CITY OF PUYALLUP

PIERCE COUNTY WASHINGTON

WATER POLLUTION CONTROL PLANT
THIRD SECONDARY CLARIFIER
CIP NO. 20-018

CITY OF PUYALLUP
DEPARTMENT OF PUBLIC WORKS
1100 39TH AVENUE SE
PUYALLUP, WASHINGTON 98371

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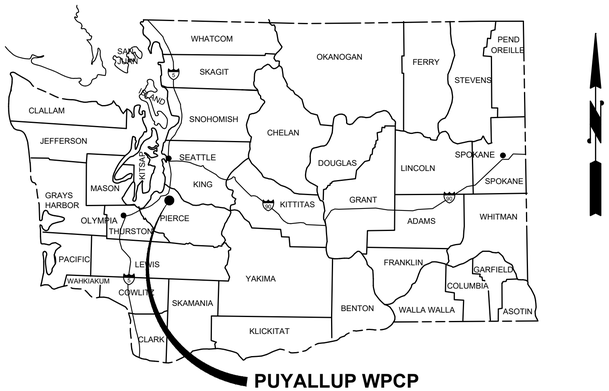
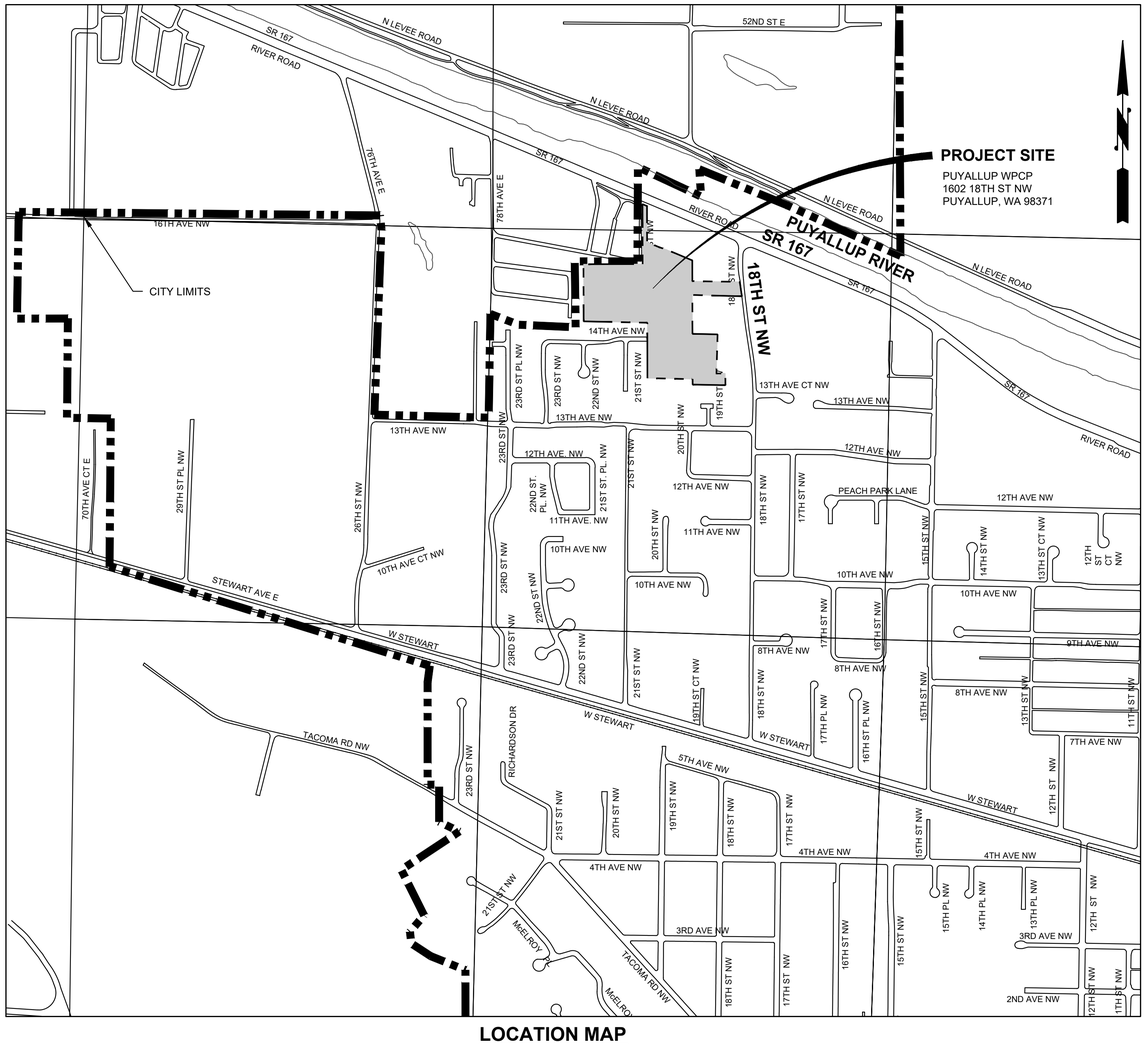
JUNE 2023
G&O JOB #21462.00



VICINITY MAP

NOT TO SCALE



LOCATION MAP

SCALE: 1"=500'-0"

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APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

NOTE: This approval expires on the date shown. If construction has not started by expiration date, plans must be resubmitted for review and approval.

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CITY OF PUYALLUP

WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018

1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	DAW
CHECKED BY:	DAW
DRAWN BY:	CRR
DESIGNER:	BJ
G & O JOB NO.:	21462.00
FILE:	G_MAPS-INDEX.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

VICINITY MAP, LOCATION MAP AND SHEET INDEX

DRAWING: G-1 OF: 9

SHEET: 1 OF: 55

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DESIGN CRITERIA AND PLANT DATA

PLANT LOADINGS

Flow:	
Average Annual Flow	9.46 MGD
Maximum Month (Design Flow)	13.98 MGD
Peak Hour Flow	27.38 MGD
Loadings:	
5-Day Biochemical Oxygen Demand	14,525 lb/d
Chemical Oxygen Demand	37,765 lb/d
Total Suspended Solids	15,550 lb/d
Total Kjeldahl Nitrogen	3,435 lb/d

MAIN PLANT LIFT STATION (EXISTING)

Quantity	4
Pump Type	screw
Size	66-Inch
Horsepower	75
Rotational Speed	36 rpm
Capacity	7,245 gpm

INFLUENT SCREENS (EXISTING)

Quantity	2
Type	Self-Cleaning Fine Screen
Drum Size	71-Inch
Bar Spacing	4 mm
Capacity, Each	17.90 MGD
Quantity	1
Type	Manual Coarse Bar
Bar Spacing	3/4-Inch

INFLUENT FLOW MEASUREMENT (EXISTING)

Quantity	1
Type	Parshall Flume
Size	4-Feet

PRIMARY CLARIFIERS (EXISTING)

Bank No. 1:	
Quantity	4
Length	150 feet
Width	20 feet
Side Water Depth	8.5 feet
Volume (each)	205,600 gal
Surface Loading Rate @ Design Flow	717 gpd/ft^2
Surface Loading Rate @ Peak Hour Flow	1,374 gpd/ft^2
Detention Time @ Design Flow	2.6 hr
Detention Time @ Peak Hour Flow	1.3 hr
Bank No. 2 :	
Quantity	2
Length	150 feet
Width	24 feet
Side Water Depth	10 feet
Volume (each)	287,100 gal
Surface Loading Rate @ Design Flow	746 gpd/ft^2
Surface Loading Rate @ Peak Hour Flow	1,511 gpd/ft^2
Detention Time @ Design Flow	2.6 hr
Detention Time @ Peak Hour Flow	1.3 hr

GRIT REMOVAL (EXISTING)

Quantity	2
Type	Grit Classifier
Diameter	40 Inches
Capacity, Each	400 gpm
Grit Dewatering System	
Quantity	1
Capacity	1 yd^3/hr
Clarifier Size	26 ft^2
Belt Width	6 Inches
Motor Horsepower	1

AERATION (EXISTING)

Quantity	3
Side Water Depth	21 feet
Volume, Each	252,000 ft^3
Hydraulic Detention Time @ Design Flow	9.4 hr
MLSS Concentration	2,850 mg/l
Aerobic Solids Retention Time	9.5 days
Oxygen Required @ Design Flow	770lb/hr
Quantity of Selector Zones	3
Quantity of Anoxic Zones	2
Quantity of Aerobic Zones	4
Selector Zone, SAx-1:	
Total Volume, all basins	10,500 ft^3
F/M Ratio	6 lb BOD_5/lb MLSS
Air Required	60 scfm
Selector Zone, SAx-2:	
Total Volume, all basins	10,500 ft^3
F/M Ratio	3 lb BOD_5/lb MLSS
Air Required	60 scfm
Selector Zone, SAx-3:	
Total Volume, all basins	21,000 ft^3
F/M Ratio	1.5 lb BOD_5/lb MLSS
Air Required	120 scfm
Anoxic Zone:	
Total Volume, all basins	249,000 ft^3
Air Required	1,420 scfm
Aerobic Zone:	
Total Volume, all basins	465,000 ft^3
Hydraulic Retention Time @ Design Flow	5.7 hr
Oxygen Required @ Design Flow	770 lb/hr
Internal Recycle Pumps:	
Quantity	3
Type	Horizontal Propeller
Capacity @ TDH	17,000 gpm @ 2.3 ft
Horsepower	20
Drain Pumps:	
Quantity	1
Type	Submersible
Capacity @ TDH	1,100 gpm @ 32 ft
Horsepower	20

BLOWERS (EXISTING)

Quantity	3
Type	Multi-Stage Centrifugal
Capacity, Each	3,425 scfm
Discharge Pressure	9.5 psi
Horsepower, Each	200

SECONDARY CLARIFIERS

	Buildout
Quantity	3 (1 New, 2 Existing)
Diameter	110 feet
Setting Area	9,500 ft^2
Side Water Depth	16 feet
Volume Per Unit (not including bottom cone)	1,150,000 gal
Surface Loading Rate @ Design Flow	513 gpd/ft^2
Surface Loading Rate @ Peak Hour Flow	983 gpd/ft^2
Detention Time @ Design Flow	5.9 hr
Detention Time @ Peak Hour Flow	3.0 hr
Solids Loading Rate @ Design Flow	16.0 lb/ft^2•d
Solids Loading Rate @ Peak Hour Flow	30.70 lb/ft^2•d
Sludge Scraper Drive Horsepower	1

SECONDARY SCUM PUMP (Clarifiers 1 and 2)

Quantity	1
Type	Submersible
Capacity @ TDH	175 gpm @ 15 ft
Horsepower	2

SECONDARY SCUM PUMP (Clarifier 3)

Quantity	1
Type	Submersible
Capacity @ TDH	120 gpm @ 13 ft
Horsepower	2

EFFLUENT FLOW METER

Quantity	2
Type	Magnetic
Size (Secondary Clarifiers 1 and 2)	48"
Size (Secondary Clarifier 3)	36"

EFFLUENT DISINFECTION

Type	Ultra-Violet
UV Tube Type	Low Pressure - High Output
Number of Channels	2
Channel Width	4'-8"
Channel Depth	7'-10"
Number of Banks/Channel	2
Number of Lamps/Bank	20
UV Transmittance	62%
Effluent Disinfection Standard	100 cfu/100 ml
UV Dose (MS2)	30 mJ/cm^2

EFFLUENT PUMPS (EXISTING)

Quantity	4
Pump Type	Vertical Propeller-Wet Pit
Capacity per Pump @ TDH	8,300 gpm @ 16 ft
Horsepower	60
Pump Station Capacity @ TDH	24,900 gpm @16 ft

RETURN ACTIVATED SLUDGE PUMPS

Quantity	4 (1 New, 3 Existing)
Type	Centrifugal
Capacity @ TDH	2,250 gpm @ 14 ft
Horsepower	20

WASTE ACTIVATED SLUDGE PUMPS (EXISTING)

Quantity	2
Type	Progressing Cavity
Capacity @ TDH	200 gpm @ 30 psi
Horsepower	10

PRIMARY SLUDGE PUMPS (EXISTING)

Quantity	3
Type	Recessed Impeller Centrifugal
Capacity per Pump @ TDH	360 gpm @ 31 ft
Horsepower	15

GRAVITY THICKENER (EXISTING)

Quantity	1
Diameter	35 ft
Side Water Depth	10 ft
Overflow Rate	660 gpd/ft^2
Solids Loading @ Design Flow	12.0 lb/ft^2•d
Drive Horsepower	1 1/2

THICKENED WASTE PRIMARY SLUDGE PUMPS (EXISTING)

Quantity	2
Type	Progressing Cavity
Capacity per Pump @ TDH	64 gpm @ 60 psi
Horsepower	5

FLOCCULATION TANK (EXISTING)

Quantity	1
Detention Time	3.0-5.0 minutes
Mixer Type	Vertical Turbine
Mixer Speed	7.7-38 rpm
Motor Size	1 hp

ROTARY DRUM THICKENER (EXISTING)

Quantity	1
Hydraulic Capacity	50 gpm
Solids Feed Concentration	~2%
Polymer Dosage	10 lbs/dry ton
Drive Horsepower	1
Flocculation Tank Mixer Horsepower	1
Solids Capture Rate	96%

POLYMER SYSTEM, THICKENING (EXISTING)

Type	2-tank
Polymer	Wet or Dry
Mixer Tank Volume	200 gal
Mixer Motor Size	2 hp
Feed Tank Volume	250 gal
Metering Pump Capacity	85 gph
Active Polymer Capacity (min required)	2.5 lbs/hr
Blower Conveyance System Capacity	90 cfm
Volumetric Feeder Motor Size	0.5 hp
Emulsion Feed Pump Motor Size	0.5 hp

POLYMER FEED PUMPS THICKENING (EXISTING)

Quantity	2
Type	Progressing Cavity
Capacity	2 gpm
TDH	30 psi
Motor Size	1 hp
Motor Speed	237 rpm

THICKENED WASTE ACTIVATED SLUDGE PUMPS (EXISTING)

Quantity	2
Type	Progressing Cavity
Pump Capacity @ TDH	50 gpm @ 90 psi
Horsepower	7.5

TEMPORARY SLUDGE STORAGE TANK (EXISTING)

Quantity	1
Diameter	75 ft
Side Water Depth	6.5 ft
Volume	215,000 gal
Air Flow Rate	550 scfm
Blowers (Existing)	
Quantity	3
Type	Multi-Stage Centrifugal
Capacity, Each	2,100 scfm
Discharge Pressure	4.0 psig
Horsepower	50

SCUM REMOVAL FACILITY (EXISTING)

Wet Well Length	18ft
Wet Well Width	8 ft
Quantity of Pumps	1
Pump Type	Rotary Lobe
Pump Capacity @ TDH	165 gpm @ 26.5 ft
Horsepower	3

ANAEROBIC DIGESTERS (EXISTING)

Primary Digesters:	
Quantity	2
Diameter	50 ft
Side Water Depth	23 ft
Volume, Each	45,000 ft^3
Hydraulic Retention Time	17.6 days
Solids Loading	0.15 lb VS/ft^2•d
Digester Mixing:	
Type	Pumped
Quantity	3
Pump Type	Screw Centrifugal
Capacity @ TDH	2,750 gpm @ 20 ft
Horsepower	20
Turnover Time	2.2 hr
Spiral Heat Exchanger:	
Quantity	2
Required Heat, Each	0.5 MBTU/hr
Boiler:	
Quantity	1
Horsepower	1.7 MBTU/hr
Recirculation Pump:	
Type	Rotary Lobe
Quantity	16
Capacity @ TDH	200 gpm @ 15 ft
Horsepower	3
Secondary Digester:	
Quantity	1
Volume	17,800 ft^3
Diameter	35 ft
Side Water Depth	18.5 ft

DIGESTED SLUDGE PUMPS (EXISTING)

Quantity	2
Pump Type	Progressing Cavity
Capacity @ TDH	64 gpm @ 30 psi
Horsepower	5

SCREW PRESS FEED PUMP (EXISTING)

Pump Type	Progressing Cavity
Capacity	50 gpm
TDH	60 psi
Motor Size	5 hp
Max Speed	222 rpm

SLUDGE/POLYMER BLENDER (EXISTING)

Quantity	1
Type	In-Line
Design Solids Concentration	~3%
Sludge Flow Rate	10-40 gpm
Polymer Flow Rate	10-60 gph
Motor Size	5 hp

FLOCCULATION TANK (EXISTING)

Detention Time	1.5 - 3.0 Minutes
Mixer Type	Vertical Turbine
Mixer Speed	10-46 rpm
Motor Size	1 hp

SCREW PRESS (EXISTING)

Solids Loading Capacity	600 lbs/hr
Hydraulic Capacity	40 gpm
Feed Sludge Concentration	3%
Cake Sludge Concentration (Min)	20%
Solids Capture (Min)	90%
Motor Size	3 hp

POLYMER SYSTEM DEWATERING (EXISTING)

System Type	2-Tank
Polymer	Wet or Dry
Mix Tank Volume	500 Gallons
Mix Tank Motor Size	0.75 hp
Hold Tank Volume	500 Gallons
Transfer Rate	40 gpm
Active Polymer Capacity (min Req'd)	15 lbs/hr
Blower Conveyance System Capacity	90 cfm
Blower Motor Size	2.5 hp
Volume Screw Motor Size	0.5 hp
Emulsion Feed Pump Motor Size	0.5 hp

POLYMER FEED PUMPS DEWATERING (EXISTING)

Quantity	2
Type	Progressing Cavity
Capacity	6 gpm
TDH	30 psi
Motor Size	0.5 hp
Max Speed	200 rpm

DEWATERED SLUDGE CONVEYOR NO. 1 (EXISTING)

Type	Shaftless Screw
Incline	15 Degrees
Transport Rate	75 ft^3/hr
Screw Diameter	14-Inches
Material Weight	60-65 lb/ft^3
Motor Size	5 hp

DEWATERED SLUDGE CONVEYORS NO. 2 AND 3 (EXISTING)

Type	Shaftless Screw
Incline	30 Degrees
Transport Rate	75 ft^3/hr
Screw Diameter	14-Inches
Material Weight	60-65 lb/ft^3
Motor Size	5 hp

DEWATERED SLUDGE CONVEYOR NO. 4 (EXISTING)

Type	Shaftless Screw
Incline	0 Degrees
Transport Rate	75 ft^3/hr
Screw Diameter	14-Inches
Material Weight	60-65 lb/ft^3
Motor Size	5 hp

DEWATERED SLUDGE STORAGE SILO (EXISTING)

Diameter	16'-4"
Total Height	22'-0"
Total Volume	4,420 ft^3
Active Volume	3,350 ft^3
Load Cell Capacity, Each	75,000 lbs

EXTRACTION CONVEYOR (EXISTING)

Type	Shafted Ribbon, Center Discharge
Transport Rate	1,730 ft^3/hr
Screw Diameter	16-Inches
Screw Speed	30 rpm
Material Weight	60-65 lb/ft^3
Motor Size	20 hp

SLIDING FRAME HYDRAULIC POWER UNIT (EXISTING)

Reservoir Size	110 Liters
Pump Type	Constant Volume Gear Pump
Motor Size	20 hp

PLANT DRAIN PUMP STATION (EXISTING)

Quantity of Pumps	3
Type	Submersible Centrifugal
Capacity, Each	450 gpm @ 22 ft
Motor Size	5 hp

STORMWATER PUMP STATION (EXISTING)

Quantity of Pumps	3
Type	Submersible Centrifugal
Capacity, Each @ TDH	1,200 gpm @ 35 ft
Motor Size	15 hp

NON-POTABLE WATER SYSTEM (EXISTING)

Quantity of Pumps	2
Type	Vertical Split Case Centrifugal
Capacity @ TDH, Each	630 gpm @ 175 ft
Motor Size, Each	40 hp

OPERATIONS BUILDING GROUNDWATER PUMP STATION (EXISTING)

Quantity of Pumps	2
Type	Submersible Centrifugal
Capacity @ TDH, Each	1,000 gpm @ 17 ft
Motor Size, Each	7.5 hp

ODOR CONTROL SYSTEM (EXISTING)

Type	Biofilter
No. of Units	2
Design Air Rate	16,250 cfm
System Size	6,800 ft2^
Media Depth	63 Inches
No. of Fans	2
Fan Motor Size	30 hp
Capacity @ TDH, Each	8,125 cfm

GENERATORS (EXISTING)

Quantity	4
Main Plant Lift Station	
Rating	400 KW, 277/480 V, 3-phase, 4-wire
Power Factor	0.80
Blower Building	
Rating	500 KW, 277/480 V, 3-phase, 4-wire
Power Factor	1.00
RAS/WAS Pump Station	
Rating	500 KW, 277/480 V, 3-phase, 4-wire
Power Factor	0.80
Generator/Compressor Building	
Rating	400 KW, 277/480 V, 3-phase, 4-wire
Power Factor	0.80

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CITY ENGINEER
CITY OF PUYALLUP

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GENERAL

PLANT DESIGN CRITERIA

DRAWING: G-2 OF: 9

SHEET: 2 OF: 55

ABBREVIATIONS

AB	ANCHOR BOLT
AC	ASPHALT CONCRETE
ACP	ACOUSTIC PANEL
ADJ	ADJUSTABLE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALTR	ALTERNATE
ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
ASSY	ASSEMBLY
AVE	AVENUE
AWS	AMERICAN WELDING SOCIETY
BFP	BELT FILTER PRESS
BI	BLACK IRON
BLD FLG	BLIND FLANGE
BLDG	BUILDING
BLK	BLOCK
BOD	BOTTOM OF DUCT, BIOCHEMICAL OXYGEN DEMAND
BOW	BOTTOM OF WALL
BTWN	BETWEEN
BVC	BEGIN VERTICAL CURVE
C	CONDUIT
CAP	CORRUGATED ALUMINUM PIPE
CB	CATCH BASIN
CCP	CONCRETE CYLINDER PIPE
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CL	CLASS
CLAR	CLARIFIER
℄	CENTER LINE
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTRACTOR
CONV	CONVEYOR
CPLG	COUPLING
CONTIN	CONTINUED
COP	COPPER
CP	CORNER POST
CSH	CONCRETE SURFACE HARDENER
CTR	CENTER
D	DRAIN
DI	DUCTILE IRON
DIA	DIAMETER
DIR	DIRECTION
DISCH	DISCHARGE
DN	DOWN
DO	DISSOLVED OXYGEN
DP	DIFFERENTIAL PRESSURE
E	EAST
EA	EACH
ECC	ECCENTRIC
EFF	EFFLUENT
EL	ELEVATION
EL	ELBOW
ELEC	ELECTRICAL
EMERG	EMERGENCY
EXIST	EXISTING
EXP	EXPANSION
EW	EACH WAY
EVC	END VERTICAL CURVE
FAB	FABRICATED
FCA	FLANGED COUPLING ADAPTER
FD	FLOOR DRAIN
FF	FACTORY FINISH, FINISHED FLOOR
FIG	FIGURE
FIN	FINISHED
FL	FLANGE
FL	FLOW LINE
FLEX	FLEXIBLE
FLR	FLOOR
FPM	FEET PER MINUTE
FT	FEET
FT^2	SQUARE FEET
GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GI	GALVANIZED IRON
GOVT	GOVERNMENT
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GRD	GRADE
GRV	GROOVED PIPE OR COUPLING
GV	GATE VALVE
GWB	GYPSUM WALL BOARD
H	HEIGHT
HDG	HOT DIP GALVANIZE
HDPE	HIGH DENSITY POLYETHYLENE
HEX	HEXAGONAL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INF	INFLUENT
INV	INVERT
J BOX	JUNCTION BOX
L	LENGTH
LB	POUND
LB/HR	POUNDS PER HOUR
LF	LINEAR FEET
MAG	MAGNETIC
MAX	MAXIMUM
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MFGR, MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MG/L	MILLIGRAM PER LITER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
MO	MID ORDINATE
N	NORTH
No.	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P	POWER
PE	PLAIN END
PERF	PERFORATED
PL	PLATE
PLYWD	PLYWOOD
POT	POTABLE
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION, PRIMARY SLUDGE, PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PTS	PAINTED SURFACE
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
QT	QUARTER
QUAD	QUADRANT
RAS	RETURN ACTIVATED SLUDGE
RD	ROOF DRAIN
RED	REDUCER
REJ	RUBBER EXPANSION JOINT
REINF	REINFORCE
REQD	REQUIRED
RESTL	REINFORCING STEEL
RM	ROOM
RO	ROUGH OPENING
RS	RAW SEWAGE
R/W	RIGHT-OF-WAY
S	SOUTH,
SC	SCUM
SCH	SCHEDULE
SF	SQUARE FEET
SHT	SHEET
SL	SLOPE
SL	SLUDGE
SOC	SOCKET
SP	STATIC PRESSURE
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STRG	STRONG
SUC	SUSPENDED CEILING
T	TELEMETRY
TAPD	TAPERED
TB	TOP AND BOTTOM
TC	TOP OF CURB
TDH	TOTAL DYNAMIC HEAD
TEL	TELEPHONE
THK	THICK
THRD	THREADED
THRU	THROUGH
TK	TANK
TOC	TOP OF CONCRETE
TOW	TOP OF WALL
TS	TOTAL SOLIDS
TYP	TYPICAL
VC	VERTICAL CURVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VIS	VINYL SHEET
VS	VOLATILE SOLIDS
W	WIDTH, WEST
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WD	WIDE
W/O	WITHOUT
WS	WATER SURFACE
WWM	WELDED WIRE MESH
WWF	WELDED WIRE FABRIC

GENERAL SYMBOLS

1/4" FT	SLOPE 1/4" PER FOOT
	FLOW DIRECTION (AIR, WATER)
	OPENING
	GROUND
	ASPHALT SECTION
	CONCRETE SECTION
	WATER SURFACE
	ELEVATION REFERENCE POINT
	LEGEND/NOTE CALL OUTS
	PIPE SUPPORT
	ELECTRICAL MAST
	SQUARE SECTION
	PIPE SECTION
@	SPACING CENTER ON CENTER
	SIZE OF DEFORMED BAR
Ø	DIAMETER
	RECTANGULAR SECTION
	ANGLE
W	WIDE-FLANGE SHAPE
C	CHANNEL
PL	PLATE
℄	CENTER LINE

EXAMPLE OF SECTION NUMBERING SYSTEM AND PLAN/DRAWING TITLES

FOR DETAILS, SUBSTITUTE DETAIL NUMBER FOR SECTION LETTER

ELEVATION VIEW ON SHT. M99-1: A / M99-1

SECTION CUT ON SHT. M99-9: A / M99-1 — SECTION LETTER OR DETAIL NUMBER; SHEET ON WHICH SECTION OR DETAIL APPEARS

ON SHT. M99-9 THIS SECTION IS IDENTIFIED AS: A / M99-1 — SECTION LETTER OR DETAIL NUMBER; SHEET ON WHICH SECTION OR DETAIL APPEARS

SECTION
SCALE: X"=1'-0"

A / - — SECTION LETTER OR DETAIL NUMBER; SECTION APPEARS ON SAME DWG AS CUT

A / TYP — SECTION LETTER OR DETAIL NUMBER; SECTION IS TYPICAL TO MANY PLACES

DETAILS ARE REFERENCED IN A SIMILAR MANNER EXCEPT NUMBERS ARE USED INSTEAD OF LETTERS

DRAWING TITLE IDENTIFICATION :

DRAWING TITLE
SCALE: X"=1'-0"

GENERAL NOTES :

1. IN GENERAL, EXISTING STRUCTURES AND FACILITIES ARE NOTED AS "EXISTING" AND ARE SHOWN IN LIGHT LINE WEIGHTS OR AS SCREENED BACKGROUND. NEW CONSTRUCTION, STRUCTURES, FACILITIES, AND FEATURES ARE SHOWN IN HEAVY LINE WEIGHTS.
2. MANY OF THE SYMBOLS SHOWN ON THIS LEGEND ARE USED ONLY WHERE THEY PROVIDE CLARITY AND ARE NOT NECESSARILY USED IN ALL APPLICATIONS. SOME CONTRACT DRAWINGS MAY HAVE ADDITIONAL LEGENDS APPLICABLE FOR THAT SPECIFIC DRAWING. SYMBOLS SHOWN ON SPECIFIC DRAWINGS GOVERN.
3. THE CONTRACTOR SHALL VERIFY ALL PLANIMETRIC FEATURES AND DIMENSIONS PRIOR TO STARTING WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
4. ALL DIMENSIONS SHOWN ON THE CONTRACT DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS REFER TO THE HORIZONTAL AND VERTICAL PROJECTED PLANES, UNLESS OTHERWISE INDICATED.

SYMBOL LEGEND

EXISTING		NEW
	ASPHALT PAVEMENT	ASPHALT PAVEMENT
	GRAVEL SURFACING	GRAVEL SURFACING
	CONCRETE SURFACING	CONCRETE SURFACING
	FENCE	FENCE
	SITE PERIMITER FENCE	
	GATE VALVE	GATE VALVE
	BUTTERFLY VALVE	BUTTERFLY VALVE
	CHECK VALVE	CHECK VALVE
	PLUG VALVE	PLUG VALVE
	THRUST BLOCK	THRUST BLOCK
	UTILITY POLE WITH GUY WIRE	UTILITY POLE WITH GUY WIRE
	UTILITY POLE	UTILITY POLE
	LUMINAIRE	LUMINAIRE (SEE ALSO ELECTRICAL)
	JUNCTION BOX (AS NOTED)	JUNCTION BOX (AS NOTED)
	MANHOLE	MANHOLE
	FIRE HYDRANT	FIRE HYDRANT
	TYPE 1 CATCH BASIN OR CURB INLET	TYPE 1 CATCH BASIN OR CURB INLET
	TYPE 2 CATCH BASIN	TYPE 2 CATCH BASIN
	SECTION CORNER	
	1/4 CORNER	
	WATER METER	WATER METER
	MONUMENT	MONUMENT
	TREES	TREES (SEE ALSO LANDSCAPE PLAN)
	SHRUBS	SHRUBS
	BORING AND TEST PIT LOCATIONS	BORING AND TEST PIT LOCATIONS
	BUILDINGS	BUILDINGS
– – – 20 – – –	CONTOUR	20 CONTOUR
YH	YARD HYDRANT	YH YARD HYDRANT
CO	CLEANOUT	CO CLEANOUT
	PIPE TO BE ABANDONED IN PLACE	
	PIPE TO BE REMOVED	

PROCESS PIPING ABBREVIATIONS

ALP	AIR LOW PRESSURE
AHP	AIR HIGH PRESSURE
CHR	CHLORINE
CP	CARRIER PIPE
D	DRAIN
DF	DIESEL FUEL
DG	DIGESTER GAS
DO	DIGESTER OVERFLOW
DS	DIGESTED SLUDGE
FE	FINAL EFFLUENT
FM	FORCEMAIN
HW	HOT WATER
I	IRRIGATION
ML	MIXED LIQUOR
NG	NATURAL GAS
NPW	NON-POTABLE WATER
NPW-C	NON-POTABLE WATER - CITY
OCD	ODOR CONTROL DUCT
OF	OVERFLOW
P	PRIMARY INFLUENT
PD	PROCESS DRAIN
PDD	PLANT DRAIN DISCHARGE
PE	PRIMARY EFFLUENT
POS	POLYMER SOLUTION
PS	PRIMARY SLUDGE
PT	PRESSATE
RAS	RETURN ACTIVATED SLUDGE
RS	RAW SEWAGE
SAM	SAMPLE
SC	SCUM
SD	STORM DRAIN
SE	SECONDARY EFFLUENT
SHC	SODIUM HYPOCHLORITE
SPD	SUMP PUMP DISCHARGE
SS	SANITARY SEWER
SW	SEAL WATER
SWD	STORM WATER PUMP DISCHARGE
TO	THICKENER OVERFLOW
TPS	THICKENED PRIMARY SLUDGE
TS	THICKENED SLUDGE
TWAS	THICKENED WASTE ACTIVATED SLUDGE
V	VENT
W	POTABLE WATER
WAS	WASTE ACTIVATED SLUDGE

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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BIANNE JACOBSEN — STATE OF WASHINGTON — 14062 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

DOUGLAS A. WEEB — STATE OF WASHINGTON — 29743 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

CITY OF PUYALLUP
STATE OF WASHINGTON

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018
1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR:
BUILDING PERMIT

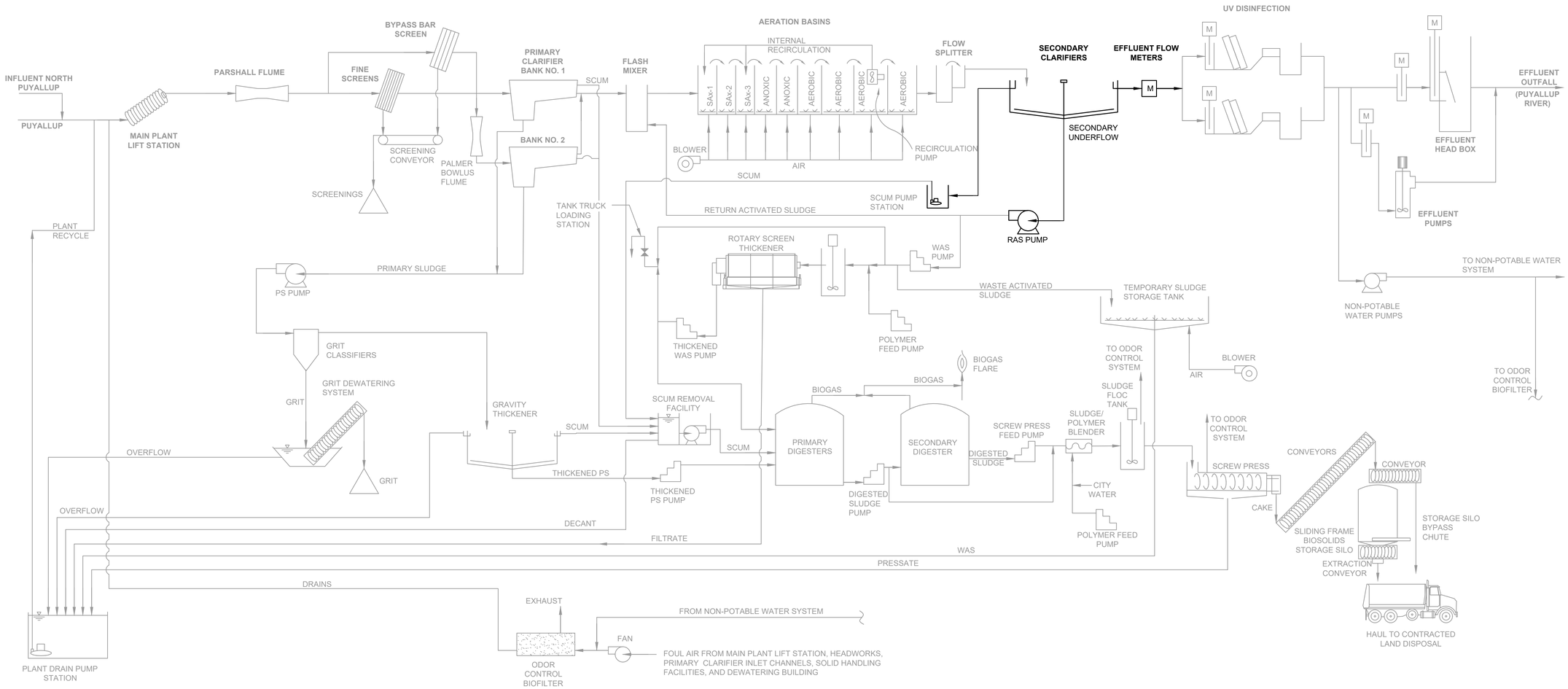
ISSUE DATE:	JUNE 2023
APPROVED BY:	DAW
CHECKED BY:	DAW
DRAWN BY:	CRR
DESIGNER:	BJ
G & O JOB NO.:	21462.00
FILE:	SYM-GEN.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

ABBREVIATIONS, GENERAL SYMBOLS, SYMBOL LEGEND, NUMBERING SYSTEM AND GENERAL NOTES

DRAWING: G-3 OF: 9
SHEET: 3 OF: 55



PROCESS FLOW DIAGRAM

Gray & Osborne, Inc.
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(206) 284-860

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0 1" 2"
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IF NOT, SCALE ACCORDINGLY

GENERAL

PROCESS FLOW DIAGRAM

DRAWING: G-4 OF: 9

SHEET: 4 OF: 55

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

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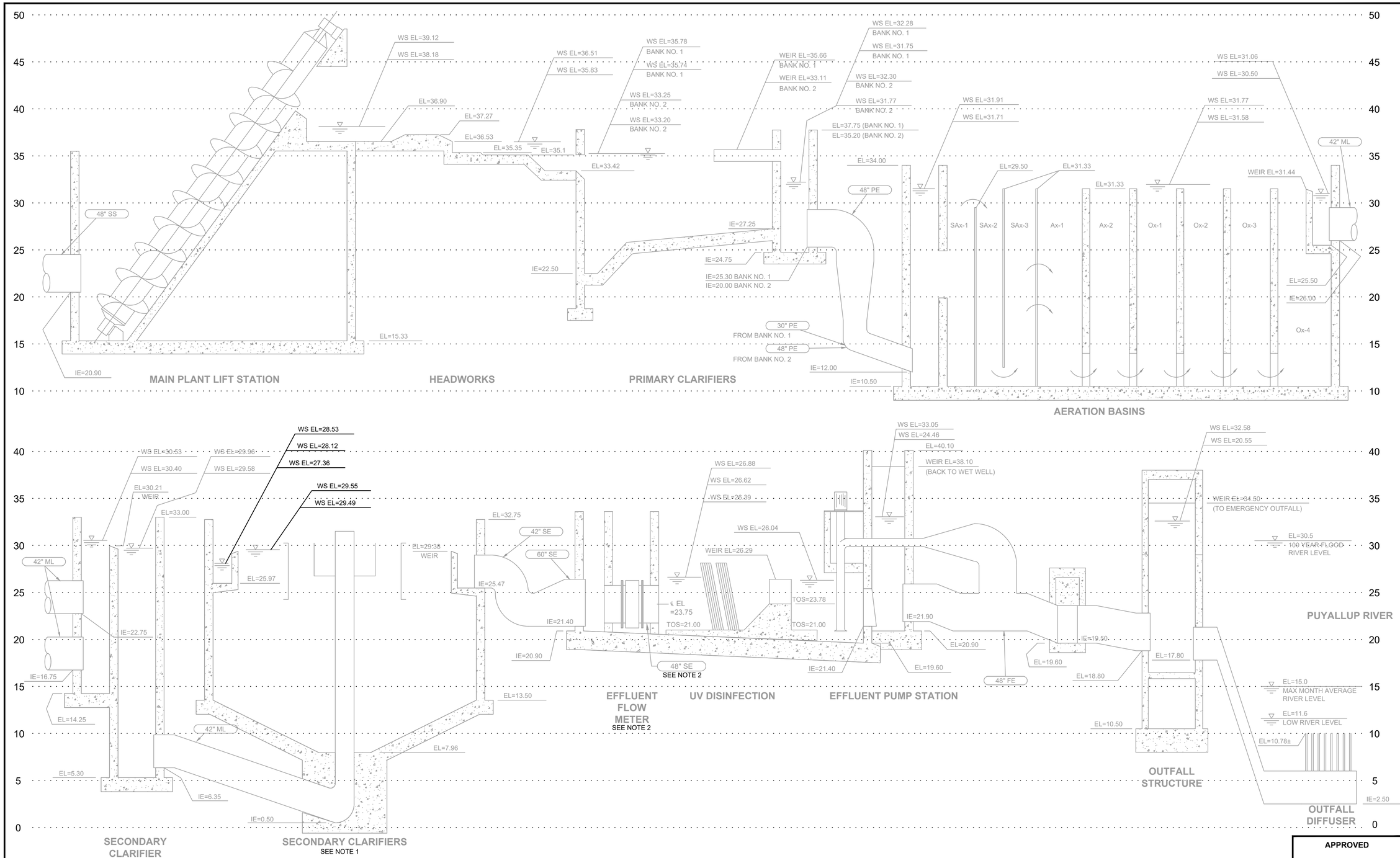

WS EL @ PROJECT 20 YEAR PEAK HOUR FLOW (39.86 MGD +0.65 MGD NPW FLOW)

WS EL @ CURRENT PEAK HOUR FLOW (27.38 MGD +0.65 MGD NPW FLOW)

WS EL @ CURRENT MAXIMUM MONTH FLOW (13.98 MGD +0.36 MGD NPW FLOW)

HYDRAULIC PROFILE

SCALE: VERTICAL 1"=5'-0"
HORIZONTAL NOT TO SCALE

NOTES:

1. EXISTING SECONDARY CLARIFIERS 1 AND 2 ARE SHOWN ON THIS DRAWING. THE WATER SURFACE ELEVATIONS FOR NEW SECONDARY CLARIFIER ARE SIMILAR.
2. EXISTING 48" EFFLUENT FLOW METER SHOWN. CONFIGURATION AND HYDRAULICS ASSOCIATED WITH NEW PARALLEL 36" EFFLUENT FLOW METER AR SIMILAR.

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CITY OF PUYALLUP
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FILE:	G_HYD-PRO.DWG

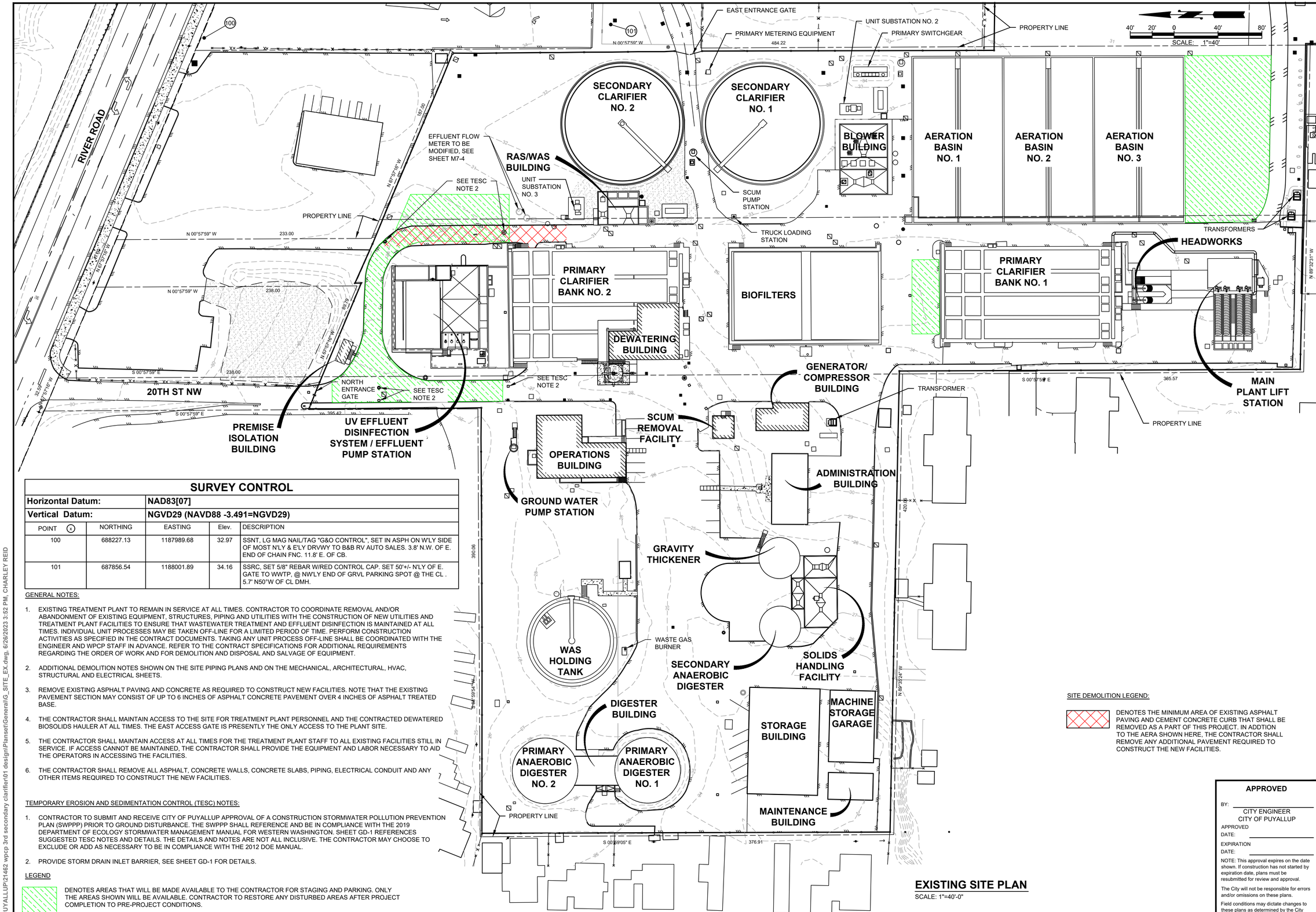
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

HYDRAULIC PROFILE

DRAWING: **G-5** OF: **9**

SHEET: **5** OF: **55**



EXISTING SITE PLAN

SCALE: 1"=40'-0"

SURVEY CONTROL

Horizontal Datum:	**NAD83[07]**
Vertical Datum:	**NGVD29 (NAVD88 -3.491=NGVD29)**

POINT ⓧ	NORTHING	EASTING	Elev.	DESCRIPTION
100	688227.13	1187989.68	32.97	SSNT, LG MAG NAIL/TAG "G&O CONTROL", SET IN ASPH ON W'LY SIDE OF MOST N'LY & E'LY DRVWY TO B&B RV AUTO SALES. 3.8' N.W. OF E. END OF CHAIN FNC. 11.8' E. OF CB.
101	687856.54	1188001.89	34.16	SSRC, SET 5/8" REBAR W/RED CONTROL CAP. SET 50'+/- N'LY OF E. GATE TO WWTP, @ NW'LY END OF GRVL PARKING SPOT @ THE CL . 5.7' N50°W OF CL DMH.

GENERAL NOTES:

1. EXISTING TREATMENT PLANT TO REMAIN IN SERVICE AT ALL TIMES. CONTRACTOR TO COORDINATE REMOVAL AND/OR ABANDONMENT OF EXISTING EQUIPMENT, STRUCTURES, PIPING AND UTILITIES WITH THE CONSTRUCTION OF NEW UTILITIES AND TREATMENT PLANT FACILITIES TO ENSURE THAT WASTEWATER TREATMENT AND EFFLUENT DISINFECTION IS MAINTAINED AT ALL TIMES. INDIVIDUAL UNIT PROCESSES MAY BE TAKEN OFF-LINE FOR A LIMITED PERIOD OF TIME. PERFORM CONSTRUCTION ACTIVITIES AS SPECIFIED IN THE CONTRACT DOCUMENTS. TAKING ANY UNIT PROCESS OFF-LINE SHALL BE COORDINATED WITH THE ENGINEER AND WPCP STAFF IN ADVANCE. REFER TO THE CONTRACT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING THE ORDER OF WORK AND FOR DEMOLITION AND DISPOSAL AND SALVAGE OF EQUIPMENT.
2. ADDITIONAL DEMOLITION NOTES SHOWN ON THE SITE PIPING PLANS AND ON THE MECHANICAL, ARCHITECTURAL, HVAC, STRUCTURAL AND ELECTRICAL SHEETS.
3. REMOVE EXISTING ASPHALT PAVING AND CONCRETE AS REQUIRED TO CONSTRUCT NEW FACILITIES. NOTE THAT THE EXISTING PAVEMENT SECTION MAY CONSIST OF UP TO 6 INCHES OF ASPHALT CONCRETE PAVEMENT OVER 4 INCHES OF ASPHALT TREATED BASE.
4. THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE SITE FOR TREATMENT PLANT PERSONNEL AND THE CONTRACTED DEWATERED BIOSOLIDS HAULER AT ALL TIMES. THE EAST ACCESS GATE IS PRESENTLY THE ONLY ACCESS TO THE PLANT SITE.
5. THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES FOR THE TREATMENT PLANT STAFF TO ALL EXISTING FACILITIES STILL IN SERVICE. IF ACCESS CANNOT BE MAINTAINED, THE CONTRACTOR SHALL PROVIDE THE EQUIPMENT AND LABOR NECESSARY TO AID THE OPERATORS IN ACCESSING THE FACILITIES.
6. THE CONTRACTOR SHALL REMOVE ALL ASPHALT, CONCRETE WALLS, CONCRETE SLABS, PIPING, ELECTRICAL CONDUIT AND ANY OTHER ITEMS REQUIRED TO CONSTRUCT THE NEW FACILITIES.

TEMPORARY EROSION AND SEDIMENTATION CONTROL (TESC) NOTES:

1. CONTRACTOR TO SUBMIT AND RECEIVE CITY OF PUYALLUP APPROVAL OF A CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PRIOR TO GROUND DISTURBANCE. THE SWPPP SHALL REFERENCE AND BE IN COMPLIANCE WITH THE 2019 DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON. SHEET GD-1 REFERENCES SUGGESTED TESC NOTES AND DETAILS. THE DETAILS AND NOTES ARE NOT ALL INCLUSIVE. THE CONTRACTOR MAY CHOOSE TO EXCLUDE OR ADD AS NECESSARY TO BE IN COMPLIANCE WITH THE 2012 DOE MANUAL.
2. PROVIDE STORM DRAIN INLET BARRIER, SEE SHEET GD-1 FOR DETAILS.

LEGEND

DENOTES AREAS THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR FOR STAGING AND PARKING. ONLY THE AREAS SHOWN WILL BE AVAILABLE. CONTRACTOR TO RESTORE ANY DISTURBED AREAS AFTER PROJECT COMPLETION TO PRE-PROJECT CONDITIONS.

SITE DEMOLITION LEGEND:

DENOTES THE MINIMUM AREA OF EXISTING ASPHALT PAVING AND CEMENT CONCRETE CURB THAT SHALL BE REMOVED AS A PART OF THIS PROJECT. IN ADDTION TO THE AERA SHOWN HERE, THE CONTRACTOR SHALL REMOVE ANY ADDITIONAL PAVEMENT REQUIRED TO CONSTRUCT THE NEW FACILITIES.

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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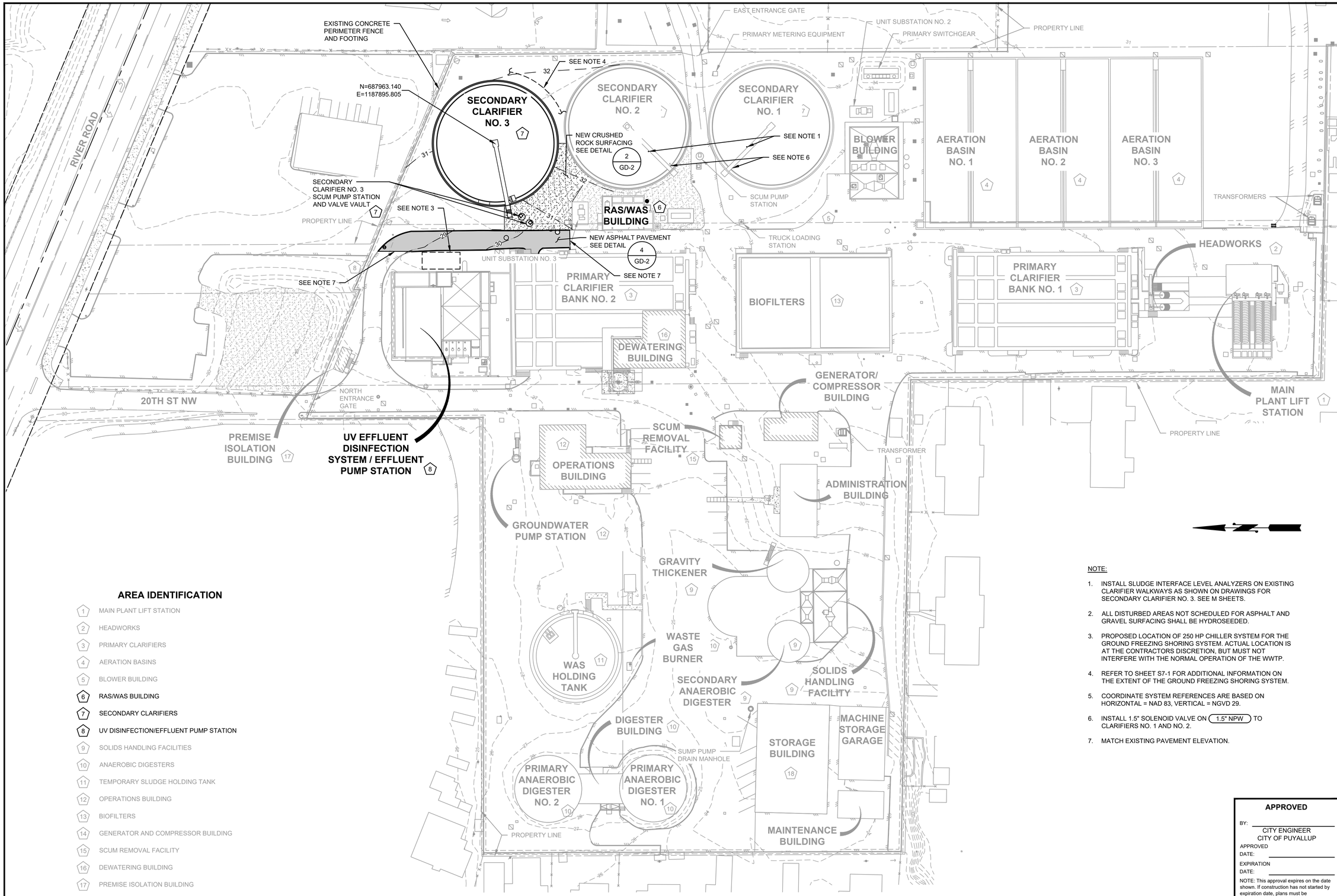
G & O JOB NO.:	21462.00
FILE:	G_SITE_EX.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

EXISTING SITE PLAN, TESC PLAN AND SITE DEMOLITION PLAN

DRAWING: **G-6** OF: **9**
SHEET: **6** OF: **55**



MODIFIED SITE PLAN

SCALE: 1"=40'

AREA IDENTIFICATION

1. MAIN PLANT LIFT STATION
2. HEADWORKS
3. PRIMARY CLARIFIERS
4. AERATION BASINS
5. BLOWER BUILDING
6. RAS/WAS BUILDING
7. SECONDARY CLARIFIERS
8. UV DISINFECTION/EFFLUENT PUMP STATION
9. SOLIDS HANDLING FACILITIES
10. ANAEROBIC DIGESTERS
11. TEMPORARY SLUDGE HOLDING TANK
12. OPERATIONS BUILDING
13. BIOFILTERS
14. GENERATOR AND COMPRESSOR BUILDING
15. SCUM REMOVAL FACILITY
16. DEWATERING BUILDING
17. PREMISE ISOLATION BUILDING

NOTE:

1. INSTALL SLUDGE INTERFACE LEVEL ANALYZERS ON EXISTING CLARIFIER WALKWAYS AS SHOWN ON DRAWINGS FOR SECONDARY CLARIFIER NO. 3. SEE M SHEETS.
2. ALL DISTURBED AREAS NOT SCHEDULED FOR ASPHALT AND GRAVEL SURFACING SHALL BE HYDROSEEDED.
3. PROPOSED LOCATION OF 250 HP CHILLER SYSTEM FOR THE GROUND FREEZING SHORING SYSTEM. ACTUAL LOCATION IS AT THE CONTRACTORS DISCRETION, BUT MUST NOT INTERFERE WITH THE NORMAL OPERATION OF THE WWTP.
4. REFER TO SHEET S7-1 FOR ADDITIONAL INFORMATION ON THE EXTENT OF THE GROUND FREEZING SHORING SYSTEM.
5. COORDINATE SYSTEM REFERENCES ARE BASED ON HORIZONTAL = NAD 83, VERTICAL = NGVD 29.
6. INSTALL 1.5" SOLENOID VALVE ON (1.5" NPW) TO CLARIFIERS NO. 1 AND NO. 2.
7. MATCH EXISTING PAVEMENT ELEVATION.

APPROVED

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G & O JOB NO.:	21462.00
FILE:	AREA_PLN.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

MODIFIED SITE PLAN AND AREA IDENTIFICATION

DRAWING: G-7 OF: 9
SHEET: 7 OF: 55

m:\PUYALLUP\21462 wpcp 3rd secondary clarifier\01 design\Planset\General\AREA_PLN.dwg, 6/26/2023 3:52 PM, CHARLEY REID

REMOVE AND REPLACE EXISTING CATCH BASIN, 8" SD AND VALVE AS REQUIRED TO CONSTRUCT NEW CLARIFIER NO. 3

REMOVE AND REPLACE 70' SECTION OF EXISTING CONCRETE FENCE, FOUNDATION AND PILASTERS TO FACILITATE INSTALLATION OF GROUND FREEZING SHORING SYSTEM AND CONSTRUCTION OF SECONDARY CLARIFIER NO. 3, SEE SHEET S7-2 FOR PLANS AND SECTIONS OF THE EXISTING CONCRETE PERIMETER FENCE AND FOOTING. NEW FENCE REPLACING EXISTING FENCE SHALL BE CONSTRUCTED AS SHOWN ON THE PLAN AND SECTIONS FOR THE EXISTING CONCRETE PERIMETER FENCE AND SHALL MATCH THE APPEARANCE OF THE EXISTING FENCE.

FACE OF EXISTING CONCRETE PERIMETER FENCE FOOTING, TYP.

10' 5' 0 10' 20'
SCALE: 1"=10'

SECONDARY CLARIFIER NO. 3

SECONDARY CLARIFIER NO. 2

07 ILA 03
INTERFACE LEVEL ANALYZER

07 ILA 02
INTERFACE LEVEL ANALYZER

INSTALL 1.5" SOLENOID VALVE ON 1.5" NPW TO CLARIFIERS NO. 1 AND NO. 2, SIMILAR TO CLARIFIER NO. 3

TO CLARIFIER SPRAY BAR, SEE SHEET M7-1

SHUT-OFF AND DRAIN VALVE — 5 / GD-3

NON-FREEZE YARD HYDRANT — 4 / GD-3

HOSE RACK — 3 / GD-3

ISOLATION VALVE AND VALVE BOX — 6 / GD-3

36" SOLID SLEEVE, MJ

CONNECT TO EXISTING 12" RAS IE=12.20± SEE DETAIL — 2 / M-4

CONNECT TO EXISTING 42" ML IE=6.35±. SEE DETAIL — 4 / M-2

CONNECT TO EXISTING W/6"x2" TAPPING SADDLE

CONNECT TO EXISTING 6" SC IE=28.60±

CLEANOUT, SEE DETAIL — 1 / GD-3

SECONDARY CLARIFIER NO. 3 SCUM PUMP STATION, SEE SHEETS M7-4 AND M7-5

VALVE VAULT, SEE SHEETS M7-4 AND M7-5

REMOVE EXISTING 36" DI MJ CAP AND CONNECT TO EXISTING 36" ML IE=23.00±

TO BE REMOVED AND REPLACED SEE SHEET G-9 FOR PROFILE

8" SD
22.5° BEND, MJxPE
22.5° BEND, MJ

A / G-9
B / G-9

IE=14.75±

UNIT SUBSTATION NO. 3

RAS/WAS BUILDING

PROPERTY LINE

PRIMARY CLARIFIER BANK NO. 2

SITE PIPING PLAN

NOTES:

1. LOCATIONS SHOWN FOR EXISTING PIPING BASED ON RECORD DRAWINGS AND ON-SITE SURVEY OF EXPOSED PIPES AND VALVES AND ARE FOR CONTRACORS INFORMATION ONLY. THE OWNER/ENGINEER DOES NOT WARRANT THE ACCURACY OF THE RECORD DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTRO TO VISIT THE SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN TO THE EXTENT THEY WILL IMPACT THE COST OF THE CONTRACTO'S WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO BIDDING.
2. THE TREATMENT PLANT SHALL REMAIN IN SERVICE AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE REMOVAL AND/OR ABANDONMENT OF EXISTING PIPING AND UTILITIES WITH CONSTRUCTION OF NEW UTILITIES AND TREATMENT FACILITIES. CONTRACTOR TO PROVIDE TEMPORARY PUMPING AND PIPING AS REQUIRED DURING CONSTRUCTION. ACCESS TO THE EXISTING OPERATIONS AREAS SHALL BE MAINTAINED AND DISRUPTIONS TO THIS ACCESS OR TREATMENT OPERATIONS MUST BE PREARRANGED THROUGH THE ENGINEER WITH THE TREATMENT PLANT OPERATORS.
3. PLUG OPEN ENDS OF PIPE TO BE ABANDONED IN PLACE WITH NON-SHRINK GROUT. CAP OR PLUG EXPOSED END OF ACTIVE PIPES. MATCH EXISTING SIZE, MATERIAL AND DUTY RATING. REMOVE EXPOSED VERTICAL PIPING SECTIONS, VALVES AND CLEANOUTS ON LINES TO BE ABANDONED TO FOUR FEET BELOW FINISHED GRADE.
4. IN ADDITION TO THE ITEMS SHOWN TO BE DEMOLISHED THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ASPHALT, CONCRETE SLABS, PIPING, ELECTRICAL CONDUIT AND OTHER ITEMS REQUIRED TO CONSTRUCT THE NEW FACILITIES.
5. CONTRACTOR SHALL POTHOLE TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING PIPES.
6. ALL PIPING SHALL HAVE RESTRAINED JOINTS.
7. FOR PIPE TRENCH SECTION SEE DETAIL (1/GD-2).
8. WHERE PIPES CROSS WITH LESS THAN ONE FOOT OF CLEARANCE, CRUSHED SURFACING TOP COURSE SHALL BE USED BETWEEN THE PIPES. THE CRUSHED ROCK SHALL BE HAND TAMPED AND COMPACTED BETWEEN THE PIPES.
9. FOR PIPE PENETRATIONS THROUGH EXISTING CONCRETE OR PRECAST CONCRETE SEE DETAILS (2/M-2) AND (3/M-2).
10. PIPING BETWEEN POINT OF INDICATED ELEVATION TO BE SET AT A SINGLE UNIFORM GRADE.
11. FOR INVERT ELEVATIONS AT STRUCTURES SEE MECHANICAL DRAWINGS.

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144
(206) 284-0860

BJARNE JACOBSEN — STATE OF WASHINGTON — 14062 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

DOUGLAS A. WEICH — STATE OF WASHINGTON — 29743 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

CITY OF PUYALLUP
STATE OF WASHINGTON

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018
1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	DAW
CHECKED BY:	DAW
DRAWN BY:	CRR
DESIGNER:	BJ
G & O JOB NO.:	21462.00
FILE:	G_PIPE_PLN.DWG

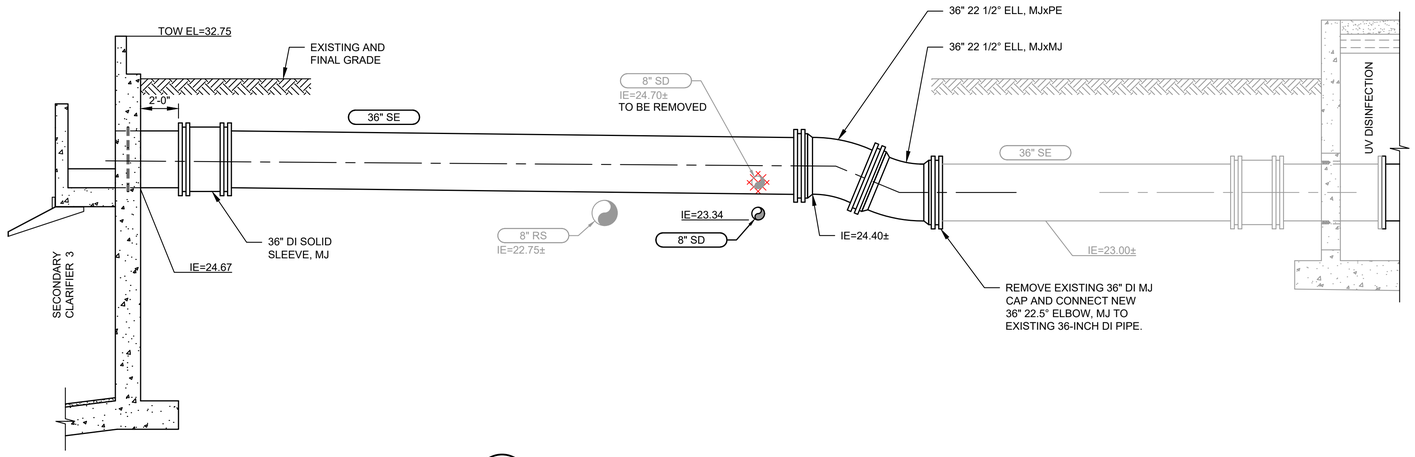
0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL

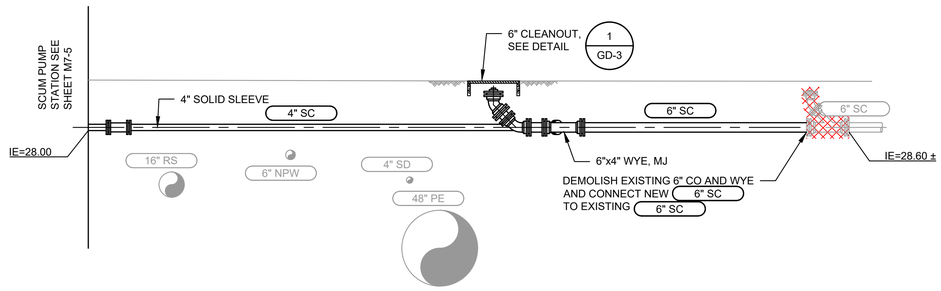
SITE PIPING PLAN

DRAWING: G-8 OF: 9
SHEET: 8 OF: 55

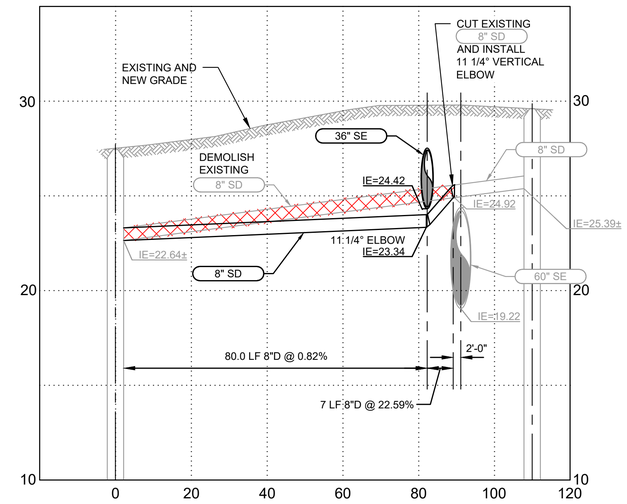
m:\PUYALLUP\21462 wpcp 3rd secondary clarifier\01 design\Plansets\General\G_PIPE_PLN.dwg, 6/26/2023 3:52 PM, CHARLEY REID



A / G-8 **SECTION**
SCALE: 1/4"=1'-0"



B / G-8 **SECTION**
SCALE: 1/4"=1'-0"



PROFILE - MODIFICATIONS TO 8" SD

SCALES: HORIZ 1"=20'
VERT 1"=4'

NOTES:

1. CONTRACTOR SHALL POTHOLE TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING PIPES.
2. ALL PIPING SHALL HAVE RESTRAINED JOINTS.
3. FOR PIPE TRENCH SECTION SEE DETAIL (1/GD-2).
4. WHERE PIPES CROSS WITH LESS THAN ONE FOOT OF CLEARANCE, CRUSHED SURFACING TOP COURSE SHALL BE USED BETWEEN THE PIPES. THE CRUSHED ROCK SHALL BE HAND TAMPED AND COMPACTED BETWEEN THE PIPES.
5. PIPING BETWEEN POINT OF INDICATED ELEVATION TO BE SET AT A SINGLE UNIFORM GRADE.
6. FOR INVERT ELEVATIONS AT STRUCTURES SEE MECHANICAL DRAWINGS.

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CITY OF PUYALLUP
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FILE:	G_PIPE_SEC.DWG

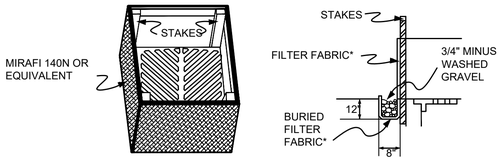
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

PIPE PROFILES

DRAWING: **G-9** OF: **9**
SHEET: **9** OF: **55**

FILTER FABRIC FENCE



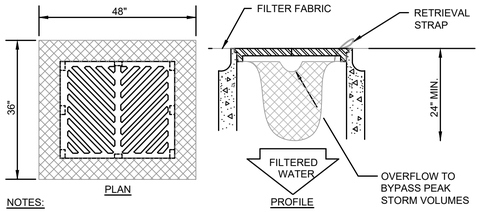
* MIRAFI 140-N OR EQUIVALENT

NOTES:

1. PLACE 2-INCH BY 2-INCH WOODEN STAKES AROUND THE PERIMETER OF THE INLET A MAXIMUM OF 3 FEET APART AND DRIVE THEM AT LEAST 8-INCHES INTO THE GROUND. THE STAKES MUST BE AT LEAST 3 FEET LONG.
2. EXCAVATE A TRENCH APPROXIMATELY 8-INCHES WIDE AND 12-INCHES DEEP AROUND THE OUTSIDE PERIMETER OF THE STAKES.
3. STAPLE THE FILTER FABRIC* TO THE WOODEN STAKES SO THAT 32-INCHES OF THE FABRIC EXTENDS AND CAN BE FORMED INTO THE TRENCH, AND USE HEAVY-DUTY WIRE STAPLES AT LEAST 1/2-INCHES LONG.
4. BACKFILL THE TRENCH WITH 3/4-INCH MINUS WASHED GRAVEL ALL THE WAY AROUND.
5. NOT FOR USE IN PAVED AREAS.

1 TYP **STORM DRAIN FILTER FABRIC FENCE BARRIER**

NOT TO SCALE



NOTES:

1. REMOVE CATCH BASIN GRATING.
2. CLEAN DIRT AND DEBRIS FROM GRATING LEDGE.
3. LAY THE CATCH BASIN INSERT INSIDE THE BASIN
4. REPLACE THE GRATING, PINCHING THE INSERT FABRIC BETWEEN THE GRATING AND THE CATCH BASIN FRAME.
5. CUT OFF THE EXCESS FABRIC OFF WITH A BLADE KNIFE. A 3 TO 5 INCH WIDE STRIP OF FABRIC SHOULD BE LEFT AROUND THE OUTSIDE OF THE GRATING IF THE INSERT IS TO BE USED MORE THAN ONCE.

2 TYP **FILTER FABRIC CATCH BASIN INSERT FOR SEDIMENT ONLY**

NOT TO SCALE

GENERAL NOTES:

1. ALL LIMITS OF CLEARING AND AREAS OF VEGETATION PRESERVATION AS PRESCRIBED ON THE PLANS SHALL BE CLEARLY FLAGGED IN THE FIELD AND OBSERVED DURING CONSTRUCTION.
2. ALL REQUIRED SEDIMENTATION AND EROSION CONTROL FACILITIES MUST BE CONSTRUCTED AND IN OPERATION PRIOR TO ANY LAND CLEARING AND/OR OTHER CONSTRUCTION TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE NATURAL DRAINAGE SYSTEM. THE CONTRACTOR SHALL SCHEDULE AN INSPECTION OF THE EROSION CONTROL FACILITIES PRIOR TO ANY LAND CLEARING AND/OR CONSTRUCTION. ALL EROSION AND SEDIMENT FACILITIES SHALL BE MAINTAINED IN A SATISFACTORY CONDITION AS DETERMINED BY THE CITY, UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR ON-SITE EROSION HAS PASSED. THE IMPLEMENTATION, MAINTENANCE, REPLACEMENT, AND ADDITIONS TO THE EROSION AND SEDIMENTATION CONTROL SYSTEMS SHALL BE THE RESPONSIBILITY OF THE PERMITEE.
3. THE EROSION AND SEDIMENTATION CONTROL SYSTEM FACILITIES DEPICTED ON THESE PLANS ARE INTENDED TO BE MINIMUM REQUIREMENTS TO MEET ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES AND UNEXPECTED OR SEASONAL CONDITIONS DICTATE, FACILITIES WILL BE NECESSARY TO ENSURE COMPLETE SILTATION CONTROL ON THE SITE. DURING THE COURSE OF CONSTRUCTION, IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE PERMITEE TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES, OVER AND ABOVE THE MINIMUM REQUIREMENTS, AS MAY BE NEEDED TO PROTECT ADJACENT PROPERTIES, SENSITIVE AREAS, NATURAL WATER COURSES, AND/OR STORM DRAINAGE SYSTEMS.
4. APPROVAL OF THESE PLANS IS FOR GRADING, TEMPORARY DRAINAGE, EROSION AND SEDIMENTATION CONTROL ONLY. IT DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT STORM DRAINAGE DESIGN, SIZE OR LOCATION OF PIPES, RESTRICTORS, CHANNELS, OR RETENTION FACILITIES.
5. ANY DISTURBED AREA WHICH HAS BEEN STRIPPED OF VEGETATION AND WHERE NO FURTHER WORK IS ANTICIPATED FOR A PERIOD OF 30 DAYS OR MORE, MUST BE IMMEDIATELY STABILIZED WITH MULCHING, GRASS PLANTING, OR OTHER APPROVED EROSION CONTROL TREATMENT APPLICABLE TO THE TIME OF YEAR IN QUESTION. GRASS SEEDING ALONE WILL BE ACCEPTABLE ONLY DURING THE MONTHS OF APRIL THROUGH SEPTEMBER INCLUSIVE. SEEDING MAY PROCEED OUTSIDE THE SPECIFIED TIME PERIOD WHENEVER IT IS IN THE INTEREST OF THE PERMITEE BUT MUST BE AUGMENTED WITH MULCHING, NETTING, OR OTHER TREATMENT APPROVED BY THE CITY.
6. IN CASE EROSION OR SEDIMENTATION OCCURS TO ADJACENT PROPERTIES, ALL CONSTRUCTION WORK WITHIN THE DEVELOPMENT THAT WILL FURTHER AGGRAVATE THE SITUATION MUST CEASE, AND THE OWNER/CONTRACTOR WILL IMMEDIATELY COMMENCE RESTORATION METHODS. RESTORATION ACTIVITY WILL CONTINUE UNTIL SUCH TIME AS THE AFFECTED PROPERTY OWNER IS SATISFIED.
7. NO TEMPORARY OR PERMANENT STOCKPILING OF MATERIALS OR EQUIPMENT SHALL OCCUR WITHIN CRITICAL AREAS OR ASSOCIATED BUFFERS, OR THE CRITICAL ROOT ZONE FOR VEGETATION PROPOSED FOR RETENTION.
8. WHERE POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL.
9. TEMPORARY SILTATION CONTROL AND DETENTION PONDS TO BE CONSTRUCTED BY PLACING GRAVEL FILLED BURLAP SACKS.
10. FILTER FABRIC FENCES OR GRAVEL SACKS TO BE LOCATED AS INDICATED ON THE PLANS OR AS REQUIRED.
11. TO PROVIDE EROSION CONTROL ON STEEP AND NEWLY GRADED SLOPES, CONTRACTOR SHALL EMPLOY EROSION CONTROL BLANKET OR CLEAR PLASTIC IMMEDIATELY AFTER GRADING SLOPES AND THE APPLICATION OF SEEDING.
12. ALL TEMPORARY EROSION CONTROL STRUCTURES SHALL BE MAINTAINED IN SATISFACTORY CONDITION UNTIL CLEARING AND/OR CONSTRUCTION IS COMPLETED AND SURFACE RESTORATION HAS BEEN COMPLETED.
13. RETURN SILTATION CONTROL AREAS TO ORIGINAL GROUND CONDITIONS UNLESS OTHERWISE NOTED.

TEMPORARY COVER PRACTICES:

1. DISTURBED AREAS WHICH ARE TO REMAIN WITHOUT PERMANENT COVER FOR MORE THAN 30 DAYS, SHALL BE STABILIZED BY PROVIDING TEMPORARY SEEDING, MULCHING, MATTING, OR CLEAR PLASTIC COVERING AS A GUARD AGAINST EROSION.

STABILIZATION AND REMOVAL:

1. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY "BEST MANAGEMENT PRACTICES" ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.

CLEAR PLASTIC COVERINGS:

1. CLEAR PLASTIC COVERINGS SHALL HAVE A MINIMUM THICKNESS OF 6 MIL AND MEET THE REQUIREMENTS OF WSDOT/APWA SECTION 9-14.5.
2. COVERING SHALL BE INSTALLED ON EXPOSED SLOPES SUBJECT TO EROSION AND MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES OR ROPES WITH A MAXIMUM 10 FOOT GRID SPACING IN ALL DIRECTIONS. ALL SEAMS SHALL BE TAPED OR WEIGHTED DOWN FULL LENGTH AND THERE SHALL BE AT LEAST A 1 TO 2 FOOT OVERLAP OF ALL SEAMS. SEAMS SHOULD THEN BE ROLLED AND STAKED OR TIED.
3. COVERING SHALL BE INSTALLED IMMEDIATELY ON AREAS SEEDED BETWEEN OCTOBER 1 TO APRIL 30 AND REMAIN UNTIL VEGETATION IS FIRMLY ESTABLISHED.
4. WHEN THE COVERING IS USED ON UNSEEDED SLOPES, IT SHALL BE LEFT IN PLACE UNTIL THE NEXT SEEDING PERIOD.
5. SHEETING SHOULD BE TOED IN AT THE TOP OF THE SLOPE TO PREVENT SURFACE FLOW BENEATH THE PLASTIC.
6. SHEETING SHOULD BE REMOVED AS SOON AS IS POSSIBLE ONCE VEGETATION IS WELL ESTABLISHED TO PREVENT BURNING THE VEGETATION.
7. CHECK SHEETING REGULARLY FOR RIPS AND PLACES WHERE THE PLASTIC MAY BE DISLODGED. CONTACT BETWEEN THE PLASTIC AND THE GROUND SHOULD ALWAYS BE MAINTAINED. ANY AIR BUBBLES FOUND SHOULD BE REMOVED IMMEDIATELY OR THE PLASTIC MAY RIP DURING THE NEXT WINDY PERIOD. RE-ANCHOR OR REPLACE THE PLASTIC AS NECESSARY.

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

APPROVED DATE: _____

EXPIRATION DATE: _____

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CITY OF PUYALLUP

WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018

1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	DAW
CHECKED BY:	DAW
DRAWN BY:	CRR
DESIGNER:	BJ
G & O JOB NO.:	21462.00
FILE:	WASH WAT-DET.DWG

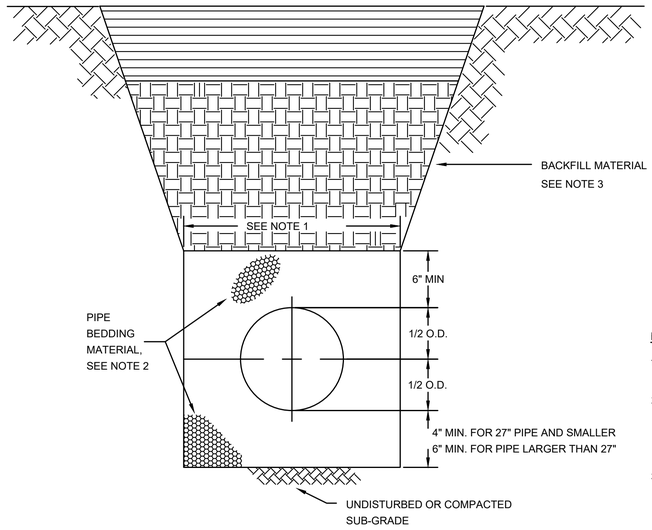
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

TESC NOTES AND DETAILS

DRAWING: **GD-1** OF: **3**

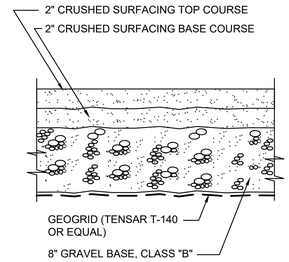
SHEET: **10** OF: **55**



NOTES:

1. TRENCHING SHALL MEET THE REQUIREMENTS OF SECTION 7-08.3(1)A AND 2-06.3(1) OF THE WSDOT SPECIFICATIONS.
2. BEDDING MATERIAL FOR PIPE SHALL BE CRUSHED OR PARTIALLY CRUSHED MATERIAL CONFORMING TO SPECIFICATION SECTION 02700.2.2, GRAVEL BACKFILL FOR PIPE BEDDING.NATIVE MATERIAL SHALL NOT BE USED FOR PIPE BEDDING.
3. GRAVEL BACKFILL SHALL CONFORM TO 9-03.12(1)A GRAVEL BACKFILL FOR FOUNDATIONS, CLASS A.

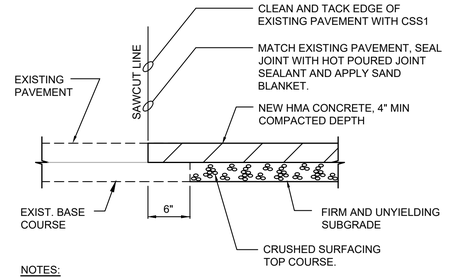
1 TYP **TYPICAL TRENCH SECTION**
NOT TO SCALE



NOTES:

1. SEE SHEET G-7 FOR FINISHED GRADE ELEVATIONS.

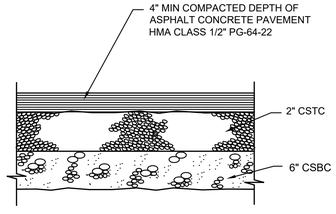
2 TYP **CRUSHED ROCK SURFACING DETAIL**
NOT TO SCALE



NOTES:

1. ALL JOINTS SHALL BE FULL DEPTH SAW CUT.
2. ALL CATCH BASINS, VALVES AND OTHER APPURTENANCES SHALL BE TACK COATED WITH AN ASPHALT EMULSION PRIOR TO THE APPLICATION OF ASPHALT CONCRETE.
3. COMPACTED ASPHALT CONCRETE SHALL NOT EXTEND MORE THAN 1/4" ABOVE THE EXISTING SURFACE.

3 TYP **ASPHALT BUTT JOINT DETAIL**
NOT TO SCALE



4 TYP **ASPHALT PAVEMENT DETAIL**
NOT TO SCALE

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STATE OF WASHINGTON
14062
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PROFESSIONAL ENGINEER
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FILE:	WASH WAT-DET.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

GENERAL

GENERAL DETAILS

DRAWING: **GD-2** OF: **3**
SHEET: **11** OF: **55**

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CITY OF PUYALLUP
APPROVED
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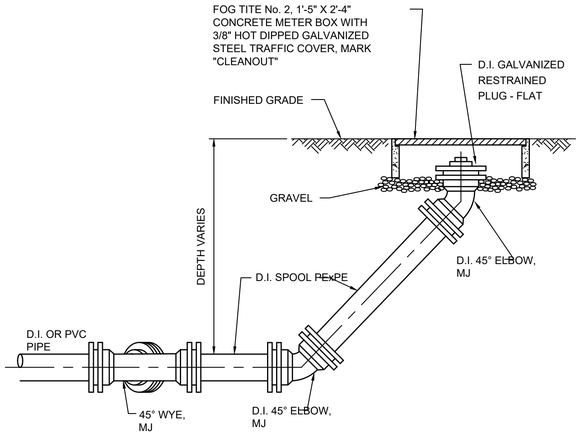
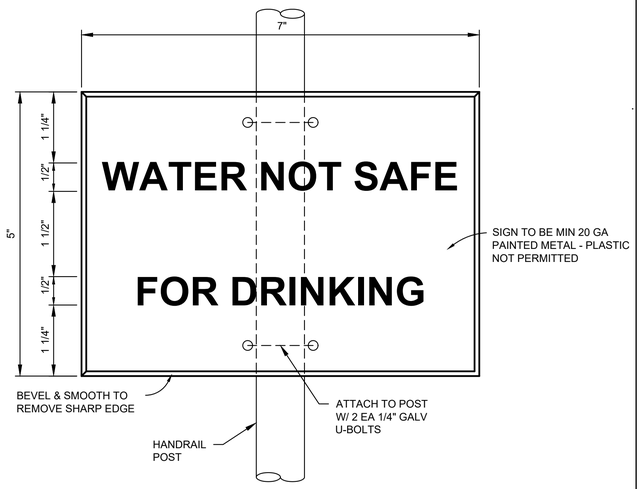


1 TYP **TYPICAL CLEANOUT DETAIL**
NOT TO SCALE

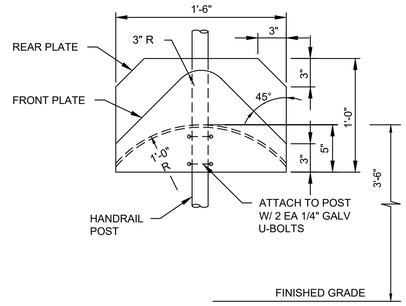


NOTE:
INSTALL NEXT TO ALL YARD HYDRANTS.

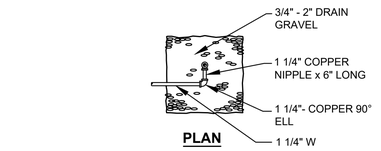
2 TYP **NON-POTABLE WATER SIGN DETAIL**
NOT TO SCALE

NOTES:

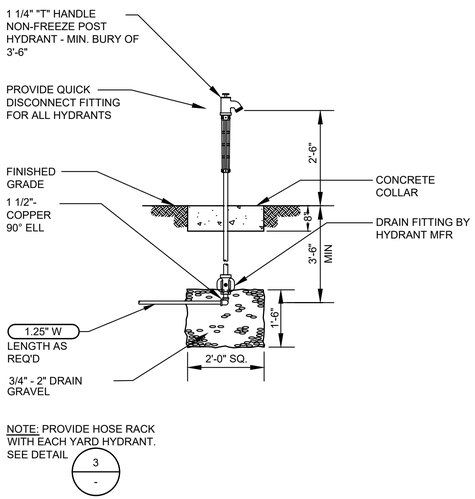
1. FABRICATE HOSE RACK OF GALVANIZED 1/4" STL PL, RACK TO BE 8" DEEP.



3 TYP **HOSE RACK DETAIL**
NOT TO SCALE

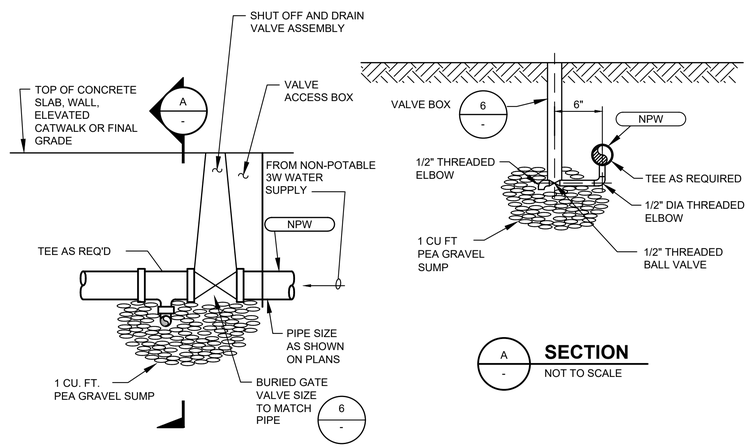


PLAN



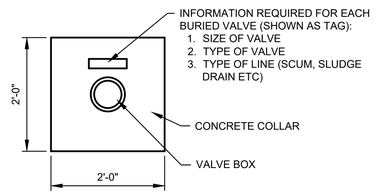
NOTE: PROVIDE HOSE RACK WITH EACH YARD HYDRANT. SEE DETAIL 3 -

4 TYP **1 1/2" NON-FREEZE POST HYDRANT**
NOT TO SCALE

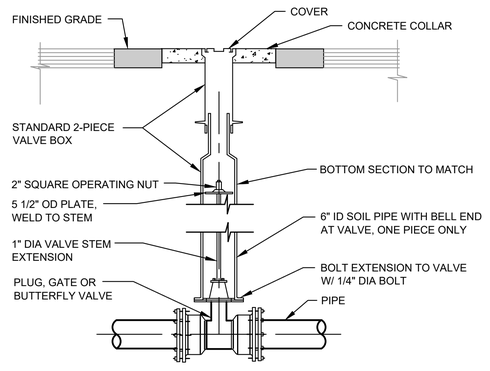


A - **SECTION**
NOT TO SCALE

5 TYP **SHUT OFF AND DRAIN VALVE DETAIL**
NOT TO SCALE



PLAN
NOT TO SCALE



SECTION
NOT TO SCALE

6 TYP **TYPICAL VALVE BOX DETAIL**
NOT TO SCALE

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144
(206) 284-860

BJARNE JACOBSEN — STATE OF WASHINGTON — 14062 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

DOUGLAS A. WEBB — STATE OF WASHINGTON — 29743 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER
CIP NO. 20-018
1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	DAW
CHECKED BY:	DAW
DRAWN BY:	CRR
DESIGNER:	BJ
G & O JOB NO.:	21462.00
FILE:	WASH WAT-DET.DWG

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

GENERAL

WASHWATER DETAILS

DRAWING: **GD-3** OF: **3**
SHEET: **12** OF: **55**

PIPING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		EXISTING PIPE
		NEW PIPE
		WELDED
		SCREWED JOINT
		FLANGED
		MECHANICAL JOINT
		GROOVED COUPLING
		FLANGED COUPLING ADAPTER
		FLANGED COUPLING ADAPTER W/ THRUST TIES TO NEXT FLANGED JOINT
		FLEXIBLE COUPLING
		STAINLESS STEEL LOW PRESSURE AIR PIPE COUPLING
		ADAPTOR FLANGE
		UNION
		RESTRAINED FLEXIBLE COUPLING
		RUBBER EXPANSION JOINT
		RESTRAINED RUBBER EXPANSION JOINT
		BLIND FLANGE
		CHECK VALVE
		GATE VALVE
		PLUG VALVE
		BUTTERFLY VALVE
		BALL VALVE
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		ELBOW, 45°
		ELBOW, 90°
		ELBOW UP
		ELBOW DOWN

DOUBLE LINE	SINGLE LINE	
		TEE
		TEE UP
		TEE DOWN
		CROSS
		WYE
		BELL UP
		FLEXIBLE HOSE OR TUBING
M	M	VALVE WITH MOTOR ACTUATOR
	S	SOLENOID VALVE
		PIPE SUPPORT.
		DENOTES ITEMS TO BE SALVAGED OR DEMOLISHED BY CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS
		EXISTING PIPE TO BE DEMOLISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS
		EXISTING PIPE TO BE ABANDONED BY CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS

NOTE:

FOR ADDITIONAL ABBREVIATIONS AND SYMBOLS SEE SHEETS G-3, S-1 AND E-1.

PROCESS PIPING, VALVE, GATE AND EQUIPMENT IDENTIFICATIONS

PROCESS PIPING

24" SC
- PROCESS TYPE (SEE LIST BELOW)
- PIPE SIZE

ABBREVIATION	PROCESS TYPE
D	DRAIN
FE	FINAL EFFLUENT
I	IRRIGATION
LUB	LUBRICATION
ML	MIXED LIQUOR
NPW	NON-POTABLE WATER
P	PRIMARY INFLUENT
PD	PROCESS DRAIN
RAS	RETURN ACTIVATED SLUDGE
RS	RAW SEWAGE
SAM	SAMPLE
SC	SCUM
SD	STORM DRAIN
SE	SECONDARY EFFLUENT
SS	SANITARY SEWER
W	POTABLE WATER
WAS	WASTE ACTIVATED SLUDGE

EQUIPMENT

99 POL 99
- AREA NUMBER SEE SHEET G-7
- EQUIPMENT NUMBER (SEQUENTIAL LISTING)
- EQUIPMENT TYPE (SEE LIST BELOW)

ABBREVIATION	EQUIPMENT TYPE
AG	AIR GAP UNIT
EF	EFFLUENT FLOW METER
ILA	INTERFACE LEVEL ANALYZER
MFM	MAGNETIC FLOW METER
RP	RETURN ACTIVATED SLUDGE PUMP
RLS	RADAR LEVEL SENSOR
SCM	SECONDARY CLARIFIER MECHANISM
TH	TROLLEY HOIST
WP	WASTE ACTIVATED SLUDGE PUMP

VALVES AND GATES

99 BV 99
- AREA NUMBER SEE SHEET G-6
- VALVE/GATE NUMBER (SEQUENTIAL LISTING)
- VALVE/GATE TYPE (SEE LIST BELOW)

ABBREVIATION	VALVE TYPE
AV	AIR RELEASE VALVE
BLV	BALL VALVE
CV	CHECK VALVE
GV	GATE VALVE
MV	MUD VALVE
PV	PLUG VALVE
SG	SLIDE GATE
SLG	SLUICE GATE

NOTE:

FOR ADDITIONAL EQUIPMENT IDENTIFICATION SEE SHEET E-1.

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

APPROVED
DATE: _____

EXPIRATION
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CITY OF PUYALLUP

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1602 18TH ST NW,
PUYALLUP, WA 98371

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G & O JOB NO.:	21462.00
FILE:	M_DET.DWG

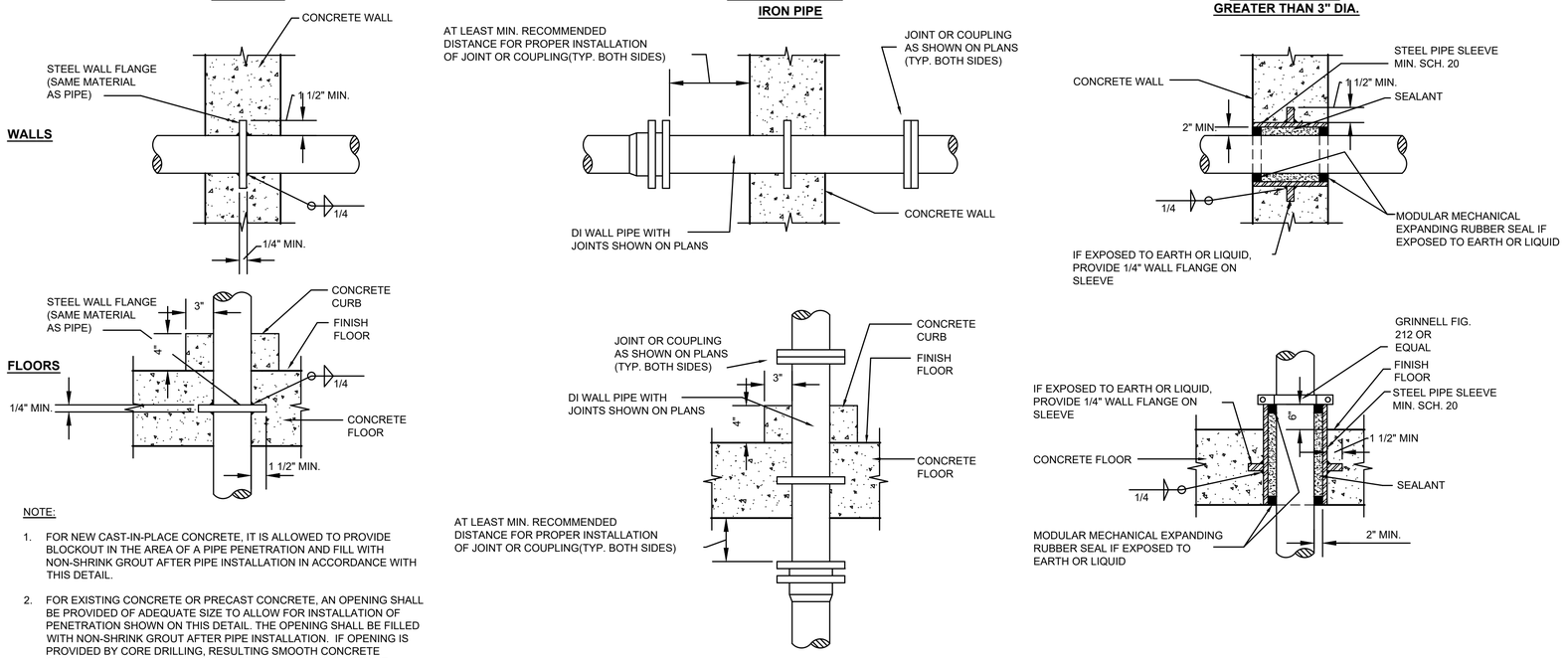
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

MECHANICAL

ABBREVIATIONS, SYMBOLS AND EQUIPMENT IDENTIFICATIONS

DRAWING: **M-1** OF: **4**

SHEET: **13** OF: **55**

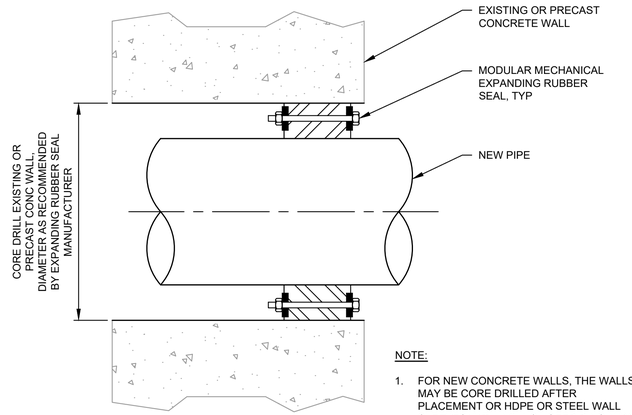


NOTE:

1. FOR NEW CAST-IN-PLACE CONCRETE, IT IS ALLOWED TO PROVIDE BLOCKOUT IN THE AREA OF A PIPE PENETRATION AND FILL WITH NON-SHRINK GROUT AFTER PIPE INSTALLATION IN ACCORDANCE WITH THIS DETAIL.
2. FOR EXISTING CONCRETE OR PRECAST CONCRETE, AN OPENING SHALL BE PROVIDED OF ADEQUATE SIZE TO ALLOW FOR INSTALLATION OF PENETRATION SHOWN ON THIS DETAIL. THE OPENING SHALL BE FILLED WITH NON-SHRINK GROUT AFTER PIPE INSTALLATION. IF OPENING IS PROVIDED BY CORE DRILLING, RESULTING SMOOTH CONCRETE SURFACES SHALL BE ROUGHENED BEFORE FILLING WITH GROUT.
3. FOR ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS SEE DETAIL 3/S-3

1 TYP — PIPE PENETRATIONS THROUGH CONCRETE WALLS AND FLOORS DETAILS

NOT TO SCALE

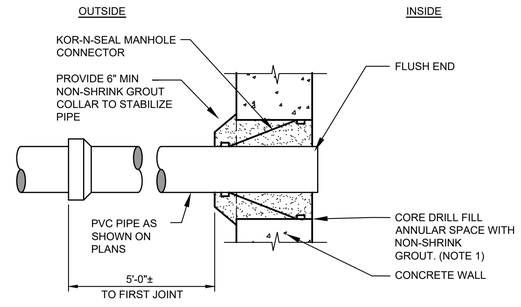


NOTE:

1. FOR NEW CONCRETE WALLS, THE WALLS MAY BE CORE DRILLED AFTER PLACEMENT OR HDPE OR STEEL WALL SLEEVES WITH A 2-INCH SEEP RING MAY BE USED.

2 TYP — PIPE PENETRATIONS THROUGH CONCRETE WALLS

NOT TO SCALE



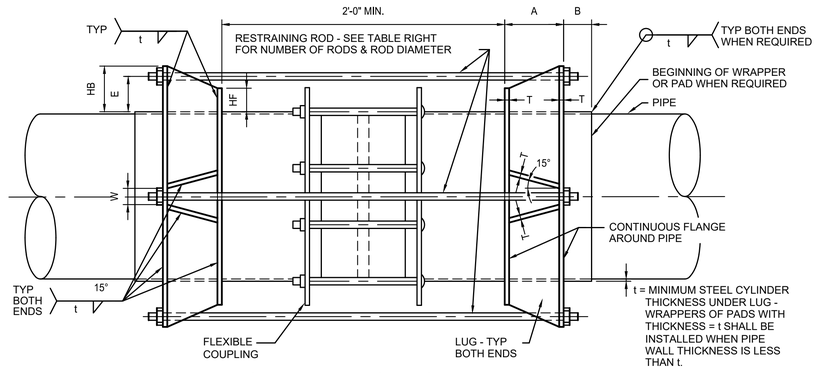
FLEXIBLE PIPE BURIED PRECAST WALL

NOTES:

1. AN OPENING SHALL BE PROVIDED OF ADEQUATE SIZE TO ALLOW FOR INSTALLATION OF PENETRATION SHOWN.
2. ROUGHEN CORE-DRILLED OPENING BEFORE FILLING ANNULAR SPACE WITH GROUT.

3 TYP — PIPE PENETRATION THROUGH PRECAST CONCRETE WALLS

NOT TO SCALE



STEEL PIPE 14" DIA OR LARGER

PIPE DIAMETER	NUMBER OF RODS	ROD DIAMETER	A	B	E	HB	HF	T	t	W
42"	4	1"	5 3/4"	6 1/2"	3 1/4"	4 1/2"	2"	1/2"	0.188"	1 3/4"

NOTES:

1. MINIMUM REQUIRED NUMBER OF RESTRAINING RODS, MINIMUM RESTRAINING ROD DIAMETER AND MINIMUM DIMENSIONS FOR LUGS FOR STEEL PIPE ARE SHOWN ON TABLE I, THIS SHEET, FOR VARIOUS PIPE SIZES.
2. TABLE I AND THE RESTRAINT DETAIL FOR STEEL PIPE IS BASED IN AWWA MANUAL OF WATER SUPPLY PRACTICES M 11.
3. THIS DETAIL IS DEVELOPED FOR A PIPE DESIGN PRESSURE OF 50 PSI AND A RESTRAINING ROD ALLOWABLE STRESS OF 40,000 PSI

4 TYP — FLEXIBLE COUPLING RESTRAINT DETAIL

NOT TO SCALE

APPROVED

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CITY ENGINEER
CITY OF PUYALLUP
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FILE:	M_DET.DWG

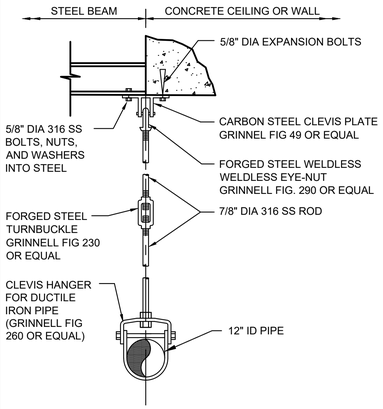
0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

MECHANICAL

PIPE DETAILS

DRAWING: M-2 OF: 4

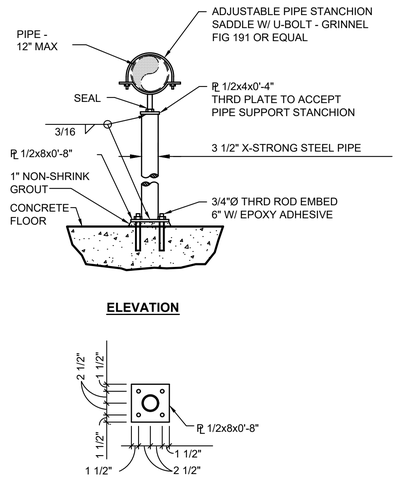
SHEET: 14 OF: 55



NOTE:

ALL STEEL NOT SCHEDULED TO BE STAINLESS STEEL SHALL BE HOT-DIP GALVANIZED.

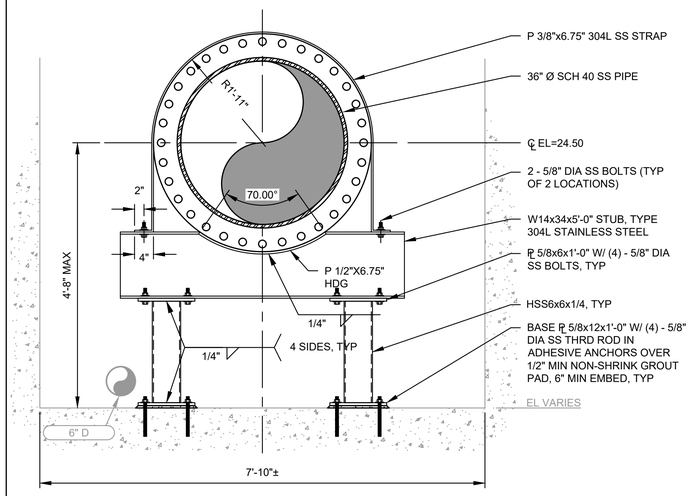
1 TYP **PIPE SUPPORT**
NOT TO SCALE



NOTE:

ALL STEEL SHALL BE HOT-DIP GALVANIZED.

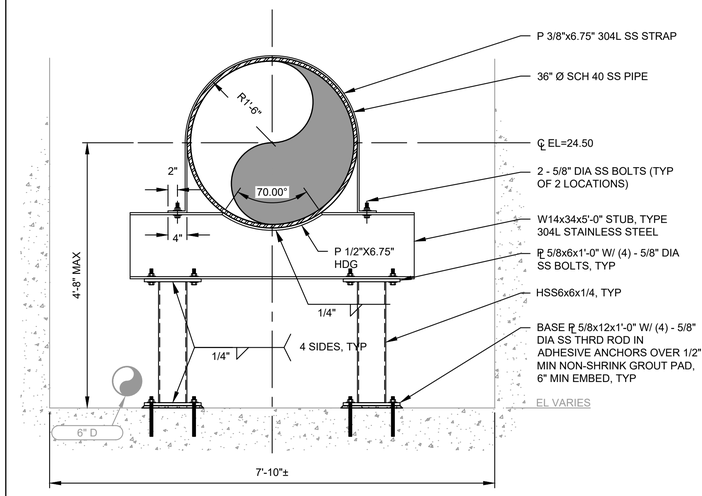
2 TYP **PIPE SUPPORT**
NOT TO SCALE



NOTE:

LOCATE LEGS TO AVOID CONFLICT WITH EXISTING 6" D

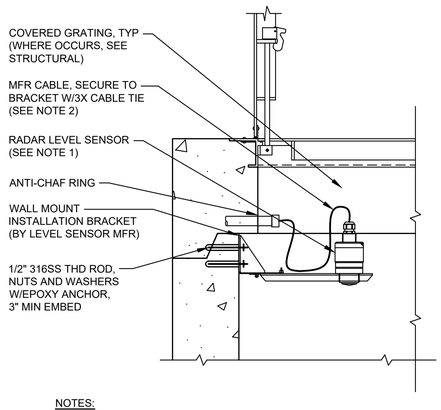
3 TYP **DETAIL**
SCALE: 3/4"=1'-0"



NOTE:

LOCATE LEGS TO AVOID CONFLICT WITH EXISTING 6" D

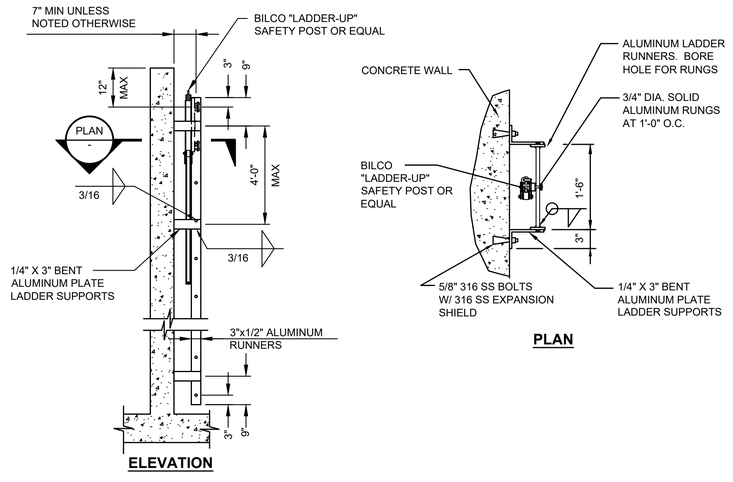
4 TYP **DETAIL**
SCALE: 3/4"=1'-0"



NOTES:

1. INSTALLATION OF THE LEVEL SENSOR SHALL BE PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.
2. ROUTE CABLE PER ELECTRICAL SHEETS. ALL CABLE ABOVE GRATING LEVEL SHALL BE LOCATED WITHIN CONDUIT.

5 TYP **RADAR LEVEL SENSOR INSTALLATION DETAIL**
NOT TO SCALE



6 TYP **ACCESS LADDER DETAIL**
NOT TO SCALE

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
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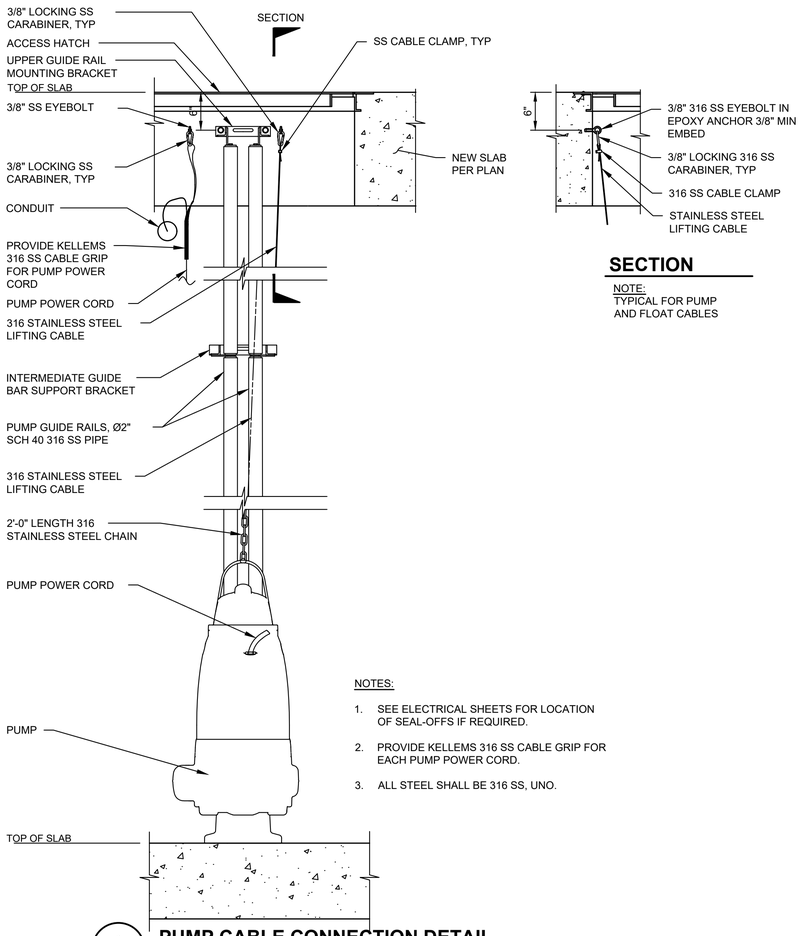
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

MECHANICAL

MISCELLANEOUS DETAILS

DRAWING: **M-3** OF: **4**
SHEET: **15** OF: **55**



1 TYP **PUMP CABLE CONNECTION DETAIL**

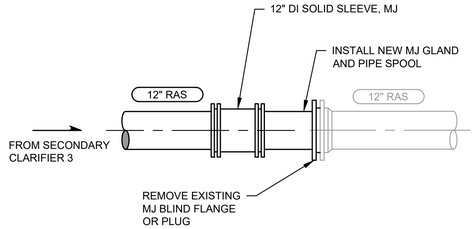
SCALE: 1"=1'-0"

SECTION

NOTE:
TYPICAL FOR PUMP AND FLOAT CABLES

NOTES:

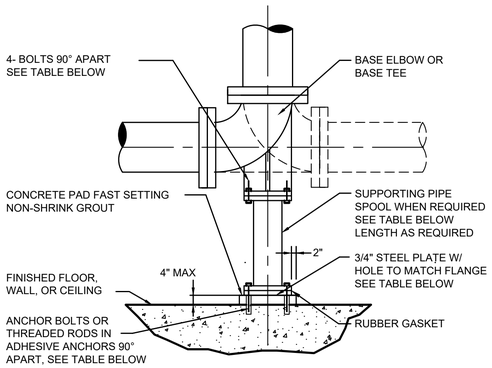
1. SEE ELECTRICAL SHEETS FOR LOCATION OF SEAL-OFFS IF REQUIRED.
2. PROVIDE KELLEMS 316 SS CABLE GRIP FOR EACH PUMP POWER CORD.
3. ALL STEEL SHALL BE 316 SS, UNO.



2 G-8 **CONNECTION OF NEW 12" RAS TO EXISTING 12" RAS**

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

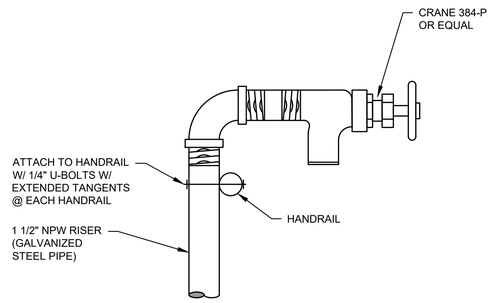
M7-1
M7-2



BASE TEE OR ELBOW DIA.	BOLT OR ROD DIA.	SUPPORTING PIPE SPOOL DIA.	STEEL PLATE DIMENSIONS
3"	1/2"	1 1/2"	5" X 5"
4"	5/8"	2"	6" X 6"
6"	5/8"	2 1/2"	7" X 7"
8"	5/8"	4"	9" X 9"
10"	5/8"	4"	9" X 9"
12"	3/4"	6"	11" X 11"
14"	3/4"	6"	11" X 11"
16"	3/4"	6"	11" X 11"
18"	7/8"	8"	13 1/2" X 13 1/2"
20"	7/8"	8"	13 1/2" X 13 1/2"
24"	7/8"	8"	13 1/2" X 13 1/2"
30"	1"	10"	16" X 16"

3 TYP **PIPE SUPPORT DETAIL**

NOT TO SCALE



4 TYP **EXTERIOR HOSE BIB DETAIL**

NOT TO SCALE

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CITY OF PUYALLUP — STATE OF WASHINGTON

CITY OF PUYALLUP

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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

MECHANICAL

MISCELLANEOUS DETAILS

DRAWING: **M-4** OF: **4**

SHEET: **16** OF: **55**

APPROVED

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CITY ENGINEER
CITY OF PUYALLUP

APPROVED
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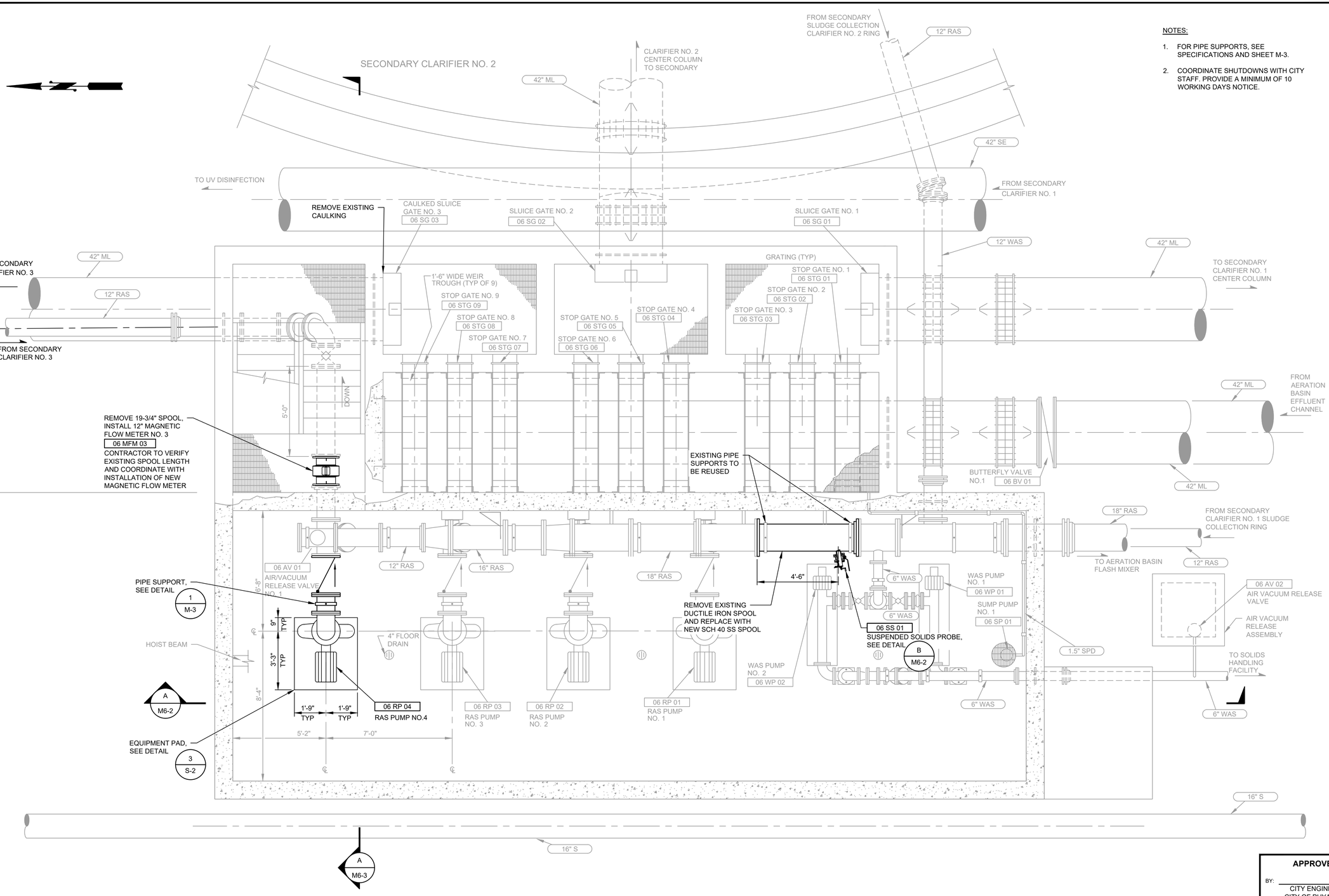

NOTES:

1. FOR PIPE SUPPORTS, SEE SPECIFICATIONS AND SHEET M-3.
2. COORDINATE SHUTDOWNS WITH CITY STAFF. PROVIDE A MINIMUM OF 10 WORKING DAYS NOTICE.

SECONDARY CLARIFIER SPLITTER BOX AND RAS/WAS PUMP STATION PLAN

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

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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

APPROVED

BY: _____
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CITY OF PUYALLUP
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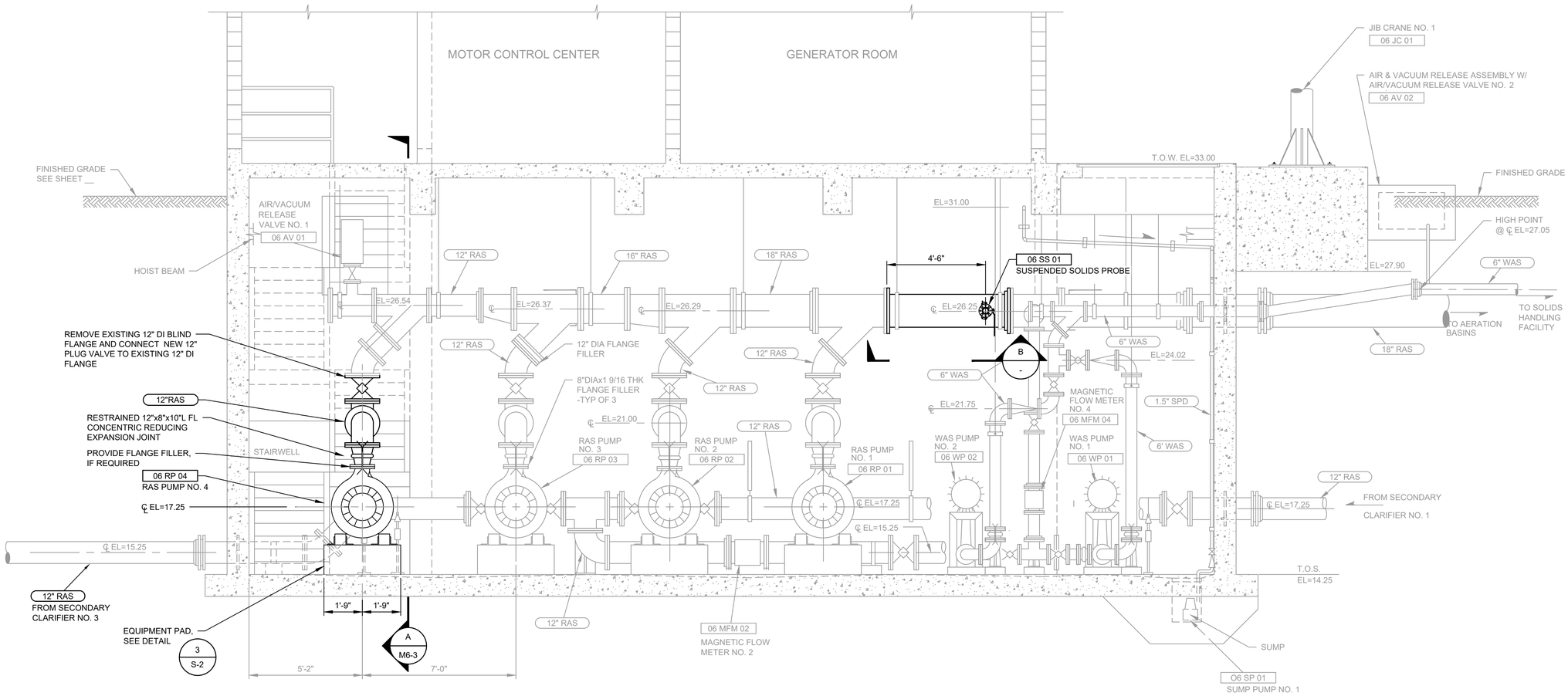
MECHANICAL

AREA 6

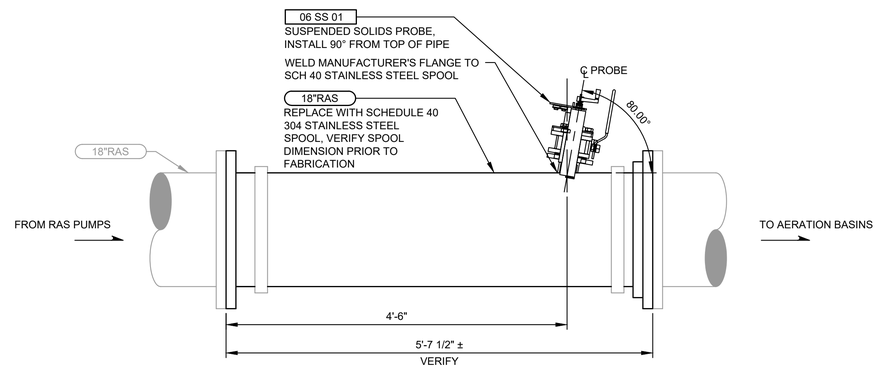
SECONDARY CLARIFIER SPLITTER BOX AND RAS/WAS PUMP STATION PLAN

DRAWING: **M6-1** OF: **3**

SHEET: **17** OF: **55**



A / M6-1 **SECTION**
SCALE: 3/8"=1'-0"



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

NOTES:

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2. COORDINATE SHUTDOWNS WITH CITY STAFF. PROVIDE A MINIMUM OF 10 WORKING DAYS NOTICE.

APPROVED

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CITY OF PUYALLUP
APPROVED
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SEATTLE, WASHINGTON 98144
(206) 284-0860

BJARNE JACOBSEN — STATE OF WASHINGTON — 14062 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

DOUGLAS A. WEICH — STATE OF WASHINGTON — 29743 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018
1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	DAW
CHECKED BY:	DAW
DRAWN BY:	CRR
DESIGNER:	BJ
G & O JOB NO.:	21462.00
FILE:	M6_SB-PLN-SEC.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

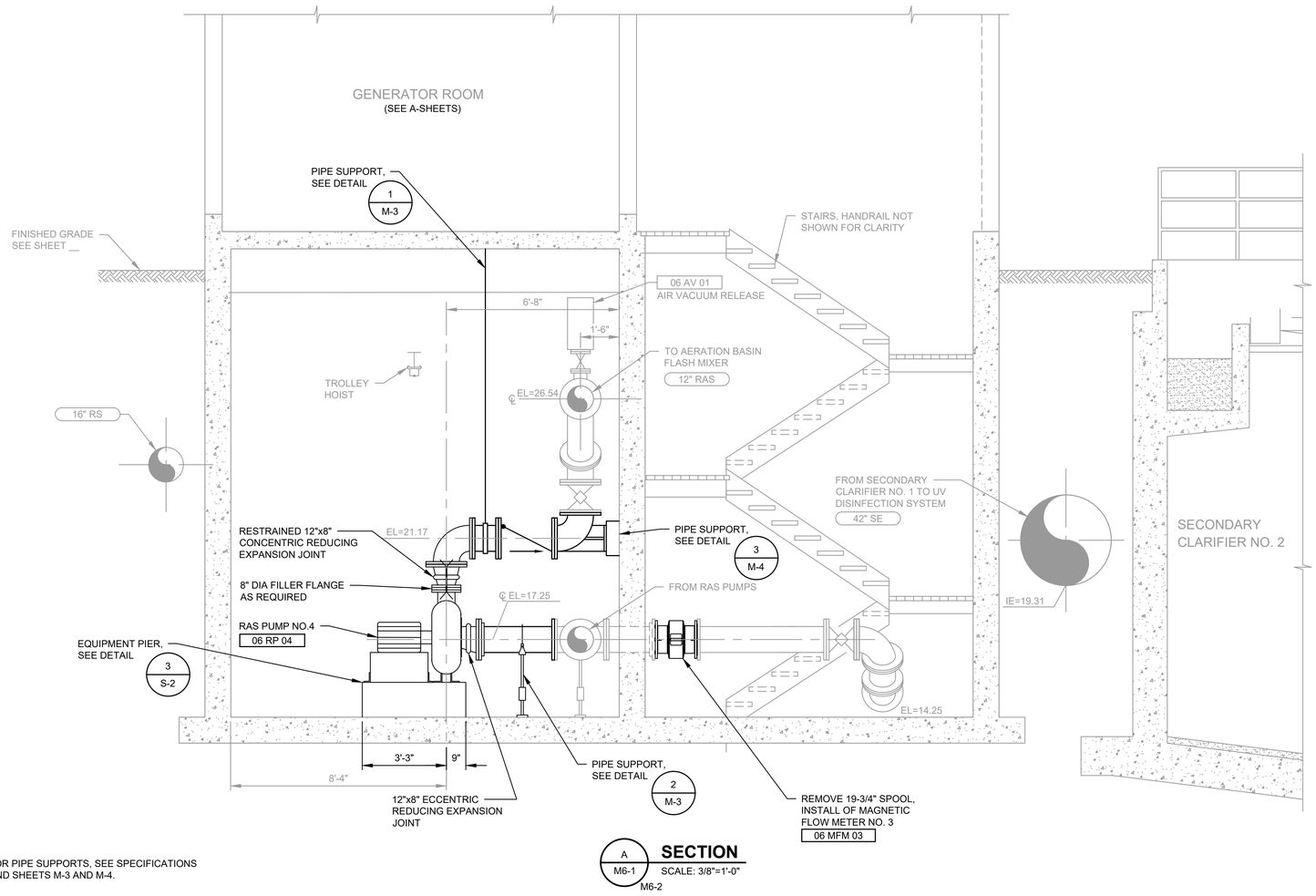
MECHANICAL

AREA 6

SECONDARY CLARIFIER SPLITTER BOX AND RAS/WAS PUMP STATION SECTIONS

DRAWING: **M6-2** OF: **3**

SHEET: **18** OF: **55**



A M6-1 **SECTION**
SCALE: 3/8"=1'-0"
M6-2

NOTE:

1. FOR PIPE SUPPORTS, SEE SPECIFICATIONS AND SHEETS M-3 AND M-4.

Gray & Osborne, Inc.
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CITY OF PUYALLUP — STATE OF WASHINGTON

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0 1" 2"
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IF NOT, SCALE ACCORDINGLY

MECHANICAL

AREA 6

SECONDARY CLARIFIER SPLITTER BOX AND RAS/WAS PUMP STATION SECTIONS AND DETAILS

DRAWING: **M6-3** OF: **3**

SHEET: **19** OF: **55**

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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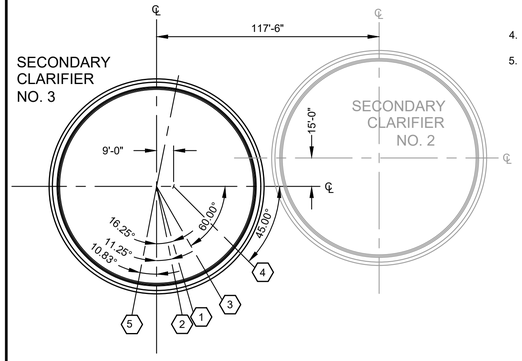


LEGEND FOR SECONDARY CLARIFIER ORIENTATION PLAN

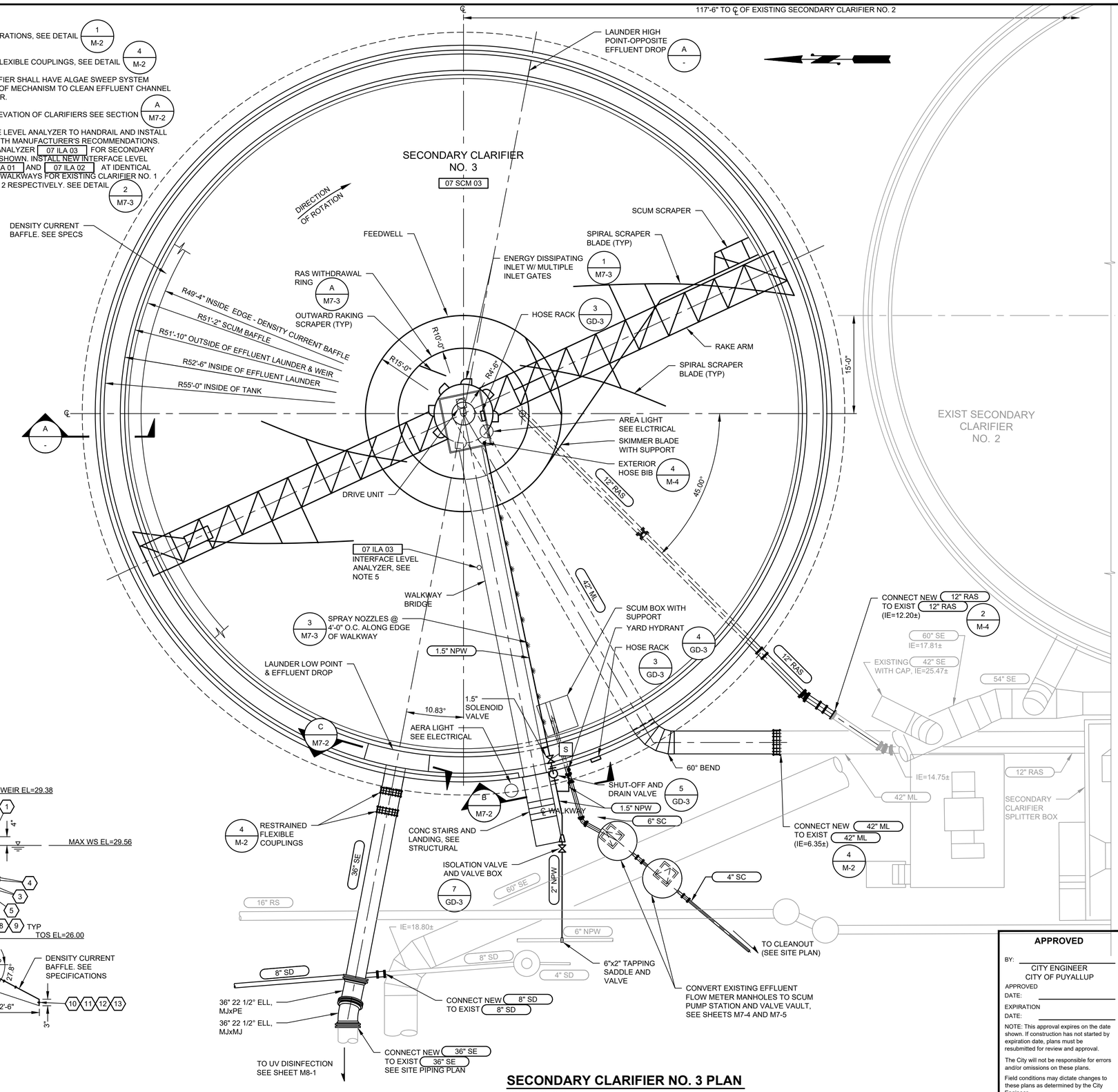
1. ℄ SCUM BOX & 6" SC PIPE
2. ℄ WALKWAY BRIDGE
3. ℄ 42" ML INFLUENT PIPE
4. ℄ 12" RAS WITHDRAWAL PIPE
5. ℄ EFFLUENT DROP & 36" SE PIPE

SECONDARY CLARIFIERS ORIENTATION PLAN

SCALE: 1"=40'-0"

NOTES :

1. FOR PIPING PENETRATIONS, SEE DETAIL 1/M-2
2. FOR RESTRAINED FLEXIBLE COUPLINGS, SEE DETAIL 4/M-2
3. SECONDARY CLARIFIER SHALL HAVE ALGAE SWEEP SYSTEM INSTALLED AT END OF MECHANISM TO CLEAN EFFLUENT CHANNEL AND EFFLUENT WEIR.
4. FOR SECTIONAL ELEVATION OF CLARIFIERS SEE SECTION A/M7-2
5. ATTACH INTERFACE LEVEL ANALYZER TO HANDRAIL AND INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. INTERFACE LEVEL ANALYZER 07 ILA 03 FOR SECONDARY CLARIFIER NO. 3 IS SHOWN. INSTALL NEW INTERFACE LEVEL ANALYZERS 07 ILA 01 AND 07 ILA 02 AT IDENTICAL LOCATIONS ALONG WALKWAYS FOR EXISTING CLARIFIER NO. 1 AND CLARIFIER NO. 2 RESPECTIVELY. SEE DETAIL 2/M7-3



SECONDARY CLARIFIER NO. 3 PLAN

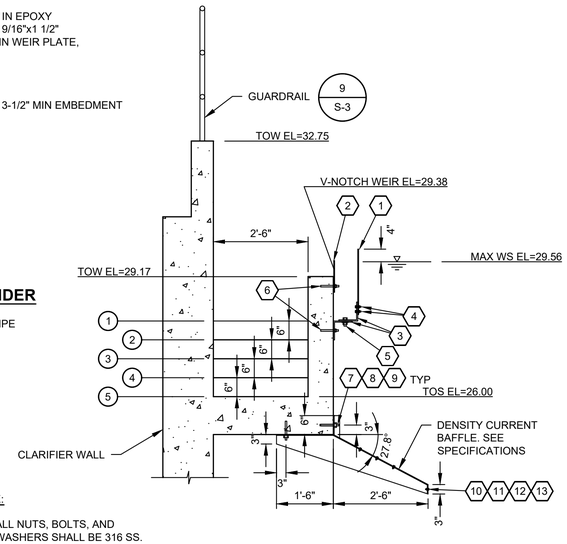
SCALE: 1/8"=1'-0"

FIBERGLASS WEIR/EFFLUENT BAFFLE/STAMFORD BAFFLE

1. 1/4"x12" FIBERGLASS SCUM BAFFLE PLATE
2. 1/4"x10" V-NOTCH FIBERGLASS WEIR PLATE WITH NEOPRENE SEAL, SEE DETAIL 1/M7-2
3. L 6x6x3/8x3" AND L 6x6x3/8x3" 316 SS BAFFLE SUPPORT BRACKETS @ 4'-0" OC AT WALL
4. (2) 3/8"x1 3/4" FLAT HEAD BOLTS w/WASHERS AND NUTS. PROVIDE 7/16"x1 1/2" SLOTTED HOLE IN L 6x6x3/8
5. 3/4"x2" BOLT w/WASHER AND NUT. PROVIDE 13/16"x1 3/4" SLOTTED HOLE IN L 6x6x3/8
6. (2) 1/2"x6" SS THREADED ROD, EMBED 4" IN EPOXY ANCHOR w/WASHER AND NUT. PROVIDE 9/16"x1 1/2" SLOTTED HOLE IN L 6X6X3/8. FOR HOLE IN WEIR PLATE, SEE DETAIL 1/M7-2
7. 3/8" DIA THRD RODS IN EPOXY ANCHOR, 3-1/2" MIN EMBEDMENT
8. 3/8" OVERSIZED FLAT WASHER
9. 3/8" NEX NUT
10. 1/4" X 1-1/4" HEX BOLT
11. 1/4" FENDER WASHER
12. 1/4" LOCK WASHER
13. 1/4" HEX NUT

GROUT FILL IN EFFLUENT LAUNDER

1. HIGH POINT @ 180° FROM EFFLUENT PIPE
2. 135° FROM EFFLUENT PIPE
3. 90° FROM EFFLUENT PIPE
4. 45° FROM EFFLUENT PIPE
5. LOW POINT @ EFFLUENT PIPE, SEE SECTION C/M7-2



NOTE:

1. ALL NUTS, BOLTS, AND WASHERS SHALL BE 316 SS.

A/TYP EFFLUENT LAUNDER SECTION

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

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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED DATE: _____
EXPIRATION DATE: _____

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MECHANICAL

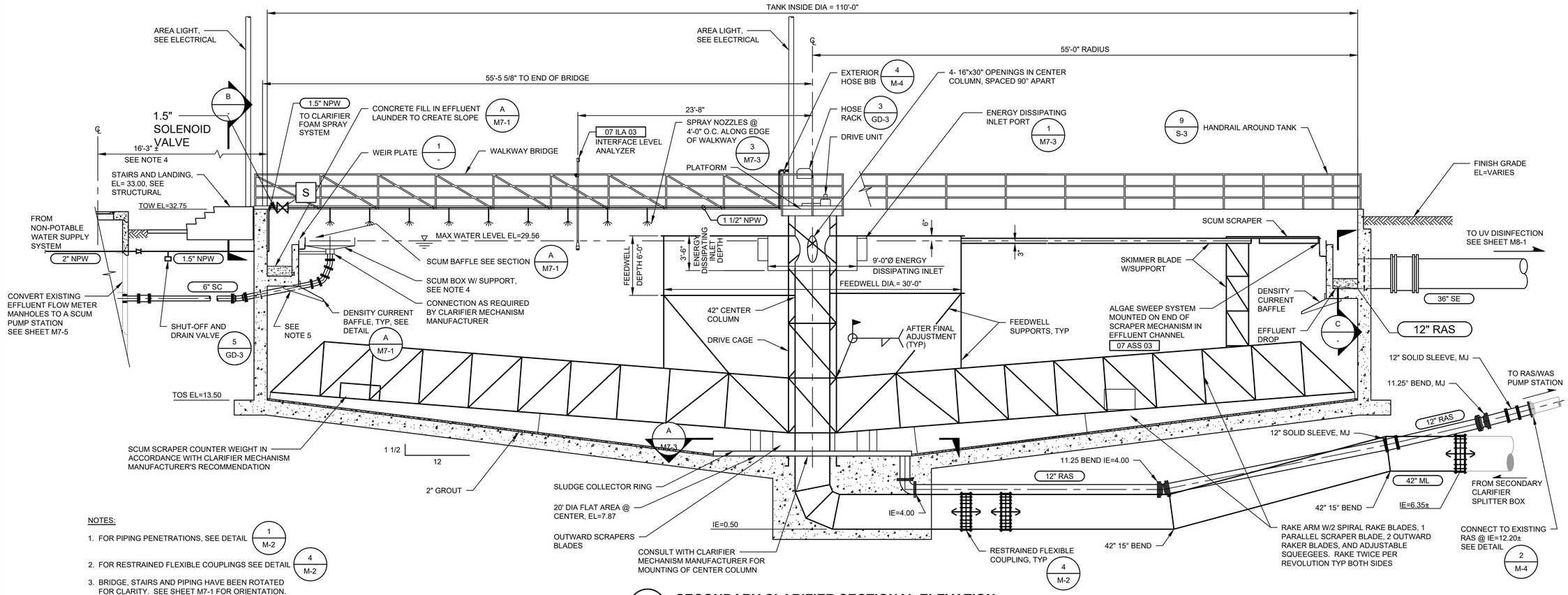
AREA 7

SECONDARY CLARIFIER NO. 3 PLAN

DRAWING: M7-1 OF: 5

SHEET: 20 OF: 55

m:\PUYALLUP\21462 wpcp 3rd secondary clarifier\01 design\Planset\Mechanical\SC3_PLAN.dwg, 6/26/2023 3:54 PM, CHARLEY REID

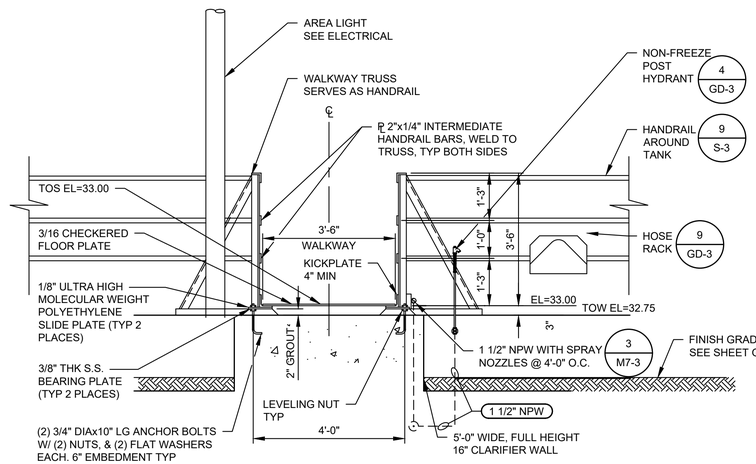


NOTES:

1. FOR PIPING PENETRATIONS, SEE DETAIL 1 / M-2
2. FOR RESTRAINED FLEXIBLE COUPLINGS SEE DETAIL 4 / M-2
3. BRIDGE, STAIRS AND PIPING HAVE BEEN ROTATED FOR CLARITY. SEE SHEET M7-1 FOR ORIENTATION.
4. SCUM BOX AND SCUM PUMP STATION ROTATED FOR CLARITY, SEE SHEETS M7-1 AND M7-5 FOR ORIENTATION.
5. PROVIDE AN OPENING IN DENSITY CURRENT BAFFLE TO ACCOMODATE SCUM PIPE. COORDINATE LOCATION OF BAFFLE SUPPORTS TO AVOID PIPE.

A / M7-1 SECONDARY CLARIFIER SECTIONAL ELEVATION

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

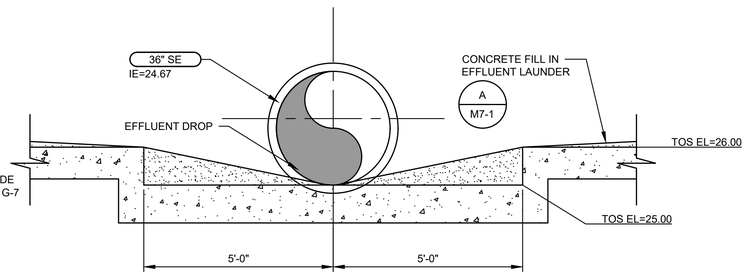


NOTE:

1. THE CLARIFIER MECHANISM MANUFACTURER SHALL DESIGN THE WALKWAY BRIDGE IN ACCORDANCE WITH ALL APPLICABLE CODES, SUBJECT TO REVIEW BY THE ENGINEER

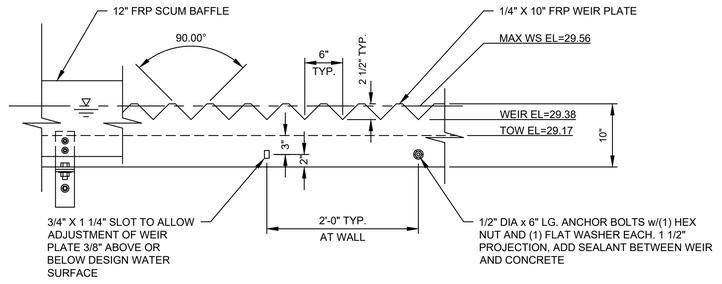
B / M7-1 SECTION

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



C / M7-1 SECTION

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



NOTES:

1. ALL NUTS, BOLTS, AND WASHERS SHALL BE 316 SS.
2. INSTALL NEOPRENE GASKET BETWEEN WEIR BLADE AND CONCRETE. CAULK TOP AND BOTTOM JOINTS W/ ELASTOMERIC SEALANT AFTER INSTALLATION.

1 / - WEIR DETAIL

SCALE: 1"=1'-0"

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

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EXPIRATION DATE: _____

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0 1" 2"
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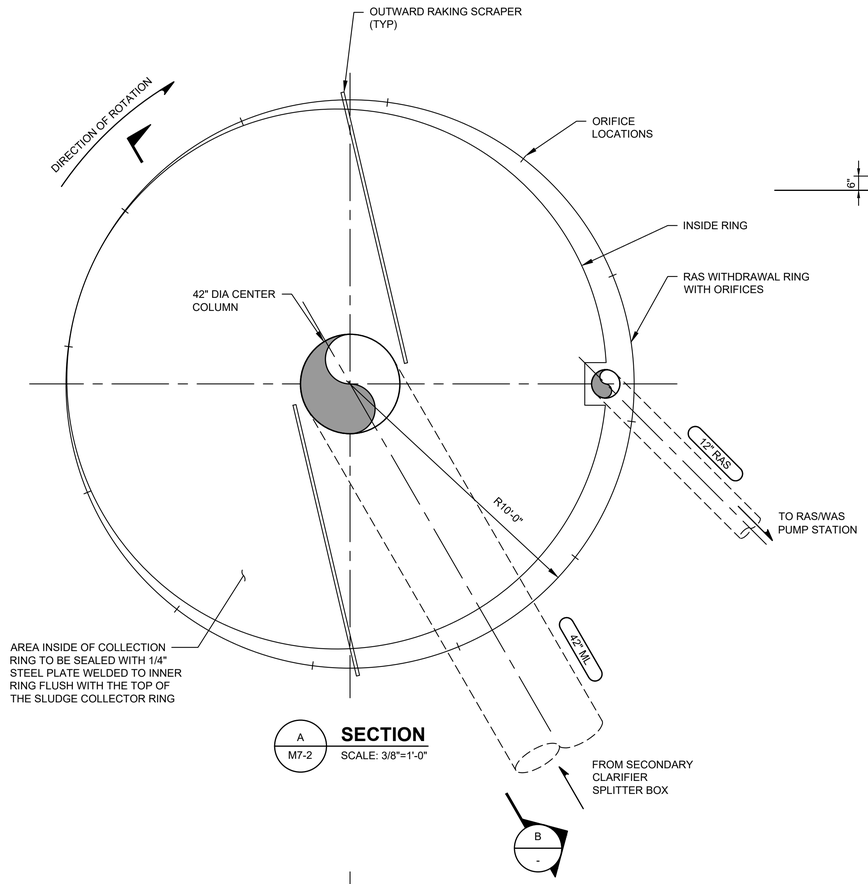
MECHANICAL

AREA 7

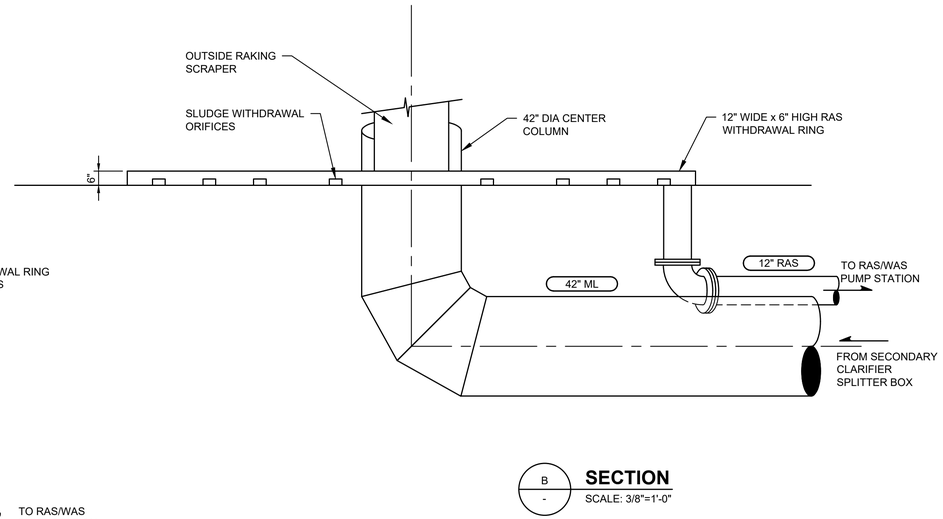
SECONDARY CLARIFIER NO. 3 SECTIONS

DRAWING: M7-2 OF: 5

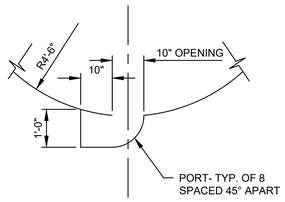
SHEET: 21 OF: 55



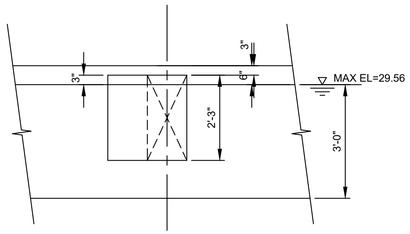
A / M7-2 **SECTION**
SCALE: 3/8"=1'-0"



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



PLAN

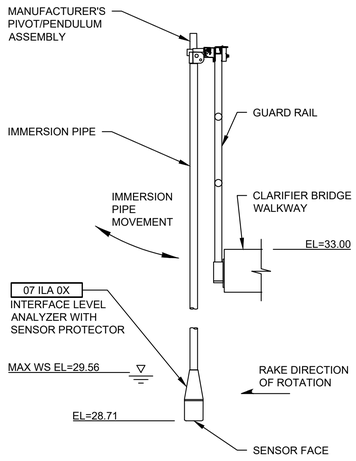


ELEVATION

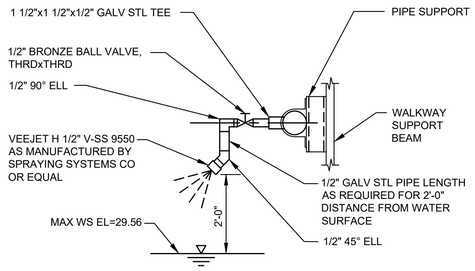
NOTE:

1. TANGENTIAL ENERGY DISSIPATING INLET SHOWN. DUAL GATE ENERGY DISSIPATING INLET ALSO ACCEPTABLE.

1 / M7-1 **ENERGY DISSIPATING INLET PORT DETAIL**
SCALE: 1/2"=1'-0"
M7-2



2 / M7-1 **INTERFACE LEVEL ANALYZER DETAIL**
SCALE: 3/4"=1'-0"



3 / TYP **SPRAY NOZZLES DETAIL**
NOT TO SCALE

APPROVED

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CITY ENGINEER
CITY OF PUYALLUP
APPROVED
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DATE: _____

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CITY OF PUYALLUP
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MECHANICAL

AREA 7

SECONDARY CLARIFIER NO. 3 SECTIONS AND DETAILS

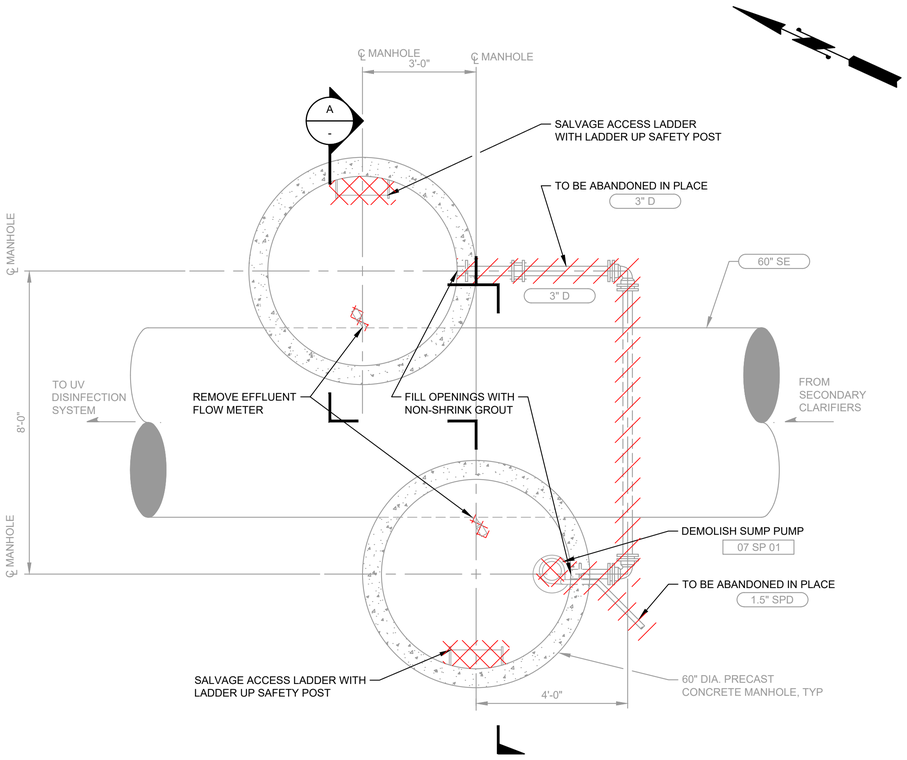
DRAWING: **M7-3** OF: **5**

SHEET: **22** OF: **55**

LEGEND:

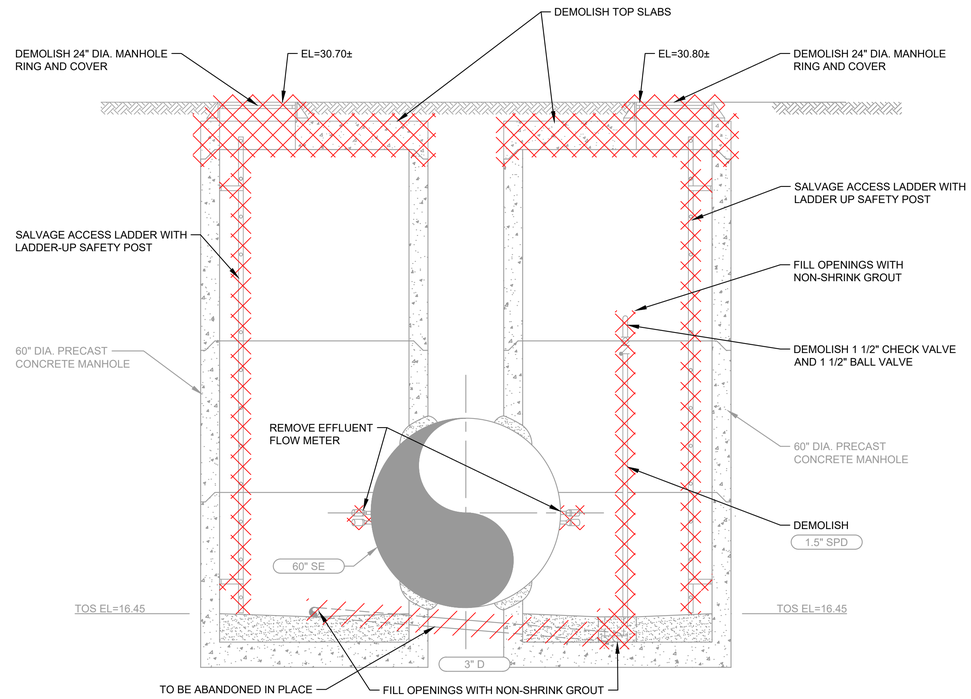
DENOTES ITEMS TO BE DEMOLISHED BY CONTRACTOR IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS

DENOTES ITEMS TO BE ABANDONED IN PLACE BY CONTRACTOR IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS



EXISTING EFFLUENT FLOW METER MANHOLE DEMOLITION PLAN

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



A / - **SECTION**

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

NOTES:

1. SEE SPECIFICATIONS FOR REMOVAL AND DISPOSAL OF PIPING, EQUIPMENT AND MATERIALS.
2. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK.
3. PLUG OPEN ENDS OF ALL ABANDONED PIPING WITH NON-SHRINK GROUT.

APPROVED

BY: _____
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CITY OF PUYALLUP

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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

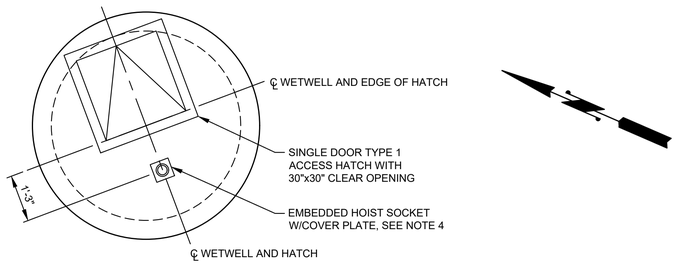
MECHANICAL

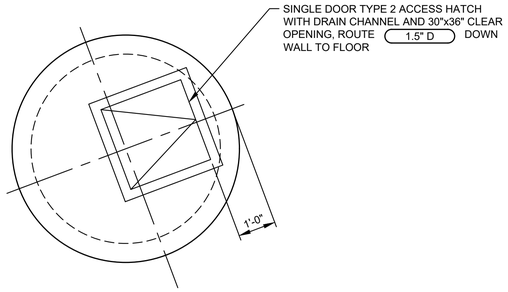
AREA 7

EXISTING EFFLUENT FLOWMETER MANHOLE DEMOLTION PLAN

DRAWING: **M7-4** OF: **5**

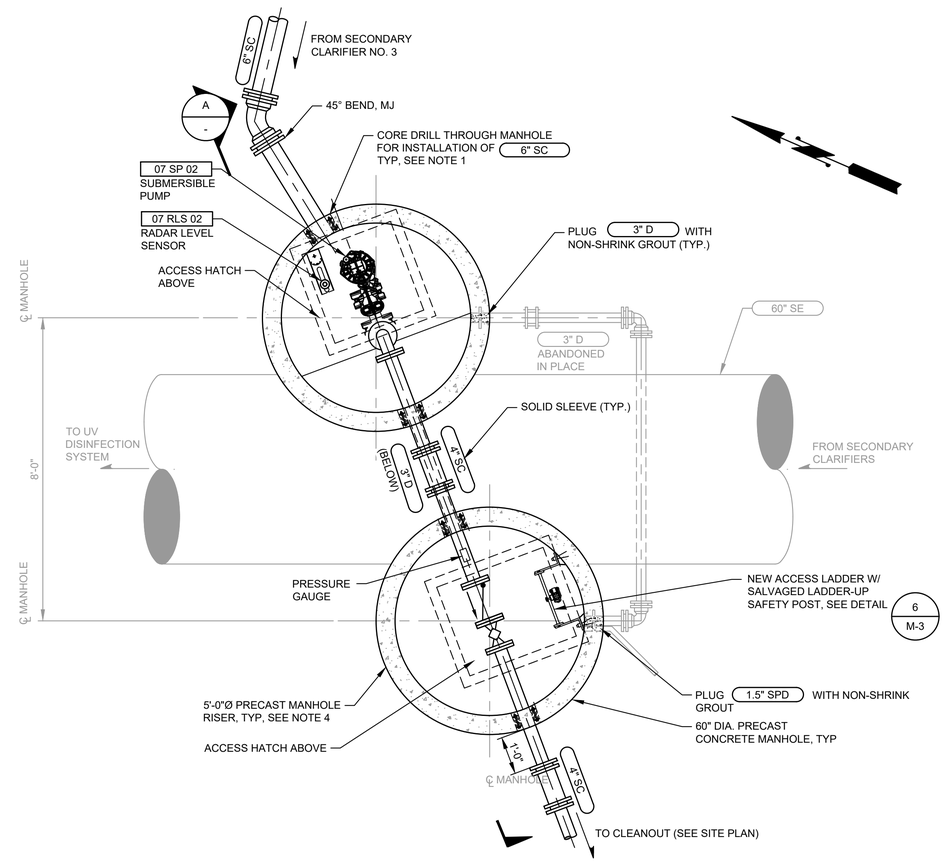
SHEET: **23** OF: **55**





NEW SCUM PUMP STATION IN EXISTING MANHOLE UPPER PLAN

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

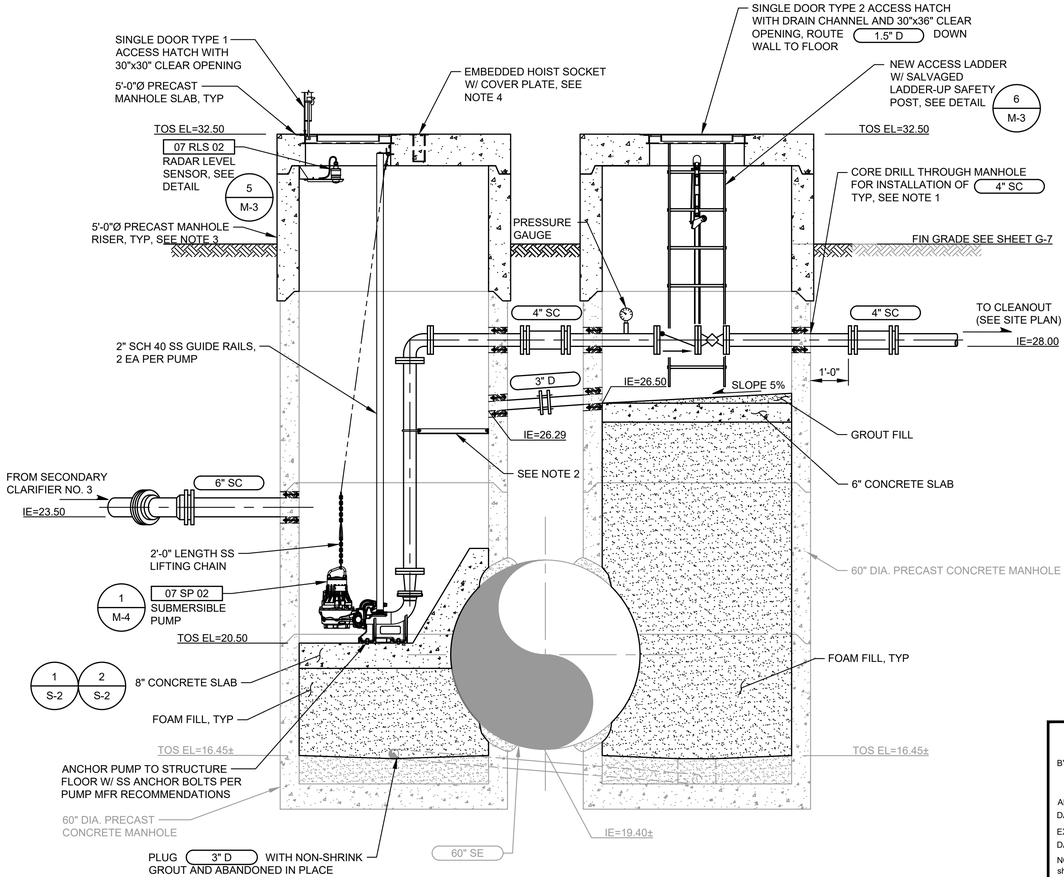


NEW SCUM PUMP STATION IN EXISTING MANHOLE LOWER PLAN

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

NOTES :

1. FOR PIPING PENETRATIONS, SEE DETAIL 1 / M-2
2. PROVIDE PIPE SUPPORTS, SEE SPECIFICATION 15066.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING RISER BARREL AND EQUIPMENT.
4. COORDINATE LOCATION OF HOIST SOCKET WITH OWNER AND SPECIFIC PUMP SELECTED FOR PROJECT. HOIST SHALL BE LOCATED SUCH THAT HOOK IS DIRECTLY CENTERED ON THE LIFTING POINT OF THE PUMP.



A / - **SECTION**

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

APPROVED

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CITY OF PUYALLUP
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0 1" 2"
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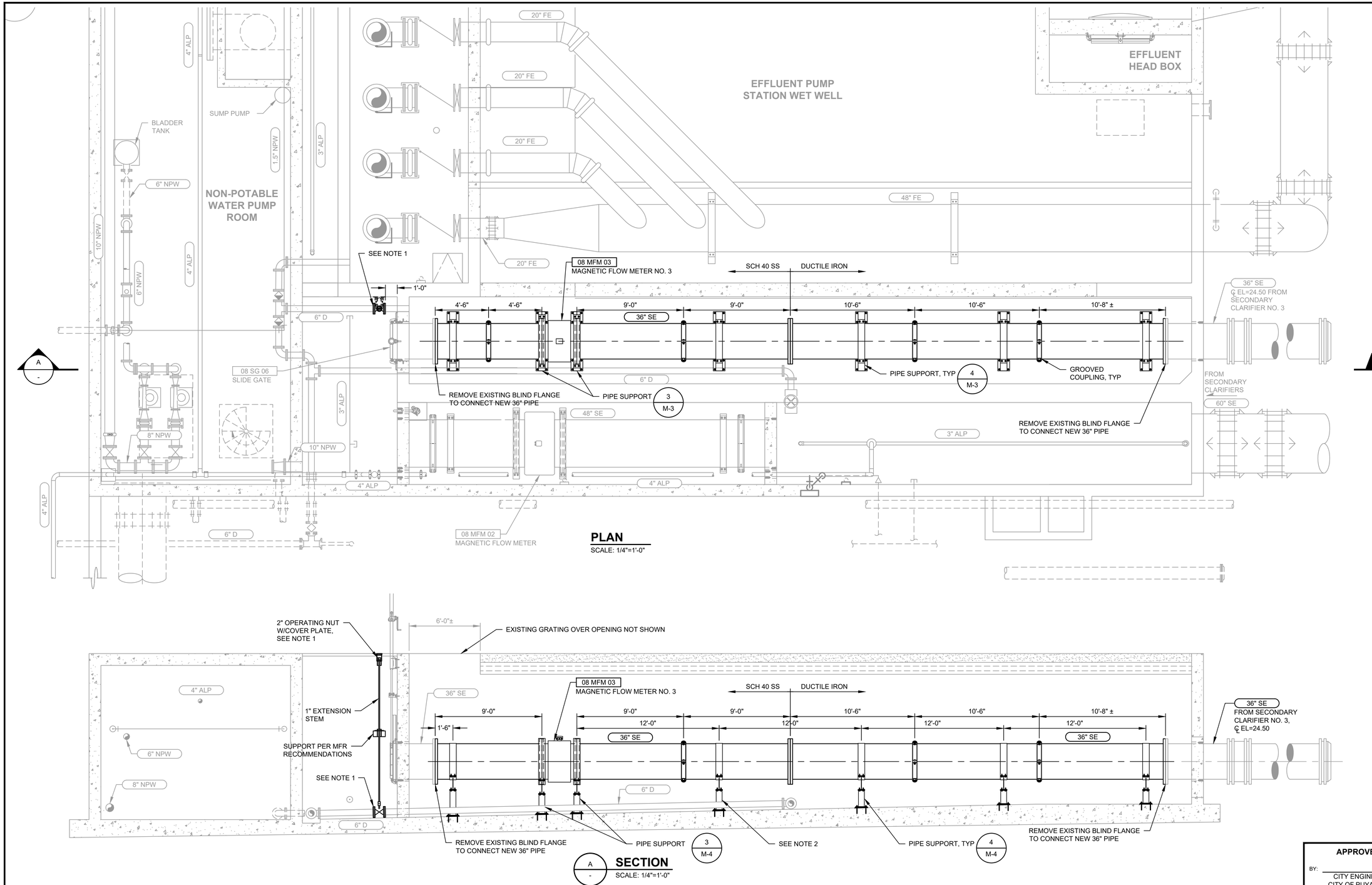
MECHANICAL

AREA 7

SECONDARY CLARIFIER NO. 3 SCUM PUMP STATION

DRAWING: M7-5 OF: 5

SHEET: 24 OF: 55



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

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

NOTES:

1. CUT 6" PIPE AND INSTALL NEW 6" PLUG VALVE WITH EXTENDED BONNET AND 2-INCH ACTUATOR NUT. PROVIDE SUPPORTS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. PROVIDE 4-INCH DIAMETER BANDED OPENING IN EXISTING ALUMINUM GRATING WITH SOLID COVER PLATE. OPENING TO BE CENTERED ON VALVE ACTUATOR NUT.
2. CONTRACTOR SHALL VERIFY SLAB ELEVATION AT EACH SUPPORT LOCATION PRIOR TO FABRICATING SUPPORTS.

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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Gray & Osborne, Inc.
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1130 RAINIER AVENUE SOUTH, SUITE 300
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BJARNE JACOBSEN — STATE OF WASHINGTON — 14062 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

DOUGLAS A. WEBB — STATE OF WASHINGTON — 29743 — REGISTERED PROFESSIONAL ENGINEER — 6/26/23

CITY OF PUYALLUP

WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018

1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	DAW
CHECKED BY:	DAW
DRAWN BY:	CRR
DESIGNER:	BJ
G & O JOB NO.:	21462.00
FILE:	M8_EFM-PLN-SEC.DWG

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

MECHANICAL

AREA 8

EFFLUENT FLOW METER PLAN AND SECTION

DRAWING: **M8-1** OF: **1**

SHEET: **25** OF: **55**

PROJECT DATA

CODES:

IBC	2018	INTERNATIONAL BUILDING CODE
IMC	2018	INTERNATIONAL MECHANICAL CODE
IFC	2018	INTERNATIONAL FIRE CODE
UPC	2018	UNIFORM PLUMBING CODE
WSEC	2018	WASHINGTON STATE ENERGY CODE
NFPA 820	2020	STANDARD FOR FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES

PROJECT DESCRIPTION:

ADDITION OF A METAL STUD FRAMED WALL AND DOOR TO SEPARATE THE MOTOR CONTROL CENTER AND THE RAS/WAS PUMP ROOM.

IBC OCCUPANCY:

U - RAS/WAS PUMP STATION

IBC TYPE OF CONSTRUCTION:

TYPE - V.B.

IBC FIRE RESISTIVE REQUIREMENTS:

BEARING WALLS - 0 HOURS
NONBEARING WALLS - 0 HOURS
FLOOR ASSEMBLIES - 0 HOURS
ROOF ASSEMBLIES - 0 HOURS
ALL OTHER CONSTRUCTIONS - NON-RATED
(ALL FIRE SEPARATION DISTANCES ≥ 30 FEET.)

NFPA 820 REQUIREMENTS:

THE RAS/WAS PUMP ROOM SHALL BE UNCLASSIFIED PER NEC AREA ELECTRICAL CLASSIFICATION REQUIREMENTS WHEN VENTILATED AT 6 AIR CHANGES PER HOUR IN ACCORDANCE WITH NFPA 820.

GENERAL NOTES:

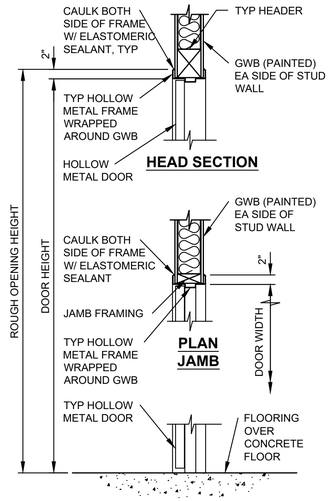
1. ALL DIMENSIONS ARE TO FACE OF FRAMING AND CMU WALL UNLESS NOTED OTHERWISE.
2. NOT ALL WALL PENETRATION, MAY BE SHOWN. COORDINATE SIZE AND LOCATIONS WITH MECHANICAL, PLUMBING, ELECTRICAL AND HVAC DRAWINGS.
3. INSULATION SHALL BE INSTALLED SUCH THAT IDENTIFICATION MARKINGS ARE READILY OBSERVABLE DURING INSPECTION.

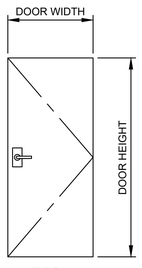
WALL TYPES & LEGEND

EXISTING WALL

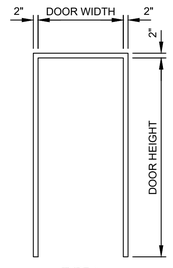
NEW 2x4 METAL STUD @ 16" OC TO EXISTING GWB CEILING W/ 1/2" GWB EA SIDE; PAINT TO SPECIFICATIONS

DOOR NUMBER, SEE DOOR SCHEDULE THIS SHEET





DOOR TYPE
SCALE: NTS

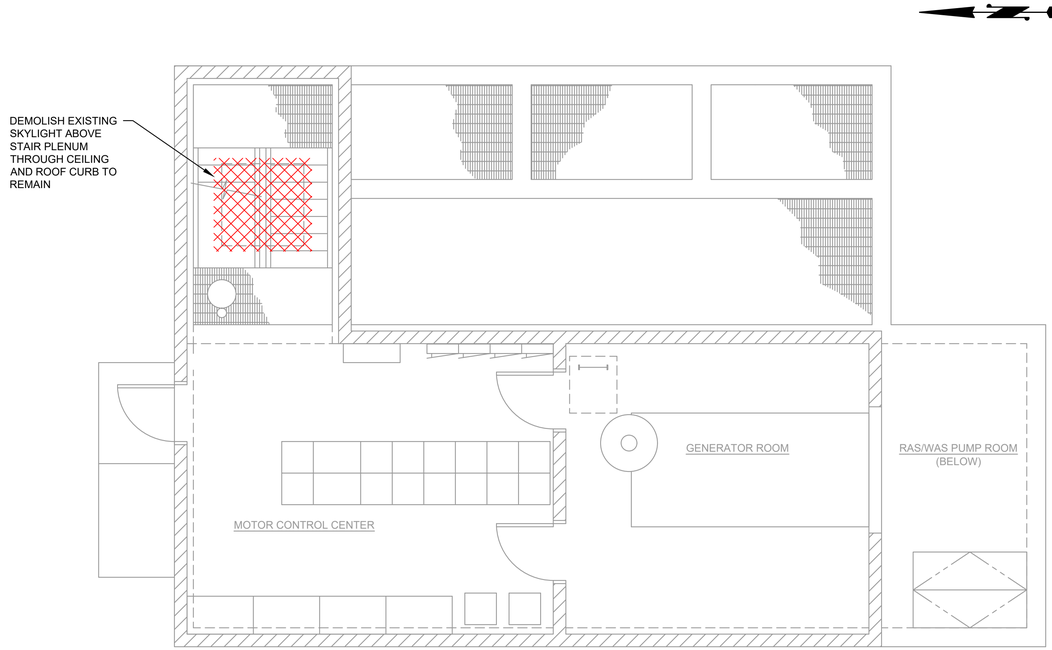


DOOR FRAME TYPE
SCALE: NTS

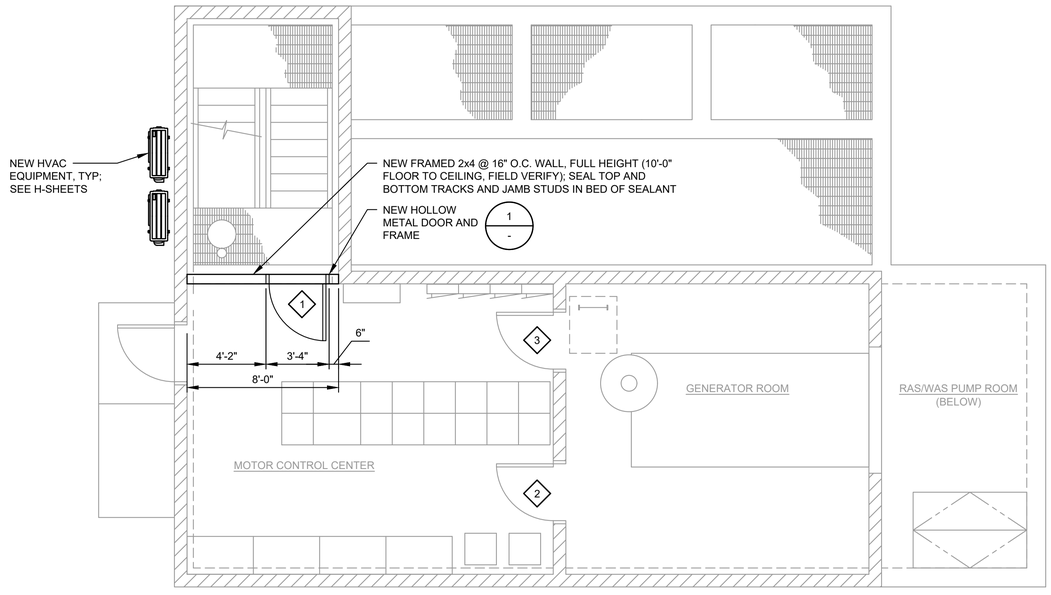
METAL DOOR FOR INTERIOR STUD WALL DETAIL
1 / TYP
SCALE: 3/4"=1'-0"

DOOR SCHEDULE							
NO.	MATERIAL & TYPE	DOOR SIZE: WIDTH x HEIGHT x THICKNESS	DOOR TYPE	FRAME TYPE	MAX. U-FACTOR	FINISH	HARDWARE GROUP
1	HOLLOW METAL INSULATED	3'-0" x 7'-0" x 1 3/4"	A	A	0.34	PAINT	1
2	HOLLOW METAL INSULATED (E)	FIELD VERIFY	-	-	-	-	2
3	HOLLOW METAL INSULATED (E)	FIELD VERIFY	-	-	-	-	2

NOTE: EXISTING DOORS 2 AND 3 SHALL BE RETROFITTED W/ NEW DOOR CLOSERS PER SPECIFICATION.



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



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

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
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EXPIRATION
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AARON M. PEASLEE — STATE OF WASHINGTON — 40276 — REGISTERED PROFESSIONAL ENGINEER — 06/26/2023

CITY OF PUYALLUP
STATE OF WASHINGTON

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER
CIP NO. 20-018
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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ARCHITECTURAL
AREA 6

RAS/WAS PUMP STATION NOTES, DETAILS, AND PLANS

DRAWING: **A6-1** OF: **1**
SHEET: **26** OF: **55**

HVAC DESIGN CRITERIA

EXISTING CONDITIONS

MOTOR CONTROL CENTER AND RAS/WAS PUMP ROOM:

COOLING:	VENTILATION
SYSTEM:	ROOF SUPPLY FAN [06 EX 01] AND ROOF EXHAUST FAN [06 EX 03]
CAPACITY:	3,000 CFM
CONTROLS:	REMOTE THERMOSTAT W/ 80 °F SETPOINT
HEATING:	NONE

GENERATOR ROOM:

COOLING:	VENTILATION
SYSTEM:	ROOF EXHAUST FAN [06 EX 02]
CAPACITY:	600 CFM
CONTROLS:	REMOTE THERMOSTAT W/ 90 °F SETPOINT
HEATING:	NONE

DESIGN TEMPERATURES

THE NEAREST DEFINED WSEC APPENDIX C LOCATION IS PUYALLUP.

WINTER AMBIENT TEMP:	19 °F
SUMMER AMBIENT TEMP:	86 °F
INTERIOR HEATING SETPOINT:	45 °F
INTERIOR COOLING SETPOINT:	95 °F

VENTILATION

RAS/WAS PUMP ROOM:

THE RAS/WAS PUMP ROOM WILL BE VENTILATED WITH BOTH SUPPLY AND EXHAUST AT A RATE OF >6 ACH TO DECLASSIFY THE SPACE PER NFPA 820. EXHAUST FLOW WILL BE INCREASED TO NEGATIVELY PRESSURIZE THE SPACE PER NFPA 820.

FLOOR AREA:	664 SF
AVERAGE HEIGHT:	20.6 FT
TOTAL VOLUME:	13,710 CUBIC FT
REQ'D ACH:	6 ACH
REQ'D AIRFLOW:	1,370 CFM
DESIGN SUPPLY:	1,500 CFM
DESIGN EXHAUST:	1,600 CFM

MOTOR CONTROL CENTER:

NONE; THE MOTOR CONTROL CENTER IS CONSIDERED AN UNOCCUPIED EQUIPMENT SPACE.

GENERATOR ROOM:

NO NEW WORK

HEATING/COOLING

RAS/WAS PUMP ROOM:

REQ'D HEATING LOAD:	55.9 MBH
TYPE:	ELECTRIC RESISTANCE
REQ'D CAPACITY:	16.1 KW

MOTOR CONTROL CENTER:

REQ'D HEATING LOAD:	7.4 MBH
REQ'D COOLING LOAD:	25.7 MBH
TYPE:	TWO SPLIT HEAT PUMP AND FAN COIL SYSTEMS; EACH FOR 70% OF LOAD
CAPACITY:	18.0 MBH

GENERATOR ROOM:

NO NEW WORK

CONTROL DESCRIPTION:

HEAT PUMP [06 HP 01] AND WALL MOUNTED FAN COIL [06 FC 01] PROVIDE HEATING AND COOLING FOR THE MOTOR CONTROL CENTER AND IS CONTROLLED BY THERMOSTAT [06 T 01].

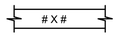
HEAT PUMP [06 HP 02] AND WALL MOUNTED FAN COIL [06 FC 02] PROVIDE REDUNDANT HEATING AND COOLING FOR THE MOTOR CONTROL CENTER AND IS CONTROLLED BY THERMOSTAT [06 T 02].

ROOF SUPPLY FAN [06 SF 01] AND ROOF EXHAUST FAN [06 EF 01] PROVIDE CONTINUOUS VENTILATION TO DECLASSIFY THE RAS/WAS PUMP ROOM PER NFPA 820.

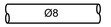
AIRFLOW SWITCHES [06 FS 01] AND [06 FS 02] MONITOR THE AIRFLOW WITHIN THE SUPPLY AND EXHAUST DUCTWORK OF THE RAS/WAS PUMP ROOM. EACH SWITCH SHALL BE SET TO ALARM IF THE AIRFLOW FALLS BELOW 1,370 CFM.

DUCT HEATER [06 HT 01] PROVIDE HEATING FOR FREEZE PROTECTION TO THE RAS/WAS PUMP ROOM AND IS CONTROLLED BY THERMOSTAT [06 T 03].

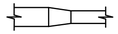
HVAC SYMBOLS

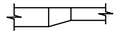


RECTANGULAR DUCT
(DIMENSION SHOWN X DIMENSION HIDDEN)



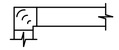
8" DIAMETER ROUND DUCT

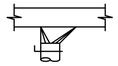

TRANSITION, CONCENTRIC, 15° MAX

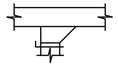

TRANSITION, ECCENTRIC, 30° MAX


TRANSITION, SQUARE TO ROUND


STANDARD RADIUS ELBOW


SQUARE THROAT ELBOW
W/ TURNING VANES


45 DEGREE RECTANGLE-TO-ROUND
BRANCH


45 DEGREE RECTANGULAR BRANCH


BRANCH, 45° TEE WYE

DUCT CHANGE OF ELEVATION

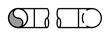
MANUAL VOLUME DAMPER


EXHAUST/RETURN/OA DUCT
(TOWARD VIEWER)


EXHAUST/RETURN/OA DUCT
(AWAY FROM VIEWER)


SUPPLY DUCT
(TOWARD VIEWER)


SUPPLY DUCT (AWAY
FROM VIEWER)


ROUND DUCT TOWARD/AWAY


FLEXIBLE DUCT CONNECTION
(TO AIR HANDLING EQUIPMENT)


SECTION EXHAUST/RETURN/OA


SECTION SUPPLY DUCT

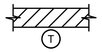

OPPOSED BLADE DAMPER


PARALLEL BLADE DAMPER


BACK DRAFT DAMPER


LOUVER


CEILING DIFFUSER, ROUND NECK



THERMOSTAT, WALL MOUNTED
WALL TYPE VARIES, SEE S-SHEETS FOR WALL TYPE

ELECTRIC MOTOR

FLOW SWITCH

FLOW DIRECTION, EXHAUST LOUVER OR SUPPLY
DIFFUSER/GRILLE


FLOW DIRECTION, INTAKE LOUVER OR
EXHAUST/RETURN GRILLE

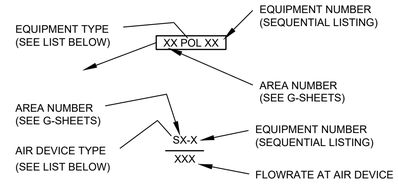
HVAC ABBREVIATIONS

A	AMPERE
ACH	AIR CHANGES PER HOUR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JUSIDICTION
BDD	BACK DRAFT DAMPER
BLDG	BUILDING
BTU	BRITISH THERMAL UNIT
CA	COMPRESSED AIR
CAP	CAPACITY
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
DIA	DIAMETER
DN	DOWN
EA	EXHAUST AIR
ECM	ELECTRONICALLY COMMUTATED MOTOR
EF	EXHAUST FAN
°F	DEGREES FAHRENHEIT
FS	FLOW SWITCH
GPM	GALLONS PER MINUTE
HOA	HAND/OFF/AUTO
MA	MIXED AIR
MBH	1,000 BTU'S/HR
MCA	MINIMUM CIRCUIT AMPS
MFR	MANUFACTURER
MOCP	MAXIMUM OVER CURRENT PROTECTION
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NO	NORMALLY OPEN
OA	OUTSIDE AIR
POC	POINT OF CONNECTION
RA	RETURN AIR
SA	SUPPLY AIR
SP	STATIC PRESSURE
TEMP	TEMPERATURE
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VD	VOLUME DAMPER
VRF	VARIABLE REFRIGERANT FLOW
W	WATT
WC	WATER COLUMN
WP	WALL PENETRATION
WSEC	WASHINGTON STATE ENERGY CODE

HVAC GENERAL NOTES

1. MATERIALS, METHODS AND INSTALLATION SHALL COMPLY WITH THE CONTRACT SPECIFICATIONS AND WITH THE PROVISIONS OF THE 2018 INTERNATIONAL MECHANICAL CODE, 2018 INTERNATIONAL BUILDING CODE, 2018 INTERNATIONAL FIRE CODE AS AMENDED BY THE STATE OF WASHINGTON AND THE LOCAL AUTHORITY HAVING JURISDICTION.
2. THESE PLANS ARE SCHEMATIC AND DO NOT SHOW EXACT ROUTING OR EVERY OFFSET, WHICH MAY BE REQUIRED. THE HVAC CONTRACTOR IS TO COORDINATE WITH ALL OTHER TRADES AND IS TO VERIFY ALL CLEARANCES BEFORE COMMENCING WORK.
3. CONTRACTOR SHALL VERIFY THE DIMENSIONS WITH THE EQUIPMENT MANUFACTURER TO PROVIDE DUCT TRANSITIONS TO HVAC VENTILATORS, FANS, LOUVERS, OR SUPPLY/EXHAUST GRILLES TO MATCH THE INLET/OUTLET DIMENSIONS OF THE EQUIPMENT.
4. PROVIDE EARTHQUAKE RESTRAINT FOR HVAC EQUIPMENT IN ACCORDANCE WITH SMACNA RESTRAINT MANUAL AS REQUIRED BY 2018 INTERNATIONAL BUILDING CODE REQUIREMENTS.
5. CONSTRUCTION, SUPPORTS AND INSTALLATION SHALL BE INSTALLED AND COMPLY WITH THE 2018 INTERNATIONAL MECHANICAL CODE (IMC) AND WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE.
6. ALL DUCTWORK IS CLASSIFIED AS LOW PRESSURE.
7. BALANCING: ALL HVAC SYSTEMS SHALL BE BALANCED BY A LICENSED CONTRACTOR IN ACCORDANCE WITH ACCEPTED ENGINEERING STANDARDS AND SPECIFICATION. AN AIR BARRIER TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE WASHINGTON STATE ENERGY CODE AND ASTM E779.
8. LOCATE THERMOSTATS 5 FEET AFF. UNLESS OTHERWISE NOTED.
9. PROVIDE FLEXIBLE DUCT CONNECTIONS ON ALL DUCTWORK CONNECTING TO EQUIPMENT.
10. EQUIPMENT DRAIN PIPING SHALL MAINTAIN A MIN HORIZONTAL SLOPE IN THE DIRECTION OF DISCHARGE OF MIN -1/8 INCH VERTICAL PER 1 FOOT HORIZONTAL.
11. CONTRACTOR SHALL COORDINATE CEILING EQUIPMENT LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ELECTRICAL LIGHTING LAYOUT.
12. EQUIPMENT CONDENSATE DRAINS SHALL BE TRAPPED AS REQUIRED BY THE EQUIPMENT OR APPLIANCE MANUFACTURER.
13. REFRIGERANT PIPING SHALL BE INSTALLED WITH CLOSED CELL ELASTOMERIC INSULATION IN ACCORDANCE WITH SPECIFICATION 15700. INSULATION EXPOSED TO OUTSIDE CONDITIONS SHALL BE ENCLOSED BY A LINE-HIDE LINESET COVER SYSTEM.
14. BUILDING HVAC DOCUMENTS SUCH AS RECORDS, CALCULATIONS, COMPLIANCE FORMS, AND EQUIPMENT MANUALS SHALL BE SUPPLIED TO THE BUILDING OWNER.

HVAC EQUIPMENT & AIR DEVICE IDENTIFICATIONS



EQUIPMENT

AC	AIR CONDITIONER
BC	BRANCH CONTROLLER
C	CONTROLLER
CU	CONDENSING UNIT
DS	DUCT STAT
EF	EXHAUST FAN
FC	FAN COIL
FS	FLOW SWITCH
HP	HEAT PUMP
HT	HEATER
MD	MOTORIZED DAMPER
SF	SUPPLY FAN
T	THERMOSTAT
VD	VOLUME DAMPER

AIR DEVICE

E	EXHAUST GRILLE
LVR	LOUVER
R	RETURN GRILLE
S	SUPPLY DIFFUSER/GRILLE

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

APPROVED
DATE: _____

EXPIRATION
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(206) 284-0860

AARON M. PEASE — STATE OF WASHINGTON — 40276 — REGISTERED PROFESSIONAL ENGINEER — 06/26/2023

ANDREW STEVEN DECKER — STATE OF WASHINGTON — 21033881 — REGISTERED PROFESSIONAL ENGINEER — 06/26/2023

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018
1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR:
BUILDING PERMIT

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APPROVED BY:	AMP
CHECKED BY:	ASD
DRAWN BY:	ASD
DESIGNER:	AMP
G & O JOB NO.:	21462.00
FILE:	H_RASWAS.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

HVAC

AREA 6

NOTES AND ABBREVIATIONS

DRAWING: **H6-1** OF: **3**

SHEET: **27** OF: **55**

FAN SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	MANUFACTURER & MODEL NO.	HP, VOLTAGE, AND PHASE	CONTROLS	CFM AND STATIC PRESSURE	REMARKS
RAS/WAS PUMP STATION	RAS/WAS PUMP ROOM	06 EF 01	ROOF EXHAUST FAN	GREENHECK CUE-180-VG OR EQUAL	3/4 HP 115 V 1 Ø	CONTINUOUS	1,600 CFM @ 0.2" WC	PROVIDE THERMAL OVERLOAD, NEMA 4X DISCONNECT, ALUMINUM HOUSING, S.S. FASTENERS, S.S SHAFT, & HI-PRO POLYESTER FINISH.
		06 SF 01	ROOF SUPPLY FAN	GREENHECK RBF-1H20 OR EQUAL	1/4 HP 115 V 1 Ø	CONTINUOUS	1,500 CFM @ 0.2" WC	PROVIDE THERMAL OVERLOAD, NEMA 4X DISCONNECT, ALUMINUM HOUSING, S.S. FASTENERS, S.S SHAFT, 2" ALUMINUM MESH FILTERS, & HI-PRO POLYESTER FINISH.

GRILLE/DIFFUSER SCHEDULE

BUILDING	ROOM NAME	DIFFUSER/ GRILLE NO.	TYPE	MANUFACTURER & MODEL NO.	SIZE (WxL)	REMARKS
RAS/WAS PUMP STATION	RAS/WAS PUMP ROOM	S6-1	SUPPLY GRILLE	PRICE RID OR EQUAL	20"	PROVIDE DUCT MOUNTING, VOLUME DAMPER, AND BAKED ENAMEL FINISH. ADJUST TO FULL VERTICAL FLOW.
		E6-1	EXHAUST GRILLE	PRICE 95 OR EQUAL	20"x20"	PROVIDE DUCT MOUNTING, AND BAKED ENAMEL FINISH.

HEATER SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	MANUFACTURER & MODEL NO.	KW OUTPUT	CONTROLS	VOLTAGE AND PHASE	MOUTING TYPE	REMARKS
RAS/WAS PUMP STATION	PUMP ROOM	06 HT 01	DUCT HEATER	INDEECO QUA OR EQUAL	20 KW	06 T 03	480 V 3 Ø	SLIP-IN, VERTICAL DOWN AIR FLOW, 22"x22" DUCT	PROVIDE DISCONNECT, DUST TIGHT TERMINAL BOX, INSULATED TERMINAL BOX, 24 V CONTROL TRANSFORMER AND CONTACTORS, PILOT LIGHT "ON" & "LOW AIRFLOW", S.S FRAME.

HEAT PUMP SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	MANUFACTURER & MODEL NO.	VOLTAGE, PHASE AND MCA	CONTROLS	STANDARD AIRFLOW	HEATING CAPACITY	COOLING CAPACITY	AHRI LISTED EFFICIENCY	REMARKS
RAS/WAS PUMP STATION	MOTOR CONTROL CENTER	06 HP 01	OUTDOOR HEAT PUMP	MITSUBISHI PUZ-A24NHA7 OR EQUAL	208 V 1 Ø 19 A	06 FC 01	~1,900 CFM	15.7 MBH @ 17 °F OAT	24.0 MBH @ 95 °F OAT	21.4 SEER 11.0 HSPF	PROVIDE INSULATED LINE SET, INSULATED DRAIN PIPE, LINE HIDE SET, WALL BRACKET, WIND BAFFLE, AND MITSUBISHI REMOTE ADAPTER WIRING HARNESS (PART #PAC-725AD)
		06 FC 01	WALL MOUNTED FAN COIL	MITSUBISHI PKA-A24KA7 OR EQUAL	208 V 1 Ø 2 A	06 T 01	570-775 CFM				PROVIDE CONDENSATE PUMP. LOCATE ABOVE DOOR.
		06 HP 02	OUTDOOR HEAT PUMP	MITSUBISHI PUZ-A24NHA7 OR EQUAL	208 V 1 Ø 19 A	06 FC 02	~1,900 CFM	15.7 MBH @ 17 °F OAT	24.0 MBH @ 95 °F OAT	21.4 SEER 11.0 HSPF	PROVIDE INSULATED LINE SET, INSULATED DRAIN PIPE, LINE HIDE SET, WALL BRACKET, WIND BAFFLE, AND MITSUBISHI REMOTE ADAPTER WIRING HARNESS (PART #PAC-725AD)
		06 FC 02	WALL MOUNTED FAN COIL	MITSUBISHI PKA-A24KA7 OR EQUAL	208 V 1 Ø 2 A	06 T 02	570-775 CFM				PROVIDE CONDENSATE PUMP. LOCATE ABOVE DOOR.

NOTE: HEATING AND COOLING CAPACITIES ARE ASSUMING 70 °F AND 80 °F INDOOR TEMPERATURES RESPECTIVELY, PER THE MANUFACTURER

CONTROL SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	CONTROLLED EQUIPMENT	MANUFACTURER & MODEL NO.	HEAT SET POINT	COOL SET POINT	VOLTAGE AND PHASE	REMARKS
RAS/WAS PUMP STATION	MOTOR CONTROL CENTER	06 T 01	PROGRAMMABLE THERMOSTAT	06 FC 01	MITSUBISHI PAR-40MAAU OR EQUAL	45 °F	95 °F	12 VDC	
		06 T 02	PROGRAMMABLE THERMOSTAT	06 FC 02	MITSUBISHI PAR-40MAAU OR EQUAL	45 °F	95 °F	12 VDC	
	RAS/WAS PUMP ROOM	06 FS 01	FLOW SWITCH	N/A	DEGREE CONTROLS S500 OR EQUAL	N/A	N/A	120 V 1 Ø	MOUNT INSIDE SUPPLY DUCT.
		06 FS 02	FLOW SWITCH	N/A	DEGREE CONTROLS S500 OR EQUAL	N/A	N/A	120 V 1 Ø	MOUNT INSIDE EXHAUST DUCT.
		06 T 03	THERMOSTAT	06 HT 01	INDEECO 1006998 OR EQUAL	45 °F	N/A	30 V MAX	

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(206) 284-0860

AARON M. PEASLEE — STATE OF WASHINGTON — 40276 — REGISTERED PROFESSIONAL ENGINEER — 06/26/2023

ANDREW STEVEN DECKER — STATE OF WASHINGTON — 21033881 — REGISTERED PROFESSIONAL ENGINEER — 06/26/2023

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER
CIP NO. 20-018
1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	AMP
CHECKED BY:	ASD
DRAWN BY:	ASD
DESIGNER:	AMP
G & O JOB NO.:	21462.00
FILE:	H_RASWAS.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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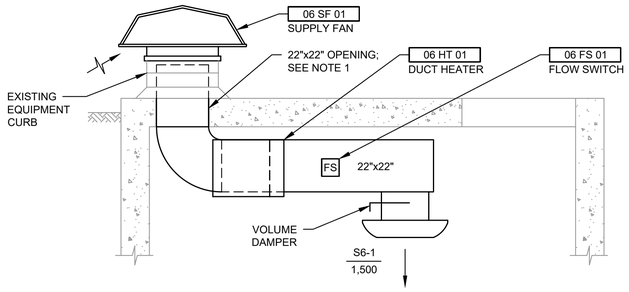
HVAC

AREA 6

EQUIPMENT SCHEDULES

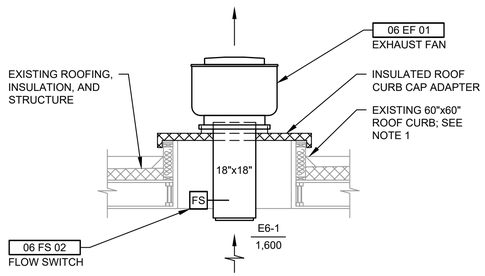
DRAWING: **H6-2** OF: **3**

SHEET: **28** OF: **55**



A / - **SUPPLY FAN SECTION**

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

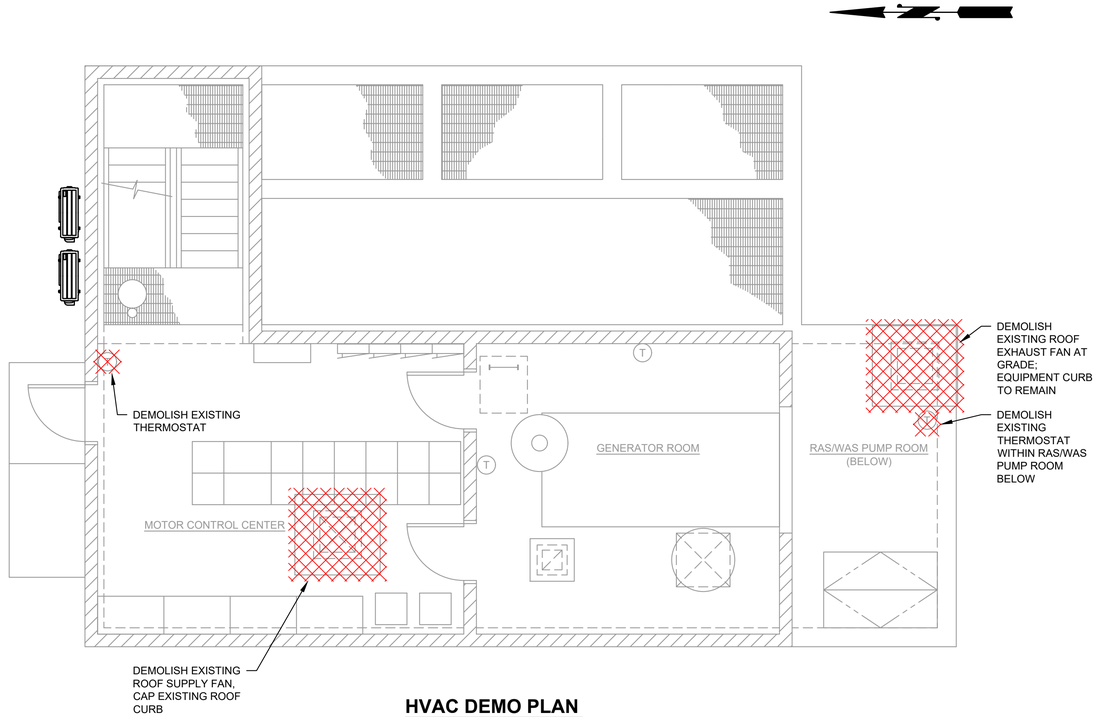


B / - **EXHAUST FAN SECTION**

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

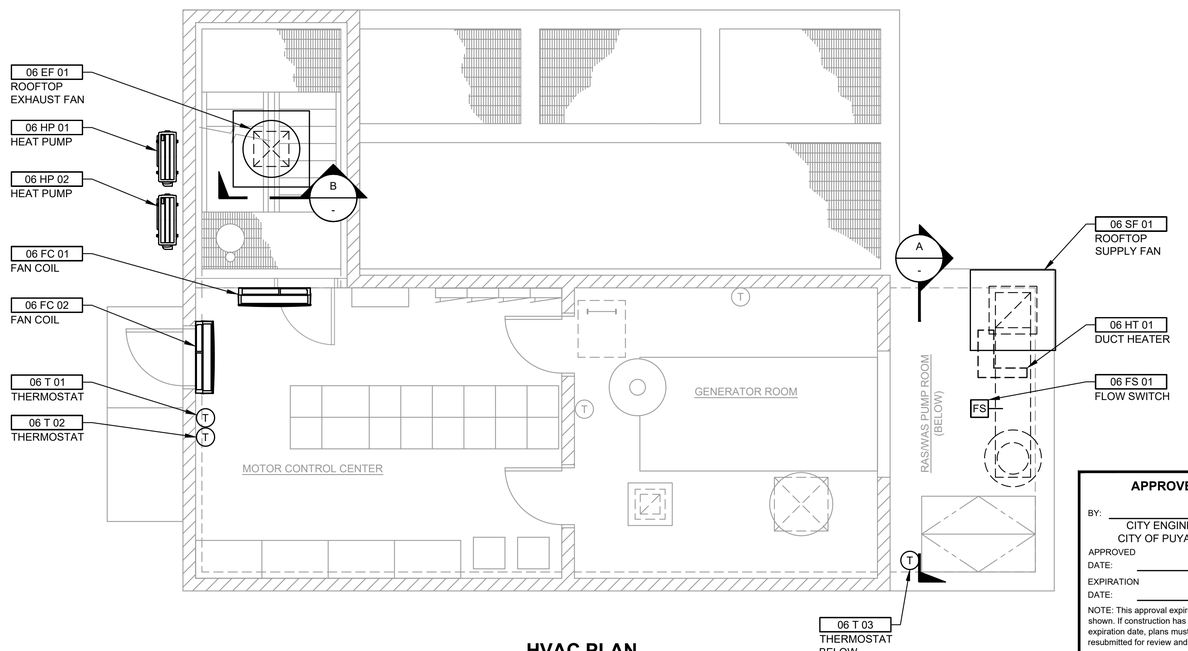
NOTE:

1. ROOF PENETRATIONS AND CONSTRUCTION IS BASED ON AVAILABLE INFORMATION; CONTRACTOR TO FIELD VERIFY.



HVAC DEMO PLAN

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



HVAC PLAN

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

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CITY OF PUYALLUP

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HVAC

AREA 6

DEMOLITION AND PROPOSED PLANS

DRAWING: **H6-3** OF: **3**

SHEET: **29** OF: **55**

WATER PIPING NOTES

NOTES:

1. INSTALL SHUT OFF VALVE TO ISOLATE WATER CLOSET SINKS AND DISH WASHER.
2. PROVIDE WATER HAMMER ARRESTOR (MINIMUM 12" AIR CHAMBER) AT SINKS.
3. ALL WATER PIPES SHALL BE COPPER.
4. ALL PIPING TO BE CONCEALED IN INTERIOR WALLS, CEILINGS, OR IN UTILITY SPACE BEHIND LABORATORY FURNITURE.
5. USE WALL AND CEILING FLANGE AT WALL AND CEILING PENETRATIONS.
6. ALL EXPOSED NON-POTABLE AND PROCESS WATER PIPING INCLUDING HOSE BIBS, SHALL BE LABELED EVERY 3 TO 5 FEET - "DANGER-UNSAFE WATER".
7. ALL HOT WATER PIPING SHALL BE 1/2" DIAMETER, UNLESS OTHERWISE NOTED ON PLANS, AND SHALL BE INSULATED W/ FIBERGLASS WRAP OUTSIDE.

DRAINAGE PIPING NOTES

NOTES:

1. DRAIN PIPE UNDER SLAB TO CI SOIL PIPE WITH SLOPE 1/4"/FT FOR PIPES < 3", SLOPE 1/8"/FT FOR PIPES > 3".
2. FLOOR DRAIN (FD) TO BE 3".
3. ALL BENDS UNDER FLOOR TO BE 45° FITTING MAXIMUM.
4. ALL FIXTURES SHALL BE TRAPPED.
5. ALL PLUMBING WORK SHALL CONFORM WITH THE MOST RECENT UNIFORM PLUMBING CODE OR SHALL BE APPROVED BY THE LOCAL BUILDING OFFICAL.
6. ALL DRAIN PIPING TO BE CAST IRON (CI).

WATER PIPING LEGEND

- COLD WATER PIPE (CW)
- HOT WATER PIPE (HW)
- VALVE
- HOSE BIBB
- 90° BEND DOWN
- AIR GAP TRAP PRIMER

DRAINAGE PIPING LEGEND

- CI — SEWER PIPE OR DRAIN PIPE IN CAST IRON (CI)
- FCO — FLOOR CLEAN OUT
- CO — CLEAN OUT
- FD — FLOOR DRAIN
- VSTR — VENT STACK THRU ROOF WITH WALL CLEANOUT

NOTE:

1. MODIFY AIR GAP UNIT PIPING AS SHOWN ON SHEET P6-2.

1 / P6-2 **PHOTO DETAIL**
NOT TO SCALE

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CITY ENGINEER
CITY OF PUYALLUP
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0 1" 2"
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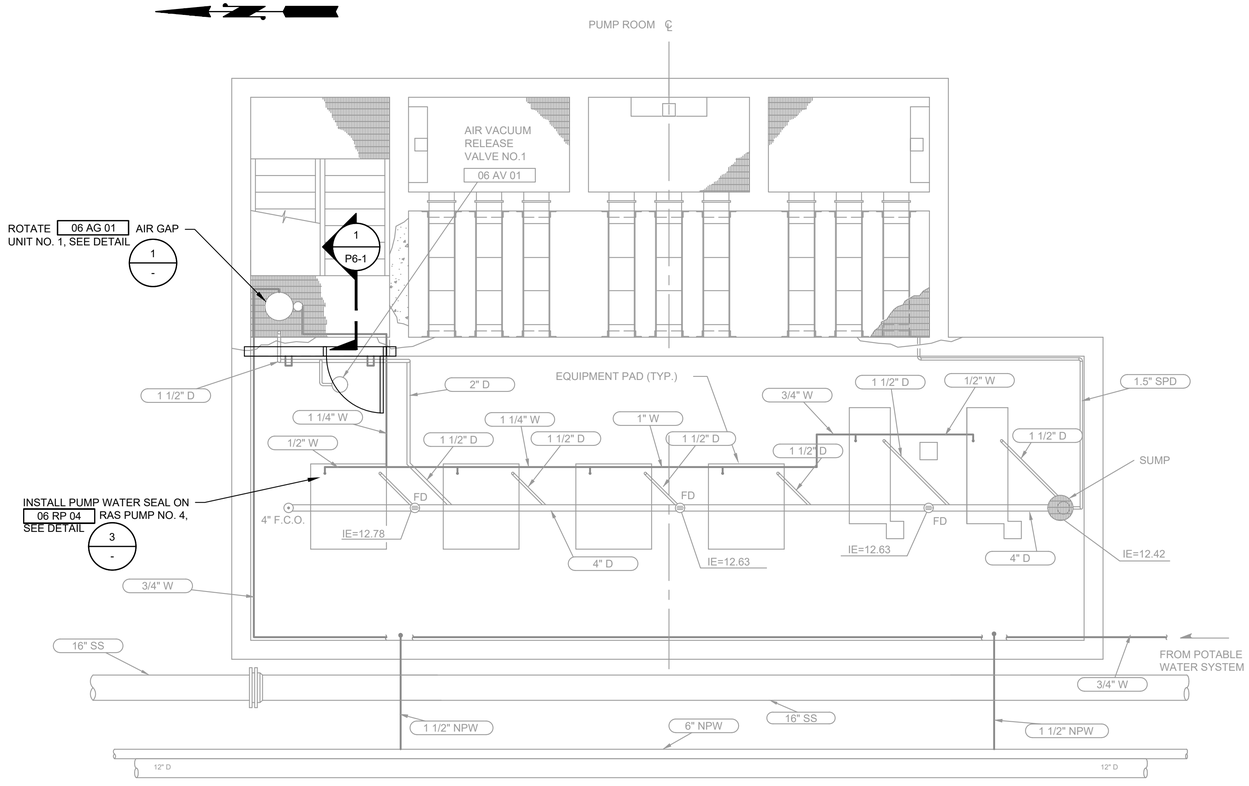
PLUMBING

AREA 6

PLUMBING NOTES, LEGEND AND DETAILS

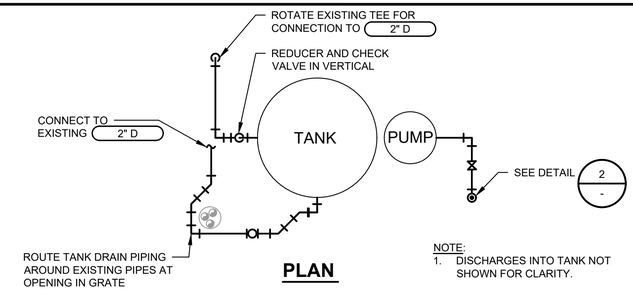
DRAWING: **P6-1** OF: **2**

SHEET: **30** OF: **55**



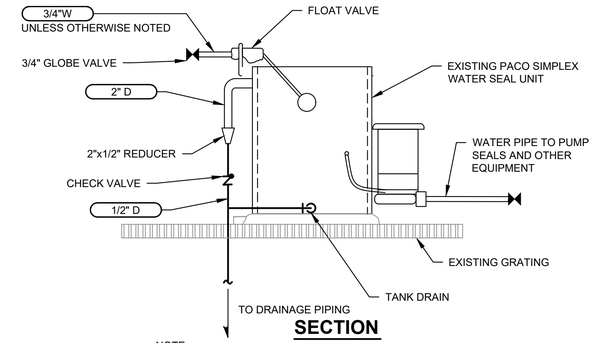
SECONDARY CLARIFIER SPLITTER BOX AND RAS/WAS PUMP STATION PLAN

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



PLAN

NOTE:
1. DISCHARGES INTO TANK NOT SHOWN FOR CLARITY.



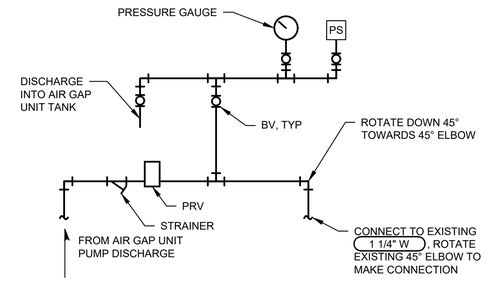
SECTION

NOTE:

1. WHEN AIR GAP UNIT IS TO BE MOUNTED ON GRATING, PROVIDE 1/2" STEEL PLATE WITH SAME FOOT PRINT DIMENSIONS AS EQUIPMENT PAD INSTEAD OF EQUIPMENT PAD. BOLT AIR GAP UNIT TO STEEL PLATE AND FASTEN STEEL PLATE TO GRATING AS REQUIRED.

1 TYP — AIR GAP UNIT DETAIL

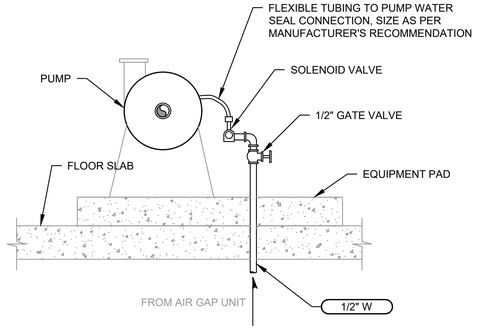
NOT TO SCALE



NOTE:
1. SUPPORT PIPING ON NEW PARTITION. INSTALL PIPE SUPPORTS IN ACCORDANCE WITH SPECIFICATIONS.

2 TYP — AIR GAP UNIT PIPING SCHEMATIC DETAIL

NOT TO SCALE



3 TYP — PUMP WATER SEAL DETAIL

NOT TO SCALE

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CITY OF PUYALLUP

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AARON M. PEASE — STATE OF WASHINGTON — 40276 — REGISTERED PROFESSIONAL ENGINEER — 06/26/2023

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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

PLUMBING

AREA 6

SECONDARY SPLITTER BOX AND RAS/WAS PUMP STATION PLAN AND DETAILS

DRAWING: **P6-2** OF: **2**

SHEET: **31** OF: **55**

GENERAL STRUCTURAL NOTES

GENERAL
THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY. USE DETAIL MARKED "TYPICAL" WHEREVER APPLICABLE. CHANGES, OMISSIONS OR SUBSTITUTIONS ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE ENGINEER. REFER TO THE SPECIFICATIONS FOR FURTHER REQUIREMENTS. DO NOT SCALE THE DRAWINGS.

ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE.

THE DESIGN, ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC., IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND HAS NOT BEEN CONSIDERED BY THE ENGINEER OF RECORD. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE PRIOR TO ITS COMPLETION. THE CONTRACTOR SHALL PROVIDE THE NECESSARY BRACING TO PROVIDE STABILITY PRIOR TO THE COMPLETION OF THE STRUCTURE.

THE GENERAL NOTES APPLY TO ALL STRUCTURES UNLESS NOTED OTHERWISE (U.N.O.). LOCATION AND SIZE OF ANCHOR BOLTS FOR SPECIFIC EQUIPMENT SHALL BE SPECIFIED BY THE VENDOR. CONTRACTOR SHALL COORDINATE LOCATIONS OF STRUCTURAL OPENINGS, PENETRATIONS AND EMBEDDED ITEMS WITH THE MECHANICAL, ARCHITECTURAL, ELECTRICAL, PLUMBING AND VENTILATION SECTIONS OF THE DRAWINGS AND WITH SUPPLIERS AND SUBCONTRACTORS AS MAY BE REQUIRED.

SPECIAL INSPECTION & TESTING
SPECIAL INSPECTIONS SHALL MEET THE REQUIREMENTS OF IBC CHAPTER 17.
OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH APPROVED DRAWINGS AND SPECIFICATIONS.

FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND ENGINEER. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION; THEN, IF NOT CORRECTED, TO THE BUILDING OFFICIAL AND ENGINEER. SUBMIT A FINAL REPORT STATING THE WORK WAS IN CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF IBC.

SPECIAL INSPECTION REQUIRED:
STEEL: IN ACCORDANCE WITH SECTION 1705.2 AND TABLE 1705.2.3
CONCRETE: IN ACCORDANCE WITH SECTION 1705.3 AND TABLE 1705.3
SOIL: IN ACCORDANCE WITH SECTION 1705.6 AND TABLE 1705.6

ALL WATER CONTAINMENT STRUCTURES SHALL BE TESTED FOR WATER TIGHTNESS. TESTING OF WATER CONTAINMENT STRUCTURES FOR WATER TIGHTNESS SHALL BE PERFORMED IN COMPLIANCE WITH ACI 350.1. THESE STRUCTURES INCLUDE, BUT ARE NOT LIMITED TO SECONDARY CLARIFIER NO. 3

SHOP DRAWINGS
SHOP DRAWINGS, WHERE REQUIRED, SHALL BE CHECKED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING FOR ENGINEER REVIEW. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW OF DESIGN INTENT, PRIOR TO FABRICATION. GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND COORDINATION OF DIMENSIONS AND DETAILS FOR EACH SUBCONTRACTOR.

DESIGN LOADS
GROUND SNOW LOAD,Pg..... 20 PSF

WIND DESIGN DATA:
ULTIMATE WIND SPEED (3-SECOND GUST), Vult..... 105 MPH
RISK CATEGORY..... III
WIND EXPOSURE..... C

EARTHQUAKE DESIGN DATA
MAPPED SPECTRAL RESPONSE
ACCELERATIONS
Ss..... 1.287 g
S1..... 0.443 g
SITE CLASS..... D
SPECTRAL RESPONSE COEFFICIENT
Sds..... 1.030 g
Sdl..... 0.548 g
SEISMIC IMPORTANCE FACTOR, Ie..... 1.5
RISK CATEGORY..... III
SEISMIC DESIGN CATEGORY..... D

FOUNDATION DATA PER GEOTECHNICAL REPORT BY PanGEO, INC., DATED AUGUST 18, 2021.

ALLOWABLE BEARING PRESSURE:.....1500 PSF

ABOVE ARE ASSUMED PER DATA PROVIDED,
CONTRACTOR MUST VERIFY IN FIELD.

EXTEND ALL EXTERIOR FOOTINGS 2'-0" MINIMUM BELOW FINISHED GRADE. UNO (UNLESS NOTED OTHERWISE), BOTTOM OF ALL FOOTINGS TO BEAR ON 12" MINIMUM OF PROPERLY COMPACTED CRUSHED SURFACING BASE COURSE (CSBC) OVER NATIVE, INORGANIC, UNDISTURBED SOIL. NO FOOTING SHALL BEAR HIGHER THAN 1 VERTICAL TO 1.5 HORIZONTAL SLOPE ABOVE ANY EXCAVATION, EXISTING OR PLANNED. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING TO PREVENT MOVEMENT OF WALLS IF BACKFILL IS PLACED BEFORE FLOOR SYSTEM IS IN PLACE. THERE SHALL BE 95% COMPACTION (ASTM D1557 MODIFIED PROCTOR DENSITY) OF ALL BACKFILL SOIL UNDER SLABS ON GRADE.

CAST-IN-PLACE CONCRETE
CONCRETE SHALL HAVE THE FOLLOWING PROPERTIES:
28-DAY STRENGTH f'c=4,000 PSI
AIR ENTRAINMENT: 5%-7%
WATER CONTAINMENT STRUCTURES: f'c=4,000 PSI @ 28 DAYS
MAXIMUM SLUMP: 3" FOR SLABS FOOTINGS, 4" FOR WALLS, COLUMNS AND BEAMS. CONSTRUCTION TO BE IN ACCORDANCE WITH ACI 318.

SUBMIT MIX DESIGN FOR REVIEW AND PROVIDE NOT LESS THAN 6 SACKS OF CEMENT PER CUBIC YARD FOR ALL CONCRETE WITH MAXIMUM W/C=0.45.

REINFORCING STEEL
WELDED WIRE FABRIC (W.W.F.): ASTM A82 AND A185
DEFORMED BARS: ASTM A615, GRADE 60 (GRADE 40 FOR #3).
UNLESS OTHERWISE NOTED ON THESE DRAWINGS, MINIMUM CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS:
CONCRETE CAST AGAINST SOIL=3".
FORMED CONCRETE AGAINST SOIL=2".
WALLS, COLUMNS AND BEAMS EXPOSED TO WATER, SEWAGE & WEATHER=2".
WALLS, COLUMNS AND BEAMS DRY CONDITION=1 1/2".

PROVIDE 2-#5 MIN. U.N.O. TRIM BARS AROUND ALL OPENINGS IN CONCRETE WALLS OR SLAB EXTENDING 2'-6" PAST CORNERS, TYP. AT TIME OF CONCRETE PLACEMENT, REINFORCING SHALL BE FREE OF MUD, OIL, OR OTHER NONMETALLIC COATINGS THAT MAY DECREASE BOND.

WELDING OF REINFORCING BARS SHALL CONFORM TO ANSI/AWS D1.4.
WHERE PERMITTED, LOW HYDROGEN WELDING RODS SHALL BE USED FOR ALL WELDING OF REINFORCING BARS. SPECIAL INSPECTION IS REQUIRED FOR ALL FIELD WELDING.

SUBMIT SHOP DRAWINGS OF REINFORCING STEEL FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION. REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 AND 318 (LATEST EDITION).

STRUCTURAL STEEL AND MISCELLANEOUS METALS
"W" SHAPES: ASTM A992, Fy=50 KSI.
CHANNELS, ANGLES, PLATES, AND BARS: ASTM A36, Fy=36 KSI.
PIPE: ASTM A53 OR A501, Fy=35 KSI MINIMUM.
TUBING: ASTM A500, GRADE B, Fy=46 KSI.

ALL BOLTS FOR CONNECTIONS IN SUBMERGED CONDITION SHALL BE: ASTM F593C OR F593D STAINLESS STEEL (SS) BOLTS. ALL OTHERS SHALL BE GALVANIZED ASTM A325-N BOLTS HIGH STRENGTH BOLTS (H.S.B.), U.N.O. AS ASTM A307 MACHINE BOLTS (M.B.).
WHERE HIGH STRENGTH BOLTS ARE USED, THEY SHALL BE INSTALLED WITH LOAD INDICATOR DEVICES (LOAD INDICATOR WASHERS OR SNAP-OFF HEADS).
ADHESIVE ANCHORS: HILTI HIT-RE 500 V3 OR APPROVED EQUAL, U.N.O. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

HEADED ANCHOR STUDS (H.A.S.): ASTM A108, Fy=50 KSI, END WELDED PER MANUFACTURER'S RECOMMENDATIONS.
ALL ANCHOR BOLTS AND THREADED RODS: ASTM F1554, U.N.O. ALL ANCHOR BOLTS MUST BE ACCURATELY PLACED IN THEIR FINAL LOCATION PRIOR TO POURING CONCRETE, "WET STICKING" OF ANCHOR BOLTS IS NOT ALLOWED.

WELDING ELECTRODES OR WIRES: AWS A5.1 OR A5.5, E70XX; AWS A5.17, E70S-X; AWS A5.20, E7XT-X.
FOR ALL SHOP WELDS AND FIELD WELDS OF ALL LATERAL RESISTING ELEMENTS, ELECTRODES SHALL BE E7O WITH A MINIMUM SPECIFIED CVN OF 20 FT-LBS AT -20 DEGREES FAHRENHEIT. ALL WELDS SHALL BE 3/16" MINIMUM U.N.O.

ERECTION AND FABRICATION IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS." WELDING SHALL CONFORM TO AWS "STRUCTURAL WELDING CODE - STEEL". ALL WELDING SHALL BE PERFORMED BY AWS/WABO CERTIFIED WELDERS.

ALL COLUMNS AND BEAMS TO BE FROM UNSPLICED LENGTHS U.N.O. ON THE DRAWINGS. SUBMIT SHOP DRAWINGS SHOWING SIZES, DIMENSIONS AND REQUIRED CONNECTION DETAILS FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION.

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(206) 284-0860

MYRON J. BASMEN
STATE OF WASHINGTON
46334
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER
6/26/2023

CITY OF PUYALLUP
STATE OF WASHINGTON

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0 1" 2"
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IF NOT, SCALE ACCORDINGLY

STRUCTURAL

GENERAL STRUCTURAL NOTES

DRAWING: **S-1** OF: **3**
SHEET: **32** OF: **55**

APPROVED
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CITY ENGINEER
CITY OF PUYALLUP
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SPECIAL INSPECTION SCHEDULE

VERIFICATION AND INSPECTION	CI	PI	REMARKS/REFERENCES
CONCRETE:			
REINFORCING STEEL INCLUDING PLACEMENT	-	X	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3
ANCHOR RODS, EMBEDDED BOLTS AND INSERTS	X	-	PRIOR TO AND DURING PLACEMENT OF CONCRETE
USE OF REQUIRED DESIGN MIX	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4
CONCRETE SLUMP, AIR CONTENT, TEMPERATURE AND TEST SPECIMENS	X	-	WHILE MAKING SPECIMENS FOR STRENGTH TESTS
CONCRETE AND SHOTCRETE PLACEMENT	X	-	ACI 318: 26.5
CONCRETE CURING	-	X	ACI 318: 26.5.3-26.5.5
CONCRETE FORMWORK FOR SHAPE, LOCATIONS AND DIMENSIONS	-	X	ACI 318: 26.11.1.2(6)
STEEL:			
MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:			
MANUFACTURER'S CERTIFICATE	-	X	
INSPECTION OF HIGH-STRENGTH BOLTING:	-	X	AISC 360, SECTION N5.6
MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD	-	X	
IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	-	X	AISC 360, N5.7
INSPECTION OF WELDING:			SHOP AND FIELD
COMPLETE AND PARTIAL PENETRATION GROOVE WELDS	X	-	AWS D1.1
MULTIPASS, SINGLE-PASS FILLET WELDS > 5/16", PLUG AND SLOT WELDS	X	-	AWS D1.1
SINGLE-PASS FILLET WELDS < 5/16", FLOOR AND ROOF DECK WELDS	-	X	AWS D1.3
REINFORCING STEEL	X	-	AWS D1.4, ACI 318: SECTION 26.6.4
SOILS:			
VERIFY DESIGN BEARING CAPACITY	-	X	
VERIFY EXCAVATIONS	-	X	
CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	-	X	
USE OF MATERIALS, DENSITIES AND LIFT THICKNESSES	X	-	DURING PLACEMENT AND COMPACTION
OBSERVE SUBGRADE AND SITE PREPARED PROPERLY	-	X	PRIOR TO PLACEMENT OF COMPACTED FILL

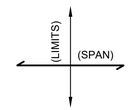
INSPECTION SCHEDULE NOTES

1. ITEMS MARKED WITH AN "X" REQUIRE INSPECTION BY A SPECIAL INSPECTOR APPROVED BY THE BUILDING OFFICIAL.
2. ITEMS MARKED "NA" ARE NOT APPLICABLE TO THIS PROJECT.
3. CI = CONTINUOUS INSPECTION DURING PROGRESS OF WORK BY SPECIAL INSPECTOR.
4. PI = PERIODIC INSPECTION BY SPECIAL INSPECTOR AS REQUIRED TO CONFIRM CONFORMANCE OF WORK.
5. TESTING AND INSPECTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER, BUILDING OFFICIAL AND CONTRACTOR.
6. OWNER WILL CONTRACT FOR SPECIAL INSPECTION SERVICES.

SUPPLEMENTAL STRUCTURAL ABBREVIATIONS:

ABV	ABOVE	FND	FOUNDATION	STRUC	STRUCTURE(AL)
AFF	ABOVE FINISH FLOOR	FO	FACE OF	SYM	SYMMETRICAL
ADD'L	ADDITIONAL	FS	FAR SIDE	T	TOP
ADJ	ADJACENT	FTG	FOOTING	TMPRY	TEMPORARY
AL	ALUMINUM	GA	GAUGE	TO	TOP OF
APPRX	APPROXIMATE	HAS	HEADER ANCHOR STUDS	TOS	TOP OF SLAB
@	AT	HDR	HEADER	TRANS	TRANSVERSE
BEL	BELOW	HGR	HANGER	TYP	TYPICAL
BM	BEAM	HSB	HIGH STRENGTH BOLT (A325 UNO)	UNO	UNLESS NOTED OTHERWISE
BNDRY	BOUNDRY	HSS	HOLLOW STRUCTURAL STEEL	VFY	VERIFY
BO	BOTTOM OF	IBC	INTERNATIONAL BUILDING CODE	WHS	WELDED HEADED STUD
BOS	BOTTOM OF SLAB	IF	INSIDE FACE	WP	WORK POINT
BOT	BOTTOM	INT	INTERIOR	WTS	WELDED THREADED STUD
BRG	BEARING	K	KIPS (1000 POUNDS)	X-STG	EXTRA STRONG
CANT	CANTILEVER(ED)	LAT	LATERAL	XX-STG	DOUBLE EXTRA STRONG
CDF	CONTROLLED DENSITY FILL	LDGR	LEDGER		
CG	CENTER OF GRAVITY	LLH	LONG LEG HORIZONTAL		
CIP	CAST IN PLACE	LLV	LONG LEG VERTICAL		
CJ	CONTROL JOINT	LS	LAG SCREW		
CJP	COMPLETE JOINT PENETRATION	MAT'L	MATERIAL		
COL	COLUMN	MB	MACHINE BOLT (A307)		
CONST	CONSTRUCTION	MFR	MANUFACTURER		
CONT	CONTINUOUS	MTL	METAL		
CTSK	COUNTERSINK	(N)	NEW MEMBER		
D	DEPTH	NS	NEAR SIDE		
DBL	DOUBLE	OH	OVERHANG		
DIAG	DIAGONAL	ORNT	ORIENTATE (ION)		
DIAPH	DIAPHRAGM	PAR	PARALLEL		
do	DITTO (DO OVER)	PERP	PERPENDICULAR		
DWG	DRAWING	PT	PRESSURE TREAT(ED)		
DWL	DOWEL	QTY	QUANTITY		
EA	EACH	REF	REFERENCE		
EF	EACH FACE	REINF	REINFORCEMENT		
EJ	EXPANSION JOINT	SHT	SHEET		
EMBD	EMBED(MENT)	SIM	SIMILAR		
ENG	ENGINEER	SKW	SKEW(ED)		
EQ	EQUAL	SPC	SPACING		
ES	EACH SIDE	SS	STAINLESS STEEL		
EXIST	EXISTING MEMBER	STGR	STAGGER		
EXT	EXTERIOR	STIFF	STIFFENER		
FFE	FINISHED FLOOR ELEVATION	STIRR	STIRRUP		

STRUCTURAL LEGEND



GRATING OR STRUCTURAL SPAN

DIFFERENCE IN ELEVATIONS

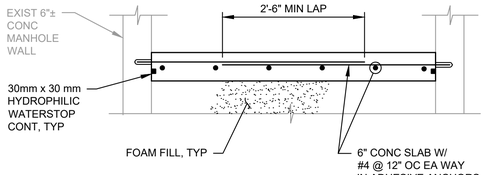
ELEVATION TARGET (REF.)

HANDRAILING

REMOVABLE HANDRAIL

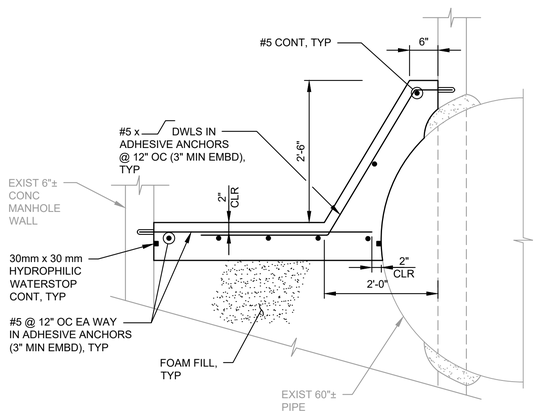
℄ CENTERLINE

℄ PLATE



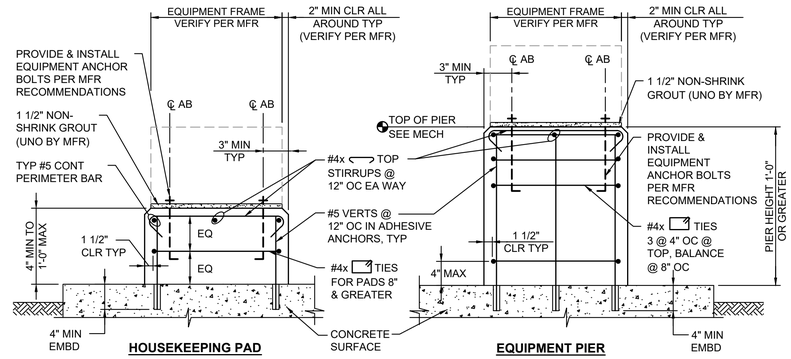
1 / - **TYPICAL SLAB INFILL IN EXISTING MANHOLE**

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



2 / - **MODIFIED SLAB INFILL IN EXISTING MANHOLE**

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



3 / TYP **TYP HOUSEKEEPING PAD & EQUIPMENT PIER DETAILS**

NOT TO SCALE

NOTES:

1. CHAMFER ALL EXPOSED CORNERS OF HOUSEKEEPING PADS AND EQUIPMENT PIERS.
2. FOR PIER HEIGHT LESS THAN 1'-0" SEE HOUSEKEEPING PAD DETAIL

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

APPROVED DATE: _____

EXPIRATION DATE: _____

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SEATTLE, WASHINGTON 98144
(206) 284-0860

MYRON J. BASMEN — STATE OF WASHINGTON — 46334 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

6/26/2023

CITY OF PUYALLUP

WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER
CIP NO. 20-018

1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	MJB
CHECKED BY:	AQ
DRAWN BY:	RAH
DESIGNER:	MJB
G & O JOB NO.:	21462.00
FILE:	S_STND.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

STRUCTURAL

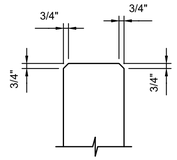
SPECIAL INSPECTION SCHEDULE, SUPPLEMENTAL STRUCTURAL ABBREVIATIONS, STRUCTURAL LEGEND AND TYPICAL DETAILS

DRAWING: S-2 OF: 3

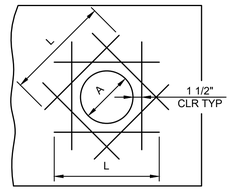
SHEET: 33 OF: 55

REINF	LAP
#4	2'-4"
#5	3'-0"
#6	3'-6"
#7	4'-3"
#8	4'-10"
#9	5'-3"
#10	6'-6"
#11	8'-0"

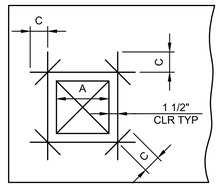
1 TYP **TYP LAP SCHEDULE**
NOT TO SCALE



2 TYP **TYP CHAMFER DETAIL**
NOT TO SCALE



TYPE I



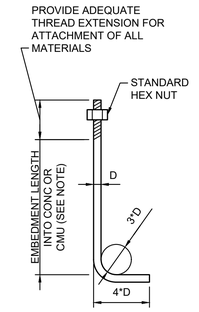
TYPE II

	TYPE I		TYPE II	
OPENING SIZE (A)	MINIMUM BAR LENGTH (L)	BAR SIZE	(C)	BAR SIZE
0" - 12"	3' - 9"	#5	1' - 0"	MATCH VERTICAL BARS OR LARGEST BAR IN SLABS OR WALKWAYS
13" - 18"	4' - 9"	#6	1' - 3"	
19" - 24"	6' - 9"	MATCH VERTICAL BARS OR LARGEST BAR IN SLABS OR WALKWAYS	2' - 6"	
25" - 36"	7' - 9"		2' - 6"	
36" ⟶	8' - 9"		2' - 6"	

NOTE:

ALL BARS, EACH FACE. USE THESE BAR SIZES UNLESS OTHERWISE NOTED.

3 TYP **TYP PENETRATION REINFORCING DETAIL**
NOT TO SCALE

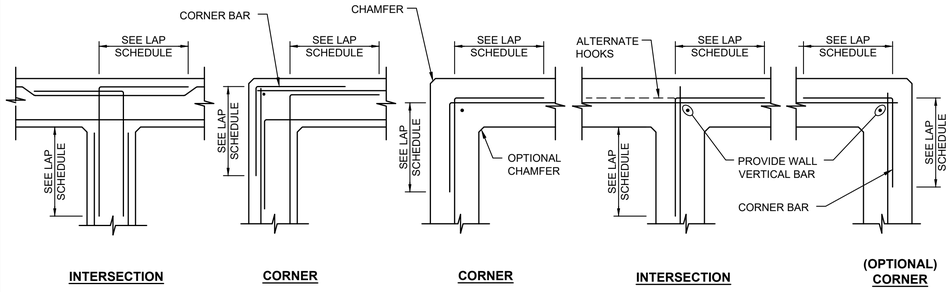


BOLT DIA. "D"	MINIMUM EMBEDMENT	
	ANCHOR BOLTS IN HORIZ SURFACE	ANCHOR BOLTS IN VERT SURFACE
1/2"	8"	7"
5/8"	8"	7"
3/4"	12"	7"
7/8"	12"	8"
1"	14"	9"
1 1/8"	14"	10"

NOTE:

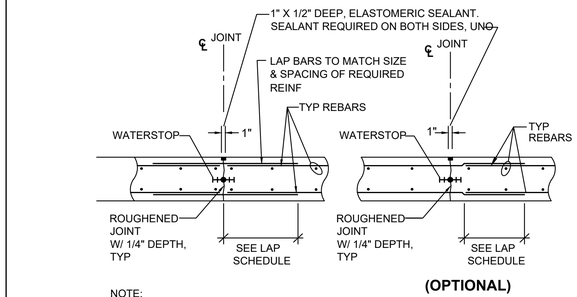
ANCHOR BOLT EMBEDMENT IN VERTICAL SURFACE APPLIES TO CONCRETE ONLY.

4 TYP **TYP ANCHOR BOLT DETAIL**
NOT TO SCALE



DOUBLE CURTAIN **SINGLE CURTAIN**

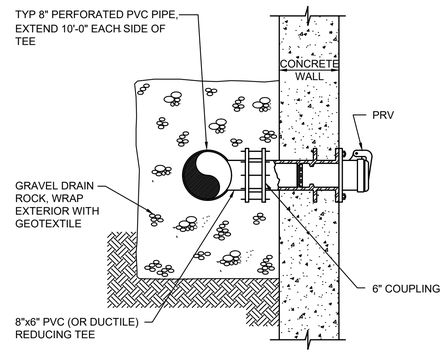
5 TYP **TYP REINFORCING @ WALL INTERSECTION DETAIL**
NOT TO SCALE



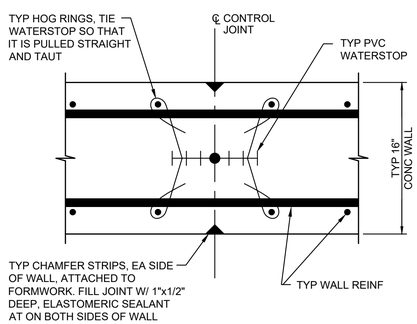
NOTE:

1. FOR SINGLE CURTAIN REINFORCING LOCATE REINFORCING AT CENTER OF WALL & WATER STOP ON DRY SIDE OF WALL.
2. WATERSTOP REQUIRED FOR ALL WATER CONTAINMENT STRUCTURES.

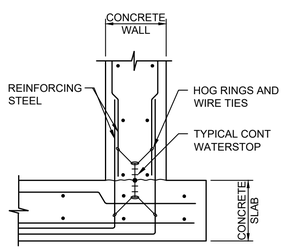
6 TYP **TYP CONSTRUCTION CONTROL JOINT (C.C.J.) DETAIL**
NOT TO SCALE



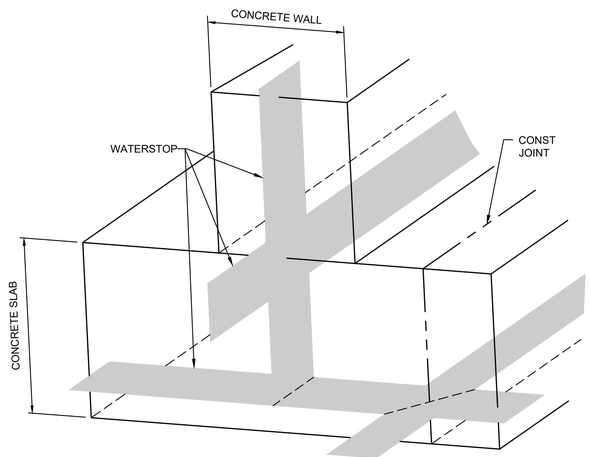
7 TYP **TYP HYDROSTATIC PRESSURE RELIEF VALVE (PRV) DETAIL**
NOT TO SCALE



WATER STOP @ WALL

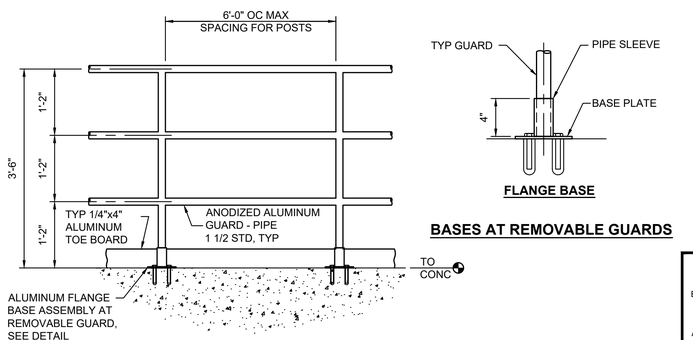


WATER STOP @ SLAB



TYP WATER STOP PLACEMENT

8 TYP **TYP WATERSTOP INSTALLATION DETAIL**
NOT TO SCALE



BASES AT REMOVABLE GUARDS

NOTES:

1. CONTRACTOR SHALL PROVIDE GUARD CONNECTIONS CAPABLE OF RESISTING REACTIONS DUE TO LATERAL LOADS AS REQ'D BY IBC.

9 TYP **GUARD MOUNTING DETAIL**
SCALE: 3/4"=1'-0"

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

APPROVED DATE: _____

EXPIRATION DATE: _____

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6/26/2023

CITY OF PUYALLUP — STATE OF WASHINGTON

CITY OF PUYALLUP
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1602 18TH ST NW,
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DESIGNER:	MJB
G & O JOB NO.:	21462.00
FILE:	S_STND.DWG

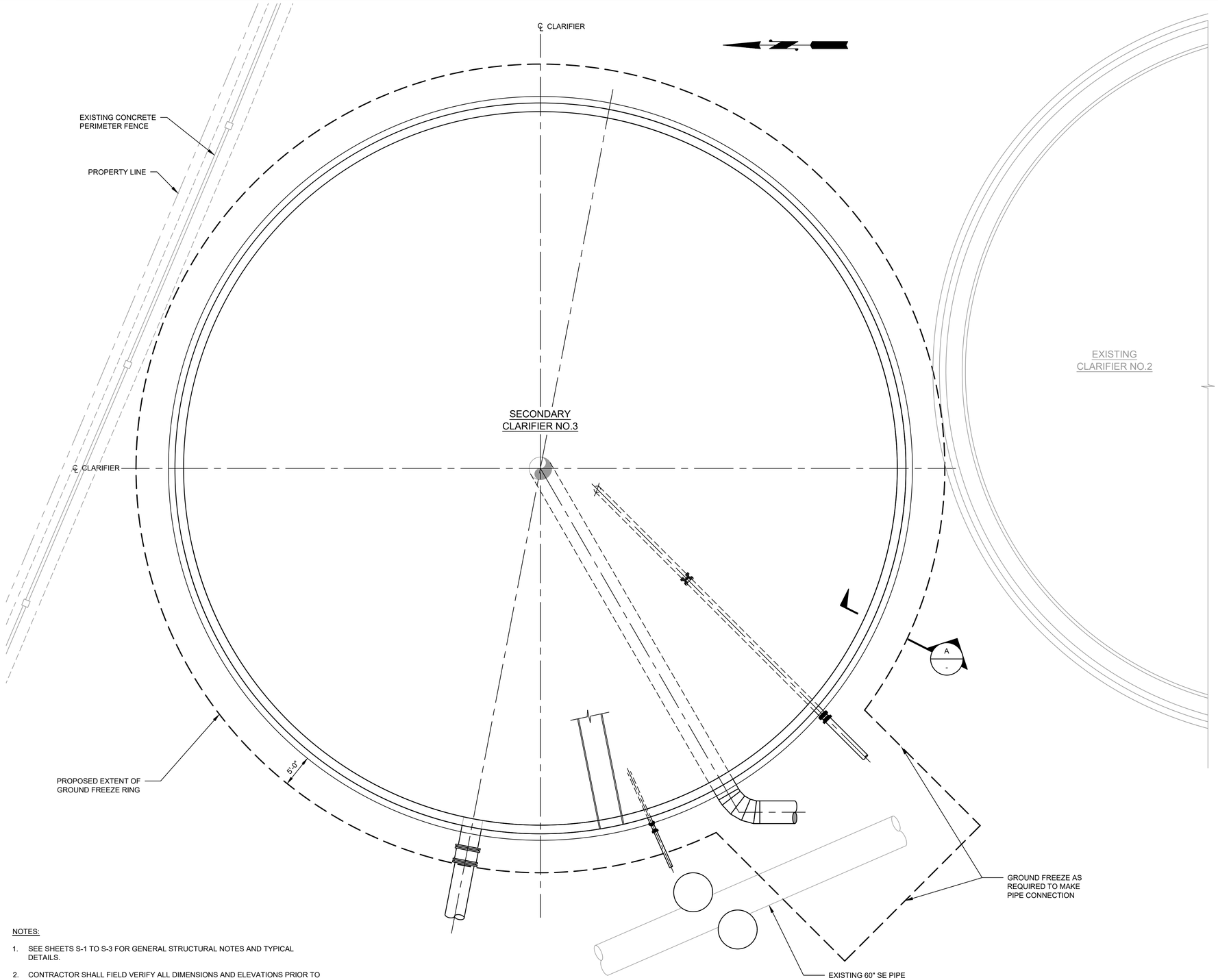
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

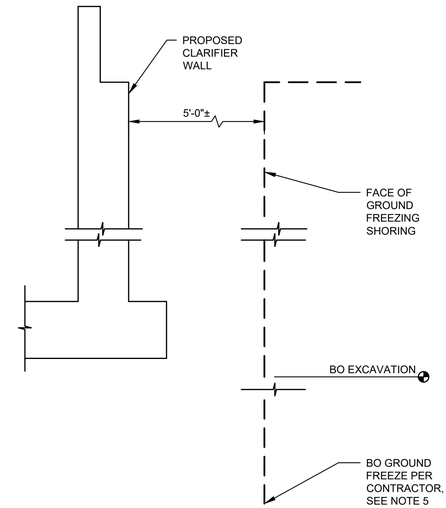
STRUCTURAL

TYPICAL STRUCTURAL DETAILS

DRAWING: **S-3** OF: **3**

SHEET: **34** OF: **55**





A / - **SECTION**
SCALE: 1/2"=1'-0"

NOTES:

1. SEE SHEETS S-1 TO S-3 FOR GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
3. FOR GROUND FREEZE REQUIREMENTS SEE THE SPECIFICATIONS.
4. CONTRACTOR SHALL SUBMIT A GROUND FREEZE SHORING PLAN FOR REVIEW PRIOR TO INSTALLATION OF THE SHORING SYSTEM.
5. GROUND FREEZE SHALL EXTEND DOWN TO AN ELEVATION DETERMINED BY THE CONTRACTOR AS REQUIRED TO CUT OFF GROUND WATER.

SECONDARY CLARIFIER NO. 3
TEMPORARY SHORING/GROUND FREEZE PLAN
SCALE: 1/8"=1'-0"

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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MYRON J. BASBEN
STATE OF WASHINGTON
46334
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER
6/26/2023

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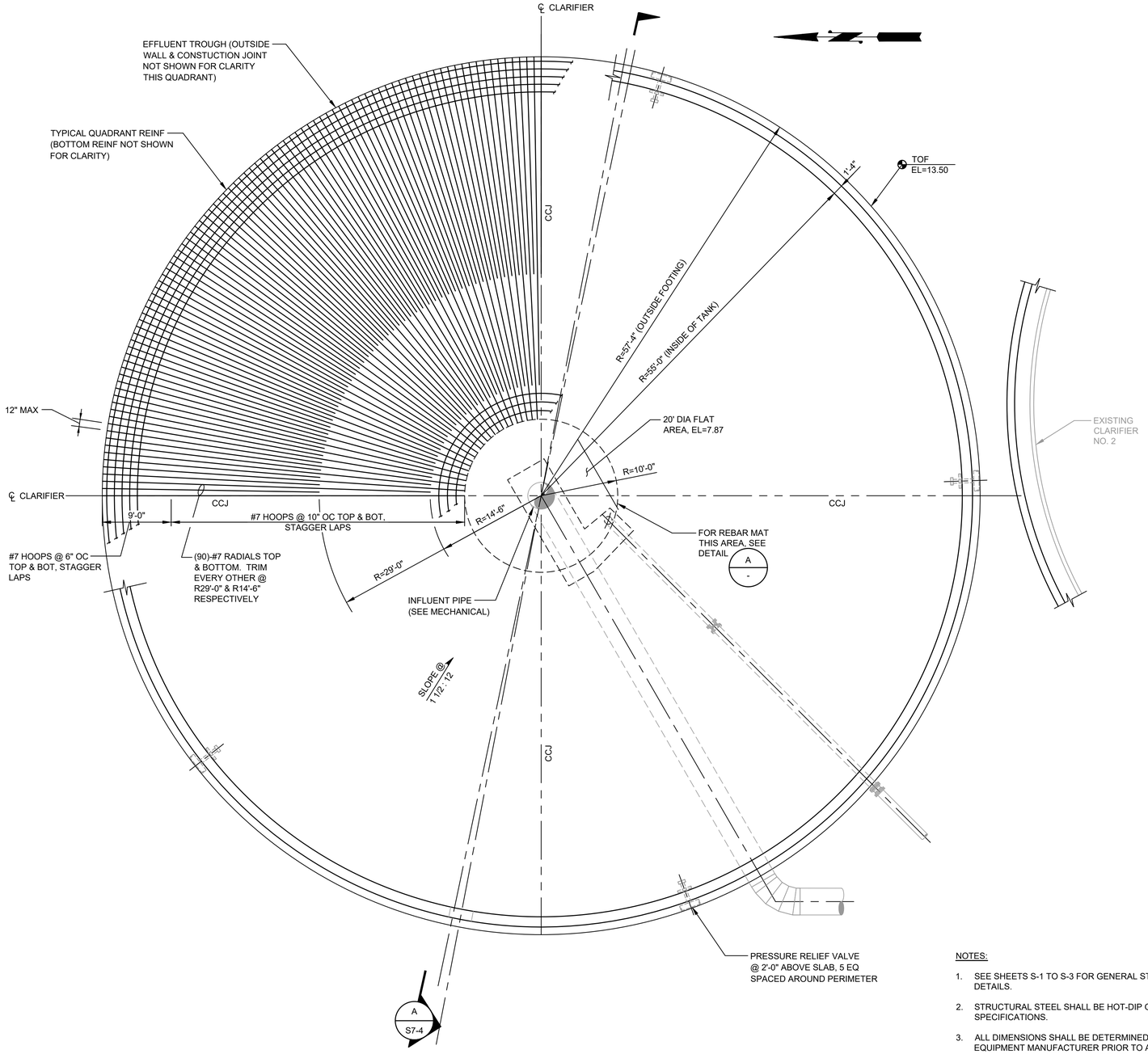
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

STRUCTURAL

SECONDARY CLARIFIER NO. 3 TEMPORARY SHORING/GROUND FREEZE PLAN

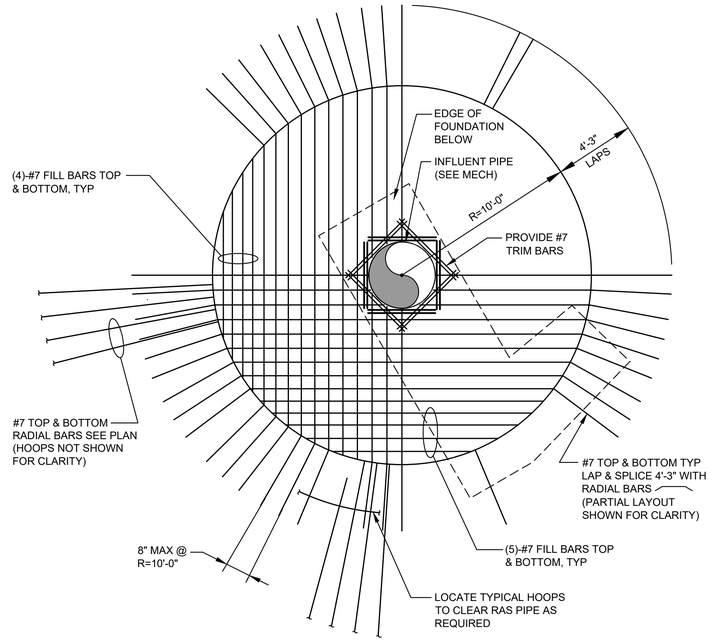
DRAWING: **S7-1** OF: **4**

35



SECONDARY CLARIFIER NO. 3 FOUNDATION PLAN

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



REBAR MAT PLAN DETAIL

A -

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

NOTES:

1. SEE SHEETS S-1 TO S-3 FOR GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
2. STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. ALL DIMENSIONS SHALL BE DETERMINED, COORDINATED AND VERIFIED BY THE EQUIPMENT MANUFACTURER PRIOR TO ANY CONCRETE CONSTRUCTION. DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWINGS ARE FOR INFORMATION PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE ALL DIMENSIONS WITH THE EQUIPMENT SYSTEMS MANUFACTURER.
4. PROVIDE 4" MIN PVC WATERSTOPS AT ALL CONSTRUCTION JOINTS, TYPICAL UNO. FABRICATE REINFORCEMENT TO CLEAR WATERSTOPS BY 1" MINIMUM, TYPICAL.

APPROVED

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CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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6/26/2023

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CITY OF PUYALLUP
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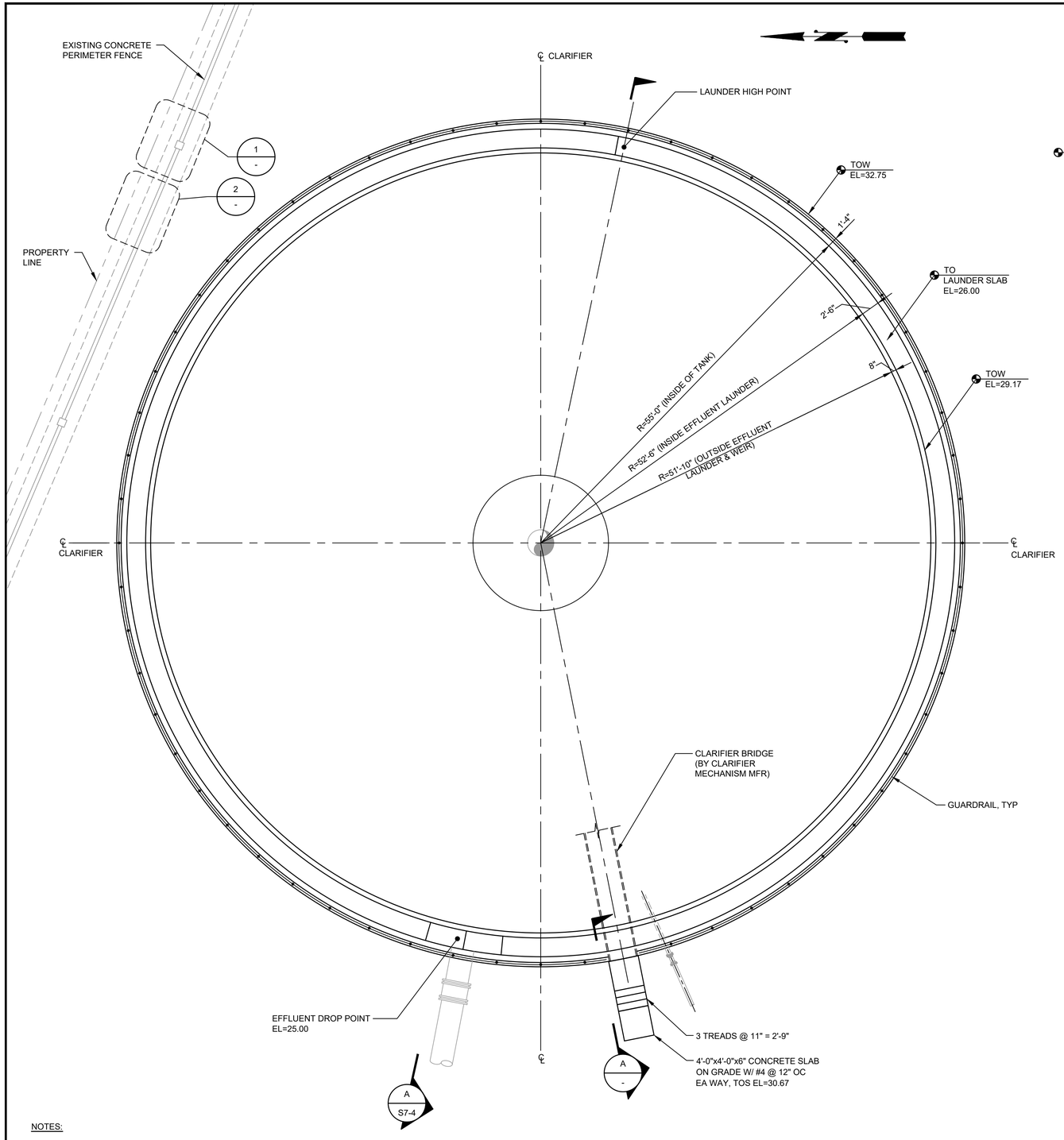
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

STRUCTURAL

SECONDARY CLARIFIER NO. 3 FOUNDATION PLAN AND DETAIL

DRAWING: **S7-2** OF: **4**

36



NOTES:

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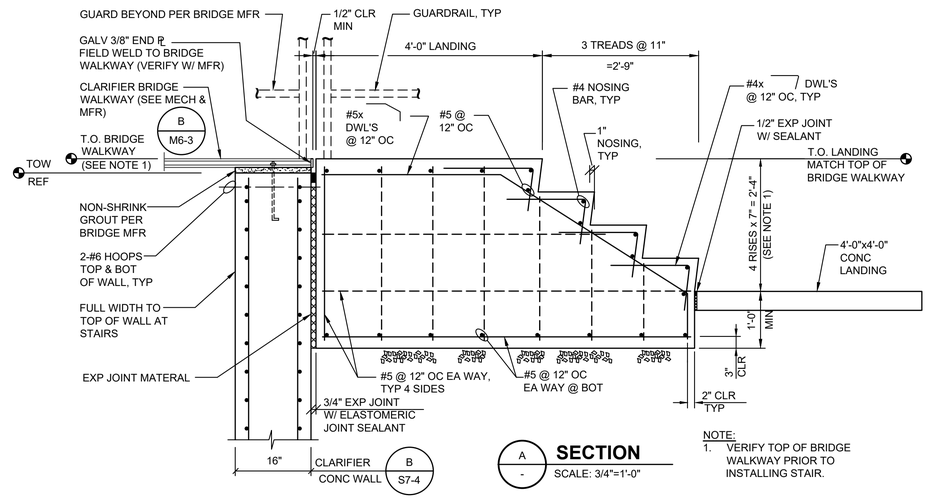
SECONDARY CLARIFIER NO. 3 UPPER PLAN

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

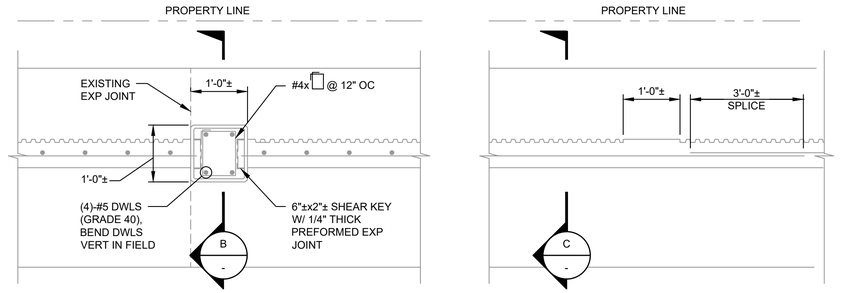


A
-

SECTION

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

NOTE:
1. VERIFY TOP OF BRIDGE WALKWAY PRIOR TO INSTALLING STAIR.



NOTE:
1. CONTRACTOR TO MATCH FINISH OF EXISTING WALL.

1 TYP

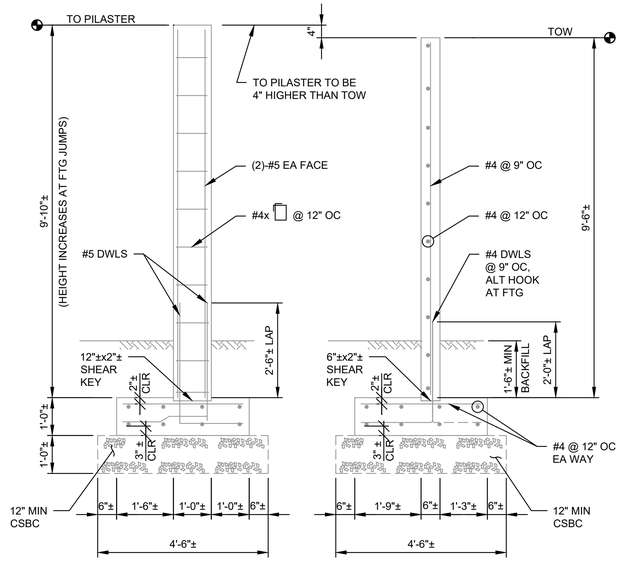
TYP PILASTER PLAN

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

2 TYP

FALSE PILASTER PLAN

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



B
-

TYP PILASTER SECTION

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

C
-

TYP WALL SECTION

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

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144
(206) 284-0860

MYRON J. BASMEN
STATE OF WASHINGTON
46334
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

6/26/2023

CITY OF PUYALLUP
STATE OF WASHINGTON

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018
1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	MJB
CHECKED BY:	AQ
DRAWN BY:	RAH
DESIGNER:	MJB
G & O JOB NO.:	21462.00
FILE:	SC3_SEC DTLS.DWG

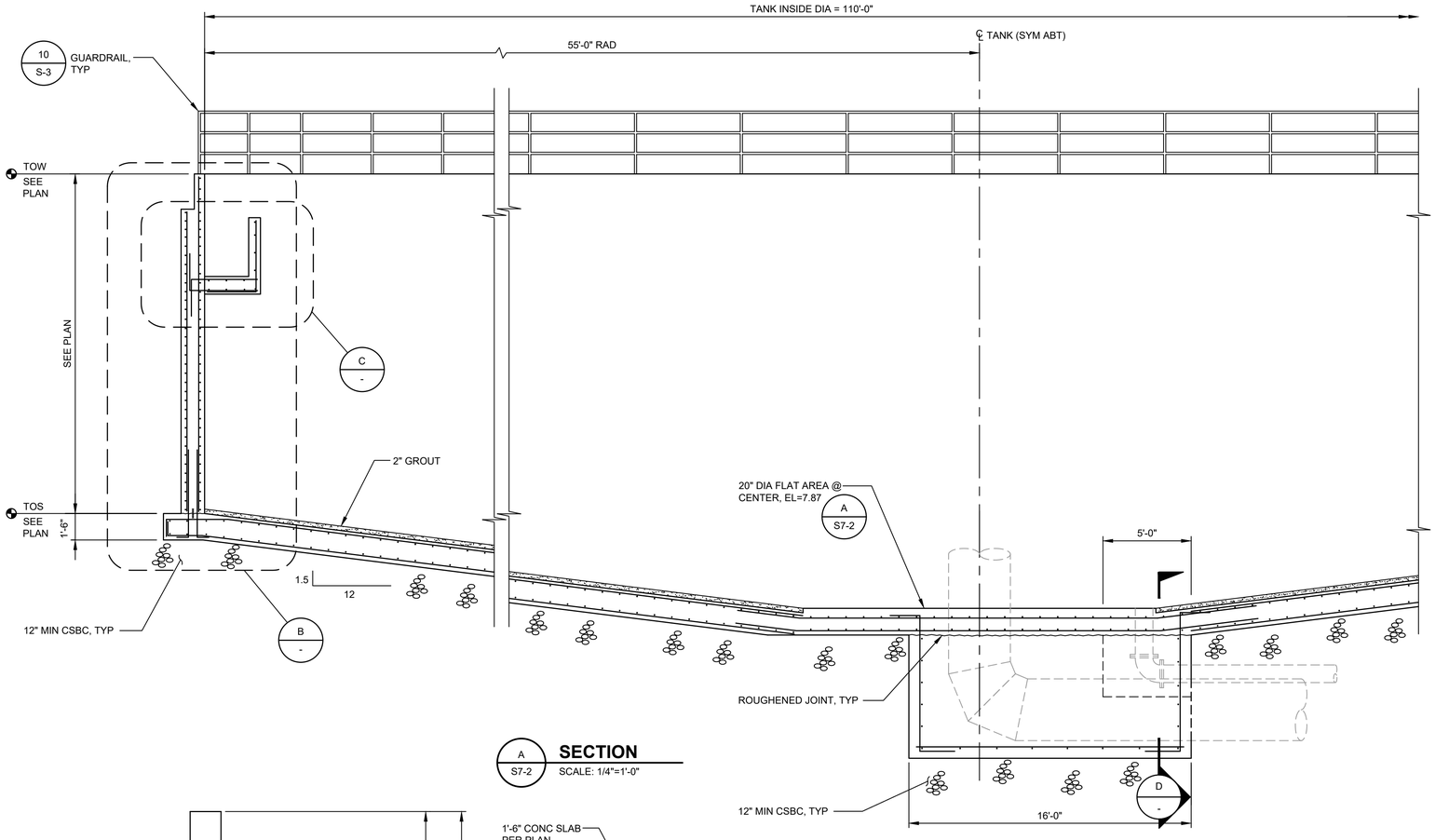
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

STRUCTURAL

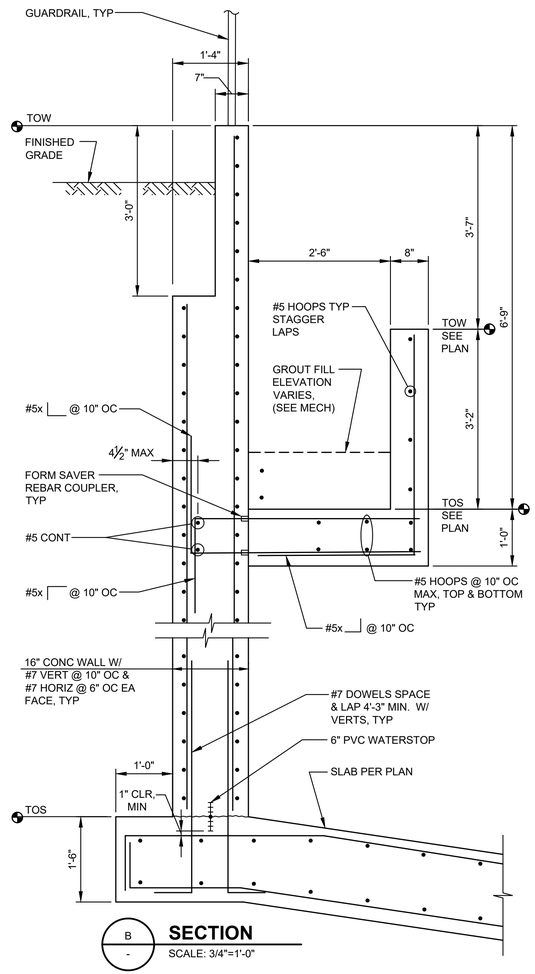
SECONDARY CLARIFIER NO. 3 UPPER PLAN

DRAWING: **S7-3** OF: **4**

37



A S7-2 **SECTION**
SCALE: 1/4"=1'-0"



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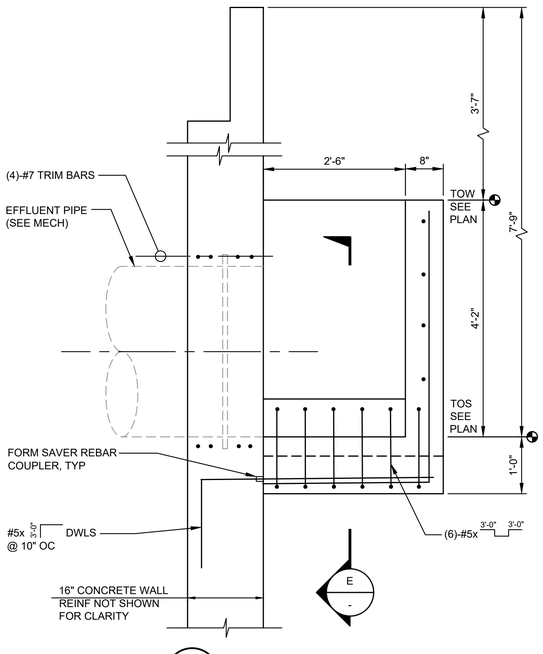

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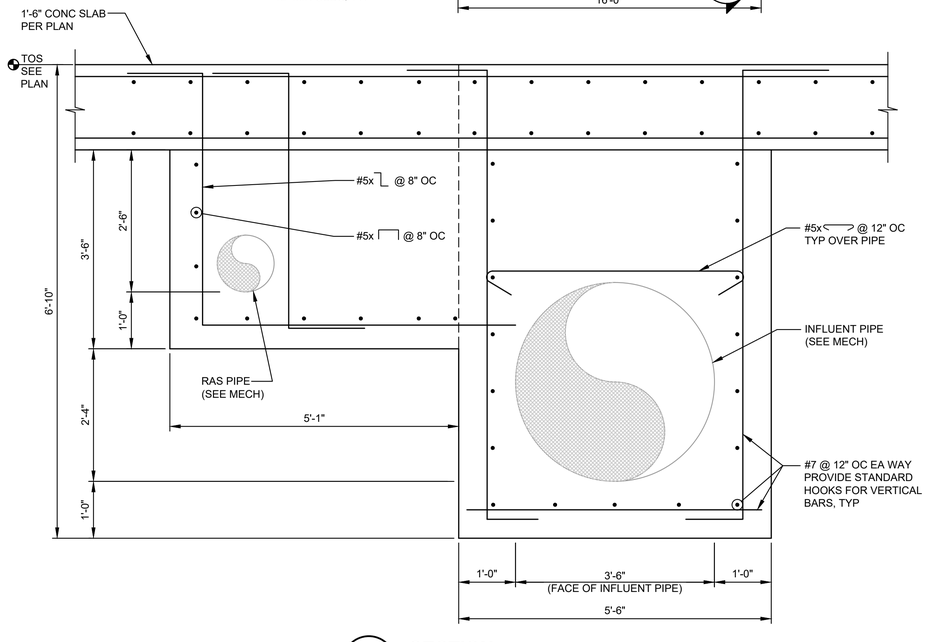

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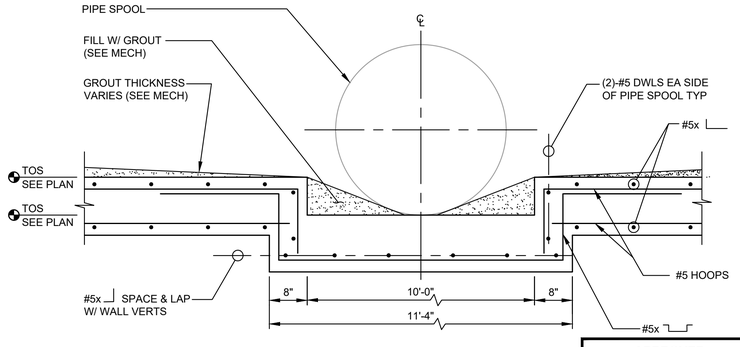

E - **SECTION**
SCALE: 3/4"=1'-0"

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STRUCTURAL

SECONDARY CLARIFIER NO. 3 SECTION AND DETAILS

DRAWING: **S7-4** OF: **4**

38

ELECTRICAL GENERAL NOTES

G01 IN GENERAL, DEVICES SHOWN ON THE ELECTRICAL DRAWINGS IN BACKGROUND (GRAY OR SCREENED) REPRESENT ONE OF THE FOLLOWING UNLESS NOTED OTHERWISE ON AN INDIVIDUAL SHEET:

- STRUCTURAL OR ARCHITECTURAL BUILDING STRUCTURES SUCH AS WALLS, DOORS, STAIRS, ETC. AND STRUCTURAL FRAMING MEMBERS.
- MECHANICAL EQUIPMENT OR DEVICES SUCH AS HVAC UNITS AND PROCESS EQUIPMENT WHICH ARE SHOWN ON THE MECHANICAL DRAWINGS AND ARE SHOWN IN BACKGROUND (GRAY OR SCREENED) ON THE ELECTRICAL DRAWINGS TO ASSIST IN DETERMINING THE LOCATION OF THE EQUIPMENT, CONNECTIONS AND DEVICES.
- DISTRIBUTION EQUIPMENT SHOWN ON ELECTRICAL PLAN DRAWINGS (SUCH AS LIGHTING PLANS) IS SHOWN IN BACKGROUND (GRAY OR SCREENED) IN ORDER TO CLARIFY OTHER ELECTRICAL DEVICES AND CIRCUITS SHOWN ON THAT SHEET.
- EQUIPMENT OR DEVICES THAT ARE EXISTING TO REMAIN (AND TO BE PRESERVED AND PROTECTED) WHERE SHOWN ON REVISED/MODIFICATIONS ELECTRICAL SHEETS.

G02 THE EXISTING FUNCTION OF THE TREATMENT PLANT TO TREAT AND DISINFECT SEWAGE ARE TO REMAIN IN OPERATION AT ALL TIMES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE WORK OF THE CONSTRUCTION PROCESS AND, TO ENSURE THAT ALL TREATMENT FUNCTIONS REMAIN IN OPERATION DURING THE COURSE OF CONSTRUCTION, INCLUDING PROVIDING BYPASS PUMPING OR OTHER MEANS. FOR ITEMS THAT ARE SHOWN TO BE DEMOLISHED, THEY SHALL REMAIN IN OPERATION UNTIL NO LONGER REQUIRED FOR THE OPERATION OF THE TREATMENT PROCESS.

G03 THE ELECTRICAL EQUIPMENT, MATERIALS, DEVICES AND CIRCUITS SHOWN ON THESE DRAWINGS ARE EXISTING TO REMAIN UNLESS OTHERWISE NOTED AS BEING DEMOLISHED OR MODIFIED. THE CONTRACTOR SHALL COORDINATE NEW CONDUIT AND CIRCUIT ROUTING AND ELEVATIONS WITH EXISTING EQUIPMENT, MATERIALS, DEVICES AND CIRCUITS PRIOR TO INSTALLATION. PROVIDE ALL MEANS NECESSARY TO PRESERVE, PROTECT AND KEEP EXISTING EQUIPMENT, MATERIALS, DEVICES AND ELECTRICAL CIRCUITS IN OPERATION DURING THE COURSE OF CONSTRUCTION INCLUDING PROVIDING TEMPORARY CIRCUITS TO ALLOW THEM TO REMAIN IN OPERATION AT ALL TIMES. THE INFORMATION SHOWN FOR EXISTING EQUIPMENT, MATERIALS AND UNDERGROUND OR CONCEALED ELECTRICAL CIRCUITS IS BASED ON AVAILABLE RECORD INFORMATION AND ON SITE SURVEY OF EXPOSED CIRCUITS, AND IS PROVIDED FOR INFORMATION ONLY. PRIOR TO COMMENCING NEW ELECTRICAL WORK OR TRENCHING, VERIFY LOCATIONS AND CONTENTS OF EXISTING EQUIPMENT, MATERIALS, DEVICES AND EXPOSED, CONCEALED OR UNDERGROUND CIRCUITS IN FIELD (BY TONING, X-RAY, EXCAVATION POTHOLING OR OTHER MEANS).

G04 THE DRAWINGS ARE NOT INTENDED TO SHOW ALL OF THE EXISTING CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND REVIEW EXISTING CONDITIONS PRIOR TO BIDDING. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN TO THE EXTENT IT WILL IMPACT THE COST OF THE CONTRACTOR'S WORK, THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING A MINIMUM OF 10 DAYS PRIOR TO BIDDING.

G05 THERE ARE EXISTING AND NEW PROCESS PIPING AND EQUIPMENT INSTALLED/TO BE INSTALLED ON THIS SITE. THE CONTRACTOR SHALL COORDINATE NEW CONDUIT AND CIRCUIT ROUTING AND ELEVATIONS WITH EXISTING EQUIPMENT, PIPING, AND OTHER CONSTRUCTION ACTIVITIES PRIOR TO INSTALLATION. LOCATE EXISTING UNDERGROUND FACILITIES, PRESERVE AND PROTECT THEM DURING CONSTRUCTION AND ROUTE NEW CONDUITS TO AVOID CONFLICTS BY INSTALLING AT DIFFERENT LEVELS OR WHEN APPROVED BY THE ENGINEER, DIFFERENT ROUTING.

G06 EXISTING EQUIPMENT, MATERIALS, DEVICES AND CIRCUITS DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE IMMEDIATELY REPLACED WITH NEW EQUIPMENT, MATERIALS, DEVICES AND CIRCUITS OF LIKE MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

G07 DEMOLISH EXISTING EQUIPMENT, MATERIALS AND DEVICES SHOWN CROSS HATCHED AND AS INDICATED UNLESS OTHERWISE NOTED. REMOVE CONDUIT (EXCEPT CONCEALED OR UNDERGROUND CONDUIT AS NOTED BELOW), FITTINGS, HANGERS, CONDUCTORS, DEVICE/JUNCTION BOXES, AND SIMILAR ITEMS ASSOCIATED WITH ITEM NOTED, BACK TO NEXT DEVICE REMAINING ON THE CIRCUIT OR BACK TO THE PANEL/MCC UNIT FROM WHICH THE CIRCUIT ORIGINATES. WHERE DEVICE BEING REMOVED IS IN THE MIDDLE OF A CIRCUIT, REPLACE/REPAIR CIRCUIT AS REQUIRED TO KEEP REMAINING DEVICES ON CIRCUIT IN OPERATION. ABANDON-IN-PLACE UNUSED CONDUITS CONCEALED IN SLAB, OR UNDERGROUND BELOW SLAB OR BELOW GRADE. CUT EXPOSED PORTION FLUSH WITH SLAB, OR 12" BELOW GRADE, AND PLUG WITH NON-SHRINK GROUT. CUT, PATCH, REPAIR AND PAINT EXISTING WALLS/CEILINGS AS REQUIRED TO REMOVE EXISTING DEVICES/EQUIPMENT. LEGALLY DISPOSE OF MATERIAL/EQUIPMENT WHICH ARE REMOVED.

G08 SALVAGE EQUIPMENT, MATERIALS AND DEVICES TO OWNER PER REQUIREMENTS OF DIVISION 1, SECTION 01900 UNLESS OTHERWISE NOTED ON DRAWINGS.

G09 COORDINATE CONDUIT STUB UP LOCATIONS WITH APPROVED EQUIPMENT SHOP DRAWING SUBMITTALS PRIOR TO LOCATING CONDUIT STUB UPS IN THE SLAB. LOCATE CONDUIT STUB UPS PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS.

GENERAL ELECTRICAL ACRONYMS AND ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AFC	AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AI	ANALOG INPUT
AL	ALUMINUM
AO	ANALOG OUTPUT
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DI	DISCRETE INPUT
DO	DISCRETE OUTPUT
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ENT	ELECTRICAL NONMETALLIC TUBING
EWD	ELEMENTARY WIRING DIAGRAM
EXIST	EXISTING
FACP	FIRE ALARM CONTROL PANEL
FMC	FLEXIBLE METAL CONDUIT
FU	FUSE
FVNR	FULL VOLTAGE NON REVERSING
FVR	FULL VOLTAGE REVERSING
G	GROUNDING CONDUCTOR
GFP	GROUND FAULT PROTECTOR
GND	GROUND
HC	HORIZONTAL CROSSCONNECT
HMI	HUMAN MACHINE INTERFACE
HP	HORSEPOWER
IC	INTERRUPTING CAPACITY
IP	INTERNET PROTOCOL
ISR	INTRINSICALLY SAFE RELAY
KA	KILO AMPERES
KAIC	KILO AMPERES INTERRUPTING CAPACITY
KCMIL	THOUSAND CIRCULAR MILLS
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVAR (REACTIVE KILOVOLT AMPERE)
KW	KILOWATT
KWH	KILOWATT-HOUR
LCP	LIGHTING CONTROL PANEL
LDP	LOAD REACTOR
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LNR	LINE REACTOR
LPU	LINE PROTECTION UNIT
LT	LIGHT
M	MAGNETIC CONTACTOR
mA	MILLIAMPERES
MC	MAIN CROSSCONNECT
MCP	MOTOR CURRENT PROTECTOR – MAGNETIC ONLY CIRCUIT BREAKER
MEG	MEGOHM
MHO	MAGNETIC HOLD OPEN
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
mV	MILLIVOLT
MW	MEGAWATT
N	NEUTRAL CONDUCTOR
NAC	NOTIFICATION APPLIANCE CIRCUIT
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION.
NESC	NATIONAL ELECTRICAL SAFETY CODE
OCP	OVERCURRENT PROTECTOR
ODP	OPEN DRIP PROOF
OI	OPERATOR INTERFACE
OL	OVERLOAD
P	POLE
PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
POT	POTENTIOMETER
PRMC	PVC COATED RIGID METALLIC (STEEL) CONDUIT
PS	POWER SUPPLY
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
RMC	RIGID METAL (STEEL) CONDUIT
RNC	RIGID NON-METALLIC CONDUIT
RPM	REVOLUTIONS PER MINUTE
RS485	SERIAL RS485 CABLE
RTRC	REINFORCED THERMOSETTING RESIN CONDUIT
SC5	SHIELDED CAT 5e CABLE
SEC	SECOND
SHL'D	SHIELDED
SPD	SURGE PROTECTIVE DEVICE
SS	SELECTOR SWITCH
STP	SHIELDED TWISTED PAIR
SUSE	SUITABLE FOR USE AS SERVICE ENTRANCE
TB	TERMINAL BLOCK
TEFC	TOTALLY ENCLOSED FAN COOLED
TENV	TOTALLY ENCLOSED NON-VENTILATED
TR	TIMING RELAY
UC5	UNSHIELDED CAT 5e CABLE
UC6	UNSHIELDED CAT 6 CABLE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLT
VA	VOLT AMPERE
VAC	VOLTS ALTERNATING CURRENT
VFD	VARIABLE FREQUENCY DRIVE
VPN	VIRTUAL PRIVATE NETWORK
VR	VOLTAGE MONITORING RELAY
W	WATT
WAN	WIDE AREA NETWORK
WG	WIREGUARD
WH	WATT HOUR
WP	WEATHER PROOF
XFMR	POWER TRANSFORMER

ELEMENTARY WIRING DIAGRAMS SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	PANEL OR DEVICE WIRING
	FIELD WIRING
	EQUIPMENT/DEVICE ENCLOSURE
	WIRING CONNECTED
	WIRING NOT CONNECTED
	DEVICE OR EQUIPMENT TERMINAL
	CONTROL PANEL TERMINAL
	MCC TERMINAL
	TRANSFORMER WINDING
	FUSE
	GROUND
	ARC SUPPRESSOR (METAL OXIDE VARISTOR)
	DIODE

CONTACTBLOCK OPERATORS

N.O. / N.C.	DESCRIPTION
	PUSHBUTTON (1PB,2PB,ETC.)
	MUSHROOM HEAD PUSHBUTTON (1PB,2PB,ETC.)
"HAND OFF AUTO" A1–1SS	SELECTOR SWITCH (1SS,2SS,ETC.) "X" = CLOSED IN THIS POSITION
"OFF — ON" XX–1SS	OFF–ON SELECTOR SWITCH (1SS,2SS,ETC.) "X" = CLOSED IN THIS POSITION ARROW POSITION DENOTES OPEN/CLOSED STATUS (SHOWN IN "OPEN" POSITION)

CONTACTS

N.O. / N.C.	DESCRIPTION
	SINGLE BREAK CONTACTS
	DOUBLE BREAK CONTACTS (CONTACT BLOCKS

RELAY CONTACTS

N.O. / N.C.	DESCRIPTION
XXCR / XXCR	INSTANTANEOUS CONTACT OF RELAY (1CR, 2CR, ETC.)
XXTR / XXTR	TIMED DELAY CONTACT OF RELAY (DELAY ON ENERGIZATION–ON DELAY) (1TR, 2TR, ETC.)
XXTR / XXTR	TIMED DELAY CONTACT OF RELAY (DELAY ON DE–ENERGIZATION–OFF DELAY) (1TR, 2TR, ETC.)
X–OL / X–OL	OVERLOAD RELAY (1OL, 2OL, ETC.)

MECHANICALLY ACTUATED SWITCHES

N.O. / N.C.	DESCRIPTION
XXFS / XXFS	FLOAT SWITCHES (1FS, 2FS, ETC.)
XXPS / XXPS	PRESSURE SWITCH (1PS, 2PS, ETC.)
XXTAS / XXTAS	TEMPERATURE ACTUATED SWITCH (THERMOSTAT) (1TAS, 2TAS, ETC.)
XXLS / XXLS FREE; XXLS / XXLS HELD	LIMIT SWITCHES (1LS, 2LS, ETC.)

ABBREVIATIONS: N.O. = NORMALLY OPEN; N.C. = NORMALLY CLOSED

MAGNETIC COILS

SYMBOL	DESCRIPTION
XX XCR	CONTROL RELAY (1CR, 2CR, ETC.)
XX XTR	TIMED DELAY RELAY (1CR, 2CR, ETC.)
XX M	MAGNETIC MOTOR STARTER (1M, 2M, ETC.)
XX XCON	MAGNETIC CONTACTOR (1CON, 2CON, ETC.)
XX XMTR	DEVICE MOTOR DRIVE
	SOLENOID (1SV, 2SV, ETC.) (FOR VALVE UNLESS OTHERWISE NOTED)

PILOT LIGHTS

SYMBOL	DESCRIPTION
G CP–1LT	INCANDESCENT TRANSFORMER TYPE (1LT, 2LT, ETC.)
G CP–1LT	INCANDESCENT "PUSH–TO–TEST" (CONNECT TEST CIRCUIT TO LINE) (1LT, 2LT, ETC.)

LENS COLOR CODE: A = AMBER; B = BLUE; C = CLEAR; G = GREEN; O = ORANGE; R = RED; W = WHITE; Y = YELLOW

ONE LINE DIAGRAMS SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	DEVICE OR EQUIPMENT TERMINAL
	WIRING CONNECTED
	BUS
	WIRING
	EQUIPMENT/DEVICE ENCLOSURE
	PLUG–IN CONNECTION
	NON–AUTOMATIC BREAKER
	THERMAL MAGNETIC CIRCUIT BREAKER
	MAGNETIC ONLY CIRCUIT BREAKER (MOTOR CIRCUIT PROTECTOR)
	SWITCH
	CONTACTOR
	THERMAL OVERLOAD
	FUSE
	POWER TRANSFORMER
	CONTROL POWER TRANSFORMER
	CURRENT TRANSFORMER
	CAPACITOR
	GROUND CONNECTION
	TRANSFER SWITCH
M	WATTHOUR METER (REVENUE METERING)
VR	VOLTAGE RELAY
G	GENERATOR
	TAP BLOCK
S N	SOLID NEUTRAL
	MOTOR
LS	LIMIT SWITCH
FS	FLOAT SWITCH
PS	PRESSURE SWITCH
TS T	THERMOSTAT/TEMPERATURE SWITCH
SV	SOLENOID VALVE
TS	TORQUE SWITCH
	CONTROL STATION/PUSHBUTTON/ SPEED POTENTIOMETER
	LOAD BREAK FUSE HOLDER AND FUSE
	SAFETY DISCONNECT (NEMA 4X ENCLOSURE UNLESS OTHERWISE NOTED)
	AUXILIARY CONTACT
	NON–SWITCHED CONDUCTOR
K A	KIRK KEY INTERLOCK

DESIGNATIONS: A,B,C,ETC. ARE KEY DESIGNATIONS THAT ARE NOT INTERCHANGEABLE WITH OTHER KIRK KEYS.

ELECTRICAL PLAN DRAWINGS SYMBOL SCHEDULE

POWER DISTRIBUTION AND CONTROL

SYMBOL	DESCRIPTION
	DISTRIBUTION/CONTROL EQUIPMENT – FLOOR MOUNTED
	DISTRIBUTION/CONTROL EQUIPMENT – WALL MOUNTED
	PANELBOARD – WALL MOUNTED
	SWITCH (SAFETY OR DISCONNECT)
F	SWITCH (FUSIBLE)

LIGHTING FIXTURES

SYMBOL	DESCRIPTION
R O c	FLUORESCENT LED LINEAR FIXTURE CEILING MOUNTED (RECESSED, SURFACE OR PENDANT)

DESIGNATIONS: A,B,C,ETC. ARE FIXTURE TYPE, REFER TO LIGHTING FIXTURE SCHEDULE. a,b,c,ETC. ARE SWITCHING CONTROL REFERENCE

SWITCHING

SYMBOL	DESCRIPTION
$P3a	SINGLE POLE SWITCH – WALL MOUNTED DESIGNATIONS

E EXISTING SWITCH; M MOTOR RATED SWITCH; 3 THREE WAY SWITCH; o LOWER CASE = SWITCH LEG; 4 FOUR WAY SWITCH

ANY COMBINATION OF THE ABOVE DESIGNATIONS MAY BE SHOWN ON PLANS

RECEPTACLE OUTLETS

SYMBOL	DESCRIPTION
GFCI 2 WP	DUPLEX RECEPTACLE OUTLET – WALL MOUNTED (NEMA 5–15R UNLESS OTHERWISE SPECIFIED)
6	QUADRUPLEX RECEPTACLE OUTLET – WALL MOUNTED (NEMA 5–15R UNLESS OTHERWISE SPECIFIED)
4	SPECIAL PURPOSE RECEPTACLE OUTLET
6	SPECIAL PURPOSE RECEPTACLE OUTLET – WALL MOUNTED

DESIGNATIONS: 1,2,3,ETC. ARE CIRCUIT NUMBERS OF PANELBOARD TO WHICH OUTLET IS TO BE CONNECTED. REFER TO CIRCUIT SCHEDULE. WP = WEATHERPROOF; GFCI = GROUND FAULT CIRCUIT INTERRUPTER

SPECIAL PURPOSE CONNECTIONS

SYMBOL	DESCRIPTION
4	SPECIAL PURPOSE EQUIPMENT CONNECTION
6	SPECIAL PURPOSE EQUIPMENT CONNECTION – WALL MOUNTED

ELECTRICAL DEVICES

SYMBOL	DESCRIPTION
SV	SOLENOID VALVE
5	MOTOR (NUMBER = HORSEPOWER)
	PUSH BUTTON CONTROL

MECHANICALLY ACTUATED SWITCHES

SYMBOL	DESCRIPTION
FS	FLOAT SWITCH
LT	LEVEL TRANSDUCER
PS	PRESSURE SWITCH
VS	FLOW (VELOCITY) SWITCH
PC	PHOTO ELECTRIC SWITCH (PHOTOCELL) – WALL MOUNTED
LS	LIMIT SWITCH

GENERAL WIRING SYMBOLS

SYMBOL	DESCRIPTION
J	JUNCTION BOX
J	JUNCTION BOX – WALL MOUNTED
	WIRING RUN EXPOSED ON BUILDING OR STRUCTURE UNLESS OTHERWISE NOTED ON DRAWINGS
	WIRING RUN CONCEALED UNDER SLAB OR BELOW GRADE UNLESS OTHERWISE NOTED ON DRAWINGS
G #10	INDICATES WIRE SIZE IF OTHER THAN #12AWG; LINE OR PHASE CONDUCTOR; NEUTRAL CONDUCTOR; GROUNDING CONDUCTOR; CROSSMARKS INDICATE QUANTITY AND USE OF CONDUCTORS
2 PPA	ARROWHEAD INDICATES HOMERUN TO EQUIPMENT/DEVICE NOTED AT END OF ARROWHEAD, NUMBER (WHERE NOTED) INDICATES CIRCUIT WITHIN EQUIPMENT/DEVICE NOTED.
	CONDUIT TURN UP
	CONDUIT TURN DOWN

APPROVED

BY: ______ CITY ENGINEER, CITY OF PUYALLUP

APPROVED DATE: ______

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(509) 965-9872 coneng.com

BRADLEY R. BAILEY, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER, 06/16/2023

CITY OF PUYALLUP

WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018

1602 18TH ST NW, PUYALLUP, WA 98371

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G & O JOB NO.:	21462
FILE:	C-E00-01.DWG

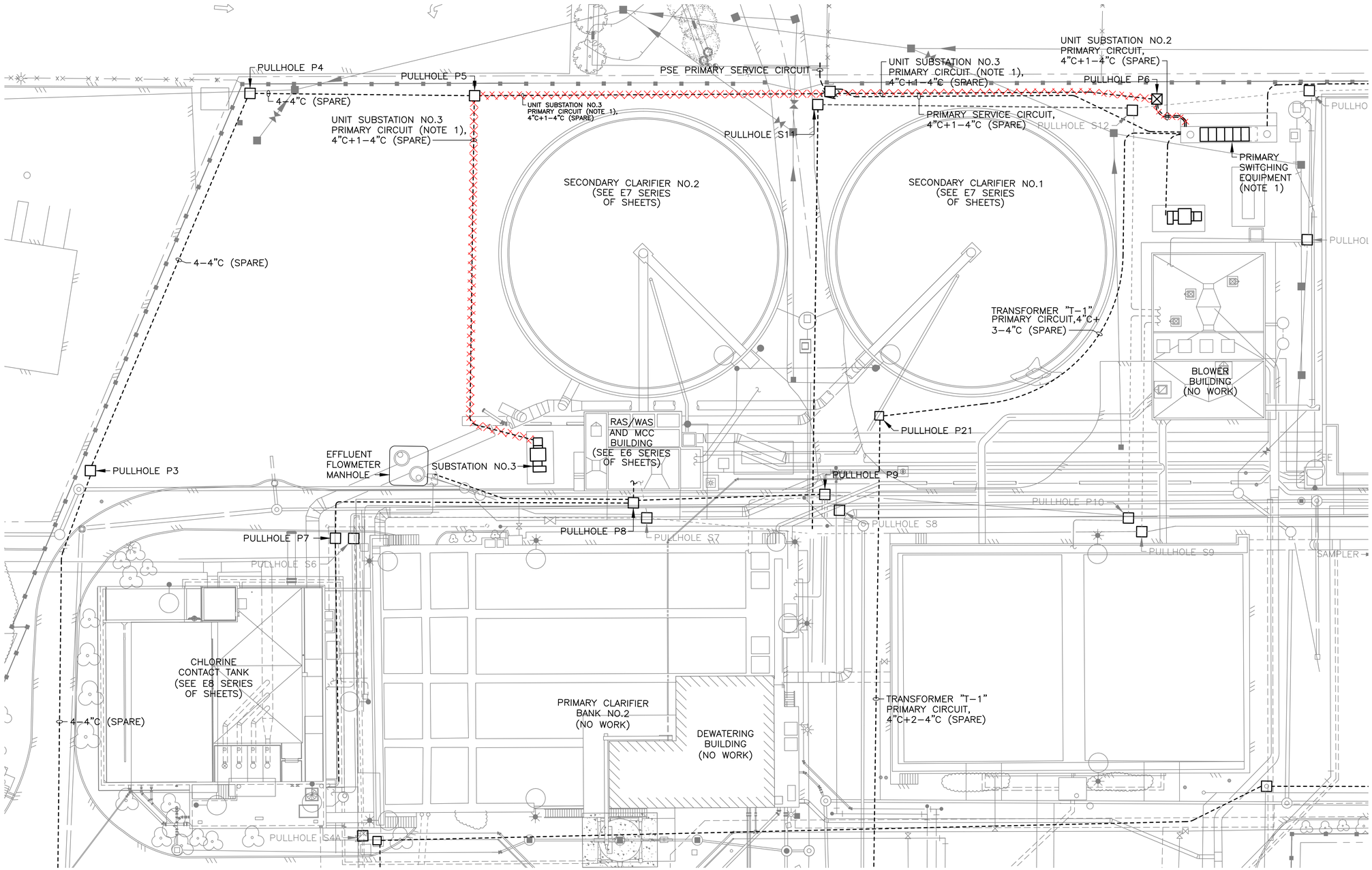
0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

ELECTRICAL

SYMBOL SCHEDULES AND GENERAL NOTES

DRAWING: E-1 OF: 12

SHEET: 39 OF: 55



EXISTING ELECTRICAL SITE PLAN
PUYALLUP WATER POLLUTION CONTROL PLANT

SCALE: 1" = 20'–0"

NOTES:

SEE DRAWING E–1 FOR GENERAL NOTES.

1. **SEE EXISTING/DEMOLITION ONE LINE DIAGRAM SHEET E–4 FOR CIRCUIT AND EQUIPMENT INFORMATION.**

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CITY ENGINEER
CITY OF PUYALLUP

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WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018

1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR:	BUILDING PERMIT
ISSUE DATE:	JUNE 2023
APPROVED BY:	**BBB**
CHECKED BY:	–
DRAWN BY:	**CJD**
DESIGNER:	**MLO**
G & O JOB NO.:	21462
FILE:	C-E00-02.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

EXISTING/DEMOLITION ELECTRICAL SITE PLAN

DRAWING: **E-2** OF: **12**

SHEET: **40** OF: **55**

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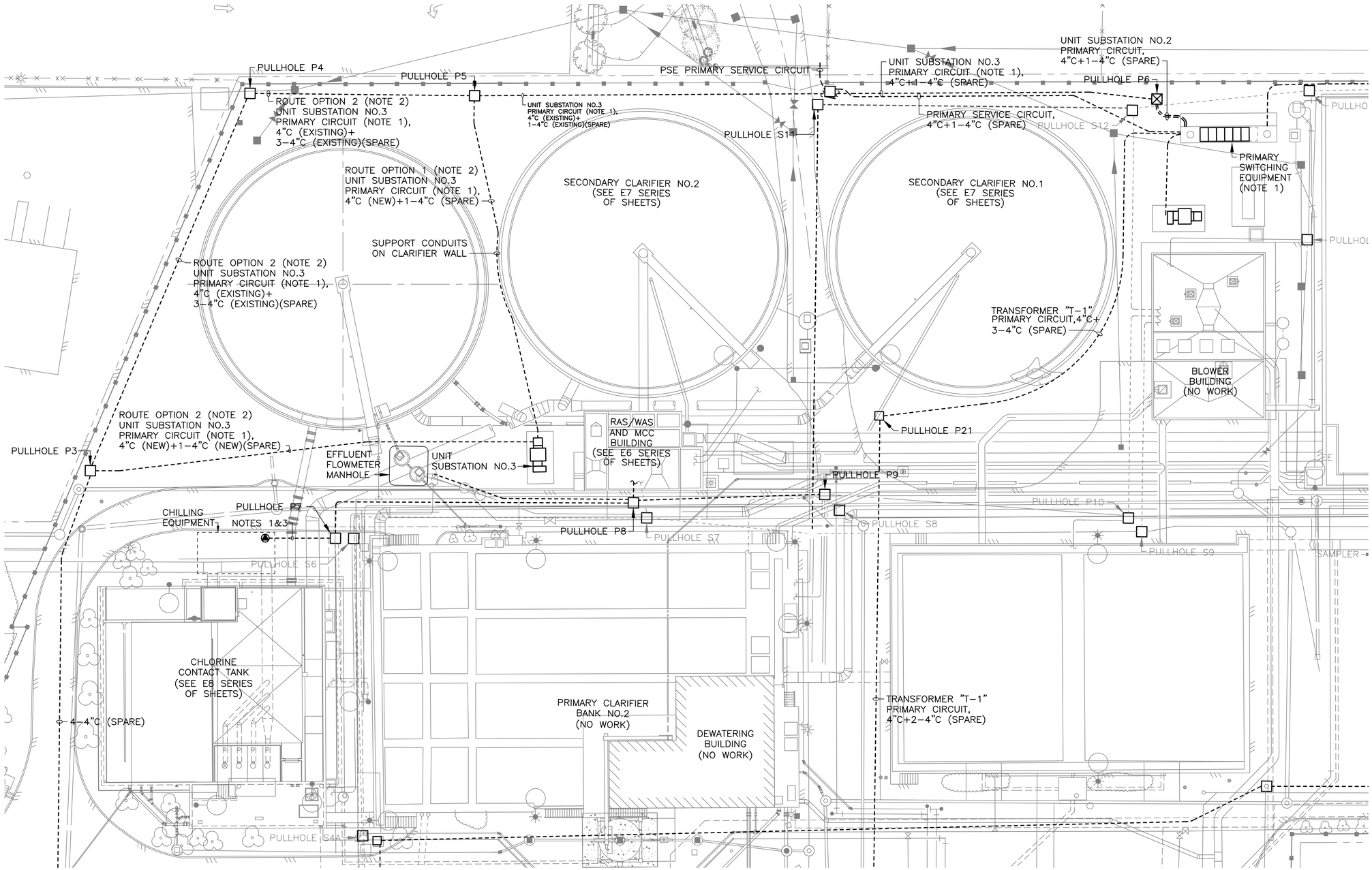

EXISTING ELECTRICAL SITE PLAN
PUYALLUP WATER POLLUTION CONTROL PLANT

SCALE: 1" = 20'-0"

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. **SEE MODIFIED ONE LINE DIAGRAM SHEET E-5 FOR CIRCUIT AND EQUIPMENT INFORMATION.**
2. **TWO POSSIBLE ROUTES ARE SHOWN FOR THE MODIFIED UNIT SUBSTATION NO.3 PRIMARY CIRCUIT. THE CONTRACOT MAY UTILIZE EITHER ROUTE AT THEIR DISCRETION, OR, PROPOSE AN ALTERNATIVE ROUTING. ANY PROPOSED ALTERNATE ROUTING SHALL BE SUBJECT TO APPROVEL BY THE ENGINEER. NOTE THAT EXCATAVTION FOR THE CLARIFIER IS EXPECTED TO BE AROUND 25 FEET DEEP.**

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

APPROVED
DATE: _____

EXPIRATION
DATE: _____

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Gray & Osborne, Inc.
CONSULTING ENGINEERS
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SEATTLE, WASHINGTON 98144
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(509) 965-9872 conenrg.com

BRADLEY R. BAILEY
STATE OF WASHINGTON
45910
REGISTERED
PROFESSIONAL ENGINEER
6/16/2023

CITY OF PUYALLUP

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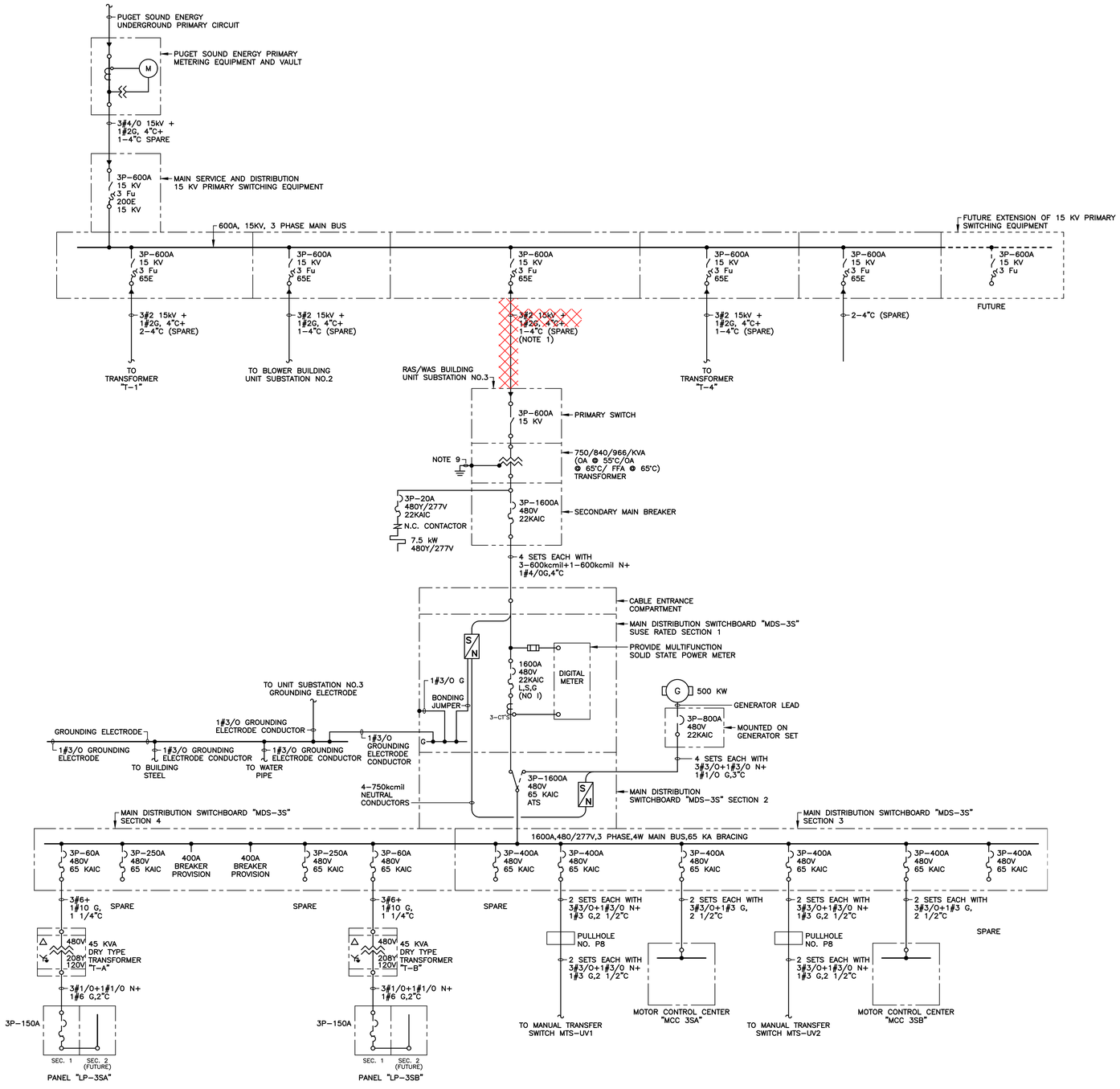
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

EXISTING/DEMOLITION ELECTRICAL SITE PLAN

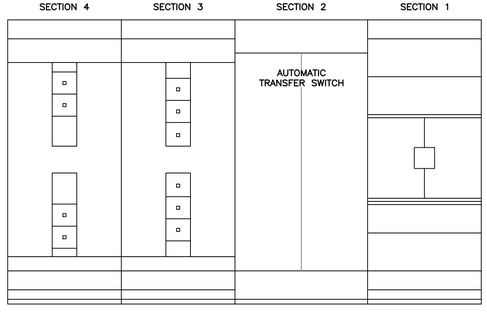
DRAWING: **E-3** OF: **12**

SHEET: **41** OF: **55**



EXISTING/DEMOLITION ONE LINE DIAGRAM
PUYALLUP WATER POLLUTION CONTROL PLANT

SCALE: NONE



EXISTING/DEMOLITION ELEVATION
MAIN DISTRIBUTION SWITCHBOARD "MDS-3S"

SCALE: NONE

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. DEMOLISH CONDUCTORS, CONDUIT TO REMAIN FOR REUSE UNLESS INDICATED AS DEMOLISHED ON EXISTING/DEMOLITION ELECTRICAL SITE PLAN.

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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

EXISTING/DEMOLITION ONE LINE DIAGRAM

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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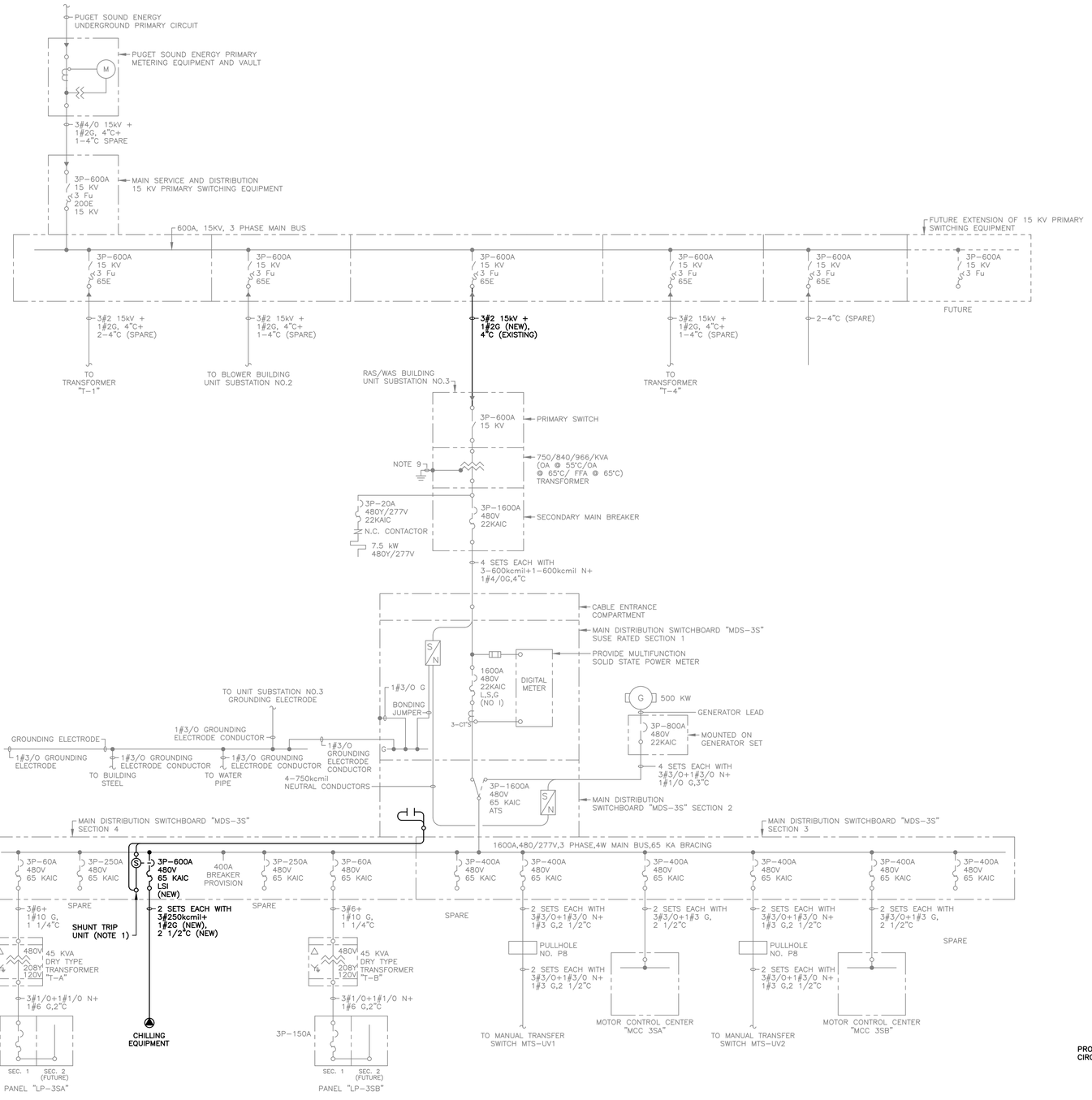
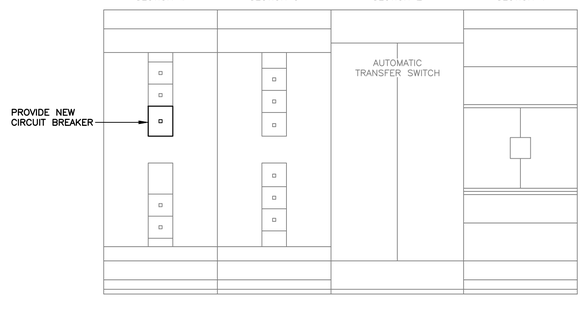
DRAWING: **E-4** OF: **12**

SHEET: **42** OF: **55**



MODIFIED ONE LINE DIAGRAM
PUYALLUP WATER POLLUTION CONTROL PLANT
SCALE: NONE
(NOTES 2&3)



MODIFIED ELEVATION
MAIN DISTRIBUTION SWITCHBOARD "MDS-3S"
SCALE: NONE
(NOTE 2)

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. **PROVIDE SHUNT TRIP BREAKER. CONNECT SHUNT TRIP SOLENOID TO MDS-3S AUTOMATIC TRANSFER SWITCH SUCH THAT SHUNT TRIP WILL OPEN THE BREAKER WHEN TRANSFER SWITCH MOVES TO GENERATOR POSITION.**
2. **DEVICES AND EQUIPMENT SHOWN ON ONE LINE DIAGRAM ARE EXISTING UNLESS OTHERWISE NOTED.**
3. **EXISTING SWITCHBOARD IS A SQUARE D QED STYLE.**

APPROVED

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CITY OF PUYALLUP
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DATE: _____

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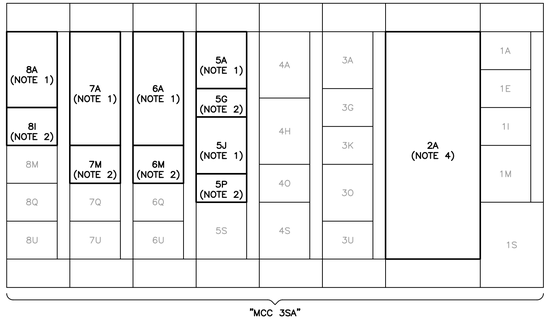
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

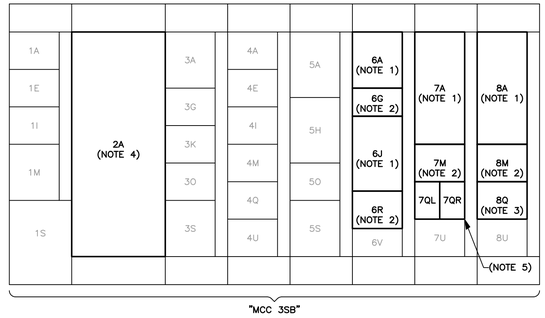
MODIFIED ONE LINE DIAGRAM

DRAWING: **E-5** OF: **12**
SHEET: **43** OF: **55**

\\shastais-data\JOBS\G&OS\21462\Cad\C-E00-05.dwg, 6/16/2023 6:09 PM, MATT L. OBERG



ELEVATION
MOTOR CONTROL CENTER "MCC 3SA"
SCALE: 1/2"=1'-0"
(NOTE 6)



ELEVATION
MOTOR CONTROL CENTER "MCC 3SB"
SCALE: 1/2"=1'-0"
(NOTE 6)

MOTOR CONTROL CENTER
CIRCUIT SCHEDULE
"MCC 3SA"

SEC.	UNIT	DESCRIPTION (NAMEPLATE)	TAG I.D.	O.L.D. # / SHEET #	E.W.D # / SHEET #	
1	A	RAS BUILDING JIB CRANE	06 JC 01	N/A	N/A	
1	E	SPACE	N/A	N/A	N/A	
1	I	SPACE	N/A	N/A	N/A	
1	M	SPACE	N/A	N/A	N/A	
1	S	MAIN LUGS	N/A	N/A	N/A	
2	**A**	**PLC "MCC 3SA"**	**N/A**	**N/A**	**N/A**	(NOTE 4)
3	A	NON-POTABLE WATER PUMP #1	08 P 01	N/A	N/A	
3	G	SPACE	N/A	N/A	N/A	
3	K	SPACE	N/A	N/A	N/A	
3	O	SPACE	N/A	N/A	N/A	
3	U	SPACE	N/A	N/A	N/A	
4	A	EFFLUENT PUMP #1	08 EP 01	N/A	N/A	
4	H	EFFLUENT PUMP #3	08 EP 03	N/A	N/A	
4	O	EFFLUENT PUP NO.1 HEATER	N/A	N/A	N/A	
4	S	EFFLUENT PUP NO.3 HEATER	N/A	N/A	N/A	
5	**A**	**SECONDARY CLARIFIER #1**	**07 SCM 01**	**O.L.D. 4/E-4**	**E.W.D. 2/E-4**	(NOTE 1)
5	**G**	**SECONDARY CLARIFIER #1 LINE REACTOR**	**N/A**	**N/A**	**N/A**	(NOTE 2)
5	**J**	**SECONDARY CLARIFIER #3**	**07 SCM 03**	**O.L.D. 3/E-4**	**E.W.D. 4/E-4**	(NOTE 1)
5	**P**	**SECONDARY CLARIFIER #3 LINE REACTOR**	**N/A**	**N/A**	**N/A**	(NOTE 2)
5	S	SPACE	N/A	N/A	N/A	
6	**A**	**RAS PUMP #3**	**06 RP 03**	**O.L.D. 5/E-4**	**E.W.D. 1/E-4**	(NOTE 1)
6	**M**	**RAS PUMP #3 LINE REACTOR**	**N/A**	**N/A**	**N/A**	(NOTE 2)
6	Q	SECONDARY CLARIFIER SCUM PUMP NO..1	07 SCP 01	N/A	N/A	
6	U	GENERATOR COOLING FAN	06 RR 01	N/A	N/A	
7	**A**	**RAS PUMP #1**	**06 RP 01**	**O.L.D. 5/E-4**	**E.W.D. 1/E-4**	(NOTE 1)
7	**M**	**RAS PUMP #1 LINE REACTOR**	**N/A**	**N/A**	**N/A**	(NOTE 2)
7	Q	SPACE	N/A	N/A	N/A	
7	U	SPACE	N/A	N/A	N/A	
8	**A**	**WAS PUMP #1**	**06 WP 01**	**O.L.D. 6/E-4**	**E.W.D. 1/E-4**	(NOTE 1)
8	**I**	**WAS PUMP #1 LINE REACTOR**	**N/A**	**N/A**	**N/A**	(NOTE 2)
8	M	SPACE	N/A	N/A	N/A	
8	Q	SPACE	N/A	N/A	N/A	
8	U	SPACE	N/A	N/A	N/A	

MOTOR CONTROL CENTER
CIRCUIT SCHEDULE
"MCC 3SB"

SEC.	UNIT	DESCRIPTION (NAMEPLATE)	TAG I.D.	O.L.D. # / SHEET #	E.W.D # / SHEET #	
1	A	RAS PUMP HOIST	06 TH 01	N/A	N/A	
1	E	SPACE	N/A	N/A	N/A	
1	I	SPACE	N/A	N/A	N/A	
1	M	SPACE	N/A	N/A	N/A	
1	S	MAIN LUGS	N/A	N/A	N/A	
2	**A**	**REMOTE I/O RACK "MCC 3SB"**	**N/A**	**N/A**	**N/A**	(NOTE 4)
3	A	NON-POTABLE WATER PUMP #2	08 P 02	N/A	N/A	
3	G	SPACE	N/A	N/A	N/A	
3	K	SPACE	N/A	N/A	N/A	
3	O	SPACE	N/A	N/A	N/A	
3	S	SPACE	N/A	N/A	N/A	
4	A	SPACE	N/A	N/A	N/A	
4	E	SPACE	N/A	N/A	N/A	
4	I	SPACE	N/A	N/A	N/A	
4	M	SPACE	N/A	N/A	N/A	
4	Q	SPACE	N/A	N/A	N/A	
4	U	SPACE	N/A	N/A	N/A	
5	A	EFFLUENT PUMP #2	08 EP 02	N/A	N/A	
5	H	EFFLUENT PUMP #4	08 EP 04	N/A	N/A	
5	O	EFFLUENT PUP NO.2 HEATER	N/A	N/A	N/A	
5	S	EFFLUENT PUP NO.4 HEATER	N/A	N/A	N/A	
6	**A**	**SECONDARY CLARIFIER #2**	**07 SCM 02**	**O.L.D. 4/E-4**	**E.W.D. 2/E-4**	(NOTE 1)
6	**G**	**SECONDARY CLARIFIER #2 LINE REACTOR**	**N/A**	**N/A**	**N/A**	(NOTE 2)
6	**J**	**WAS PUMP #2**	**06 WP 02**	**O.L.D. 6/E-4**	**E.W.D. 1/E-4**	(NOTE 1)
6	**R**	**WAS PUMP #2 LINE REACTOR**	**N/A**	**N/A**	**N/A**	(NOTE 2)
6	V	SPACE	N/A	N/A	N/A	
7	**A**	**RAS PUMP #2**	**06 RP 02**	**O.L.D. 5/E-4**	**E.W.D. 1/E-4**	(NOTE 1)
7	**M**	**RAS PUMP #2 LINE REACTOR**	**N/A**	**N/A**	**N/A**	(NOTE 2)
7	**QL**	**PUMP ROOM HEATER**	**06 HT 01**	**(NOTE 5)**	**N/A**	(NOTE 5)
7	**QR**	**SPARE**	**N/A**	**N/A**	**N/A**	(NOTE 5)
7	U	SPACE	N/A	N/A	N/A	
8	**A**	**RAS PUMP #4**	**06 RAS 04**	**O.L.D. 2/E-4**	**E.W.D. 3/E-4**	(NOTE 1)
8	**M**	**RAS PUMP #4 LINE REACTOR**	**N/A**	**N/A**	**E.W.D. 3/E-4**	(NOTE 2)
8	**Q**	**SECONDARY CLARIFIER SCUM PUMP NO..2**	**07 SCP 02**	**O.L.D. 1/E-4**	**E.W.D. 5/E-4**	(NOTE 3)
8	U	SPACE	N/A	N/A	N/A	

MOTOR CONTROL CENTER
I/O SCHEDULE
"MCC 3SA"

FIELD I/O	DESCRIPTION	PLC I/O POINT
07 SCM 03-1LR	OVERTORQUE ALARM	DISCRETE INPUT ???
07 SCP 02-CALL	SCUM PUMP 2 - CALL TO RUN	DISCRETE OUTPUT ???
07 SCP 02-RUN	SCUM PUMP 2 - RUN STATUS	DISCRETE INPUT ???
07 SCP 02-AUTO	SCUM PUMP 2 - AUTO STATUS	DISCRETE INPUT ???
06 FS 01	SUPPLY AIR PROVEN	DISCRETE INPUT ???
06 FS 02	EXHAUST AIR PROVEN	DISCRETE INPUT ???
06 MFM 03-FLOW	RAS PUMP 4 - INSTANTANEOUS FLOW	ANALOG INPUT ???
06 MFM 03-TOTAL	RAS PUMP 4 - TOTALIZED FLOW	DISCRETE INPUT ???
07 ILA 03	SECONDARY CLARIFIER 3 - SLUDGE BLANKET LEVEL	ANALOG INPUT ???
07 ILS 02	SECONDARY CLARIFIER 2 - SLUDGE BLANKET LEVEL	ANALOG INPUT ???
07 ILS 01	SECONDARY CLARIFIER 1 - SLUDGE BLANKET LEVEL	ANALOG INPUT ???
08 MFM 01-FLOW	EFFLUENT - INSTANTANEOUS FLOW	ANALOG INPUT ???
08 MFM 01-TOTAL	EFFLUENT - TOTALIZED FLOW	DISCRETE INPUT ???

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. REPLACE EXISTING MCC UNIT WITH NEW VFD UNIT. PROVIDE NEW DOOR WITH NEW UNIT.
2. REPLACE EXISTING MCC LINE REACTOR UNIT WITH NEW LINE REACTOR UNIT. PROVIDE NEW DOOR WITH NEW UNIT. ALTERNATIVELY, EXISTING MCC LINE REACTOR UNIT MAY BE REUSED IF COMPATIBLE WITH NEW VFD UNIT.
3. PROVIDE NEW MCC FVNR STARTER UNIT IN EXISTING MCC SPACE. PROVIDE NEW DOOR WITH NEW UNIT.
4. PRESERVE EXISTING CONTROL WIRING FROM THE PLC AND REMOTE IO UNITS TO THE MCC VFD UNITS FOR RECONNECTION TO THE NEW MCC UNITS. SEE SHEETS E-3 AND E-4 FOR ADDITIONAL INFORMATION.
5. PROVIDE NEW SPLIT BUCKET MCC-UNIT WITH TWO 3P-30A BRANCH CIRCUIT BREAKERS.
6. EXISTING MCC IS A SQUARE D MODEL 6 ORIGINALLY BUILT IN 1998.

APPROVED

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CITY ENGINEER
CITY OF PUYALLUP
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ELECTRICAL

MCC ELEVATIONS AND SCHEDULES

DRAWING: **E-6** OF: **12**
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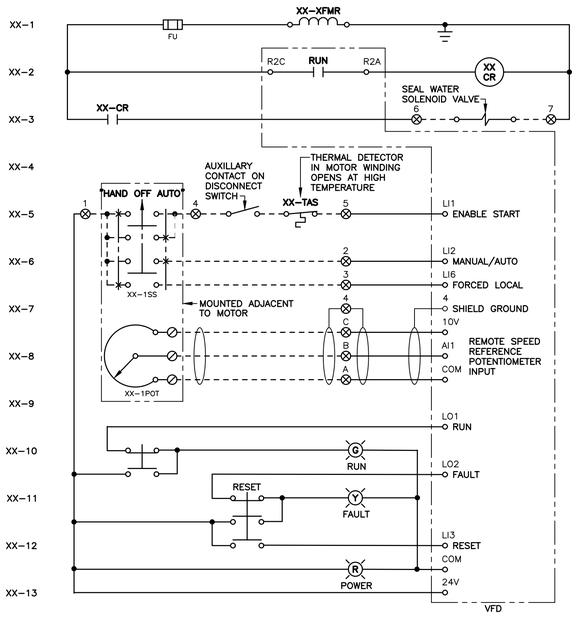
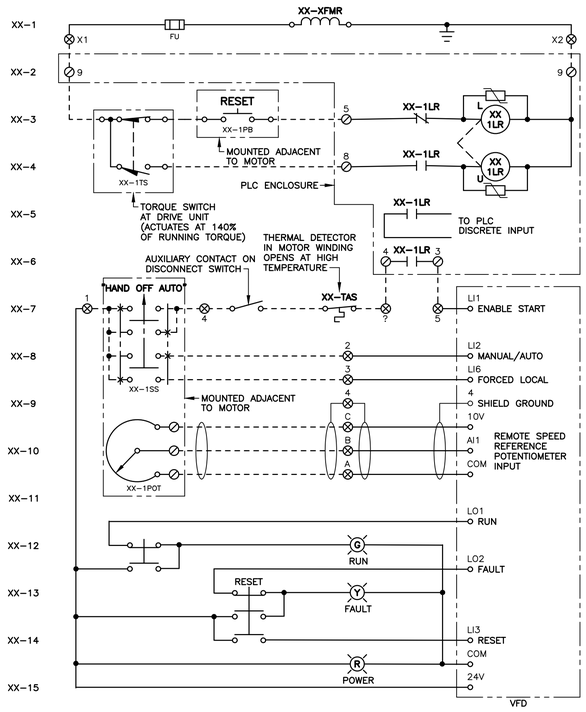


EXISTING E.W.D. 1/E-3

(NOTES 1&2)

XX = 06 RAS 01, 06 RAS 02, 06 RAS 03, XX = 06 WAS 01, 06 WAS 02



EXISTING E.W.D. 2/E-3

(NOTES 1&2)

XX = 06 SCM 01, 06 SCM 02

NOTES:

SEE DRAWING E–1 FOR GENERAL NOTES AND FOR GENERAL PLAN NOTES.

1. **THIS DIAGRAM DEPICTS THE EXISTING WIRING CONNECTIONS BASED ON THE 1998 RECORD DRAWING AND LIMITED FIELD OBSERVATION. THE OWNER HAS REPLACED SELECTED VFDS SINCE THE ORIGINAL INSTALLATION AND ACTUAL WIRING MAY DIFFER FROM THAT SHOWN. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE ACTUAL FIELD AND MCC UNIT WIRING AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.**

2. **IDENTIFY AND LABEL ALL FIELD WIRING TERMINATIONS TO FACILITATE DISCONNECTION AND RECONNECTION FOR REPLACEMENT OF THE VFDS. DISCONNECT ALL FIELD WIRING AT MCC VFD UNIT AND PRESERVE FOR RECONNECTION. MAINTAIN ALL FIELD WIRING AT MCC PLC UNIT. REMOVE EXISTING MCC VFD AND LINE REACTOR UNITS TO MAKE SPACE FOR NEW VFD AND LINE REACTOR UNITS. EXISTING LINE REACTOR UNITS MAY BE LEFT IN PLACE AND REUSED IF COMPATIBLE WITH NEW VFD UNITS.**

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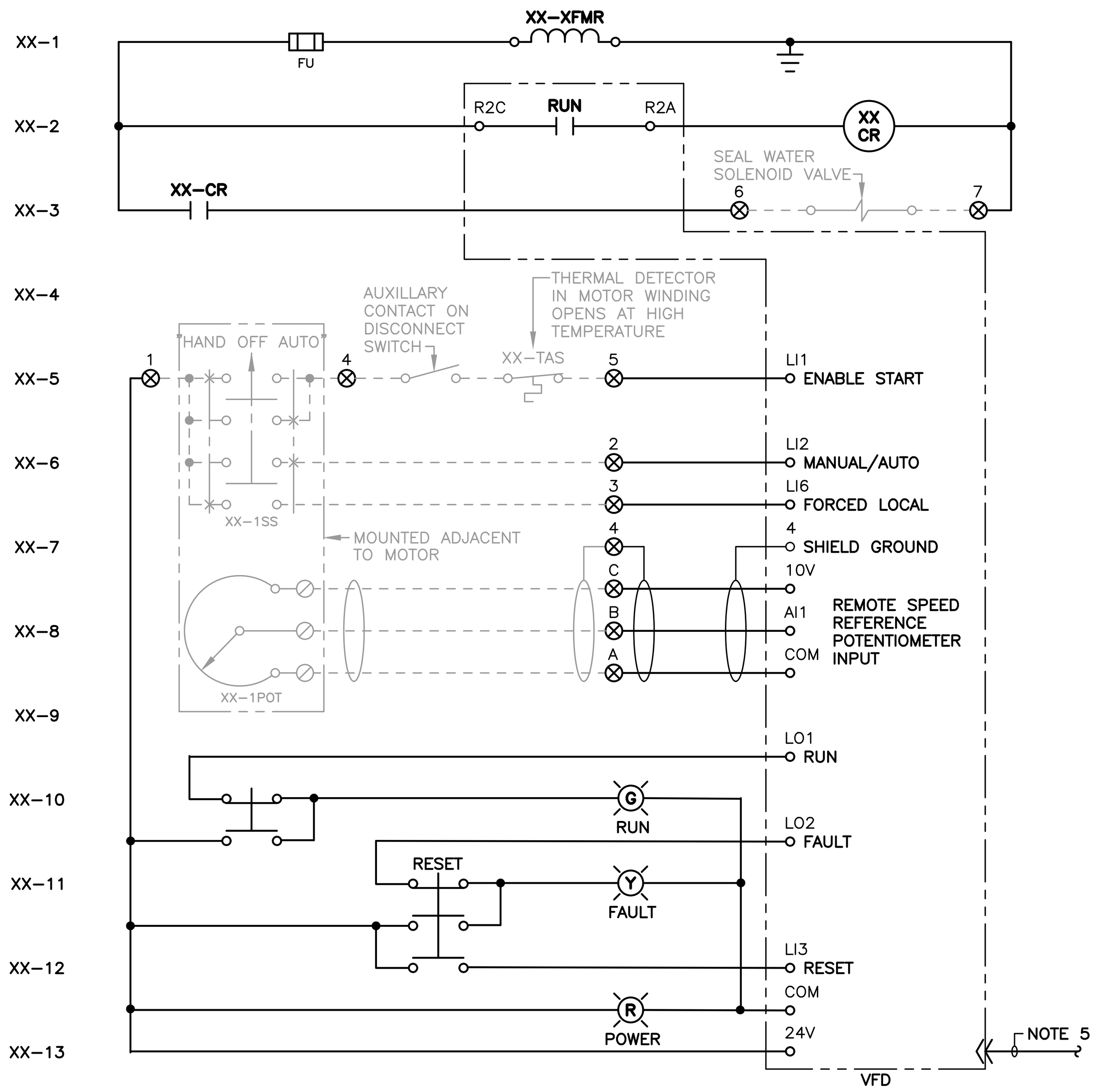
ELECTRICAL

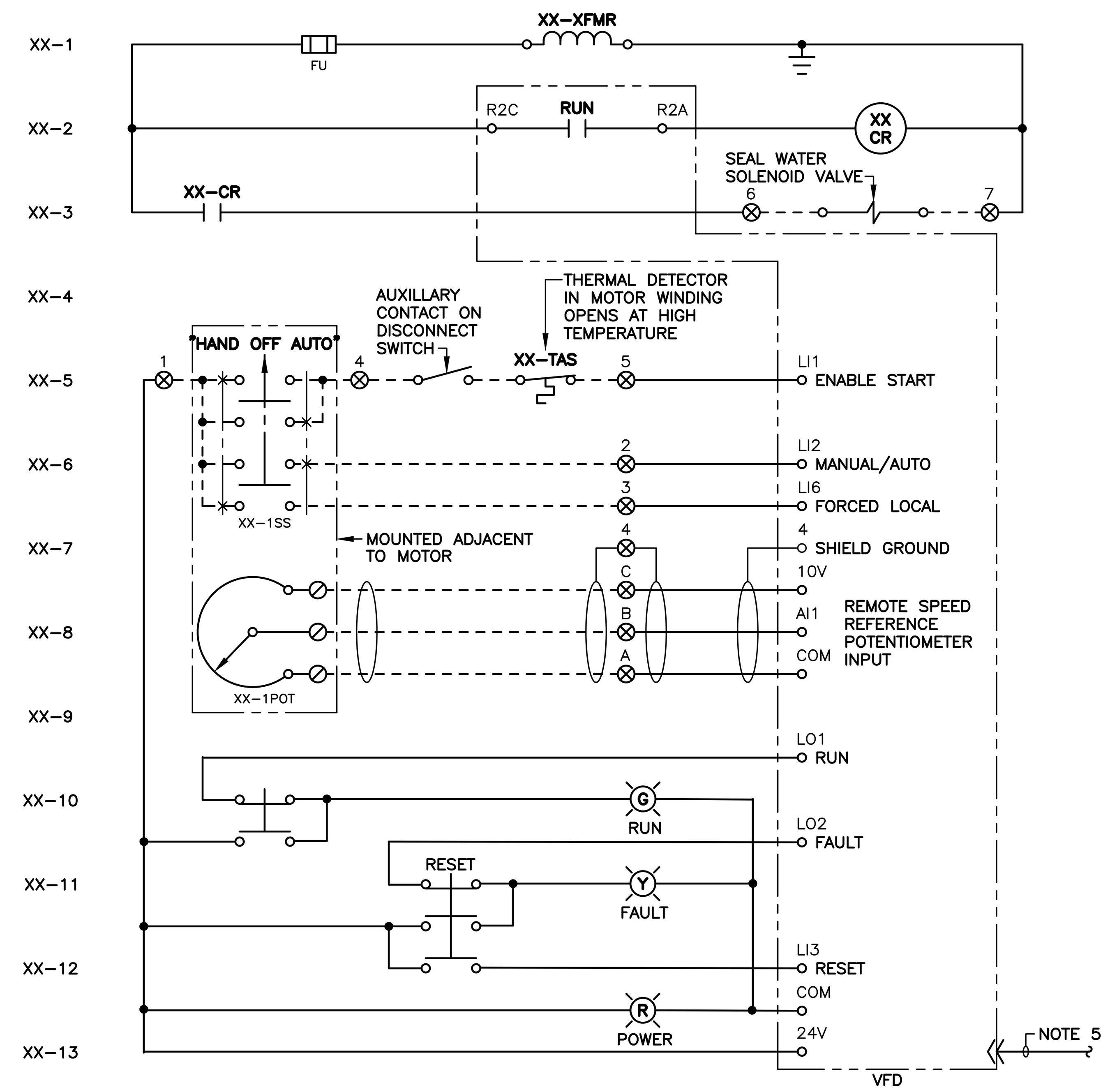
EXISTING VFD ELEMENTARY WIRING DIAGRAMS

DRAWING: **E-7** OF: **12**

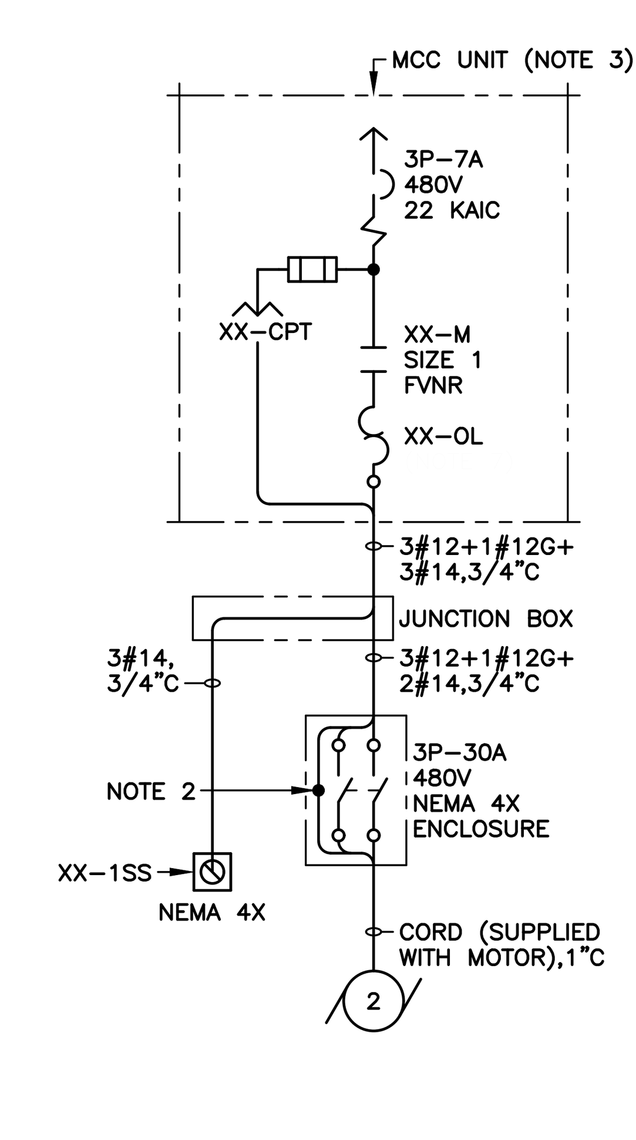
SHEET: **45** OF: **55**



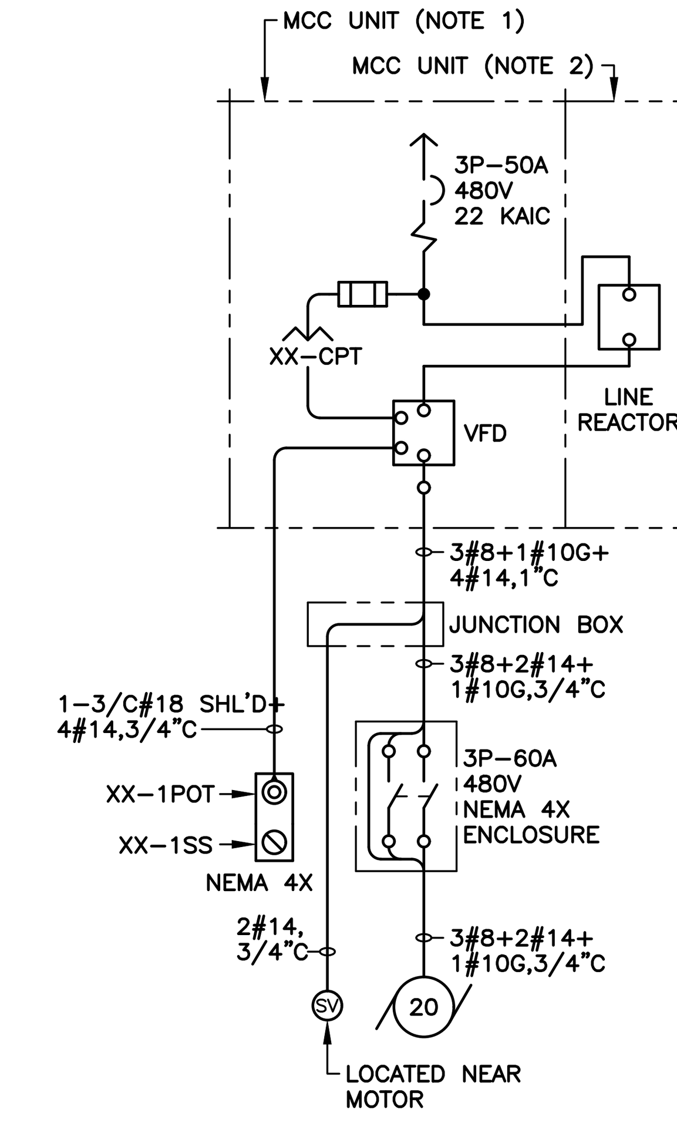
E.W.D. 1/E-4
(NOTES 1&4)
XX = 06 RAS 01, 06 RAS 02, 06 RAS 03,
XX = 06 WAS 01, 06 WAS 02



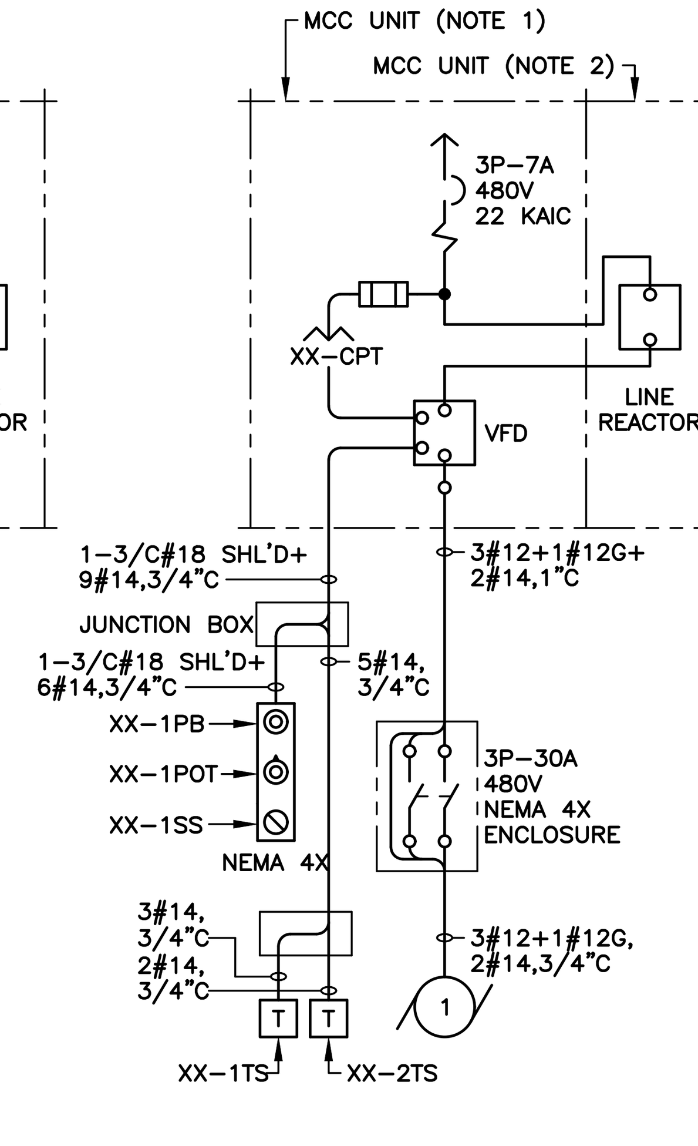
E.W.D. 2/E-4
(NOTE 1)
XX = 06 RAS 04



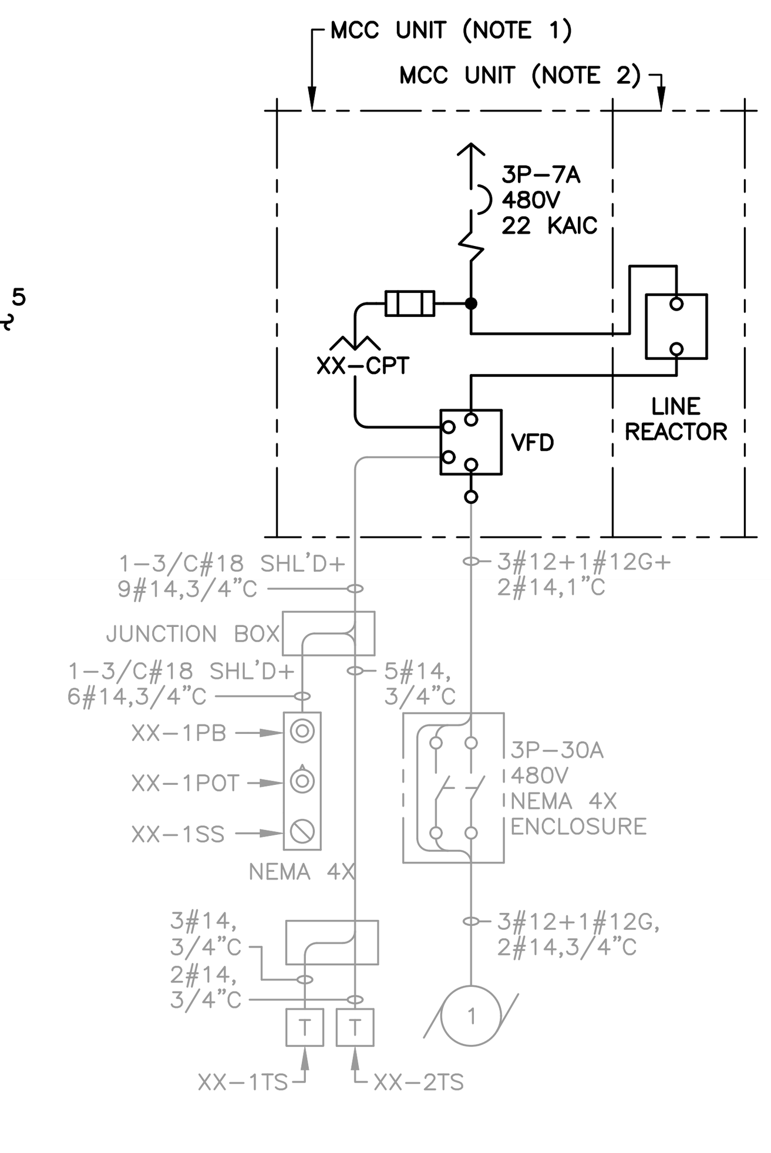
O.L.D. 1/E-4
NOTE: XX=TAG I.D. #
SECONDARY CLARIFIER SCUM PUMP (07 SCP 02)



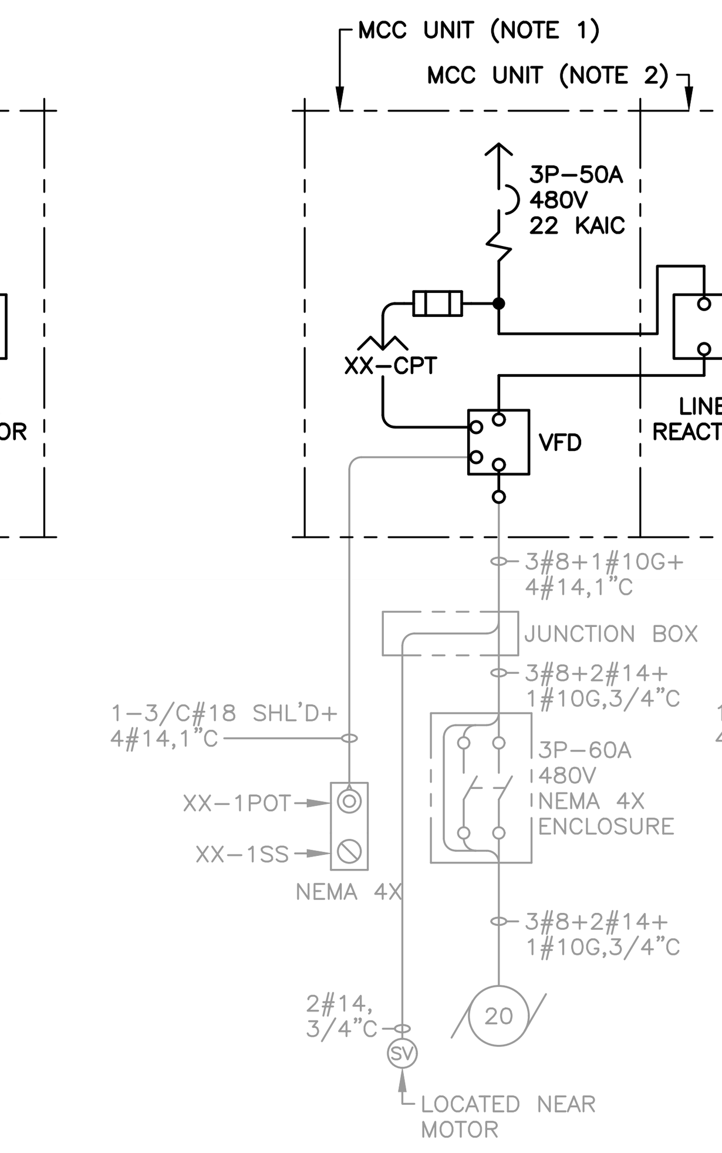
O.L.D. 2/E-4
NOTE: XX=TAG I.D. #
RAS PUMP #4 (06 RP 04)



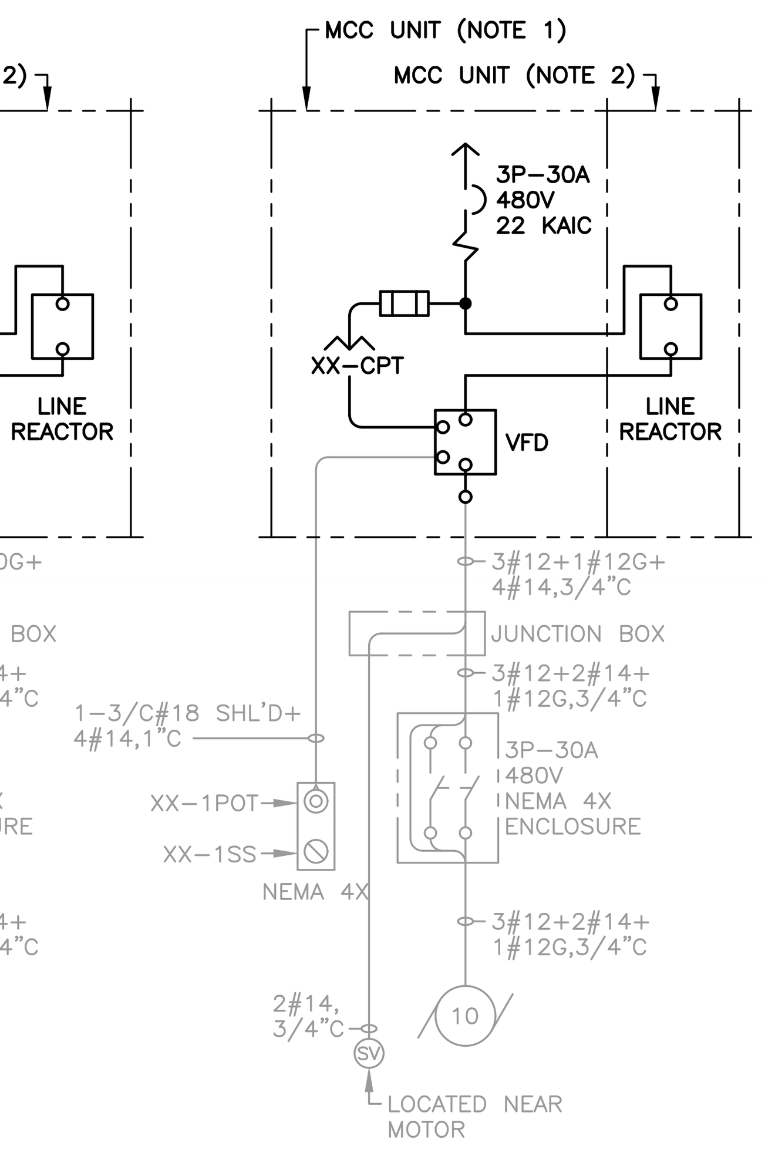
O.L.D. 3/E-4
NOTE: XX=TAG I.D. #
SECONDARY CLARIFIER #3 (07 SCM 03)



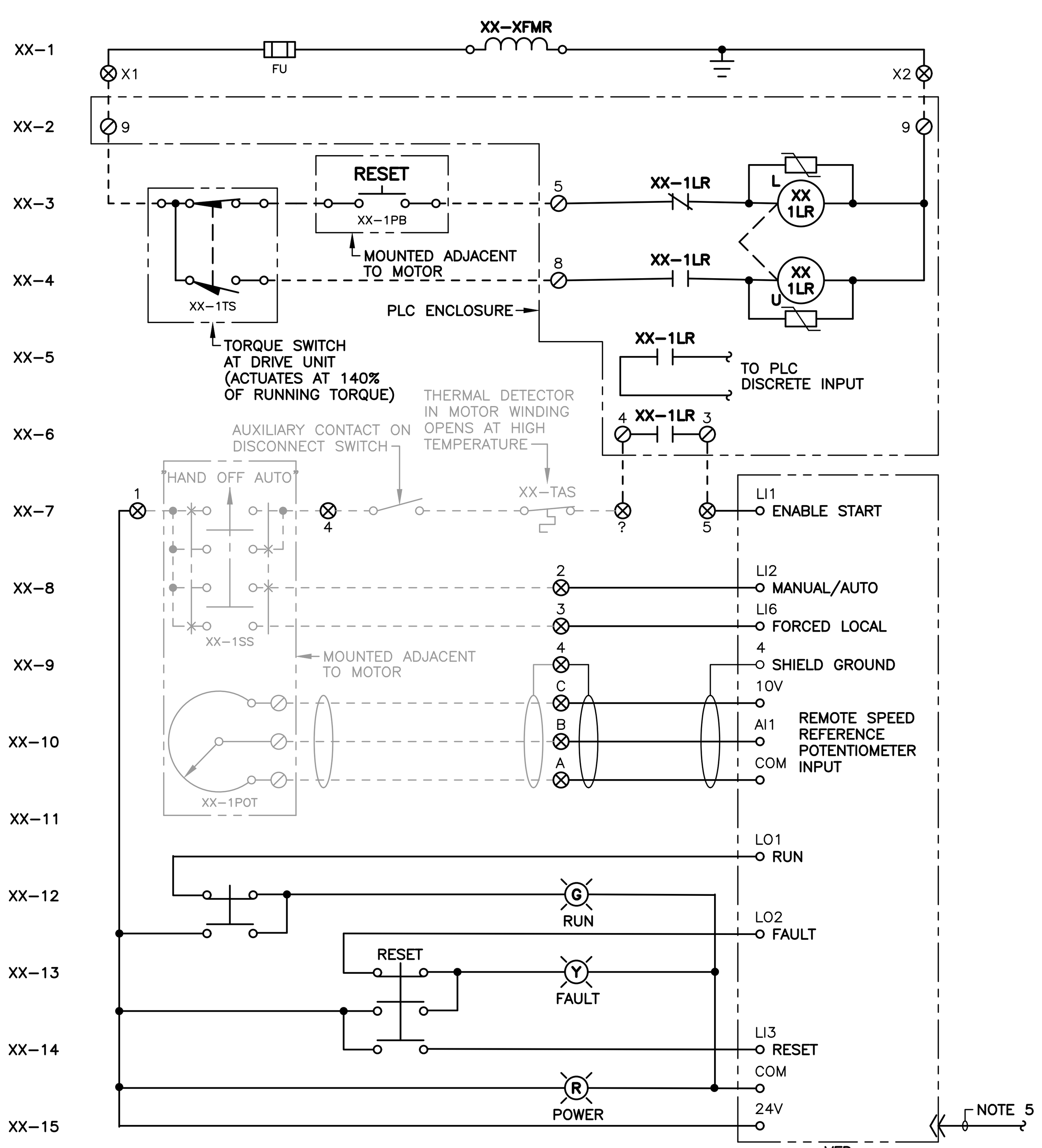
O.L.D. 4/E-4
NOTE: XX=TAG I.D. #
SECONDARY CLARIFIER #1 (07 SCM 01)
SECONDARY CLARIFIER #2 (07 SCM 02)
(NOTE 4)



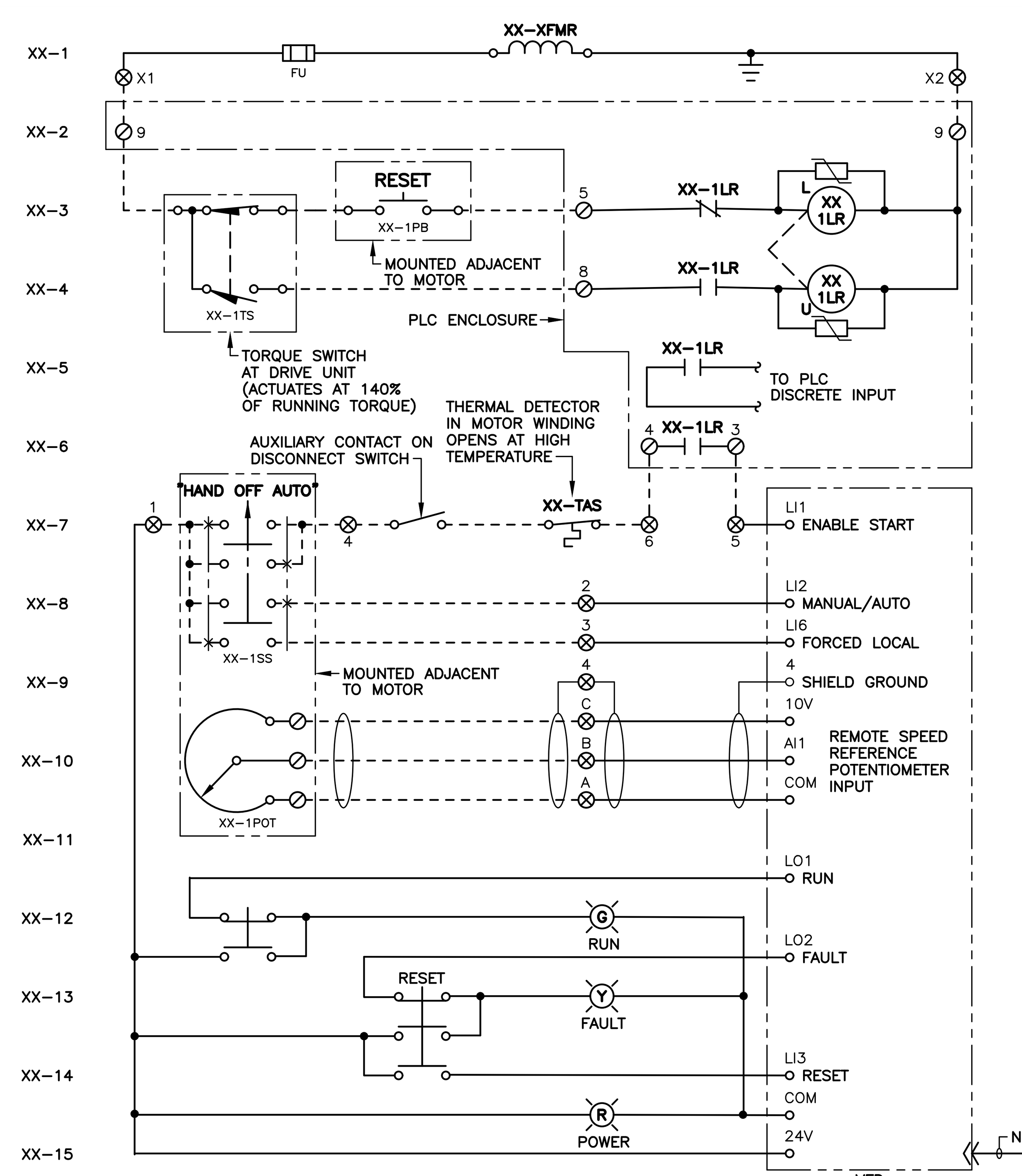
O.L.D. 5/E-4
NOTE: XX=TAG I.D. #
RAS PUMP #1 (06 RP 01)
RAS PUMP #2 (06 RP 02)
RAS PUMP #3 (06 RP 03)
(NOTE 4)



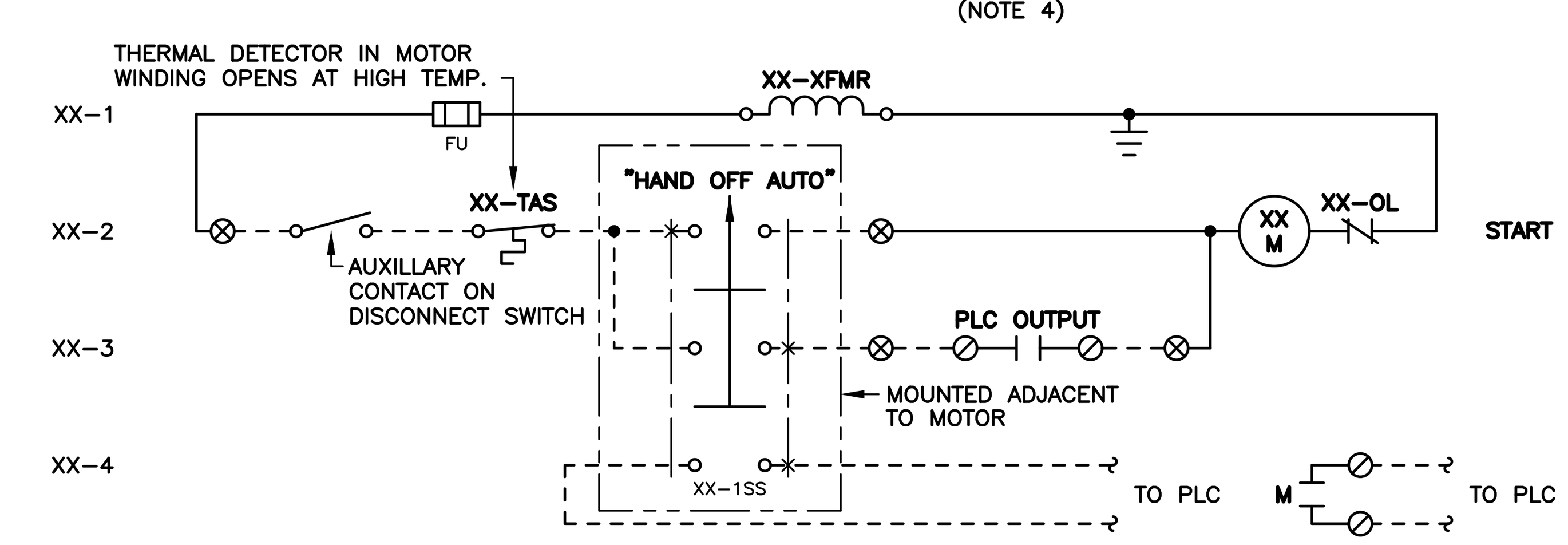
O.L.D. 6/E-4
NOTE: XX=TAG I.D. #
WAS PUMP #1 (06 WP 01)
WAS PUMP #2 (06 WP 02)
(NOTE 4)



E.W.D. 3/E-4
(NOTES 1&4)
XX = 07 SCM 01, 07 SCM 02



E.W.D. 4/E-4
(NOTE 3)
XX = 07 SCM 03



E.W.D. 5/E-4
(NOTE 1)
XX = 07 SCP 02

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES AND FOR GENERAL PLAN NOTES.

1. REPLACE EXISTING MCC UNIT WITH NEW VFD UNIT. PROVIDE NEW DOOR WITH NEW UNIT.
2. REPLACE EXISTING MCC LINE REACTOR UNIT WITH NEW LINE REACTOR UNIT. PROVIDE NEW DOOR WITH NEW UNIT. ALTERNATIVELY, EXISTING MCC LINE REACTOR UNIT MAY BE REUSED IF COMPATIBLE WITH NEW VFD UNIT.
3. PROVIDE NEW MCC FVNR STARTER UNIT IN EXISTING MCC SPACE. PROVIDE NEW DOOR WITH NEW UNIT.
4. PRESERVE FIELD DEVICE CONDUCTORS FOR RECONNECTION TO NEW MOTOR CONTROLLER.
5. MODBUS TCP TO NEW ETHERNET SWITCH. SEE DRAWING E-5.

APPROVED

BY: ______
CITY ENGINEER
CITY OF PUYALLUP
APPROVED DATE:
EXPIRATION DATE:

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(206) 284-0860

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1430 North 16th Avenue, Yakima, WA 98902
(509) 965-9872 coneng.com

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER
CIP NO. 20-018
1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR:	BUILDING PERMIT
ISSUE DATE:	JUNE 2023
APPROVED BY:	BBB
CHECKED BY:	–
DRAWN BY:	CJD
DESIGNER:	MLO
G & O JOB NO.:	21462
FILE:	C-E00-08.DWG

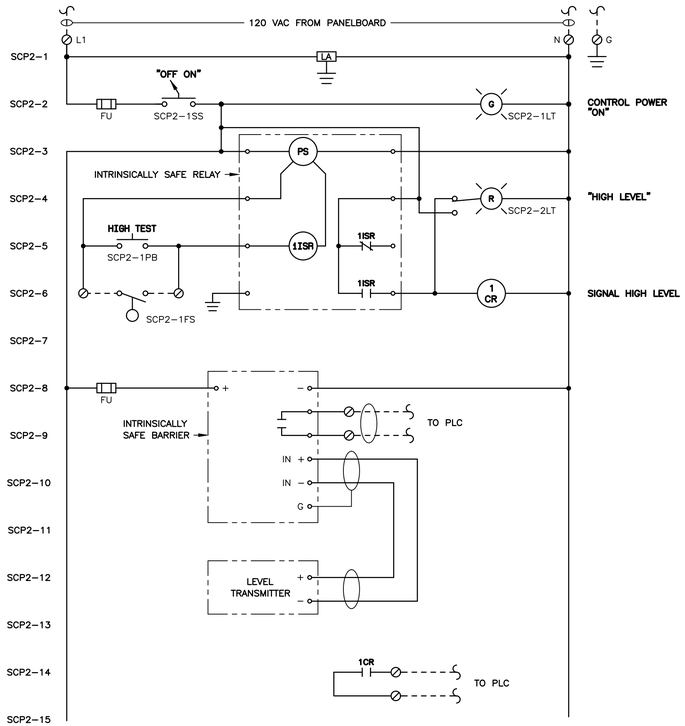
0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

ELECTRICAL

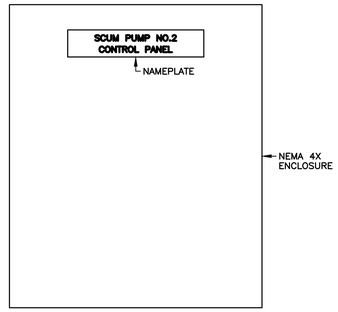
MOTOR CONTROL CENTER ONE LINE DIAGRAMS AND ELEMENTARY WIRING DIAGRAMS

DRAWING: E-8 OF: 12
SHEET: 46 OF: 55

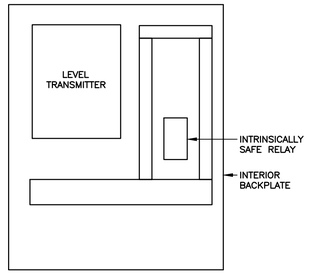
\\shastals-data\JOBS\G&OS\21462\Cad\C-E00-08.DWG, 6/16/2023 6:09 PM, MATT L. OBERG



ELEMENTARY WIRING DIAGRAM
SCUM PUMP NO.2 CONTROL PANEL



EXTERIOR ELEVATION
SCUM PUMP CONTROL PANEL NO.2
SCALE: 2"=1'-0"



INTERIOR ELEVATION
SCUM PUMP CONTROL PANEL NO.2
SCALE: 2"=1'-0"

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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(509) 965-9872 coneng.com

BRADLEY R. BAILEY
STATE OF WASHINGTON
45910
REGISTERED
PROFESSIONAL ENGINEER
6/16/2023

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018
1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR:	BUILDING PERMIT
ISSUE DATE:	JUNE 2023
APPROVED BY:	**BBB**
CHECKED BY:	–
DRAWN BY:	**CJD**
DESIGNER:	**MLO**
G & O JOB NO.:	21462
FILE:	C-E00-09.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

SCUM PUMP CONTROL PANEL NO.2 DETAILS

DRAWING: **E-9** OF: **12**

SHEET: **47** OF: **55**

PANELBOARD CIRCUIT SCHEDULE PANEL LP-3SA (EXISTING)

SECTION 1 OF 1

CKT. #	LOAD DESCRIPTION	BREAKER TYPE	POLE #	POLE #	BREAKER TYPE	LOAD DESCRIPTION	CKT. #
1	RAS/WAS PUMP ROOM AIR GAP UNIT	1P-20A	1	2	1P-20A	RAS/WAS PUMP ROOM RECEPTACLES	2
3	EFFLUENT FLOWMETER MANHOLE SUMP PUMP	1P-20A	3	4	1P-20A	RAS/WAS PUMP ROOM RECEPTACLES	4
5	EFFLUENT FLOWMETER CONVERTER	1P-20A	5	6	1P-20A	ELECTRICAL ROOM RECEPTACLES	6
7	EFFLUENT SAMPLER	1P-20A	7	8	1P-20A	GENERATOR ROOM RECEPTACLES	8
9	EFFLUENT FLOWMETER 08 MFM 01	1P-20A	9	10	1P-20A	RAS/WAS PUMP ROOM SUMP PUMP	10
11	RAS/WAS MAGNETIC FLOWMETER	1P-20A	11	12	1P-20A	PLC ' MCC 3SA'	12
13	SPARE	1P-20A	13	14	1P-30A	SPARE	14
15	SPARE	1P-20A	15	16	1P-20A	LEVEL SENSOR	16
17	SPARE	1P-20A	17	18	1P-20A	ELECRICAL ROOM RECEPTACLES	18
19	SPARE	1P-20A	19	20	1P-20A	SPARE	20
21	SPARE	1P-20A	21	22	1P-20A	LEVEL DETECTION PANEL	22
23	SPARE	1P-20A	23	24	1P-20A	SPARE	24
25	SPARE	1P-20A	25	26	1P-20A	SPARE	26
27	SPARE	1P-20A	27	28	1P-20A	SPARE	28
29	SPARE	1P-20A	29	30	1P-20A	SPARE	30
31	SPARE	1P-20A	31	32	1P-20A	SPARE	32
33	SPARE	2P-50A	33	34		SPACE	34
			35	36		SPACE	36
37	SPACE		37	38		SPACE	38
39	SPACE		39	40		SPACE	40
41	SPACE		41	42		SPACE	42

PANELBOARD CIRCUIT SCHEDULE PANEL LP-3SA (MODIFIED)

SECTION 1 OF 1

CKT. #	LOAD DESCRIPTION	BREAKER TYPE	POLE #	POLE #	BREAKER TYPE	LOAD DESCRIPTION	CKT. #
1	RAS/WAS PUMP ROOM AIR GAP UNIT	1P-20A	1	2	1P-20A	RAS/WAS PUMP ROOM RECEPTACLES	2
3	EFFLUENT FLOWMETER MANHOLE SUMP PUMP	1P-20A	3	4	1P-20A	RAS/WAS PUMP ROOM RECEPTACLES	4
5	EFFLUENT FLOWMETER CONVERTER	1P-20A	5	6	1P-20A	ELECTRICAL ROOM RECEPTACLES	6
7	EFFLUENT SAMPLER	1P-20A	7	8	1P-20A	GENERATOR ROOM RECEPTACLES	8
9	EFFLUENT FLOWMETER 08 MFM 01	1P-20A	9	10	1P-20A	RAS/WAS PUMP ROOM SUMP PUMP	10
11	RAS/WAS MAGNETIC FLOWMETER	1P-20A	11	12	1P-20A	PLC ' MCC 3SA'	12
13	SPARE	1P-20A	13	14	1P-30A	SPARE	14
15	SPARE	1P-20A	15	16	1P-20A	LEVEL SENSOR	16
17	MAGNETIC FLOWMETER 06 MFM 03	1P-20A	17	18	1P-20A	ELECRICAL ROOM RECEPTACLES	18
19	SPARE	1P-20A	19	20	1P-20A	SPARE	20
21	SPARE	1P-20A	21	22	1P-20A	LEVEL DETECTION PANEL	22
23	SPARE	1P-20A	23	24	1P-20A	SPARE	24
25	SPARE	1P-20A	25	26	1P-20A	SPARE	26
27	SPARE	1P-20A	27	28	1P-20A	SPARE	28
29	SPARE	1P-20A	29	30	1P-20A	SPARE	30
31	SPARE	1P-20A	31	32	1P-20A	SPARE	32
33	SPARE	2P-50A	33	34		SPACE	34
			35	36		SPACE	36
37	SPACE		37	38		SPACE	38
39	SPACE		39	40		SPACE	40
41	SPACE		41	42		SPACE	42

PANELBOARD CIRCUIT SCHEDULE PANEL LP-3SB (EXISTING)

SECTION 1 OF 1

CKT. #	LOAD DESCRIPTION	BREAKER TYPE	POLE #	POLE #	BREAKER TYPE	LOAD DESCRIPTION	CKT. #
1	RAS/WAS ROOM EXHAUST FAN	1P-20A	1	2	1P-20A	RAS/WAS BUILDING LIGHTING	2
3	GENERATOR ROOM EXHAUST FAN	1P-20A	3	4	1P-20A	RAS/WAS BUILDING LIGHTING	4
5	ELECTRICAL ROOM EXHAUST FAN	1P-20A	5	6	1P-20A	SITE LIGHTING	6
7	GENERATOR BATTERY CHARGER	1P-20A	7	8	1P-20A	SITE LIGHTING	8
9	GENERATOR ROOM EXHAUST	1P-20A	9	10	1P-20A	POLE BASE RECEPTACLES	10
11	EFFLUENT METER CHANNEL SUMP PUMP	1P-50A	11	12	1P-20A	POLE BASE RECEPTACLES	12
13	GENERATOR BLOCK HEATER	2P-20A	13	14	1P-20A	REMOTE I/O RACK 'MCC 3SB'	14
			15	16	1P-20A	RAS/WAS BUILDING EXTERIOR LIGHTING	16
17	SPARE	1P-50A	17	18	1P-20A	SPARE	18
19	SPARE	1P-20A	19	20	1P-20A	SUBSTATION NO.3 LIGHTS	20
21	SPARE	1P-20A	21	22	1P-20A	HEATER CONTROL	22
23	SPARE	1P-20A	23	24	1P-20A	SPARE	24
25	SPARE	1P-20A	25	26	1P-20A	SITE LIGHTS PHOTOCONTROL	26
27	SPACE		27	28		SPACE	28
29	SPACE		29	30		SPACE	30
31	SPACE		31	32		SPACE	32
33	SPACE		33	34		SPACE	34
35	SPACE		35	36		SPACE	36
37	SPACE		37	38		SPACE	38
39	SPACE		39	40		SPACE	40
41	SPACE		41	42		SPACE	42

PANELBOARD CIRCUIT SCHEDULE PANEL LP-3SB (MODIFIED)

SECTION 1 OF 1

CKT. #	LOAD DESCRIPTION	BREAKER TYPE	POLE #	POLE #	BREAKER TYPE	LOAD DESCRIPTION	CKT. #
1	RAS/WAS ROOM SUPPLY FAN	1P-20A	1	2	1P-20A	RAS/WAS BUILDING LIGHTING	2
3	GENERATOR ROOM EXHAUST FAN	1P-20A	3	4	1P-20A	RAS/WAS BUILDING LIGHTING	4
5	RAS/WAS ROOM EXHAUST FAN	1P-20A	5	6	1P-20A	SITE LIGHTING	6
7	GENERATOR BATTERY CHARGER	1P-20A	7	8	1P-20A	SITE LIGHTING	8
9	GENERATOR ROOM EXHAUST	1P-20A	9	10	1P-20A	POLE BASE RECEPTACLES	10
11	EFFLUENT METER CHANNEL SUMP PUMP	1P-50A	11	12	1P-20A	POLE BASE RECEPTACLES	12
13	GENERATOR BLOCK HEATER	2P-20A	13	14	1P-20A	REMOTE I/O RACK 'MCC 3SB'	14
			15	16	1P-20A	RAS/WAS BUILDING EXTERIOR LIGHTING	16
17	SPARE	1P-50A	17	18	1P-20A	SPARE	18
19	SPARE	1P-20A	19	20	1P-20A	SUBSTATION NO.3 LIGHTS	20
21	SPARE	1P-20A	21	22	1P-20A	HEATER CONTROL	22
23	SPARE	1P-20A	23	24	1P-20A	SPARE	24
25	SPARE	1P-20A	25	26	1P-20A	SITE LIGHTS PHOTOCONTROL	26
27	SPACE		27	28		SPACE	28
29	SPACE		29	30		SPACE	30
31	SPACE		31	32		SPACE	32
33	SPACE		33	34		SPACE	34
35	HEAT PUMP 06 HP 01	2P-30A	35	36		SPACE	36
			37	38		SPACE	38
39	HEAT PUMP 06 HP 02	2P-30A	39	40		SPACE	40
			41	42		SPACE	42

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

APPROVED DATE: _____

EXPIRATION DATE: _____

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BRADLEY R. BAITEY — STATE OF WASHINGTON — 45910 — REGISTERED PROFESSIONAL ENGINEER
06/16/2023

CITY OF PUYALLUP — STATE OF WASHINGTON

CITY OF PUYALLUP

WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018

1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR: BUILDING PERMIT

ISSUE DATE:	JUNE 2023
APPROVED BY:	**BBB**
CHECKED BY:	–
DRAWN BY:	**CJD**
DESIGNER:	**MLO**
G & O JOB NO.:	21462
FILE:	C-E00-10.DWG

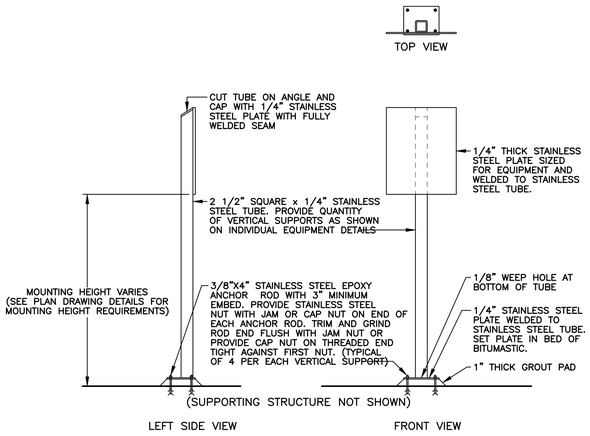
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

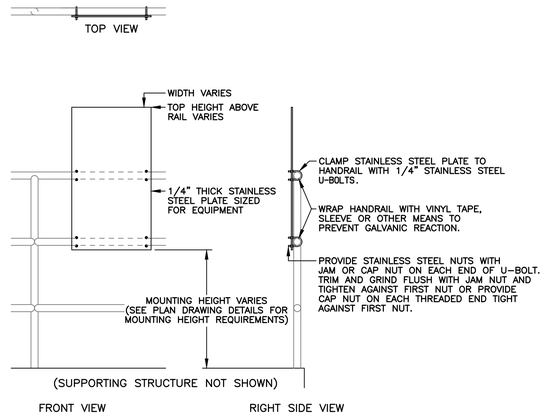
PANEL SCHEDULES

DRAWING: **E-10** OF: **12**

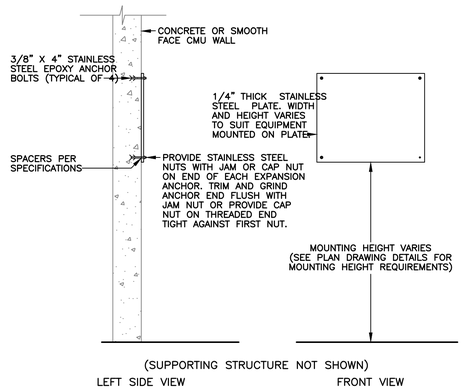
SHEET: **48** OF: **55**



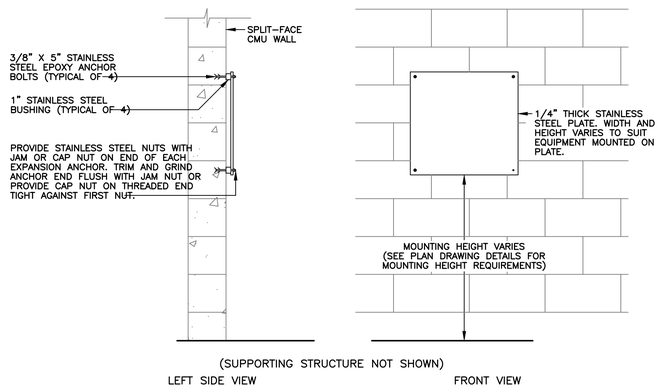
DETAIL 1/E-11
MOUNTING ON STANCHION
SCALE: NONE



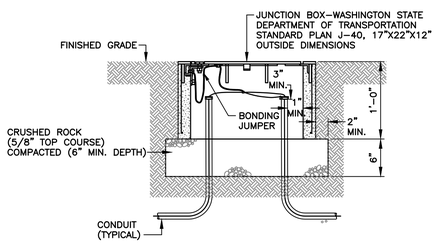
DETAIL 2/E-11
MOUNTING ON RAILING
SCALE: NONE



DETAIL 3/E-11
MOUNTING ON CONCRETE OR SMOOTH FACE CMU WALL
SCALE: NONE

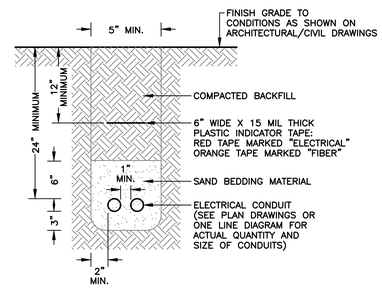


DETAIL 4/E-11
MOUNTING ON SPLIT FACE CMU WALL
SCALE: NONE



DETAIL 5/E-11
TYPE 1L JUNCTION BOX
SCALE: NONE

NOTE: CONDUITS ARE SHOWN DIAGRAMMATICALLY. SEE PLAN DRAWINGS FOR ACTUAL CONDUIT QUANTITIES, DEPTH, SIZES AND ARRANGEMENTS.



NOTE: CONDUITS ARE SHOWN DIAGRAMMATICALLY. SEE PLAN DRAWINGS FOR ACTUAL CONDUIT QUANTITIES, DEPTH, SIZES AND ARRANGEMENTS.

DETAIL 6/E-11
TRENCHING FOR ELECTRICAL CIRCUITS SECONDARY POWER OR SIGNAL CIRCUITS
SCALE: NONE

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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6/16/2023

CITY OF PUYALLUP
STATE OF WASHINGTON

CITY OF PUYALLUP
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0 1" 2"
TWO INCHES AT FULL SCALE.
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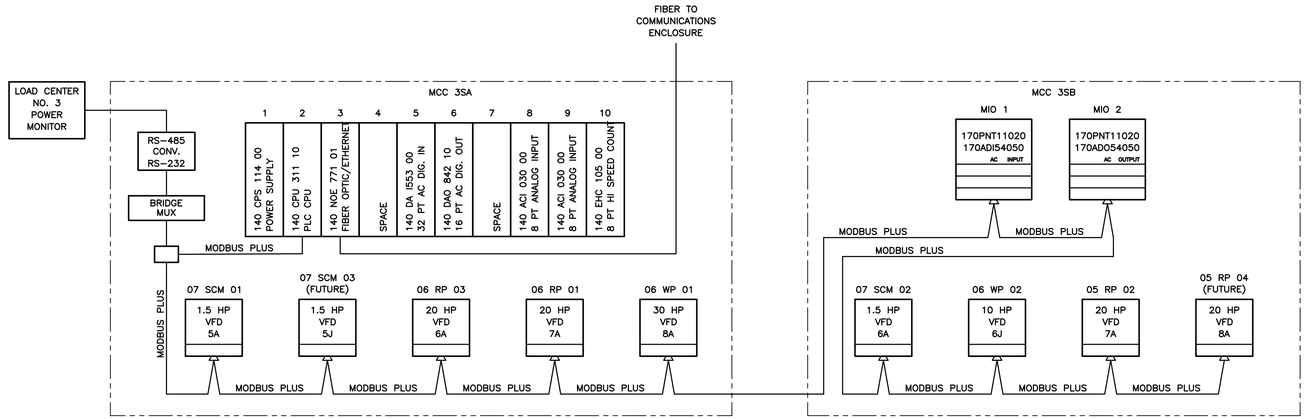
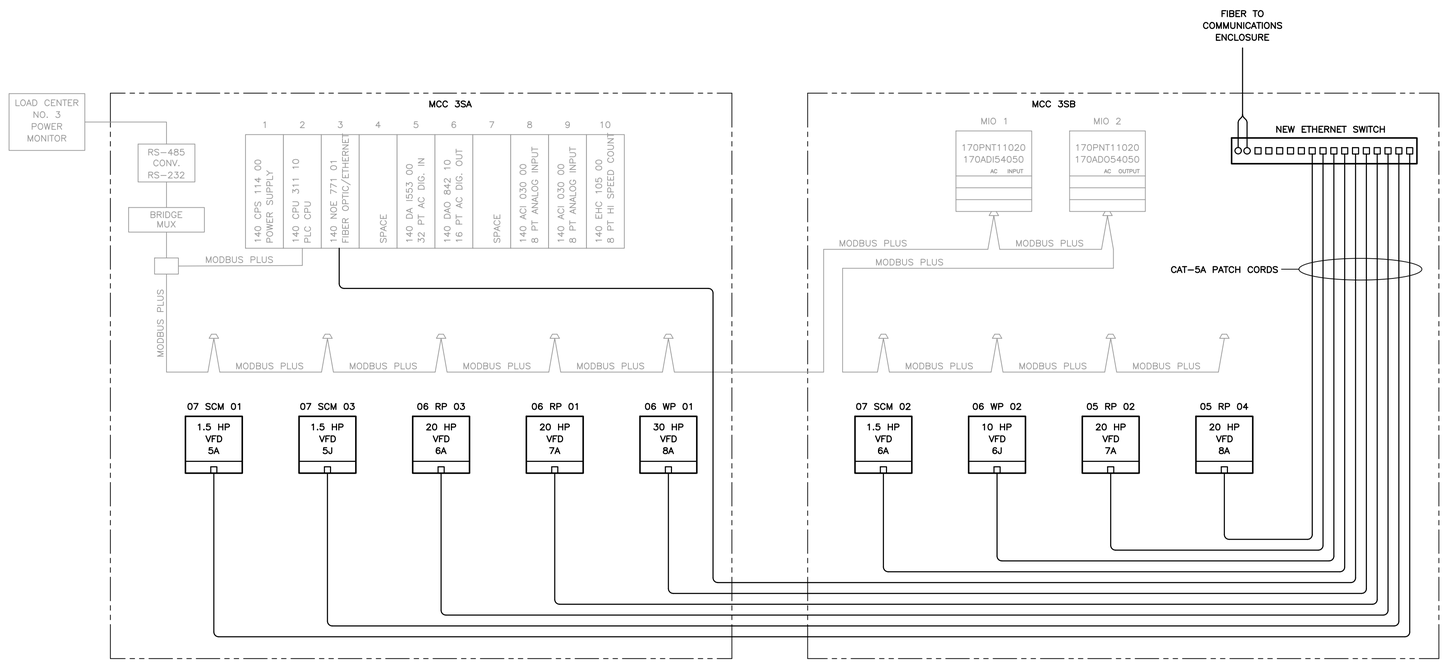
ELECTRICAL

ELECTRICAL DETAILS

DRAWING: **E-11** OF: **12**
SHEET: **49** OF: **55**



EXISTING COMMUNICATION DIAGRAM



MODIFIED COMMUNICATION DIAGRAM

(NOTE 1)

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES AND FOR GENERAL PLAN NOTES.

1. **COIL DISCONNECTED MODBUS PLUS CABLING IN BOTTOM OF MCC UNIT WHERE DISCONNECTED. TAPE OFF CONNECTOR TO KEEP CLEAN AND DEBRIS OUT OF CONNECTOR PINS. MODBUS PLUS CABLE WILL BE REMOVED AS PART OF FUTURE PLC UPGRADES PROJECT.**

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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(206) 284-0860

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(509) 965-9872 coneng.com

BRADLEY R. BAITEY — STATE OF WASHINGTON — 45910 — REGISTERED PROFESSIONAL ENGINEER
6/16/2023

CITY OF PUYALLUP — STATE OF WASHINGTON

CITY OF PUYALLUP

WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018

1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR:	BUILDING PERMIT
ISSUE DATE:	JUNE 2023
APPROVED BY:	**BBB**
CHECKED BY:	**_**
DRAWN BY:	**DEK**
DESIGNER:	**MLO**
G & O JOB NO.:	21462
FILE:	C-E00-12.DWG

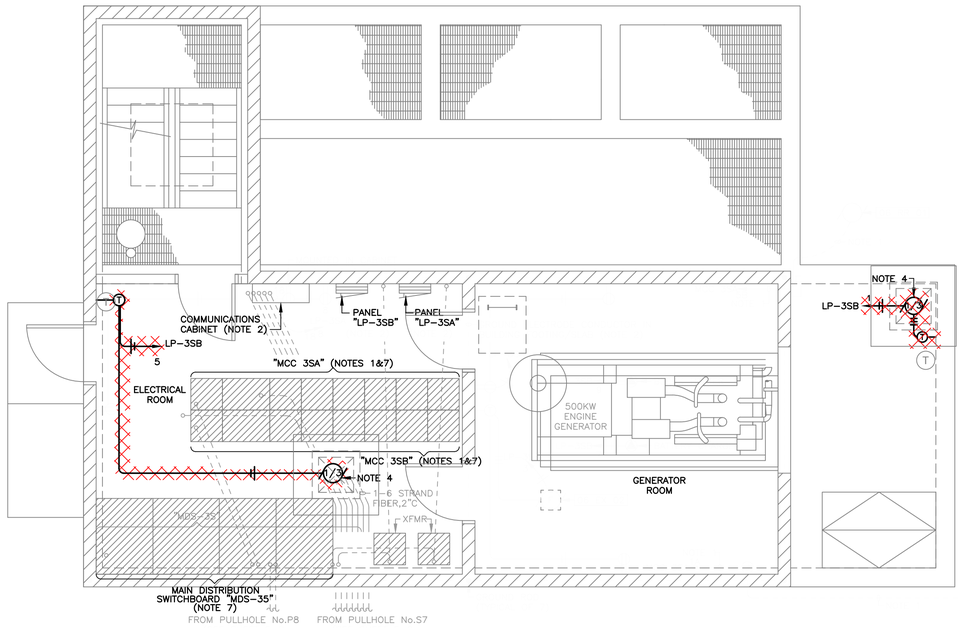
0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

PLC CONTROL SYSTEM MODIFICATIONS

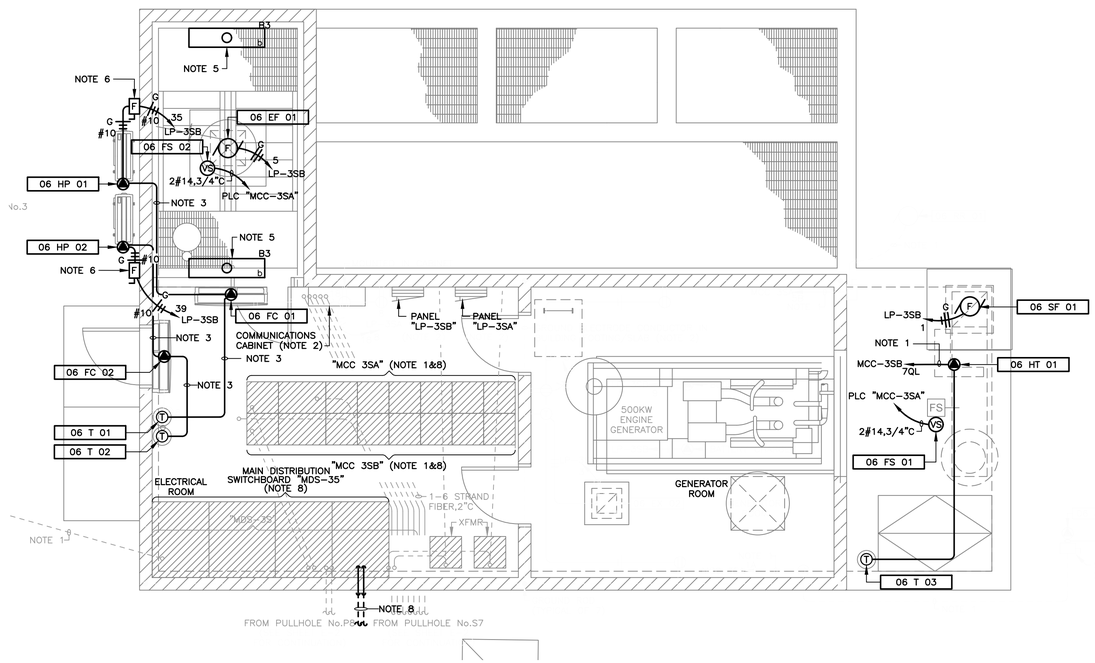
DRAWING: **E-12** OF: **12**

SHEET: **50** OF: **55**



DEMOLITION ELECTRICAL PLAN
RAS/WAS BUILDING - MAIN LEVEL

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



MODIFIED ELECTRICAL PLAN
RAS/WAS BUILDING - MAIN LEVEL

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

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. SEE MCC ELEVATIONS, ONE LINE DIAGRAMS, AND ELEMENTARY WIRING DIAGRAMS DRAWINGS E-2, E-3, AND E-4 FOR ADDITIONAL INFORMATION.
2. SEE DRAWING E-5 FOR ADDITIONAL INFORMATION.
3. PROVIDE MANUFACTURER'S RECOMMENDED CONDUCTORS IN 3/4" MINIMUM CONDUIT.
4. DEMOLISH EXISTING HVAC EQUIPMENT CIRCUIT BACK TO EXISTING PANELBOARD. CONDUIT MAY BE REUSED (IF POSSIBLE) FOR NEW HVAC EQUIPMENT AT CONTRACTOR'S OPTION.
5. PROVIDE LED LIGHTING FIXTURE SURFACE MOUNTED TO WALL IN STAIRWELL AT 8 FEET ABOVE PLATFORM LANDING. LIGHTING FIXTURE SHALL BE 4 FOOT LONG, ENCLOSED AND GASKETED, ONE PIECE MOLDED FIBERGLASS REINFORCED POLYESTER BODY WITH END ENTRY HUBS, IMPACT RESISTANT POLYCARBONATE DIFFUSER WITH STAINLESS STEEL LATCHES, WET LABEL, AND FIVE YEAR WARRANTY. METALUX MODEL 4VT3-LD5-4-W-UNV-L840-SSL OR EQUAL.
6. PROVIDE 2P-30A, NEMA 3R, HEAVY DUTY FUSED DISCONNECT. SIZE FUSES PER HVAC EQUIPMENT MANUFACTURER'S RECOMMENDATIONS FOR ACTUAL HVAC EQUIPMENT PROVIDED ON SITE.
7. SEE EXISTING/DEMOLITION ONE LINE DIAGRAM SHEET E-4 FOR CIRCUIT AND EQUIPMENT INFORMATION.
8. SEE MODIFIED ONE LINE DIAGRAM SHEET E-5 FOR CIRCUIT AND EQUIPMENT INFORMATION.

APPROVED

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CITY OF PUYALLUP
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BRADLEY R. BAILEY — STATE OF WASHINGTON — 45910 — REGISTERED PROFESSIONAL ENGINEER
6/16/2023

CITY OF PUYALLUP
STATE OF WASHINGTON

CITY OF PUYALLUP

WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER CIP NO. 20-018

1602 18TH ST NW,
PUYALLUP, WA 98371

No.	DATE	REVISION

ISSUED FOR:	BUILDING PERMIT
ISSUE DATE:	JUNE 2023
APPROVED BY:	BBB
CHECKED BY:	–
DRAWN BY:	CJD
DESIGNER:	MLO
G & O JOB NO.:	21462
FILE:	C-E06-01.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

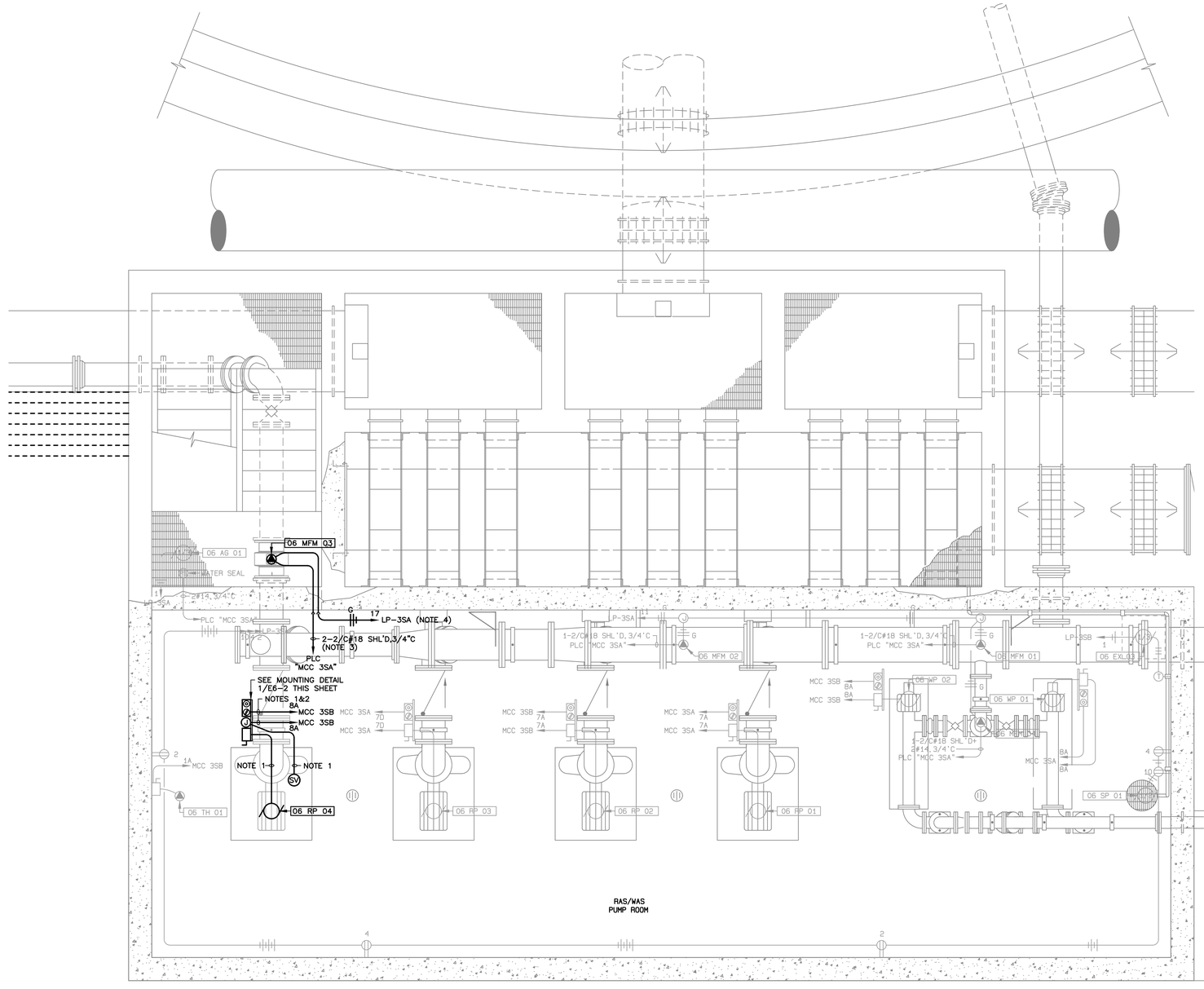
AREA 6

DEMOLITION AND MODIFIED RAS/WAS BUILDING MAIN LEVEL

DRAWING: **E6-1** OF: **2**

SHEET: **51** OF: **55**

\\shastais-data\JOBS\G&OS\21462\Cad\C-E06-01.DWG, 6/16/2023 6:10 PM, MATT L. OBERG

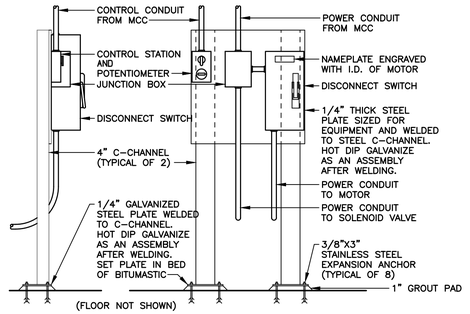


EXISTING/MODIFIED ELECTRICAL PLAN
RAS/WAS BUILDING - LOWER LEVEL
SCALE: 3/8" = 1'-0"

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES AND FOR GENERAL PLAN NOTES.

1. **SEE ONE LINE DIAGRAM DRAWING E-4 AS REFERENCED BY SCHEDULES ON E-2 FOR CIRCUIT AND EQUIPMENT INFORMATION.**
2. **ROUTE CONDUITS ON EXISTING RACKS UNDER CEILING TO BELOW MCC-3SB, AD CONNECT TO EXISTING LABELED STUBOUTS UNDER THE MCC.**
3. **ROUTE CONDUITS ON EXISTING RACKS UNDER CEILING TO BELOW THE PLC SECTION OF MCC-3SA. CORE DRILL THROUGH CEILING TO ROUTE CONDUITS INTO THE MCC SECTION.**
4. **ROUTE CONDUITS ON EXISTING RACKS UNDER CEILING TO BELOW THE PANELBOARD. CORE DRILL THROUGH CEILING TO ROUTE CONDUITS UP INTO THE PANELBOARD. CONNECT FLOWMETER TO EXISTING CIRCUIT BREAKER AT POLE SPACE 17.**



LEFT SIDE VIEW FRONT VIEW

MOUNTING DETAIL 1/E6-2
CONTROL STATION/DISCONNECT
SCALE: 3/4"=1'-0"

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
EXPIRATION
DATE: _____

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06/16/2023

CITY OF PUYALLUP — STATE OF WASHINGTON

CITY OF PUYALLUP
WATER POLLUTION CONTROL PLANT THIRD SECONDARY CLARIFIER
CIP NO. 20-018
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CHECKED BY:	–
DRAWN BY:	CJD
DESIGNER:	MLO
G & O JOB NO.:	21462
FILE:	C-E06-02.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

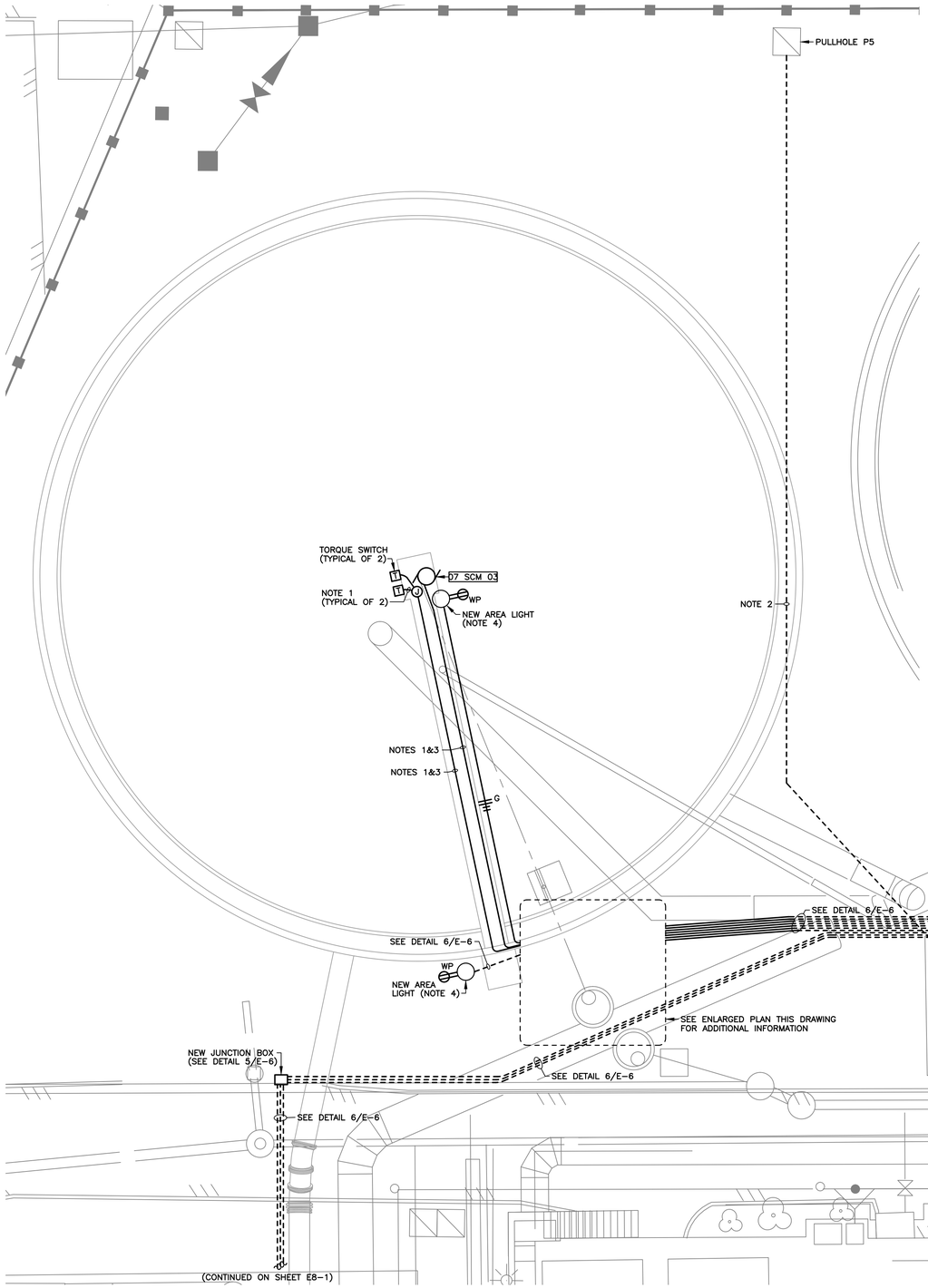
ELECTRICAL

AREA 6

EXISTING/MODIFIED RAS/WAS BUILDING LOWER LEVEL

DRAWING: **E6-2** OF: **2**

SHEET: **52** OF: **55**



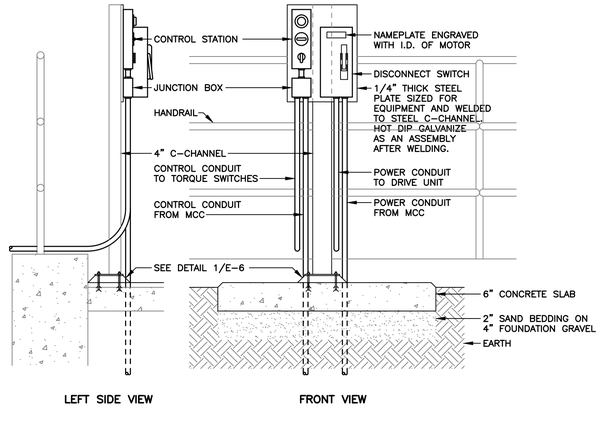
ELECTRICAL PLAN CLARIFIER NO.3

SCALE: 1" = 10'

NOTES:

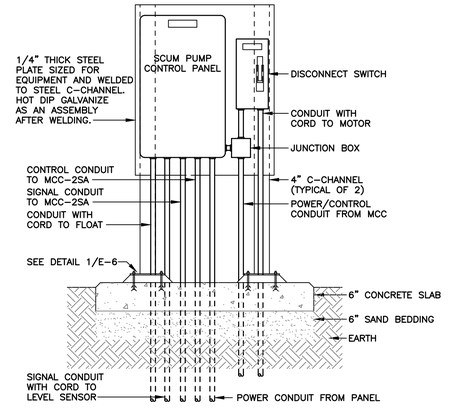
SEE DRAWING E-1 FOR GENERAL NOTES AND FOR GENERAL PLAN NOTES.

1. SEE ONE LINE DIAGRAM DRAWING E-4 AS REFERENCED BY SCHEDULES ON E-2 FOR CIRCUIT AND EQUIPMENT INFORMATION.
2. EXISTING 13.5 kV PRIMARY FEEDER CIRCUIT AND SPARE 4"C (OWNED BY CITY OF PUYALLUP) TO SUBSTATION NO.3. THIS CIRCUIT WILL NEED TO BE RELOCATED OUT OF THE FOUNDATION AREA FOR THE NEW CLARIFIER. EXACT ROUTING IS NOT KNOWN. CONTRACTOR IS RESPONSIBLE TO LOCATE AND REROUTE THIS CIRCUIT AS NECESSARY TO CONSTRUCT THE NEW CLARIFIER.
3. ROUTE CIRCUIT MOUNTED TO UNDERSIDE OF CLARIFIER BRIDGE STRUCTURE.
4. SEE AREA LIGHT POLE DETAIL 1/E7-2 FOR FURTHER INFORMATION.



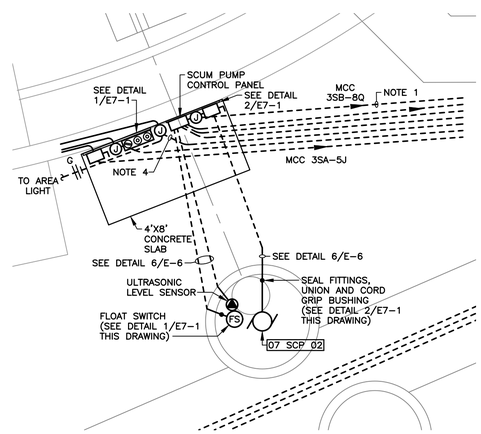
MOUNTING DETAIL 1/E7-1 DISCONNECT/CONTROL STATION

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



MOUNTING DETAIL 2/E7-1 SCUM CONTROL PANEL

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



ENLARGED ELECTRICAL PLAN SCUM PUMP STATION

SCALE: 1/4" = 1'

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP

APPROVED DATE: _____

EXPIRATION DATE: _____

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6/16/2023

CITY OF PUYALLUP
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DRAWN BY:	CJD
DESIGNER:	MLO
G & O JOB NO.:	21462
FILE:	C-E07-01.DWG

0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL

AREA 7

ELECTRICAL PLAN CLARIFIER NO.3

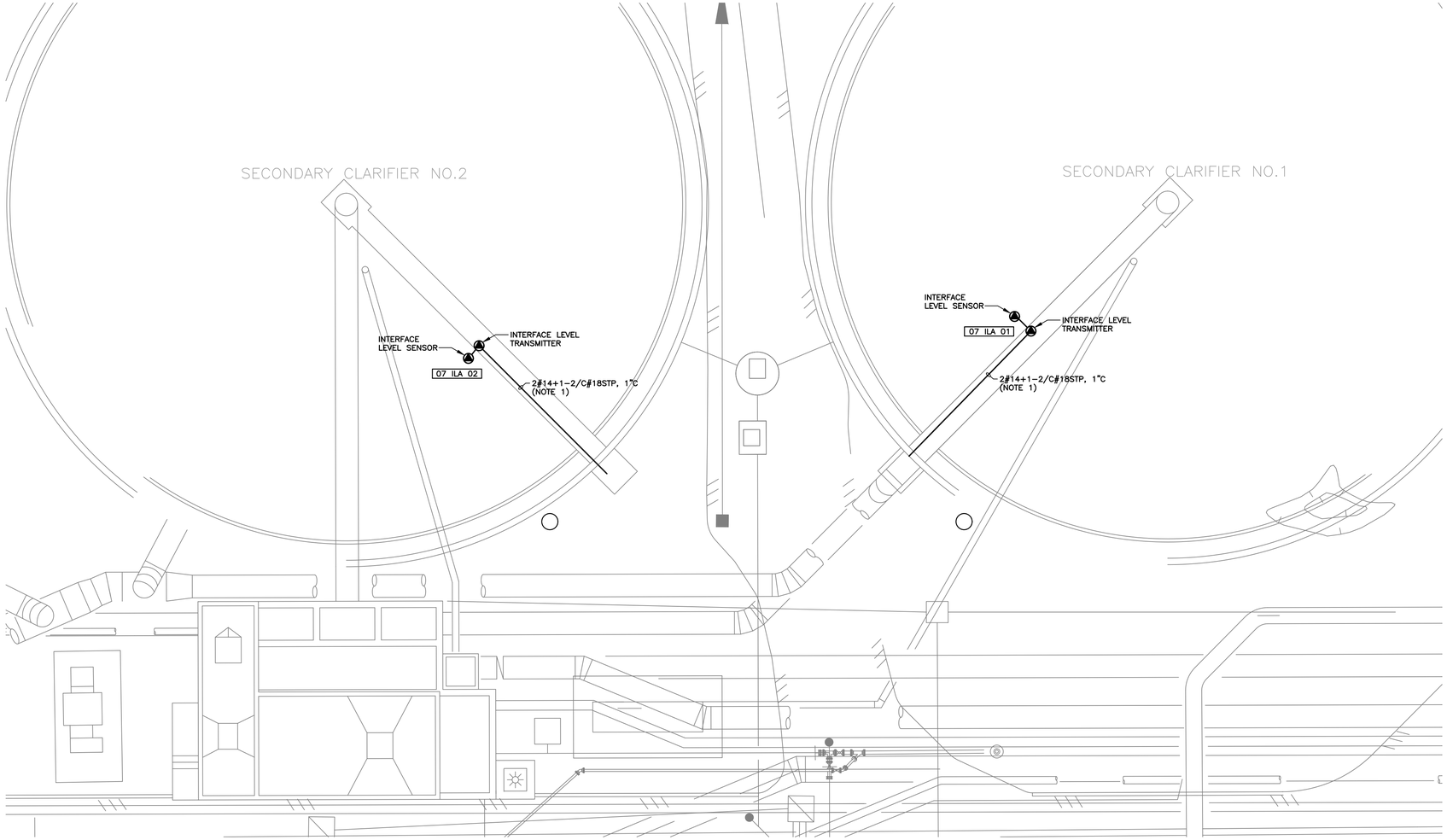
DRAWING: E7-1 OF: 2

SHEET: 53 OF: 55

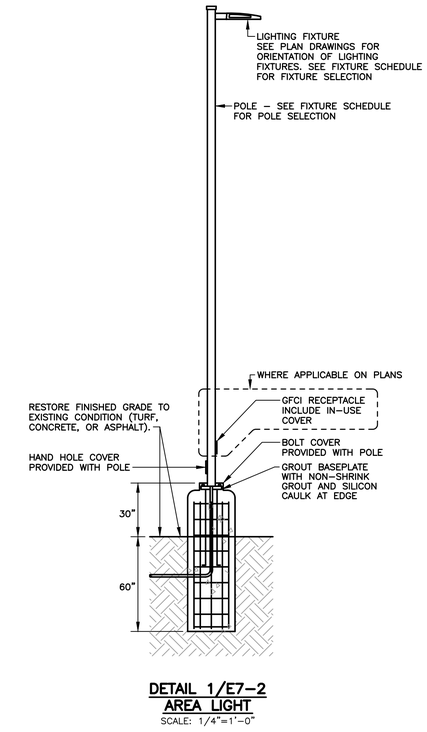
NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES AND FOR GENERAL PLAN NOTES.

1. ROUTE CIRCUIT MOUNTED TO UNDERSIDE OF CLARIFIER BRIDGE STRUCTURE.



ELECTRICAL PLAN
EXISTING CLARIFIERS
SCALE: 1" = 10'



DETAIL 1/E7-2
AREA LIGHT
SCALE: 1/4"=1'-0"

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
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45910
REGISTERED PROFESSIONAL ENGINEER
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CITY OF PUYALLUP
STATE OF WASHINGTON

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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL
AREA 7

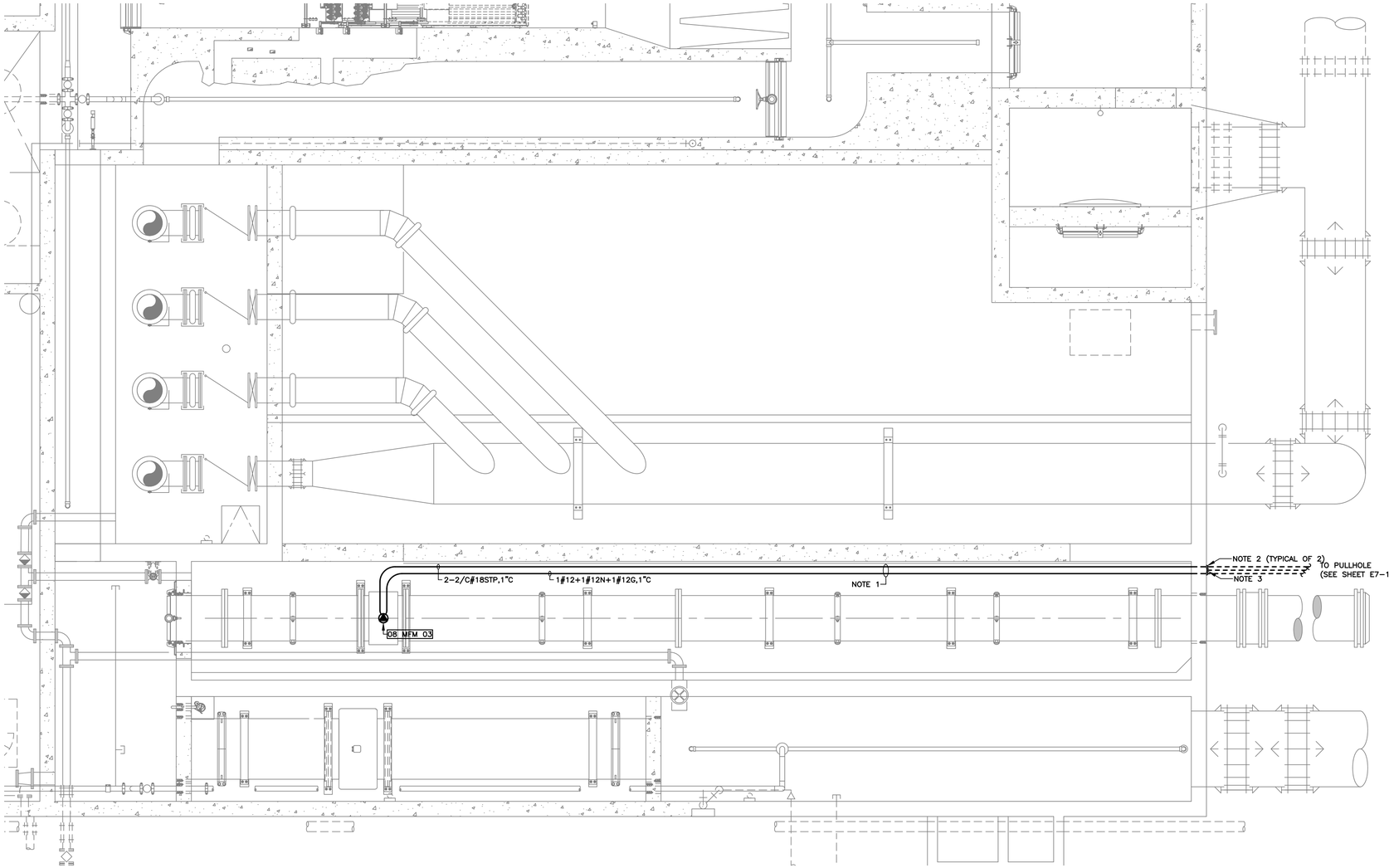
ELECTRICAL PLAN
EXISTING CLARIFIERS

DRAWING: **E7-2** OF: **2**
SHEET: **54** OF: **55**

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES AND FOR GENERAL PLAN NOTES.

1. ROUTE CONDUIT ON WALL OF EFFLUENT PIPE GALLERY.
2. CORE DRILL WALL FOR CONDUIT PENETRATION AND SEAL WITH NON-SHRINK GROUT.
3. CAP SPARE 1" CONDUIT ABOVE GRADE.



ELECTRICAL PLAN
EFFLUENT FLOWMETER
SCALE: 31/128" = 1'-0"

APPROVED

BY: _____
CITY ENGINEER
CITY OF PUYALLUP
APPROVED
DATE: _____
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0 1" 2"
TWO INCHES AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

ELECTRICAL
AREA 8

ELECTRICAL PLAN
EFFLUENT
FLOWMETER

DRAWING: **E8-1** OF: **2**
SHEET: **55** OF: **55**