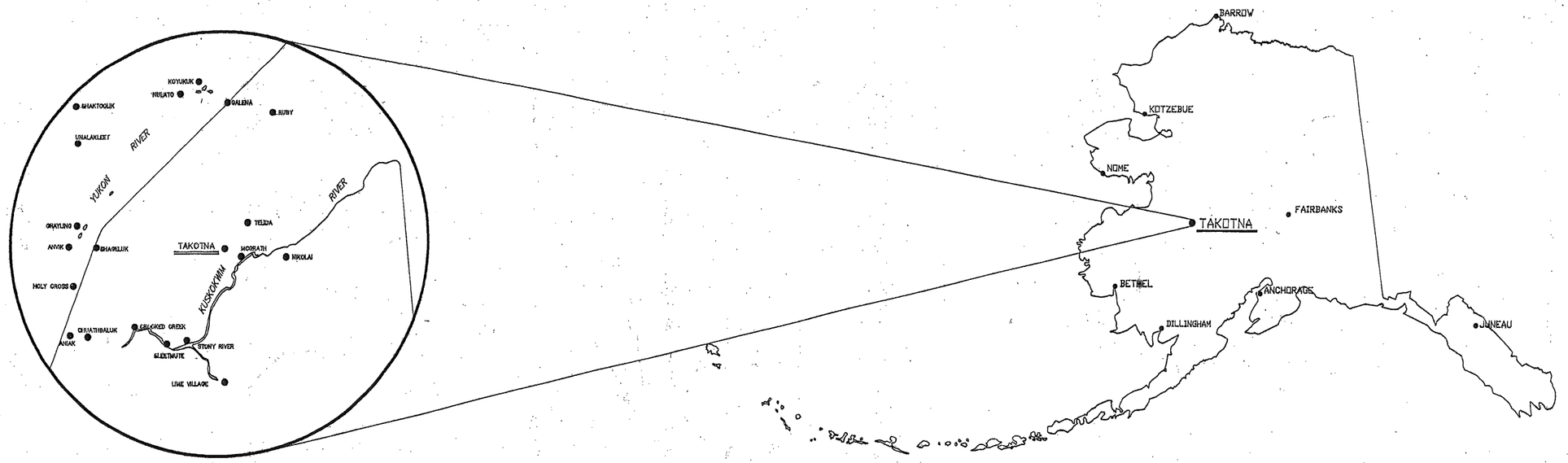
CONSTRUCTION PLANS

SANITATION FACILITIES

TAKOTNA, ALASKA



U. S. DEPT OF HEALTH & HUMAN SERVICE
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE

ALASKA AREA NATIVE HEALTH SERVICE
OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING
222 WEST 8 th AVENUE #65
ANCHORAGE, ALASKA 99513-7561

PUBLIC LAW 86-121 PROJECT
PROJECT NO AN-91-679/057

TABLE OF CONTENTS

LEGEND AND GENERAL NOTES

SITE PLAN

EXISTING		PROPOSED THIS PROJECT
	STRUCTURES	
	ROADS (PAVED)	
	ROADS (UNPAVED)	
	PROPERTY LINE	
C	COMMUNICATIONS LINE	C
P	POWER LINE	P
S	SEWER SERVICE LINE	S
W	WATER SERVICE LINE	W
CO S	CLEANOUT	CO S
S	SEWER LINE	S
W	WATER LINE	W
FM	FORCE MAIN	FM
FH	FIRE HYDRANT, IN-LINE	FH
FH	FIRE HYDRANT, OFFSET	FH
MH	MANHOLE	MH
	VALVE	
POL	POL LINE (FUEL OIL)	POL
	LIFT STATION W/BUILDING	
	R.O.W. LINE	
	WELL	
X	FENCE	X
U	UTILIDOR	U
R	RACEWAY	R
	RAILROAD	
	BENCHMARK	
	TEST HOLE	
EL.	ELEVATION	
ST	SEPTIC TANK	ST
LF	LEACHFIELD	LF
W	CORPORATION STOP	W
BC	BRASS CAP	
W	WATERING POINT	W
PP	POWER POLE	PP
CS W	CURB STOP	CS W
DT REPS	RESIDENTIAL EFFLUENT PUMPING STATION (DOSING TANK)	DT REPS
	PEDESTAL	
	TRANSFORMER	
WTP or WTB	WATER TREATMENT PLANT or WATER TREATMENT BUILDING	
WST	WATER STORAGE TANK	

MECHANICAL

	PRIMARY SYSTEM
HW	HOT WATER LINES
HWR	HOT WATER RETURN LINES
D	DRAIN & OVERFLOW LINE
CWM	COLD WATER MAKE-UP LINE
BP	BY-PASS LINE
BW	BACK WASH LINE
CW	COLD WATER LINES
LWC	LOW WATER CUT-OFF
CP	CHEMICAL PUMP
C	CIRCULATING PUMP
M	WATER METER
	GATE VALVE
	CHECK VALVE
	UNION
DE	DIELECTRIC UNION
	AUTOMATIC AIR RELIEF
	PRESSURE RELIEF VALVE
	ADAPTOR
	FLEX PIPE
	FLEX COUPLING
A	AQUASTAT
FS	FLOW SWITCH
PS	PRESSURE SWITCH
T	THERMOMETER
	PRESSURE REDUCING VALVE
P	PRESSURE GAUGE
F	FLOW INDICATOR
TF	THERMOFLO INDICATOR
T	CIRCUIT SETTER
	DIRECTION OF FLOW
V	VACUUM BREAKER
TL	TANK LEVEL INDICATOR

PIPE FITTING & VALVE SYMBOLS

	ANGLE VALVE
	CAP
	CROSS
	ELBOW (ELL), 45°
	ELBOW, 90°
	LATERAL
	TEE
	STRAINER
DE	DIELECTRIC FLANGE PKG.
	FLANGE JOINT
	SCREWED JOINT
	WELDED JOINT
	SOLDERED JOINT
	SLEEVE
	DRESSER COUPLING
	EXPANSION JOINT
	REDUCER, CONCENTRIC
FC 3ppm	
	90° LONG RADIUS ELBOW
	VICTAULIC COUPLING
V	VACUUM BREAKER
	FLOOR DRAIN
	BALL VALVE
	CHECK BALL VALVE
S	SOLENOID VALVE
M	MOTORIZED VALVE
M	MOTORIZED 3-WAY VALVE
	GLOBE VALVE
	BALANCING VALVE
2-WAY	AUTO. TEMP CONTROL VALVE
3-WAY	AUTO. TEMP CONTROL VALVE
	QUICK OPENING VALVE
	FUSIBLE VALVE
	BUTTERFLY VALVE

ELECTRICAL

	CONDUIT, SURFACE MOUNTED
	CONDUIT, BURIED OR IN-SLAB
	HOMERUN TO CIRCUIT BREAKER PANEL
	CONDUIT W/No. OF WIRES INDICATED, ONE NEUTRAL, TWO HOT, AWG 12, CU
	INCANDESCENT FIXTURE
	INCANDESCENT FIXTURE, WALL MOUNTED
	FLUORESCENT FIXTURE
V	VAPOR TIGHT LIGHT FIXTURE
	HIGH PRESSURE SODIUM LIGHT FIXTURE
	INCANDESCENT FIXTURE, RECESSED
	FLUORESCENT FIXTURE, RECESSED
	DUPLEX RECEPTACLES
	QUADRAPLEX RECEPTACLES
	SPECIAL PURPOSE RECEPTACLES
S	SINGLE POLE SWITCH
S_3	3-WAY SWITCH
J	JUNCTION BOX
T	THERMOSTAT
T	TRANSFORMER
A	AQUASTAT
PC	PHOTO CELL
R	RELAY
M	MOTOR OPERATED VALVE (ZONE VALVE)
S	SOLENOID VALVE
	CONTROLLER
	MOTOR STARTER, MANUAL
	MOTOR STARTER, MAGNETIC
	SWITCHING PANEL
	CIRCUIT BREAKER PANEL
	ALARM PANEL
H	HEAT DETECTOR
S	SMOKE DETECTOR
B	BELL
	ALARM HORN
M	METER BASE
2	MOTOR W/HORSEPOWER INDICATED
FLS	FLOAT SWITCH
PS	PRESSURE SWITCH
FS	FLOW SWITCH
UH	UNIT HEATER
	EMERGENCY LIGHT
	EXIT LIGHT
T	SYSTEM GROUND THERMOSTAT
S_{PB}	SWITCHED RECEPTACLE PUSH-BUTTON SWITCH
F	FAN
	FIXTURE W/PULL CHAIN

NOTES

CIVIL

1. MINIMUM VERTICAL SEPARATION BETWEEN WATER LINE & SEWER LINE AT THE CROSSING POINT SHALL BE 18".
2. MINIMUM HORIZONTAL SEPARATION BETWEEN WATER LINE & SEWER LINE SHALL BE 10.0'.
3. MINIMUM BURY ON WATER LINE SHALL BE 4 FEET
4. LOCATION OF ALL WELLS, SEPTIC TANKS, MANHOLES, CLEANOUTS, VALVES, ETC. SHALL BE REFERENCED TO THREE PERMANENT ABOVE GROUND STRUCTURES.
5. CLEANOUTS, LEACHFIELDS AND SEPTIC TANKS ARE NUMBERED ACCORDING TO CORRESPONDING MANHOLE, i.e., MH-1, ST-1A, LF-1A AND CO-1A.

MECHANICAL

1. ALL EXPOSED PIPING SHALL BE PAINTED USING THE FOLLOWING COLOR CODE:
   - GREEN - RAW WATER
   - BLUE - POTABLE WATER
   - BLACK - HEATING
   - RED - FIRE
   - BROWN - SEWAGE
   - GRAY - COMPRESSED AIR
   - ORANGE - FUEL
   - YELLOW - WASTE HEAT RECOVERY
2. TYPE OF PAINT TO BE USED SHALL BE GARLOCK OR APPROVED EQUAL.
3. DIRECTION OF FLOW SHALL BE INDICATED BY ARROWS AND A NAME PLATE SHALL BE ATTACHED DESCRIBING MATERIAL BEING CARRIED.
4. ALL PIPING SHALL BE COPPER UNLESS OTHERWISE INDICATED.
5. ALL SOLDER CONNECTIONS SHALL BE LEAD FREE ANTIMONY FREE SOLDER.
6. ALL HOT WATER LINES SHALL BE INSULATED.
7. ALL PIPE SUPPORTS AND HANGERS SHALL HAVE 1/2" INSULATION BETWEEN COPPER PIPE AND SUPPORTS OR HANGERS.
8. PRESSURE TESTING REQUIREMENTS FOR WATER MAINS AND SERVICES, AND SEWER MAINS AND SERVICES SHALL BE IN ACCORDANCE WITH SFS GUIDELINE C-39 .
9. TESTING REQUIREMENTS FOR DRAIN WASTE AND VENT PLUMBING, WATER SUPPLY PIPING AND HYDRONICS PIPING SHALL BE IN ACCORDANCE WITH SECTION 318 OF 1988 UNIFORM PLUMBING CODE.

ELECTRICAL

1. CLEAR AREA REQUIRED FOR ELECTRICAL PANELS:
   - 36" FROM FACE OF PANEL
   - 75" FROM FLOOR UP TO FIRST OBSTRUCTION
   - 15" CLEAR EACH SIDE FROM CENTER LINE OF PANEL
2. GROUND SYSTEM NEUTRAL AND ALL METALLIC SURFACES PER 1990 NATIONAL ELECTRICAL CODE (N. E. C.) .
3. ALL WIRING SHALL BE IN CONDUIT. UNLESS OTHERWISE SPECIFIED

DATE	REVISIONS	INITIALS

U. S. Department of Health, & Human Services
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Indian Health Service

TAKOTNA, ALASKA

LEGEND & NOTES
PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-91-679/057

SHEET NO. L-1 OF 1 TOTAL SHEETS

Design Engineer

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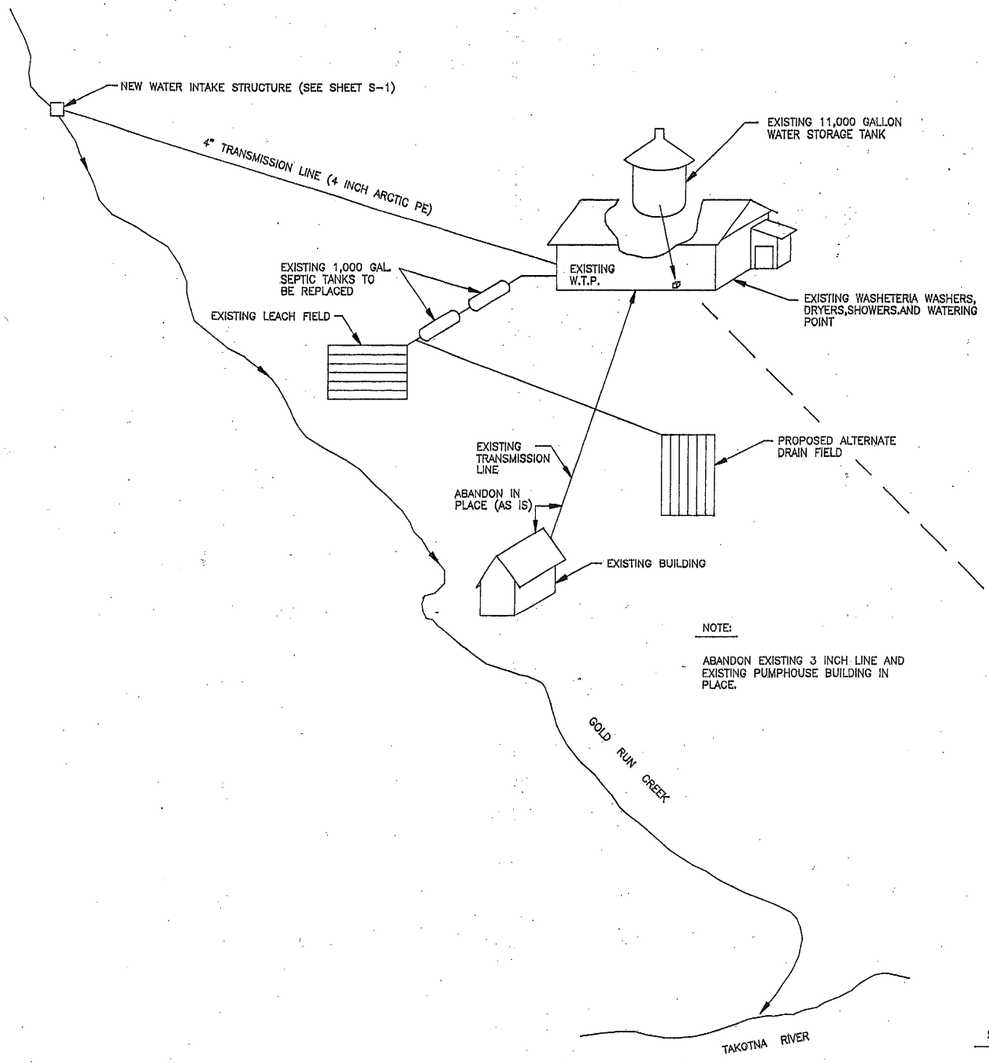

NOTE:

ABANDON EXISTING 3 INCH LINE AND EXISTING PUMPHOUSE BUILDING IN PLACE.

SHEET SPECIFIC SCOPE OF WORK

1. CONSTRUCT ALTERNATE DRAINFIELD.
2. REPLACE EXISTING 1,000 GALLON SEPTIC TANKS LOCATED IN ROADWAY (2) AND PLACE NEW SEPTIC TANKS OUT OF ROADWAY.
3. CONSTRUCT NEW WATER INTAKE STRUCTURE APPROXIMATELY 400 FEET UPSTREAM OF EXISTING WATER INTAKE STRUCTURE.
4. INSTALL NEW 4 INCH ARCTIC PE TRANSMISSION LINE BETWEEN NEW INTAKE STRUCTURE AND EXISTING WTP.

DESIGN CRITERIA

POPULATION	40
DESIGN POPULATION	50
NUMBER OF HOUSES	24 (OCCUPIED FULL TIME) 36 (TOTAL EXISTING HOUSES)
WATER STORAGE	11,000 GALLONS
PERIODIC FILL PUMP	1 @ 1 HP
PERIODIC PUMPING RATE (ON DEMAND)	25 gpm
CHEMICAL FEED SYSTEM	
CHLORINE SOURCE AVG. FEED RATE	CALCIUM HYPOCHLORITE 1 PPM
FLUORIDE SOURCE AVG. FEED RATE	GRANULAR SODIUM FLUORIDE 1 PPM
DESIGN WIND LOAD	40 POUNDS/SQ. FT. (HORIZONTAL)
DESIGN SNOW LOAD	30 POUNDS/SQ. FT. (VERTICAL)

Design Engineer

STATE OF ALASKA 49th

DATE	REVISIONS	INITIALS

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TAKOTNA, ALASKA
DESIGN CRITERIA
PUBLIC LAW 86-121 PROJECT
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SHEET NO. D-1 OF 2 TOTAL SHEETS

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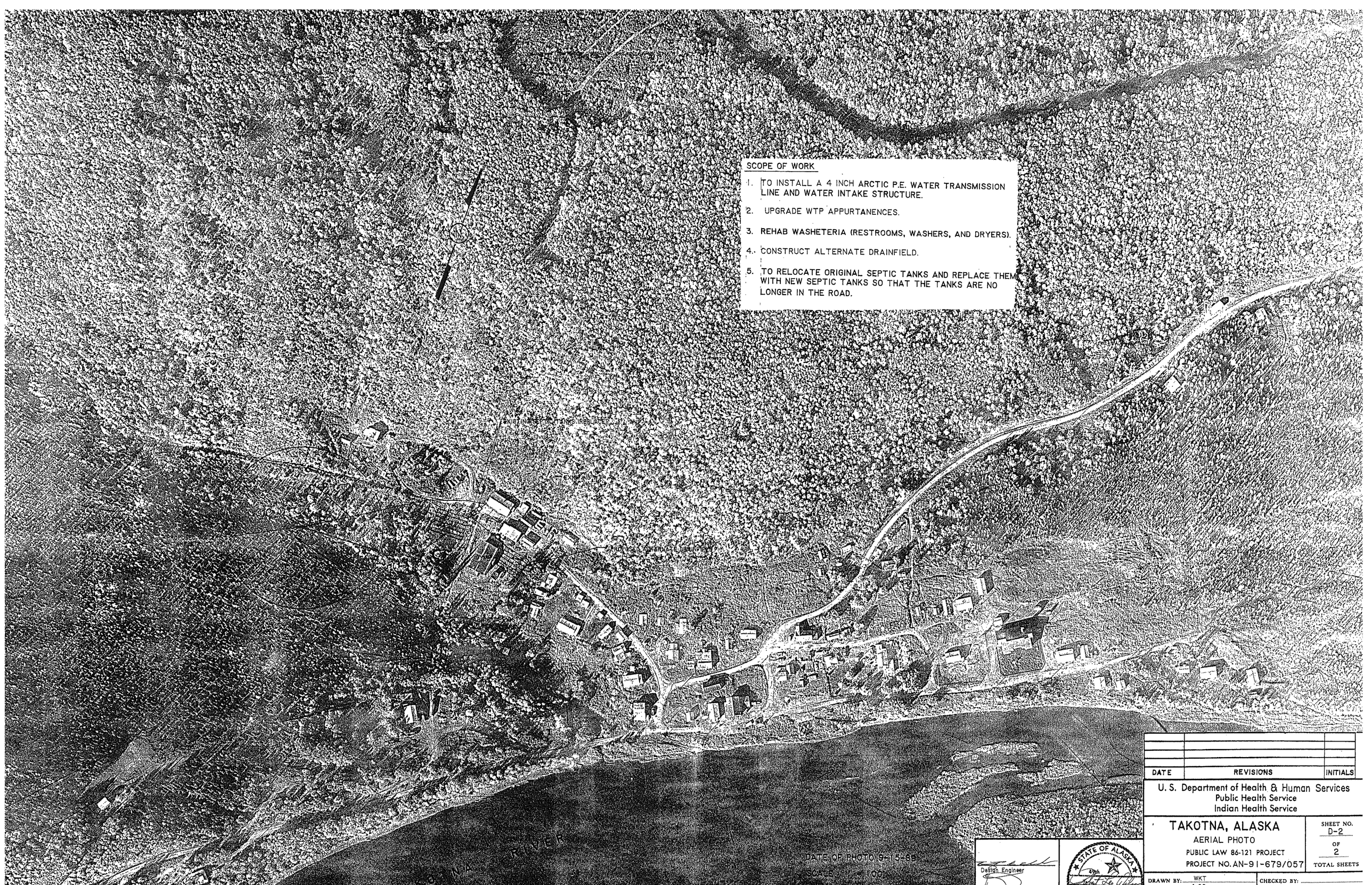

DATE	REVISIONS	INITIALS

U. S. Department of Health & Human Services
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TAKOTNA, ALASKA

AERIAL PHOTO

PUBLIC LAW 86-121 PROJECT

PROJECT NO. AN-91-679/057

SHEET NO. D-2 OF 2 TOTAL SHEETS

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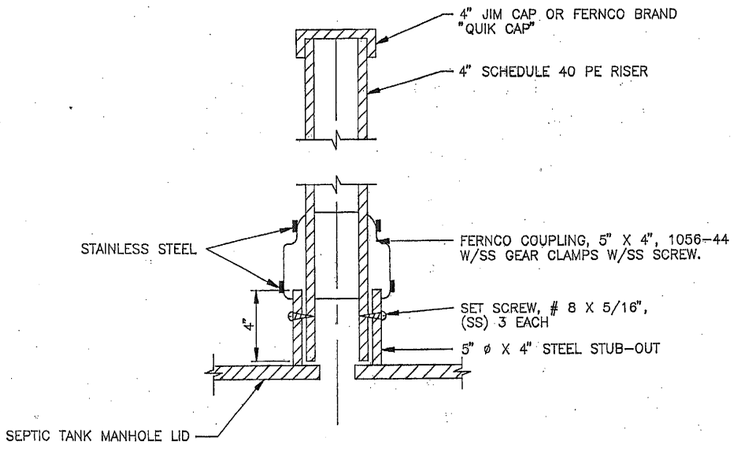
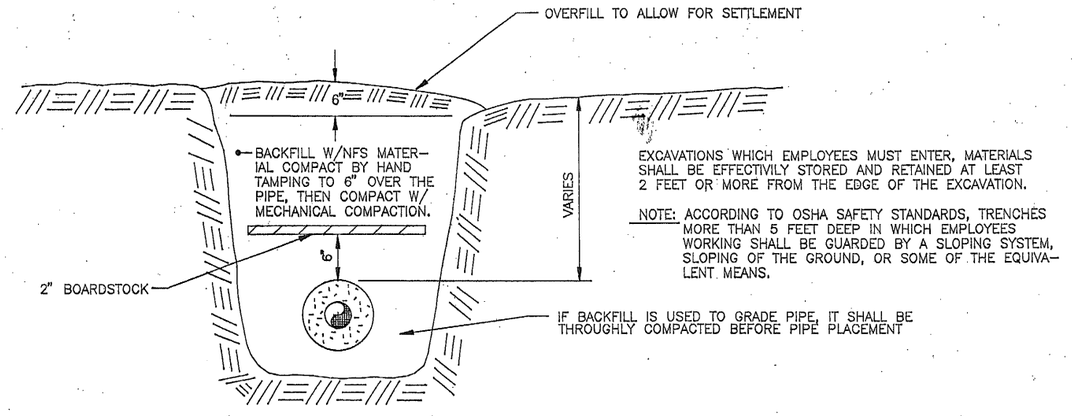


STUB-OUT DETAIL

NOT TO SCALE

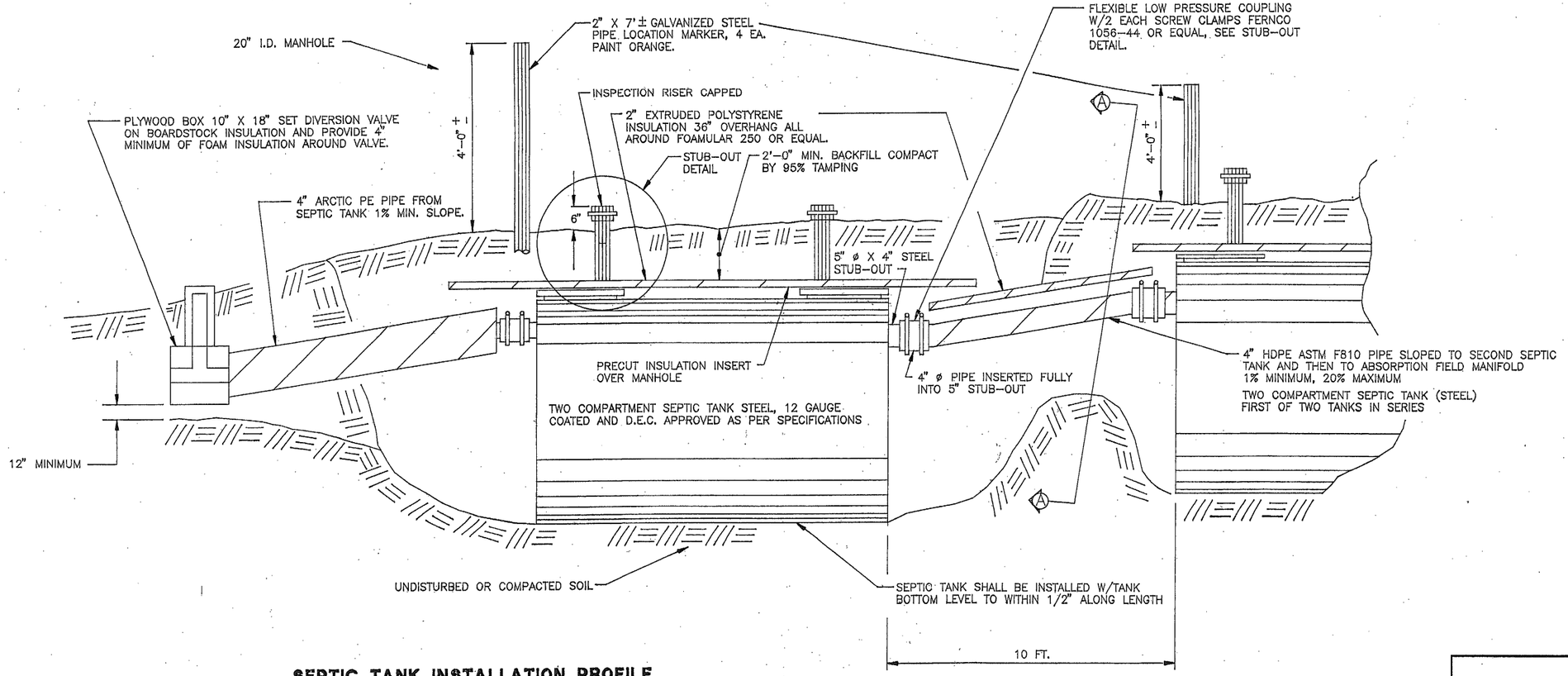


EXCAVATIONS WHICH EMPLOYEES MUST ENTER, MATERIALS SHALL BE EFFECTIVILY STORED AND RETAINED AT LEAST 2 FEET OR MORE FROM THE EDGE OF THE EXCAVATION.

NOTE: ACCORDING TO OSHA SAFETY STANDARDS, TRENCHES MORE THAN 5 FEET DEEP IN WHICH EMPLOYEES WORKING SHALL BE GUARDED BY A SLOPING SYSTEM, SLOPING OF THE GROUND, OR SOME OF THE EQUIVALENT MEANS.

SECTION A-A

NOT TO SCALE



SEPTIC TANK INSTALLATION PROFILE

NOT TO SCALE

SHEET SPECIFIC SCOPE OF WORK

1. INSTALL TWO 1,000 GALLON SEPTIC TANKS OUT OF ROADWAY (REPLACE EXISTING TANKS).

DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
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Indian Health Service

TAKOTNA, ALASKA
SEPTIC TANK AND SEWER SERVICE LINE DETAILS
PUBLIC LAW 86-121 PROJECT
PROJECT NO.AN-91-679/057

SHEET NO. C-1 OF 2 TOTAL SHEETS

Design Engineer

STATE OF ALASKA 49th

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TABLE 1

STRUCTURE	SIZE OF ABSORPTION FIELD REQUIRED(FT^2)	TOTAL LENGHT OF TRENCH REQUIRED(FT)	APPROXIMATE NUMBER OF INFILTRATOR SECTIONS(EA)
2 BEDROOM	N/A	N/A	N/A
3 BEDROOM	N/A	N/A	N/A
4 BEDROOM	N/A	N/A	N/A
WASHETERIA	2,600 SQ FT	867 FEET	144

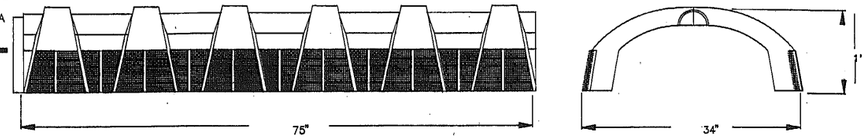
TABLE 2

MINIMUM SEPARATIONS TO BE OBSERVED IN INSTALLATION OF SEPTIC TANK AND ABSORPTION FIELD IN ACCORDANCE WITH 1990 ADCE WASTE WATER REGULATIONS:

FROM	TO	MINIMUM SEPARATION
SEPTIC TANK	DWELLING	10 FEET
SEPTIC TANK	ABSORPTION FIELD	10 FEET
ABSORPTION FIELD	PROPERTY LINE	10 FEET
ABSORPTION FIELD	WATER LINE	10 FEET
SEPTIC TANK	WATER LINE	10 FEET
ABSORPTION FIELD	WELL (PRIVATE)	100 FEET
SEPTIC TANK	WELL (PRIVATE)	100 FEET
PRIVATE SEWER LINE	WELL (PRIVATE)	25 FEET
ABSORPTION FIELD	LAKE, RIVER	100 FEET
ABSORPTION FIELD	CUT OR FILL BANK	50 FEET
PRIVATE SEWER CLEANOUT	WELL (PRIVATE)	25 FEET

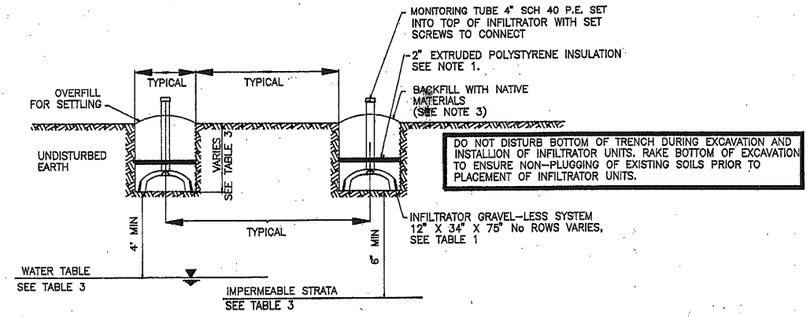
TABLE 3

GEOGRAPHICAL LOCATION	MINIMUM DEPTH OF GROUND COVER (IN FEET)	MINIMUM DEPTH TO SEASONAL HIGH WATER TABLE (IN FEET)	MINIMUM DEPTH TO IMPERMEABLE STRATA (IN FEET)
SOUTHEAST ALASKA (EAST OF 141 DEGREE W, LONGITUDE	3	8	10
SOUTHWEST ALASKA (KODIAK ISLAND BOROUGH AND ALL AREAS SOUTWEST OF CHIGNIK INCLUDING CHIGNIK)	2	7	9
VALDEZ AND THE AREA ENCLOSED BY THE VALDEZ BASIN	3	8	10
ALL REMAINING AREAS OF THE STATE	4	9	11



STANDARD INFILTRATION UNIT

NOT TO SCALE

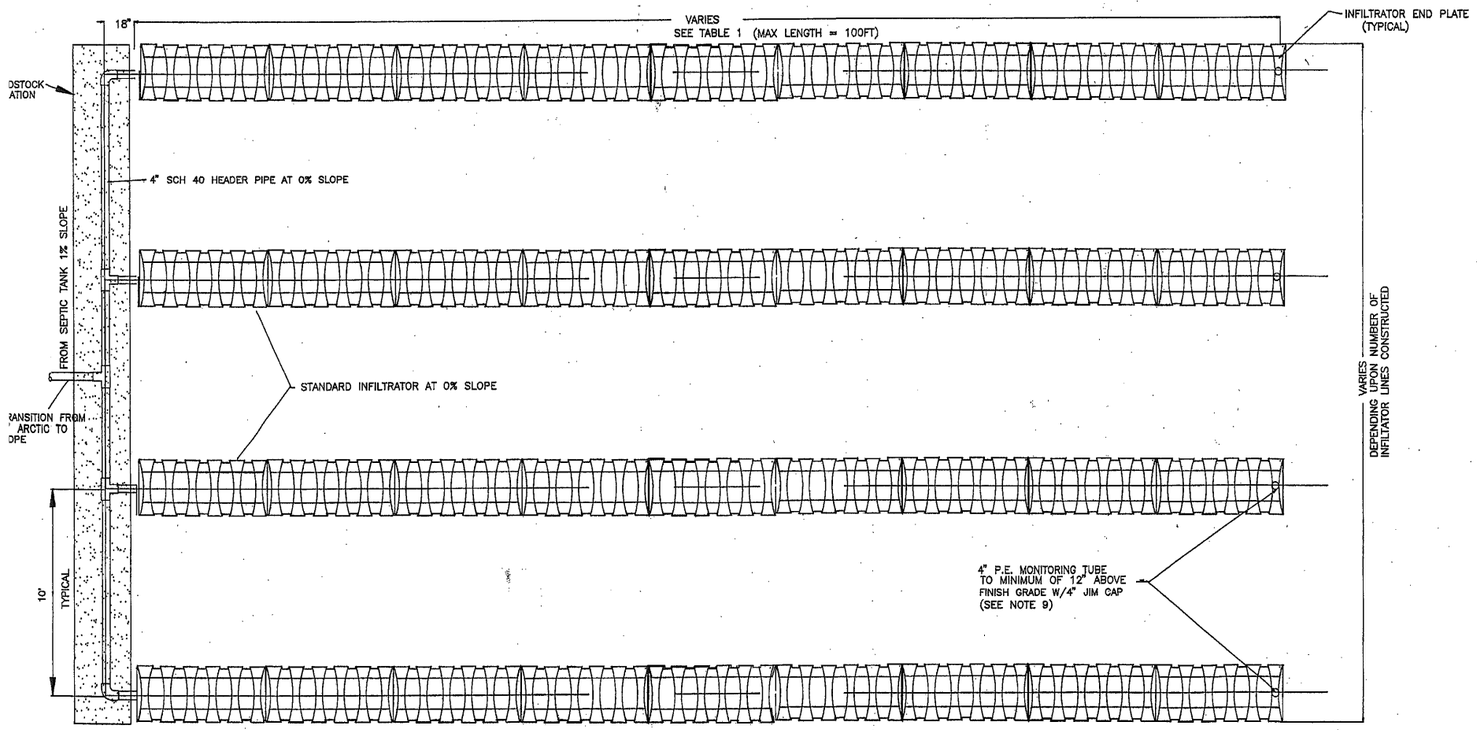


TYPICAL ABSORPTION FIELD SECTION

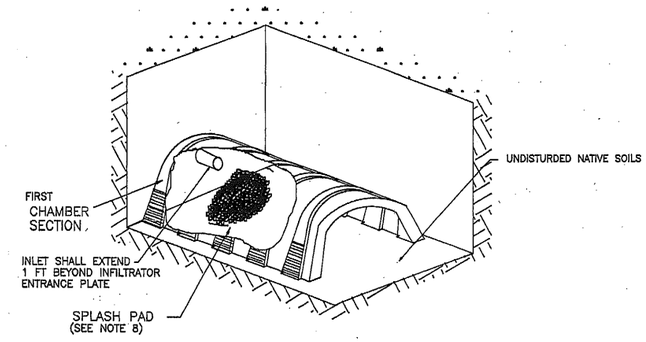
NOT TO SCALE

NOTES:

1. MINIMUM DEPTH OF GROUND COVER OVER INFILTRATOR SHALL BE IN ACCORDANCE WITH TABLE 3. SUBSTITUTION OF 2 INCHES OF EXTRUDED PLOYSTYRENE INSULATION FOR EACH FOOT OF EARTH COVER LESS THE SPECIFIED COVER DEPTH IS ALLOWED. HOWEVER AT LEAST 2 FEET MINIMUN EARTH COVER IS REQUIRED.
2. BOTTOM OF INFILTRATOR SYSTEM SHALL BE PLACED 4 FEET ABOVE HIGHEST RECORDED WATER TABLE. HIGH WATER TABLE SHALL BE VERIFIED BY THE FIELD ENGINEER AT TIME OF EXCAVATION.
3. BACKFILL MATERIAL AROUND INFILTRATOR UNITS MAY BE OBTAINED FROM THE TRENCH EXCAVATION. MATERIAL MUST BE NON-ORGANIC.
4. INSTALL INFILTRATOR UNITS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THESE PLANS.
5. ABSORPTION FIELD SYSTEM SHALL BE STANDARD CAPCITY INFILTERATOR AS MANUFACTURED BY INFILTRATOR SYSTEM INC; 123 ELM STREET, SUITE 12, OLD SAYBROOK CT. 06475.OR APPROVED EQUAL.
6. THE ABSORPTION FIELD MAY BE DOWN-SIZE OR ENLARGE TO MATCH THE SOIL CONDITIONS AND PERCOLATION RATES AT A PARTICULAR LOCATION. THE SIZE OF THE ABSORPTION FIELD WILL BE DETERMINED BY THE PROJECT ENGINEER ACCORDING TO THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGULATIONS.
7. THE SIZE OF THE ABORPTION FIELD WILL BE DETERMINED BY THE PROJECT ENGINEER ACCORDING TO THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGULATIONS.
8. A STANDARD INFILTRATOR SPLASH PAD OR APPROVED EQUAL SHALL BE INSTALLED AT THE INLET OF EACH INFILTRATOR ROW.
9. MONITORING TUBES ARE REQUIRED AT THE END OF EACH LATERAL ABSORPTION FIELD LINE.



TYPICAL ABSORPTION FIELD PLAN



ISOMETRIC VIEW CHAMBER ABSORPTION FIELD

NOT TO SCALE

NOTE: THIS DRAWING WAS DEVELOPED AS A STANDARD DETAIL FOR AANHS SANITATION FACILITES CONSTRUCTION PROGRAM PROJECT SPECIFIC MODIFICATIONS SHALL BE HIGHLIGHTED AND ARE THE REPONSIBILITY OF THE PROJECT DESIGN ENGINEER.

SITE SPECIFIC NOTES

1. WASHETERIA WASTEWATER SYSTEM SHALL BE LOCATED OUTSIDE OF 200 FOOT PROTECTION RADIUS OF WATER SOURCE
2. WASHETERIA SEPTIC TANK SHALL BE 1,000 GALLON STEEL SEPTIC TANK. (TWO-SEPTIC TANKS TOTAL)

SHEET SPECIFIC SCOPE OF WORK

1. CONSTRUCT NEW SEPTIC DRAINFIELD.
2. PLACE BOARDSTOCK INSULATION OVER HEADER (2" THICKNESS)

DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
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Indian Health Service

TAKOTNA, ALASKA
TYPICAL ABSORPTION FIELD
PUBLIC LAW 86-121 PROJECT
PROJECT NO.AN-91-679/057

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OF 2
TOTAL SHEETS

Design Engineer
Maintenance Review

STATE OF ALASKA
20th
Robert Leo Wilson

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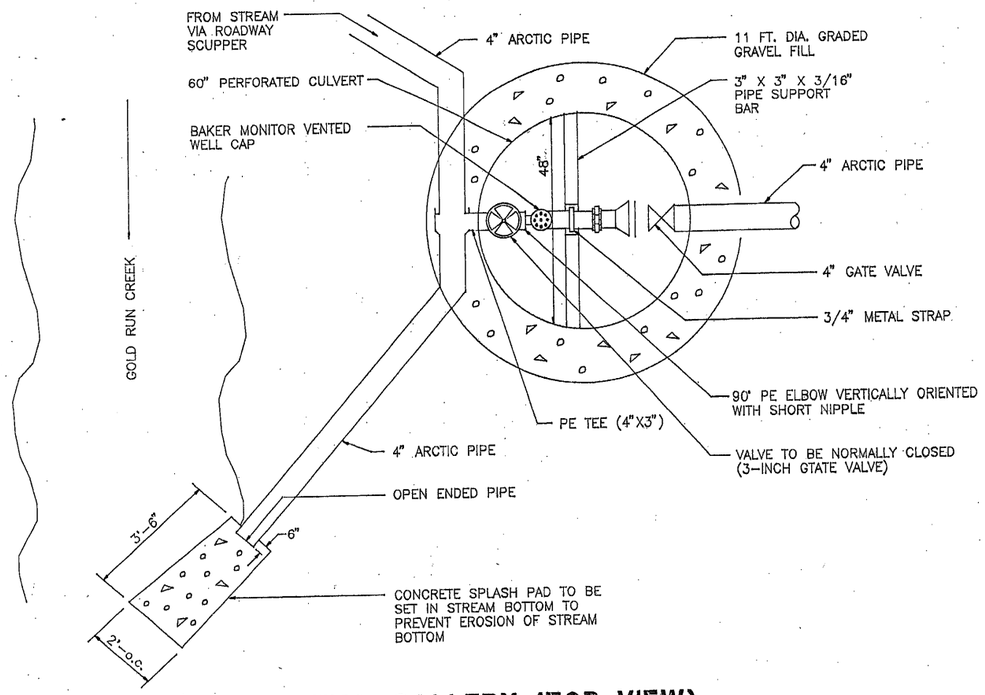
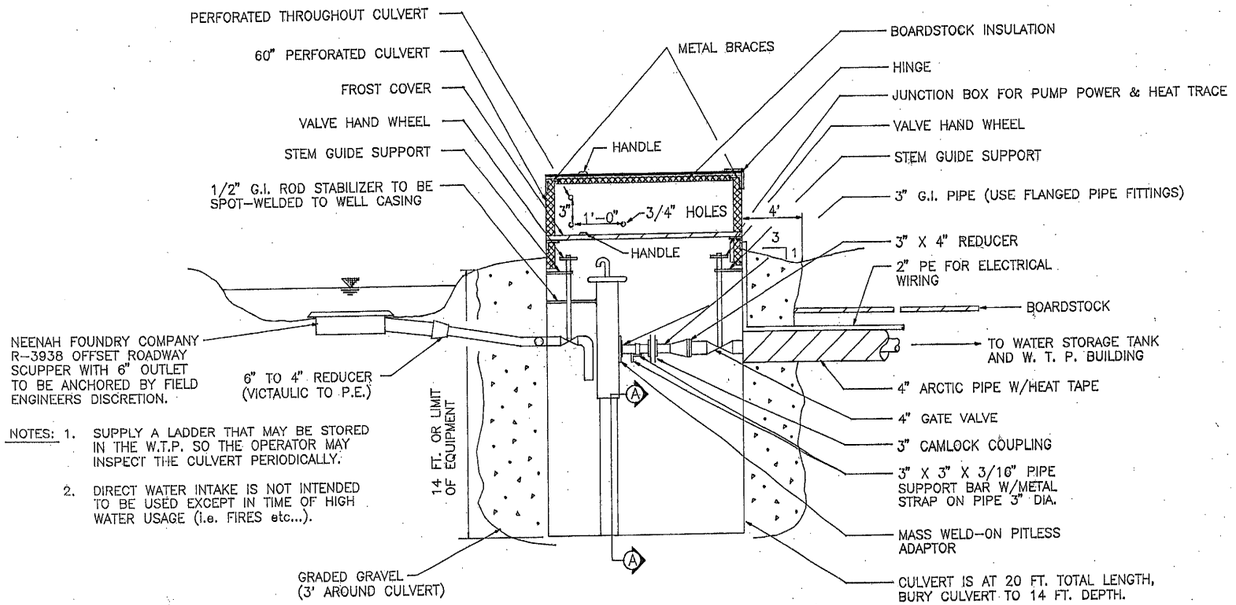


INFILTRATION GALLERY (TOP VIEW)

NOT TO SCALE

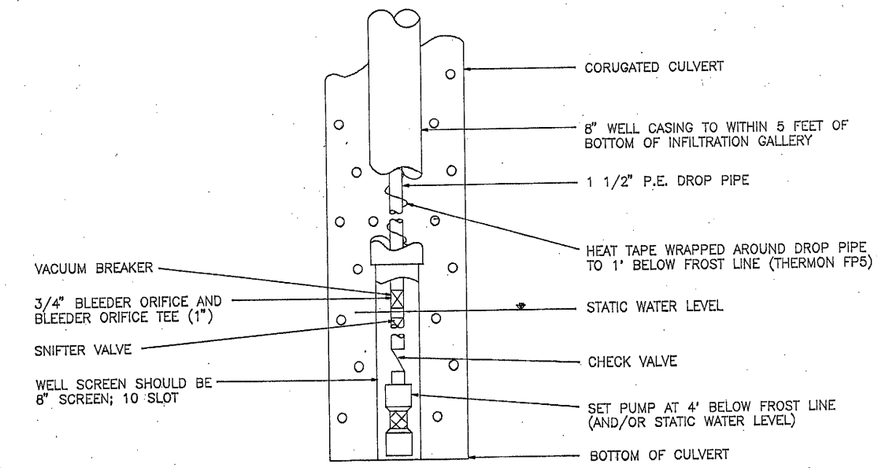


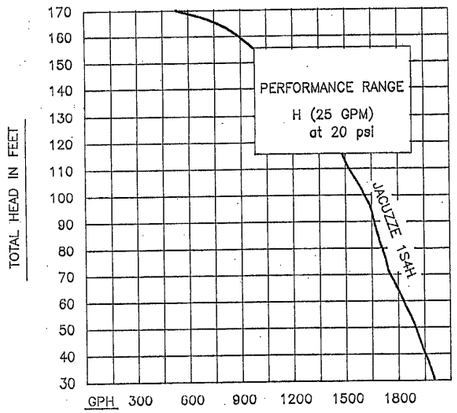
INFILTRATION GALLERY (SIDE VIEW)

NOT TO SCALE

NOTES: 1. SUPPLY A LADDER THAT MAY BE STORED IN THE W.T.P. SO THE OPERATOR MAY INSPECT THE CULVERT PERIODICALLY.

2. DIRECT WATER INTAKE IS NOT INTENDED TO BE USED EXCEPT IN TIME OF HIGH WATER USAGE (i.e. FIRES etc...).





SECTION A-A

NOT TO SCALE

SHEET SPECIFIC SCOPE OF WORK

1. CONSTRUCT WATER INTAKE STRUCTURE

NOTES :

1. 4" PE ARCTIC PIPE SHALL BE BURIED AT A MINIMUM OF 4 FEET.
2. SCREEN SLOT SIZE IS PREDICATED ON THE GRAIN-SIZE DISTRIBUTION OF THE FILTER PACK; ALWAYS OBTAIN 100% OF FILTER PACK.
3. USE CORUGATED CULVERT.
4. FILTER PACK SHOULD BE CLEAN, SILICEOUS, ROUNDED AND UNIFORM, (3/4" PLUS).
5. INSULATE TOP AND SIDES (TO WINTER WATER LEVEL) OF THE WET WELL.
6. WATER FILL SYSTEM IS A DRAINBACK SYSTEM.

DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
Public Health Service
Indian Health Service

TAKOTNA, ALASKA

WATER INTAKE/OUTLET DETAIL

PUBLIC LAW 86-121 PROJECT
PROJECT NO.AN-91-679/057

SHEET NO. S-L
OF 1
TOTAL SHEETS

Design Engineer
Maintenance Review

STATE OF ALASKA 49th
Robert Leo Wilson

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DATE: 4-92
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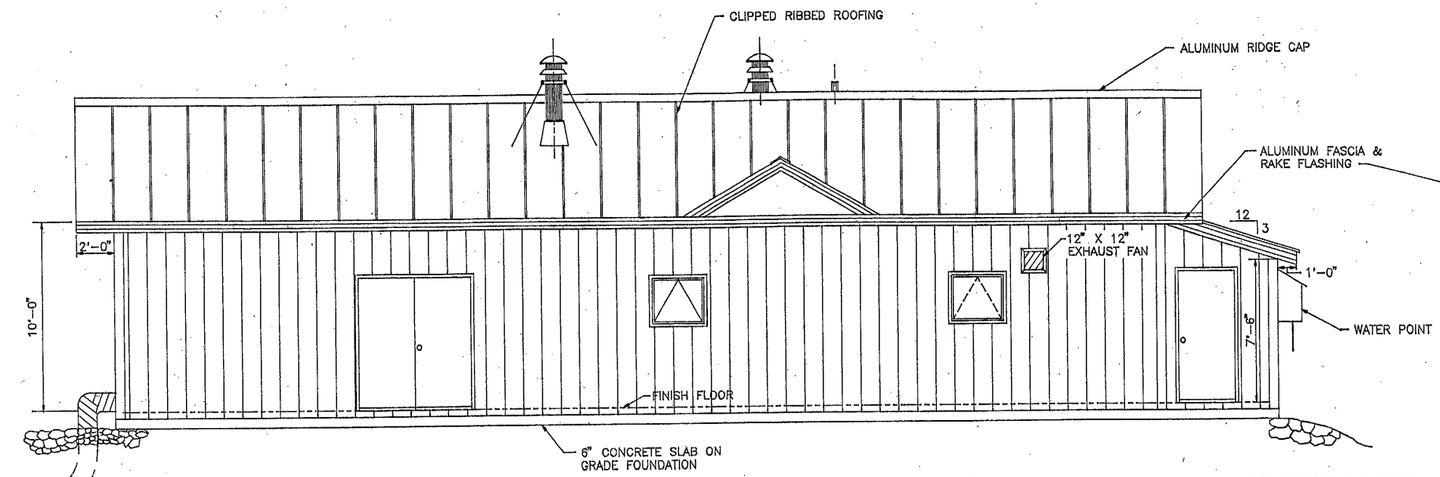
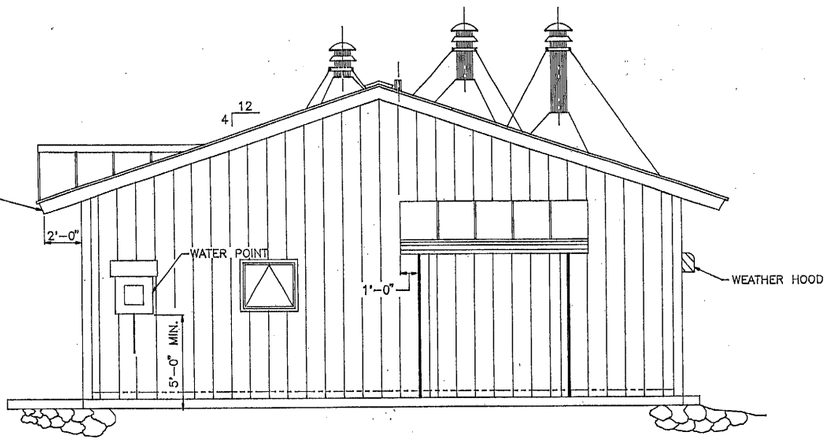


FRONT ELEVATION

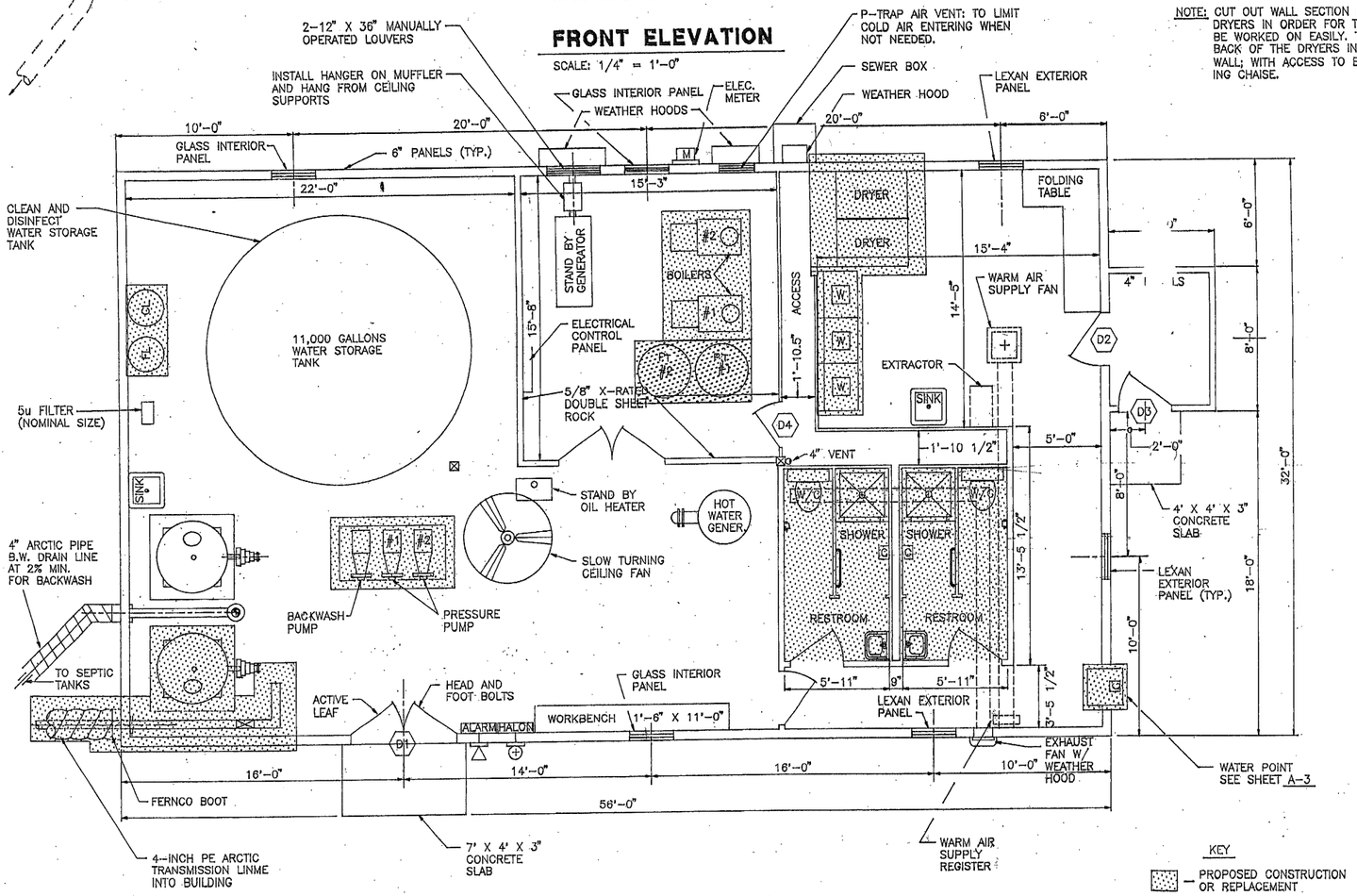
SCALE: 1/4" = 1'-0"



RIGHT SIDE ELEVATION

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

NOTE: CUT OUT WALL SECTION DIRECTLY BEHIND DRYERS IN ORDER FOR THE DRYERS TO BE WORKED ON EASILY. THEN FRAME THE BACK OF THE DRYERS INTO THE EXISTING WALL; WITH ACCESS TO BACK FROM PLUMBING CHAISE.



FLOOR PLAN

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

SHEET SPECIFIC SCOPE OF WORK

1. REPLACE OLD WASHERS AND HYDRONIC DRYERS.
2. REPLACE ALL MEDIA IN PRESSURE SANDFILTERS.
3. REHAB BOTH BATHROOMS.
4. REPLACE ALL PUMPS LISTED.
5. REPLACE BOILERS.
6. REPLACE WATERING POINT.
7. REPLACE PRESSURE TANKS.
8. REPLACE CHLORIDE AND FLUORINE INJECTION EQUIPMENT (ie. PUMPS AND VATS).
9. INSTALL NEW RAW WATER SUPPLY LINE.
10. REPLACE PIPING AS NEEDED.
11. REWIRE AS NEEDED.
12. REPLACE UNIT HEATERS.
13. CLEAN AND DISINFECT INTERIOR OF WATER STORAGE TANK.
14. REPLACE DOORS LISTED BELOW.
15. REPLACE WINDOWS.
16. PAINT EXTERIOR AND INTERIOR OF BUILDING (EXTERIOR-BLUE; INTERIOR-WHITE).
17. REPLACE ALUMINUM ROOFING W/CLIPPED RIBBED ROOFING.
18. INSTALL EXTRACTOR (SINGLE PHASE).
19. REPLACE W/C

ITEMS TO BE REPLACED IN WTP AND WASHETERIA

ITEM	MAKE	MODEL
CIRCULATING PUMPS # 1 & 2	GRUNDFOS	UP26-64F OR EQUAL
PRESSURE PUMP	JACUZZI	1DS1-S/B OR EQUAL
DRYERS # 1 & 2	LOADSTAR BY HUEBSCH	
BOILER # 1 & 2	BURNHAM	V-74 (OR EQUAL)
FLUORIDE PUMP	LMI	A37
CHLORINE PUMP	LMI	A18
UNIT HEATER	TRANE	
WASHER # 1,2 & 3	WHIRLPOOL	
PRESSURE TANK # 1 & 2	WELL-X-TROL	WX 252

DOOR SCHEDULE

REQ'D	DOOR	TYPE OF DOOR	TYPE OF FRAME	TYPE OF HINGE	TYPE OF LOCKSET	DOOR CLOSER	TYPE OF THRESHOLD	TYPE OF DOOR BOTTOM	SWING
1	D1	EXTERIOR	METAL	EXTERIOR	ENTRANCE	NO	EXTERIOR IN SWING	EXTERIOR	LH
1	D2	EXTERIOR	METAL	EXTERIOR	ENTRANCE	YES	EXTERIOR	EXTERIOR	RH
1	D3	EXTERIOR	METAL	EXTERIOR	ENTRANCE	YES	EXTERIOR IN SWING	EXTERIOR	RH
1	D4	FIRE DOOR	METAL	EXTERIOR		YES	EXTERIOR	EXTERIOR	LH

DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
Public Health Service
Indian Health Service

TAKOTNA, ALASKA

WTP FLOOR PLAN AND ELEVATIONS
PUBLIC LAW 86-121 PROJECT
PROJECT NO.AN-91-679/057

SHEET NO. A-1 OF 2 TOTAL SHEETS

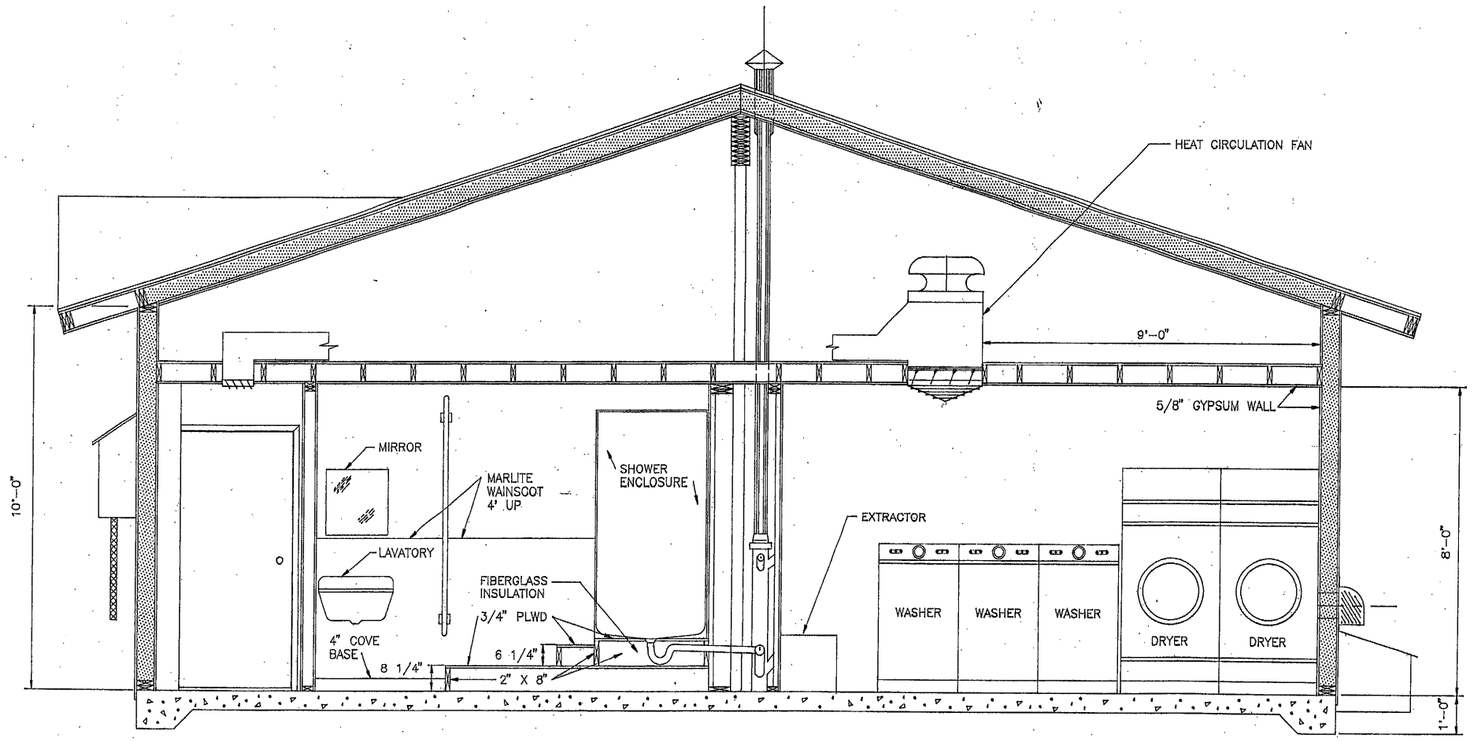
Design Engineer

STATE OF ALASKA — Robert Lee Wilson — 7744 — Registered Professional Engineer

DRAWN BY: WKT
DATE: 4-92
CHECKED BY:
DATE:

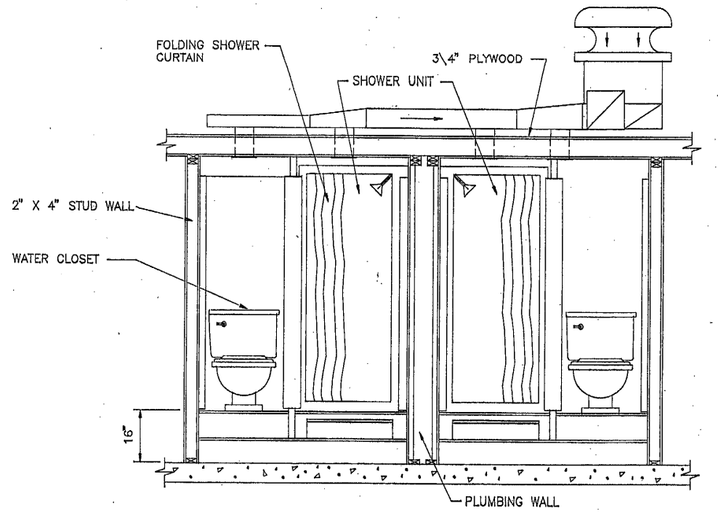
SHEET SPECIFIC SCOPE OF WORK

1. REPLACE HYDRONIC DRYERS (DRYERS ALREADY IN PLACE)
2. REPLACE WASHERS.
3. REPLACE ROTTING FLOORING IN BOTH BATHROOMS.
4. INSTALL HEAT CIRCULATING FAN TO MOVE WARM AIR FROM MEZZANINE AREA TO LOWER AREAS IN PUPLIC AREA. (OR CHECK AND REPAIR EXISTING HEAT CIRCULATING FAN).
5. INSTALL FIRE DAMPERS FOR HEAT CIRC. FAN DUCT (FUSIBLE-LINK AUTOMATIC CLOSING ASSEMBLY).



CROSS SECTION C-C

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



CROSS SECTION D-D

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

DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
Public Health Service
Indian Health Service

TAKOTNA, ALASKA
WTP CROSS SECTIONS
PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-91-679/057

SHEET NO. A-2
OF 2
TOTAL SHEETS

Design Engineer

STATE OF ALASKA 1041

DRAWN BY: WKT
DATE: 4-92
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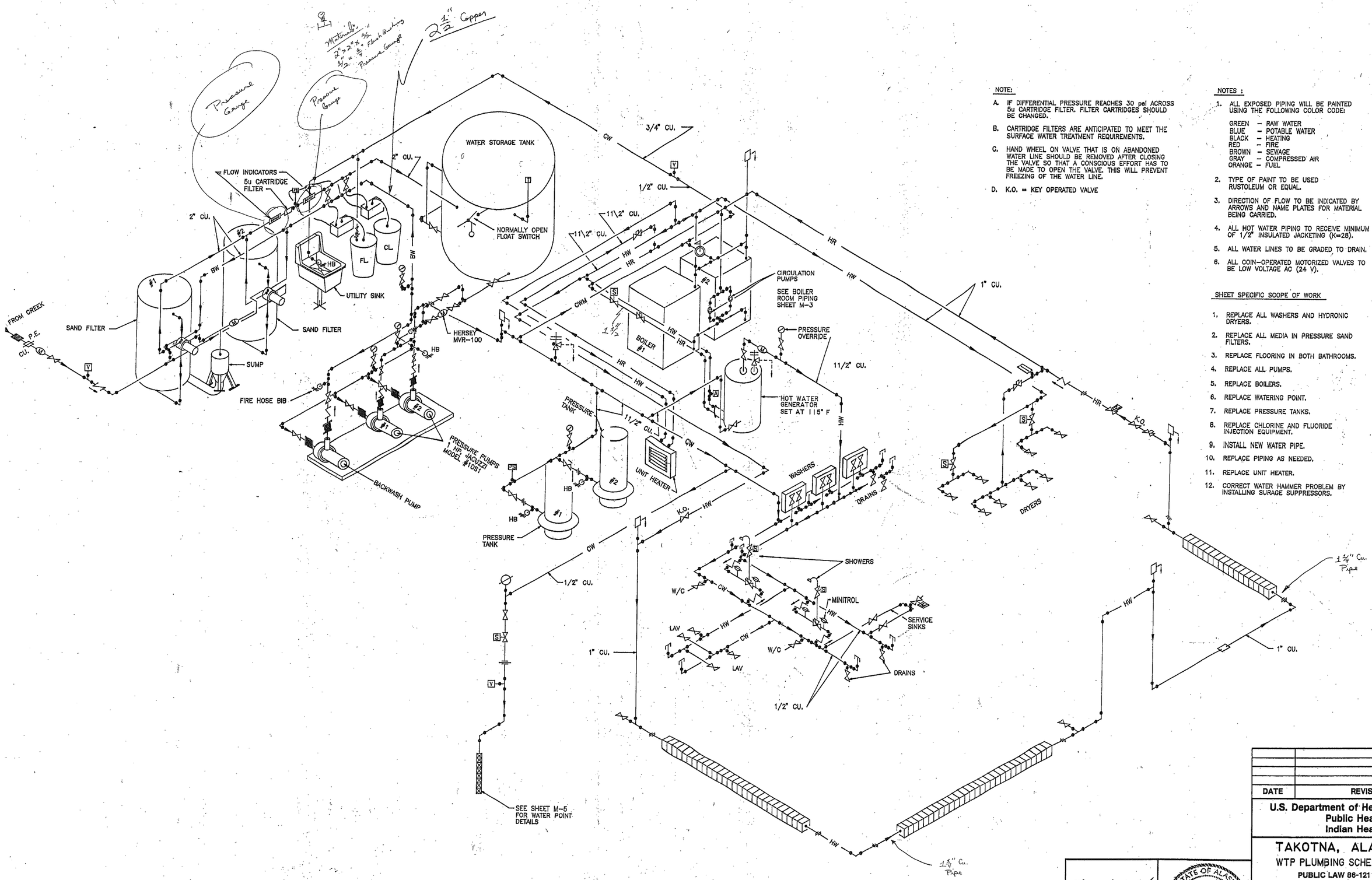
DATE:



NOTE:

A. IF DIFFERENTIAL PRESSURE REACHES 30 psi ACROSS 5u CARTRIDGE FILTER. FILTER CARTRIDGES SHOULD BE CHANGED.

B. CARTRIDGE FILTERS ARE ANTICIPATED TO MEET THE SURFACE WATER TREATMENT REQUIREMENTS.

C. HAND WHEEL ON VALVE THAT IS ON ABANDONED WATER LINE SHOULD BE REMOVED AFTER CLOSING THE VALVE SO THAT A CONSCIOUS EFFORT HAS TO BE MADE TO OPEN THE VALVE. THIS WILL PREVENT FREEZING OF THE WATER LINE.

D. K.O. = KEY OPERATED VALVE

NOTES :

1. ALL EXPOSED PIPING WILL BE PAINTED USING THE FOLLOWING COLOR CODE:

   GREEN – RAW WATER
   BLUE – POTABLE WATER
   BLACK – HEATING
   RED – FIRE
   BROWN – SEWAGE
   GRAY – COMPRESSED AIR
   ORANGE – FUEL

2. TYPE OF PAINT TO BE USED RUSTOLEUM OR EQUAL.
3. DIRECTION OF FLOW TO BE INDICATED BY ARROWS AND NAME PLATES FOR MATERIAL BEING CARRIED.
4. ALL HOT WATER PIPING TO RECEIVE MINIMUM OF 1/2" INSULATED JACKETING (K=28).
5. ALL WATER LINES TO BE GRADED TO DRAIN.
6. ALL COIN-OPERATED MOTORIZED VALVES TO BE LOW VOLTAGE AC (24 V).

SHEET SPECIFIC SCOPE OF WORK

1. REPLACE ALL WASHERS AND HYDRONIC DRYERS.
2. REPLACE ALL MEDIA IN PRESSURE SAND FILTERS.
3. REPLACE FLOORING IN BOTH BATHROOMS.
4. REPLACE ALL PUMPS.
5. REPLACE BOILERS.
6. REPLACE WATERING POINT.
7. REPLACE PRESSURE TANKS.
8. REPLACE CHLORINE AND FLUORIDE INJECTION EQUIPMENT.
9. INSTALL NEW WATER PIPE.
10. REPLACE PIPING AS NEEDED.
11. REPLACE UNIT HEATER.
12. CORRECT WATER HAMMER PROBLEM BY INSTALLING SURAGE SUPPRESSORS.

DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
Public Health Service
Indian Health Service

TAKOTNA, ALASKA

WTP PLUMBING SCHEMATIC

PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-91-679/057

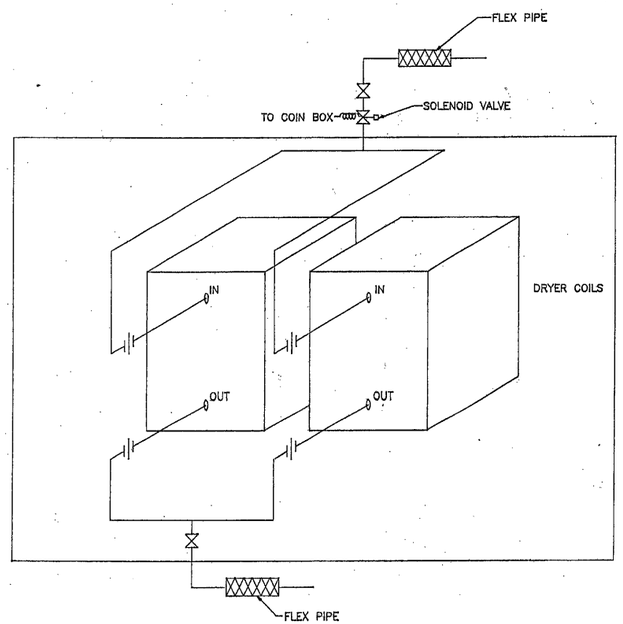
SHEET NO. M-1 OF 5 TOTAL SHEETS

Design Engineer

STATE OF ALASKA

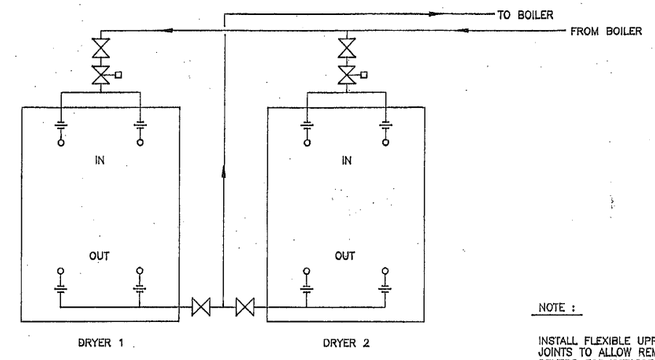
DRAWN BY: WKT DATE: 4-92

CHECKED BY: DATE:



PLUMBING DIAGRAM HOT WATER DRYERS

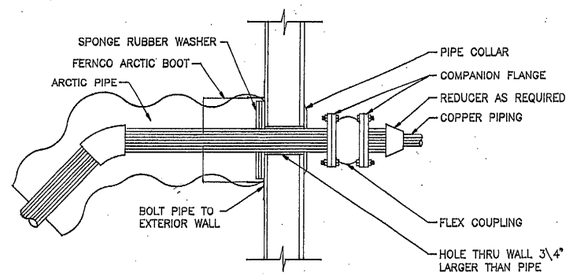
NOT TO SCALE



NOTE :

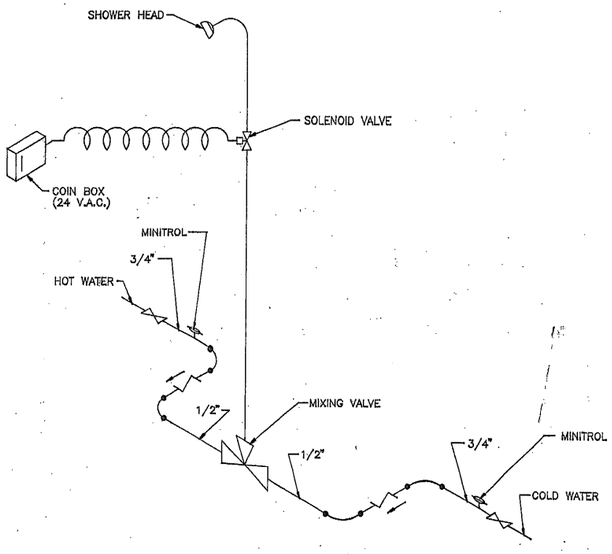
INSTALL FLEXIBLE UPPER EXPANSION JOINTS TO ALLOW REMOVAL OF DRYERS FOR SERVICE.

DRYERS ARE TO BE HEUBSCH, 30CSL, 115V HYDRONIC DRYERS.



TYPICAL PIPE THRU WALL SECTION

NOT TO SCALE



SHOWER PIPING

NOT TO SCALE:

NOTES :

1. INSTALL SOLENOID VALVE SO IT IS ACCESSIBLE.
2. PUT MINI-TROLS ON HOT AND COLD WATER LINES.

DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
Public Health Service
Indian Health Service

TAKOTNA, ALASKA
WTP PIPE DETAIL
PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-9 I-679/057

SHEET NO. M-2
OF 5
TOTAL SHEETS

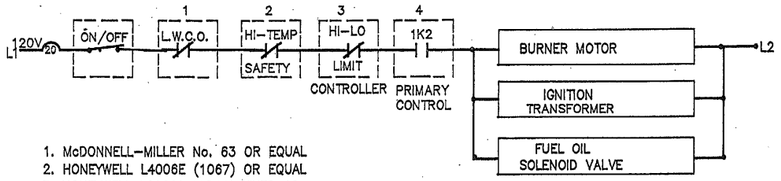
Design Engineer

Maintenance Review

STATE OF ALASKA 49th

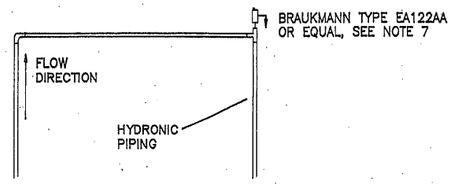
DRAWN BY: WKT
DATE: 4-92

CHECKED BY:
DATE:

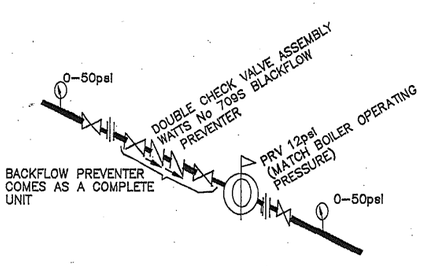


1. McDONNELL-MILLER No. 63 OR EQUAL
2. HONEYWELL L4006E (1067) OR EQUAL
3. HONEYWELL L6006A (1244) FIXED 10 DEGREE F. DIFF OR EQUAL
4. HONEYWELL R8184G (1138) OR EQUAL

(5) TYPICAL BOILER CONTROL COMPONENTS SCHEMATIC LAYOUT
NTS

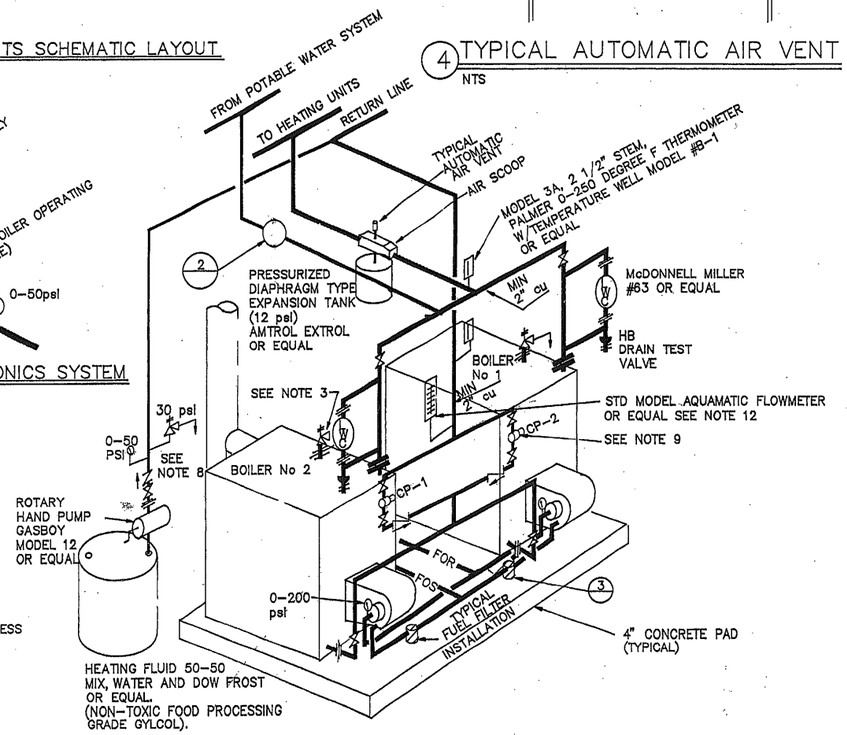


(4) TYPICAL AUTOMATIC AIR VENT
NTS



(2) TYPICAL WATER SYSTEM/HYDRONICS SYSTEM INTERFACE
NTS

NOTES:
1. PROVIDE GYLCOL HYDROMETER FOR OPERATOR.
2. THE OPERATING PRESSURE FOR THE POTABLE WATER SUPPLY SHOULD BE GREATER THAN THAT OF THE HYDRONICS SYSTEM



(1) TYPICAL BOILER PIPING
NTS

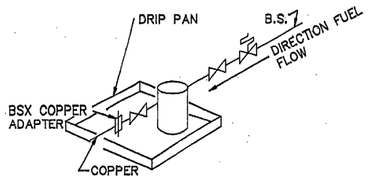
BOILER OPERATING CHARACTERISTICS
1. STACK TEMP 400 TO 550 DEGREE F
2. OIL PRESSURE 100 psi UNLESS OTHERWISE SPECIFIED BY BURNER MANUFACTURER
3. SMOKE DOT: 0-1
4. STACK DRAFT: .02-.04" WATER COLUMN
5. H_2O OVERFIRE DRAFT: 0.01-0.02" WATER COLUMN UNLESS OTHERWISE SPECIFIED BY BOILER MANUFACTURER
6. 12-20 psi BOILER OPERATING PRESSURE
7. 160 TO 190 DEGREE OPERATING TEMP

TEST KITS REQUIRED
BACHARACH KIT #10-5022 OR EQUAL

SPARE PARTS TO BE PROVIDED FOR EACH TYPE BOILER/BURNER INSTALLATION
1. ONE EACH COMPLETE BURNER UNIT
2. ELECTRODE ASSEMBLY 1 EACH
3. IGNITION TRANSFORMER, 1 EACH
4. CAD CELL FLAME DETECTION WITH HONEYWELL R8184G PRIMARY CONTROL OR EQUAL
5. FUEL PUMP, 1 EACH
6. HI-TEMPERATURE SAFETY CONTROL WITH MANUAL RESET HONEYWELL L4006E OR EQUAL
7. HI-LO OPERATING CONTROLLER, HONEYWELL L6006A (1244) WITH 10 DEGREE FIXED OPERATING DIFFERENTIAL OR EQUAL

FIRE EXTINGUISHER REQUIREMENTS
1. SET PORTABLE FIRE EXTINGUISHERS PER REQUIREMENTS OF CHAPTER 10, 1988 NATIONALFIRE CODE. WASHETERIA PUBLIC ROOMS ARE CONSIDERED A "LIGHT HAZARD" WITH CLASS A COMBUSTIBLES. WATER TREATMENT PLANTS OR MECHANICAL ROOMS ARE AN ORDINARY HAZARD" WITH CLASS A COMBUSTIBLES AND CLASS B FLAMMABLES.
2. USE 5-6 POUNDS PORTABLE FIRE EXTINGUISHERS IN LIGHT HAZARD AND ORDINARY HAZARD LOCATIONS. "AMEREX MODEL No 443, UL RATING 3-A40BC OR APPROVED EQUAL, WITH MULTIPURPOSE ABC DRY CHEMICAL (NONOAMONIUM PHOSPHATE) POWDER. INSTALL THE UNIT(S) IN ACCESSIBLE AREAS (MAX STRAIGHT WALKING DIST. =70') OR AS REQUIRED BY FIRE MARSHAL. IN ANY CASE, PROVIDE A MINIMUM OF 2 UNITS IN EACH TREATMENT PLANT OR WASHETERIA.
3. IN ADDITION, USE AUTOMATIC FIRE EXTINGUISHERS IN ORDINARY HAZARD LOCATIONS. AD-X FIRE SYSTEMS, INC. MODEL No 103-, 20 SQ FOOT COVERAGE OR APPROVED EQUAL, WITH MULTIPURPOSE ABC DRY CHEMICAL POWDER. INSTALL ONE UNIT OVER EACH HEAT APPLIANCE BURNER. SET BETWEEN 3 FEET AND 7.5 FEET ABOVE THE BURNER.

NOTES ON BOILER PIPING
1. HYDRONIC PIPING SHOWN IS FOR REPRESENTATION OF REQUIRED FITTINGS ONLY. ACTUAL LOCATION OF TAPS WILL VARY BY BOILER MANUFACTURER.
2. BOILERS SHALL BE PLUMBED IN PARALLEL.
3. BOILER HOT WATER SAFETY RELIEF VALVES SHALL BE RATED FOR 30 psi. A RIGID PIPE WITH THREADED CONNECTIONS SHALL BE ATTACHED TO BRING THE BLOW-OFF DISCHARGE WITHIN 6 INCHES OF THE FLOOR.
4. THE EXPANSION TANK SHALL BE INDIVIDUALLY SIZED FOR EACH HYDRONIC SYSTEM, BASED ON OPERATING TEMPERATURES, VOLUME OF SYSTEM, AND TANK MANUFACTURES RECOMMENDATIONS.
5. DIELECTRIC JOINTS SHALL BE MADE BY ISOLATION KITS. (NIPPLES AND NOT UNIONS) AT ALL CONNECTIONS OF DISSIMILAR METALS.
6. MINIMUM CLEARANCE REQUIRED BY UNIFORM CODE IS 18 INCHES ON ALL SIDES. FOR REAR EXIT BOILERS A REAR CLEARANCE OF 36 INCHES IS REQUIRED TO MAINTAIN ADEQUATE SEPARATION BETWEEN STACK AND WALL. FOR EASY O&M ACCESS 24-INCHES BETWEEN BOILERS, 36-INCHES SIDE CLEARANCE AND 48-INCHES FRONT CLEARANCE IS RECOMMENDED. THESE DISTANCES ARE AS MEASURED FROM THE BOILER BOX. ALLOWANCE FOR PROTRUDING PIPING AND APPURTENANCES ARE INCORPORATED INTO THE RECOMMENDED VALUES.
7. INSTALL AUTOMATIC AIR VENT AT DOWNSTREAM END OF ANY HYDRONICS PIPING HIGH POINT. INSTALL AN ISOLATION BALL VALVE WITH EACH VENT IF NOT PART AN INTERGAL PART OF THE VENT ASSEMBLY (Ie HONEYWELL BRAUKMANN TYPE EA122AA)
8. A HEATING FLUID ADD LINE 30 psi RELIEF VALVE IS ONLY REQUIRED WHEN MIX VAT IS LOCATED OUT OF SIGHT OF BOILER RELIEF VALVES. WHEN UTILIZED, POSITION HEATING FLUID ADD LINE 30 psi RELIEF VALVE AND ATTACH HOSE SUCH THAT ANY DISCHARGE DRAINS INTO GYLCOL MIXING VAT
9. CIRCULATION PUMPS ARE TYPICALLY PLUMBED IN PARALLEL ON THE RETURN LINE AT AN ELEVATION BELOW THE LOW WATER CUTOFF. PUMPS ARE SHOWN IN A TYPICAL CONFIGURATION. SEE HYDRONICS SCHEMATIC FOR LOCATION.
10. PROVIDE 2 EACH 10' WASHER HOSES FOR DRAINING SYSTEMS AND GENERAL HOUSEKEEPING.
11. PROVIDE PETCOCK TYPE ISOLATION VALVE ON ALL PRESSURE GAUGES.
12. PROVIDE THE STANDARD MODEL FLOW CELL FLOWMETER WITH NEOPRENE "O" RINGS AND METAL STRAINER CAP RATED FOR OPERATION TO A MAXIMUM 194 DEGREE F . PROVIDE THE "K" TYPE NICKEL PLATED BRASS "CHECKMATE" ISOLATION VALVE RATED FOR OPERATION TO A MAXIMUM 194 DEGREE F. SIZE THE METER PER MANUFACTURER'S RECOMMENDATION. IF BOILER OPERATION IN EXCESS OF 190 DEGREE F IS DESIRED PROVIDE TEFLON "O" RINGS TO BRING MAXIMUM TEMPERATURE RATING TO 302 DEGREES F.
13. CALIBRATE ALL THERMOMETERS IN BOILING WATER PRIOR TO INSTALLATION.



(3) TYPICAL FUEL FILTER INSTALLATION
NTS

FUEL FILTER NOTES
1. APPLIANCE FUEL FILTER INSTALLATION: USE GENERAL 1A25A OR EQUAL (TYP) AT EACH FUEL USING APPLIANCE.
4. PROVIDE DRIP PANS UNDER ALL FUEL FILTER INSTALLATIONS.

NOTE: THIS DRAWING WAS DEVELOPED AS A STANDARD DETAIL FOR AANHS SANITATION FACILITIES CONSTRUCTION PROGRAM PROJECT SPECIFIC MODIFICATIONS SHALL BE HIGHLIGHTED AND ARE THE RESPONSIBILITY OF THE PROJECT DESIGN ENGINEER.

DATE	REVISIONS	INITIALS

U. S. Department of Health & Human Services
Public Health Service
Indian Health Service

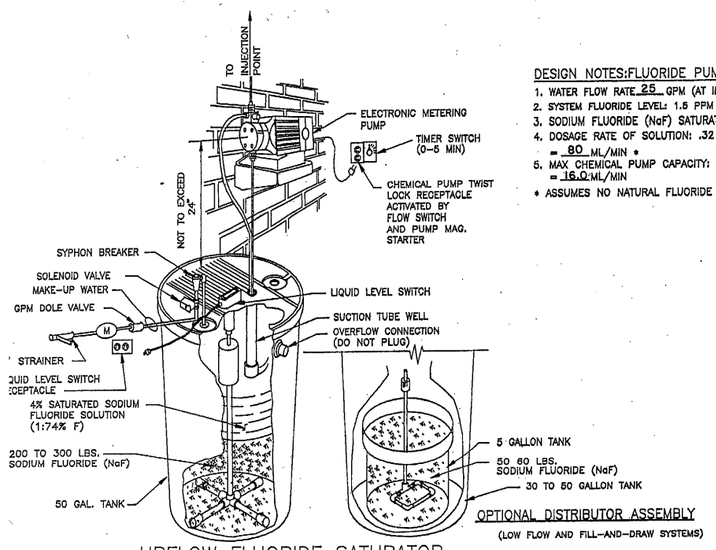
TAKOTNA, ALASKA
TYPICAL BOILER PIPING
PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-91-679/057

SHEET NO. M-3 OF 5 TOTAL SHEETS

Design Engineer

STATE OF ALASKA 49TH

DRAWN BY: JAQ / WKT
CHECKED BY:



UPFLOW FLUORIDE SATURATOR

NOT TO SCALE

DESIGN NOTES:FLUORIDE PUMP

1. WATER FLOW RATE 25 GPM (AT INJECTION POINT)
2. SYSTEM FLUORIDE LEVEL: 1.5 PPM (RANGE 1.1 TO 1.7 PPM)
3. SODIUM FLUORIDE (NaF) SATURATED SOLUTION 4% (1.8% F)
4. DOSAGE RATE OF SOLUTION: .32 X WATER FLOW RATE (GPM) = 80 ML/MIN *
5. MAX CHEMICAL PUMP CAPACITY: 2 X DOSAGE RATE ML/MIN = 16.0 ML/MIN

* ASSUMES NO NATURAL FLUORIDE

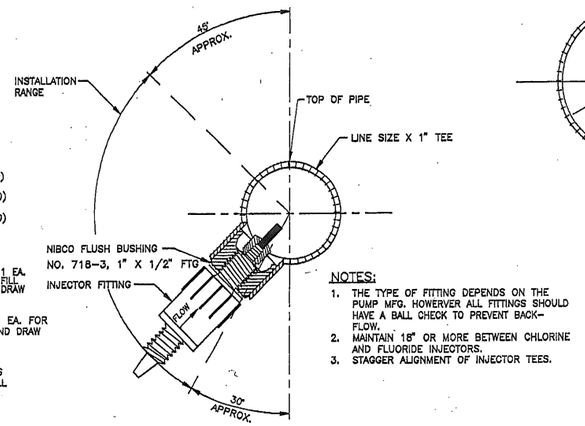
TYPICAL PARTS LIST

TWIST–LOCK RECEPTACLE & 3 TWIST–LOCK PLUGS

SATURATOR FEED WATER LINE, INJECTOR, FLOW SWITCH
4 EA. LINE SIZE X 1" TEE SWEAT
4 EA. 1" X 1/2" FLUSH BUSHING, SWEAT X FIPT
3 EA. 1/2" X 3" BRASS NIPPLE
1 EA. 1/2" TEE, IPT
} ADD 2 EA. FOR FILL AND DRAW SYSTEMS

3 EA. 1/2" HOSE BIB
1 EA. 1/2" Y–STRAINER
1 EA. 1/2" X 3/3" BRASS BUSHING
1 EA. 3/8" X 3" BRASS NIPPLE
1 EA. 3/8" 0.5 GPM DOLE VALVE
1 EA. 3/8" MIPT X 3/8" TUBING ADAPTER, PVC (COLE–PARMER T–6385–50)
1 EA. 1/4" MIPT X 3/8" TUBING ADAPTER, PVC (COLE–PARMER T–6385–40)
2 EA. 1/4" MIPT X 3/8" TUBING, ELBOWR, PVC (COLE–PARMER T–6386–40)
2 EA. 1/2" G.V.
1 EA. McDONNELL, FS 8W FLOW SWITCH
1 EA. LINE SIZE X 1 1/2", C X C X SWEAT, TEE
1 EA. 1 1/2" X 1" FLUSH BUSHING, SWEAT X FIPT, NIBCO 718–3
} ADD 1 EA. FOR FILL AND DRAW
1 EA. STATIC MIXER, CHEMINEER–KENICS 2–KME–PVC 4 (2–INCH) OR, CHEMINEER–KENICS 4–KME–PVC 2 (4–INCH)
} ADD 1 EA. FOR FILL AND DRAW
2 EA. LINE SIZE X 1" TEE, C X C X SWEAT
2 EA. 1" X 3/4" FLUSH BUSHING, SWEAT X FIPT
2 EA. LMI CORPORATION STOP AND NOZZLE ASSEMBLY (CAT. NO. 10998, 3/4" NPT)
} FOR NON–FLUSH BUSHING CONDITIONS (ADD 2 EA. FOR FILL AND DRAW SYSTEMS)
1 EA. METER, MODEL C–700*
1 EA PUMP REPAIR KIT
1 EA TIMER SWITCH (0–5 MIN NO HOLD) PARAGON #PSW–5M

*METER SHALL BE ACCURATE ± 1% @ 1/4 GPM

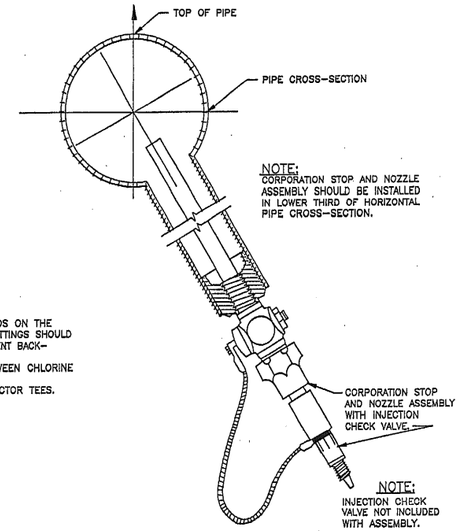


INJECTOR INSTALLATION (FLUSH)

NOT TO SCALE

NOTES:

1. THE TYPE OF FITTING DEPENDS ON THE PUMP MFG. HOWERVER ALL FITTINGS SHOULD HAVE A BALL CHECK TO PREVENT BACK–FLOW.
2. MAINTAIN 18" OR MORE BETWEEN CHLORINE AND FLUORIDE INJECTORS.
3. STAGGER ALIGNMENT OF INJECTOR TEES.

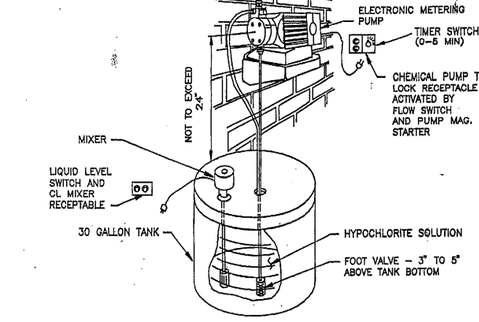


CAUTION:

MAKE CERTAIN THAT THE COUPLING NUT IS TIGHTENED SECURELY WHEN NOZZLE ASSEMBLY IS EXTENDED INTO TREATED LINE. MAXIMUM LINE PRESSURE = 150 PSI.

INJECTOR INSTALLATION (NON–FLUSH)

NOT TO SCALE
(ONLY FOR PIPE DIAMETER 4" OR GREATER)



CHLORINATION SYSTEM

NOT TO SCALE

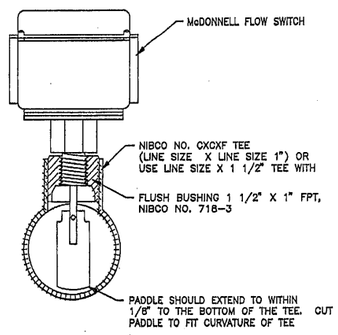
DESIGN NOTES: CHLORINE PUMP

1. WATER FLOW RATE 25 GPM (AT INJECTION POINT)
2. CHLORINE DOSAGE RATE: FREE RESIDUAL (.2 TO .4) CHLORINE DEMAND
   TYPICAL VALUES: 1–3 PPM WELL SOURCE
   3–5 PPM RIVER OR LAKE SOURCE
3. HYPOCHLORITE SOLUTION 1.0 % (.5% TO 2%), 1%TYP. (3 LB HTH DISSOLVED IN 25 GALLONS OF WATER = 1% SOLUTION
4. DOSAGE RATE OF SOLUTION: 378 X WATER FLOW RATE (GPM) = 9.45 ML/MIN ÷ 1.0 % SOLUTION
5. MAX PUMP CAPACITY: 2 X DOSAGE RATE OF SOLUTION (ML/MIN) = 18.9 ML/MIN

SOLDERING NOTES:

1. ALWAYS SOLDER THE BUSHING IN THE TEE BEFORE SOLDERING THE TEE INTO THE LINE.
2. IF POSSIBLE, SCREW FLOW SWITCH INTO BUSHING AND MEASURE AND CUT PADDLE TO LENGTH, BEFORE SOLDERING TEE INTO THE LINE. REMOVE THE FLOW SWITCH BEFORE SOLDERING.

NOTE: THIS DRAWING WAS DEVELOPED AS A STANDARD DETAIL FOR THE AANS SANITATION CONSTRUCTION PROGRAM. PROJECT SPECIFIC MODITICATION SHALL BE HIGHLIGHTED AND ARE THE RESPONSIBILY OF THE DESIGN ENGINEER.



STANDARD FLOW SWITCH INSTALLATION

NOT TO SCALE

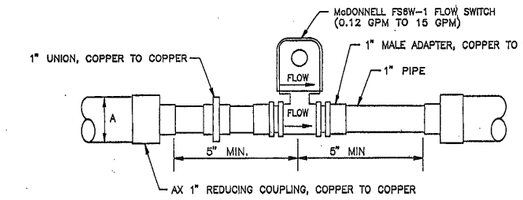
STANDARD FLOW SWITCH SELECTION

MODEL	PIPE SIZE	FLOW RANGE
FS 8W	2"	15 TO 50 GPM
FS 7–4W	2"	9 GPM
FS 7–4W	1 1/2"	6 GPM
FS 7–4W	1 1/4"	5 GPM
FS 6W–1	1"	LESS THAN 15 GPM

NOTE: THREADED 1 1/4" N.P.T.

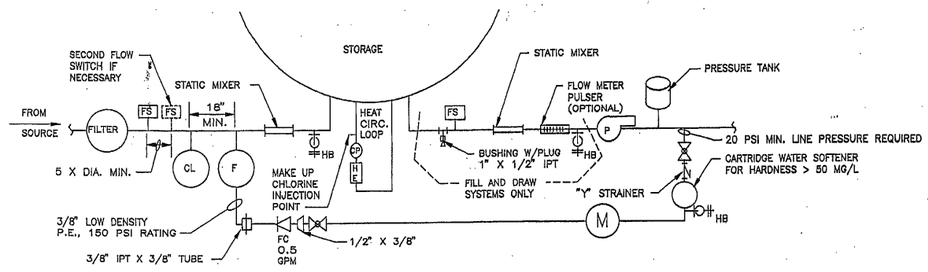
NOTES:

1. IF FLOW IS LESS THAN 15 GPM, SEE DETAIL DRAWING FOR LOW FLOW SWITCH.
2. IF PIPE IS OTHER THAN 2", SEE TABLE IN McDONNELL CATALOGUE TO DETERMINE PROPER FLOW SWITCH.



FLOW SWITCH FOR LOW FLOWS

NOT TO SCALE



TYPICAL SYSTEM

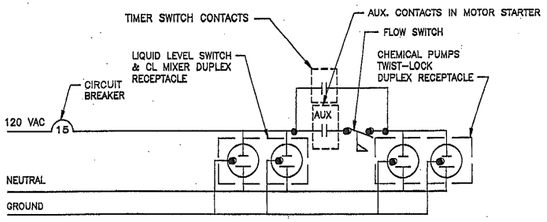
NOT TO SCALE

NOTES:

1. THE 0.5 GPM FLOW CONTROL VALVE DOES NOT COME WITH THE SATURATOR. THIS SHOULD BE INSTALLED TO MAINTAIN A SLOW UPFLOW MOVEMENT THROUGH THE NaF IN ORDER TO DEVELOP A SATURATED SOLUTION.
2. THE CARTRIDGE TYPE SOFTENER IS REQ'D. IF HARDNESS IS GREATER THAN 75PPM. USE Mac GUARD WATER SOFTENER, MODEL 30H OR EQUAL. AVAILABLE AT MacDONALD & FILS, 5608 CHARLEMAGNE, MONTREAL HIX2H9, CANADA (514)374–0450 CCRC. RFD # 3, SALMON RIVER RD., PLATTSBURG, N.Y. 12901

VARIABLE FLOW SYSTEMS

1. VARIABLE FLOW SYSTEMS REQUIRE THE USE OF PROPORTIONAL FLOW MEASUREMENT DEVICES LIKE THE LMI FLOW–METER PULSER UNIT & CHEMICAL PUMPS WITH EXTERNAL CONTROL CAPABILITY.



FLOW SWITCH ELECTRICAL

NOT TO SCALE

NOTES:

1. LIQUID LEVEL SWITCH AND CHLORINE MIXER DUPLEX RECEPTACLE SHALL BE SEPARATE FROM DUPLEX RECEPTACLE FOR CHEMICAL PUMPS.
2. IF MOTOR STARTER FOR WATER SOURCE PUMP IS IN THE PUMPHOUSE, ROUTE CIRCUIT YHROUGH AUX. CONTACTS AS SHOWN. IF NOT ANALYZE THE SYSTEM HYHRAULICS TO DETERMINE IF TWO FLOW SWITCHES OR PRESSURE SWITCH, WIRED SERIES, CAN BE USED.

8–16–91	UP DATED	JAQ
DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
Public Health Service
Indian Health Service

TAKOTNA, ALASKA
FLUUORIDATION AND CHLORINATION
PUBLIC LAW 86-121 PROJECT
PROJECT NO.AN-91-679/057

SHEET NO. M-4 OF 5 TOTAL SHEETS

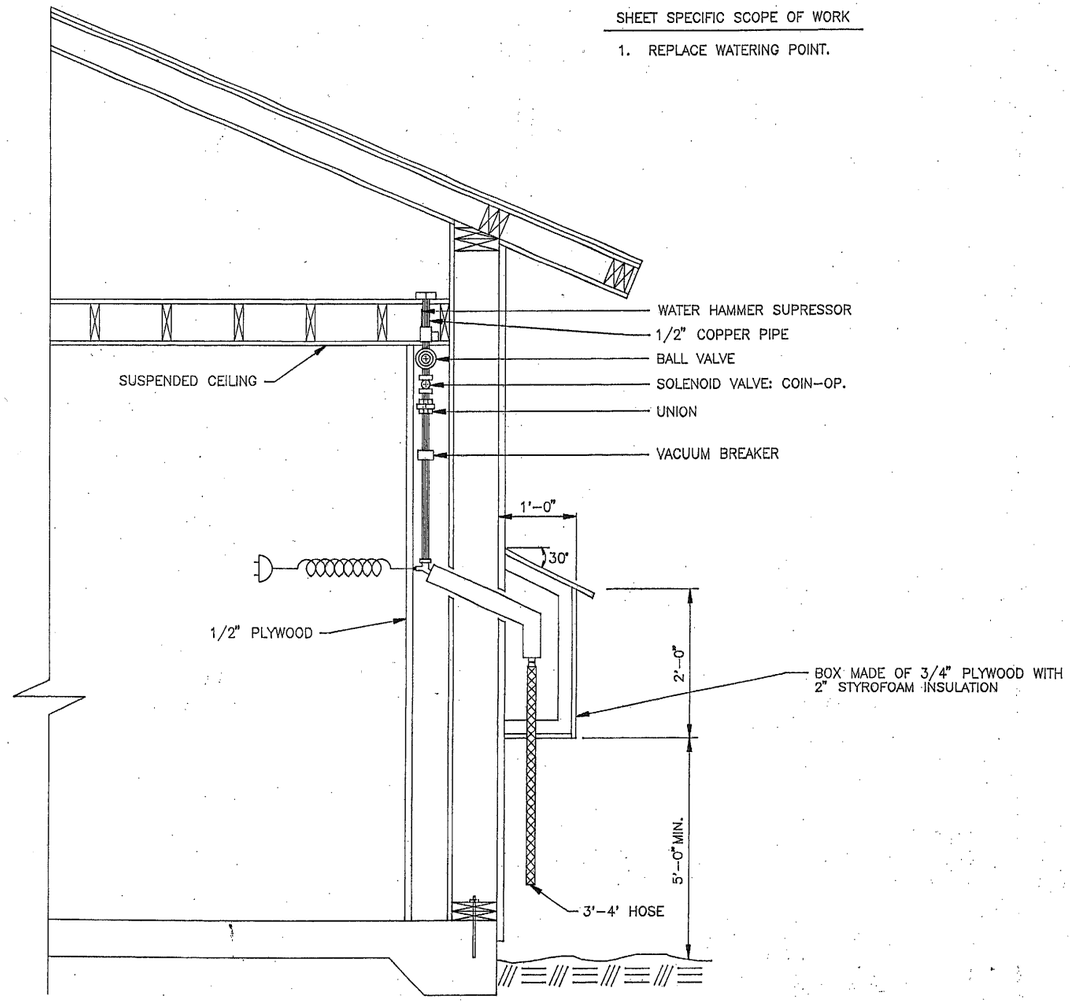
Design Engineer

STATE OF ALASKA

DRAWN BY: JAQ / WKT
CHECKED BY:

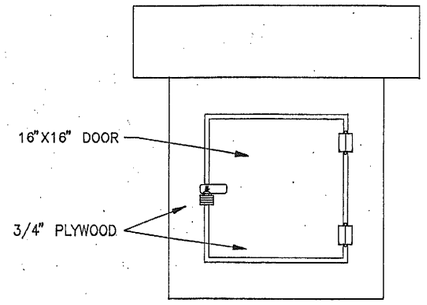
SHEET SPECIFIC SCOPE OF WORK

1. REPLACE WATERING POINT.



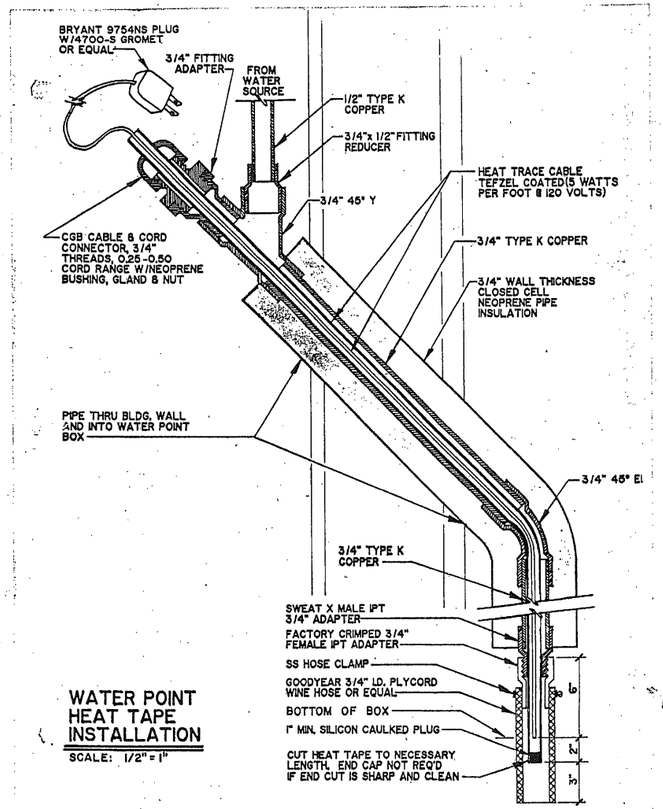
WATER POINT ASSEMBLY SECTION

NOT TO SCALE



EXTERIOR BOX ELEVATION

NOT TO SCALE



WATER POINT HEAT TAPE INSTALLATION

SCALE: 1/2" = 1"

Alaska Rubber

"Boston" Royal Flex Arctic Grade Potable Water Hose

1" Pipe Threaded

2ea - 1" Female Swivels

NOTE: ALL WATERING POINT PIPING AS NOTED.

DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
Public Health Service
Indian Health Service

TAKOTNA, ALASKA

WTP WATER POINT DETAILS

PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-91-679/057

SHEET NO. M-5 OF 5 TOTAL SHEETS

Design Engineer

STATE OF ALASKA 49th

DRAWN BY: WKT DATE: 4-92

CHECKED BY: DATE:

WATER SYSTEM

PUMPS

M	QNTY	MAKE	MODEL	SERIAL//SERIES	SUC	DIS	IMP	OTHER
. PUMP No. 1	1	GRUNDFOS	UP26-64F					115 V 3100 RPM
. PUMP No. 2	1	GRUNDFOS	UP26-64F					
SURE PUMP	1	JACUZZI	1DSI-S/B					
SURE PUMP	1	JACUZZI	1DSI-S/B					
L PUMP	1	JACUZZI	1S4H					1 HP AT 25 gpm

MOTORS

IIPMENT VEN	QNTY	MAKE	MODEL	TYPE	SERIAL/ SERIES	HP	PH	VOLT	AMP	FRAME	RPM

TREATMENT EQUIPMENT

EM	QNTY	MAKE	SIZE	OTHER
TRIDGE FILTER	1	FULFLO FH SERIES	5 MICRON FLOW 70 TO 75 gpm	POLYPROPYLENE FILTER

CHEMICAL EQUIPMENT

UIPMENT	QNTY	MAKE	MODEL/SERIES	SERIAL No.	TYPE	OTHER
ORIDE PUMP	1	LMI	A37			140 psi MAX., 75 WATT
ORINE PUMP.	1	LMI	A18			80 psi MAX.

WATER METERS

ETER No.	MAKE	MODEL	TYPE	SIZE	OTHER

OTHER EQUIPMENT

EM	QNTY	MAKE	MODEL	SERIAL	OTHER
SSURE K	2	WELL- X-TROL	WX 252		

WASTE WATER SYSTEM

LIFT STATION

L.S. No.	MAKE	MODEL	SERIAL/SERIES	SIZE SUC	SIZE DIS	OTHER

WASTE WATER TREATMENT

MANUFACTURER	CAPACITY MOD	MODEL/TYPE	VOLT	PHASE	OTHER

PUMPS - BLOWERS

ITEM	QNTY	MAKE	MODEL	SERIAL/SERIES	SIZE SUC	SIZE DIS	IMP	OTHER

SEPTIC TANKS

SIZE	QNTY	TYPE	INLET	OUTLET	RISER	OTHER

OTHER EQUIPMENT OR TREATMENT

ITEM	INFORMATION

BOILER/HYDRONIC SYSTEM

BOILERS

BOILER No.	MANUFACTURER	MODEL/SERIES	NET BTU	SERIAL No.	OTHER
1	BURNHAM	V-74		7574893	OR EQUAL
2	BURNHAM	V-74		7574894	OR EQUAL

BOILER BURNERS

BOILER No. BURNER	MANUFACTURER	MODEL	SERIAL No.	OTHER

WASTE HEAT CONTROLS

ITEM	MAKE	SIZE	OTHER

HYDRONIC PUMPS

ITEM	MAKE	MODEL No.	SERIAL/SERIES	SIZE SUC	SIZE DIS	OTHER

HEAT EXCHANGERS

No.	MAKE	MODEL No.	SERIAL/SERIES	INLET	OUTLET	OTHER

BUILDING HEATERS

ITEM	MAKE	MODEL	SERIAL/SERIES	
UNIT HEATERS	TRANE			

FLOW REGISTRATION & MEASUREMENT

ITEM	QNTY	MAKE	SIZE	INFORMATION

HOT WATER GENERATOR

INFORMATION

WASHETERIA EQUIPMENT

EQUIPMENT	QNTY	MAKE	MODEL	OTHER
WASHERS	3	WHIRLPOOL		
DRYERS	2	BY HUEBSCH LOADSTAR	30 GSL	125 psi MAX., 115 V SINGLE PHASE, 15 AMP.
SHOWER VALVES				
WATER CLOSETS				

STANDBY GENERATOR

EQUIPMENT	MAKE	MODEL/TYPE	SERIAL No.	VOLT	PH	KW	FRAME	OTHER
GEN UNIT								
GENERATOR	EMPIRE	720 DFW-8E	383-188	120/240	1	22		1800 RPM 60 Hz SINGLE PHASE
MOTOR								
EXCITER								

MISCELLANEOUS EQUIPMENT

ITEM	INFORMATION

DATE	REVISIONS	INITIALS

U. S. Department of Health & Human Services
Public Health Service
Indian Health Service

TAKOTNA, ALASKA

SPECIFICATION SHEET
PUBLIC LAW 86-121 PROJECT
PROJECT NO.AN-91-679/057

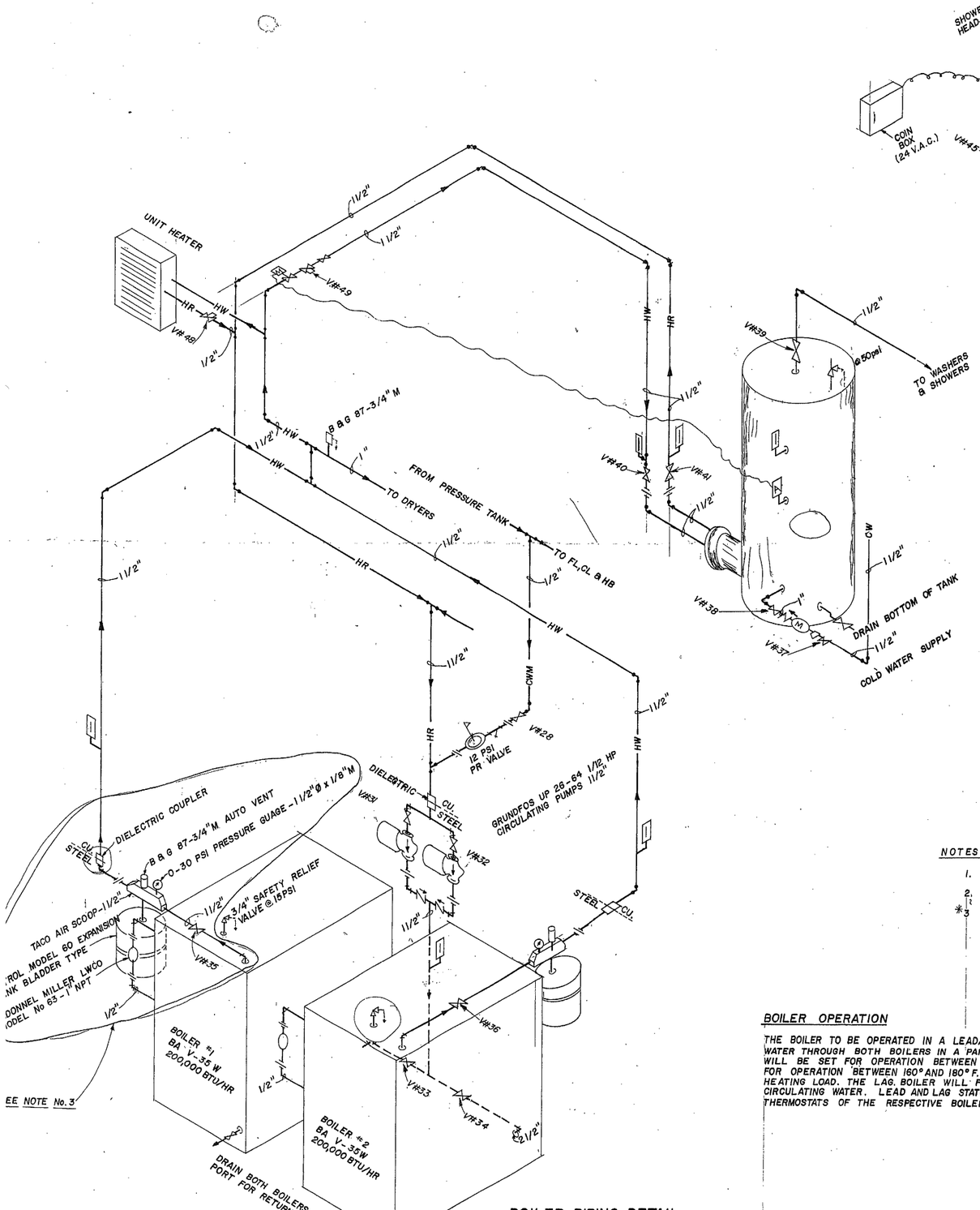
SHEET NO. SP-1 OF 1 TOTAL SHEETS

Design Engineer

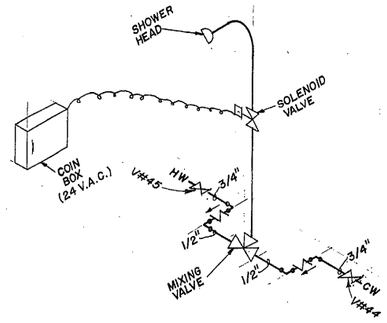
STATE OF ALASKA 49th

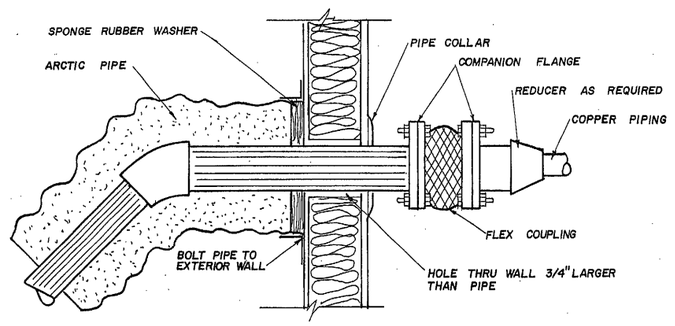
DRAWN BY: WKT 4-92

CHECKED BY:

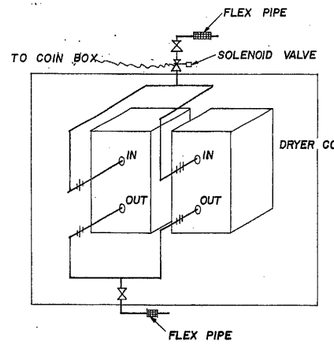


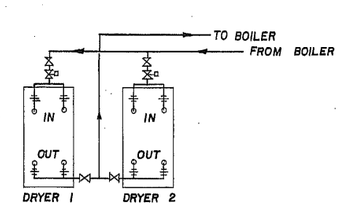
SHOWER PIPING
NTS





TYPICAL PIPE THRU WALL SECTION
NTS





NOTE
INSTALL FLEXIBLE UPPER EXPANSION JOINTS TO ALLOW REMOVAL OF DRYERS FOR SERVICE.

PLUMBING DIAGRAM HOT WATER DRYERS
NTS

NOTES:
1. ALL LINES TO BE GRADED TO DRAIN.
2. ALL PIPING TO BE INSULATED.
*3 RUN HW PIPING STRAIGHT BACK INSTEAD OF TO SIDE FOR CLEARANCE ON SIDE TO ALLOW ACCESS TO PANELS AND ROOM ON SIDE OF BOILER LIKE SHOWN ON BOILER *2.

BOILER OPERATION

THE BOILER TO BE OPERATED IN A LEAD/LAG MANNER. THE CIRCULATION PUMP WILL PUSH WATER THROUGH BOTH BOILERS IN A PARALLEL FLOW ARRANGEMENT. THE LEAD BOILER WILL BE SET FOR OPERATION BETWEEN 180° AND 200° F. THE LAG BOILER WILL BE SET FOR OPERATION BETWEEN 160° AND 180° F. WHEN THE LEAD BOILER CANNOT CARRY THE HEATING LOAD. THE LAG BOILER WILL FIRE, DUE TO THE LOW TEMPERATURE OF THE CIRCULATING WATER. LEAD AND LAG STATUS CAN BE CHANGED BY ADJUSTING THE THERMOSTATS OF THE RESPECTIVE BOILER.

DATE	REVISIONS	INITIALS
11-11-81	AS BUILT	B.K.

U. S. Department of Health, Education & Welfare
Public Health Service
Indian Health Service

TAKOTNA, ALASKA
WATER TREATMENT PLANT
BOILER PIPING & PIPE DETAIL
PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-79-170

SHEET NO. 13 OF 31 TOTAL SHEETS

DRAWN BY: MD DATE: MAY, 1979
CHECKED BY: JRD DATE: 12-10-79

Mark Newell
Design Engineer

Maintenance Review

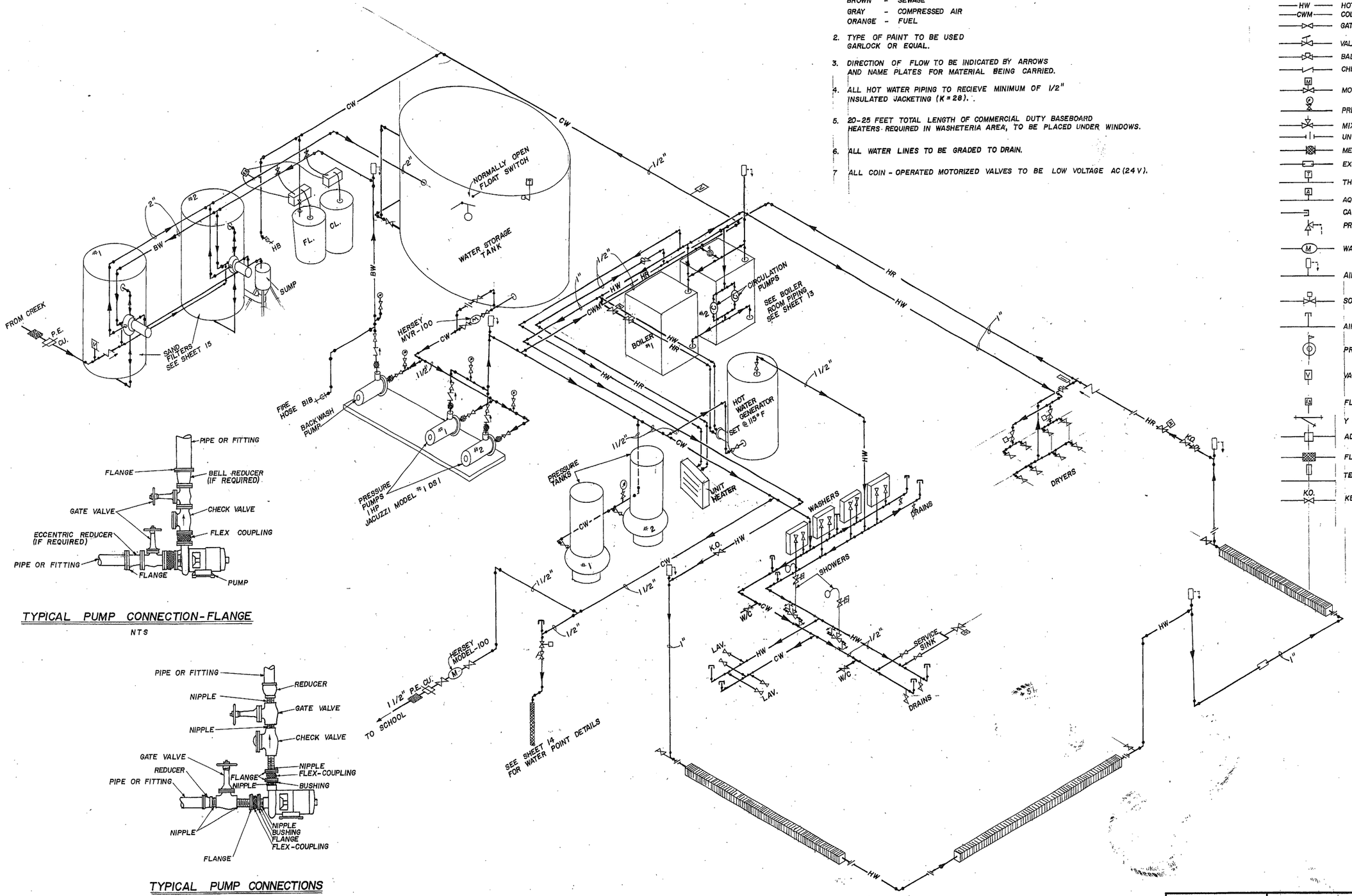
STATE OF ALASKA — John R. DeLapp — NO. 4000-E — REGISTERED ENGINEER

NOTES:

1. ALL EXPOSED PIPING WILL BE PAINTED USING THE FOLLOWING COLOR CODE:
   - GREEN - RAW WATER
   - BLUE - POTABLE WATER
   - BLACK - HEATING
   - RED - FIRE
   - BROWN - SEWAGE
   - GRAY - COMPRESSED AIR
   - ORANGE - FUEL
2. TYPE OF PAINT TO BE USED GARLOCK OR EQUAL.
3. DIRECTION OF FLOW TO BE INDICATED BY ARROWS AND NAME PLATES FOR MATERIAL BEING CARRIED.
4. ALL HOT WATER PIPING TO RECIEVE MINIMUM OF 1/2" INSULATED JACKETING (K = 28).
5. 20-25 FEET TOTAL LENGTH OF COMMERCIAL DUTY BASEBOARD HEATERS REQUIRED IN WASHETERIA AREA, TO BE PLACED UNDER WINDOWS.
6. ALL WATER LINES TO BE GRADED TO DRAIN.
7. ALL COIN - OPERATED MOTORIZED VALVES TO BE LOW VOLTAGE AC (24 V).

LEGEND

- PRIMARY SYSTEM
- DIRECTIONAL FLOW
- SOLDERED JOINT
- BP — BYPASS LINE
- BW — BACKWASH LINE
- CW — COLD WATER LINE
- HR — HEAT RETURN LINE
- HW — HOT WATER LINE
- CWM — COLD WATER MAKEUP LINE
- GATE VALVE
- VALVE QUICK OPENING
- BALANCING COCK VALVE
- CHECK VALVE
- M — MOTORIZED VALVE - NORMALLY CLOSED
- PRESSURE GAUGE
- MIXING VALVE
- UNION
- METRIC FLEX-COUPLING
- EXPANSION JOINT
- T — THERMOMETER
- A — AQUASTAT
- CAP
- PRESSURER RELIEF VALVE
- M — WATER METER
- AIR RELIEF VALVE
- SOLENOID VALVE - NORMALLY CLOSED
- AIR CUSHION
- PRESSURE REDUCING VALVE
- V — VACMUM BREAKER
- FS — FLOW SWITCH
- Y SCREEN
- ADAPTOR
- FLEX PIPE
- TEMP. GUAGE
- KO. — KEY OPERATED VALVE W/LOCK SHIELD INSTALLED



TYPICAL PUMP CONNECTION - FLANGE

NTS

TYPICAL PUMP CONNECTIONS

NTS

NOTE

WHEN USING COPPER & BRONZE FITTING & VALVES, DIELECTRICAL UNION MAY BE OMITTED.

DATE	REVISIONS	INITIALS

U. S. Department of Health, Education & Welfare
Public Health Service
Indian Health Service

TAKOTNA, ALASKA

WATER TREATMENT PLANT
PLUMBING SCHEMATIC
PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-79-170

SHEET NO. 12 OF 31 TOTAL SHEET

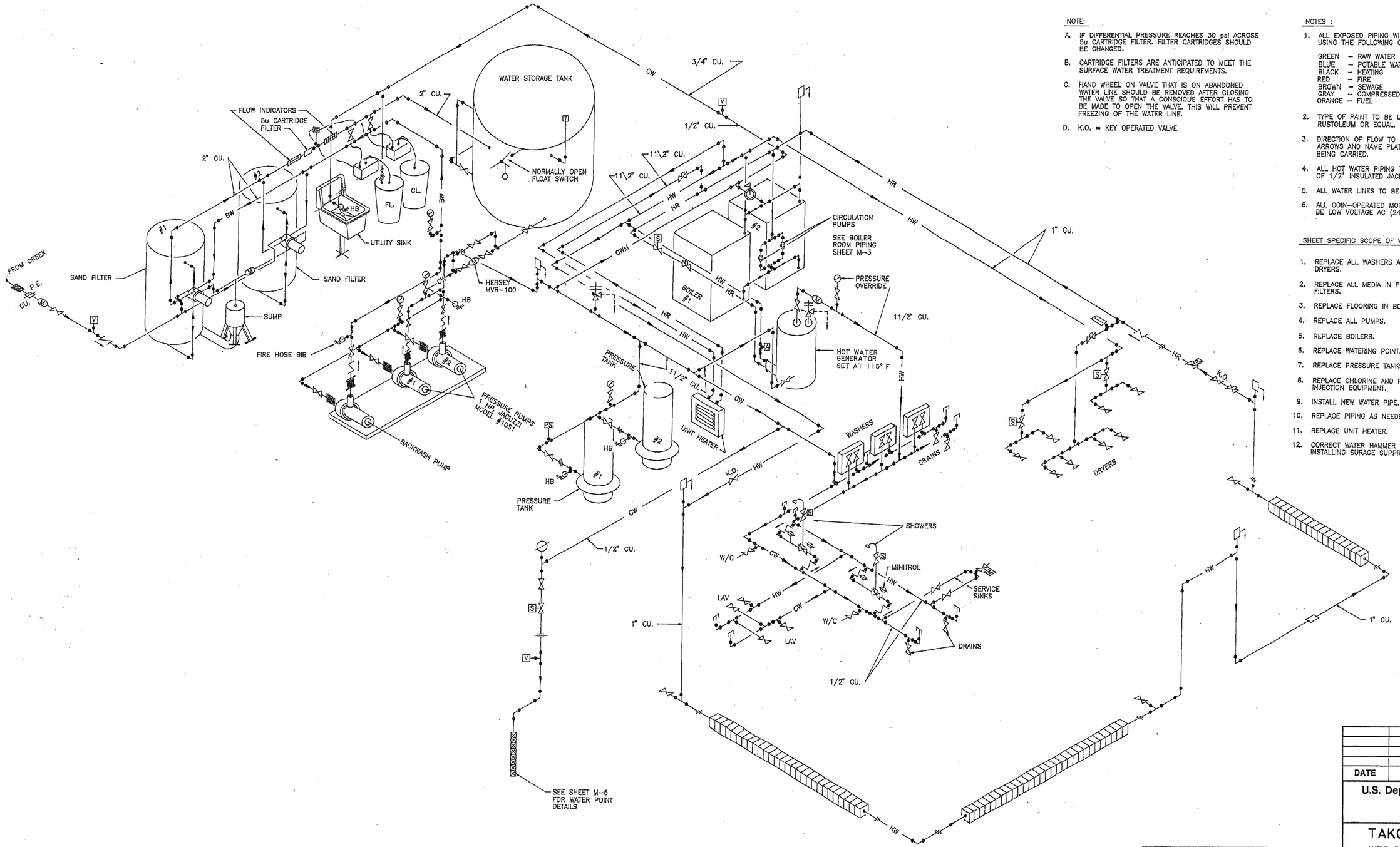
DRAWN BY: MD
DATE: JUNE, 1979

CHECKED BY: JRD
DATE: 12-10-79

Mark Stewell
Design Engineer

Maintenance Review

STATE OF ALASKA
REGISTERED
MARK D. STEWELL
John R. Delapp



NOTE:

A. IF DIFFERENTIAL PRESSURE REACHES 30 psi ACROSS 5u CARTRIDGE FILTER. FILTER CARTRIDGES SHOULD BE CHANGED.

B. CARTRIDGE FILTERS ARE ANTICIPATED TO MEET THE SURFACE WATER TREATMENT REQUIREMENTS.

C. HAND WHEEL ON VALVE THAT IS ON ABANDONED WATER LINE SHOULD BE REMOVED AFTER CLOSING THE VALVE SO THAT A CONSCIOUS EFFORT HAS TO BE MADE TO OPEN THE VALVE. THIS WILL PREVENT FREEZING OF THE WATER LINE.

D. K.O. = KEY OPERATED VALVE

NOTES :

1. ALL EXPOSED PIPING WILL BE PAINTED USING THE FOLLOWING COLOR CODE:

   GREEN – RAW WATER
   BLUE – POTABLE WATER
   BLACK – HEATING
   RED – FIRE
   BROWN – SEWAGE
   GRAY – COMPRESSED AIR
   ORANGE – FUEL

2. TYPE OF PAINT TO BE USED RUSTOLEUM OR EQUAL.
3. DIRECTION OF FLOW TO BE INDICATED BY ARROWS AND NAME PLATES FOR MATERIAL BEING CARRIED.
4. ALL HOT WATER PIPING TO RECEIVE MINIMUM OF 1/2" INSULATED JACKETING (K=28).
5. ALL WATER LINES TO BE GRADED TO DRAIN.
6. ALL COIN-OPERATED MOTORIZED VALVES TO BE LOW VOLTAGE AC (24 V).

SHEET SPECIFIC SCOPE OF WORK

1. REPLACE ALL WASHERS AND HYDRONIC DRYERS.
2. REPLACE ALL MEDIA IN PRESSURE SAND FILTERS.
3. REPLACE FLOORING IN BOTH BATHROOMS.
4. REPLACE ALL PUMPS.
5. REPLACE BOILERS.
6. REPLACE WATERING POINT.
7. REPLACE PRESSURE TANKS.
8. REPLACE CHLORINE AND FLUORIDE INJECTION EQUIPMENT.
9. INSTALL NEW WATER PIPE.
10. REPLACE PIPING AS NEEDED.
11. REPLACE UNIT HEATER.
12. CORRECT WATER HAMMER PROBLEM BY INSTALLING SURAGE SUPPRESSORS.

DATE	REVISIONS	INITIALS

U.S. Department of Health & Human Services
Public Health Service
Indian Health Service

TAKOTNA, ALASKA

WTP PLUMBING SCHEMATIC

PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-91-679/057

SHEET NO. M-1 OF 5 TOTAL SHEETS

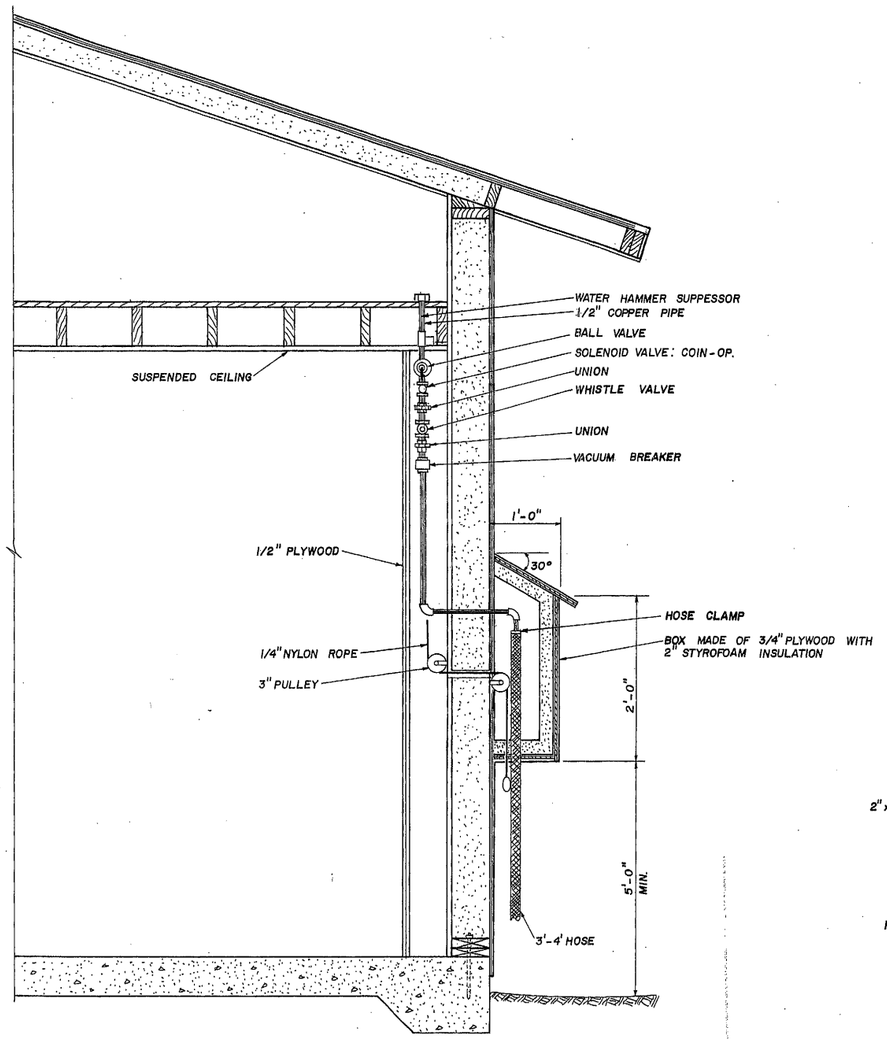
Design Engineer

Maintenance Review

STATE OF ALASKA — Robert Lee Wilson

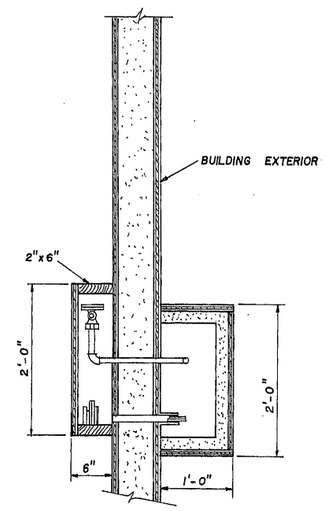
DRAWN BY: WKT DATE: 4-92

CHECKED BY: DATE:



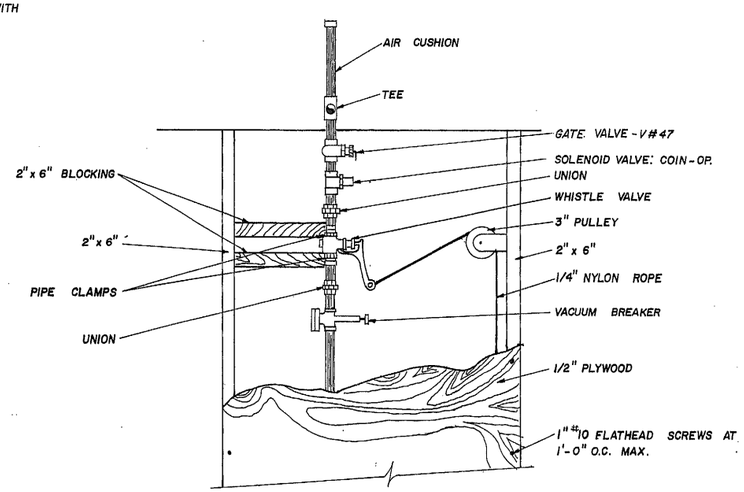
WATER POINT ASSEMBLY SECTION

NTS



WATER POINT BOX AND PIPING PLAN

NTS



INTERIOR FRONT VIEW

NTS

EXTERIOR BOX ELEVATION

NTS

NOTE: ALL WATERING POINT PIPING - 1/2"

11-9-81	AS BUILT	B.K.
DATE	REVISIONS	INITIALS

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Public Health Service
Indian Health Service

TAKOTNA, ALASKA
WATER TREATMENT PLANT
WATER POINT DETAILS
PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-79-170

SHEET NO. 14 OF 31 TOTAL SHEETS

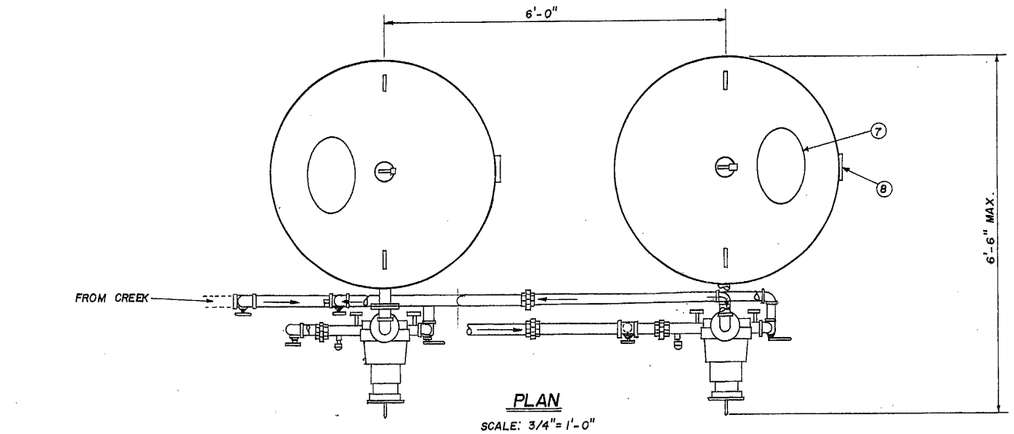
Mark Newell
Design Engineer

STATE OF ALASKA
49TH
Mark Newell

Maintenance Review

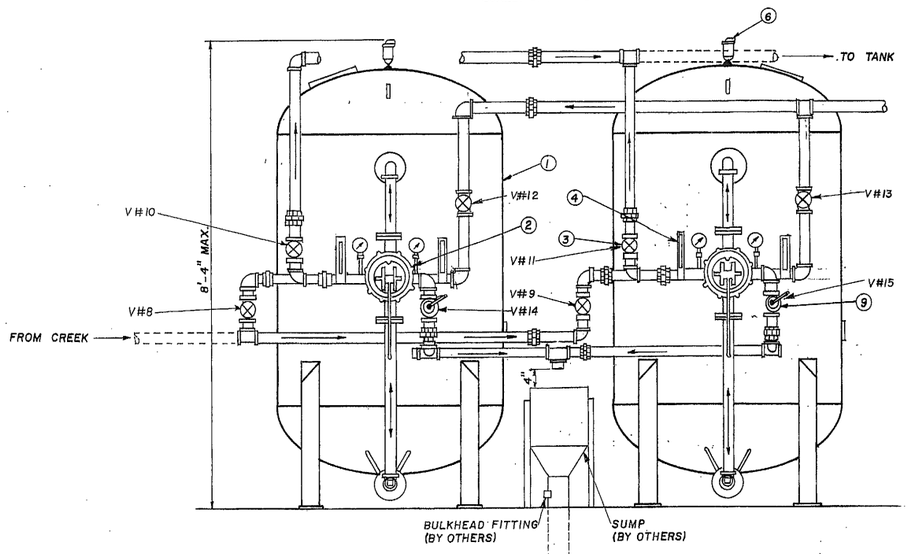
DRAWN BY: MD
DATE: MAY, 1979

CHECKED BY: JRD
DATE: 12-10-79



PLAN

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



FRONT VIEW

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

	DESCRIPTION
1.	FILTER TANK 48x60 100 PSI ASME CODE-STAMPED
2	2" MULTIPORT VALVE-AQUAMATIC SOLO VALVE SERIES 105 D R
3	2" GATE VALVE-125LB BRONZE SCRD. NRS, 6 EACH
4	IMPACT FLOW METER 4 EACH
5	PRESSURE GAUGE/SAMPLE COCK 4 EACH
6	AIR RELEASE
7	11"x 15" MANHOLE
8	4"x 6" HANDHOLE
9	2" BALLCENTRIC VALVE - BACKWASH WASTE CONTROL, 2 EACH

NOTES

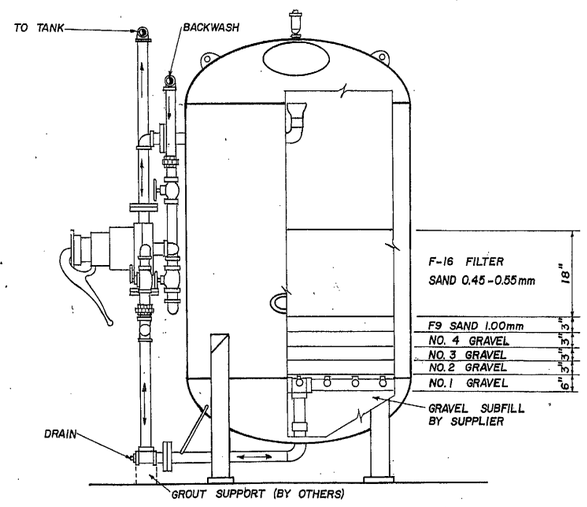
A. INTERIOR SURFACES - SANDBLASTED AND COATED WITH COAL TAR EPOXY, 2 COATS 8-10 MIL EACH, 16 MIL MINIMUM TOTAL.

B. EXTERIOR SURFACES, SAND BLASTED AND COATED WITH ONE COAT ZINK PRIMER 2.5 MILS MINIMUM THICKNESS.

C. FRONT PIPING - SCHEDULE 40 BLACK STEEL WITH 150 PSI FITTINGS, 2".

D. DASH LINE PIPING BY OTHERS.

E. DRAINS TO BE PLUMBED TO DRAIN INTO SUMP (BY OTHERS).



SIDE VIEW

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

DATE	REVISIONS	INITIALS
11-13-81	AS BUILT	B.K.

U. S. Department of Health, Education & Welfare
Public Health Service
Indian Health Service

TAKOTNA, ALASKA

STANDARD 2" MULTIPORT VALVE PIPING FOR 48" SAND FILTER
PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-79-170

SHEET NO. 15 OF 31 TOTAL SHEETS

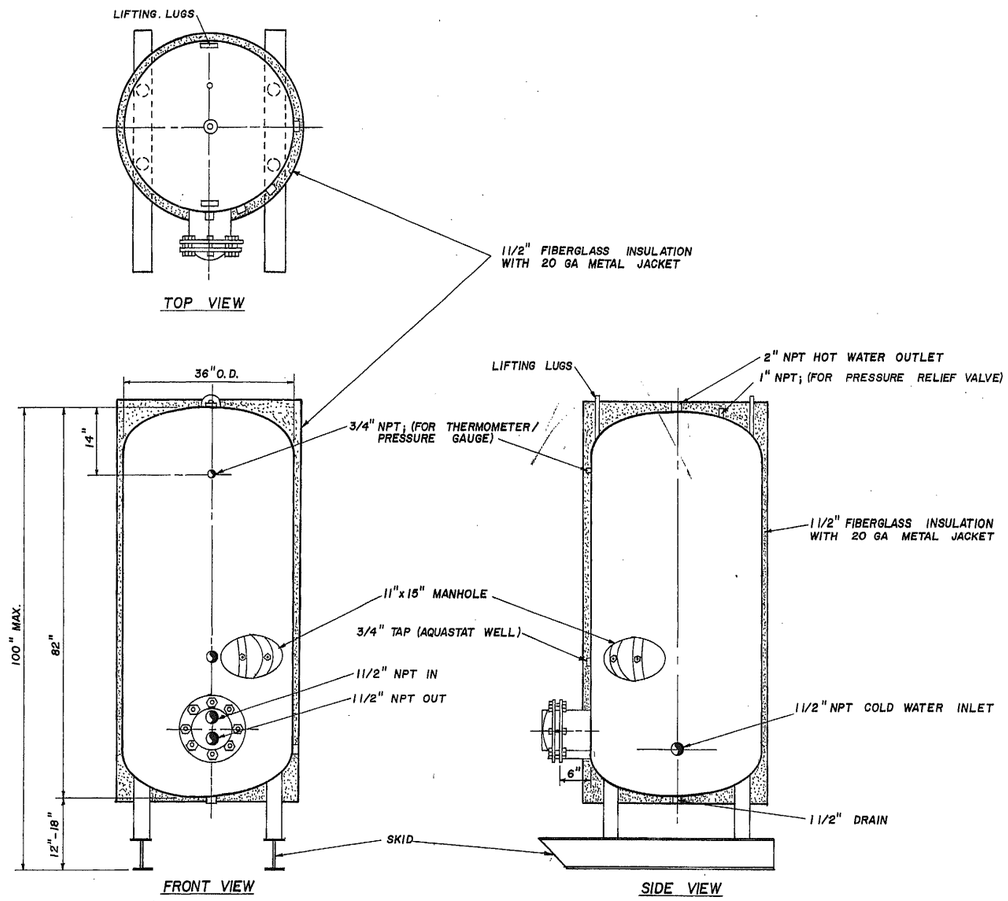
Mark Llewell
Design Engineer

Maintenance Review

STATE OF ALASKA
REGISTERED
John R. DeLapp
19TH

DRAWN BY: MD
DATE: APRIL, 1979

CHECKED BY: JRD
DATE: 12-10-79



HOT WATER GENERATOR DETAIL

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

NOTES

1. ASME PRESSURE RATED TO 125 PSI.
2. APPROXIMATE STORAGE CAPACITY 325 GALLONS.
3. ALL TAPS TO BE EXTRA STORAGE COUPLINGS.
4. EXTERIOR OF TANK TO BE PAINTED WITH ZINC PRIMER, MINIMUM DRY FILM THICKNESS 2 MIL.
5. TANK INTERIOR SHALL HAVE CATALYTIC SET PHENOLIC COATING, MINIMUM DRY FILM THICKNESS 6 MIL.

DATE	REVISIONS	INITIALS

U. S. Department of Health, Education & Welfare
Public Health Service
Indian Health Service

TAKOTNA, ALASKA
WATER TREATMENT PLANT
HOT WATER GENERATOR DETAIL
PUBLIC LAW 86-121 PROJECT
PROJECT NO. AN-79-170

SHEET NO. 16 OF 31 TOTAL SHEETS

DRAWN BY: MD DATE: MAY, 1979
CHECKED BY: JRD DATE: 12-10-79

Mark Hewell
Design Engineer

Maintenance Review

STATE OF ALASKA
John R. DeLapp
NO. 4000-E/S
REGISTERED PROFESSIONAL ENGINEER