Shell Chemical Appalachia LLC
4301 Dutch Ridge Road
Beaver, PA 15009

January 22, 2020

Mr. Ryan Decker
Clean Water Program
PA Department of Environmental Protection
Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15222

RE: Cooling Water Intake Structure Follow-up
NPDES Permit Number PA0002208 A-2
Shell Chemical Appalachia LLC
Beaver County, Pennsylvania

Dear Mr. Decker:

This letter provides the requested additional information concerning the changes that are being made to the cooling water intake structure (CWIS). The following are enclosed:

- Table 1 which provides side by side comparison of existing CWIS and what is being done to bring it up to usable/current standards.
- Attachment 1 – Page 65286 from Federal Register (Vol. 66, No. 243 / Tuesday, December 18, 2001) the Preamble for National Pollutant Discharge Elimination System: Regulations Addressing Cooling Water Intake Structures for New Facilities.

  The highlighted text is where EPA utilized "newly constructed" and "modified" in same sentence and in our reading illustrates EPA clear intent that the only modification that could cause an existing source to be subject to this rule is an increase in capacity.

- Attachment 2 – Drawings for Existing CWIS
- Attachment 3 – Drawings and Photo Log for Refurbishing the CWIS

Hopefully this information provides what you need for your evaluation

Sincerely

H. James Sewell
CSU Environmental Manager
Shell Chemical Appalachia LLC

Enclosures -

Table 1
Cooling Water Intake Structure Comparison

	Existing	Change
1. Foundation	Concrete	Concrete – same existing structure, same exact footprint, some patching of cracks/existing concrete due to deterioration / age
2. Structure over Intake	Cinder block building	Existing cinder block building replaced with steel building
3. Sluice Gate	Cast iron	Opening reused existing, sluice gate replaced
4. Design Flow	80 MGD	21 MGD
5. In take Pumps	4 pumps	3 Gould pumps rated at 0.44 MG/hr (2 operating one redundant)
6. Trash Bar Screens -Opening (in)	2.0 inches	1.5 inches
7. Traveling Screens		
Screen Type	Two (2) Link Belt Model 45 Traveling Screens	Two (2) 24” pitch dual flow traveling water screens with wing walls, 4’ basket width x 43” centers
Screen Dimensions	9’2” wide by 5’5” deep	8’2” wide by 5’5” deep
Through Screen Velocity (ft/sec)	1.36 @ Normal Pool-12' depth	0.38 @ Normal Pool-12' depth
Screen Opening	Hot Dip Galvanized Wire Screen, 0.105” dia. wire with 0.395” square openings	Screen cloth – 316 SSTL 0.072” dia. wire with 0.25” square openings
8. Stop Log	Unknown	Two (2) new stop logs in existing track 20’ height, 3 sections
9. Screen Cleaning System	Two (2) 225 gpm water pumps	Two (2) new 102 gpm water pumps
10. Safety/Electrical/Monitor Features	Unknown	Change to current Code/Shell Standards

Attachment 1

Page 65286 from Federal Register Preamble for Regulations Addressing Cooling Water Intake Structures for New Facilities

modified CWIS). Thus, the Agency believes the language of the regulation does make it clear that the rule applies to greenfield and stand-alone facilities or those whose processes are substantially independent of an existing facility at the same site. As commenters requested, EPA has added some examples to the regulatory section of the rule to serve as guidance regarding the definition of new facility under this final rule.

Several commenters also questioned whether repowering an existing facility would trigger applicability of the new facility requirements. These commenters pointed out that repowering is a common practice that often results in a gain in efficiency (*i.e.,* both increased power output and a reduced need for cooling water withdrawals). Commenters expressed concern that, although repowering an existing facility is distinct from building a greenfield or stand-alone facility, repowering could be interpreted as subject to the new source definition and thereby subject to the new facility rule. Some also asserted that the proposed rule included an arbitrary distinction between completely replacing an existing facility and repowering that facility. By defining the complete replacement of a facility as a new facility but allowing repowering to be defined as an existing facility, these commenters argued, the proposed rule creates an incentive to use less efficient technology for the redevelopment of older sites. Commenters also noted that the proposed rule would regulate a new, greenfield facility and the complete replacement of an existing facility (*i.e.,* a brownfield site) in a similar manner, which creates a disincentive to redevelop or modernize brownfield sites.

The definition of a new facility in the final rule applies to a facility that is repowered only if the existing facility has been demolished and another facility is constructed in its place, and modifies the existing cooling water intake structure to increase the design intake capacity. To the extent commenters assert some inequity of treatment between new facilities and certain existing facilities, EPA will address this comment when it addresses what substantive requirements apply to existing facilities. Further, changes to an existing facility that do not totally replace the process or production equipment that causes a discharge at an existing facility (*e.g.,* partial repowering), and those that do not result in a new separate facility whose processes are substantially independent of any existing source at the same site, do not result in the facility being defined as a new facility, regardless of whether these changes result in the use of a new or modified cooling water intake structure that increases existing design capacity. EPA does not agree that by not addressing most repowering under this rule the Agency is creating an incentive to use less efficient technology. Both the power-generating and manufacturing industries routinely seek greater efficiency when repowering. This is illustrated by the increased use over the past 10 years of combined-cycle technology, which requires significantly less cooling water for a given level of power generation and is a more efficient process than older technologies.

Several commenters supported EPA's definition of new facility as proposed. In contrast to concerns discussed above, some commenters expressed apprehension that the new facility definition would not capture all appropriate facilities. These commenters observed that an existing facility could rebuild its whole facility behind the cooling water intake structure and not be subject to the requirements applicable to a new facility. These commenters asserted that if an operator completely rebuilds an existing facility that facility should be subject to the new facility requirements.

EPA can foresee one instance in which the concern raised by this commenter may be well founded. In this rule EPA has defined a new facility in a manner consistent with existing NPDES regulations, with a limited exception. EPA generally deferred regulation of new sources constructed on a site at which an existing source is located (see 40 CFR 122.29(b)(3)) until the Agency completes analysis of its survey data on existing facilities. However, in addition to meeting the definition of a new source, today's rule requires that a new facility have a new cooling water intake structure or use an existing intake structure that has been modified to increase the design capacity. Thus, it might be possible to completely demolish an existing source, replace it with a smaller-capacity new source, and not be regulated under today's rule as a new facility. This facility would then be an existing facility an as such the requirements applicable to such a facility will be addressed in Phase II and III.

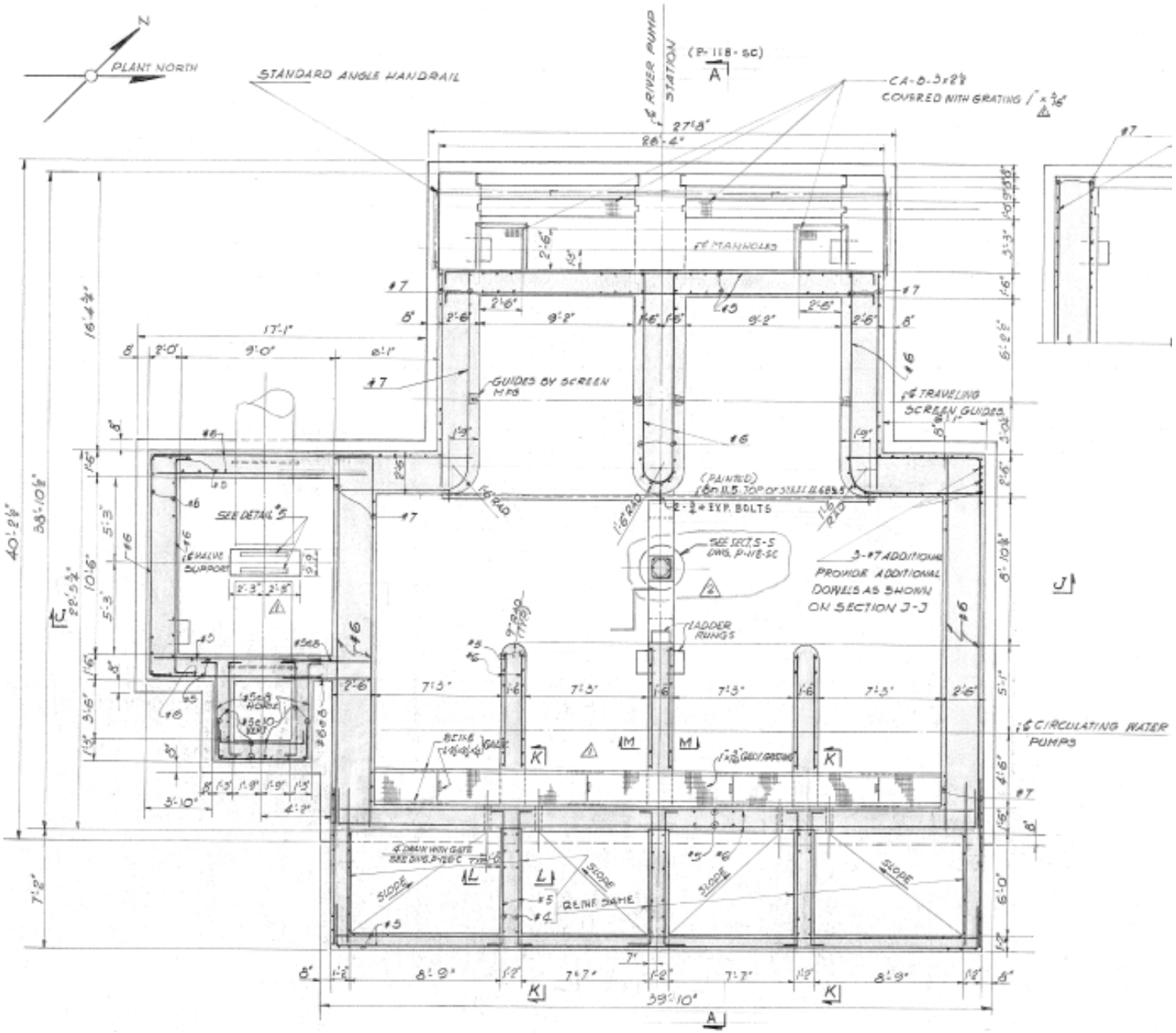
Several commenters requested that EPA define facilities deemed to be substantially independent for purposes of applying the new source criteria under 40 CFR 122.29 as those that could be practicably located at a separate site. Commenters maintained that such an approach is justified because EPA has based the proposed new facility requirements on the assumption that each owner or operator has the option to choose the location of his or her new facility and that such location would be selected to allow the owner or operator to best comply with the intake structure location and operation requirements.

With regard to defining when a facility is substantially independent under 40 CFR 122.29, EPA does not believe it is feasible to project under what circumstances owners and operators are free to select any location they desire for a new facility. For this reason, EPA takes the facility as it is planned for purposes of determining whether it is a new facility. In today's rule EPA does not believe it is appropriate to define the phrase ''substantially independent'' as used in 122.29(b)(1)(iii) as facilities that could be practicably located at a separate site. Section 122.29(b)(1)(iii) in the existing NPDES regulations already provides that ''[i]n determining whether . . . processes are substantially independent, the Director shall consider such factors as the extent to which the new facility is integrated with the existing plant; and the extent to which the new facility is engaged in the same general type of activity as the existing source.'' EPA does not think it is feasible for the permit authority to judge whether the facility could have been elsewhere for the purpose of determining whether the facility is subject to the new facility rules. Commenters also requested that EPA define what actions constitute routine maintenance to an existing cooling water intake, so that the distinction between changes that constitute maintenance and those that constitute a modification to an existing intake is made clearer.

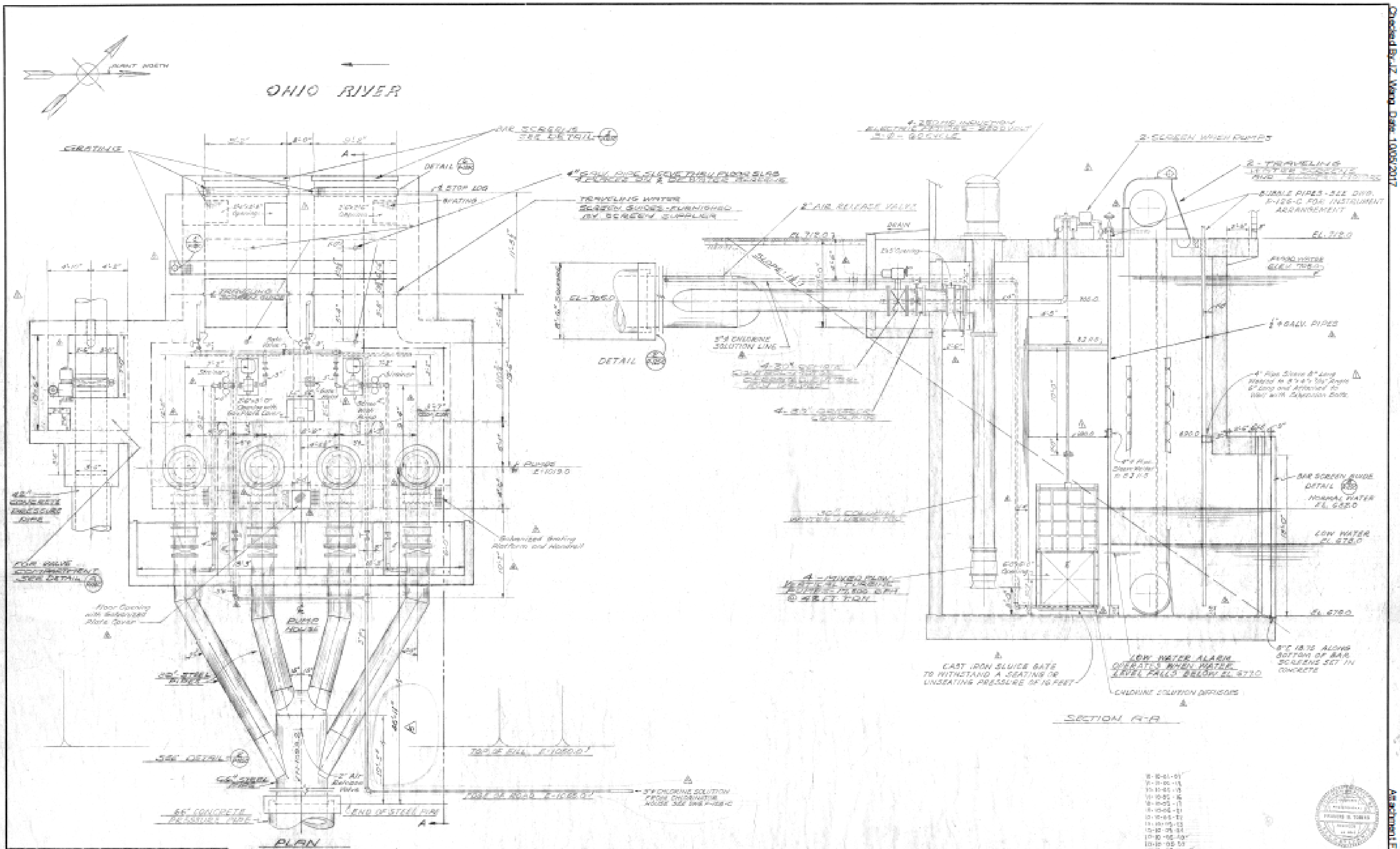
EPA has not defined ''routine maintenance'' in the final rule because clarifying what constitutes routine maintenance is not vital to the definition of new facility. Under the new facility rule, to be considered a new facility a facility must be a new source or new discharger and use a newly constructed cooling water intake structure or a modified existing cooling water intake structure whose design intake has been increased. Thus, changes to a cooling water intake structure at an existing facility that is not a new source or new discharger are not subject to this rule. In addition, at facilities that are new sources or new dischargers but may use an existing cooling water intake structure, EPA has clarified in the final rule that the facility is subject to this rule only where changes to the intake result in an

Attachment 2

Drawings for Existing CWIS



SECTION C-C
P-118-SC



APPROVAL	DATE

APPROVED FOR CONSTRUCTION

CONSTRUCTION APPROVAL

KAISER ENGINEERS

FOR: ST. JOSEPH LEAD COMPANY

LOCATION: JOSEPHTOWN, MONACA, PA.

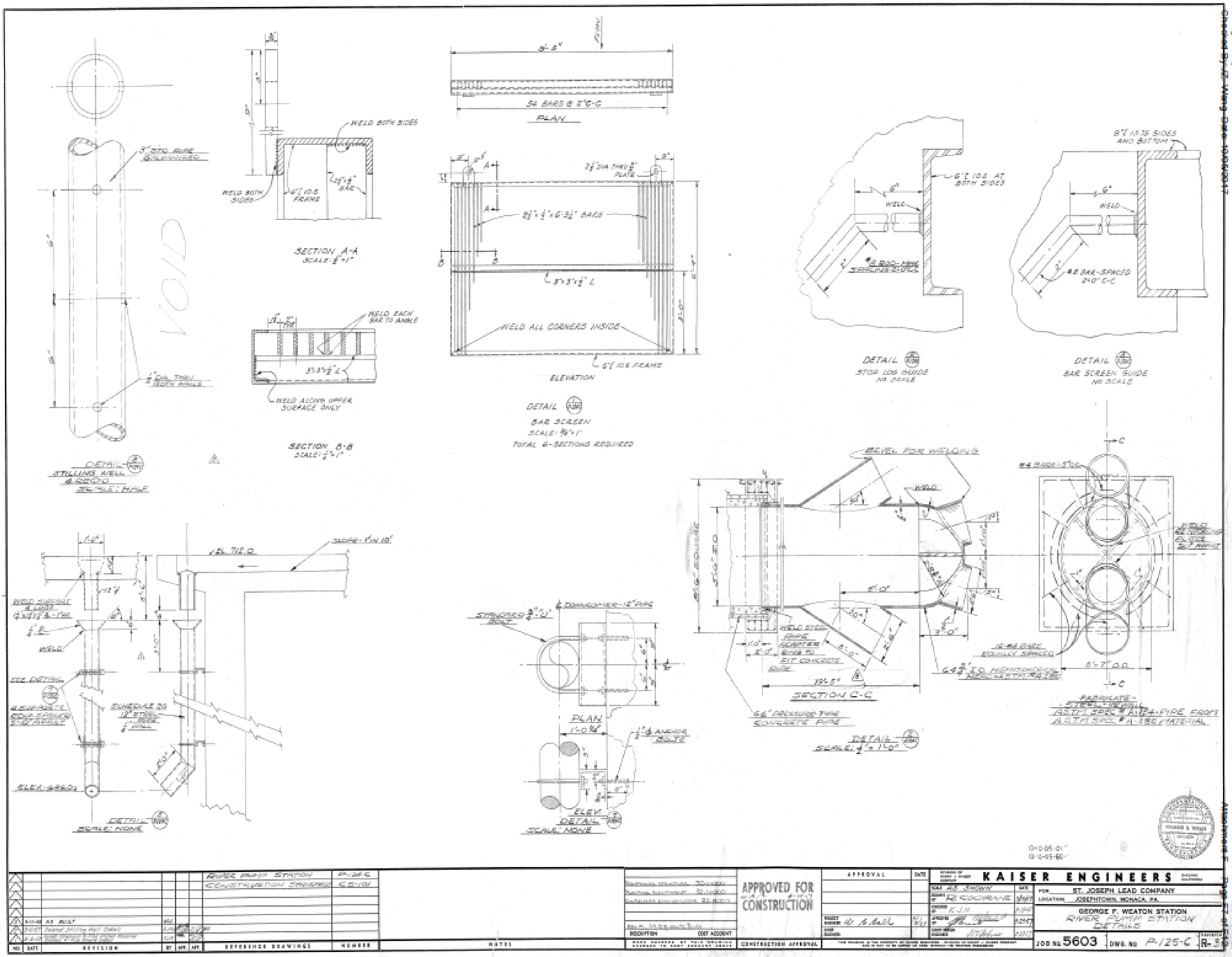
GEORGE F. WEATON STATION

RIVER PUMP STATION ARRANGEMENT

JOB No. 5603 | DWG. No. P-124-C | R-5

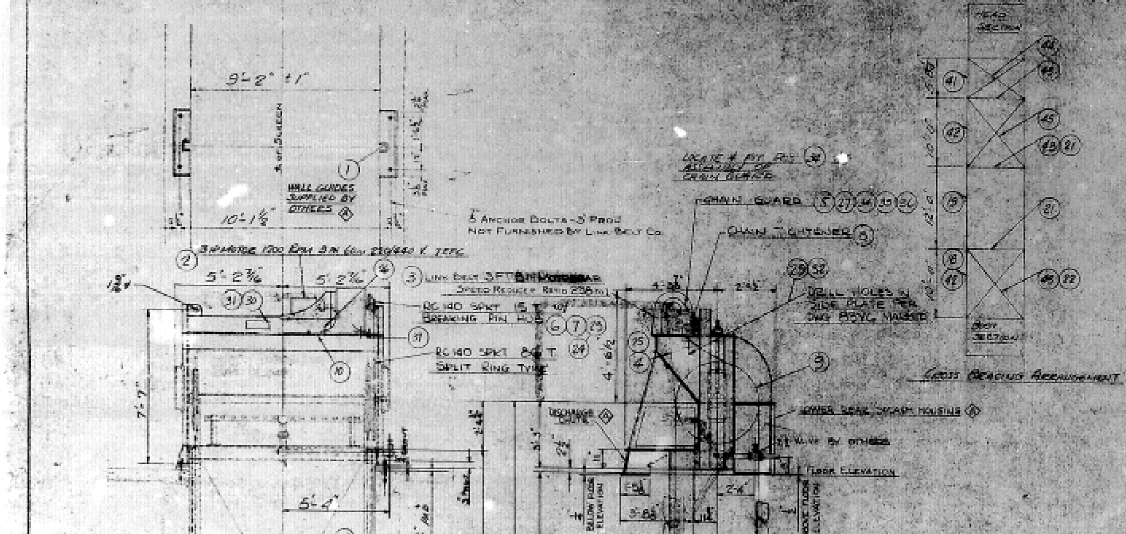
NOTES

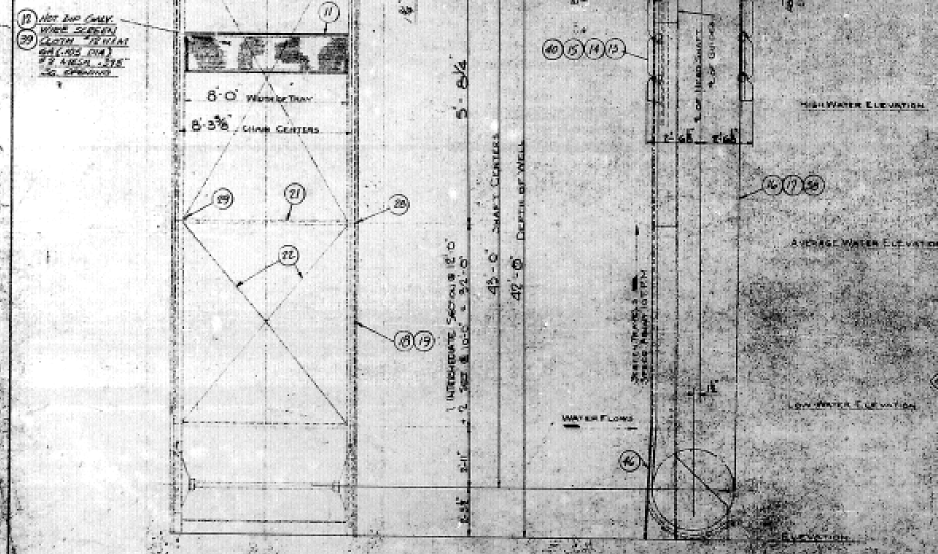
1. Operating Floor overhang 2' at the sides of Pump Station as shown on this drawing; see architectural and structural drawings for further information.
2. Provision will be made for 1" station for service and 2" plant water for pump seals and service.



Designed By: S. Jan Date: 10/06/2017
Checked By: Z. Wang Date: 10/06/2017

Bechtel Calc. No: 25873-100-DBC-5WRW0002X-11450, Rev000
Attachment F





MATERIAL SUPPLIED BY CUSTOMER

PC No	QTY	DWG	DESCRIPTION
38	1		ITEM #45 WATER SCREEN CHAIN 24" PITCH 324' LONG TOTAL 162' R.H. & 162' L.H.
39	81		TRAY ASSEMBLIES COMPLETE WITH GALVANIZED WIRE SCREEN CLOTH
40	162		SEAL PLATES
41	3		PAIRS PANEL SIDES 5'-8 1/4" LONG (1 SPARE)
42	3		PAIRS PANEL SIDES 10'-0" LONG
43	3		CROSS TIES
44	3		SETS CROSS BRACING FOR 5'-8 1/4" PANEL SIDES (1 SPARE)
45	3		SETS CROSS BRACING FOR 10'-0" PANEL SIDES
46	3		FOOT SECTION ASSEMBLIES COMPLETE WITH MACHINERY (1 SPARE)
47	3		HEAD SECTION ASSEMBLIES WITHOUT DRIVE UNITS (1 SPARE WITH HEAD SHAFT ASSEMBLY AS SUPPLIED ON FK 4461 SHIPPED LOOSE - 2 MODIFIED AS SHOWN)

MTL LIST

PC No	QTY	DWG No	DESCRIPTION
			MATERIAL FOR TWO #45 TRAVELING WATER SCREENS 8'-0" WIDE TRAYS × 45'-0" SHAFT CTRS (MATERIAL NOT LISTED SUPPLIED BY PURCHASER FROM THREE #45 SCREENS 8'-0 WIDE TRAYS × 21'-0" SHAFT CTRS ORIGINALLY MANUFACTURED ON FK 4461)
2	2		L-B Co. 3FTB1 MOTOGEAR UNITS W/O MOTORS RATIO 23.8:1 SAME MOTOR CPLG. 1B FOR MOTOR LISTED BELOW
3	2		MOTOR 3 HP 1200 RPM 220/440 V 3 PH 60 ~ TEFC NEMA FRAME #215 GE TYPE K OR EQUAL
4	2		STRANDS RC 140 CHAIN EACH STRAND 17'-9 1/2" LG. TOTAL LENGTH 35'-7"
5	1	-3D	WELDED STL. #14 GA CHAIN GUARDS
6	1	-3A	RC 140 SPKT 15 T 8.417 PD W/ BREAK PIN HUB FOR 3 5/8" SHAFT
7	2		KEY 7/8" SQ × 2 1/2" LG
8	2	[illegible]-B	CHAIN TIGHTENER FOR RC 140
9	1	FC 5818-9A	HEAD SHAFT ASSY.
10	1	-9A	MACHINERY PLATFORM
11	17	FC 5818-X7C	TRAY ASSY
12	17	375 X 10-2	WIRE SCREEN CLOTH #12 W&M (.105 DIA) STEEL WIRE #2 MESH .395" SQ OPENING HOT DIP GALV. AFTER WEAVING
13	34	419 W 30-1	SEAL PLATE
14	68		CARRIAGE BOLT 1/4 × 4 1/2" ELECTRO GALV
15	68	[illegible]	LOCKNUT 1/4" ELECTRO GALV.
16	1	497 X 9A	STRAND WATER SCREEN CHAIN 34' LONG
17	1	497 X 9B	STRAND WATER SCREEN CHAIN 34' LONG
18	1	88X2 A	FT PANEL SIDES 10'-0" LG
19	1	FC 5818-X8	PANEL SIDES 12'-0" LG
21	3	88X1 L	CROSS TIE - DIM A = 8'-10 3/4"
22	1	88X3 MARKED	CROSS BRACING
23	2		PIPE NIPPLE 1/8" PT × 3" LONG FIT TO PC 8
24	2		PIPE COUPLING 1/8" PT FIT TO PC 23
25	2		RC 140 OFFSET COUPLER FIT TO PC 4 AS REQD
26	8		BOLT SH HN & LW 1 1/8" × 4 1/2" LG
27	6		BOLT SH HN 5/8" × 1 1/2" LG ELEC GALV
28	36		BOLT CSK HD HN 5/8 × 1 1/2" ELEC GALV
29	44		BOLT SH HN 5/8 × 1 1/4" ELEC GALV
30	2	[illegible]	WATER SCREEN NAME PLATES STAMP MODEL 45 ORDER No FK 5818
31	8		DRIVE SCREWS #2 × 1/4"
32	4		CUT WASHER 5/8"
33	1		ITEM DRILL HOLES IN HEAD FRAME PER DWG No 85YG MARKED
34	4		NELSON WELD STUDS TYPE NO [illegible]
35	8		HN 5/8"
36	12		PLATE WASHERS 5/8" SIZE
37	1		BOLT SH HN 5/8 × 2" FOR MCHY. PLATFORM

FOLLOWING ITEMS WILL BE SUPPLIED BY L-B Co.

2 - L-B Co. 3FTB1 MOTOGEAR UNITS REDUCTION RATIO 23.8:1 WITH 3 HP 1200 RPM 220/440 V, 3 PH, 60 CYCLE TEFC MOTORS
2 - RC 140 CHAIN DRIVES WITH SHEAR PIN OVERLOAD PROTECTION, CHAIN TIGHTENERS, & CHAIN GUARDS
2 - HEAD SHAFT ASSEMBLIES INCLUDING 14" DIA TORQUE TUBES, 4 7/16" DIA. TURNED & GROUND STEEL SHAFTS & WELDED STEEL END PLATES & SPROCKET CENTER PLATES. (DEMOUNTABLE SPROCKET TEETH TO BE SUPPLIED FROM PURCHASERS EXISTING SCREENS)
68 - LINEAR FEET SCREEN CHAIN, 34 FT. R.H. & 34 FT. L.H.
17 - SCREEN TRAYS COMPLETE WITH GALV. WIRE CLOTH, SEAL PLATES & FASTENERS
1 - SET INTERMEDIATE PANELS 10'-0" LONG WITH BRACING
2 - SETS INTERMEDIATE PANELS 12'-0" LONG
2 - CROSS TIES
1 - ITEM SHOP WORK TO REMOVE EXISTING DRIVES & HEADSHAFTS FROM 2 EXISTING SCREENS SUPPLIED BY PURCHASER & INSTALL NEW DRIVES & HEAD SHAFTS & REMOVE MACHINERY PLATFORM & INSTALL NEW.

REMAINING ITEMS REQUIRED FOR INSTALLATION SUPPLIED BY PURCHASER

PAINTING INSTRUCTIONS:

1. ALL STRUCTURAL STEEL BELOW FLOOR ELEVATION WILL BE PAINTED WITH ONE COAT INERTOL STANDARD THICK BLACK BITUMINOUS (I.E.: FOOT FRAME, SIDE PANELS, BRACING, CROSS TIES, TRAY FRAMES, SEAL PLATES).
2. HEAD FRAME & SPLASH HOUSING WILL BE PAINTED WITH ONE COAT INSIDE & OUT OF L-B Co. GREY ZINC CHROMATE PRIMER.
3. MACHINED SURFACES WILL BE TREATED WITH GASOLINE SOLUBLE SLUSHING COMPOUND.
4. CHAIN WILL BE UNPAINTED.

FOR FOUNDATION DETAILS SEE DWG. No. FK 5818-2

MODIFICATION OF TWO No 45 TRAVELING WATER SCREENS 8'-0" WIDE TRAYS & 21'-0" SHAFT CENTERS TO PROVIDE TWO No 45 TRAVELING WATER SCREENS 8'-0" WIDE TRAYS & 45'-0" SHAFT CENTERS. EXISTING SCREENS ARE PROPERTY OF PURCHASER AND WERE ORIGINALLY SUPPLIED ON FK 4461

REFER TO INSTRUCTION MANUAL 342 W 109 FOR ALL FIELD ASSEMBLY & PARTS LIST

KAISER JOB NO. 5603-103
ST. JOSEPH LEAD CO. JOSEPHTOWN, MONACA, PENNSYLVANIA.

GENERAL ARRANGEMENT OF MODEL 45 WATER INTAKE SCREEN
TRAY WIDTH 8'-0" SHAFT CTRS 45'-0"
FOR KAISER ENGINEERS

FK 4461

7775

LINK-BELT COMPANY

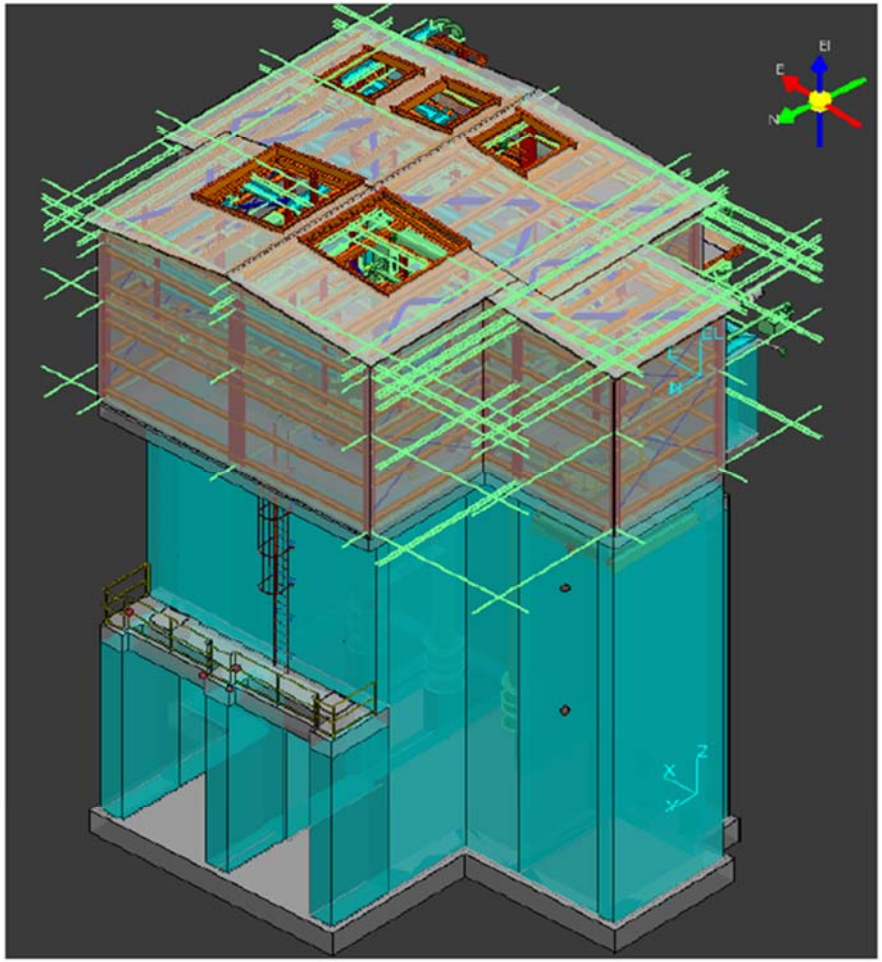
FK 5818-1

Attachment 3
Drawings and Photolog for Refurbishing the Existing CWIS

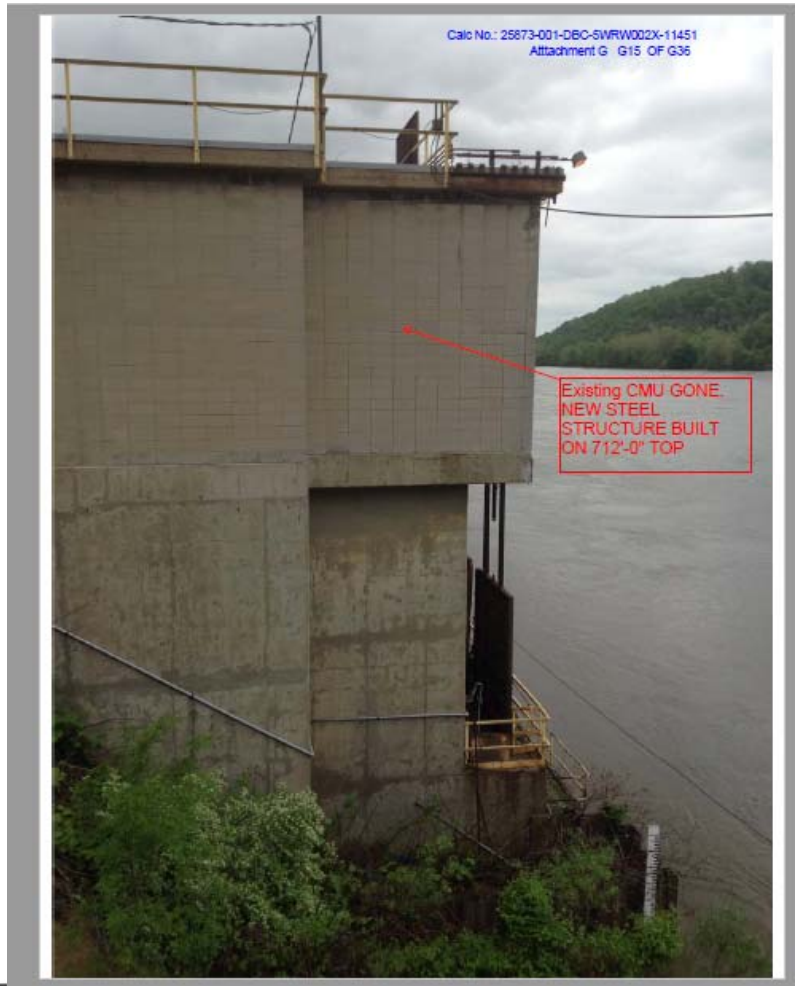
1.0 DESIGN BASIS

1.1 Purpose and Scope

- The plant location is on eastern shore of Ohio River approximately 30 miles NW of Pittsburgh, PA in Potter & Center Townships, Beaver County, Pennsylvania, USA.
- The existing building is designed on 1957. The existing CMU building on the top level (above 712'-0" from the floor slab) is demolished and the structure below 712'-0" remains. The new steel structure is bearing on the existing floor slab of the building. The steel structure design and its anchor bolt connection design see calculation 25873-001-SSC-5WRW002X-15320.
- This calculation includes deck slab check @ elevation 712'-0" only. All existing concrete walls and existing concrete other than slab @ 712'-0" level, the whole structure reliability, dynamic analysis and repairs procedures see 25873-001-DBC-5WRW002X-11450.
- The existing top slab @ 712'-0" checking includes: one way & two way shear checking and flexural stress checking.



LOOKING SOUTH EAST

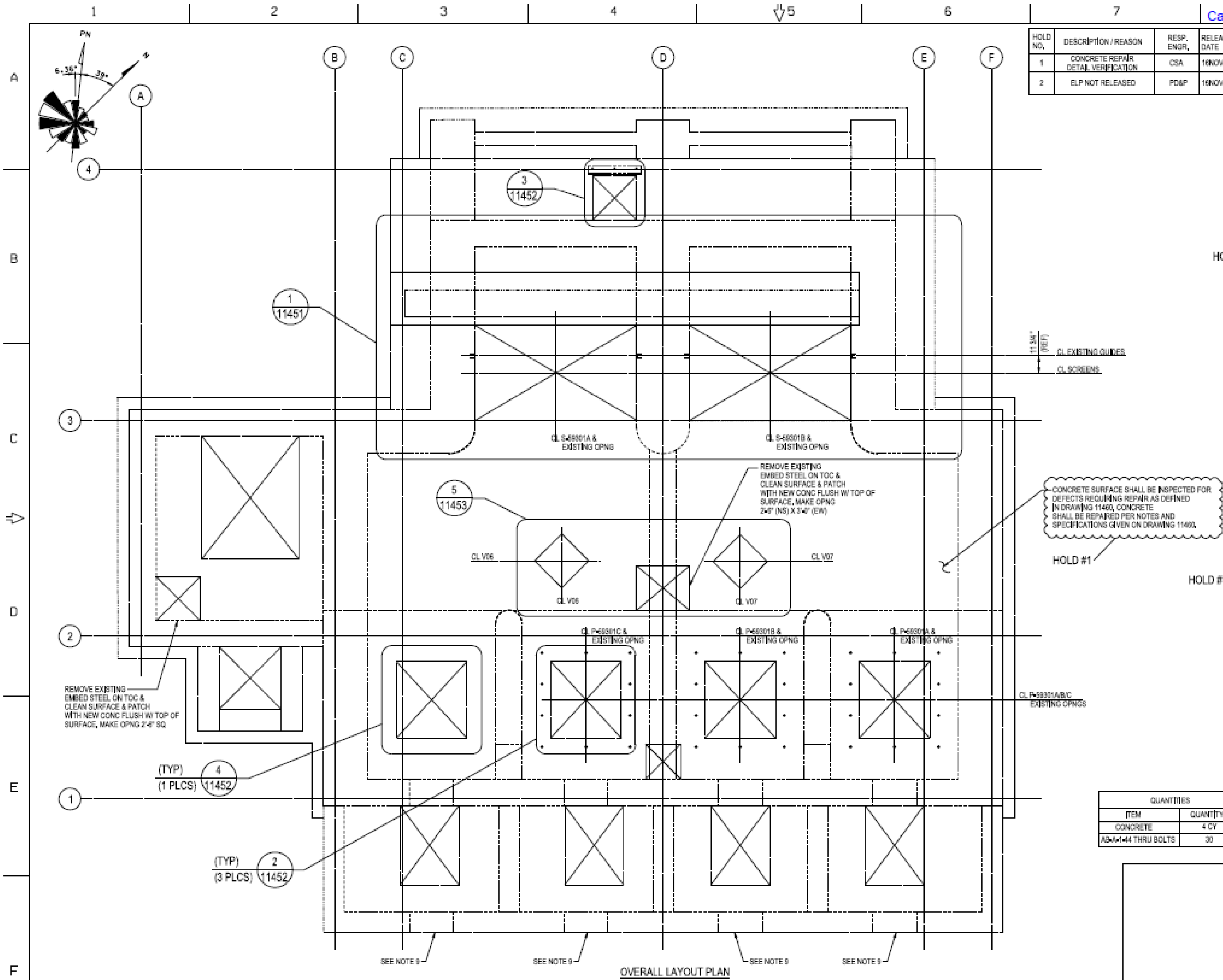


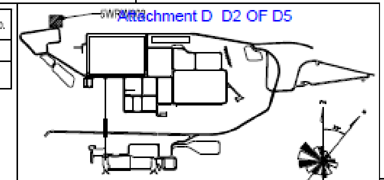

STOP LOG & LIFT BEAM GUIDES (Fill orginal guide with grout prior new guides installation)


Existing Sluice Gate


Replaced with new handrails
Existing re-bar exposed. Concrete need to be repaired

HOLD NO.	DESCRIPTION / REASON	RESP. ENGR.	RELEASE DATE	REL'D.
1	CONCRETE REPAIR DETAIL VERIFICATION	CSA	16NOV17	
2	ELP NOT RELEASED	PD&P	16NOV17	


REMOVE EXISTING
EMBED STEEL ON TOC &
CLEAN SURFACE & PATCH
WITH NEW CONC FLUSH W/ TOP OF
SURFACE, MAKE OPNG 2'-0" (NS) X 3'-0" (EW)
REMOVE EXISTING
EMBED STEEL ON TOC &
CLEAN SURFACE & PATCH
WITH NEW CONC FLUSH W/ TOP OF
SURFACE, MAKE OPNG 2'-6" SQ
CL EXISTING GUIDES
CL SCREENS
CL S-59301A & EXISTING OPNG
CL S-59301B & EXISTING OPNG
CL P-59301C & EXISTING OPNG
CL P-59301B & EXISTING OPNG
CL P-59301A & EXISTING OPNG
CL P-59301A/B/C EXISTING OPNGS
CL V06
CL V07
CONCRETE SURFACE SHALL BE INSPECTED FOR DEFECTS REQUIRING REPAIR AS DEFINED IN DRAWING 11460, CONCRETE SHALL BE REPAIRED PER NOTES AND SPECIFICATIONS GIVEN ON DRAWING 11460.
HOLD #1
HOLD #2
(TYP) (1 PLCS)
(TYP) (3 PLCS)
SEE NOTE 9
OVERALL LAYOUT PLAN



NOTES

1. ALL DIMENSIONS ARE IN FEET/INCHES UNO.
2. FOR CONCRETE GENERAL NOTES AND REFERENCES SEE DWG GM1-700-G0000-CX-2397-00001 (25873-001-D8-000-00101).
3. FOR LOCATION SEE EQUIPMENT LAYOUT PLAN DRAWING NO. GM1-700-U50000-MP-4024-00079 (25873-001-P1-5WRW-00104).
4. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000PSI (S-2A). ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60, UNCOATED DEFORMED BARS.
5. FOR REBAR DEVELOPMENT AND SPLICE LENGTHS SEE STANDARD DWG GM1-700-G0000-CX-2397-00002 (25873-001-D8-000-00102).
6. GROUT UNDER BASE PLATE SHALL BE NON SHRINK TYPE IN ACCORDANCE WITH SPECIFICATION NO. GM1-700-G0000-CX-7736-00002 (25873-001-3PS-DB01-F0002).
7. UNO ALL REFERENCE DRAWINGS SHALL BE PRE-FIXED WITH "GM1-700-U50000-CX-4018-" OR "25873-001-DB-5WRW002X-".
8. ALL EXISTING CONCRETE REFERENCE DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATIONS AND INSTALLATIONS.
9. SEAL OPENING WITH CLOSED CELL POLYURETHANE FOAM WITH A MINIMUM CORE DENSITY OF 2.0 PCF. OPENING SHALL BE BACKED WITH 3/4" PLYWOOD PRIOR TO APPLICATION. FOAM SHALL BE APPLIED PER MANUFACTURERS RECOMMENDATIONS. APPLY SPRAYED FOAM INSULATION IN CONSECUTIVE LAYERS OF NOT LESS THAN 1/2" AND NOT MORE THAN 2" THICK EACH TO ACHIEVE A TOTAL THICKNESS OF 6". FOAM SHALL NOT BE APPLIED TO ELECTRICAL WIRES. ELECTRICAL WIRES SHALL BE PROPERLY PROTECTED WITH CONDUIT OR OTHER APPROVED PROTECTION METHOD.

REFERENCE DRAWINGS

11451 - DETAIL AND SECTION
11452 - DETAILS AND SECTIONS
11453 - DETAIL AND SECTION
11454 - ENLARGED KEY PLANS
11455 - ENLARGED KEY PLAN, DETAILS AND SECTIONS
11456 - DETAILS
11457 - DETAILS AND SECTIONS BELOW DECK
11458 - DETAILS AND SECTIONS BELOW DECK
11459 - DETAILS AND SECTIONS BELOW DECK
11460 - EXISTING CONCRETE SURFACE REPAIR & COATING DETAILS
11461 - EXISTING CONCRETE SURFACE REPAIR & COATING DETAILS

COMPANY	DATE	DWG NO.
KAISER ENGINEERS	APR. 1957	P-118-SC, P-119-SC P-121-A P-124-C P-125-C P-126-C

REV	DATE	DESCRIPTION	BY	CHK	APP	PEM	CLIENT
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00A	02OCT17	ISSUED FOR REVIEW	RAH	JW	RD	RB	.

QUANTITIES	
ITEM	QUANTITY
CONCRETE	4 CY
AB-A-1-44 THRU BOLTS	30

BECHTEL OG&C
PROJECT FRANKLIN
UTILITIES AND GENERAL FACILITIES

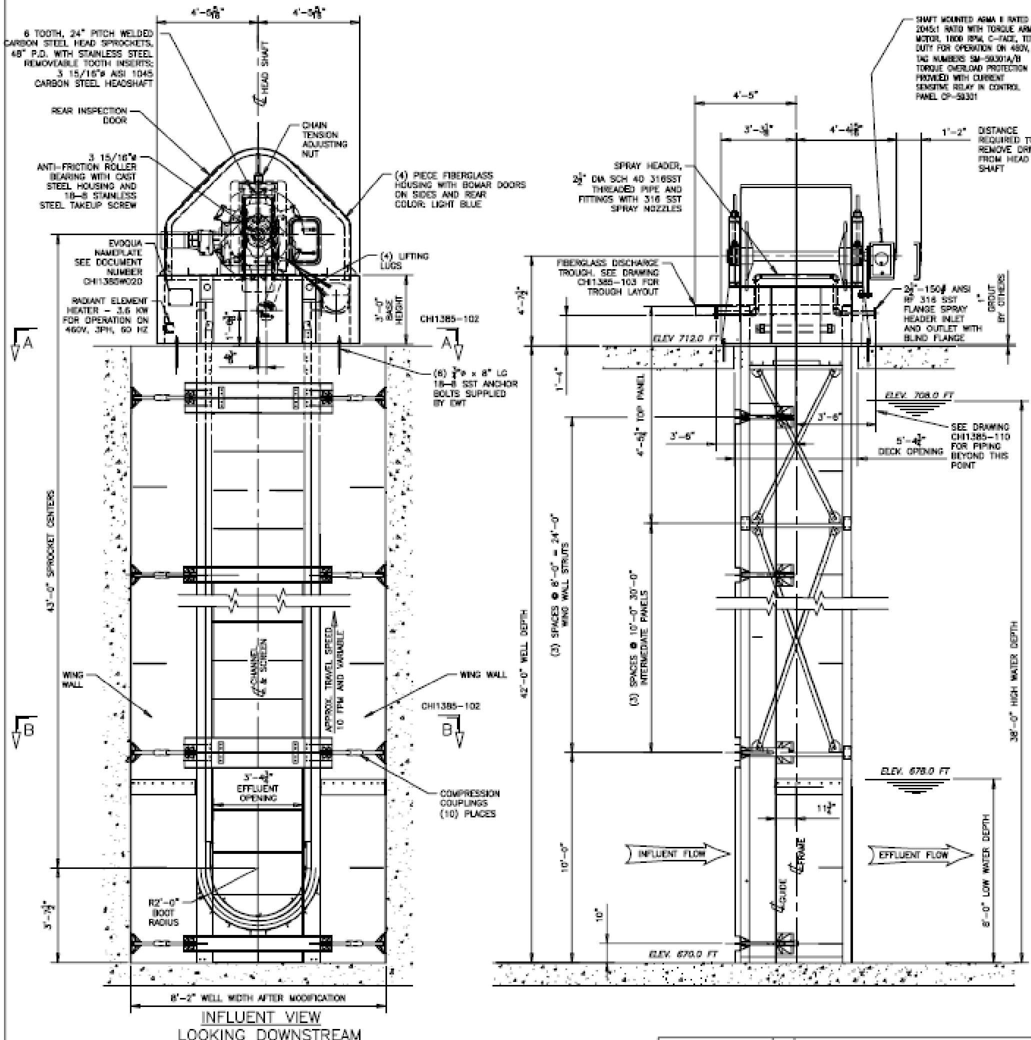
25873-001
ECCN - EAR 99

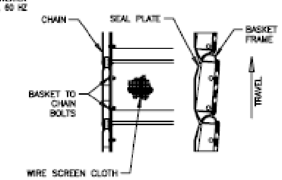
WBS/MODULE NO: 5WRW002X
BECHTEL DRAWING NO: 25873-001-DB-5WRW002X-11450 — REV 00A

CONCRETE WATER INTAKE STRUCTURE OVERALL LAYOUT PLAN

LOCATION:	PLANT AREA:	COMPANY PROJECT NO:	SCALE:	SHEET:
Monaca, PA	OSBL	GM1	1/2" = 1' UNO	1 OF 1

PROJECT FRANKLIN — COMPANY DRAWING NO: GM1-700-U50000-CX-4018-11450 — REV 00A





CHAIN AND SCREEN BASKET ASSEMBLIES

CHAIN – 24" PITCH, NON-LUBRICATED
SIDEBAR – 3/8" x 3", AISI 1040 CARBON STEEL
PINS – AISI 8620 CASE HARDENED CARBON STEEL
BUSHINGS – AISI 8620 CASE HARDENED CARBON STEEL
ROLLERS – AISI 8620 CASE HARDENED CARBON STEEL

TRAY FRAME – HIGH STRENGTH COMPOSITE
RETAINER TABS – HIGH STRENGTH COMPOSITE
SCREEN CLOTH – 316 SSTL 0.072"ø WIRE WITH 0.25" SQUARE OPENINGS

FASTENERS–BASKET TO CLOTH–316 SSTL
BASKET TO CHAIN–316 SSTL

SEAL PLATE – NON-METALLIC

SPARE PARTS TO BE SUPPLIED LOOSE SEPARATELY

(10) SPRAY NOZZLES
(3) PIECES OF SCREEN CLOTH
(3) SETS OF CLOTH TO BASKET FASTENERS
(6) SEAL PLATES
(6) SETS OF BASKET TO CHAIN FASTENERS

SPRAY WASH ACCESSORY SHIPPED LOOSE FOR INSTALLATION BY OTHERS

(2) 2½"ø MANUAL BUTTERFLY FLUSH VALVES WITH DUCTILE IRON BODY, 316 STAINLESS STEEL DISC AND STEM AND EPDM SEAT WITH 150# ANSI FLANGED CONNECTIONS

CONTRACT NOTE

THESE SCREENS REPLACE THE THROUGH FLOW MODEL 45 SCREENS PROVIDED ON CONTRACT FK5818 CIRCA 1957.

WORK THIS DRAWING WITH THE FOLLOWING DRAWINGS:

CHI1385-102 DETAILS OF TRAVELING WATER SCREEN
CHI1385-103 TROUGH LAYOUT
CHI1385-110 SPRAY WASH PIPING SKID ARRANGEMENT
CHI1385-171 CONTROL PANEL GENERAL ARRANGEMENT

SCREEN DATA

TWO (2) 24" PITCH DUAL FLOW TRAVELING WATER SCREENS WITH WING WALLS , 4'-0" BASKET WIDTH x 43'-0" CENTERS

CAPACITY (PER SCREEN):
14090 GPM @ 8'-0" LWD, VELOCITY = 1.2 FPS
SPRAY WATER (PER SCREEN):
102 GPM @ 80 PSI FOR GENERAL REFUSE

ESTIMATED WEIGHTS (IN POUNDS, PER SCREEN):

HEAD SECTION	3600	WING WALLS	3960
DRIVE ASSEMBLY	900	MAIN FRAME	7600
BASKETS	3900	CHAIN	2260
SPLASH HOUSING	550		
SCREEN TOTAL	22,770 LBS		

PAINTING INSTRUCTIONS

ALL STRUCTURAL STEEL AND CASTINGS EXCEPT STAINLESS STEEL, MACHINERY, MACHINED SURFACES, ANY ITEMS THAT AFFECT PERFORMANCE WILL HAVE SURFACE PREPARATION IN ACCORDANCE WITH SSPC-SP10 FOLLOWED BY SHOP APPLICATION OF PPG AMERCOAT 370 EPOXY (BLACK) WITH A FINAL DFT OF 10-12 MILS. ALL SHAFTING AND EXPOSED MACHINED SURFACES WILL RECEIVE STANDARD SHOP PRESERVATION. MAIN TRAY CHAIN WILL RECEIVE ONE COAT OF POTABLE PROTECTIVE COATING. MOTOR AND REDUCER WILL RECEIVE THE MANUFACTURERS STANDARD FINISH.

SCREEN CONSTRUCTION

HEAD SECTION FRAME – 1/4" MINIMUM THICKNESS ASTM A36 CARBON STEEL
MAIN FRAME – 3/8" MINIMUM THICKNESS ASTM A36 CARBON STEEL
WING WALLS – 5/16" MINIMUM THICKNES ASTM A36 CARBON STEEL
WALL GUIDES – ASTM A48 CAST IRON
FASTENERS – 316 STAINLESS STEEL
ANCHOR BOLTS AND NUTS – 18-8 STAINLESS STEEL
SPLASH HOUSING – 3/16" MINIMUM THICKNESS FIBERGLASS

SCREEN DESIGN

THE SCREEN DRIVE IS DESIGNED TO START AT A MAXIMUM DIFFERENTIAL HEAD OF 1'-0" AND RUN CONTINUOUSLY AT A DIFFERENTIAL HEAD OF 6" AT A HIGH WATER OF DEPTH OF 38'-0" AND STRUCTURALLY WITHSTAND A DIFFERENTIAL HEAD OF 3'-3⅜" AT THE HIGH WATER DEPTH.

FIELD NOTE

HOLES FOR BOLTING THE FIBERGLASS HOUSINGS TO THE FRAME ARE TO BE DRILLED IN THE FIBERGLASS DURING FIELD INSTALLATION USING THE HOLES IN THE STAINLESS STEEL FRAME AS A TEMPLATE.

ASSEMBLY NOTE

BOTH TRAVELING WATER SCREENS WILL SHOP ASSEMBLED. ONE SCREEN WILL BE TEST RUN. SHOP ASSEMBLY WILL INCLUDE THE FRAME, HEAD SECTION, MAIN CHAIN, BASKETS, INTERNAL SPRAY PIPING AND DRIVE UNIT. THE WING WALLS, COMPRESSION STRUTS AND FIBERGLASS COMPONENTS WILL BE SHIPPED LOOSE FOR FIELD ASSEMBLY.

CUSTOMER: SHELL CHEMICAL APPALACHIA LLC
PROJECT: FRANKLIN
LOCATION: MONACA, PA
P.O. NUMBER: 25873-100-POA-MLST-00001
EWT PROJECT NO.: 2052/000323 (CHI1385)
EQUIPMENT NUMBERS: S-59301A, S-59301B

25873-100-V1A-MLST-00001

TITLE: GENERAL ARRANGEMENT TRAVELING WATER SCREEN WING WALL DUAL FLOW 4'-0" BASKET

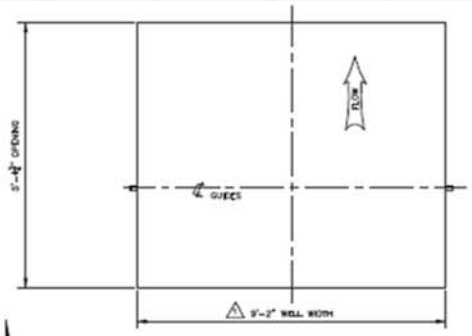
CLIENT: SHELL CHEMICAL APPALACHIA LLC PROJECT FRANKLIN

EVOQUA WATER TECHNOLOGIES
Water Technologies
Chalfont, PA
215-712-0280

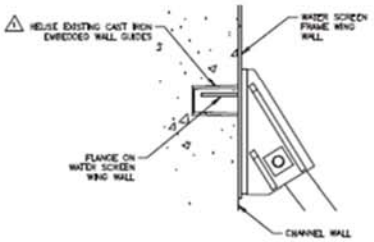
DESIGNER	DATE
DM	5/23/17
CHECKER	DATE
ENGINEER DM	5/23/17
MANAGER PB	5/23/17

PROJECT	CODE	DRAWING	SHEET	REV
2052/000323		CHI1385-101	1 OF 1	0

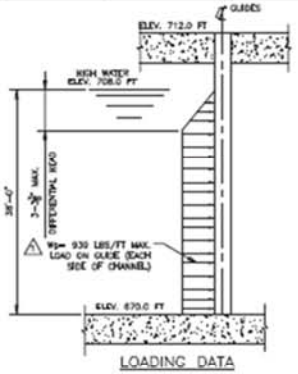
STD: 2-0799-22x340 | MADE FROM: CHI1162-101 AND CHI1336-101 | BAR = 1" AT PLOT SCALE



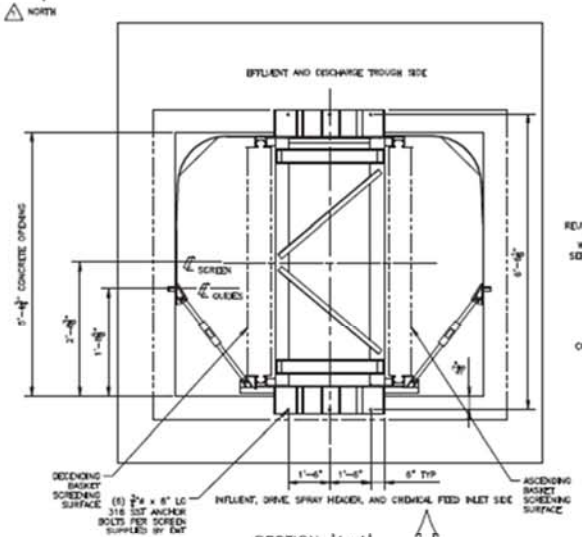
CONCRETE OPENING AT
DECK LEVEL ELEV 712.0 FT



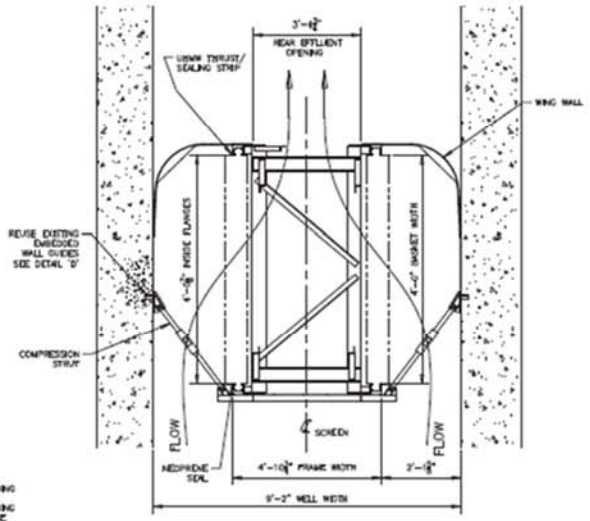
DETAIL 'D'
SHOWING ENGAGEMENT OF WATER SCREEN FRAME WING WALL IN EXISTING WALL GUIDES



LOADING DATA



SECTION 'A-A'



SECTION 'B-B'

NOTE: WORK THIS DRAWING WITH DRAWINGS CHI1385-101 AND CHI1385-103

5873-100-V1A-MLST-00002

CUSTOMER: SHELL CHEMICAL APPALACHIA LLC
PROJECT: FRANKLIN
LOCATION: MONACA, PA
P.O. NUMBER: 25873-100-P0A-MLST-00001
EWT PROJECT NO.: 2052/000323 (CHI1385)
EQUIPMENT NUMBERS: S-59301A, S-59301B
BECHTEL DOCUMENT NO. 25873-100-V1A-MLST-00002

REV	DESCRIPTION	DATE	DRN	DSN	APVD	EDN
1	WELL WIDTH WAS 8'-2". ELIMINATE NEW GUIDES, AND MODIFIED PER BECHTEL COMMENTS ARE EMAIL 5-30-17	5-29-17	DM	DM	RH	

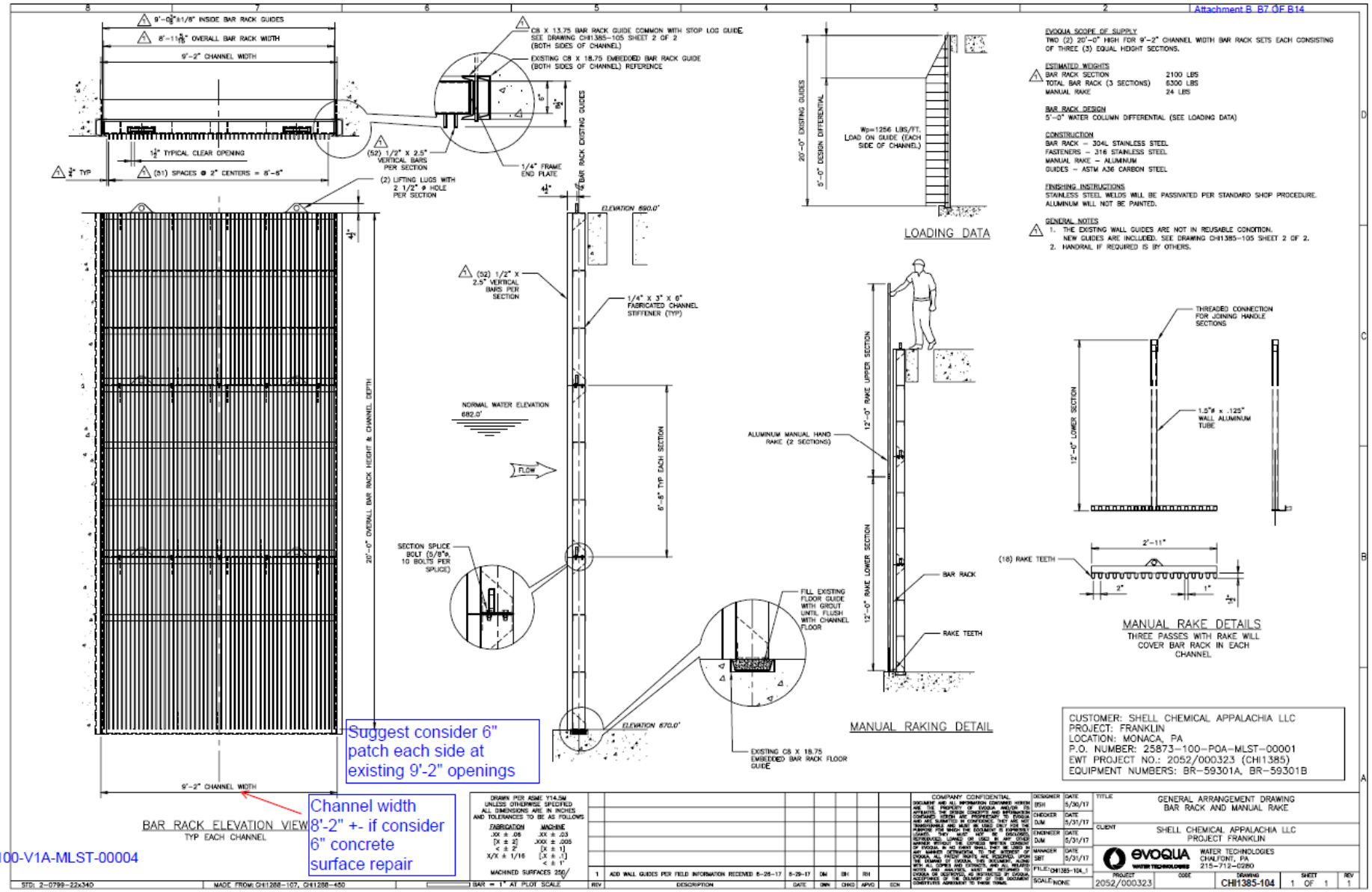
DESIGNER	DM	5-18-17
CHECKER	DA/RR	5-26-17
ENGINEER	DM	5-18-17
MANAGER	RH	5-29-17
FILE	CHI1385-102_1	
SCALE	NONE	

TITLE: DETAILS OF TRAVELING WATER SCREEN WING WALL DUAL FLOW 6'-0" BASKET
CLIENT: SHELL CHEMICAL APPALACHIA LLC PROJECT FRANKLIN

evoqua WATER TECHNOLOGIES
Water Technologies
Chalfont, PA
215-712-0260

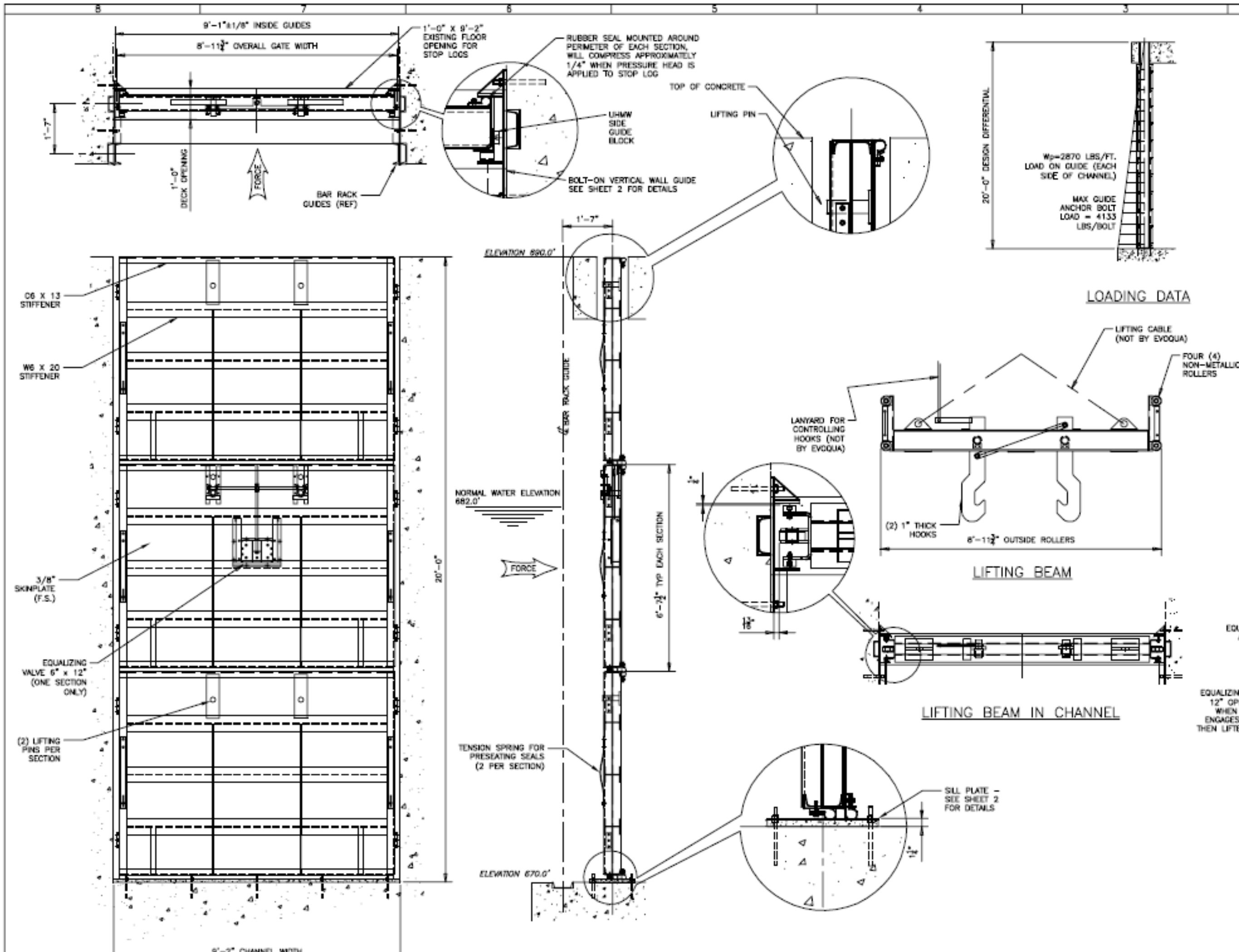
PROJECT	CODE	DRAWING	SHEET	REV
2052/000323		CHI1385-102	1 OF 1	1

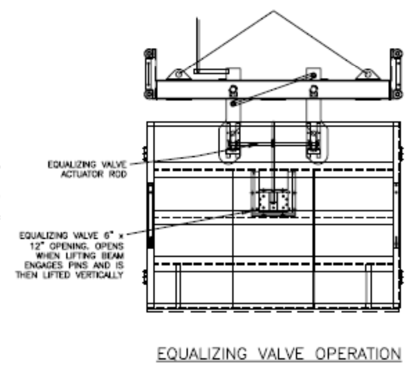
STD. 2-0798-22x340 | MADE FROM: | BAR = 1" AT PLOT SCALE



25873-100-V1A-MLST-00004

Calc. No.: 25873-001-DBC-5WRW002X-11451 R000
Attachment B B8 OF B14





EVOQUA SCOPE OF SUPPLY

TWO (2) 20'-0" HIGH FOR 9'-2" CHANNEL WIDTH STOP GATE SETS CONSISTING OF THREE (3) EQUAL HEIGHT SECTIONS.

TWO (2) SETS OF BOLT-ON GUIDES 20'-0" HIGH (EACH SET INCLUDES ONE (1) BOTTOM SILL PLATE, TWO (2) VERTICAL GUIDES AND ANCHOR BOLTS).

ONE (1) LIFTING BEAM FOR STOP LOG SECTION REMOVAL.

ESTIMATED WEIGHTS:

STOP LOG SECTION	2500 LBS
LIFTING BEAM	750 LBS
COMMON GUIDE	1000 LBS EACH (1)

STOP LOG DESIGN

20 FOOT WATER COLUMN DIFFERENTIAL ON SEATING PRESSURE (SEE LOADING DATA)

CONSTRUCTION

STOP LOG FRAME – A-36 CARBON STEEL
EQUALIZING VALVE – 304 STAINLESS STEEL
SEALS – NEOPRENE (60-70 DUROMOETER)
WALL GUIDES – CARBON STEEL W/304 STAINLESS STEEL SEALING PLATE
LIFTING BEAM – A-36 CARBON STEEL
WEAR BARS – UHMW
FASTENERS – 18-8 STAINLESS STEEL
ANCHOR BOLTS – 316 STAINLESS STEEL

PAINTING INSTRUCTIONS

ALL STRUCTURAL STEEL EXCEPT STAINLESS STEEL & MACHINED ITEMS SHALL HAVE SURFACE PREPARATION IN ACCORDANCE WITH SSPC-SP10 FOLLOWED BY TWO (2) SHOP COATS OF AMERCOAT 370 EPOXY PAINT FOR A TOTAL SYSTEM FINISH DFT OF 10-12 MILS.

LEAK RATE

APPROXIMATELY 0.15 LITERS PER HOUR PER METER OF SEAL.

GENERAL NOTES

1. STOP LOG SECTIONS CAN ONLY BE REMOVED WHEN A BALANCED WATER HEAD IS OBTAINED ON EACH SIDE. THIS IS DONE BY USE OF THE EQUALIZING VALVE.
2. REFER TO SHEET 2 OF 2 FOR GUIDE AND SILL PLATE DETAILS.
3. SECTIONS ARE INTERCHANGEABLE. PLACEMENT OF STOP LOG SECTION WITH EQUALIZING VALVE WILL DEPEND ON THE WATER LEVELS.

CUSTOMER: SHELL CHEMICAL APPALACHIA LLC
PROJECT: FRANKLIN
LOCATION: MONACA, PA
P.O. NUMBER: 25873-100-POA-MLST-00001
EWT PROJECT NO.: 2052/000323 (CHI1385)
EQUIPMENT NUMBERS: SL-59301A, SL-59301B

Suggest 6" concrete surface patch each side at existing 9'-2" openings. (similar to the detail on 25873-100-V1A-MLST-00002)

NOTE – VERTICAL WALL GUIDE NOT SHOWN FOR CLARITY

DRAWN PER ASME Y14.5M UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AND TOLERANCES TO BE AS FOLLOWS

FABRICATION	MACHINE
.XX ± .06	.XX ± .03
[X ± 2]	.XXX ± .005
< ± 2°	[X ± 1]
X/X ± 1/16	[.X ± .1]
	< ± 1°

MACHINED SURFACES 250

BAR = 1" AT PLOT SCALE

REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN
1	REVISED SECTION C-C ON SHEET 2 OF 2 PER FIELD INFORMATION RECEIVED 6-26-17	6-27-17	DM	BH	RH	

COMPANY CONFIDENTIAL

DESIGNER	BSH	5/24/17
CHECKER	DJM	5/25/17
ENGINEER	DJM	5/25/17
MANAGER	SBT	5/25/17

FILE: CHI1385-105_1
SCALE: NONE

TITLE: GENERAL ARRANGEMENT DRAWING STOP LOGS, BOLT-ON WALL GUIDES AND LIFTING BEAM

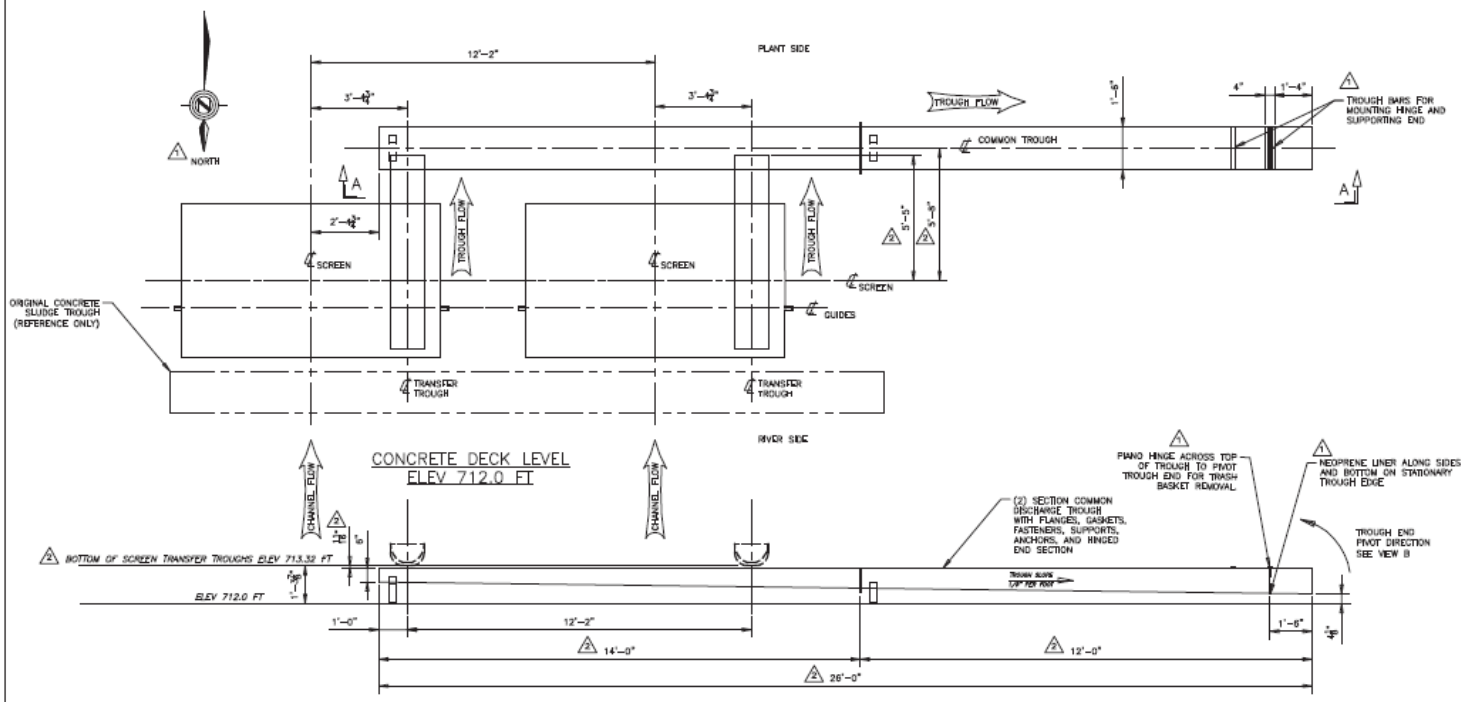
CLIENT: SHELL CHEMICAL APPALACHIA LLC PROJECT FRANKLIN

EVOQUA WATER TECHNOLOGIES
CHALFONT, PA
215-712-0280

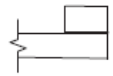
PROJECT	CODE	DRAWING	SHEET	REV
2052/000323		CHI1385-105	1 OF 2	1

STD: 2-0799-22x34D
MADE FROM:

25873-100-V1A-MLST-00005



VIEW 'A–A'



VIEW 'B'
TROUGH END IN RESTING POSITION FOR TRASH BASKET REMOVAL

25873-100-V1A-MLST-00003

NOTE: WORK THIS DRAWING WITH DRAWINGS CHI1385–101 AND CHI1385–102

CUSTOMER: SHELL CHEMICAL APPALACHIA LLC
PROJECT: FRANKLIN
LOCATION: MONACA, PA
P.O. NUMBER: 25873–100–POA–MLST–00001
EWT PROJECT NO.: 2052/000323 (CHI1385)
EQUIPMENT NUMBERS: S–59301A, S–59301B
BECHTEL DOCUMENT NO. 25873–100–V1A–MLST–00003

REV	DESCRIPTION	DATE	DRN	CHKD	APVD	EIH
2	EXTEND TRANSFER TROUGHS BY 1FT, SHORTEN COMMON TROUGH BY 2FT PER COMMENTS DATED 7–10–17	9–28–17	DM	DM	RH	
1	ADD HINGED TROUGH END AND REVISIONS PER COMMENTS DATED 7–10–17	7–28–17	DM	DM	RH	

COMPANY CONFIDENTIAL

DESIGNED	DM 5–30–17
CHECKED	RH 6–2–17
ENGINEER	DM 5–30–17
MANAGER	RH 6–2–17
FILE	CHI1385–103_2
SCALE	NONE

TITLE: TROUGH LAYOUT – WING WALL DUAL FLOW TRAVELLING WATER SCREEN 4'–0" BASKET
CLIENT: SHELL CHEMICAL APPALACHIA LLC PROJECT FRANKLIN
evoqua WATER TECHNOLOGIES — Water Technologies, Chalfont, PA, 215–712–0280
PROJECT: 2052/000323
DRAWING: CHI1385-103
SHEET: 1 OF 1
REV: 2

STD: 2–0799–22x340 | MADE FROM: | BAR = 1" AT PLOT SCALE