KWD
Kennebec Water District

KWD Project #28210
DWSRF Project #2026-21

Project Drawings

for the

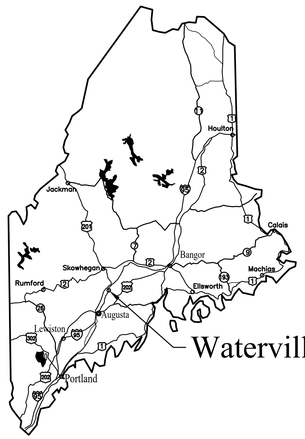
Chase Avenue Pump Station Upgrades Project

for the

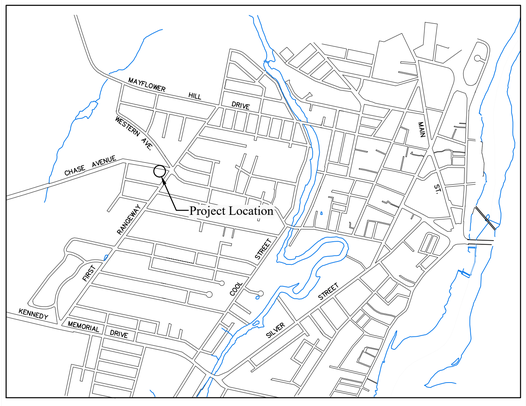
Kennebec Water District

Waterville, Maine

Project Location



Site Location



Drawing Index

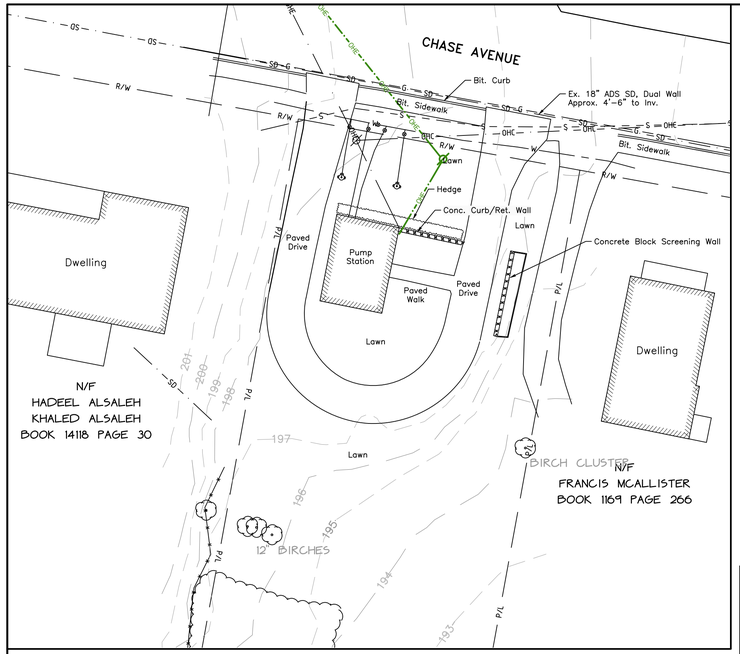
DIRIGO ENGINEERING

2 Dirigo Drive Fairfield, Maine 04937

STATE OF MAINE
TIMOTHY D. SAWTELLE
5533
LICENSED PROFESSIONAL ENGINEER

DIRIGO ENGINEERING
Project Engineer — Date 1/26/26

#29707



EXISTING SITE PLAN

0' 20' 40' 60'

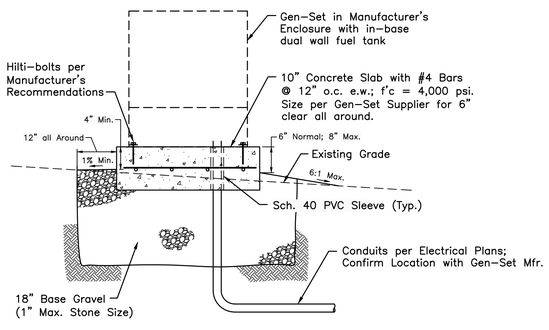
Scale

LEGEND

- MANHOLE
- CATCH BASIN
- GATE VALVE
- HYDRANT
- MONUMENT
- UTILITY POLE
- OHC — OVERHEAD COMMUNICATIONS
- OHE — OVERHEAD ELECTRIC
- P/L — PROPERTY LINE
- E/L — EASEMENT LINE
- W — WATER MAIN
- S — SEWER MAIN
- SD — STORM DRAIN
- CURB
- 96 — EXISTING CONTOURS
- 96.0x EXISTING SPOT ELEVATIONS
- 92 — PROPOSED CONTOURS
- 92.5 PROPOSED SPOT ELEVATIONS
- PROPOSED EROSION CONTROL FENCE

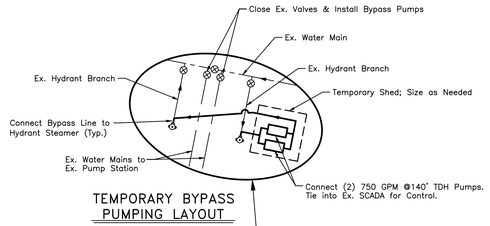
NOTES:

1. Site plan based on boundary & topographic survey by Broken Stone Land Surveyors, 4/2/2024, File#2024-8.
2. Vertical datum of Site Plan is NAVD88. Finish floor = 197.7. Vertical datum of Building Plans is assumed NGVD-29. Original (1974) design elevation of finish floor = 198.5.
2. The location of the existing utilities shown on the plans were compiled from field survey and various other sources. Locations are approximate and not guaranteed to be accurate nor is it guaranteed that all utilities are shown. Contractor shall field verify underground utility locations, including depths, prior to starting work. Excavation of test pits as necessary to verify/locate utilities and depths shall be incidental.
3. Contractor shall design, install, and maintain Erosion Control Measures in conformance with *Maine Erosion and Sediment Control Practices Field Guide for Contractors* (latest edition). Measures shall be installed prior to any construction work.
4. Permit from Waterville Sewerage District to connect to stormdrain to be acquired by Owner. Physical connection to stormdrain to be coordinated by Contractor and performed by Waterville Sewerage District.
5. Repair trench surfaces as follows:
   - In paved areas, match existing gravel depth and replace pavement in layers: MDOT 12.5 mm binder pavement in 2" lifts and 1¾" of MDOT 12.5 mm surface pavement. Total pavement thickness in Chase Ave. to match existing.
   - In lawn areas, restore surface with 4" of loam, seed & mulch.
6. Contractor shall not operate existing KWD water system valves. Coordinate all operation needs with Owner.

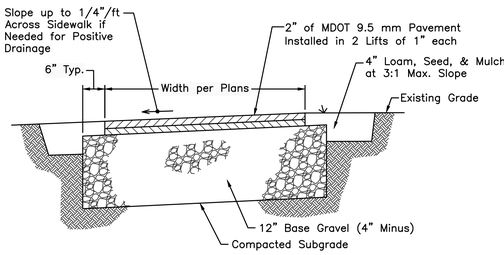


GEN-SET PAD DETAIL

NOT TO SCALE

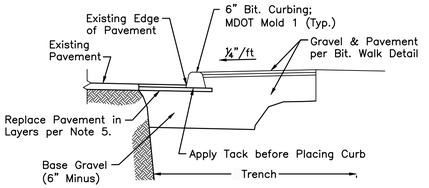


TEMPORARY BYPASS PUMPING LAYOUT



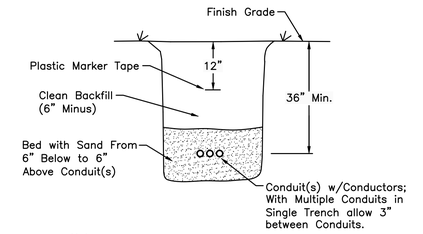
BITUMINOUS WALK DETAIL

NOT TO SCALE



SIDEWALK & CURB REPAIR DETAIL

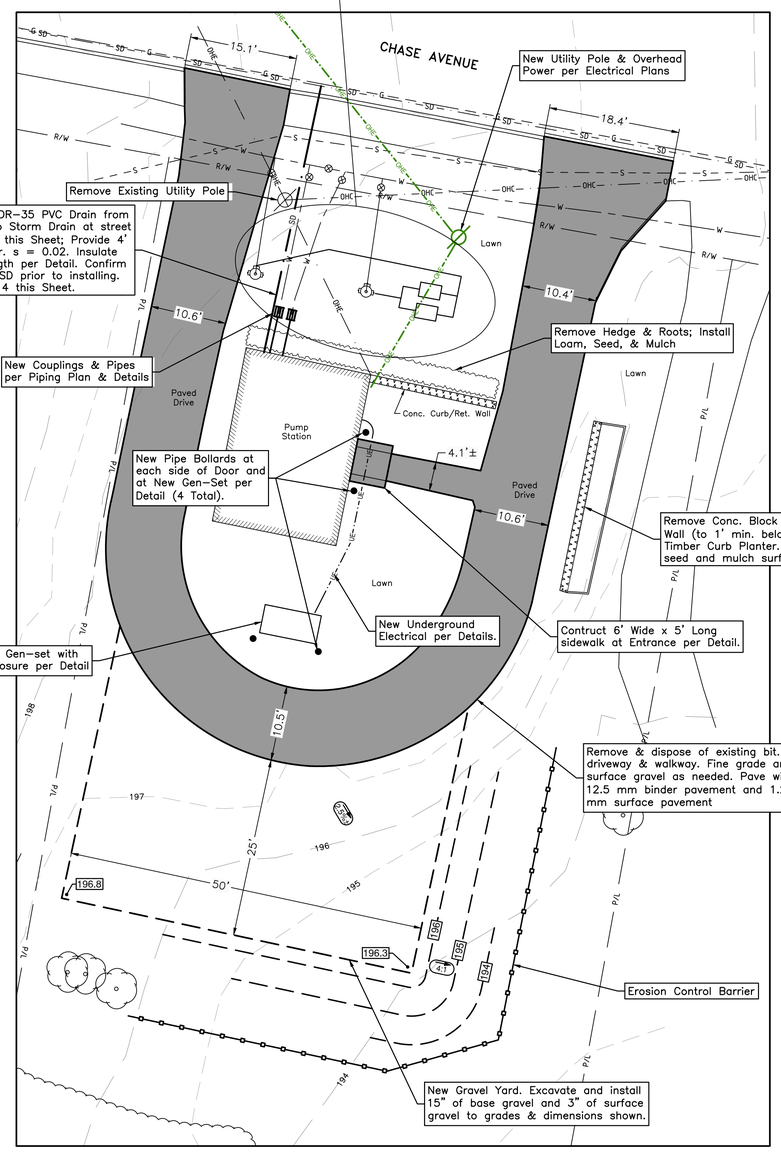
NOT TO SCALE



Notes:
1. In gravel & paved areas, provide concrete encasement around conduits: 3" below, 3" sides, 6" above; f'c = 3000 psi
2. Install trench insulation over conduits within 8' generator and building walls.

ELECTRICAL CONDUIT TRENCH DETAIL

NOT TO SCALE

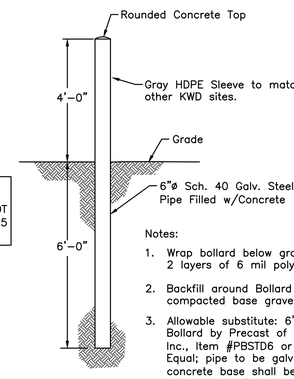


NEW SITE PLAN

0' 10' 20' 30'

Scale

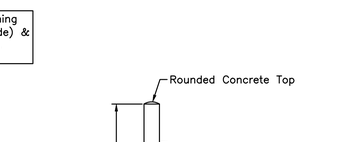
Note: On the original full size drawing, this dimension is 6"



Notes:
1. Wrap bollard below grade with 2 layers of 6 mil polyethylene.
2. Backfill around Bollard shall be compacted base gravel.
3. Allowable substitute: 6" Pipe Bollard by Precast of Maine, Inc., Item #PBSTD6 or Approved Equal; pipe to be galv.; top of concrete base shall be min. 3" below grade. Provide HDPE sleeve as shown.

PIPE BOLLARD DETAIL

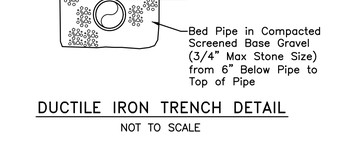
NOT TO SCALE



Note: Install Trench Insulation as Follows:
1. Where Cover over Main or Service is Less Than 5'.
2. At Storm Drain Crossings.
3. Over conduits within 8' of Well Casing and Building Walls.

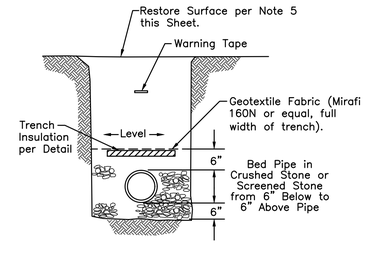
TRENCH INSULATION DETAIL

NOT TO SCALE



DUCTILE IRON TRENCH DETAIL

NOT TO SCALE



Note: Top of stone bedding shall be level and compacted before installing backfill.

SUMP DRAIN TRENCH DETAIL

NOT TO SCALE

NO.	REVISIONS	DATE

BID SET

VERT. DATUM	See Notes
DATE:	1/26/26
DRAWN BY:	RJB
CHECKED:	
APPROVED:	
FIELD BK:	#
FILE:	A Chase Ave Booster Site
PROJECT:	#29706

KENNEBEC WATER DISTRICT
WATERVILLE, MAINE

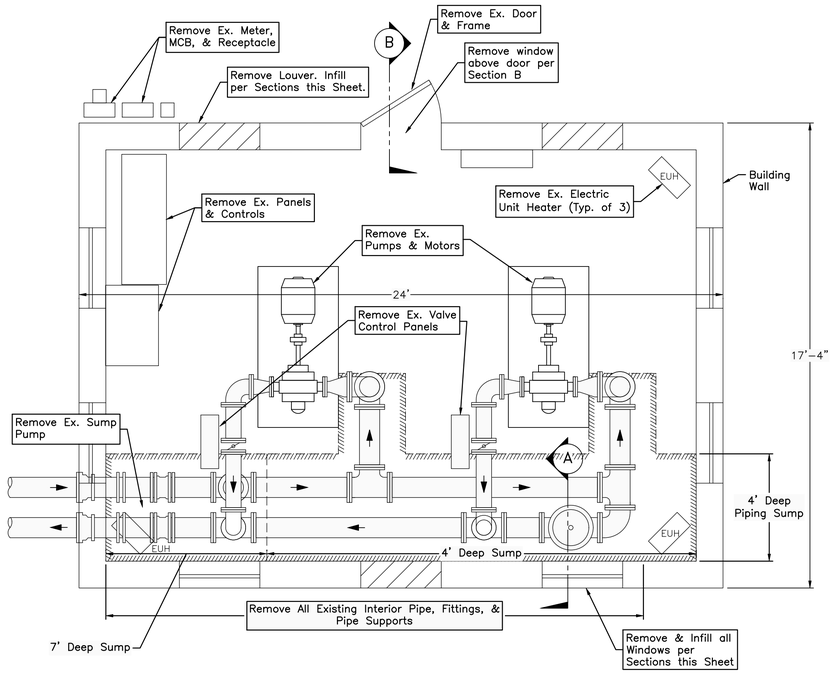
CHASE AVE. PUMP STATION UPGRADES PROJECT

SITE PLANS & DETAILS

DIRIGO ENGINEERING
2 DIRIGO DRIVE, FAIRFIELD, MAINE 04937 (207) 453-2401

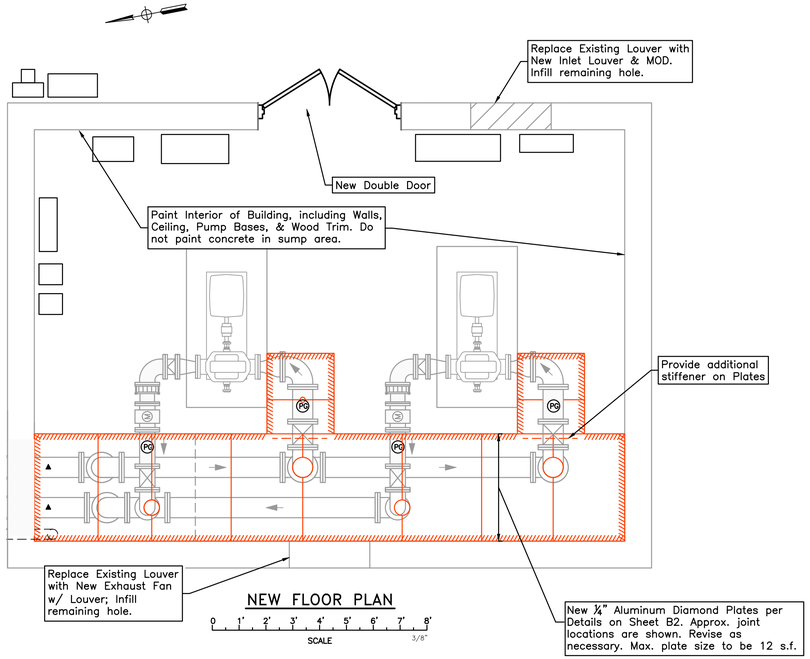
SHEET 1 OF 6

C1



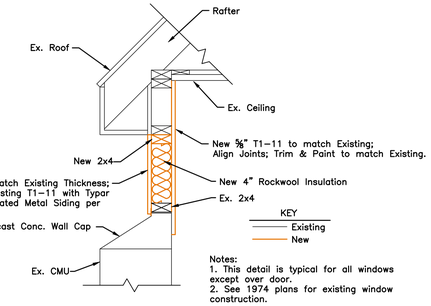
INTERIOR DEMO PLAN

SCALE 0 1' 2' 3' 4' 5' 6' 7' 8' 3/8"



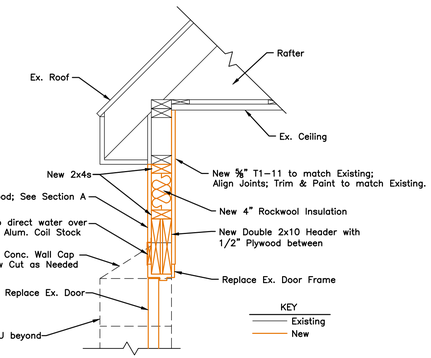
NEW FLOOR PLAN

SCALE 0 1' 2' 3' 4' 5' 6' 7' 8' 3/8"



SECTION A

SCALE 0 1' 2' 3' 1"



SECTION B

SCALE 0 1' 2' 3' 1"

DOOR SCHEDULE

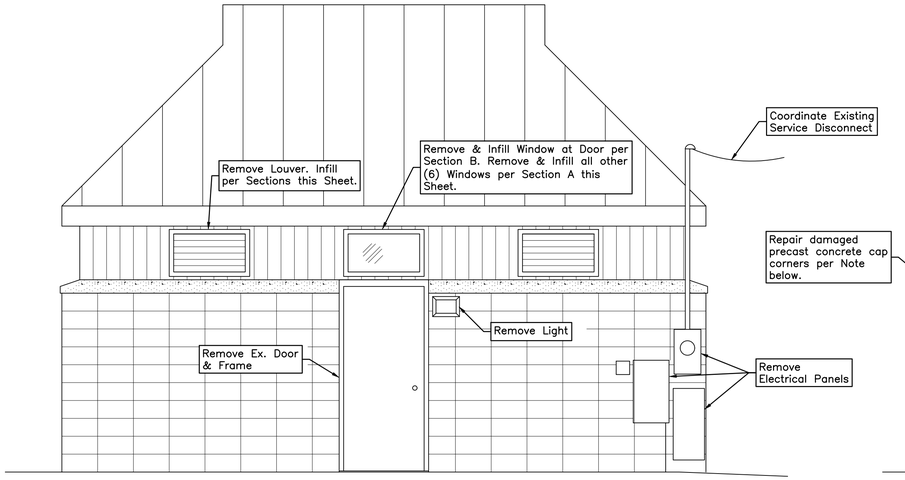
ITEM	NO.	SIZE	CONSTRUCTION	NOTES	WEATHER-STRIPPING	THRESHOLD	LOCKSET
D1	1	5'-0" x 6'-8" Double Door	1 3/4" Thick Steel Flush Insulated	KP, CSO	YES	YES-ADA	Mortised Lockset with Lever Handles; Deadbolt Lock (Key Outside, Thumb Latch Inside, Match Owner's Key Standard) 2nd Door shall have Sliding Lock Rods at Jamb & Sill

DOOR NOTES:

1. Door shall have wrap-around steel frame appropriate for wall thickness.
2. Provide heavy duty latch guard.
3. Provide door contacts for intrusion alarm.

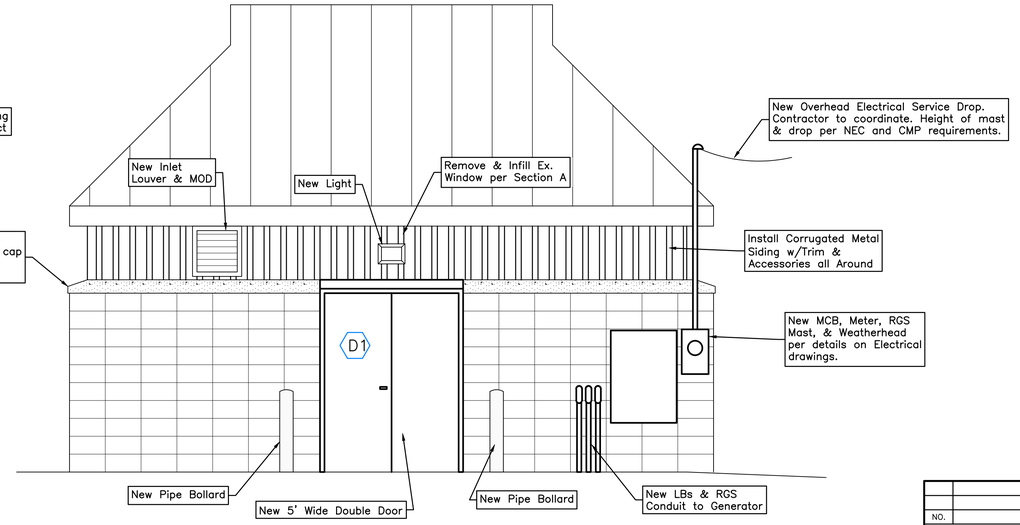
DOOR NOTES KEY:

CSO Closer w/Stay-Open Feature
KP Kickplate (Satin Chrome)



EXISTING EAST ELEVATION

SCALE 0 1' 2' 3' 4' 5' 6' 7' 8' 3/8"



EAST ELEVATION UPGRADE

SCALE 0 1' 2' 3' 4' 5' 6' 7' 8' 3/8"

NOTES:

1. Repair damaged precast concrete caps at SE & NE corners. Remove incompetent concrete and repair per Concrete Rehabilitation specification. Following repair, cover cap with aluminum coil stock all around perimeter. Color per Owner.
2. Where equipment is removed or relocated, patch old holes in blocks.

Note: On the original full size drawing, this dimension is 6"

NO.	REVISIONS	DATE

BID SET

VERT. DATUM	See Note on Sheet 1
DATE:	1/26/26
DRAWN BY:	RJB
CHECKED:	
APPROVED:	
FIELD BK:	#
FILE:	B Chase Ave Booster Bldg
PROJECT:	#29706

KENNEBEC WATER DISTRICT
WATERVILLE, MAINE

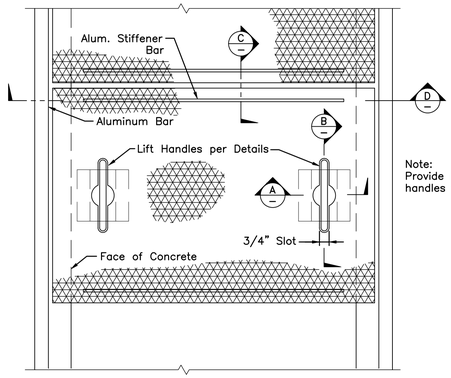
CHASE AVE. PUMP STATION UPGRADES PROJECT

INTERIOR DEMO PLAN, FLOOR PLAN, & DETAILS

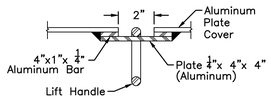
DIRIGO ENGINEERING
2 DIRIGO DRIVE, FAIRFIELD, MAINE 04937 (207) 453-2401

SHEET 2 OF 6

B1

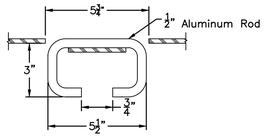


TYPICAL ALUMINUM PLATE – PLAN VIEW
NOT TO SCALE



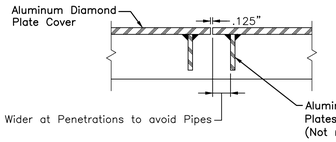
SECTION A
NOT TO SCALE

Note:
Provide minimum of 2 lift handles for each plate section.



SECTION B
NOT TO SCALE

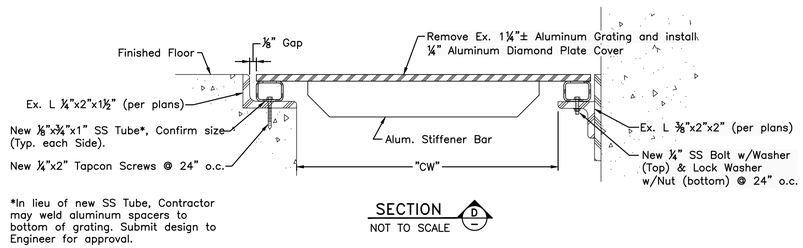
LIFT HANDLE DETAILS
NOT TO SCALE



Aluminum Stiffener Bar at Unsupported Edges of Plates and at 2'–4" o.c. (Welded) see table below. (Not required on end of runs)

Channel Width "CW"	Stiffener Bar Size (UNO)
Less Than 2'–0"	¼" x 1"
2'–0" To 4'–0"	¼" x 2½"

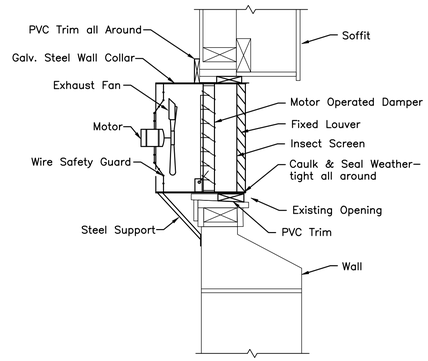
DETAIL AT JOINT C
NOT TO SCALE

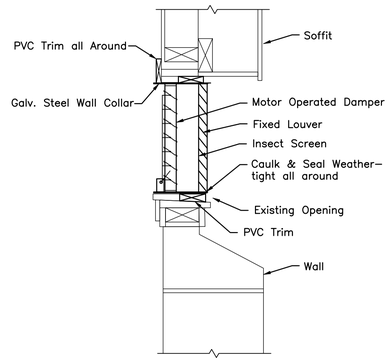


*In lieu of new SS Tube, Contractor may weld aluminum spacers to bottom of grating. Submit design to Engineer for approval.

SECTION D
NOT TO SCALE

ALUMINUM PLATE DETAILS
NOT TO SCALE





Note:
Remove existing Fan/Louver assembly and install New Exhaust Fan/Louver assembly. Confirm opening sizes prior to ordering. Provide trim and caulk as needed for weathertight seal.

EXHAUST FAN DETAIL
NOT TO SCALE

INLET LOUVER DETAIL
NOT TO SCALE

Note: On the original full size drawing, this dimension is 6"

NO.	REVISIONS	DATE

BID SET

VERT. DATUM	See Note on Sheet 1
DATE:	1/26/26
DRAWN BY:	RJB
CHECKED:	
APPROVED:	
FIELD BK:	#
FILE:	8 Chase Ave Booster Bldg
PROJECT:	#29706

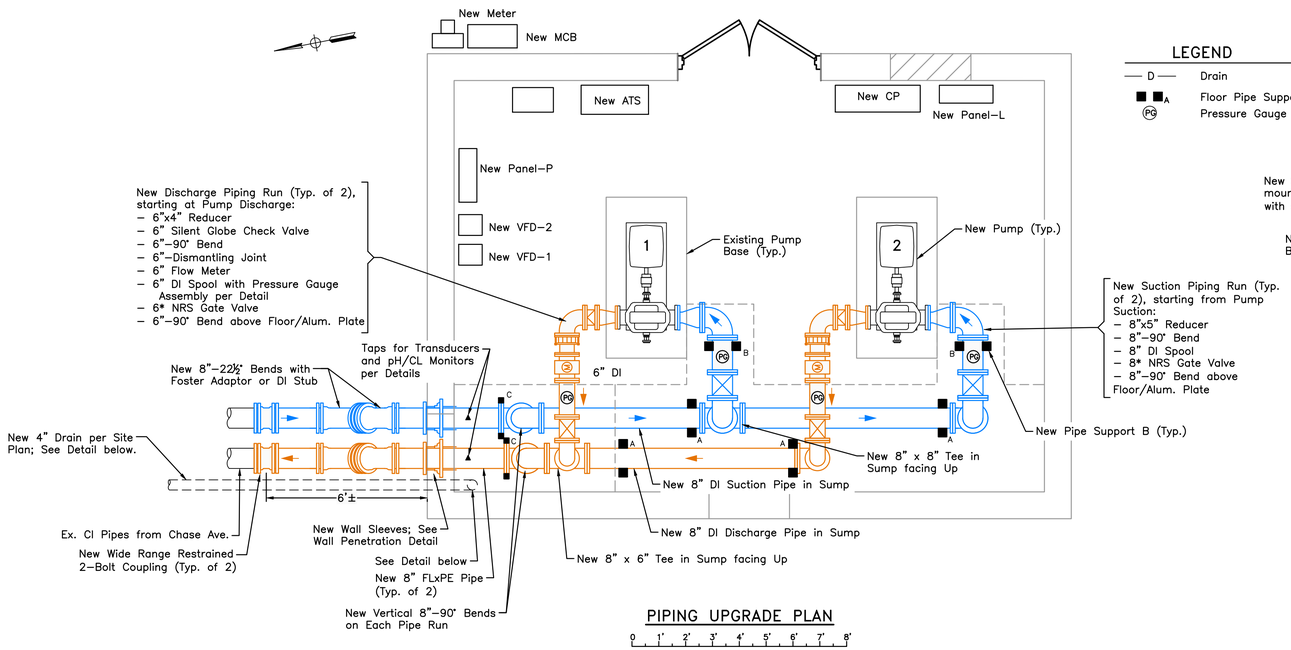
KENNEBEC WATER DISTRICT
WATERVILLE, MAINE

CHASE AVE. PUMP STATION UPGRADES PROJECT

ALUMINUM PLATE & EXHAUST FAN DETAILS

DIRIGO ENGINEERING
2 DIRIGO DRIVE, FAIRFIELD, MAINE 04937 (207) 453-2401

SHEET 3 OF 6
B2

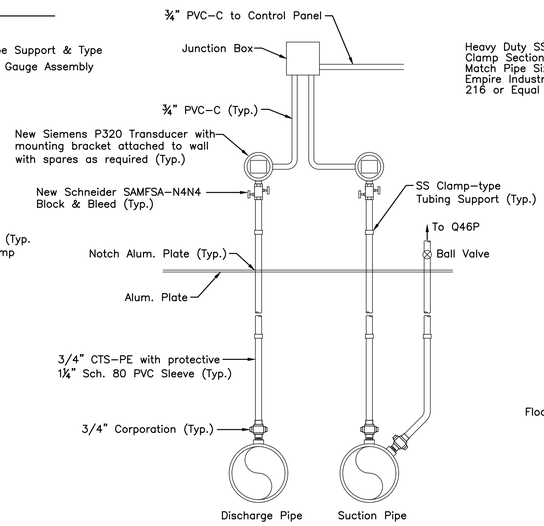


PIPING UPGRADE PLAN

SCALE 0 1' 2' 3' 4' 5' 6' 7' 8' — 3/8"

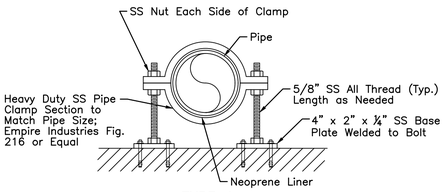
LEGEND

- D — Drain
- ■ ■A Floor Pipe Support & Type
- PG Pressure Gauge Assembly

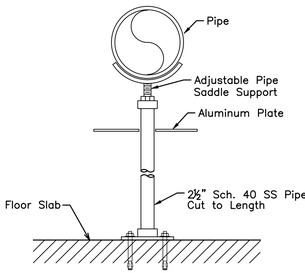


PRESSURE TRANSDUCER DETAIL

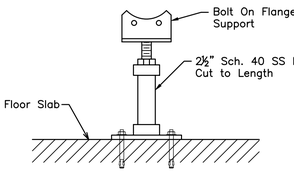
NOT TO SCALE



TYPE A



TYPE B

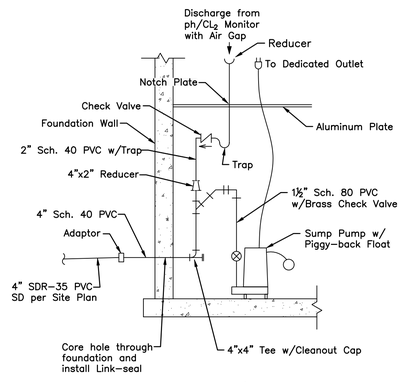


TYPE C

Notes:
1. Install Pipe Supports as Shown on Plans.
2. All support components shall be SS.
3. Secure Base Plates to Floor/Wall with (2) 1/2"ø x 4"L SS Wedge–Lock Anchors each.

PIPE SUPPORT DETAILS

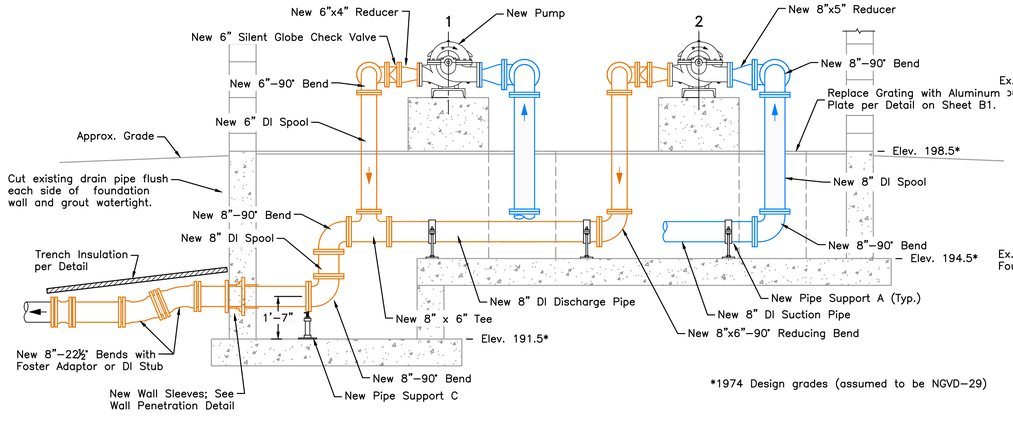
NOT TO SCALE



Note: Secure all piping w/SS clamp supports at 30" max. o.c.

SUMP PUMP & DRAIN DISCHARGE SCHEMATIC

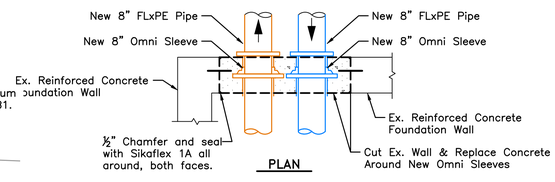
SCALE 0 1' 2' 3' 4' 5' 6' 7' 8' — 3/8"



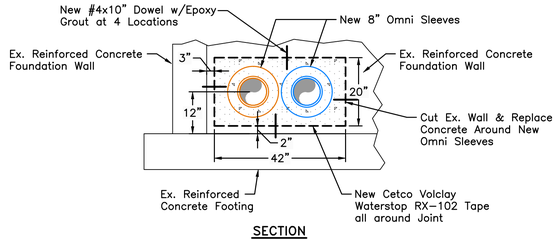
*1974 Design grades (assumed to be NGVD–29)

PIPING UPGRADE SECTION

SCALE 0 1' 2' 3' 4' 5' 6' 7' 8' — 3/8"



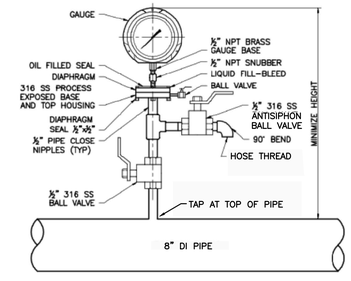
PLAN



SECTION

WALL PENETRATION DETAILS

NOT TO SCALE



PRESSURE GAUGE ASSEMBLY DETAIL

NOT TO SCALE

GENERAL NOTES:

1. Confirm dimensions and space requirements of all fittings and equipment prior to installation of pipes, conduits, etc. through foundations & walls.
2. Locations shown are conceptual; coordinate locations of all electrical, mechanical, plumbing, structural, etc. and verify with owner/engineer.
3. Coordinate power supply for all equipment.

PIPING NOTES:

1. All Flange Piping shall use foundry–installed flanges. All Flange Bolts shall be 316 Stainless Steel. All Flange Nuts shall be 304 Stainless Steel. Lubricate Threads with "Never–Sieze" or Equal.
2. Flanged Pipe shall be Shop–Primed, not tar–coated.
3. Run Chlorine monitor drain to sump pump with 2" CTS–PE.
4. Plans are based on using DI Pipe. Add Alternate is to change DI Pipe to welded Sch. 40 SS.

Note: On the original full size drawing, this dimension is 6"

NO.	REVISIONS	DATE

BID SET

VERT. DATUM	See Note on Sheet 1
DATE:	1/26/26
DRAWN BY:	RJB
CHECKED:	
APPROVED:	
FIELD BK:	#
FILE:	B Chase Ave Booster Bldg
PROJECT:	#29706

KENNEBEC WATER DISTRICT
WATERVILLE, MAINE

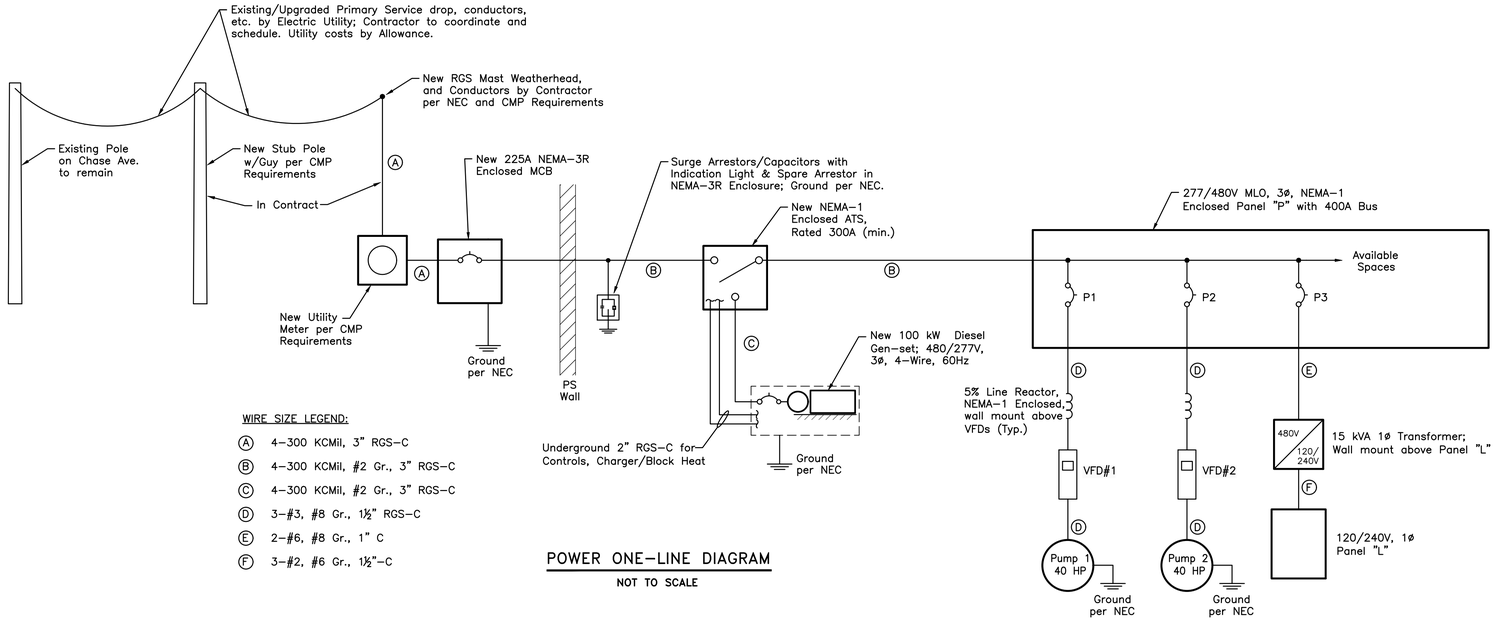
CHASE AVE. PUMP STATION UPGRADES PROJECT

PIPING PLANS & DETAILS

DIRIGO ENGINEERING
2 DIRIGO DRIVE, FAIRFIELD, MAINE 04937 (207) 453–2401

SHEET 4 OF 6

P1



WIRE SIZE LEGEND:

- (A) 4–300 KCMil, 3" RGS–C
- (B) 4–300 KCMil, #2 Gr., 3" RGS–C
- (C) 4–300 KCMil, #2 Gr., 3" RGS–C
- (D) 3–#3, #8 Gr., 1½" RGS–C
- (E) 2–#6, #8 Gr., 1" C
- (F) 3–#2, #6 Gr., 1½"–C

POWER ONE–LINE DIAGRAM

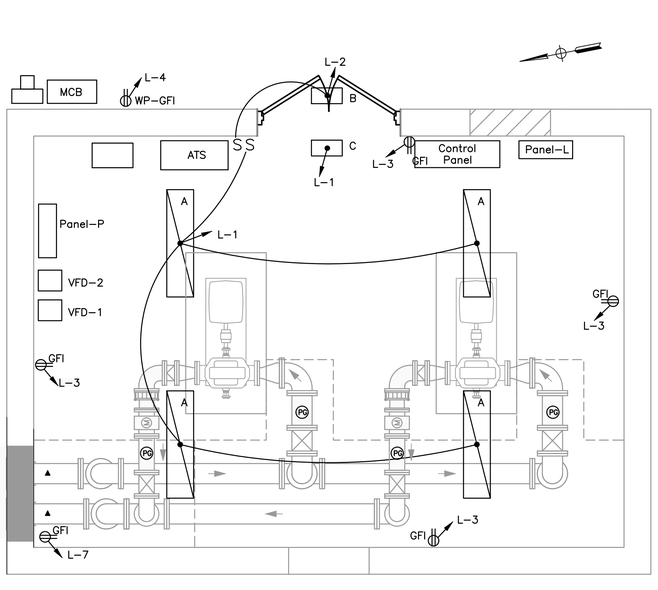
NOT TO SCALE

ELECTRICAL LEGEND

AFF	ABOVE FINISHED FLOOR	FLUORESCENT LIGHT FIXTURE	NEUTRAL
AHJ	AUTHORITY HAVING JURISDICTION	INCANDESCANT, COMPACT FLUORESCENT, HID LIGHT FIXTURE	WIRING EXTERNAL TO PANEL
CP	CONTROL PANEL	PANELBOARD/INSTRUMENTS, ETC.	PANEL LIGHT–AMBER
EWH	ELECTRIC WATER HEATER	CONNECTION TO FIXED EQUIPMENT	PANEL LIGHT–GREEN (RUN)
EF	EXHAUST FAN	DUPLEX RECEPTACLE; 18" AFF OR AS NOTED	PANEL LIGHT–RED (ALARM)
GFI	GROUND FAULT INTERRUPTER	DEDICATED DUPLEX RECEPTACLE; SEE NOTES	CIRCUIT BREAKER
MOD	MOTOR OPERATED DAMPER	SINGLE POLE SWITCH; 48" AFF	NORMALLY OPEN CONTACT
O/L	OVERLOAD	3–WAY SWITCH; 48" AFF	NORMALLY CLOSED CONTACT
OTD	ON TIME DELAY	4–WAY SWITCH; 48" AFF	DISCONNECT SWITCH OR CIRCUIT BREAKER
RGS	RIGID GALVANIZED STEEL	EMERGENCY LIGHT FIXTURE	OVERLOAD
RTM	RUNNING TIME METER	EXIT SIGN	THERMOSTAT
UE	UNDERGROUND ELECTRICAL	JUNCTION BOX	PRESSURE/LEVEL SWITCH
VFD	VARIABLE FREQUENCY DRIVE	THERMOSTAT	
WP	WATERPROOF	LOW TEMPERATURE ALARM THERMOSTAT	
M5	RELAY/COIL	TELEPHONE JACK	
	TERMINAL SCREW		

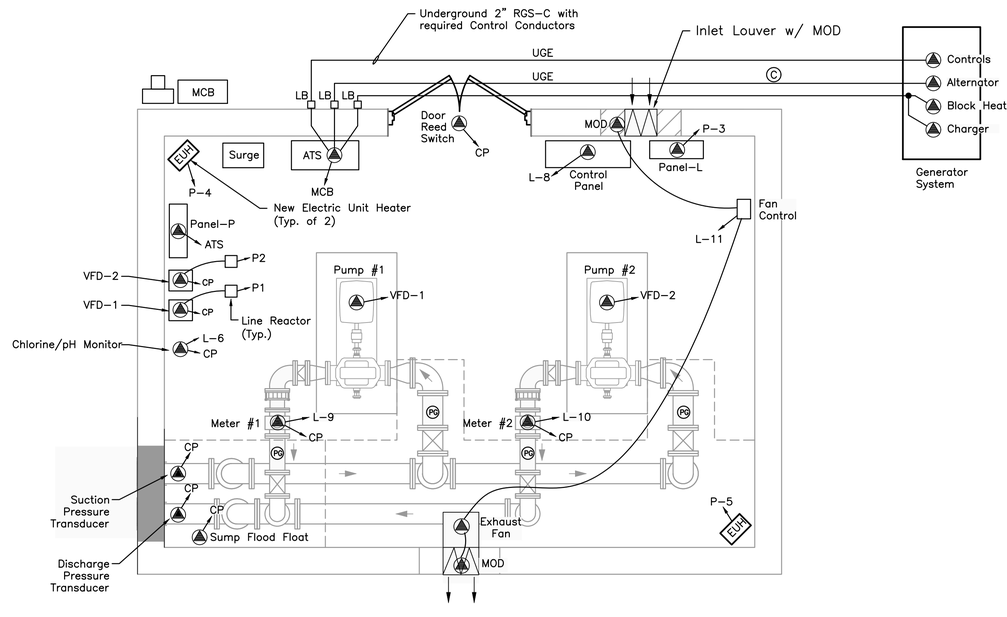
Notes:

1. All electrical work shall comply with all electric utility & NEC requirements. Ground all equipment per NEC. Size all conductors, circuit protection, overloads and conduit per NEC. Sizes shown are minimum acceptable, furnish larger if required by Code.
2. All electrical equipment, fixtures, panels, conductors, and work shall be furnished and installed by Contractor unless specifically noted otherwise. Contractor shall furnish all conduits, conductors, and electrical work necessary to provide power to all equipment.
3. Wiring for all equipment, motors, etc. shall be in conduits (either surface mounted or within the slab, walls, or above ceiling).
4. Provide non–fused disconnects for all equipment when required by Code (whether drawings show disconnect or not).
5. Circuit breaker operating mechanisms shall conform to Codes and Ordinances for safety/lockout/tagout procedures.
6. Refer to Division 16 for specific electrical work requiring electrical interconnection.
7. All exposed exterior conduits shall be rigid galvanized steel (RGS).
8. Power, signal, and monitoring (status) conductors shall not utilize the same conduit, raceway, or junction box.
9. All Outlets shall be GFI (unless they are intended for equipment operation). Provide Waterproof Covers for all Switches and Outlets.



LIGHTING & RECEPTACLES PLAN

SCALE 0 1' 2' 3' 4' 5' 6' 7' 8' 3/8"



MOTOR & EQUIPMENT PLAN

SCALE 0 1' 2' 3' 4' 5' 6' 7' 8' 3/8"

PANEL–P SCHEDULE

480/277V, 3 Phase, 5 Wire, MLO, 60 Hz
Panel bus to be 400A rated
Panel to be NEMA–1 Enclosed
Ground Panel per NEC
All Breakers Shall be Bolt to Bus Type

Confirm individual Circuit Breaker sizes per Mfr. & NEC.

CKT	Poles	Rating	Description
1	3	100A	Pump 1 / VFD 1
2	3	100A	Pump 2 / VFD 2
3	2	40A	Transformer, 15KVA
4	3	15A	Electric Unit Heater
5	3	15A	Electric Unit Heater
6–12	2	––	Space

PANEL–L SCHEDULE

120/240V, 1 Phase, 4 Wire, 60 Hz
Panel to have 125A MCB
Panel to be NEMA–1 Enclosed
Ground Panel per NEC
All Breakers Shall be Bolt to Bus Type

CKT	Poles	Rating	Description
1	1	20A	Lights – Interior
2	1	20A	Lights – Exterior
3	1	20A	Convenience Receptacles – Interior
4	1	20A	Convenience Receptacles – Exterior
5	1	20A	For Dehumidifier
6	1	20A	Chlorine/pH Monitor
7	1	20A	Sump Pump
8	1	20A	Control Panel
9	1	20A	Mag–Meter 1
10	1	20A	Mag–Meter 2
11	1	20A	Exhaust Fan & Louvers
12	1	20A	Spare
13–24	1	––	Space

FIXTURE SCHEDULE

TYPE	QTY.	MAKE/MODEL	LAMPS	MOUNTING
A	4	Lithonia LBL4 60L EZ1 LP840	LED	Ceiling Surface
B	1	Lithonia DSXW1 LED 20C with Photocell	LED	Exterior Wall Mount as Shown on Building Elevation
C	1	Exit/Emergency Light Combo, Lithonia LHQM LED Quantum	LED	Wall Mount, 7' AFF

UNIT HEATER SCHEDULE

QTY.	MAKE/MODEL	kW	NOTES
2	Berko HUH–548–SA	5	480V, 3ø with "SW" switch, CWB1A Bracket

Note: On the original full size drawing, this dimension is 6"

NO.	REVISIONS	DATE

BID SET

VERT. DATUM	See Note on Sheet 1
DATE:	1/26/26
DRAWN BY:	RJB
CHECKED:	
APPROVED:	
FIELD BK:	#
FILE:	B Chase Ave Booster Bldg
PROJECT:	#29706

KENNEBEC WATER DISTRICT
WATERVILLE, MAINE

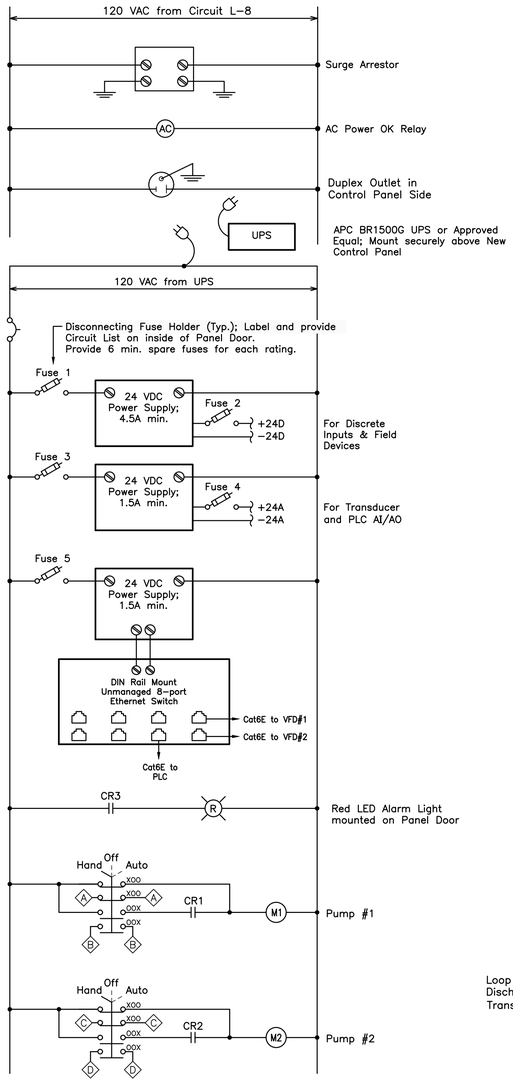
CHASE AVE. PUMP STATION UPGRADES PROJECT

ELECTRICAL PLANS & DETAILS

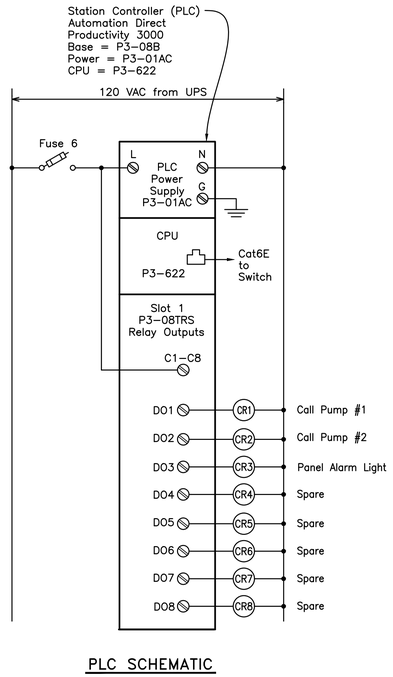
DIRIGO ENGINEERING
2 DIRIGO DRIVE, FAIRFIELD, MAINE 04937 (207) 453–2401

SHEET 5 OF 6

E1



CONTROL PANEL SCHEMATIC

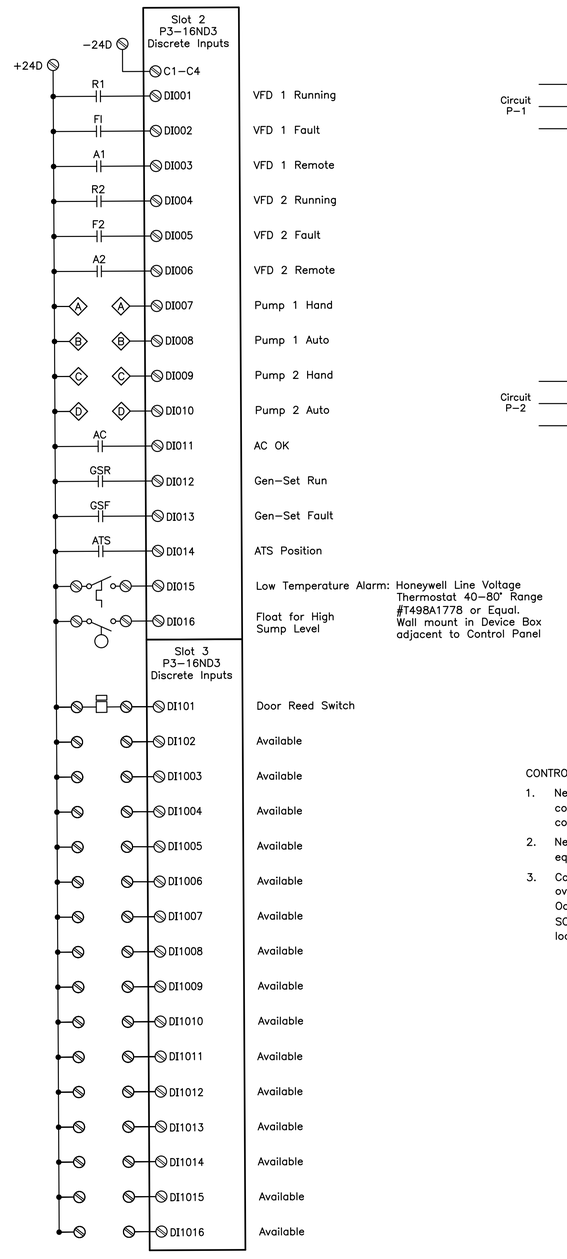


PLC SCHEMATIC

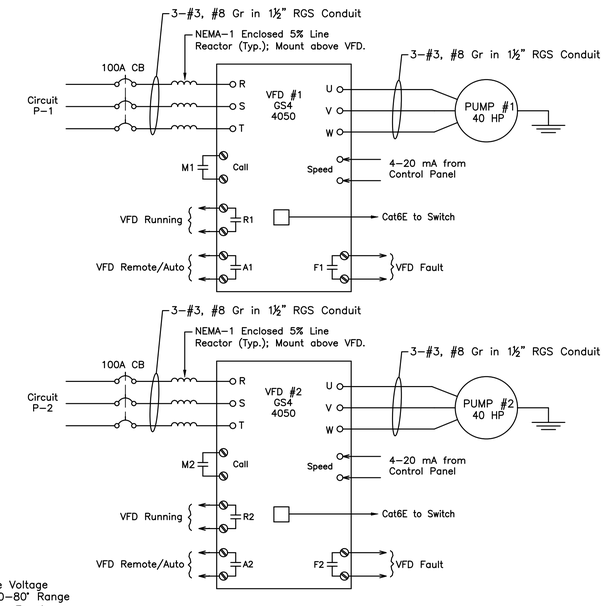
LEGEND

0.032A	Edison S500–32–R 0.032A Fast Acting Fuse with DN–F10 Fuse Terminal Block

PLC SCHEMATIC (CONT'D)



PLC SCHEMATIC (CONT'D)

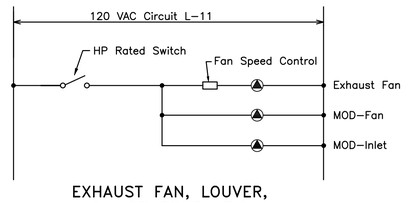


VFD SCHEMATICS

NOT TO SCALE

CONTROL PANEL NOTES:

1. New SCADA Panel to be built by KWD SCADA contractor. Installation and connection of all I/O is in this Contract. Coordinate with KWD SCADA contractor.
2. New SCADA Panel will be NEMA–12 enclosed and will house all required equipment. KWD will provide the internet hardware (firewall, VPN, ONT, etc.)
3. Communication with KWD SCADA system is via static IP addresses and a VPN over a fiber optic internet connection. The SCADA system will write the Oakland tank level to the local (Chase Ave.) PLC for control purposes. The SCADA system will read all desired data (analog and discrete) etc. from the local PLC to the remote master PLC.



EXHAUST FAN, LOUVER, & MOD SCHEMATIC

Note: On the original full size drawing, this dimension is 6"

NO.	REVISIONS	DATE

BID SET

VERT. DATUM	See Note on Sheet 1
DATE:	1/26/26
DRAWN BY:	RJB
CHECKED:	
APPROVED:	
FIELD BK:	#
FILE:	8 Chase Ave Booster Bldg
PROJECT:	#29706

KENNEBEC WATER DISTRICT
WATERVILLE, MAINE

CHASE AVE. PUMP STATION UPGRADES PROJECT

CONTROL PANEL SCHEMATICS

DIRIGO ENGINEERING
2 DIRIGO DRIVE, FAIRFIELD, MAINE 04937 (207) 453–2401

SHEET 6 OF 6

E2