE TANK SHALL BE MOUNTED IN SUCH A MANNER THE CONDUIT OPENING/END IS EASILY ACCESSIBLE FROM THE TANK EDGE AND REACHABLE WITHOUT ENTERING THE TANK.



N 1 ELECTRICAL PLAN CHLORINE CONTACT BASIN

0 2' 4' 8'

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ELECTRICAL PLAN - CHLORINE CONTACT BASIN

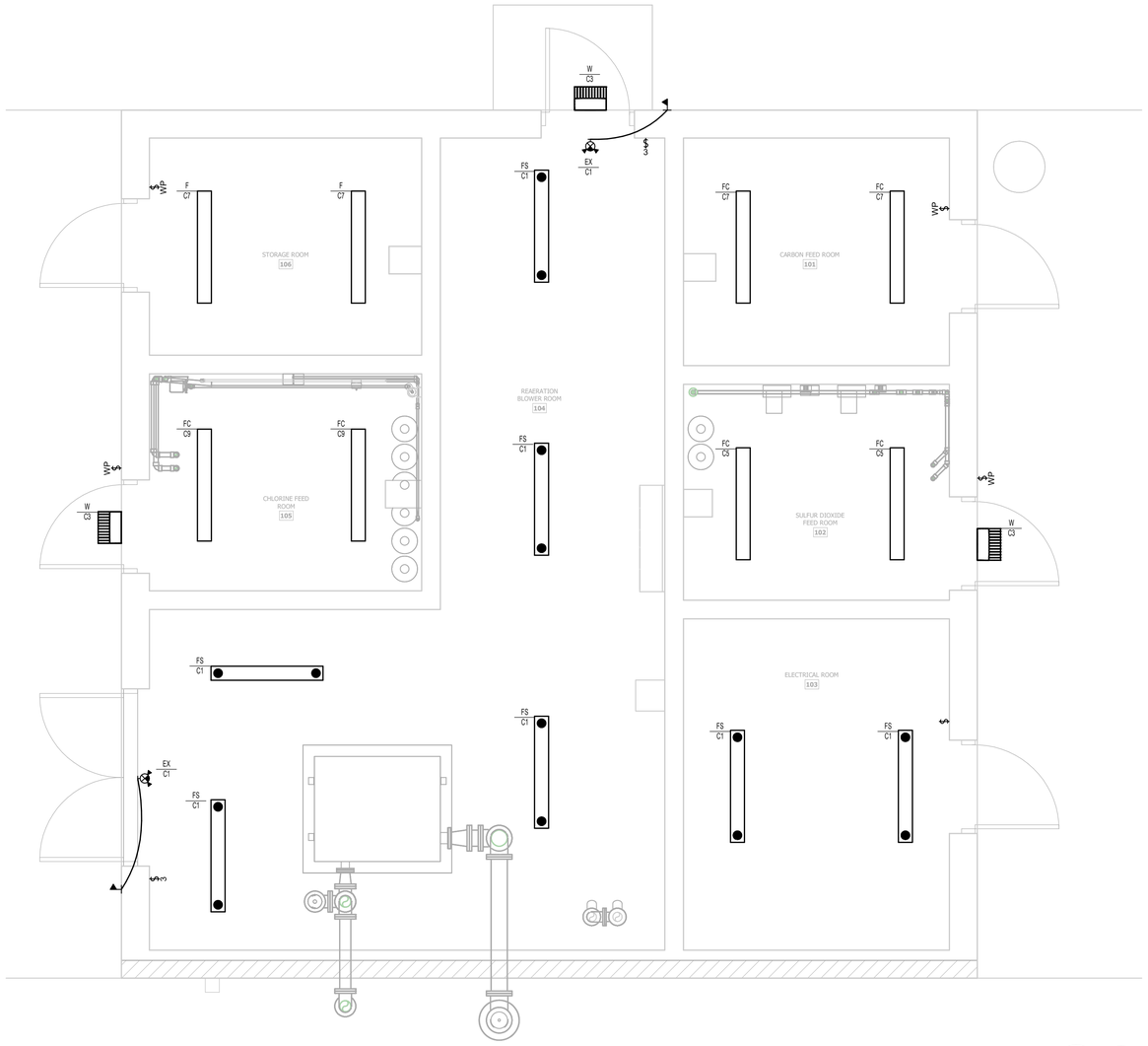
SHEET 7.16

GENERAL NOTES:

1. COORDINATE EXACT LIGHT FIXTURE LOCATION IN THE FIELD TO AVOID CONFLICT WITH OTHER DISCIPLINES.
2. ALL WALL MOUNTED LIGHT FIXTURES SHALL BE MOUNTED AT 9'-0" FROM LEVEL GRADE, UNLESS NOTED OTHERWISE.
4. ALL SUSPENDED LIGHT FIXTURES SHALL BE MOUNTED AT 9'-0" AFF, UNLESS NOTED OTHERWISE.

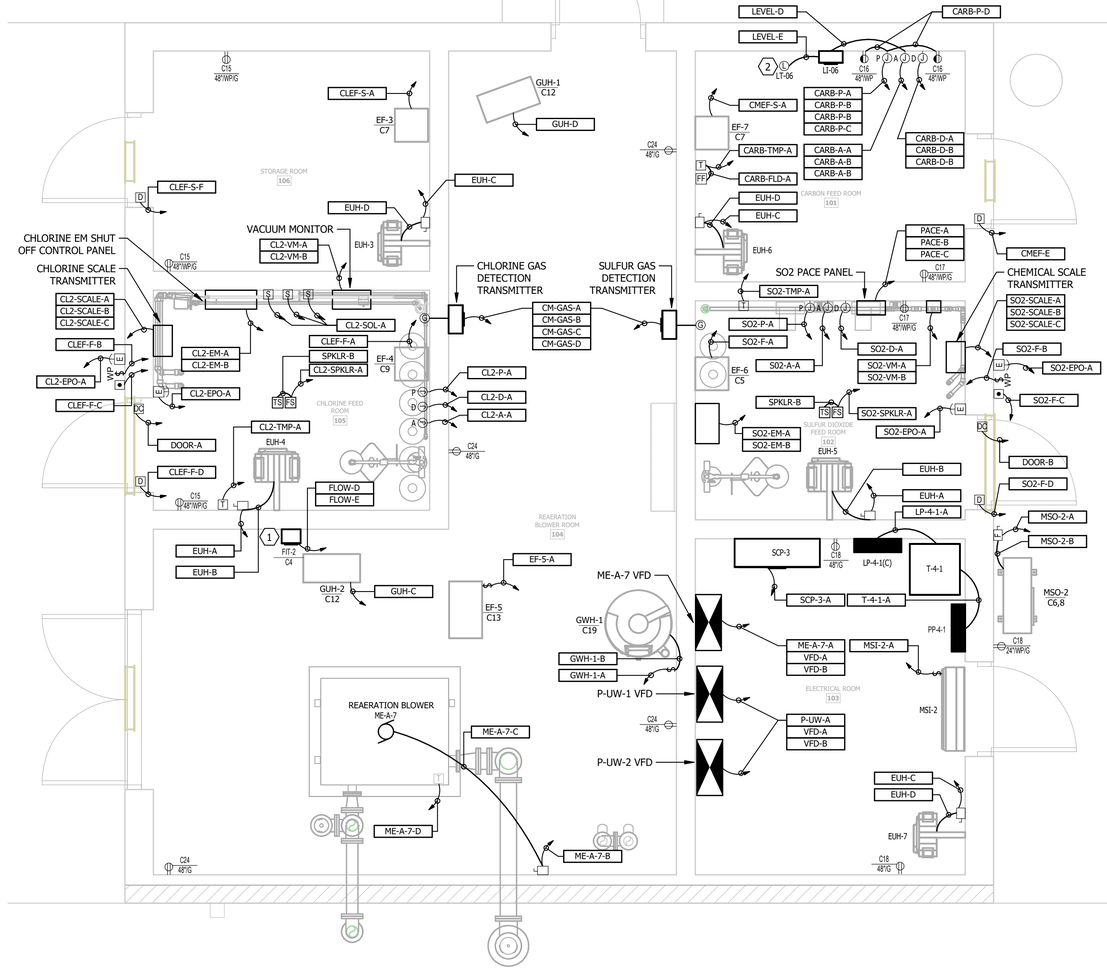
KEYED NOTES:

X
1. REUSE EXISTING CONDUIT TO METER VAULT FOR FLOW METER CABLE.
2. RADAR LEVEL TRANSMITTER TO BE MOUNTED ABOVE THE CHEMICAL TANK. REFER TO DETAIL SHEET 7.31 FOR MOUNTING INFORMATION.



1 LIGHTING PLAN DISINFECTION BUILDING

0 1'-6" 3' 6'



2 POWER & SYSTEMS PLAN DISINFECTION BUILDING

0 1'-6" 3' 6'

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ELECTRICAL PLAN - DISINFECTION BUILDING

SHEET 7.17

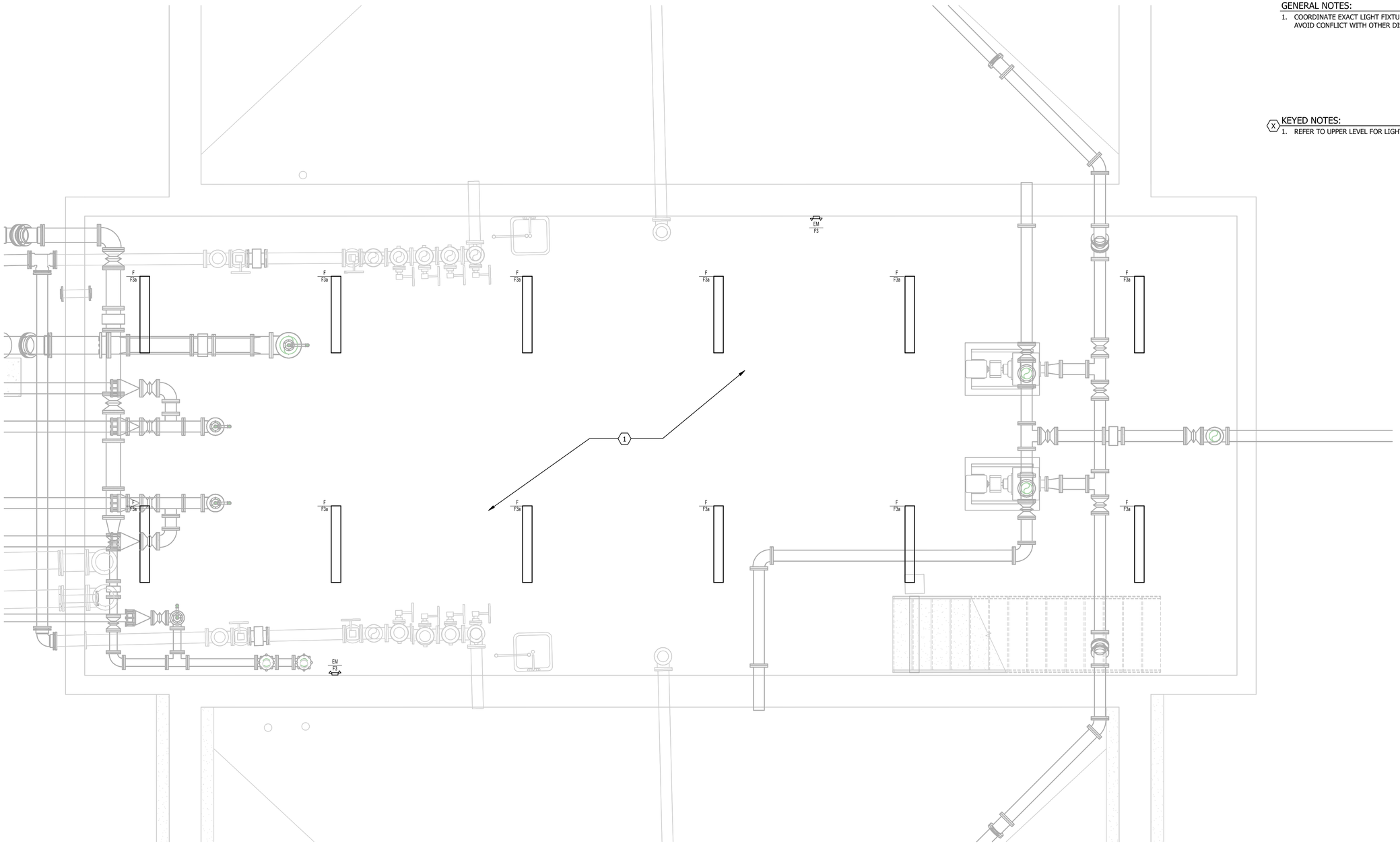
GENERAL NOTES:

1. COORDINATE EXACT LIGHT FIXTURE LOCATION IN THE FIELD TO AVOID CONFLICT WITH OTHER DISCIPLINES.

KEYED NOTES:

X

1. REFER TO UPPER LEVEL FOR LIGHT SWITCH LOCATION.



N 1 ELECTRICAL PLAN BLOWER BUILDING LOWER LEVEL

0 1'-6" 3' 6'

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
LIGHTING PLAN - BLOWER BUILDING LOWER LEVEL

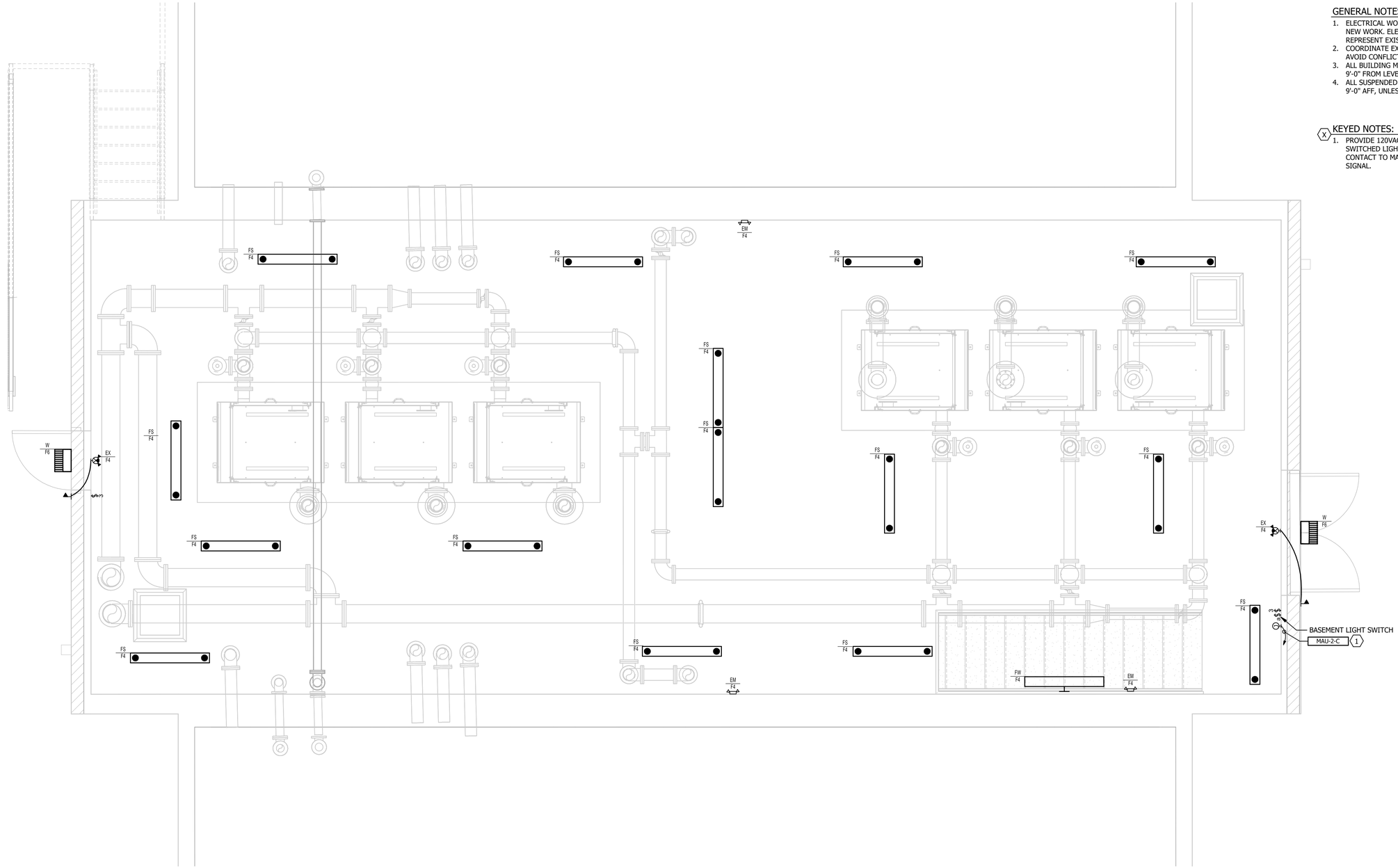
SHEET
7.18

GENERAL NOTES:

1. ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL SHOWN WITH LIGHT (GRAY) LINES REPRESENT EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.
2. COORDINATE EXACT LIGHT FIXTURE LOCATION IN THE FIELD TO AVOID CONFLICT WITH OTHER DISCIPLINES.
3. ALL BUILDING MOUNTED LIGHT FIXTURES SHALL BE MOUNTED AT 9'-0" FROM LEVEL GRADE, UNLESS NOTED OTHERWISE.
4. ALL SUSPENDED LIGHT FIXTURES SHALL BE MOUNTED AT 9'-0" AFF, UNLESS NOTED OTHERWISE.

KEYED NOTES:

(X)
1. PROVIDE 120VAC INTERPOSING RELAY. ENERGIZE RELAY COIL FROM SWITCHED LIGHTING CIRCUIT. CONNECT NORMALLY OPEN DRY CONTACT TO MAU CONTROL PANEL TO PROVIDE "OCCUPANCY" SIGNAL.



N 1 LIGHTING PLAN BLOWER BUILDING UPPER LEVEL

0 1'-6" 3' 6'

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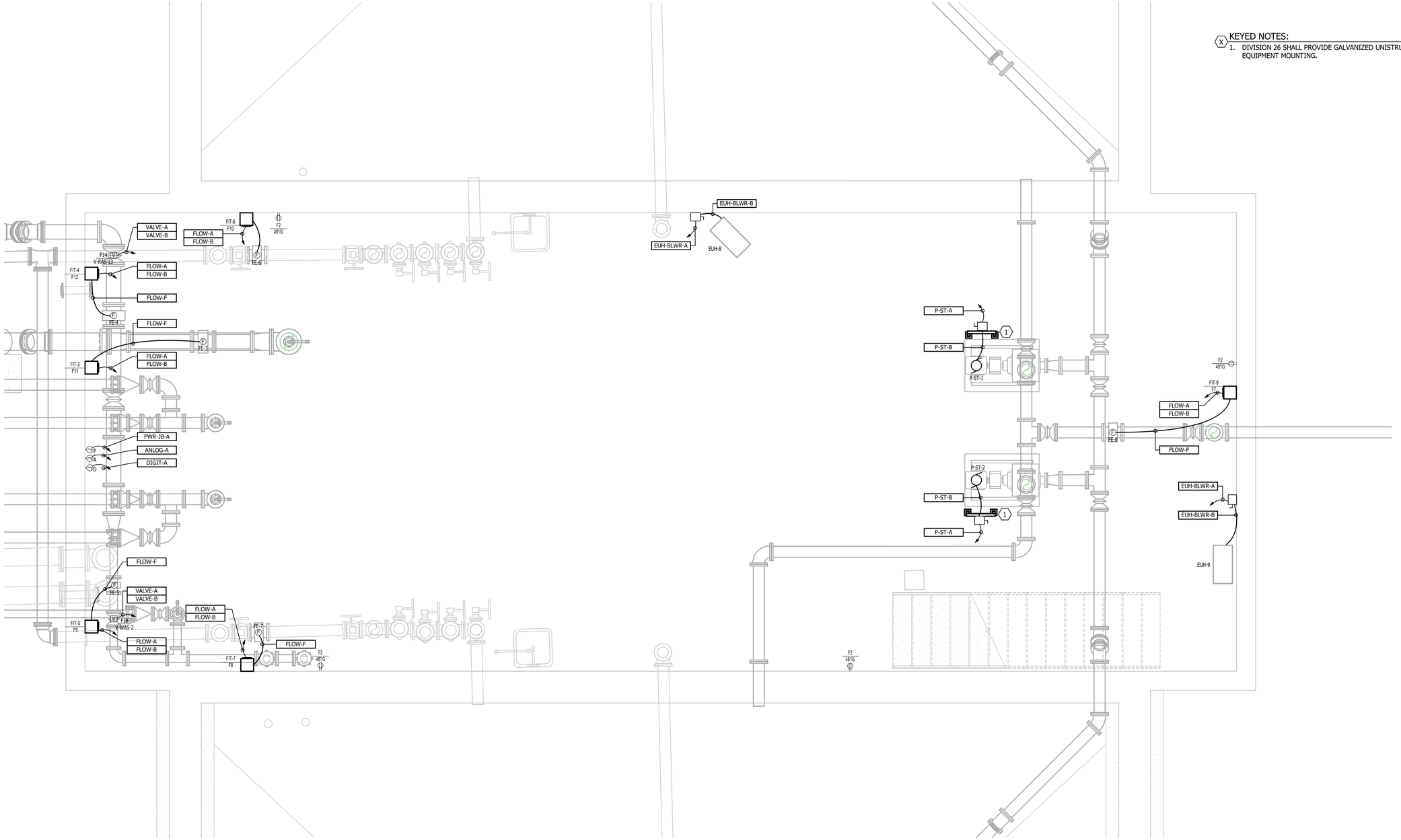
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
LIGHTING PLAN - BLOWER BUILDING UPPER LEVEL

SHEET 7.19

KEYED NOTES:

1. DIVISION 26 SHALL PROVIDE GALVANIZED UNISTRUT SUPPORT FOR EQUIPMENT MOUNTING.



N 1 POWER & SYSTEMS PLAN BLOWER BUILDING LOWER LEVEL

0 1'-6" 3' 6'

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
POWER & SYSTEMS PLAN - BLOWER BUILDING LOWER LEVEL

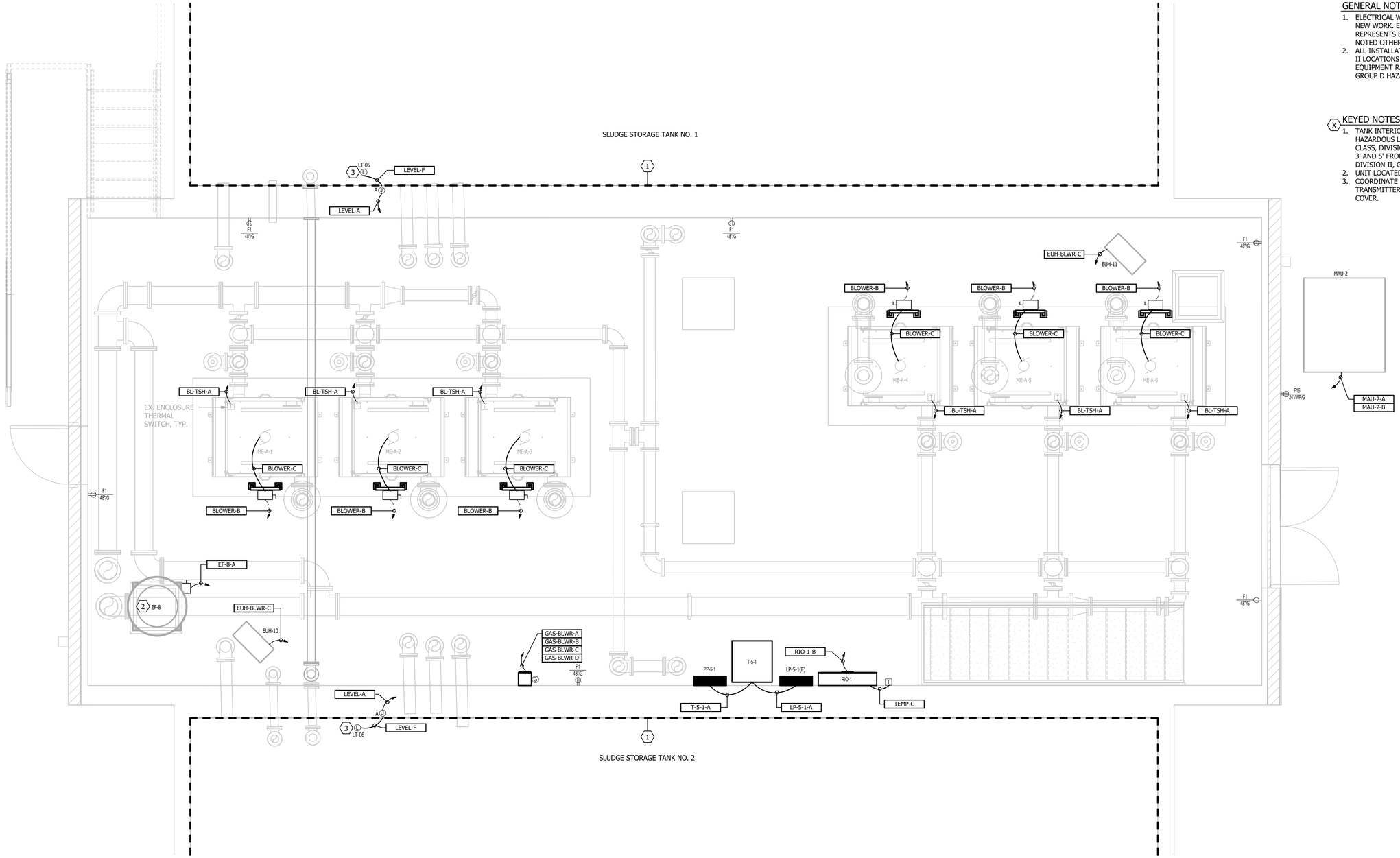
SHEET 7.20

GENERAL NOTES:

1. ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL WORK SHOWN WITH LIGHT (GRAY) LINES REPRESENTS EXISTING EQUIPMENT TO REMAIN AS IS, UNLESS NOTED OTHERWISE.
2. ALL INSTALLATIONS IN CLASS 1, DIVISION I AND CLASS 1, DIVISION II LOCATIONS SHALL MEET THE NEC INSTALLATION AND EQUIPMENT RATING REQUIREMENTS FOR A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION.

(X) KEYED NOTES:

1. TANK INTERIOR IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA 3' FROM VENT IS CLASSIFIED AS A CLASS, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA BETWEEN 3' AND 5' FROM VENT/OPENING IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
2. UNIT LOCATED ON ROOF.
3. COORDINATE FINAL LOCATION AND MOUNTING OF THE RADAR LEVEL TRANSMITTER WITH THE OPENING PROVIDED IN THE NEW TANK COVER.



1 POWER & SYSTEMS PLAN BLOWER BUILDING UPPER LEVEL

N

0 1'-6" 3' 6'

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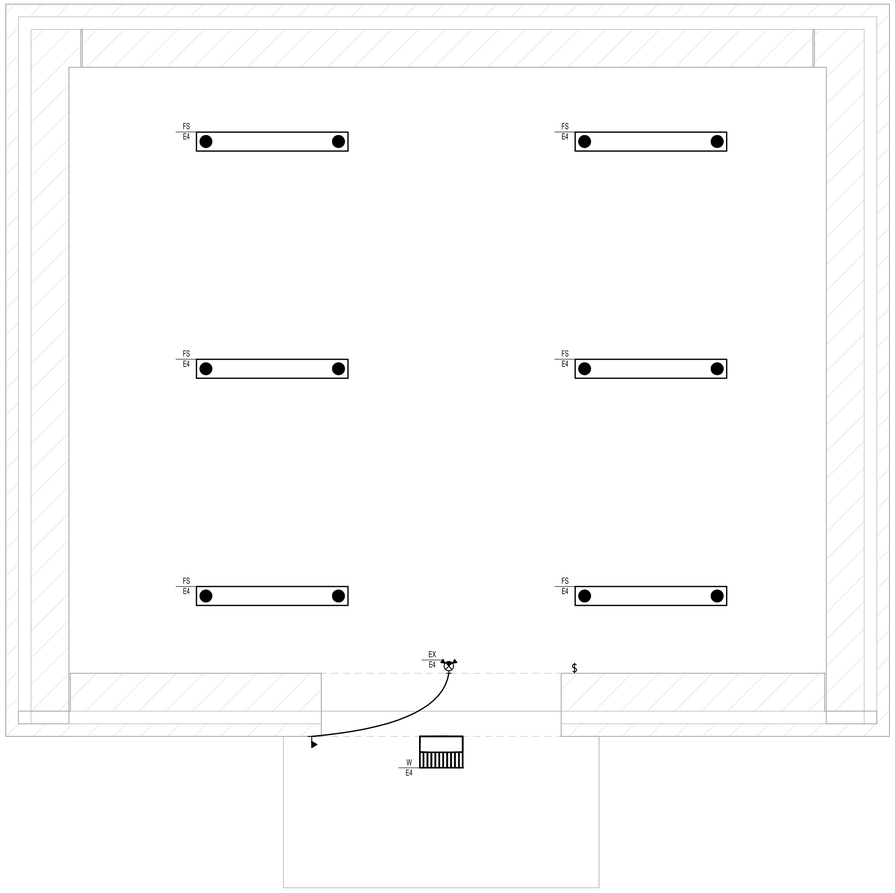
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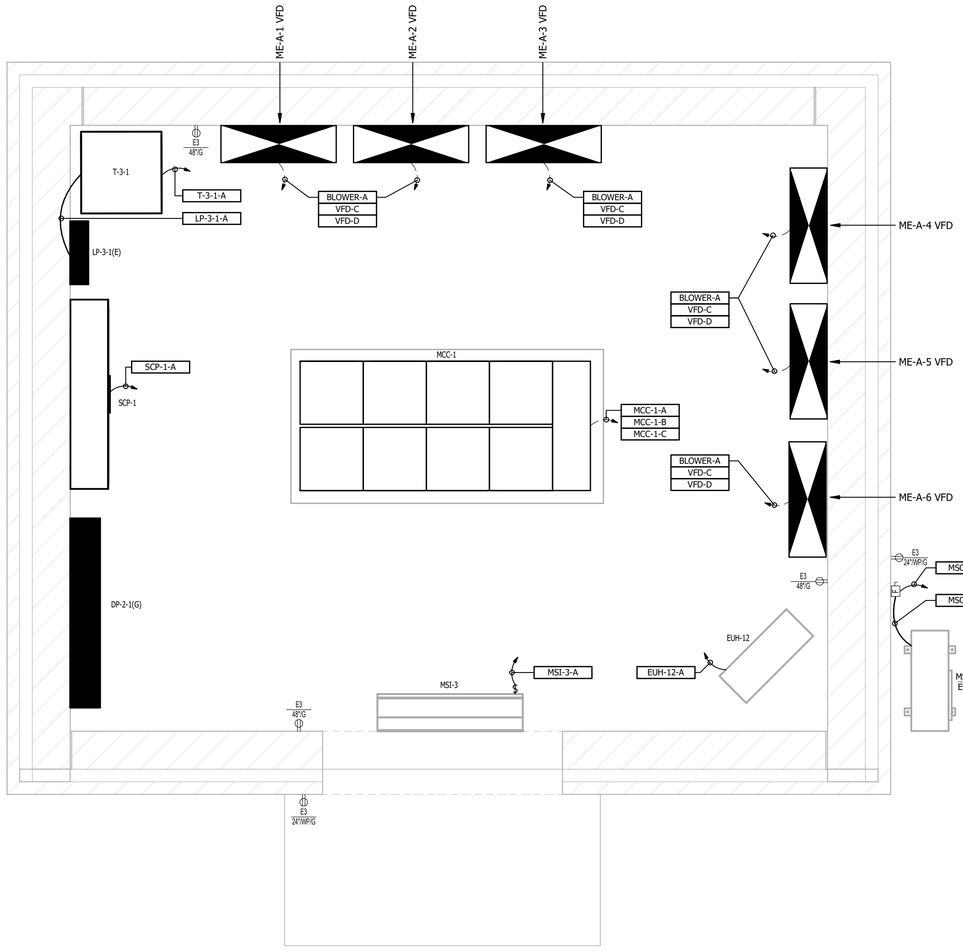
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
POWER & SYSTEMS PLAN - BLOWER BUILDING UPPER LEVEL

SHEET 7.21





N 1 LIGHTING NEW ELECTRICAL BUILDING PLAN

0 1' 2' 4'

N 2 POWER & SYSTEMS NEW ELECTRICAL BUILDING PLAN

0 1' 2' 4'

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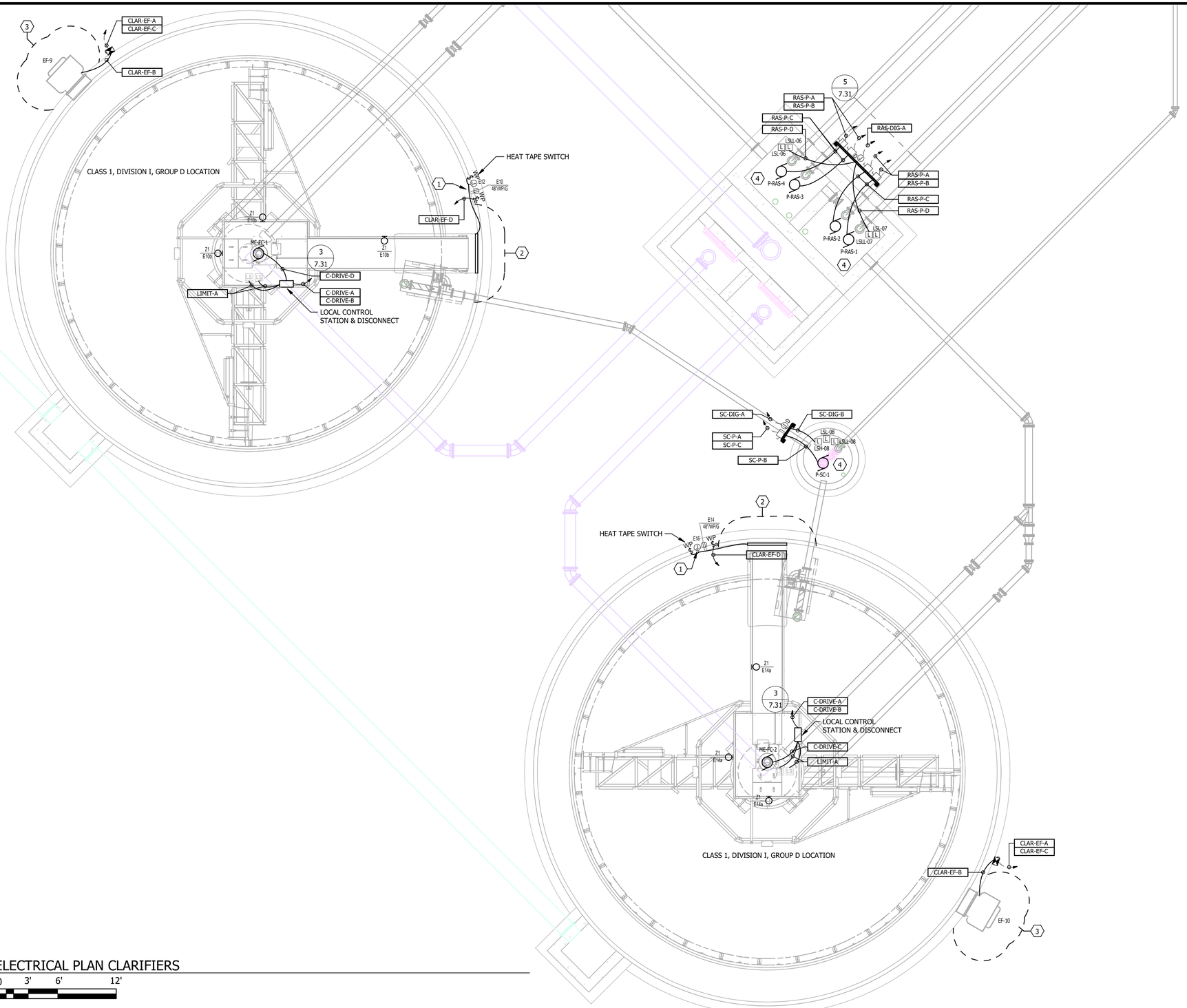
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL PLANS - NEW ELECTRICAL BUILDING

SHEET 7.22



GENERAL NOTES:

1. ALL INSTALLATIONS IN CLASS 1, DIVISION I AND CLASS 1, DIVISION II LOCATIONS SHALL MEET THE NEC INSTALLATION AND EQUIPMENT RATING REQUIREMENTS FOR A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION.
2. EQUIPMENT CABLES AND HANGING HARDWARE LOCATED WITHIN TANK ARE TO BE MOUNTED ACCESSIBLE FROM TANK HATCH. CONDUITS ENTERING THE TANK SHALL BE MOUNTED IN SUCH A MANNER THE CONDUIT OPENING/END IS EASILY ACCESSIBLE FROM THE TANK HATCH AND REACHABLE WITHOUT ENTERING THE TANK.

X KEYED NOTES:

1. PROVIDE SELF REGULATING HEAT TAPE CABLE ON ENTIRE LENGTH OF DOOR FRAME.
2. THE AREA WITHIN 3' FROM DOOR OPENINGS IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
3. THE AREA 3' FROM EXHAUST IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA BETWEEN 3' AND 5' FROM EXHAUST IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
4. WETWELL INTERIOR IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA 18" ABOVE THE HATCH AND WITHIN 3' OF THE HATCH EDGE IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. AREA 3' FROM VENT IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA BETWEEN 3' AND 5' FROM VENT OPENING IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.

N 1 ELECTRICAL PLAN CLARIFIERS

0 3' 6' 12'

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ELECTRICAL PLAN - CLARIFIERS

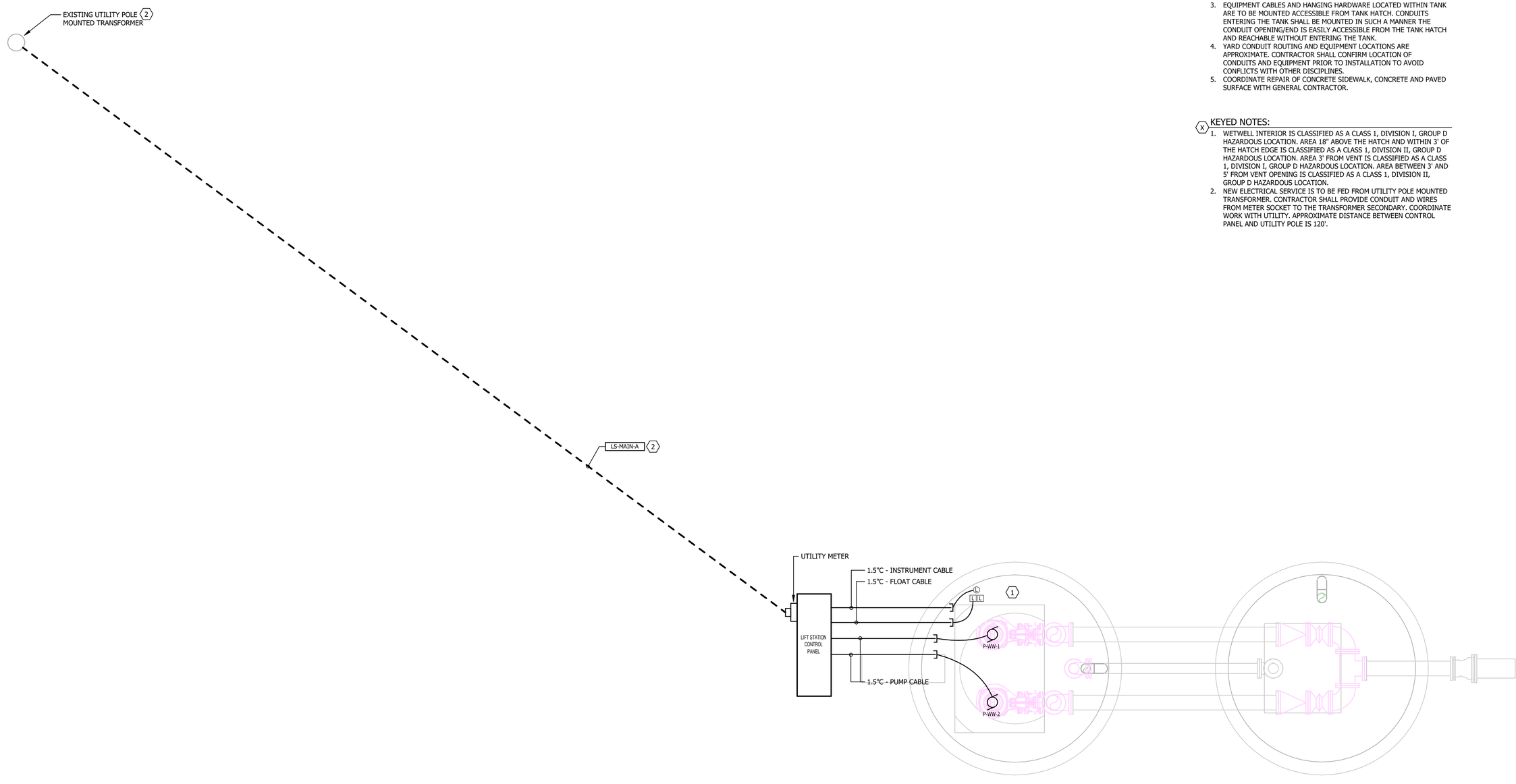
SHEET 7.23

GENERAL NOTES:

1. ALL INSTALLATIONS IN CLASS 1, DIVISION I AND CLASS 1, DIVISION II LOCATIONS SHALL MEET THE NEC INSTALLATION AND EQUIPMENT RATING REQUIREMENTS FOR A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION.
2. DO NOT INSTALL ELECTRICAL EQUIPMENT IN HAZARDOUS LOCATIONS OTHER THAN CONDUIT TO WETWELL AND DEVICES/CABLING IN WETWELL.
3. EQUIPMENT CABLES AND HANGING HARDWARE LOCATED WITHIN TANK ARE TO BE MOUNTED ACCESSIBLE FROM TANK HATCH. CONDUITS ENTERING THE TANK SHALL BE MOUNTED IN SUCH A MANNER THE CONDUIT OPENING/END IS EASILY ACCESSIBLE FROM THE TANK HATCH AND REACHABLE WITHOUT ENTERING THE TANK.
4. YARD CONDUIT ROUTING AND EQUIPMENT LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL CONFIRM LOCATION OF CONDUITS AND EQUIPMENT PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH OTHER DISCIPLINES.
5. COORDINATE REPAIR OF CONCRETE SIDEWALK, CONCRETE AND PAVED SURFACE WITH GENERAL CONTRACTOR.

(X) KEYED NOTES:

1. WETWELL INTERIOR IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA 18" ABOVE THE HATCH AND WITHIN 3' OF THE HATCH EDGE IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. AREA 3' FROM VENT IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA BETWEEN 3' AND 5' FROM VENT OPENING IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
2. NEW ELECTRICAL SERVICE IS TO BE FED FROM UTILITY POLE MOUNTED TRANSFORMER. CONTRACTOR SHALL PROVIDE CONDUIT AND WIRES FROM METER SOCKET TO THE TRANSFORMER SECONDARY. COORDINATE WORK WITH UTILITY. APPROXIMATE DISTANCE BETWEEN CONTROL PANEL AND UTILITY POLE IS 120'.



N (1) ELECTRICAL PLAN MAIN LIFT STATION

0 1' 2' 4'

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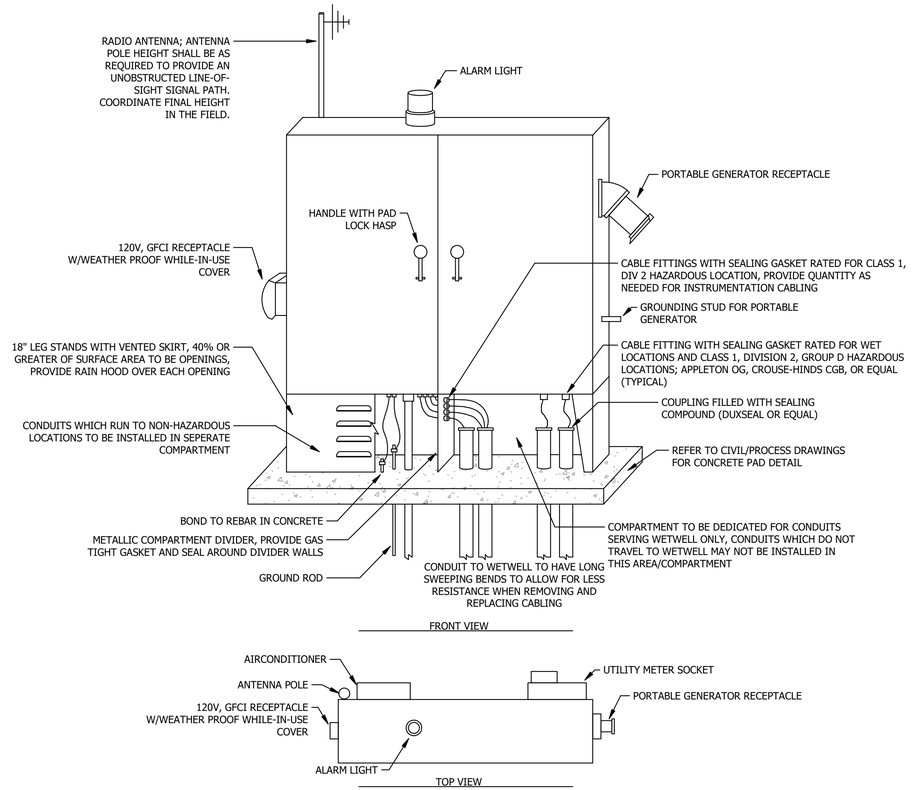
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ELECTRICAL PLAN MAIN LIFT STATION

SHEET 7.24

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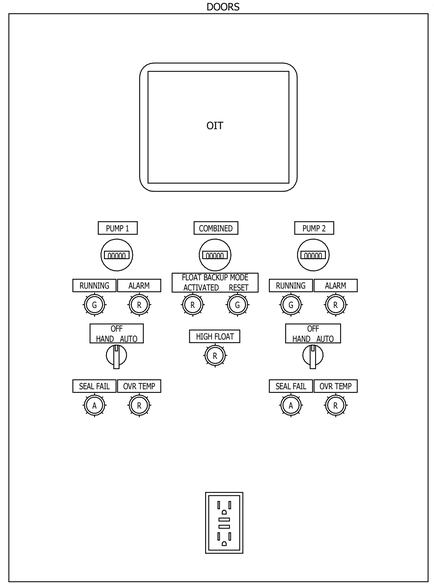
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FRONT VIEW

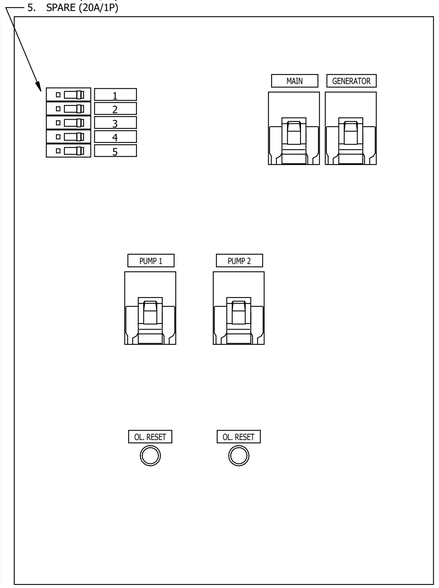
TOP VIEW

CONTROL SIDE OUTER DOOR SHALL BE CONFIGURED TO OPEN WITHOUT THE NEED TO OPEN OTHER EXTERIOR DOORS



LOAD CENTER LEGEND

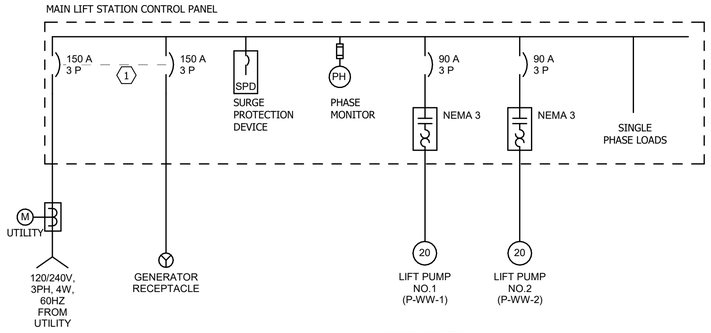
1. CONTROL POWER (20A/1P)
2. RECEPTACLES (20A/1P)
3. HEATING/COOLING (20A/1P)
4. SPARE (20A/1P)
5. SPARE (20A/1P)



INNER DOOR ELEVATION

1 LIFT STATION OUTDOOR CONTROL PANEL DETAIL

NO SCALE



KEYED NOTES:

1. PROVIDE MECHANICAL INTERLOCK BETWEEN THE UTILITY-SOURCE CIRCUIT BREAKER AND GENERATOR-SOURCE CIRCUIT BREAKER.

2 ELECTRICAL ONE-LINE DIAGRAM

NO SCALE

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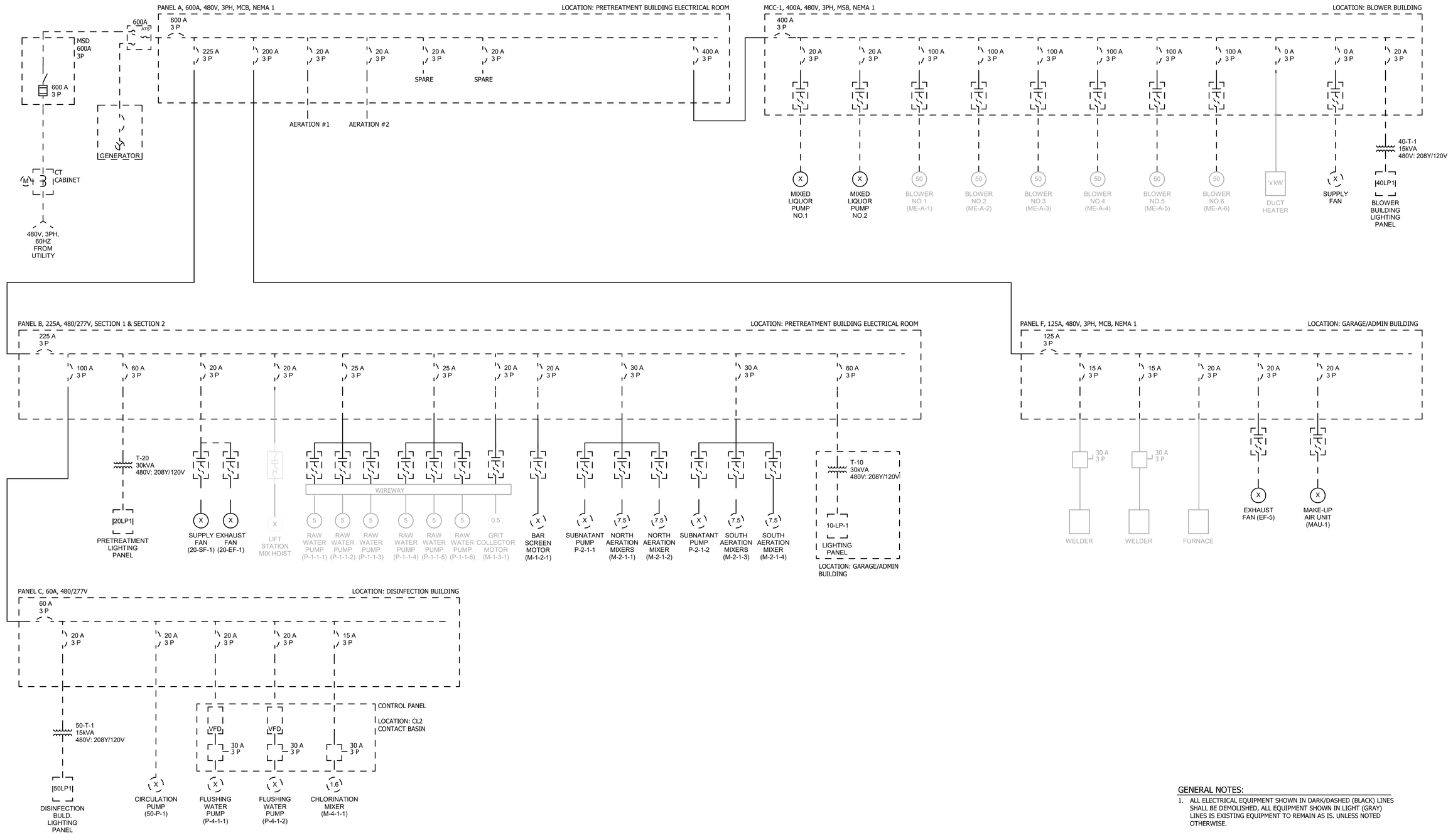
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CITY OF SPRING VALLEY, MINNESOTA

WASTEWATER TREATMENT FACILITY IMPROVEMENTS

ELECTRICAL PLAN MAIN LIFT STATION

SHEET 7.25



1 DEMOLITION ONE-LINE DIAGRAM
NO SCALE

GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT SHOWN IN DARK/DASHED (BLACK) LINES SHALL BE DEMOLISHED, ALL EQUIPMENT SHOWN IN LIGHT (GRAY) LINES IS EXISTING EQUIPMENT TO REMAIN AS IS. UNLESS NOTED OTHERWISE.

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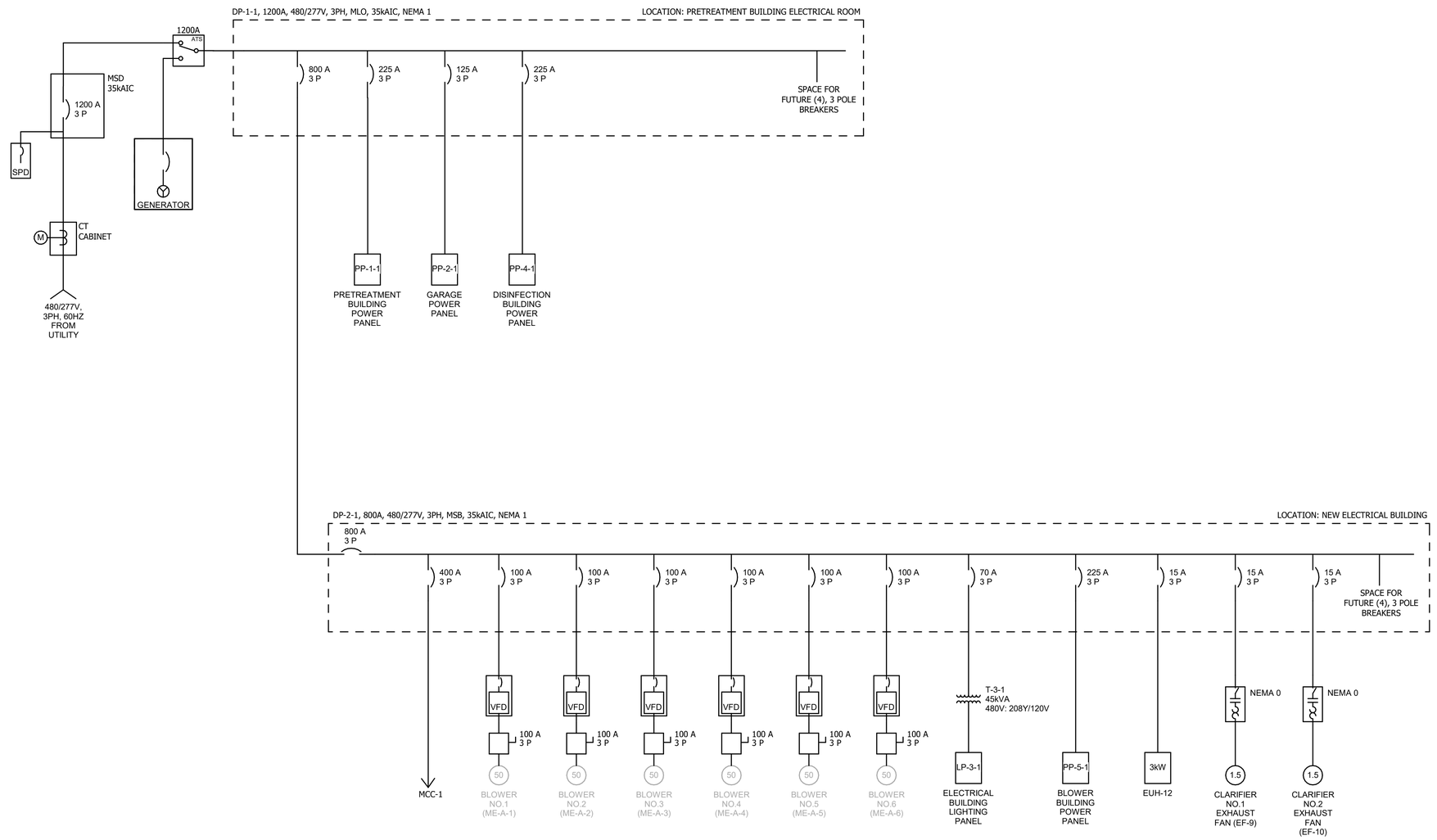
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CITY OF SPRING VALLEY, MINNESOTA
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ELECTRICAL DEMOLITION ONE-LINE DIAGRAM

SHEET 7.26

GENERAL NOTES:

1. ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL SHOWN WITH LIGHT (GRAY) LINES REPRESENT EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.



1 MODIFIED ONE-LINE DIAGRAM
NO SCALE

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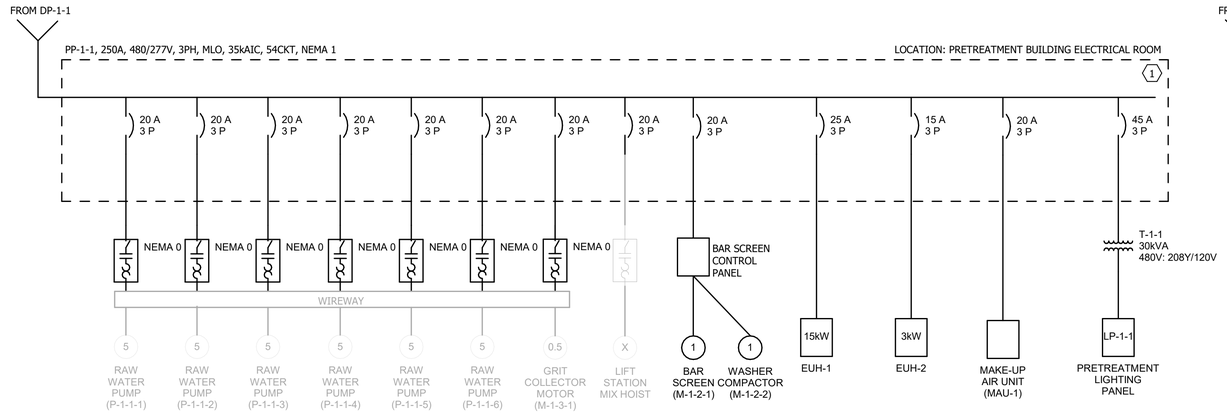
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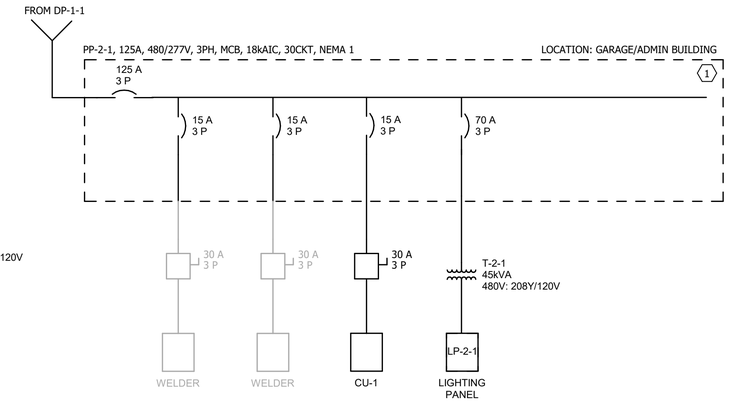
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SHEET
7.27



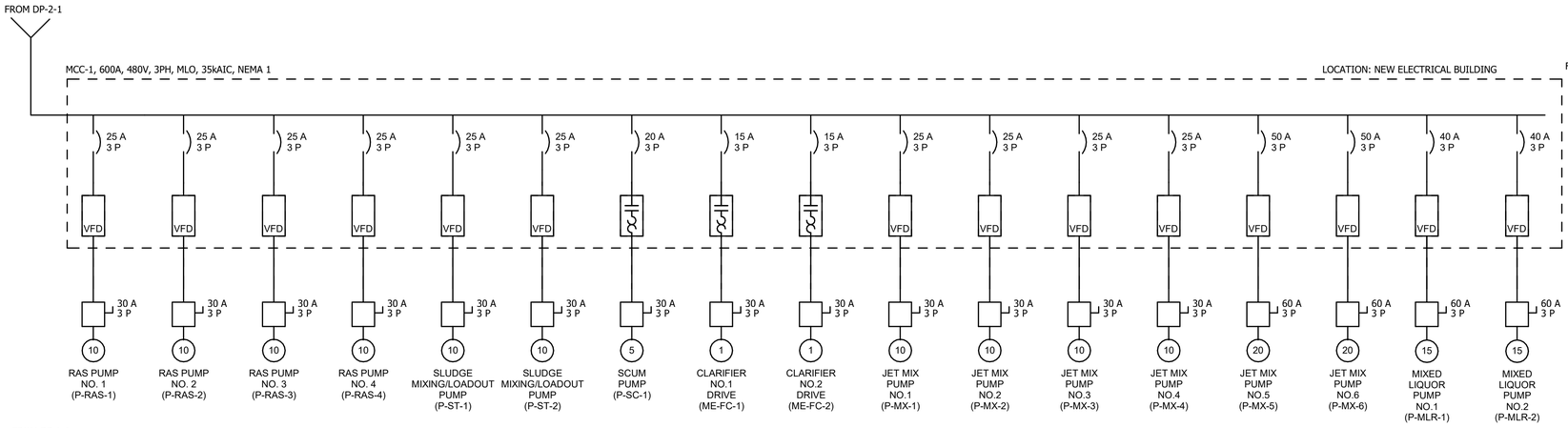


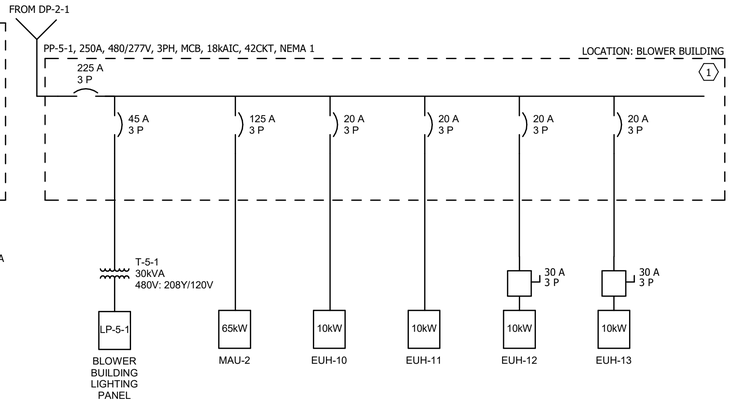
GENERAL NOTES:

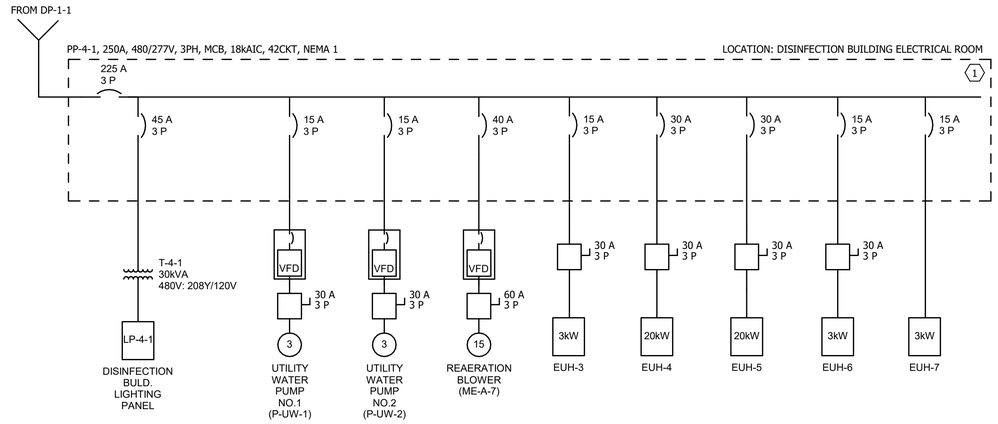
1. ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL SHOWN WITH LIGHT (GRAY) LINES REPRESENT EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.

KEYED NOTES:

X 1. PROVIDE TWO SPARE 20A/3P CIRCUIT BREAKERS.







1 MODIFIED ONE-LINE DIAGRAM CONTINUED

NO SCALE

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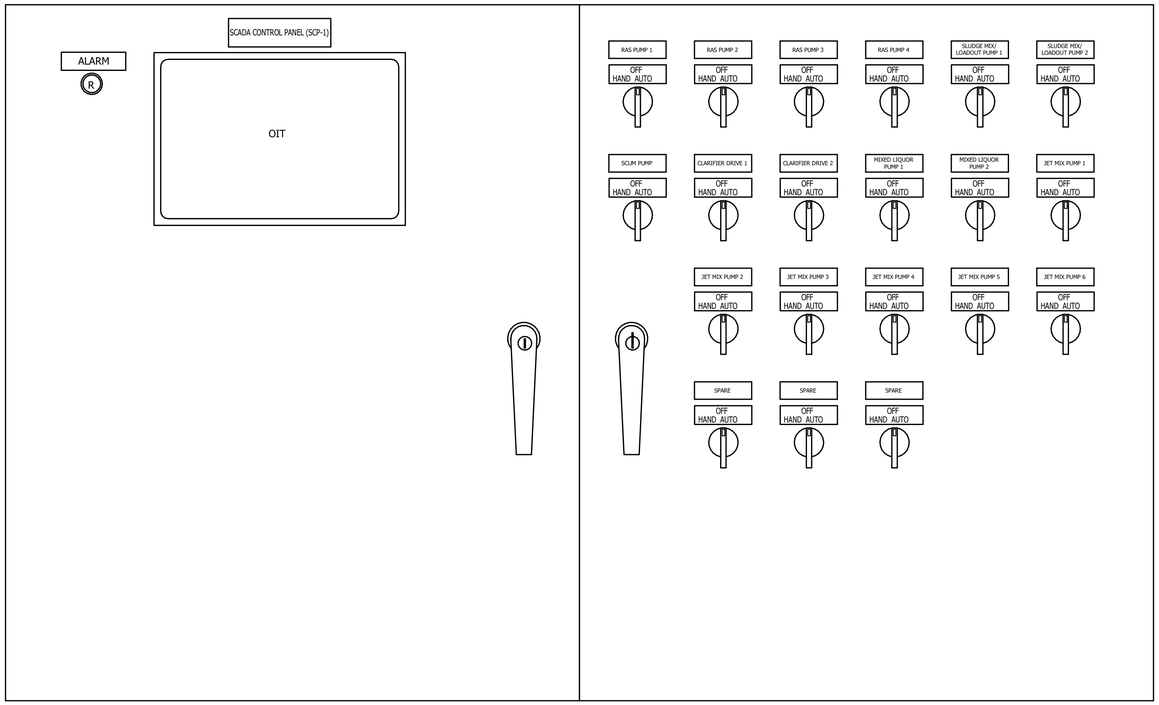
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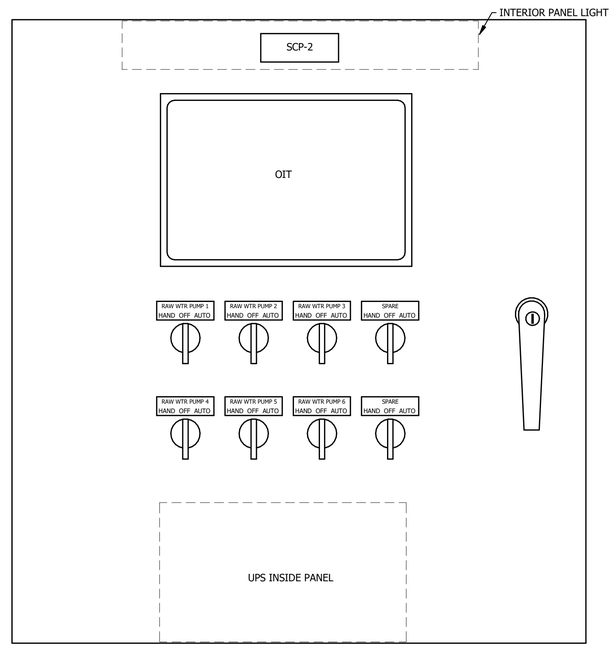
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL MODIFIED ONE-LINE DIAGRAM

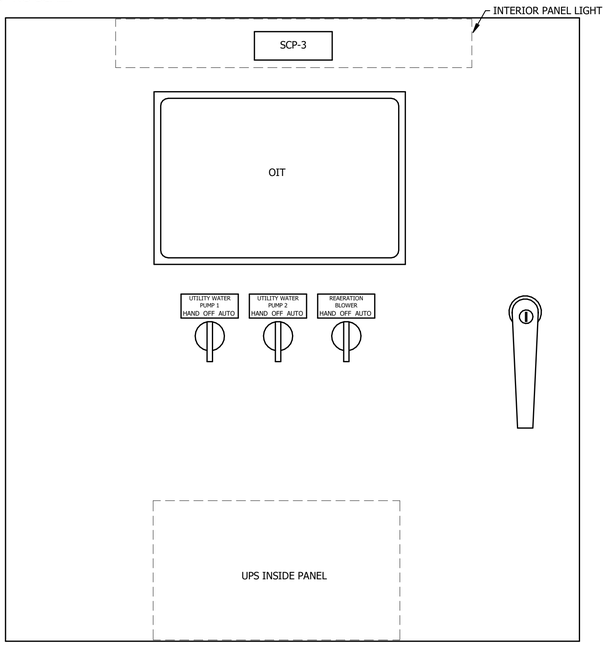
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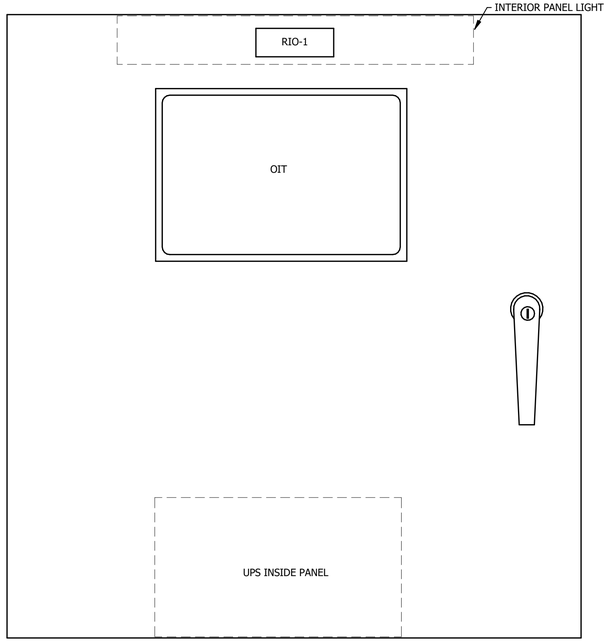
1 SCADA CONTROL PANEL ELEVATION (SCP-1)
NO SCALE



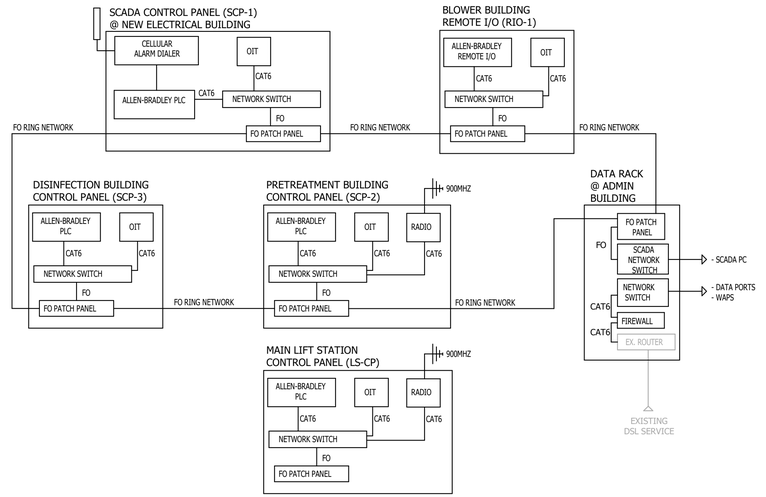
2 PRETREATMENT BUILDING CONTROL PANEL (SCP-2)
NO SCALE



3 DISINFECTION BUILDING CONTROL PANEL (SCP-3)
NO SCALE



4 BLOWER BUILDING REMOTE I/O PANEL (RIO-1)
NO SCALE



5 NETWORK DIAGRAM
NO SCALE

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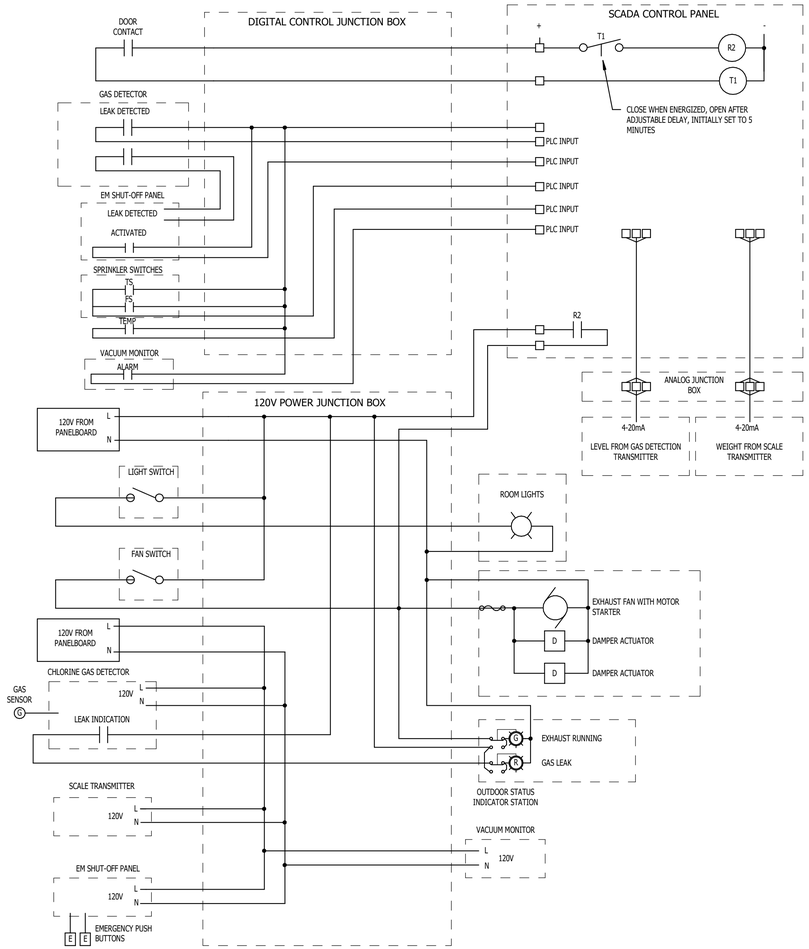
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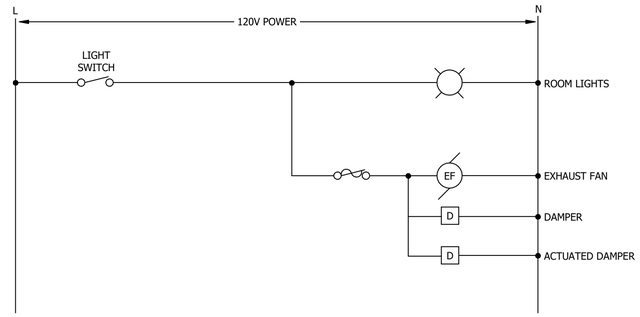
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DETAILS

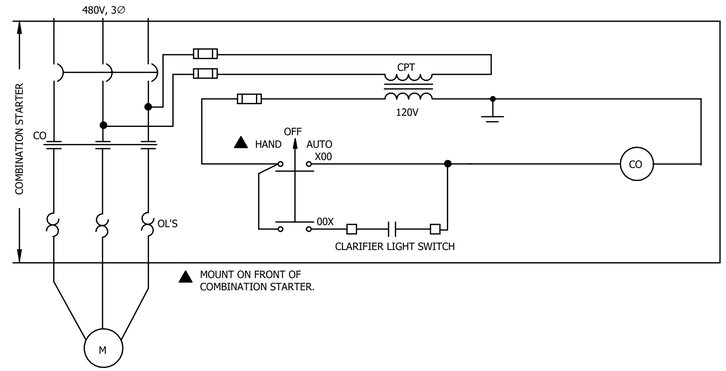
SHEET
7.29



1 CHLORINE AND SULFUR DIOXIDE GAS ROOM HVAC AND CONTROLS DETAIL
NO SCALE



2 CARBON FEED AND STORAGE ROOM LIGHT & FAN CONTROL SCHEMATIC
NO SCALE



3 CLARIFIER EXHAUST FAN DETAIL
NO SCALE

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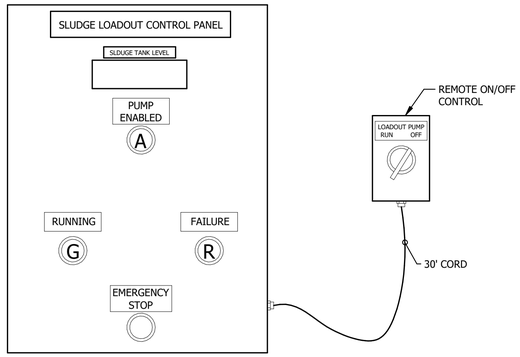
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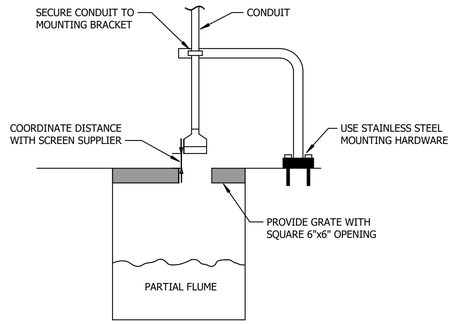
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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DETAILS

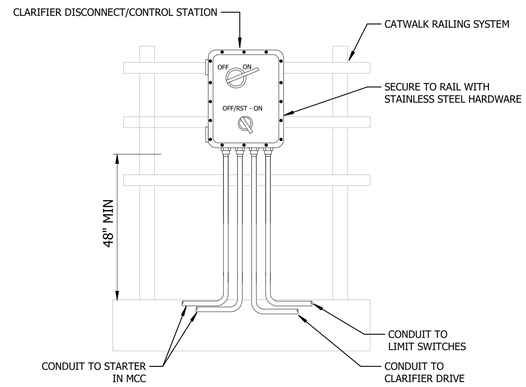
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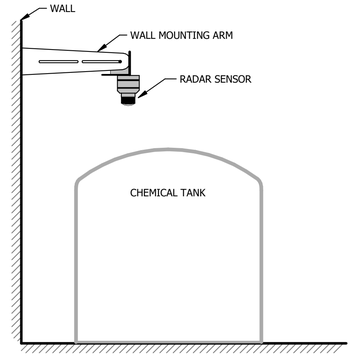
1 SLUDGE LOADOUT CONTROL PANEL ELEVATION
NO SCALE



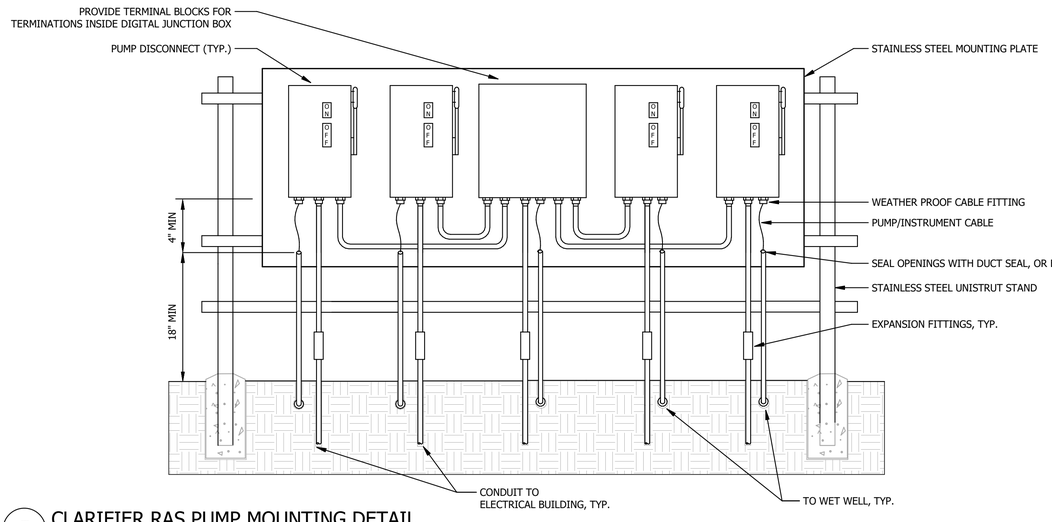
2 PARTAIL FLUME MOUNTING
NO SCALE



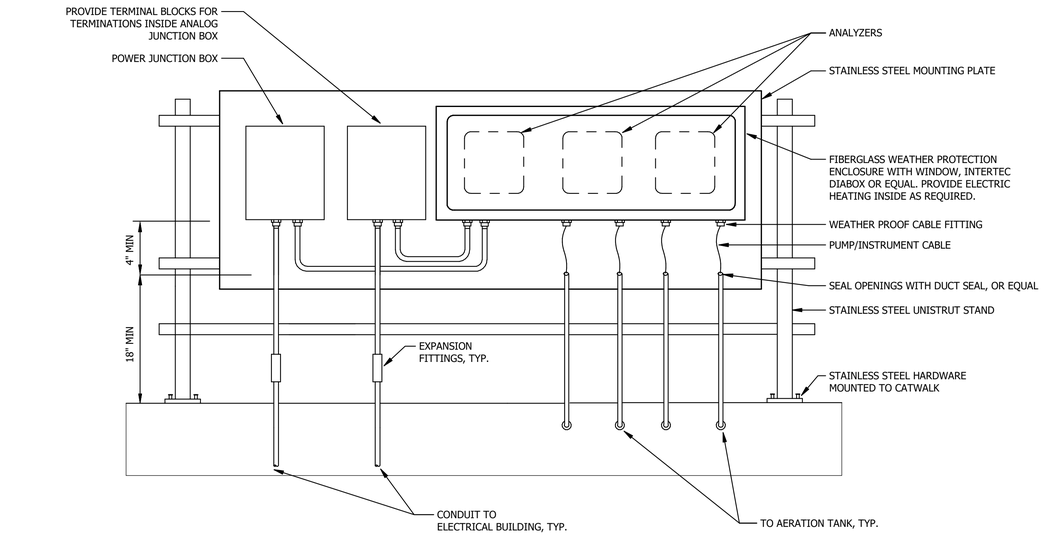
3 CLARIFIER LOCAL DISCONNECT/CONTROL STATION DETAIL
NO SCALE



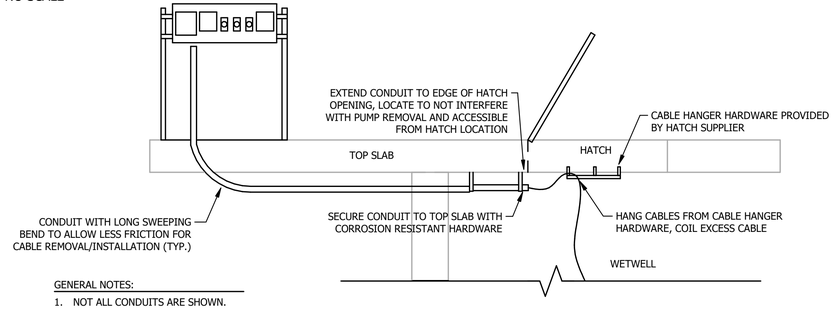
4 RADAR LEVEL TRANSMITTER MOUNTING DETAIL
NO SCALE



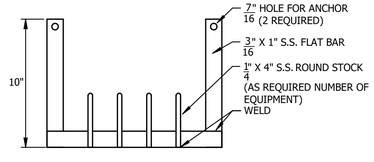
5 CLARIFIER RAS PUMP MOUNTING DETAIL
NO SCALE



6 AERATION BASIN INSTRUMENT MOUNTING DETAIL
NO SCALE



7 WETWELL ELECTRICAL INSTALLATION DETAIL
NO SCALE



8 CABLES HANGING BRACKET DETAIL
NO SCALE

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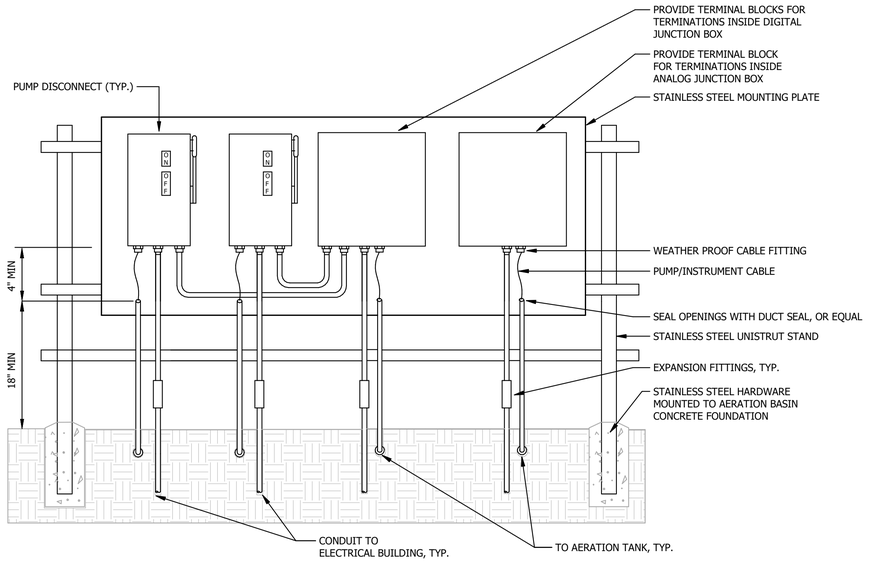
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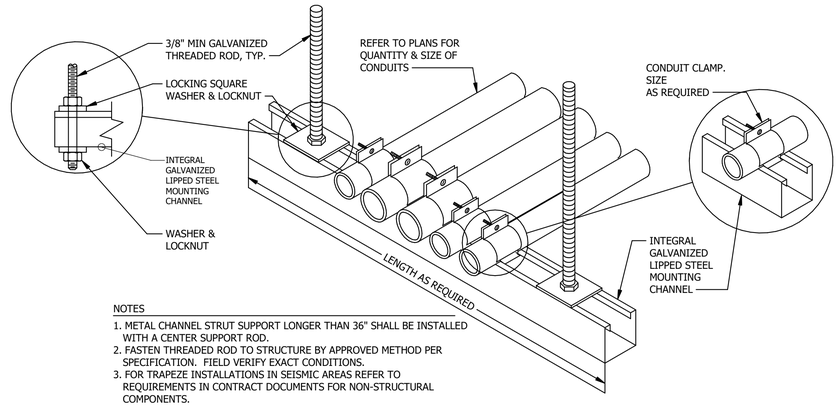
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ELECTRICAL DETAILS

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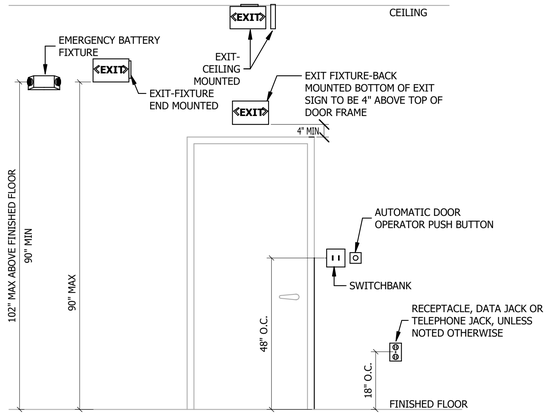


1 MIXED LIQUOR PUMP MOUNTING DETAIL
NO SCALE

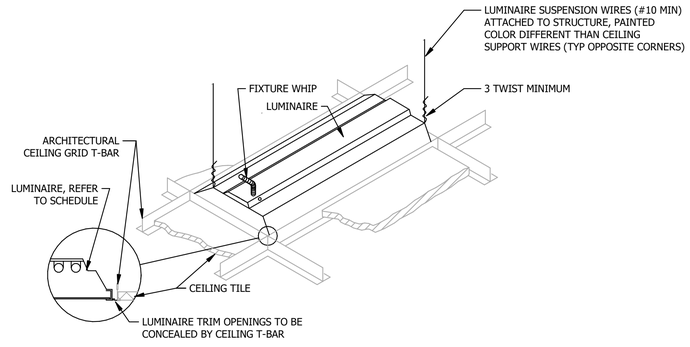


NOTES
1. METAL CHANNEL STRUT SUPPORT LONGER THAN 36" SHALL BE INSTALLED WITH A CENTER SUPPORT ROD.
2. FASTEN THREADED ROD TO STRUCTURE BY APPROVED METHOD PER SPECIFICATION. FIELD VERIFY EXACT CONDITIONS.
3. FOR TRAPEZE INSTALLATIONS IN SEISMIC AREAS REFER TO REQUIREMENTS IN CONTRACT DOCUMENTS FOR NON-STRUCTURAL COMPONENTS.

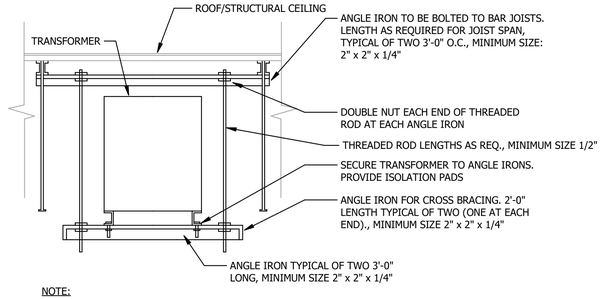
2 CONDUIT TRAPEZE MOUNTING
NO SCALE



3 TYPICAL MOUNTING HEIGHTS
NO SCALE



4 LUMINAIRE MOUNTING - ACT CEILING
NO SCALE



NOTE:
1. TRAPEZE MOUNTED TRANSFORMERS TO BE AS HIGH AS POSSIBLE.
2. COORDINATE STRUCTURAL CEILING/ROOF WITH ARCHITECTURAL AND STRUCTURAL DOCUMENTS.
3. FOLLOW MANUFACTURER INSTRUCTION FOR TRAPEZE MOUNTING. FOLLOW DETAIL WHEN MANUFACTURER DOES NOT HAVE INSTRUCTIONS OR REQUIREMENTS FOR SUCH MOUNTING.

5 TRAPEZE MOUNTED TRANSFORMER DETAIL
NO SCALE

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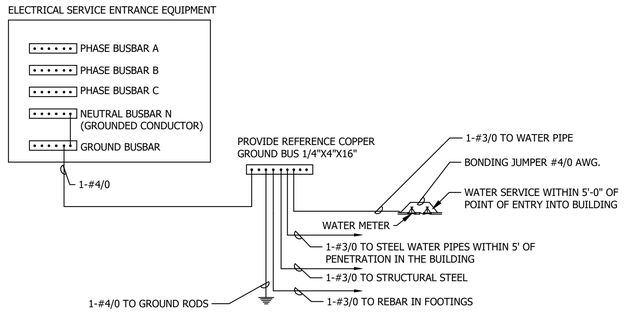
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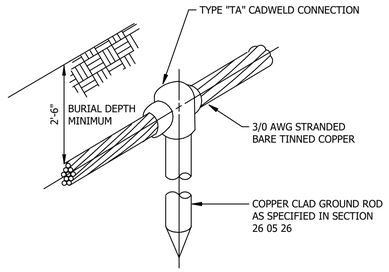
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WASTEWATER TREATMENT FACILITY IMPROVEMENTS
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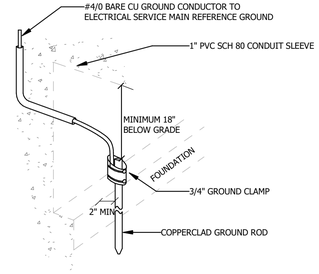
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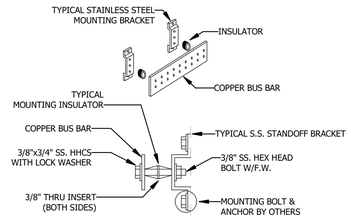
1 TYPICAL GROUNDING ELECTRODE SYSTEM DETAIL
1/8" = 1'-0"



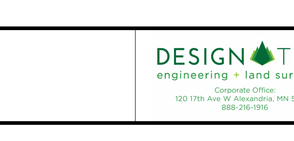
2 GROUND ROD DETAIL
NO SCALE



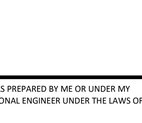
3 TYPICAL GROUND ROD DETAIL
NO SCALE



4 TYPICAL GROUNDING BUS BAR DETAIL
NO SCALE

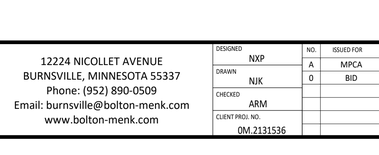


5 GROUND CABLE CONNECTION DETAIL
NO SCALE

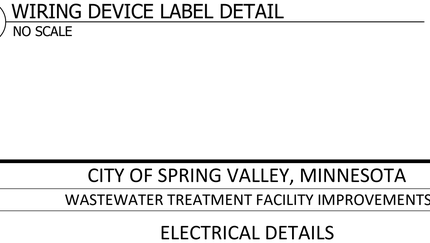


COPPER CONDUCTOR TAP TO HORIZONTAL REINFORCING BAR (REBAR) LOCATED NEAR THE BOTTOM OR VERTICALLY, WITHIN THAT PORTION OF CONCRETE FOUNDATION OR FOOTING. MAXIMUM CONDUCTOR SIZE IS 4/0 AWG. MINIMUM DIAMETER OF REBAR IS 1/2". MINIMUM LENGTH OF REBAR IS 20'.

6 GROUNDING CABLE CADWELDED TO REBAR DETAIL
NO SCALE



7 CABLE TO ROD CONNECTION DETAIL
NO SCALE



NOTE:
1. BOLTS SHALL BE INSERTED IN BOLT HOLES BEFORE CONNECTOR IS EMBEDDED.

8 GROUNDING INSERT DETAIL
NO SCALE

SERVICE EQUIPMENT LABEL

PROVIDE THE FOLLOWING INFORMATION:
EQUIPMENT NAME
VOLTAGE SYSTEM DESCRIPTION (V, PH, #W, HZ)
FEEDER SIZE (CONDUIT, CONDUCTOR, & CONDUCTOR TYPE)
UTILITY TRANSFORMER SIZE AND IMPEDANCE
EQUIPMENT AIC RATING
"SERVICE ENTRANCE RATED"
DATE OF INSTALL

EXAMPLE:
MSB-A
208Y/120V, 3PHASE, 4W, 60HZ
FEEDER: (4) 3"C-4#500KCMIL
UTILITY XFMR: 750KVA,9.6%Z
RATED KAIC: 65KA
SERVICE ENTRANCE RATED
MARCH 2023

NOTES:
1. PROVIDE SIGN(S) ON EXTERIOR OF ALL ENCLOSURES CONTAINING CONDUCTORS OPERATING AT POTENTIALS UNDER 1000 VOLTS.
2. THE ABOVE LABELING IS MINIMUM REQUIRED. ADD ALL ADDITIONAL LABELING REQUIRED BY THE NEC AND AHJ.
3. LABEL SHALL BE ATTACHED TO THE FRONT OF EQUIPMENT IN SUCH A MANNER IT IS IN PLAIN SIGHT.
4. LABEL SHALL BE ENGRAVED PHENOLIC AND FASTENED TO THE EQUIPMENT WITH SCREWS OR RIVETS, NOT TO VOID UL LISTINGS.

9 SERVICE EQUIPMENT LABEL
NO SCALE

PANELBOARD LABEL

PROVIDE THE FOLLOWING INFORMATION:
PANEL NAME
VOLTAGE SYSTEM DESCRIPTION (V, PH, #W, HZ)
PRIMARY DISCONNECT LOCATION & OVERCURRENT DEVICE RATING/PHASE
FEEDER SIZE (CONDUIT AND CONDUCTORS)
DATE OF INSTALL

EXAMPLE:
LP-9-5
208Y/120V, 3PH, 4W, 60Z
FED FROM: SWBD-1 200A/3P
FEEDER: 2"C-4#3/0,1#6G
MARCH 2023

NOTES:
1. PROVIDE SIGN(S) ON EXTERIOR OF ALL ENCLOSURES CONTAINING CONDUCTORS OPERATING AT POTENTIALS UNDER 1000 VOLTS.
2. THE ABOVE LABELING IS MINIMUM REQUIRED. ADD ALL ADDITIONAL LABELING REQUIRED BY THE NEC AND AHJ.
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4. LABEL SHALL BE ENGRAVED PHENOLIC AND FASTENED TO THE EQUIPMENT WITH SCREWS OR RIVETS, NOT TO VOID UL LISTINGS.

10 PANELBOARD LABEL
NO SCALE

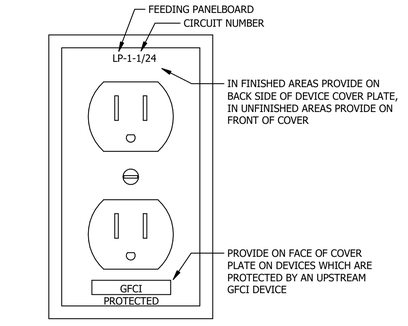
DISCONNECT LABEL

PROVIDE THE FOLLOWING INFORMATION:
NAME OF EQUIPMENT BEING SERVED
FEEDER LOCATION SIZE/FUSE
FEEDER SIZE(CONDUIT AND CONDUCTORS)
IF SERVICE RATED LABEL "SERVICE EQUIPMENT RATED"
DATE OF INSTALL

EXAMPLE:
AHJ-1 SUPPLY
FED FROM: DP-1-1 150A/3P
FEEDER: 1.5"C-3#1/0,1#6G
MARCH 2017

NOTES:
1. PROVIDE SIGN(S) ON EXTERIOR OF ALL ENCLOSURES CONTAINING CONDUCTORS OPERATING AT POTENTIALS UNDER 600 VOLTS.
2. THE ABOVE LABELING IS MINIMUM REQUIRED. ADD ALL ADDITIONAL LABELING REQUIRED BY THE NEC AND AHJ.
3. LABEL SHALL BE ATTACHED TO THE FRONT OF EQUIPMENT IN A MANNER IT IS IN PLAIN SIGHT.
4. LABEL SHALL BE ENGRAVED PHENOLIC AND FASTENED TO THE EQUIPMENT WITH SCREWS OR RIVETS, NOT TO VOID UL LISTINGS.

11 DISCONNECT LABEL
NO SCALE



GENERAL NOTES:
1. LABEL SHALL BE ENGRAVED, PLASTIC LAMINATE OR MACHINE TYPED SELF-ADHESIVE THERMO TAPE. PROVIDE ON EVERY WIRING DEVICE AND JUNCTION BOX COVER, WHICH INCLUDES LIGHT SWITCHES.

12 WIRING DEVICE LABEL DETAIL
NO SCALE

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A	MPCA	03/28/2025
0	BID	09/29/2026

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL DETAILS

SHEET
7.33

LIGHT FIXTURE SCHEDULE

FIXTURE ID	FIXTURE TYPE	MOUNTING STYLE	RATED LUMEN OUTPUT	COLOR TEMPERATURE (°K)	VOLTAGE	INPUT WATTS	FIXTURE DESCRIPTION	FINISH COLOR	APPROVED MANUFACTURER	NOTES
A	2X2 FLAT PANEL LED	RECESSED	3,500-4,000 LUMENS, 80CRI MIN	4000K	120 V	26 W	UV RESISTANT ACRYLIC LENS, HOUSING DEPTH LESS THAN 1", OVERALL DEPTH WITH DRIVER LESS THAN 2", EDGE LIT LED, IC RATED	WHITE	ELITE 22FPL-BL SERIES, OR EQUAL	
AA1	EXTERIOR POLE MOUNTED LED	15' SQUARE ALUMINUM POLE 4" DIAMETER WITH ANCHOR BASE	LED 9,000 LUMENS, 80CRI MIN	4000K	120 V	54 W	TYPE 4 DISTRIBUTION LED DECORATIVE POLE MOUNTED FIXTURE HEADS AS SHOWN. WITH INTEGRAL PHOTOCELL AND BI-LEVEL MOTION/AMBIANT SENSOR.	BLACK	GARDCO OPT SERIES, OR EQUAL	
AA2	EXTERIOR POLE MOUNTED LED	15' SQUARE ALUMINUM POLE 4" DIAMETER WITH ANCHOR BASE	LED 9,000 LUMENS, 80CRI MIN	4000K	120 V	54 W	TYPE 2 DISTRIBUTION LED DECORATIVE POLE MOUNTED FIXTURE HEADS AS SHOWN. WITH INTEGRAL PHOTOCELL AND BI-LEVEL MOTION/AMBIANT SENSOR.	BLACK	GARDCO OPT SERIES, OR EQUAL	
EM	EMERGENCY WALL PACK	UNIVERSAL	LED		120 V	10 W	WHITE THERMOSPLASTIC HOUSING, SEALED, MAINTENANCE-FREE NICKEL-CADMIUM BATTERIES, SELF DIAGNOSTICS.	WHITE	ELITE ELM SERIES, OR EQUAL	
EX	EXIT SIGN WITH EMERGENCY HEADS	UNIVERSAL	LED		120 V	4 W	THERMOPLASTIC IMPACT RESISTANT, SCRATCH RESISTANT, NICKEL-CADMIUM BATTERY. DUAL-HEAD EXIT SIGN, WITH (1) REMOTE HEAD, SELF DIAGNOSTICS.	WHITE HOUSING, RED LETTERS	ABB EMERGILITE - ELXN400 SERIES, OR EQUAL	
EX1	EXIT SIGN WITH EMERGENCY HEADS	UNIVERSAL	LED		120 V	4 W	THERMOPLASTIC IMPACT RESISTANT, SCRATCH RESISTANT, NICKEL-CADMIUM BATTERY. DUAL-HEAD EXIT SIGN, WITH (1) REMOTE HEAD, SELF DIAGNOSTICS.	WHITE HOUSING, RED LETTERS	ABB EMERGILITE - ELXN400 SERIES, OR EQUAL	
EXZ	EXIT SIGN CLASSIFIED WITH EMERGENCY HEADS	UNIVERSAL	LED		120 V	4 W	IMPACT RESISTANT, SCRATCH RESISTANT, NICKEL-CADMIUM BATTERY. DUAL-HEAD EXIT SIGN, WITH (1) REMOTE HEAD, SELF DIAGNOSTICS.	WHITE HOUSING, RED LETTERS	ABB EMERGILITE - GGSVXH12NRD2LG SERIES, OR EQUAL	
F	4' LENSED LED STRIP LIGHT	SURFACE/CEILING	LED 7,000 LUMENS, 80CRI MIN	4000K	120 V	56 W	COMPACT LINEAR METAL CHANNEL, FROSTED WRAPPED ROUND DIFFUSE LENS.	WHITE	ELITE LIGHTING 4-OEC-LED SERIES, OR EQUAL	
FC	4' LENSED CORROSION RESISTANT LED STRIP LIGHT	SURFACE/CEILING	LED 6,000 LUMENS, 80CRI MIN	4000K	120 V	49 W	VAPOR TIGHT POLYCARBONATE CORROSION RESISTANT HOUSING, WET LOCATION LISTED, TOOL-LESS NON-METALLIC LATCHES.	WHITE	ELITE LIGHTING 4-OW1P-LED SERIES, OR EQUAL	
FS	4' LENSED LED STRIP LIGHT	SUSPENDED	LED 8,000 LUMENS, 80CRI MIN	4000K	120 V	63 W	COMPACT LINEAR METAL CHANNEL, FROSTED WRAPPED ROUND DIFFUSE LENS.	WHITE	ELITE LIGHTING 4-OEC-LED SERIES, OR EQUAL	
FW	4' LENSED LED STRIP LIGHT	WALL	LED 7,000 LUMENS, 80CRI MIN	4000K	120 V	56 W	COMPACT LINEAR METAL CHANNEL, FROSTED WRAPPED ROUND DIFFUSE LENS.	WHITE	ELITE LIGHTING 4-OEC-LED SERIES, OR EQUAL	
G	VANITY LED	WALL	3,000 LUMENS, 80CRI MIN	4000K	120 V	29 W	36" LINEAR VANITY LED, DAMP LOCATION LISTED,	WHITE	ELITE LIGHTING OVL-LED SERIES, OR EQUAL	
W	EXTERIOR WALL PACK	WALL	LED 4,500-6,000 LUMENS, 80CRI MIN	4000K	120 V	40 W	TYPE 4 FORWARD DISTRIBUTION, DIE CAST ALUMINUM HOUSING, ONE-PIECE HINGED DOOR, CLEAR INJECTION MOLDED ACRYLIC LENS, WITH INTEGRAL PHOTOCELL & MOTION/AMBIENT SENSOR W/DIMMING CONTROL	BLACK	KIM LIGHTING WDS SERIES, OR EQUAL	
Z	CLASSIFIED LED	SURFACE/CEILING	LED 7,700 LUMENS, 80CRI MIN	4000K	120 V	60 W	EXPLOSION PROOF CLASS 1, DIVISION 1, GROUP D LED FIXTURE. TYPE 5 DISTRIBUTION. CEILING MOUNT KIT.	WHITE	RIG-A-LITE/AVAIL - SXPJ06 SERIES, OR EQUAL	
Z1	CLASSIFIED LED	WALL	LED 6,000 LUMENS, 80CRI MIN	4000K	120 V	70 W	EXPLOSION PROOF CLASS 1 DIVISION 1, GROUP D LED FIXTURE. STANCHION MOUNT KIT.	WHITE	RIG-A-LITE/AVAIL - SXPJ06 SERIES, OR EQUAL	
ZW	CLASSIFIED LED	WALL	LED 7,700 LUMENS, 80CRI MIN	4000K	120 V	60 W	EXPLOSION PROOF CLASS 1 DIVISION 1, GROUP D LED FIXTURE. TYPE 5 DISTRIBUTION. WALL MOUNT KIT.	WHITE	RIG-A-LITE/AVAIL - SXPJ06 SERIES, OR EQUAL	

EQUIPMENT CONNECTION SCHEDULE

MOTOR/ EQUIPMENT ID	LOCATION	HP	ELECTRIC HC KW	FLA	MCA	MOCP	VOLTAGE	PHASE	DISCONNECT INFORMATION				STARTER INFORMATION			NOTES
									PROVIDED BY	AMPERAGE	FUSES	LOCATION	PROVIDED BY	TYPE/SIZE	LOCATION	
BB-1	OFFICE 107A		2.5	12		20	208 V	1	MFR				MFR			
BB-2	OPERATIONS ROOM 102		2.5	12		20	208 V	1	MFR				MFR			
CU-1	ADMIN BUILDING, GRADE			0.6	7.9	15	480 V	3	ELEC	30/3P NEMA 3R		NEAR UNIT	MECH			
EF-1	ADMIN BUILDING, GARAGE	1		12.5	15.6	25	208 V	1	MFR			ON UNIT	MFR			
EF-2	PRETREATMENT BLDG, EXTERIOR	1		2.1	2.6	15	480 V	3	MFR	30/3P NEMA 3R		NEAR UNIT	MFR			
EF-3	DISINFECTION BLDG, STORAGE 106	1/2		6.6	8.2	15	120 V	1	MFR				MFR			
EF-4	DISINFECTION BLDG, CHLORINE 105	1/2		6.6	8.2	15	120 V	1	MFR				MFR			
EF-5	DISINFECTION BLDG, 104	1/5		2.8	3.5	15	120 V	1	MFR				MFR			
EF-6	DISINFECTION BLDG, SULFUR DIOXIDE 102	1/2		6.6	8.2	15	120 V	1	MFR				MFR			
EF-7	DISINFECTION BLDG, CARBON FEED 101	1/2		6.6	8.2	15	120 V	1	MFR				MFR			
EF-8	BLOWER BUILDING, ROOF	2		12.5	15.6	25	208 V	1	MFR	30/3P NEMA 3R		ON UNIT	MFR			
EF-9	CLARIFIER	1 1/2		3	3.8	15	480 V	3	ELEC	30/3P NEMA 3R		NEAR UNIT	ELEC			
EF-10	CLARIFIER	1 1/2		3	3.8	15	480 V	3	ELEC	30/3P NEMA 3R		NEAR UNIT	ELEC			
EF-11	OPERATIONS ROOM 102			1.3	1.6	15	120 V	1	MFR				MFR			
EF-12	OPERATIONS ROOM 102			1.3	1.6	15	120 V	1	MFR				MFR			
EUH-1	PRETREATMENT BLDG, SCREENING ROOM 101		15	19		25	480 V	3	ELEC							
EUH-2	PRETREATMENT BLDG, ELEC 102		3	3.6		15	480 V	3	ELEC	CIRCUIT BREAKER		PP-1-1				
EUH-3	DISINFECTION BLDG,CHLORINE 106		3	3.6		15	480 V	3	MFR							
EUH-4	DISINFECTION BLDG, CHLORINE 105		20	24		30	480 V	3	ELEC	30/3P NEMA 4X		NEAR UNIT				
EUH-5	DISINFECTION BLDG, SULFUR DIOXIDE 102		20	24		30	480 V	3	ELEC	30/3P NEMA 4X		NEAR UNIT				
EUH-6	DISINFECTION BLDG, SULFUR DIOXIDE 101		3	3.6		15	480 V	3	ELEC	30/3P NEMA 4X		NEAR UNIT				
EUH-7	DISINFECTION BLDG, BOILER RM 103		2.2	3.6		15	480 V	3	ELEC	CIRCUIT BREAKER		PP-4-1				
EUH-8	BLOWER BUILDING, LOWER LEVEL		10	12		20	480 V	3	ELEC			NEAR UNIT				
EUH-9	BLOWER BUILDING, LOWER LEVEL		10	12		20	480 V	3	ELEC			NEAR UNIT				
EUH-10	BLOWER BUILDING, UPPER LEVEL		10	12		20	480 V	3	ELEC	CIRCUIT BREAKER		PP-5-1				
EUH-11	BLOWER BUILDING, UPPER LEVEL		10	12		20	480 V	3	ELEC	CIRCUIT BREAKER		PP-5-1				
EUH-12	NEW ELECTRICAL BUILDING		3	3.6		15	480 V	3	ELEC	CIRCUIT BREAKER		DP-2-1				
EUH-13	ADMIN BUILDING, VESTIBULE 101		1.5	12.5		20	120 V	1	MFR							
F-1	ADMIN BUILDING, MECH RM 108				7.8	15	120 V	1	ELEC				MECH			
GUH-1	DISINFECTION BLDG, 104			1.3		20	120 V	1	MFR							
GUH-2	DISINFECTION BLDG, 104			1.3		20	120 V	1	MFR							
GUH-3	ADMIN BUILDING, MECH RM 108			1.3		20	120 V	1	MFR							
GUH-4	ADMIN BUILDING, PARTS ROOM			1.3		20	120 V	1	MFR							
GWH-1	DISINFECTION BLDG, 104			3	-	20	120 V	1	ELEC				MECH			
GWH-2	MECHANICAL ROOM 108			3	-	20	120 V	1	ELEC				MECH			
HWCP-1	MECHANICAL ROOM 108			-	-	20	120 V	1	ELEC				DIV 22			
MAU-1	PRETREATMENT BLDG, EXTERIOR			12	-	20	480 V	3	MFR				MECH			
MAU-2	BLOWER BUILDING, ROOF			90.5	-	125	480 V	3	MFR				MECH			
MSI-1	PRETREATMENT BLDG, ELEC 102			-	-	-	120 V	1	ELEC	2-POLE TOGGLE						
MSI-2	DISINFECTION BLDG, BOILER RM 103					-	120 V	1	ELEC	2-POLE TOGGLE						
MSI-3	NEW ELEC BUILDING					-	208 V	1	ELEC	2-POLE TOGGLE						
MSO-1	PRETREATMENT BLDG, EXTERIOR				12	15	208 V	1	ELEC	30/2P NEMA 3R		NEAR UNIT	MFR			
MSO-2	DISINFECTION BLDG, EXTERIOR				12	15	208 V	1	ELEC	30/2P NEMA 3R		NEAR UNIT	MFR			
MSO-3	NEW ELEC BUILDING, EXTERIOR				25	35	208 V	1	ELEC	60/2P NEMA 3R		NEAR UNIT	MFR			

PANELBOARD SCHEDULE

NAME: LP-1-1 | PANEL ID: B | MAIN CIRCUIT BREAKER: 125 | KAIC RATING: 10
LOCATION: PRETREATMENT ELECTRICAL ROOM | MAIN LUGS ONLY: | VOLTAGE: 208Y/120
MOUNTING: SURFACE | WIRES: 4 | PHASE: 3

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION	CKT
B1	L. ELECTRICAL ROOM	20 A	1	504	1200					1	20 A	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	B2
B3	L. PRETREATMENT ROOM	20 A	1			732	250			1	20 A	EXISTING GRIT COLLECTOR CONTROL PANEL	B4
B5	L. EXTERIOR BUILDING	20 A	1					120	200	1	20 A	PH-AIT-2, ELECTRICAL ROOM	B6
B7	L. LIFT STATION WETWELL	20 A	1	500	250					1	20 A	GAS DETECTION TRANSMITTER	B8
B9	R. MAU-01	20 A	1			180	0			1	20 A	SPARE	B10
B11	R. ELECTRICAL ROOM, EXTERIOR	20 A	1					720	0	1	20 A	SPARE	B12
B13	SPARE	20 A	1	0	0					1	20 A	SPARE	B14
B15	SPARE	20 A	1			0	0			1	20 A	SPARE	B16
B17	SPARE	20 A	1					0	0	1	20 A	SPARE	B18
B19	SPARE	20 A	1	0	0					1	20 A	SPARE	B20
B21	SPARE	20 A	1			0	0			1	20 A	SPARE	B22
B23	SPARE	20 A	1					0	0	1	20 A	SPARE	B24
B25	SPACE	--	1	--	0					1	20 A	SPARE	B26
B27	SPACE	--	1			--	0			1	20 A	SPARE	B28
B29	SPACE	--	1					--	0	1	20 A	SPARE	B30
B31	SPACE	--	1	--	1248					2	15 A	MSI-1/MSO-1	B32
B33	SPACE	--	1			--	1248						B34
B35	SPACE	--	1					--	0	2	30 A	PANEL C (FUEL FILL STATION), ELEC ROOM	B36
B37	SPACE	--	1	--	0								B38
B39	SPACE	--	1			--	2500			2	60 A	GENERATOR LOAD CENTER	B40
B41	SPACE	--	1					--	2500				B42

TOTAL CONNECTED LOAD 12152 VA | TOTAL CALCULATED DEMAND 9722 VA | TOTAL CALCULATED AMPS 27 A

GENERAL NOTES:

1.
2.
3.
4.

KEY NOTES:

* GFCI RATED BREAKER

L. = LIGHTING

R. = RECEPTACLE

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0	BID	09/29/2026

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL SCHEDULES

SHEET 7.34

PANELBOARD SCHEDULE

NAME:	LP-2-1	PANEL ID	D	MAIN CIRCUIT BREAKER:	150	KAIC RATING:	10
LOCATION:	GARAGE			MAIN LUGS ONLY:		VOLTAGE:	208Y/120
MOUNTING:	SURFACE			WIRES:	4	PHASE:	3

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION	CKT
D1	L. LAB, OFFICES', CONFERENCE RM.	20 A	1	476	148					1	20 A	L. HALL, RESTROOMS	D2
D3	GARAGE DOOR	20 A	1			1176	756			1	20 A	L. MECH ROOM, STORAGE ROOM, MEZZ	D4
D5	GARAGE DOOR	20 A	1					1176	546	1	20 A	L. RESTROOMS EF-11, EF-12	D6
D7	R. OFFICE	20 A	1	720	1300					1	20 A	L. GARAGE SOUTH	D8
D9	*R. REFIGERATOR, BREAKROOM	20 A	1			600	1400			1	20 A	L. GARAGE EAST	D10
D11	R. GARAGE NORTH & WEST	20 A	1					520	1200	1	20 A	L. GARAGE NORTH	D12
D13	FURNACE F-1, MECH ROOM	20 A	1	936	800					1	20 A	L. EXTERIOR BUILDING	D14
D15	R. DATA RACK, OPERATIONS ROOM	20 A	1			180	0			1	20 A	SPARE	D16
D17	R. LAB, EXTERIOR	20 A	1					540	1500	1	20 A	EUH-15, VESTUBULE	D18
D19	R. RMS 104, 108, 109	20 A	1	520	540					1	20 A	R. MEZZ LEVEL	D20
D21	*R. REFIGERATOR, OPERATIONS ROOM	20 A	1			600	360			1	20 A	R. COMPUTER, LAB	D22
D23	GARAGE CEILING FANS	20 A	1					600	900	1	20 A	R. OPERATIONS ROOM, HALLWAY	D24
D25	R. RESTROOMS	20 A	1	360	720					1	20 A	R. ABOVE COUNTER, LAB	D26
D27	BASEBOARD HEATER BB-A, OPERATIONS ROOM	20 A	2			1250	180			1	20 A	R. ABOVE COUNTER, OPERATIONS ROOM	D28
D29								1250	460	1	20 A	GWH-2 & HWCP-1, MECH ROOM	D30
D31	BASEBOARD HEATER BB-A, OFFICE	20 A	2	1250	180					1	20 A	R. NORTH EXTERIOR	D32
D33						1250	200			1	20 A	EXISTING LOAD GARAGE	D34
D35	GAS UNIT HEATERS GUH-3/GUH-4, MECH, STORAGE	20 A	1					312	200	1	20 A	EXISTING LOAD GARAGE	D36
D37	SPARE	20 A	1	0	0					1	20 A	EXISTING LOAD	D38
D39	EF-1, GARAGE	25 A	2			1373	2000			2	50 A	R. WELDER	D40
D41								1373	2000				D42
D43	NORTH GATE PUMPS	20 A	1	600	1664					2	20 A	PORTABLE ACTUATOR CHARGING STATION, LAB	D44
D45	AIR COMPRESSOR	60 A	2			4992	1664						D46
D47								4992	0	1	20 A	SPARE	D48
D49	GRINDER	30 A	3	2600	0					1	20 A	SPARE	D50
D51						2600	1000			2	20 A	HOIST	D52
D53								2600	1000				D54
TOTAL CONNECTED LOAD	55563 VA			TOTAL CALCULATED DEMAND	44451 VA					TOTAL CALCULATED AMPS	123 A		

GENERAL NOTES:

1.
2.
3.
4.

KEY NOTES:

* GFCI RATED BREAKER

L. = LIGHTING

R. = RECEPTACLE

PANELBOARD SCHEDULE

NAME:	LP-4-1	PANEL ID	C	MAIN CIRCUIT BREAKER:	125	KAIC RATING:	10
LOCATION:	DISINFECTION BUILDING			MAIN LUGS ONLY:		VOLTAGE:	208Y/120
MOUNTING:	SURFACE			WIRES:	4	PHASE:	3

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION	CKT
C1	L. FLUSHING WATER ROOM	20 A	1	449	500					1	20 A	DISINFECTION BUILDING CONTROL PANEL, SCP-3	C2
C3	L. EXTERIOR BUILDING**	20 A	1			120	250			1	20 A	FE-2/FIT-2	C4
C5	L. SULFUR FEED ROOM, EF-5	20 A	1					890	1248	2	15 A	MSI-2/MSO-2	C6
C7	L. ROOMS 106, 101 - EF-3, EF-7	20 A	1	1794	1248								C8
C9	L. CHLORINE FEED ROOM, EF-4	20 A	1			890	500			1	20 A	GAS DETECTION TRANSMITTERS / CL2 & SULFUR	C10
C11	R. CL2 CONTACT BASIN	20 A	1					180	312	1	20 A	GAS UNIT HEATERS GUH-1/GUH-2, ROOM 104	C12
C13	EXHAUST FAN EF-5, ROOM 104	20 A	1	336	250					1	20 A	EFFLUENT SAMPLER, CL2 CONTACT BASIN	C14
C15	R. ROOMS 105, 106	20 A	1			540	360			1	20 A	CARBON FEED ROOM CHEMICAL PUMPS	C16
C17	R. ROOMS 101, 102	20 A	1					360	540	1	20 A	R. ELECTRICAL ROOM, EXTERIOR	C18
C19	GWH-1, ROOM 104	20 A	1	1920	500					1	20 A	CHLORINE EM SHUT OFF PNL & VACUUM MONITOR	C20
C21	SULFUR SCALE TRANSMITTER & PACE PANEL	20 A	1			500	250			1	20 A	CHLORINE SCALE TRANSMITTER	C22
C23	SPARE	20 A	1					0	720	1	20 A	R. ROOM 104	C24
C25	SPARE	20 A	1	0	0					1	20 A	SPARE	C26
C27	SPARE	20 A	1			0	0			1	20 A	SPARE	C28
C29	SPARE	20 A	1					0	0	1	20 A	SPARE	C30
C31	SPACE	--	1	--	--					1	--	SPACE	C32
C33	SPACE	--	1			--	--			1	--	SPACE	C34
C35	SPACE	--	1					--	--	1	--	SPACE	C36
C37	SPACE	--	1	--	--					1	--	SPACE	C38
C39	SPACE	--	1			--	--			1	--	SPACE	C40
C41	SPACE	--	1					--	--	1	--	SPACE	C42
TOTAL CONNECTED LOAD	14657 VA			TOTAL CALCULATED DEMAND	11726 VA					TOTAL CALCULATED AMPS	33 A		

GENERAL NOTES:

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KEY NOTES:

* GFCI RATED BREAKER

L. = LIGHTING

R. = RECEPTACLE

PANELBOARD SCHEDULE

NAME:	LP-3-1	PANEL ID	E	MAIN CIRCUIT BREAKER:	125	KAIC RATING:	10
LOCATION:	ELECTRICAL BUILDING			MAIN LUGS ONLY:		VOLTAGE:	208Y/120
MOUNTING:	SURFACE			WIRES:	4	PHASE:	3

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION	CKT
E1	SCADA CONTROL PANEL (SCP-1)	20 A	1	1200	486					1	20 A	L. AERATION BASIN	E2
E3	R. ELECTRICAL BUILDING, EXTERIOR	20 A	1			900	422			1	20 A	L. ELECTRICAL BUILDING, EXTERIOR	E4
E5	R. AERATION BASIN	20 A	1					360	0	1	20 A	SPARE	E6
E7	AERATION BASIN EAST ANALYZERS	20 A	1	500	0					1	20 A	SPARE	E8
E9	MSI-3/MSO-3	25 A	2			2080	390			1	20 A	L. R. - CLARIFIER NO. 1	E10
E11								2080	500	1	20 A	**HEAT TAPE - CLARIFIER NO. 1	E12
E13	AERATION BASIN WEST ANALYZERS	20 A	1	500	390					1	20 A	L. R. - CLARIFIER NO. 2	E14
E15	AERATION BASIN ANALYZERS ENCLOSURE HEATING	20 A	1			500	500			1	20 A	**HEAT TAPE - CLARIFIER NO. 2	E16
E17	SPARE	20 A	1					0	0	1	20 A	SPARE	E18
E19	SPARE	20 A	1	0	0					1	20 A	SPARE	E20
E21	SPARE	20 A	1			0	0			1	20 A	SPARE	E22
E23	SPARE	20 A	1					0	0	1	20 A	SPARE	E24
E25	SPACE	--	1	--	0					1	20 A	SPARE	E26
E27	SPACE	--	1			--	0			1	20 A	SPARE	E28
E29	SPACE	--	1					--	0	1	20 A	SPARE	E30
E31	SPACE	--	1	--	--					1	--	SPACE	E32
E33	SPACE	--	1			--	--			1	--	SPACE	E34
E35	SPACE	--	1					--	--	1	--	SPACE	E36
E37	SPACE	--	1	--	--					1	--	SPACE	E38
E39	SPACE	--	1			--	--			1	--	SPACE	E40
E41	SPACE	--	1					--	--	1	--	SPACE	E42
TOTAL CONNECTED LOAD	10808 VA			TOTAL CALCULATED DEMAND	8646 VA					TOTAL CALCULATED AMPS	24 A		

GENERAL NOTES:

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KEY NOTES:

* GFCI RATED BREAKER

** PROVIDE GFPE CIRCUIT BREAKER

L. = LIGHTING

R. = RECEPTACLE

PANELBOARD SCHEDULE

NAME:	LP-5-1	PANEL ID	F	MAIN CIRCUIT BREAKER:	125	KAIC RATING:	10
LOCATION:	BLOWER BUILDING			MAIN LUGS ONLY:		VOLTAGE:	208Y/120
MOUNTING:	SURFACE			WIRES:	4	PHASE:	3

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION	CKT
F1	R. BLOWER ROOM	20 A	1	1080	720					1	20 A	R. BLOWER BUILDING BASEMENT	F2
F3	L. BLOWER BUILDING BASEMENT	20 A	1			691	1038			1	20 A	L. BLOWER ROOM	F4
F5	CONTROL PANEL, RIO-1	20 A	1					500	80	1	20 A	L. EXTERIOR BLOWER BUILDING	F6
F7	FE/FIT-8, BASEMENT	20 A	1	250	250					1	20 A	FE/FIT-7, BASEMENT	F8
F9	FE/FIT-5, BASEMENT	20 A	1			250	250			1	20 A	FE/FIT-6, BASEMENT	F10
F11	FE/FIT-3, BASEMENT	20 A	1					250	250	1	20 A	FE/FIT-4, BASEMENT	F12
F13	GAS DETECTION TRANSMITTER	20 A	1	250	400					1	20 A	VALVES V-RAS-13, V-WAS-2	F14
F15	SPARE	20 A	1			0	180			1	20 A	R. MAU-2	F16
F17	SPARE	20 A	1					0	0	1	20 A	SPARE	F18
F19	SPARE	20 A	1	0	0					1	20 A	SPARE	F20
F21	SPARE	20 A	1			0	0			1	20 A	SPARE	F22
F23	SPARE	20 A	1					0	0	1	20 A	SPARE	F24
F25	SPARE	20 A	1	0	0					1	20 A	SPARE	F26
F27	SPARE	20 A	1			0	0			1	20 A	SPARE	F28
F29	SPARE	20 A	1					0	0	1	20 A	SPARE	F30
TOTAL CONNECTED LOAD	6439 VA			TOTAL CALCULATED DEMAND	5151 VA					TOTAL CALCULATED AMPS	14 A		

GENERAL NOTES:

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KEY NOTES:

* GFCI RATED BREAKER

L. = LIGHTING

R. = RECEPTACLE

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

SIGNATURE: _____ TYPED OR PRINTED NAME: AARON R. MUELLER

DATE 09/29/2026 LIC NO. 46184

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0	BID	09/29/2026

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL SCHEDULES

SHEET
7.35

CONDUIT AND WIRE SCHEDULE

WIRE ID	NUMBER OF CONDUITS	CONDUIT SIZE (IN)	CONDUCTORS QUANTITY & SIZE PER CONDUIT (AWG)	FROM	TO	NOTES
AB-ANLG-A	1	2.5	12-2/C#16 SHIELDED	AERATION BASIN EAST ANALOG JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
AB-ANLG-B	1	1.25	6-2/C#16 SHIELDED	AERATION BASIN WEST ANALOG JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
AB-PWR-A	1	1.25	8#12, 1#12G	EAST AERATION BASIN POWER JUNCTION BOX	PANELBOARD LP-3-1	
AB-PWR-B	1	0.75	6#12, 1#12G	EAST AERATION BASIN POWER JUNCTION BOX	WEST AERATION BASIN POWER JUNCTION BOX	
ANLOG-A	1	2	12-2/C#16 SHIELDED	BLOWER BUILDING BASEMENT ANALOG JUNCTION BOX	BLOWER BUILDING REMOTE I/O, RIO-1	
ANT-A	1	0.75	COAX CABLE	SCADA ANTENNA	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
ATS-A	4	3.5	4#350KCMIL, 1#3/0G	MAIN SERVICE DISCONNECT (MSD)	AUTOMATIC TRANSFER SWITCH (ATS)	
ATS-B	1	0.75	10#14, 1#14G	AUTOMATIC TRANSFER SWITCH (ATS)	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
BB-A	1	0.75	2#12, 1#12G	ELECTRIC BASEBOARD HEATER	PANELBOARD LP-2-1	
BL-TSH-A	1	0.75	2#14, 1#14G	BLOWER ENCLOSURE THERMAL SWITCH	BLOWER BUILDING REMOTE I/O, RIO-1	
BLOWER-A	1	1.5	3#4, 1#8G	BLOWER VFD	DISTRIBUTION PANEL DP-2-1	
BLOWER-B	1	1.5	3#4, 1#8G	BLOWER VFD	BLOWER DISCONNECT	
BLOWER-C	1	1.5	3#4, 1#8G	BLOWER	BLOWER DISCONNECT	
C-DRIVE-A	1	1.25	3#12, 1#12G	CLARIFIER DRIVE LOCAL CONTROL STATION & DISCONNECT	STARTER IN MCC-1	
C-DRIVE-B	1	1.25	8#14, 1#14G	CLARIFIER DRIVE LOCAL CONTROL STATION & DISCONNECT	STARTER IN MCC-1	
C-DRIVE-C	1	1.25	3#12, 1#12G	CLARIFIER DRIVE LOCAL CONTROL STATION & DISCONNECT	CLARIFIER DRIVE, ME-FC-2	
C-DRIVE-D	1	1.25	3#12, 1#12G	CLARIFIER DRIVE LOCAL CONTROL STATION & DISCONNECT	CLARIFIER DRIVE, ME-FC-1	
CARB-A-A	1	1.25	5-2/C#16 SHIELDED	CARBON FEED ROOM ANALOG SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CARB-A-B	1	0.75	2-2/C#16 SHIELDED	CARBON FEED ROOM ANALOG SIGNALS JUNCTION BOX	CHEMICAL FEED PUMP	
CARB-D-A	1	0.75	13#14, 1#14G	CARBON FEED ROOM DIGITAL SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CARB-D-B	1	0.75	5#14, 1#14G	CARBON FEED ROOM DIGITAL SIGNALS JUNCTION BOX	CHEMICAL FEED PUMP	
CARB-FLD-A	1	0.75	2#14, 1#14G	TEMPERATURE SWITCH	FLOOR FLOOD SWITCH	
CARB-P-A	1	0.75	4#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	PANELBOARD LP-4-1	
CARB-P-B	1	0.75	2#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	CHEMICAL FEED PUMP	
CARB-P-C	1	0.75	4#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CARB-P-D	1	0.75	3#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	CHEMICAL FEED RECEPTACLE	
CARB-TMP-A	1	0.75	3#14, 1#14G	CARBON FEED ROOM DIGITAL SIGNALS JUNCTION BOX	TEMPERATURE SWITCH	
CL2-A-A	1	1.25	5-2/C#16 SHIELDED	CHLORINE ROOM ANALOG SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CL2-D-A	1	0.75	16#14, 1#14G	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CL2-EM-A	1	0.75	2#12, 1#12G	EMERGENCY SHUT OFF CONTROL PANEL	CHLORINE ROOM POWER JUNCTION BOX	
CL2-EM-B	1	0.75	4#14, 1#14G	EMERGENCY SHUT OFF CONTROL PANEL	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	
CL2-EPO-A	1	0.75	2#14, 1#14G	GAS EMERGENCY PUSH BUTTON	CHLORINE SHUT OFF PANEL	
CL2-P-A	1	0.75	4#12, 1#12G	CHLORINE ROOM POWER JUNCTION BOX	PANELBOARD LP-4-1	
CL2-SCALE-A	1	0.75	2#12, 1#12G	CHLORINE SCALE TRANSMITTER	CHLORINE ROOM POWER JUNCTION BOX	
CL2-SCALE-B	1	0.75	2-2/C#16 SHIELDED	CHLORINE SCALE TRANSMITTER	CHLORINE ROOM ANALOG SIGNALS JUNCTION BOX	
CL2-SCALE-C	1	0.75	MANUFACTURER RECOMMENDED CABLE	CHLORINE SCALE TRANSMITTER	CHLORINE SCALE	
CL2-SOL-A	1	0.75	2#14, 1#14G	CHLORINE SOLENOID	CHLORINE ROOM DIGITAL JUNCTION BOX	
CL2-SPKLR-A	1	0.75	3#14, 1#14G	TAMPER & FLOW SWITCH	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	
CL2-TMP-A	1	0.75	2#14, 1#14G	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	TEMPERATURE SWITCH	
CL2-VM-A	1	0.75	2#12, 1#12G	VACUUM MONITOR	CHLORINE ROOM POWER JUNCTION BOX	
CL2-VM-B	1	0.75	2#14, 1#14G	VACUUM MONITOR	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	
CLAR-EF-A	1	1.25	3#12, 1#12G	CLARIFIER EXHAUST FAN COMBO STARTER	DISTRIBUTION PANEL DP-2-1	
CLAR-EF-B	1	0.75	3#12, 1#12G	CLARIFIER EXHAUST FAN COMBO STARTER	CLARIFIER EXHAUST FAN	
CLAR-EF-C	1	1.25	4#14, 1#14G	CLARIFIER EXHAUST FAN COMBO STARTER	SCADA CONTROL PANEL (SCP-1)	
CLAR-EF-D	1	0.75	2#12, 1#12G	CLARIFIER EXHAUST FAN COMBO STARTER	INTERIOR CLARIFIER SWITCHED LIGHTING CIRCUIT	
CLEF-F-A	1	0.75	2#12, 1#12G	CHLORINE ROOM POWER JUNCTION BOX	CHLORINE ROOM EXHAUST FAN SWITCH	
CLEF-F-B	1	0.75	2#12, 1#12G	EXHAUST FAN	CHLORINE FEED ROOM EXHAUST FAN SWITCH	
CLEF-F-C	1	0.75	4#12, 1#12G	CHLORINE ROOM POWER JUNCTION BOX	CHLORINE ROOM INDOOR STATUS INDICATOR STATION	
CLEF-F-D	1	0.75	2#12, 1#12G	CHLORINE ROOM POWER JUNCTION BOX	EXHAUST FAN MOTORIZED DAMPER	
CLEF-S-A	1	0.75	2#12, 1#12G	LOCAL SWITCHED LIGHTING CIRCUIT	CHLORINE STORAGE ROOM EXHAUST FAN	
CLEF-S-F	1	0.75	2#12, 1#12G	CHLORINE STORAGE ROOM POWER JUNCTION BOX	EXHAUST FAN MOTORIZED DAMPER	
CM-GAS-A	1	0.75	2#12, 1#12G	GAS DETECTION TRANSMITTER	PANELBOARD LP-4-1	
CM-GAS-B	1	0.75	2-2/C#16 SHIELDED	GAS DETECTION TRANSMITTER	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CM-GAS-C	1	0.75	4#14, 1#14G	GAS DETECTION TRANSMITTER	CHEMICAL ROOM DIGITAL JUNCTION BOX	
CM-GAS-D	1	0.75	2#12, 1#12G	GAS DETECTION TRANSMITTER	CHEMICAL ROOM POWER JUNCTION BOX	
CMEF-E	1	0.75	2#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	EXHAUST FAN MOTORIZED DAMPER	
CMEF-S-A	1	0.75	2#12, 1#12G	LOCAL SWITCHED LIGHTING CIRCUIT	CARBON FEED ROOM EXHAUST FAN	
CO-NO2-A	1	0.75	2#12, 1#12G	GARAGE GAS DETECTION TRANSMITTER	PANELBOARD LP-2-1	
CO-NO2-B	1	0.75	2#12, 1#12G	GARAGE GAS DETECTION TRANSMITTER WEST	GARAGE GAS DETECTION TRANSMITTER EAST	
CU-1-A	1	0.75	3#12, 1#12G	CONDENSING UNIT, CU-1 DISCONNECT	PANELBOARD PP-2-1	
CU-1-B	1	0.75	3#12, 1#12G	CONDENSING UNIT, CU-1 DISCONNECT	CONDENSING UNIT, CU-1	
DATA-A	1	0.75	CAT6	SCADA DATA OUTLET	DATA RACK, ADMIN BUILDING	
DATA-B	1	0.75	CAT6	WIRELESS ACCESS POINT, WAP	DATA RACK, ADMIN BUILDING	
DIGIT-A	1	0.75	16#14, 1#14G	BLOWER BUILDING BASEMENT DIGITAL JUNCTION BOX	BLOWER BUILDING REMOTE I/O, RIO-1	
DIGIT-B	1	1.25	10#14, 1#14G	JET MIX PUMP DIGITAL JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
DIGIT-C	1	1.25	8#14, 1#14G	MIXED LIQUOR PUMP DIGITAL JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
DOOR-A	1	0.75	2#14, 1#14G	DOOR CONTACT	CHLORINE ROOM DIGITAL JUNCTION BOX	
DOOR-B	1	0.75	2#14, 1#14G	DOOR CONTACT	SULFUR ROOM DIGITAL JUNCTION BOX	
DP-1-1-A	4	3.5	4#350KCMIL, 1#3/0G	DISTRIBUTION PANEL DP-1-1	AUTOMATIC TRANSFER SWITCH (ATS)	
DP-2-1-A	2	3.5	4#350KCMIL, 1#1G	DISTRIBUTION PANEL DP-1-1	DISTRIBUTION PANEL DP-2-1	
EF-1-A	1	0.75	2#12, 1#12G	EXHAUST FAN, EF-1 DISCONNECT	PANELBOARD LP-2-1	
EF-2-A	1	0.75	3#12, 1#12G	EXHAUST FAN, EF-2 DISCONNECT	MAKE-UP AIR UNIT, MAU-1	
EF-2-B	1	0.75	3#12, 1#12G	EXHAUST FAN, EF-2 DISCONNECT	EXHAUST FAN, EF-2	
EF-5-A	1	0.75	2#12, 1#12G	EXHAUST FAN, EF-5 DISCONNECT	PANELBOARD LP-4-1	
EF-8-A	1	0.75	3#12, 1#12G	EXHAUST FAN, EF-8 DISCONNECT	MAKE-UP AIR UNIT, MAU-2	
EF-RR-A	1	0.75	2#12, 1#12G	EXHAUST FAN DISCONNECT	PANELBOARD LP-2-1	
EF-RR-B	1	0.75	2#12, 1#12G	EXHAUST FAN DISCONNECT	RESTROOM SWITCHED LIGHTING CIRCUIT	
EFF-SMPL-A	1	1.25	2#12, 1#12G	EFFLUENT SAMPLER	PANELBOARD LP-4-1	
EFF-SMPL-B	1	1.25	4#14, 1#14G	EFFLUENT SAMPLER	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
EFF-SMPL-C	1	1.25	1-2/C#16 SHIELDED	EFFLUENT SAMPLER	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
EUH-1-A	1	0.75	3#10, 1#10G	ELECTRIC UNIT HEATER, EUH-1 DISCONNECT	PANELBOARD PP-1-1	
EUH-2-A	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER, EUH-2 DISCONNECT	PANELBOARD PP-1-1	
EUH-12-A	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER, EUH-12	DISTRIBUTION PANEL DP-2-1	
EUH-15-A	1	0.75	2#12, 1#12G	ELECTRIC UNIT HEATER	PANELBOARD LP-2-1	
EUH-A	1	0.75	3#10, 1#10G	ELECTRIC UNIT HEATER DISCONNECT	PANELBOARD PP-4-1	
EUH-B	1	0.75	3#10, 1#10G	ELECTRIC UNIT HEATER DISCONNECT	ELECTRIC UNIT HEATER	
EUH-BLWR-A	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER DISCONNECT	PANELBOARD PP-5-1	
EUH-BLWR-B	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER DISCONNECT	ELECTRIC UNIT HEATER	
EUH-BLWR-C	1	1.5	3#12, 1#12G	ELECTRIC UNIT HEATER	PANELBOARD PP-5-1	
EUH-C	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER DISCONNECT	PANELBOARD PP-4-1	
EUH-D	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER DISCONNECT	ELECTRIC UNIT HEATER	
F-1-A	1	0.75	2#12, 1#12G	FURNACE, F-1 DISCONNECT	PANELBOARD LP-2-1	
F-1-B	1	0.75	4#12, 1#12G	FURNACE, F-1 DISCONNECT	CONDENSING UNIT, CU-1	
FLOAT-A	1	0.75	3#14, 1#14G	FLOAT DIGITAL	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	

CONDUIT AND WIRE SCHEDULE

WIRE ID	NUMBER OF CONDUITS	CONDUIT SIZE (IN)	CONDUCTORS QUANTITY & SIZE PER CONDUIT (AWG)	FROM	TO	NOTES
FLOW-A	1	0.75	2#12, 1#12G	FLOW METER TRANSMITTER	BLOWER BUILDING BASEMENT POWER JUNCTION BOX	
FLOW-B	1	0.75	2-2/C#16 SHIELDED	FLOW METER TRANSMITTER	BLOWER BUILDING BASEMENT ANALOG JUNCTION BOX	
FLOW-C	1	1.25	MANUFACTURER CABLE	FLOW METER	FLOW METER TRANSMITTER	
FLOW-D	1	0.75	2#12, 1#12G	FLOW METER TRANSMITTER	PANELBOARD LP-4-1	
FLOW-E	1	0.75	2-2/C#16 SHIELDED	FLOW METER TRANSMITTER	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
FLOW-F	1	0.75	MANUFACTURER CABLE	FLOW METER	FLOW METER TRANSMITTER	
FT-01-A	1	0.75	1-2/C#16 SHIELDED	RADAR TRANSMITTER ANALOG JUNCTION BOX	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
FT-01-B	1	0.75	1-2/C#16 SHIELDED	RADAR TRANSMITTER ANALOG JUNCTION BOX	RADAR TRANSMITTER	
GAS-A	1	0.75	2#12, 1#12G	GAS TRANSMITTER	PANELBOARD LP-1-1	
GAS-B	1	0.75	2-2/C#16 SHIELDED	GAS TRANSMITTER	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
GAS-BLWR-A	1	0.75	2#12, 1#12G	GAS TRANSMITTER	PANELBOARD LP-5-1	
GAS-BLWR-B	1	0.75	2-2/C#16 SHIELDED	GAS TRANSMITTER	BLOWER BUILDING REMOTE I/O, RIO-1	
GAS-BLWR-C	1	0.75	2#14, 1#14G	GAS TRANSMITTER	BLOWER BUILDING REMOTE I/O, RIO-1	
GAS-BLWR-D	1	0.75	2#14, 1#14G	GAS TRANSMITTER	MAKE-UP AIR UNIT, MAU-2	
GAS-C	1	0.75	4#14, 1#14G	GAS TRANSMITTER	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
GAS-D	1	0.75	4#14, 1#14G	GAS TRANSMITTER	MAKE-UP AIR UNIT, MAU-1	
GAS-E	1	0.75	3#14, 1#14G	GO/NO-GO STATION	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
GEN-A	3	3	4#250KCMIL, 1#1/0G	AUTOMATIC TRANSFER SWITCH (ATS)	GENERATOR	
GEN-B	1	1.25	10#14, 1#14G	AUTOMATIC TRANSFER SWITCH (ATS)	GENERATOR	
GEN-C	1	1.25	3#6, 1#8G	PANELBOARD LP-1-1	GENERATOR LOAD CENTER	
GEN-D	1	1.25	16#14, 1#14G	SCADA CONTROL PANEL (SCP-1)	GENERATOR	
GUH-A	1	0.75	2#12, 1#12G	GAS UNIT HEATER, GUH-4	PANELBOARD LP-2-1	
GUH-B	1	0.75	2#12, 1#12G	GAS UNIT HEATER, GUH-3	GAS UNIT HEATER, GUH-4	
GUH-C	1	0.75	2#12, 1#12G	GAS UNIT HEATER, GUH-2	PANELBOARD LP-4-1	
GUH-D	1	0.75	2#12, 1#12G	GAS UNIT HEATER, GUH-2	GAS UNIT HEATER, GUH-1	
GWH-1-A	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-1 DISCONNECT	PANELBOARD LP-4-1	
GWH-1-B	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-1 DISCONNECT	GAS WATER HEATER, GWH-1	
GWH-2-A	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-2 DISCONNECT	PANELBOARD LP-2-1	
GWH-2-B	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-2 DISCONNECT	GAS WATER HEATER, GWH-2	
HWCP-1	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-2 DISCONNECT	HOT WATER RECIRCULATION PUMP	
INF-SMPL-A	1	0.75	2#12, 1#12G	INFLUENT SAMPLER	PANELBOARD LP-1-1	
INF-SMPL-B	1	0.75	4#14, 1#14G	INFLUENT SAMPLER	SCADA CONTROL PANEL (SCP-1)	
INF-SMPL-C	1	0.75	1-2/C#16 SHIELDED	INFLUENT SAMPLER	SCADA CONTROL PANEL (SCP-1)	
LEVEL-A	1	0.75	1-2/C#16 SHIELDED	RADAR LEVEL TRANSMITTER JUNCTION BOX	BLOWER BUILDING REMOTE I/O, RIO-1	
LEVEL-B	1	0.75	1-2/C#16 SHIELDED	MIXED LIQUOR PUMP ANALOG JUNCTION BOX	LEVEL TRANSDUCER	
LEVEL-C	1	1.25	1-2/C#16 SHIELDED	MIXED LIQUOR PUMP ANALOG JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
LEVEL-D	1	0.75	1-2/C#16 SHIELDED	CARBON FEED ROOM ANALOG SIGNALS JUNCTION BOX	RADAR LEVEL READOUT PANEL	
LEVEL-E	1	0.75	1-2/C#16 SHIELDED	RADAR LEVEL READOUT PANEL	RADAR LEVEL TRANSMITTER	
LEVEL-F	1	0.75	1-2/C#16 SHIELDED	RADAR LEVEL TRANSMITTER	RADAR LEVEL TRANSMITTER JUNCTION BOX	
LIMIT-A	1	0.75	2#14, 1#14G	LIMIT SWITCH	DRIVE LOCAL CONTROL STATION & DISCONNECT	
LP-1-1-A	1	1.5	4#2, 1#6G	TRANSFORMER T-1-1	PANELBOARD LP-1-1	
LP-2-1-A	1	2.5	4#1/0, 1#6G	TRANSFORMER T-2-1	PANELBOARD LP-2-1	
LP-3-1-A	1	2.5	4#1/0, 1#6G	TRANSFORMER T-3-1	PANELBOARD LP-3-1	
LP-4-1-A	1	1.5	4#2, 1#6G	TRANSFORMER T-4-1	PANELBOARD LP-4-1	
LP-5-1-A	1	1.5	4#2, 1#6G	TRANSFORMER T-5-1	PANELBOARD LP-5-1	
LS-MAIN-A	1	2	4#1/0	LIFT STATION CONTROL PANEL	POLE MOUNTED TRANSFORMER	
LT-03-A	1	0.75	1-2/C#16 SHIELDED	INFLUENT CANAL RADAR LEVEL TRANSMITTER	JUNCTION BOX	
LT-03-B	1	0.75	1-2/C#16 SHIELDED	JUNCTION BOX	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
M-121-A	1	0.75	3#12, 1#12G	BAR SCREEN MOTOR	POWER JUNCTION BOX	
M-121-B	1	0.75	6#12, 1#12G	BAR SCREEN CONTROL PANEL	POWER JUNCTION BOX	
M-121-C	1	0.75	12#14, 1#14G	BAR SCREEN CONTROL PANEL	DIGITAL JUNCTION BOX	
M-121-D	1	0.75	3#12, 1#12G	BAR SCREEN CONTROL PANEL	PANELBOARD PP-1-1	
M-121-E	1	0.75	6#14, 1#14G	BAR SCREEN CONTROL PANEL	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
M-121-F	1	0.75	2#14, 1#14G	BAR SCREEN LOCAL CONTROL STATION	DIGITAL JUNCTION BOX	
M-121-G	1	0.75	2#14, 1#14G	E-STOP	DIGITAL JUNCTION BOX	
M-121-H	1	0.75	2#14, 1#14G	LIMIT SWITCH	DIGITAL JUNCTION BOX	
M-121-I	1	0.75	2#14, 1#14G	SOLENOID	DIGITAL JUNCTION BOX	
M-122-A	1	0.75	3#12, 1#12G	WASHER COMPACTOR MOTOR	POWER JUNCTION BOX	
M-122-D	1	0.75	2#12, 1#12G	EXISTING GRIT COLLECTOR CONTROL PANEL	PANELBOARD LP-1-1	
M-122-E	1	0.75	6#14, 1#14G	EXISTING GRIT COLLECTOR CONTROL PANEL	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
MAIN-A	4	3.5	4#350KCMIL, 1#3/0G	MAIN SERVICE DISCONNECT (MSD)	UTILITY TRANSFORMER	
MAU-1-A	1	0.75	3#10, 1#10G	MAKE-UP AIR UNIT, MAU-01	PANELBOARD PP-1-1	
MAU-1-B	1	0.75	6#14, 1#14G	MAKE-UP AIR UNIT, MAU-01	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
MAU-1-C	1	0.75	2#14, 1#14G	LIGHTING JUNCTION BOX	MAKE-UP AIR UNIT, MAU-1	
MAU-2-A	1	1.5	3#1, 1#8G	MAKE-UP AIR UNIT, MAU-2	PANELBOARD PP-5-1	
MAU-2-B	1	0.75	4#14, 1#14G	MAKE-UP AIR UNIT, MAU-2	RIO-1 CONTROL PANEL	
MAU-2-C	1	0.75	2#14, 1#14G	LIGHTING JUNCTION BOX	MAKE-UP AIR UNIT, MAU-2	
MCC-1-A	2	2	4#3/0, 1#3G	DISTRIBUTION PANEL DP-2-1	MCC-1	
MCC-1-B	2	2	65#14, 1#14G	MCC-1	SCADA CONTROL PANEL (SCP-1)	
MCC-1-C	2	2	13-2/C#16 SHIELDED	MCC-1	SCADA CONTROL PANEL (SCP-1)	
ME-A-7-A	1	0.75	3#10, 1#10G	BLOWER VFD	PANELBOARD PP-4-1	
ME-A-7-B	1	0.75	3#10, 1#10G	BLOWER DISCONNECT	BLOWER VFD	
ME-A-7-C	1	0.75	3#10, 1#10G	BLOWER DISCONNECT	BLOWER	
ME-A-7-D	1	0.75	2#14, 1#14G	BLOWER ENCLOSURE THERMAL SWITCH	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
MSI-1-A	1	0.75	4#12, 1#12G	INDOOR UNIT MSI-1 DISCONNECT	OUTDOOR UNIT MSO-1	
MSI-2-A	1	0.75	4#12, 1#12G	INDOOR UNIT MSI-2 DISCONNECT	OUTDOOR UNIT MSO-2	
MSI-3-A	1	0.75	4#12, 1#12G	INDOOR UNIT MSI-3 DISCONNECT	OUTDOOR UNIT MSO-3	
MSO-1-A	1	0.75	3#12, 1#12G	OUTDOOR UNIT MSO-1 DISCONNECT	PANELBOARD LP-1-1	
MSO-1-B	1	0.75	3#12, 1#12G	OUTDOOR UNIT MSO-1 DISCONNECT	OUTDOOR UNIT MSO-1	
MSO-2-A	1	0.75	3#12, 1#12G	OUTDOOR UNIT MSO-2 DISCONNECT	PANELBOARD LP-4-1	
MSO-2-B	1	0.75	3#12, 1#12G	OUTDOOR UNIT MSO-2 DISCONNECT	OUTDOOR UNIT MSO-2	
MSO-3-A	1	0.75	3#10, 1#10G	OUTDOOR UNIT MSO-3 DISCONNECT	PANELBOARD LP-3-1	
MSO-3-B	1	0.75	3#10, 1#10G	OUTDOOR UNIT MSO-3 DISCONNECT	OUTDOOR UNIT MSO-3	
P-JM-A	1	1.25	3#12, 1#12G	JET MIX PUMP DISCONNECT	VFD IN MCC-1	
P-JM-B	1	1.5	PUMP CABLE	JET MIX PUMP DISCONNECT	JET MIX PUMP	
P-JM-C	1	0.75	3#14, 1#14G	JET MIX PUMP DIGITAL JUNCTION BOX	JET MIX PUMP DISCONNECT	PUMP PROTECTION SIGNALS
P-JM-D	1	0.75	3#14, 1#14G	JET MIX PUMP	JET MIX PUMP DISCONNECT	PUMP PROTECTION SIGNALS
P-JM-E	1	1.25	3#10, 1#10G	JET MIX PUMP DISCONNECT	VFD IN MCC-1	
P-MLR-A	1	1.25	3#10, 1#10G	MIXED LIQUOR PUMP DISCONNECT	VFD IN MCC-1	
P-MLR-B	1	0.75	3#14, 1#14G	MIXED LIQUOR PUMP DIGITAL JUNCTION BOX	MIXED LIQUOR PUMP DISCONNECT	PUMP PROTECTION SIGNALS
P-MLR-C	1	1.5	PUMP CABLE	MIXED LIQUOR PUMP DISCONNECT	MIXED LIQUOR PUMP	
P-ST-A	1	0.75	3#10, 1#10G	SLUDGE MIXING/LOADOUT PUMP DISCONNECT	VFD IN MCC-1	
P-ST-B	1	0.75	3#10, 1#10G	SLUDGE MIXING/LOADOUT PUMP DISCONNECT	SLUDGE MIXING/LOADOUT PUMP	
P-UW-A	1	0.75	3#12, 1#12G	UTILITY WATER PUMP VFD	PANELBOARD PP-4-1	
P-UW-B	1	1.25	3#12, 1#12G	UTILITY WATER PUMP DISCONNECT	UTILITY WATER PUMP VFD	

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CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL SCHEDULES

SHEET 7.36

CONDUIT AND WIRE SCHEDULE

WIRE ID	NUMBER OF CONDUITS	CONDUIT SIZE (IN)	CONDUCTORS QUANTITY & SIZE PER CONDUIT (AWG)	FROM	TO	NOTES
P-UW-C	1	1.25	PUMP CABLE	UTILITY WATER PUMP DISCONNECT	UTILITY WATER PUMP	
P-UW-D	1	1.25	6#14, 1#14G	CHLORINE CONTACT BASIN DIGITAL JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	PUMP PROTECTION SIGNALS
P-UW-E	1	1.25	3#14, 1#14G	CHLORINE CONTACT BASIN DIGITAL JUNCTION BOX	UTILITY WATER PUMP DISCONNECT	PUMP PROTECTION SIGNALS
P-UW-F	1	1.25	3#14, 1#14G	CHLORINE CONTACT BASIN DIGITAL JUNCTION BOX	UTILITY WATER PUMP DISCONNECT	PUMP PROTECTION SIGNALS
PACE-A	1	0.75	2#12, 1#12G	SO2 PACE PANEL	SO2 ROOM POWER JUNCTION BOX	
PACE-B	1	0.75	2-2/C#16 SHIELDED	SO2 PACE PANEL	SO2 ROOM ANALOG SIGNALS JUNCTION BOX	
PACE-C	1	0.75	4#14, 1#14G	SO2 PACE PANEL	SO2 ROOM DIGITAL SIGNALS JUNCTION BOX	
PH-AIT-A	1	0.75	2#12, 1#12G	PH ANALYZER TRANSMITTER, PH-AIT-1	PANELBOARD LP-1-1	
PH-AIT-B	1	0.75	2-2/C#16 SHIELDED	PH ANALYZER TRANSMITTER, PH-AIT-1	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
PH-AIT-C	1	0.75	SENSOR CABLE	PH ANALYZER TRANSMITTER, PH-AIT-2	PH SENSOR	
PP-1-1-A	1	2.5	4#4/0, 1#4G	DISTRIBUTION PANEL DP-1-1	PANELBOARD PP-1-1	
PP-2-1-A	1	1.5	4#1, 1#8G	DISTRIBUTION PANEL DP-1-1	PANELBOARD PP-2-1	
PP-4-1-A	1	2.5	4#4/0, 1#4G	DISTRIBUTION PANEL DP-1-1	PANELBOARD PP-4-1	
PP-5-1-A	1	2.5	4#4/0, 1#4G	DISTRIBUTION PANEL DP-2-1	PANELBOARD PP-5-1	
PWR-JB-A	1	0.75	4#12, 1#12G	BLOWER BUILDING BASEMENT POWER JUNCTION BOX	PANELBOARD LP-5-1	
RAS-DIG-A	1	1.25	12#14, 1#14G	RAS PUMPS DIGITAL JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
RAS-P-A	1	1.25	3#12, 1#12G	RAS PUMP DISCONNECT	VFD IN MCC-1	
RAS-P-B	1	0.75	3#14, 1#14G	RAS PUMPS DIGITAL JUNCTION BOX	RAS PUMP DISCONNECT	PUMP PROTECTION SIGNALS
RAS-P-C	1	1.25	PUMP CABLE	RAS PUMP DISCONNECT	RAS PUMP	
RAS-P-D	1	1.25	FLOAT CABLES	RAS PUMPS DIGITAL JUNCTION BOX	LEVEL FLOATS	
RIO-1-B	1	0.75	2#12, 1#12G	BLOWER BUILDING REMOTE I/O, RIO-1	PANELBOARD LP-5-1	
S02-A-A	1	1.25	5-2/C#16 SHIELDED	SULFUR ROOM ANALOG SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
SC-DIG-A	1	1.25	8#14, 1#14G	SCUM PUMP DIGITAL JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
SC-DIG-B	1	1.25	FLOAT CABLES	SCUM PUMP DIGITAL JUNCTION BOX	LEVEL FLOATS	
SC-P-A	1	1.25	3#12, 1#12G	SCUM PUMP P-SC-1 DISCONNECT	STARTER IN MCC-1	
SC-P-B	1	1.25	PUMP CABLE	SCUM PUMP P-SC-1 DISCONNECT	SCUM PUMP P-SC-1	
SC-P-C	1	0.75	3#14, 1#14G	SCUM PUMP DIGITAL JUNCTION BOX	SCUM PUMP DISCONNECT	PUMP PROTECTION SIGNALS
SCADA-A	1	1.25	6 STRAND FIBER OPTIC CABLE	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	DATA RACK, ADMIN BUILDING	
SCADA-B	1	1.25	6 STRAND FIBER OPTIC CABLE	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
SCADA-C	1	1.25	6 STRAND FIBER OPTIC CABLE	DISINFECTION BUILDING CONTROL PANEL, SCP-3	SCADA CONTROL PANEL (SCP-1)	
SCADA-D	1	1.25	6 STRAND FIBER OPTIC CABLE	BLOWER BUILDING REMOTE I/O, RIO-1	SCADA CONTROL PANEL (SCP-1)	
SCADA-E	1	1.25	6 STRAND FIBER OPTIC CABLE	BLOWER BUILDING REMOTE I/O, RIO-1	DATA RACK, ADMIN BUILDING	
SCP-1-A	1	1.5	2#12, 1#12G	PANELBOARD LP-3-1	SCADA CONTROL PANEL (SCP-1)	
SCP-2-A	1	0.75	2#12, 1#12G	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	PANELBOARD LP-1-1	
SCP-3-A	1	0.75	2#12, 1#12G	DISINFECTION BUILDING CONTROL PANEL, SCP-3	PANELBOARD LP-4-1	
SLUDGE-CP-A	1	0.75	2#12, 1#12G	SLUDGE LOADOUT CONTROL PANEL	PANELBOARD LP-5-1	
SLUDGE-CP-B	1	0.75	12#14, 1#14G	SLUDGE LOADOUT CONTROL PANEL	BLOWER BUILDING REMOTE I/O, RIO-1	
SLUDGE-CP-C	1	0.75	1-2/C#16 SHIELDED	SLUDGE LOADOUT CONTROL PANEL	BLOWER BUILDING REMOTE I/O, RIO-1	
SO2-D-A	1	0.75	12#14, 1#14G	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
SO2-EM-A	1	0.75	2#12, 1#12G	SULFUR ROOM POWER JUNCTION BOX	EMERGENCY SHUT OFF CONTROL PANEL	
SO2-EM-B	1	0.75	4#14, 1#14G	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	EMERGENCY SHUT OFF CONTROL PANEL	
SO2-EPO-A	1	0.75	2#14, 1#14G	GAS EMERGENCY PUSH BUTTON	SULFUR SHUT OFF PANEL	
SO2-F-A	1	0.75	2#12, 1#12G	SULFER DIOXIDE FEED ROOM POWER JUNCTION BOX	SULFER DIOXIDE FEED ROOM EXHAUST FAN SWITCH	
SO2-F-B	1	0.75	2#12, 1#12G	EXHAUST FAN	SULFUR ROOM EXHAUST FAN SWITCH	
SO2-F-C	1	0.75	4#12, 1#12G	SULFUR ROOM POWER JUNCTION BOX	SULFUR ROOM INDOOR STATUS INDICATOR STATION	
SO2-F-D	1	0.75	2#12, 1#12G	SULFER DIOXIDE FEED ROOM POWER JUNCTION BOX	EXHAUST FAN MOTORIZED DAMPER	
SO2-P-A	1	0.75	4#12, 1#12G	SULFUR ROOM POWER JUNCTION BOX	PANELBOARD LP-4-1	
SO2-SCALE-A	1	0.75	2#12, 1#12G	SCALE TRANSMITTER	SULFUR ROOM POWER JUNCTION BOX	
SO2-SCALE-B	1	0.75	1-2/C#16 SHIELDED	SCALE TRANSMITTER	SULFUR ROOM ANALOG SIGNALS JUNCTION BOX	
SO2-SCALE-C	1	0.75	MANUFACTURER RECOMMENDED CABLE	SCALE TRANSMITTER	CHEMICAL SCALE	
SO2-SPKLR-A	1	0.75	3#14, 1#14G	TAMPER & FLOW SWITCH	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	
SO2-TMP-A	1	0.75	2#14, 1#14G	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	TEMPERATURE SWITCH	
SO2-VM-A	1	0.75	2#14, 1#14G	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	SULFUR VACUUM MONITOR	
SO2-VM-B	1	0.75	2#12, 1#12G	SULFUR ROOM POWER JUNCTION BOX	SULFUR VACUUM MONITOR	
SPD-A	1	0.75	MANUFACTURER RECOMMENDED CABLE	SPD	MAIN SERVICE DISCONNECT (MSD)	
SPD-B	1	0.75	4#14, 1#14G	SPD	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
SPKLR-B	1	0.75	2#14, 1#14G	TAMPER SWITCH	FLOW SWITCH	
STR-A	1	0.75	3#12, 1#12G	COMBINATION STARTER	PANELBOARD PP-1-1	
STR-B	1	0.75	3#12, 1#12G	COMBINATION STARTER	EXISTING WIREWAY	
STR-C	1	0.75	6#14, 1#14G	COMBINATION STARTER	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
STR-D	1	0.75	6#14, 1#14G	COMBINATION STARTER	EXISTING GRIT COLLECTOR (M-1-3-1) CONTROL PANEL	
T-1-1-A	1	0.75	3#6, 1#8G	TRANSFORMER T-1-1	PANELBOARD PP-1-1	
T-2-1-A	1	1.25	3#4, 1#8G	TRANSFORMER T-2-1	PANELBOARD PP-2-1	
T-3-1-A	1	1.25	3#4, 1#8G	TRANSFORMER T-3-1	DISTRIBUTION PANEL DP-2-1	
T-4-1-A	1	1	3#6, 1#8G	TRANSFORMER T-4-1	PANELBOARD PP-4-1	
T-5-1-A	1	0.75	3#6, 1#8G	TRANSFORMER T-5-1	PANELBOARD PP-5-1	
TEMP-A	1	0.75	3#14, 1#14G	HIGH TEMP SWITCH	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
TEMP-B	1	0.75	2#14, 1#14G	HIGH TEMP SWITCH	LOW TEMP SWITCH	
TEMP-C	1	0.75	2#14, 1#14G	HIGH TEMP SWITCH	BLOWER BUILDING REMOTE I/O, RIO-1	
VALVE-A	1	0.75	2#12, 1#12G	VALVE	BLOWER BUILDING BASEMENT POWER JUNCTION BOX	
VALVE-B	1	0.75	8#14, 1#14G	VALVE	BLOWER BUILDING BASEMENT DIGITAL JUNCTION BOX	
VFD-A	1	0.75	8#14, 1#14G	VFD	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
VFD-B	1	0.75	2-2/C#16 SHIELDED	VFD	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
VFD-C	1	0.75	8#14, 1#14G	VFD	SCADA CONTROL PANEL (SCP-1)	
VFD-D	1	0.75	2-2/C#16 SHIELDED	VFD	SCADA CONTROL PANEL (SCP-1)	

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