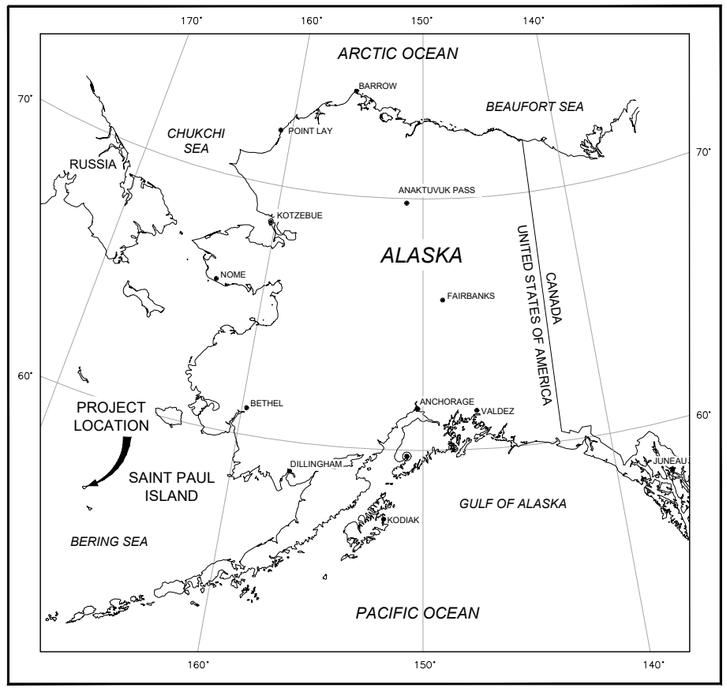
SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
65% SUBMITTAL - MARCH 2023

IN COOPERATION WITH THE STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
VILLAGE SAFE WATER PROGRAM
U.S. DEPARTMENT OF AGRICULTURE, RURAL
ECONOMIC AND COMMUNITY DEVELOPMENT



LOCATION MAP

PROJECT NUMBER (CONSULTANT)	165.030540 (VSW) 22-VSW-SNP-034
VSW PROJECT ENGINEER	AARON WHEATALL
CONSTRUCTION FOREMAN	–
FINAL DESIGN (DATE)	
ADEC APPROVAL (DATE)	
CONSTRUCTION PERIOD (FROM)	– (TO) –
AS-BUILTS (DATE)	–

65% SUBMITTAL

PROJECT STATUS: 65% SUBMITTAL
DATE: MARCH 2023

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CONSULTANT

SHEET INDEX

VICINITY MAP

LINEWORK LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BUILDING
		EDGE OF CONCRETE
		EDGE OF GRAVEL
		UTILITY EASEMENT
UG/E		ELECTRIC
X		FENCE
xGAS		GAS LINE
10		MAJOR CONTOURS
10		MINOR CONTOURS
		PROPERTY LINES
W		WATER SERVICE PIPE
SS		SEWER SERVICE PIPE
FM		SEWER FORCE MAIN
		EASEMENT
		FLOW DIRECTION

ABBREVIATIONS

ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
AWG	AMERICAN WIRE GAUGE
C	CIVIL
CI	CAST IRON
CIR	CIRCLE
COMP	COMPARTMENT
DEMO	DEMOLITION
DIA, Ø	DIAMETER
DR	DRIVE
DRW	DRAWING
E	EAST, ELECTRICAL
ELEV	ELEVATION
EO	ELECTRIC OVERHEAD
FM	FORCE MAIN
FL	FLANGE
FT	FEET
FPS	FEET PER SECOND
G	GENERAL
GPCD	GALLONS PER CAPITA DAY
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
HMWPE	HIGH MOLECULAR WEIGHT POLYETHYLENE
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
ID	INSIDE DIAMETER
IN	INCH
LF	LINEAL FEET
LN	LANE
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
N	NORTH
OD	OUTSIDE DIAMETER
OFF	OFFSET
PC	POINT OF CURVATURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
RD	ROAD
ROW	RIGHT OF WAY
RT	RIGHT
S	SOUTH
SS	SANITARY SEWER
TYP	TYPICAL
UG/E	UNDERGROUND ELECTRIC
VB	VALVE BOX
W	WATER
YRS	YEARS

SYMBOL LEGEND

EXISTING	PROPOSED	DESCRIPTION
		UTILITY POLE
		FIRE HYDRANT
		POST
MH##		MANHOLE
E		ELECTRICAL JUNCTION
		SURVEY MONUMENT
		STREET LIGHT

DETAIL AND SECTION CALLOUT LEGEND

# / XX	DETAIL #, LOCATED ON SHEET XX
# / XX	SEE SECTION #, LOCATED ON SHEET XX

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REVISIONS & ADDENDUMS

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MANAGEMENT	
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CHECKED	BJD
APPROVED	DEN
LAST EDIT	3/3/23
PLOT DATE	3/3/23
SUBMITTAL	02/01/23

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
LEGEND, ABBREVIATIONS & VICINITY MAP

DRAWING SCALE: AS SHOWN
PROJECT NUMBER: 165.030540
DRAWING FILE NAME: 030540-G01.DWG

SHEET NUMBER
G-001

SCOPE OF WORK:

1. THIS PROJECT IS INITIATED BY THE CITY OF SAINT PAUL AND VILLAGE SAFE WATER TO IMPROVE THE SAINT PAUL WASTEWATER COLLECTION SYSTEM.
2. BASED ON THE 2020 PRELIMINARY ENGINEERING REPORT (PER), THE COMMUNITY OF SAINT PAUL SELECTED OPTION (D) WHICH IS TO REPLACE THE EXISTING LIFT STATIONS AT ELLERMAN HEIGHTS AND SANDY LANE.
3. KUNA WILL PRODUCE CONSTRUCTION DOCUMENTS FOR THE REPLACEMENT OF THE EXISTING LIFT STATIONS AT ELLERMAN HEIGHTS AND SANDY LANE.
4. BOTH PROPOSED LIFT STATIONS WILL CONTAIN CONCRETE WET WELLS, ADJACENT TO A LIFT STATION FACILITY TO HOUSE PUMPS, INSTRUMENTATION, AND COMPONENTS.

COMMUNITY DATA:

THE CITY OF SAINT PAUL IS A SECOND CLASS CITY LOCATED ON SAINT PAUL ISLAND IN THE BERING SEA OFF THE WEST COAST OF ALASKA. IT IS APPROXIMATELY 750 MILES WEST OF ANCHORAGE AND IS ONLY ACCESSIBLE BY AIR OR SEA. THE COMMUNITY IS LOCATED ABOUT 3 MILES FROM THE 6500-FOOT LONG STATE-OWNED AIRPORT. THE CITY IS HOME TO APPROXIMATELY 360 RESIDENTS AND HOSTS 145 NON-SEASONAL HOMES. THERE ARE APPROXIMATELY 190 SERVICE CONNECTIONS THAT ARE SERVED BY THE TWO LIFT STATIONS. ACCORDING TO THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION, THE SAINT PAUL WASTEWATER COLLECTION SYSTEM IS CLASSIFIED AS CLASS 1. THE COMMUNITY OF SAINT PAUL OFTEN REFERS TO SANDY LANE AS "OLD TOWN" AS IDENTIFIED IN PREVIOUS REPORTS AND DRAWINGS.

THE FIRST SEWER SYSTEM WAS INSTALLED IN THE COMMUNITY OF SAINT PAUL PRIOR TO THE 1950'S. THE SEWER SYSTEM SERVED SANDY LANE. IN 1969, ELLERMAN HEIGHTS SEWER SYSTEM WAS INSTALLED. IN 1978, THE ELLERMAN HEIGHTS COLLECTION SYSTEM WAS EXPANDED, AND AGAIN IN 1985, WHERE THE EXISTING LIFT STATION WAS INSTALLED. THE SANDY LANE LIFT STATION WAS INSTALLED IN 1988.

SINCE THE ORIGINAL CONSTRUCTION, THE LIFT STATIONS HAVE DEGRADED DUE TO CORROSION OF THE STEEL TANKS, PIPING AND OBSOLETE CONTROL SYSTEMS. THE DRY WELLS DO NOT ALLOW EASE OF ACCESS TO THE INDIVIDUAL COMPONENTS AND ARE CONSIDERED CONFINED SPACES.

TDX OWNS THE LAND AT THE ELLERMAN AND SANDY LANE LIFT STATION SITES. THE ALEUT CORPORATION (AEC), THE REGIONAL NATIVE CORPORATION, OWNS THE SUBSURFACE RIGHTS TO THE LAND UNDERLYING BOTH THE ELLERMAN AND SANDY LANE LIFT STATION SITES. BOTH EXISTING LIFT STATIONS ARE WITHIN EASEMENTS PROVIDED TO THE CITY OF SAINT PAUL BY TDX.

ALL PROPOSED WORK WILL FIT WITHIN THE EXISTING EASEMENT AREA AND NO ADDITIONAL LAND WOULD BE REQUIRED.

REFERENCES:

1. 2020 PRELIMINARY ENGINEERING REPORT FOR CITY OF SAINT PAUL WASTEWATER LIFT STATION, POLARCONSULT ALASKA, FEBRUARY 2020.

DESIGN CRITERIA:

1. SYSTEM NAME: SAINT PAUL WASTEWATER COLLECTION SYSTEM.
2. DESIGN AND CONSTRUCTION MUST MEET THE STATE OF ALASKA DOMESTIC WASTEWATER TREATMENT AND DISPOSAL STANDARDS (18 AAC 72). CONTRACTOR WILL COMPLY WITH REQUIREMENTS OF ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION'S APPROVAL TO CONSTRUCT. CONTRACTOR WILL CONTACT ENGINEER OF RECORD WITH ANY VARIATIONS FROM THE STANDARDS OR APPROVAL.

LIFT STATION DESIGN CRITERIA	ELLERMAN HEIGHTS		SANDY LANE	
	2004 FLOWS	DESIGN	2004 FLOWS	DESIGN
AVERAGE INFLOW (GPM)	15.00	28.70	17.20	20.90
PEAK INFLOW (GPM)	46.40	88.90	51.60	64.90
INFLOW PEAKING FACTOR	3.09	3.10	3.00	3.01
PERIOD OF RECORD (DAYS)	5.80		1.04	
PUMP RUN TIMES	29.30%	56.04%	12.40%	15.09%
AVERAGE PUMP RATE (GPM)	46.10	46.10	121.10	121.10
PEAK PUMP RATE (GPM)	128.40		203.70	

TABLE NOTES:

1. WASTEWATER FLOW FOR FULL DEVELOPMENT SCALED FROM EXISTING DEVELOPMENT, WITH CONSTANT PER CAPITA WASTEWATER GENERATION, TO FULL DEVELOPMENT UNDER CURRENT ZONING.
2. PEAKING FACTOR OF 3.1 TIMES AVERAGE FLOW WAS OBSERVED IN ELLERMAN LIFT STATION AND USED FOR ESTIMATING FLOWS IN ALL SERVICE AREAS DUE TO SIGNIFICANTLY LONGER PERIOD OF RECORD.
3. TABLE FROM 2020 PER, TABLE 4-1. THESE ARE THE RECOMMENDED DESIGN CRITERIA.

DESCRIPTION	UNITS	LIFT STATION	
		ELLERMAN HEIGHTS	SANDY LANE
RESIDENTIAL POPULATION DISTRIBUTION	PERSON	159	231
COMMERCIAL POPULATION DISTRIBUTION	PERSON	30	60
APPROXIMATE POPULATION AT PLANTS	PERSON	0	0
EXISTING ESTIMATED DAILY FLOW	GPD	18488	27351
EXISTING AVERAGE DAILY FLOWS	GPM	12.80	19.00
PEAKING FACTOR		3.10	3.10
EXISTING PEAK FLOW	GPM	39.80	58.90
FUTURE DAILY FLOWS	GPD	19043	28171
FUTURE AVERAGE LIFT STATION FLOW	GPM	13.20	19.60
FUTURE PEAK LIFT STATION FLOW	GPM	41.00	60.60

TABLE NOTES:

1. PER CAPITA WASTEWATER FLOW OF RESIDENTIAL IS 100 GPCD AND COMMERCIAL IS 50 GPCD. THESE ARE THE MEASURED VALUES FROM THE 2005 REPORT.

LIFT STATION	ELLERMAN HEIGHTS		SANDY LANE	
	VALUE	UNIT	VALUE	UNIT
RECOMMENDED WET WELL DIAMETER:	9	FEET	8	FEET
PUMPED DEPTH REASONABLE GROWTH	4.00	FEET	3.70	FEET
CYCLE TIME (AVG./PEAK) REASONABLE GROWTH		MINUTES		MINUTES
STATIC HEAD	18	FEET	19	FEET
RECOMMENDED PUMP SIZE	150	GPM	150	GPM
FORCE MAIN DIAMETER	6	INCHES	6	INCHES
FORCE MAIN LENGTH	2601	FEET	1195	FEET
VOLUME PUMPED	1903	GALLONS	1391	GALLONS
% OF LINE VOLUME PUMPED	63%		100%	
FORCE MAIN LIQUID VELOCITY	2.00	FT/SEC	2.00	FT/SEC

TABLE NOTES:

1. PER CAPITA WASTEWATER FLOW OF RESIDENTIAL IS 100 GPCD AND COMMERCIAL IS 50 GPCD. THESE ARE THE MEASURED VALUES FROM THE 2005 REPORT.

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REVISIONS & ADDENDUMS

#	DATE	REMARKS

MANAGEMENT

DESIGNED	BJK	
DRAWN	BJK	
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APPROVED	DEN	3/3/23
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PLOT DATE	3/3/23	
SUBMITTAL	02/01/23	

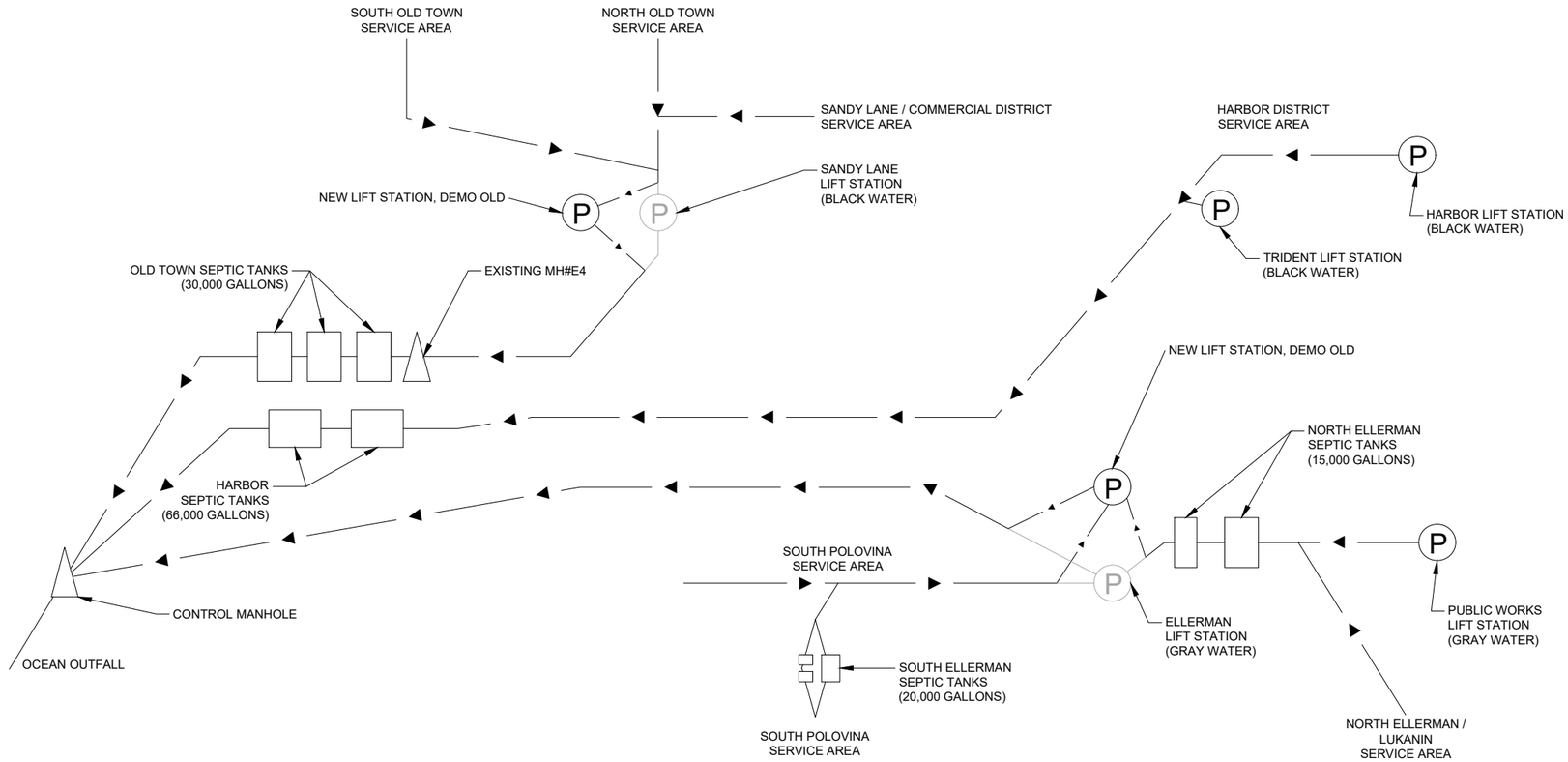
SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
SCOPE OF WORK & DESIGN CRITERIA

DRAWING SCALE: AS SHOWN
DRAWING FILE NAME: 030540-G02.DWG
PROJECT NUMBER: 165.030540

SHEET NUMBER
G-002

NOTES:

1. SEWER SYSTEM SCHEMATIC CONTAINS BOTH EXISTING AND NEW SEWER SYSTEMS FOR INFORMATIVE PURPOSES ONLY.
2. THE EXISTING, DENOTED AS SHADED, ARE TO BE REMOVED. SEE DEMOLITION SHEETS (C-200).



1 SEWER SYSTEM PROCESS DIAGRAM
SCALE: N.T.S.

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SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
SEWER SYSTEM SCHEMATIC

DRAWING SCALE: AS SHOWN
PROJECT NUMBER: 165.030540
DRAWING FILE NAME: 030540-G03.DWG

SHEET NUMBER
G-003

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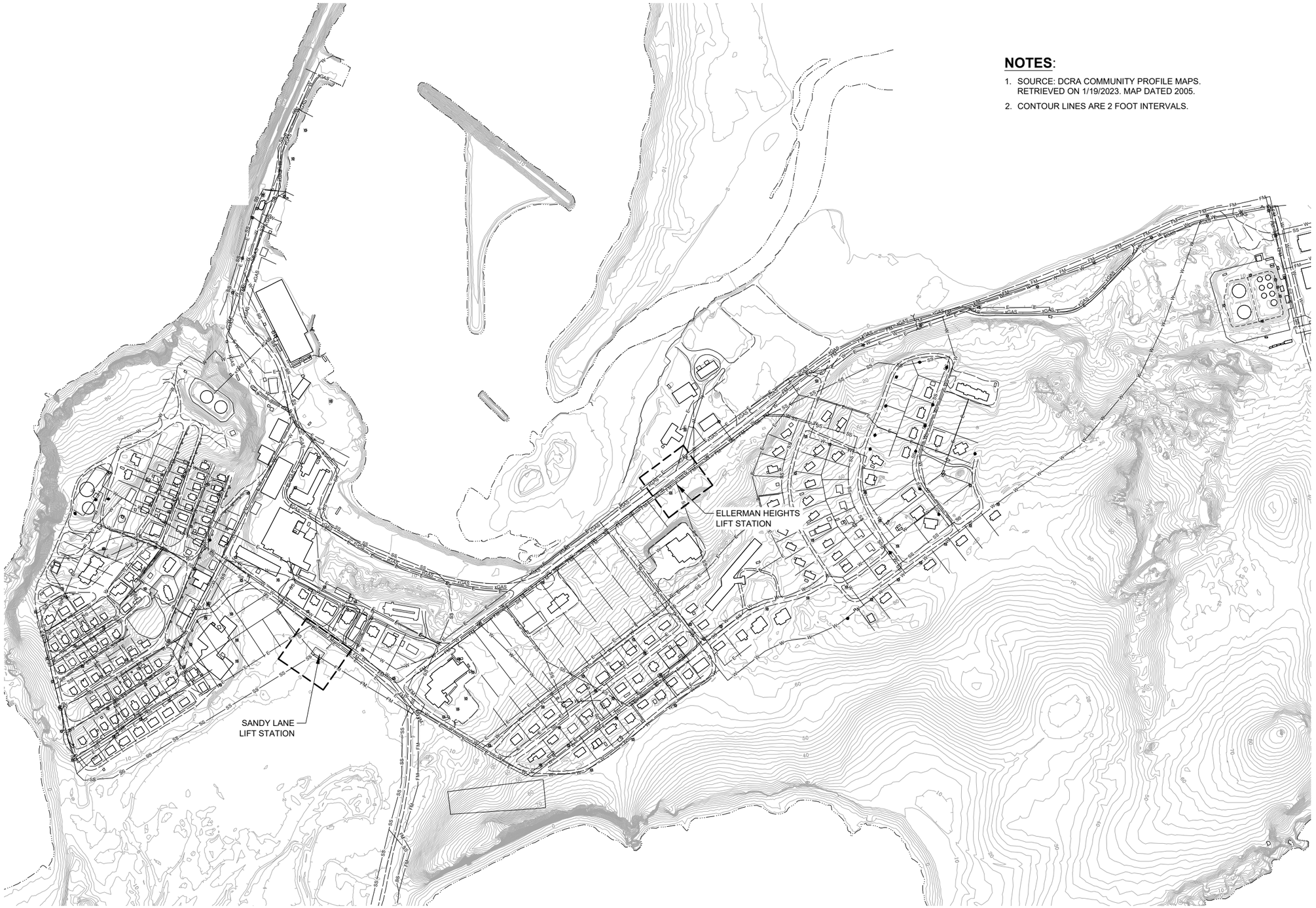

NOTES:

1. SOURCE: DCRA COMMUNITY PROFILE MAPS. RETRIEVED ON 1/19/2023. MAP DATED 2005.
2. CONTOUR LINES ARE 2 FOOT INTERVALS.

200' 0' 100' 200' 400'

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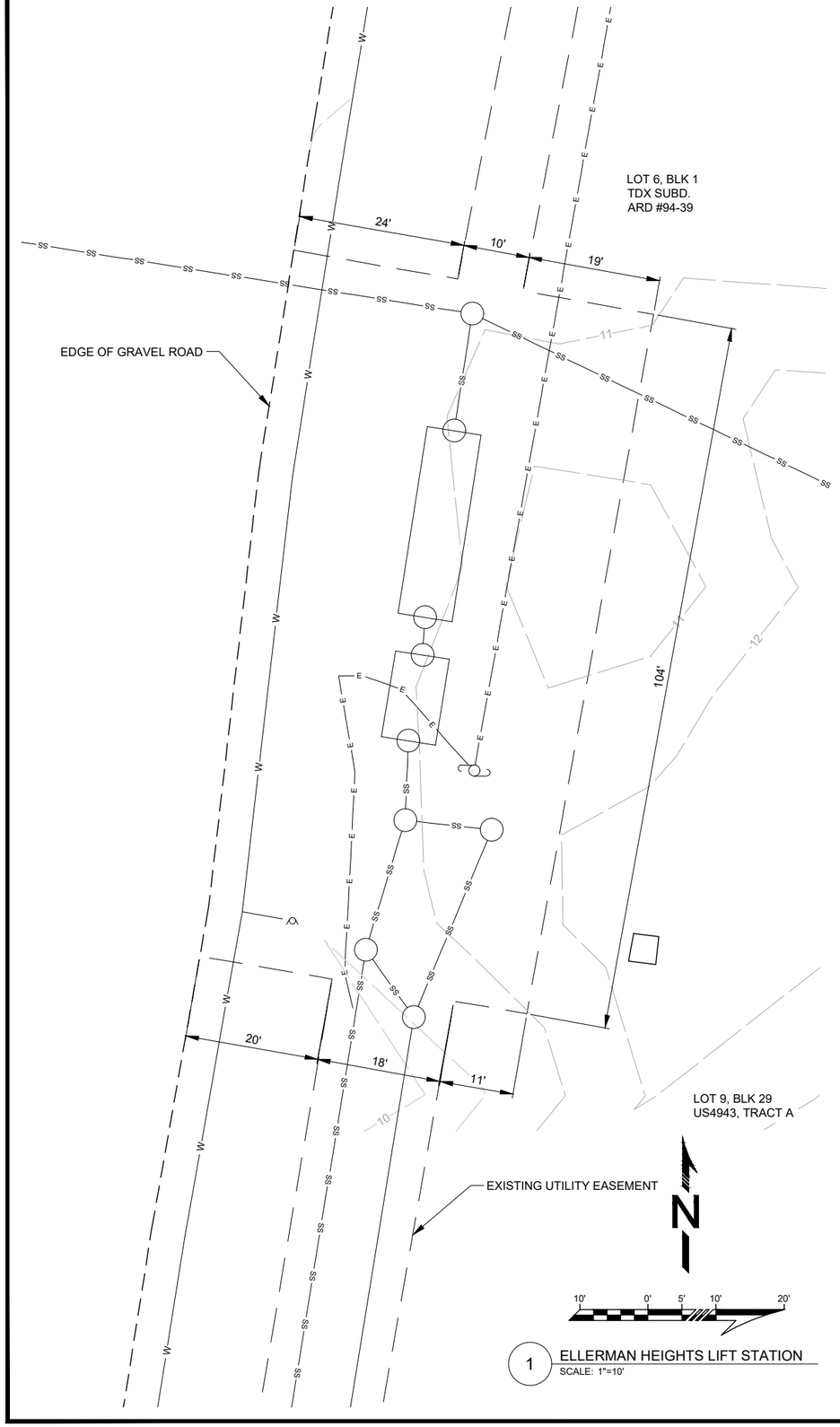
SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
OVERALL SITE PLAN & TOPOGRAPHY

PROJECT NUMBER 165.030540
DRAWING FILE NAME 030540-G04.DWG
DRAWING SCALE AS SHOWN

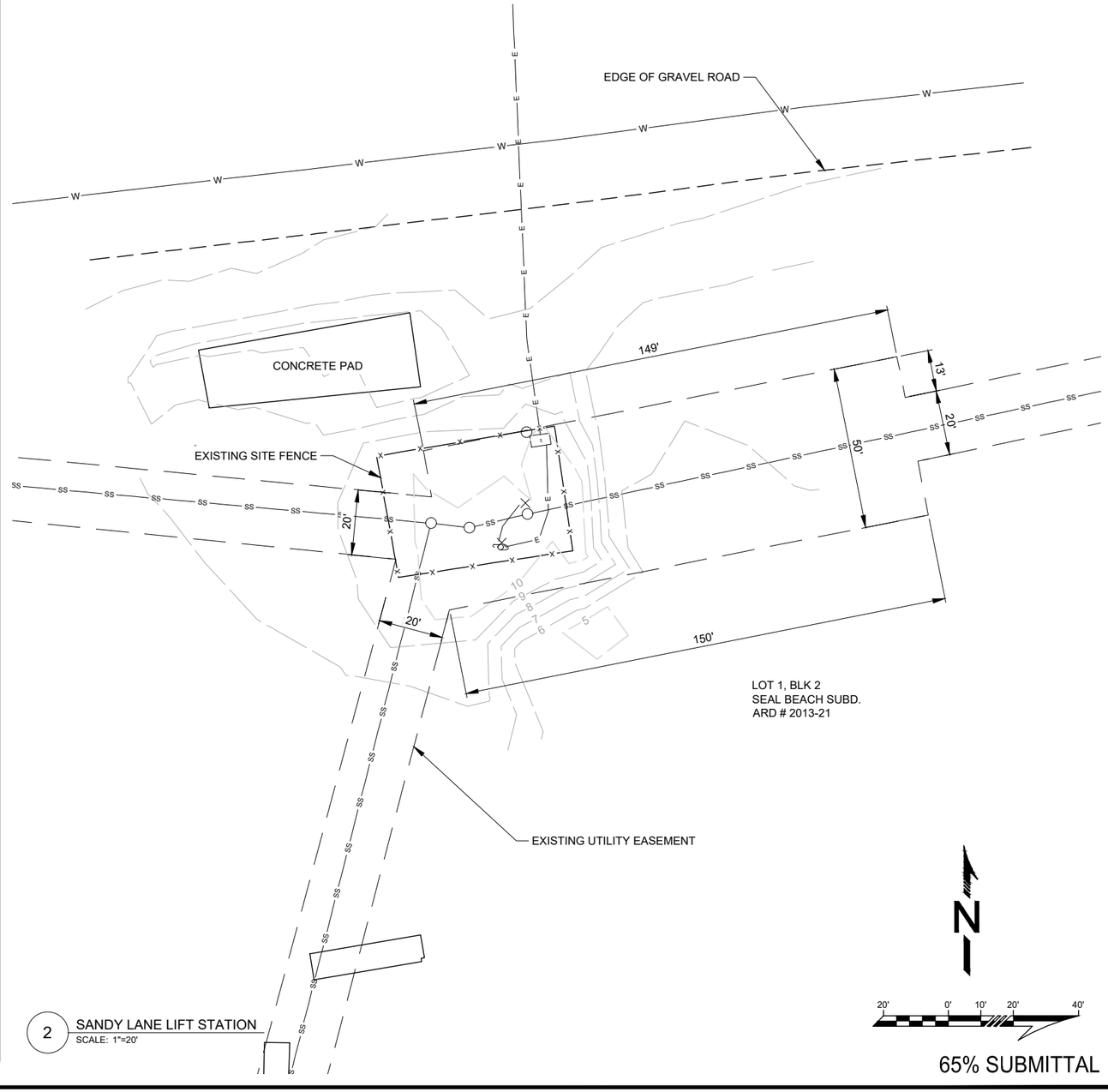
SHEET NUMBER
G-004

NOTES:

1. CONTOUR LINES SHOWN ARE FROM FIELD COLLECTED SURVEY.
2. CONTOUR INTERVALS ARE 1 FOOT.
3. HORIZONTAL DATUM IS ALASKA STATE PLANE, ZONE 9, NAD83, U.S. SURVEY FEET.
4. GRID NORTH WAS HELD AS PER ALASKA STATE PLANE ZONE 9, NAD83.
5. THE VERTICAL CONTROL IS BASED ON THE RECORD VALUES PROVIDED FOR THE MONUMENT IN THE PREVIOUS SURVEY.
6. NO ADDITIONAL LAND IS REQUIRED FOR THIS PROJECT.
7. ELLERMAN EASEMENTS FROM UNRECORDED "FINAL SETTLEMENT AGREEMENT" SECTION 3.2, DATED SEPTEMBER 12, 2013 IN EXHIBIT 26, DATED MARCH 29, 2013.
8. SANDY LANE EASEMENT: NOVEMBER 24, 1987, ALEUTIAN RECORDING DISTRICT, BOOK 27, PAGE 391.



1 ELLERMAN HEIGHTS LIFT STATION
SCALE: 1"=10'



2 SANDY LANE LIFT STATION
SCALE: 1"=20'

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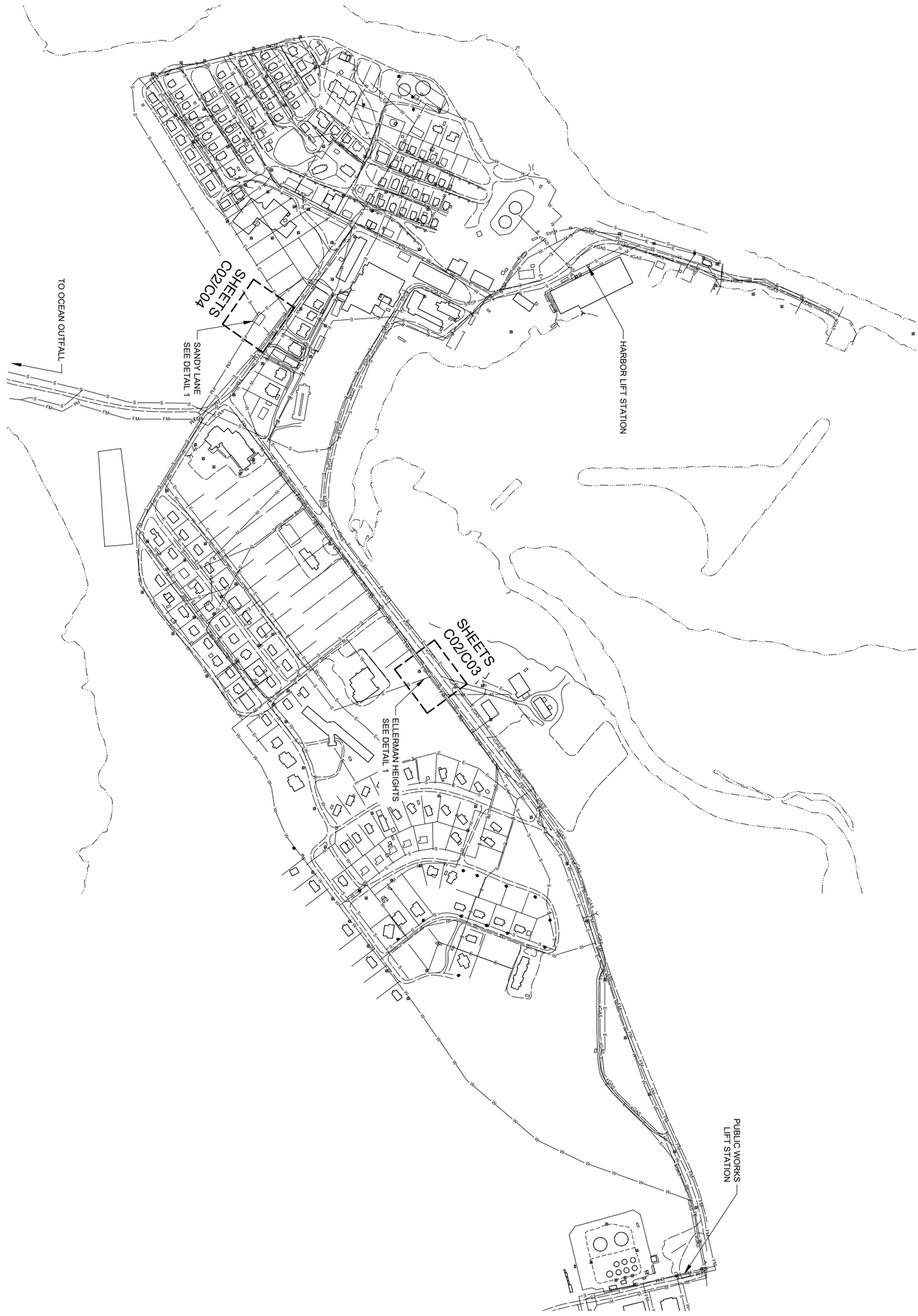
SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
RIGHT OF WAY MAPS

DRAWING SCALE: AS SHOWN
PROJECT NUMBER: 165.030540
DRAWING FILE NAME: 030540-C02.DWG

SHEET NUMBER
V-100



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SHEET NUMBER
C-100

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
SHEET INDEX

PROJECT NUMBER	DRAWING FILE NAME	DRAWING SCALE
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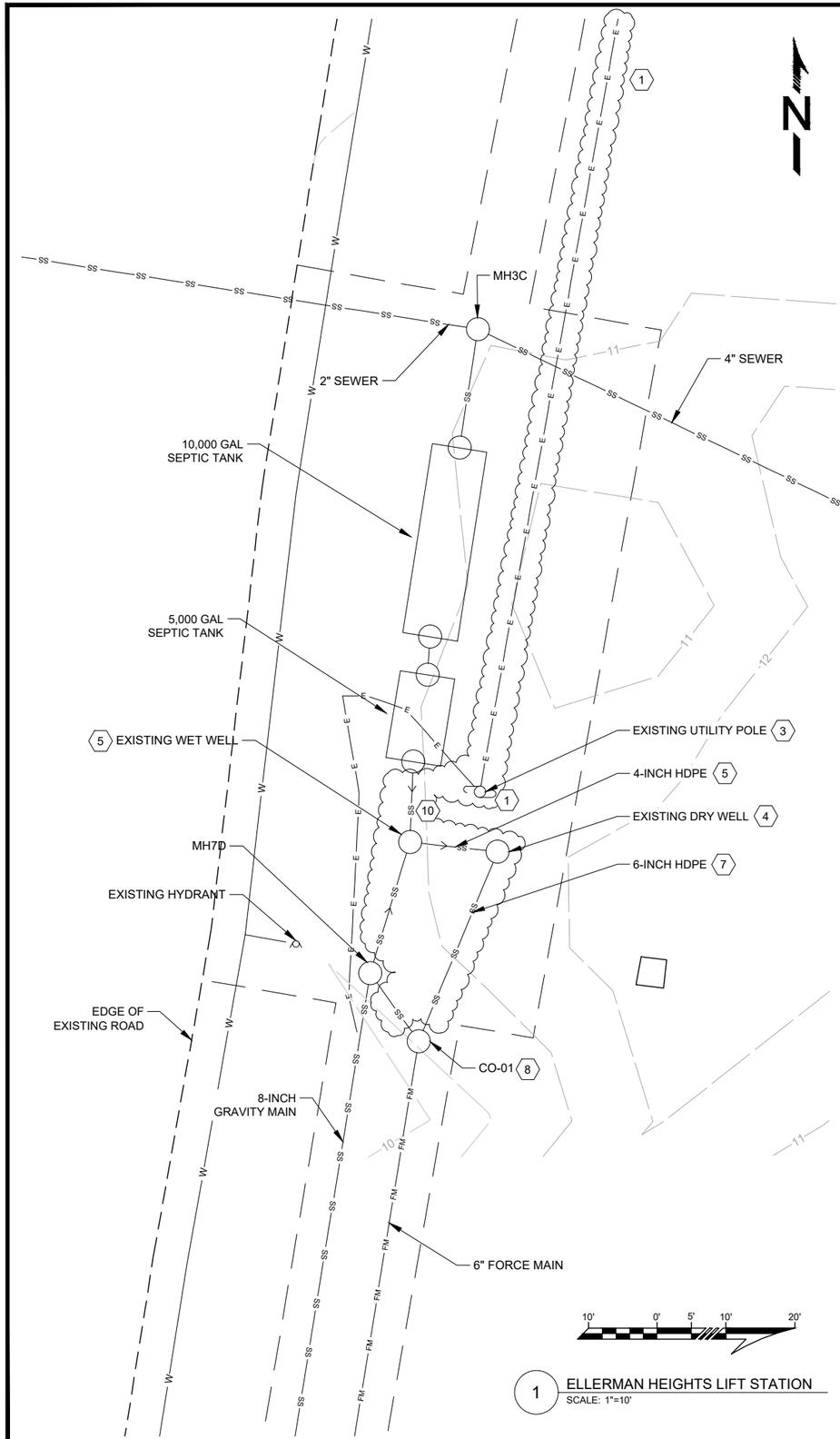
DEMOLITION NOTES: (##)

ELLERMAN HEIGHTS

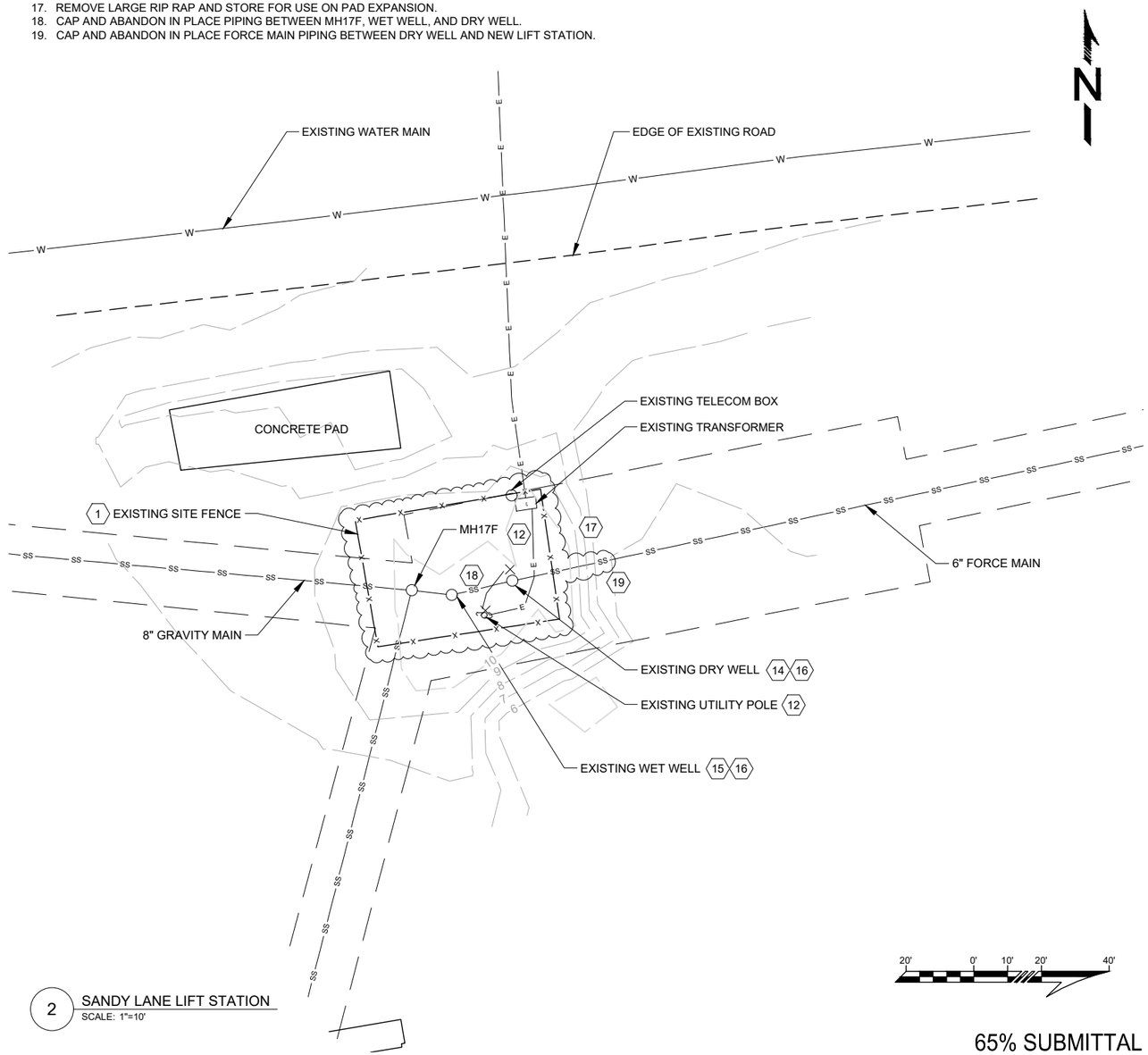
1. REMOVE EXISTING LIFT STATION BELOWGROUND WIRING FROM TRANSFORMER TO THE LIFT STATION ELECTRICAL SERVICE, APPROXIMATELY 350 FEET.
2. COORDINATE WITH THE LOCAL UTILITY AND THE NOAA SITE TO TURN OFF THE TRANSFORMER POWER TO DISCONNECT THE EXISTING LIFT STATION CONDUCTORS.
3. REMOVE UTILITY POLE AND ALL EQUIPMENT. REMOVE ELECTRICAL WIRING BETWEEN UTILITY POLE, DRY WELL, AND WET WELL.
4. REMOVE DRY WELL, INCLUDING ALL PIPING, PUMPS, WIRING, AND PUMPS.
5. REMOVE WET WELL, INCLUDING ALL PIPING, FLOATS, AND WIRING.
6. REMOVE PIPING BETWEEN DRY WELL AND WET WELL.
7. REMOVE PIPING BETWEEN DRY WELL AND CO#1.
8. REMOVE VALVING IN CO#1.
9. REMOVE PIPING BETWEEN MH7D AND WET WELL.
10. REMOVE PIPING BETWEEN SEPTIC TANK AND WET WELL.

SANDY LANE

11. REMOVING ALL FENCING, INCLUDING POST AND FOOTINGS.
12. REMOVE ALL ABOVEGROUND AND BELOWGROUND WIRING BETWEEN TRANSFORMER, UTILITY POLE, DRY WELL, AND WET WELL. REMOVE UTILITY POLE AND ALL EQUIPMENT.
13. COORDINATE WITH LOCAL UTILITY TO TURN OFF TRANSFORMER POWER DURING DEMO.
14. REMOVE ALL PIPING, PUMPS, WIRING, AND PUMPS FROM DRY WELL.
15. REMOVE ALL PIPING, FLOATS, AND WIRING FROM WET WELL.
16. ABANDONED WET WELL AND DRY WELL IN PLACE. WASHDOWN AND VACUUM WET WELLS. REMOVE LIDS AND GRADE RINGS TO 12-INCHES BELOW GRADE. FILL IN PIPES AND MANHOLES WILL COMPACTED BORROW MATERIAL.
17. REMOVE LARGE RIP RAP AND STORE FOR USE ON PAD EXPANSION.
18. CAP AND ABANDON IN PLACE PIPING BETWEEN MH17F, WET WELL, AND DRY WELL.
19. CAP AND ABANDON IN PLACE FORCE MAIN PIPING BETWEEN DRY WELL AND NEW LIFT STATION.



1 ELLERMAN HEIGHTS LIFT STATION
SCALE: 1"=10'



2 SANDY LANE LIFT STATION
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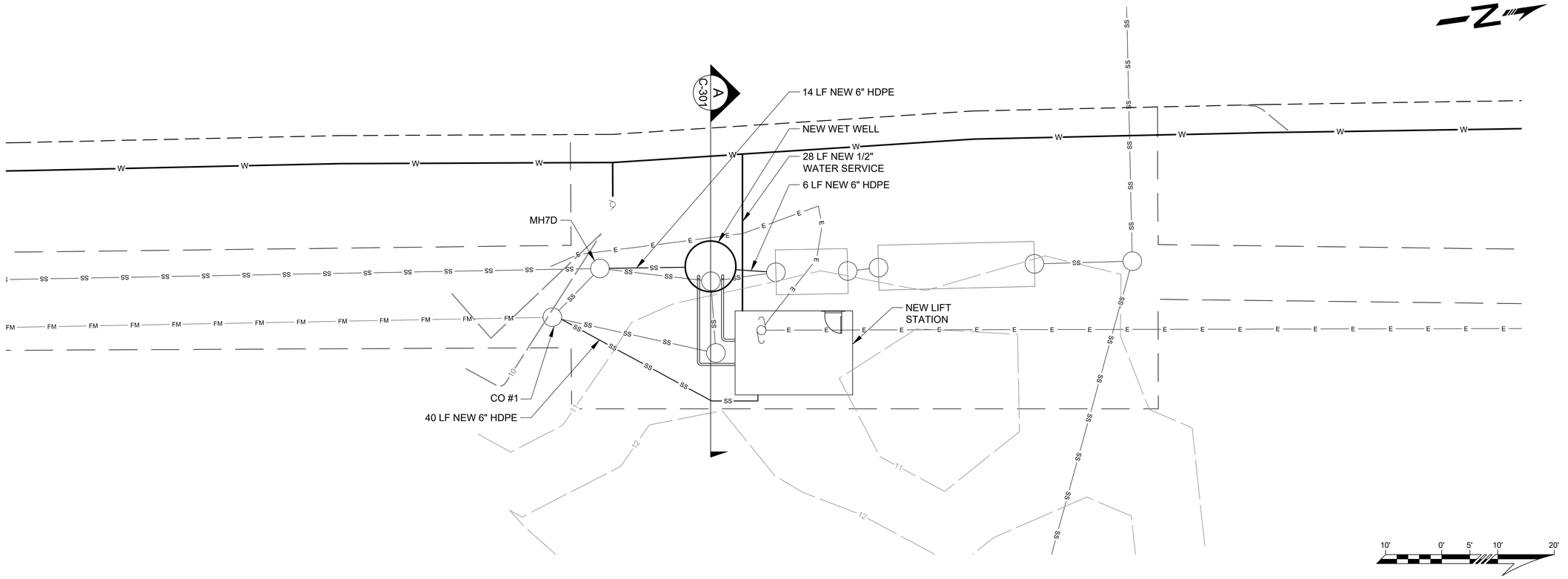
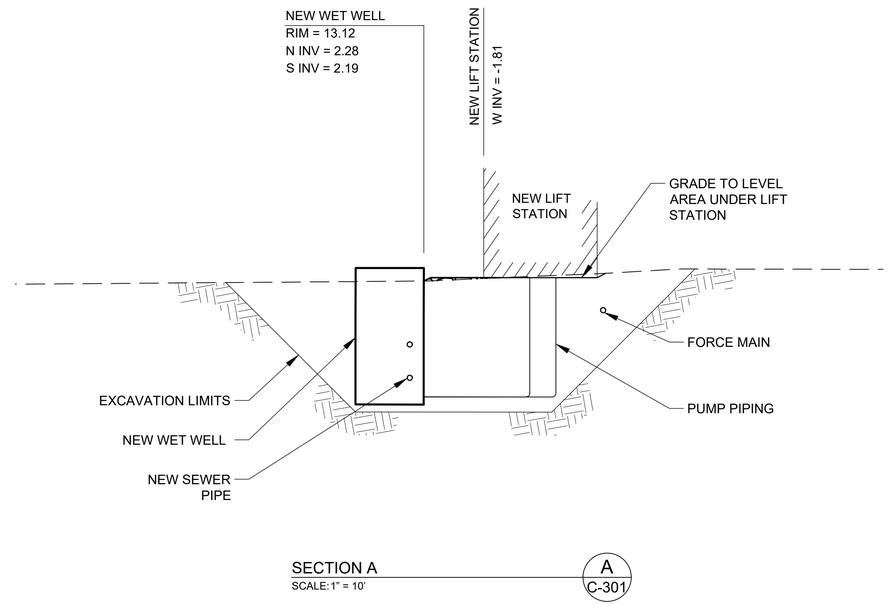
SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
DEMOLITION PLANS

PROJECT NUMBER 165.030540
DRAWING FILE NAME 030540-C02.DWG
DRAWING SCALE AS SHOWN

SHEET NUMBER
C-200





SECTION A
SCALE: 1" = 10'

A
C-301

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SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
PLAN AND PROFILE - ELLERMAN HEIGHTS

PROJECT NUMBER	DRAWING FILE NAME	DRAWING SCALE
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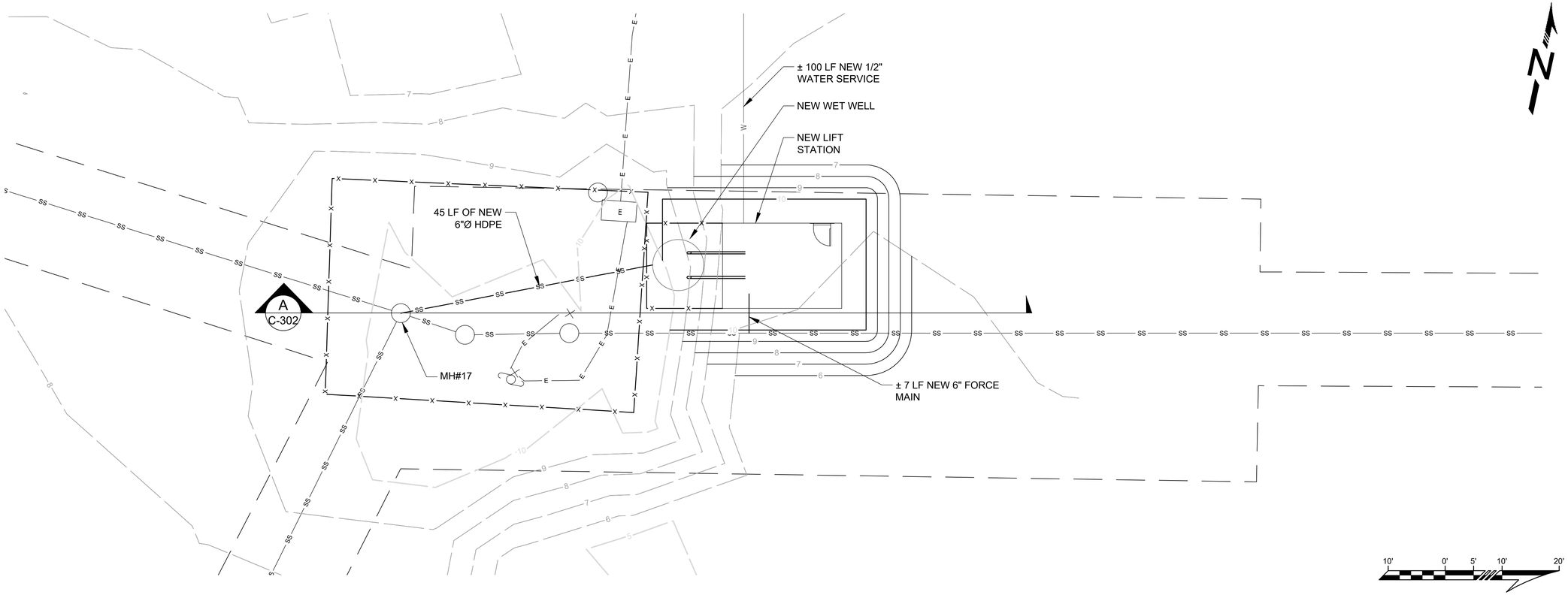
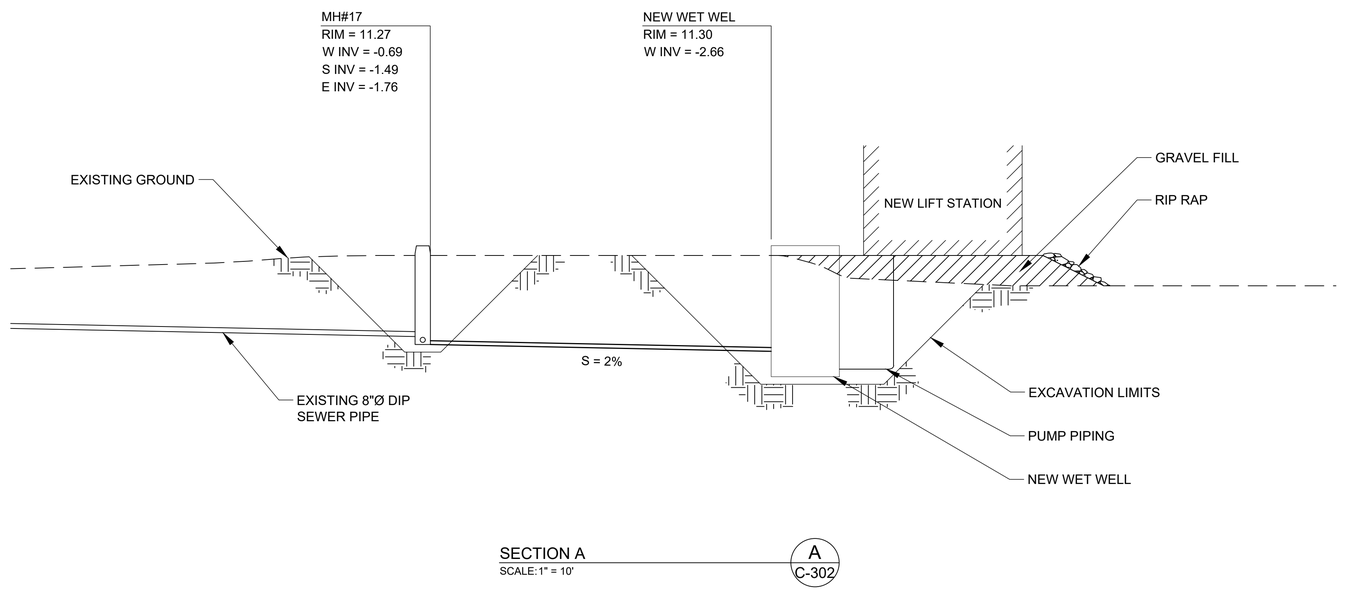
SHEET NUMBER
C-301





SECTION A
SCALE: 1" = 10'

A
C-302

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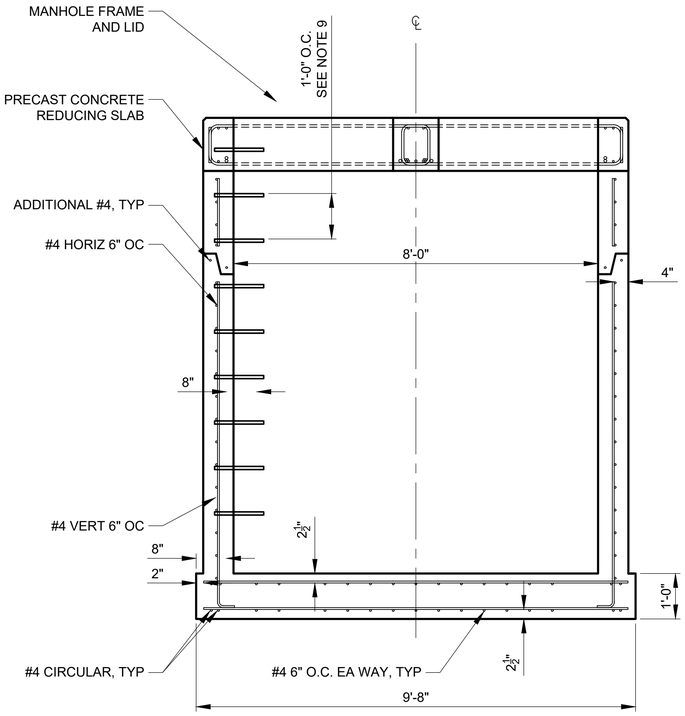
SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
PLAN AND PROFILE - SANDY LANE

DRAWING SCALE: AS SHOWN

PROJECT NUMBER: 165.030540

DRAWING FILE NAME: 030540-C04.DWG

SHEET NUMBER
C-302



WETWELL DETAIL 1
SCALE:N.T.S. -

NOTES:

1. PLACE LADDER RUNGS ON THE UNOBSTRUCTED SIDE OF THE MANHOLE AND INLINE WITH THE MANHOLE FRAME. IF UNOBSTRUCTED SIDE NOT AVAILABLE, SPACING AS DIRECTED BY THE ENGINEER. SEE MANHOLE STEP DETAILS ON ADOT&PF STANDARD PLAN D-20.05.
2. ALL BARS SHALL BE CONTINUOUS. CIRCULAR BARS LAPPED A MINIMUM OF 48 BAR DIAMETERS.
3. MAINTAIN A MINIMUM OF 1 1/2" OF CONCRETE COVER OVER ALL REBAR.
4. EXTEND PIPE A MINIMUM OF 2" INTO MANHOLE.
5. WALL PENETRATION DIAMETER "D" SHALL NOT EXCEED PIPE O.D.+4 INCHES.
6. LIFTING INSERTS SHALL BE DESIGNED FOR A LOAD EQUIVALENT TO FOUR TIMES THE MAXIMUM LOAD TRANSMITTED TO THE INSERT.
7. REINFORCEMENT SHALL BE GRADE 60 CONFORMING TO ASTM A615/A 615M.
8. USE EDPM BOOT SEALS (Z-LOK, KOR-N-SEAL, OR APPROVED EQUAL) TO CREATE FLEXIBLE, WATER TIGHT PIPE TO WET WELL CONNECTION.
9. USE RAM-NEK SEALANT ON ALL PRECAST JOINTS.
10. WATER PROOF EXTERIOR WITH 50 MILES OF ELASTOMERIC COATING. PATCH ANY DAMAGE TO COATING PRIOR TO BACKFILL.
11. WRAP WET WELL WITH TWO LAYERS OF 6 MIL VISQUENE PRIOR TO BACKFILL.

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REVISIONS & ADDENDUMS

#	DATE	REMARKS

MANAGEMENT	
DESIGNED	RW
DRAWN	RW
CHECKED	DEN
APPROVED	DEN
LAST EDIT	3/3/23
PLOT DATE	3/3/23
SUBMITTAL	02/01/23

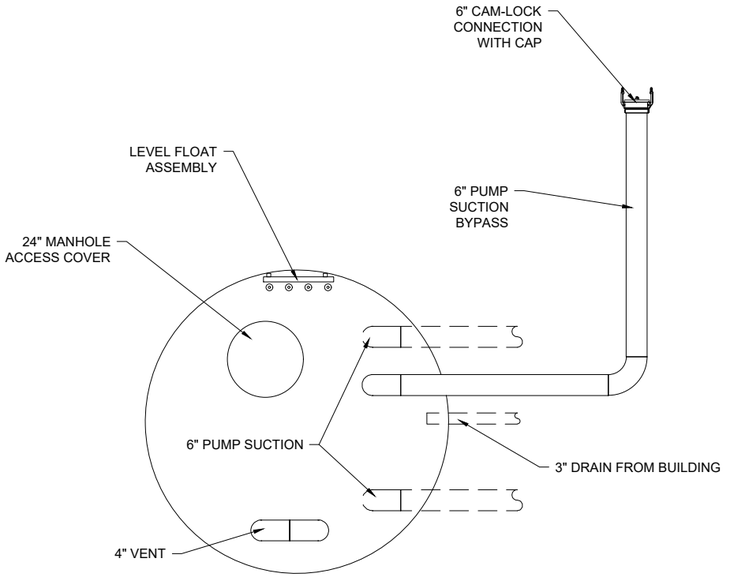
SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
WETWELL DETAIL SHEET

PROJECT NUMBER 165.030540
DRAWING FILE NAME 030540-C05.DWG
DRAWING SCALE AS SHOWN

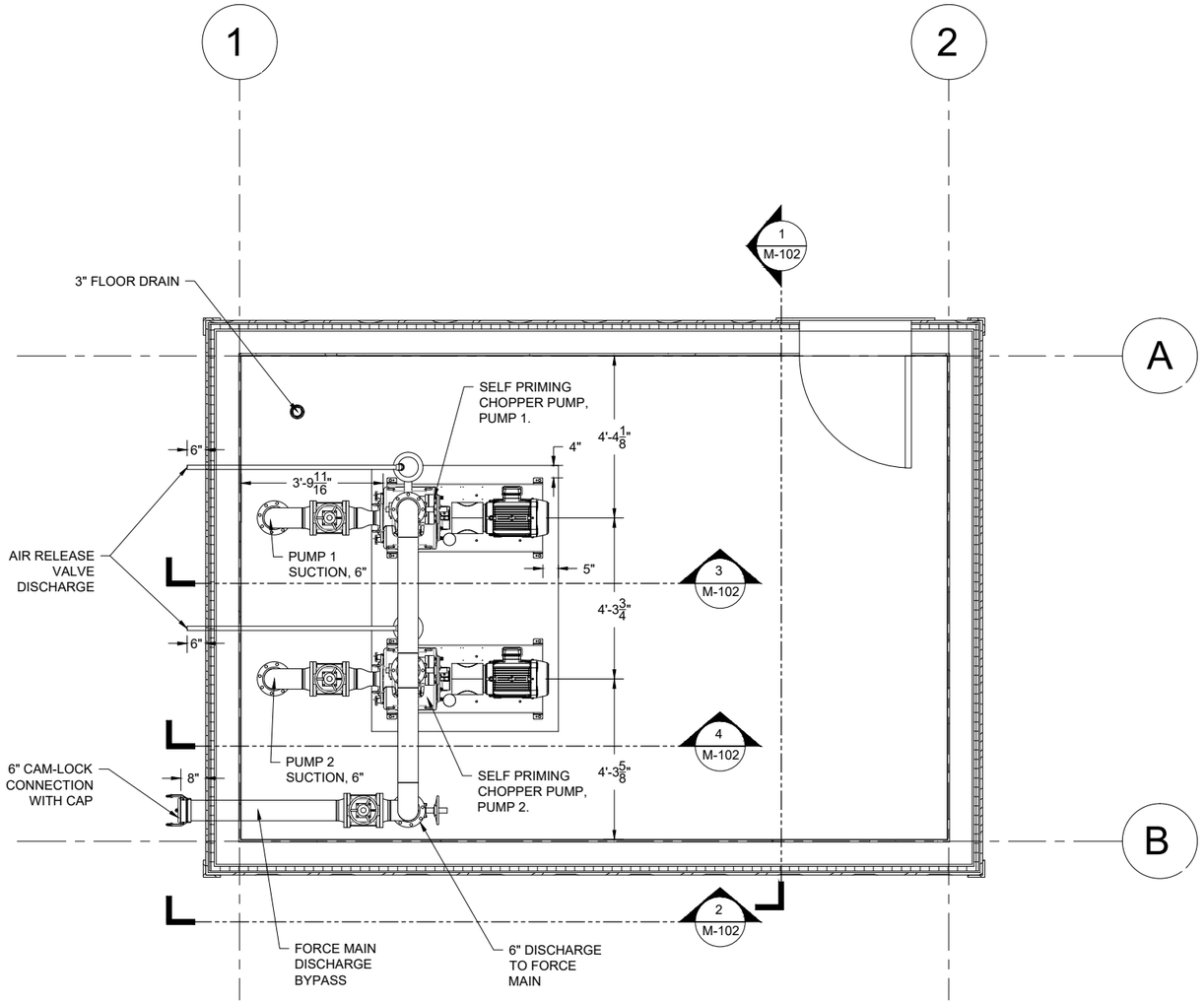
SHEET NUMBER
C-400

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO THE BEGINNING OF CONSTRUCTION.
2. ADDITIONAL FLANGE CONNECTIONS CAN BE UTILIZED IF REQUIRED FOR FABRICATION REQUIREMENTS.
3. SEE CIVIL DRAWINGS FOR WELL PLACEMENT AND PIPE ROUTING IN RELATION TO BUILDING.



1 M-101 LIFT STATION WELL PLAN
SCALE: 1/2" = 1'-0"



2 M-101 LIFT STATION PLUMBING PLAN
SCALE: 1/2" = 1'-0"

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REVISIONS & ADDENDUMS

#	DATE	REMARKS

MANAGEMENT	
DESIGNED	JDD
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CHECKED	-
APPROVED	-
LAST EDIT	3/2/23
PLOT DATE	3/2/23
SUBMITTAL	02/01/23

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
LIFT STATION PLUMBING PLAN

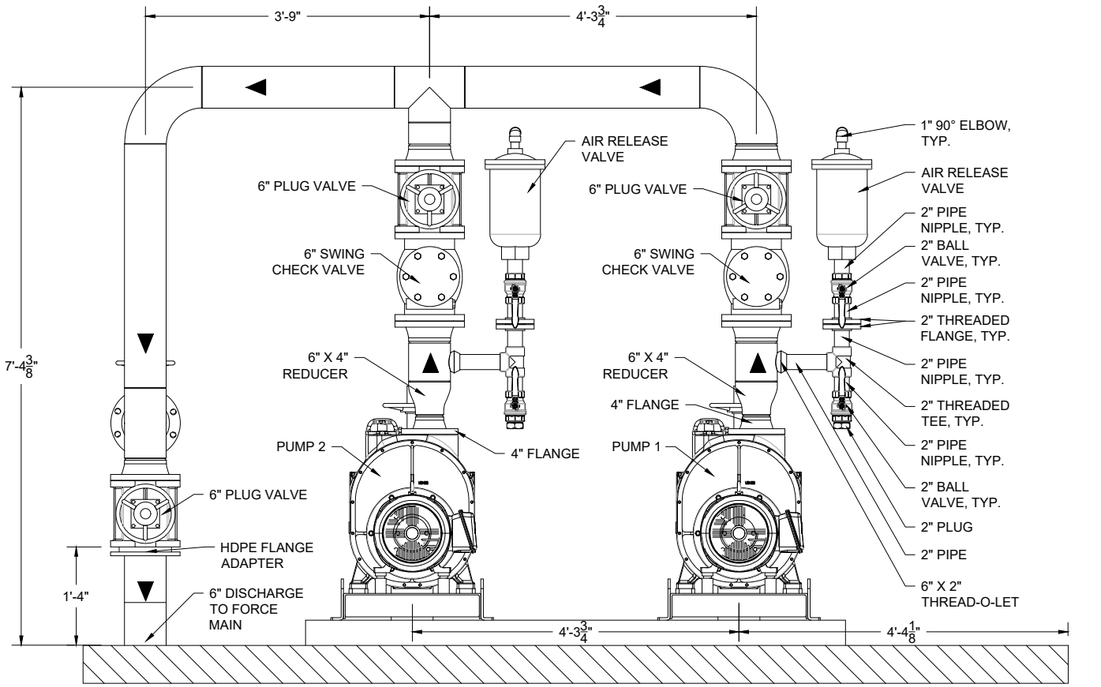
DRAWING SCALE: AS SHOWN
PROJECT NUMBER: 165.030540
DRAWING FILE NAME: M-101

SHEET NUMBER
M-101

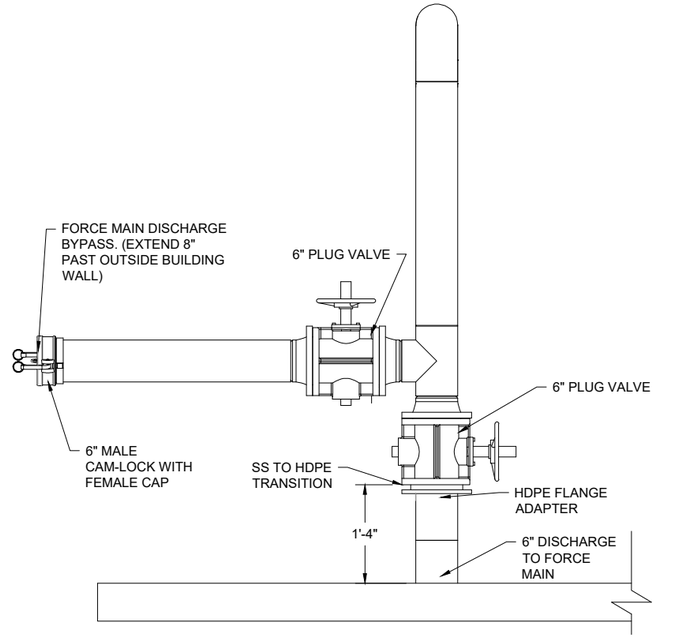
65% SUBMITTAL

GENERAL NOTES:

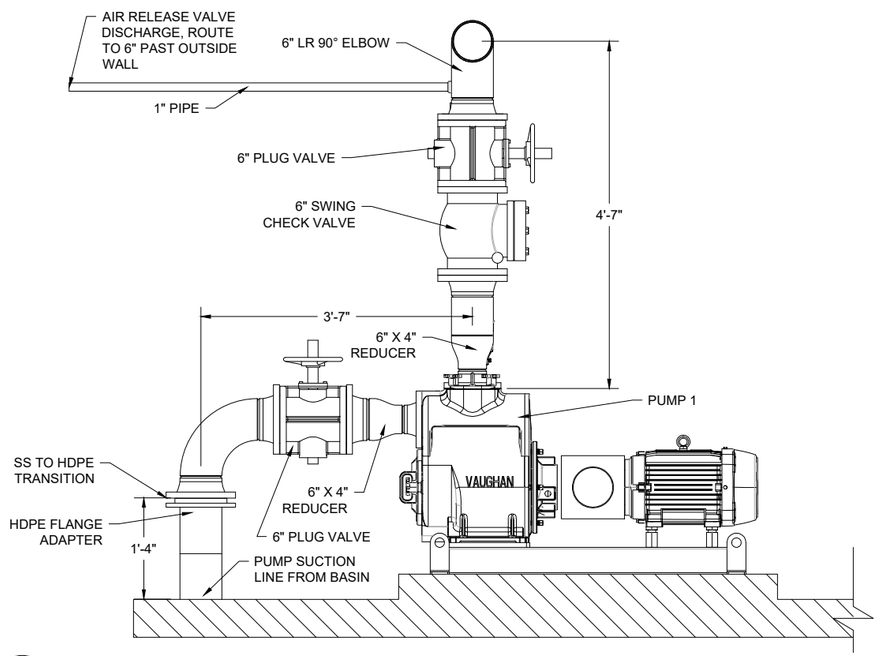
1. CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO THE BEGINNING OF CONSTRUCTION.
2. ADDITIONAL FLANGE CONNECTIONS CAN BE UTILIZED IF REQUIRED FOR FABRICATION REQUIREMENTS.



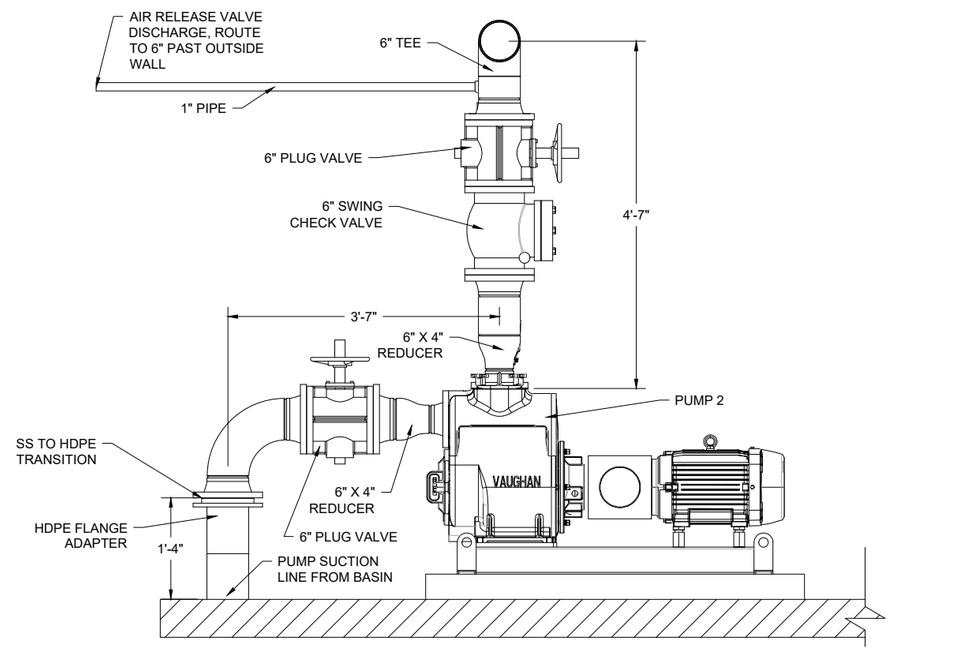
1 M-102 ELEVATION SECTION
SCALE: 1" = 1'-0"



2 M-102 DISCHRAGE PARTIAL SECTION
SCALE: 1" = 1'-0"



3 M-102 PUMP 1 ELEVATION SECTION
SCALE: 1" = 1'-0"



4 M-102 PUMP 2 ELEVATION SECTION
SCALE: 1" = 1'-0"

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REVISIONS & ADDENDUMS

#	DATE	REMARKS

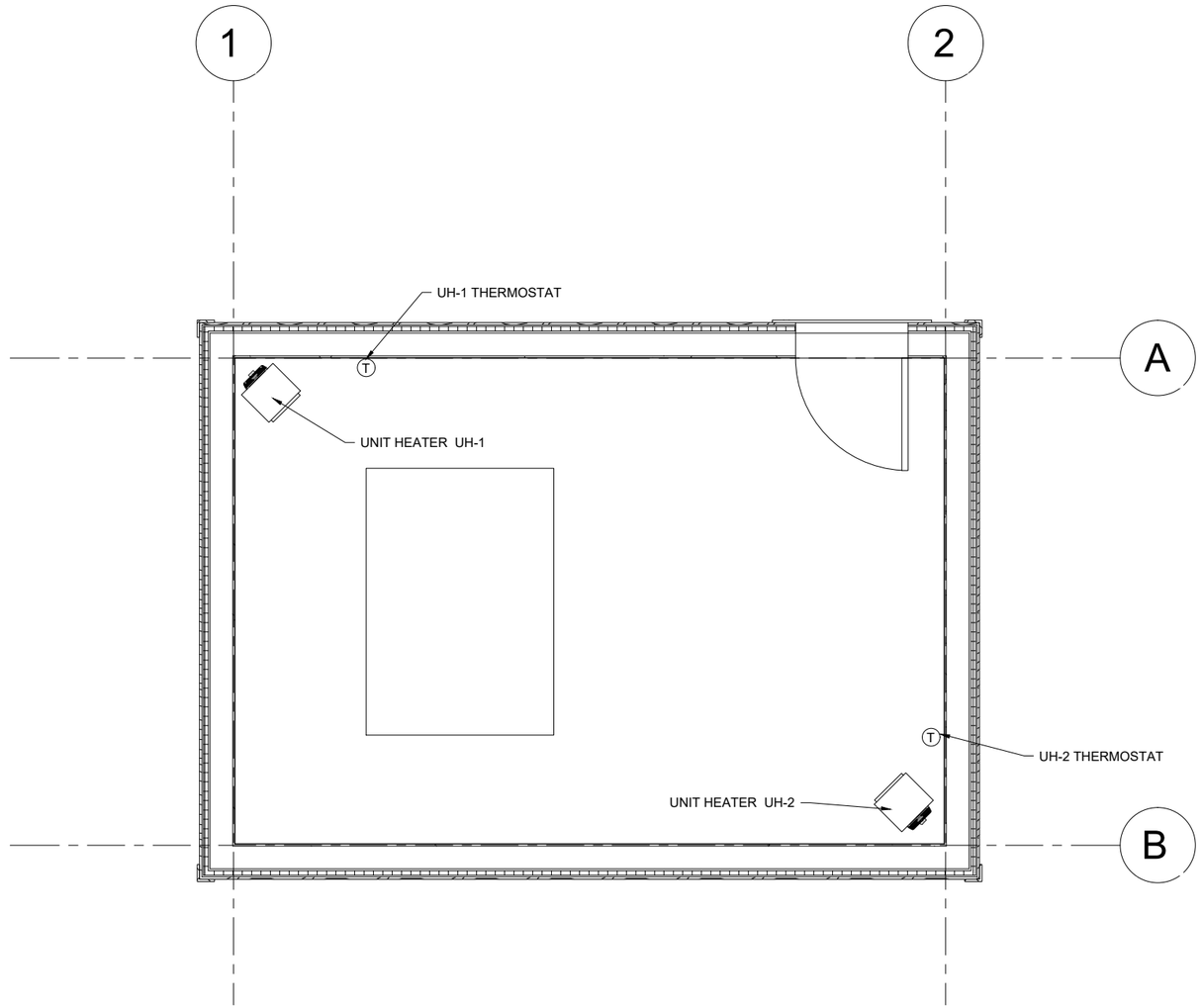
MANAGEMENT	
DESIGNED	JDD
DRAWN	JDD
CHECKED	-
APPROVED	-
LAST EDIT	3/2/23
PLOT DATE	3/2/23
SUBMITTAL	02/01/23

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
PIPING AND EQUIPMENT SECTIONS

DRAWING SCALE: AS SHOWN
DRAWING FILE NAME: M-101
PROJECT NUMBER: 165.030540

SHEET NUMBER
M-102

UNIT HEATER SCHEDULE										
ITEM	TYPE	RATED CAPACITY (BTU/HR)	DESIGN CAPACITY (BTU/HR)	CFM	ELECTRICAL DATA				BASIS OF DESIGN		NOTE
					HP	V	PH	HZ	MAKE	MODEL	
UH-1	HORIZONTAL ELECTRIC	10,200	4,028	380	1/40	208	3	60	MODINE	HER 30B 3101	
UH-2	HORIZONTAL ELECTRIC	10,200	4,028	380	1/40	208	3	60	MODINE	HER 30B 3101	



1 / M-201 HVAC BUILDING PLAN
SCALE: 1/2" = 1'-0"

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REVISIONS & ADDENDUMS

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APPROVED	-	
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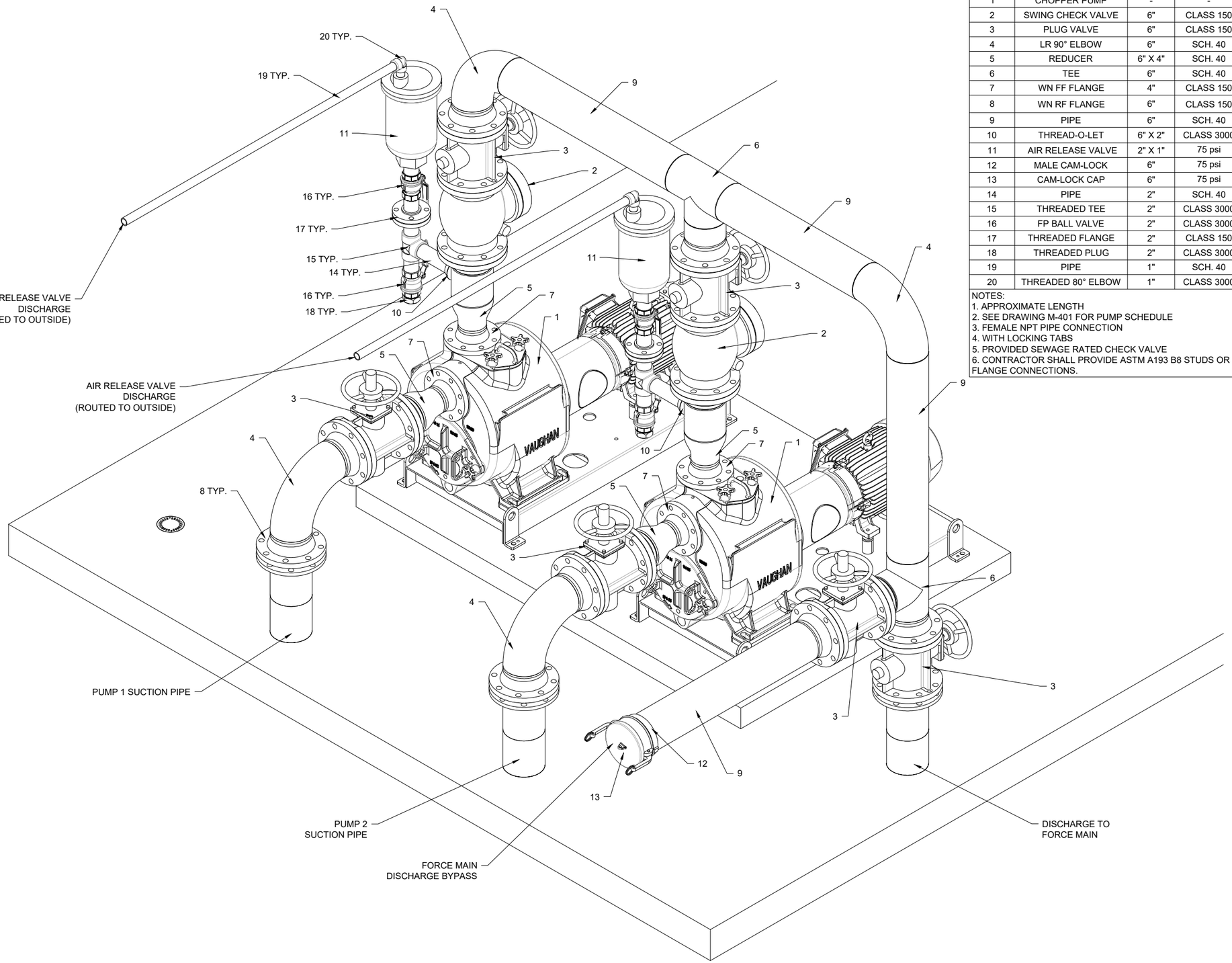
PLOT DATE	3/2/23	
SUBMITTAL	02/01/23	

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
LIFT STATION HVAC PLAN

DRAWING SCALE: AS SHOWN
PROJECT NUMBER: 165.030540
DRAWING FILE NAME: M-101

SHEET NUMBER
M-201



BOM

TAG	DESCRIPTION	SIZE	CLASS/SCH.	MATERIAL	QTY.	NOTES
1	CHOPPER PUMP	-	-	-	2	2
2	SWING CHECK VALVE	6"	CLASS 150	STAINLESS STEEL	2	5
3	PLUG VALVE	6"	CLASS 150	STAINLESS STEEL	6	
4	LR 90° ELBOW	6"	SCH. 40	ASTM A403	4	
5	REDUCER	6" X 4"	SCH. 40	ASTM A403	4	
6	TEE	6"	SCH. 40	ASTM A403	2	
7	WN FF FLANGE	4"	CLASS 150	ASTM A182	4	
8	WN RF FLANGE	6"	CLASS 150	ASTM A182	13	
9	PIPE	6"	SCH. 40	ASTM A312	20 Ft	1
10	THREAD-O-LET	6" X 2"	CLASS 3000	ASTM A182	2	
11	AIR RELEASE VALVE	2" X 1"	75 psi	ASTM A351 GR. CF8M	2	
12	MALE CAM-LOCK	6"	75 psi	STAINLESS STEEL	1	3
13	CAM-LOCK CAP	6"	75 psi	STAINLESS STEEL	1	4
14	PIPE	2"	SCH. 40	ASTM A312	4 FT	1
15	THREADED TEE	2"	CLASS 3000	ASTM A182	2	
16	FP BALL VALVE	2"	CLASS 3000	STAINLESS STEEL	4	
17	THREADED FLANGE	2"	CLASS 150	ASTM A182	4	
18	THREADED PLUG	2"	CLASS 3000	CLASS 3000	2	
19	PIPE	1"	SCH. 40	ASTM A312	20 FT	1
20	THREADED 80° ELBOW	1"	CLASS 3000	ASTM A182	2	

NOTES:
1. APPROXIMATE LENGTH
2. SEE DRAWING M-401 FOR PUMP SCHEDULE
3. FEMALE NPT PIPE CONNECTION
4. WITH LOCKING TABS
5. PROVIDED SEWAGE RATED CHECK VALVE
6. CONTRACTOR SHALL PROVIDE ASTM A193 B8 STUDS OR BOLTS AND ASTM A194 GR.8 NUTS FOR ALL FLANGE CONNECTIONS.

1 M-301 PIPING & EQUPMENT ISOMETRIC
SCALE:NTS

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REVISIONS & ADDENDUMS

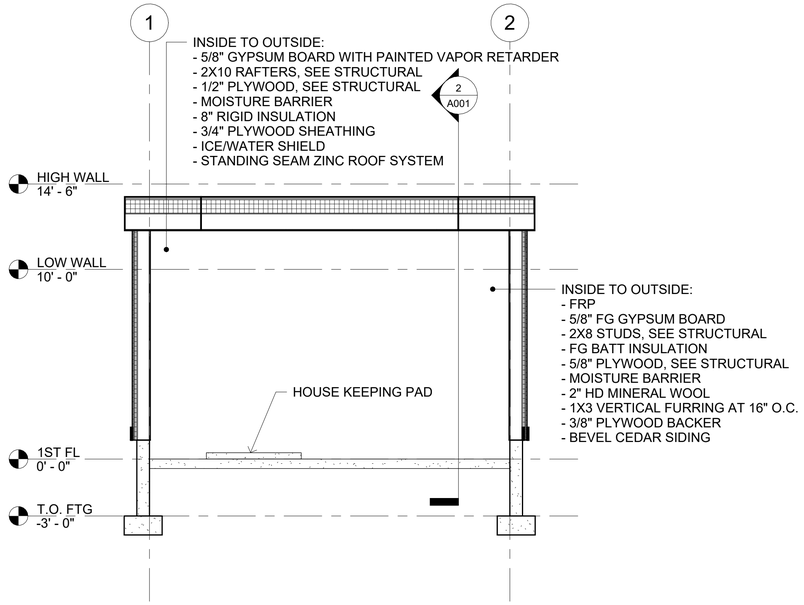
#	DATE	REMARKS

MANAGEMENT	
DESIGNED	JDD
DRAWN	JDD
CHECKED	-
APPROVED	-
LAST EDIT	3/2/23
PLOT DATE	3/2/23
SUBMITTAL	02/01/23

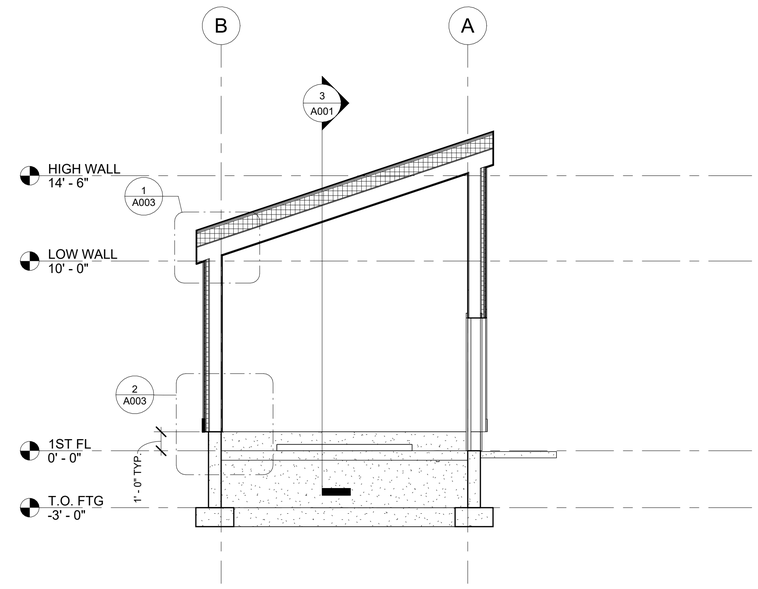
SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
PIPING AND EQUIPMENT ISOMETRIC

DRAWING SCALE: AS SHOWN
PROJECT NUMBER: 165.030540
DRAWING FILE NAME: M-101

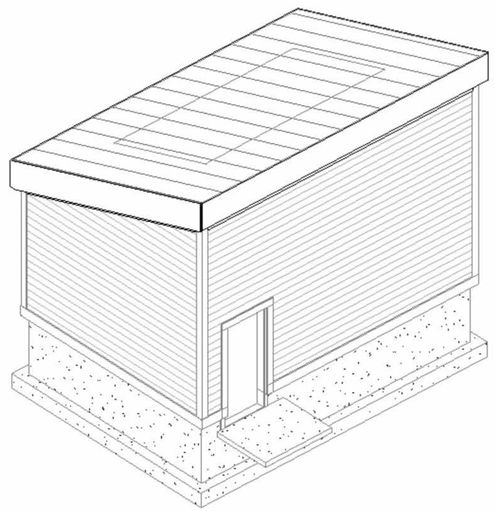
SHEET NUMBER
M-301

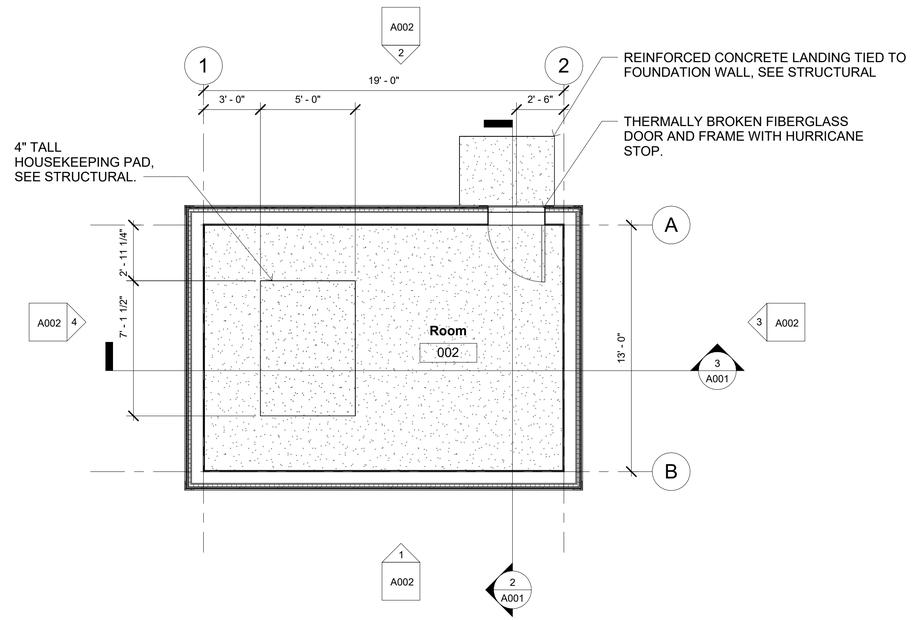


3 BUILDING SECTION - LONG
1/4" = 1'-0"



2 BUILDING SECTION - SHORT
1/4" = 1'-0"





1 FLOOR PLAN
1/4" = 1'-0"

**SEE CIVIL FOR SITE LAYOUT

65% DESIGN DEVELOPMENT

3/6/2023 3:01:24 PM

11"X17" SHEETS ARE HALF INDICATED SCALE

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REVISIONS & ADDENDUMS

#	DATE	REMARKS

MANAGEMENT	
DESIGNED	Designer
DRAWN	WTG
CHECKED	Checker
APPROVED	Approver
LAST EDIT	
PLOT DATE	
SUBMITTAL	3/4/2023

SAINT PAUL LIFT STATION
CITY OF STAINT PAUL
PLAN / SECTIONS

PROJECT NUMBER 165.030540
DRAWING FILE NAME 165.030540- A001

SHEET NUMBER
A-100

PROJECT INFORMATION

Project name	Saint Paul Lift Station
Export date	03/03/2023

APPLICABLE CODES

Building Code 2021 of Alaska

BUILDING DATA

Story	Space Name	Occupancy Group	Function of Space	Designed Area (gross sq. ft.)	Area Per Story
1	Equipment Room	S-2	Accessory storage areas, mechanical equipment room	315	315
				Total Gross Area:	315

Sprinkler type	Type of Construction	Fire Separation	High-Rise
Not Sprinklered	VB	-	No

HEIGHTS AND AREAS

Building Area 503

Single Occupancy

Occupancy Group	Designed Area (sq. ft.)	Allowed Area (Aa) (sq. ft.)
S-2	315	28,755

Factor Increase was determined by interpolation
Per Section 508.3.1, use area requirements for most restrictive occupancy group per story. Occupancy group with most restrictive area: S-2 = 28,755 sq. ft.

Building Height in Stories 504.4

Single Occupancy

Occupancy Group	Highest Story Above Grade Plane Occupancy Appears On	Highest Allowable Story Above Grade Plane
S-2	1	2

Building Height in Feet 504.3

Single Occupancy

Occupancy Group	Highest Elevation Above Grade Plane Occupancy Appears On	Highest Allowable Elevation Above Grade Plane
S-2	12.0 ft.	40 ft.

Average Roof Surface Height Above Grade Plane	Highest Allowable Elevation Above Grade Plane
12.0 ft.	40 ft.

EGRESS INFORMATION

Occupant Loads

Story	Space Name	Occupancy Group	Function of Space	Designed Area (gross sq. ft.)	Designed Area (net sq. ft.)	OLF	Occupant Load
1	Equipment Room	S-2	Accessory storage areas, mechanical equipment room	315	-	300	2

Min. Exits per Space 1006.2.1 1006.3.3

More than one exit must be provided if the space occupant load or maximum common path of egress travel distance are exceeded. More exits may be required under high occupant load or other special conditions (see notes below).

Story	Space Name	Occupancy Group	Function of Space	Cum. Occupant Load of Space	Max Single Exit Cumulative Load of Space	Min. Number of Exits per Space	Max. Common Path of Egress Allowed for Single Exit
1	Equipment Room	S-2	Accessory storage areas, mechanical equipment room	2	29	1	100

Min. Exits per Story 1006.3.3

Story	Total Occupancy Load by Story	Minimum Number of Exits or Exit Accesses	Max Exit Access Travel Distance for 1 Exit
1	2	1	75

In addition to single exit eligibility shown above, one exit may be permitted where all spaces are permitted to have one exit or access to a single exit and the exit discharges directly to the exterior at the level of exit discharge

Max. Exit Access Travel Distance 1017.2

Maximum exit access travel distance serving each space should be at a maximum the values below for each occupancy group.

Occupancy Group	Max Exit Access Travel Distance
S-2	300 ft.

FIRE-RESISTANCE RATINGS

Interior Building Element Fire-Resistance I 704.1

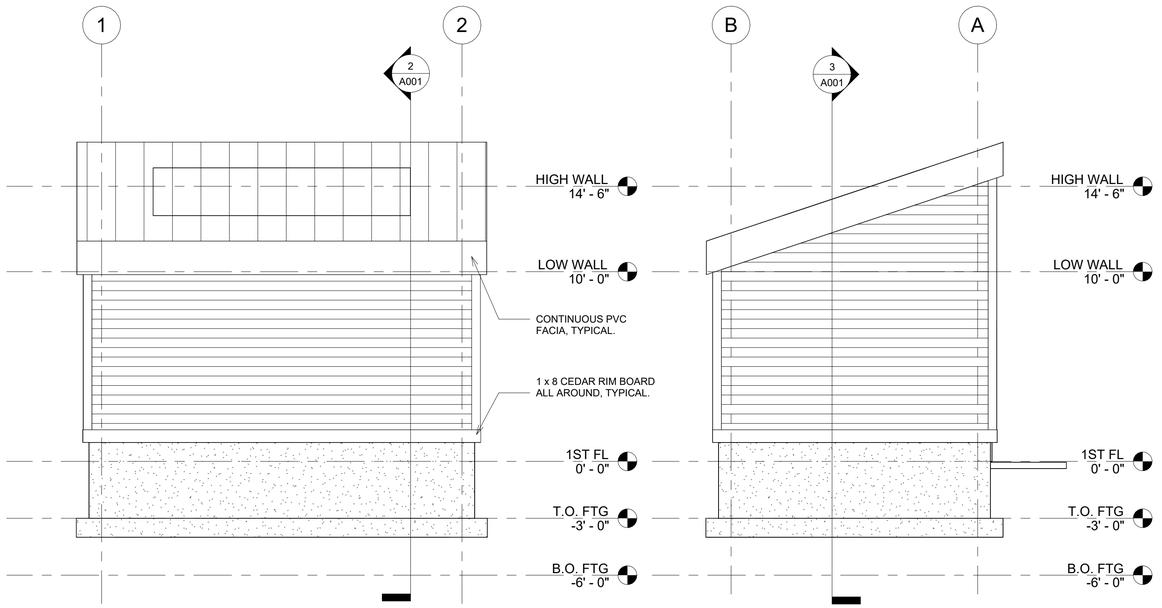
Story	Interior Building Element Type	Min. Fire Resistance Ratings (hrs.)
All	Primary structural frame	0
	Interior Bearing Walls	0
	Interior Nonbearing walls and partitions	0
	Floor construction and associated secondary structural members	0
	Roof construction and associated secondary structural members	0

Required Occupancy Separations 508.4

PLUMBING

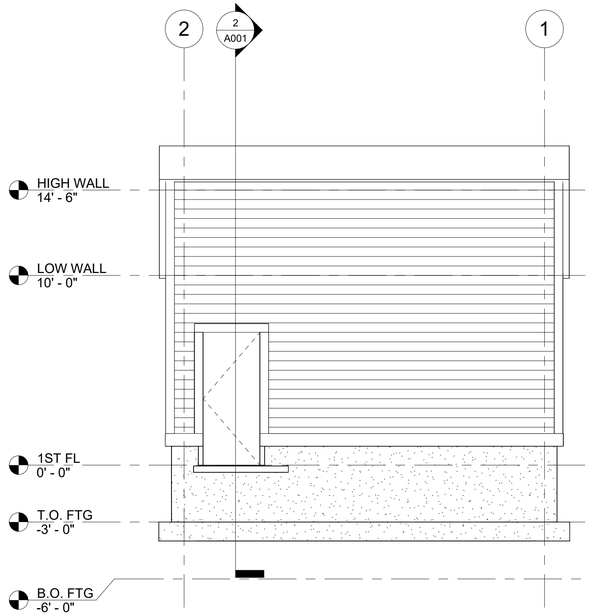
N/A - Not Occupied 1210

11"X17" SHEETS ARE HALF INDICATED SCALE

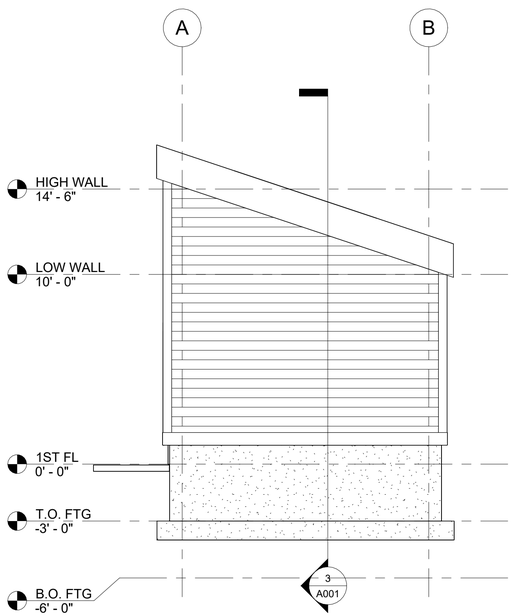


1 SOUTH ELEVATION
1/4" = 1'-0"

3 EAST ELEVATION
1/4" = 1'-0"



2 NORTH ELEVATION
1/4" = 1'-0"



4 WEST ELEVATION
1/4" = 1'-0"

65% DESIGN DEVELOPMENT

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REVISIONS & ADDENDUMS

#	DATE	REMARKS

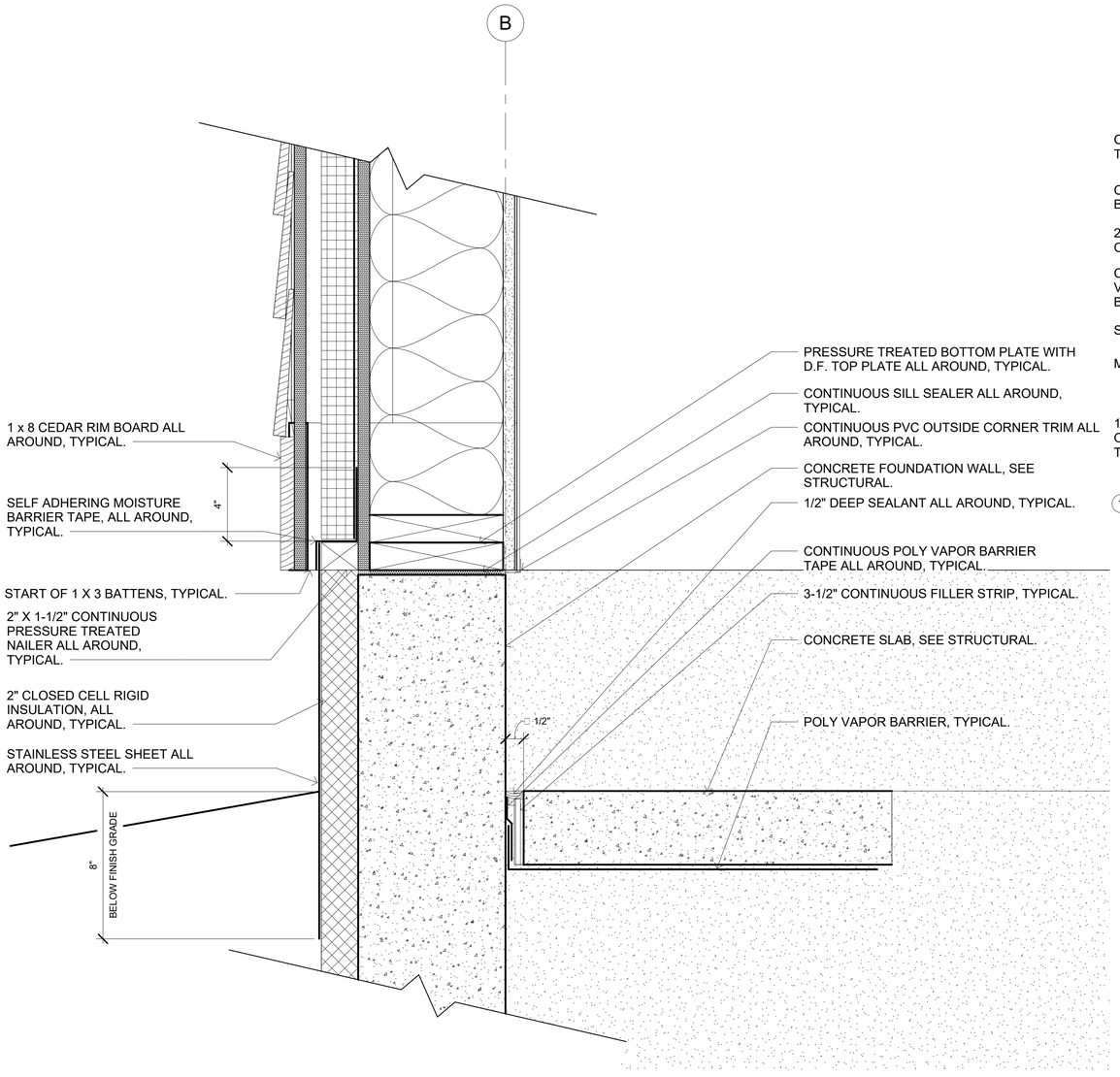
MANAGEMENT		
DESIGNED	Designer	
DRAWN	Author	
CHECKED	Checker	
APPROVED	Approver	
LAST EDIT		
PLOT DATE		3/4/2023
SUBMITTAL		

SAINT PAUL LIFT STATION
CITY OF STAINT PAUL

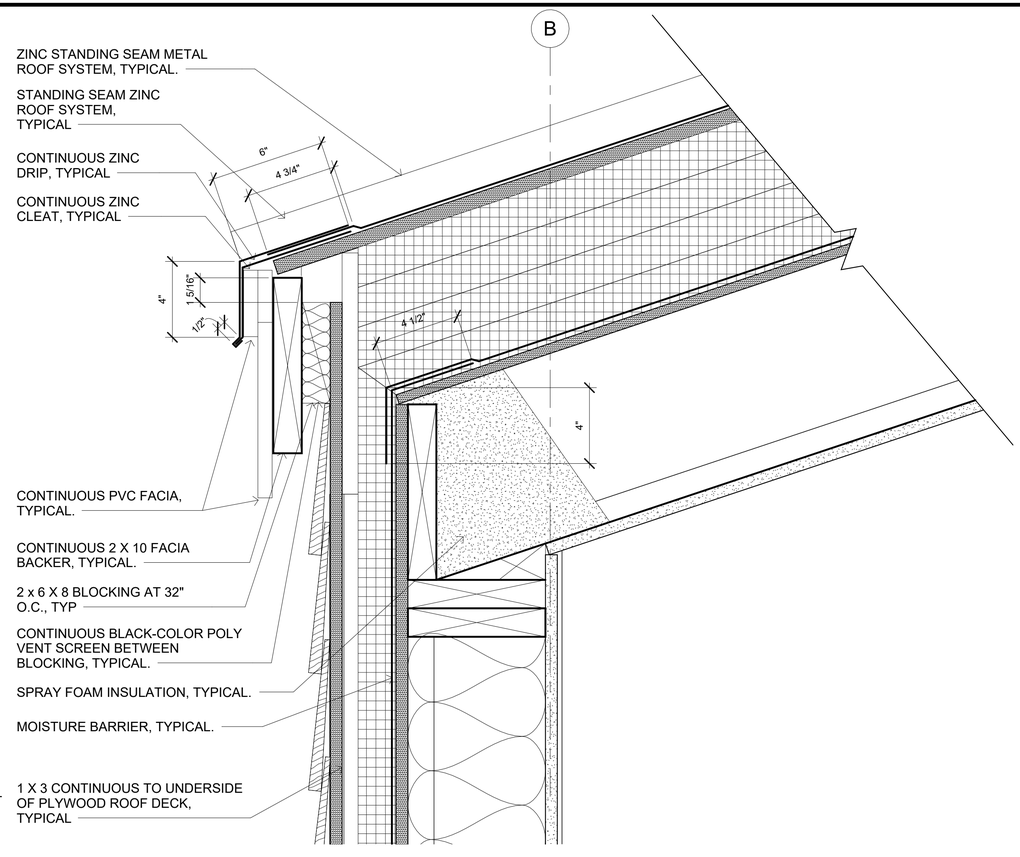
ELEVATIONS

PROJECT NUMBER 165.030540
DRAWING FILE NAME 165.030540- A002

SHEET NUMBER
A-200



2 DETAIL AT WALL BASE
3" = 1'-0"



1 DETAIL AT EAVE
3" = 1'-0"

11"X17" SHEETS ARE HALF INDICATED SCALE

65% DESIGN DEVELOPMENT

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REVISIONS & ADDENDUMS

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MANAGEMENT	
DESIGNED	Designer
DRAWN	Author
CHECKED	Checker
APPROVED	Approver
LAST EDIT	
PLOT DATE	3/4/2023
SUBMITTAL	

SAINT PAUL LIFT STATION
CITY OF STAINT PAUL

DETAILS

PROJECT NUMBER 165.030540

DRAWING FILE NAME 165.030540- A003

SHEET NUMBER
A-300

STRUCTURAL DESIGN DATA:

1. SITE AND BUILDING PARAMETERS:
   OCCUPANCY CATEGORY.....III
   SITE TERRAIN/EXPOSURE CATEGORY.....C
   SITE SOIL CLASS.....D
2. LIVE LOADS:
   ROOF.....20 PSF
   FLOOR.....NA
3. SNOW LOADS:
   GROUND SNOW LOAD, P_g.....40 PSF
   EXPOSURE FACTOR, C_e.....1.00
   THERMAL FACTOR, C_t.....1.10
   SNOW IMPORTANCE FACTOR, I_s.....1.10
   FLAT ROOF SNOW LOAD, P_f.....34 PSF
   ROOF SLOPE FACTOR, C_s.....1.00
   SLOPED ROOF SNOW LOAD, P_s.....34 PSF
   DRIFT SURCHARGE LOAD, P_d.....NA
   DRIFT SURCHARGE WIDTH, W.....NA
4. WIND LOADS:
   BASIC WIND SPEED, V.....170 MPH
   BASIC WIND SPEED ASD, V_{ASD}.....132 MPH
   RISK CATEGORY.....III
   EXPOSURE CLASSIFICATION.....C
   DESIGN VELOCITY PRESSURE (26-10.2).....53 PSF

5. SEISMIC LOADS:
   RISK CATEGORY
   SEISMIC IMPORTANCE FACTOR, I_E.....1.25
   MAPPED SHORT-PERIOD ACCELERATION, S_s.....0.24
   MAPPED 1-SECOND PERIOD ACCELERATION, S_t.....0.13
   SITE CLASS
   SHORT-PERIOD DESIGN ACCELERATION, S_{DS}.....0.26
   1-SECOND PERIOD DESIGN ACCELERATION, S_{D1}.....0.20
   SEISMIC DESIGN CATEGORY.....D
   BASIC SEISMIC FORCE-RESISTING SYSTEM
   DESIGN BASE SHEAR.....
   SEISMIC RESPONSE COEFFICIENT, CS.....
   RESPONSE MODIFICATION COEFFICIENT, R.....

6. GEOTECHNICAL DATA
   DESIGN LOAD BEARING VALUE
   GEOTECHNICAL REFERENCE

7. RAIN INTENSITY.....0.57 IN/HR

2. GENERAL

2.1. ALL WORK IS TO BE IN ACCORDANCE WITH THE 2021 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC) AS AMENDED BY THE STATE OF ALASKA, LOCAL CODE AMENDMENTS, AND GOOD STANDARD PRACTICE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THESE DRAWINGS WITH THE ARCHITECTURAL SHEETS FOR OPENING SIZES, PROPER LOCATION OF BEARING WALLS AND BEAMS, AND LOCATION OF MECHANICAL AND ELECTRICAL ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS. PROVIDE ADDITIONAL STUDS, JOISTS, OR OTHER FRAMING AS REQUIRED TO PERMIT PROPER INSTALLATION OF MECHANICAL. ELECTRICAL, AND PLUMBING PENETRATIONS.

2.2. PRIOR TO STARTING ANY WORK OR FABRICATION, THE CONTRACTOR SHALL COORDINATE ALL DIMENSIONS AMONG THE DRAWINGS. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, SITE CONDITIONS, AND THESE NOTES SHALL BE REPORTED TO THE ARCHITECT/ENGINEER.

2.3. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL OSHA AND DOSH SAFETY STANDARDS. THE CONTRACTOR IS IN CHARGE OF ALL SAFETY MATTERS ON AND AROUND THE JOB SITE. PROVIDE TEMPORARY ERECTION BRACING AND SHORING AS REQUIRED FOR STABILITY OF THE STRUCTURE DURING ALL PHASES OF THE CONSTRUCTION.

3. QUALITY ASSURANCE:

3.1. SPECIAL INSPECTION IS REQUIRED IN ACCORDANCE WITH IBC SECTION 1704. THE OWNER SHALL ENGAGE THE SERVICES OF AN INDEPENDENT, QUALIFIED SPECIAL INSPECTOR. THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION: PERIODIC INSPECTION OF THE LATERAL FORCE RESISTING SYSTEM - WOOD DIAPHRAGM NAILING AND ATTACHMENTS TO PERIMETER SHEAR WALLS. CONTINUOUS INSPECTION OF POST INSTALLED ANCHORS.

3.2. SPECIAL INSPECTION IS IN ADDITION TO THE CONTRACTOR'S REQUIRED QUALITY CONTROL INSPECTIONS AND TESTING. THE CONTRACTOR'S QUALITY CONTROL INSPECTIONS AND TESTING SHALL OCCUR PRIOR TO SPECIAL INSPECTION AND REPORTS SHALL BE AVAILABLE TO THE SPECIAL INSPECTOR.

4. DEFERRED SUBMITTALS:

4.1. THE FOLLOWING ITEMS ARE NOT INCLUDED IN THESE DRAWINGS AND REQUIRE STRUCTURAL DESIGN TO BE FURNISHED BY THE CONTRACTOR:

4.1.1. ROOFING ATTACHMENT

4.1.2. SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT DRAWINGS AND CALCULATIONS FOR BUILDER-DESIGNED COMPONENTS, SEALED BY AN ENGINEER REGISTERED IN THE STATE OF ALASKA, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO SUBMITTING TO BUILDING SAFETY FOR REVIEW. SUBMITTALS OF BUILDER-DESIGNED ITEMS SHALL INCLUDE LOCATIONS, MAGNITUDES, AND DIRECTIONS OF ALL FORCES TRANSFERRED TO THE STRUCTURE. DEFERRED SUBMITTALS MUST BE REVIEWED AND APPROVED PRIOR TO INSTALLATION/CONSTRUCTION.

5. SUBMITTALS:

5.1. THE CONTRACTOR SHALL REVIEW, STAMP WITH HIS APPROVAL, DATE AND SIGN ALL SHOP DRAWINGS AND SUBMITTALS REQUIRED BY THE CONTRACT DRAWINGS PRIOR TO SUBMITTAL TO THE ENGINEER. AT THE TIME OF SUBMISSION, THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DEVIATION IN THE SHOP DRAWINGS FROM THE REQUIREMENTS OF THE CONTRACT DRAWINGS. DIMENSIONS AND QUANTITIES ARE THE CONTRACTOR'S RESPONSIBILITY AND WILL NOT BE REVIEWED.

6. CONCRETE WORK:

6.1. STRUCTURAL CONCRETE SHALL HAVE A 28 DAY STRENGTH, F'cOF 4,000 PSI. MIX SHALL NOT CONTAIN LESS THAN 5-1/2 SACKS OF CEMENT PER CUBIC YARD. MAXIMUM WATER TO CEMENT RATIO EQUALS 0.50. MAXIMUM UN-PLASTICIZED SLUMP SHALL BE 5 INCHES. ENTRAIN AIR IN ACCORDANCE WITH ACI 318.

6.2. REINFORCING STEEL: SHALL BE ASTM A615, GRADE 60 DETAILED OR IN ACCORDANCE WITH ACI 318.BAR LAP SHALL BE IN ACCORDANCE WITH ACI 318 (44 BAR DIAMETER MINIMUM), OR AS DETAILED, IF MORE RESTRICTIVE. PROVIDE A 135 DEGREE BEND PLUS 6 BAR DIAMETER TAIL AT ALL TIE STEEL. CONCRETE COVER OVER A REINFORCEMENT SHALL BE AS NOTED ON THE DRAWINGS AND IN ACCORDANCE WITH ACI 301. WELDING OF REINFORCEMENT IS PROHIBITED.

6.3. SUPPORT ALL REBAR ON CHAIRS, DOBIES, OR OTHER APPROVED MEANS. CONTRACTOR SHALL TAKE SPECIAL CARE TO PREVENT DISTURBANCE DURING CONCRETE PLACEMENT TO ENSURE THAT REINFORCEMENT REMAINS AT ITS PROPER ELEVATION AND POSITION.

6.4. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE.

6.5. FOUNDATIONS ARE DESIGNED FOR A MAXIMUM SOIL BEARING PRESSURE OF 2000 PSF UNDER SUSTAINED LOADING.

6.6. FOUNDATION SOILS SHALL BE PREPARED IN ACCORDANCE WITH IBC 2021 AND THE PROJECT GEOTECHNICAL REPORT.

7. WOOD:

7.1. ALL DIMENSIONAL LUMBER SHALL BE HEM FIR #2 OR BETTER FOR ALL 2X JOISTS, STUDS, AND PLATES, AND DOUG FIR #1 FOR ALL 4X OR 6X WOOD POSTS AND BEAMS UNLESS NOTED OTHERWISE. WOOD SHALL BE GRADED IN ACCORDANCE WITH THE WESTERN WOODS PRODUCTS ASSOCIATION (WWPA) OR WEST COAST LUMBER INSPECTION BUREAU (WCLIB) LUMBER GRADING CRITERIA. MAXIMUM MOISTURE CONTENT SHALL BE 15%. MINIMUM HEADER SIZE UNLESS NOTED OTHERWISE SHALL BE (2)2X8 HEM-FIR #2.

7.2. FLOORS: 3/4" T&G PLYWOOD SUBFLOOR NOTED ON THE DRAWINGS SHALL BE APA RATED SUBFLOOR AND SHALL HAVE A PANEL SPAN RATING OF 48/24- BLOCKED EDGES, MINIMUM NAILING FOR FLOOR PANELS SHALL EQUAL 10d (0.148) NAILS AT 4" CENTERS ALONG SUPPORT EDGES AND 12"0.C. ALONG INTERMEDIATE FRAMING.

7.3. ROOFING: 5/8" PLYWOOD ROOF SHEATHING SHALL BE CDX WITH EXTERIOR GLUE, OR BETTER AND SHALL HAVE A PANEL SPAN RATING OF 32/16 - BLOCKED EDGES, MINIMUM NAILING FOR ROOF PANELS SHALL BE (1.148)10d NAILS AT 6"0.C. ALONG PANEL EDGES AND 12"0.C. IN THE FIELD.

7.4. WALLS: PLYWOOD WALL SHEATHING SHALL BE 7/16" MIN CDX OR OSB WITH EXTERIOR GLUE, OR BETTER, AND SHALL HAVE A SPAN RATING OF 32/16 - MINIMUM NAILING FOR WALL PANELS SHALL BE 8d (0.131) NAILS AT 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD. BLOCK ALL PANEL EDGES FOR VERTICAL PLYWOOD DIAPHRAGMS. REFER TO SHEARWALL SCHEDULE FOR ADDITIONAL NAILING REQUIREMENTS.

7.5. ALL METAL TO WOOD OR WOOD TO WOOD CONNECTIONS SHALL BE STANDARD OR AS DETAILED ON THE DRAWINGS USING A307 BOLTS. ALL BOLTS AND LAG SCREW HEADS IN CONTACT WITH WOOD SHALL HAVE PLATES OR WASHERS AS DETAILED AND OR SPECIFIED. THE MINIMUM SIZE WASHER EQUALS 2" DIAMETER.

7.6. ALL FRAMING ANCHORS AND HANGERS INDICATED ON THE DRAWINGS ARE "SIMPSON STRONG-TIE" OR EQUAL. UNLESS OTHERWISE DETAILED, ALL BEAMS AND JOISTS SHALL RECEIVE HANGERS WITH A NORMAL LOAD CAPACITY EQUAL TO THE SHEAR CAPACITY OF THE SUPPORTED MEMBER. HANGERS LOCATED IN CONTACT WITH TREATED WOOD OR WET CONDITIONS SHALL BE Z-MAX, STAINLESS STEEL OR HOT DIPPED GALVANIZED.

7.7. LAG SCREWS SHALL BE PRE-DRILLED WITH LEAD HOLES AS FOLLOWS:

7.7.1. THE LEAD HOLE FOR THE SHANK SHALL HAVE THE SAME DIAMETER AS THE SHANK, AND THE SAME DEPTH AS THE LENGTH OF THE UNTHREADED SHANK.

7.7.2. THE LEAD HOLE FOR THE THREADED PORTION SHALL HAVE A DIAMETER EQUAL TO 60% TO 70% OF THE SHANK DIAMETER AND A LENGTH EQUAL TO AT LEAST THE LENGTH OF THE THREADED PORTION.

7.8. WOOD SCREWS SHALL BE PRE-DRILLED WITH LEAD HOLES. THE PART OF THE HOLE RECEIVING THE SHANK SHALL BE ABOUT 7/8X THE DIAMETER OF THE SHANK AND THAT FOR THE THREADED PORTION SHALL BE ABOUT 7/8X THE DIAMETER OF THE SCREW AT THE ROOT OF THE THREAD.

7.9. MINIMUM NAILING SHALL EQUAL THAT INDICATED IN IBC TABLE 2304.9.1 UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

7.10. LAMINATED VENEER LUMBER (LVL) MEMBERS ARE TO BE "VERSA-LAM 2.0E" AS MANUFACTURED BY BOISE CASCADE OR OR APPROVED EQUAL. MINIMUM ALLOWABLE DESIGN STRESSES: Fb=2,800 PSI, E=2,000,000 PSI, Fv=285 PSI.

7.11. GLUED-LAMINATED BEAMS (GLB) ARE TO BE 24F-1.8E, BALANCED LAY-UP WITH MINIMUM ALLOWABLE DESIGN STRESSES OF Fb2,400 PSI, E=1,800,000 PSI, Fv=265 PSI. ALL GLUED-LAMINATED LUMBER TO BE FABRICATED IN ACCORDANCE WITH AITC 117 AND PRODUCT STANDARD PS-56.

7.12. PRE-ENGINEERED PLYWOOD WEB FLOOR JOISTS ARE TO BE BCI SERIES JOISTS AS MANUFACTURED BY BOISE CASCADE OR APPROVED EQUAL. MINIMUM JOIST SIZES ARE INDICATED ON THE FRAMING PLANS. SUBSTITUTIONS MUST MEET BOTH THE LOAD CAPACITY AND DEFLECTION CRITERIA OF THE INDICATED FLOOR JOISTS PER PLAN. JOISTS SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S PUBLISHED SPECIFICATIONS. ALL NECESSARY BRIDGING, BLOCKING, BLOCKING PANELS, STIFFENERS, E

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REVISIONS & ADDENDUMS

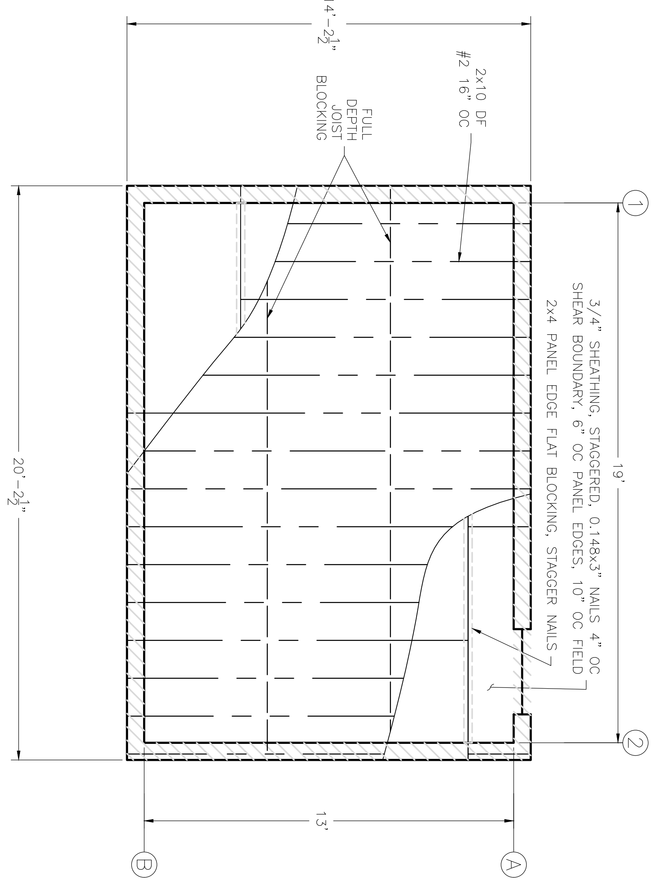
#	DATE	REMARKS

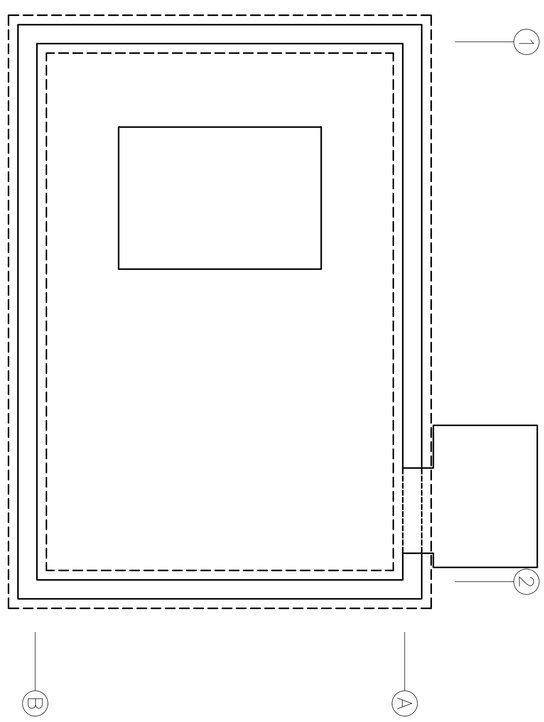
MANAGEMENT	BY
DESIGNED	DESIGNBY
DRAWN	DRAWNBY
CHECKED	CHECKEDBY
APPROVED	APPROVEDBY
LAST EDIT	3/6/23
PLOT DATE	3/6/23
SUBMITTAL	02/01/23

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
SPECIFICATIONS & DESIGN DATA

DRAWING SCALE: AS SHOWN
DRAWING FILE NAME: DWGNAME
PROJECT NUMBER: 165.030540

SHEET NUMBER
S-100





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SHEET NUMBER
S-201

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
FRAMING AND FOUNDATION PLAN

PROJECT NUMBER	DRAWING FILE NAME	DRAWING SCALE
165.030540		AS SHOWN

MANAGEMENT	
DESIGNED	
DRAWN	
CHECKED	
APPROVED	
LAST EDIT	
PLOT DATE	
SUBMITTAL	02/01/23

REVISIONS & ADDENDUMS

#	DATE	REMARKS

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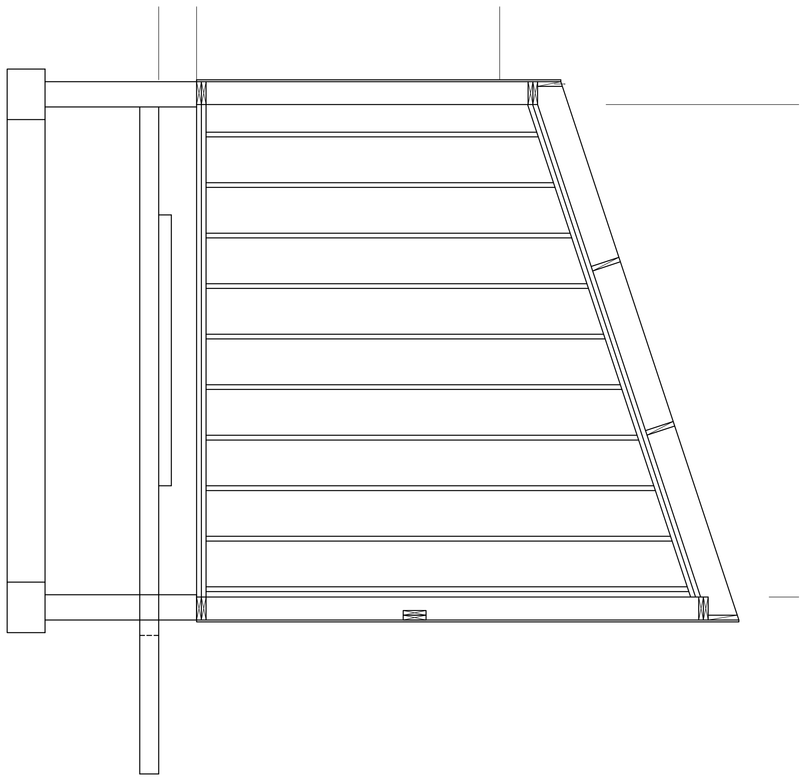

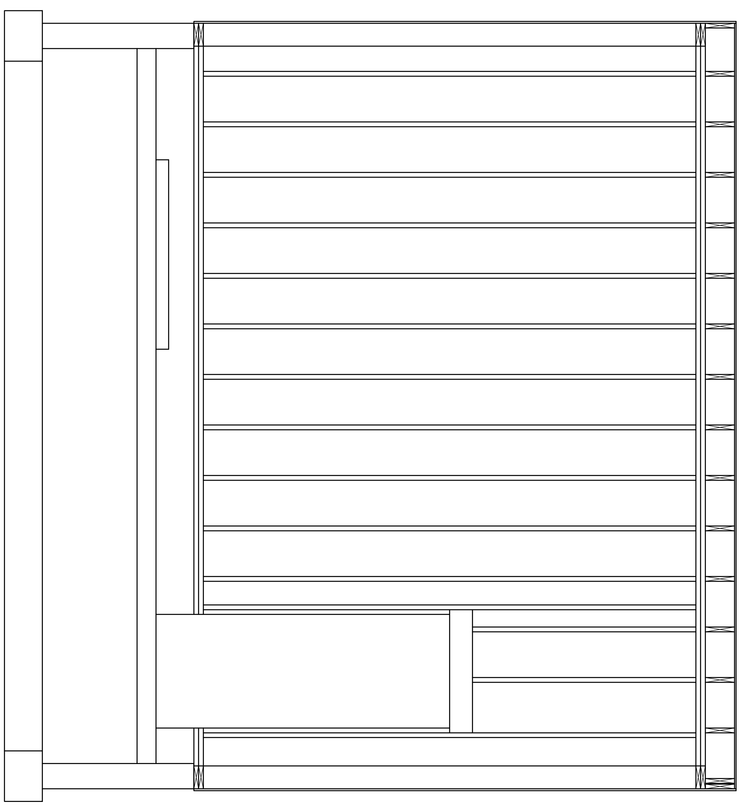

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SHEET NUMBER
S-202

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
SECTIONS AND DETAILS

PROJECT NUMBER	DRAWING FILE NAME	DRAWING SCALE
165.030540		AS SHOWN

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SUBMITTAL	02/01/23

REVISIONS & ADDENDUMS

#	DATE	REMARKS

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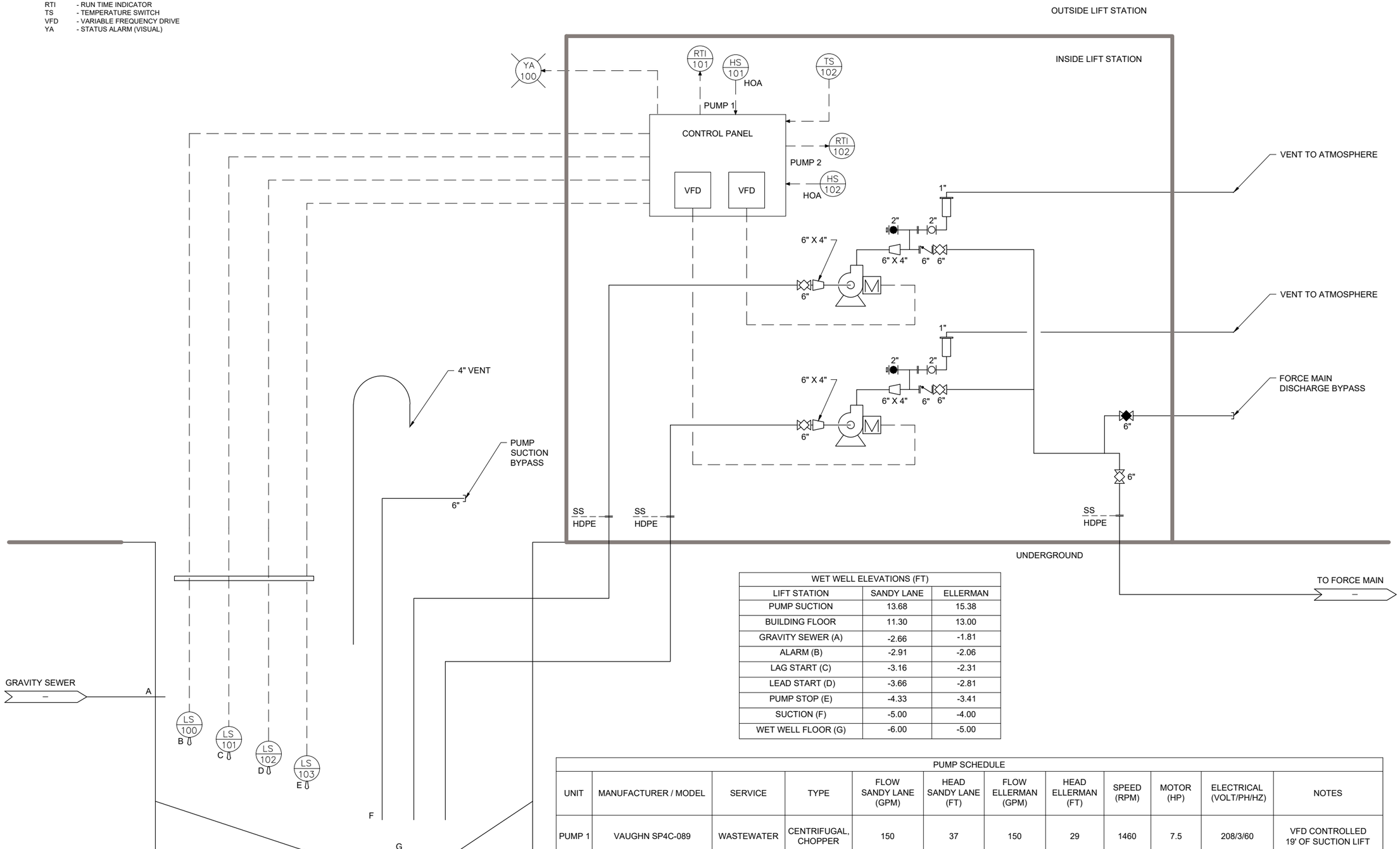
ABBREVIATIONS

HS	- HAND SWITCH
LS	- LEVEL SWITCH
RTI	- RUN TIME INDICATOR
TS	- TEMPERATURE SWITCH
VFD	- VARIABLE FREQUENCY DRIVE
YA	- STATUS ALARM (VISUAL)



WET WELL ELEVATIONS (FT)		
LIFT STATION	SANDY LANE	ELLERMAN
PUMP SUCTION	13.68	15.38
BUILDING FLOOR	11.30	13.00
GRAVITY SEWER (A)	-2.66	-1.81
ALARM (B)	-2.91	-2.06
LAG START (C)	-3.16	-2.31
LEAD START (D)	-3.66	-2.81
PUMP STOP (E)	-4.33	-3.41
SUCTION (F)	-5.00	-4.00
WET WELL FLOOR (G)	-6.00	-5.00

PUMP SCHEDULE

UNIT	MANUFACTURER / MODEL	SERVICE	TYPE	FLOW SANDY LANE (GPM)	HEAD SANDY LANE (FT)	FLOW ELLERMAN (GPM)	HEAD ELLERMAN (FT)	SPEED (RPM)	MOTOR (HP)	ELECTRICAL (VOLT/PH/HZ)	NOTES
PUMP 1	VAUGHN SP4C-089	WASTEWATER	CENTRIFUGAL, CHOPPER	150	37	150	29	1460	7.5	208/3/60	VFD CONTROLLED 19' OF SUCTION LIFT
PUMP 1	VAUGHN SP4C-089	WASTEWATER	CENTRIFUGAL, CHOPPER	150	37	150	29	1461	7.5	208/3/60	VFD CONTROLLED 19' OF SUCTION LIFT

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REVISIONS & ADDENDUMS

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MANAGEMENT	
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SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
PIPING AND INSTRUMENTATION DIAGRAM

DRAWING SCALE: AS SHOWN
DRAWING FILE NAME: M-101
PROJECT NUMBER: 165.030540

SHEET NUMBER
M-401

LIGHTING LEGEND

- LIGHTING FIXTURE - SURFACE (CEILING)
- COMB. EXHAUST FAN, LIGHT FIXTURE - SURFACE (CEILING)
- LIGHTING FIXTURE - RECESSED
- WALL MOUNTED FIXTURE
- 2x2 RECESSED FIXTURE
- 2x4 RECESSED FIXTURE
- 1x4 RECESSED FIXTURE
- 2x2 SURFACE MOUNTED FIXTURE
- 2x4 SURFACE MOUNTED FIXTURE
- 1X4 SURFACE MOUNTED FIXTURE
- PENDANT MOUNTED FIXTURE
- WALL MOUNTED FIXTURE
- STRIP FIXTURE
- TRACK LIGHTING SYSTEM
- POLE MOUNTED AREA LIGHT
- WALL MOUNTED BUILDING LIGHT
- FLOOD LIGHT
- EXIT SIGN - CEILING MOUNTED (SOLID INDICATES EXIT SIGN FACING)
- EXIT SIGN - WALL MOUNTED (SOLID INDICATES EXIT SIGN FACING)
- EMERGENCY LIGHT
- LIGHT FIXTURE W/ EMERGENCY BATTERY
- PHOTOCELL
- $ SINGLE POLE SWITCH +48" U.O.N.
- $D SWITCH WITH DESIGNATION (D - DIMMABLE) +48" U.O.N.
- $K3 THREE WAY KEY OPERATED SWITCH +48" U.O.N.
- $3 $4 3-WAY & 4-WAY SWITCH +48" U.O.N.
- $PL SINGLE POLE SWITCH W/ PILOT LIGHT (PL "ON" WHEN LIGHT IS "OFF" - U.O.N.) + 48" U.O.N.
- $OS OCCUPANCY SENSOR - WALL MOUNTED
- OS OCCUPANCY SENSOR - CEILING MOUNTED
- MS MOTION SENSOR - WALL MOUNTED

WIRING DEVICES LEGEND

- RECEPTACLE - SINGLE +18" U.O.N.
- RECEPTACLE - DUPLEX +18" U.O.N.
- RECEPTACLE - QUAD +18" U.O.N.
- RECEPTACLE - SPLIT WIRED +18" U.O.N.
- RECEPTACLE - GFI OR ON GFI CIRCUIT
- RECEPTACLE - WEATHER PROOF (WP)
- RECEPTACLE - SPECIAL +18" U.O.N.
- RECEPTACLE - FLOOR MOUNTED
- RECEPTACLE - CEILING MOUNTED
- JUNCTION BOX
- PUSH BUTTON (DOORBELL, GARAGE)
- W PLUG MOLD
- POWER POLE

WIRING CIRCUITS LEGEND

- CONDUIT - CONCEALED
- CONDUIT - EXPOSED
- CONDUIT - UNDERGROUND
- CONDUIT - FLEX
- A-2 HOMERUN (PANEL AND CIRCUIT #)
- CONDUIT STUB-UP
- CONDUIT STUB-DN
- 1-HOT
- 2-HOT
- 3-HOT
- 1-NEUTRAL, 1-HOT
- 1-NEUTRAL, 2-HOT
- 1-NEUTRAL, 3-HOT
- 1-NEUTRAL, 4-HOT
- TELECOM OUTLET, 2 JACKS UON
- T THERMOSTAT (LINE VOLTAGE)

ELECTRICAL ABBREVIATIONS LIST

AC	ABOVE COUNTER
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AMP	AMPERES
ATS	AUTOMATIC TRANSFER SWITCH
BB	BASEBOARD (HEATER)
BCU	BARE COPPER
BFC	BELOW FINISH CEILING (BOTTOM OF DEVICE)
BLDG	BUILDING
CB	CIRCUIT BREAKER
CFF	CLEARANCE FINISH FLOOR (SURFACE TO SURFACE)
CFC	CLEARANCE FINISH CEILING (SURFACE TO SURFACE)
CLG	CEILING
CKT	CIRCUIT
CO	CONDUIT ONLY
C	CONDUIT
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
DC	DIRECT CURRENT
DCS	DIGITAL CONTROL SYSTEM
DIST	DISTANCE
(E)	EXISTING
EGC	EQUIPMENT GROUNDING CONDUCTOR
EM	EMERGENCY
EMCS	ENERGY MANAGMENT CONTROL SYSTEM
EO	ELECTRICALLY OPERATED
EP	EXPLOSION PROOF
EKSU	ELECTRONIC KEY SWITCH UNIT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FA	FIRE ALARM
FBO	FURNISHED BY OTHERS
FWP	FACTORY WIRED PANEL
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HID	HIGH INTENSITY DISCHARGE
HIT	HIGH INTENSITY TUNGSTEN
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HWH	HOT WATER HEATER
IBO	INSTALLED BY OTHERS
INC	INCANDESCENT
ITB	INTERCOM TERMINAL BOX
KEA	KODIAK ELECTRIC ASSOCIATION
KSU	KEY SWITCH UNIT
LC	LIGHTING CONTACTOR
LPS	LOW PRESSURE SODIUM
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MDS	MAIN DISTRIBUTION SWITCHBOARD
MH	MOUNTING HEIGHT
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OC	ON CENTER
OL	OVERLOAD
PA	PUBLIC ADDRESS
PC	PHOTOCELL
PH	PHASE
PL	PILOT LIGHT
PNL	PANEL
PTZ	PAN, TILT, ZOOM
QTZ	QUARTZ
RIB	RELAY IN BOX
ROW	RIGHT OF WAY
SEC	SECTION
SSBJ	SUPPLY SIDE BONDING JUMPER
SSP	SECURITY SYSTEM PANEL
TC	TIME CLOCK
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
UON	UNLESS OTHERWISE NOTED
VEL	VERIFY EXACT LOCATION
VOS	VERIFY ON SITE
W/	WITH
W/O	WITHOUT
WP	WEATHER PROOF
XFRM	TRANSFORMER

THIS IS A STANDARD (TYPICAL) ABBREVIATIONS LIST. NOT ALL ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT. ALSO, ADDITIONAL ABBREVIATIONS MAY BE INTRODUCED ON DRAWINGS AND DEFINED THEREIN.

DRAWING SYMBOLS

SEE SECTION #, ON SHEET XX

SECTION #/DETAIL # SCALE:

NORTH ARROW

SCALE BAR 40' 0' 20' 40' 80'

CONSTRUCTION NOTE

SHEET NOTE

LINE TYPES

- EXISTING EQUIPTMENT
- NEW EQUIPTMENT
- DEMOLISHION
- HEAT TRACE

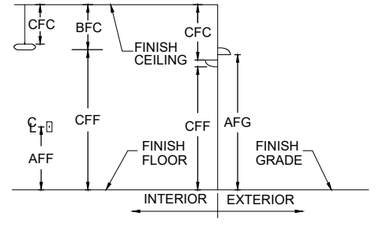
POWER LEGEND

- M ELECTRIC METER
- NEW PANELBOARD - SURFACE MOUNTED
- EXISTING PANELBOARD - SURFACE MOUNTED
- NEW PANELBOARD - FLUSH MOUNTED
- EXISTING PANELBOARD - FLUSH MOUNTED
- MOTOR CONNECTION
- G GENERATOR
- $T FRACTIONAL HP MOTOR DISCONNECT SWITCH W/INTEGRAL THERMAL PROTECTION
- DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- COMBINATION MOTOR STARTER DISCONNECT
- EQUIPMENT CONNECTION
- T TRANSFORMER

COMMUNICATIONS LEGEND

- 1-GROUND
- TELECOM OUTLET - FLOOR MOUNTED, 2 JACKS UON
- TELECOM OUTLET - CEILING MOUNTED, 2 JACKS UON
- EXISTING TELECOM AND/OR DATA OUTLET
- TV TELEVISION OUTLET
- S SPEAKER - WALL MOUNTED
- S SPEAKER - CEILING MOUNTED
- BELL
- DOOR-BELL W/ ADA COMPLIANT VISUAL NOTIFICATION DEVICE
- S SPEAKER / CLOCK
- CLOCK - WALL MOUNTED
- CLOCK - CEILING MOUNTED
- TTB TELEPHONE TERMINAL BOARD

MOUNTING LEGEND



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REVISIONS & ADDENDUMS

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MANAGEMENT	
DESIGNED	WDF
DRAWN	WDF
CHECKED	CIO
APPROVED	
LAST EDIT	3/2/23
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SUBMITTAL	02/01/23

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
ELECTRICAL LEGEND AND ABBREVIATIONS

PROJECT NUMBER	DRAWING FILE NAME	DRAWING SCALE
165.030540	030540-E-100 LEGEND AND ABBREVIATIONS.DWG	AS SHOWN

SHEET NUMBER
E-100

65% SUBMITTAL

ELLERMAN EQUIPMENT SCCR SCHEDULE

ALL EQUIPMENT TO HAVE SCCR EXCEEDING THE AVAILABLE SCA AT THE CALCULATED X/R RATIO. WHERE X/R RATIO IS GREATER THAN THE INDUSTRY STANDARD TEST X/R RATIOS, THE APPROPRIATE MULTIPLICATION FACTOR SHALLBE APPLIED TO PROPERLY RATE THE EQUIPMENT. DOWNSTREAM EQUIPMENT AND ASSOCIATED CIRCUIT BREAKER RATINGS MAY BE SATISFIED BY USING FULLY RATED EQUIPMENT OR MANUFACTURER TESTED COMBINATIONS FOR BRANCH CIRCUITS RATED 100AMPS OR LESS PER NEC 240.86(B) TO SERIES RATE FOR THE AVAILABLE SCA AT EQUIPMENT. ALL SERIES RATED EQUIPMENT TO BE CLEARLY LABELED & IDENTIFIED PER NEC 110.22(C). SERIES RATED EQUIPMENT MOTOR LOADS CANNOT EXCEED 1% OF AIC RATING PER NEC 240.86(C).

CONTRACTOR TO VERIFY ACTUAL EQUIPMENT TO BE PROVIDED WITH SERVING UTILITY PRIOR TO EQUIPMENT PROCUREMENT. ANY DECREASE OF TRANSFORMER %Z, CONDUCTOR LENGTH, OR INCREASE IN TRANSFORMER KVA OR CABLE SIZES TO BE REPORTED TO ENGINEER FOR RECALCULATION OF AVAILABLE FAULT CURRENT PRIOR TO PROCUREMENT OF EQUIPMENT. PROVIDE WARNING PLACARD INSTALLED ON SERVICE DISCONNECT PER NEC 110.24 DENOTING ALL PROJECT PARAMETERS REQUIRED BY NEC

ASSUMED UTILITY SYSTEM CONFIGURATION FOR CALCUALTION PURPOSES

SERVICE TRANSFORMER

KVA	%Z	PF	DATE	SCA (SEC.)
45	1.8	1	1/27/2023	6,940

SERVICE AMPS	FOR FAULT CURRENT CALCUATIONS ONLY SERVICE LATERAL	FT
125	4#4/0, 1#4EGC, 2.5"C	400

EQUIPMENT ID	SC AMPS
SERVICE DISCONNECT	2,740
PANEL 'MDP'	2,673

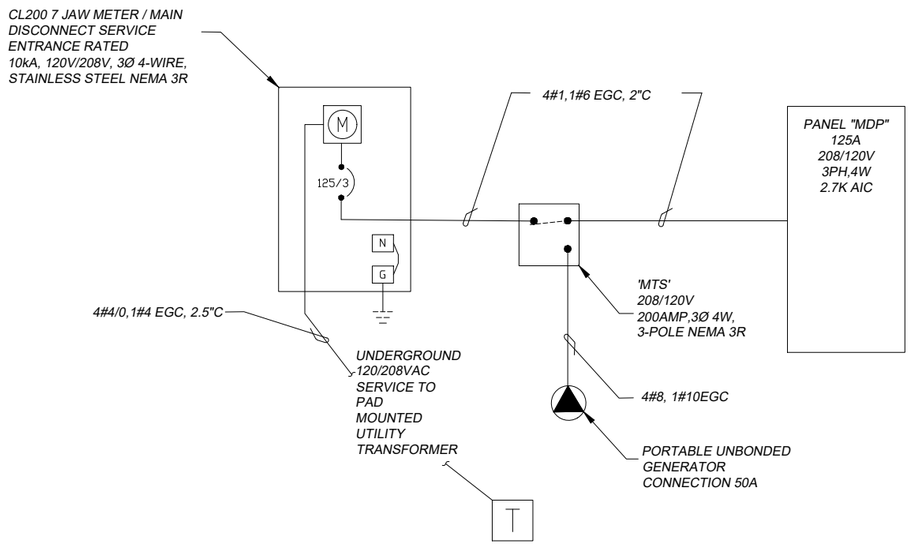
SCHEDULE DISTRIBUTION PANEL 'MDP'

TYPE	SPACE #	NO. OF POLES	TRIP RATING	LOAD DESCRIPTION	BRANCH LOAD VA	CONNECTED LOAD (kVA) A	B	C	BRANCH LOAD VA	LOAD DESCRIPTION	TRIP RATING	NO. OF POLES	SPACE #	TYPE
G	1	3	100		7,071	8.57			1,500	UNIT HEATER 3KW	20	2	2	G
G	3	"	"	PUMP CONTROLLER	7,071		8.57		1,500				4	G
G	5	"	"		7,071			8.57	1,500	UNIT HEATER 3KW	20	2	6	G
G	7	1	20	SPARE		1.50			1,500			"	8	G
L	9	1	20	INTERIOR LIGHTS	112		0.31		200	UNIT HEATERS UH1, UH2	20	1	10	M
L	11	1	20	EXTERIOR LIGHTS	140			0.14		SPARE	20	1	12	G
G	13	1	20	SPARE		0.00				SPARE	20	1	14	G
R	15	1	20	EXTERIOR RECEPTACLE	360		0.36			SPARE	20	1	16	G
R	17	1	20	INTERIOR RECEPTACLES	540			0.54		SPARE	20	1	18	G
G	19	1	20	SPARE		0.00				SPARE	20	1	20	G
G	21	1	20	SPARE			0.00			SPARE	20	1	22	G
G	23	1	20	SPARE				0.00		SPARE	20	1	24	G
G	25	1	20	SPARE		0.00				SPARE	20	1	26	G
G	27	1	20	SPARE			0.00			SPARE	20	1	28	G
G	29	1	20	SPARE				0.00		SPARE	20	1	30	G
				CONNECTED LOAD	28.6 KVA / 79 AMPS	10.07 / 83.9	9.24 / 77.0	9.25 / 77.0						
				NEC DEMAND	28.7 KVA / 80 AMPS									

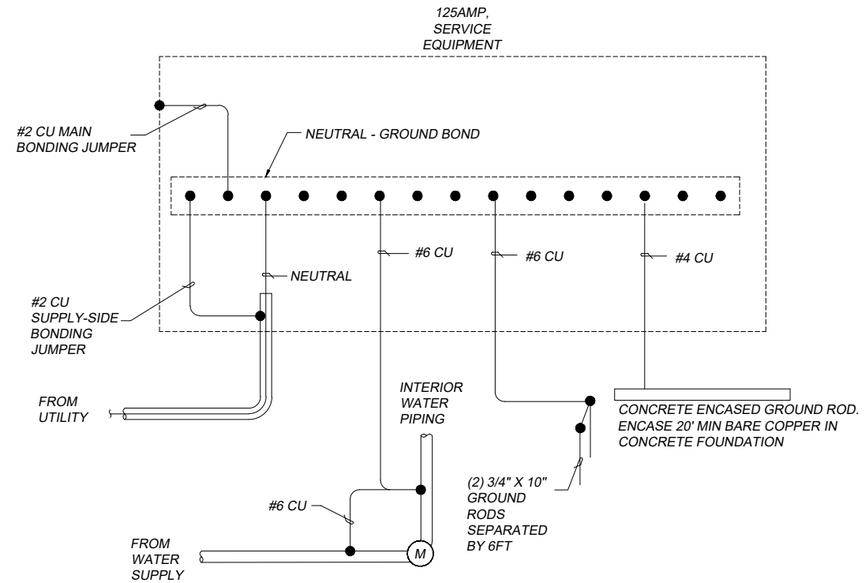
PANEL NOTES
1. "*" INDICATES GFI CIRCUIT BREAKER W/ 30 mA TRIP SETTING
2. INCLUDE TVSS IN THIS PANEL
3.
4.

PANEL SPECIFICATIONS		
MAINS RATING AMPS	-	125
MAIN CIRCUIT BREAKER	-	MCB
SYSTEM VOLTAGE	-	208Y 120 V
PHASE, NO. OF WIRES	-	3 PH 4. WIRE
AIC RATING	-	10,000
MOUNTING	-	SURFACE
CAPACITY ONE-POLE CIRCUITS	-	30
LOCATION NEMA TYPE	-	STAINLESS STEEL 3R

LOAD TYPES: G=GENERAL, L=LIGHTING, M=MOTOR, A=APPLIANCE, F=FEEDER, S=SPARE OR SPACE, R=RECEPTACLE



1 E-101 ONE-LINE LIFT STATION DIAGRAM
SCALE: 1 : 1



2 E-101 LIFT STATION GROUNDING SYSTEM
SCALE: 1 : 1

ELLERMAN LIFT STATION

65% SUBMITTAL

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REVISIONS & ADDENDUMS

#	DATE	REMARKS

MANAGEMENT	
DESIGNED	WDF
DRAWN	WDF
CHECKED	CIO
APPROVED	CIO
LAST EDIT	3/2/23
PLOT DATE	3/2/23
SUBMITTAL	02/01/23

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
ONE-LINE DIAGRAMS - ELLERMAN

DRAWING SCALE: AS SHOWN
DRAWING FILE NAME: 030540-E-101, E-102 ONE-LINE DIAGRAMS
PROJECT NUMBER: 165.030540

SHEET NUMBER
E-101

SANDY LANE EQUIPMENT SCCR SCHEDULE

ALL EQUIPMENT TO HAVE SCCR EXCEEDING THE AVAILABLE SCA AT THE CALCULATED X/R RATIO. WHERE X/R RATIO IS GREATER THAN THE INDUSTRY STANDARD TEST X/R RATIOS, THE APPROPRIATE MULTIPLICATION FACTOR SHALLBE APPLIED TO PROPERLY RATE THE EQUIPMENT. DOWNSTREAM EQUIPMENT AND ASSOCIATED CIRCUIT BREAKER RATINGS MAY BE SATISFIED BY USING FULLY RATED EQUIPMENT OR MANUFACTURER TESTED COMBINATIONS FOR BRANCH CIRCUITS RATED 100AMPS OR LESS PER NEC 240.86(B) TO SERIES RATE FOR THE AVAILABLE SCA AT EQUIPMENT. ALL SERIES RATED EQUIPMENT TO BE CLEARLY LABELED & IDENTIFIED PER NEC 110.22(C). SERIES RATED EQUIPMENT MOTOR LOADS CANNOT EXCEED 1% OF AIC RATING PER NEC 240.86(C).

CONTRACTOR TO VERIFY ACTUAL EQUIPMENT TO BE PROVIDED WITH SERVING UTILITY PRIOR TO EQUIPMENT PROCUREMENT. ANY DECREASE OF TRANSFORMER %Z, CONDUCTOR LENGTH, OR INCREASE IN TRANSFORMER KVA OR CABLE SIZES TO BE REPORTED TO ENGINEER FOR RECALCULATION OF AVAILABLE FAULT CURRENT PRIOR TO PROCUREMENT OF EQUIPMENT. PROVIDE WARNING PLACARD INSTALLED ON SERVICE DISCONNECT PER NEC 110.24 DENOTING ALL PROJECT PARAMETERS REQUIRED BY NEC.

ASSUMED UTILITY SYSTEM CONFIGURATION FOR CALCUALTION PURPOSES

SERVICE TRANSFORMER

KVA	%Z	PF	DATE	SCA (SEC.)
45	1.8	1	1/27/2023	6,940

SERVICE AMPS	FOR FAULT CURRENT CALCUATIONS ONLY SERVICE LATERAL	FT
125	4#1, 1#6EGC, 2"C	70

EQUIPMENT ID	SC AMPS
SERVICE DISCONNECT	4,464
PANEL 'MDP'	4,289

SCHEDULE DISTRIBUTION PANEL 'MDP'

TYPE	SPACE #	NO. OF POLES	TRIP RATING	LOAD DESCRIPTION	BRANCH LOAD VA	CONNECTED LOAD (kVA) A	B	C	BRANCH LOAD VA	LOAD DESCRIPTION	TRIP RATING	NO. OF POLES	SPACE #	TYPE
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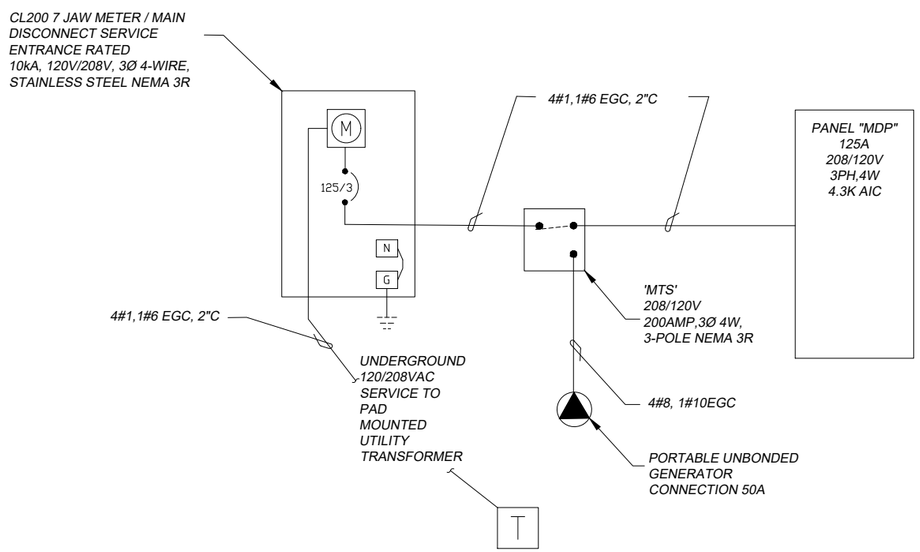
L	11	1	20	EXTERIOR LIGHTS	140			0.14		SPARE	20	1	12	G
G	13	1	20	SPARE		0.00				SPARE	20	1	14	G
R	15	1	20	EXTERIOR RECEPTACLE	360		0.36			SPARE	20	1	16	G
R	17	1	20	INTERIOR RECEPTACLES	540			0.54		SPARE	20	1	18	G
G	19	1	20	SPARE		0.00				SPARE	20	1	20	G
G	21	1	20	SPARE			0.00			SPARE	20	1	22	G
G	23	1	20	SPARE				0.00		SPARE	20	1	24	G
G	25	1	20	SPARE		0.00				SPARE	20	1	26	G
G	27	1	20	SPARE			0.00			SPARE	20	1	28	G
G	29	1	20	SPARE				0.00		SPARE	20	1	30	G
				CONNECTED LOAD	28.6 KVA / 79 AMPS	10.07	9.24	9.25						
				NEC DEMAND	28.7 KVA / 80 AMPS									

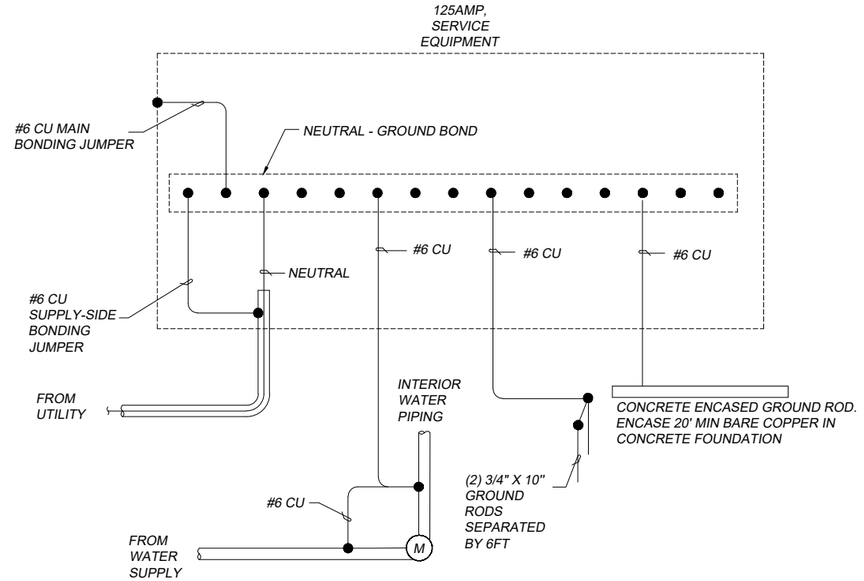
PANEL NOTES
1. "*" INDICATES GFI CIRCUIT BREAKER W/ 30 mA TRIP SETTING
2. INCLUDE TVSS IN THIS PANEL
3.
4.

PANEL SPECIFICATIONS
- MAINS RATING AMPS - 125
- MAIN CIRCUIT BREAKER - MCB
- SYSTEM VOLTAGE - 208Y 120 V
- PHASE, NO. OF WIRES - 3 PH 4 WIRE
- AIC RATING - 10,000
- MOUNTING - SURFACE
- CAPACITY ONE-POLE CIRCUITS - 30
- LOCATION NEMA TYPE - STAINLESS STEEL 3R

LOAD TYPES: G=GENERAL, L=LIGHTING, M=MOTOR, A=APPLIANCE, F=FEEDER, S=SPARE OR SPACE, R=RECEPTACLE



1 E-102 ONE-LINE LIFT STATION DIAGRAM
SCALE: 1 : 1



2 E-102 LIFT STATION GROUNDING SYSTEM
SCALE: 1 : 1

SANDY LANE LIFT STATION

65% SUBMITTAL

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REVISIONS & ADDENDUMS

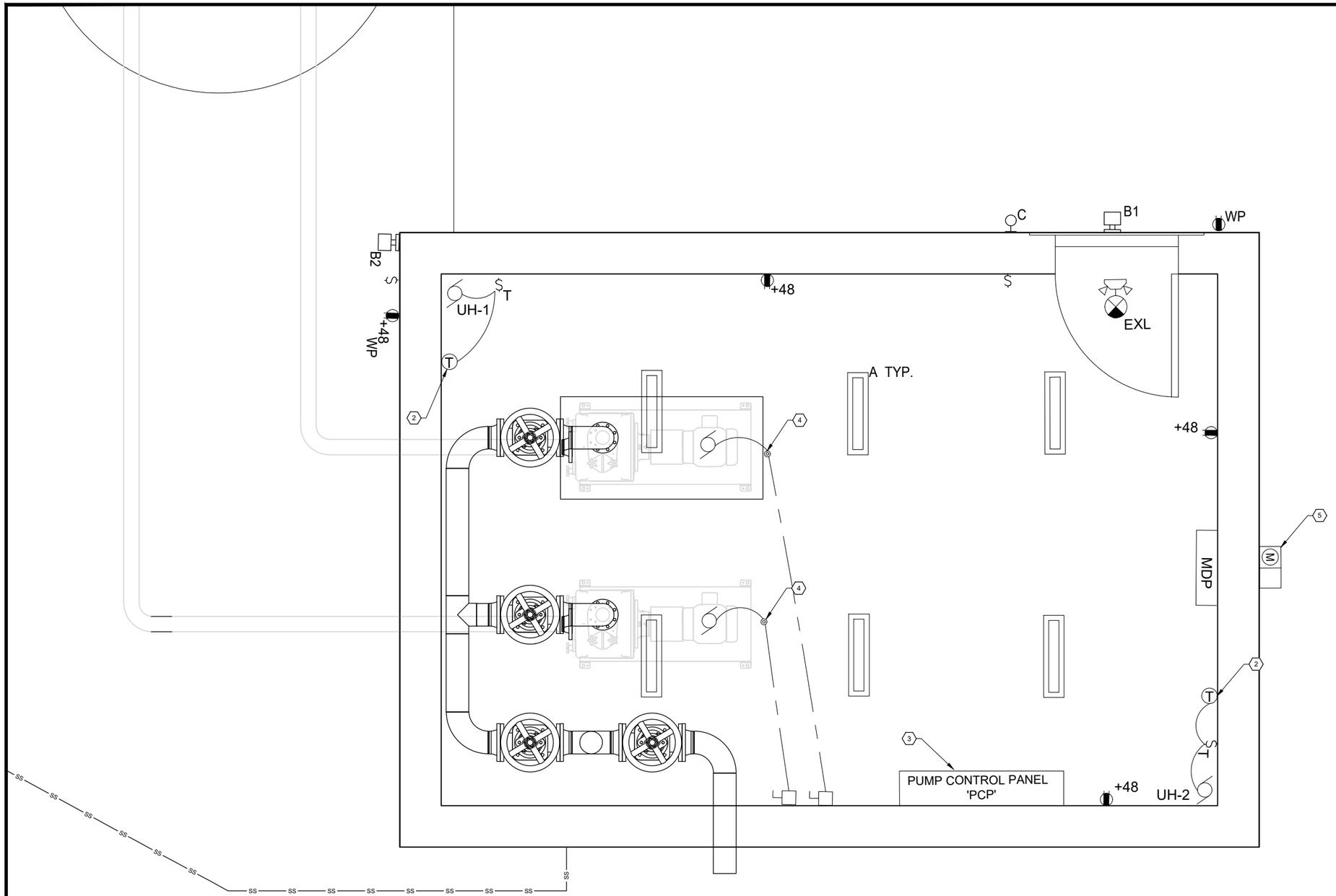
#	DATE	REMARKS

MANAGEMENT	
DESIGNED	WDF
DRAWN	WDF
CHECKED	CIO
APPROVED	CIO
LAST EDIT	3/2/23
PLOT DATE	3/2/23
SUBMITTAL	02/01/23

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
ONE-LINE DIAGRAMS - SANDY LANE

DRAWING SCALE: AS SHOWN
DRAWING FILE NAME: 030540-E-101, E-102 ONE-LINE DIAGRAMS
PROJECT NUMBER: 165.030540

SHEET NUMBER
E-102



NOTES

1

2 LINE VOLTAGE THERMOSTAT.

3 PUMP CONTROL PANEL WITH VFD'S.

4 CONDUIT STUB-UP WHERE TRANSITION FROM 1" GRC BURIED IN-SLAB TO 1" LTF TERMINATING AT PUMP MOTOR HOUSES CONDUCTORS FROM LOCAL DISCONNECT.

5 METER/ MAIN

6

LUMINAIRE SCHEDULE

QTY	TYPE	ELECTRICAL WATTS	ELECTRICAL VOLTAGE	DESCRIPTION	LAMPS	MOUNTING	MANUFACTURER	MODEL	NOTES
	A	27	MVOLT	SURFACE MOUNTED 5X2' GASKETED LIGHT FIXTURE	4,000LM LED	SURFACE CEILING	LITHONIA	CMW2 L24 200LM PEL WD MVOLT 010V 40K 80CRI USB	
	B1	51	MVOLT	OUTDOOR FLOODLIGHT WITH MOTION SENSOR	7,000LM LED	WALL 4'-1 AFF	LITHONIA	RSXF1LED P1 40K AWFD MVOLT AAWB NLTAIR2 PIRHNCCE DDBXD	
	B2	72	MVOLT	OUTDOOR FLOODLIGHT	10,000LM LED	WALL +9' AFF	LITHONIA	RSXF1LED P2 40K AWFD MVOLT AAWB QCE DDBXD	
	C	17	MVOLT	METAL/PLUG VAPORPROOF LED WITH RED LENSE	1,300LM LED	WALL +7'6" AFF	PHOENIX	VA W 17LED CW PGC / GHR	
	EXL	4.3	MVOLT	COMMERCIAL LED EXIT SIGN WITH EMERGENCY EGRESS LIGHTS		WALL +7'6" AFF	LITHONIA	LHQM LED R WG SD	

GENERAL NOTES:

A VERIFY CEILING TYPES THROUGHOUT. PROVIDE ALL MOUNTING HARDWARE AS RECOMMENDED BY THE LIGHTING MANUFACTURER FOR SPECIFIC CEILING TYPES

B COORDINATE ALL FIXTURE MOUNTING LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION TO ENSURE THAT CONFLICTS DO NOT EXIST. WHERE CONFLICTS EXIST, NOTIFY ENGINEER.

C LIGHT FIXTURE PACKAGE TO GENERALLY MATCH OWNER'S SUPPLIED SAMPLE DRAWINGS. SUBMIT FULL LIGHTING PACKAGE FOR OWNER REVIEW

1 E201 ELLERMAN LIFT STATION POWER PLAN

SCALE: 3/4" = 1'

65% SUBMITTAL

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REVISIONS & ADDENDUMS

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MANAGEMENT	
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CHECKED	CIO
APPROVED	CIO
LAST EDIT	3/2/23
PLOT DATE	3/2/23
SUBMITTAL	02/01/23

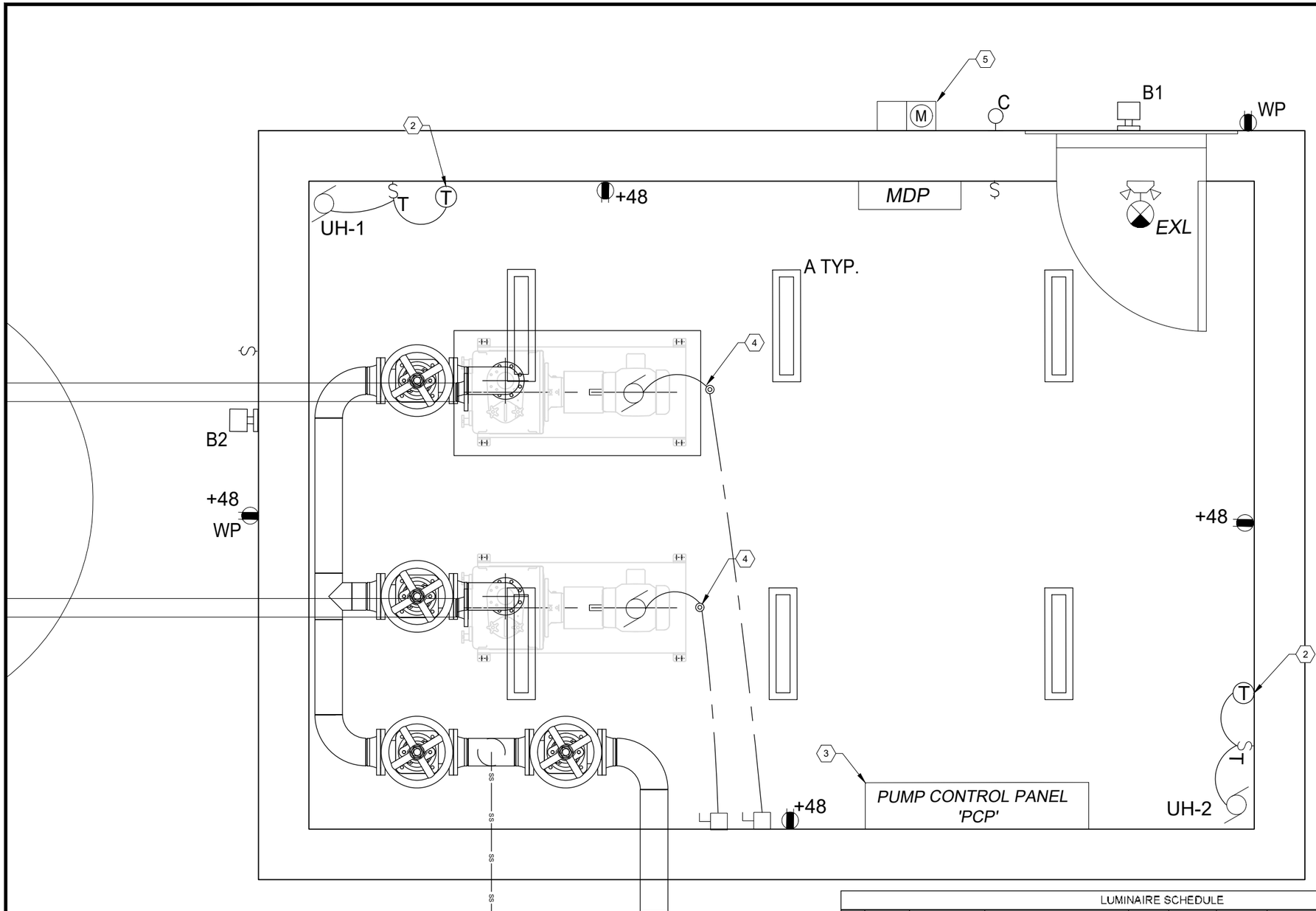
SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
POWER PLAN- ELLERMAN

DRAWING SCALE: AS SHOWN

PROJECT NUMBER: 165.030540

DRAWING FILE NAME: 030540-E-201 ELLERMAN LIFT STATION POWER PLAN.DWG

SHEET NUMBER
E-201



NOTES

1

2 LINE VOLTAGE THERMOSTAT

3 PUMP CONTROL PANEL WITH VFD'S.

4 CONDUIT STUB-UP WHERE TRANSITION FROM 1" GRC BURIED IN-SLAB TO 1" LTF TERMINATING AT PUMP MOTOR HOUSES CONDUCTORS FROM LOCAL DISCONNECT

5 METER/ MAIN

6

LUMINAIRE SCHEDULE

QTY	TYPE	ELECTRICAL WATTS	ELECTRICAL VOLTAGE	DESCRIPTION	LAMPS	MOUNTING	MANU-FACTURER	MODEL	NOTES
	A	27	MVOLT	SURFACE MOUNTED 5'X2' GASKETED LIGHT FIXTURE	4,000LM LED	SURFACE CEILING	LITHONIA	DMW2 L24 2000LM PFL WD MVOLT 010V 40K 80CRI JSB	
	B1	51	MVOLT	OUTDOOR FLOODLIGHT WITH MOTION SENSOR	7,000LM LED	WALL +11 AFF	LITHONIA	RSXF1LED P1 40K AWFD MVOLT AAWB NLTAIR2 PIRHNCCE DDBXD	
	B2	72	MVOLT	OUTDOOR FLOODLIGHT	10,000LM LED	WALL +9' AFF	LITHONIA	RSXF1LED P2 40K AWFD MVOLT AAWB CCE DDBXD	
	C	17	MVOLT	METALALLIC VAPORPROOF LED WITH RED LENSE	1,300LM LED	WALL +7'6" AFF	PHOENIX	VA W 17LED CW FGC / GHR	
	EXL	4.3	MVOLT	COMMERCIAL LED EXIT SIGN WITH EMERGENCY EGRESS LIGHTS		WALL +7'6" AFF	LITHONIA	LHQM LED R HO SD	

GENERAL NOTES:

A. VERIFY CEILING TYPES THROUGHOUT. PROVIDE ALL MOUNTING HARDWARE AS RECOMMENDED BY THE LIGHTING MANUFACTURER FOR SPECIFIC C

B. COORDINATE ALL FIXTURE MOUNTING LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION TO ENSURE THAT CONFLICTS DO NOT EXIST. WHERE CONFLICTS EXIST, NOTIFY ENGINEER.

C. LIGHT FIXTURE PACKAGE TO GENERALLY MATCH OWNER'S SUPPLIED SAMPLE DRAWINGS SUBMIT FULL LIGHTING PACKAGE FOR OWNER REVIEW

1 / E202 SANDY LANE LIFT STATION POWER PLAN

SCALE: 1" = 1'

65% SUBMITTAL

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REVISIONS & ADDENDUMS

#	DATE	REMARKS

MANAGEMENT	
DESIGNED	RW
DRAWN	RW
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APPROVED	CIO
LAST EDIT	3/2/23
PLOT DATE	3/2/23
SUBMITTAL	02/01/23

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
POWER PLAN - SANDY LANE

DRAWING SCALE: AS SHOWN

PROJECT NUMBER: 165.030540

DRAWING FILE NAME: 030540-E-202 SANDY LANE LIFT STATION POWER PLAN.DWG

SHEET NUMBER
E-202

NOTES

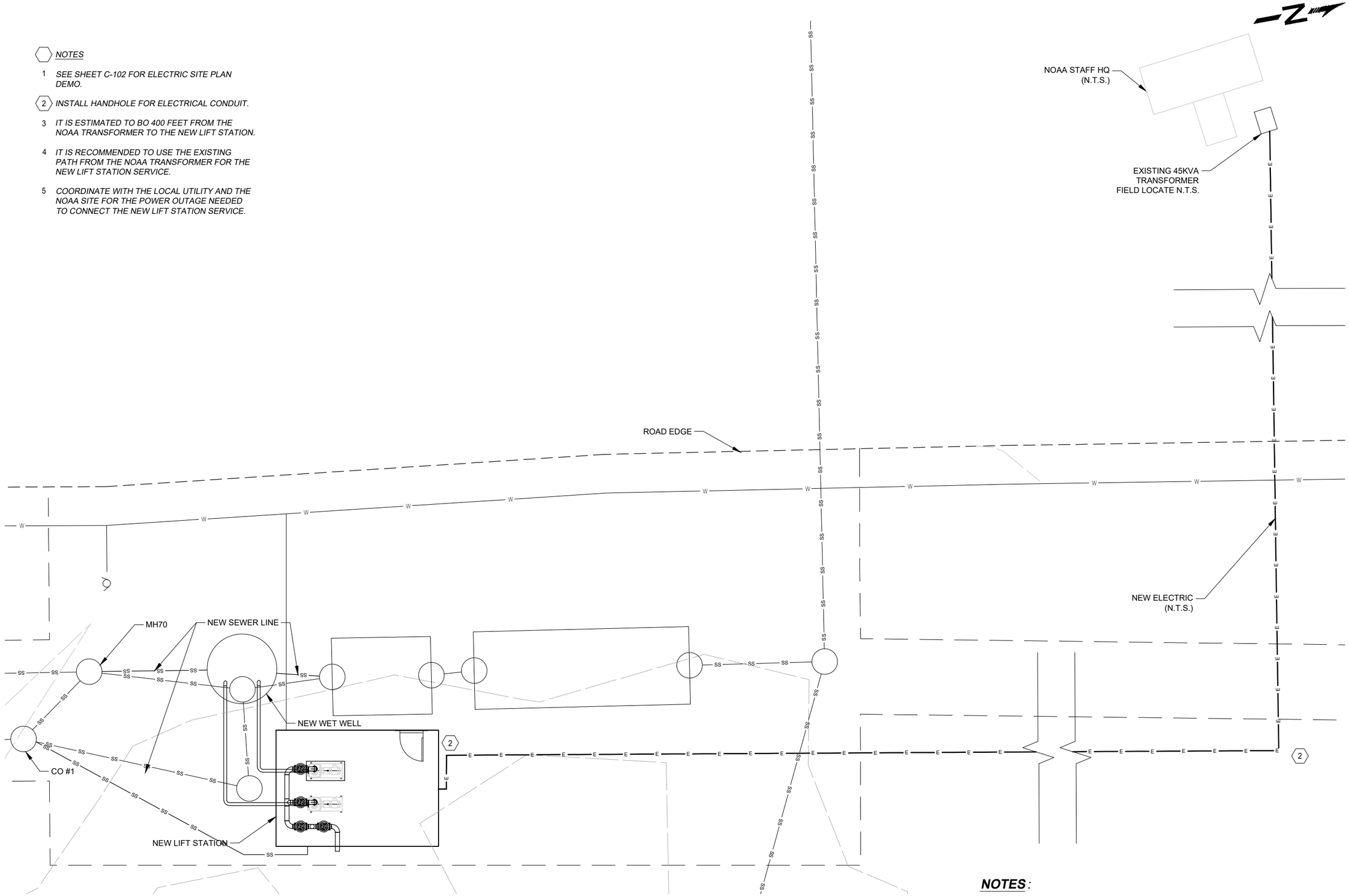
1 SEE SHEET C-102 FOR ELECTRIC SITE PLAN DEMO.

2 INSTALL HANDHOLE FOR ELECTRICAL CONDUIT.

3 IT IS ESTIMATED TO BO 400 FEET FROM THE NOAA TRANSFORMER TO THE NEW LIFT STATION.

4 IT IS RECOMMENDED TO USE THE EXISTING PATH FROM THE NOAA TRANSFORMER FOR THE NEW LIFT STATION SERVICE.

5 COORDINATE WITH THE LOCAL UTILITY AND THE NOAA SITE FOR THE POWER OUTAGE NEEDED TO CONNECT THE NEW LIFT STATION SERVICE.



NOTES:

1. FIELD LOCATE NOAA EXISTING TRANSFORMER TO CONNECT NEW ELECTRICAL LINE FROM NEW ELLERMAN LIFT STATION.

ELECTRICAL SITE PLAN - ELLERMAN LIFT STATION 1
SCALE: 1" = 6' E-301

6 0' 3 6 12

65% SUBMITTAL

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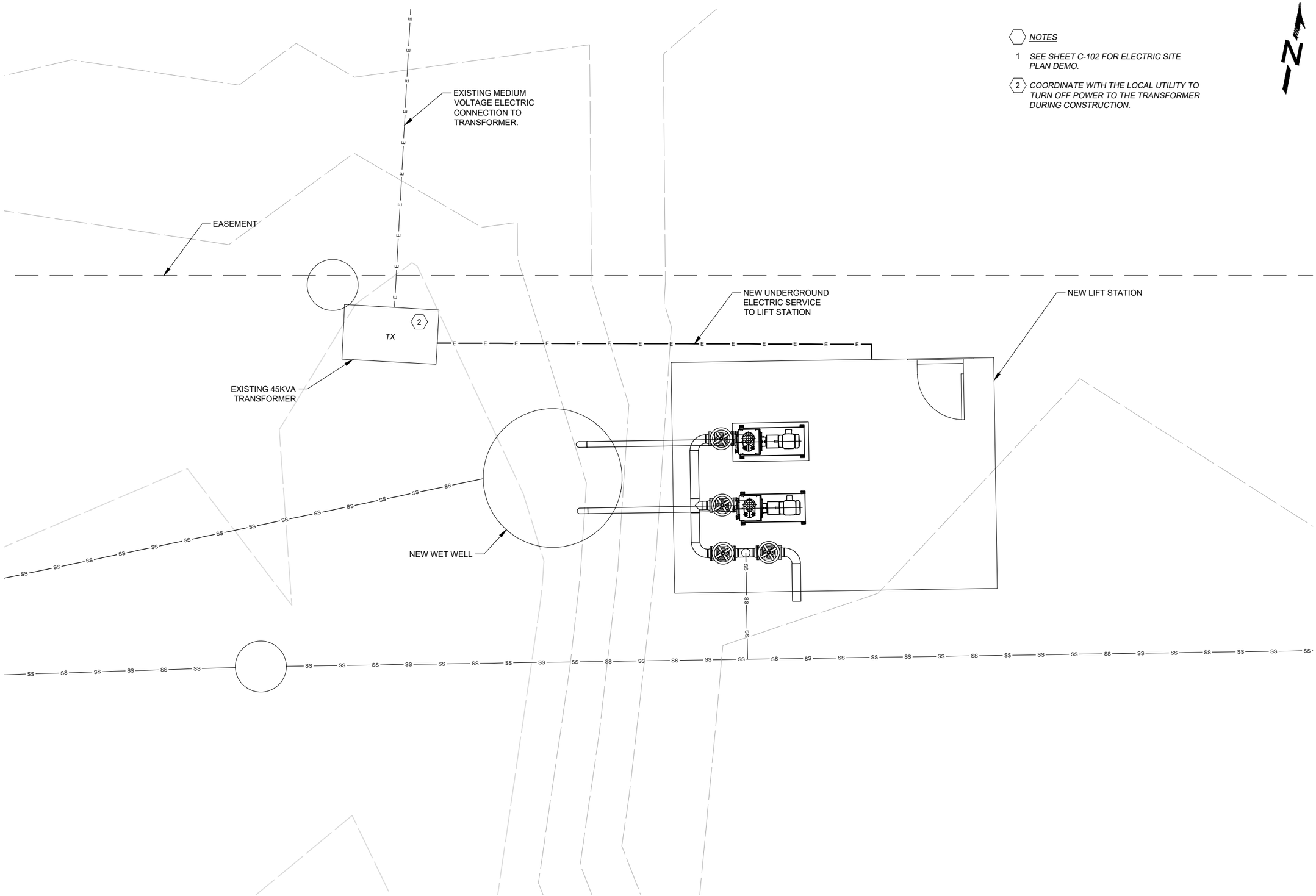
SUBMITTAL	02/01/23

SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
ELECTRICAL SITE PLAN - ELLERMAN

PROJECT NUMBER 165.030540
DRAWING FILE NAME 030540-E-301 ELLERMAN LIFT STATION SITE PLAN ELECTRICAL.DWG
DRAWING SCALE AS SHOWN

SHEET NUMBER
E-301



NOTES

1 SEE SHEET C-102 FOR ELECTRIC SITE PLAN DEMO.

2 COORDINATE WITH THE LOCAL UTILITY TO TURN OFF POWER TO THE TRANSFORMER DURING CONSTRUCTION.

N

ELECTRICAL SITE PLAN - SANDY LANE LIFT STATION 1
SCALE: 1" = 6' E-302

3 0' 1.5 3 6

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APPROVED	CIO	
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SAINT PAUL, ALASKA
LIFT STATION REPLACEMENTS
ELECTRICAL SITE PLAN - SANDY LANE

PROJECT NUMBER 165.030540
DRAWING FILE NAME 030540-E-302 SANDY LANE LIFT STATION SITE PLAN ELECTRICAL.DWG
DRAWING SCALE AS SHOWN

SHEET NUMBER
E-302