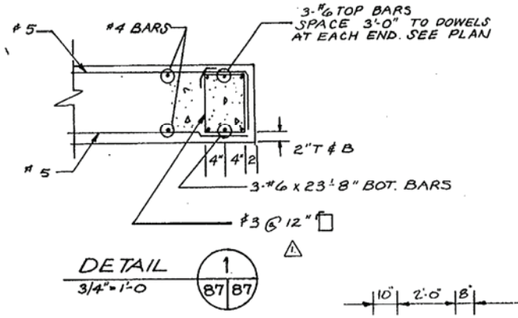
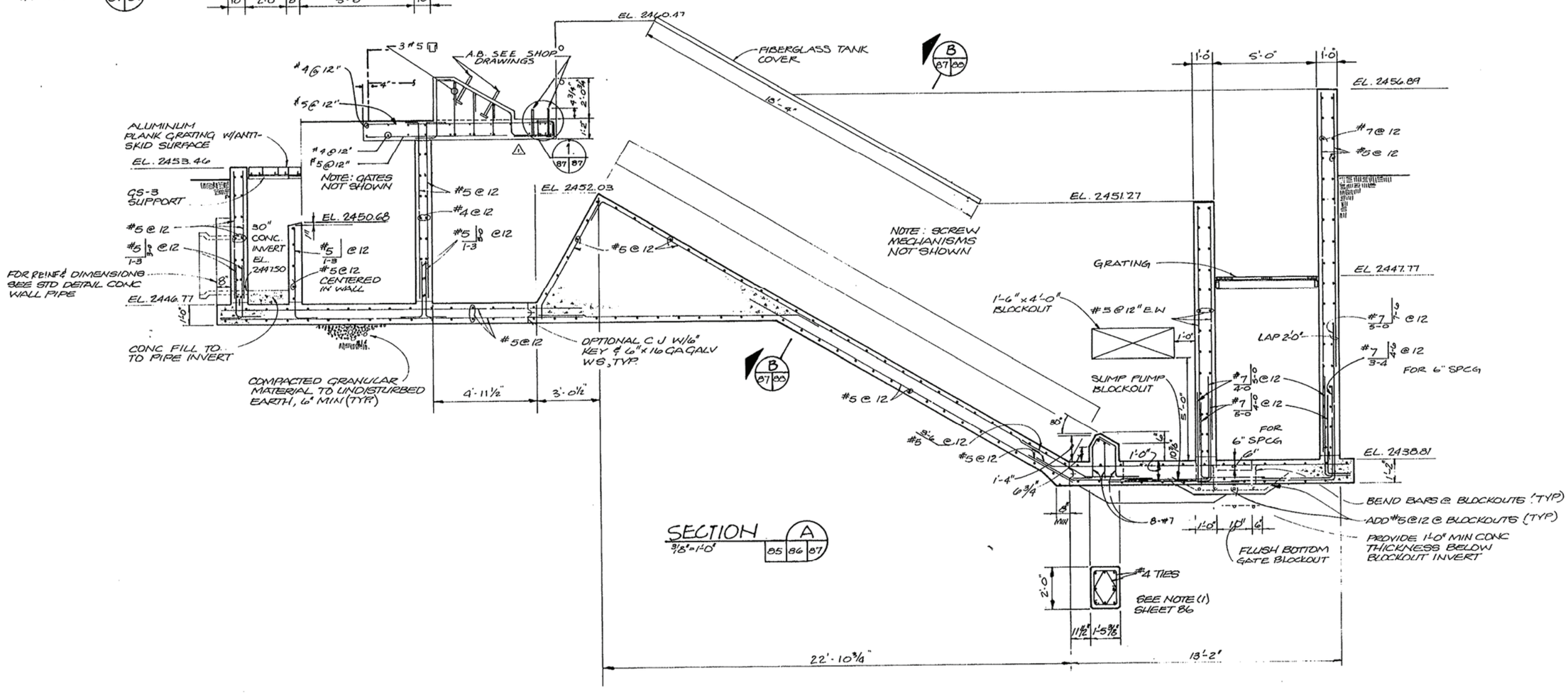


DETAIL 1 (87|87)
3/4"=1'-0"



SECTION A (85|86|87)
3/8"=1'-0"

⚠

REGISTERED PROFESSIONAL ENGINEER 3415 1-12-79 STATE OF IDAHO MARK EVERETT FORDHAM

CH2M HILL

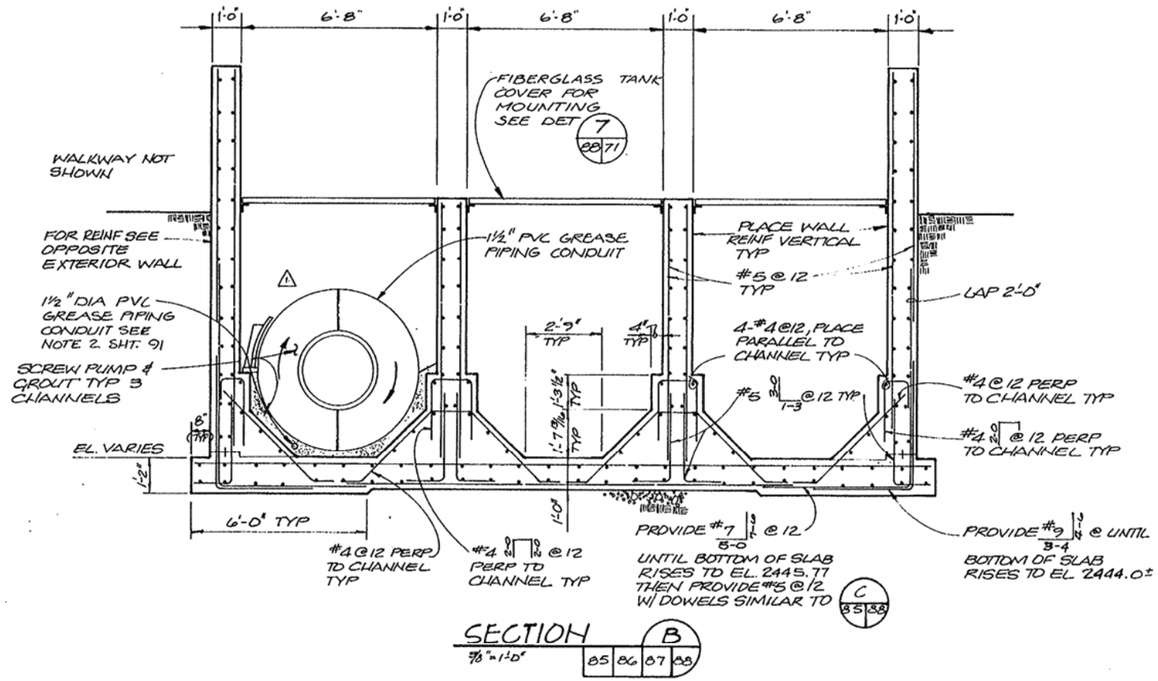
DES. MLHP				
DR. FK				
CHK. TROG				
APPD. LJBT				
⚠	11/81	RECORD DRAWINGS	MLW	LJB.
NO.	DATE	REVISION	BY	APPD.

WASTEWATER TREATMENT PLANT
CITY OF NAMPA, IDAHO
CONTRACT 4

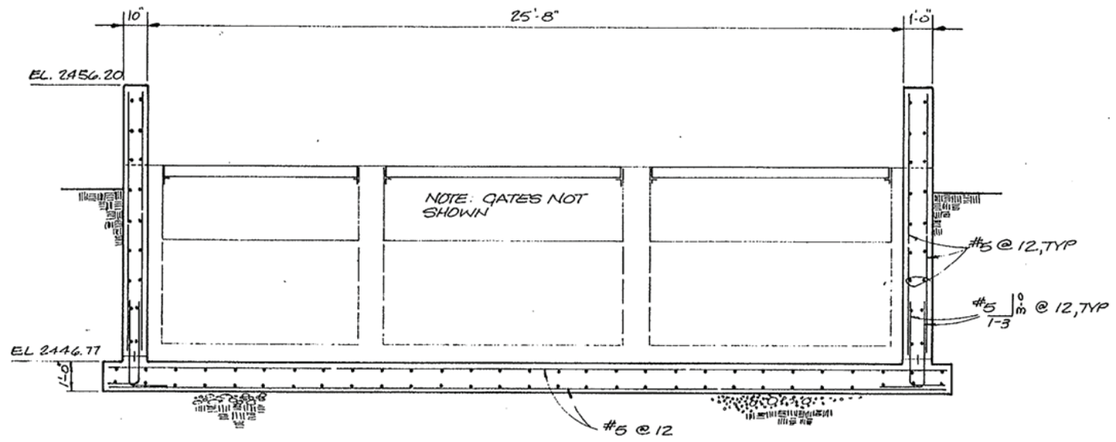
FILTER EFFLUENT PUMP STATION

STRUCTURAL - SECTION

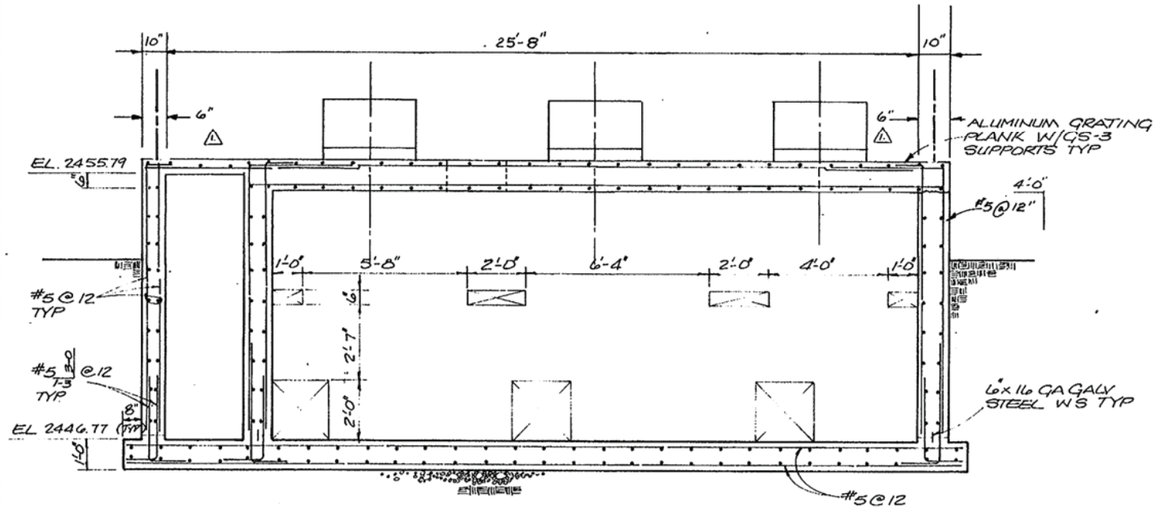
SHEET 87 OF
DATE MAR. 1979
DWG. NO. C9821.2B



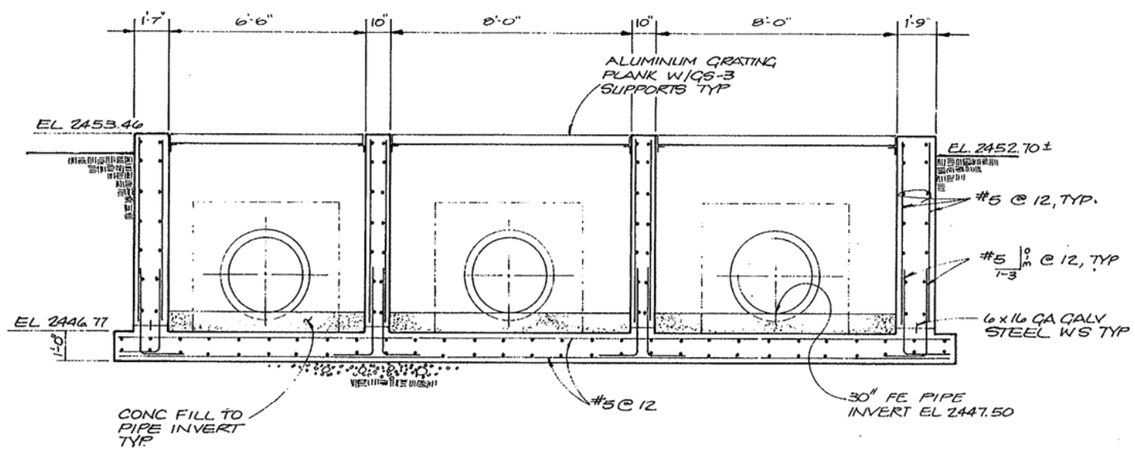
SECTION B
3/8"=1'-0"
85 86 87 88



SECTION D
3/8"=1'-0"
85 86 88



SECTION C
3/8"=1'-0"
85 86 88



SECTION E
3/8"=1'-0"
85 86 88

REGISTERED PROFESSIONAL ENGINEER 3815 STATE OF IDAHO MARK EVERETT FORDHAM 1-13-79

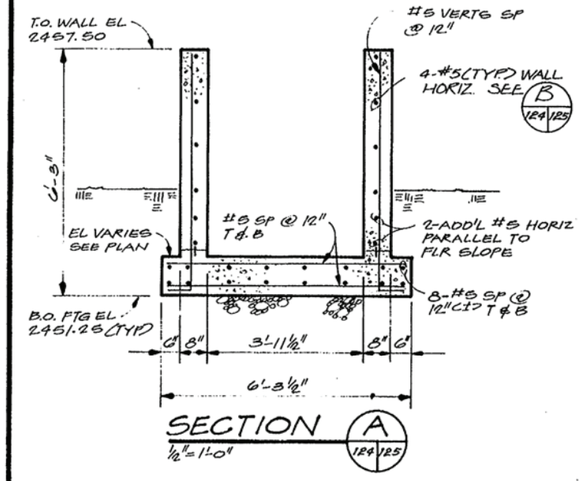
CH2M HILL	DES. MLHP						
	DR. FK						
	CHK. TRCG						
	APPD. LJBT	NO.	DATE	REVISION		BY	APPD.
		1	11/81	RECORD DRAWING		MLW	LJB

WASTEWATER TREATMENT PLANT
CITY OF NAMPA, IDAHO
CONTRACT 4

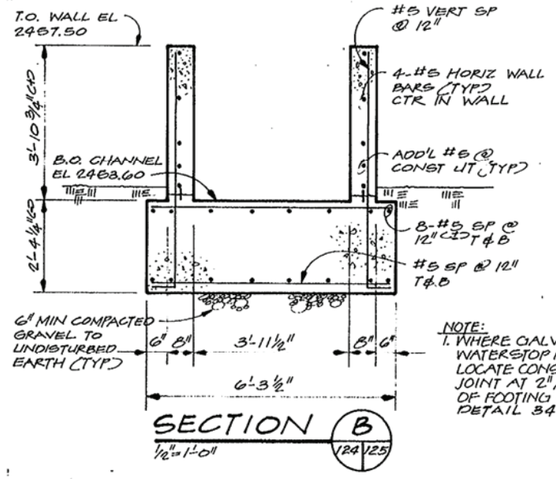
FILTER EFFLUENT PUMP STATION

STRUCTURAL - SECTIONS

SHEET 88
OF
DATE MAR. 1979
DWG. NO. C9821.2B

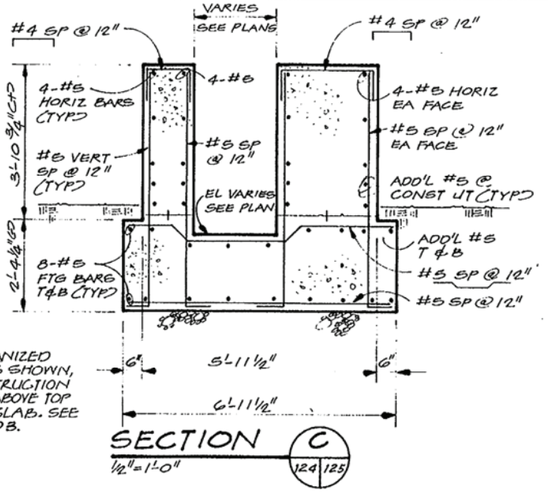


SECTION A 124|125
½" = 1'-0"

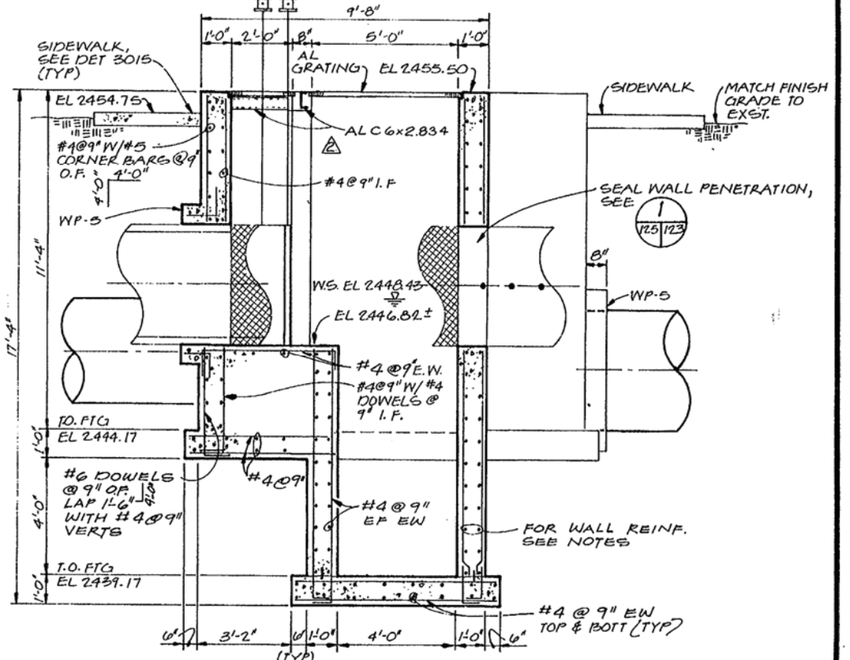


SECTION B 124|125
½" = 1'-0"

NOTE:
1. WHERE GALVANIZED WATERSTOP IS SHOWN, LOCATE CONSTRUCTION JOINT AT 2" ABOVE TOP OF FOOTING SLAB. SEE DETAIL 3408.

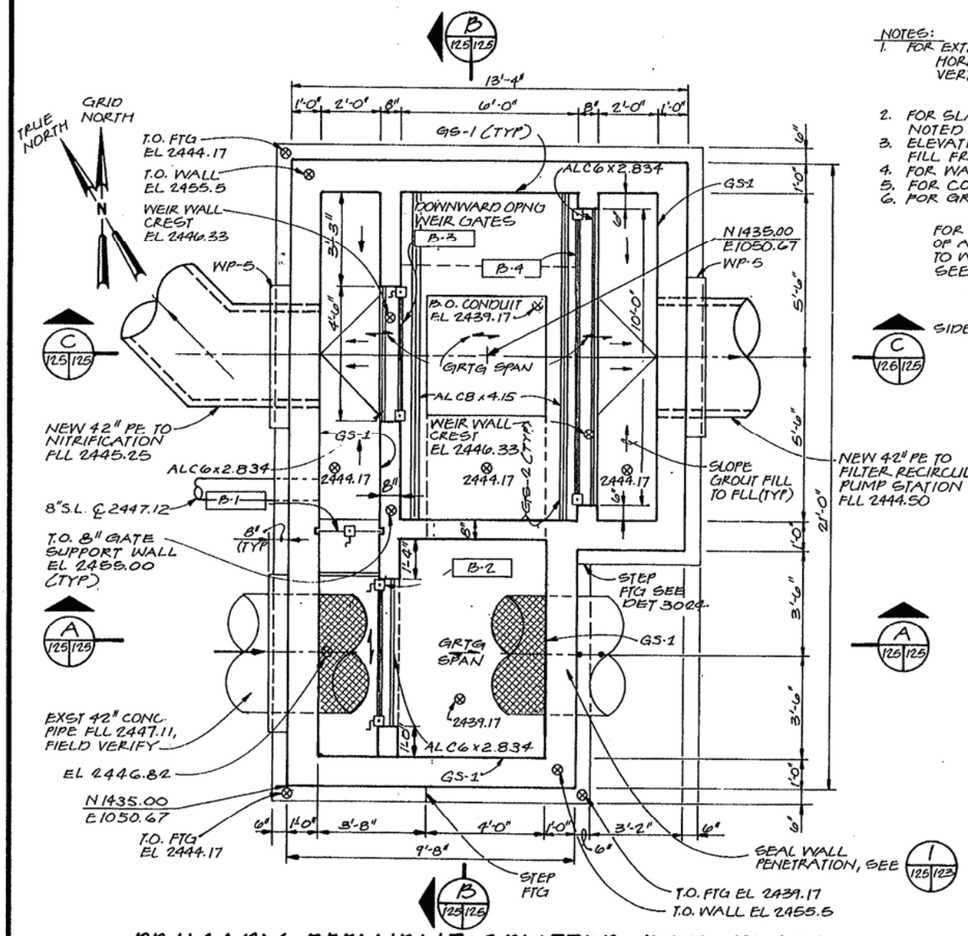


SECTION C 124|125
½" = 1'-0"

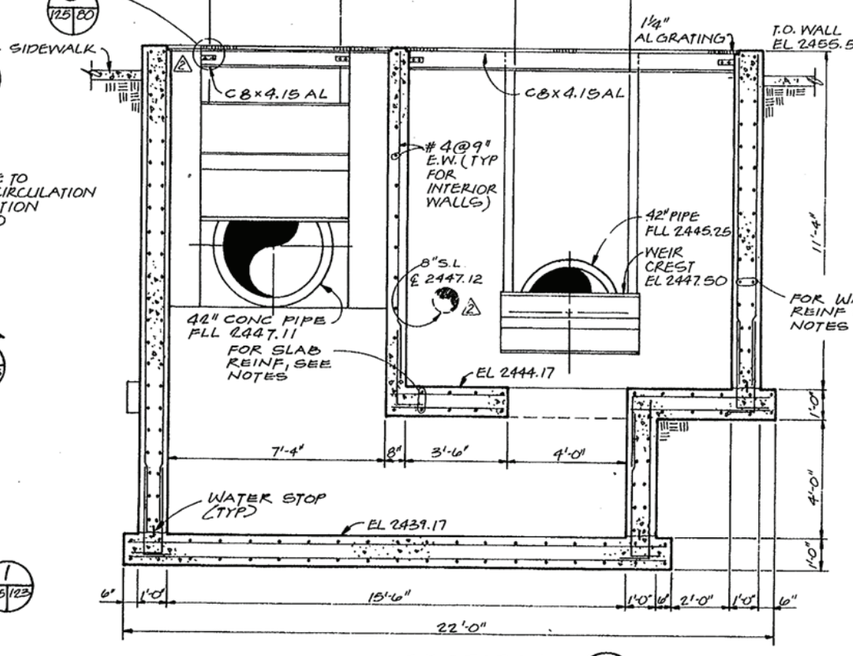


SECTION A 125|125 ⚠
3/8" = 1'-0"

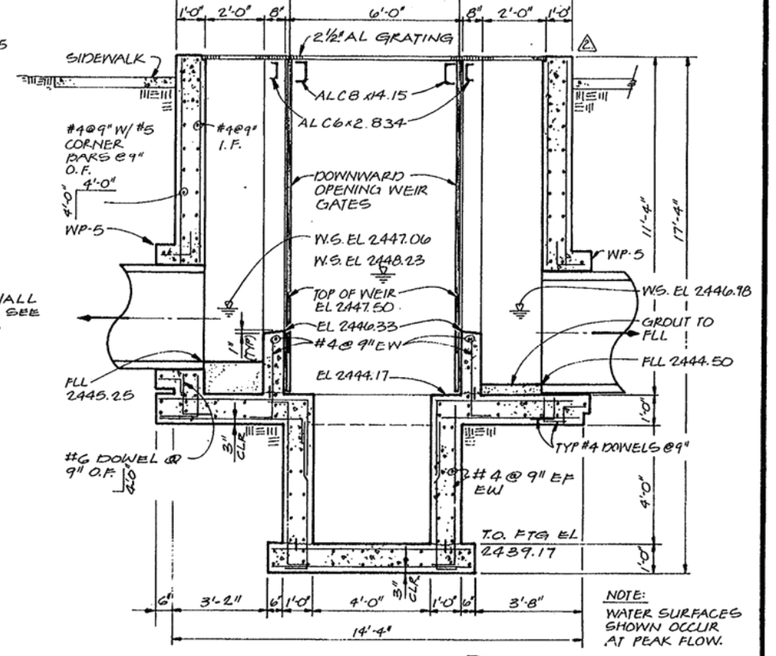
NOTES:
1. FOR EXTERIOR WALL REINFORCING, USE THE FOLLOWING UNLESS OTHERWISE NOTED ON PLANS.
   HORIZONTAL: #4@9" EACH FACE
   VERTICAL: #4@9 WITH #4@9" DOWELS
2. FOR SLAB REINFORCING, USE #4@9" EACH WAY, TOP AND BOTTOM UNLESS OTHERWISE NOTED ON PLANS.
3. ELEVATIONS SHOWN ON SLAB INDICATE THE TOP OF STRUCTURAL SLABS. PROVIDE GROUT FILL FROM THE ELEVATIONS SHOWN TO THE PIPE FLOW LINES.
4. FOR WALL REINFORCING AROUND PIPE PENETRATIONS, SEE DETAIL 3302.
5. FOR CORNER AND WALL INTERSECTION REINFORCING, SEE DETAIL 3303.
6. FOR GRATING NOTES AND DETAILS SEE DETAIL 5008 A & 5008 B.



PRIMARY EFFLUENT SPLITTER BOX - PLAN ⚠⚠
3/8" = 1'-0"



SECTION B 125|125 ⚠
3/8" = 1'-0"



NOTE:
WATER SURFACES SHOWN OCCUR AT PEAK FLOW.

SECTION C 125|125 ⚠
3/8" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER STATE OF IDAHO Mark C. Parker 5-30-79

REGISTERED PROFESSIONAL ENGINEER STATE OF IDAHO 7704 LAWRENCE J. BENNETT

CH2M HILL

DES. GBAM/GLNN
DR. JME
CHK. LCMN
APPD. LJBT

NO.	DATE	REVISION	BY	APPD.
⚠	12/81	RECORD DRAWING	MLW	LJB
⚠	5/79	ADDENDUM NO. 2	GBAM	LJBT

WASTEWATER TREATMENT PLANT
CITY OF NAMPA, IDAHO
CONTRACT 4

MISCELLANEOUS STRUCTURES

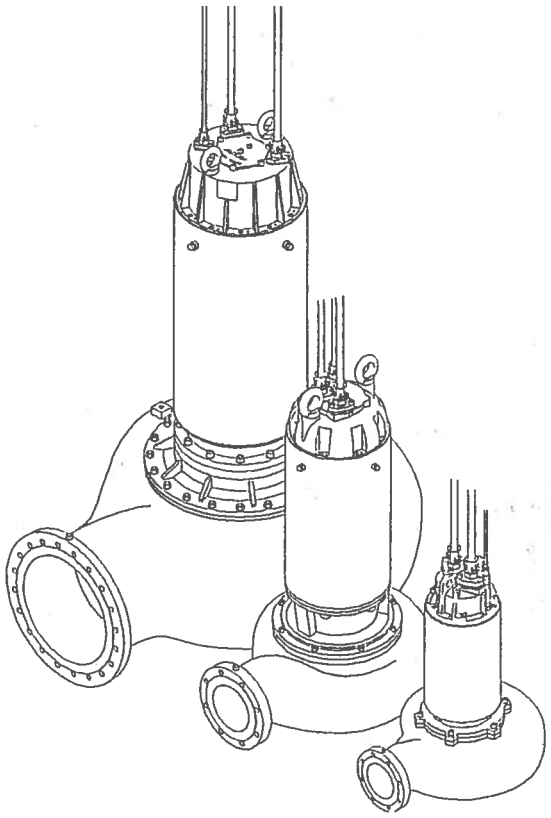
PARSHALL FLUME NO. 1 - SECTIONS AND PRIMARY EFFLUENT SPLITTER BOX

SHEET 125
OF
DATE MAR. 1979
DWG. NO. C9821.2B

EXISTING PUMP DATA

ABS
COST-EFFECTIVE PUMPING

AFP-A2



AFP 1000	AFP 1525	AFP 2001	AFP 2501	AFP 3001	AFP 4001	AFP 5001	AFP 6001	AFP 8001
AFP 1001	AFP 1526	AFP 2002	AFP 2523	AFP 3002	AFP 4003	AFP 5002	AFP 6002	AFP 8002
	AFP 1552	AFP 2024		AFP 3003	AFP 4004		AFP 6004	
	AFP 1555	AFP 2025						
		AFP 2051						

Einbau - und Betriebsanweisung
Installation and Operating Instructions

Änderungen im Sinne der technischen Weiterentwicklung vorbehalten !
We reserve the right to make modifications in the progress of technical development !

SCOPE

Furnish and install ____ ABS Model AFP 3002M350/8FM submersible non-clog wastewater pump(s). The pump(s) shall be supplied with a mating cast iron 12 inch discharge connection and be capable of delivering 4200 U.S. GPM at a total dynamic head of 28 feet. An additional point on the same curve shall be _____ U.S. GPM at a total dynamic head of _____ feet. Shut off head shall be ___ feet (minimum). The motor shall be an integral part of the unit. The motor shall be 47 HP connected for operation on a 460 volts, 3 phase, 60 hertz electrical supply service. The pump shall be supplied with a cast iron guide rail base fitted with a 12 inch discharge ~~elbow~~. Each unit shall be fitted with ___ feet of lifting chain or stainless steel cable. The working load of the lifting system shall be a minimum of 50% greater than the pump weight. Each pump motor shall be equipped with ___ feet of power and control cable(s) sized in accordance with NEC standards.

PUMP DESIGN

The pump(s) shall be capable of handling raw unscreened sewage, stormwater, and other similar solids-laden fluids without clogging. The discharge base and elbow shall be permanently installed in the wet well and connected to the discharge piping. In order to prevent binding or separation of the pump from the guide rail system, the pump(s) shall connect to the guide rail base automatically and firmly, guided by no more than one guide bar extending from the top of the station to the discharge connection. Dual guide rail systems and/or cable guide systems shall not be considered acceptable. The sliding guide bracket shall be a separate part of the pumping unit, capable of being attached to standard ANSI or DIN pump flanges so that the base is interchangeable with other pumps and not limited to a specific pump. Non standard flange dimensions shall not be considered acceptable. There shall be no need for personnel to enter the wet well to remove or reinstall the pump(s). Positive sealing of the pump to the discharge elbow shall be accomplished by a field replaceable Nitrile rubber profile gasket mechanically held in place between the pump and the sliding guide bracket: Metal to metal contact between the pump and discharge elbow shall not be considered acceptable. No portion of the pump shall bear directly on the floor of the sump. The pump with its appurtenances and cable shall be capable of continuous submergence to a depth of 65 feet.

PUMP CONSTRUCTION

Major pump components shall be of gray cast iron, ASTM A-48, Class 40, with smooth surfaces devoid of porosity or other irregularities. All exposed nuts and bolts shall be AISI type 316 stainless steel construction. All metal surfaces coming into contact with the pumped media (other than the stainless steel components) shall be protected by a factory applied spray coating of modified vinyl-zinc primer with a modified acrylic resin finish on the exterior of the pump.

Sealing design for the pump/motor assembly shall incorporate metal to metal contact between machined surfaces. Critical mating surfaces where a watertight seal is required shall be machined and fitted with Nitrile or Viton rubber O-rings. Sealing will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without requiring a specific torque limit. Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered adequate or equal. No secondary sealing compounds shall be used.

Impeller: The impeller shall be of gray cast iron, ASTM A-48, Class 40 and shall be of the closed, non-clogging dynamically balanced two vane design, capable of passing a minimum of 5X4 3/8 diameter spherical solids. The impeller shall be capable of being trimmed to meet specific hydraulic requirements, and shall have a slip fit onto the motor shaft and drive key. It shall be fastened to the shaft by a stainless steel bolt which is mechanically prevented from loosening by a positively engaged ratcheting washer assembly.

Wear Ring System: A replaceable wear ring of ASTM A48, Class 40, cast iron shall be securely fitted into the pump casing. As an option, casing and impeller wear rings constructed of stainless steel shall be available.

Pump Volute: The pump volute shall be single piece gray cast iron, ASTM A48, Class 40, non-concentric design with centerline discharge. Passages shall be smooth and large enough to pass any solids which may enter the impeller. Minimum inlet and discharge size shall be as specified. The discharge flange design shall permit attachment to standard ANSI or DIN flanges/appurtenances.

Rotating Assembly: The rotating assembly (impeller, shaft and rotor) shall be dynamically balanced such that undue vibration or other unsatisfactory characteristics will not result when the pump is in operation..

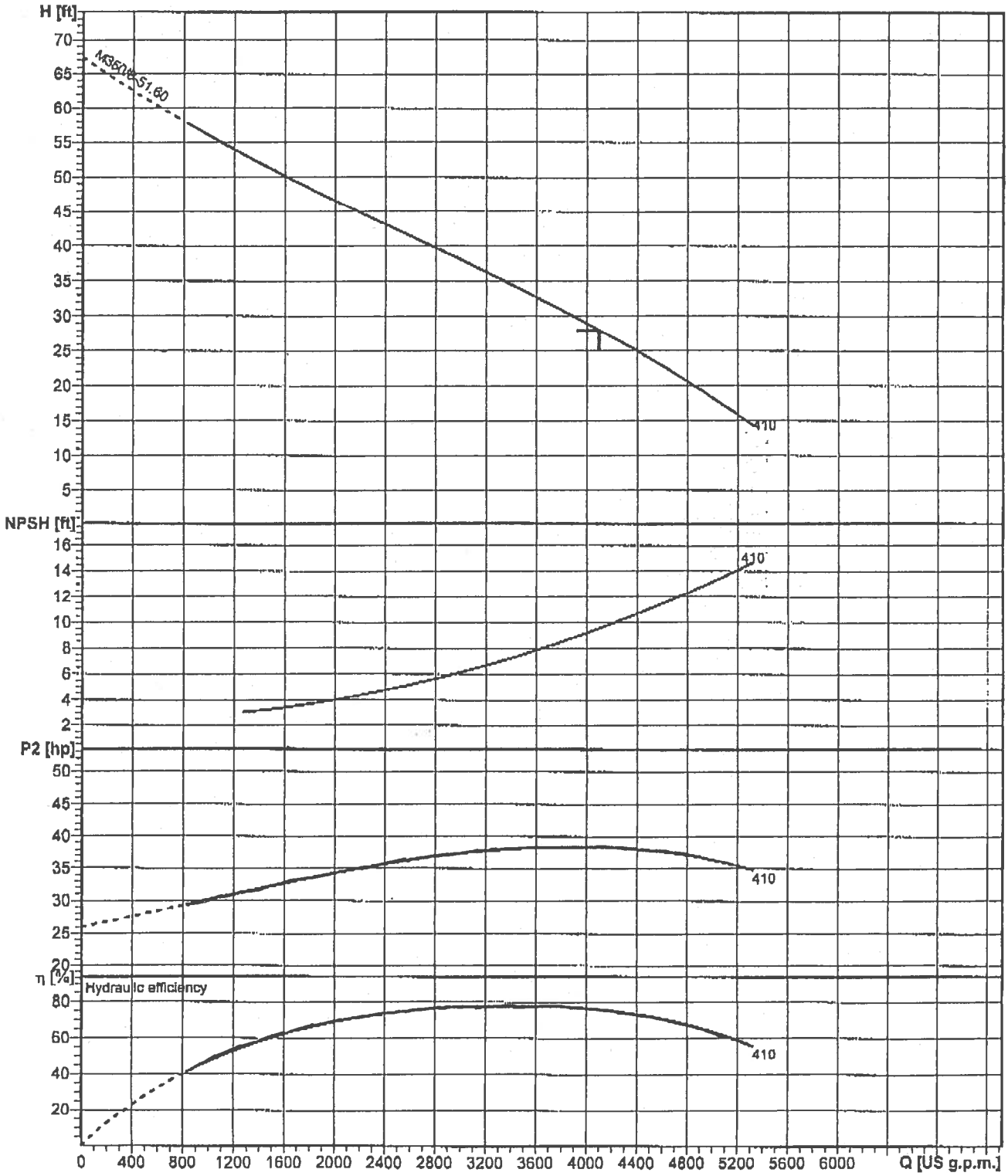
Shaft: The pump shaft and motor shaft shall be an integral unit. Each shaft shall be of 420 stainless steel material and adequately designed to meet the maximum torque required at any normal start-up condition or operating point in the system. Maximum deflection shall not exceed .002" at the lower seal. Each pump shaft shall have a polished finish and have accurately machined shoulders to accommodate bearings, seals and impeller. Carbon steel or chrome plated shafts shall not be considered adequate or equal.

Mechanical Seals: Each pump shall be equipped with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The seals shall operate in a lubricant reservoir that hydro-dynamically lubricates the lapped seal faces at a constant rate. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary industrial duty **silicon-carbide** seal ring and one rotating industrial duty **silicon-carbide** seal ring. The upper, secondary seal unit, located between the lubricant chamber and motor housing, shall contain one stationary **carbon** seal ring and one rotating seal ring made from corrosion resistant **Cr-steel**. Each seal interface shall be held in contact by its own spring system. The seals shall not require routine maintenance, or adjustment, and shall not be dependent on the direction of rotation for proper sealing. Each pump shall be provided with a lubricant chamber for the shaft sealing system which shall provide superior heat transfer and maximum seal cooling. The lubricant chamber shall be designed to prevent overfilling, and to provide lubricant expansion capacity. The drain and inspection plug shall have a positive anti-leak seal, and shall be easily accessible from the outside of the pump. The seal system shall not rely upon the pumped media for lubrication and shall not be damaged when the pump is run dry.

ABS
COST-EFFECTIVE PUMPING

Pump performance curves
AFP 3002 60 Hz

Curve number	
Reference curve	AFP 3002
Discharge	DN300
Frequency	60 Hz
Density	62.428 lb/ft³
Viscosity	0.000016813 ft²/s
Testnorm	Hydraulic Institute
Rated speed	875 rpm
Date	2001-10-24



Impeller size	N° of vanes	Impeller	Solid size	Revision 2000-02-02
16.1 inch		2-vane channel impeller	5 x 4 3/8"	

TECHNICAL DATA	8 Pole	AFP 3002
Dwg. Rev: Date: 01/02	Section AFP Tab 12" Closed	Page

EXPLOSION PROOF

MOTOR SPECIFICATIONS

Motor Design		NEMA design B, squirrel cage induction, air filled
Motor Type		Enclosed submersible
Insulation Class		Class F, rated at 155°C
Bimetallic Temp Setting		140°C ± 5°C
Motor Protection	Thermal	Bimetallic Switches in each Phase, and at upper and lower bearings
	Leakage	DI Moisture Detection in seal oil chamber, motor housing and junction chamber
Maximum Submergence		65 feet
Max. Fluid Temperature		40°C (104°F)
Voltage Tolerance ±		10%
RPM		880

PUMP & MOTOR DATA

Discharge Size		12"					
Impeller		420					
Solid Size-Inches		4.3 X 5.0					
Impeller DIA mm		420					
WK^2 LB-FT^2 (with water)		24.5					
Impeller weight LBS.		94.0					
Minimum Flow GPM		1250					
Motor		M350/8-51					
BHP		47					
Phase		3					

MATERIALS of CONSTRUCTION

Motor Housing		Cast Iron ASTM A48 Class 40	
Oil Chamber		Cast Iron ASTM A48 Class 40	
Seal Plate		Cast Iron ASTM A48 Class 40	
Impeller		Cast Iron ASTM A48 Class 40	
Volute		Cast Iron ASTM A48 Class 40	
Water Jacket		Steel ASTM A36	
Wear Ring Case		Cast Iron ASTM A48 Class 40	~~Optional material: 316 SS~~
~~Wear Ring Impeller (optional)~~		~~304 SS~~	
Pump and Motor Shaft		420 SS	
External Hardware		316 SS	
O-Rings		BUNA "N" (NITRILE)	
Cable Glands		BUNA "N" (NITRILE)	
Upper Bearing		Cylindrical Roller Bearing Pennanently Lubricated	
Lower Bearing		Angular Contact Ball Bearings Permanently Lubricated	
Tandem Mechanical Seal	Lower	Silicon Carbide on Silicon Carbide	
	Upper	Chrome Steel on Carbon	

WEIGHT OF PUMP AND MOTOR (LBS)

Standard and Explosion proof		2468					

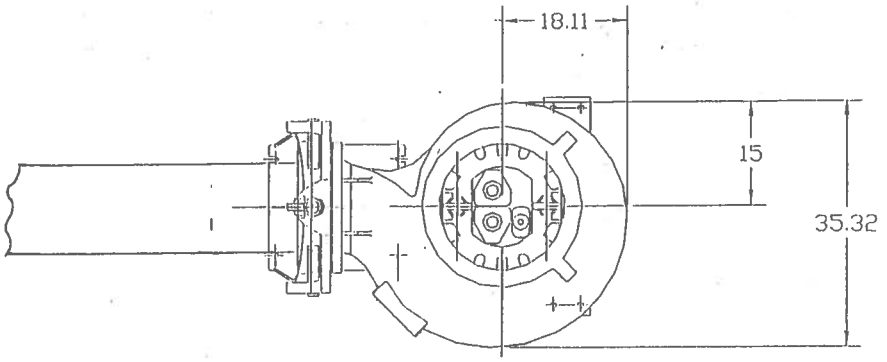
CABLE SPECIFICATIONS

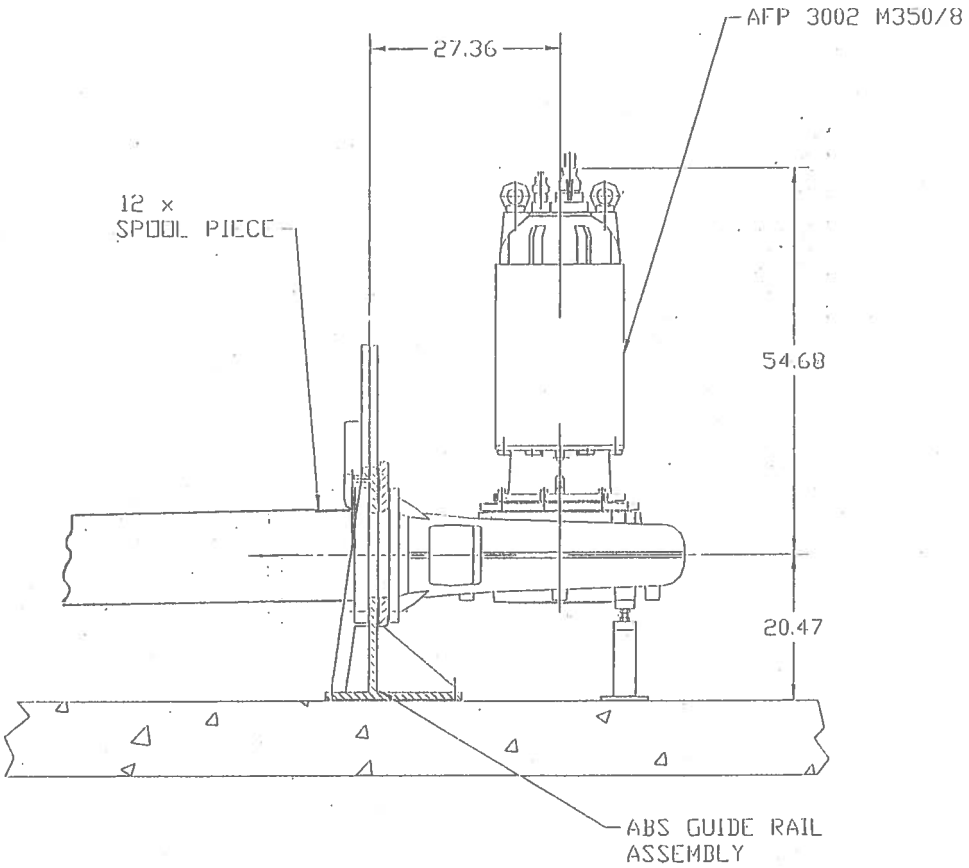
Power Cable	Type	H07RN-F, Ozoflex, GGC					
	Number	2					
	OD Inches	1.12					
Control Cable	Type	H07RN-F, Ozoflex, SOW					
	Number	1					
	OD Inches	0.71					
Cable, Standard Length		30 feet					

STANDARD & EXPLOSION PROOF

Motor Model	BHP Out (P2)	KW In (P1)	RPM	Rated Voltage	Full Load Amps	Locked Rotor Amps	NEMA Code	S.F.	Power Factor at % Load			Motor Efficiency at % Load		
									100%	75%	50%	100%	75%	50%
M4 Frame, Three Phase, 8 Pole														
M170/8	23.0	20.5	880	230 460 575	66.0 33.0 26.4	292 146 117	F	1.1	.78	.74	.64	82.8	81.8	78.1
M210/8	28.0	25.3	880	230 460 575	82.4 41.2 33.0	356 178 142	F	1.1	.77	.73	.63	83.0	82.2	79.0
M250/8	33.5	29.9	880	230 460 575	102 50.8 40.6	474 237 190	G	1.1	.74	.68	.58	83.5	82.3	79.1
M5 Frame, Three Phase, 8 Pole														
M350/8	47.0	40.3	880	460 575	65.6 52.5	314 251	F	1.1	.77	.73	.63	86.9	86.0	83.1
M430/8	58.0	49.0	880	460 575	77.8 62.2	370 296	F	1.1	.79	.74	.65	87.8	87.0	84.1
M520/8	70.0	59.2	880	460 575	94.0 75.2	416 333	E	1.1	.79	.75	.67	87.8	87.4	84.8
M630/8	84.0	71.2	880	460 575	114 91.2	568 454	F	1.1	.78	.73	.63	88.6	87.8	85.0
M860/8	115	97.3	880	460 575	159 127	739 591	F	1.1	.77	.72	.62	88.4	88.1	86.0
M6 Frame, Three Phase, 8 Pole														
M1040/8	140	116	880	460 575	197 158	690 552	C	1.1	.74	.69	.59	89.9	89.7	88.0
M1250/8	168	139	880	460 575	242 194	898 718	D	1.1	.72	.66	.55	90.2	89.7	88.1
M1500/8	201	166	880	460 575	289 231	1032 826	D	1.1	.72	.67	.56	90.2	89.7	88.3
M7 Frame, Three Phase, 8 Pole														
M1850/8	248	204	880	460 575	341 273	1531 1225	E	1.1	.75	.69	.58	90.7	90.3	88.7

ABS
COST-EFFECTIVE PUMPING





ABS Pumps Inc.

CORPORATE OFFICE:
ABS PUMPS, INC.
140 POND VIEW DRIVE
MERIDEN, CT 06450
(203) 238-2700
FAX (203) 238-0738

REGIONAL OFFICES:
ABS PUMPS, INC.
949 SHADICK DRIVE
ORANGE CITY, FL 32763
(904) 775-6353
FAX (904) 775-3272

ABS PUMPS, INC.
970 GARCIA AVE., UNITS A & B
PITTSBURG, CA 94565
(510) 427-6400
FAX (510) 427-6404

ABS PUMPS, INC.
6315 SHAWSON DRIVE, UNIT # 13
MISSISSAUGA, ONTARIO
CANADA L5T1J2
(905) 670-4677

Nampa Wastewater Treatment Plant Phase I Upgrades: Group A-Liquid Stream Upgrades

Response to Written Bidder Questions – Addendum 5

Internal Tracking	Spec/Drawing	Bidder Question/Comment	Response
24	00 52 00	Please see caption below taken from Addendum No. 2 - Plant Operation Flow (Page 5). This indicates that the Completion date of Milestone No. 1 is to be April 2016. Specification Section 00 52 00 4.2.2.1 indicates that the completion date of Milestone 1 is to be within 600 Days after Notice to Proceed. Based on an award and estimated Notice to Proceed date of May 15, 2015, the completion date per the Agreement will be on or about January 4th, 2017. Please confirm the required completion date of Milestone No. 1.	Refer to Section 00 52 00 Paragraph 4.2 for Contract Times.
27	381-E-111	Ref. Drawing 100, 3129HMCP, what is this, what does it feed, what feeds it, etc. Also not shown on the 1-Line.	3129HMCP is the HVAC master control panel. See cable block diagram labeled "Air Handling System" of drawing 10-PEB-E-510.
28	40 91 00 2.04.D F51	Paragraph D. F51 Flow Element & Transmitter, Thermal Mass Flow Can the max operating temperature requirement be lowered to 250F?	See Addendum 5.
29	40 91 00 2.04.D F51	Paragraph D. F51 Flow Element & Transmitter, Thermal Mass Flow Paragraph 3.b.2) Process Connection. States a 1-1/4" retractable sensor with graphite packed gland is required. Paragraph 6.g. states a 1" FNPT meter connection. My question is if the 1-1/4" retractable sensor is not necessary since this meter will be in a flow conditioner inline pipe spool?	A 1 1/4" MNPT is not required because the all meters are required to be inserted into a flow conditioner. See addendum.

Internal Tracking	Spec/Drawing	Bidder Question/Comment	Response
30	050-CY-108	I understand that the existing 42" PE pipe that we are tying into is concrete. Where is this shown in the plans? Where are other existing pipe materials shown?	The information regarding the 42-inch PE is shown on sheet 125 of the 1979 Nampa WWTP Contract 4 drawings and in the specifications for those documents. This drawing has been added to Volume 6 Record Drawings by Addendum 5. This drawing also shows the Primary Effluent Splitter Box that is to be demolished under the current contract. Other existing pipe materials may or may not be identified on the Record Drawings for the project under which they were installed. For some projects the material is identified in the specifications rather than on the drawings, and the specifications are generally not available for many older projects, some of which date back to the 1960s. A compilation of project record Drawings is available for bidders to view in accordance with 4.2.1.2 of the Instructions to Bidders.
31	050-CY-301	In Secondary Clarifier Meter Vault (Sheet 48 of 157) there are 2 – 30" valves called out (FV 3110 and FV 3111) that I can't find any information on.	See Addendum 5
32	40 27 00.10	In the Buried Pressure Pipe – AWWA C900, you call for pressure class 150. Pressure Class 150 doesn't exist anymore since the reclassification of AWWA C900 in 2007. Could you specify either a DR rating or a psi that you would like?	See Addendum 5
33	40 27 00.10	In the Buried Gravity Pipe – you call for ASTM D3034SDR less than 35. Could you specify what you mean by less than 35 or specify a pipe class that you would like to use?	See Addendum 5
34	40 91 00	F4 Flow Element and Transmitter, Electromagnetic. Paragraph 8.h. Submergence: Temporary submergence is stated as required. Can this be changed for integral transmitter units to be IP66 (NEMA 4) rating? As an example, the Rosemount Model 8732 is listed as an approved transmitter but only meets IP66 (NEMA 4) rating.	The intention of the design was to have the mag meters with integral transmitter be rated NEMA 4, and the flow meters with remote transmitters to be rated for temporary submergence. See Addendum 5.

Internal Tracking	Spec/Drawing	Bidder Question/Comment	Response
35	01 57 28	Section 1.05 QUALITY ASSURANCE states that the temporary flow control systems designer to be a professional engineer with at least 5 years' experience and registered in the State of Idaho. Q1: Is the PE absolutely necessary? Xylem Dewatering Solutions (Godwin Pumps) has performed many bypasses of similar nature and many of which have been larger in scale when compared to the bypasses required for this job and have not required a PE review. Rather, references for bypasses in similar size and scope have been requested. Q2: If you do indeed required a PE, is it necessary for him/her to be registered in the State of Idaho? If it is, you may be limiting the number of bypass vendors able to bid this work.	The design must be stamped by an Idaho PE.
36	01 57 28	Are there any as-built drawings of just the Trickling Filter Effluent Pump Station that you could supply us with?	Refer to the last 3 sheets in Volume 6 Supplementary Information, which are the design drawings for the 2 existing submersible pumps. Refer to drawing 050-D-501 added under Addendum 5, which shows the original screw pump station mechanical design. Also see Addendum 5 for other record drawings added to Volume 6.
37	01 57 28	Can you supply us with the pump performance data and pump curves for the existing submersible pumps currently installed in the TFEPS wet well?	See Addendum 5 for these curves.