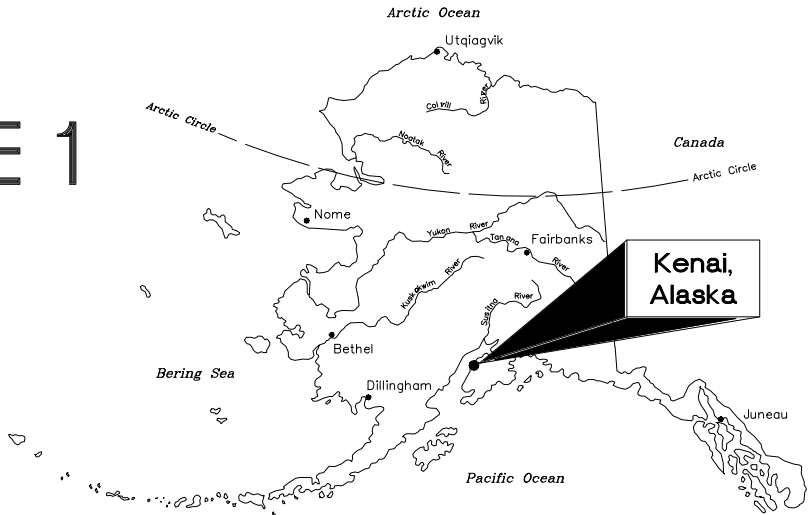


# SLUDGE PRESS REPLACEMENT – PHASE 1

## KENAI WASTEWATER TREATMENT FACILITY

CITY OF KENAI  
PUBLIC WORKS DEPARTMENT

210 Fidalgo Avenue  
Kenai, Alaska 99611  
(907) 283-7535



LOCATION MAP

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### SCOPE OF WORK

- DEMOLITION – REMOVE TWO (2) EXISTING DIGESTED SLUDGE PUMPS, EXISTING POLYMER SYSTEM, EXISTING ROOF-MOUNTED AIR HANDLER AND ASSOCIATED DUCTING, SELECT LIGHTING, AND TWO (2) EXISTING DOORS.
- SCREW PRESS – INSTALL ONE (1) OWNER FURNISHED ANDRITZ C-5427 SCREW PRESS IN PARALLEL WITH THE EXISTING BELT PRESS.
- ANCILLARY EQUIPMENT – FURNISH AND INSTALL SCREW PRESS EQUIPMENT SUPPORT, ACCESS PLATFORMS, PROCESS PIPING, TWO (2) DIGESTED SLUDGE PUMPS, POLYMER SYSTEM, WASHWATER BOOSTER PUMP SYSTEM, AND ONE (1) SCREW CONVEYOR.
- VENTILATION UPGRADES – INSTALL EXHAUST FAN, MAKEUP AIR UNIT, AND ASSOCIATED DUCTING.
- STRUCTURAL REHABILITATION – INSTALL ONE (1) DOOR AND REHABILITATE INTERIOR ROD BRACING ALONG TWO (2) WALLS.
- ALL OTHER WORK INDICATED ON THE PLANS AND SPECIFICATIONS.

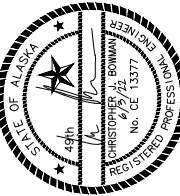


VICINITY MAP



0 200 400  
SCALE IN FEET

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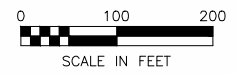
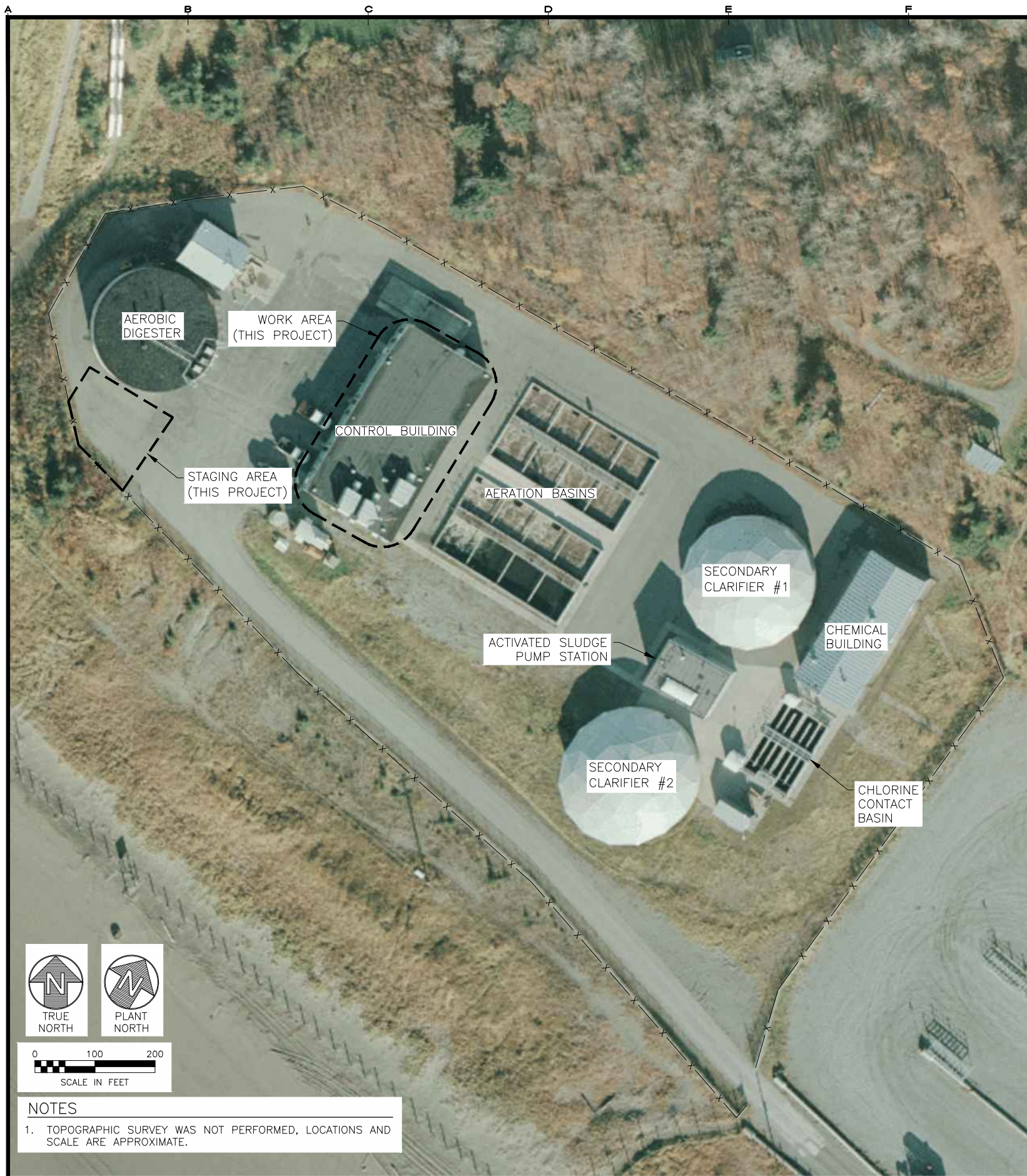
SLUDGE PRESS REPLACEMENT – PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE	COVER
SHEET	G1.01
DRAWN BY:	LRK
CHECKED BY:	CJB
DATE:	JUNE 2022
SCALE:	AS SHOWN
JOB NUMBER:	20-012-04





NOTES

1. TOPOGRAPHIC SURVEY WAS NOT PERFORMED, LOCATIONS AND SCALE ARE APPROXIMATE.

OVERALL SITE PLAN

PROJECT NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
2. THE CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES AND THE GENERAL REQUIREMENTS, THE CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
3. THE CONTRACTOR SHALL ACCEPT THE SITE IN ITS CONDITION AT THE TIME OF BIDDING.
4. THE LOCATION OF EXISTING FEATURES, EQUIPMENT, PIPES, ETC. IN THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING FIELD VERIFICATION OF ALL DIMENSIONS AND LAYOUT PRIOR TO PROCEEDING WITH THE WORK. ANY DISCREPANCY IN THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
5. THE FACILITY WILL REMAIN OPERATIONAL DURING THE PROGRESS OF THIS CONTRACT'S WORK. CONTRACTOR SHALL COORDINATE HIS WORK WITH KENAI OPERATIONS PERSONNEL. IN ACCORDANCE WITH SPECIFICATION SECTION 01 32 00, CONTRACTOR SHALL INDICATE SEQUENCE OF SHUT-DOWN TO CRITICAL FACILITIES IN HIS CONSTRUCTION PLAN.
6. OTHER CONTRACTORS OR UTILITY COMPANIES MAY ALSO BE WORKING ON THE SAME PROJECT SITE OR IN THE VICINITY DURING THE PROGRESS OF THIS CONTRACT'S WORK. CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER CONTRACTORS OR UTILITY COMPANIES WORKING IN THE AREA.
7. ALL LAYOUT SHALL BE PROVIDED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
8. ALL CONSTRUCTION ACTIVITIES, EQUIPMENT STORAGE, ETC. SHALL REMAIN WITHIN THE FENCED AREA OF THE KENAI WWTF. SEE CONTRACT GENERAL CONDITIONS AND OVERALL SITE PLAN.
9. CONTRACTOR SHALL PROVIDE ALL PERMITS WHICH ARE NOT SPECIFICALLY INDICATED AS PROVIDED BY THE OWNER IN THE SPECIFICATIONS.
10. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE IBC, OSHA, AND ALL OTHER FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS PERTAINING TO THIS PROJECT. ANY WORK PERFORMED BY THE CONTRACTOR CONTRARY TO SUCH LAWS OR REGULATIONS SHALL BE AT THE CONTRACTOR'S SOLE RISK AND EXPENSE.
11. REPAIR OF DAMAGE TO THE EXISTING FACILITY OR ANY EQUIPMENT CAUSED BY CONTRACTOR'S ACTIVITIES SHALL BE AT NO COST TO OWNER.

CONSTRUCTION NOTES

1. CONTRACTOR SHALL SUBMIT A CONSTRUCTION PLAN, SCHEDULE, AND SEQUENCE OF WORK, IN ACCORDANCE WITH SPECIFICATION SECTION 01 32 00.
2. THE WORK SHALL BE SUBSTANTIALLY COMPLETE BY FEBRUARY 28, 2023.
3. FOR WORK TO BE CONSIDERED SUBSTANTIALLY COMPLETE, THE SCREW PRESS SHALL BE OPERATIONAL, FULLY COMMISSIONED, AND ALL OPERATOR TRAINING COMPLETE.
4. FINAL ACCEPTANCE OF THE ENTIRE PROJECT SHALL BE OBTAINED ON OR BEFORE MARCH 15, 2023.

REVISIONS	DATE	DESCRIPTION
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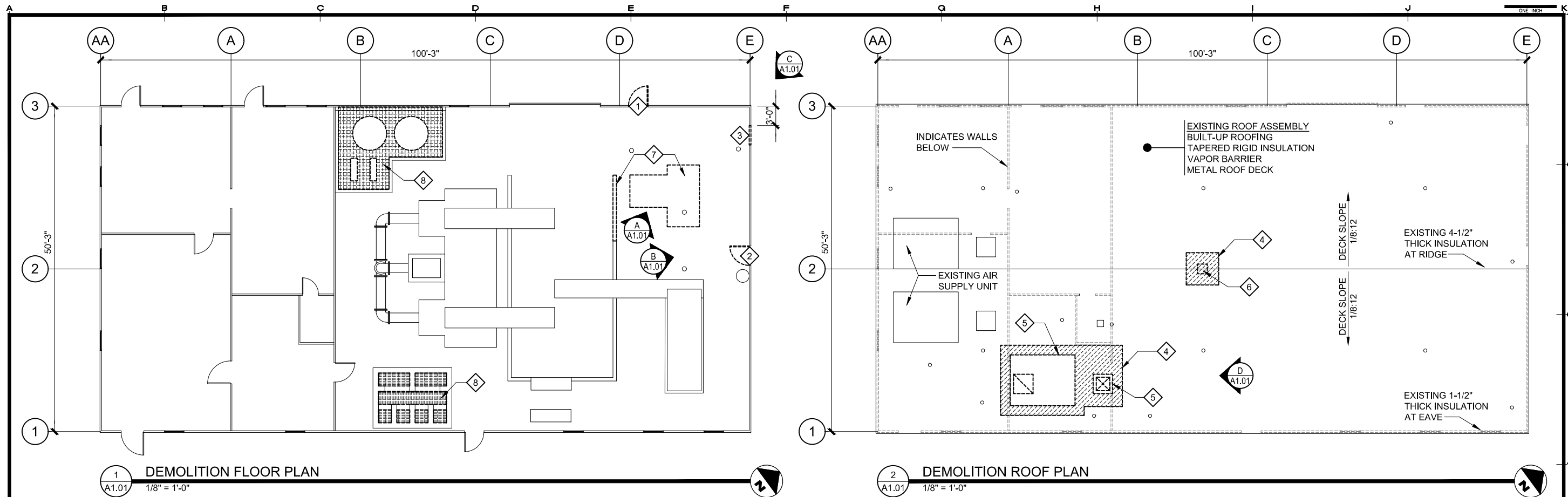


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AECL861

SLUDGE PRESS REPLACEMENT - PHASE 1  
CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE OVERALL SITE PLAN AND PROJECT NOTES	
SHEET G1.02	
DRAWN BY: LRK	CHECKED BY: CJB
DATE: JUNE 2022	SCALE: AS SHOWN
JOB NUMBER: 20-012-04	





#### GENERAL NOTES:

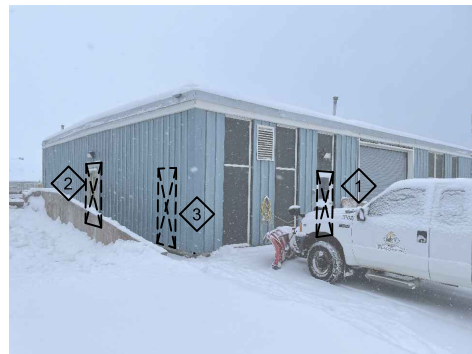
- EXISTING DIMENSIONS SHOWN ARE TAKEN FROM ORIGINAL RECORD DRAWINGS AND CASUAL WALK THROUGH. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS AND PROFILES OF EXISTING MATERIALS.
- COORDINATE ALL ITEMS SHOWN WITH OTHER DISCIPLINES.
- CONTRACTOR TO PROTECT ALL EXISTING ITEMS FROM DUST AND DEBRIS DURING CONSTRUCTION ACTIVITIES.
- MORE ROOF PENETRATIONS / CURBS THAN WHAT ARE SHOWN MAY EXIST. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ROOF PENETRATIONS AND LOCATIONS IN AREA OF IMPACT FOR ROOF SCOPE OF WORK. COORDINATE WITH EHS-ALASKA, INC REPORT DATED MAY 31, 2022, FOR POTENTIAL ACM ON ROOF.
- BOLD DASHED LINES INDICATE ITEMS TO BE DEMOLISHED.

#### DEMOLITION NOTES:

- REMOVE AND DISPOSE OF EXISTING METAL DOOR AND DOOR HARDWARE. EXISTING DOOR OPENING FRAME TO REMAIN.
- REMOVE AND DISPOSE OF ENTIRE WOOD DOOR, FRAME, AND HARDWARE ASSEMBLY.
- REMOVE AND DISPOSE OF PORTION OF EXISTING INSULATED METAL WALL PANEL IN PREPARATION FOR INSTALLATION OF NEW DOOR. COORDINATE WITH NEW STRUCTURAL FRAMING AND NEW DOOR FRAME SIZE OF DEMO OPENING. NEW OPENING IS LOCATED WITHIN AN EXISTING 36" PANEL WIDTH.
- REMOVE AND DISPOSE OF EXISTING BUILT-UP ROOFING, RIGID INSULATION, VAPOR BARRIER, AND COVER BOARD AS REQUIRED FOR INSTALLATION OF NEW MECHANICAL EQUIPMENT ROOF CURB. EXISTING METAL DECK TO REMAIN.
- REMOVE AND DISPOSE OF EXISTING ROOF CURBS.
- CUT NEW OPENING IN EXISTING METAL ROOF DECK AS REQUIRED FOR NEW MECHANICAL EXHAUST AIR DUCT.
- REMOVE AND DISPOSE OF PORTION OF EXISTING CONCRETE CURB AND CONCRETE SLAB IN PREPARATION FOR NEW EQUIPMENT. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE AND DISPOSE OF EXISTING GRATING. REFER TO PROCESS DRAWINGS FOR ADDITIONAL INFORMATION.



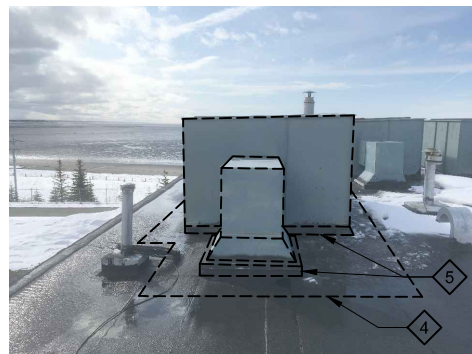
**PHOTO A**  
NOT TO SCALE



**PHOTO C**  
NOT TO SCALE



**PHOTO B**  
NOT TO SCALE



**PHOTO D**  
NOT TO SCALE

#### CODE ANALYSIS

REFERENCE	
ORIGINAL CONSTRUCTION	1974
KENAI MUNICIPAL CODE	TITLE 4 - UNIFORM CODES
INTERNATIONAL EXISTING BUILDING CODE	2012 EDITION {IEBC-12}
INTERNATIONAL BUILDING CODE	2009 EDITION {IBC-09}
EXISTING BUILDING CLASSIFICATION OF WORK	
{REF: IEBC-12, SEC. 504}	
LEVEL 2 ALTERATION - INSTALLATION OF NEW EQUIPMENT APPLICATION: SHALL COMPLY WITH LEVEL 1 AND LEVEL 2 ALTERATION REQUIREMENTS	
COMPLIANCE:	
{REF: IEBC-12, SEC. 701.2}	
AN EXISTING BUILDING SHALL NOT BE ALTERED SUCH THAT THE BUILDING BECOMES LESS SAFE THAN ITS EXISTING CONDITION.	
MATERIALS AND METHODS:	
{REF: IEBC-12, SEC. 702.4}	
ALL NEW WORK SHALL COMPLY WITH THE MATERIALS AND METHODS REQUIREMENTS IN THE ADOPTED BUILDING CODES AS REQUIRED FOR NEW CONSTRUCTION.	
ALL NEW CONSTRUCTION ELEMENTS, COMPONENTS, SYSTEMS, AND SPACES SHALL COMPLY WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE. {REF: IEBC-12, SEC. 801.3}	
HAZARDOUS CLASSIFICATION	
REFER TO MECHANICAL AND ELECTRICAL DISCIPLINES FOR DETERMINATION OF EXISTING HAZARDOUS CLASSIFICATION.	
EXISTING OCCUPANCY CLASSIFICATION - CONTROL BUILDING	
GROUP B: BUSINESS {REF: IBC-09, SEC. 304.1}	
GROUP F-1: MODERATE-HAZARD FACTORY INDUSTRIAL {REF: IBC-09, SEC. 306.2}	
EXISTING TYPE OF CONSTRUCTION	
TYPE VB, NON-SPRINKLERED {REF: IBC-09, SEC. 602.5}	
SPRINKLERS NOT REQUIRED {REF: IBC-09, SEC. 903.2.4}	
CONSTRUCTION REQUIREMENTS {REF: IBC-09, TABLE 601}	
BUILDING ELEMENT	
PRIMARY STRUCTURAL FRAME 0 HOURS	
BEARING WALLS (EXTERIOR AND INTERIOR) 0 HOURS	
NON-BEARING WALLS AND PARTITIONS (TABLE 602) (EXTERIOR X-OR = 30FT) 0 HOURS	
NON-BEARING WALLS AND PARTITIONS (INTERIOR) 0 HOURS	
FLOOR CONSTRUCTION 0 HOURS	
ROOF CONSTRUCTION 0 HOURS	
EXISTING CONSTRUCTION: 0 HOURS	
HEIGHT AND NUMBER OF STORIES {REF: IBC-09, TABLE 503}	
GROUP B	
ALLOWED: 40' 2 STORIES 9,000 SF /STORY	
EXISTING: 13' 1 STORY 495 SF	
ALLOWABLE BUILDING AREA RATIO: 495/9,000 = 0.06	
GROUP F-1	
ALLOWED: 40' 1 STORY 8,500 SF /STORY	
EXISTING: 13' 1 STORY 4,543 SF	
ALLOWABLE BUILDING AREA RATIO: 4,583/8,500 = 0.53	
SEPARATION OF OCCUPANCIES {REF: IBC-09, TABLE 508.4}	
SEPARATION BETWEEN OCCUPANCY GROUP B AND F-1: NO OCCUPANCY SEPARATION REQUIREMENT	
PORTABLE FIRE EXTINGUISHERS {REF: IBC-09, SEC. 906}	
REQUIRED IN NEW AND EXISTING OCCUPANCY GROUPS B & F-2 EXISTING TRAVEL DISTANCE TO EXTINGUISHER LESS THAN 75'	
NUMBER OF EXITS REQUIRED {REF: IBC-09, TABLE 1015.1}	
OCCUPANCY GROUPS B & F-1 ONE EXIT (<49 OCCUPANTS) EXITS: 5 EXITS	

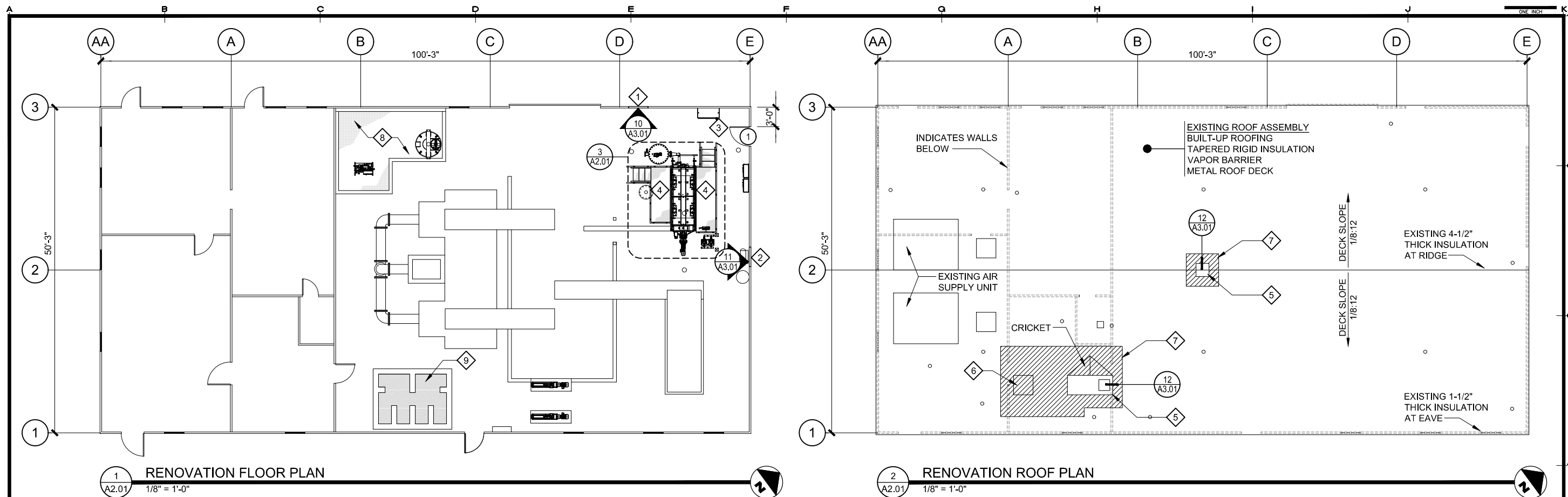
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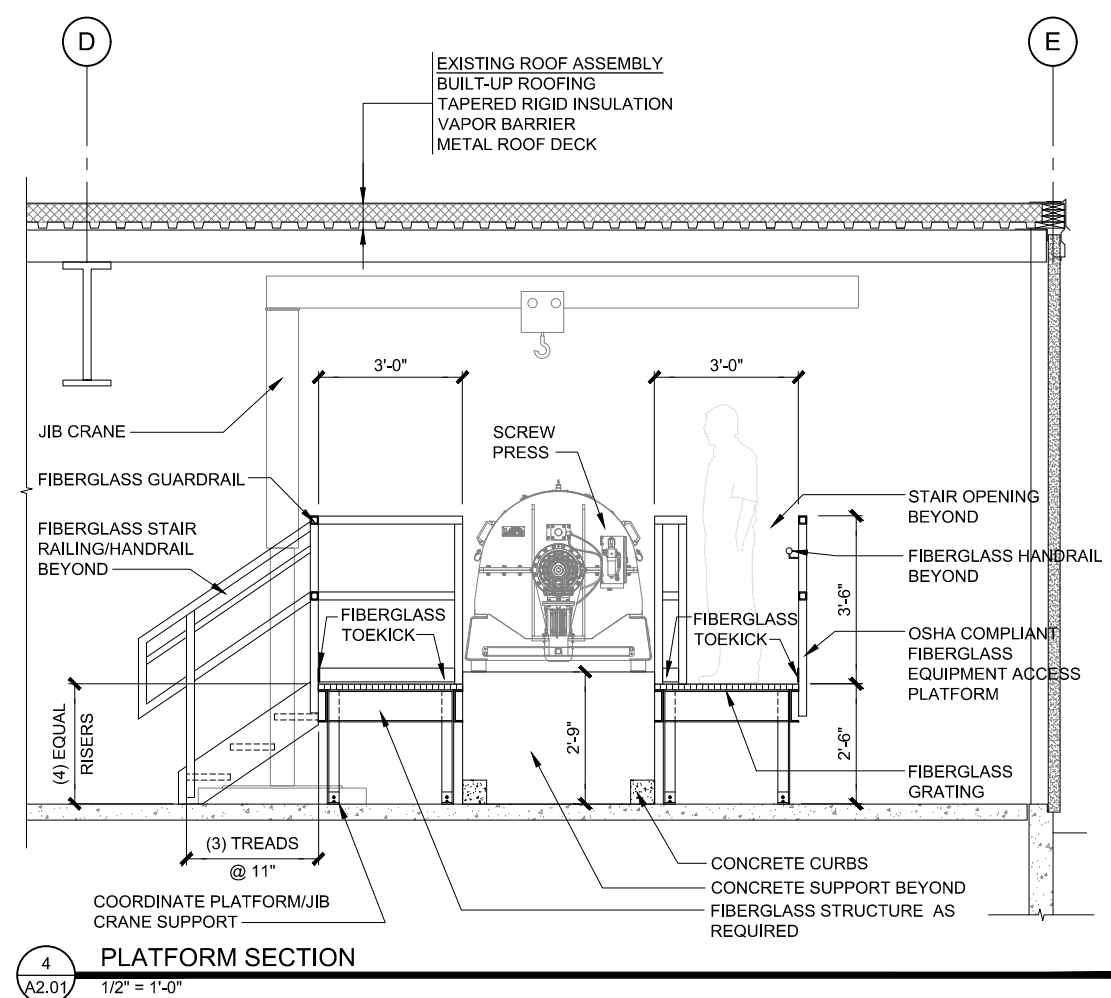
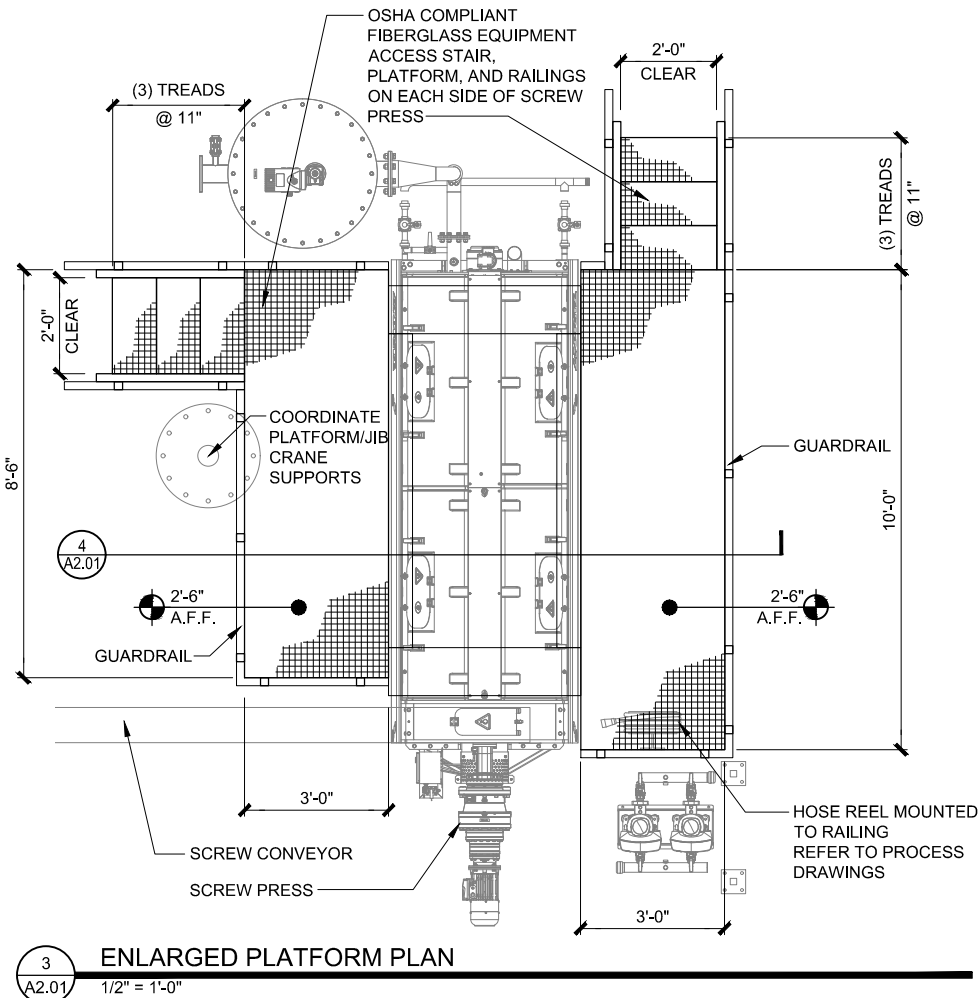
SLUDGE PRESS REPLACEMENT - PHASE 1  
CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE CODE ANALYSIS DEMOLITION PLAN	
SHEET A1.01	
DRAWN BY: TJ	CHECKED BY: RRR
DATE: JUNE 2022	SCALE: AS SHOWN
JOB NUMBER: 20-012-04	



- GENERAL NOTES:**
- A. EXISTING DIMENSIONS SHOWN ARE TAKEN FROM ORIGINAL RECORD DRAWINGS AND CASUAL WALK THROUGH. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS AND PROFILES OF EXISTING MATERIALS.
  - B. COORDINATE ALL ITEMS SHOWN WITH OTHER DISCIPLINES.
  - C. CONTRACTOR TO PROTECT ALL EXISTING ITEMS FROM DUST AND DEBRIS DURING CONSTRUCTION ACTIVITIES.
  - D. MORE ROOF PENETRATIONS / CURBS THAN WHAT ARE SHOWN MAY EXIST. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ROOF PENETRATIONS AND LOCATIONS IN AREA OF IMPACT FOR ROOF SCOPE OF WORK.

- RENOVATION NOTES:**
- 1. PROVIDE INSULATED METAL WINDOW PANEL IN EXISTING METAL FRAME. PAINT EXISTING FRAME. PROVIDE ADDITIONAL PAINTED SILL FRAME AND EXTERIOR FLASHING AS INDICATED ON THE DETAILS.
  - 2. PROVIDE STRUCTURAL STEEL FRAMING SUPPORT AT JAMBS AND HEAD OF EXISTING OPENING FOR EXISTING METAL WALL PANEL AND NEW INSULATED METAL WINDOW PANEL INFILL. REFER TO STRUCTURAL FOR STEEL FRAMING. PAINT FRAMED OPENING STEEL.
  - 3. PROVIDE STRUCTURAL STEEL FRAMING AT JAMBS AND HEAD OF NEW PANEL CUTOFF OPENING. PROVIDE INSULATED METAL DOOR, FRAME, AND HARDWARE IN NEW OPENING. COORDINATE WITH STRUCTURAL FOR STEEL FRAMING. NEW OPENING IS LOCATED WITHIN AN EXISTING 36" PANEL WIDTH. PAINT FRAMED OPENING STEEL.
  - 4. PROVIDE NEW FIBERGLASS EQUIPMENT ACCESS PLATFORM. PLATFORM TO BE OSHA COMPLIANT PLATFORM COMPLETE WITH FIBERGLASS STRUCTURE, GRATING, GUARDRAILS, STAIRS, AND HANDRAILS.
  - 5. PROVIDE NEW ROOF CURB. COORDINATE WITH MECHANICAL FOR SIZE.
  - 6. PATCH EXISTING HOLE IN METAL ROOF DECK.
  - 7. PROVIDE NEW BUILT-UP ROOFING, RIGID INSULATION, VAPOR BARRIER, AND DENSDECK OVER EXISTING METAL DECK. CONTRACTOR TO VERIFY EXISTING ASSEMBLY AND MATCH WITH EXISTING PLIES AND THICKNESS. TIE NEW ASSEMBLY INTO EXISTING ASSEMBLY AS RECOMMENDED BY BUILT-UP ROOFING MANUFACTURER.
  - 8. PROVIDE NEW FIBERGLASS GRATING. REFER TO PROCESS DRAWINGS FOR ADDITIONAL INFORMATION.
  - 9. PROVIDE NEW COVERED FIBERGLASS GRATING PANELS. REFER TO PROCESS DRAWINGS FOR ADDITIONAL INFORMATION.



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MARK	DESCRIPTION
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AECL 1316

**SLUDGE PRESS REPLACEMENT - PHASE 1**

**CITY OF KENAI**  
KENAI, ALASKA

SHEET TITLE: RENOVATION PLAN  
PLATFORM PLAN & SECTIONS

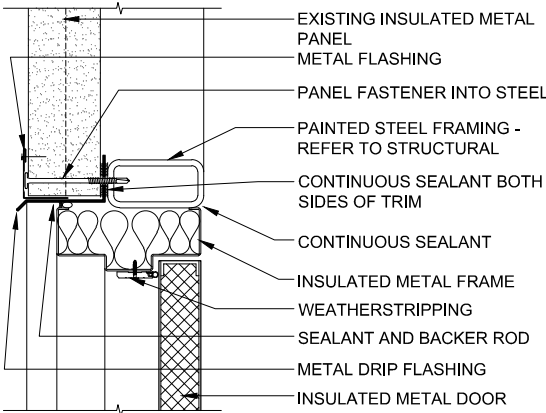
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CHECKED BY: RRR  
DATE: JUNE 2022  
SCALE: AS SHOWN  
JOB NUMBER: 20-012-04

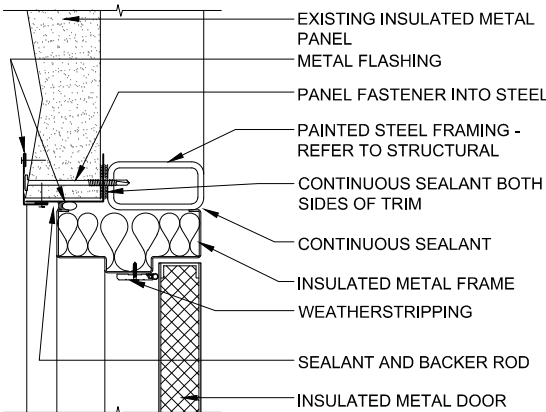


DOOR SCHEDULE

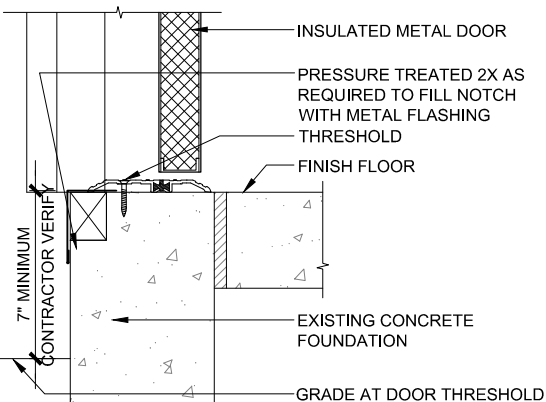
DOOR NO.	DOORS							FRAMES			DETAIL NUMBER			FIRE RATING	HW GROUP	REMARKS	DOOR NO.
	WIDTH	HEIGHT	THICK	TYPE	MATERIAL	FINISH		TYPE	MATERIAL	FINISH	HEAD	JAMB	SILL				
1	3'-0"	7'-0"	1-3/4"	D1	STEEL	PAINT		F1	STEEL	PAINT	1/A3.01	2/A3.01	3/A3.01	NA	HW-1	INSULATED DOOR AND FRAME	1



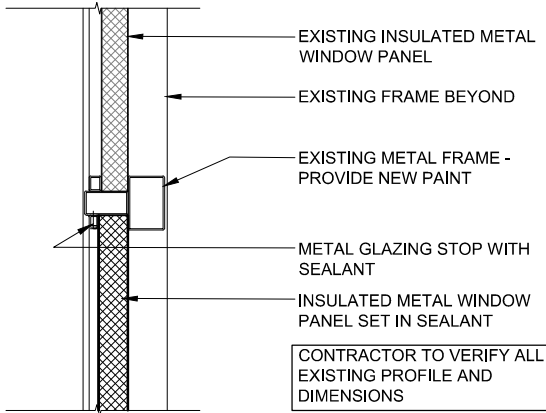
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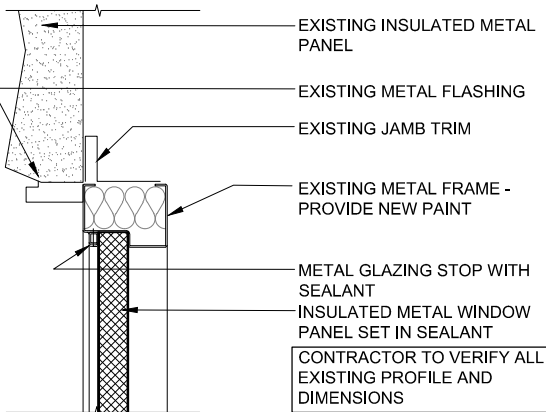
2 DOOR JAMB  
A3.01 3" = 1'-0"



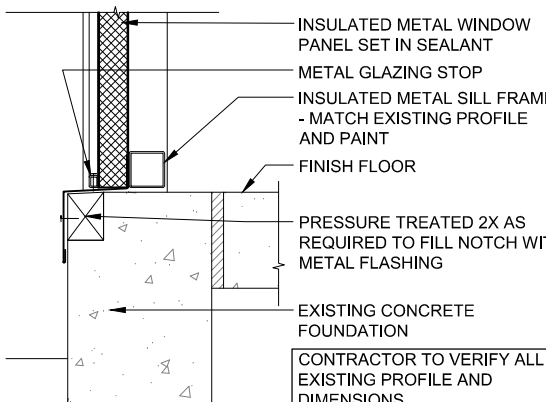
3 DOOR SILL  
A3.01 3" = 1'-0"



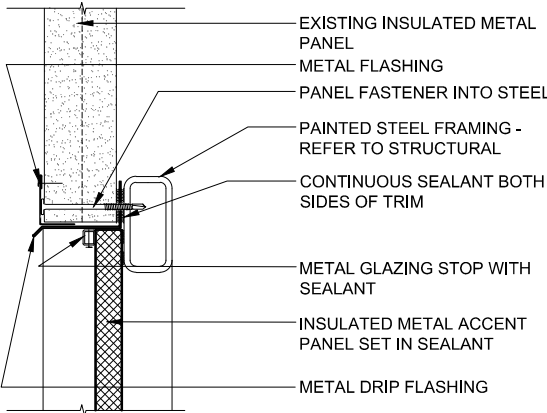
4 PANEL INFILL HEAD  
A3.01 3" = 1'-0"



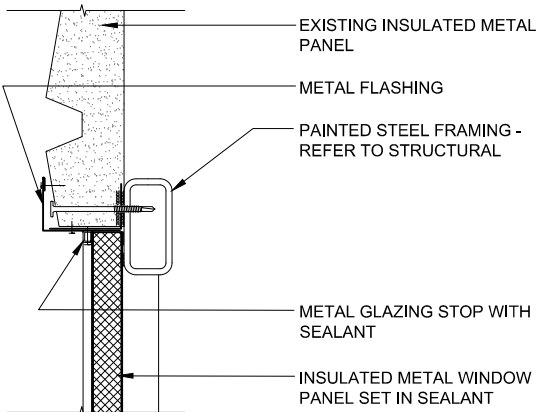
5 PANEL INFILL JAMB  
A3.01 3" = 1'-0"



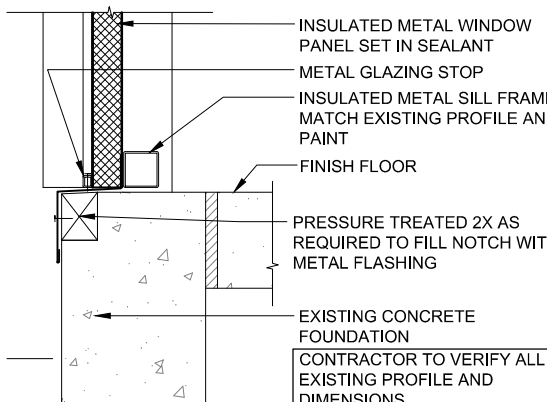
6 PANEL INFILL SILL  
A3.01 3" = 1'-0"



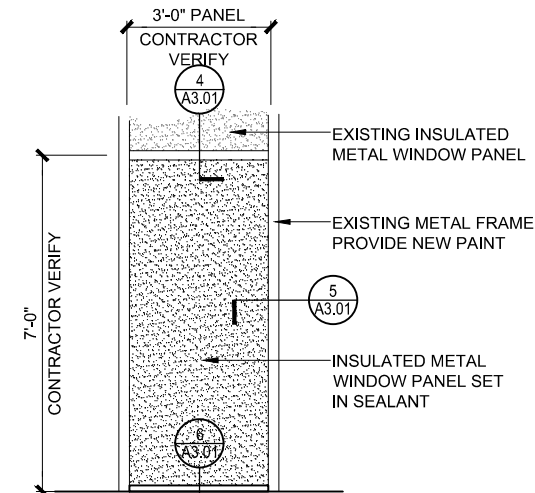
7 PANEL INFILL HEAD  
A3.01 3" = 1'-0"



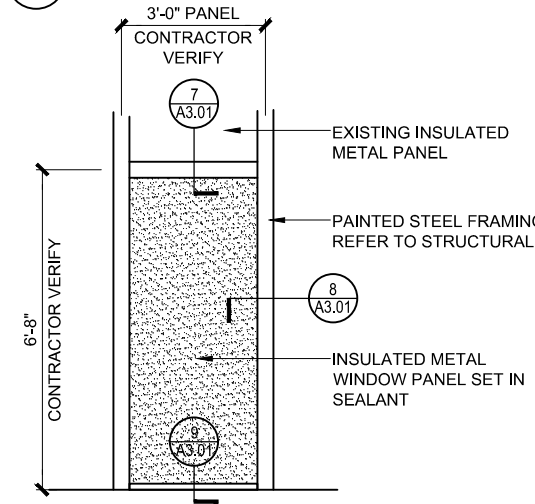
8 PANEL INFILL JAMB  
A3.01 3" = 1'-0"



9 PANEL INFILL SILL  
A3.01 3" = 1'-0"

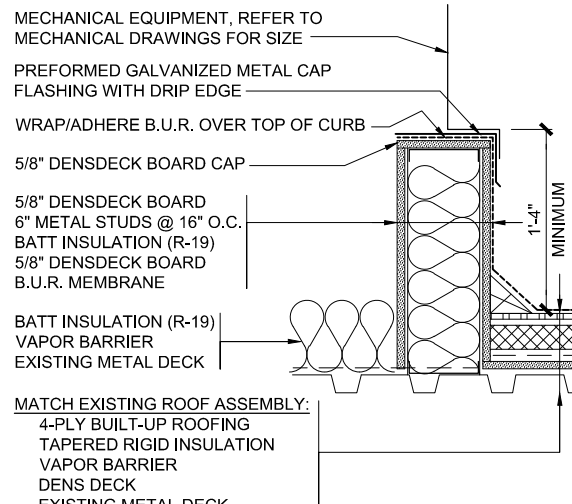
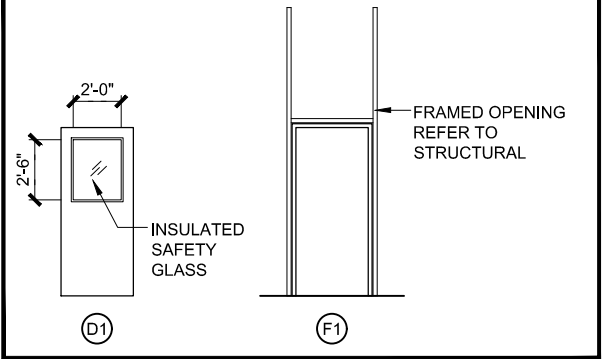


10 PANEL INFILL ELEVATION  
A3.01 1/2" = 1'-0"



11 PANEL INFILL ELEVATIONS  
A3.01 1/2" = 1'-0"

DOOR & FRAME TYPES



12 ROOF CURB  
A3.01 1-1/2" = 1'-0"

REVISIONS	DATE	DESCRIPTION
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SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE	RENOVATION PLAN
SHEET	A3.01
DRAWN BY:	TJ
CHECKED BY:	RRR
DATE:	JUNE 2022
SCALE:	AS SHOWN
JOB NUMBER:	20-012-04



STRUCUTRAL NOTES & SPECIFICATIONS

GENERAL

ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO REQUIREMENTS OF THE INTERNATIONAL CODE COUNCIL INTERNATIONAL BUILDING CODE (IBC) 2009 EDITION AND THE INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2012. WHERE EXPLICIT DETAILS ARE NOT SHOWN OR DESCRIBED, THE MINIMUM REQUIREMENTS OF THE ABOVE CODE SHALL APPLY. UNLESS OTHERWISE NOTED, ALL CODES, STANDARDS AND OTHER PUBLICATIONS CITED SHALL REFER TO THE LATEST EDITION.

LOCATION

THESE STRUCTURAL DRAWINGS ARE INTENDED FOR THE RENOVATION OF A BUILDING IN KENAI, ALASKA

DESIGN LOADS

IN ADDITION TO DEAD LOADS, THE FOLLOWING LIVE LOADS WERE USED FOR DESIGN:

ROOF:GROUND SNOW LOAD Pg = 70 PSF  
FLAT-ROOF SNOW LOAD Pf = 44 PSF  
SNOW EXPOSURE FACTOR Ce = 0.9  
SNOW LOAD IMPORT FACTOR Is = 1.0

WIND:BASIC WIND SPEED (3 SEC GUST) V = 112 MPH  
WIND IMPORTANCE FACTOR Ie = 1.0  
EXPOSURE D EXP = 1.47

METHOD 1 SIMPLIFIED PROCEDURE USED FOR DESIGN COMP & CLADDING WIND LOADS TO BE USED FOR DESIGN PER ASCE 7-05.

SEISMIC: SEISMIC IMPORTANCE FACTOR Ie = 1.0  
SPECT. RESPONSE ACCEL. Ss=129%, S1=48%  
SITE CLASS D  
SPECTRAL RESPONSE COEFF. Sds = 0.86  
SEISMIC DESIGN CATEGORY: D

CONCRETE

MIXING, SELECTION OF MATERIALS, AND PLACING OF ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF THE IBC, CHAPTER 19. AN AIR ENTRAINING AGENT SHALL BE USED IN ALL CONCRETE MIXES FOR CONCRETE WORK WHICH IS TO BE EXPOSED TO EARTH OR WEATHER. AIR ENTRAINMENT SHALL BE 6% +/- 1.5% BY VOLUME. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (F'C) = 3000 P.S.I. CONCRETE FOR INTERIOR AND EXTERIOR SLABS SHALL CONTAIN 0.1% BY VOLUME 'GENESIS FIBER' COLLATED FIBRILLATED POLYPROPYLENE FIBER PER CUBIC YARD OF CONCRETE. THE FIBER SHALL BE THOROUGHLY MIXED INTO THE CONCRETE IN TRANSIT TO THE SITE, IN ACCORDANCE WITH THE FIBER MANUFACTURER'S RECOMMENDATIONS.

REINFORCING STEEL

UNLESS NOTED OTHERWISE, ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO IBC CHAPTER 19. REINFORCING BARS SHALL BE GRADE 60. REINFORCING STEEL SHALL BE SECURELY TIED IN PLACE WITH NO. 16 DOUBLE ANNEALED IRON WIRE. REINFORCING IN FOOTINGS SHALL BE SUPPORTED ON WELL CURED CONCRETE BLOCKING OR APPROVED METAL CHAIRS. REINFORCING BARS NO. 6 AND SMALLER SHALL BE SPLICED BY A LAP OF AT LEAST (44) BAR DIAMETERS. REINFORCING BARS NO. 7 OR LARGER SHALL BE SPLICED BY A LAP OF AT LEAST (55) BAR DIAMETERS. A MINIMUM LAP FOR ALL BARS SHALL BE 24". CONCRETE COVER OVER REINFORCING SHALL BE 3" FOR CONCRETE CAST AGAINST EARTH. CONCRETE COVER FOR FORMED CONCRETE THAT WILL BE EXPOSED TO WEATHER OR EARTH SHALL BE 2" MINIMUM FOR NO. 6 THROUGH NO. 18 BARS AND 1 1/2" MINIMUM FOR NO. 5 BARS AND SMALLER, INCLUDING WELDED WIRE FABRIC (WWF). OTHER REINFORCEMENT SHALL HAVE A MINIMUM COVERAGE OF NOT LESS THAN 3/4".

ADHESIVE ANCHORING SYSTEM

THREADED ROD ANCHORS AND REINFORCING BAR DOWELS SHALL BE SET IN HILTI HIT-RE 500 V3 ADHESIVE OR STRUCTURAL EQUIVALENT. ADHESIVE ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE ADHESIVE MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES. MINIMUM EMBEDMENT IN CONCRETE FOR ALL ANCHORS SHALL BE 3-1/2" UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL AND CONNECTORS

STRUCTURAL STEEL SHALL CONFORM TO IBC CHAPTER 22, FOR ASTM SPECIFICATION A-36, FY = 36 K.S.I. EXCEPT WHERE NOTED OTHERWISE. STEEL W-SHAPES SHALL CONFORM TO ASTM A992 FY = 50 KSI. STEEL TUBING (HSS) SHALL CONFORM TO ASTM A500, GRADE B, FY = 46 K.S.I. DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE IBC CHAPTER 22, DIVISION IX. ALLOWABLE STRESS DESIGN. MACHINE BOLTS (MB) SHALL CONFORM TO ASTM 307 UNLESS NOTED OTHERWISE AND SHALL BE PROVIDED WITH STANDARD HEX HEAD NUTS, AND WASHERS CONFORMING TO TABLE 2.

TABLE 2		
BOLT	NUT	WASHER
A307	A563 GR. A	F436 TYPE 1
A325	A563 GR. C	F436 TYPE 1
A490	A563 GR. DH	F436 TYPE 1

TO ASTM A563, GRADE A AND HARDENED STEEL CIRCULAR WASHERS CONFORMING TO ASTM F436. ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY D1.1. WELD ALL FAYING SURFACES WITH CONTINUOUS 3/16" FILLET WELD (MINIMUM) UNLESS OTHERWISE NOTED. ELECTRODES SHALL BE A.W.S. E-70. ANCHOR ALL COLUMNS WITH MINIMUM (4) 3/4" X 10" ANCHOR BOLTS UNLESS SHOWN OTHERWISE. PROVIDE ADEQUATE LATERAL BRACING FOR STRUCTURE DURING CONSTRUCTION.

ANCHOR BOLTS AND CONCRETE EXPANSION ANCHORS

ANCHOR BOLTS, THREADED RODS AND CONCRETE EXPANSION ANCHORS SHALL CONFORM TO ASTM F1554 GRADE 36. CONCRETE EXPANSION ANCHORS (KB) SHALL BE "HILTI KWIK BOLT II" CONCRETE EXPANSION ANCHORS OR STRUCTURAL EQUIVALENT, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ANCHOR BOLTS SHALL BE PROVIDES WITH HEX HEAD NUTS AND 3"x3"x1/4" STEEL PLATE WASHERS. WHERE BOLTS OR RODS ARE USED WITH CEDAR SILL PLATES, BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. ALL FASTENERS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT DIPPED GALVANIZED OR SHALL BE STAINLESS STEEL.

POWDER FASTENERS

POWDER FASTENERS FOR CONNECTION TO CONCRETE, GROUTED MASONRY, OR STEEL SHALL BE POWDER ACTUATED HILTI X-AL-H HEAVY DUTY DOME HEAD NAILS WITH 0.177 INCH SHANK DIAMETER. MINIMUM FASTENER EMBEDMENT SHALL BE 1-3/8". NAIL LENGTH SHALL BE AS REQUIRED TO ACHIEVE SPECIFIED MINIMUM PENETRATION INTO SUBSTRATE.

STEEL TIE RODS AND CONNECTORS

STEEL TIE RODS SHALL BE ASTM A572 GRADE 50, WITH MIN 50 KSI YIELD STRENGTH. TIE RODS SHALL BE A SOLID ROUND STOCK WITH THREADS CUT ON EACH END. RODS SHALL HAVE A HEAVY HEX NUT & HILLSIDE WASHER SIMILAR TO THE EXISTING ROD CONNECTIONS.

COLD FORMED STEEL FRAMING

ALL STUD WALL FRAMING MEMBERS SHALL BE OF THE TYPE, SIZE AND GAUGE AS SHOWN ON THE PLANS AND SHALL BE MANUFACTURED BY MEMBERS OF THE STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA). ALL MEMBERS SHALL BE FORMED FROM STEEL THAT CORRESPONDS TO THE MINIMUM REQUIREMENTS OF THE 2012 AMERICAN IRON AND STEEL INSTITUTE (AISI) STANDARDS. ALL STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 33,000 PSI, UNLESS NOTED OTHERWISE. ALL MEMBERS SHALL HAVE A G-60 GALVANIZED COATING MEETING THE REQUIREMENTS OF ASTM A525 AND C955. ALL STRUCTURAL MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS". PROVIDE ALL ACCESSORIES INCLUDING, BUT NOT LIMITED TO TRACKS, CLIPS, WEB STIFFENERS, ANCHORS, FASTENING DEVICES, RESILIENT CLIPS, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AND AS RECOMMENDED BY THE MANUFACTURER FOR THE STEEL MEMBERS USED. FASTENING OF MEMBERS SHALL BE WITH SELF DRILLING SCREWS OR WELDING. SCREWS OR WELDS SHALL BE OF SUFFICIENT SIZE TO INSURE THE STRENGTH OF THE CONNECTION. ALL WELDS OF GALVANIZED STEEL SHALL BE TOUCHED UP WITH A ZINC-RICH PAINT. ALL WELDS OF CARBON STEEL SHALL BE TOUCHED UP WITH PAINT. WIRE TYING OF COMPONENTS SHALL NOT BE PERMITTED. THE PHYSICAL AND STRUCTURAL PROPERTIES SHALL BE AS INDICATED ON THE DRAWINGS AND SHALL CONFORM TO THE PROPERTIES LISTED BY THE SSMA UNIFORM FOUR PART PRODUCT CODE.

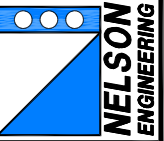
GENERAL ABBREVIATIONS LIST

AB	-ANCHOR BOLT	MAX	-MAXIMUM
AL	-ALUMINUM	MECH.	-MECHANICAL
ARCH	-ARCHITECT	MFR	-MANUFACTURER
C	-STRUCTURAL CHANNEL	MIN.	-MINIMUM
CFMU	-CONCRETE FORM MASONRY UNIT	N/A	-NOT AVAILABLE
CL (C)	-CENTERLINE	NFS	-NON-FROST SUSCEPTIBLE
CMU	-CONCRETE MASONRY UNIT	N.T.S.	-NOT TO SCALE
CONC	-CONCRETE	O/C	-ON CENTER
CONT	-CONTINUOUS	O.D.	-OUTSIDE DIMENSION
D	-DEEP	OSB	-ORIENTATED STRAND BOARD
DF	-DOUGLAS FIR	PERP.	-PERPINDICULAR
DIM	-DIMENSION	PL (P)	-PLATE
ELEC	-ELECTRICAL	POI	-POINT OF INTERSECTION
E.O.C.	-EDGE OF CONCRETE	PSF	-POUNDS PER SQUARE FOOT
E/W	-EACH WAY	PSI	-POUNDS PER SQUARE INCH
EXIST	-EXISTING	PT	-PRESSURE TREATED
EQ	-EQUAL	R	-RADIUS
FDN	-FOUNDATION	REQ'D	-REQUIRED
F.F.	-FINISH FLOOR	SCH	-SCHEDULE
F.G.	-FINISH GRADE	SHT	-SHEET
FT	-FEET	SIM.	-SIMILAR
FTG	-FOOTING	S.S.	-STAINLESS STEEL
GA	-GAUGE	STL	-STEEL
GALV	-GALVANIZED	SQ.	-SQUARE
GL	-GRIDLINE	T	-TALL
GLB	-GLULAM BEAM	T	-THICK
GLULAM	-GLUE LAMINATED TIMBER	T&B	-TOP AND BOTTOM
H	-HEIGHT	T.B.D.	-TO BE DETERMINED
HDG	-HOT-DIPPED GALVANIZED	T&G	-TONGUE AND GROOVE
HDPE	-HIGH DENSITY POLYETHYLENE	T.O.S.	-TOP OF STEEL
HDR	-HEADER	T.O.W.	-TOP OF WALL
HORIZ	-HORIZONTAL	T.R.	-THREADED ROD
HSS	-HOLLOW STRUCTURAL SECTION	TYP.	-TYPICAL
I.B.C.	-INTERNATIONAL BUILDING CODE	U.N.O.	-UNLESS NOTED OTHERWISE
ICF	-INSULATED CONCRETE FORM	VERT.	-VERTICAL
I.D.	-INNER DIMENSION	WF	-WIDE FLANGE BEAM
IN.	-INCH	W	-WIDTH
L	-STEEL ANGLE	W/	-WITH
L	-LENGTH	W/O	-WITH OUT
LF	-LINEAR FEET	WWM	-WELDED WIRE MESH
LVL	-LAMINATED VENEER LUMBER		

REVISIONS	MARK	DATE		DESCRIPTION
		1	2	
		3	4	
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SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE  
STRUCTURAL NOTES  
& SPECIFICATIONS

SHEET  
S1.01

DRAWN BY: CAM  
CHECKED BY: MJD

DATE: JUNE 2022  
SCALE: AS NOTED  
JOB NUMBER: 20-012-04



SPECIAL INSPECTION NOTES

THE FOLLOWING SPECIAL INSPECTIONS ARE REQUIRED FOR THE PROJECT BY THE IBC. THE CONTRACTOR SHALL SUPPLY THE CONCRETE TESTING PORTION OF THE INSPECTION AS IDENTIFIED IN 033000 THROUGH A THIRD PARTY INDEPENDENT LAB. THE OWNER SHALL PROVIDE THE REMAINDER OF THE STRUCUTRAL SPECIAL INSPECTION FOR THE PROJECT DURING CONSTRUCTION.

TABLE 1704.3 REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION				
VERIFICATION AND INSPECTION	CONT.	PERIODIC	REFERENCED STANDARD <sup>a</sup>	IBC REF
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS:				
a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	-	X	AISC 360, SEC. A3.3 & APPLICABLE ASTM MAT'L STANDARDS	
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	-	X	-	-
2. INSPECTION OF HIGH-STRENGTH BOLTING:				
a. SNUG-TIGHT JOINTS.	-	X	AISN360, SECTION M2.5	1704.3.3
b. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS INSTALLED.	-	X		
c. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION.	X	-		
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:				
a. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.	-	X	AISC 360, SECTION M5.5	
b. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	-	X	APPLICABLE ASTM MATERIAL STANDARDS	
c. MANUFACTURER'S CERTIFIED TEST REPORTS.	-	X		
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:				
a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS.	-	X	AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENTS	-
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	-	X	-	-
5. INSPECTION OF WELDING:				
a. STRUCTURAL STEEL AND OLD-FORMED STEEL DECK:	X	X	AWS D1.1	1704.3.1
1.) COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS.	X	-		
2.) MULTIPASS FILLET WELDS.	X	-		
3.) SINGLE-PASS FILLET WELDS > 5/16"	X	-		
4.) PLUG AND SLOT WELDS.	X	-		
5.) SINGLE-PASS FILLET WELDS ≤ 5/16"	-	X		
6.) FLOOR AND ROOF DECK WELDS.	-	X	AWS D1.3	
b. REINFORCING STEEL:		X	AWS D1.4 ACI 318: SECTION 3.5.2	-
1.) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706.	-	X		
2.) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	X	-		
3.) SHEAR REINFORCEMENT.	X	-		
4.) OTHER REINFORCING STEEL.	-	X		
6. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE:				
a. DETAILS SUCH AS BRACING AND STIFFENING.	-	X	-	1704.3.2
b. MEMBER LOCATIONS.	-	X		
c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION	-	X		

<sup>a</sup> WHERE APPLICABLE, SEE ALSO SECTION 1707.1, SPECIAL INSPECTION FOR SEISMIC RESISTANCE

TABLE 1704.4 REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION				
VERIFICATION AND INSPECTION	CONT.	PERIODIC	REFERENCED STANDARD <sup>a</sup>	IBC REF
1. INSPECTION FOR REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.	-	X	ACI 318: 3.5, 7.1-7.7	1913.4
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1704.3, ITEM 5b.	-	-	AWS D1.4 ACI 318:3.5.2	-
3. INSPECTION OF BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED WHERE STRENGTH DESIGN IS USED.	X	-	ACI318: 8.1.3, 21.2.8	1911.5, 1912.1
4. INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE	-	X	ACI3 18: 3.8.6, 8.1.3, 21.2.8	1912.1
5. VERIFY USE OF REQUIRED DESIGN MIX	-	X	ACI 318: CH. 4, 5.2-5.4	1904.2.2, 1913.2, 1913.3
6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1913.9
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 5.9, 5.10	1913.6, 1913.7, 1913.8
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	-	X	ACI 318: 5.11-5.13	1913.9
9. INSPECTION OF PRESTRESSED CONCRETE: a. APPLICATION OF PRESTRESSING FORCES. b. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE-RESISTING SYSTEM.	X	-	ACI 318: 18.20 ACI 318: 18.18.4	-
10. ERECTION OF PRECAST CONCRETE MEMBERS.	-	X	ACI 318: CH. 6	-
11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POSTTENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 6.2	-
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 6.1.1	-

<sup>a</sup> WHERE APPLICABLE, SEE ALSO SECTION 1707.1, SPECIAL INSPECTION FOR SEISMIC RESISTANCE

REVISIONS	MARK	DATE	DESCRIPTION
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SLUDGE PRESS REPLACEMENT – PHASE 1

CITY OF KENAI

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SHEET TITLE  
SPECIAL INSPECTION

SHEET  
S1.02

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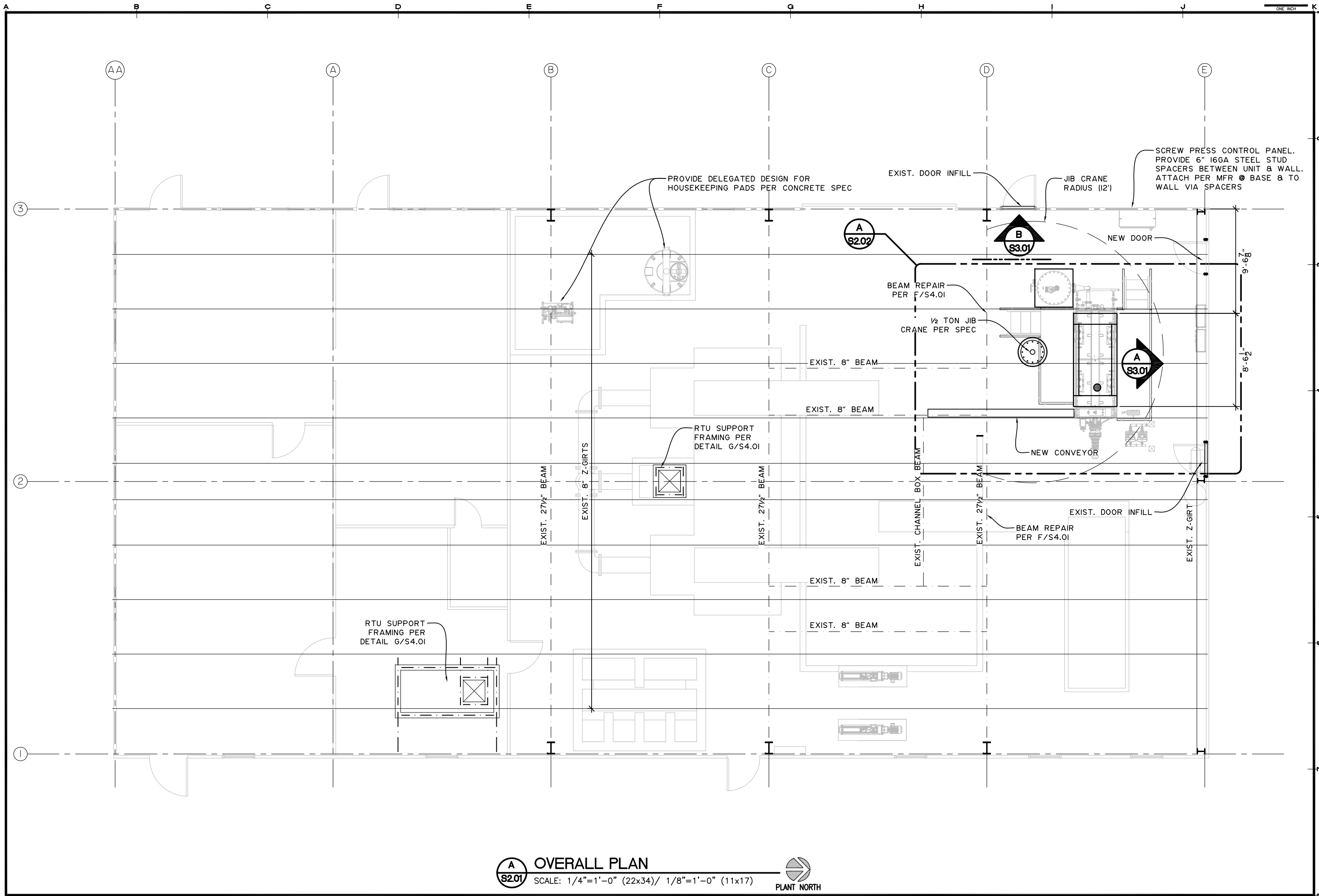
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JUNE 2022

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JOB NUMBER:  
20-012-04

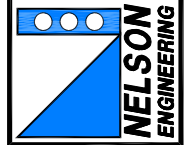




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SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE  
OVERALL PLAN

SHEET  
S2.01

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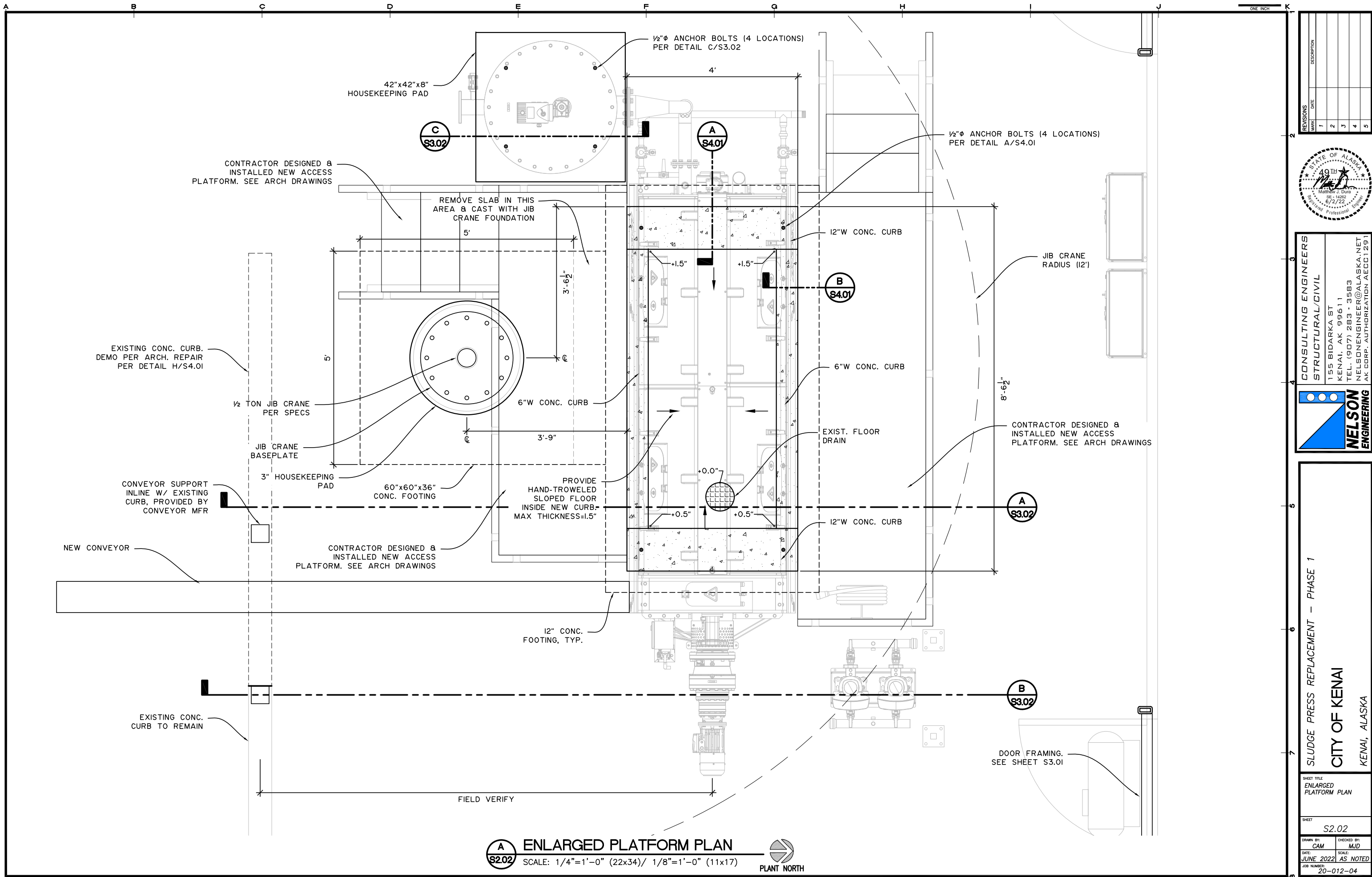
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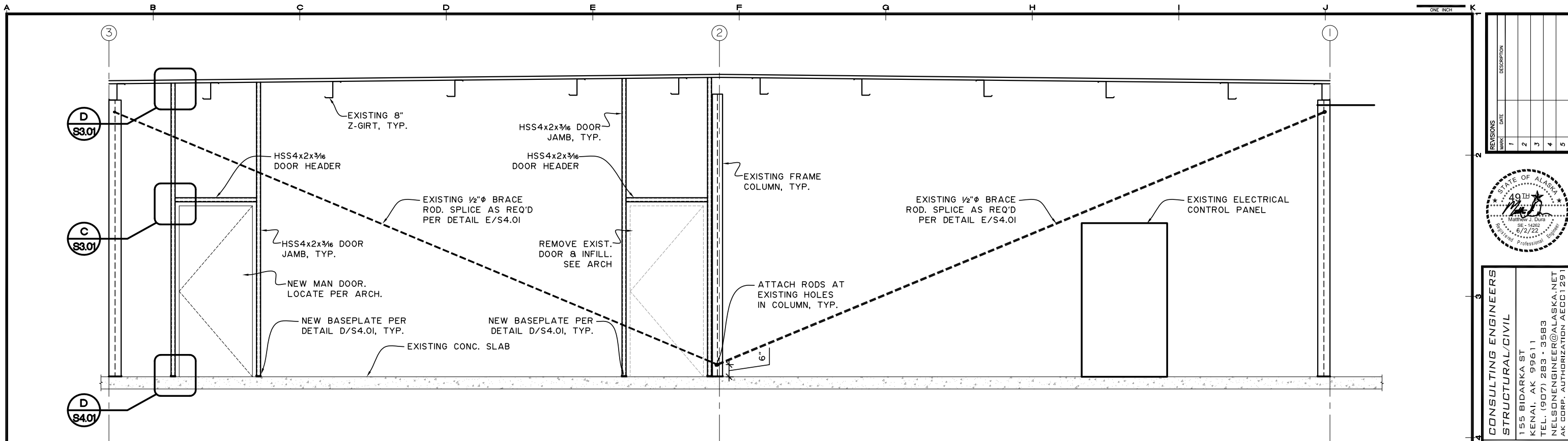
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JUNE 2022

SCALE:  
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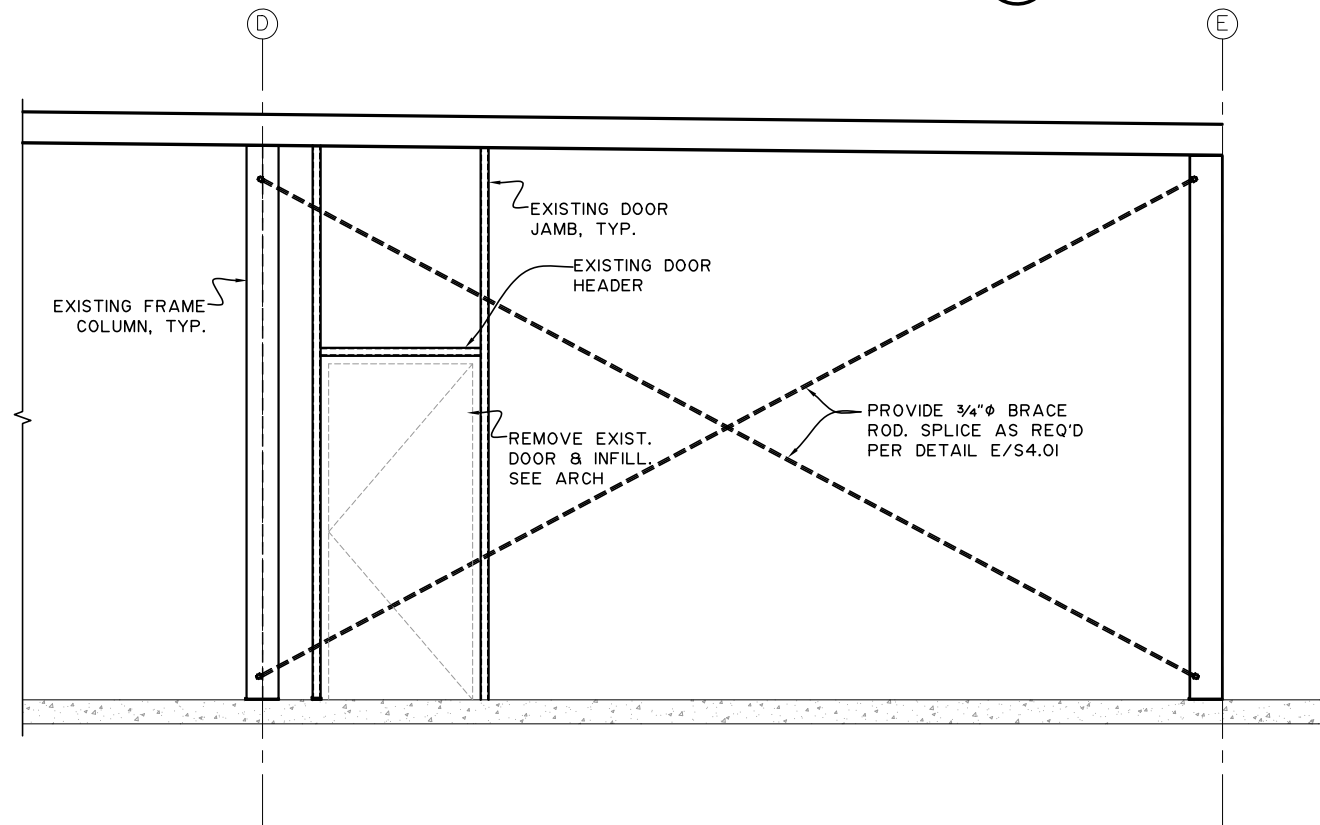
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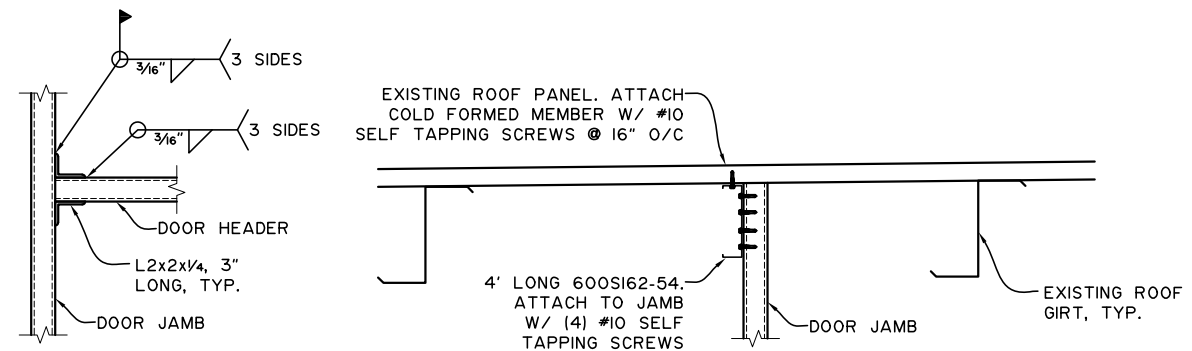




**A** **FRAMING ELEVATION • GL-E**  
**S3.01** SCALE: 1/2"=1'-0" (22x34)/ 1/4"=1'-0" (11x17)



**B** **FRAMING ELEVATION • GL-3**  
**S3.01** SCALE: 1/2"=1'-0" (22x34)/ 1/4"=1'-0" (11x17)



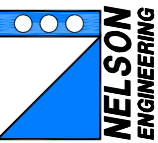
**C** **JAMB TO HEADER CONNECTION**  
**S3.01** SCALE: 1-1/2"=1'-0" (22x34)/ 3/4"=1'-0" (11x17)

**D** **JAMB TO ROOF CONNECTION**  
**S3.01** SCALE: 1-1/2"=1'-0" (22x34)/ 3/4"=1'-0" (11x17)

REVISIONS	DATE	DESCRIPTION
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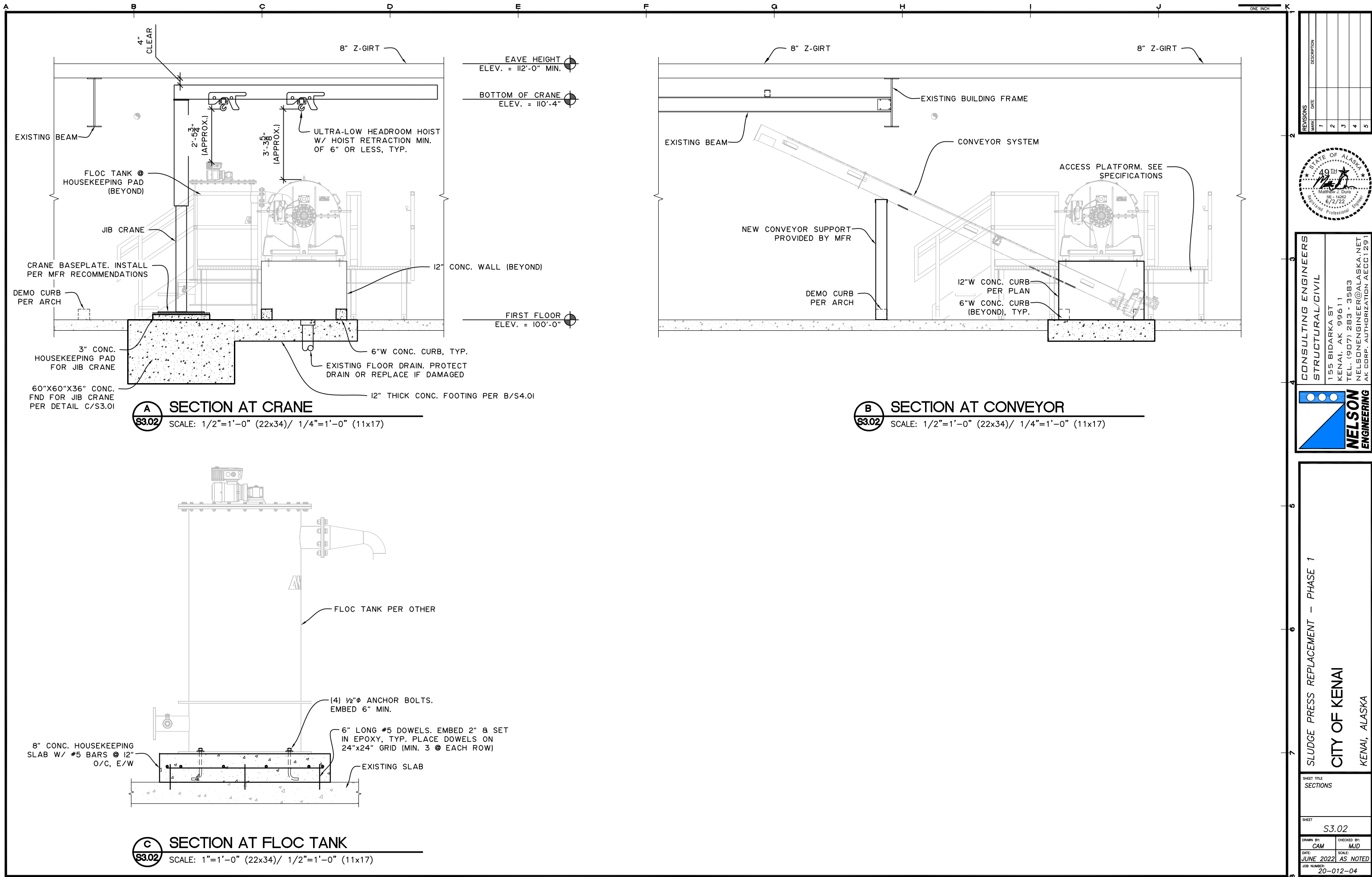
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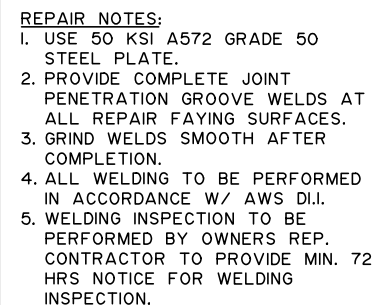
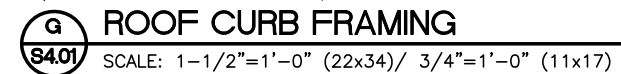
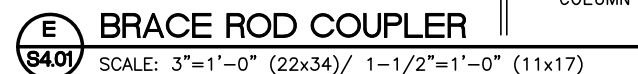
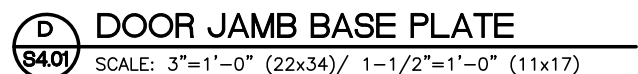
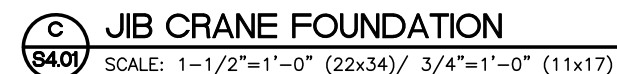
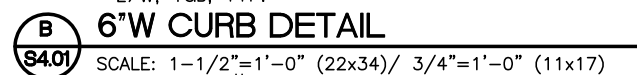


SLUDGE PRESS REPLACEMENT - PHASE 1  
 CITY OF KENAI  
 KENAI, ALASKA

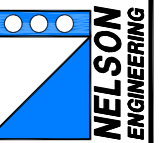
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SHEET	S3.01
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DATE:	JUNE 2022
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CITY OF KENAI  
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SHEET TITLE <i>DETAILS</i>	
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DATE: <i>JUNE 2022</i>	SCALE: <i>AS NOTED</i>
JOB NUMBER: <i>20-012-04</i>	



TYPICAL INSTRUMENT NUMBER

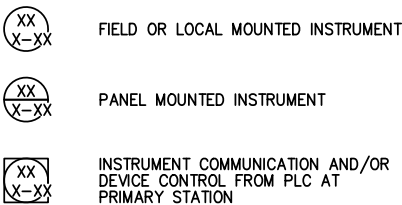
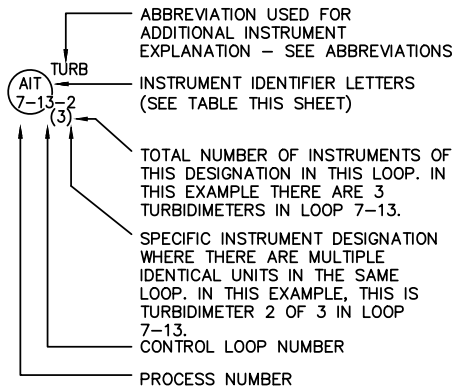
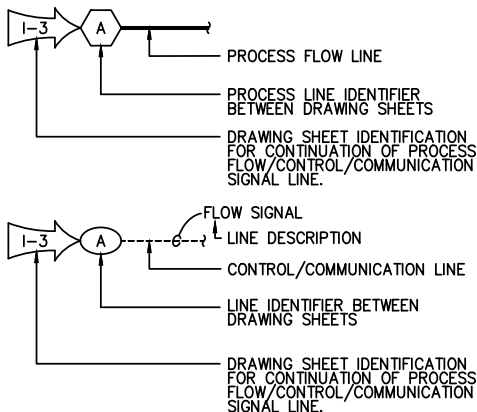


DIAGRAM INTERFACE LEGEND



INSTRUMENT LETTER DESIGNATION TABLE					
LETTER	FIRST LETTER(S)		SUCCESSIVE LETTERS		
	PROCESS/INITIATING VARIABLE	MODIFIER	READOUT	OUTPUT	MODIFIER
A	ANALYSIS (+)		ALARM		
B	BURNER FLAME				
C	CONDUCTIVITY			CONTROL	
D	DENSITY				
E	VOLTAGE				
F	FLOW				
G	GAUGE				
H	HAND (MANUAL)				HIGH
I	CURRENT	INDICATING			
J	POWER				
K	TIME, SCHEDULE			CONTROL	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION	MOMENTARY			MIDDLE
N	-				
O	-				
P	PRESSURE (VACUUM)				
Q	QUANTITY OR EVENT	INTEGRATE			
R	-				
S	SPEED OR FREQUENCY			SWITCH	
T	TEMPERATURE		TRANSMIT		
U	MULTI-VARIABLE (+)				MULTIFUNCTION
V	VACUUM				
W	WEIGHT OR FORCE				
X	UNCLASSIFIED (+)			SEQUENCE	
Y	-			RELAY	
Z	POSITION				

NOTES:

- DESIGNATES ITEM TO BE FURNISHED BY OWNER, DELIVERED AND INSTALLED BY CONTRACTOR
- POINT OF CONNECTION TO OWNER FURNISHED EQUIPMENT
- DESIGNATES ITEM TO BE FURNISHED AND INSTALLED BY CONTRACTOR
- DESIGNATES EXISTING COMPONENT
- DESIGNATES EQUIPMENT TO BE OWNER FURNISHED AS PART OF ANDRITZ EQUIPMENT PACKAGE PURCHASED BY THE CITY OF KENAI AND INSTALLED BY THE CONTRACTOR
- DESIGNATES CONTRACTOR FURNISHED AND INSTALLED POLYMER PREPARATION AND DOSING VENDOR EQUIPMENT PACKAGE

SYMBOL LEGEND

- PROCESS FLOW LINE, PRIMARY
- PROCESS FLOW LINE, SECONDARY
- COMMUNICATIONS, CONTROL SIGNAL
- ETHERNET CABLE
- DEVICE NET
- DC VOLTAGE
- FLOW DIRECTION
- EQUIPMENT SKID LIMITS
- INSTRUMENT AIR

VALVES & PROCESS COMPONENTS

- GATE VALVE, MANUAL
- SOLENOID VALVE
- BALL VALVE, 2 WAY, MANUAL
- BALL VALVE, 3 WAY, MANUAL
- CHECK VALVE, SWING CHECK
- CHECK VALVE, BALL CHECK POPPET VALVE
- GLOBE VALVE, MANUAL
- PLUG VALVE, MANUAL
- DIAPHRAGM VALVE, MANUAL
- DIAPHRAGM VALVE, PNEUMATIC ACUTATION
- DIAPHRAGM VALVE, MOTOR ACTUATED
- BUTTERFLY VALVE, MANUAL
- BUTTERFLY VALVE, MOTOR ACTUATED
- REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP)
- BALL VALVE, PNEUMATICALLY ACTUATED
- BALL VALVE, MOTOR ACTUATED
- SPRING LOADED PRESSURE RELIEF VALVE
- SPRING LOADED PRESSURE REDUCING VALVE
- WYE STRAINER
- FLEX CONNECTION
- PIPE UNION
- REDUCER
- SCREENED TANK VENT
- PUMP, CENTRIFUGAL
- SAMPLE PORT
- FLOW ELEMENT, MAGNETIC METER
- DRAIN
- FLOW SWITCH
- PRESSURE SWITCH
- LEVEL SENSOR, ULTRASONIC
- CAM AND GROOVE HOSE COUPLING
- ELECTRICAL SUPPLY PROVIDED BY CONTRACTOR
- DIAPHRAGM SEAL
- FLOW RATE INDICATOR, VARIABLE ORIFICE
- RUPTURE DISK

ABBREVIATIONS

- ABV ABOVE
- AIT ANALYTICAL INDICATOR/TRANSMITTER
- B BLOWER
- BEL BELOW
- CA COMPRESSED AIR
- CGHA CAM AND GROOVE HOSE ASSEMBLY
- CONC CONCRETE
- COND CONDUCTIVITY
- CONN CONNECTION
- CPVC CHLORINATED POLY VINYL CHLORIDE
- CU COPPER
- D DRAIN
- DI DUCTILE IRON
- DS DIGESTED SLUDGE
- DV DRAIN VALVE
- E,EX,(E) EXISTING
- EL ELEVATION
- EW EAST WEST
- FC FLOW CONTROL
- FCV FLOW CONTROL VALVE
- FF FINISHED FLOOR
- FIT FLOW INDICATOR, TRANSMITTER
- FLEX FLEXIBLE
- FRP FIBERGLASS REINFORCED PLASTIC
- FV FLOW VALVE (OPEN CLOSE ONLY)
- G GATE
- GI GALVANIZED IRON
- HDPE HIGH DENSITY POLYETHYLENE
- HV HAND VALVE
- HS HAND SWITCH
- HW1 HOT POTABLE WATER
- IA INSTRUMENT AIR
- LCP LOCAL CONTROL PANEL
- LPA LOW PRESSURE AIR
- LIT LEVEL INDICATOR TRANSMITTER
- M MOTOR
- MCP MAIN CONTROL PANEL
- MOV MOTOR OPERATED VALVE
- MXR MIXER
- (N) NEW
- NC NORMALLY CLOSED
- NS NORTH SOUTH
- OF OVERFLOW
- P PUMP
- PDI PRESSURE DIFFERENTIAL INDICATOR
- PE POLYETHYLENE
- PEX CROSS LINKED POLYETHYLENE
- PIT PRESSURE INDICATOR / TRANSMITTER
- PH NEGATIVE LOG OF HYDROGEN ION CONC
- PI PRESSURE INDICATOR
- PLC PROGRAMMABLE LOGIC CONTROLLER
- POLY POLYMER
- PRDV PRESSURE REDUCING VALVE
- PRV PRESSURE RELIEF VALVE
- PT PRESSURE TRANSMITTER
- QA EVENT ALARM
- QL EVENT LIGHT
- RPBFP REDUCED PRESSURE BACKFLOW PREVENTER
- SS/SST STAINLESS STEEL
- ST STRAINER
- STL STEEL
- SV SOLENOID VALVE
- T TANK
- TYP TYPICAL
- TW2 TEMPERED NON-POTABLE WATER
- V VENT
- VIC VICTAULIC GROOVED COUPLING
- W1 POTABLE WATER
- W2 PLANT NON-POTABLE WATER
- XS TRANSFER SWITCH
- YC EVENT COUNTER
- ZS POSITION INDICATOR
- ZSC POSITION SWITCH CLOSED
- ZSO POSITION SWITCH OPEN

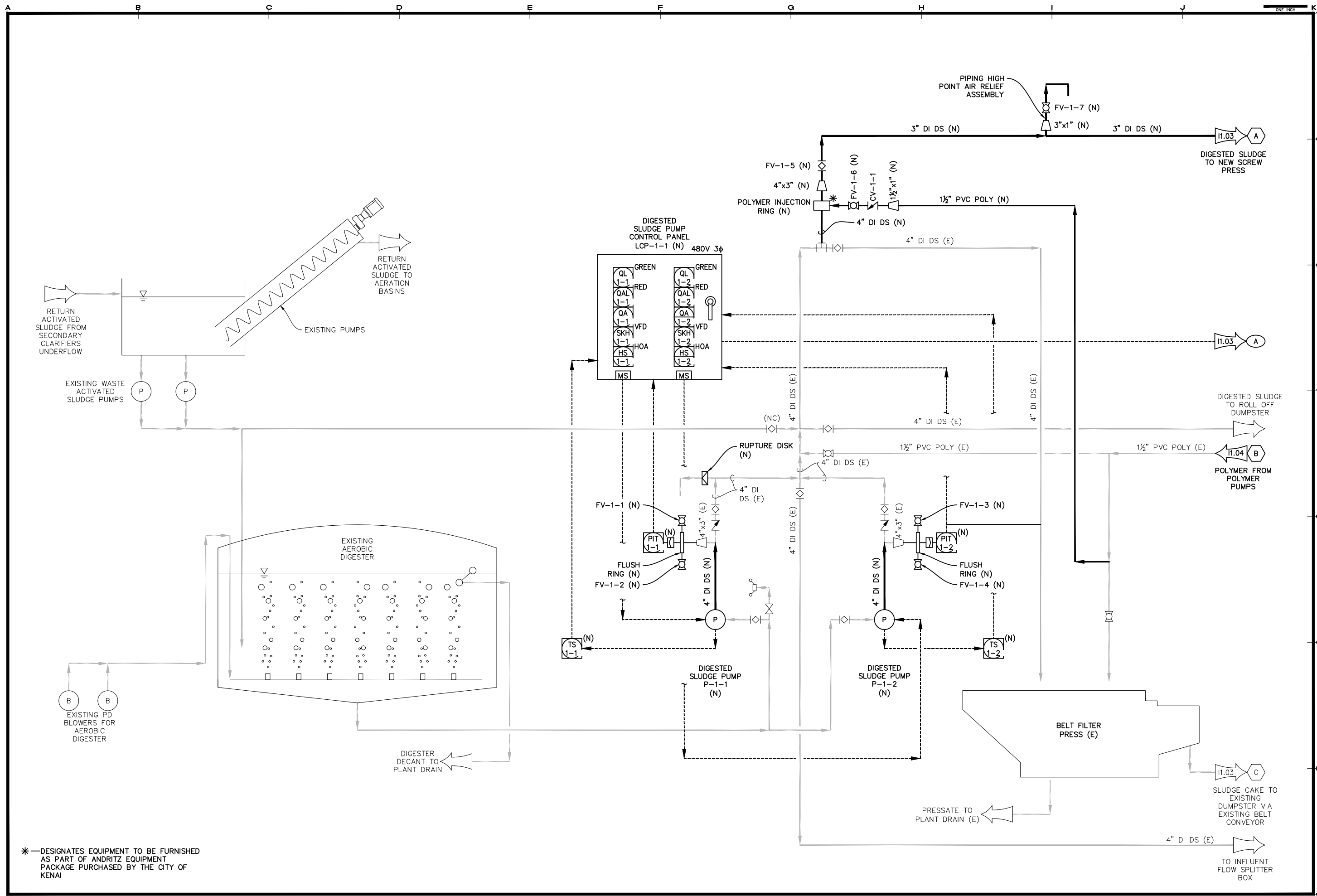
REVISIONS	DATE	DESCRIPTION
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**GV Jones & Associates, Inc.**  
Water and Wastewater Process Engineers  
1200 E. 76th Avenue  
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Fax: (907) 346-4124

SLUDGE PRESS REPLACEMENT - PHASE 1  
CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE	GENERAL P&ID INFORMATION
SHEET	11.01
DRAWN BY:	CMH
CHECKED BY:	AEJ
DATE:	JUNE 2022
SCALE:	NONE
JOB NUMBER:	20-012-04



\* — DESIGNATES EQUIPMENT TO BE FURNISHED AS PART OF ANDRITZ EQUIPMENT PACKAGE PURCHASED BY THE CITY OF KENAI

REVISIONS	DATE	DESCRIPTION
1		
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SLUDGE PRESS REPLACEMENT — PHASE 1

CITY OF KENAI

KENAI, ALASKA

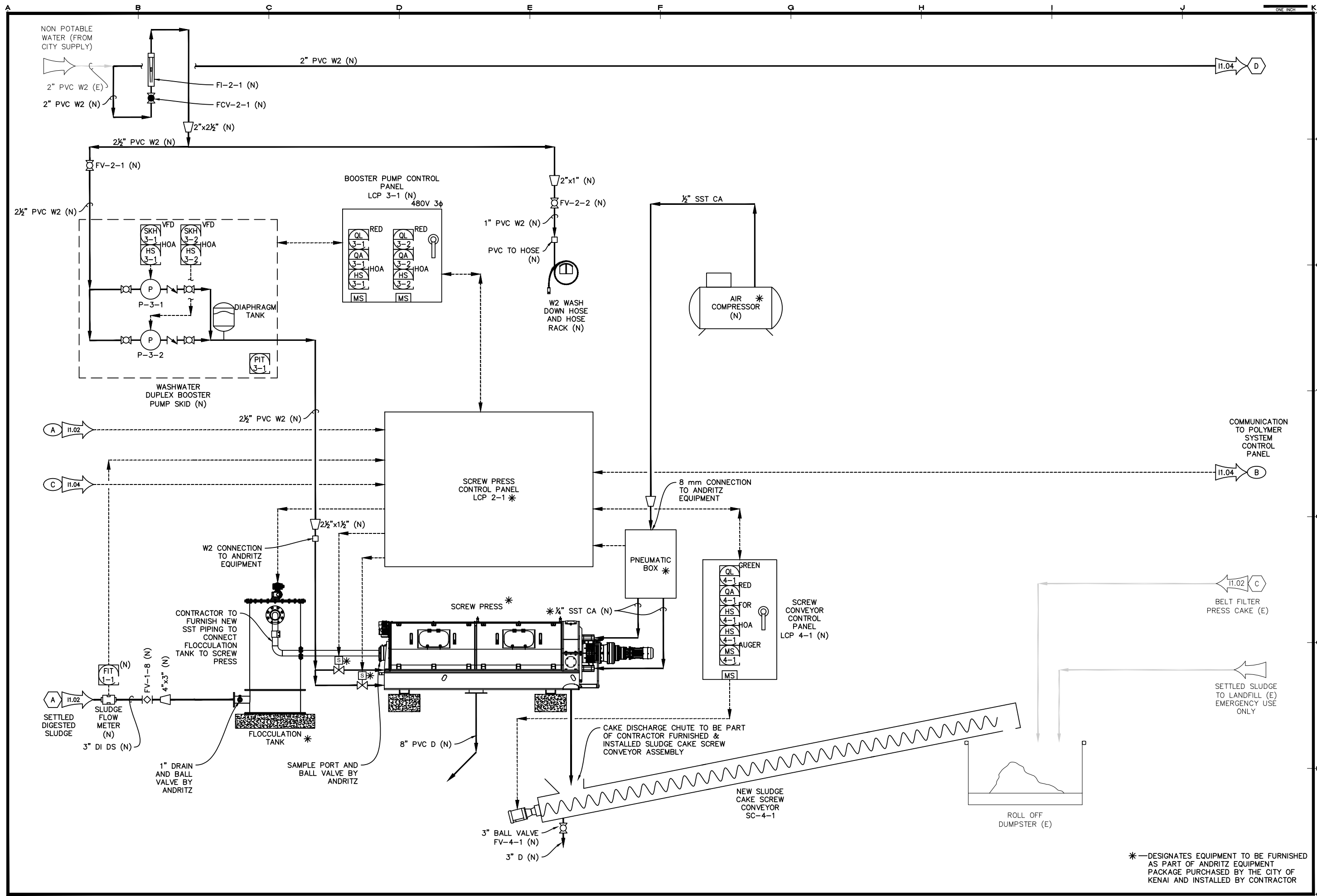
SHEET TITLE  
SLUDGE PUMPING  
P&ID

SHEET  
11.02

DRAWN BY: CMH  
DATE: JUNE 2022  
JOB NUMBER: 20-012-04

CHECKED BY: AEJ  
SCALE: NONE





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SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI

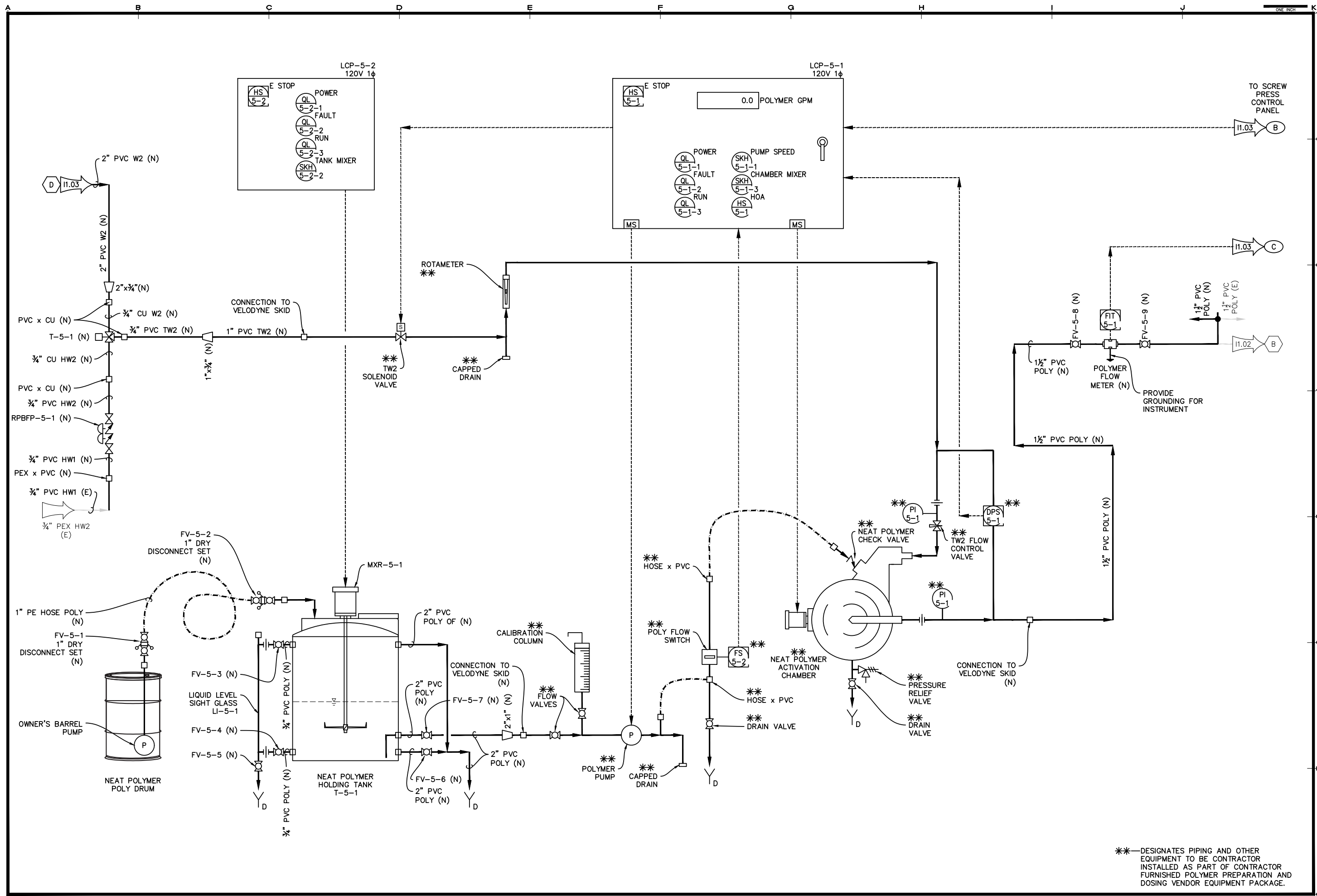
KENAI, ALASKA

SHEET TITLE  
SCREW PRESS DEWATERING P&ID

SHEET  
11.03

DRAWN BY: CMH  
CHECKED BY: AEU  
DATE: JUNE 2022  
SCALE: NONE  
JOB NUMBER: 20-012-04

\*—DESIGNATES EQUIPMENT TO BE FURNISHED AS PART OF ANDRITZ EQUIPMENT PACKAGE PURCHASED BY THE CITY OF KENAI AND INSTALLED BY CONTRACTOR



\*\*—DESIGNATES PIPING AND OTHER EQUIPMENT TO BE CONTRACTOR INSTALLED AS PART OF CONTRACTOR FURNISHED POLYMER PREPARATION AND DOSING VENDOR EQUIPMENT PACKAGE.

REVISIONS	DATE	DESCRIPTION
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SLUDGE PRESS REPLACEMENT — PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE  
POLYMER DOSING P&ID

SHEET  
11.04

DRAWN BY: CMH  
DATE: JUNE 2022  
JOB NUMBER: 20-012-04

CHECKED BY: AEJ  
SCALE: NONE



- GENERAL NOTES:
1. THE CONTRACTOR SHALL PERFORM THE DEMOLITION WORK SHOWN AND DISPOSE OF ALL DEMOLISHED MATERIAL IN A SAFE AND LEGAL MANNER.
  2. THE CONTRACTOR SHALL PERFORM THE DEMOLITION WORK DESCRIBED WITHOUT DAMAGE TO OTHER AREAS OF THE PLANT. ANY DAMAGES CAUSED AS A RESULT OF THE CONTRACTOR'S ACTIVITIES WILL BE RESTORED TO THEIR PRE-CONTRACT CONDITION TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.
  3. DEMOLITION OF EXISTING EQUIPMENT IS DEPICTED AND DESCRIBED IN THESE ANNOTATED PHOTO SHEETS. DEMOLITION ACTIVITIES ARE ALSO DESCRIBED AND DEPICTED ELSEWHERE IN THE CONTRACT DOCUMENTS. ALL AREAS OF THE CONTRACT DOCUMENTS APPLY TO THE WORK AND THE DEPICTION OF DEMOLITION ACTIVITY IN ONE LOCATION AND NOT IN ANOTHER SHALL NOT REMOVE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM THE DEMOLITION.
  4. INSTALL PIPING UNIONS AT ALL LOCATIONS WHERE NEW PIPING IS CONNECTED TO EXISTING PIPING TO FACILITATE MAINTENANCE.

- 1 REMOVE EXISTING CABINET FROM THE WALL AND PROVIDE TO THE OWNER FOR SALVAGE
- 2 DEMOLISH EXISTING W2 PIPING AS SHOWN. WHERE THE PIPING CONNECTS AT THE FLOOR INSTALL A NEW TEE. CONNECT THE RUN OF THE TEE TO THE EXISTING WASHDOWN HOSE, CONNECT THE BRANCH OF THE TEE TO THE FLOOR, AND CONNECT THE OPPOSITE BRANCH OF THE TEE TO NEW PIPING TO SERVE THE W2 NEEDS OF THE NEW POLYMER SYSTEM.
- 3 FOLLOWING REMOVAL OF THE EXISTING POLYMER MIXING TANK, DEMOLISH THE EXISTING HOUSEKEEPING PAD AND GRIND THE FLOOR SMOOTH TO MATCH THE SLOPE OF THE EXISTING FLOOR SLAB. THEN COAT THE FLOOR WITH A POLYAMIDE EPOXY PAINT (MACROPOXY 646 OR SIMILAR) TYPICAL OF TWO HOUSEKEEPING PADS AND TANKS
- 4 DEMOLISH EXISTING PUMPS AND THEIR ASSOCIATED PIPING AND APPURTENANCES. OFFER TO FURNISH EQUIPMENT TO OWNER FOR SALVAGE AND DISPOSE OF ANY AND ALL COMPONENTS NOT WANTED BY THE OWNER. PREPARE THE EXISTING HOUSEKEEPING PADS FOR NEW POLYMER DOSING EQUIPMENT AS NEEDED BY GRINDING THE PADS FLAT AND APPLYING A POLYAMIDE EPOXY PAINT. (TYPICAL OF TWO)
- 5 WITH A TEMPORARY POLYMER DOSING SYSTEM IN PLACE AS SHOWN IN THE CONSTRUCTION SEQUENCING DRAWINGS, DEMOLISH THE EXISTING POLYMER PIPING AS NEEDED TO INSTALL NEW POLYMER FLOW METER AND PIPING.
- 6 MOVE ONE OF THE EXISTING POLYMER TANKS TO THE LOCATION SHOWN ON THE CONSTRUCTION SEQUENCING DRAWINGS AND PROVIDE A TEMPORARY PUMP AND OTHER EQUIPMENT TO FACILITATE TEMPORARY POLYMER DOSING TO THE EXISTING BELT FILTER PRESS DURING CONSTRUCTION. OFFER THE EXISTING TANKS TO THE OWNER AS SALVAGE AND IF THEY ARE NOT WANTED BY THE OWNER DISPOSE OF THE TANKS IN A SAFE AND LEGAL MANNER.
- 7 DEMOLISH ALL APPURTENANCES ASSOCIATED WITH THE EXISTING POLYMER PREPARATION AND DOSING EQUIPMENT WHICH ARE NOT INTENDED TO BE RE-UTILIZED WITH THE NEW POLYMER DOSING SYSTEM.
- 8 DEMOLISH EXISTING W2 PIPING AS SHOWN. DIRECT THE W2 PIPING TO THE FLOOR AS SHOWN IN THE PROCESS DRAWING SHEETS. DISPOSE OF ALL MATERIALS IN A SAFE AND LEGAL MANNER.

A  
P0.01

**DEMOLITION PHOTO SHEET**

SCALE: NONE

REVISIONS	MARK	DATE	DESCRIPTION
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**GV Jones & Associates, Inc.**  
WATER AND WASTEWATER PROCESS ENGINEERS

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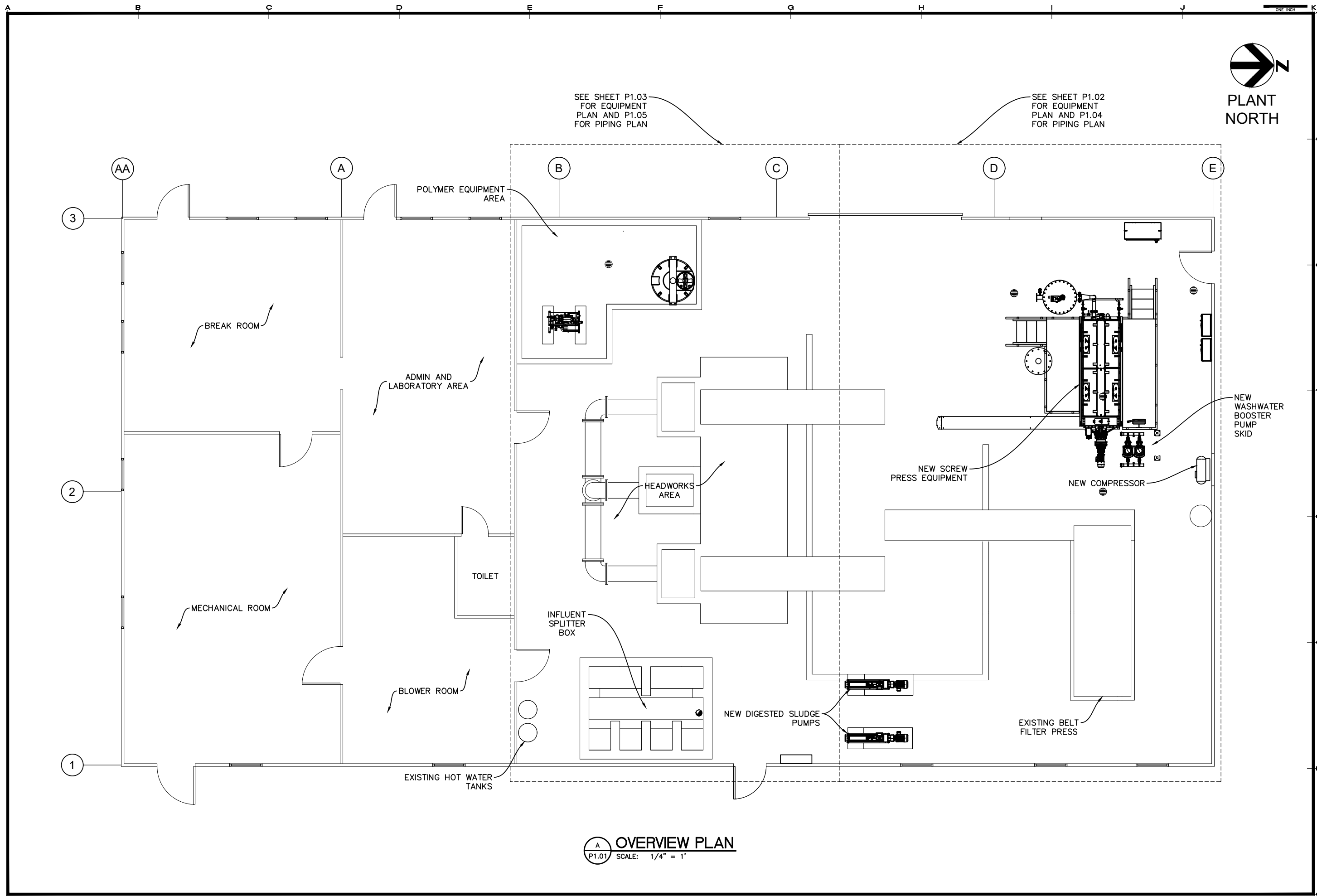
AC0778  
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SLUDGE PRESS REPLACEMENT - PHASE 1

**CITY OF KENAI**  
KENAI, ALASKA

SHEET TITLE PROCESS DEMOLITION SHEET	
SHEET P0.01	
DRAWN BY: CMH	CHECKED BY: AEJ
DATE: JUNE 2022	SCALE: NONE
JOB NUMBER: 20-012-04	

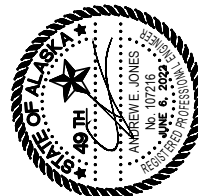




**OVERVIEW PLAN**  
SCALE: 1/4" = 1'



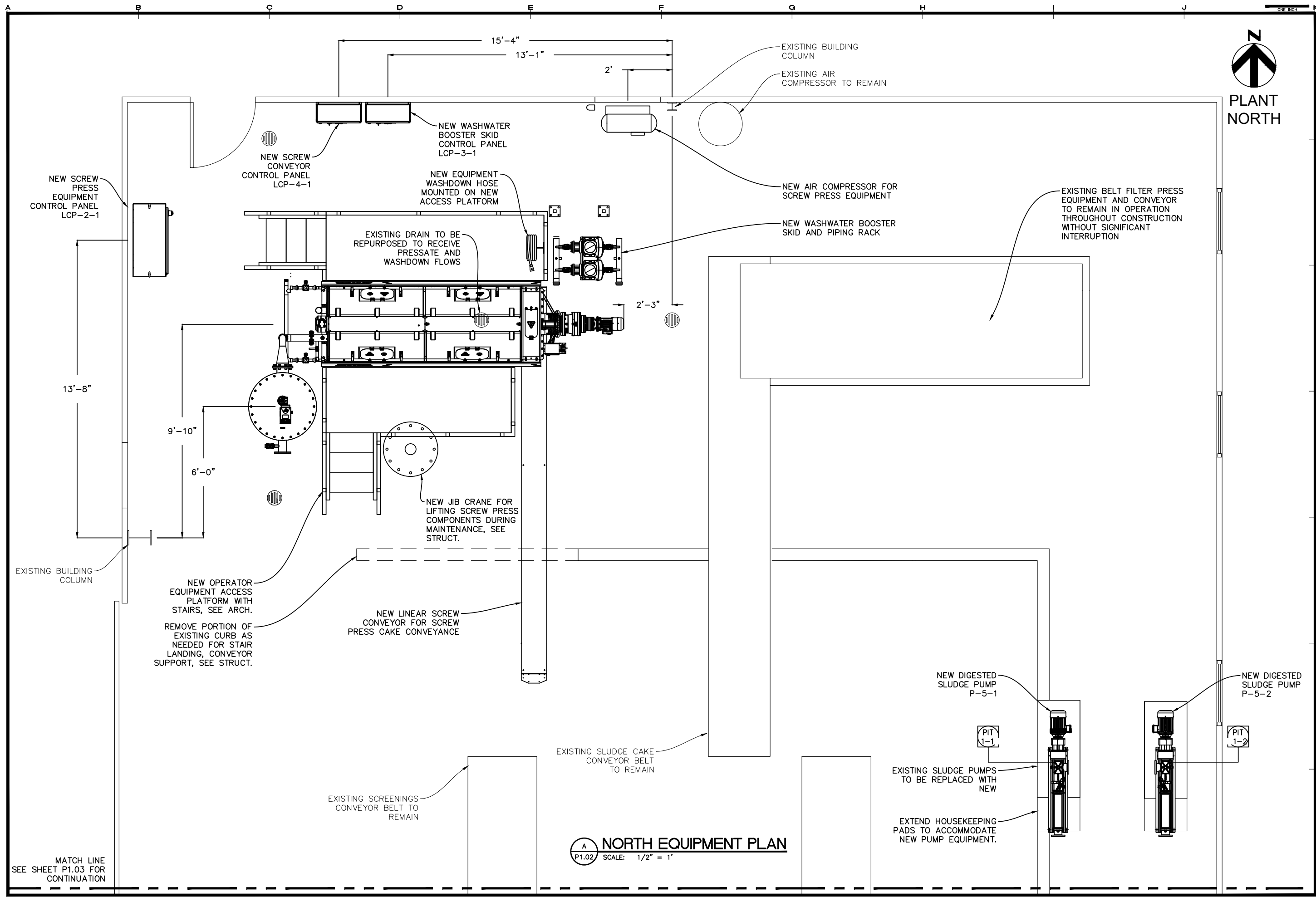
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**SLUDGE PRESS REPLACEMENT - PHASE 1**  
**CITY OF KENAI**  
**KENAI, ALASKA**

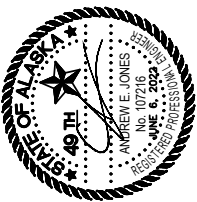
SHEET TITLE <b>PROCESS OVERVIEW PLAN</b>	
SHEET <b>P1.01</b>	
DRAWN BY: <b>CMH</b>	CHECKED BY: <b>AEJ</b>
DATE: <b>JUNE 2022</b>	SCALE: <b>1/4"=1'</b>
JOB NUMBER: <b>20-012-04</b>	



MATCH LINE  
SEE SHEET P1.03 FOR  
CONTINUATION



REVISIONS	DATE	DESCRIPTION
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SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE

PROCESS EQUIPMENT PLAN NORTH

SHEET

P1.02

DRAWN BY:

CMH

CHECKED BY:

AEJ

DATE:

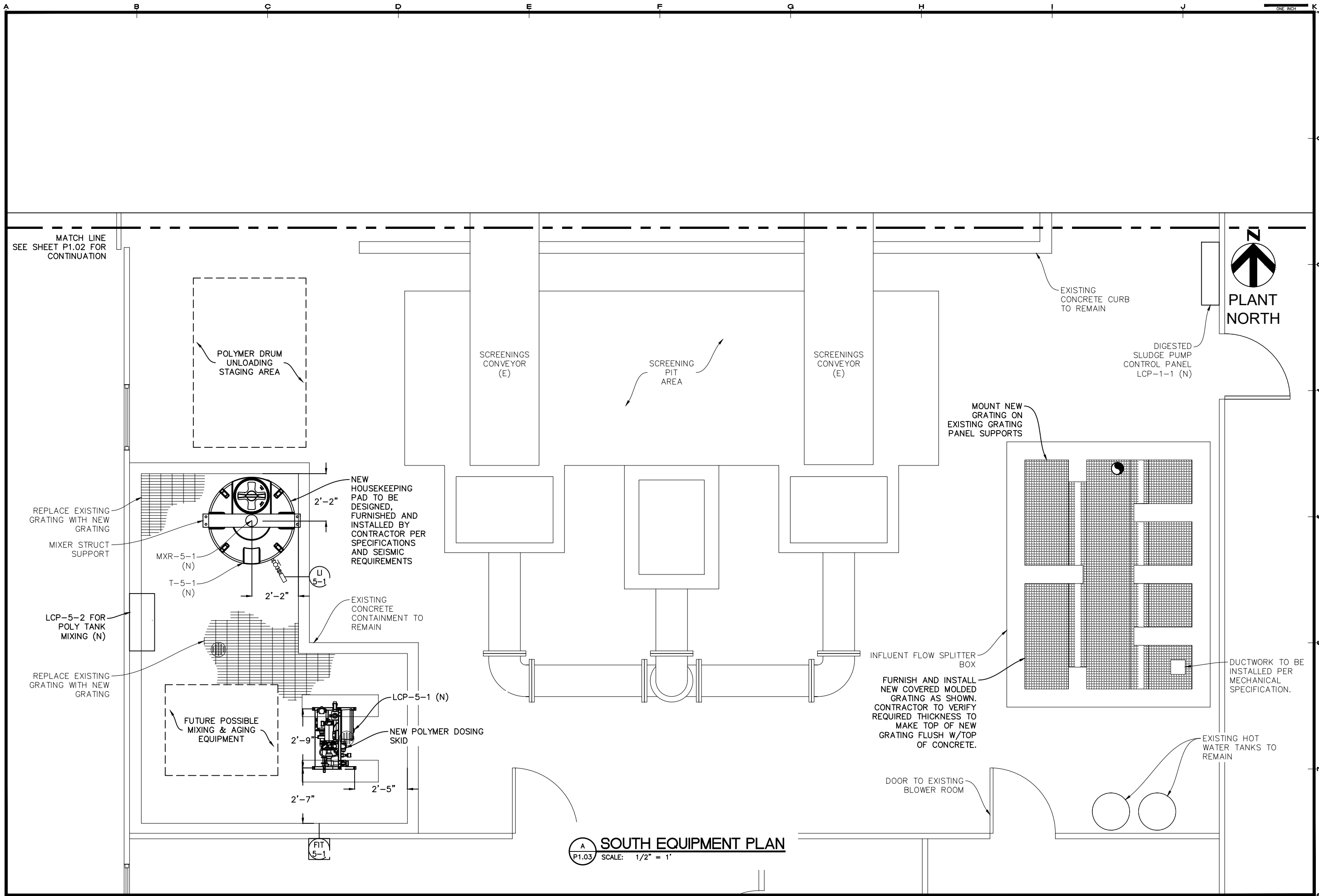
JUNE 2022

SCALE:

1/2" = 1'

JOB NUMBER:

20-012-04



**SOUTH EQUIPMENT PLAN**  
SCALE: 1/2" = 1'

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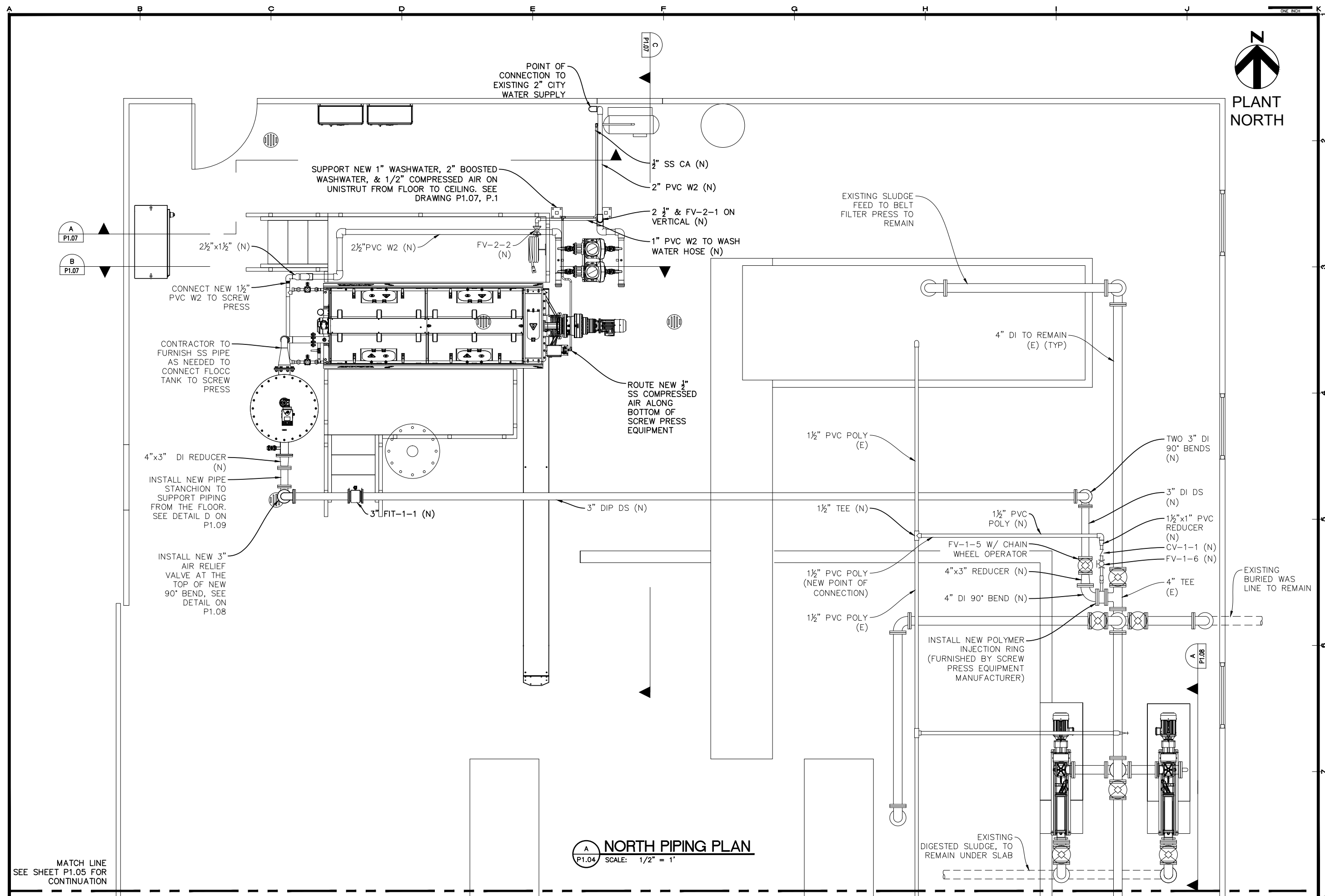


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SLUDGE PRESS REPLACEMENT - PHASE 1  
CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE	PROCESS EQUIPMENT PLAN SOUTH
SHEET	P1.03
DRAWN BY:	CMH
CHECKED BY:	AEJ
DATE:	JUNE 2022
SCALE:	1/2"=1'
JOB NUMBER:	20-012-04





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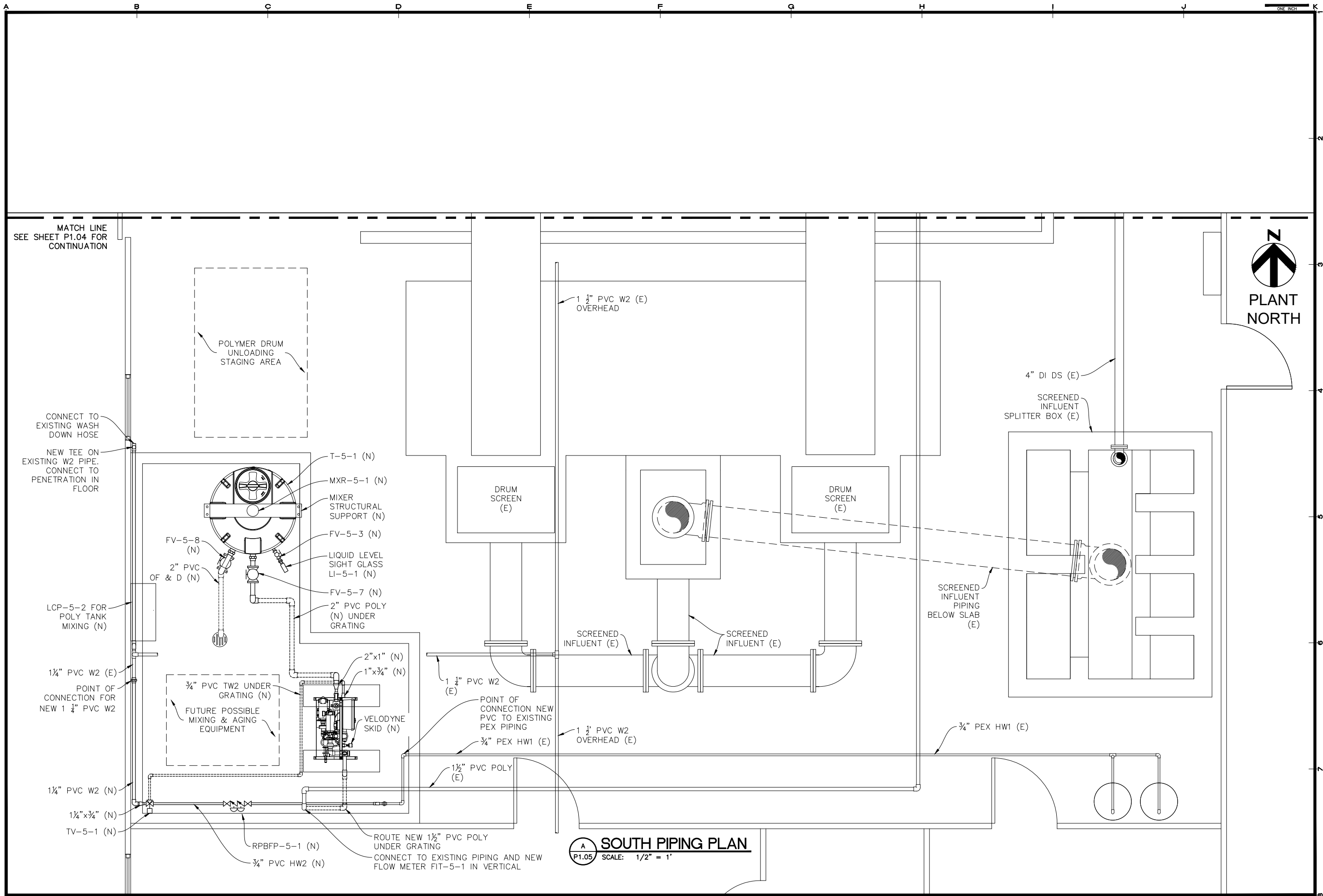
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SLUDGE PRESS REPLACEMENT – PHASE 1  
CITY OF KENAI  
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SHEET TITLE	
PROCESS PIPING PLAN NORTH	
SHEET	
P1.04	
DRAWN BY:	CHECKED BY:
CMH	AEJ
DATE:	SCALE:
JUNE 2022	1/2" = 1'
JOB NUMBER:	
20-012-04	



**SOUTH PIPING PLAN**  
SCALE: 1/2" = 1'

REVISIONS	DATE	DESCRIPTION
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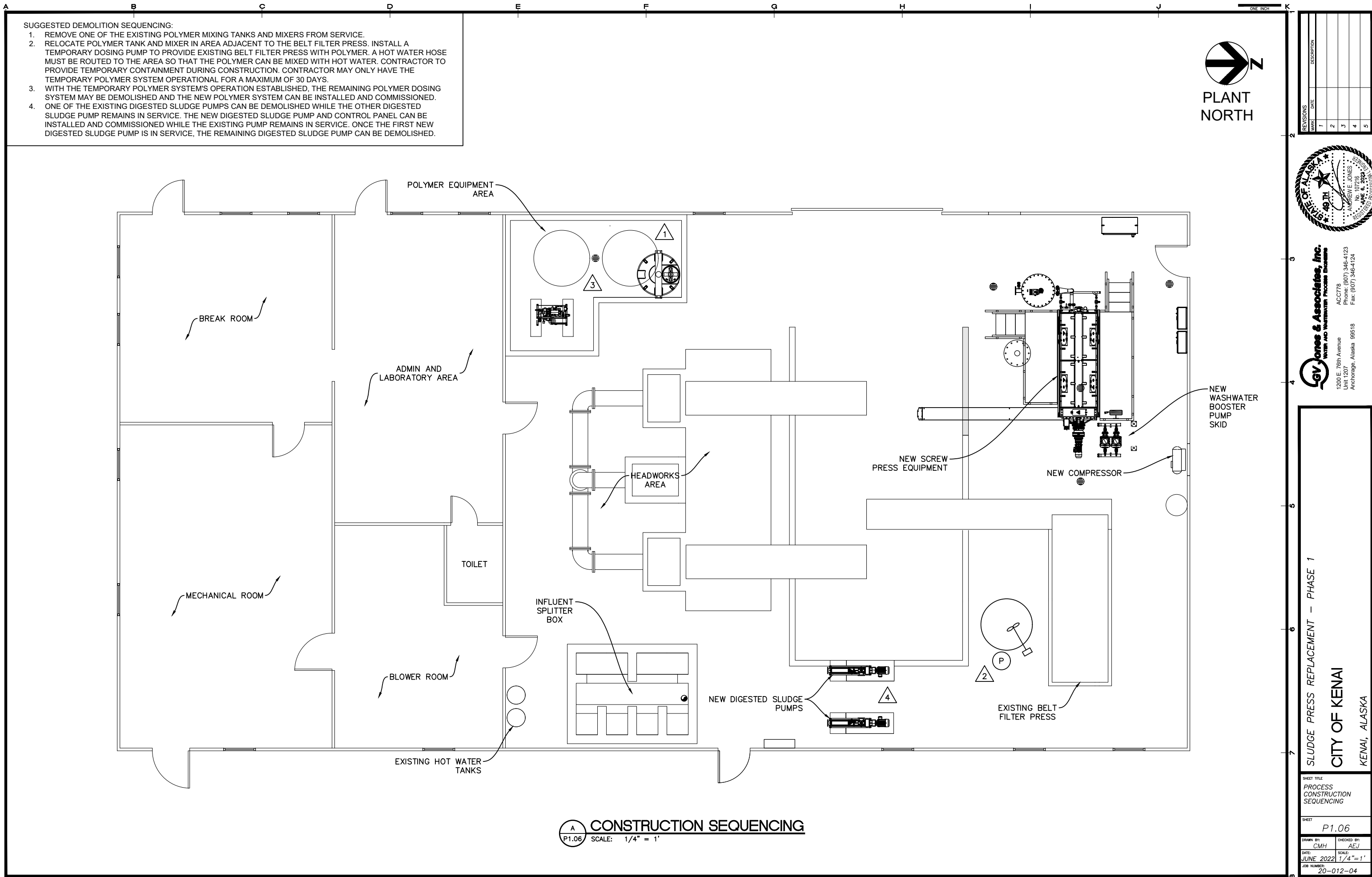
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**SLUDGE PRESS REPLACEMENT - PHASE 1**  
**CITY OF KENAI**  
**KENAI, ALASKA**

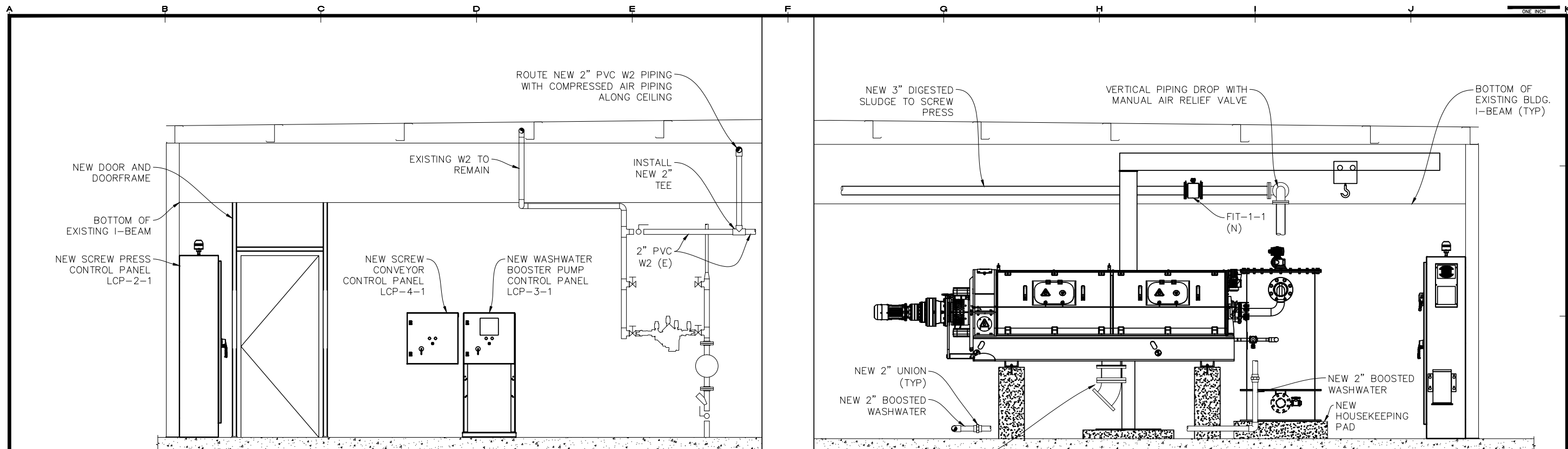
SHEET TITLE  
**PROCESS PIPING PLAN SOUTH**

SHEET  
**P1.05**

DRAWN BY: CMH  
CHECKED BY: AEJ  
DATE: JUNE 2022  
SCALE: 1/2" = 1'  
JOB NUMBER: 20-012-04





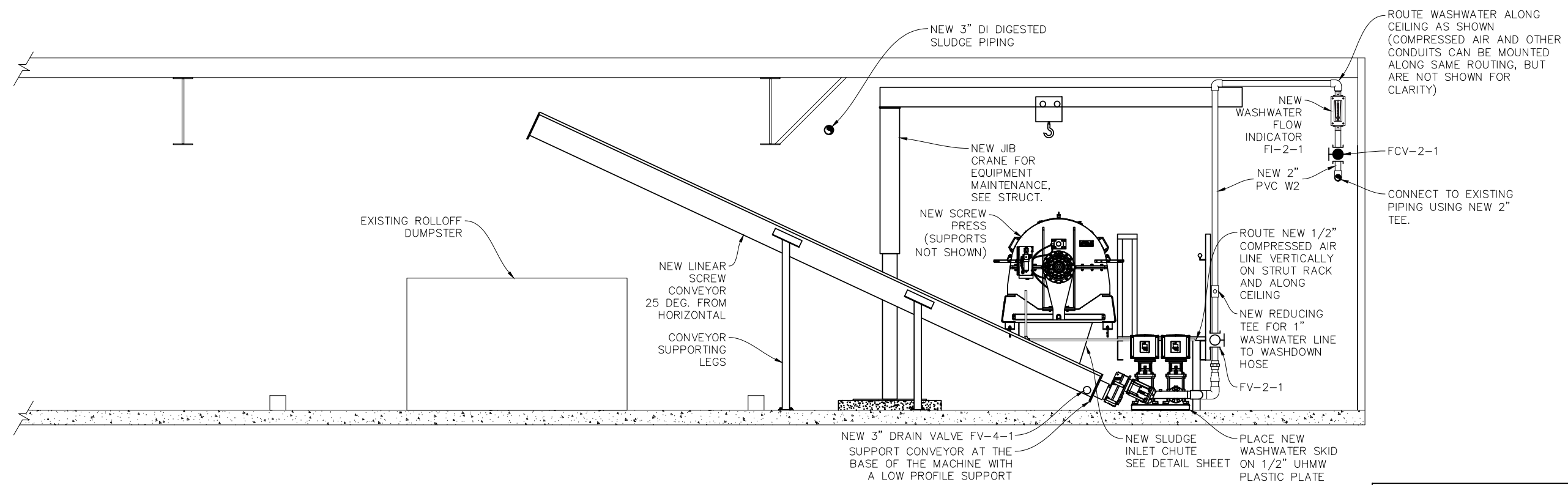


**A NORTH WALL - ELEVATION**  
P1.07 SCALE: 1/2" = 1'

NOTE: SOME OBJECTS NOT DEPICTED, ARE PARTIALLY DEPICTED, OR ARE SHOWN ROTATED IN SECTION FOR CLARITY. REFER TO PLAN VIEW FOR ROTATION ORIENTATION.

**B SCREW PRESS - ELEVATION**  
P1.07 SCALE: 1/2" = 1'

NOTE: SOME OBJECTS NOT DEPICTED, ARE PARTIALLY DEPICTED, OR ARE SHOWN ROTATED IN SECTION FOR CLARITY. REFER TO PLAN VIEW FOR ROTATION ORIENTATION.



**C SCREW PRESS - ELEVATION VIEW**  
P1.07 SCALE: 1/2" = 1'

NOTE: SOME OBJECTS NOT DEPICTED, ARE PARTIALLY DEPICTED, OR ARE SHOWN ROTATED IN SECTION FOR CLARITY. REFER TO PLAN VIEW FOR ROTATION ORIENTATION.

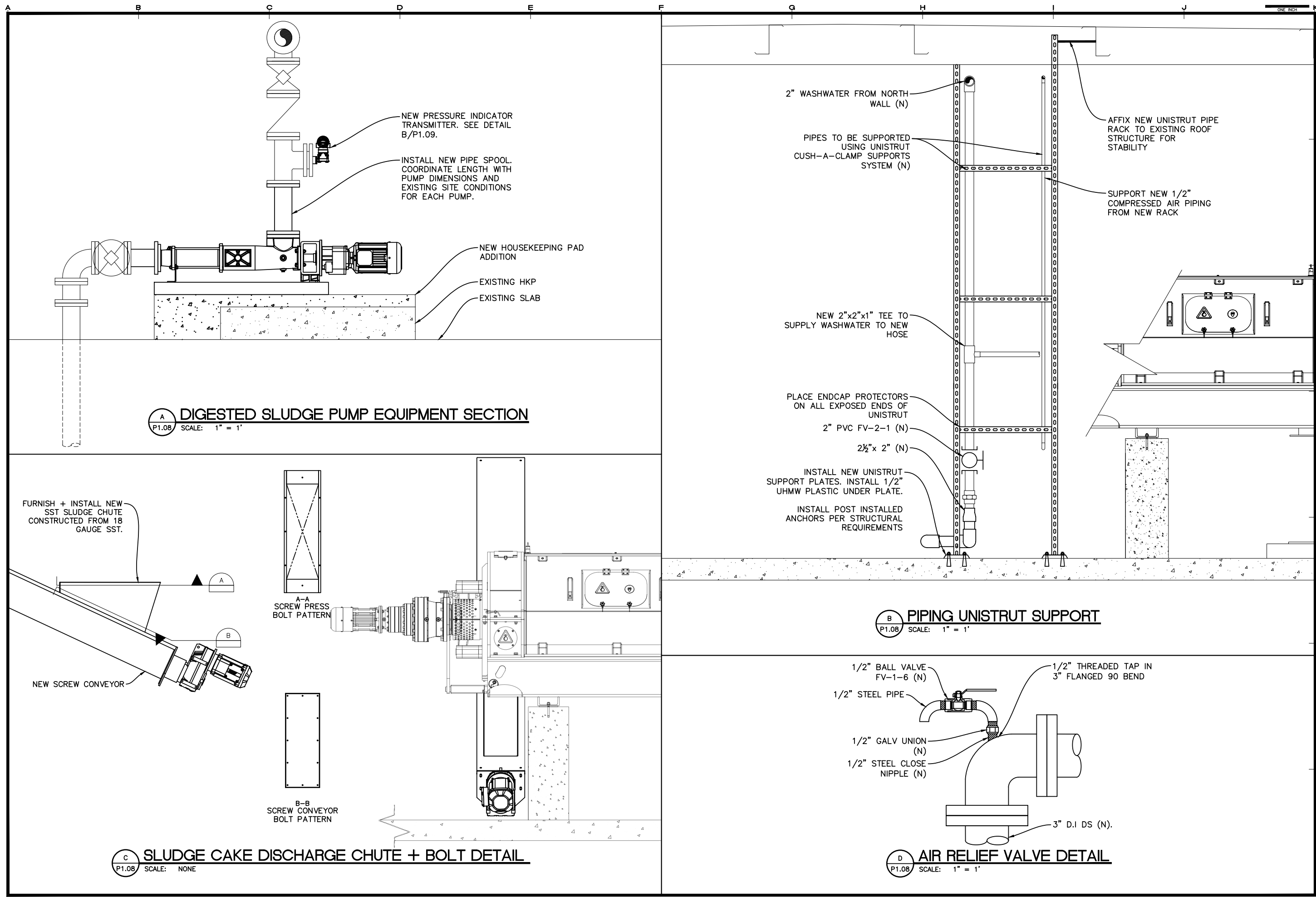
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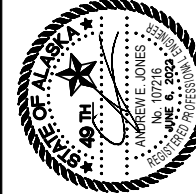
**GV Jones & Associates, Inc.**  
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SLUDGE PRESS REPLACEMENT - PHASE 1  
CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE	PROCESS ELEVATIONS
SHEET	P1.07
DRAWN BY:	CMH
CHECKED BY:	AEJ
DATE:	JUNE 2022
SCALE:	VARIES
JOB NUMBER:	20-012-04



REVISIONS	DATE	DESCRIPTION
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SLUDGE PRESS REPLACEMENT - PHASE 1

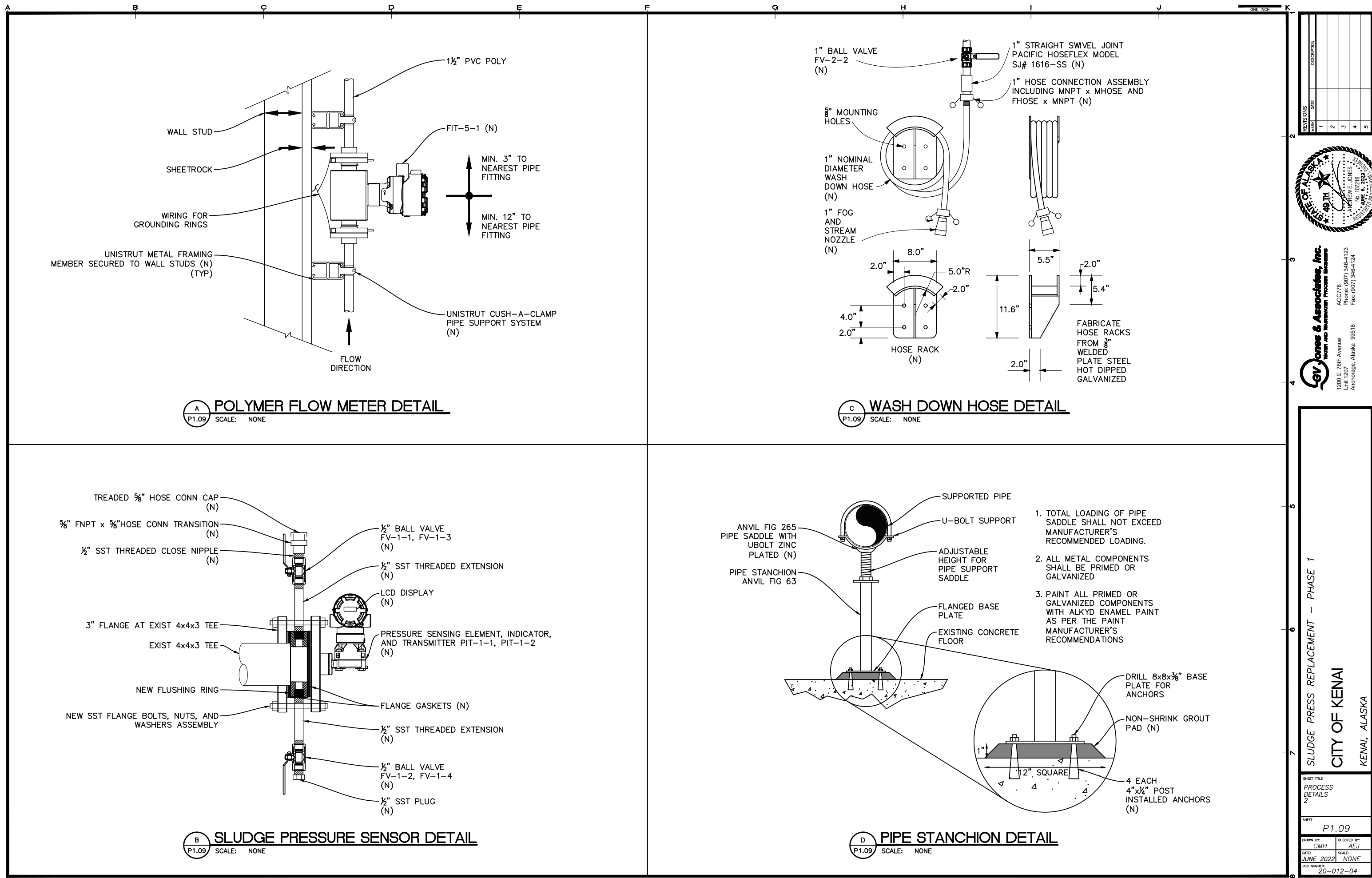
CITY OF KENAI

KENAI, ALASKA

SHEET TITLE  
PROCESS DETAILS

SHEET  
P1.08

DRAWN BY: CMH  
CHECKED BY: AEJ  
DATE: JUNE 2022  
SCALE: VARIES  
JOB NUMBER: 20-012-04



**A POLYMER FLOW METER DETAIL**  
P1.09 SCALE: NONE

**C WASH DOWN HOSE DETAIL**  
P1.09 SCALE: NONE

**B SLUDGE PRESSURE SENSOR DETAIL**  
P1.09 SCALE: NONE

**D PIPE STANCHION DETAIL**  
P1.09 SCALE: NONE

REVISIONS	DATE	DESCRIPTION
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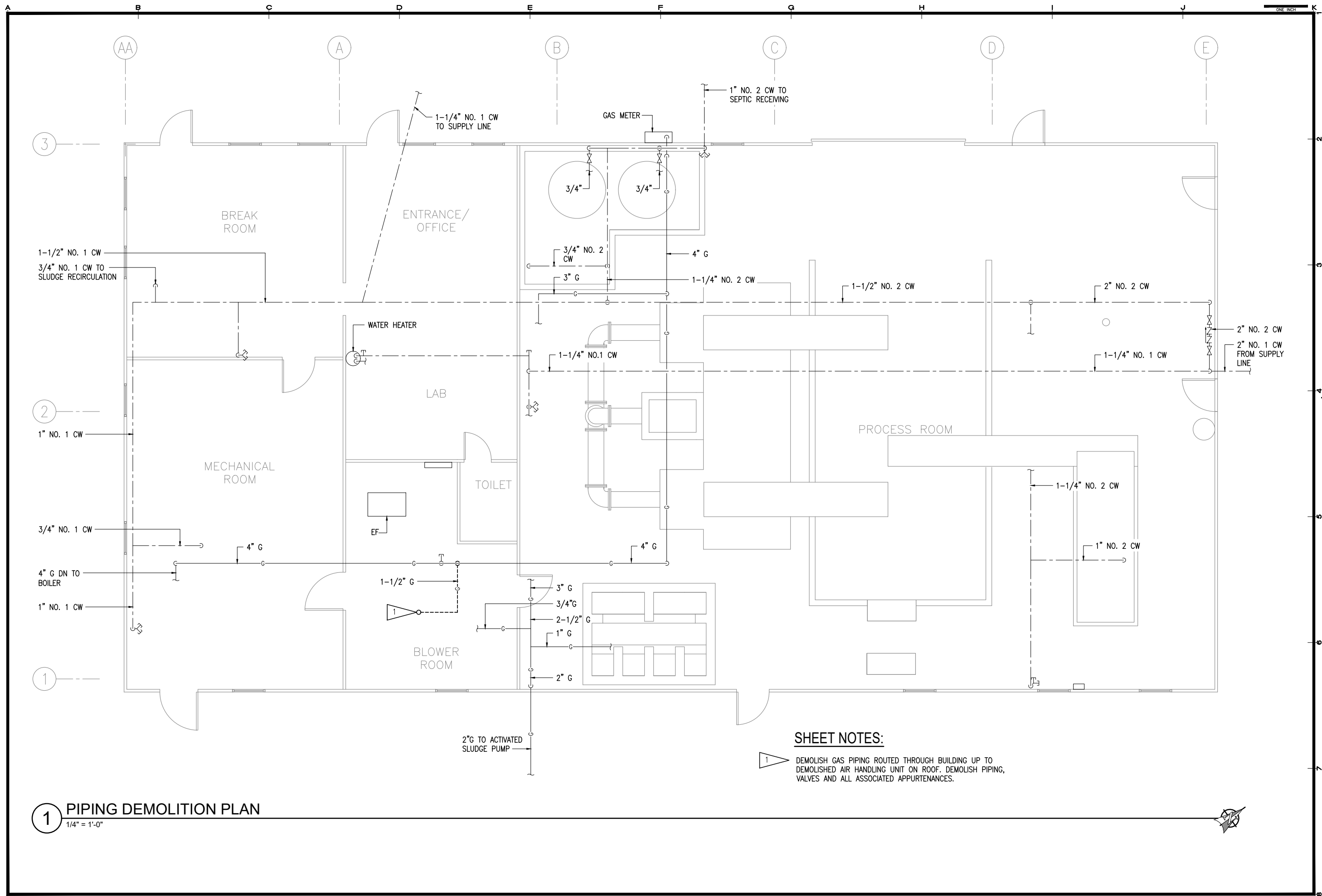
**GV Jones & Associates, Inc.**  
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SLUDGE PRESS REPLACEMENT - PHASE 1  
CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE	PROCESS DETAILS
2	
SHEET	P1.09
DRAWN BY:	CMH
CHECKED BY:	AEJ
DATE:	JUNE 2022
SCALE:	NONE
JOB NUMBER:	20-012-04







3

2

1

1 PIPING DEMOLITION PLAN  
1/4" = 1'-0"

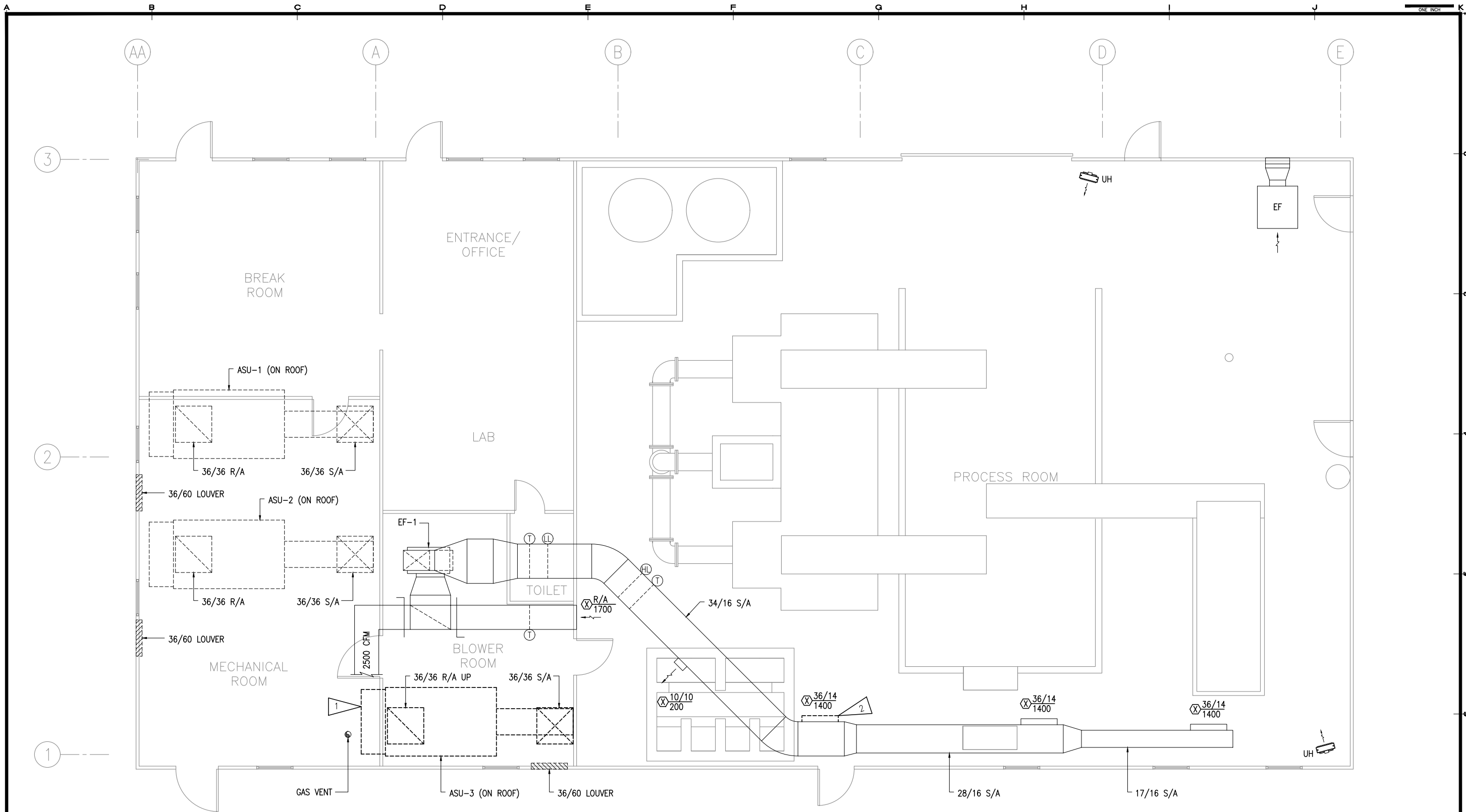
SHEET NOTES:  
1 DEMOLISH GAS PIPING ROUTED THROUGH BUILDING UP TO DEMOLISHED AIR HANDLING UNIT ON ROOF. DEMOLISH PIPING, VALVES AND ALL ASSOCIATED APPURTENANCES.

REVISIONS	DATE	DESCRIPTION
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**RISA Engineering, Inc.**  
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS  
670 West Freewood Lane, Suite 200  
Anchorage, AK 99503  
Phone (907) 276-0621  
Corporate No.: AEOCC542

SLUDGE PRESS REPLACEMENT - PHASE 1	
CITY OF KENAI	
KENAI, ALASKA	
SHEET TITLE PIPING DEMOLITION PLAN	
SHEET M1.1	
DRAWN BY: ARN	CHECKED BY: MEM
DATE: JUNE 2022	SCALE: 1/4"=1'
JOB NUMBER: M1178	



**1 VENTILATION DEMOLITION PLAN**  
1/4" = 1'-0"

**SHEET NOTES:**

- 1 DEMOLISH AIR HANDLER ON ROOF. DEMOLISH DUCTWORK, DAMPERS AND ALL ASSOCIATED CONTROLS. DEMOLISH ROOF CURB. EXISTING SUPPLY AIR OPENING THROUGH ROOF TO REMAIN, PATCH R/A OPENING THROUGH ROOF, SEE ARCH.
- 2 REMOVE 36/14 S/A DIFFUSER IN EXISTING DUCTWORK. SALVAGE DIFFUSER FOR REINSTALLATION DURING REMODEL WORK.

REVISIONS		
MARK	DATE	DESCRIPTION
1		
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**RISA Engineering, Inc.**  
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS  
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Phone (907) 276-0621  
Corporate No.: AEOCC542

SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE  
VENTILATION  
DEMOLITION PLAN

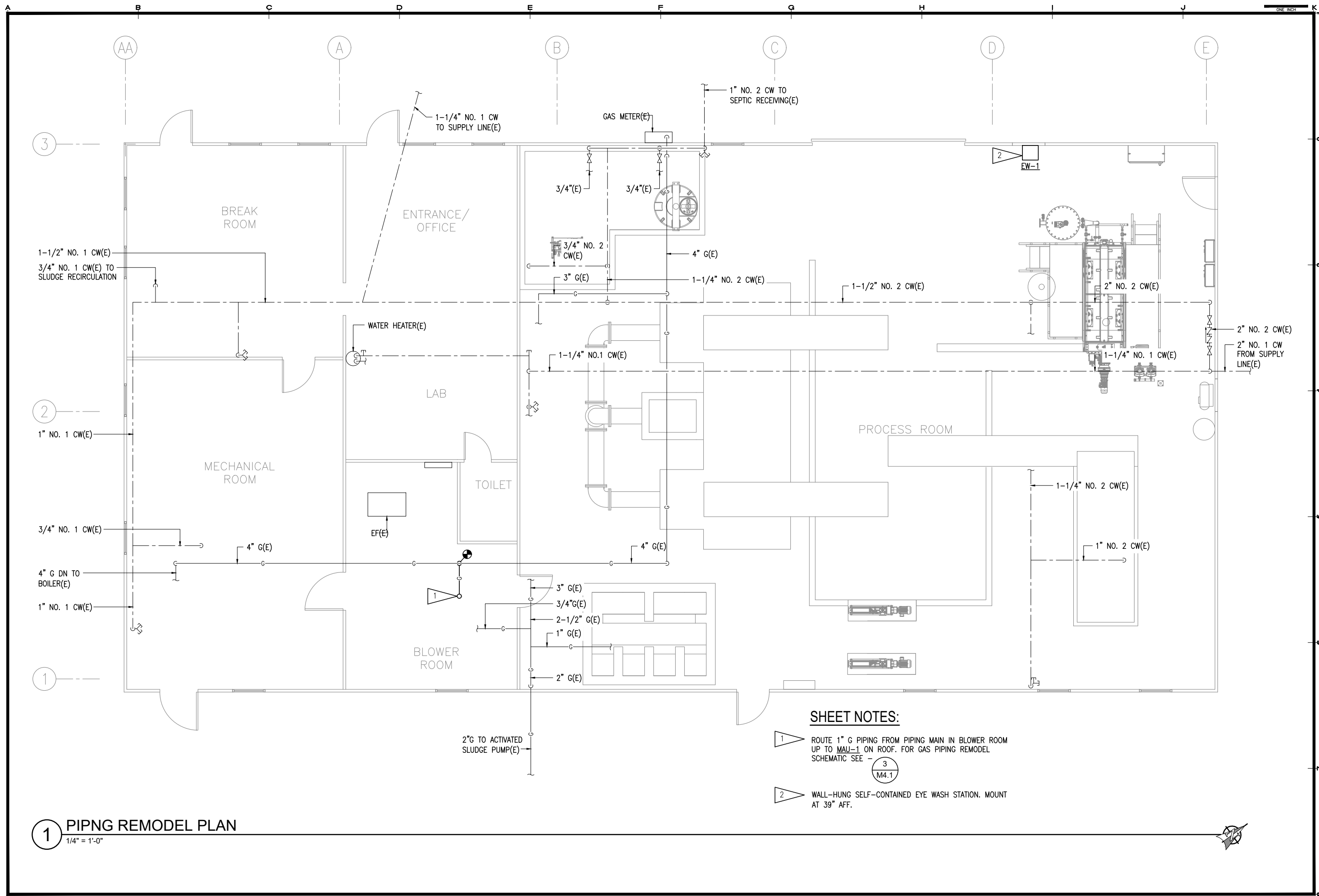
SHEET  
M1.2

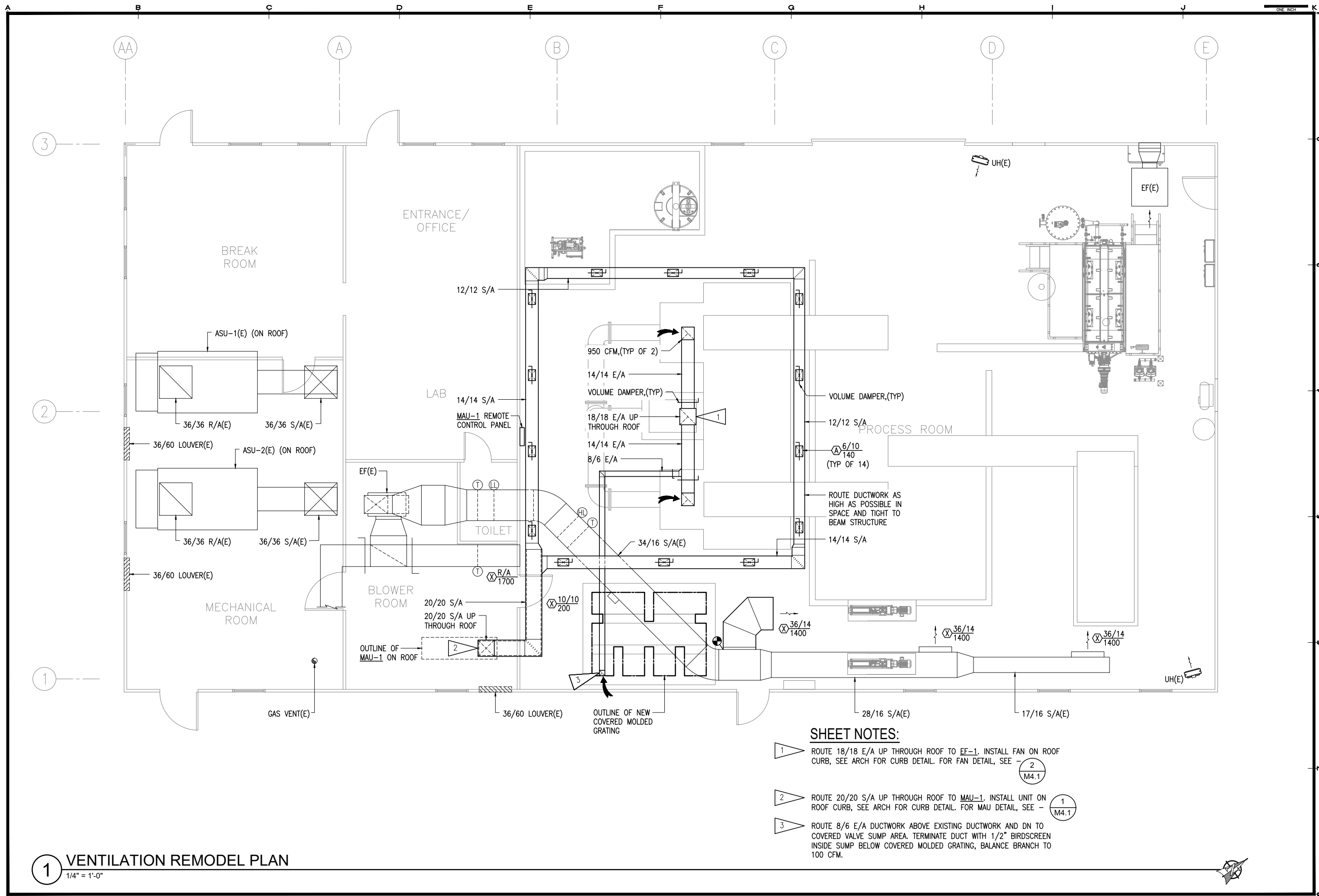
DRAWN BY: ARN  
CHECKED BY: MEM

DATE: JUNE 2022  
SCALE: 1/4"=1'

JOB NUMBER: M1178







**1 VENTILATION REMODEL PLAN**  
1/4" = 1'-0"

**SHEET NOTES:**

- 1 ROUTE 18/18 E/A UP THROUGH ROOF TO EF-1. INSTALL FAN ON ROOF CURB, SEE ARCH FOR CURB DETAIL. FOR FAN DETAIL, SEE - 2 (M4.1)
- 2 ROUTE 20/20 S/A UP THROUGH ROOF TO MAU-1. INSTALL UNIT ON ROOF CURB, SEE ARCH FOR CURB DETAIL. FOR MAU DETAIL, SEE - 1 (M4.1)
- 3 ROUTE 8/6 E/A DUCTWORK ABOVE EXISTING DUCTWORK AND DN TO COVERED VALVE SUMP AREA. TERMINATE DUCT WITH 1/2" BIRDSCREEN INSIDE SUMP BELOW COVERED MOLDED GRATING, BALANCE BRANCH TO 100 CFM.

REVISIONS	DATE	DESCRIPTION
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SLUDGE PRESS REPLACEMENT - PHASE 1  
**CITY OF KENAI**  
KENAI, ALASKA

SHEET TITLE	VENTILATION REMODEL PLAN
SHEET	M3.1
DRAWN BY:	ARN
CHECKED BY:	MEM
DATE:	JUNE 2022
SCALE:	1/4"=1'
JOB NUMBER:	M1178

A B C D E F G H I J K

ONE INCH

REVISIONS	MARK	DATE	DESCRIPTION
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2			
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PLENUM BLOWER SECTION,  
S/A PENETRATIONS IN BOTTOM  
SIZED PER PLANS

MERV-8 FILTER BANK

WEATHER HOOD

EXISTING ROOF  
ASSEMBLY(E)

INSULATED FIELD FABRICATED  
ROOF CURB, FOR DETAIL SEE ARCH

INFILL CURB W/ INSULATION, SEE ARCH

EXISTING JOISTS(E)

20/20 S/A W/ SOUND LINING

16" MIN.

MAU-1

1 MAU-1 SECTION  
NOT TO SCALE

INFILL CURB  
W/ MINERAL  
WOOL INSULATION  
TRANSITION DUCT  
AS REQUIRED ABOVE  
ROOF DECK

EF-1

INSULATED FIELD FABRICATED  
ROOF CURB, FOR DETAIL  
SEE ARCH

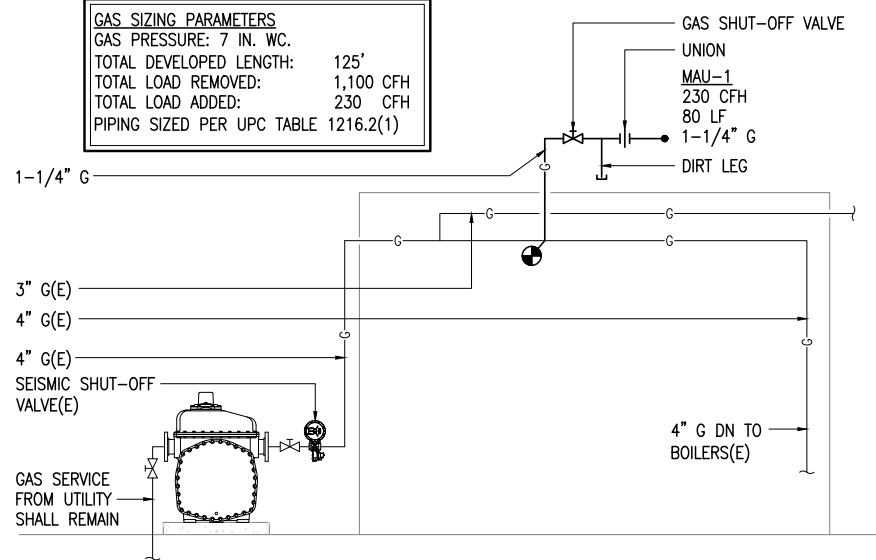
ROOF ASSEMBLY(E)

TERMINATE DUCT W/  
STAINLESS STEEL  
1/2" BIRDSCREEN

8/8 E/A

2 EF-1 SECTION  
NOT TO SCALE

GAS SIZING PARAMETERS  
GAS PRESSURE: 7 IN. WC.  
TOTAL DEVELOPED LENGTH: 125'  
TOTAL LOAD REMOVED: 1,100 CFH  
TOTAL LOAD ADDED: 230 CFH  
PIPING SIZED PER UPC TABLE 1216.2(1)



3 GAS PIPING REMODEL SCHEMATIC  
NOT TO SCALE

SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE	MECHANICAL SCHEMATICS AND DETAILS
SHEET	M4.1
DRAWN BY:	ARN
CHECKED BY:	MEM
DATE:	JUNE 2022
SCALE:	NO SCALE
JOB NUMBER:	M1178

ONE INCH

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100

REVISIONS

DATE

1

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3

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DESCRIPTION

STATE OF ALASKA

40th

REGISTERED PROFESSIONAL ENGINEER

XUAN P. TA

EE-9568

6/3/23

RSA

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SLUDGE PRESS REPLACEMENT – PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE

ELECTRICAL LEGEND

SHEET

E0.1

DRAWN BY

NVF

CHECKED BY

XPT

DATE

JUNE 2022

SCALE

NO SCALE

JOB NUMBER

M1178

LIGHT FIXTURE SCHEDULE

TYPE	LOCATION	MANUFACTURER AND CATALOG NUMBER (OR APPROVED EQUAL)	LUMINAIRE DESCRIPTION	MOUNTING		LAMPS	BALLAST/DRIVER	TOTAL INPUT WATTS
				TYPE	HEIGHT			
X	AS SHOWN	LITHONIA #LHQM-LED-R-HO-SD	WHITE, THERMOPLASTIC LED EXIT SIGN WITH STENCIL FACE HOUSING WITH EXTRA PLATE, RED LETTERS, HIGH OUTPUT OPTION WITH TWO HEADS, SELF-DIAGNOSTICS, 9V NI-CAD BATTERY, WITH 32W BATTERY CAPACITY FOR REMOTE HEADS	SURFACE	OVER DOOR	LED	120/277V EMERGENCY DRIVER	6
X1	AS SHOWN	LITHONIA #ELMLT-W-LP06VS-LTP-HO-SD	LOW PROFILE COMPACT LED EMERGENCY LIGHT WITH UV-STABLE IMPACT-RESISTANT THERMOPLASTIC HOUSING, DUAL LAMP HEADS, SEALED MAINTENANCE-FREE Ni-Cad EMERGENCY BACK-UP BATTERY.	WALL	+8'-0" AFF	LED	120-277V EMERGENCY DRIVER	14
X2	EGRESS EXITS	LITHONIA #ELA-T-QWP-L0309-SD	REMOTE EGRESS LED FOR USE WITH TYPE 'X'	SURFACE	OVER DOOR	LED	9.6V	3

LEGEND

	ROUND LIGHT FIXTURE – PENDANT OR SURFACE MTD CLG		GROUND TIME OVERCURRENT RELAY
	EMERGENCY EXIT LIGHT – SURFACE MTD CLG		CURRENT TRANSFORMER
	EMERGENCY EXIT LIGHT – SURFACE MTD WALL		GROUNDING
	EMERGENCY LIGHT		DRAWOUT MOLDED CASE CIRCUIT BREAKER, LOW VOLTAGE
	LINEAR LIGHT FIXTURE – PENDANT MTD		LOW VOLTAGE CIRCUIT BREAKER WITH MOTOR CONTROLLER – MAGNETIC MOTOR STARTERS AND THERMAL OVERLOAD PROTECTION
	LINEAR LIGHT FIXTURE – WALL MTD		DUPLEX RECEPTACLE TO BE REMOVED (DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED TYPICAL)
	STRIPLIGHT – PENDANT OR SURFACE MTD CLG		NOTE TAG (No. INDICATES NOTE)
	FIXTURE TAG (LETTER INDICATES TYPE)		EQUIPMENT TAG (No. INDICATES TYPE)
	SINGLE POLE SWITCH		ABOVE FINISHED FLOOR
	SINGLE POLE SWITCH (LOWERCASE LETTER INDICATES SWITCHING)		AUTOMATIC TRANSFER SWITCH
	CONDUIT, CONCEALED		CONDUIT
	NUMBER AND SIZE OF WIRES (NO MARKS = 3 #12)		CEILING
	HOMERUN TO PANEL (PANEL AND CIRCUIT No.)		DENOTES EXISTING ITEM
	PANEL		GROUND FAULT CIRCUIT INTERRUPTER
	DUPLEX RECEPTACLE		GALVANIZED RIGID STEEL CONDUIT
	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER		KELVIN
	JUNCTION BOX		LIGHT EMITTING DIODE
	MOTOR (SIZED AS NOTED)		LUMENS
	FRACTIONAL HORSEPOWER MOTOR STARTER		MOTOR CONTROL CENTER
	DISCONNECT SWITCH		MOUNTED
	COMBINATION DISCONNECT/MAGNETIC MOTOR STARTER		NATIONAL ELECTRICAL CODE
	VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT		TYPICAL
	AMMETER WITH SWITCH – SCALE RANGE SHOWN		UNLESS OTHERWISE NOTED
	VOLT METER WITH SWITCH – SCALE RANGE SHOWN		WEATHERPROOF
	INSTANTANEOUS OVERCURRENT RELAY		TRANSFER SWITCH
	AC TIME OVERCURRENT RELAY		



ELECTRICAL LOAD ANALYSIS				
PROJECT:	KENAI WWTF SLUDGE DEWATERING			
	KENAI, ALASKA			
EXISTING FACILITY SERVICE IS 800A, 277/480V, 3-PHASE, 4-WIRE				
EXISTING DEMAND LOAD (NEC 220.87)				
EXISTING HISTORICAL PEAK DEMAND LOAD (HEA UTILITY-FEBRUARY 2021)	241.15 kW			
PER NEC 220.87 (125%)	301.43 kW			
ASSUMED POWER FACTOR OF 0.80		376,791 VA	453 A	
REMOVED LOADS				
(2) POLYMER PUMPS EACH @ 9A, 120V		(2,160) VA		
(2) POLY MIXER EACH @ 3/4 HP, 120V		(3,312) VA		
(2) DIGESTED SLUDGE PUMPS EACH @ 5HP, 480v, 3-PHASE		(12,637) VA		
(1) ASU-3 5HP, 480V 3-PHASE		(6,319) VA		
TOTAL EXISTING LOAD REMOVED		(24,428) VA	(29) A	
ADDED LOADS				
[2] (1) SCREW PRESS 2HP, 480V, 3-PHASE		2,827 VA		
[3] (1) AIR COMPRESSOR 3.4A, 480V, 3-PHASE		2,827 VA		
[1] LCP-5-1		1,500 VA		
(1) POLYMER MIXER PUMP 1HP, 90VDC		1,098 VA		
(1) SCREW CONVEYOR MOTOR 5HP, 480V, 3-PHASE		6,319 VA		
[2] (1) WATER BOOSTER PUMP (DUPLX PUMP) EACH @3HP, 480V, 3-PHASE		7,982 VA		
[2] (2) DIGESTED SLUDGE PUMPS EACH @ 5HP, 480V, 3-PHASE		12,637 VA		
(1) EF-1 1/2HP, 120V		1,176 VA		
(1) MAU-1 2HP, 480V, 3-PHASE		2,827 VA		
TOTAL ADDED LOAD		39,192 VA	47 A	
NET CALCULATED DEMAND LOAD:		391,555 VA	471 A	
RESULT: THE EXISTING 800A, 277/480V, 3-PHASE, 4-WIRE SERVICE HAS AVAILABLE SPARE SPARE CAPACITY FOR BOTH EXISTING AND NEW ADDED LOADS				

- NOTES:
- [1]

POLYMER DOSING PUMP IS POWERED FROM LCP-5-1.
- [2]

VFD CONTROLLED PUMPS.
- [3]

POWERED FROM LCP-2-1

(E)PANEL 'LA'																	
MFR/MODEL: SQUARE D TYPE NQOD						VOLTS: 120/208V,3PH,4W			ENCLOSURE: NEMA 1			225 A					
						VOLT-AMPS			MTG: SURFACE								
NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	A		B		C		TYPE	SERVICE	AMPS	POLE	CIRC	NOTE
b	1	1	20	EF-1 (ROOF)	MOTR	1176							SPACE	-	1	2	
b	3	1	20	POLYMER MIXER PUMP	MOTR			1098					GENERATOR SHACK	60	2	4	a
b	5	1	20	RECP ROOF	RECP					180			^^	60	2	6	a
	7	1	-	SPACE									EXISTING PANEL	100	3	8	a
	9	1	-	SPACE									^^^	100	3	10	a
	11	1	-	SPACE									^^^	100	3	12	a
a	13	1	20	SAMPLER M 101									O/H DOOR OPERATOR	20	1	14	a
a	15	1	15	FLOW SWITCH , POLYMER PMP #1				1000				MISC	EW-1	20	1	16	b
a	17	1	15	FLOW SWITCH , POLYMER PMP #2						1500		MISC	LCP-5-1	20	1	18	b
a	19	1	20	BOILER CONTROL									DIGESTER HEAT TAPE	20	1	20	a
a	21	1	20	BYPASS ALARM									DIGESTER HEAT TAPE	20	1	22	a
a	23	1	20	TEMPERATURE CONTROL VALVE									RECP HEAT EXCHANGER RM	20	1	24	a
a	25	1	30	HEATER GENERATOR									FLOW SWITCH SEPTAGE PMP #1	15	1	26	a
a	27	1	20	PLANT CONTROL PANEL (PCP)									FLOW SWITCH SEPTAGE PMP #2	15	1	28	a
a	29	1	20	EMERGENCY LIGHTS									HEAT TAPE SEPTAGE RECEIVING	20	1	30	a
a	31	1	15	FLOW SW DIGESTED SLUDGE #1									RECP SEPTAGE STATION	20	1	32	a
a	33	1	15	FLOW SW DIGESTED SLUDGE #2									DECANT SIGHT GLASS LIGHT&RECP	20	1	34	a
a	35	1	20	P-4 AERATION BASIN CONT PNL									HEAT TAPE TOP OF DIGESTER	20	1	36	a
a	37	2		EXISTING									EXSTING LOAD	20	1	38	a
a	39	2		^^									WELDER	50	2	40	a
a	41	1	-	SPACE									^^	50	2	42	a
TOTAL V-A						1176	2098		1680		4,954 VA						
TOTAL AMPS						10	17		14		14 A						
A.I.C. RATING: 10,000																	
PANEL NOTES:												PANEL OPTIONS:					
a EXISTING LOAD TO REMAIN.												MAIN CIRCUIT BREAKER (SEE ONE-LINE FOR SIZE)					
b DENOTES EXISTING LOAD HAS BEEN REMOVED . NEW LOAD CONNECTS TO EXISTING CIRCUIT BREAKER.																	

REVISIONS		DESCRIPTION				
MARK	DATE	1	2	3	4	5



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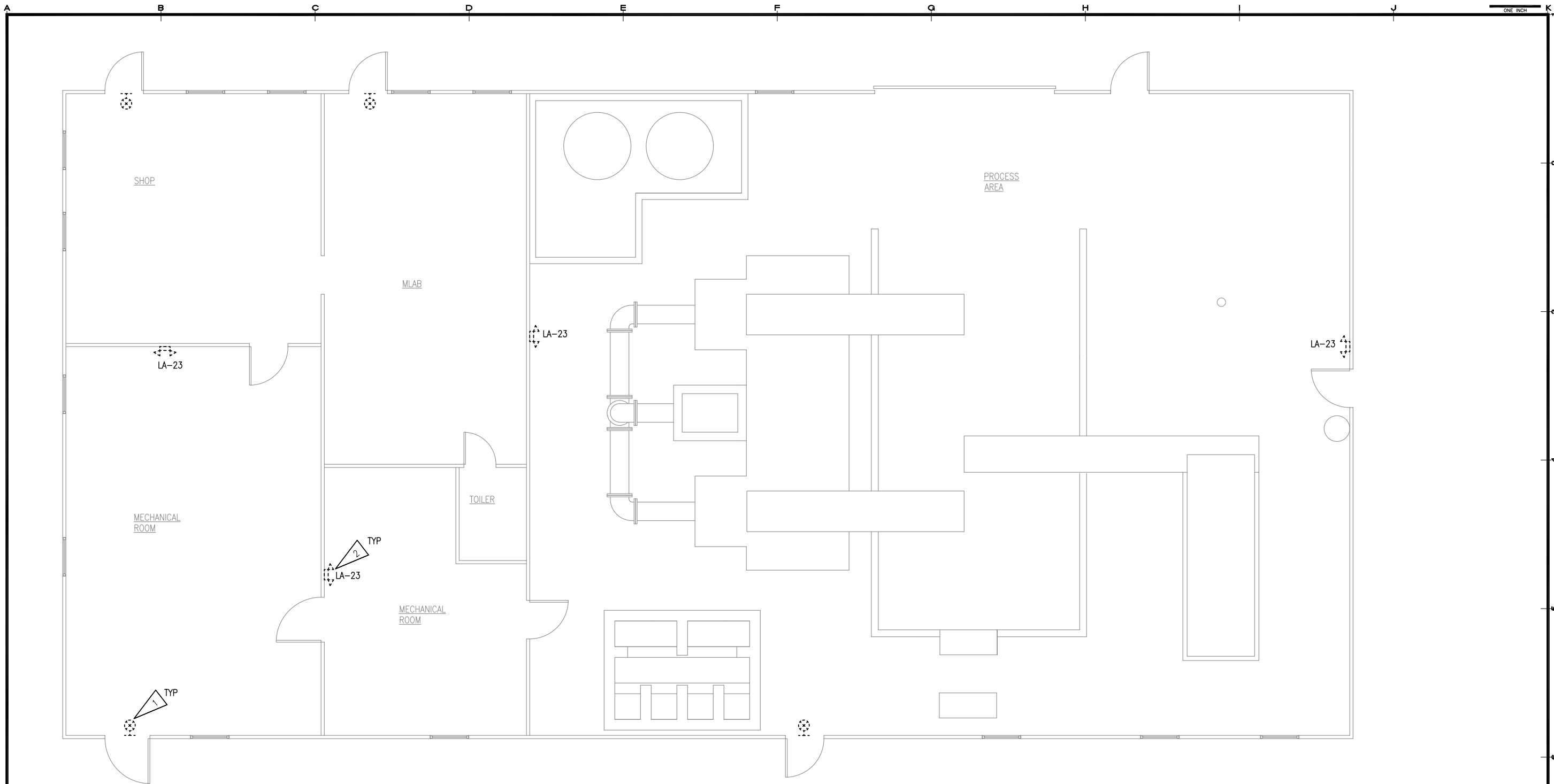
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MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS  
670 West Fireweed Lane, Suite 200  
Anchorage, AK 99503  
Phone (907) 276-0621  
Corporate No.: AECC0542

SLUDGE PRESS REPLACEMENT – PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE	
ELECTRICAL CALCULATIONS AND PANEL SCHEDULE	
SHEET	
E0.2	
DRAWN BY: NVF	CHECKED BY: XPT
DATE: JUNE 2022	SCALE: NO SCALE
JOB NUMBER: M1178	



**1 LIGHTING DEMOLITION PLAN**  
1/4" = 1'-0"

**GENERAL NOTES:**

- A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM CONSTRUCTION DRAWINGS DATED JANUARY 1980, NOVEMBER 2019, AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.
- B. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS. THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A WAREHOUSE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL DISPOSE OF, OFF SITE, ALL UNWANTED MATERIALS.
- C. DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.

**SHEET NOTES:**

1. DEMOLISH A NON-ILLUMINATE PLASTIC EXIT SIGN POST ON THE EXIT DOOR.
2. DEMOLISH CONDUIT, CONDUCTORS, AND JUNCTION BOX BACK TO SOURCE.

REVISIONS		DATE	DESCRIPTION
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RSA

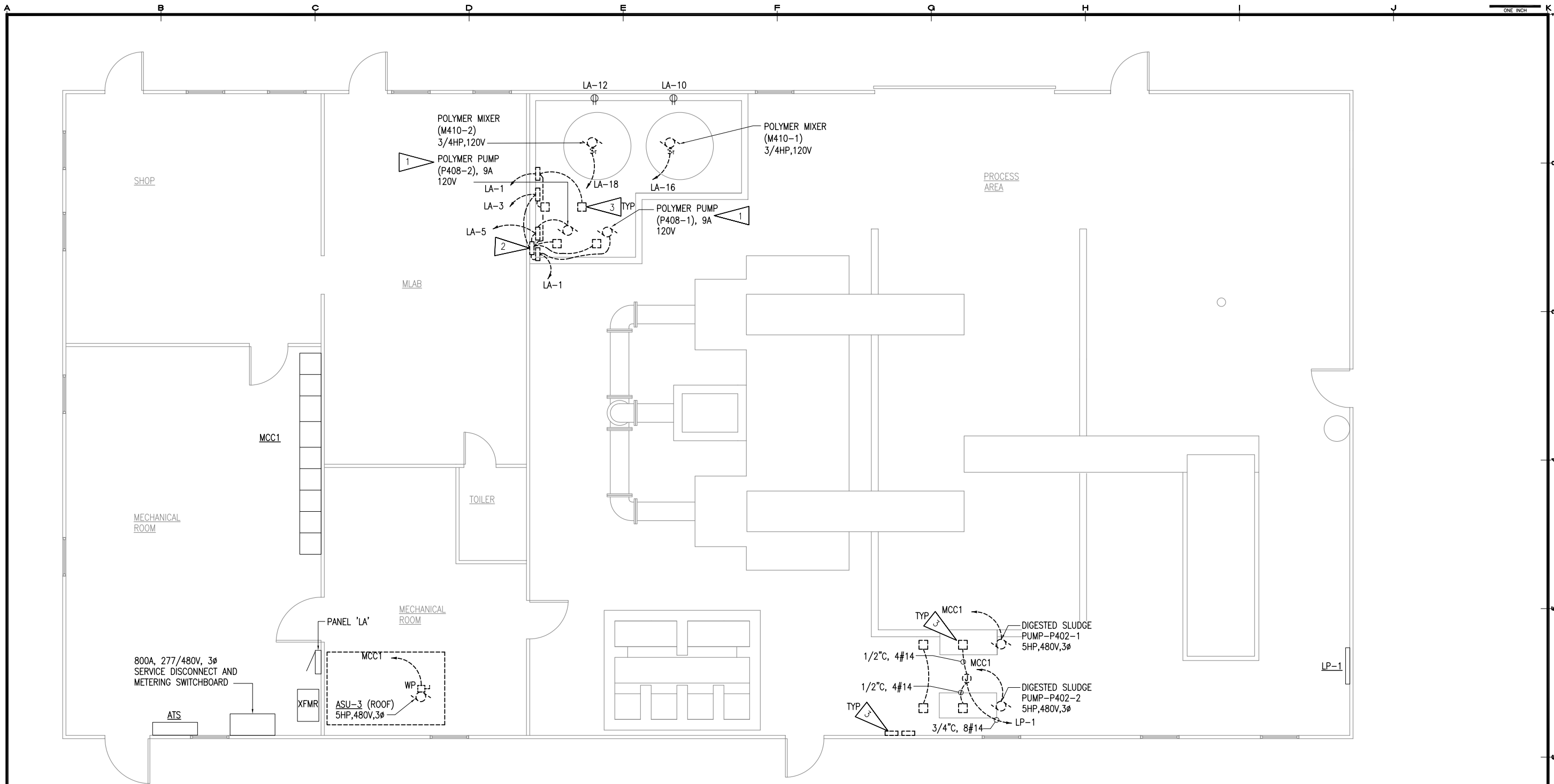
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SLUDGE PRESS REPLACEMENT - PHASE 1  
CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE  
LIGHTING  
DEMOLITION PLAN

SHEET  
E1.1

DRAWN BY: NVF  
CHECKED BY: XPT  
DATE: JUNE 2022  
SCALE: 1/4"=1'  
JOB NUMBER: M1178



# 1 POWER & SIGNAL DEMOLITION PLAN 1/4" = 1'-0"

## GENERAL NOTES:

- A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM CONSTRUCTION DRAWINGS DATED JANUARY 1980, NOVEMBER 2019, AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.
- B. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS. THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A WAREHOUSE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL DISPOSE OF, OFF SITE, ALL UNWANTED MATERIALS.

- C. DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.
- D. DEMOLISH INSTRUMENTATION CONDUIT, WIRES, AND DEVICES.
- E. SEE SHEET E1.3 FOR FEEDER SIZING.

## SHEET NOTES:

1. DEMOLISH CONDUITS, CONDUCTORS, CONTROL PANEL, INSTRUMENTATION DEVICES, ETC. BACK TO SOURCE.
2. DEMOLISH PANEL 'LP3' AND ASSOCIATED CONDUIT AND WIRING.
3. DEMOLISH INSTRUMENTATION DEVICE AND ASSOCIATED CONDUIT AND WIRES BACK TO SOURCE.

REVISIONS	DATE	DESCRIPTION
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SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI

KENAI, ALASKA

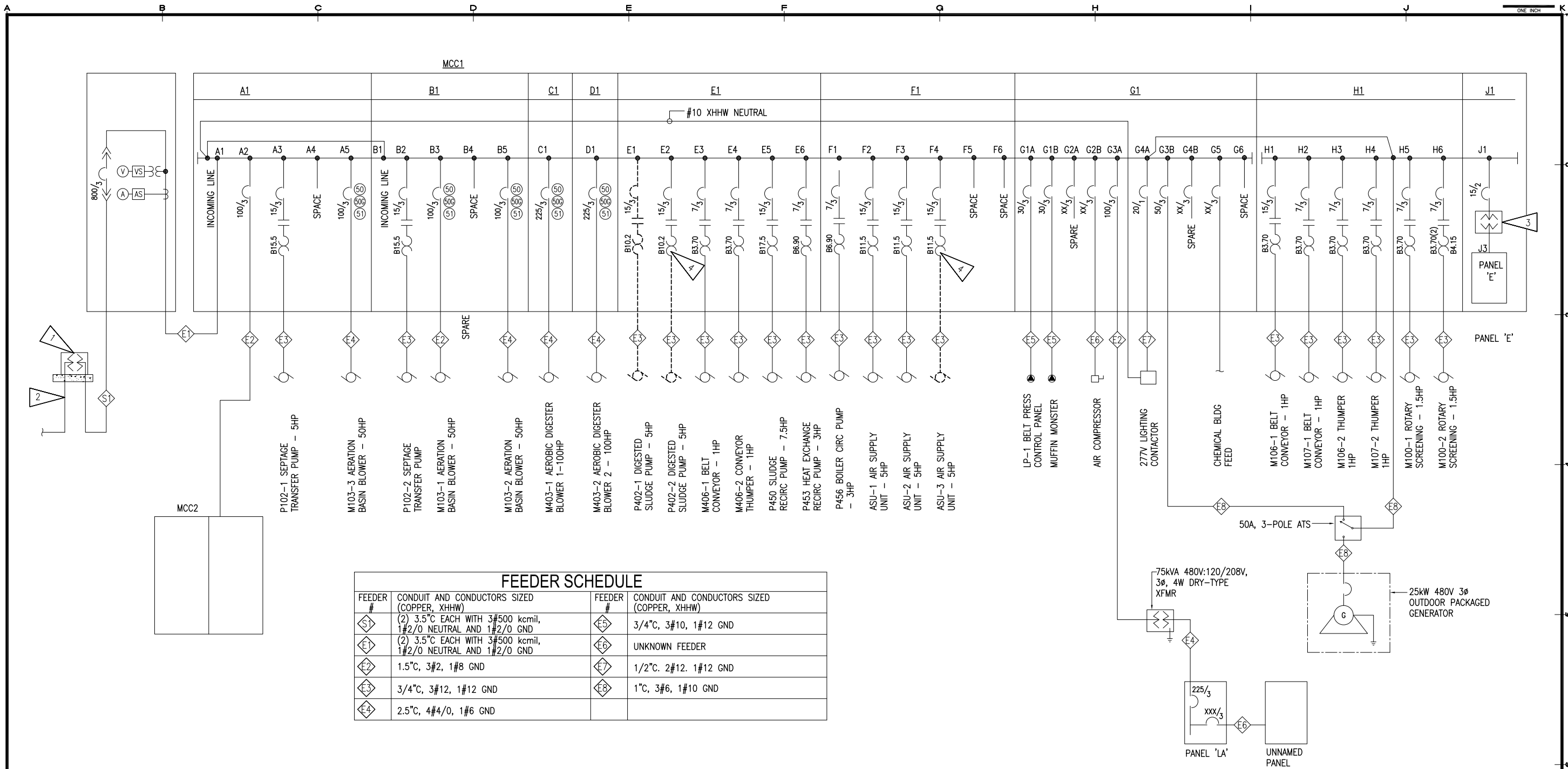
SHEET TITLE  
POWER & SIGNAL  
DEMOLITION PLAN

SHEET  
E1.2

DRAWN BY: NVF  
CHECKED BY: XPT

DATE: JUNE 2022  
SCALE: 1/4"=1'

JOB NUMBER: M1178



# 1 POWER ONE-LINE DEMOLITION PLAN

NO SCALE

## GENERAL NOTES:

- THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM CONSTRUCTION DRAWINGS DATED JANUARY 1980, NOVEMBER 2019, AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.
- THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS. THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A WAREHOUSE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL DISPOSE OF, OFF SITE, ALL UNWANTED MATERIALS.
- DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.
- NOT ALL EXISTING ELECTRICAL DEVICES AND INSTALLATION ARE SHOWN FOR CLARITY.
- CONTRACTOR SHALL ENSURE CIRCUIT CONTINUITY IS MAINTAINED FOR DEVICES THAT ARE TO REMAIN.
- SPECIAL COORDINATION AND SCHEDULING SHALL BE PROVIDED AS REQUIRED IN DIVISION 01 IN ORDER FOR THE PLANT TO REMAIN IN OPERATION DURING CONSTRUCTION PRIOR TO START OF WORK.

## SHEET NOTES:

- 500kVA 12.47kV - 277/480V, 3-PHASE, 4-WIRE UTILITY PAD MOUNTED TRANSFORMER AND CONCRETE PAD.
- UTILITY UNDER GROUND PRIMARY LINES.
- 5kVA 480V:120/240V, 1-PHASE, 3-WIRE DRY-TYPE TRANSFORMER.
- EXISTING DRAWOUT CIRCUIT BREAKER, STARTER, AND THERMAL OVERLOAD PROTECTION TO REMAIN AND RE-USE.

REVISIONS	DATE	DESCRIPTION
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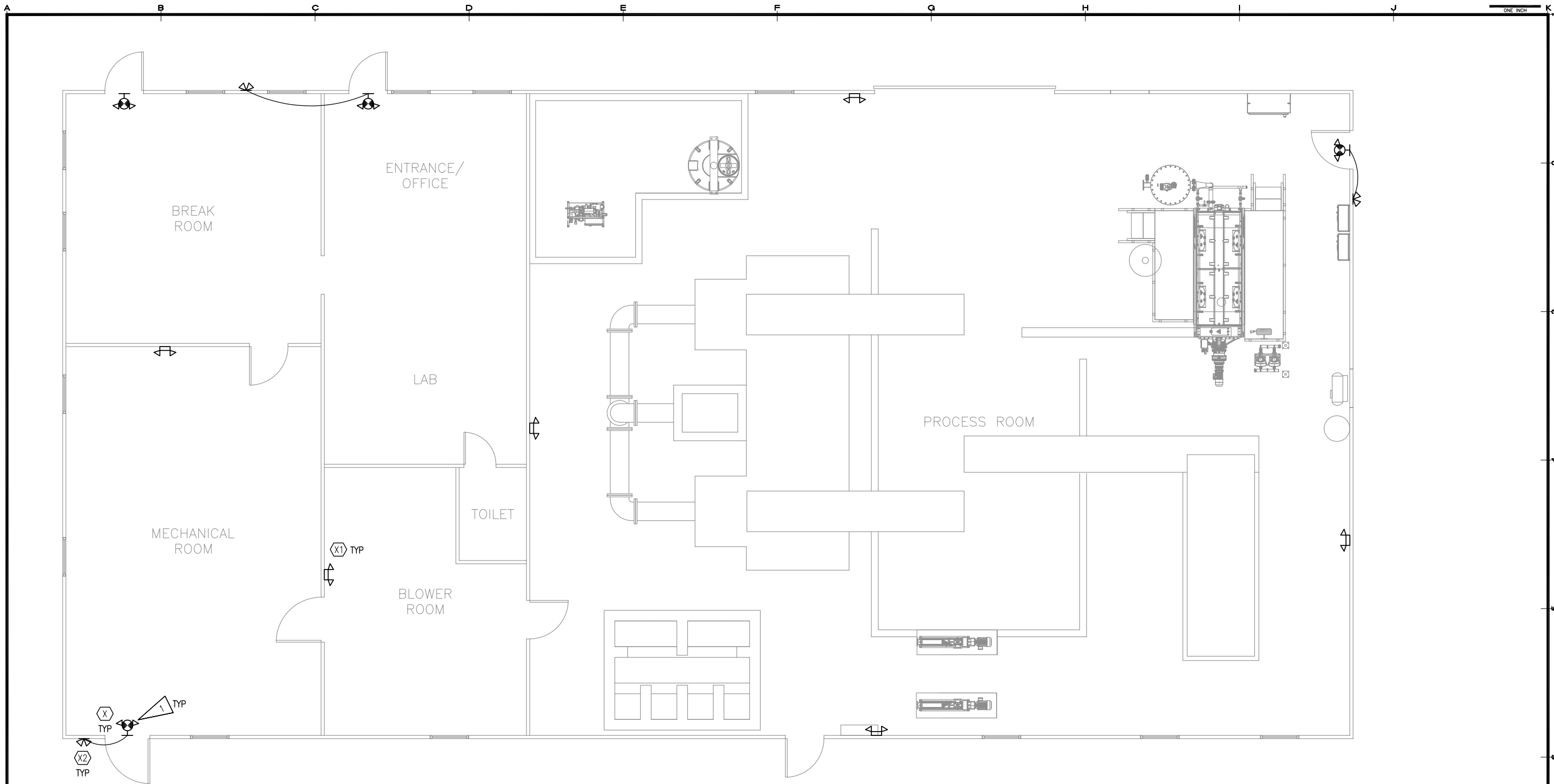


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SLUDGE PRESS REPLACEMENT - PHASE 1  
CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE	POWER ONE-LINE DEMOLITION PLAN
SHEET	E1.3
DRAWN BY: NVF	CHECKED BY: XPT
DATE: JUNE 2022	SCALE: NO SCALE
JOB NUMBER: M1178	





1 LIGHTING REMODEL PLAN  
1/4" = 1'-0"

GENERAL NOTES:

- A. LOCATE NEW EMERGENCY LIGHTING UNIT TO AVOID CONFLICT WITH EXISTING PIPING, DUCTWORK, ETC.

SHEET NOTES:

1. PROVIDE 1/2" C, 2#12, 1#12 GND AND CONNECT NEW EXIT SIGN OR EMERGENCY LIGHTING UNIT TO AN UNSWITCHED LEG OF LOCAL LIGHTING CIRCUIT FROM LOCAL LIGHTING CIRCUIT. PROVIDE ADDITIONAL CONDUCTOR AS REQUIRED.

REVISIONS	DATE	DESCRIPTION
MARK	1	2
	2	3
	3	4
	4	5



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SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE  
LIGHTING  
REMODEL PLAN

SHEET  
E2.1

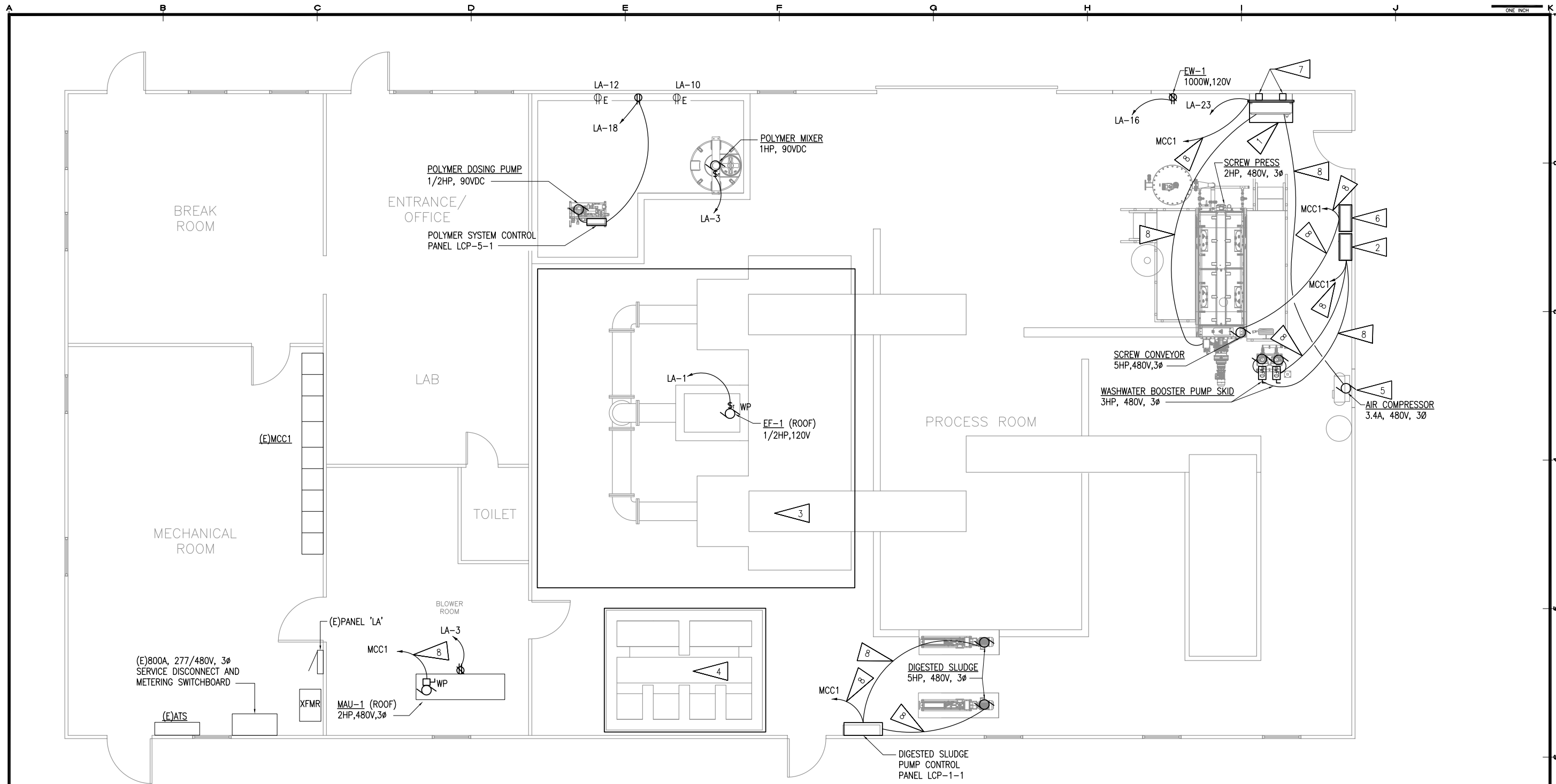
DRAWN BY:  
NVF

CHECKED BY:  
XPT

DATE:  
JUNE 2022

SCALE:  
1/4"=1'

JOB NUMBER:  
M1178



# 1 POWER REMODEL PLAN

1/4" = 1'-0"

## GENERAL NOTES:

- COORDINATE WITH MECHANICAL DRAWINGS FOR HVAC EQUIPMENT PRIOR TO ROUGH-IN ELECTRICAL DEVICES.
- COORDINATE WITH PROCESS DRAWINGS FOR SCREW PRESS, SCREW PRESS CONTROL PANEL, POLYMER PUMP SKID, POLYMER MIXER, WATER BOOSTER PUMP SKID, AND ASSOCIATED DEVICES PRIOR TO ROUGH-IN.
- FIELD COORDINATE TO MAINTAIN WORKING CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT PRIOR TO ROUGH-IN.
- CONTROL PANEL FOR POLYMER DOSING PUMPS, WATER BOOSTER PUMPS, DIGESTED SLUDGE PUMPS, SCREW PRESS, AND CONVEYOR BELL PROVIDED WITH PROCESS EQUIPMENT PACKAGE. THE CONTROL PANEL PROVIDED WITH INTEGRAL CIRCUIT BREAKER, STARTER, THERMAL OVERLOAD PROTECTION, VFD, ETC. FOR EACH PUMP.
- FIELD LOCATE TO MAINTAIN WORKING CLEARANCE IN FRONT OF THE PROCESS EQUIPMENT CONTROL PANEL.
- SEE SHEET E4.1 FOR CONDUIT AND CONDUCTORS SIZED.
- CLASS 1 DIVISION 2 AREA: ALL WORK IN THIS AREA SHALL BE DONE IN STRICT COMPLIANCE WITH NEC ARTICLE 501 AND NFPA 820. PROVIDE SEAL-OFF ON ALL CONDUITS PENETRATING CLASSIFIED LOCATIONS AS REQUIRED BY CODE. AREAS NOT INDICATED AS CLASS 1 DIVISION 2 ARE UNCLASSIFIED.

## SHEET NOTES:

- SCREW PRESS EQUIPMENT CONTROL PANEL LCP-2-1.
- WASHWATER BOOSTER CONTROL PANEL LCP-3-1.
- HEADWORKS AREA IS A CLASS 1 DIVISION 2 AREA FROM THE FLOOR UP TO THE CEILING.
- AERATION BASIN SPLITTER BOX IS A CLASS 1 DIVISION 2 AREA AT THE FLOOR LEVEL.
- AIR COMPRESSOR POWER BY SCREW PRESS CONTROL PANEL.
- SCREW CONVEYOR CONTROL PANEL LCP-4-1.
- MOUNT UNISTRUT BRACKET 6" AWAY FROM BUILDING WALL. SEE STRUCTURAL FOR MOUNTING DETAIL.
- SEE 1/E4.1 FOR FEEDER SIZING WHERE NOT INDICATED ON PLANS.

REVISIONS	DATE	DESCRIPTION
1		
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3		
4		
5		

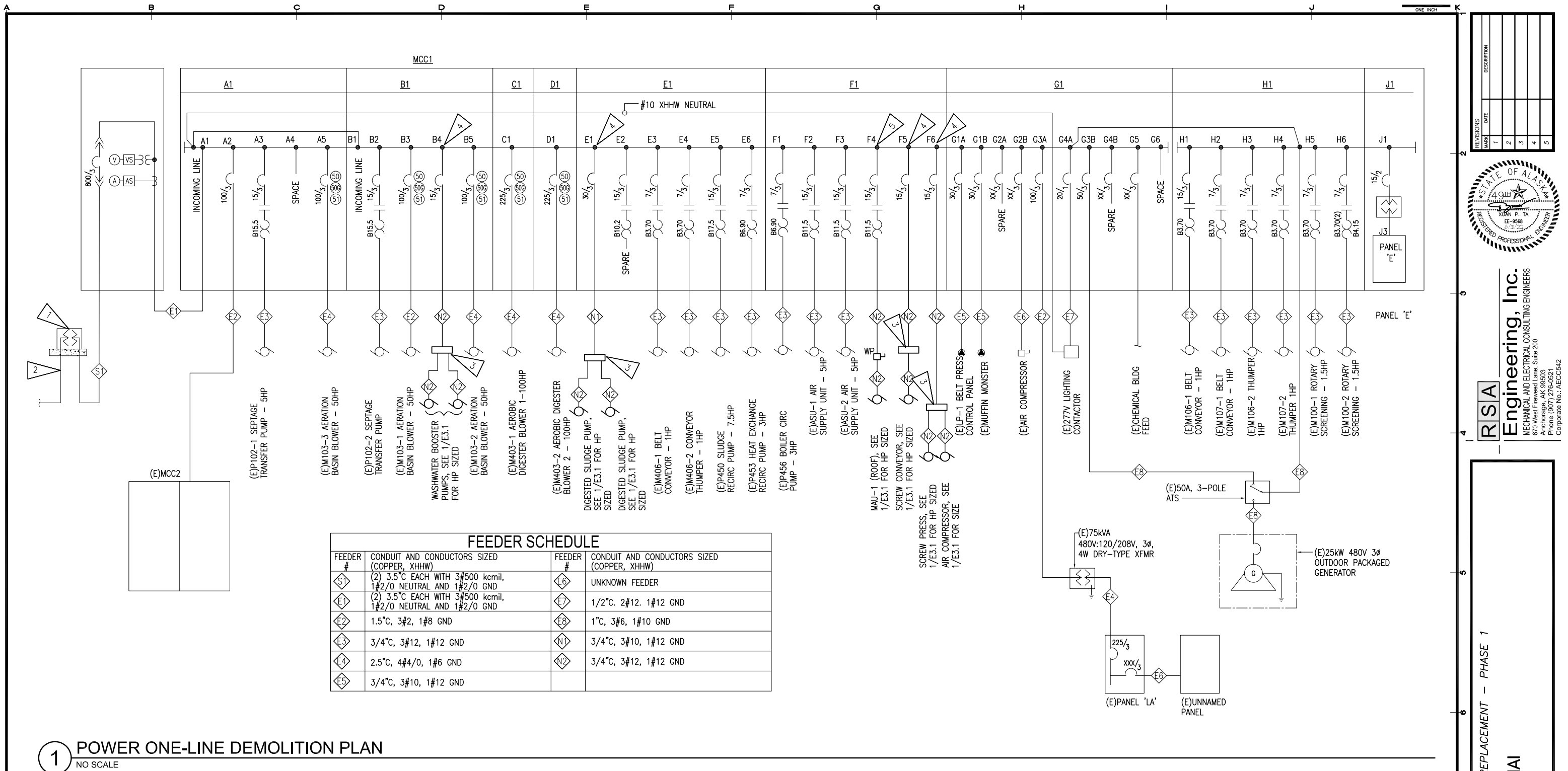


**RSA Engineering, Inc.**  
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS  
670 West Fireweed Lane, Suite 200  
Anchorage, AK 99503  
Phone (907) 276-0621  
Corporate No.: AECC542

SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI  
KENAI, ALASKA

SHEET TITLE POWER REMODEL PLAN	
SHEET E3.1	
DRAWN BY: NVF	CHECKED BY: XPT
DATE: JUNE 2022	SCALE: 1/4"=1'
JOB NUMBER: M1178	



**1 POWER ONE-LINE DEMOLITION PLAN**  
NO SCALE

**GENERAL NOTES:**

- NOT ALL EXISTING ELECTRICAL DEVICES AND INSTALLATION ARE SHOWN FOR CLARITY.
- CONTRACTOR SHALL ENSURE CIRCUIT CONTINUITY IS MAINTAINED FOR DEVICES THAT ARE TO REMAIN.
- SPECIAL COORDINATION AND SCHEDULING SHALL BE PROVIDED AS REQUIRED IN SPECIFICATION IN ORDER FOR THE PLANT TO REMAIN IN OPERATION DURING CONSTRUCTION PRIOR TO START OF WORK.
- MOTOR CONTROL CENTER (MCC) IS A SQ D MODEL 4, 600A MLO, 277/480V, 3Ø, 4W. THE NEW CIRCUIT BREAKERS SHALL BE COMPATIBLE WITH AND LISTED FOR USE IN THE EXISTING MOTOR CONTROL CENTER (MCC) AND SHALL HAVE A MINIMUM SHORT CIRCUIT AIC RATING TO MATCH THE LOWEST RATED EXISTING DEVICE IN THE MCC.

**SHEET NOTES:**

- EXISTING 500kVA 12.47kV - 277/480V, 3-PHASE, 4-WIRE UTILITY PAD MOUNTED TRANSFORMER AND CONCRETE PAD.
- EXISTING UTILITY UNDER GROUND PRIMARY LINES.
- ROUTE THROUGH CONTROL PANEL.
- PROVIDE NEW CIRCUIT BREAKER IN SPACE AVAILABLE IN SECTION 'A', 'B', 'E', OR 'F' AS SHOWN.
- PROVIDE NEW CIRCUIT BREAKER, MAGNETIC MOTOR STARTER, AND INTEGRAL THERMAL OVERLOAD PROTECTION IN SPACE AVAILABLE IN SECTION AS SHOWN.

REVISIONS  
MARK  
DATE  
DESCRIPTION

1  
2  
3  
4  
5

STATE OF ALASKA  
40th  
XUAN P. TA  
EE-9568  
REGISTERED PROFESSIONAL ENGINEER

RSA

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SLUDGE PRESS REPLACEMENT - PHASE 1

CITY OF KENAI

KENAI, ALASKA

SHEET TITLE  
POWER ONE-LINE  
REMODEL PLAN

SHEET  
E4.1

DRAWN BY: NVF  
CHECKED BY: XPT  
DATE: JUNE 2022  
SCALE: NO SCALE  
JOB NUMBER: M1178

