City of Homer
www.cityofhomer-ak.gov

Public Works
3575 Heath Street
Homer, AK 99603
publicworks@cityofhomer-ak.gov
(p) 907- 235-3170
(f) 907-235-3145

Memorandum 22-147

TO: Mayor Castner and Homer City Council
THROUGH: Rob Dumouchel, City Manager
FROM: Janette Keiser, PE, Director of Public Works
DATE: August 23, 2022
SUBJECT: WWTP Clarifier Belt Repairs – additional funding needed

I. Issue: The purpose of this Memorandum is to request additional funding to repair the chain driven clarifier skimming systems at the Waste Water Treatment Plant ("WWTP").

II. Background:

Memorandum 22-103, dated May 23, 2022, explained that the belt-drive clarifier skimmers in the WWTP require repair or replacement. We issued a Task Order to RESPEC Company, Inc. to evaluate options and develop an engineered solution. Memorandum 22-111, dated June 13, 2022, explained that, after a preliminary investigation, we contacted the original manufacturer of the equipment, Evoqua Water Technologies, and received a preliminary price of $475,000 for the elements required to repair/renovate both clarifiers. We added that estimated price to the cost of the engineering ($22,480), for a total expected cost of $497,480. Ordinance 22-34(S) authorized $497,480 from the Sewer CARMA Fund.

After a thorough investigation, a site visit by Evoqua personnel, and the development of a more detailed work, we asked Evoqua to provide a written quote for materials and installation. Their quote, dated August 16, 2022, includes the following:

- Materials $555,898
- Installation $311,845

Total $867,743

This leaves a balance of $370,263.

Evoqua is the only manufacturer in the United States that fabricates the necessary materials.

III. Recommendation:

That the City Council appropriate funds from the Operating Fund Balance in the amount of $370,263 to fully fund the repair of the two broken clarifier belts in the WWTP.

CITY OF HOMER
FINANCIAL SUPPLEMENT

PROJECT NAME	WWTP Clarifier Belts	DATE	09/07/2022
DEPARTMENT	Public Works	SPONSOR	City Manager/PW Director
REQUESTED AMOUNT	$ 370,263		

DESCRIPTION	Ordinance 22-34(S) authorized $497,480 from the Sewer CARMA Fund. After a thorough investigation, a site visit by Evoqua personnel, and the development of a more detailed work, we asked Evoqua to provide a written quote for materials and installation, which includes the following: Materials $555,898 Installation $311,845 Total $867,743 This leaves a balance of $370,263 to be funded by the Utility Operations fund balance.

FUNDING SOURCE(S)	Utility Operations	GF CARMA	GF FLEET CARMA	PORT RESERVES	WATER CARMA
	100%	0%	0%	0%	0%
	HAWSP	HART-ROADS	HART-TRAILS	PORT FLEET RESERVES	SEWER CARMA
	0%	0%	0%	0%	0%

FUNDING SOURCE 1: Utility Operations FB		FUNDING SOURCE 2:		FUNDING SOURCE 3:	
Current Balance	$ 1,205,126	Current Balance		Current Balance	
Encumbered	$ 0	Encumbered		Encumbered	
Requested Amount	$ 370,263	Requested Amount		Requested Amount	
Other Items on Current Agenda	$ 208,000	Other Items on Current Agenda		Other Items on Current Agenda	
Remaining Balance	$ 626,863	Remaining Balance		Remaining Balance	

FUNDING SOURCE 4:		FUNDING SOURCE 5:		FUNDING SOURCE 6:	
Current Balance		Current Balance		Current Balance	
Encumbered		Encumbered		Encumbered	
Requested Amount		Requested Amount		Requested Amount	
Remaining Balance		Remaining Balance		Remaining Balance	

EVOQUA WATER TECHNOLOGIES

Quote Number: 2022-539176 Rev: 3
Account ID: 0001011442

Original Evoqua Contract No.: 10105-01 Homer AK

Proposal For:
CITY OF HOMER
Dave Welty
3575 HEATH ST
HOMER, AK 99603-7833
Phone: 907-519-3706
dwelty@ci.homer.ak.us

James Moore
Evoqua Water Technologies
N19W23993 Ridgeview Pkwy, Suite 200
Waukesha, WI 53188
Phone: 262-521-8368
james.a.moore@evoqua.com

Item Pricing Summary

Item	Part No Description	Qty	Net Price	Ext. Price
1	field material	1	$744.93	$744.93
2	**W3T488570** Limit Switch Kit, SS S/P Hub, NEMA 4/4X7 Reference #: 603-100011	4 EA	$1,479.53	$5,918.12
3	**W3T561111** engineering	1 EA	$1,500.00	$1,500.00
4	**W2T119027** COLLAR-SET,SPLIT,2.44"DIA.,BLK STL Reference #: 841-24105	6 EA	$88.05	$528.30
5	**W2T120206** COLLAR-SET,SPLIT,1.94"DIA.,BLK STL Reference #: 841-24075	8 EA	$50.36	$402.88
6	**W3T23628** BEARING-WALL,2.437"DIA,SA,BABB,W/GRS FTG Reference #: A65749-BC1	4 EA	$872.64	$3,490.56
7	**W2T118523** WASHER-PLAIN,.75"DIA,2.75"OD, SS18-8 Reference #: 103-81621-1	32 EA	$16.23	$519.36
8	**W2T121733** WASHER-RND,1.062"ID,2.75"OD,0.125"THK,PU Reference #: 303-1396-1	32 EA	$25.84	$826.88
9	**W3T23625** BEARING-WALL,1.937"DIA,SA,BABB,W/GRS FTG Reference #: A65749-BB1 for the collector mechanism	8 EA	$1,140.18	$9,121.44

10	**W3T553369** SPROCKET,26T,21.64"PD,2.44"B,KW&SS Reference #: 403-65-3 collector mechanism	2 EA	$1,850.02	$3,700.04
11	**W3T385107** SPROCKET,NCS720S 23T KEYED 2.44"B PU Reference #: 603-81164-81 collector mechanism	4 EA	$1,231.72	$4,926.88
12	**W2T319566** SPROCKET,NCS720S 17T 16.61"PD 1.94"B BLK Reference #: 603-81165-80 collector mechanism	4 EA	$1,685.80	$6,743.20
13	**W2T313940** CHAIN-CHABELCO, 578 PIN & COTTER Reference #: 841-28007	50 FT	$439.75	$21,987.50
14	**W3T23631** BEARING-WALL,2.937"DIA,SA,BABB,W/GRS FTG Reference #: A65762-BB1 skimmer mechanism	4 EA	$843.78	$3,375.12
15	303-70215-92 skimmer sprocket skimmer mechanism	4	$3,159.73	$12,638.92
16	303-70215-86 skimmer sprocket skimmer mechanism	2	$3,094.72	$6,189.44
17	303-70215-81 skimmer sprocket skimmer mechanism	2	$3,033.86	$6,067.72
18	**W3T515086** SPROCKET,78 30T 24.96"PD 2.440"B STL Reference #: 303-2068-3 skimmer mechanism	2 EA	$2,215.16	$4,430.32

19	**W2T315348** PIN-SHEAR, .375"DIA X 1.50", 2240 SH.VAL Reference #: CA1943-26	24 EA	$13.23	$317.52
20	**W2T315339** PIN-SHEAR, .375"DIA X 1.50", 1015 SH.VAL Reference #: CA1943-10	24 EA	$11.41	$273.84
21	K87 R57 variable speed gearbox gearbox includes inverter, with optional ProfiNET plug in card. Also included our dongle (line07) to connect to our LT Shell software for diagnostics and some start up parameters, ref#419620063REV1. also includes sprocket	2	$13,941.56	$27,883.12
22	SEW K87 gear box collector collecgtor drives, one left hand one right hand	2	$10,074.02	$20,148.04
23	drive bases for skimmer drive	2	$486.48	$972.96
24	drive bases for collector drive	2	$486.48	$972.96
25	**W2T269844** WEAR STRIP, .38 X 3.00 X 120.00, UHMW Reference #: 303-80410-1 collector mechanism	52 EA	$51.48	$2,676.96
26	**W2T269847** WEAR STRIP, .38 X 3.00 X 120.00, UHMW Reference #: 303-80410-2 collector mechanism	4 EA	$110.28	$441.12
27	**W2T269849** WEAR STRIP, .38 X 3.00 X 60.00", UHMW Reference #: 303-80410-3 collector mechanism	4 EA	$55.37	$221.48
28	**W2T121891** WASHER-DISHED,.38",1.4"OD,.40"ID, 316SS Reference #: 303-2041-2	250 EA	$1.68	$420.00
29	303-1907-1 SRD196 chain upper	68	$1,846.65	$125,572.20

30	10105-118-100 upper flights	68	$2,942.28	$200,075.04
31	**W3T422183** CHAIN,NCS720S-NX POLY 6"P 120" F26 ATT(1 Reference #: 303-80515-1	60 EA	$244.70	$14,682.00
32	**W2T319411** TOOL-CHAIN ASSY,NCS720S/-NX/NCS360S,STL Reference #: 603-31204-80	2 EA	$165.74	$331.48
33	10105-112-100 3x6 lower flights	30	$289.30	$8,679.00
34	**W3T413282** WEARSHOE,CARRY,2.5X2.5X5.5,92A ETHER-PUR Reference #: 303-70493-1	60 EA	$15.06	$903.60
35	**W3T413284** WEARSHOE,RTRN,3X3X4, 92A ETHER-PUR Reference #: 303-70493-3	60 EA	$14.04	$842.40
36	**W2T118751** SPACER-FLT,6"SIG,4.88X5.25 X 2.19"T,POLY Reference #: 303-70156-1	60 EA	$7.81	$468.60
37	**W2T319430** KIT-HRDWR(6"/8" SIGMA FLGHT,W/RTRN SHOE) Reference #: 303-60662-80	30 EA	$30.14	$904.20

Currency: USD

Item(s) Subtotal:	**$499,898.13**
Shipping and Handling Charges:	**$56,000.00**
Total Net Price:	**$555,898.13**

Proposal Notes
overall lead time is 18-24 weeks ARO

Material Escalation

Due to volatility in steel costs, prices quoted in this proposal will be adjusted to reflect changes in the Metal and Metal Products Index (MMPI) published by the U.S. Department of Labor, Bureau of Labor Statistics. The most recent published MMPI is 345.5 for May 2022. If the MMPI exceeds 352.4 at the time the Equipment is released for manufacture, then the price will be increased by the same percentage as the MMPI exceeds 352.4.

Further Evoqua's price does not account for increased costs, delays and inefficiencies associated with current regulations and guidelines concerning COVID-19. Should these, or any additional,

restrictions be implemented by any governing body, the CDC, or the customer or user of the Equipment to address COVID-19, Evoqua reserves the right to request a change order to the extent its costs or time for performance are increased by additional restrictions

please provide tax exempt certificate with purchase order.
Our Manufacturer Rep in your area is:

Representative:	William M. Reilly
Company:	William H. Reilly & Co., Inc.
List Address:	910 SW 18th Avenue
	Portland, OR, 97205
Phone:	
Email:	billjr@whreilly.com

Payment Terms and Delivery

PO Terms

Purchaser acknowledges that Seller is required to comply with applicable export laws and regulations relating to the sale, exportation, transfer, assignment, disposal and usage of the goods and/or services provided under the Contract, including any export license requirements. Purchaser agrees that such goods and/or services shall not at any time directly or indirectly be used, exported, sold, transferred, assigned or otherwise disposed of in a manner which will result in non-compliance with such applicable export laws and regulations. It shall be a condition of the continuing performance by Seller of its obligations hereunder that compliance with such export laws and regulations be maintained at all times. PURCHASER AGREES TO INDEMNIFY AND HOLD SELLER HARMLESS FROM ANY AND ALL COSTS, LIABILITIES, PENALTIES, SANCTIONS AND FINES RELATED TO NON-COMPLIANCE WITH APPLICABLE EXPORT LAWS AND REGULATIONS.

Shipping Information

- Prepaid and Add: Shipping and Handling Charge

Terms

- This quote is valid until 08-19-2022
- Payment terms are N30 - Net 30 days with proper credit, and are subject to the attached Evoqua Water Technologies Terms and Conditions

Sales Tax & GST:

- The pricing provided in this proposal does not include applicable Sales Tax or GST.
- If your company is exempt from Sales Tax or GST, or eligible for a reduced rate of tax, a tax exemption certificate must be provided no later than with your purchase order.
- If a timely, valid exemption certificate or other documentation is not provided, any applicable Sales Tax or GST will be invoiced and payable.

- New customers may be required to supply a signed credit application to be approved for credit terms.
- NOTE: Effective May 2022, you may be assessed a 3% fee if paying via Credit Card. Find more info on our website here > https://www.evoqua.com/en/about-us/terms-conditions-sale-products-services/credit-card-fee-faqs/. Ask us how to avoid paying fees by migrating to ACH CTX payment type.
- We require hard documentation of your ordering for Evoqua to process your order. For your convenience, we can start processing your order by signing and returning:
  Fax to:
  or Email to: james.a.moore@evoqua.com
- You may also mail to:
  Evoqua Water Technologies
  N19W23993 Ridgeview Pkwy, Suite 200
  Waukesha, WI 53188

Evoqua Water Technologies Banking Details

ACH - CTX

Evoqua's preferred payment method is via ACH - CTX:
JP Morgan Chase Bank
Attn: Evoqua Water Technologies, LLC
Account #: 603148011
Swift Code: CHASUS33
ACH Routing / ABA: **044000037**
Wire Routing / ABA: **021000021**
Remittance details should go to: **electronicfunds@evoqua.com**

Paper checks via Postal Service

Paper checks via Postal Service:
Send to our Lockbox, address is:
Evoqua Water Technologies LLC
28563 Network Place
Chicago, IL 60673-1285

Paper checks via Overnight / Courier

Paper checks via Overnight / Courier:
JP Morgan Chase Bank
Attn: Evoqua Water Technologies Lockbox 28563
131 S Dearborn, 6th Floor
Chicago, IL 60603
Remittance details should go to: **electronicfunds@evoqua.com**

**** If ever instructed to change banking information, contact us immediately at 1-800-466-7873 ****

Standard Terms of Sale

1. **Applicable Terms.** These terms govern the purchase and sale of equipment, products, related services, leased products, and media goods if any (collectively herein "Work"), referred to in Seller's proposal ("Seller's Documentation"). Whether these terms are included in an offer or an acceptance by Seller, such offer or acceptance is expressly conditioned on Buyer's assent to these terms. Seller rejects all additional or different terms in any of Buyer's forms or documents.

2. **Payment.** Buyer shall pay Seller the full purchase price as set forth in Seller's Documentation. Unless Seller's Documentation specifically provides otherwise, freight, storage, insurance and all taxes, levies, duties, tariffs, permits or license fees or other governmental charges relating to the Work or any incremental increases thereto shall be paid by Buyer. If Seller is required to pay any such charges, Buyer shall immediately reimburse Seller. If Buyer claims a tax or other exemption or direct payment permit, it shall provide Seller with a valid exemption certificate or permit and indemnify, defend and hold Seller harmless from any taxes, costs and penalties arising out of same. All payments are due within 30 days of invoice date. Buyer shall be charged the lower of 1 ½% interest per month or the maximum legal rate on all amounts not received by the due date and shall pay all of Seller's reasonable costs (including attorneys' fees) of collecting amounts due but unpaid. All orders are subject to credit approval by Seller. Back charges without Seller's prior written approval shall not be accepted.

3. **Delivery.** Delivery of the Work shall be in material compliance with the schedule in Seller's Documentation. Unless Seller's Documentation provides otherwise, delivery terms are ExWorks Seller's factory (Incoterms 2010). Title to all Work shall pass upon receipt of payment for the Work under the respective invoice. Unless otherwise agreed to in writing by Seller, shipping dates are approximate only and Seller shall not be liable for any loss or expense (consequential or otherwise) incurred by Buyer or Buyer's customer if Seller fails to meet the specified delivery schedule.

4. **Ownership of Materials and Licenses.** All devices, designs (including drawings, plans and specifications), estimates, prices, notes, electronic data, software and other documents or information prepared or disclosed by Seller, and all related intellectual property rights, shall remain Seller's property. Seller grants Buyer a non-exclusive, non-transferable license to use any such material solely for Buyer's use of the Work. Buyer shall not disclose any such material to third parties without Seller's prior written consent. Buyer grants Seller a non-exclusive, non-transferable license to use Buyer's name and logo for marketing purposes, including but not limited to, press releases, marketing and promotional materials, and web site content.

5. **Changes.** Neither party shall implement any changes in the scope of Work described in Seller's Documentation without a mutually agreed upon change order. Any change to the scope of the Work, delivery schedule for the Work, any Force Majeure Event, any law, rule, regulation, order, code, standard or requirement which requires any change hereunder shall entitle Seller to an equitable adjustment in the price and time of performance.

6. **Force Majeure Event.** Neither Buyer nor Seller shall have any liability for any breach or delay (except for breach of payment obligations) caused by a Force Majeure Event. If a Force Majeure Event exceeds six (6) months in duration, the Seller shall have the right to terminate the Agreement without liability, upon fifteen (15) days written notice to Buyer, and shall be entitled to payment for work performed prior to the date of termination. "Force Majeure Event" shall mean events or circumstances that are beyond the affected party's control and could not reasonably have been easily avoided or overcome by the affected party and are not substantially attributable to the other party. Force Majeure Event may include, but is not limited to, the following circumstances or events: war, act of foreign enemies, terrorism, riot, strike, or lockout by persons other than by Seller or its sub-suppliers, natural catastrophes or (with respect to on-site work), unusual weather conditions.

7. **Warranty.** Subject to the following sentence, Seller warrants to Buyer that the (i) Work shall materially conform to the description in Seller's Documentation and shall be free from defects in material and workmanship and (ii) the Services shall be performed in a timely and workmanlike manner. Determination of suitability of treated water for any use by Buyer shall be the sole and exclusive responsibility of Buyer. The foregoing warranty shall not apply to any Work that is specified or otherwise demanded by Buyer and is not manufactured or selected by Seller, as to which (i) Seller hereby assigns to Buyer, to the extent assignable, any warranties made to Seller and (ii) Seller shall have no other liability to Buyer under warranty, tort or any other legal theory. The Seller warrants the Work, or any components thereof, through the earlier of (i) eighteen (18) months from delivery of the Work or (ii) twelve (12) months from initial operation of the Work or ninety (90) days from the performance of services (the "Warranty Period"). If Buyer gives Seller prompt written notice of breach of this warranty within the Warranty Period, Seller shall, at its sole option and as Buyer's sole and exclusive remedy, repair or replace the subject parts, re-perform the Service or refund the purchase price. Unless otherwise agreed to in writing by Seller, (i) Buyer shall be responsible for any labor required to gain access to the Work so that Seller can assess the available remedies and (ii) Buyer shall be responsible for all costs of installation of repaired or replaced Work. If Seller determines that any claimed breach is not, in fact, covered by this warranty, Buyer shall pay Seller its then customary charges for any repair or replacement made by Seller. Seller's warranty is conditioned on Buyer's (a) operating and maintaining the Work in accordance with Seller's instructions, (b) not making any unauthorized repairs or alterations, and (c) not being in default of any payment obligation to Seller. Seller's warranty does not cover (i) damage caused by chemical action or abrasive material, misuse or improper installation (unless installed by Seller) and (ii) media goods (such as, but not limited to, resin, membranes, or granular activated carbon media) once media goods are installed. THE WARRANTIES SET FORTH IN THIS SECTION 7 ARE THE SELLER'S SOLE AND EXCLUSIVE WARRANTIES AND ARE SUBJECT TO THE LIMITATION OF LIABILITY PROVISION BELOW. SELLER MAKES NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE.

8. **Indemnity.** Seller shall indemnify, defend and hold Buyer harmless from any claim, cause of action or liability incurred by Buyer as a result of third party claims for personal injury, death or damage to tangible property, to the extent caused by Seller's negligence. Seller shall have the sole authority to direct the defense of and settle any indemnified claim. Seller's indemnification is conditioned on Buyer (a) promptly, within the Warranty Period, notifying Seller of any claim, and (b) providing reasonable cooperation in the defense of any claim.

9. **Assignment.** Neither party may assign this Agreement, in whole or in part, nor any rights or obligations hereunder without the prior written consent of the other party; provided, however, the Seller may assign its rights and obligations under these terms to its affiliates or in connection with the sale or transfer of the Seller's business and Seller may grant a security interest in the Agreement and/or assign proceeds of the agreement without Buyer's consent.

10. **Termination.** Either party may terminate this agreement, upon issuance of a written notice of breach and a thirty (30) day cure period, for a material breach (including but not limited to, filing of bankruptcy, or failure to fulfill the material obligations of this agreement). If Buyer suspends an order without a change order for ninety (90) or more days, Seller may thereafter terminate this Agreement without liability, upon fifteen (15) days written notice to Buyer, and shall be entitled to payment for work performed, whether delivered or undelivered, prior to the date of termination.

11. **Dispute Resolution**. Seller and Buyer shall negotiate in good faith to resolve any dispute relating hereto. If, despite good faith efforts, the parties are unable to resolve a dispute or claim arising out of or relating to this Agreement or its breach, termination, enforcement, interpretation or validity, the parties will first seek to agree on a forum for mediation to be held in a mutually agreeable site. If the parties are unable to resolve the dispute through mediation, then *any dispute, claim or controversy arising out of or relating to this Agreement or the breach, termination, enforcement, interpretation or validity thereof, including the determination of the scope or applicability of this agreement to arbitrate, shall be determined by arbitration in Pittsburgh, Pennsylvania before three arbitrators* who are lawyers experienced in the discipline that is the subject of the dispute and shall be jointly selected by Seller and Buyer. *The arbitration shall be administered by JAMS pursuant to its Comprehensive Arbitration Rules and Procedures. The Arbitrators shall issue a reasoned decision* of a majority of the arbitrators, which shall be the decision of the panel. Judgment may be entered upon the arbitrators' decision in any court of competent jurisdiction. The substantially prevailing party as determined by the arbitrators shall be reimbursed by the other party for all costs, expenses and charges, including without limitation reasonable attorneys' fees, incurred by the prevailing party in connection with the arbitration. For any order shipped outside of the United States, any dispute shall be referred to and finally determined by the International Center for Dispute Resolution in accordance with the provisions of its International Arbitration Rules, enforceable under the New York Convention (Convention on the Recognition and Enforcement of Foreign Arbitral Awards) and the governing language shall be English.

12. **Export Compliance.** Buyer acknowledges that Seller is required to comply with applicable export laws and regulations relating to the sale, exportation, transfer, assignment, disposal and usage of the Work provided under this Agreement, including any export license requirements. Buyer agrees that such Work shall not at any time directly or indirectly be used, exported, sold, transferred, assigned or otherwise disposed of in a manner which will result in non-compliance with such applicable export laws and regulations. It shall be a condition of the continuing performance by Seller of its obligations hereunder that compliance with such export laws and regulations be maintained at all times. BUYER AGREES TO INDEMNIFY AND HOLD SELLER HARMLESS FROM ANY AND ALL COSTS, LIABILITIES, PENALTIES, SANCTIONS AND FINES RELATED TO NON-COMPLIANCE WITH APPLICABLE EXPORT LAWS AND REGULATIONS.

13. **LIMITATION OF LIABILITY.** NOTWITHSTANDING ANYTHING ELSE TO THE CONTRARY, SELLER SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, PUNITIVE OR OTHER INDIRECT DAMAGES, AND SELLER'S TOTAL LIABILITY ARISING AT ANY TIME FROM THE SALE OR USE OF THE WORK, INCLUDING WITHOUT LIMITATION ANY LIABILITY FOR ALL WARRANTY CLAIMS OR FOR ANY BREACH OR FAILURE TO PERFORM ANY OBLIGATION UNDER THE CONTRACT, SHALL NOT EXCEED THE PURCHASE PRICE PAID FOR THE WORK. THESE LIMITATIONS APPLY WHETHER THE LIABILITY IS BASED ON CONTRACT, TORT, STRICT LIABILITY OR ANY OTHER THEORY.

14. **Rental Equipment / Services.** Any leased or rented equipment ("Leased Equipment") provided by Seller shall at all times be the property of Seller with the exception of certain miscellaneous installation materials purchased by the Buyer, and no right or property interest is transferred to the Buyer, except the right to use any such Leased Equipment as provided herein. Buyer agrees that it shall not pledge, lend, or create a security interest in, part with possession of, or relocate the Leased Equipment. Buyer shall be responsible to maintain the Leased Equipment in good and efficient working order. At the end of the initial term specified in the order, the terms shall automatically renew for the identical period unless canceled in writing by Buyer or Seller not sooner than three (3) months nor later than one (1) month from termination of the initial order or any renewal terms. Upon any renewal, Seller shall have the right to issue notice of increased pricing which shall be effective for any renewed terms unless Buyer objects in writing within fifteen (15) days of issuance of said notice. If Buyer timely cancels service in writing prior to the end of the initial or any renewal term this shall not relieve Buyer of its obligations under the order for the monthly rental service charge which shall continue to be due and owing. Upon the expiration or termination of this Agreement, Buyer shall promptly make any Leased Equipment available to Seller for removal. Buyer hereby agrees that it shall grant Seller access to the Leased Equipment location and shall permit Seller to take possession of and remove the Leased Equipment without resort to legal process and hereby releases Seller from any claim or right of action for trespass or damages caused by reason of such entry and removal.

15. **Miscellaneous.** These terms, together with any Contract Documents issued or signed by the Seller, comprise the complete and exclusive statement of the agreement between the parties (the "Agreement") and supersede any terms contained in Buyer's documents, unless separately signed by Seller. No part of the Agreement may be changed or cancelled except by a written document signed by Seller and Buyer. No course of dealing or performance, usage of trade or failure to enforce any term shall be used to modify the Agreement. To the extent the Agreement is considered a subcontract under Buyer's prime contract with an agency of the United States government, in case of Federal Acquisition Regulations (FARs) flow down terms, Seller will be in compliance with Section 44.403 of the FAR relating to commercial items and those additional clauses as specifically listed in 52.244-6, Subcontracts for Commercial Items (OCT 2014). If any of these terms is unenforceable, such term shall be limited only to the extent necessary to make it enforceable, and all other terms shall remain in full force and effect. The Agreement shall be governed by the laws of the Commonwealth of Pennsylvania without regard to its conflict of laws provisions. Both Buyer and Seller reject the applicability of the United Nations Convention on Contracts for the international sales of goods to the relationship between the parties and to all transactions arising from said relationship.

Accepted by: _____

Print: _____

Date: _____

APPENDIX C

EVOQUA INSTALLATION QUOTE

evoqua
WATER TECHNOLOGIES

Homer, AK
Flotation Clarifier No. 1 & 2 Rehab

INSTALLATION OF CHAIN AND SCRAPER EQUIPMENT

Quotation #2022-539176 - Installation

Questions relative to this Quotation should be directed to Evoqua's local area sales representative:

Bill Reilly | Wm. H. Reilly & Co.
503-223-6197 Office | 503-223-0845
Fax | 503-314-8386 Cell
Bill@whreilly.com

FIELD ERECTION:

- Evoqua proposes to furnish labor, equipment and expendable materials to install the equipment for clarifier No. 1 & 2. Two purchase option are given.

  Option 1 will be to Replace the upper steel Flights, Chain, Wear Strips & sprockets. Includes installing new drive and gear boxes. Field Wiring will be by others. Shafts and chain track angles shall be reused.

  Option 2 will be to Replace the upper steel Flights, Chain, Wear Strips & sprockets. Lower Fiberglass Flights, Sprockets, Chain & Wear Strips. Includes installing new drive and gear boxes. Field Wiring will be by others. Upper and Lower Shafts and chain track angles shall be reused.

- Customer is responsible for having tank drained and cleaned before Evoqua arrives onsite to begin work. One Clarifier at a time, leaving one in operation until demo and install of the first clarifier is complete.

- All materials/equipment removed during demolition to be disposed of on site.

- Evoqua is responsible for installing purchased equipment into the existing DAF basins by normal installation procedures.

- Evoqua is responsible for providing the necessary construction equipment for erection (fork truck, welding machines, cutting equipment, etc.).

- Work hours by Evoqua Water Technologies LLC at the site shall be as determined by Evoqua Water Technologies LLC. The purchaser shall not define working hours, number of work days per week or prohibit Evoqua Water Technologies LLC from working evenings, weekends, holidays, etc., when deemed to be advisable.

PRICING: (prevailing wages do not apply) .....

Installation of Clarifier equipment Option 1 **Upper mechanisms on Clarifier # 1&2**	**$311,845** **(Taxes not included)**
Installation of Clarifier equipment Option 2 **Upper & Lower mechanisms on Clarifier # 1&2**	**$496,480** **(Taxes not included)**

NOTE:

1. **There may be other items in need of repair that are not known at this time. Evoqua will give customer a quote for any additional repairs before work is to be done.**

QUOTATION VALID: This quotation is valid for a period of Sixty (60) days unless extended in writing by Evoqua.

PAYMENT AND PRICE TERMS: The terms of payment are Net 45 after completed installation.

Price does not include:

- Concrete modifications to existing basin.
- Field Electrical work of any kind
- Disposal of existing materials of site
- Taxes, Permits, and bonds.

SCHEDULE: Construction is an estimated 2 to 3 weeks on site per Clarifier Basin.

WARRENTY: Evoqua shall warrant all materials and labor for one year after successful installation

Quotation Submitted by Evoqua Water Technologies LLC: Bryan Davis

Signature below indicates acceptance of this quotation, including the Standard Terms of Sale attached hereto.

Accepted by Buyer:

_____
Company Name

By: _____
Date: _____

Acknowledged by Seller:
Evoqua Water Technologies LLC

by: _____
Date: _____

Evoqua Water Technologies LLC
GENERAL TERMS AND CONDITIONS
FOR ERECTION WORK

1. Equipment location and staking, including plant orientation, influent and effluent location, is the responsibility of the Purchaser and/or his engineer.

2. The elevation of equipment above or below grade must be determined by the Purchaser and/or his engineer and entered upon the approved drawings. Purchaser is responsible for establishing benchmark at site for Evoqua Waste Technologies erection crew.

3. Purchaser agrees to provide a clear level work area at least 35 feet wide around the periphery of the erection site. Prior to starting erection, any obstructions in the work area, such as excavations, overhead lines, fences, trees, shrubbery, etc., shall be removed by and at the expense of the Purchaser. The Purchaser shall keep the site properly drained and free from surface water during erection, and until the work has been completed and accepted. The site and site access shall be capable of supporting a crane up to and including 50-ton capacity and other erection equipment. Any fill or dewatering necessary to accomplish the above, or additional costs of oversized or special equipment required due to poor site conditions, will be the responsibility of the Purchaser. Site leveling, grading, etc., after erections, shall be the responsibility of the Purchaser. Evoqua Water Technologies shall be responsible for the clean-up and removal of trash, scrap materials, etc., left from Evoqua Water Technologies erection work.

4. Purchaser agrees to provide site access and site working area capable of supporting the delivery trucks (70-75,000 pounds gross weight). Purchaser agrees to maintain site access and working area, daily if required, to allow Evoqua Water Technologies erection crew to perform work during all weather conditions. Should Evoqua Water Technologies have to stop work and return to the site when access and/or work area permits or experience delays due to the site and site access being unsuitable for work due to Purchaser's failure to prepare and/or maintain the above, the Purchaser agrees to compensate Evoqua Water Technologies for cost incurred and agrees Evoqua Water Technologies shall be indemnified and held harmless from all loss or damages resulting from delays of job progress, that are directly or indirectly a result of the Purchaser's responsibility.

5. Evoqua Water Technologies' erection personnel are non-union and all work will be by non-union personnel. In case of interference in erection work due to labor problems by persons not employed by Evoqua Water Technologies, or the imposition of requirements concerning labor, working conditions, wage rates, etc., which were not clearly defined prior to Evoqua Water Technologies acceptance of the erection job, Evoqua Water Technologies shall have the right to stop work without prejudice until such interference or condition is satisfactorily removed or resolved. If additional costs are incurred by Evoqua Water Technologies due to such conflict the Purchaser hereby agrees to reimburse Evoqua Water Technologies for the additional costs incurred.

Evoqua Water Technologies is an Equal Opportunity Employer and shall comply with government regulations pertaining to fair and equal employment.

Work hours by Evoqua Water Technologies at the site shall be as determined by Evoqua Water Technologies The purchaser shall not define working hours, number of work days per week or prohibit Evoqua Water Technologies from working evenings, weekends, holidays, etc., when deemed to be advisable by Evoqua Water Technologies.

6. INSURANCE
During the period of erection of the equipment contemplated herein, Evoqua Water Technologies will maintain the following insurance: Per Englewood Water District Insurance requirement, (copy attached).

(a) Workmen's Compensation and Employer's Liability.
(b) Occupational Disease.
(c) Contractual Liability.
(d) Public Liability Insurance, Personal Injury and Property Damage.
(e) Automobile Liability, Personal Injury and Property Damage.

Any insurance required by Purchaser in addition to the above mentioned coverage shall not be considered to be included in the purchase price as set forth herein and shall be charged to the Purchaser.

7. UNLOADING OF EQUIPMENT: Evoqua Water Technologies is responsible for unloading of equipment which is to be erected by Evoqua Water Technologies. Purchaser is responsible for unloading any equipment or accessories shipped to Purchaser for his installation. (Such as base channels to be embedded in concrete foundation by Purchaser, blowers or other accessories to be installed by Purchaser).

8. PURCHASER ACCEPTANCE OF ERECTED EQUIPMENT: When erection of the equipment nears completion Evoqua Water Technologies shall give Purchaser seventy-two hours verbal notice that the equipment shall be ready for inspection and acceptance. Purchaser agrees to provide, on seventy-two hours notice, an authorized agent to meet at the site with Evoqua Water Technologies erection personnel, to inspect the erected equipment, and accept same for/or on behalf of the Purchaser. Any backordered items not installed at that time shall be listed on the acceptance agreement with written understanding that Evoqua Water Technologies is responsible for installing the subject equipment. Backordered items shall be received by the Purchaser at the "Backordered Address" previously provided- and stored until Evoqua Water Technologies installation is scheduled.

9. PREPARATION FOR START-UP OF ERECTED EQUIPMENT: Upon completion of erection Evoqua Water Technologies shall inform the Purchaser that the erected equipment is ready to be placed in service. The Purchaser shall make all preparations for which he is responsible, such as: Influent and effluent connections, installation of the required electrical power supply and circuitry, filling tanks with clean water for testing and start-up, etc. If any deficiencies in materials or workmanship by Evoqua Water Technologies are discovered by the Purchaser while performing this work, the Purchaser shall immediately notify Evoqua Water Technologies so that corrective action can be taken. Evoqua Water Technologies is responsible for providing start-up supervision as defined in the equipment proposal. For scheduling purposes, ten days notice of desired start-up date is required.

10. SECURITY AND PROTECTION OF EQUIPMENT: Purchaser is responsible for security of equipment stored on his site after delivery prior to arrival of Evoqua Water Technologies crews to begin erection; and for any backordered material delivered to Purchaser after departure of Evoqua Water Technologies erection crews. Evoqua Water Technologies shall not be responsible for deterioration, theft, vandalism or damage to equipment which is stored on site or left inoperative after installation due to delays in start-up. Purchaser agrees to be responsible for security and protection of such equipment.

11. BACKCHARGES: Evoqua Water Technologies will accept no back charges for any reason which has not been approved prior to any work being performed in writing by an authorized manager of the company. Purchaser agrees to contact Evoqua Water Technologies and receive written authorization prior to incurring any costs related to back charges.

12. LICENSES AND PERMITS: Unless specifically stated in Evoqua Water Technologies erection proposal, Evoqua Water Technologies is not responsible for licenses, permits or fees required to perform the work defined in this proposal.

13. (a) Evoqua Water Technologies shall not be liable for delays due to: (1) causes beyond its reasonable control or (2) acts of God, acts of customer, prerequisite work by others, acts of civil or military authority, government priorities, fires, strikes or other labor disturbances, floods, epidemics, war riot, delays in transportation or (3) Inability to obtain or delay in obtaining, due to causes beyond its reasonable control, suitable labor, materials, or facilities. In the event of any such delay; the time of performance shall be extended for a period equal to the time lost by reason of the delay.

(b) In the event Evoqua Water Technologies is delayed by acts of the customer or by prerequisite work by other contractors or suppliers of the customer, Evoqua Water Technologies shall be entitled to an equitable price adjustment in addition to extension of the time of performance.

14. Evoqua Water Technologies reserves the right to subcontract any of the work to one or more subcontractors.

15. Purchaser shall protect all gauges, controls and factory finishes from the painting operation. Purchaser shall be responsible for the removal and reinstallation of any assembly that affects the painting operation.

CITY OF HOMER
TASK ORDER #22-01: WWTP CLARIFIER MECHANISM ALTERNATIVES MEMORANDUM

To: Janette Keiser, PE
Director of Public Works
City of Homer

From: Luke Rubalcava, PE
Project Manager/Mechanical Engineer
RESPEC

Date: August 22, 2022

The City of Homer (CITY) has requested that RESPEC Company, LLC (RESPEC) provide engineering services to identify options for repairing/replacing the clarifier solids collection mechanism at the Wastewater Treatment Plant (WWTP), develop specifications for procurement and installation of the selected repair/replacement option, provide construction administration support to facilitate procurement of equipment/labor, and perform quality control during construction.

RESPEC met and coordinated with plant staff and manufacturers to identify the available repair/replacement paths for the WWTP clarifier equipment. The purpose of this memorandum is to provide a historical background for the equipment, summarize the options for repairing/replacing the equipment, and propose a recommendation for the CITY.

BACKGROUND

The Homer WWTP was designed and constructed more than 30 years ago. The primary clarification is achieved using two rectangular clarifiers, each with upper and lower solids collection mechanisms, otherwise known as skimmers and collectors. The skimmers and collector equipment for each clarifier consist of the following components:

- Locally Controlled Variable Frequency Drives
- Electric Motors
- Gearbox/Speed Reducers
- Sprockets and Shafts
- Chains (Skimmer – Steel, Collector – Plastic)
- Pins and Rollers
- Flights (Skimmer – Epoxy Coated Carbon Steel, Collector – Fiberglass)
- Rails
- Wear shoes (Collector only)

P.O. BOX 3387
HOMER, AK 99603
541.979.1500

Figure 1: Clarifier 1 Upper Collection Mechanism (left) and Clarifier 2 Upper Drive Mechanism (right)

Sometime during the third full weekend in May 2022, the skimmer mechanism on Clarifier 2 failed when the drive chain disengaged from the southeast sprocket (see Figure 2 below), which broke the cotter pin on one of the flights, dislodged a flight support pin, and sheared the shear key on the skimmer drive mechanism. After the cotter pin broke and the flight support pin was dislodged, the steel flight fell and caused a jam in the lower collector mechanism which sheared the shear key on the lower drive mechanism. The failure occurred over a weekend and the failure was not identified until Monday morning (5/23/2022). There are currently no alarms associated with the clarifier collection mechanisms, meaning the failure was not realized until plant staff performed their rounds. The cause of the failure was attributed to slack in the steel chain caused by age and wear.

Figure 2: Clarifier 2 Southeast Sprocket and Damaged Drive Chain

In addition to the wear on the chain that caused the failure, the pins that connect the steel flights to the skimmer chain have worn the flight's sockets from the original circular shape to an oblong opening. This wear loosens the tolerances of the mating surfaces and creates "slop" and surges in the system which will continue to cause wear damage to the equipment over time and ultimately lead to another failure.

See Appendix A (Record Drawings Excerpt) for additional information regarding the existing installation.

REPAIR OPTION

In 2015 plant staff performed an overhaul on the skimmer mechanism chains by sourcing new pins and rollers. In addition to replacing the most worn parts, the operators relocated the rollers from weight bearing locations (connected to the flights) to non-weight bearing locations (in between flights). This overhaul was labor intensive and sourcing the components locally was a challenge. This is a feasible option (and is likely the least expensive) but will not provide any relief for the stretched chain links. The operators currently adjust the chain tension every other month and the chain is lubricated using auto-oilers which has ensured that the equipment has ran well with minimal failures for the last 32 years. Per the manufacturer, typical lifespans of the chain and other wear items on similar systems are approximately 20 years.

During the overhaul in 2015, the steel skimmer flights were recoated with an epoxy coating which appears to still be in good condition. As stated in the background section, the connection points between the flights and the chain have worn and the sockets on the flights are now an irregular shape. To prevent further wear, two options are available. The first option is to special order bushings (brass, bronze, UHMW, etc.) and press them into the flight sockets. These will likely need to be custom fabricated. The second option is to weld caps onto the sockets to turn the oblong opening into circular openings. These caps will need to be custom fabricated, and the welding will likely damage the epoxy coating on the flight, meaning that the flights will at best require a coating touch-up and at worst require a complete recoating. Another downside of option two is that it will drastically reduce the bearing surface between the flights and the pins, which has the potential to cause accelerated wear to the pins.

The other components in the skimmer drive train are in working order but are at least 30 years old. Sprockets and shafts are available from the original equipment manufacturer and can be ordered in an emergency and delivered with costs and lead times dependent upon availability. The existing model of gearbox/speed reducers are discontinued, and replacement parts will become increasingly more difficult to source.

The collector system is in good working order, but the drive components are also at least 30 years old. Like the skimmer system, the sprockets and shafts are available from the original equipment manufacturer and can be ordered in an emergency and delivered with costs and lead times dependent upon availability. The existing model of gearbox/speed reducers on the collector system are also discontinued, and replacement parts will become increasingly more difficult to source.

REPLACEMENT OPTIONS

The original equipment supplier, Envirex, is now owned and operated by Evoqua. In July 2022, two Evoqua representatives visited the Homer WWTP to perform an inspection on the existing equipment and meet with plant staff. During the site visit, the two representatives confirmed that the typical life expectancy of similar installations is approximately 20 years and stated that plant staff has done a notable job of maintaining the equipment. The representatives also confirmed that the existing gearbox/speed reducers have been discontinued and many components in the skimmer mechanism are worn and require major overhaul or replacement. Discussions with CITY staff and manufacturer representatives yielded the two options described below.

PARTIAL REPLACEMENT

A partial replacement would replace the following pieces of equipment on Clarifiers 1 and 2:

- Skimmer Mechanism
  - Flights
  - Chain
  - Wear strips
  - Sprockets
  - Gearbox/Speed Reducers
  - Electric Motors
  - Variable Frequency Drive
- Collector Mechanism
  - Gearbox/Speed Reducers
  - Electric Motors
  - Variable Frequency Drive

Note that the new skimmer flights would be stainless steel, not epoxy coated carbon steel (like existing) and that the new variable frequency drives would be relocated from the process area (adjacent to the drive mechanisms) to the controls room and tied into the plant's control system for remote monitoring and control capability. In addition to connecting the drives to the control system, the estimate also includes the addition of limit switches. The switches will be programmed to trip when a clarifier mechanism is unintentionally stopped (presumably due to a mechanical equipment failure) and will create an alarm to notify staff.

As of August 2022, the budgetary estimate from Evoqua for this work is approximately $796,900 (cost of materials: $485,000; labor cost to install: $311,900). Note that the estimate does not include electrical work, disposal of existing materials, potential concrete modifications to the existing basin, or taxes, permits, and bonds. See Appendices B and C (Evoqua Equipment Quote and Evoqua Installation Quote) for additional information.

FULL REPLACEMENT

A full replacement would replace the items mentioned above and the following pieces of equipment on Clarifiers 1 and 2:

- Collector Mechanism
  - Flights
  - Chain
  - Wear strips
  - Sprockets

Like in the partial replacement option, the new skimmer flights would be stainless steel, not epoxy coated carbon steel (like existing) and the new variable frequency drives would be relocated from the process area (adjacent to the drive mechanisms) to the controls room and tied into the plant's control system for remote monitoring and control capability. Also like in the partial replacement option, the estimate includes the addition of limit switches to alarm and notify staff in the event of a mechanical equipment failure.

As of August 2022, the budgetary estimate from Evoqua for this work is approximately $1,052,400 (cost of materials: $555,900; labor cost to install: $496,500). Note that the estimate for materials does not include electrical work, disposal of existing materials, potential concrete modifications to the existing basin, or taxes, permits, and bonds. See Appendices B and C (Evoqua Equipment Quote and Evoqua Installation Quote) for additional information.

RESPEC'S RECCOMENDATION

After multiple site visits and discussions with CITY staff and manufacturer representatives, RESPEC recommends that the CITY pursues the partial replacement option. By replacing the entirety of the skimmer mechanisms, the drive mechanism on the collectors, adding limit switches and tying the drive equipment into the facility's control system, the clarifiers will be ready for another 20+ years of operation.

It is RESPEC's opinion that a full replacement is unnecessary because many of the components that make up the collector mechanism (chain, sprockets, flights, and wear shoes) are in good condition. The components of the collector mechanism are lighter (plastic and fiberglass) compared to the skimmer mechanism (steel) and do not require as much force to operate as the skimmer mechanism (1/2 hp motor vs 3 hp motor). The lower forces translate to less wear and tear and the lighter components can be handled and replaced by CITY staff more readily than the heavier steel components of the skimmer mechanism.

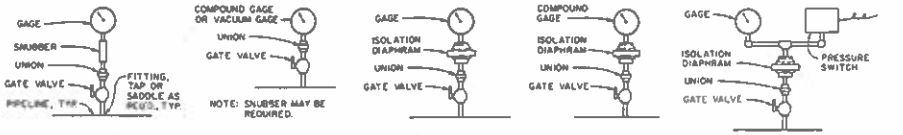
It is also RESPEC's opinion that the repair option is a temporary solution that will likely take longer to execute and will be more disruptive to the day-to-day operations of the facility than either of the replacement options. The capital investment needed to source the components to overhaul the chain and flights of the skimmer will be less than either replacement option, but the labor will likely fall on CITY staff due to the specific nature of the project. The repair option also does not take any preventative measures for the discontinued gearbox/speed reducers or improve the capability of the system to be operated and monitored through the plant's control system.

APPENDICES

A. Record Drawings Excerpt
B. Evoqua Equipment Quote
C. Evoqua Installation Quote

APPENDIX A

RECORD DRAWINGS EXCERPT



PRESSURE GAGE ASSEMBLY FOR CLEAR LIQUID — TYPE 1

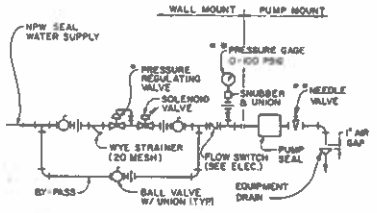
VACUUM GAGE ASSEMBLY — TYPE 2

PRESSURE GAGE ASSEMBLY FOR SLUDGE — TYPE 3

VACUUM GAGE ASSEMBLY FOR PUMP SUCTIONS — TYPE 4

PRESSURE SWITCH GAGE OR VACUUM SWITCH, VACUUM GAGE — TYPE 5

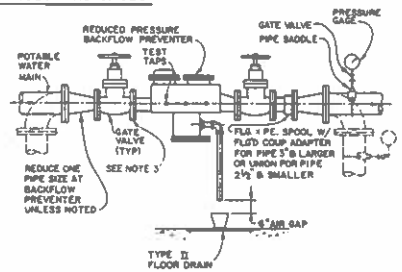
PRESSURE DEVICES AND GAGES



* SET SYSTEM PSI PER PUMP MFR.
** ADJUST DISCHARGE PSI TO PUMP DISCHARGE PSI PLUS 5 PSI.

SEAL WATER CONTROL UNIT

NOTES:
1. ALL PIPING SHALL BE ½" COPPER
2. LOCATE PIPING OUT FROM WALL SUFFICIENT DISTANCE FOR VALVE AND GAGE MAINTENANCE



BACKFLOW PREVENTER

NOTES: 1. ORIENT REDUCED PRESSURE BACKFLOW PREVENTOR FACING OPERATING AREA FOR CONVENIENT TESTING
2. SUPPORT WITH PIPE STANCHEON OR ANGLE BRACKETS OFF OF WALL AT FLANGES BETWEEN BACKFLOW PREVENTER AND VALVES.
3. INSTALL WATER METER PROVIDED BY CITY.

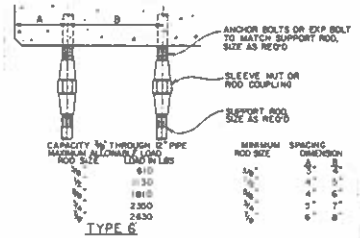
VALVES

CHECK VALVE
STOP COCK
VALVE SOLENOID
VALVE, FLOAT OPERATED
GATE VALVE
VALVE, MOTOR OPERATED
GLOBE VALVE
VALVE, AIR OPERATED
ANGLE GLOBE VALVE, ELEVATION
ANGLE GLOBE VALVE, PLAN
PRESSURE REGULATING VALVE
PRESSURE REDUCING VALVE
VALVE, QUICK OPENING
SAFETY RELIEF VALVE
PLUG VALVE
BALL VALVE
BUTTERFLY VALVE
BUTTERFLY STYLE CHECK VALVE
MUD VALVE
KNIFE GATE VALVE
FLUSHING CONNECTION WITH QUICK DISCONNECT
PRESSURE GAGE W/ COCK & SNUBBER
AIR RELIEF VALVE
STOP & WASTE VALVE
PRESSURE GAGE & PRESSURE SWITCH ISOLATION MANIFOLD

FITTINGS (ONE LINE)

FLANGE	SCREW	
		ELBOW, 45°
		ELBOW, 90°
		ELBOW, TURNED UP
		ELBOW, TURNED DOWN
		ELBOW, REDUCING
		ELBOW, BASE
		EXPANSION JOINT
		REDUCER, CONCENTRIC
		REDUCER, ECCENTRIC
		SLEEVE
		TEE
		TEE, OUTLET UP
		TEE, OUTLET DOWN
		CROSS
		UNION
		LATERAL
		FLEXIBLE OR TRANSITION COUPLING
		FLANGE COUPLING ADAPTER
		BLIND FLANGE

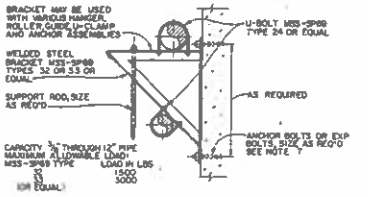
NOTES: (FOR PIPE SUPPORT SYSTEMS)
1. ROD SIZE IS BASED ON CARRYING SINGLE PIPE. WHEN MORE THAN ONE PIPE IS TO BE SUPPORTED BY ROD(S), ROD(S) SHALL BE SIZED BASED ON TOTAL LOAD CARRIED BY ROD(S).



CAPACITY ½" THROUGH 12" PIPE MAXIMUM ALLOWABLE LOAD ROD SIZE	LOAD IN LBS
⅜"	610
½"	1130
⅝"	1810
¾"	2350
⅞"	2630

MINIMUM ROD SIZE	SPACING DIMENSION	
⅜"	3'	3'
½"	4'	4'
⅝"	4'	6'
¾"	5'	7'
⅞"	6'	8'

TYPE 6

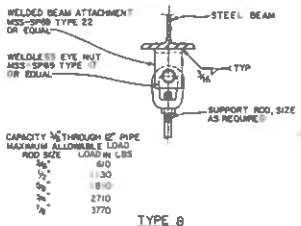


CAPACITY ¾" THROUGH 12" PIPE MAXIMUM ALLOWABLE LOAD MSS-SP69 TYPE	LOAD IN LBS
33	1500
32 (OR EQUAL)	1500

USE DESIGN WEIGHTS SHOWN IN TABLE 4 TO DETERMINE TOTAL LOAD

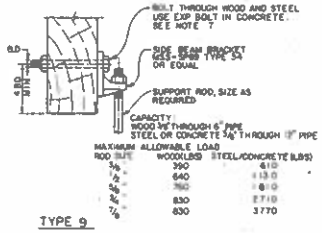
TYPE 7

NOTES: (GENERAL PIPING)
1. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS.
2. SIZE OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIALS SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.



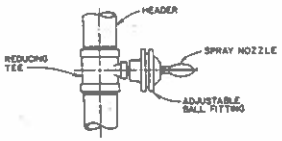
CAPACITY ⅜" THROUGH 12" PIPE MAXIMUM ALLOWABLE LOAD ROD SIZE	LOAD IN LBS
⅜"	610
½"	1130
⅝"	1810
¾"	2710
⅞"	3770

TYPE 8



MAXIMUM ALLOWABLE LOAD ROD SIZE	WOOD (LBS)	STEEL/CONCRETE (LBS)
⅜"	390	610
½"	640	1130
⅝"	760	1810
¾"	830	2710
⅞"	830	3770

TYPE 9



PLAN

SPRAY NOZZLE DETAIL

ABBREVIATIONS

GENERAL

℄	CENTERLINE
CONN	CONNECT
DN	DOWN
ECC	ECCENTRIC
EL	ELEVATION
FCA	FLANGED COUPLING ADAPTER
FIN GR	FINISHED GRADE
HHB	INTERIOR HOSE BIBB W/HOSE RACK & HOSE
HWL	HIGH WATER LINE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
L	LENGTH
LWL	LOW WATER LEVEL
MH	MANHOLE
OD	OUTSIDE DIAMETER
PG	PULL GATE
PRV	PRESSURE REDUCING VALVE
RED	REDUCER
SDG	SLIDE GATE
SLG	SLUICE GATE
TB	THRUST BLOCK
TYP	TYPICAL
W/	WITH
W/O	WITHOUT
WG	WEIR GATE
WH	WALL HYDRANT W/HOSE RACK & HOSE
YH	YARD HYDRANT W/HOSE RACK & HOSE
MV	MUD VALVE
SG	SHEAR GATE
NFS	NON-FROST SUSCEPTIBLE

PROCESS PIPING AND PLUMBING

ARV	AIR RELEASE VALVE
AW	ACID WASTE
CL2	CHLORINE GAS
CLSOL	CHLORINE SOLUTION
CO	CLEANOUT
CW	COLD WATER
D	DRAIN
DF	DIESEL FUEL
DGS	DIGESTED SLUDGE
ED	EQUIPMENT DRAIN (TYPE II)
EF	EFFLUENT
FD	FLOOR DRAIN (TYPE I)
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FS	FIRE SERVICE
FV	FLAP VALVE
GR	GRIT
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
IA	INSTRUMENT AIR
INF	INFLUENT
LPG	PROPANE GAS
LS	LIME SOLUTION
MUW	MAKE-UP WATER
NPW	NON-POTABLE WATER
OF	OVERFLOW
PA	PROCESS AIR
PAH	PROCESS AIR-HIGH PRESSURE
PM	POLYMER
PS	POLYMER SOLUTION
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RD	ROOF DRAIN
RW	RECLAIMED WATER
S	SAMPLE
SA	SERVICE AIR
SC	SCUM
SD	STORM DRAIN
SS	SANITARY SEWER
TV	TELESCOPIC VALVE
V	VENT
VTR	VENT THRU ROOF
WAS	WASTE ACTIVATED SLUDGE
WL	WASTE LEADER
WW	WASTEWATER

DRAWING CONFORMED TO CONSTRUCTION RECORDS
Date 5/19/93 by G.D. Wade
R. W. Beck and Associates

STATE OF ALASKA — 49TH — Lowell W. Harris — REGISTERED PROFESSIONAL ENGINEER

PIPE SUPPORT DETAILS

REV NO.	DATE	DESCRIPTION
2	5-12-93	DRAWING CONFORMED TO CONSTRUCTION RECORDS
1	6-15-89	ISSUED FOR CONSTRUCTION
0	3-2-89	ISSUED FOR BIDS

DRAWING REVISION RECORD

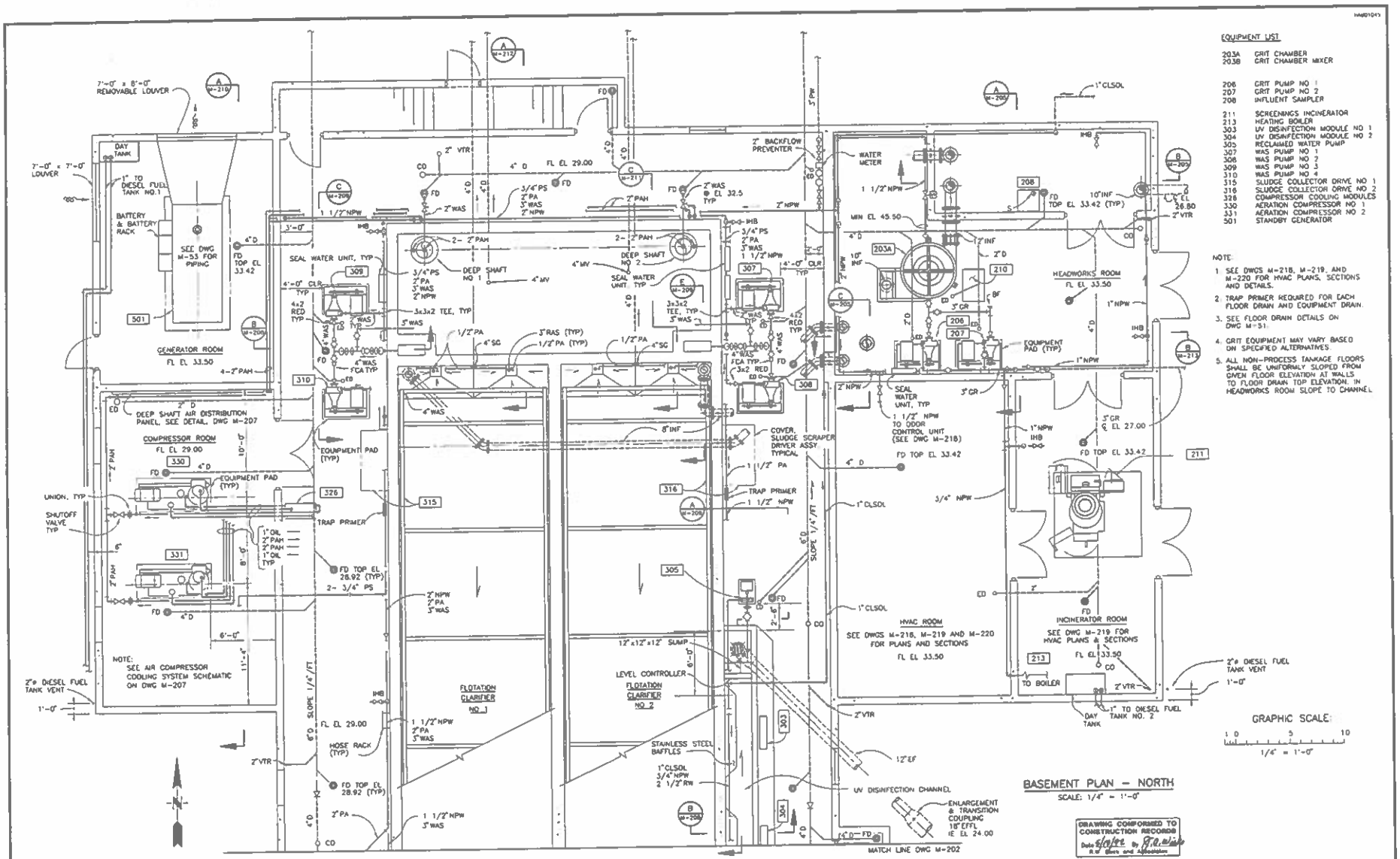
DESIGNED GAW — CIVIL REVIEW DJC — MECHANICAL REVIEW CWS
DRAWN GAW — STRUCTURAL REVIEW GWS — ELECTRICAL REVIEW SFS
CHECKED LD — DATE 3-2-89 — APPROVED

R. W. BECK AND ASSOCIATES, INC
ENGINEERS AND CONSULTANTS

CITY OF HOMER, ALASKA - WASTEWATER TREATMENT FACILITIES
MAIN TREATMENT FACILITY 01170

MISCELLANEOUS MECHANICAL DETAILS

WORK ORDER NUMBER 91-1957-572-AY
DRAWING NUMBER 824-M-52.2



BASEMENT PLAN – NORTH
SCALE: 1/4" = 1'-0"

DRAWING CONFORMED TO CONSTRUCTION RECORDS
Date 5/9/12 By R.W. Beck
R.W. Beck and Associates

REV	DATE	BY	CKD	APPROVALS	DESCRIPTION
2	5-12-92				DRAWING CONFORMED TO CONSTRUCTION RECORDS
1	8-15-89				REVISED FOR CONSTRUCTION
0	1-2-89				ISSUED FOR BIDS

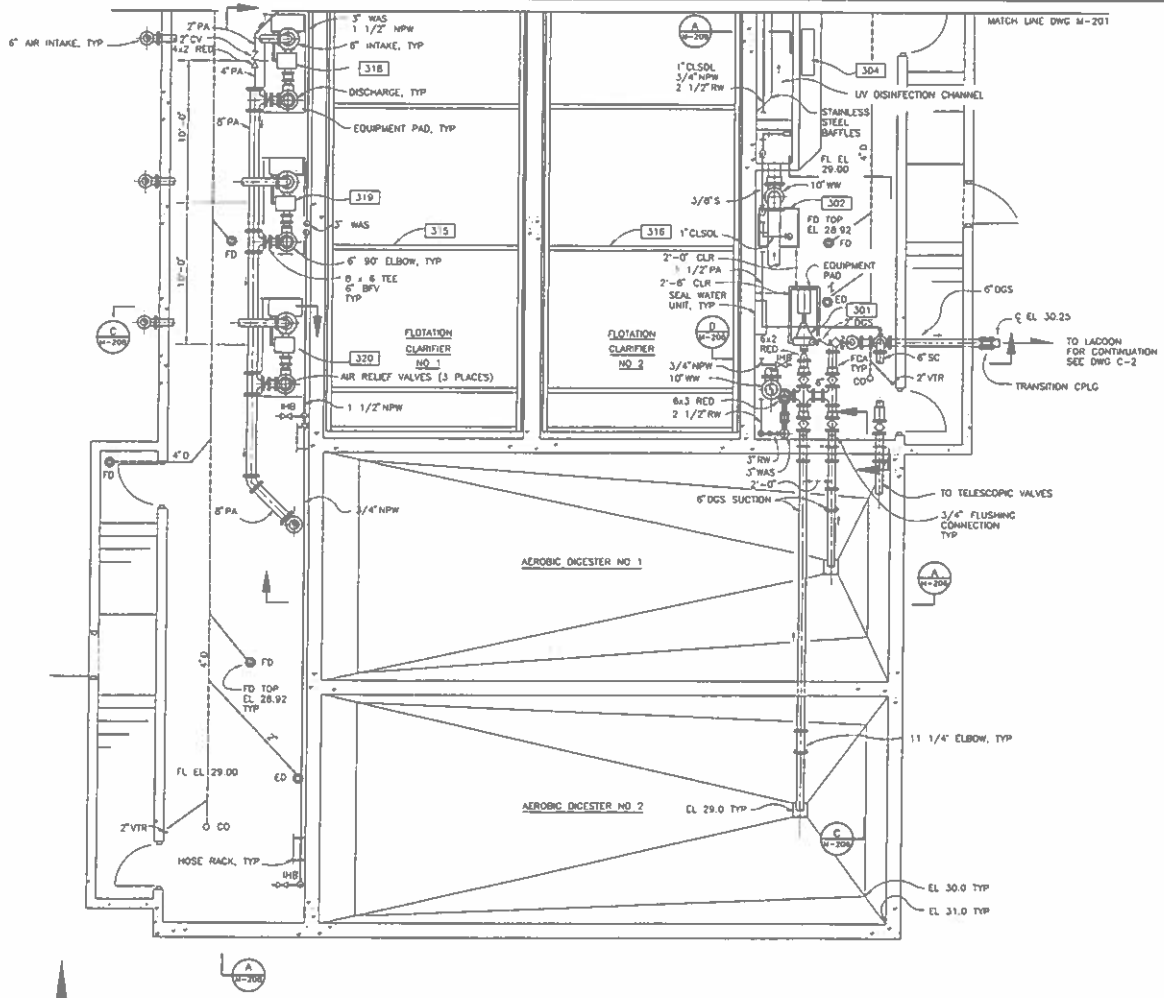
DRAWING REVISION RECORD

DESIGNED | CIVIL REVIEW | MECHANICAL REVIEW
DRAWN | STRUCTURAL REVIEW | ELECTRICAL REVIEW
CHECKED | DATE | APPROVAL

R. W. BECK AND ASSOCIATES, INC
ENGINEERS AND CONSULTANTS

CITY OF HOMER, ALASKA – WASTEWATER TREATMENT FACILITIES
MAIN TREATMENT FACILITY
TREATMENT BUILDING
LOWER LEVEL PLAN – NORTH
01174

CITY PROJECT NUMBER: UU-1957-ST2-AY
DRAWING NUMBER: 824-M-201.2



EQUIPMENT NUMBERS

301	DIGESTED SLUDGE PUMP
302	EFFLUENT SAMPLER
304	UV DISINFECTION MODULE NO 2
315	SLUDGE COLLECTOR DRIVE NO 1
316	SLUDGE COLLECTOR DRIVE NO 2
318	DIGESTER BLOWER NO 1
319	DIGESTER BLOWER NO 2
320	DIGESTER BLOWER NO 3

NOTES:

1. TRAP PRIMER REQUIRED FOR EACH FLOOR DRAIN AND EQUIPMENT DRAIN.
2. SEE FLOOR DRAIN DETAILS, DWG M-51.
3. SEE DWGS M-218, M-219 AND M-220 FOR HVAC PLANS, SECTIONS AND DETAILS
4. ALL NON-PROCESS TANKAGE FLOORS SHALL BE UNIFORMLY SLOPED FROM GIVEN FLOOR ELEVATIONS AT WALLS TO FLOOR DRAIN TOP ELEVATIONS.

GRAPHIC SCALE:

1 0 5 10

1/4" = 1'-0"

LOWER LEVEL PLAN – SOUTH

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

DRAWING CONFORMED TO CONSTRUCTION RECORDS
Date 5/10/96 by
R.W. Beck and Associates

REV	DATE	BY	CK'D	APPROVALS	DESCRIPTION
2	5-13-97				DRAWING CONFORMED TO CONSTRUCTION RECORDS
1	6-13-96				ISSUED FOR CONSTRUCTION
0	3-7-96				ISSUED FOR BIDS

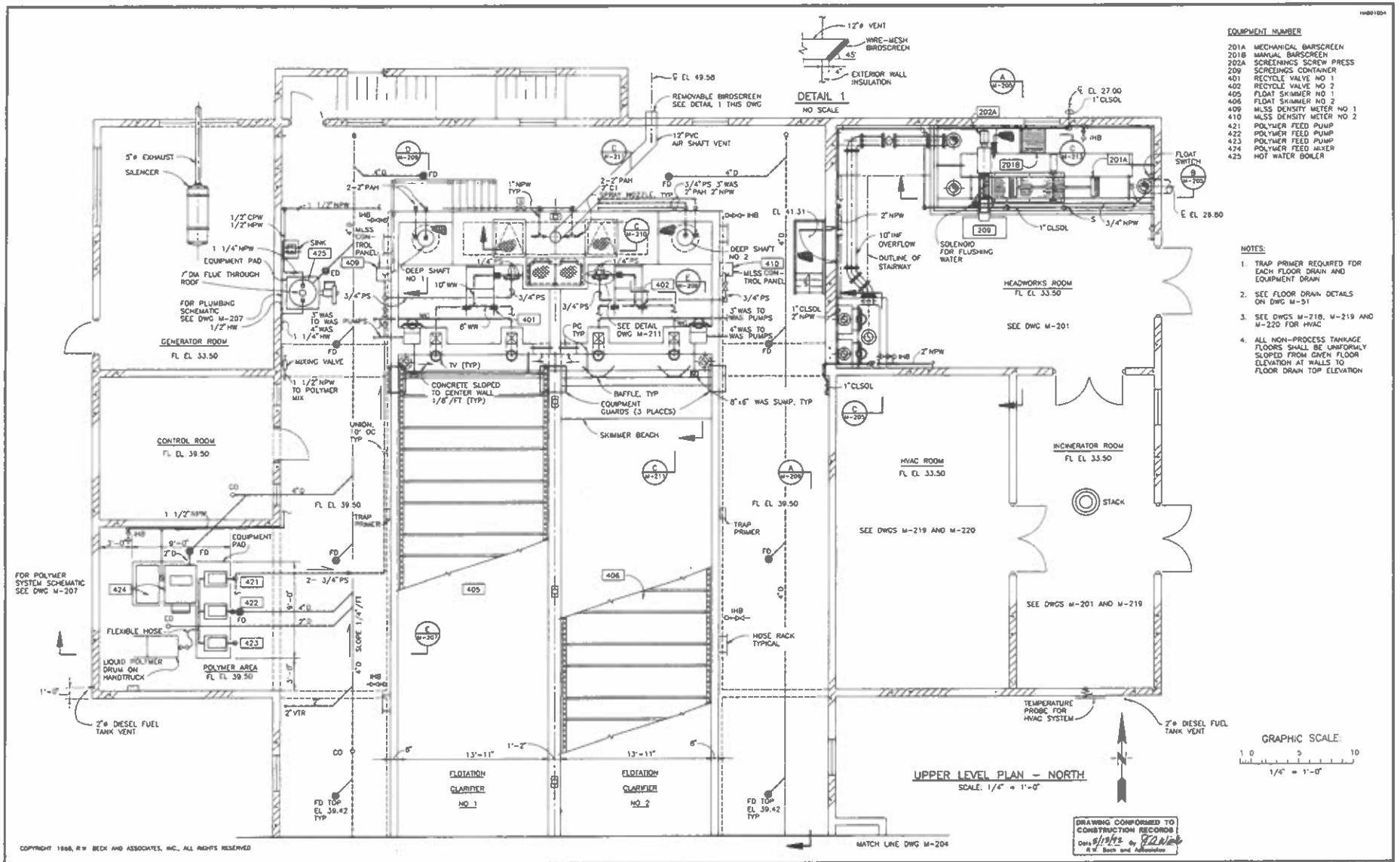
DRAWING RELEASED RECORD

DESIGNED	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED	DATE	APPROVED

R. W. BECK AND ASSOCIATES, INC
ENGINEERS AND CONSULTANTS

CITY OF HOMER, ALASKA – WASTEWATER TREATMENT FACILITIES
MAIN TREATMENT FACILITY 01175
TREATMENT BUILDING
LOWER LEVEL PLAN – SOUTH

WORK ORDER NUMBER 957-ST2-AY
DRAWING NUMBER 824-M-202.2



EQUIPMENT NUMBER

201A	MECHANICAL BARSCREEN
201B	MANUAL BARSCREEN
202A	SCREENINGS SCREW PRESS
209	SCREENINGS CONTAINER
401	RECYCLE VALVE NO 1
402	RECYCLE VALVE NO 2
405	FLOAT SKIMMER NO 1
406	FLOAT SKIMMER NO 2
409	MLSS DENSITY METER NO 1
410	MLSS DENSITY METER NO 2
421	POLYMER FEED PUMP
422	POLYMER FEED PUMP
423	POLYMER FEED PUMP
424	POLYMER FEED MIXER
425	HOT WATER BOILER

NOTES:

1. TRAP PRIMER REQUIRED FOR EACH FLOOR DRAIN AND EQUIPMENT DRAIN
2. SEE FLOOR DRAIN DETAILS ON DWG M-51
3. SEE DWGS M-218, M-219 AND M-220 FOR HVAC
4. ALL NON-PROCESS TANKAGE FLOORS SHALL BE UNIFORMLY SLOPED FROM OWEN FLOOR ELEVATION AT WALLS TO FLOOR DRAIN TOP ELEVATION

REV	DATE	BY	CK'D	APPROVALS	DESCRIPTION
2	5-13-92				DRAWING CONFORMED TO CONSTRUCTION RECORDS
1	6-15-89				ISSUED FOR CONSTRUCTION
0	3-2-89				ISSUED FOR BIDS

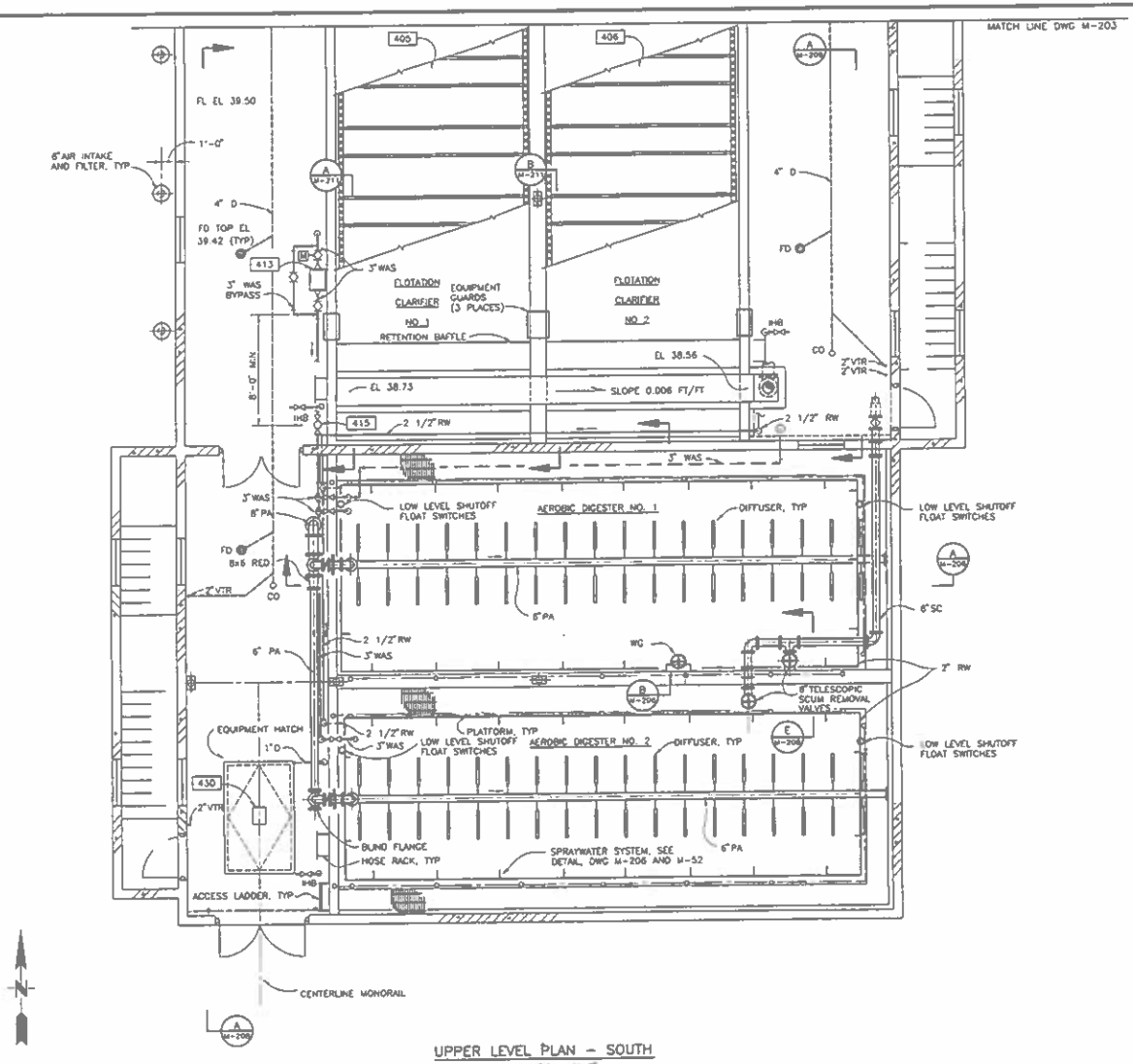
DRAWING REVISION RECORD

DESIGNED	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED	DATE	APPROVED

R. W. BECK AND ASSOCIATES, INC
ENGINEERS AND CONSULTANTS

CITY OF HOMER, ALASKA - WASTEWATER TREATMENT FACILITIES
MAIN TREATMENT FACILITY
TREATMENT BUILDING
UPPER LEVEL PLAN - NORTH
01176

JOB/PROJECT NUMBER: JU-1957-ST2-AY
DRAWING NUMBER: 824-M-203.2



EQUIPMENT LIST

405	FLOAT SKIMMER NO 1
406	FLOAT SKIMMER NO 2
413	WAS GRINDER
415	WAS FLOW METER
430	HOIST

NOTE:

1. TRAP PRIMER REQUIRED FOR EACH FLOOR DRAIN AND EQUIPMENT DRAIN.
2. SEE FLOOR DRAIN DETAILS ON DWG M-51.
3. SEE DWGS M-218, M-219 AND M-220 FOR HVAC PLANS, SECTIONS, AND DETAILS
4. ALL NON-PROCESS TANKAGE FLOORS SHALL BE UNIFORMLY SLOPED FROM THE GIVEN FLOOR ELEVATION AT WALLS TO FLOOR DRAIN TOP ELEVATION.

GRAPHIC SCALE

1 0 5 10

1/4" = 1'-0"

UPPER LEVEL PLAN – SOUTH

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

DRAWING CONFORMED TO CONSTRUCTION RECORDS
Date 6/18/02 By R.W. Beck
R.W. Beck and Associates

NO.	DATE	BY	CHK'D	APPROVALS	DESCRIPTION
2	5-13-02				DRAWING CONFORMED TO CONSTRUCTION RECORDS
1	8-17-99				ISSUED FOR CONSTRUCTION
0	2-2-99				ISSUED FOR BIDS

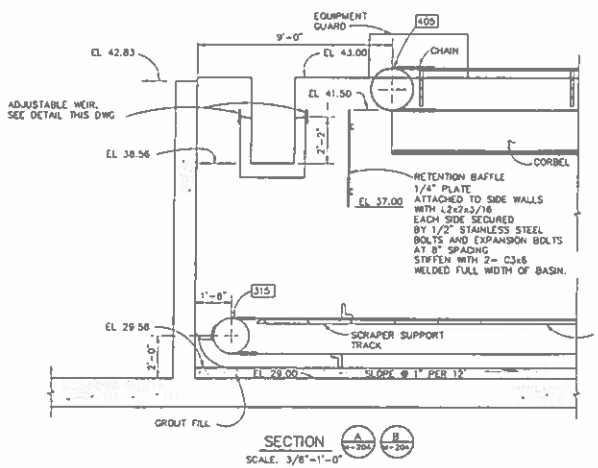
DRAWING BY WHOM RECORD

DESIGNED	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED	DATE	APPROVED

R. W. BECK AND ASSOCIATES, INC
ENGINEERS AND CONSULTANTS

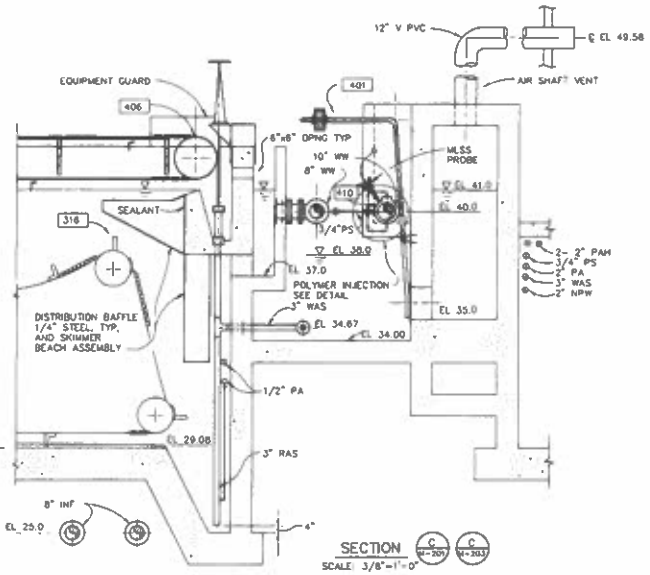
CITY OF HOMER, ALASKA – WASTEWATER TREATMENT FACILITIES
MAIN TREATMENT FACILITY
TREATMENT BUILDING 01177
UPPER LEVEL PLAN – SOUTH

KENAI DRILLY NUMBER UU-1957-ST2-AY
DRAWING NUMBER 824-M-204.2



SECTION (A, W=204 / B, W=204)

SCALE: 3/8"=1'-0"

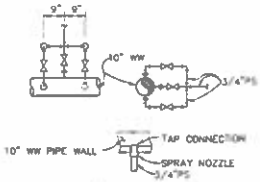


SECTION (C, W=207 / C, W=203)

SCALE: 3/8"=1'-0"

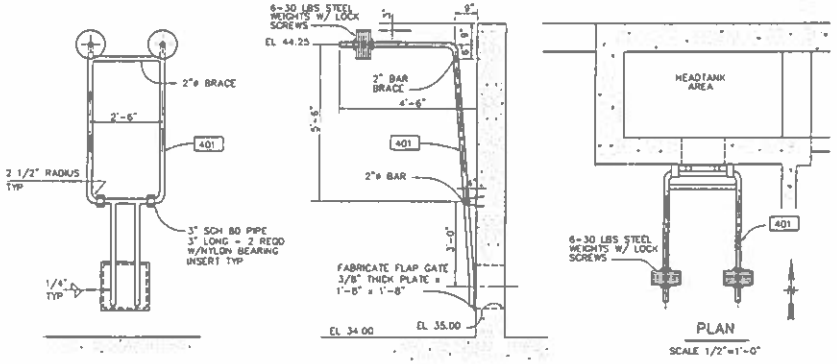
EQUIPMENT LIST

315	SLUDGE COLLECTOR DRIVE NO. 1
316	SLUDGE COLLECTOR DRIVE NO. 2
401	RECYCLE VALVE NO. 1
405	FLOAT SKIMMER NO. 1
406	FLOAT SKIMMER NO. 2
410	MLSS DENSITY METER NO. 1



POLYMER INJECTION DETAIL

NO SCALE

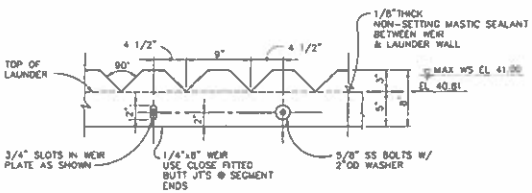


PLAN

SCALE 1/2"=1'-0"

RETURN ACTIVATED SLUDGE RECYCLE VALVE DETAIL

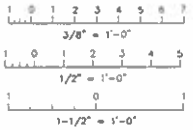
SCALE: 1/2"=1'-0"



ADJUSTABLE WEIR DETAIL

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

GRAPHIC SCALE:



DRAWING CONFORMED TO CONSTRUCTION RECORDS
Date 5/19/99 By R.W. Beck and Associates

REV	DATE	BY	CHD	APPROVALS	DESCRIPTION
2	5-13-99				DRAWING CONFORMED TO CONSTRUCTION RECORDS
1	8-13-98				ISSUED FOR CONSTRUCTION
0	3-2-98				ISSUED FOR BIDS

DESIGNED | CIVIL REVIEW | MECHANICAL REVIEW
DRAWN | STRUCTURAL REVIEW | ELECTRICAL REVIEW
CHECKED | DATE | APPROVED

R. W. BECK AND ASSOCIATES, INC
ENGINEERS AND CONSULTANTS

CITY OF HOMER, ALASKA - WASTEWATER TREATMENT FACILITIES
MAIN TREATMENT FACILITY
TREATMENT BUILDING
SECTIONS AND DETAILS
01184

DRAWING NUMBER: UU-1957-572-AY
824-M-211.2

APPENDIX B

EVOQUA EQUIPMENT QUOTE