

# CONSTRUCTION PLANS

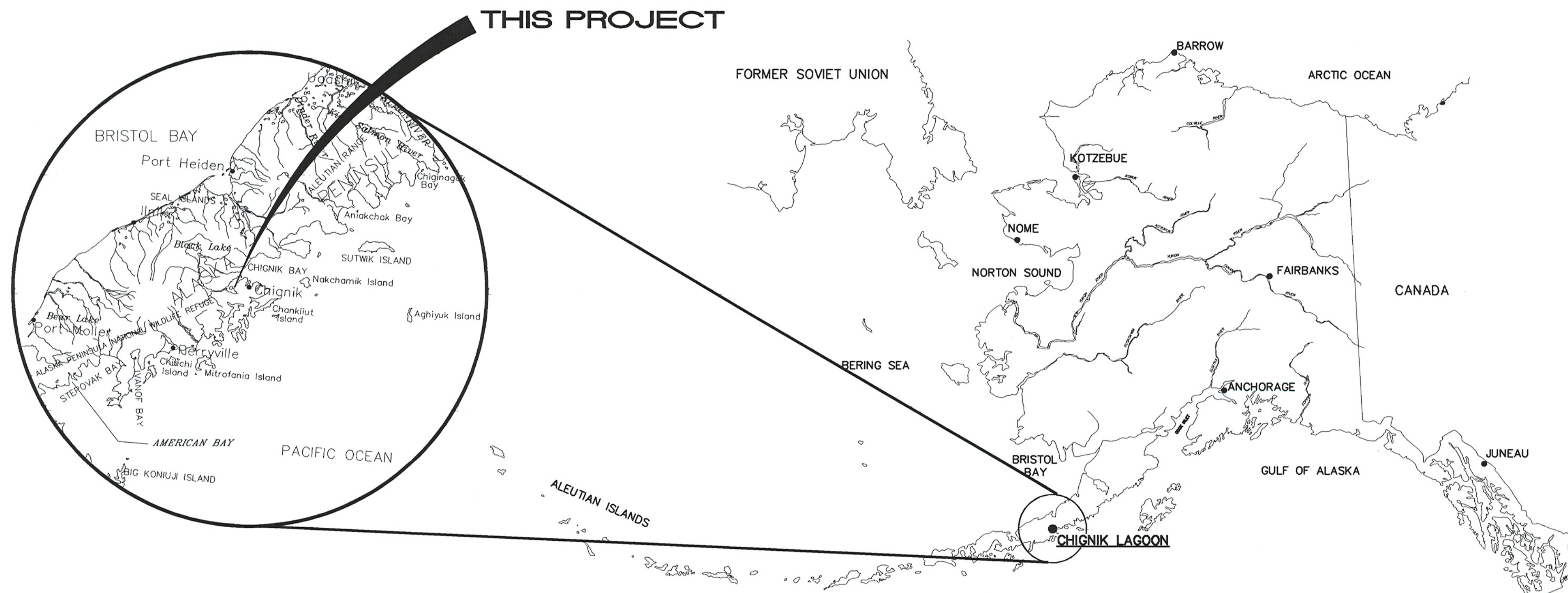
## WATER SYSTEM IMPROVEMENTS

### CHIGNIK LAGOON, ALASKA

#### WATER TREATMENT PLANT AND STORAGE TANK

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### CODE SUMMARY

THE FOLLOWING CODE ANALYSIS WAS PERFORMED USING THE 1997 UBC AND 1997 UFC.

PROJECT NAME: CHIGNIK LAGOON WATER TREATMENT FACILITY  
 TOTAL SQUARE FOOTAGE: 384 SF  
 HAZARDOUS MATERIALS UBC: EXEMPT AMOUNTS PER TABLES 3D AND E  
 OCCUPANCY: F-1/S-1 PROCESSING/STORAGE  
 CONSTRUCTION TYPE: V-N  
 AREA AND HEIGHT LIMITATIONS: OK  
 WALLS/FLOORS/ROOF: NON-RATED  
 HAZARDOUS MATERIALS UFC: EXEMPT AMOUNTS PER TABLES 8001.15A AND B

SUMMARY OF EXEMPT MATERIALS PER TABLE 3D (UBC) AND 8001.15A (UFC)

MATERIAL	ACTUAL		ALLOWABLE	
	STORAGE	OPEN USE	STORAGE	OPEN USE
SODA ASH	3900 LBS	100 LBS	4000 LBS	1000 LBS
CALCIUM HYPOCHLORITE	200 LBS	30 LBS	250 LBS	50 LBS

SUMMARY OF EXEMPT MATERIALS PER TABLE 3-E (UBC) AND 8001.15B (UFC)

MATERIAL	ACTUAL		ALLOWABLE	
	STORAGE	OPEN USE	STORAGE	OPEN USE
NALCO	60 LBS	30 LBS	500 LBS	500 LBS
SODIUM FLUORIDE	200 LBS	50 LBS	500 LBS	125 LBS

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 3925 TUDOR CENTRE DR. ANCHORAGE, ALASKA 99508-5977

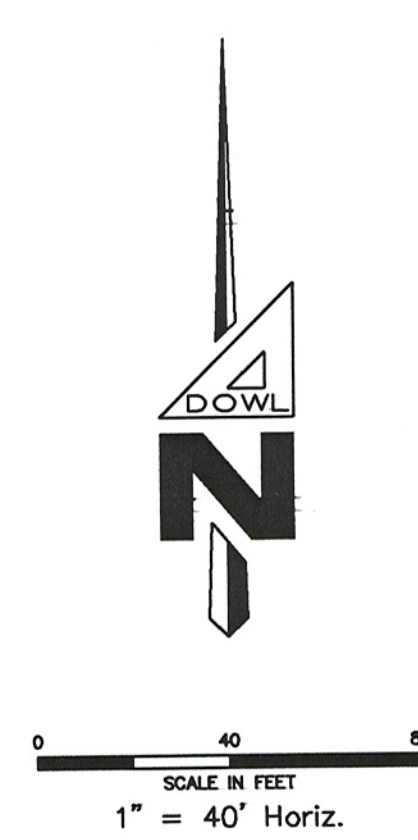
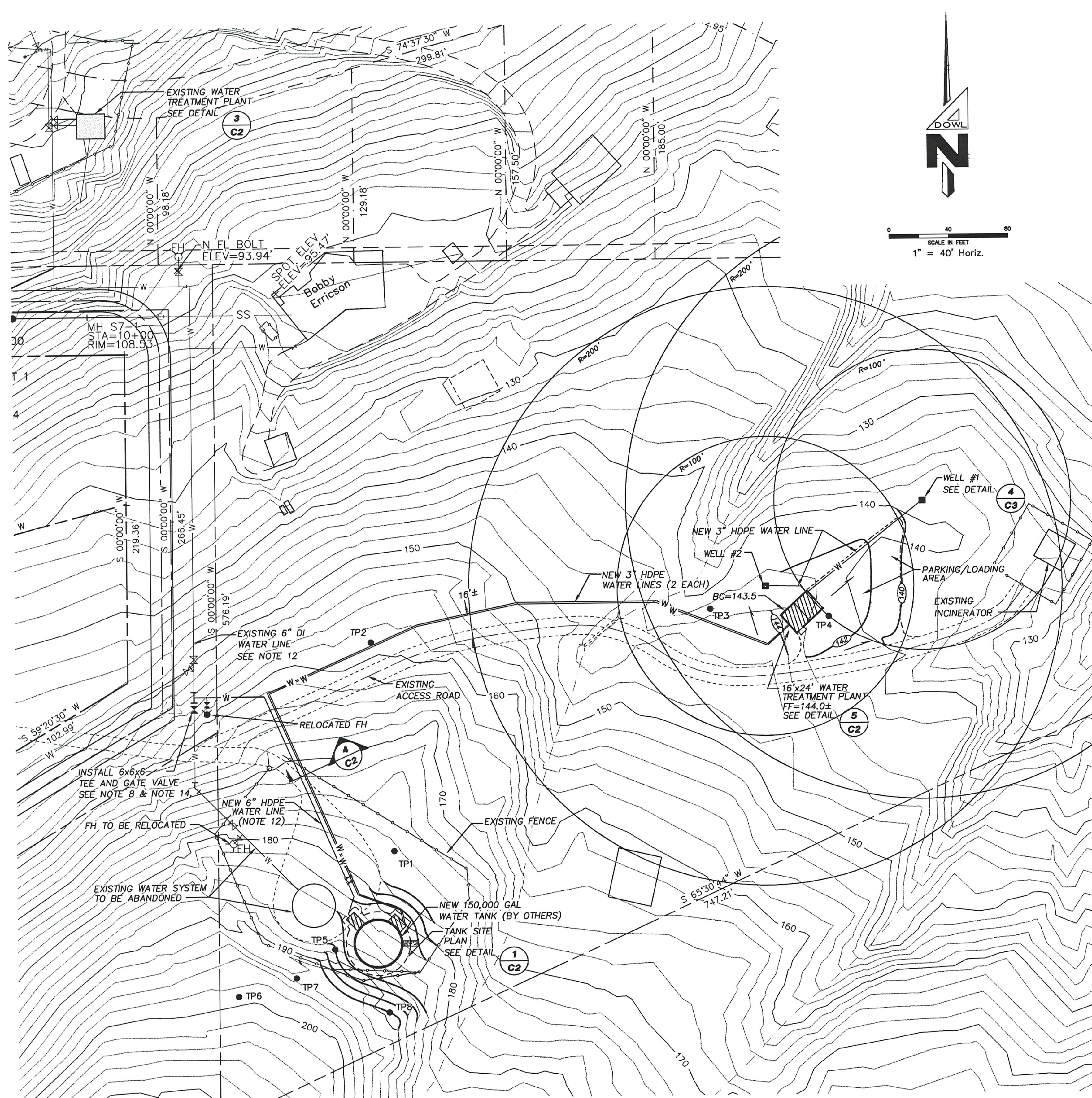
PUBLIC LAW 86-121 PROJECT  
 PROJECT NO AN-00-D-0384

DRAWING NO. 228-658

PLOTTED: SEP 11, 2000 13:14:36 (V6/F72)

PROJECT: CHIGNIK LAGOON, ALASKA  
DRAWING NAME: DSANTHC.DWG  
SCRIPT FILE FOR THIS SHEET: DSANTHC

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### GENERAL NOTES

- LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. VERIFY LOCATIONS BY OBTAINING UTILITY LOCATES PRIOR TO BEGINNING CONSTRUCTION. EXERCISE CAUTION DURING EXCAVATION.
- VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION. RECORD LOCATIONS AND CHANGES TO UTILITIES IN SURVEY NOTES AND ON AS-BUILT DRAWINGS.
- VERIFY INVERTS AND LOCATIONS OF ALL CONNECTION POINTS PRIOR TO LAYING ANY PIPE. DISCREPANCIES FROM THE PLANS SHALL BE IMMEDIATELY REPORTED TO THE OWNER'S REPRESENTATIVE.
- MAINTAIN MINIMUM HORIZONTAL SEPARATION DISTANCES BETWEEN SURFACE OR SUBSURFACE DRINKING WATER SOURCES AND POTENTIAL SOURCES OF CONTAMINATION PER ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION 1993 DRINKING WATER REGULATIONS.
- ALL WATER MAINS AND HYDRANT LATERALS SHALL BE SDR-11 HIGH DENSITY POLYETHYLENE PIPE UNLESS NOTED OTHERWISE, USE FUSED BUTT JOINTS FOR TYPICAL HDPE JOINTS.
- PIPE BEDDING SHALL BE CLASSIFIED MATERIAL TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 95% MAXIMUM DENSITY.
- NO PIPE LENGTH LESS THAN 8 FEET SHALL BE INCORPORATED IN THE SYSTEM EXCEPT THOSE NECESSARY FOR FIRE HYDRANT OR GATE VALVE LOCATIONS.
- ALL EXISTING WATER USERS SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF WATER SERVICE INTERRUPTION. CONTRACTOR SHALL PROVIDE TEMPORARY SERVICE.
- RESTORE ALL DISTURBED PROPERTY OUTSIDE THE WORK LIMITS TO ORIGINAL CONDITION.
- ALL WATERLINE PIPE SHALL BE BURIED 6' MINIMUM DEPTH.
- NFS MATERIAL MAY BE FOUND IN AREA OF TP3 AFTER REMOVING OVERBURDEN SEE SOIL LOGS. THIS MATERIAL MAY BE USED FOR NFS FILL.
- THE EXISTING WATER MAIN IS REPORTED TO BE 6" DUCTILE IRON PIPE, VERIFY PIPE SIZE AND TYPE PRIOR TO ORDERING MATERIAL. SIZE NEW WATER MAIN TO MATCH EXISTING PIPE DIAMETER.
- THE FOLLOWING DISTANCES ARE FOR PLANNING PURPOSES ONLY AND SHOULD BE CONSIDERED APPROXIMATE. TRUE PIPELINE DISTANCES WILL DEPEND ON THE FINAL PIPE ROUTE. CONFIRM PIPE ROUTE PRIOR TO ORDERING MATERIALS.
 

WTP TO WST (3" PIPELINE ROUTE)	559 LF
WST TO 6" TAP (6" PIPELINE ROUTE)	208 LF
WELL NO 1 TO WTP	28 LF
WELL NO 2 TO WTP	99 LF
- POUR CONCRETE INTO SELECT VALVE BOXES TO ENSURE ABANDONED WATER SYSTEMS ARE PERMANENTLY REMOVED FROM NEW SYSTEM.
- A VISUAL INSPECTION OF THE SITE DISCLOSED NO SOURCES OF CONTAMINATION WITHIN 200 FT OF EITHER WELL NO. 1 OR WELL NO. 2, WITH THE POSSIBLE EXCEPTION OF THE EXISTING INCINERATOR.

### ABBREVIATIONS

BG	BUILDING GRADE
BOP	BOTTOM OF PIPE
DIA	DIAMETER
DI	DUCTILE IRON
DTL	DETAIL
FH	FIRE HYDRANT
FF	FINISH FLOOR
GB	GRADE BREAK
GI	GALVANIZED IRON
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
L	LENGTH
LF	LINEAR FEET
ME	MATCH EXISTING
PCC	PORTLAND CEMENT CONCRETE
PVC	POLYVINYL CHLORIDE
STA	STATION
TP	TEST PIT
TYP	TYPICAL
VERT	VERTICAL
W	WATER
WST	WATER STORAGE TANK
WTP	WATER TREATMENT PLANT

### LEGEND

PROPOSED	EXISTING	DESCRIPTION
---	---	PROPERTY LINE
---	---	EASEMENT LINE
---	---	CREEK
●	●	TEST PIT LOCATION
---	---	2 FOOT CONTOUR
---	---	10 FOOT CONTOUR
W	W	WATER LINE
SS	SS	SEWER LINE
○	○	FIRE HYDRANT
×	×	GATE VALVE
---	---	EDGE OF GRAVEL ROAD
▒	▒	CONCRETE
---	---	FENCE
---	---	CULVERT
▒	▒	BUILDING



NO.	DATE	REVISIONS

PROJECT ENGINEER	DISTRICT ENGINEER	O&M CONSULTANT
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 3925 TUDOR CENTRE DRIVE  
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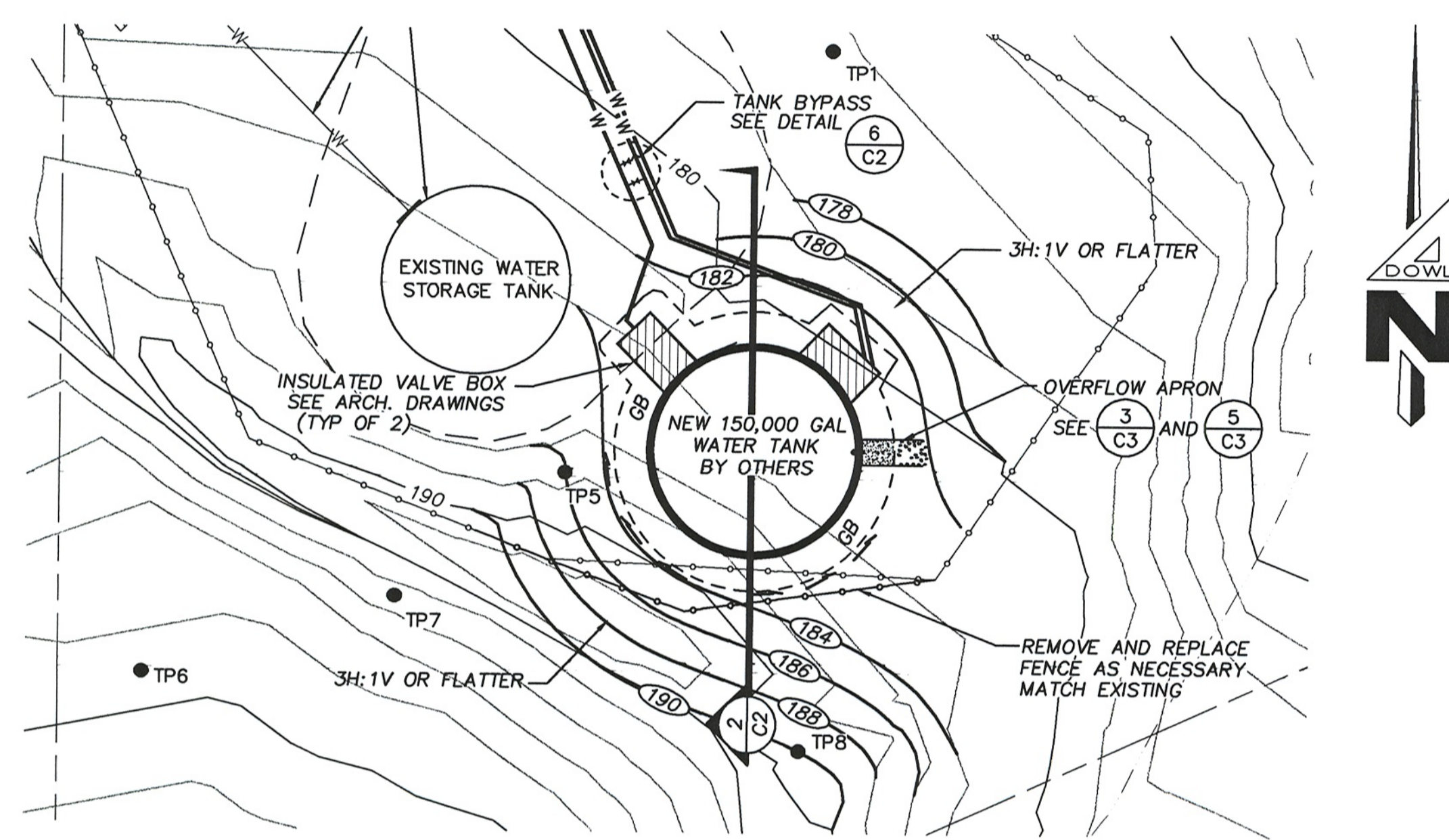
CHIGNIK LAGOON, ALASKA  
 SITE PLAN, NOTES  
 & LEGEND

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 PLOT SCALE: 1"=1 (1-50 VP)  
 DRAWN BY: MJP  
 DATE: 8-31-2000

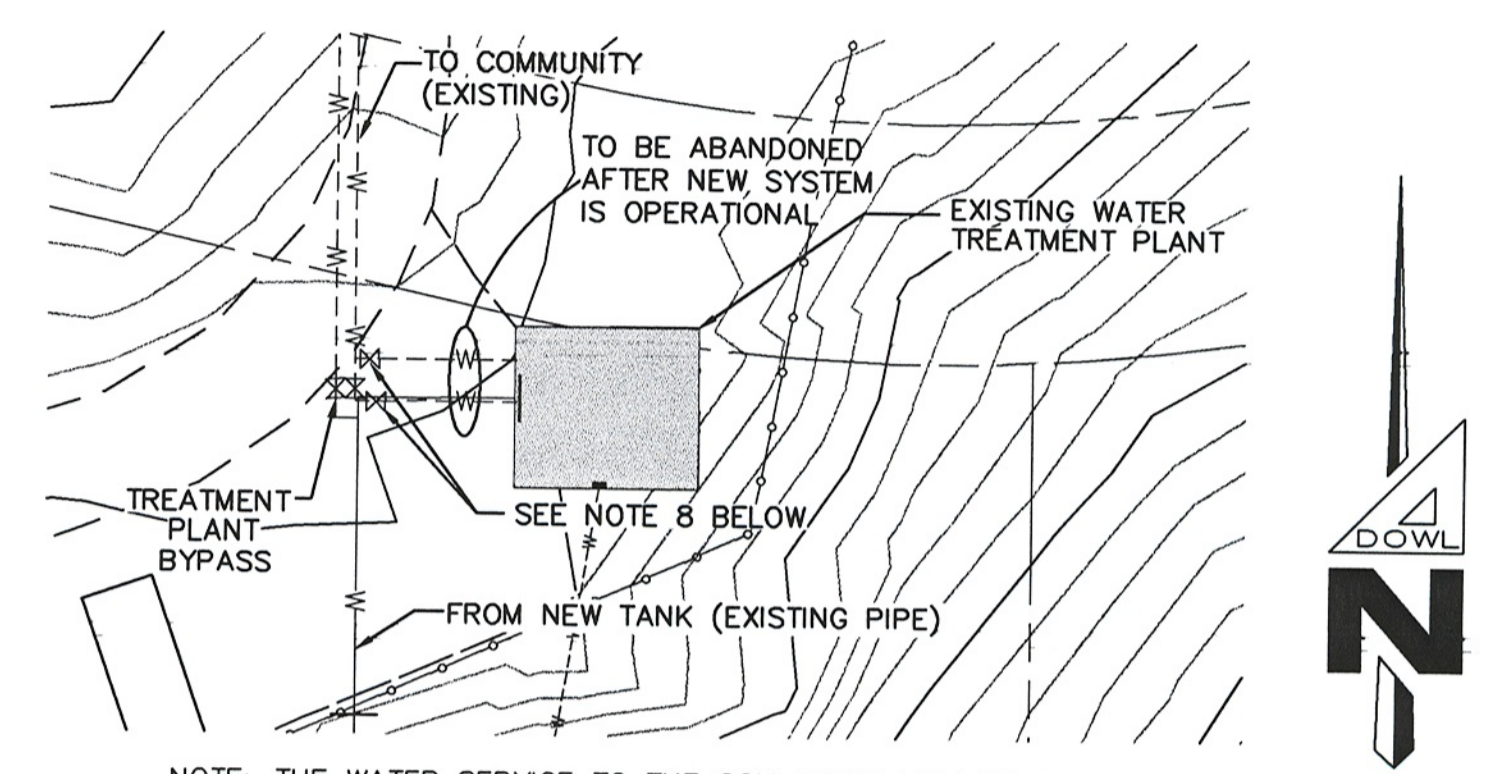
PROJECT NO.

C1

**DOWL ENGINEERS**  
 4040 "B" Street Anchorage, Alaska 99503  
 PHONE (907) 562-2000 FAX (907) 563-3953

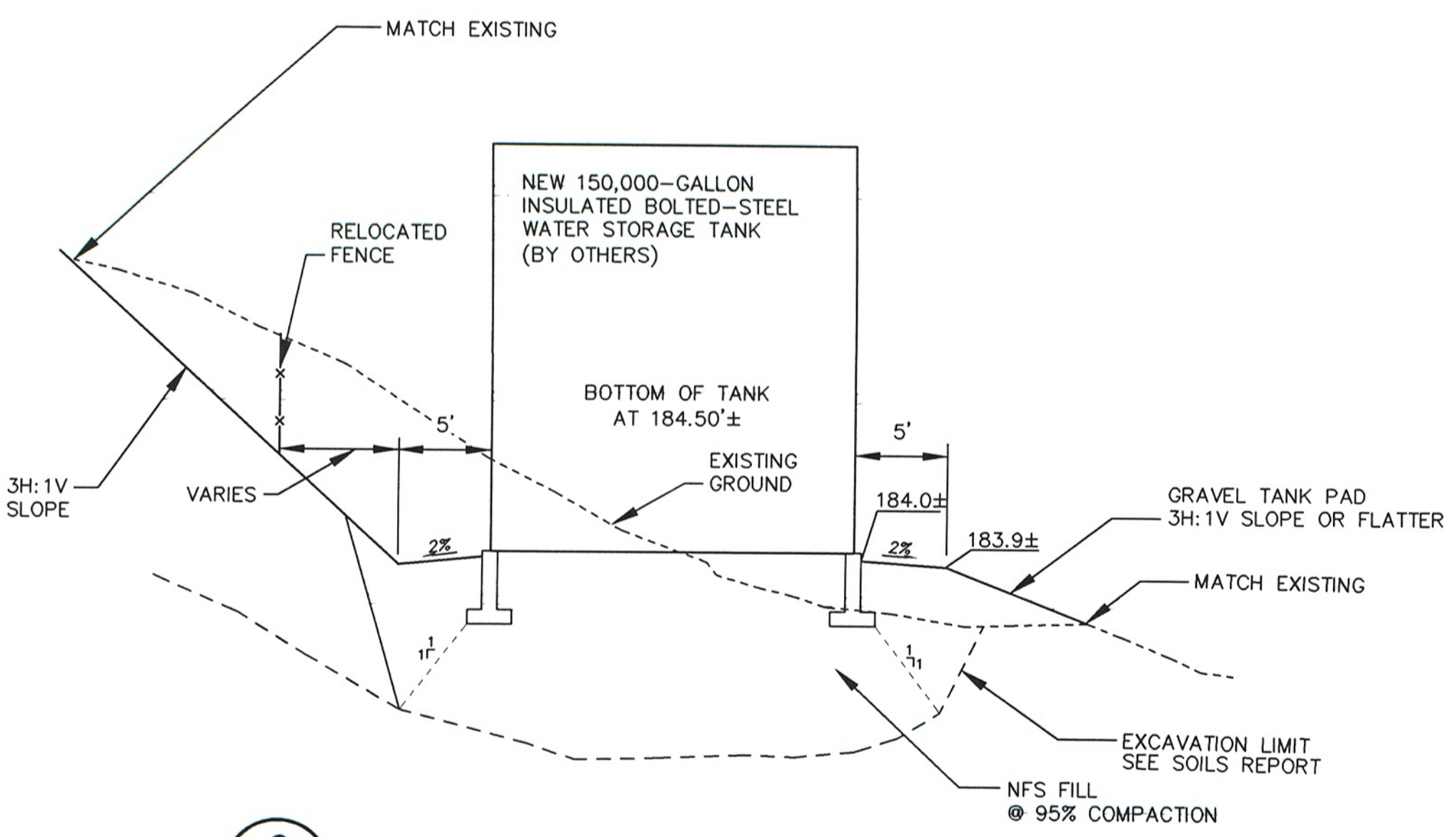


**1 NEW WATER TANK SITE PLAN**  
SCALE 1" = 20'

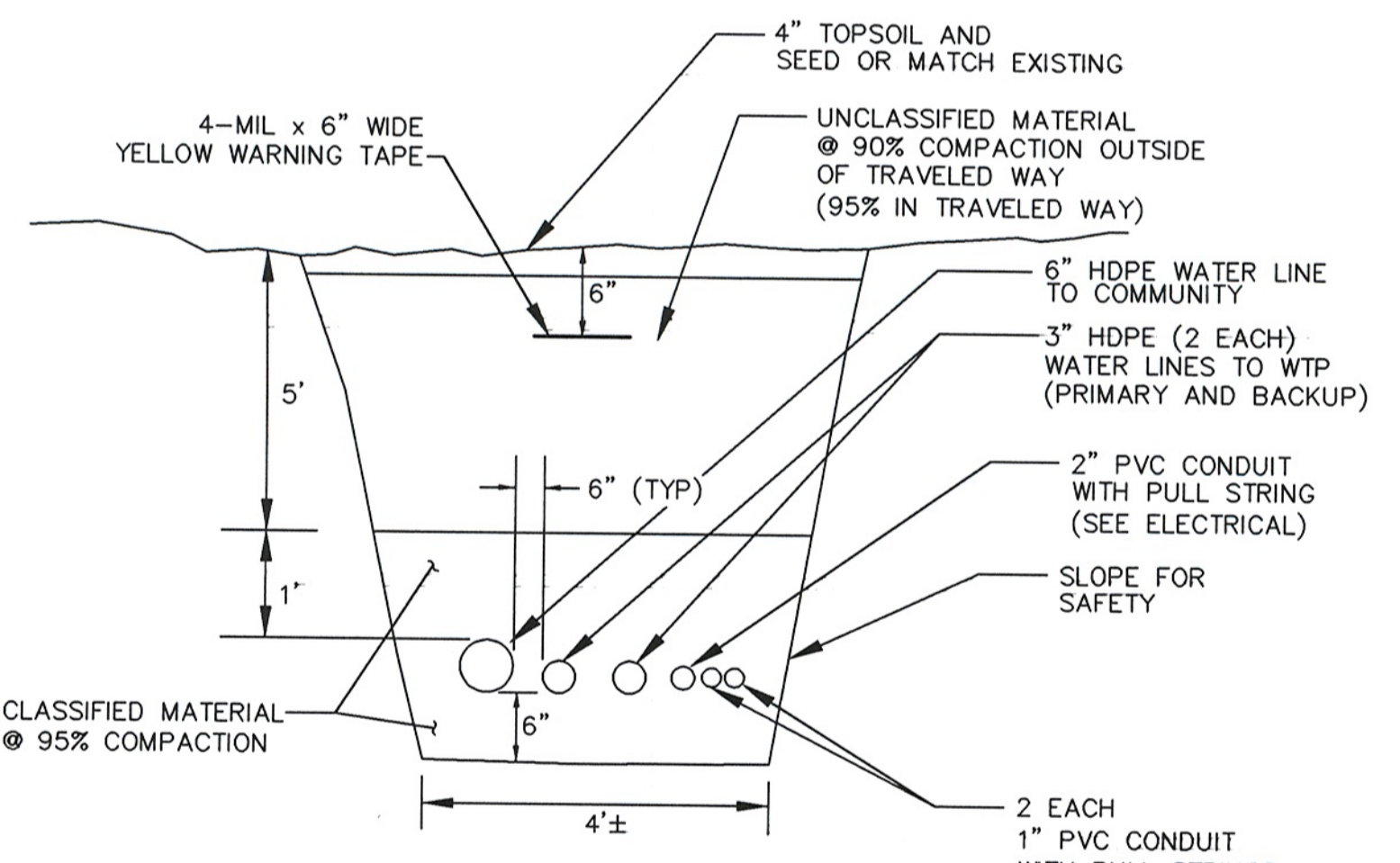


- NOTE: THE WATER SERVICE TO THE COMMUNITY MAY BE SWITCHED OVER IN THE FOLLOWING SEQUENCE:
1. FILL EXISTING TANK WITH TREATED WATER FOR USE AS BACKUP.
  2. FILL NEW TANK WITH TREATED WATER.
  3. OPEN SELECT VALVES ALLOWING WATER FROM NEW TANK TO ENTER EXISTING WATER PIPELINE.
  4. CLOSE SELECT VALVES TO ISOLATE OLD WATER TANK (TO BE PERMANENTLY REMOVED FROM WATER SYSTEM)
  5. ROUTE TREATED WATER FROM NEW TANK THROUGH EXISTING 6" RAW WATER PIPELINE TO EXISTING WATER TREATMENT PLANT
  6. ALLOW DOUBLE TREATMENT OF WATER UNTIL RAW WATER LINE HAS BEEN ADEQUATELY CLEANED
  7. BYPASS EXISTING WATER TREATMENT PLANT (TO BE PERMANENTLY REMOVED FROM WATER SYSTEM)
  8. POUR CONCRETE INTO SELECT VALVE BOXES TO ENSURE ABANDONED WATER SYSTEMS ARE PERMANENTLY REMOVED FROM NEW SYSTEM.

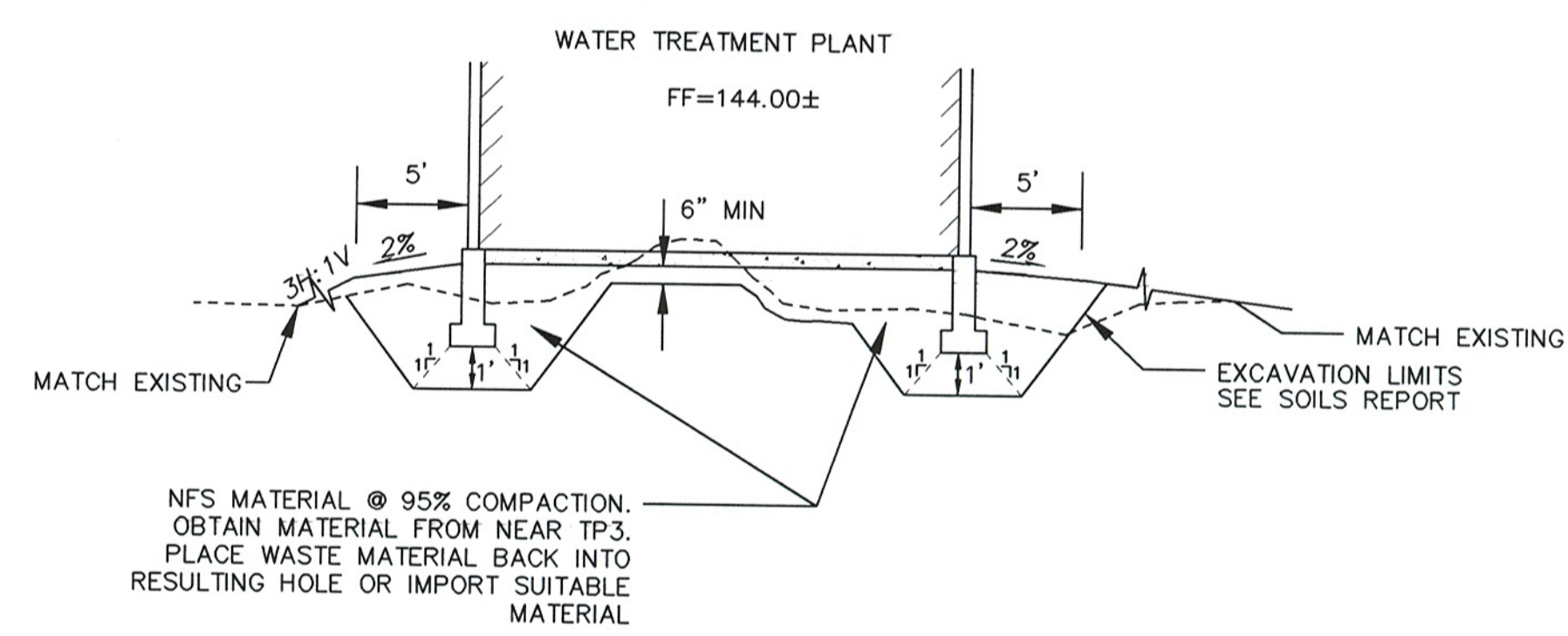
**3 EXISTING WATER TREATMENT PLANT BYPASS**  
SCALE 1" = 20'



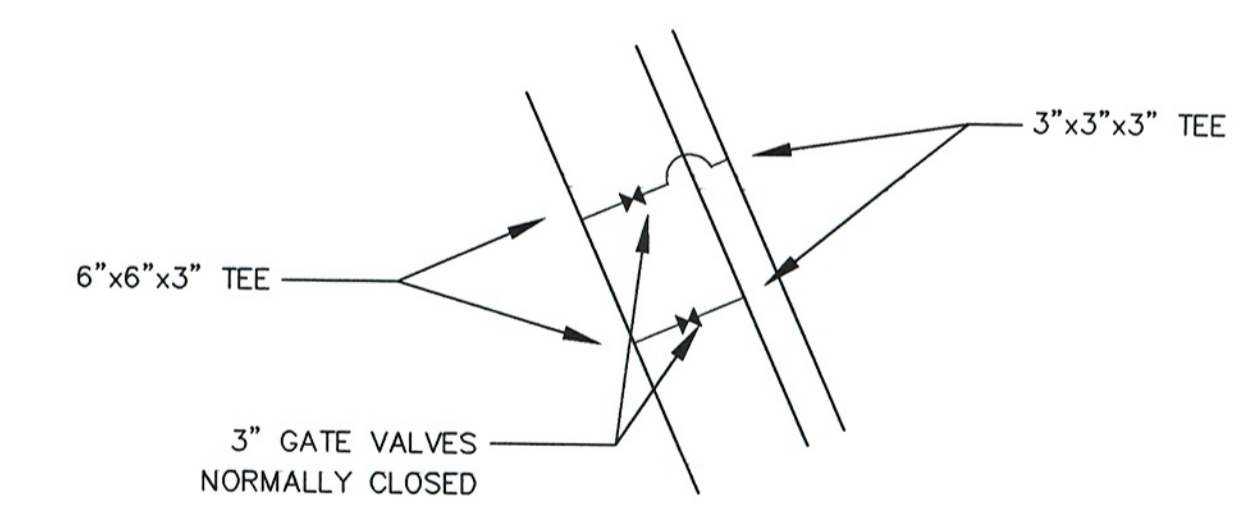
**2 TANK GRADING SECTION**  
NTS



**4 UTILITY TRENCH SECTION**  
NTS



**5 BUILDING SECTION**  
NTS



**6 TANK BYPASS DETAIL**  
NTS



INT:	
REVISIONS:	
DATE:	

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 SECTIONS AND DETAILS  
 DRAWN BY: MJP  
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PROJECT NO.  
**C2**



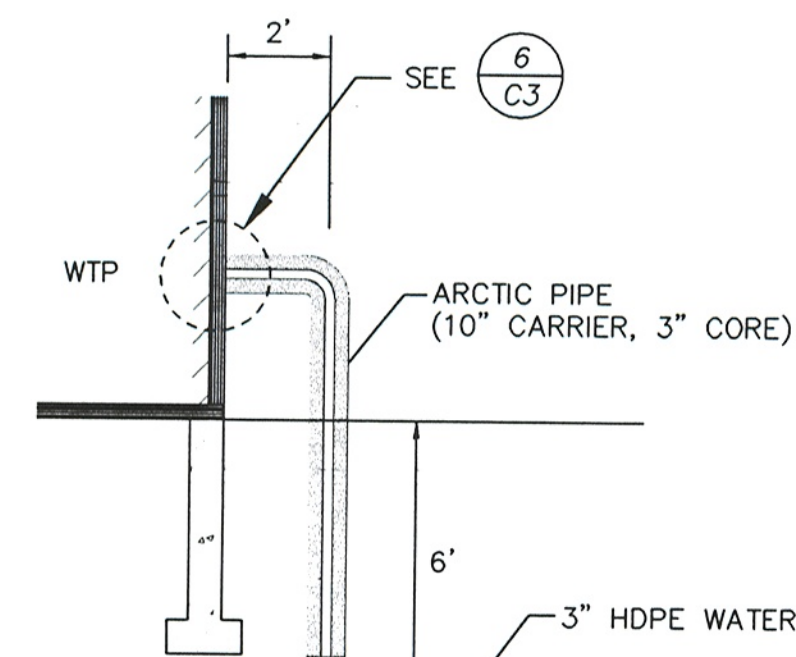
4040 "B" Street Anchorage, Alaska 99503  
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DRAWING FILE NO. 228-65C

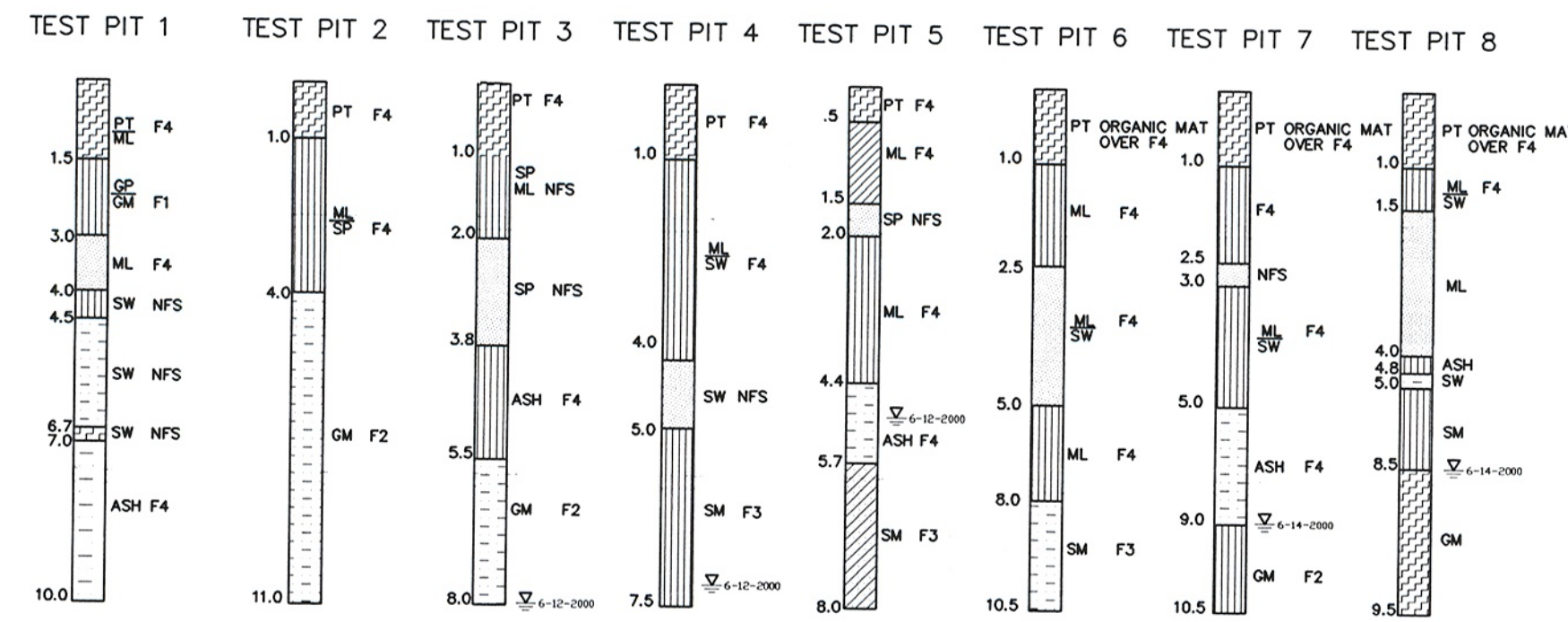
PROJECT: CHIGNIK LAGOON, ALASKA

DESIGN: DSTANTHC.DWG

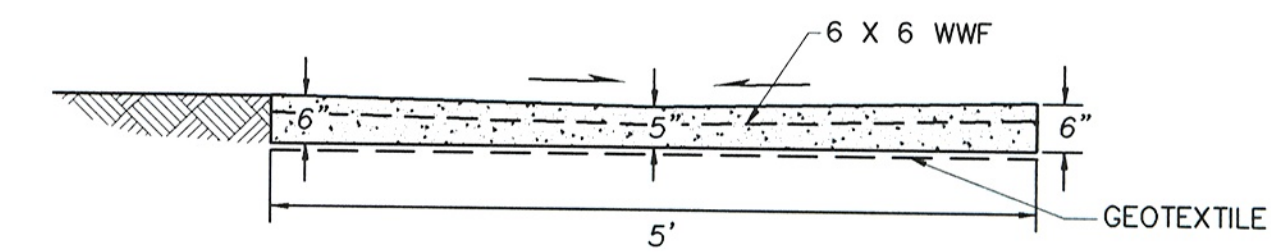
PROJECT: CHIGNIK LAGOON, ALASKA



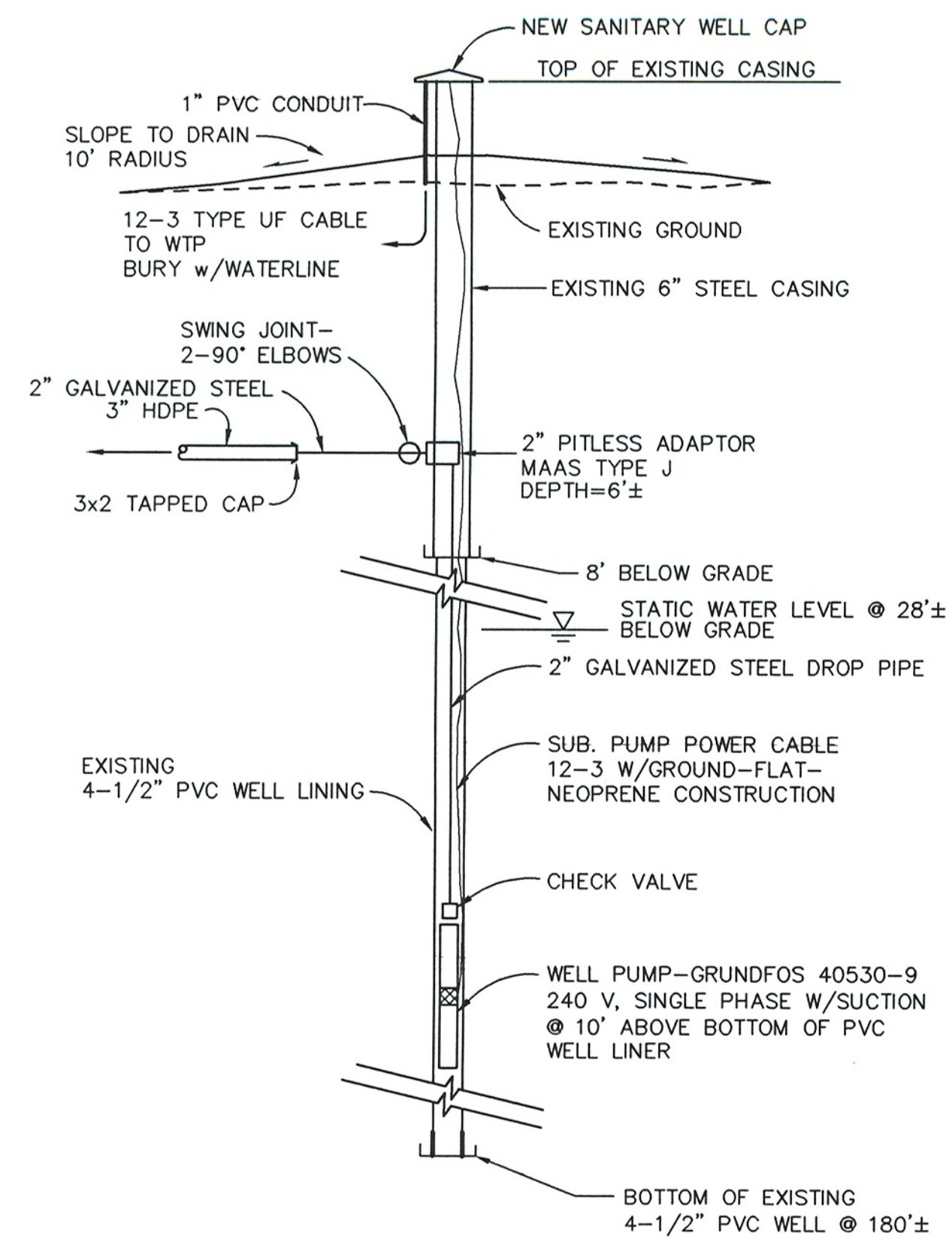
**1**  
**C3** **INSULATED PIPE ENTRY/EXIT**  
NTS



**2**  
**C3** **TEST PITS**  
NTS

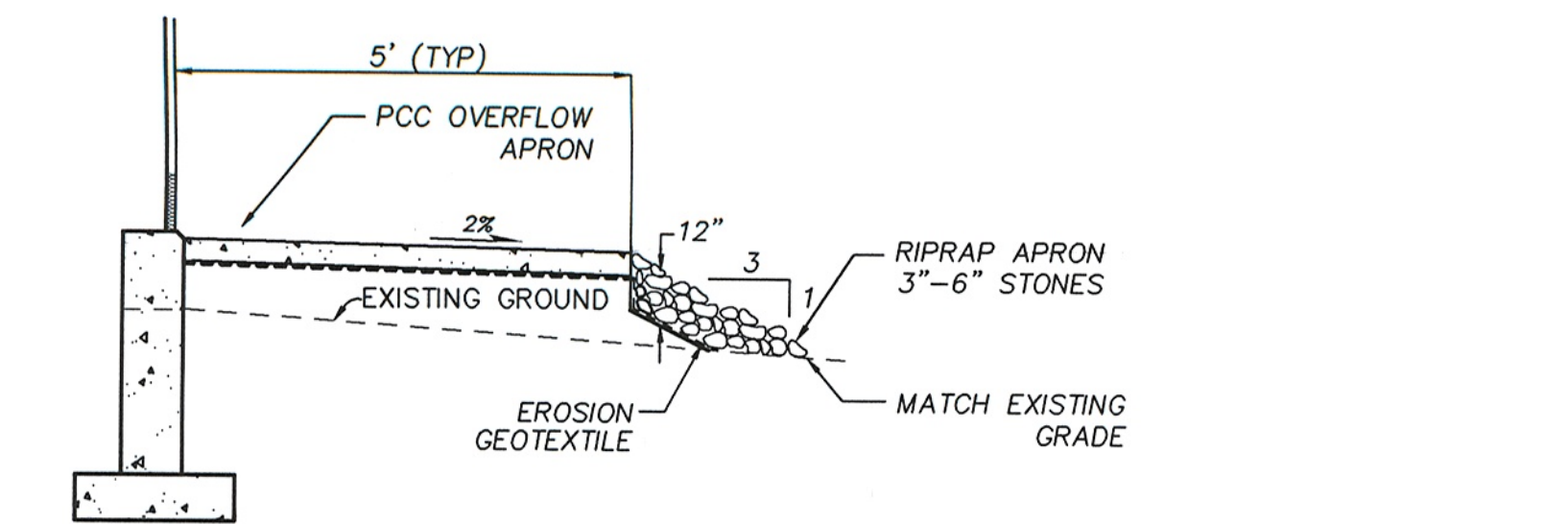


**3**  
**C3** **OVERFLOW APRON SECTION (NORTH-SOUTH)**  
NTS

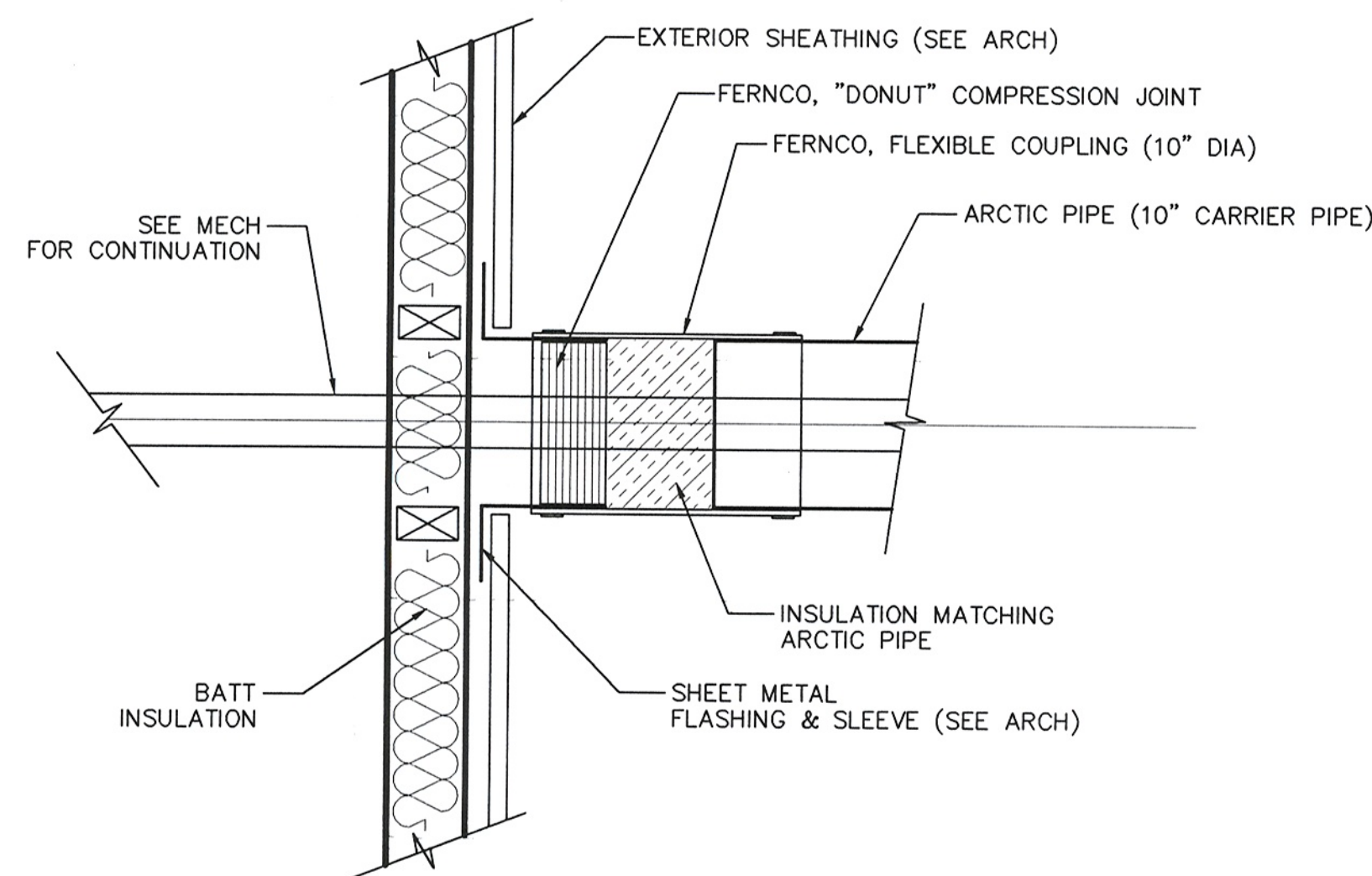


**4**  
**C3** **WATER WELL NO 1 DETAIL**  
NTS

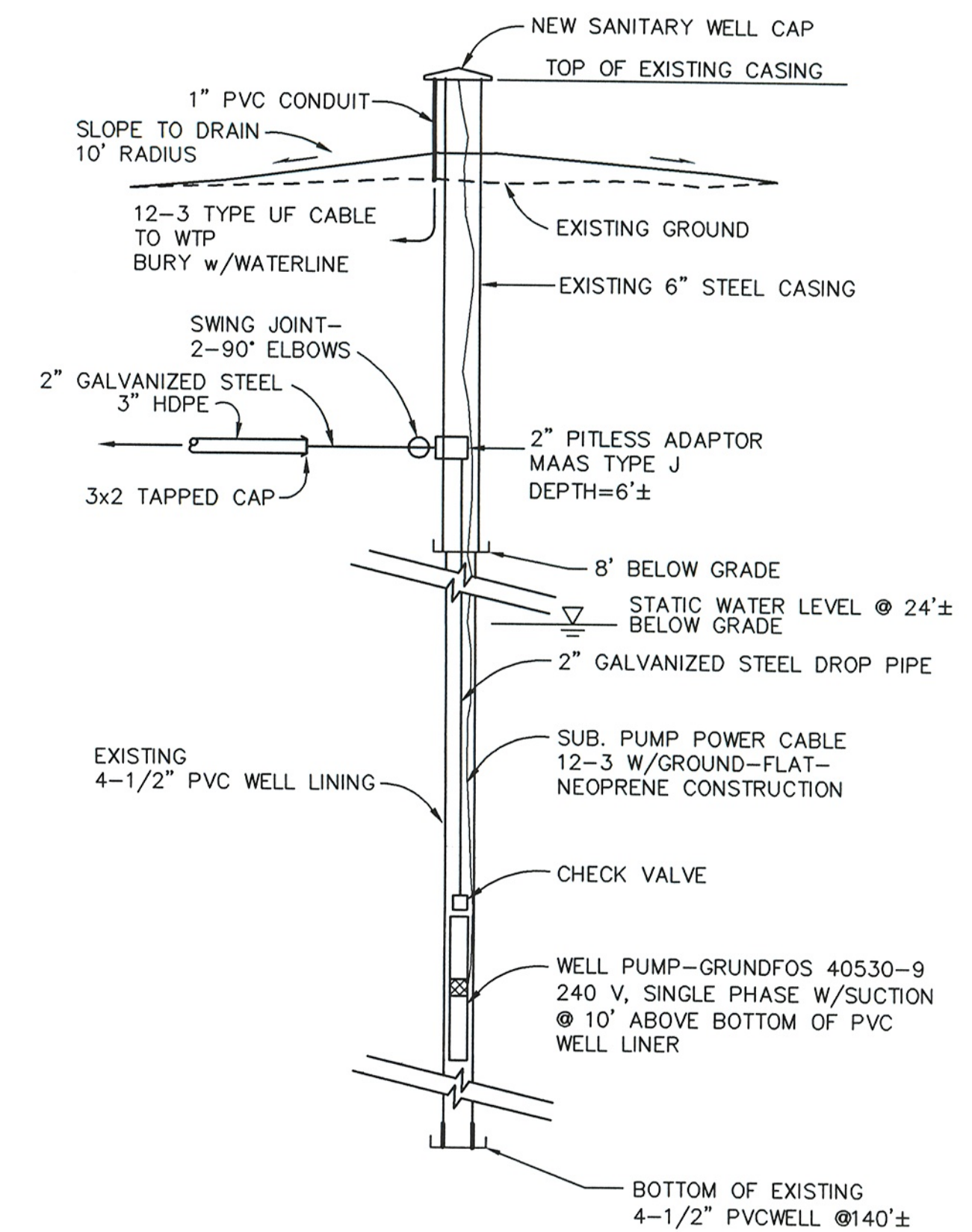
NOTE:  
WELL CASING AND SCREEN  
ARE EXISTING - CASING  
CAPPED WITH WELDED STEEL  
PLATE



**5**  
**C3** **OVERFLOW APRON SECTION (EAST-WEST)**  
NTS



**6**  
**C3** **PIPE PENETRATION**  
NTS



**7**  
**C3** **WATER WELL NO 2 DETAIL**  
NTS

NOTE:  
WELL CASING AND SCREEN  
ARE EXISTING - CASING  
CAPPED WITH WELDED STEEL  
PLATE



INIT.	
REVISIONS	
DATE	

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**CHIGNIK LAGOON, ALASKA**  
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DRAWN BY: MJP  
DATE: 8-31-2000

PROJECT NO.

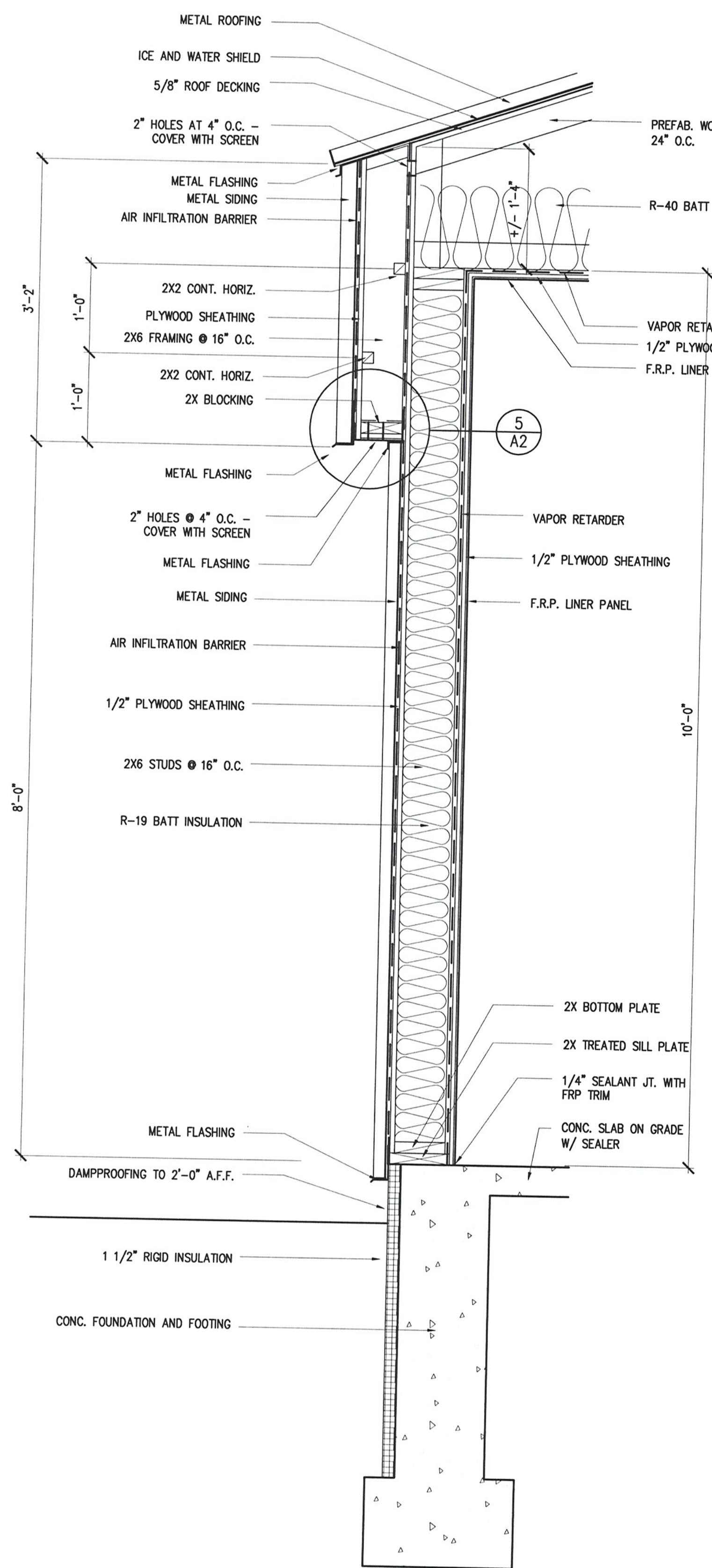
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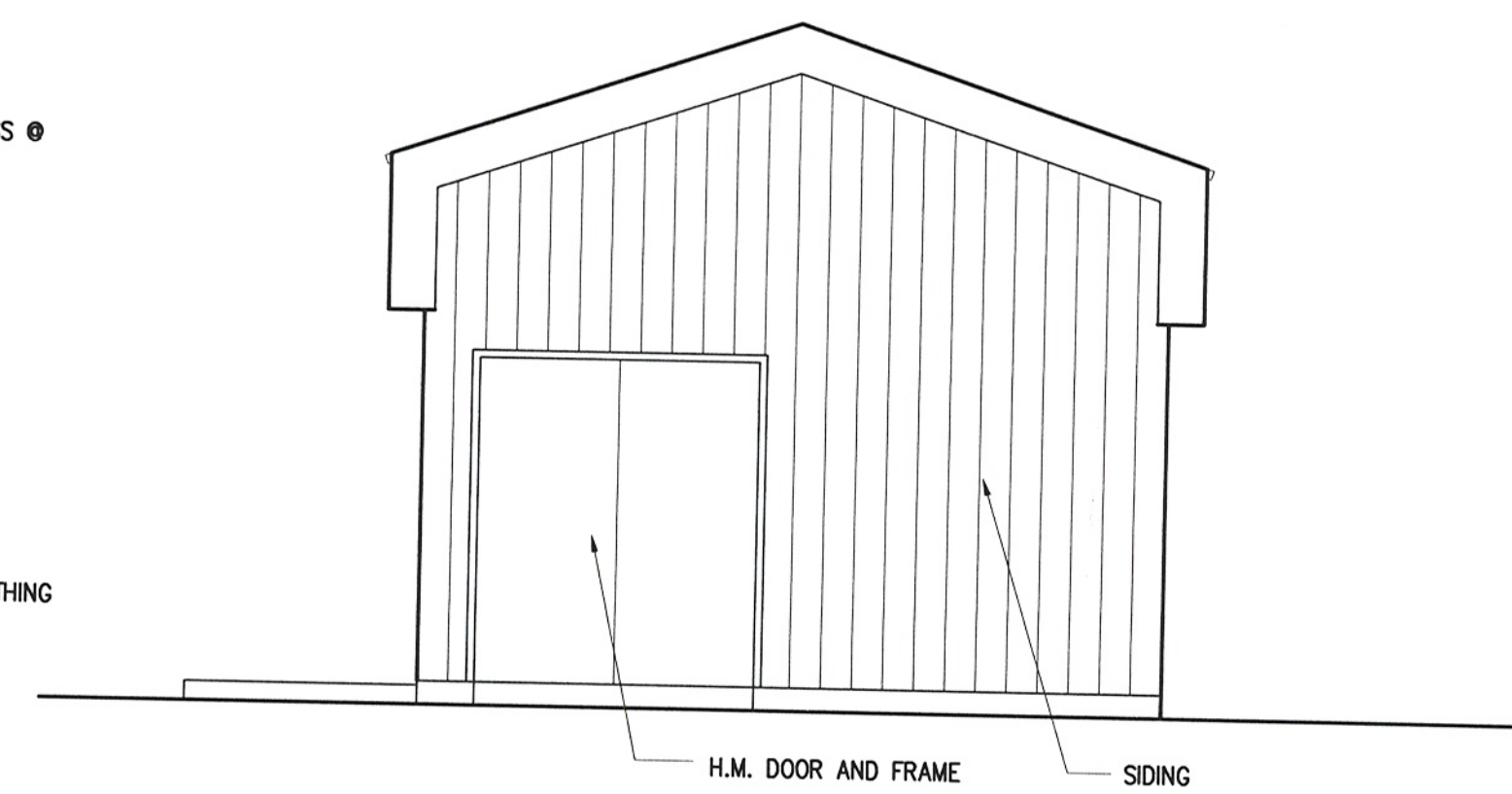
4040 "B" Street Anchorage, Alaska 99503  
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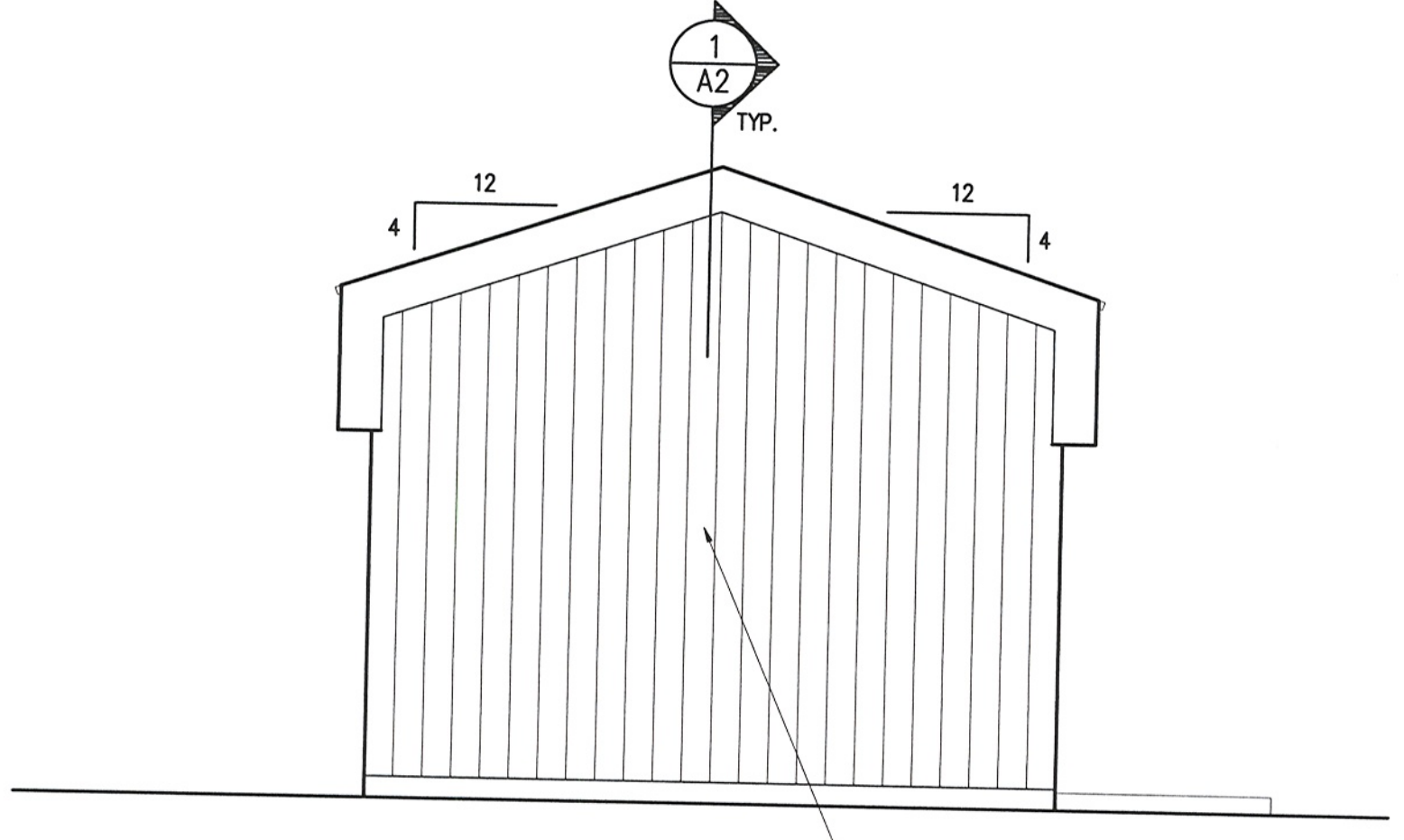
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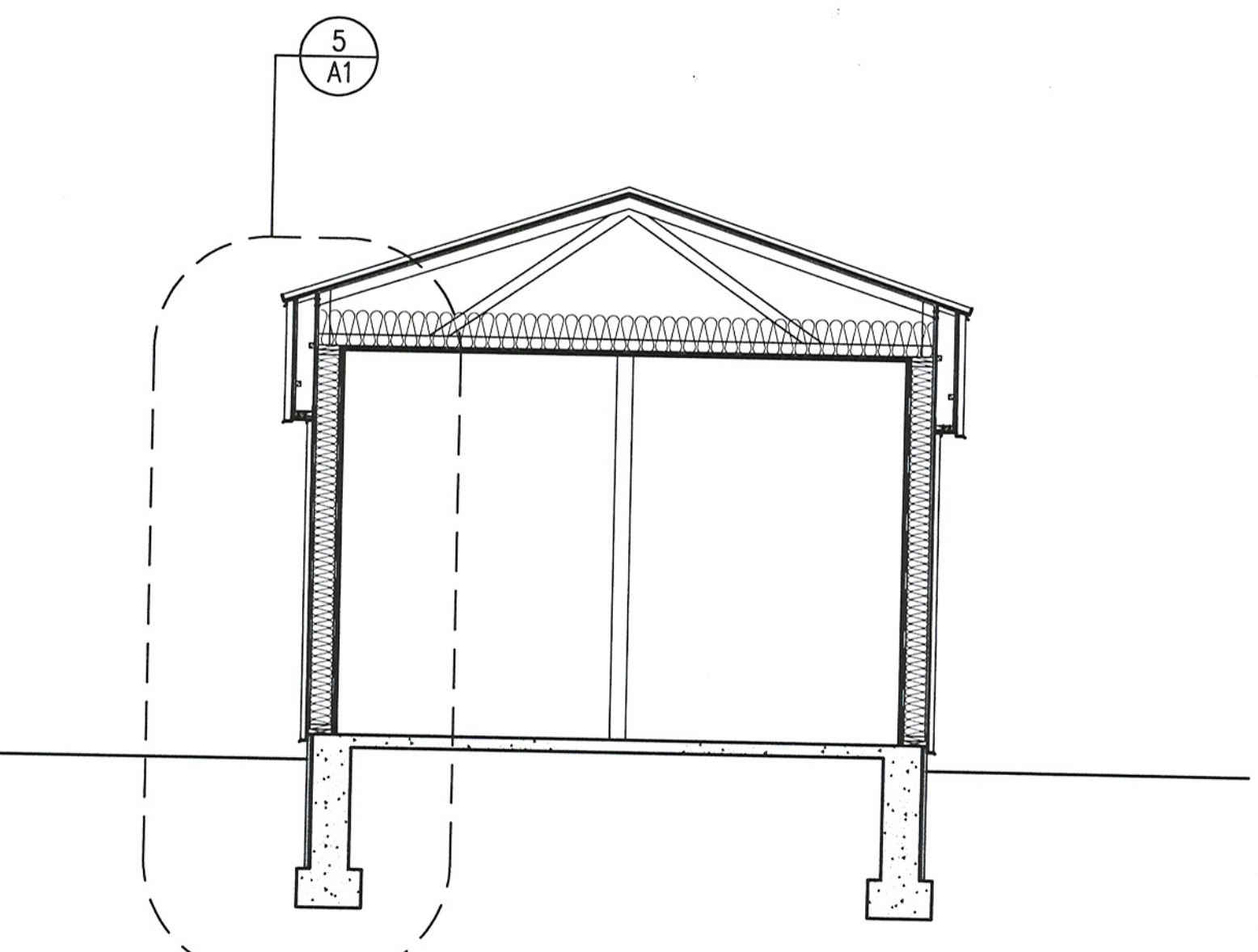
5 WALL SECTION  
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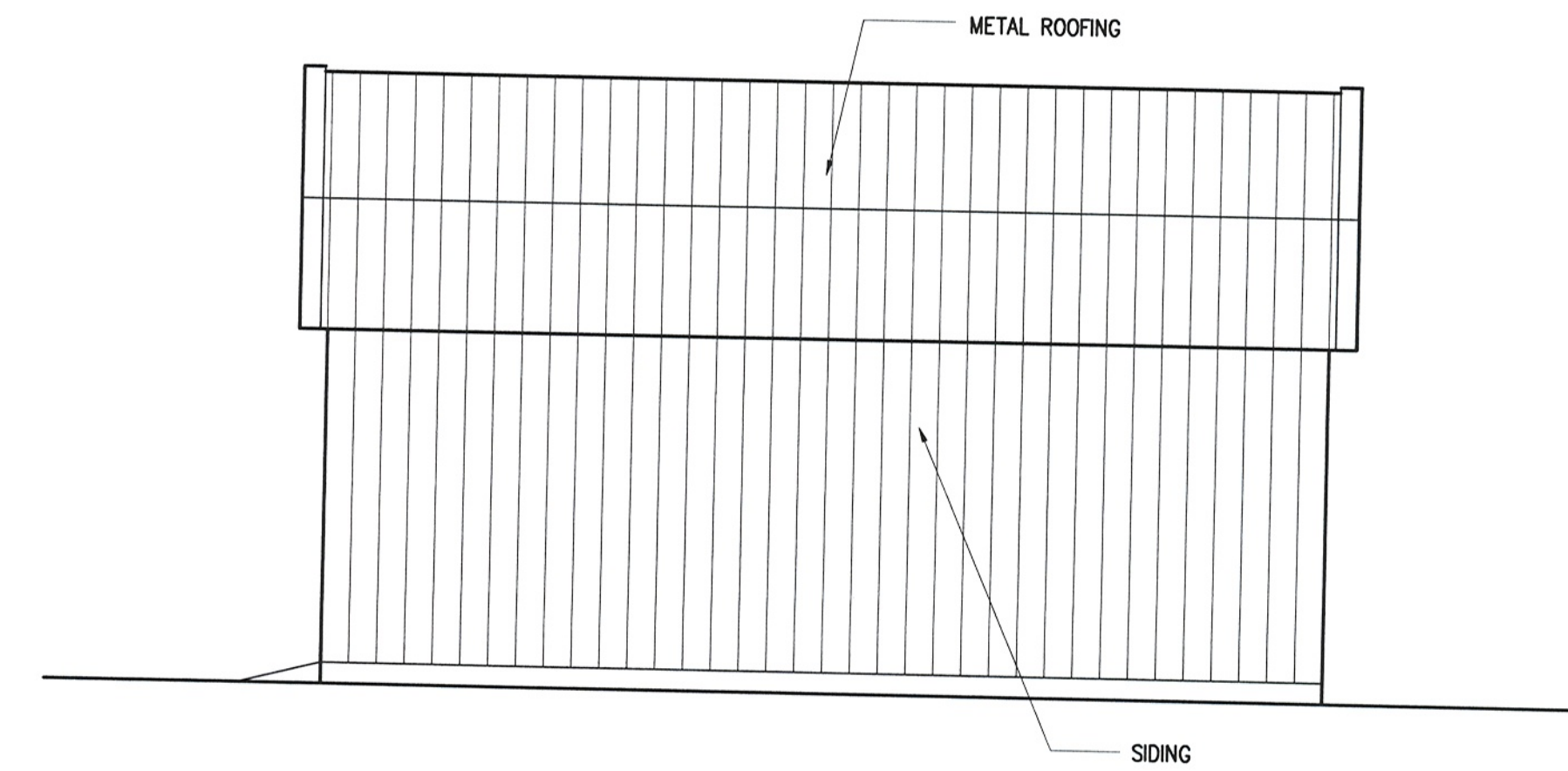
1 ELEVATION  
1/4"=1'-0"



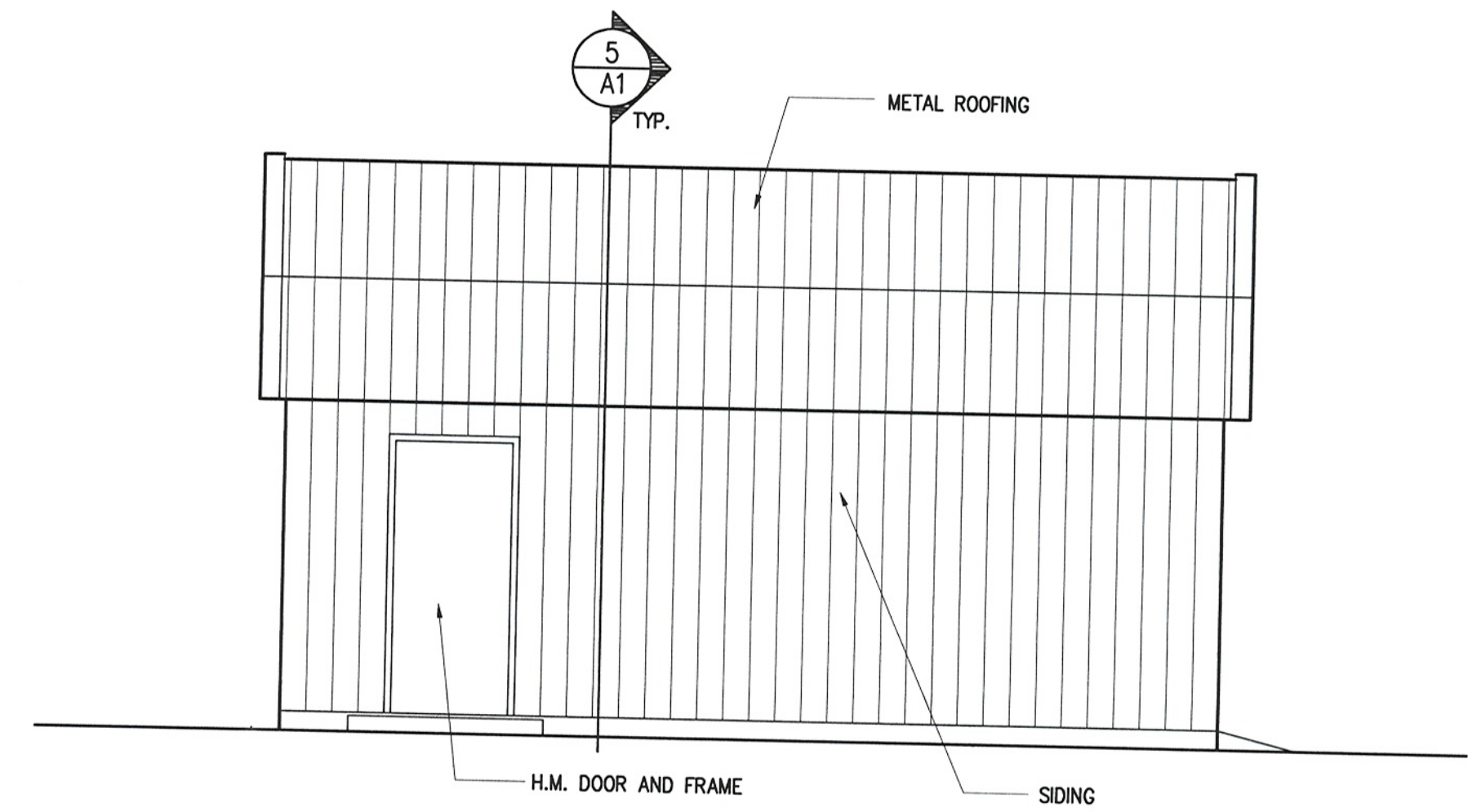
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1/4"=1'-0"



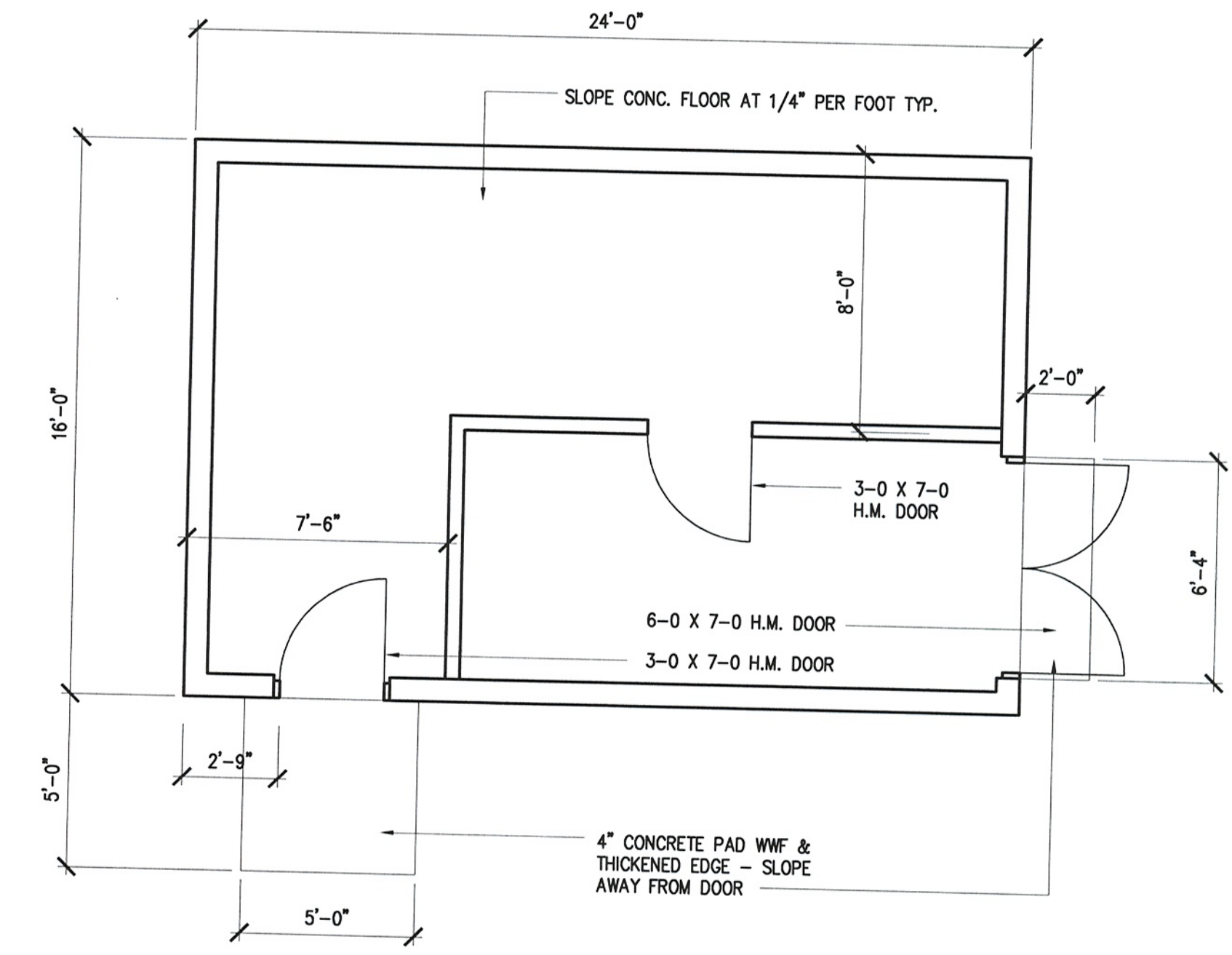
6 SECTION  
1/4"=1'-0"



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



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



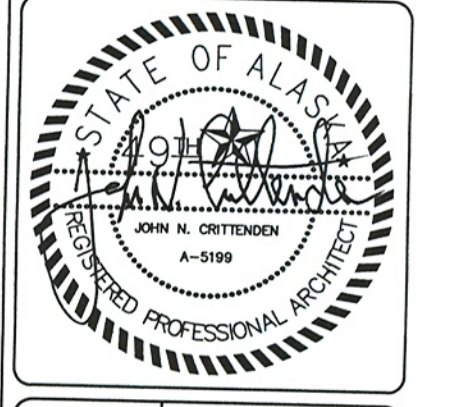
7 FLOOR PLAN  
1/4"=1'-0"

**Architects  
Alaska**  
An Alaskan Corporation  
Architecture  
Landscape Architecture  
Interior Architecture

900 West Fifth Avenue  
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DISTRICT ENGINEER  
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CHIGNIK LAGOON, ALASKA  
FLOOR PLAN ELEVATIONS, SECTION, WALL SECTION

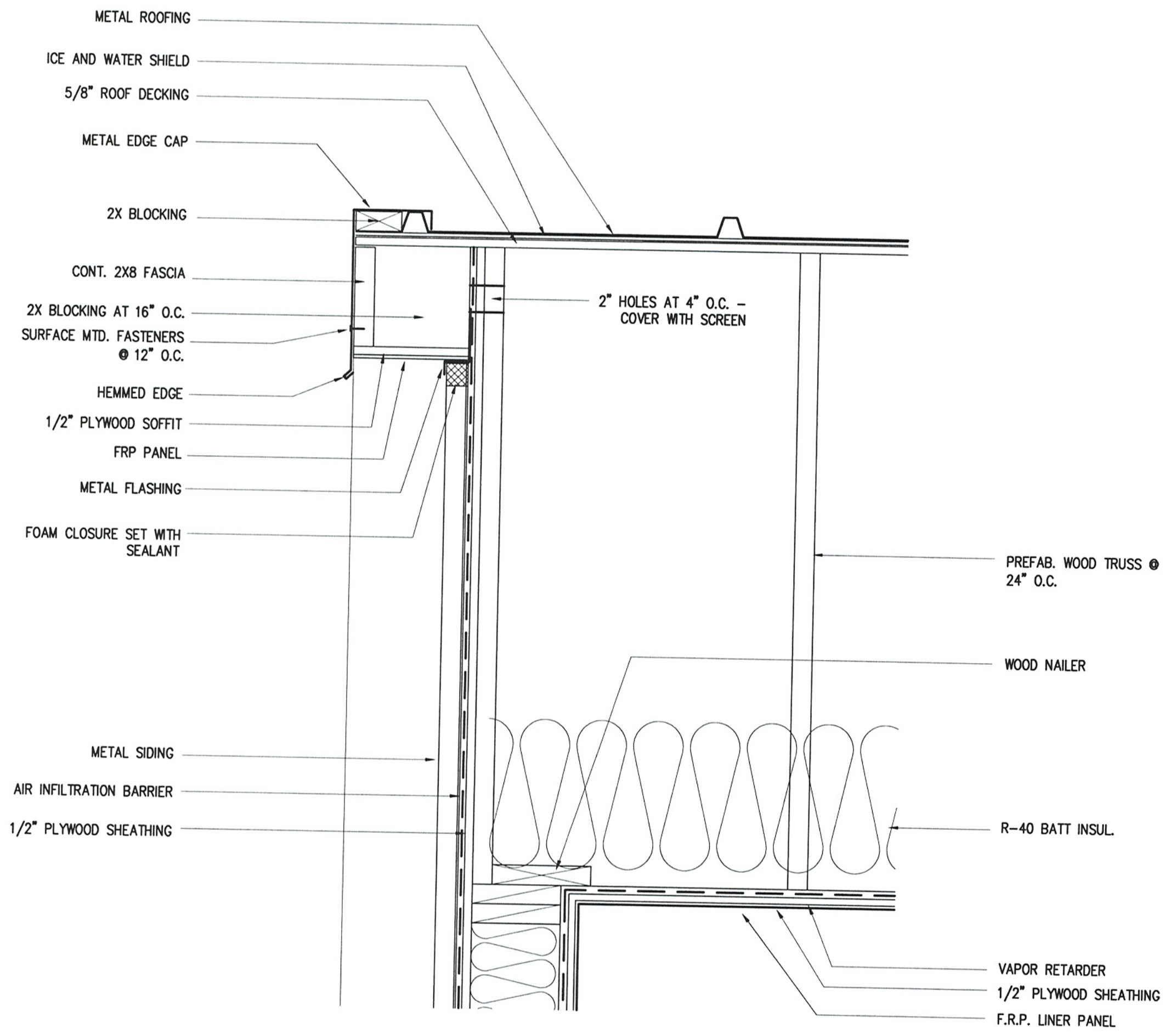
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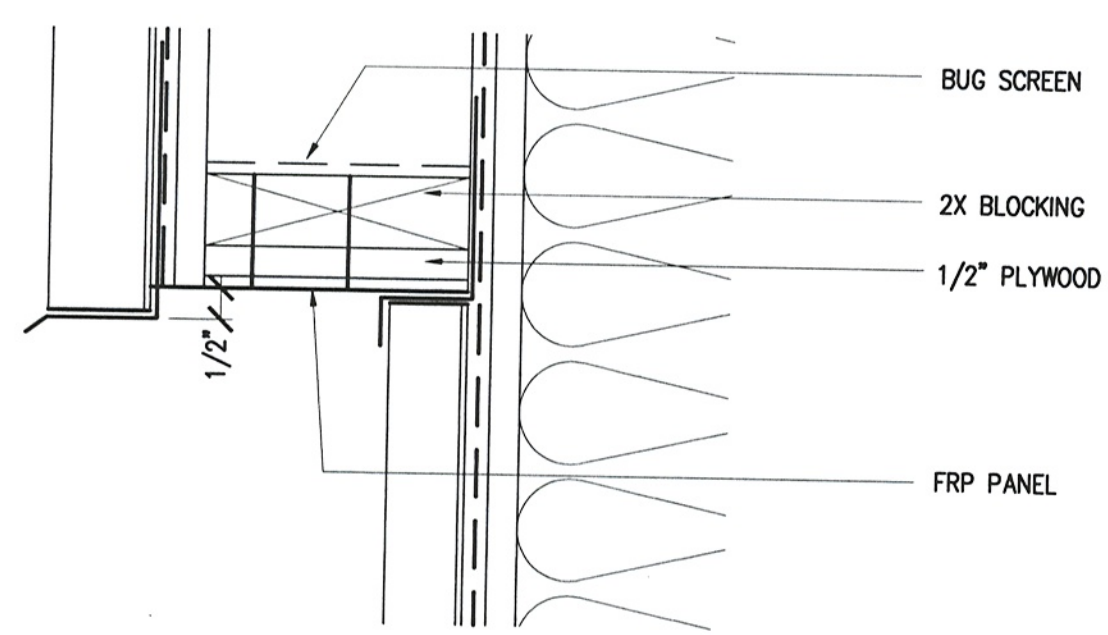
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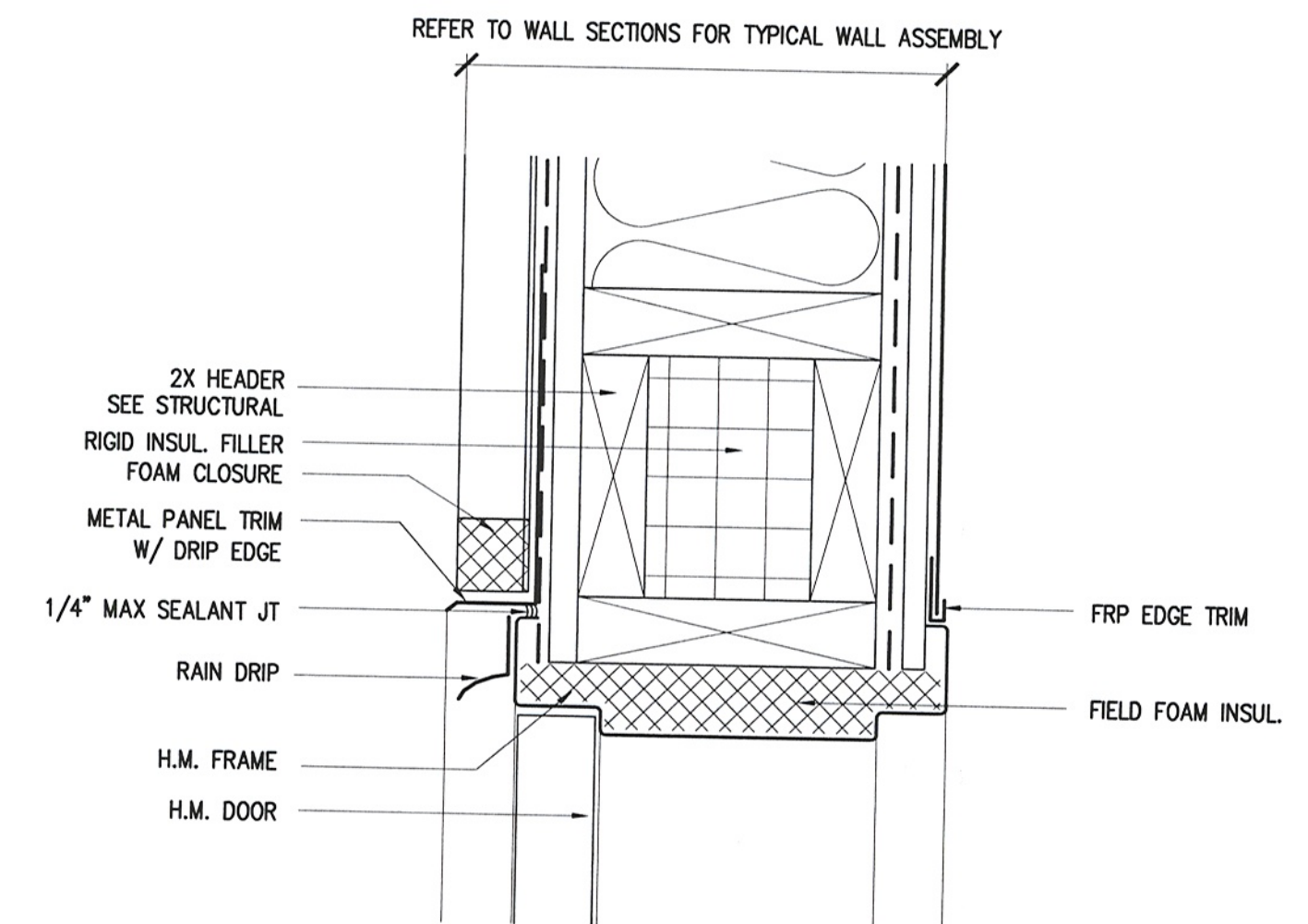
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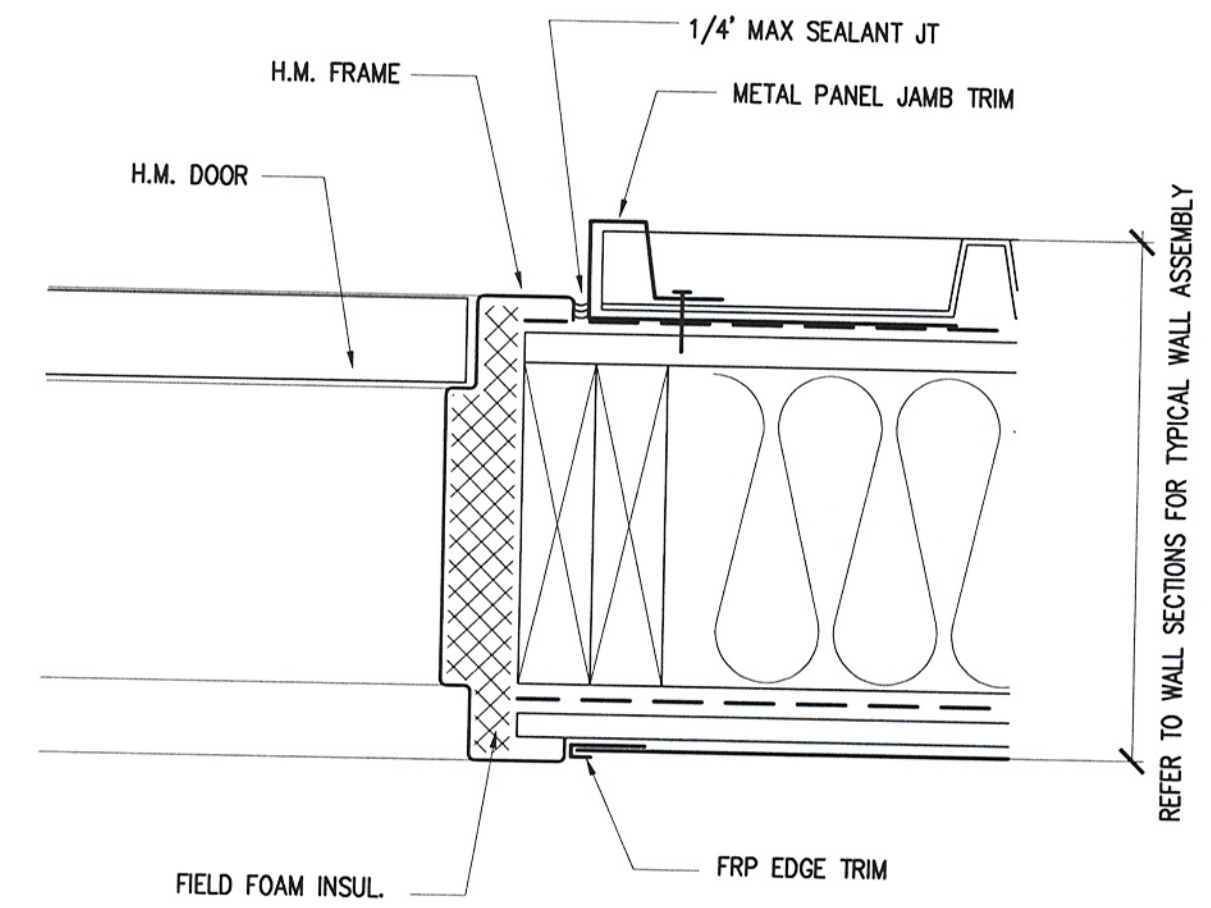
1  
A2  
**DETAIL AT RAKE**  
1 1/2"=1'-0"



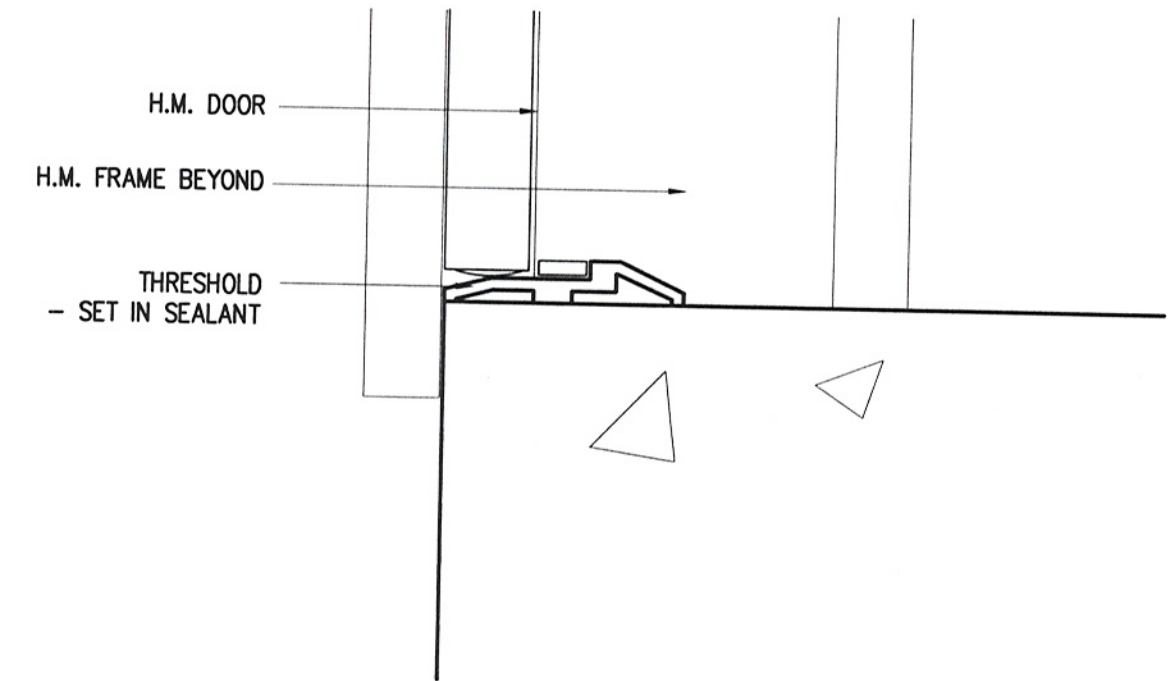
1  
A2  
**DETAIL AT EAVE**  
3"=1'-0"



2  
A2  
**DETAIL AT HEAD**  
3"=1'-0"



3  
A2  
**DETAIL AT JAMB**  
3"=1'-0"



4  
A2  
**DETAIL AT SILL**  
3"=1'-0"

**SPECIFICATIONS**

**GENERAL:**

**DELIVERY, STORAGE, AND HANDLING:** DELIVER MATERIALS TO SITE IN ORIGINAL PACKAGING WITH SEALS UNBROKEN, LABELED WITH MANUFACTURER'S NAME, PRODUCT, DATE OF MANUFACTURE, AND DIRECTIONS FOR STORAGE. STORE MATERIALS IN THEIR ORIGINAL UNDAMAGED PACKAGES IN A CLEAN, DRY, PROTECTED LOCATION AND WITHIN TEMPERATURE AND HUMIDITY RANGE REQUIRED BY MANUFACTURER. PROTECT FROM WEATHER AND CONTACT WITH DAMP OR WET SURFACES. AVOID CONTACT BETWEEN MATERIALS WHICH MAY RESULT IN STAINING, CORROSION, DENTING, OR SURFACE DAMAGE. STACK MATERIALS AND PROTECT FROM DAMAGE. PROVIDE AIR CIRCULATION WITHIN AND AROUND STACKS AND UNDER TEMPORARY COVERINGS. COMPLY WITH ANY ADDITIONAL REQUIREMENTS BY MANUFACTURERS. EXERCISE CARE IN UNLOADING, STORING, AND ERECTING TO PREVENT DAMAGE. FOR MATERIALS WHICH MAY NOT BE STORED PRIOR TO INSTALLATION, COMPLY WITH MANUFACTURER'S INSTRUCTION FOR HANDLING.

**QUALITY ASSURANCE:** FOR EACH ITEM LISTED BELOW, ENGAGE AN INSTALLER WHO HAS EXPERIENCE SIMILAR TO THAT INDICATED FOR THIS PROJECT AND WHO IS ACCEPTABLE TO THE MANUFACTURER, AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.

**PROTECTING AND CLEANING:** FOR EACH ITEM LISTED BELOW, PROTECT FROM DAMAGE AND WEAR DURING APPLICATION AND REMAINDER OF CONSTRUCTION PERIOD, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. PROTECT INSTALLED MATERIALS FROM DAMAGE DUE TO EXPOSURE, MOISTURE, ABUSE, AND OTHER CAUSES. PROVIDE TEMPORARY COVERINGS WHERE MATERIALS WILL BE SUBJECT TO ABUSE AND CANNOT BE CONCEALED AND PROTECTED BY PERMANENT CONSTRUCTION IMMEDIATELY AFTER INSTALLATION. CLEAN SPILLAGES, SOILING, STAINING, OR MARKS FROM ADJACENT CONSTRUCTION USING CLEANING AGENTS AND PROCEDURES RECOMMENDED BY MANUFACTURER OF AFFECTED CONSTRUCTION. PROVIDE FINAL PROTECTION AND MAINTAIN CONDITIONS THAT ENSURE THE WORK DURING CONSTRUCTION IS WITHOUT DAMAGE OR DETERIORATION.

**FINAL ADJUSTMENTS:** FOR DOORS, FRAMES, AND HARDWARE, INCLUDING OVERHEAD SECTIONAL DOORS, LISTED BELOW, PROVIDE FINAL ADJUSTMENTS TO ENSURE DOORS OPERATE EASILY, FREE FROM WARP, TWIST, OR DISTORTION, AND FITTING WEATHERTIGHT FOR ENTIRE PERIMETER.

**ROUGH CARPENTRY:** FOR DIMENSION LUMBER SIZES, PROVIDE NO. 3 OR STANDARD GRADE LUMBER PER ALSC'S NGR'S OF ANY SPECIES. FOR BOARD SIZE LUMBER, PROVIDE NO. 3 COMMON GRADE PER NELMA, NLGA, OR WMPA; NO. 2 GRADE PER SPIB; OR STANDARD GRADE PER NLGA, NCLB, OR WMPA OF ANY SPECIES. DIMENSIONAL LUMBER EXPOSED TO GROUND OR CONCRETE SURFACES TO BE PRESSURE TREATED WITH CCA (CHROMATED COPPER ARSENATE) TO RESIST ROT, DECAY, OR TERMITE ATTACK.

**AIR INFILTRATION BARRIER:** USE DUPONT TYVEK HOMEWRAP OR APPROVED EQUAL. SUBMIT PRODUCT DATA.

**BELOW GRADE WALL WATERPROOFING:** USE BITUTHENE MEMBRANE BY W.R. GRACE & CO. OR APPROVED EQUAL. SUBMIT PRODUCT DATA.

**RIGID INSULATION:** USE EXTRUDED POLYSTYRENE STYROFOAM BRAND INSULATION BY DOW CHEMICAL CO. OR APPROVED EQUAL. SUBMIT PRODUCT DATA.

**VAPOR RETARDER:** ZERO PERM VAPOR RETARDER BY ALUMISEAL CORPORATION. SUBMIT PRODUCT DATA.

**MANUFACTURED STEEL ROOF AND WALL PANELS:** USE BHP STEEL BUILDING PRODUCTS USA INC. "KLP-RIB PANEL", 24 GAUGE. FACTORY-FINISH AS FOLLOWS: METALLIC COATING BY HOT-DIP PROCESS AND PREPAINTED WITH MANUFACTURER'S STANDARD 2-COAT THERMOURED FLUOROPOLYMER COATING SYSTEM. SUBMIT PRODUCT DATA. SUBMIT SHOP DRAWINGS SHOWING LAYOUTS OF PANELS, DETAILS AT EDGE CONDITIONS, JOINTS, PANEL PROFILES, SUPPORTS, ANCHORAGES, TRIM, FLASHINGS, UNDERLAYMENT, CLOSURES, SNOW GUARDS, AND SPECIAL DETAILS. DISTINGUISH BETWEEN FACTORY AND FIELD-ASSEMBLED WORK. SUBMIT MANUFACTURER'S COLOR CHARTS OR CHIPS SHOWING THE FULL RANGE OF COLORS AVAILABLE WITH FACTORY-APPLIED FINISHES. PROVIDE MANUFACTURER'S STANDARD 20-YEAR FINISH WARRANTY FOR OWNER'S SIGNATURE AND MANUFACTURER'S STANDARD 5-YEAR WEATHERTIGHT WARRANTY FOR OWNER'S SIGNATURE.

**ROOFING UNDERLAYMENT:** ICE AND WATER SHIELD BY W.R. GRACE & CO. SUBMIT PRODUCT DATA.

**SHEET METAL FLASHING:** USE COIL-COATED GALVANIZED STEEL SHEET, ZINC COATED, WITH HIGH PERFORMANCE FLUOROPOLYMER COATING NOT LESS THAN .0336 INCH THICK. ELASTOMERIC SEALANT AND ADHESIVES AS RECOMMENDED BY SHEET METAL MANUFACTURER FOR APPLICATION OF SHEET METAL. 6-MIL THICK BLACK POLYETHYLENE UNDERLAYMENT AND MISCELLANEOUS METAL ACCESSORIES AS REQUIRED FOR INSTALLATION OF WORK. SUBMIT PRODUCT DATA AND SHOP DRAWINGS SHOWING LAYOUT, PROFILES, METHODS OF JOINING, AND ANCHORAGE DETAILS. SUBMIT MANUFACTURER'S FULL RANGE OF COLORS FOR COLOR SELECTION.

**ELASTOMERIC JOINT SEALANT:** USE "DOW CORNING 790" BY DOW CHEMICAL CO. OR APPROVED EQUAL. COORDINATE SEALANT APPLICATION WITH MANUFACTURER'S REQUIREMENTS. PROVIDE JOINT FILLER: CLOSED CELL POLYETHYLENE FOAM; ROUND PROFILE; THICKNESS APPROXIMATELY 130% OF JOINT WIDTH. PROVIDE BOND-BREAKER TAPE AS RECOMMENDED BY SEALANT MANUFACTURER. SUBMIT PRODUCT DATA AND MANUFACTURER'S COLOR CHARTS.

**STANDARD STEEL DOORS AND FRAMES:** USE CURRIES CO. 707 SERIES DOORS: FLUSH CONSTRUCTION 1-3/4" THICK. 18 GAUGE, GRADE II AT INTERIOR; 16 GAUGE, GRADE III AT EXTERIOR WITH .08 U-FACTOR INSULATION. FINISH WITH MANUFACTURER'S STANDARD ONE-COAT BAKED ON RUST-INHIBITING PAINT FINISH. SUBMIT SHOP DRAWINGS AND PRODUCT DATA.

**FINISH HARDWARE:** TYPICAL FINISH TO BE US32D. SUBMIT PRODUCT DATA INCLUDING COPIES OF MANUFACTURER'S DATA FOR EACH ITEM OF FINISH HARDWARE. SUBMIT HARDWARE SCHEDULE.

**FINISH HARDWARE SCHEDULE:**

**EXTERIOR DOORS**  
 BUTTS (3 EA. LEAF): HAGER BB1279  
 EXIT DEVICE: SCHLAGE L-SERIES HD DEADBOLT MORTISE - L9480 - LEVER - SATIN STAINLESS STEEL  
 FLUSHBOLT: GLYNN JOHNSON 1700 SERIES, 1708T AND 1708B  
 CYLINDER (OUTSIDE): BEST 1E72-PKS  
 CYLINDER (DOGGING): BEST 1E74-PKS  
 CLOSER: LCN 4110 - ACTIVE LEAFS ONLY  
 KICK PLATE: BUILDERS BRASS WORKS 37X  
 MOP PLATE: BUILDERS BRASS WORKS 37X  
 FLOOR STOP: BUILDERS BRASS WORKS F9076X  
 THRESHOLD: PEMKO 252X226AFG W/ VINYL INSERT  
 WEATHERSTRIP: PEMKO 45041CP  
 DOOR BOTTOM: PEMKO 234AV  
 RAIN DRIP: PEMKO 346C  
 3 SILENCERS

**INTERIOR DOOR**  
 BUTTS (3): HAGER BB1199  
 EXIT DEVICE: SCHLAGE AL SERIES - AL70PD - F84 - LEVER - SATIN STAINLESS STEEL  
 MOP PLATES (2): BUILDERS BRASS WORKS 37X  
 FLOOR STOP: BUILDERS BRASS WORKS F9076X  
 3 SILENCERS

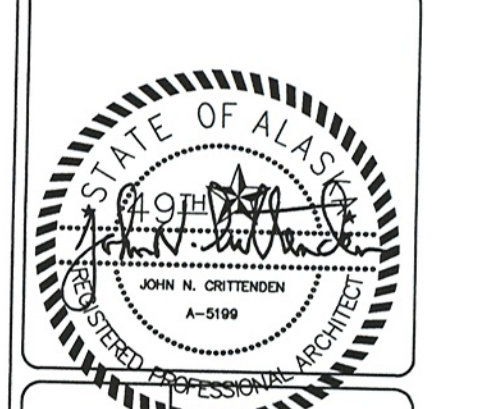
**FRP LINER PANELS (WALL AND CEILING):** USE "GLASBORD" LINER PANELS BY KEMLITE COMPANY. PROVIDE MATCHING COLOR PVC MOLDINGS AND MANUFACTURER'S STANDARD RIVETS. PROVIDE PANEL ADHESIVE AS RECOMMENDED BY MANUFACTURER. SUBMIT PRODUCT DATA AND SHOP DRAWINGS, SHOWING LAYOUT, PROFILES, AND PRODUCT COMPONENTS, INCLUDING ANCHORAGE, ACCESSORIES, FINISH COLORS, PATTERNS, AND TEXTURES, LOCATION AND DIMENSION OF JOINTS, AND FASTENER ATTACHMENT.

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 Anchorage, Alaska 99501  
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NO.	DATE	REVISIONS	INIT.

PROJECT ENGINEER  
 DISTRICT ENGINEER  
 O&M CONSULTANT



**ALASKA NATIVE TRIBAL HEALTH CONSORTIUM**  
**ENVIRONMENTAL HEALTH AND ENGINEERING**  
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**CHIGNIK LAGOON, ALASKA**  
 SPECIFICATIONS

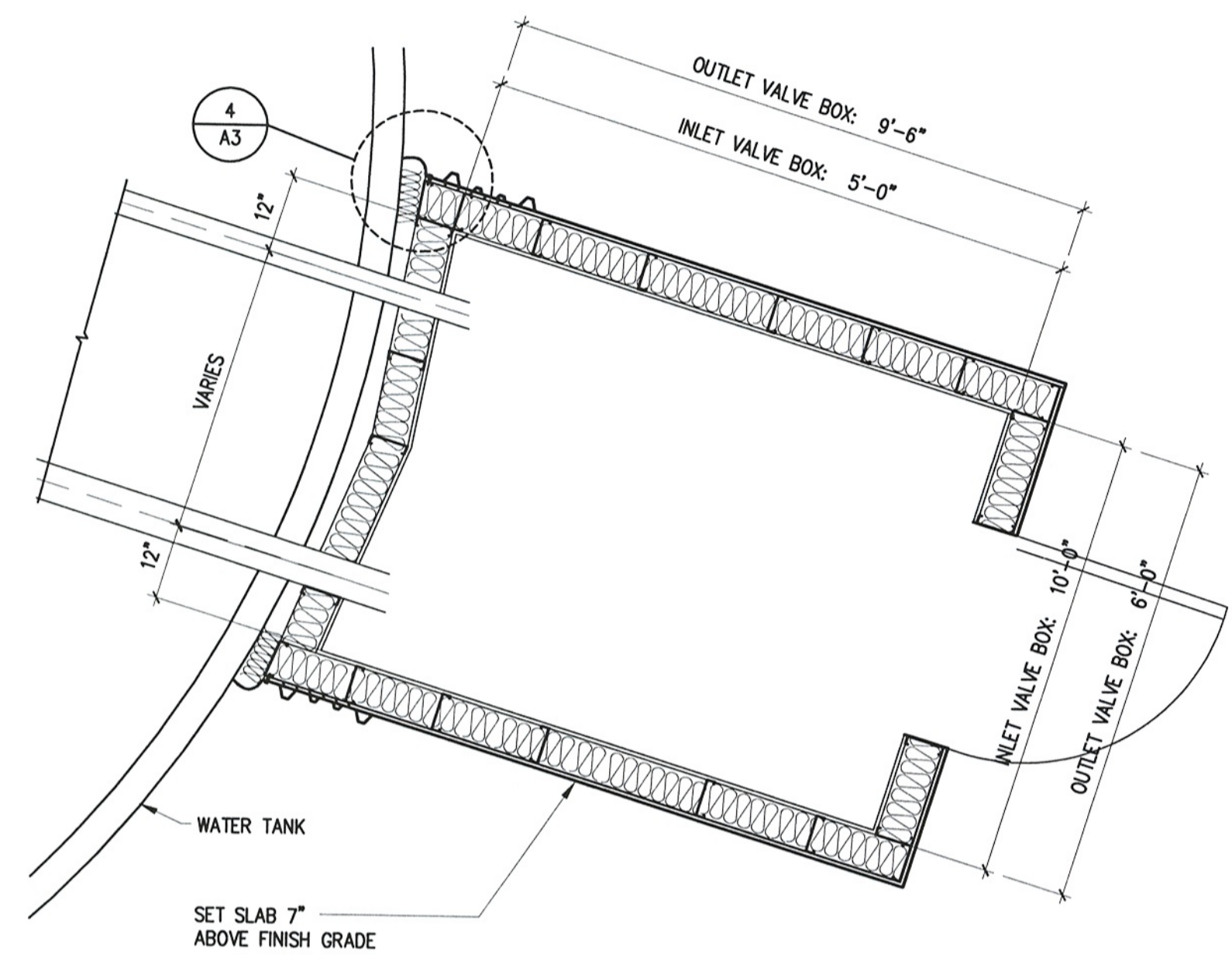
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 PLOT SCALE: \_\_\_\_\_

DRAWN BY: JMB  
 DATE: 8-31-2000

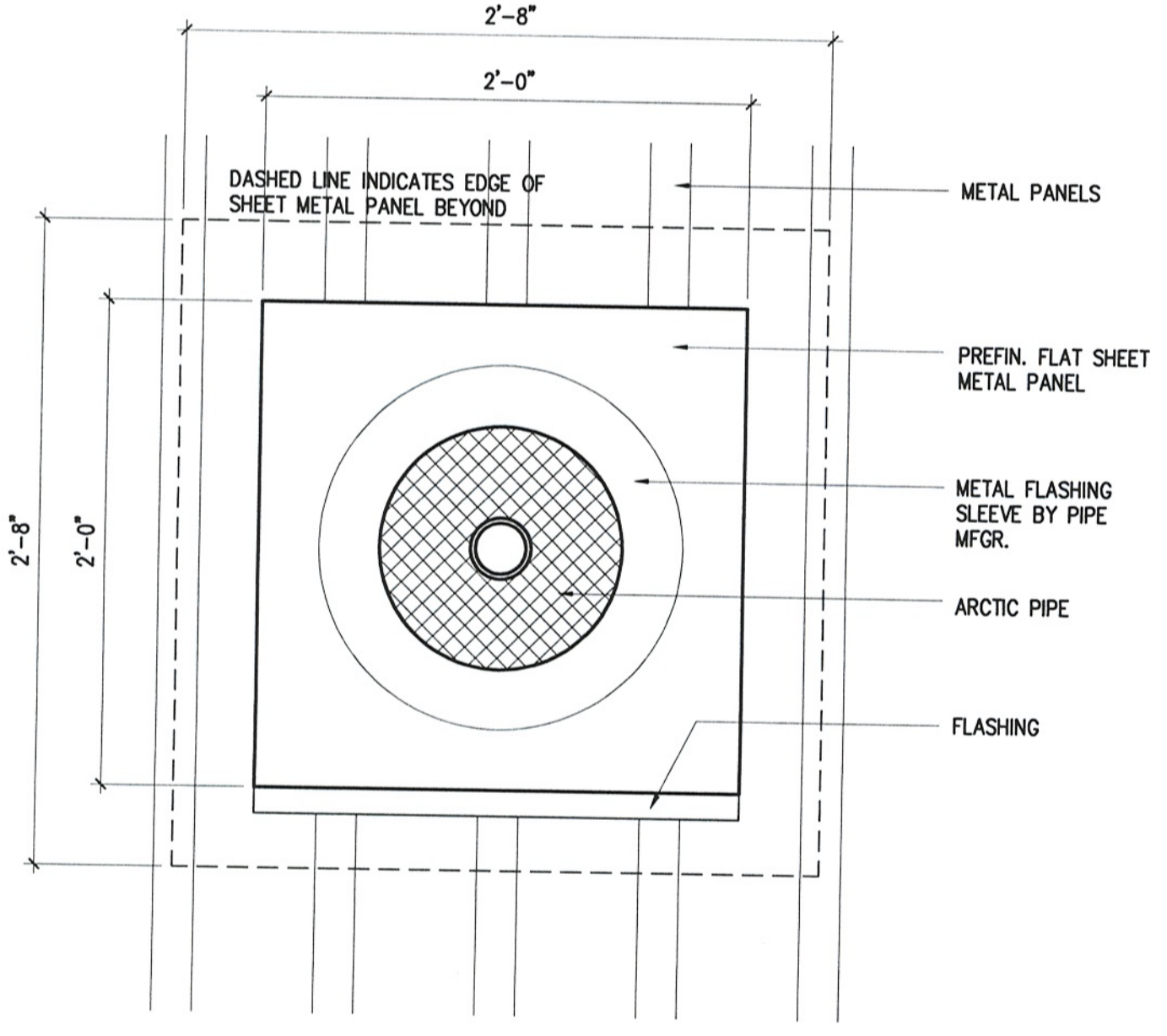
PROJECT NO.

**A 2**

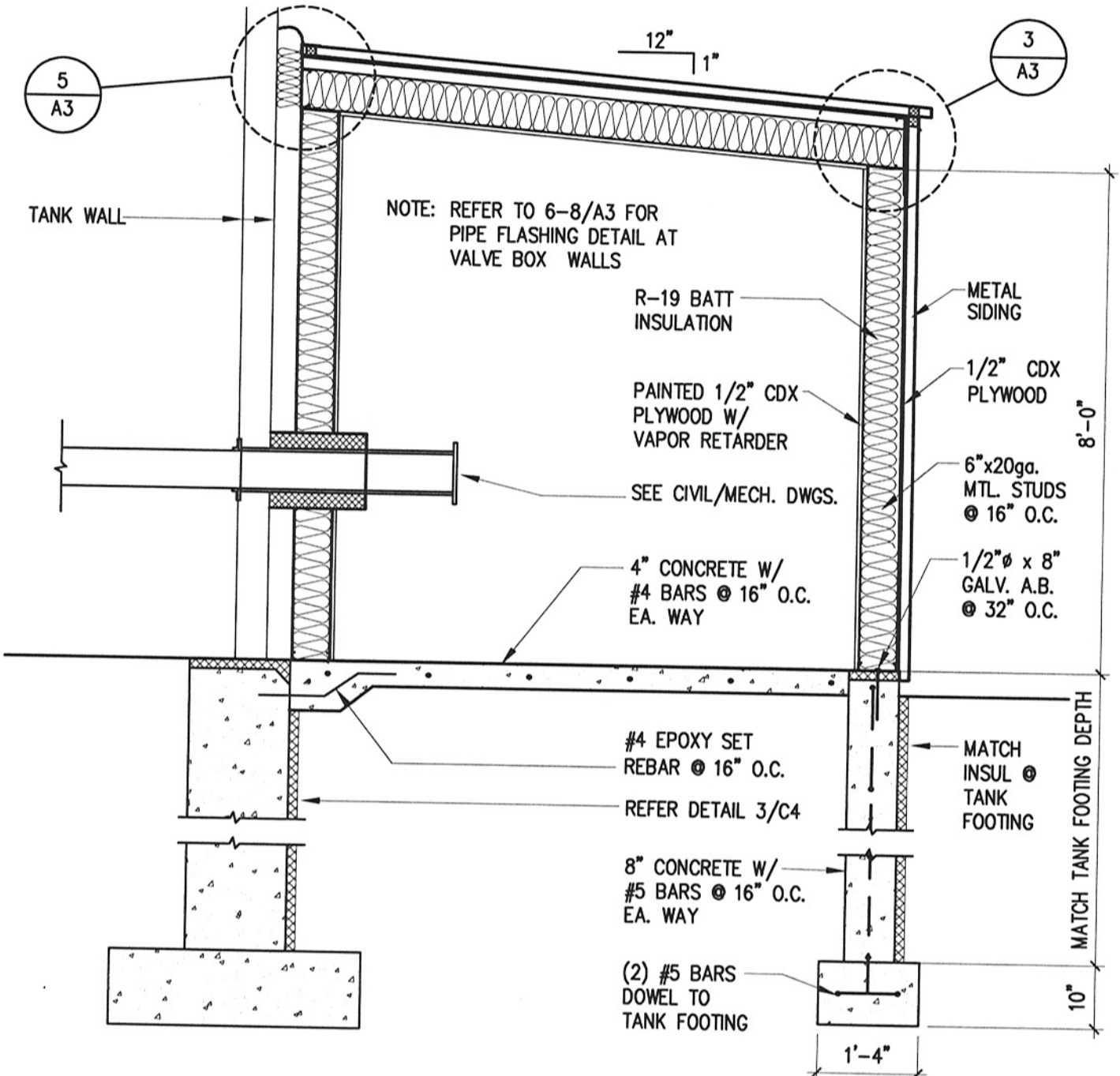
ORIGINAL



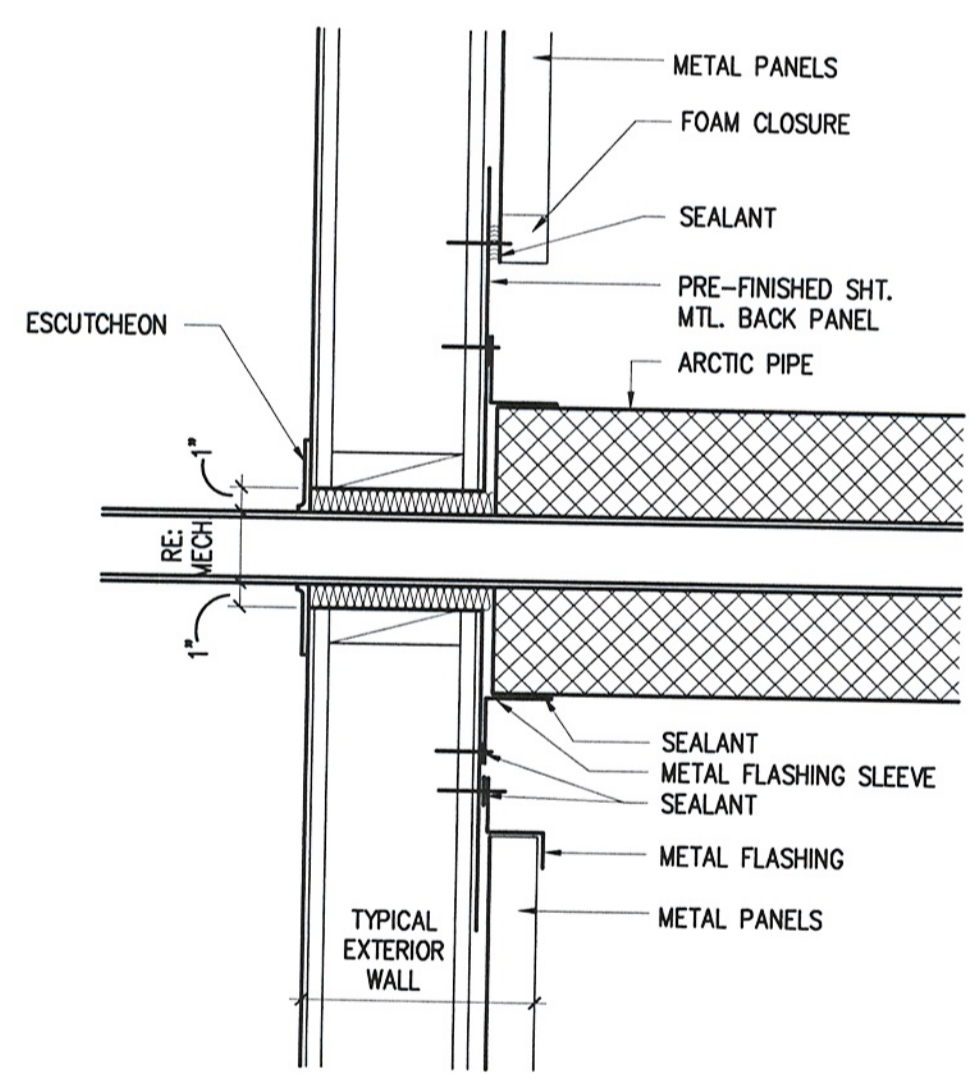
1 PLAN  
 A3 1/2" = 1'-0"



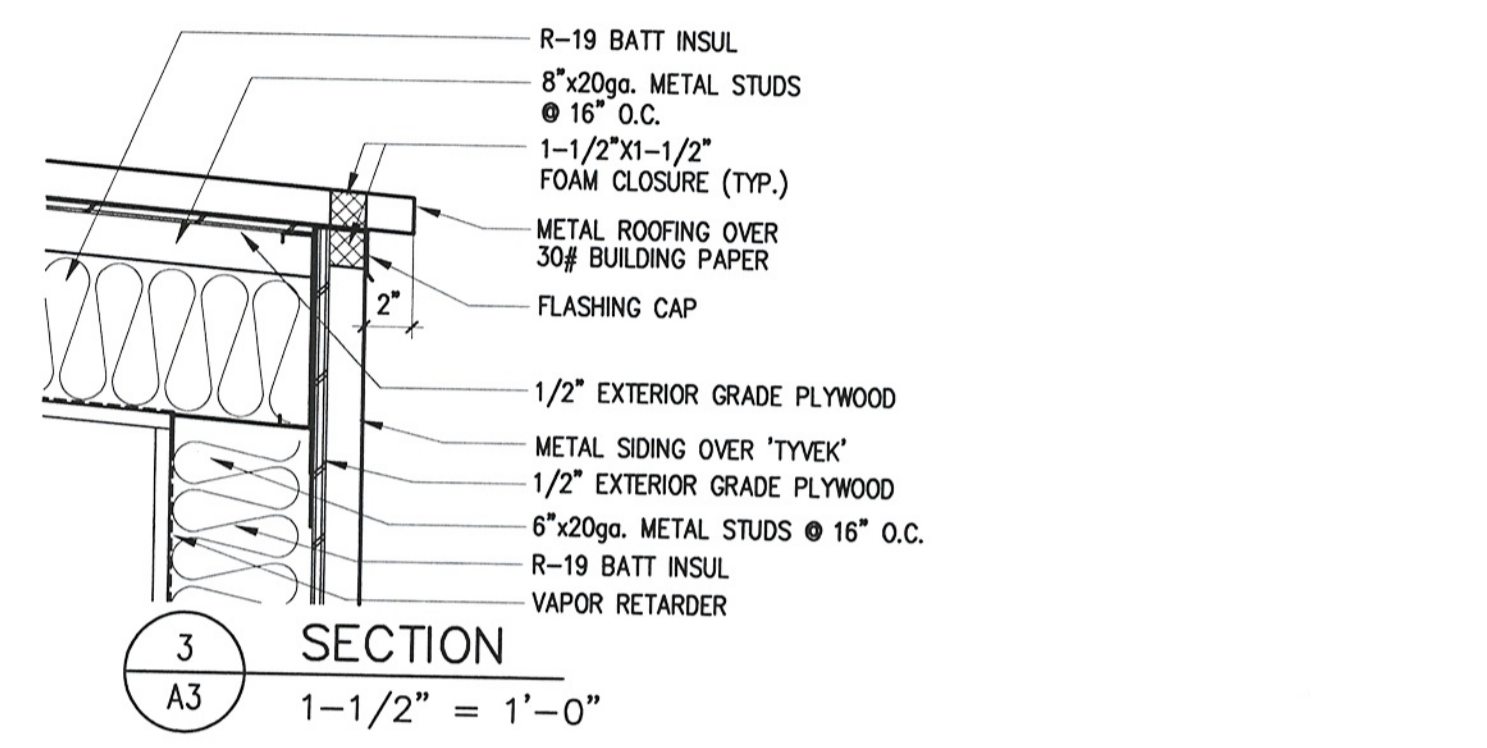
6 ELEVATION  
 A3 1 1/2" = 1'-0"



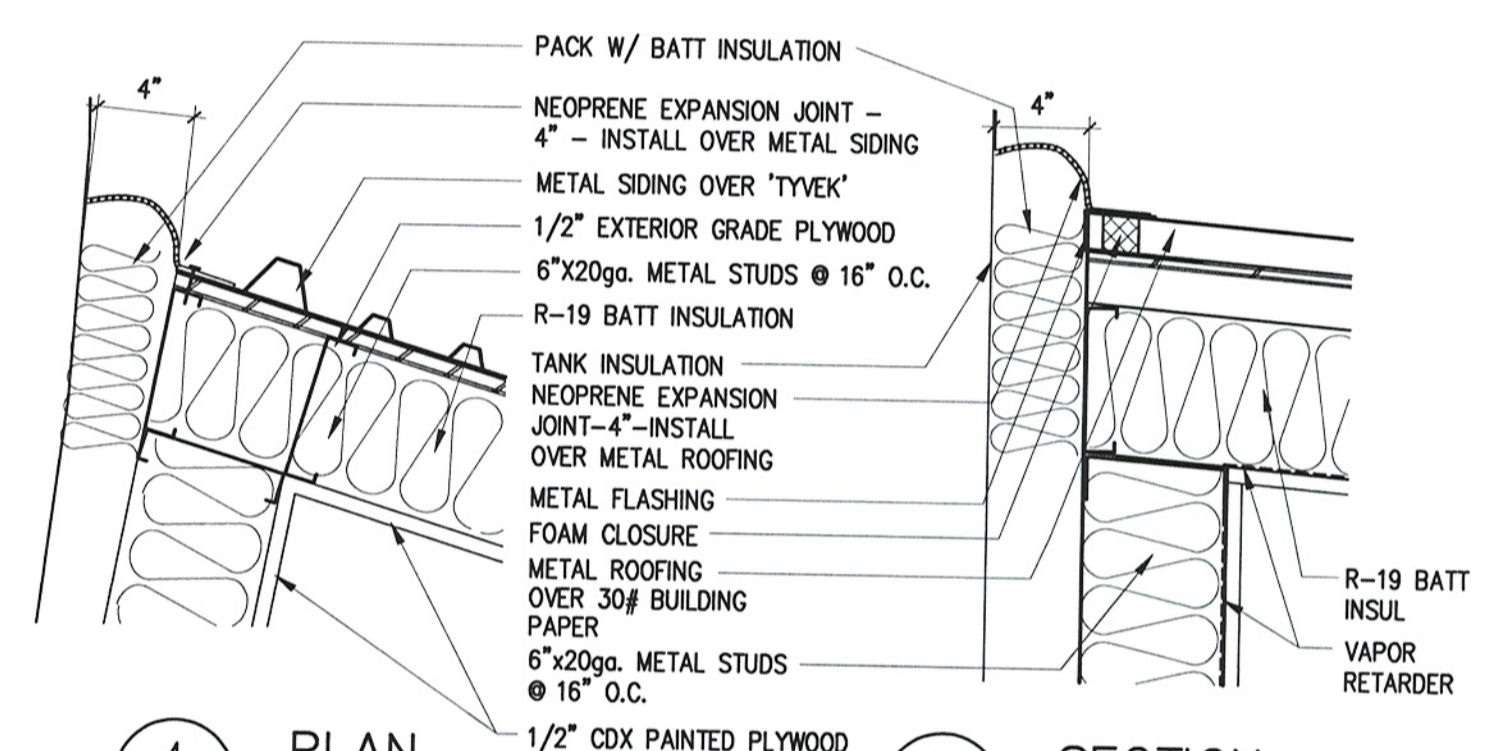
2 SECTION  
 A3 1/2" = 1'-0"



7 SECTION  
 A3 1 1/2" = 1'-0"

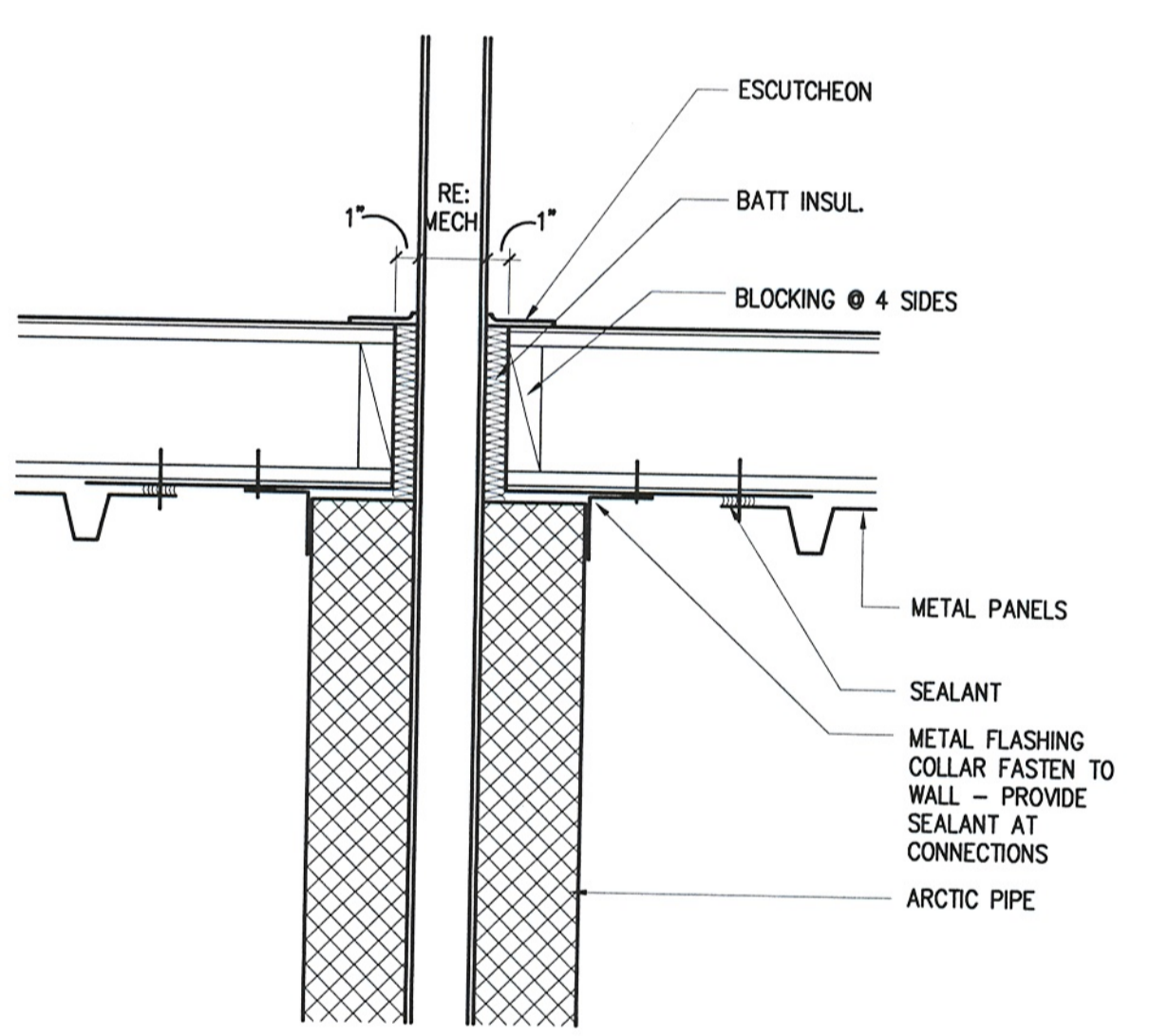


3 SECTION  
 A3 1-1/2" = 1'-0"



4 PLAN  
 A3 1-1/2" = 1'-0"

5 SECTION  
 A3 1-1/2" = 1'-0"



8 PLAN DETAIL  
 A3 1 1/2" = 1'-0"

**Architects  
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INIT.	REVISIONS	DATE

PROJECT ENGINEER  
 DISTRICT ENGINEER  
 C&M CONSULTANT



**ALASKA NATIVE TRIBAL HEALTH CONSORTIUM**  
 ENVIRONMENTAL HEALTH AND ENGINEERING  
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CHIGNIK LAGOON, ALASKA  
 INSULATED VALVE BOX DETAILS  
 DRAWN BY: JMB  
 DATE: 8-31-2000  
 FILE NAME:  
 PLOT SCALE:

PROJECT NO.

**A 3**

**ABBREVIATIONS**

(A)	ABOVE	FD	FLOOR DRAIN	P/C	PRECAST
AB	ANCHOR BOLT	FDN	FOUNDATION	PERP	PERPENDICULAR
ACI	AMERICAN CONCRETE INSTITUTE	FIN	FINISH, FINISHED	PJP	PARTIAL JOINT PENETRATION
ADDL	ADDITIONAL	FF	FAR FACE	PL	PLATE (STEEL)
AGGR	AGGREGATE	FLG	FLANGE	PL	PLATE (WOOD)
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	FLR	FLOOR	PLCS	PLACES
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION	FOS	FACE OF STUDS	PLWD	PLYWOOD
ALT	ALTERNATE	FS	FAR SIDE	PP	PARTIAL PENETRATION
ALUM	ALUMINUM	FT	FOOT, FEET	P/S	PRESTRESSED
ARCH	ARCHITECT, ARCHITECTURAL	FTG	FOOTING	PSF	POUNDS PER SQUARE FOOT
@	AT	FUT	FUTURE	PSI	POUNDS PER SQUARE INCH
APPROX	APPROXIMATELY	FV	FIELD VERIFY	PT	PRESSURE TREATED
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	GA	GAUGE, GAGE	P/T	POST TENSION
AWS	AMERICAN WELDING SOCIETY	GALV	GALVANIZED	R	RADIUS
&	AND	GEN	GENERAL	RD	ROUND
(B)	BELOW	GL	GLUE LAMINATED	REF	REFERENCE
B	BOTTOM (BEAM AND JOIST SCHEDULES ONLY)	GND	GROUND	REIN	REINFORCING, REINFORCEMENT, REINFORCED
BD	BOARD	GR	GRADE	REQD	REQUIRED
BLDG	BUILDING LINE	GB	GYP	RO	ROUGH OPENING
BLKG	BLOCKING	GYP	GYP	REQD	REQUIRED
BM	BEAM	HT	HT	RO	ROUGH OPENING
BOD	BOTTOM OF DECK	HORIZ	HORIZONTAL	S	AMERICAN STANDARD
BOT	BOTTOM	HP	HIGH POINT, HP STEEL	S	STEEL SHAPE, SOUTH
BRG	BEARING	HSB	HIGH STRENGTH BOLT	SCHED	SCHEDULE
BMT	BASEMENT	HT	HEIGHT	SECT	SECTION
BTWN	BETWEEN	ID	INSIDE DIAMETER	SH PL	SHEAR PLATE
C	AMERICAN CHANNELS	IF	INSIDE FACE	SHT	SHEET
CG	CENTER OF GRAVITY	IN OR "	INCH	SHTHG	SHEATHING
CJ	CONSTRUCTION JOINT	INCL	INCLUDE	SLBB	SIMILAR
CJP	COMPLETE JOINT PENETRATION	INSUL	INSULATION, INSULATED	SP	SPRAL
CIP	CAST-IN-PLACE	INT	INTERIOR	SPA	SPACE, SPACING, SPACES
CL	CENTER LINE	JT	JOINT	SPEC	SPECIFICATION
CLG	CEILING	JST	JOIST	SQ	SQUARE
CLR	CLEAR	K	KIP, KIPS	SS	STAINLESS STEEL
CMU	CONCRETE MASONRY UNIT	KSI	KIPS PER SQUARE INCH	SSL	SHORT SLOTTED HOLE
CO	CONCRETE OPENING	LB OR #	POUND	ST	STRUCTURAL TEE
COL	COLUMN	LLB	LONG LEG BACK TO BACK	STD	STANDARD
COMM	COMMON	LLH	LONG LEG HORIZONTAL	STIFF	STIFFENER
CONC	CONCRETE	LLV	LONG LEG VERTICAL	STIRR	STIRRUP
CONN	CONNECTION	LONGIT	LONGITUDINAL	STL	STEEL
CONSTR	CONSTRUCTION	LP	LOW POINT	STRUCT	STRUCTURAL
CONT	CONTINUOUS	LSL	LONG SLOTTED HOLES	SUPT	SUPPORT
CONTR	CONTRACTOR	LT	LIGHT	SUSP	SUSPENDED
CONTR	CONTRACTOR	LT WT	LIGHT WEIGHT	SYMM	SYMMETRICAL
CTJ	CONTROL JOINT, CONTRACTION JOINT	L	ANGLE	T	TOP
CTSK	COUNTERSUNK	M	MISCELLANEOUS SHAPE	TC	TOP OF CURB
CU	CUBIC	MAS	MASONRY	T&G	TONGUE AND GROOVE
		MATL	MATERIAL	TEMP	TEMPERATURE, TEMPORARY
		MAX	MAXIMUM	THK	THICK
		MECH	MECHANICAL	THRU	THROUGH
		MFR	MANUFACTURER	TOC	TOP OF CONCRETE
		MFRG	MANUFACTURING	TOS	TOP OF STEEL
		MIN	MINIMUM	TOW	TOP OF WALL
		MISC	MISCELLANEOUS	TRANS	TRANSVERSE
		MT	MISCELLANEOUS STRUCTURAL TEE FROM W SERIES SECTION	TS	STRUCTURAL TUBE
		MTD	MOUNTED	TYP	TYPICAL
		MTL	METAL	UBC	UNIFORM BUILDING CODE
		N	NORTH	UL	UNDERWRITERS LABORATORY
		NF	NEAR FACE	UON	UNLESS OTHERWISE NOTED
		NIC	NOT IN CONTRACT	UT	ULTRASONIC TEST
		DI	DIAMETER	VEF	VERTICAL EACH FACE
		DP	DEEP	VERT	VERTICAL
		DP	DEEP	VIF	VERTICAL INSIDE FACE
		DWG	DRAWING	VOF	VERTICAL OUTSIDE FACE
		DWL	DOWEL	W	WEST, W SERIES SECTION
		E	EAST	W	WITH
(E)	EXISTING	EA	EACH	W/O	WITHOUT
EA	EACH	EB	EXPANSION BOLT	WD	WOOD
EB	EXPANSION BOLT	EF	EACH FACE	WH	WEEP HOLE
EF	EACH FACE	EJ	EXPANSION JOINT	WHS	WELDED HEADED STUD
EJ	EXPANSION JOINT	EKL	ELEVATION (HEIGHT)	WP	WORK POINT
EKL	ELEVATION (HEIGHT)	ELEC	ELECTRICAL	WT	WEIGHT, STRUCTURAL TEE FROM W SERIES SECTION
ELEC	ELECTRICAL	ELEV	ELEVATOR	WWF	WELDED WIRE FABRIC
ELEV	ELEVATOR	ENCL	ENCLOSURE	YD	YARD
ENCL	ENCLOSURE	ENGR	ENGINEER		
ENGR	ENGINEER	EQ	EQUAL		
EQ	EQUAL	EQUIP	EQUIPMENT		
EQUIP	EQUIPMENT	ES	EACH SIDE		
ES	EACH SIDE	EW	EACH WAY		
EW	EACH WAY	EXIST	EXISTING		
EXIST	EXISTING	EXP	EXPANSION		
EXP	EXPANSION	EXT	EXTERIOR		
EXT	EXTERIOR				

**GENERAL STRUCTURAL NOTES**

**THE FOLLOWING NOTES APPLY UNLESS INDICATED OTHERWISE:**

**CODE:**  
 UNIFORM BUILDING CODE, 1997 EDITION.  
**DESIGN SOIL PRESSURE:**  
 2,000 PSF MAX DEAD + LIVE LOAD.  
 CAST FOOTINGS ON COMPACTED SOILS AT ELEVATIONS NOTED ON PLANS. CAST SLAB ON GRADE OVER 6" THICK COMPACTED GRANULAR FILL OVER COMPACTED SUBGRADE. CONSULT SOILS REPORT BY DOWL ENGINEERS FOR FOUNDATION AND EXCAVATION INFORMATION.

**DESIGN LIVE LOADS:**  
 ROOF = 40 PSF  
 WIND = 110 MPH, EXPOSURE D, qs = 31 PSF, I = 1.0  
 SEISMIC = ZONE IV, Z = 0.4, I = 1.0, Cv = 0.64, Ca = 0.44, R = 5.8, OMEGA = 2.8

**REINFORCED CONCRETE:**  
 ALL CONCRETE - f'c = 3,000 PSI, MAXIMUM W/C = .50, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD. SUBMIT MIX DESIGN. PROVIDE AIR-ENTRAINMENT AND WATER REDUCING ADMIXTURE IN ALL CONCRETE.  
 UNLESS OTHERWISE NOTED, REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. SUBMIT REINFORCING STEEL SHOP DRAWINGS WITH DETAILS PER ACI 315 MANUAL OF STANDARD PRACTICE. LAP BARS WITH A CLASS B SPLICE.

**CONCRETE COVER:**  
 FOOTINGS 3". WALLS 2" AGAINST EARTH. SLABS ON GRADE 1 1/2".  
**FOOTINGS:**  
 PROVIDE 2-#5 LONGITUDINAL BOTTOM BARS IN WALL FOOTINGS. PROVIDE CORNER BARS OF SAME SIZE AND NUMBER AT CORNERS AND INTERSECTIONS, 40 DIA. EACH LEG. PROVIDE VERTICAL DOWELS OF SAME SIZE, NUMBER AND SPACING AS WALL VERTICAL BARS WITH A 90 DEGREE STANDARD HOOK AT THE BOTTOM OF THE FOOTING, UNLESS OTHERWISE NOTED.

**WALLS:**  
 REINFORCE AS FOLLOWS:  
 8" WALLS, #5 @ 15 HORIZONTAL AND VERTICAL @ CENTER OF WALL,  
 AT OPENINGS OVER 12" SQUARE, PROVIDE 2-#5 BARS AT CENTER OF WALL ALL FOUR SIDES, EXTENDING 40 DIA. PAST OPENING. PROVIDE 1-#5x4'-0" DIAGONAL BAR AT CENTER OF WALL ALL FOUR CORNERS.  
 AT CORNERS, PROVIDE CORNER BARS IN OUTSIDE FACE OF SAME SIZE AND SPACING AS HORIZONTAL BARS, 40 DIA. EACH LEG.  
 AT INTERSECTIONS, PROVIDE CORNER BARS OF SAME SIZE, NUMBER AND SPACING AS HORIZONTAL BARS OF INTERSECTING WALL, 40 DIA. EACH LEG.

PROVIDE 2-#5 LONGITUDINAL BARS AT TOP OF WALLS. PROVIDE ROUGHENED SURFACE AT CONSTRUCTION JOINTS.  
 PROVIDE VERTICAL DOWELS OF SAME SIZE, NUMBER AND SPACING AS VERTICAL BARS.  
**ANCHOR BOLTS:**  
 ANCHOR BOLTS, ASTM A307 GALVANIZED.  
**DRILL-IN EXPANSION BOLTS:**  
 "KWIK-BOLT II" BY HILTI FASTENING SYSTEMS, "REDHEAD WEDGE ANCHOR" BY ITW RAMSET/RED HEAD OR APPROVED EQUAL. ICBO CERTIFICATION REQUIRED.

**STRUCTURAL SAWN LUMBER:**

LUMBER VISUALLY GRADED AND STAMPED PER WWPA STANDARD GRADING RULES. MOISTURE CONTENT OF LUMBER 2" OR LESS IN THICKNESS - 19 % MAXIMUM.  
 STRUCTURAL FRAMING - HEM-FIR SPECIES, #2 GRADE OR BETTER.  
 CONVENTIONAL CONSTRUCTION PROVISIONS PER SECTION 2320 OF THE UBC. MINIMUM NAILING FOR CONNECTION OF VARIOUS COMPONENTS PER TABLE 23-II-B-1 OF THE UBC. TREAT WOOD BEARING ON OR WITHIN 1" OF MASONRY OR CONCRETE WITH PRESERVATIVE. USE MILD STEEL PLATE WASHERS AT ALL BOLT HEADS AND NUTS BEARING ON WOOD. ATTACH FOUNDATION PLATES AND SILLS TO CONCRETE AND MASONRY WITH GALVANIZED A307 BOLTS. USE COMMON NAILS ONLY. USE GALVANIZED FRAMING HARDWARE MANUFACTURED BY SIMPSON COMPANY OR APPROVED EQUAL. ICBO CERTIFICATION REQUIRED.

**PLYWOOD:**  
 PLYWOOD GRADE - CD INT-APA WITH EXTERIOR GLUE LAID FACE GRAIN PERPENDICULAR TO SUPPORT.  
 ROOF SHEATHING - 3/4" THICK, 40/20 SPAN RATING.  
 WALL SHEATHING - 1/2" THICK, 32/16 SPAN RATING.

PROVIDE 2x4 BLOCKING AT ALL UNSUPPORTED PANEL EDGES.  
 NAILING AT ALL PANEL EDGES AND AT ALL STUDS WITH HOLDDOWNS IS AS FOLLOWS:  
 ROOF SHEATHING - 10d @ 4" OC,  
 WALL SHEATHING - 8d @ 4" OC,  
 NAILING AT ALL PANEL INTERMEDIATE SUPPORTS OTHER THAN STUDS WITH HOLDDOWNS IS AS FOLLOWS:  
 ROOF SHEATHING - 10d @ 12" OC,  
 WALL SHEATHING - 8d @ 12" OC.

**METAL PLATE CONNECTED WOOD TRUSSES:**  
 WOOD TRUSSES DESIGNED, MANUFACTURED AND INSTALLED PER TRUSS PLATE INSTITUTE SPECIFICATIONS. ICBO CERTIFICATION REQUIRED.  
 WEB AND CHORD SIZES INDICATED ON PLANS ARE MINIMUM ONLY. ROOF DESIGN DEAD LOAD - 10 PSF MINIMUM, ROOF DESIGN WIND UPLIFT - 43 PSF MINIMUM. DESIGN TRUSSES FOR SUPPORT OF DEAD, LIVE, SNOW DRIFT AND WIND LOADS AND MECHANICAL EQUIPMENT, PIPING, ETC AS REQUIRED. COORDINATE WEIGHTS, LOCATIONS AND SUPPORT DETAILS. SUBMIT SHOP DRAWINGS SHOWING TRUSSES AND ERECTION BRACING SIZES AND CONNECTIONS. SHOP DRAWINGS AND DESIGN CALCULATIONS BOTH STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN STATE OF ALASKA. PROVIDE STANDARD TRUSS CAMBER. PROVIDE ERECTION BRACING PER MANUFACTURER'S INSTRUCTIONS AND PERMANENT BRACING AS INDICATED ON PLANS.

**MISCELLANEOUS:**  
 REFER TO ARCHITECTURAL DRAWINGS FOR WALL OPENINGS, ARCHITECTURAL TREATMENT AND DIMENSIONS NOT SHOWN.  
 REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF DUCT OPENINGS, PIPING, CONDUITS, ETC, NOT SHOWN.  
 SHOP DRAWINGS SHALL BE SUBMITTED AND REVIEWED PRIOR TO FABRICATION.  
 VERIFY ALL DIMENSIONS AND CONDITIONS AT THE PROJECT SITE PRIOR TO STARTING WORK AND NOTIFY THE CONTRACTING OFFICER IMMEDIATELY OF ANY DISCREPANCIES.  
 PROVIDE TEMPORARY ERECTION BRACING AND SHORING AS REQUIRED FOR STABILITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.



DATE	REVISIONS

PROJECT ENGINEER	DISTRICT ENGINEER	O&M CONSULTANT
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ALASKA NATIVE TRIBAL HEALTH CONSORTIUM  
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CHIGNIK LAGOON, ALASKA  
 GENERAL NOTES AND ABBREVIATIONS  
 DRAWN BY: KWK  
 DATE: 9-7-2000  
 FILE NAME: 20007351.DWG  
 PLOT SCALE: 1=1

PROJECT NO.

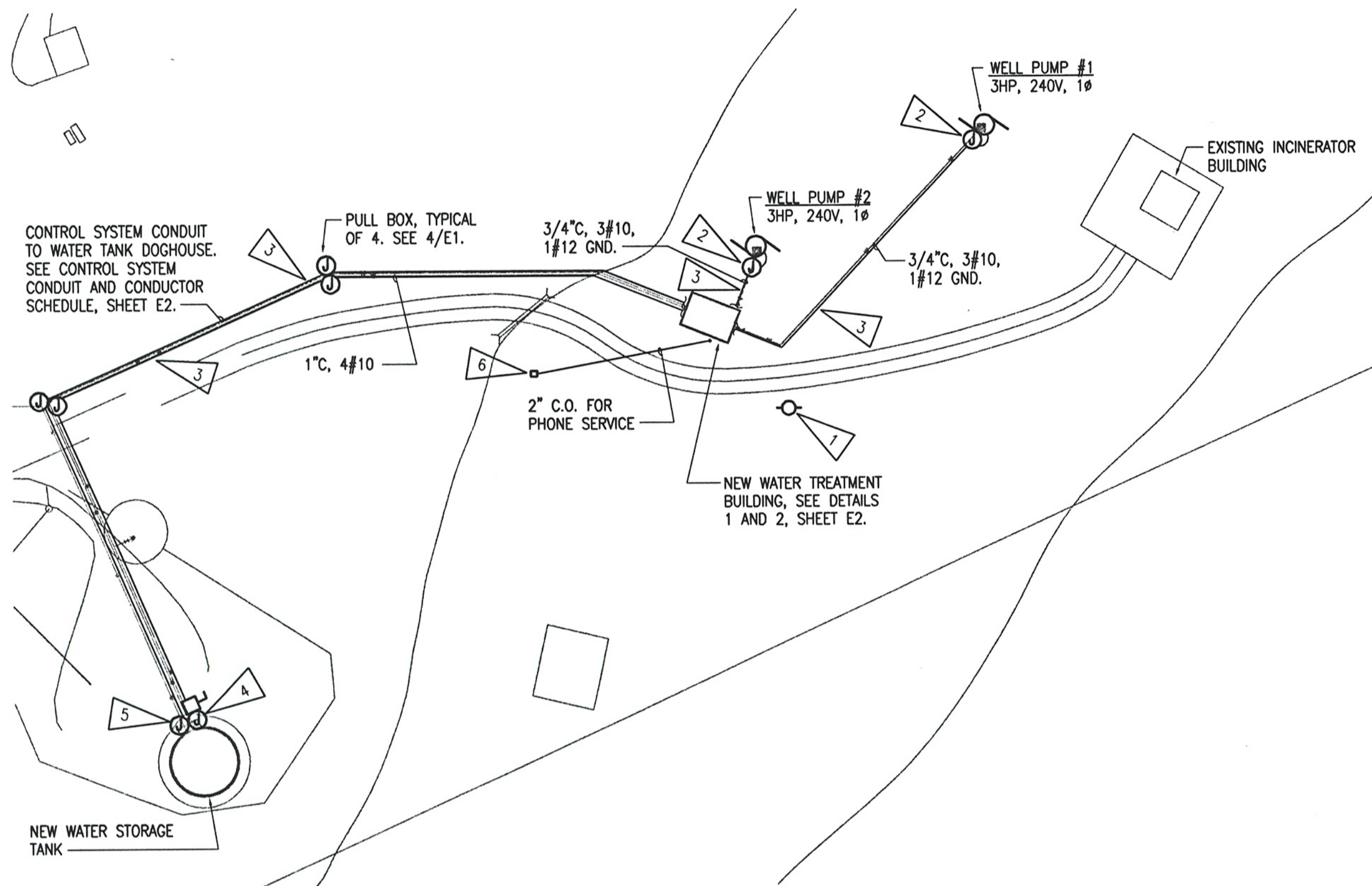
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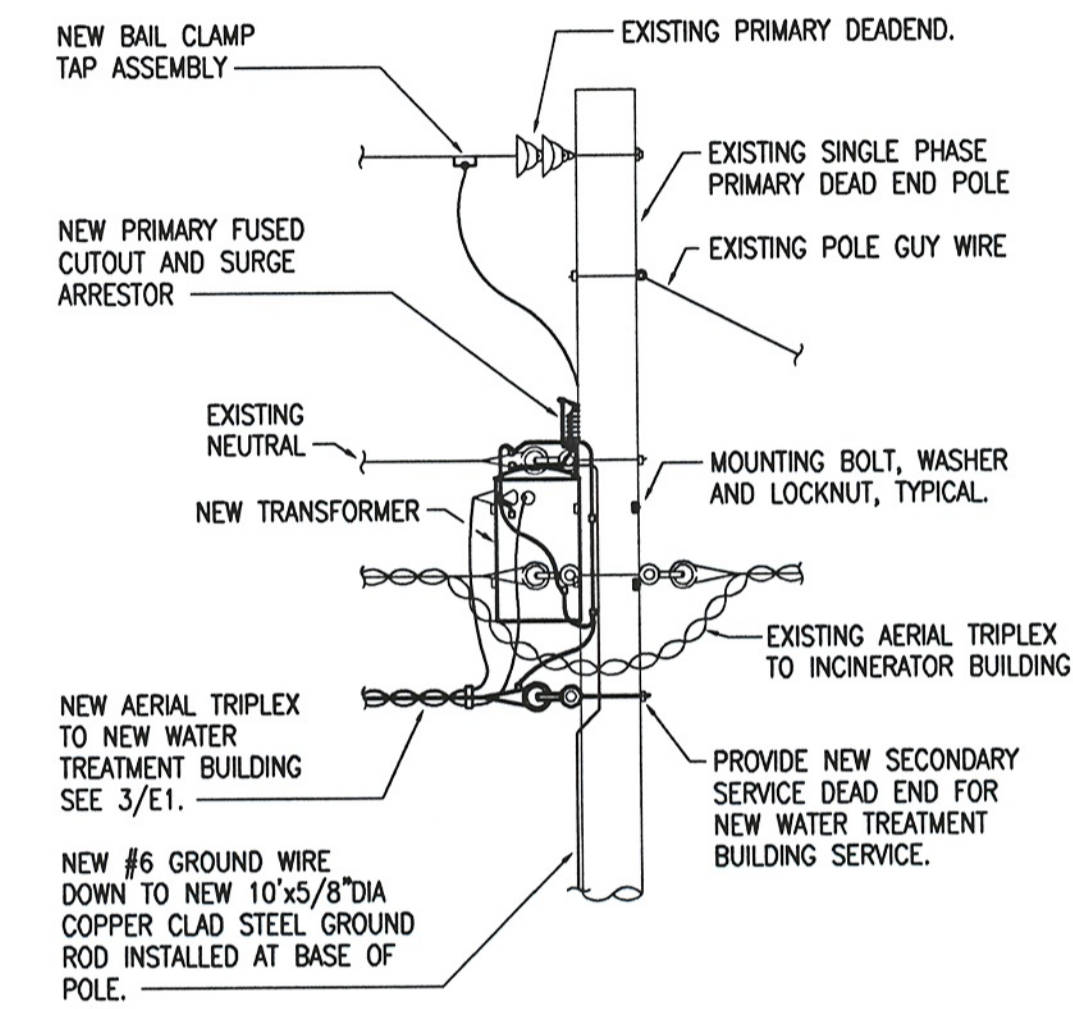






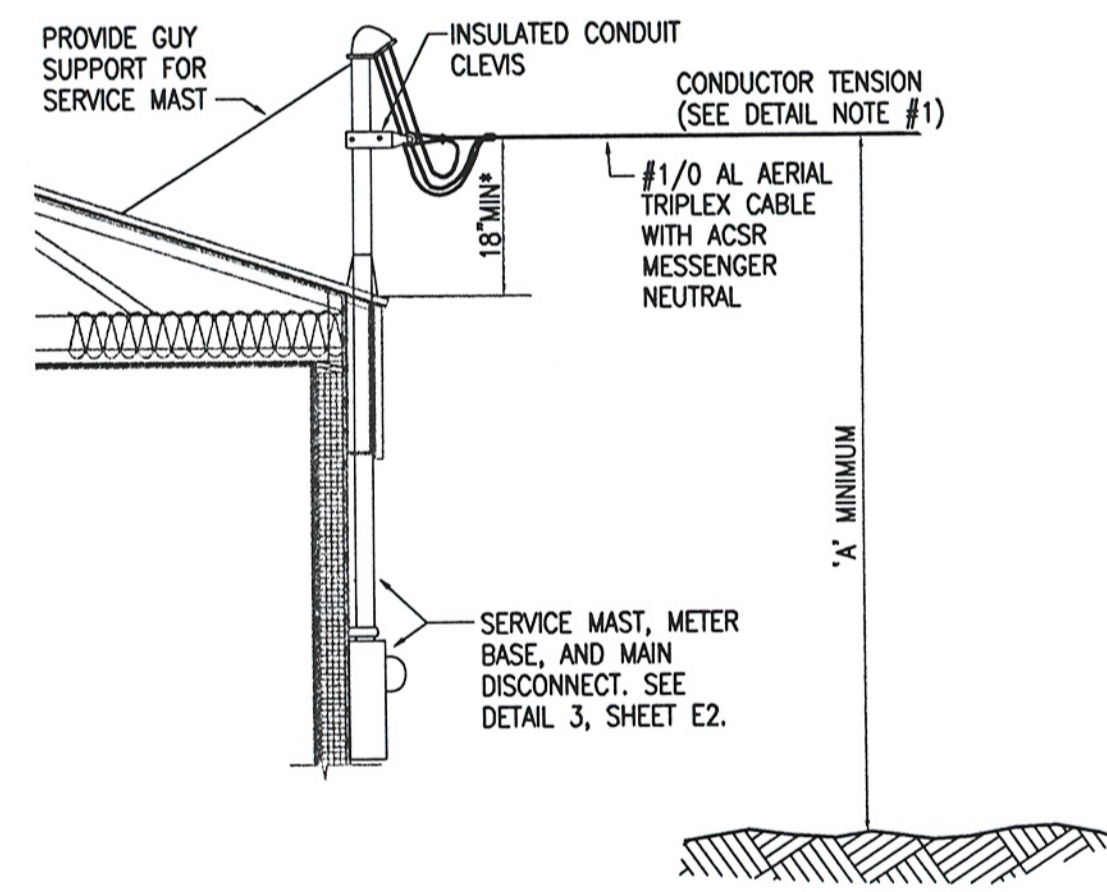


**1 WATER TREATMENT FACILITY SITE PLAN**  
1" = 50'



NOTE: PERFORM ALL POWER DISTRIBUTION AND SERVICE DROP WORK IN ACCORDANCE WITH REA STANDARDS AND BULLETINS AND THE NATIONAL ELECTRICAL SAFETY CODE.

**2 TRANSFORMER MOUNTING DETAIL**  
NO SCALE



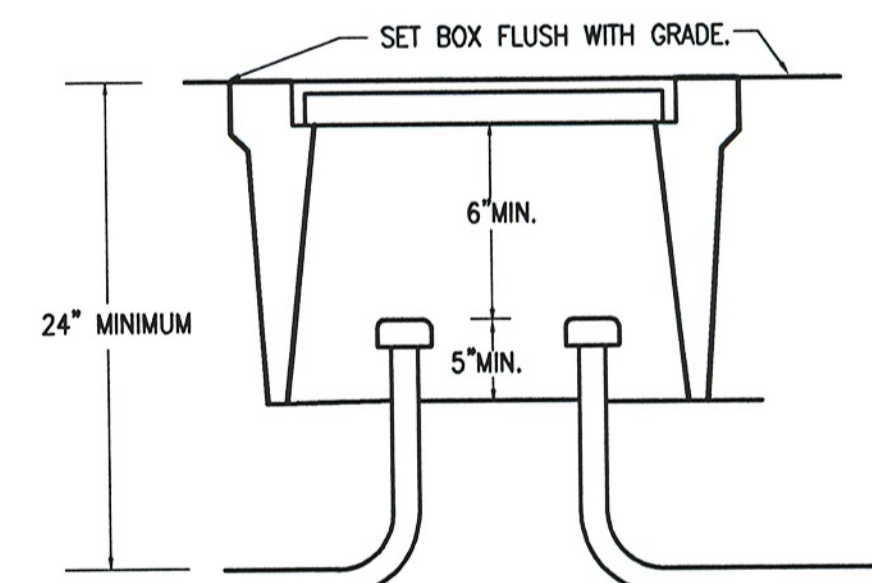
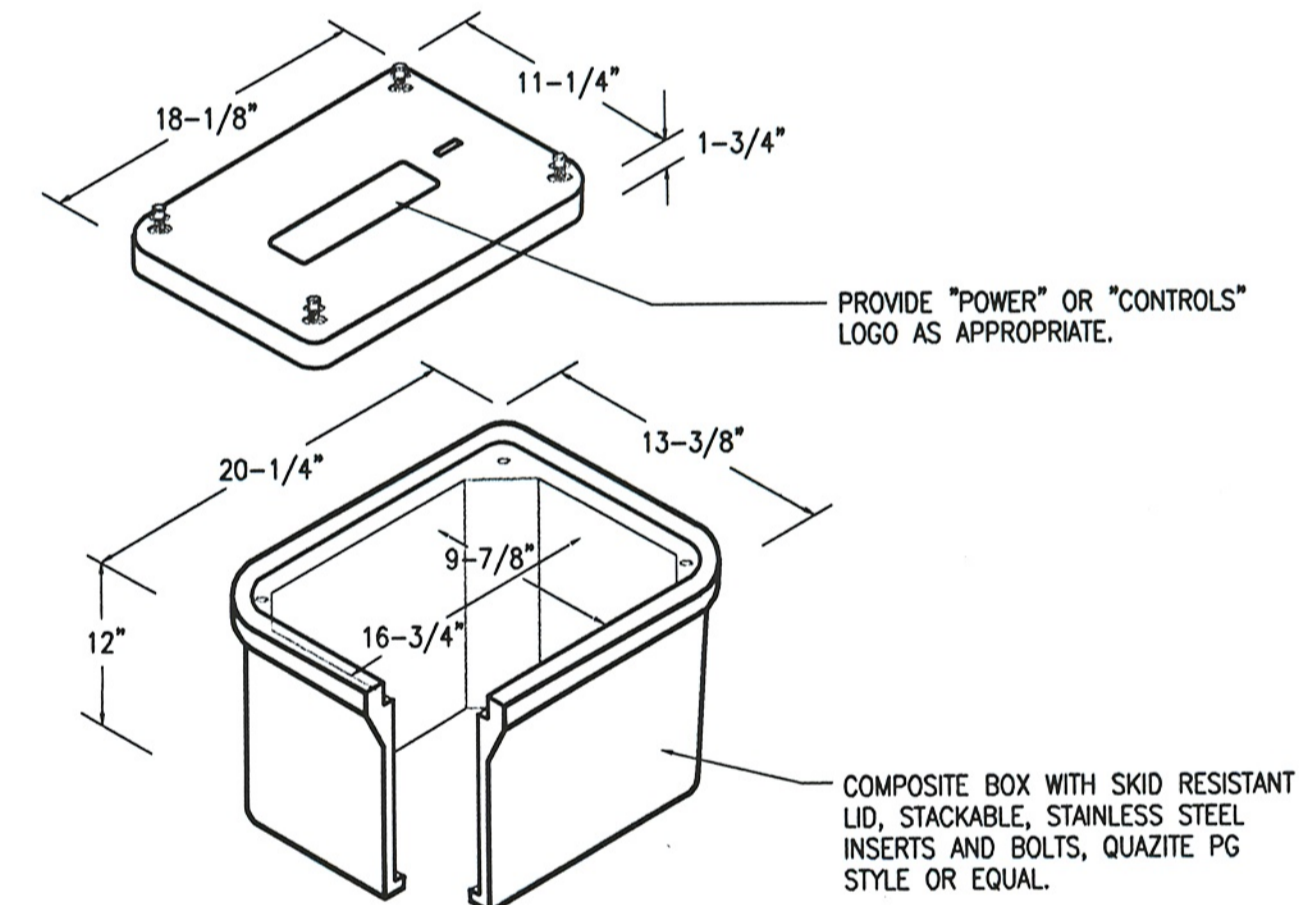
CLEARANCE 'A'	MINIMUM
TO BOTTOM OF DRIP LOOP	16'
TO SERVICE ASSEMBLY AND SERVICE DROP CONDUCTOR IN SPAN	18'

\*THESE DIMENSIONS APPLY TO BOTH DRIP LOOP AND SPAN.

**DETAIL NOTES:**

1. MAXIMUM TENSION OF CONDUCTOR SHALL NOT EXCEED 50% OF ULTIMATE STRENGTH.
2. SERVICE CONNECTORS SHALL BE INSULATED COMPRESSION TYPE.

**3 OVERHEAD SERVICE DETAIL**  
NO SCALE



**4 PULL BOX DETAIL**  
NO SCALE

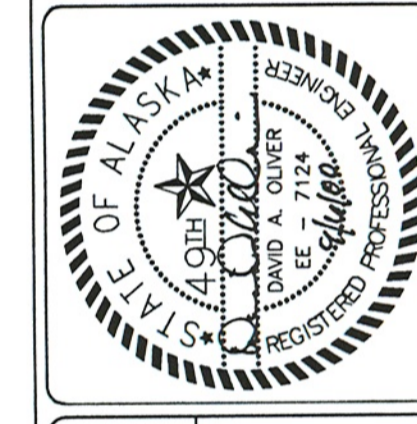
LEGEND	
	LIGHT FIXTURE - SURFACE MTD ON WALL
	FLUORESCENT FIXTURE - SURFACE MTD
	FIXTURE TAG (LETTER INDICATES TYPE)
	MOTOR (SIZED AS NOTED)
	DISCONNECT SWITCH
	DISCONNECT SWITCH (FUSED)
	VFD CONTROLLER
	FRACTIONAL HORSEPOWER MOTOR STARTER
	SINGLE POLE SWITCH
	THREE WAY SWITCH, FOUR WAY SWITCH
	PILOT LIGHT SWITCH
	CONDUIT, CONCEALED UNLESS NOTED OTHERWISE
	NUMBER AND SIZE OF WIRES (NO MARKS = 3 #12)
	HOMERUN TO PANEL (PANEL AND CIRCUIT No.)
	PANEL
	DUPLEX RECEPTACLE
	JUNCTION BOX
	CONDUIT
	CONDUIT ONLY
	WEATHERPROOF
	CONDUIT ONLY
	SHIELDED TWISTED PAIR
	UNSHIELDED TWISTED PAIR
	NOTE TAG (No. INDICATES NOTE)

**NOTES:**

1. EXISTING SINGLE PHASE OVERHEAD DISTRIBUTION LINE DEAD ENDS AT THIS POLE, WITH AERIAL TRIPLEX CONTINUING ON TO THE EXISTING INCINERATOR BUILDING. INSTALL NEW SINGLE PHASE TRANSFORMER AT THIS POLE TO SERVE THE NEW WATER TREATMENT BUILDING, WITH NEW AERIAL TRIPLEX CABLE SERVICE TO THE BUILDING. SEE DETAILS 2 AND 3, SHEET E1. LOCATION OF POLE SHOWN IS APPROXIMATE. FIELD COORDINATE FOR EXACT LOCATION OF POLE.
2. NEMA 4X JUNCTION BOX FOR CONNECTION TO WELL PUMP MOTOR LEADS. MOUNT JUNCTION BOX TO WELL CASING.
3. INSTALL EXTERIOR CONDUITS UNDERGROUND IN SAME TRENCH WITH WATER PIPING AT MINIMUM DEPTH OF 24" BELOW GRADE. SEE TRENCHING DETAIL 5/C-2.
4. PROVIDE 120V POWER CONNECTION TO LEVEL SENSOR LE/LT-3-1, FLOW METER FE/FQT-3-1, TEMPERATURE SENSOR TE/TT-3-1 AND ELECTRICAL BASEBOARD HEATERS (2@120V,500W), LOCATED IN THE DOGHOUSES OF THE WATER STORAGE TANK. CONNECT THE CONTROL DEVICES TO ONE CIRCUIT AND THE TWO BASEBOARD HEATERS TO THE OTHER CIRCUIT. FOR THE TEMPERATURE SENSOR PROVIDE AND INSTALL A 25 WATT, 120VAC INPUT, 24VDC OUTPUT POWER SUPPLY, MOUNTED IN A NEMA 4X JUNCTION BOX. ROUTE POWER CIRCUITS THROUGH A SERVICE ENTRANCE RATED 20 AMP, TWO-POLE, NEMA 3R, DISCONNECT MOUNTED AT THE EXTERIOR OF THE DOGHOUSES. PROVIDE AND INSTALL 3/4" DIA. x 10' GROUND ROD AT THE DOGHOUSES AND CONNECT TO DISCONNECT GROUND BUS WITH A #6 BARE COPPER GROUND WIRE.
5. PROVIDE CONTROL CONNECTION TO LEVEL SENSOR LE/LT-3-1, FLOW METER FE/FQT-3-1, AND TEMPERATURE SENSOR TE/TT-3-1 LOCATED IN THE DOGHOUSE OF THE WATER STORAGE TANK. SEE CONTROL SYSTEM CONDUIT AND CONDUCTOR SCHEDULE, SHEET E2.
6. EXISTING UNDERGROUND PHONE UTILITY PEDESTAL (PEDESTAL #02/4). PROVIDE 2"C.O. FROM PHONE SERVICE LOCATION TO THIS PEDESTAL. SEE DETAIL 3/E2. COORDINATE WITH LOCAL TELEPHONE UTILITY TO PROVIDE PHONE SERVICE TO THE FACILITY. LOCATION OF PEDESTAL SHOWN IS APPROXIMATE. FIELD COORDINATE FOR EXACT LOCATION OF PHONE PEDESTAL.

INIT.	REVISIONS	DATE

PROJECT ENGINEER	DISTRICT ENGINEER	O&M CONSULTANT
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ALASKA NATIVE TRIBAL HEALTH CONSORTIUM  
ENVIRONMENTAL HEALTH AND ENGINEERING  
3925 TUDOR CENTRE DRIVE  
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CHIGNIK LAGOON, ALASKA  
ELECTRICAL SITE PLAN, DETAILS  
DRAWN BY: MSW  
DATE: 09-07-00  
FILE NAME: KCB0-E1  
PLOT SCALE: 1" = 1'

PROJECT NO.

**E 1**

**RSA**  
**Engineering, Inc.**  
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS  
2522 Arctic Boulevard, Suite 200  
Anchorage, AK 99503-2516  
Phone (907) 276-0521 Fax (907) 276-1751

DOUBLE FILE NO. 222-066



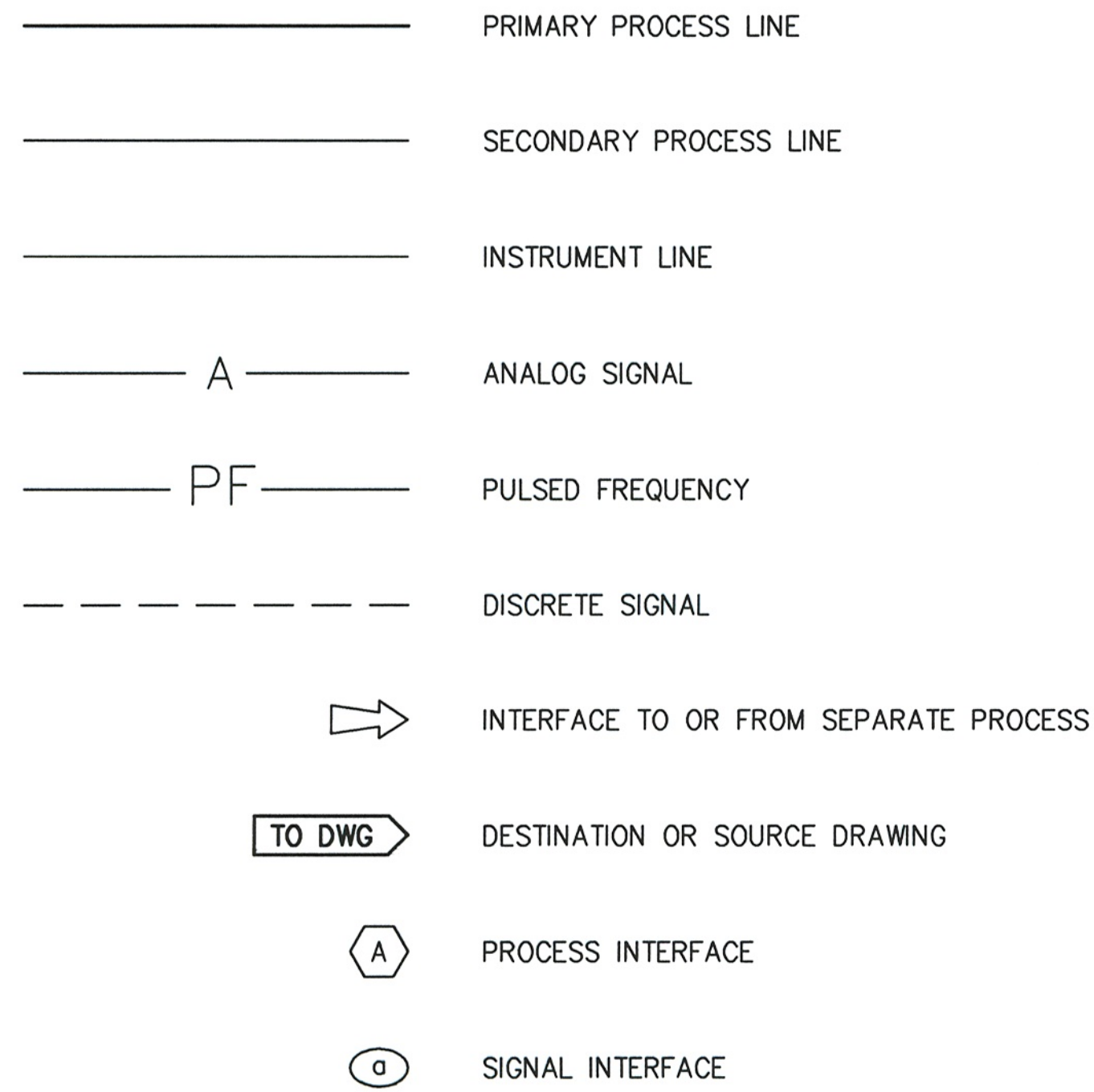








**INTERFACE SYMBOLS & LINETYPE LEGEND**



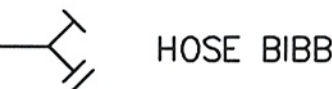
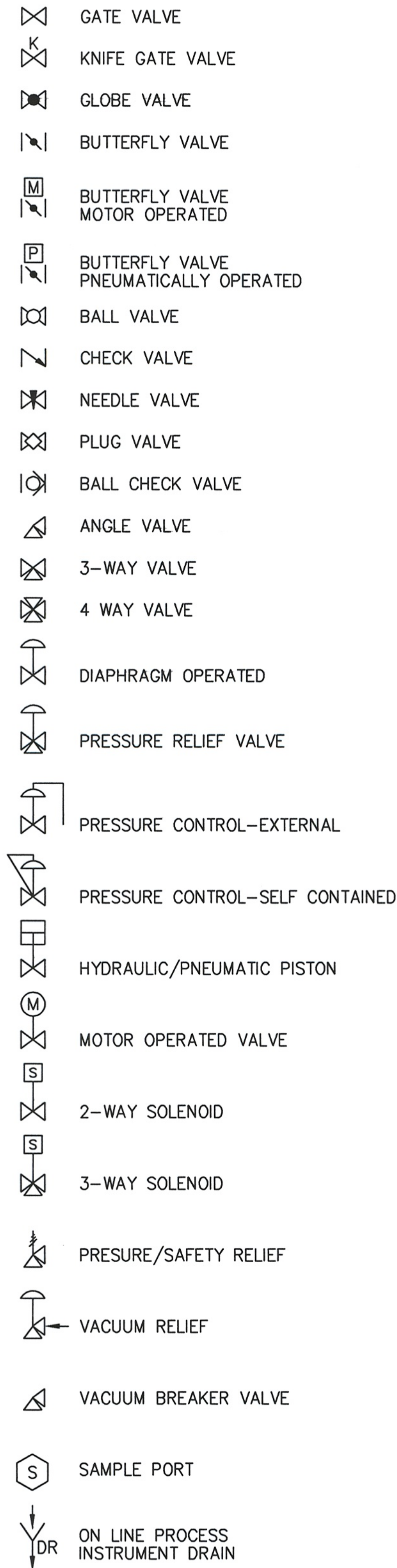
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INSTRUMENT SOCIETY OF AMERICA TABLE

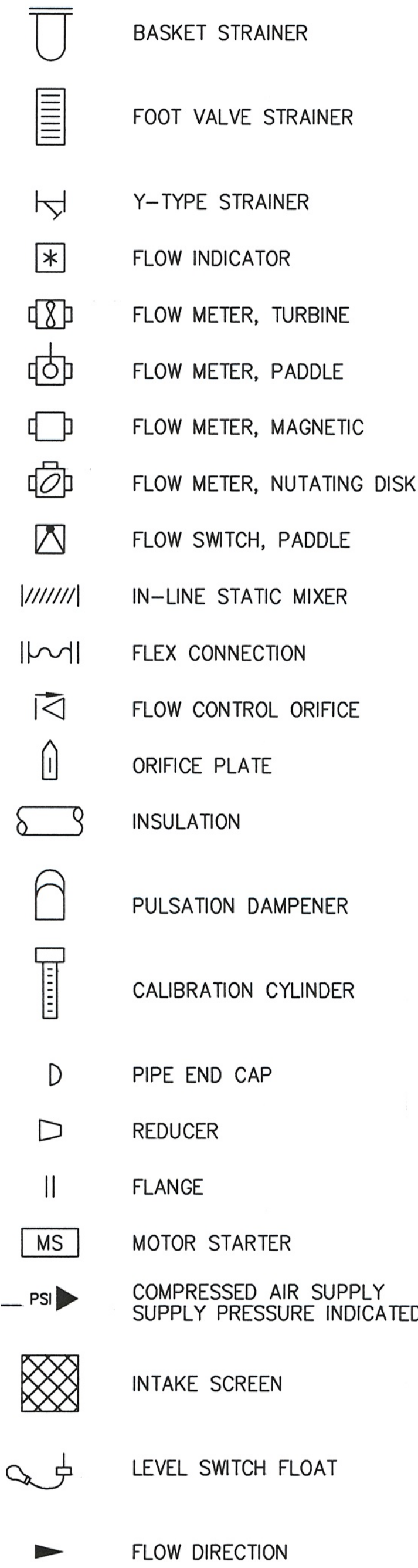
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	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (+)		ALARM		
B	BURNER FLAME		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
C	CONDUCTIVITY			CONTROL	
D	DENSITY (S.G.)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	GAUGE		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION				MIDDLE
N	USERS CHOICE (+)		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
O	USERS CHOICE (+)		ORIFICE		
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT (+)	INTEGRATE	INTEGRATE		
R			RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (+)		MULTIFUNCTION	MULTIFUNCTION (+)	MULTIFUNCTION (+)
V	VISCOSITY			VALVE OR DAMPER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED (+)			SEQUENCE	
Y	USERS CHOICE (+)			RELAY OR COMPUTE (+)	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(+) WHEN USED, EXPLANATION IS SHOWN NEXT TO INSTRUMENT SYMBOL.

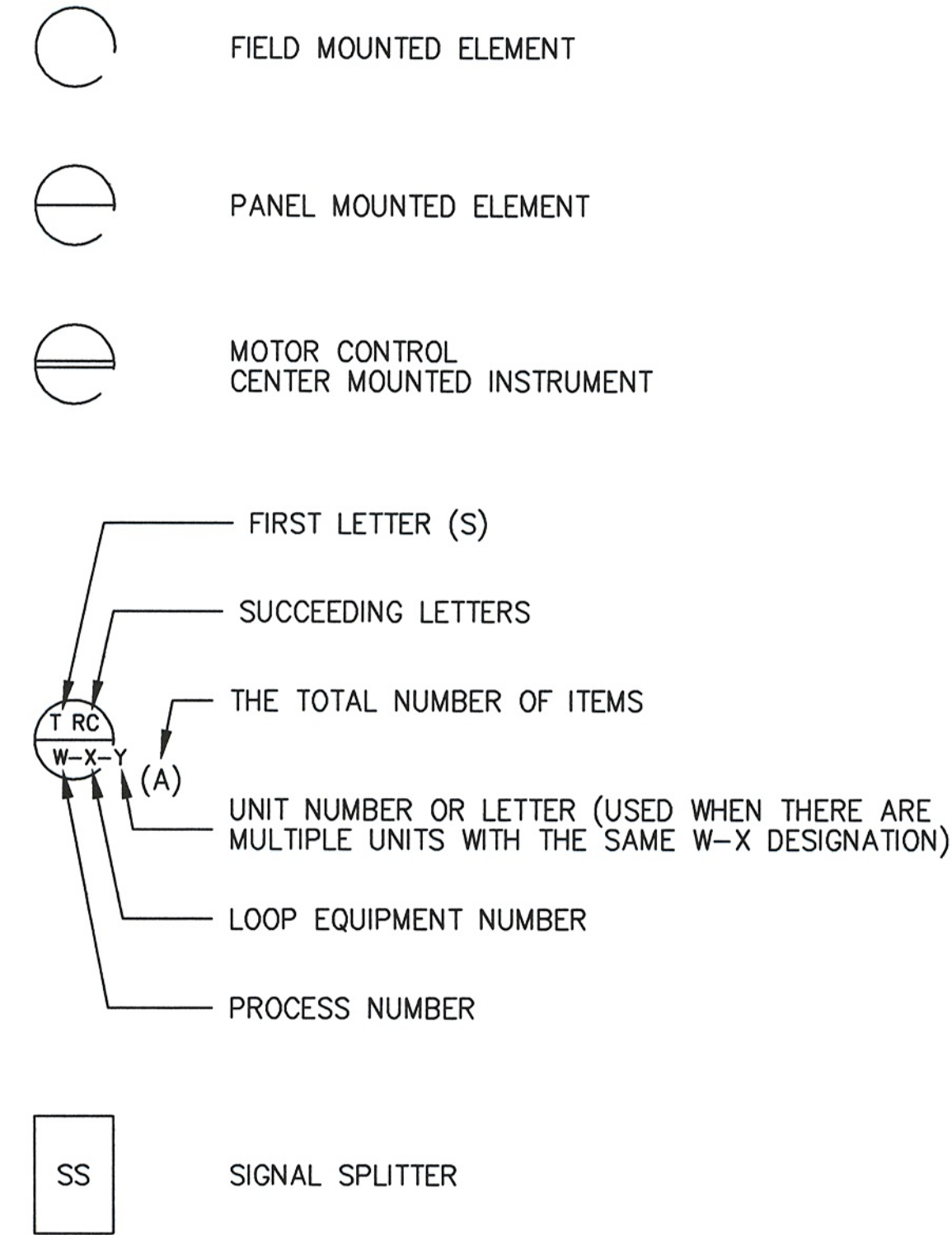
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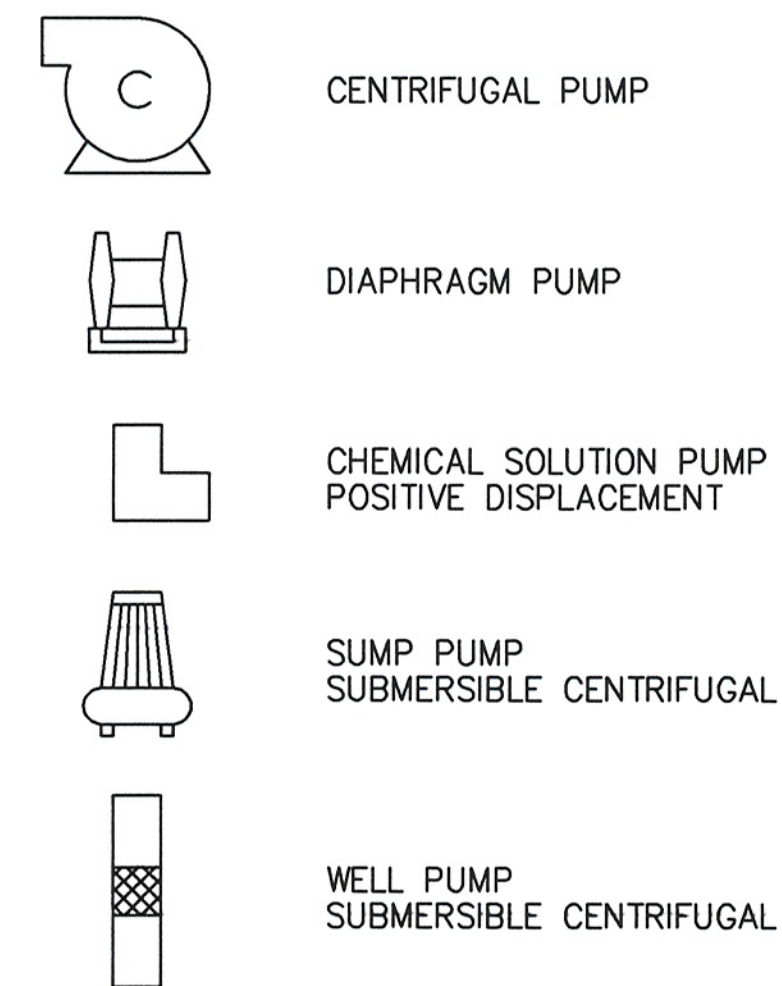
**SYMBOLS**



**INSTRUMENT TAGS**



**PUMPS**



**ABBREVIATIONS**

- AFF ABOVE FINISHED FLOOR
- ARV AIR RELIEF VALVE
- BYP BYPASS
- CL CHLORINE
- COND CONDUCTIVITY
- CP CONTROL PANEL
- CV CONTROL VALVE
- F FLUORIDE
- FCV FLOW CONTROL VALVE
- FW FINISHED WATER
- HOA HAND OFF AUTO
- HPA HIGH PRESSURE AIR
- HX HEAT EXCHANGER
- INHIB ANTISCALANT (SCALE INHIBITOR)
- LR LOCAL REMOTE
- MG MILLION GALLON
- MS MOTOR STARTER
- MXR MIXER
- NH3 AMMONIA
- OF OVERFLOW
- OO ON/OFF
- ORP OXIDATION REDUCTION POTENTIAL
- P PUMP
- PO4 PHOSPHATE
- PRV PRESSURE RELIEF VALVE
- RW RAW WATER
- SA SODA ASH
- TURB TURBIDITY
- TW TREATED WATER
- TYP TYPICAL
- UG UNDERGROUND
- W2 NON-POTABLE WATER (UTILITY WATER)
- WCP WATER CONTROL PANEL
- WW PROCESS WASTE WATER

**NOTES:**

1. BOLD TYPE AND LINE WEIGHT REPRESENT EQUIPMENT TO BE INSTALLED DURING CONSTRUCTION. LIGHT TYPE AND LINE WEIGHT REPRESENT EQUIPMENT TO BE INSTALLED AT A FUTURE TIME.

DATE	REVISIONS	INIT.
7/19/00	ISSUED FOR REVIEW	GHR

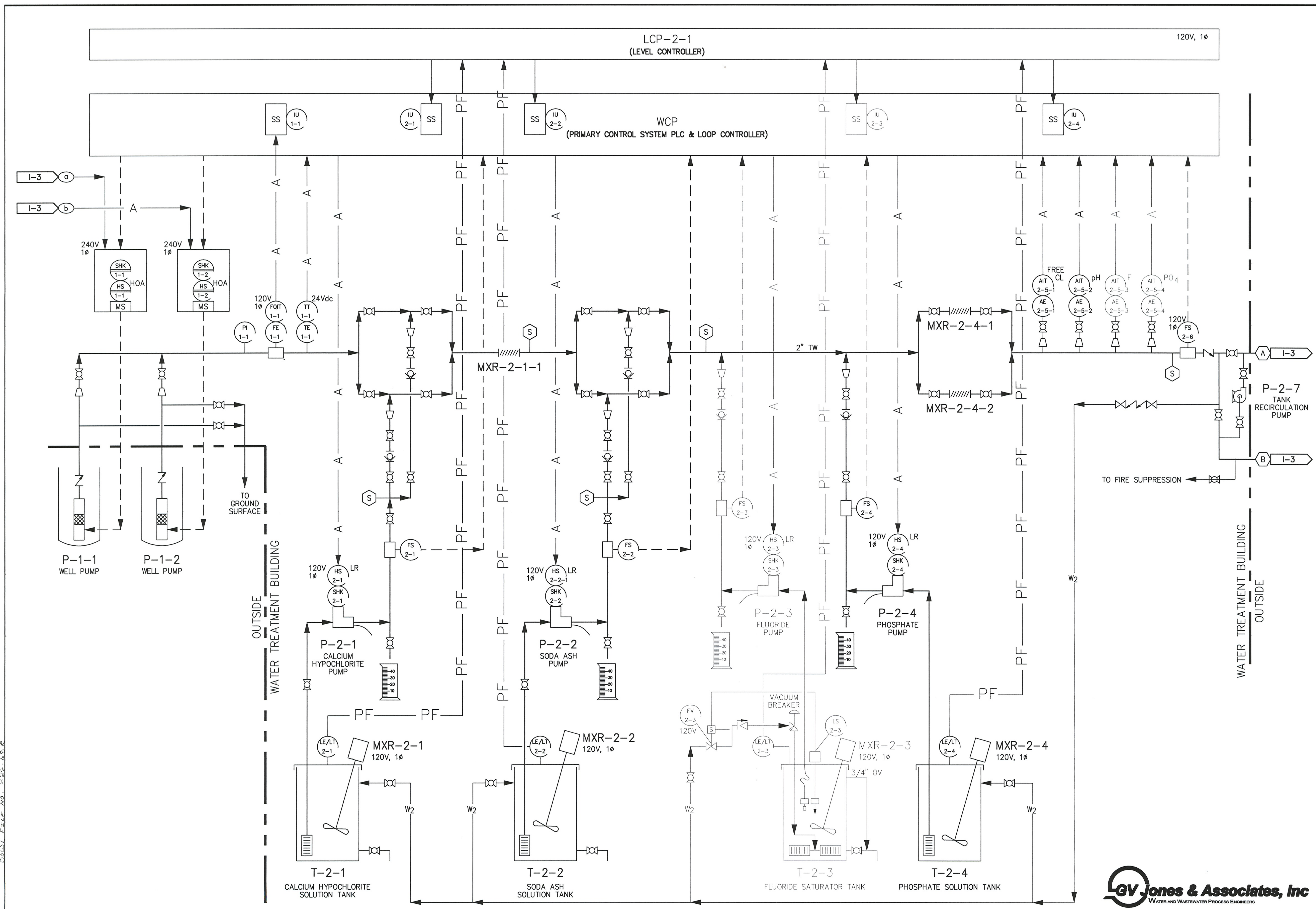
PROJECT ENGINEER	DISTRICT ENGINEER	O&M CONSULTANT
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**ALASKA NATIVE TRIBAL HEALTH CONSORTIUM**  
**ENVIRONMENTAL HEALTH AND ENGINEERING**  
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**CHIGNIK LAGOON, ALASKA**  
 DRAWING LEGEND  
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 PLOT SCALE: 1=1 (1=20VP)  
 DRAWN BY: GHR  
 DATE: 07-11-2000

PROJECT NO.



INIT.	DATE	REVISIONS	ISSUED FOR REVIEW	GHR
			7/21/00	

PROJECT ENGINEER	DISTRICT ENGINEER	O&M CONSULTANT
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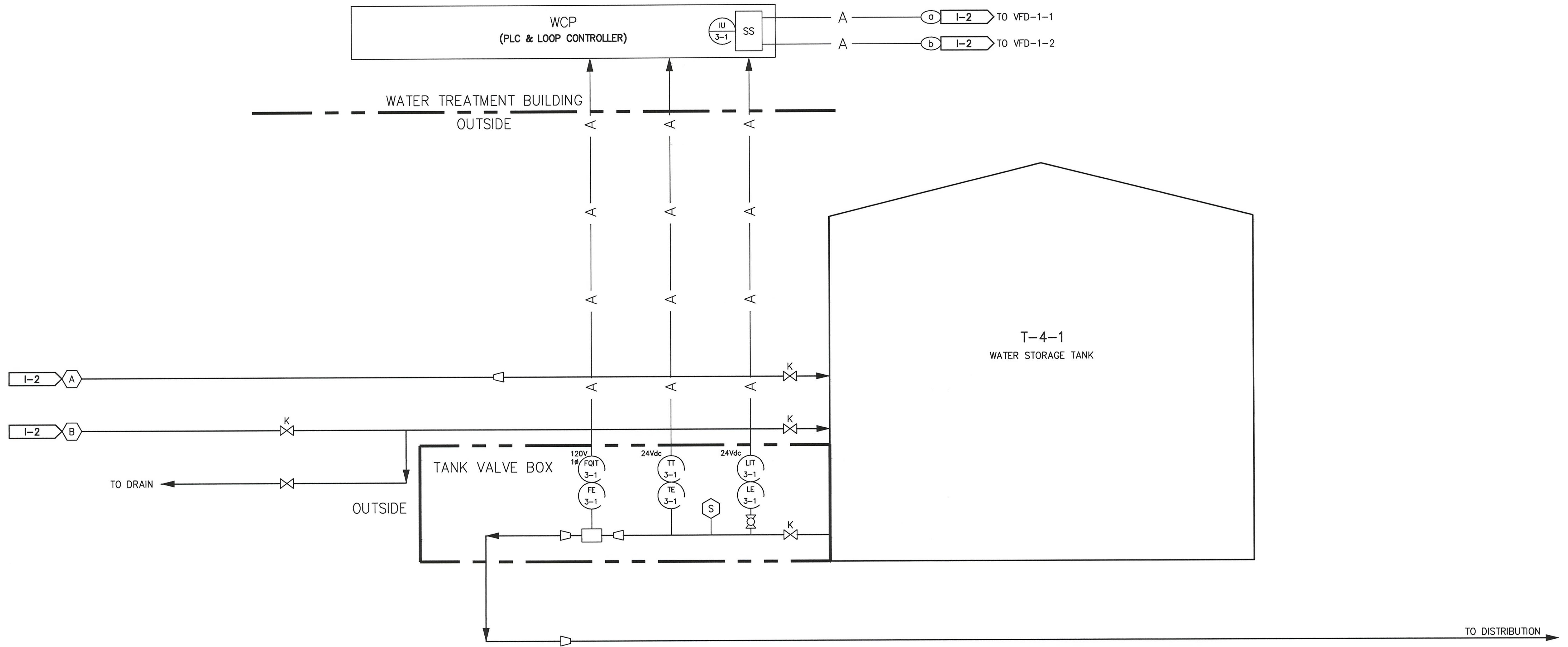
ALASKA NATIVE TRIBAL HEALTH CONSORTIUM  
 ENVIRONMENTAL HEALTH AND ENGINEERING  
 3925 TUDOR CENTRE DRIVE  
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CHIGNIK LAGOON, ALASKA  
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 DATE: 07-21-2000

PROJECT NO.





DRAWN FILE NO. 831-653

INIT.	REVISIONS	DATE	ISSUED FOR REVIEW	CHR

PROJECT ENGINEER  
 DISTRICT ENGINEER  
 O&M CONSULTANT



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 TRIBAL HEALTH CONSORTIUM  
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**CHIGNIK LAGOON, ALASKA**  
 PROCESS P&ID  
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 DATE: 07-12-2000  
 FILE NAME: 23806702.DWG  
 PLOT SCALE: 1=1 (1-20VP)

PROJECT NO.

13

