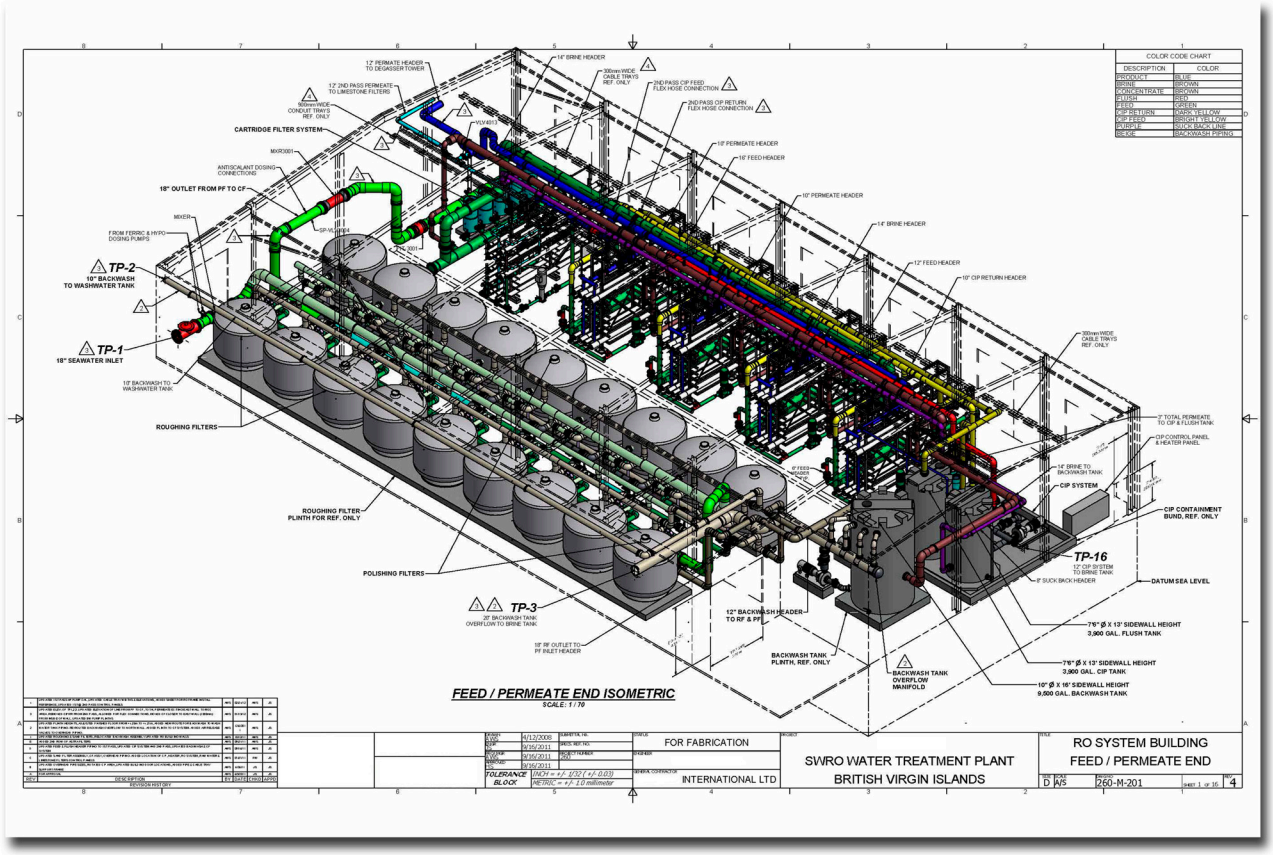
Anthony Squires Professional Portfolio

"British Virgin Islands Desalination Plant Design



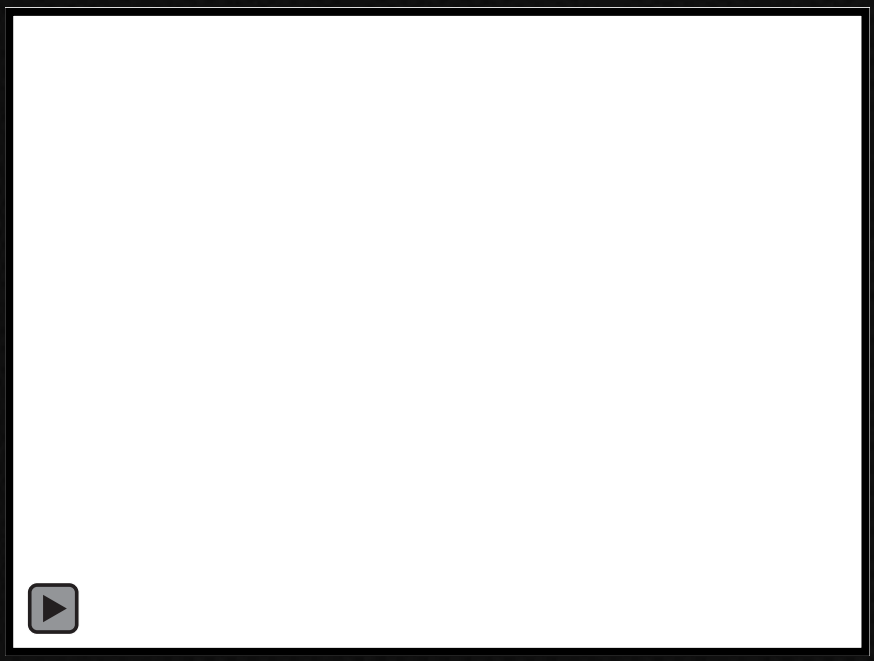
British Virgin Islands Desalination Reverse Osmosis Design Drawings

In these next few pages, I have compiled a set of drawings that I created using Autosedk Inventor. Using the clients specifications and P&Ids, these drawings where developed.

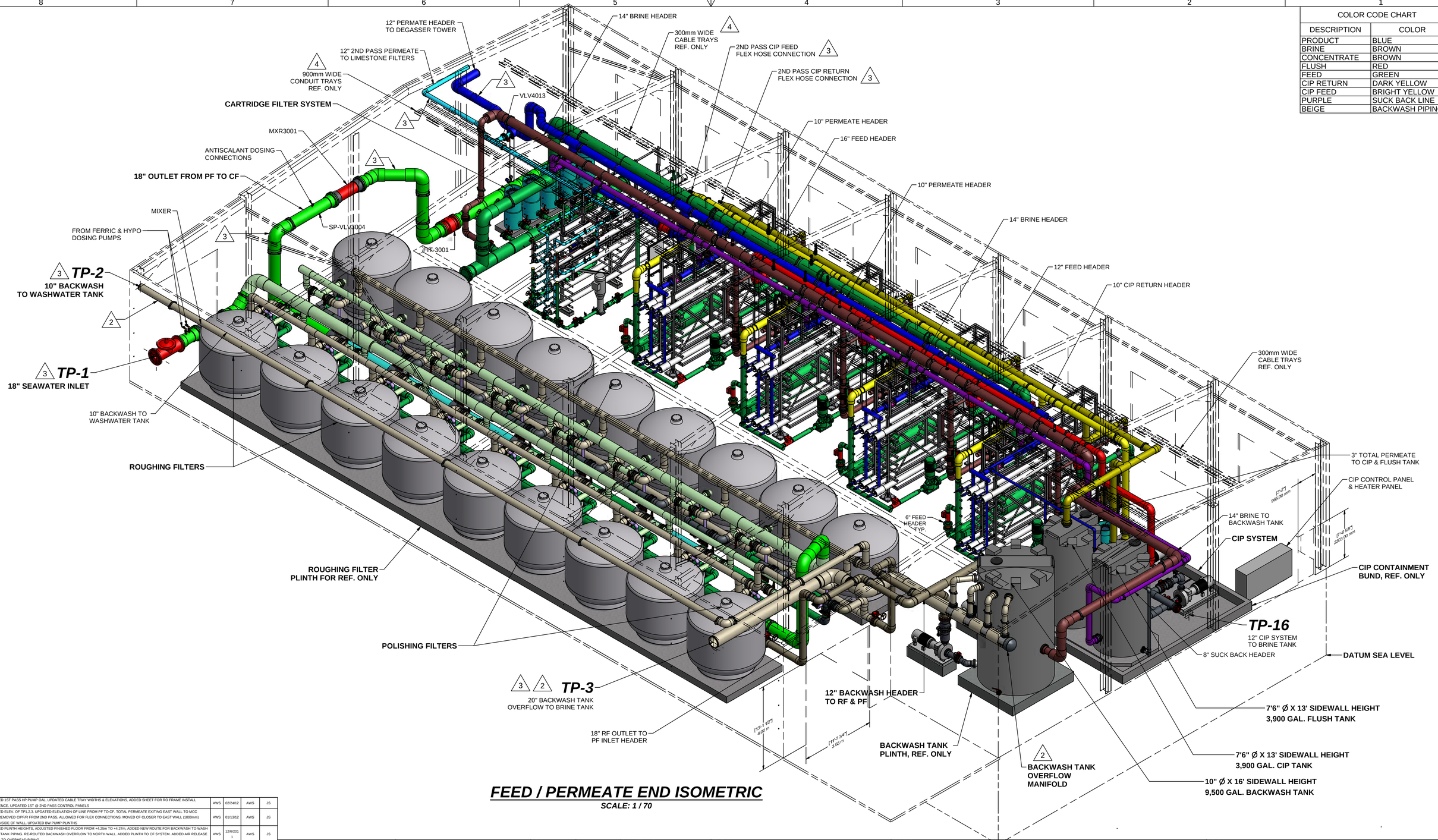
The 1st Pass Reverse Osmosis Systems is the process where the sea water passes through six of the RO trains to remove the Salt and purify the the water for drinking and then it moves onto the 2nd Pass system for further treatment.

British Virgin Islands Overall Drawing Compilation

(double click to enlarge the video)



COLOR CODE CHART	
DESCRIPTION	COLOR
PRODUCT	BLUE
BRINE	BROWN
CONCENTRATE	BROWN
FLUSH	RED
FEED	GREEN
CIP RETURN	DARK YELLOW
CIP FEED	BRIGHT YELLOW
PURPLE	SUCK BACK LINE
BEIGE	BACKWASH PIPING



FEED / PERMEATE END ISOMETRIC

SCALE: 1 / 70

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP QAL, UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3; UPDATED ELEVATION OF LINE FROM PF TO CF, TOTAL PERMEATE EXITING EAST WALL TO MCC AREA, REMOVED CIP/RR FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL, UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING, RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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DRAWN AWS	4/12/2008	SUBMITTAL NO.
ENGR JS	9/16/2011	SPECS. REF. NO.
PROJ MGR AWS	9/16/2011	PROJECT NUMBER 260
APPROVED HS	9/16/2011	
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

ENGINEER: BIWATER-AEWT

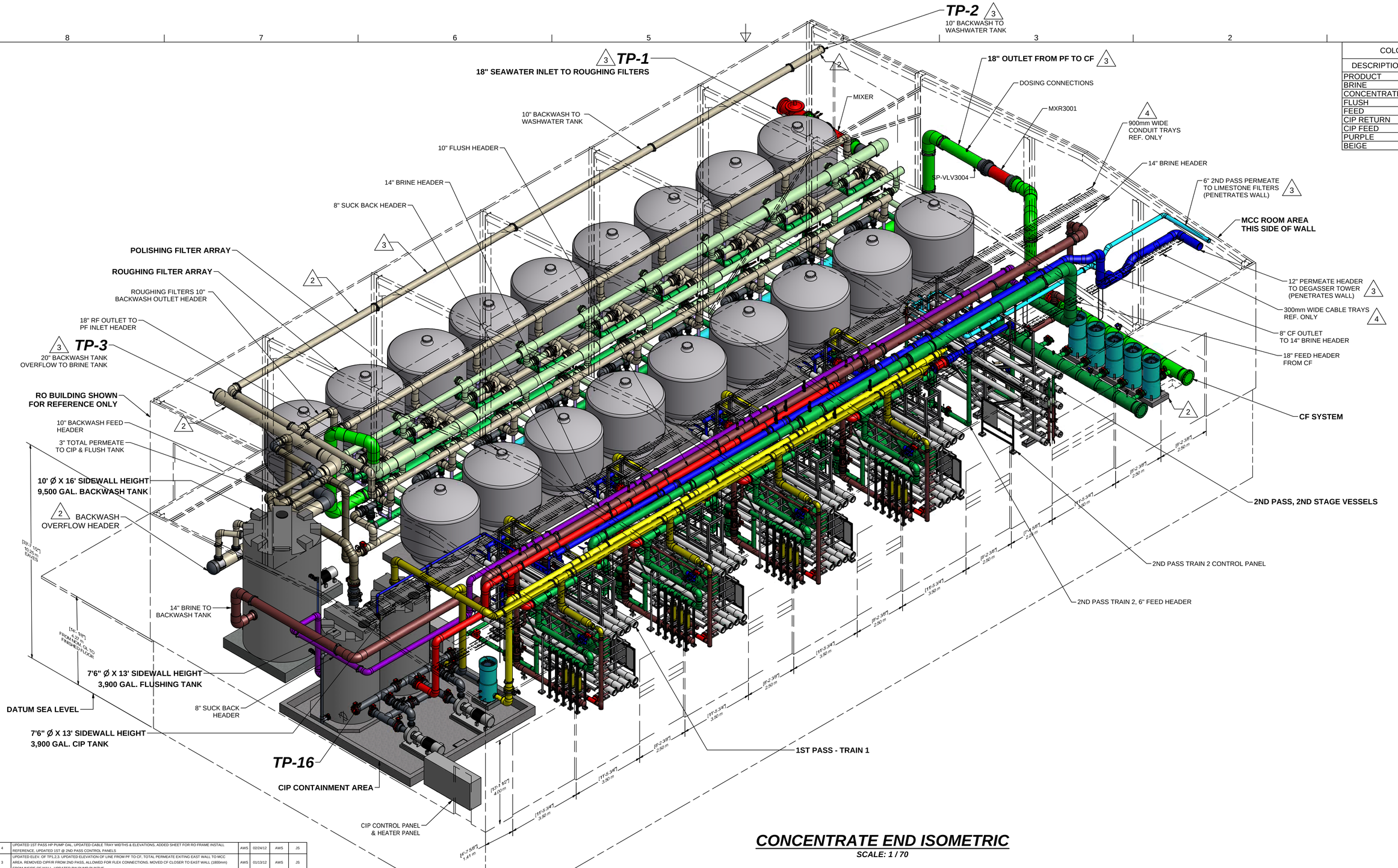
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING
FEED / PERMEATE END

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	1 OF 16	4

COLOR CODE CHART	
DESCRIPTION	COLOR
PRODUCT	BLUE
BRINE	BROWN
CONCENTRATE	BROWN
FLUSH	RED
FEED	GREEN
CIP RETURN	DARK YELLOW
CIP FEED	BRIGHT YELLOW
PURPLE	SUCK BACK LINE
BEIGE	BACKWASH PIPING



CONCENTRATE END ISOMETRIC

SCALE: 1 / 70

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP QAL. UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF. TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/R FROM 2ND PASS. ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS. ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

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APPROVED HS	9/16/2011	
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

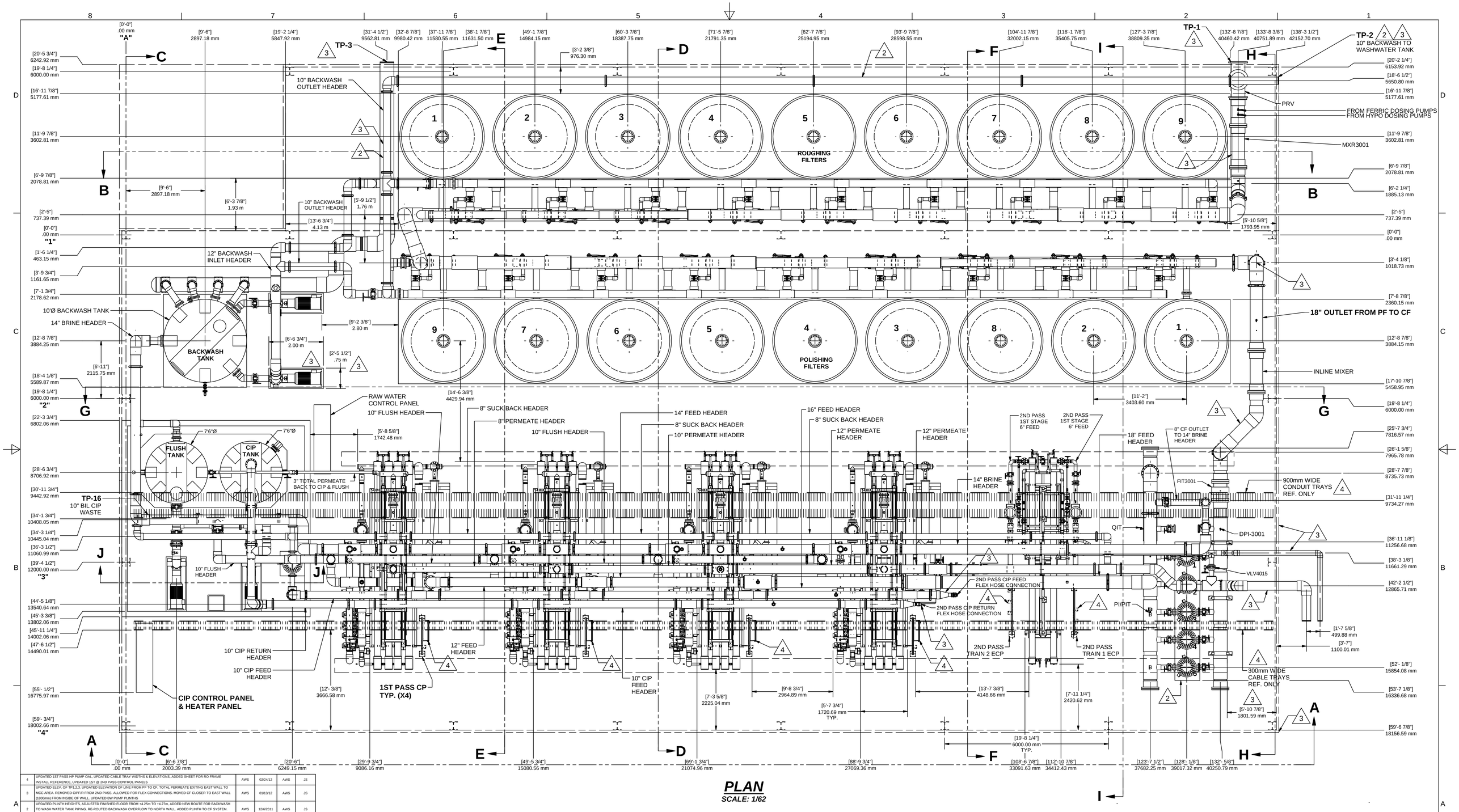
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING CONCENTRATE END

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	2 OF 16	4



PLAN
SCALE: 1/62

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP QAL, UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3, UPDATED ELEVATION OF LINE FROM PF TO CF, TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/FIR FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

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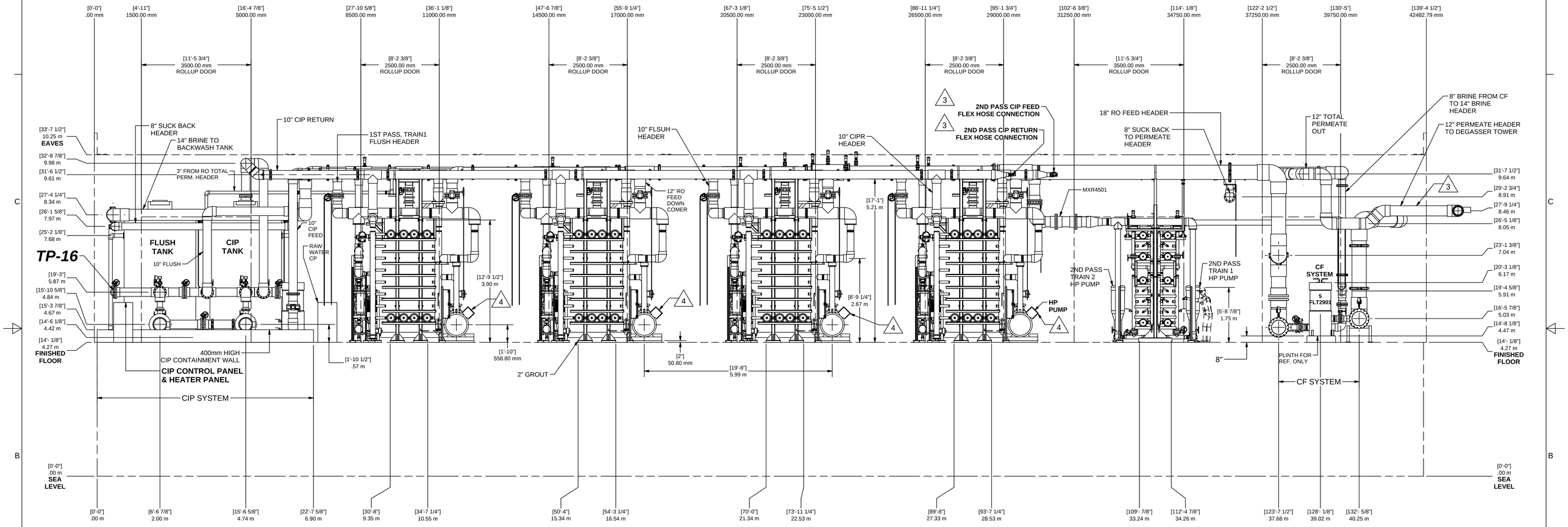
PROJ MGR AWS	9/16/2011	PROJECT NUMBER 260
APPROVED HS	9/16/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING PLAN VIEW

SIZE D | SCALE A/S | DWG NO 260-M-201 | SHEET 3 OF 16 | REV 4



ELEVATION A-A

ELEVATION OUTSIDE OF BUILDING DOORS
CONCENTRATE END
SCALE: 1/58

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL, UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3, UPDATED ELEVATION OF LINE FROM PF TO CF, TOTAL PERMEATE EXITING EAST WALL TO MCC AREA, REMOVED CIP/R FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS, MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL, UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

REVISION HISTORY

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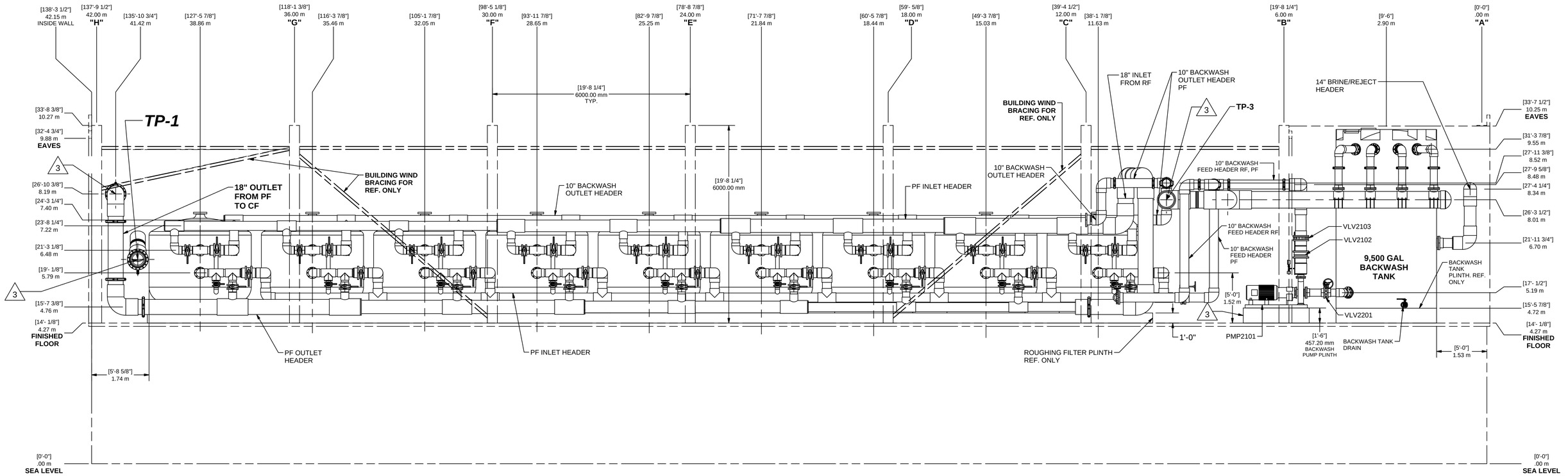
ENGR JS	9/16/2011	SPECS. REF. NO.
PROJ MGR AWS	9/16/2011	PROJECT NUMBER 260
APPROVED HS	9/16/2011	
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: RO SYSTEM BUILDING ELEVATION A-A
SIZE: D | SCALE: A/S | DWG NO: 260-M-201 | SHEET 4 OF 16 | REV: 4



SECTION B-B

POLISHING FILTER ELEVATION

SCALE: 1/58

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP QAL. UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF. TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/FR FROM 2ND PASS. ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS. ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m. ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS. RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

REVISION HISTORY

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DRAWN AWS	4/12/2008	SUBMITTAL NO.	
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PROJ MGR AWS	9/16/2011	PROJECT NUMBER 260	
APPROVED HS	9/16/2011		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

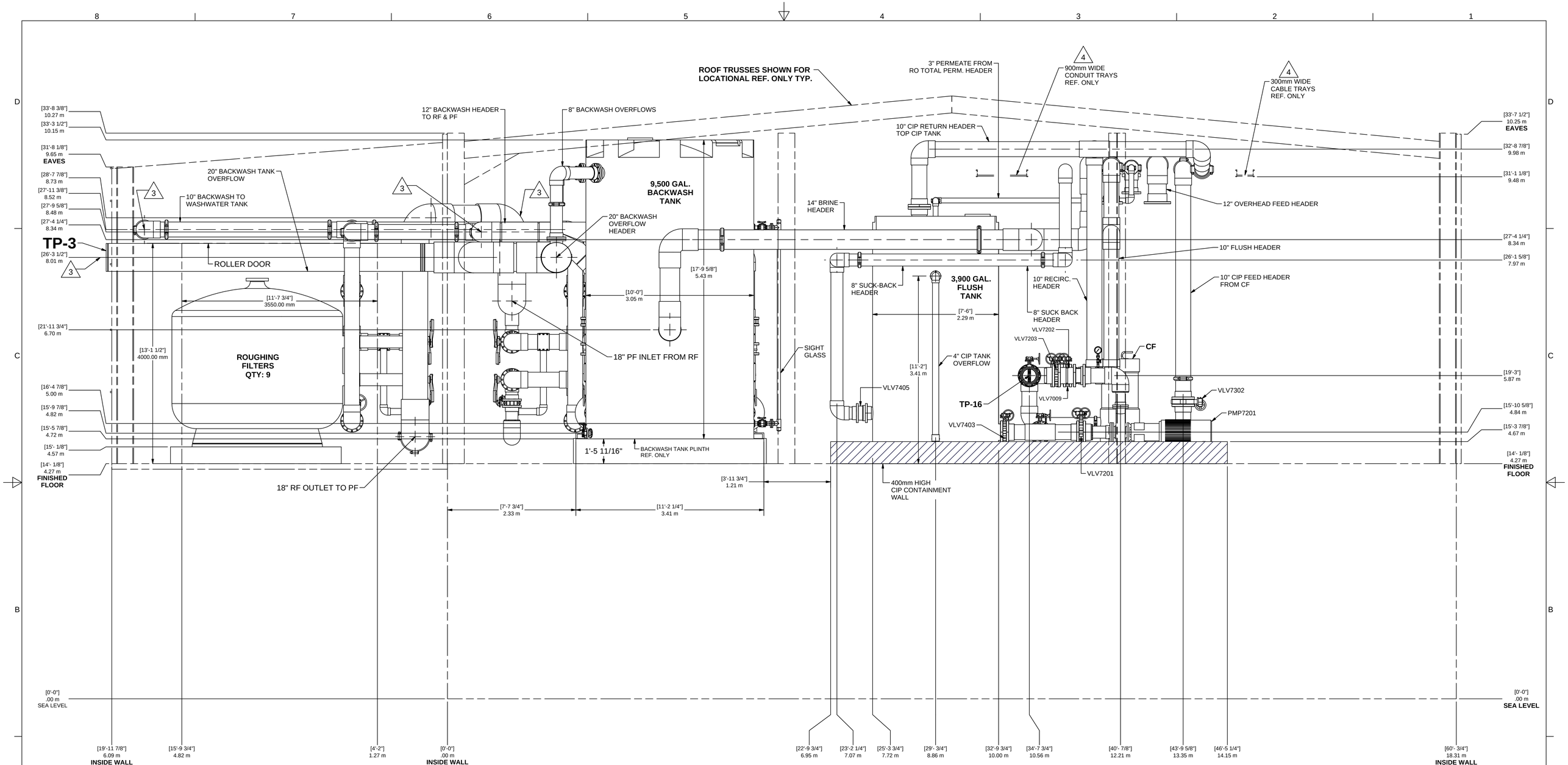
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING
SAND FILTER ELEVATIONS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	5 OF 16	4



SECTION C-C

BACKWASH & CIP AREA ELEVATION

SCALE: 1/33

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL, UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF. TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/R FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

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APPROVED HS	9/16/2011	
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

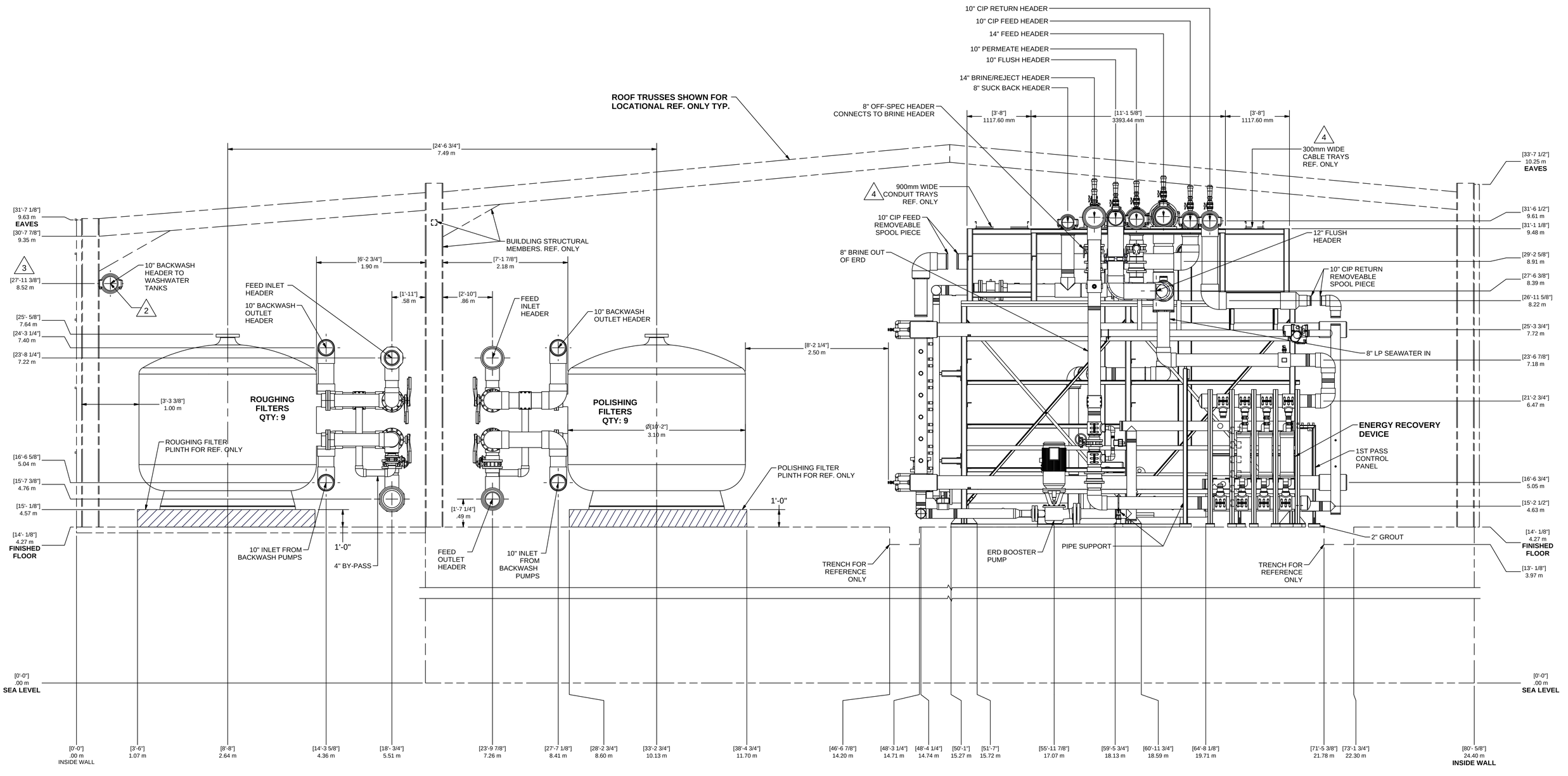
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING SECTION C-C

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	6 OF 16	4



SECTION D-D

1ST PASS RO (TRAIN #3) ERD & SAND FILTERS ELEVATION

SCALE: 1/33

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL. UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF. TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/R FROM 2ND PASS. ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS. ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN AWS	4/12/2008	SUBMITTAL NO.	
ENGR JS	9/16/2011	SPECS. REF. NO.	
PROJ MGR AWS	9/16/2011	PROJECT NUMBER 260	
APPROVED HS	9/16/2011		
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

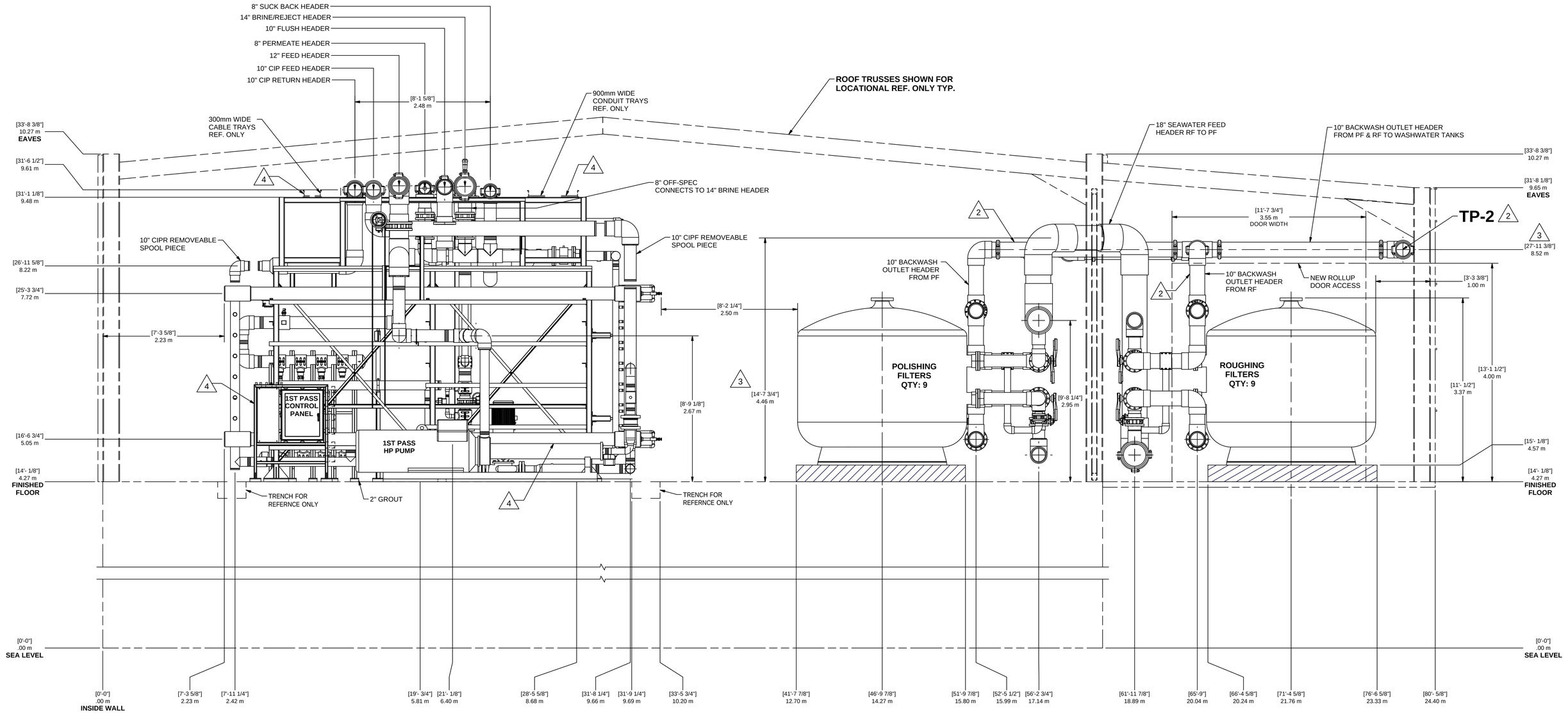
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING SECTION D-D

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	7 OF 16	4



SECTION E-E

1ST PASS RO (TRAIN #1) FEED & SAND FILTERS ELEVATION

SCALE: 1/35

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL, UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF, TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIPF/R FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

REVISION HISTORY

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DRAWN	AWS	4/12/2008	SUBMITTAL NO.
ENGR	JS	9/16/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/16/2011	PROJECT NUMBER 260
APPROVED	HS	9/16/2011	
TOLERANCE BLOCK		*INCH = +/- 1/32 (+/- 0.03)*	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

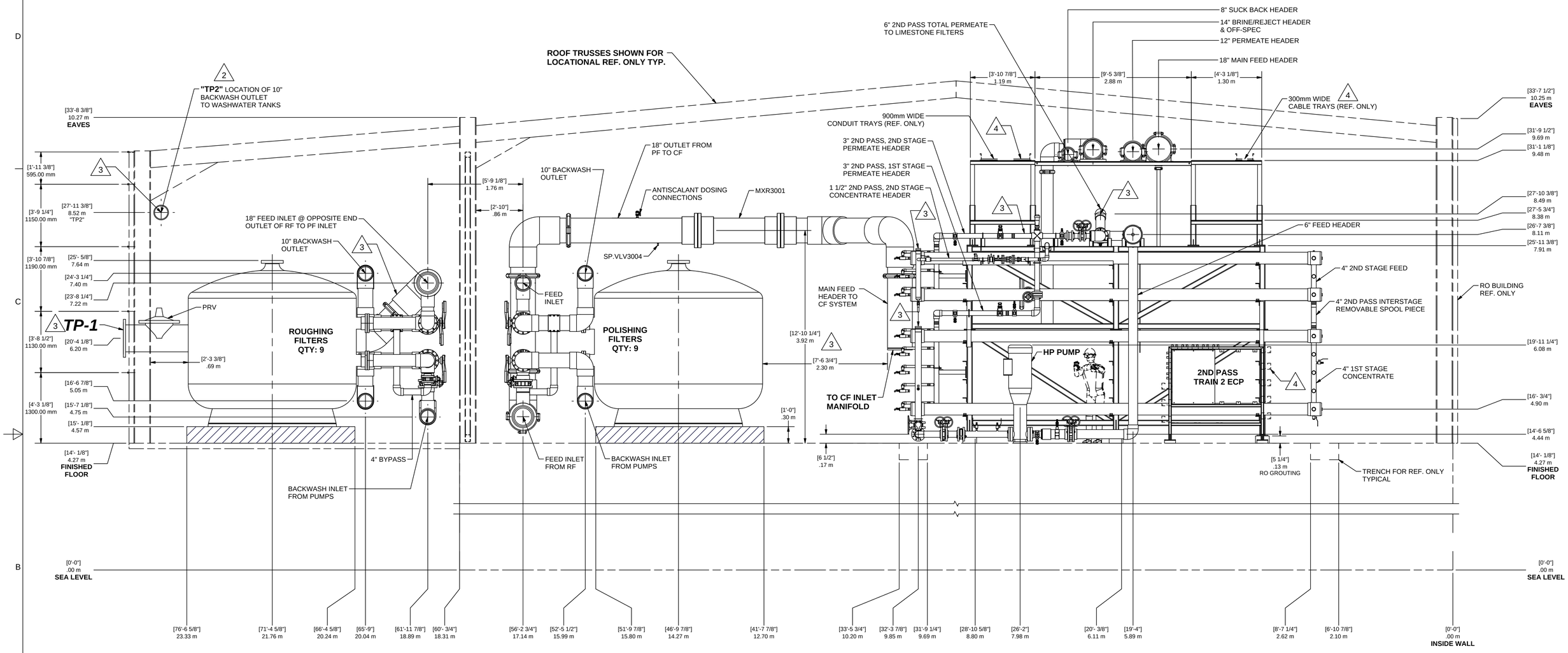
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING SECTION E-E

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	8 OF 16	4



SECTION F-F

2ND PASS RO & SAND FILTERS
ELEVATION
SCALE: 1/35

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL. UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF, TOTAL PERMEATE EXITING EAST WALL TO MCC AREA, REMOVED CIP/R FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY. OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

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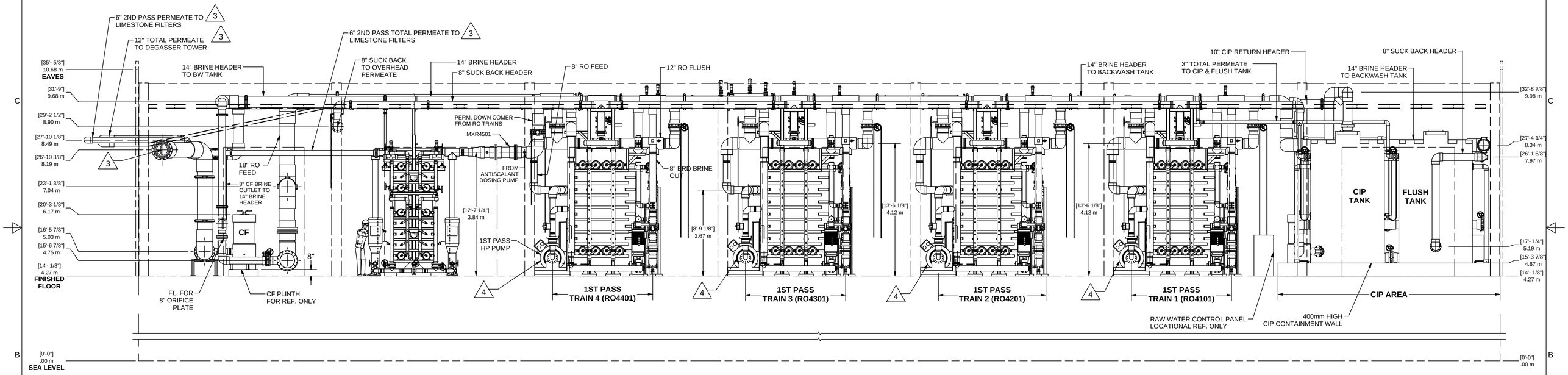
DRAWN	AWS	4/12/2008	SUBMITTAL NO.
ENGR	JS	9/16/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/16/2011	PROJECT NUMBER 260
APPROVED	HS	9/16/2011	
TOLERANCE BLOCK		*INCH = +/- 1/32 (+/- 0.03)*	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: RO SYSTEM BUILDING SECTION F-F
SIZE: D | SCALE: A/S | DWG NO: 260-M-201 | SHEET 9 OF 16 | REV: 4



SECTION G-G

RO TRAINS 1 THRU 4
PERMEATE END
SCALE: 1/56.5

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL. UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF. TOTAL PERMEATE EXITING EAST WALL TO MCC AREA, REMOVED CIP/R FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

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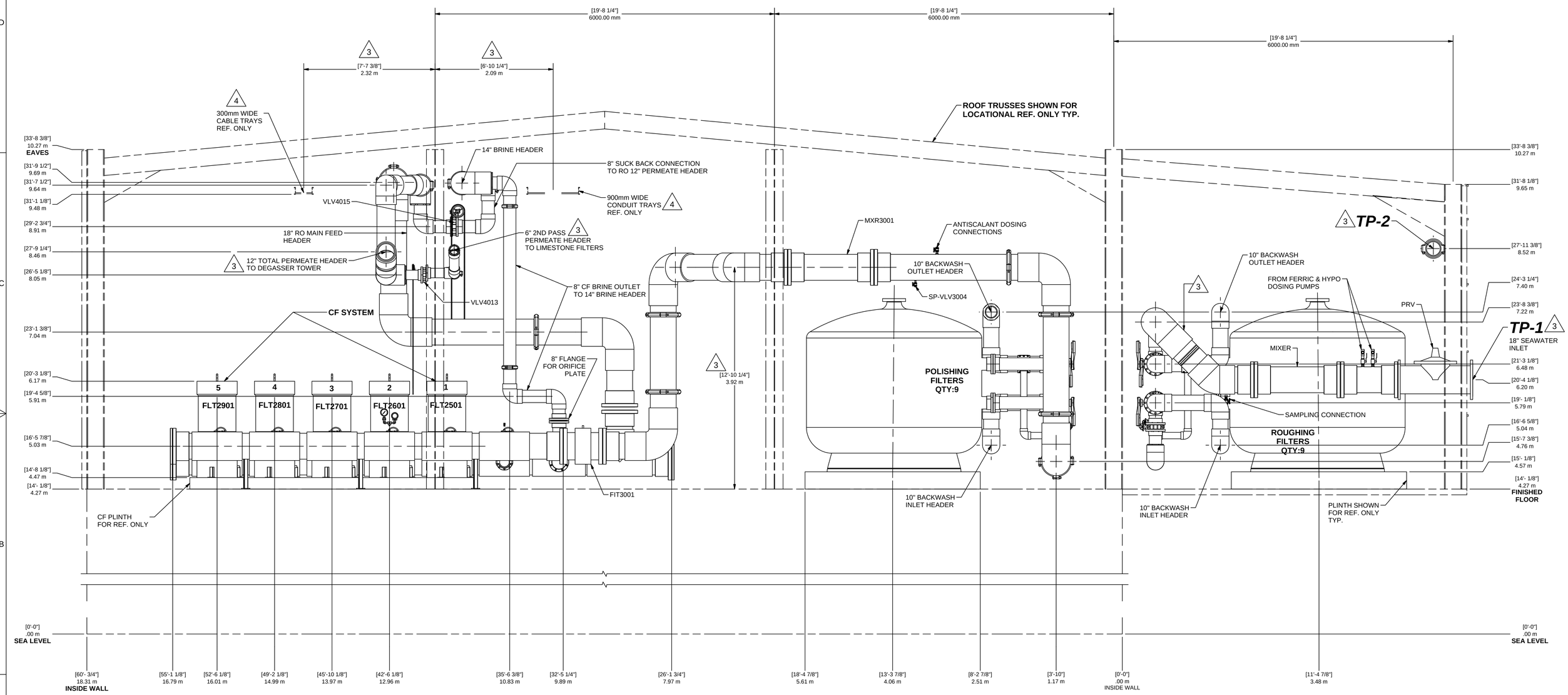
DRAWN AWS	4/12/2008	SUBMITTAL NO.	
ENGR JS	9/16/2011	SPECS. REF. NO.	
PROJ MGR AWS	9/16/2011	PROJECT NUMBER	260
APPROVED HS	9/16/2011		
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: RO SYSTEM BUILDING SECTION G-G
SIZE: D | SCALE: A/S | DWG NO: 260-M-201 | SHEET 10 OF 16 | REV: 4



VIEW H-H

CARTRIDGE FILTER & SAND FILTER ELEVATION

SCALE: 1/33

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL. UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF. TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/R FROM 2ND PASS. ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASS'Y. OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

REVISION HISTORY

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ENGR JS	9/16/2011	SPECS. REF. NO.	
PROJ MGR AWS	9/16/2011	PROJECT NUMBER 260	
APPROVED HS	9/16/2011		
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

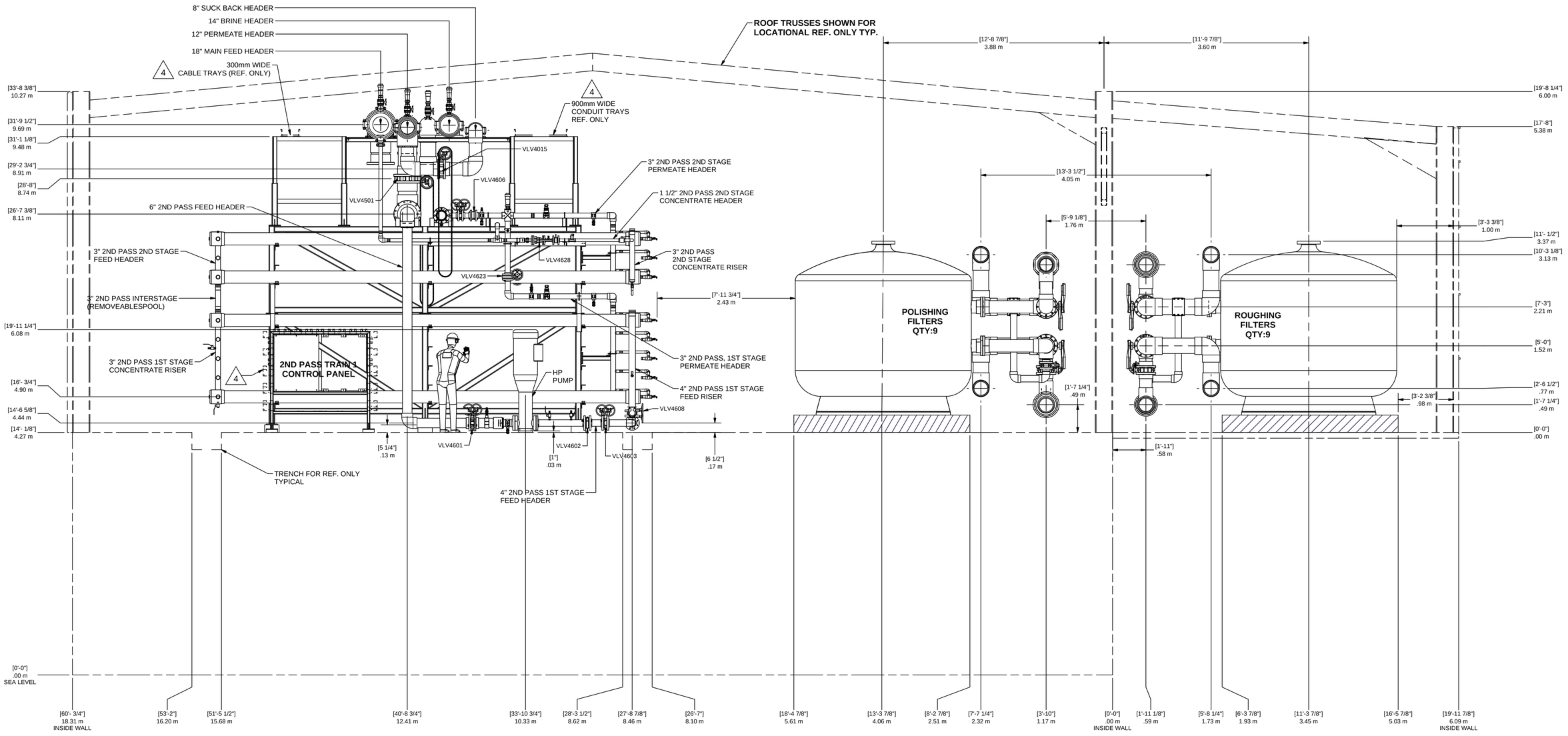
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING
SECTION H-H

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	11 OF 16	4



SECTION: I-I

END ELEVATION

SCALE: 1/35

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL, UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3, UPDATED ELEVATION OF LINE FROM PF TO CF, TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/R FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

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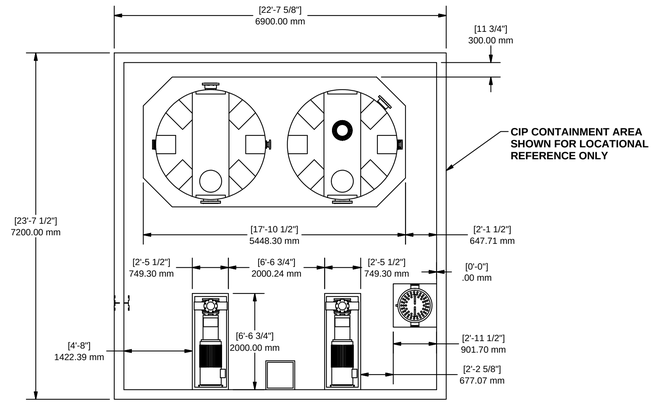
PROJ MGR AWS	9/16/2011	PROJECT NUMBER 260
APPROVED HS	9/16/2011	
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*	
	METRIC = +/- 1.0 millimeter	

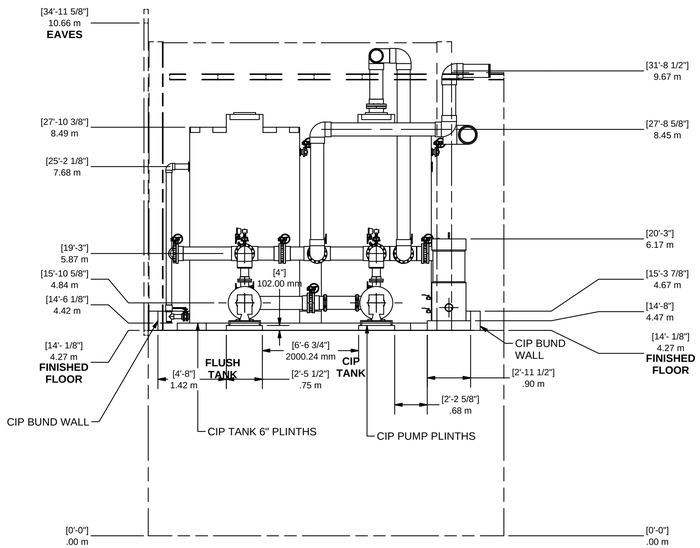
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: RO SYSTEM BUILDING SECTION I-I

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	12 OF 16	4



CIP AREA PLAN

SCALE: 1/62



SECTION: J-J

CIP AREA

SCALE: 1/62

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP QAL; UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF, TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/FR FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

REVISION HISTORY

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DRAWN AWS	4/12/2008	SUBMITTAL NO.	
ENGR JS	9/16/2011	SPECS. REF. NO.	
PROJ MGR AWS	9/16/2011	PROJECT NUMBER	260
APPROVED HS	9/16/2011		
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

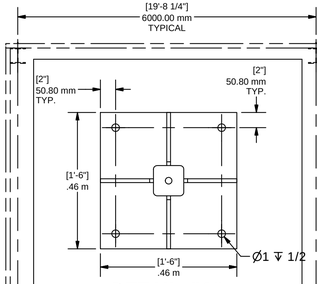
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING
SECTION J-J

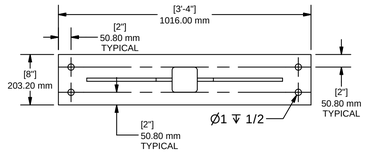
SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	13 OF 16	4



DETAIL "A"

1ST PASS BASEPLATE

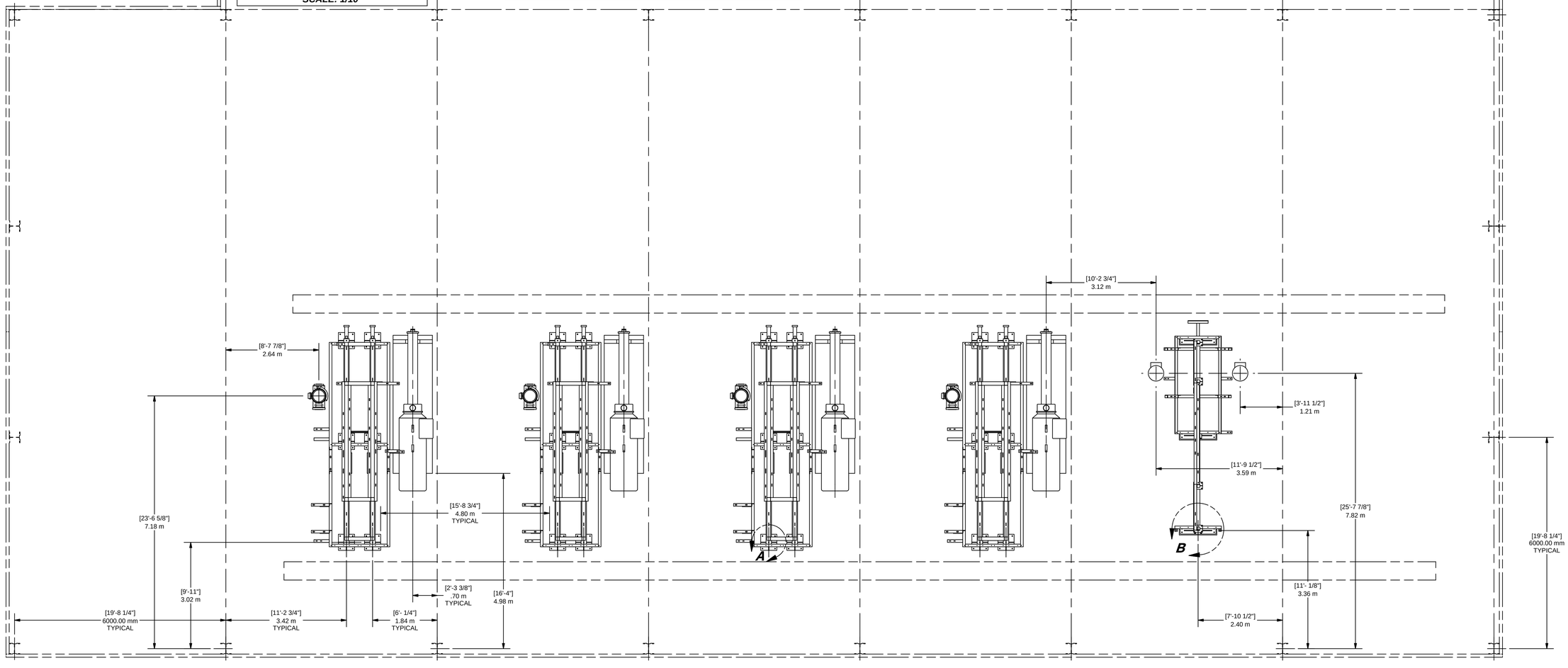
SCALE: 1/10



DETAIL "B"

2ND PASS BASEPLATE

SCALE: 1/12



VIEW22

SCALE 1/60

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL, UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3. UPDATED ELEVATION OF LINE FROM PF TO CF. TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/R FROM 2ND PASS. ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m. ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING. RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN AWS	4/12/2008	SUBMITTAL NO.
ENGR JS	9/16/2011	SPECS. REF. NO.
PROJ MGR AWS	9/16/2011	PROJECT NUMBER 260
APPROVED HS	9/16/2011	
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

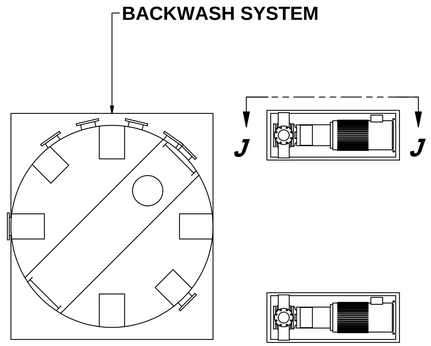
ENGINEER: BIWATER-AEWT

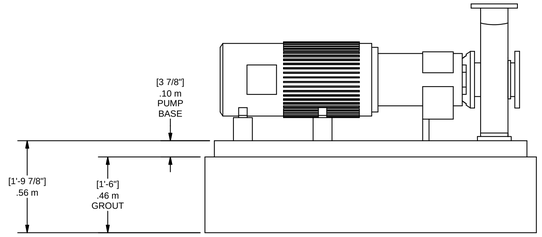
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING
RO FRAME INSTALL LOCATIONS

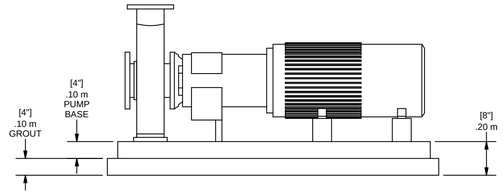
SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-201	14 OF 16	4





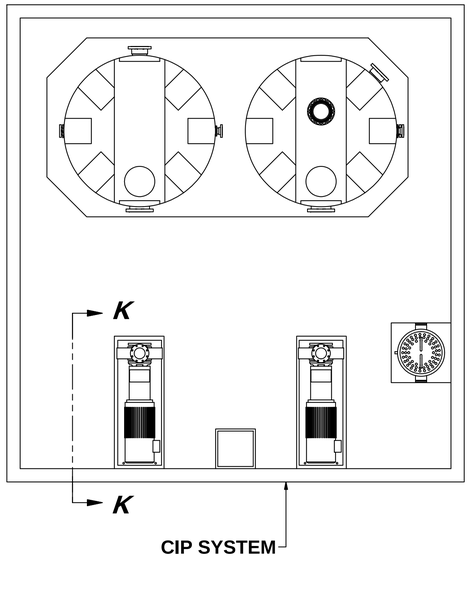
VIEW "J-J"
BACKWASH PUMP
ELEVATION
SCALE: 1/18

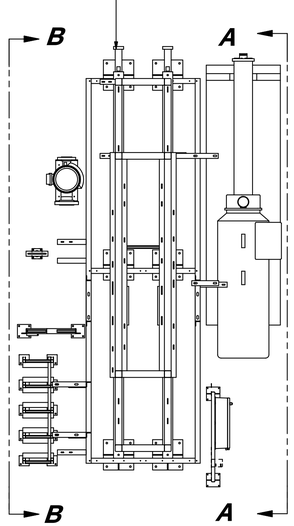
4

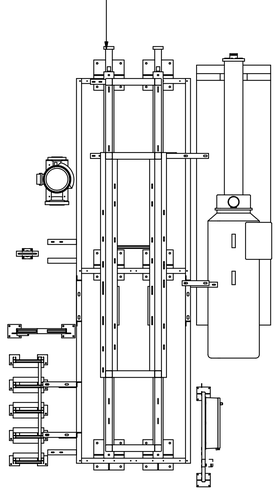


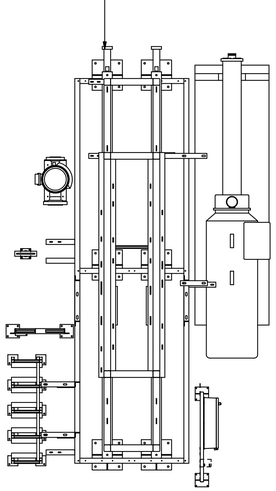
SECTION "K-K"
CIP/FLUSH PUMP
ELEVATION
SCALE: 1/18

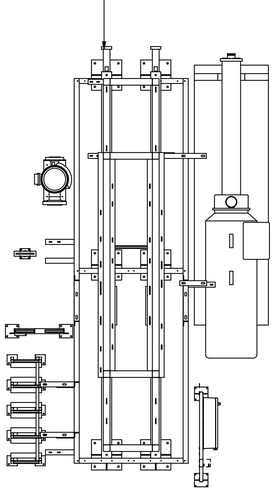
4

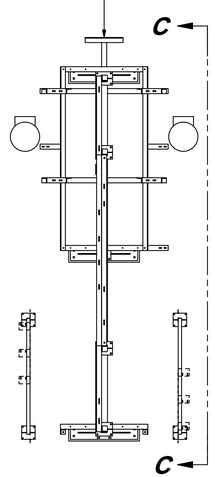












4

PLAN
ANCHOR BOLT SECTIONS
SCALE: 1/45

REV	DESCRIPTION	BY	DATE	CHKD	APPD
4	UPDATED 1ST PASS HP PUMP OAL; UPDATED CABLE TRAY WIDTHS & ELEVATIONS, ADDED SHEET FOR RO FRAME INSTALL REFERENCE, UPDATED 1ST @ 2ND PASS CONTROL PANELS	AWS	02/24/12	AWS	JS
3	UPDATED ELEV. OF TP1,2,3; UPDATED ELEVATION OF LINE FROM PF TO CF; TOTAL PERMEATE EXITING EAST WALL TO MCC AREA. REMOVED CIP/R FROM 2ND PASS, ALLOWED FOR FLEX CONNECTIONS. MOVED CF CLOSER TO EAST WALL (1800mm) FROM INSIDE OF WALL. UPDATED BW PUMP PLINTHS	AWS	01/13/12	AWS	JS
2	UPDATED PLINTH HEIGHTS, ADJUSTED FINISHED FLOOR FROM +4.25m TO +4.27m, ADDED NEW ROUTE FOR BACKWASH TO WASH WATER TANK PIPING, RE-ROUTED BACKWASH OVERFLOW TO NORTH WALL. ADDED PLINTH TO CF SYSTEM. ADDED AIR RELEASE VALVES TO OVERHEAD PIPING.	AWS	12/6/2011	AWS	JS
1	UPDATED ROUGHING & SAND FILTERS, RELOCATED BACKWASH ASSEMBLY UPDATED RO BUILDING WALLS	AWS	10/12/11	AWS	JS
E	ADDED 2ND ROW OF ASTRA FILTERS	AWS	09/21/11	AWS	JS
D	UPDATED FEED & FLUSH HEADER PIPING TO 1ST PASS, UPDATED CIP SYSTEM AND 2ND PASS, UPDATED BACKWASH & CF SYSTEM	AWS	09/16/11	AWS	JS
C	UPDATED SAND FILTER ASSEMBLY, CF ASSY, OVERHEAD PIPING. ADDED LOCATION OF CIP, HEATER, RO SYSTEM, RAW WATER & LIMESTONE FILTERS CONTROL PANELS	AWS	07/07/11	RW	JS
B	UPDATED OVERHEAD PIPE SIZES, ROTATED CIP AREA, UPDATED BUILDING DOOR LOCATIONS, ADDED PIPE & CABLE TRAY SUPPORT FRAME	AWS	6/26/11	JS	JS
A	FOR APPROVAL	AWS	6/3/2011	JS	JS

REVISION HISTORY

Biwater

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DRAWN AWS	4/12/2008	SUBMITTAL NO.
ENGR JS	9/16/2011	SPECS. REF. NO.
PROJ MGR AWS	9/16/2011	PROJECT NUMBER 260
APPROVED HS	9/16/2011	
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: RO SYSTEM BUILDING
ANCHOR BOLT DETAILS

SIZE D | SCALE A/S | DWG NO 260-M-201 | SHEET 15 OF 16 | REV 4

1ST PASS RO ASSEMBLY

ITEM	QTY	DESCRIPTION	DRAWING#	SPOOL#
1	1	+++EQUIPMENT+++		
2	16	260-PV-R80B1000S-7A		
3	16	260-PV-R80B1000S-7A		
4	1	RO FRAME ASSEMBLY	260-S-101	
5	1	INSTRUMENT CONTROL PANEL ASSEMBLY	260-S-104	
6	1	ERI BOOSTER PUMP VP-4671		
7	1	ERI AQUABOLD 4X6X9, 3 STAGE FEED PUMP (MOTOR 5810A)		
8	1	PRESSURE EXCHANGER 65 SERIES 3x PX-220	260-M-501	
9				
10		+++PIPING SPOOLS+++		
11	1	12" OVERHEAD PVC FEED HEADER	260-P-104	260-1FW-PV-01
12	50.000 in	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove both ends	260-P-104	260-1FW-PV-02
13	1	12" 1ST PASS OVERHEAD PVC FEED HEADER TO RO/PX LP IN	260-P-104	260-1FW-PV-03
14	1	8" 1ST PASS PX LP SEAWATER INLET HEADER	260-P-104	260-1FW-PV-04
15	1	8" 1ST PASS PVC FEED HEADER	260-P-104	260-1FW-PV-05
16	1	8" 1ST PASS PX LP SEAWATER INLET HEADER	260-P-104	260-1FW-PV-08
17	1	8" 1ST PASS PVC PUMP SUCTION HEADER	260-P-104	260-1FW-PV-06
18	1	8" 1ST PASS PVC PUMP SUCTION HEADER	260-P-104	260-1FW-PV-07
19	1	4" 1ST PASS HP PUMP DISCHARGE DUPLEX SS HEADER	260-P-101	260-1FW-DP-01
20	1	4" 1ST PASS HP PUMP DISCHARGE TO 6" DUPLEX SS HEADER	260-P-101	260-1FW-DP-02
21	1	6" 1ST PASS HP PUMP DISCHARGE DUPLEX SS HEADER	260-P-101	260-1FW-DP-03
22	1	8" 1ST PASS FEED RISER	260-P-101	260-1FW-DP-04
23	1	6" 1ST PASS BOOSTER PUMP DISCHARGE DUPLEX SS HEADER	260-P-101	260-1FW-DP-05
24	1	6" 1ST PASS PX HP OUTLET FROM BOOSTER PUMP DUPLEX SS HEADER	260-P-101	260-1FW-DP-07
25	1	6" 1ST PASS PX HP BOOSTER PUMP SUCTION DUPLEX SS HEADER	260-P-101	260-1FW-DP-08
26	1	6" 1ST PASS PX HP OUTLET TO BOOSTER PUMP DUPLEX SS HEADER	260-P-101	260-1FW-DP-09
27	96.000 in	A316L SS PIPE 2-1/2" Sch40S Seamless W/Cut Groove End	260-P-101	260-1FW-DP-06
28	1	6" 1ST PASS CONCENTRATE DUPLEX SS HEADER	260-P-201	260-1CW-DP-01
29	1	6" PX HP CONCENTRATE INLET DUPLEX SS HEADER	260-P-201	260-1CW-DP-02
30	1	8" 1ST PASS PX LP CONCENTRATE OULET PVC HEADER	260-P-204	260-1CW-PV-01
31	1	8" 1ST PASS PX LP CONCENTRATE OULET PVC HEADER	260-P-204	260-1CW-PV-02
32	1	8" PX LP CONCENTRATE OULET PVC HEADER	260-P-204	260-1CW-PV-03
33	1	14" OVERHEAD PVC CONCENTRATE/REJECT HEADER TRAIN 01	260-P-204	260-1CW-PV-05
34	1	4" 1ST PASS PVC CONCENTRATE HEADER	260-P-204	260-1CW-PV-06
35	1	8" 1ST PASS PX LP CONCENTRATE OULET PVC HEADER	260-P-204	260-1CW-PV-04
36	1	8" PVC 1ST STAGE OVERHEAD PERMEATE HEADER	260-P-304	260-1PW-PV-01
37	1	8" 1ST PASS PVC PERMEATE HEADER	260-P-304	260-1PW-PV-02
38	1	8" 1ST PASS PVC PERMEATE HEADER	260-P-304	260-1PW-PV-03
39	2	6" 1ST STAGE PERMEATE 316L SS RISER	260-P-301	260-1PW-SS-01
40	1	1ST PASS 6" PERMEATE HEADER	260-P-301	260-1PW-SS-02
41	32	1-1/4" PVC J-BEND ASSEMBLY	260-P-401	260-1JW-PV-01
42	1	8" 1ST PASS PVC CIP FEED HEADER	260-P-104	260-1CIPF-PV-01
43	1	10" 1ST PASS PVC CIP FEED HEADER	260-P-104	260-1CIPF-PV-02
44	1	6" 1ST PASS PVC CIP RETURN REMOVEABLE SPOOL PIECE	260-P-204	260-1CIPR-PV-01
45	1	10" 1ST PASS PVC CIP RETURN HEADER	260-P-204	260-1CIPR-PV-02
46	1	6" 1ST PASS CONCENTRATE ARV PUC PIECE	260-P-201	PART OF 260-1CW-DP-01
47	1	8" PVC 1ST PASS OVERHEAD OFF-SPEC HEADER (TRAIN 01)	260-P-204	260-1OFFSPC-PV-01
48	1	8" 1ST PASS PVC OFF-SPEC HEADER	260-P-204	260-1OFSPC-PV-01
49	1	8" PVC 1ST STAGE SUCKBACK OVERHEAD HEADER	260-P-304	260-SCKBK-PV-01
50				
51		+++VALVES & INSTRUMENTS+++		
52	1	RITEPRO SERIES 600 SUPER DUPLEX WAFER TYPE SWING CHECK VALVE, 6"		
53	3	MTS DUPLEX SS PLUG VALVE, 6"		
54	1	MTS DUPLEX SS PLUG VALVE, 4"		
55	1	MTS DUPLEX SS PLUG VALVE, 2"		
56	3	HAYWARD PVC WAFER CHECK VALVE W/SPACER, #WC1800ES, 8"		
57	8	FLOW-TEK 3 PIECE, THRD'D FULL PORT DUPLEX BV-1/2"		
58	6	BAV TYPE 375, 1/2", SCH80 PVC.		
59	1	Bray BFV RSDI ANSI 150 12" Lugged S31		

1ST PASS RO ASSEMBLY

ITEM	QTY	DESCRIPTION	DRAWING#	SPOOL#
60	2	Bray BFV RSDI ANSI 150 8" Lugged S31		
61	1	Bray BFV RSDI ANSI 150 10" Lugged S31		
62	1	Bray Gear Operator Series 04-0300 w/ 8"Wheel		
63	1	Bray BFV RSDI ANSI 150 6" S30		
64	2	IPEX PVC AIR RELEASE VALVE, 2"		
65	2	CHAINWHEEL ASSEMBLY		
66	1	ROTORK IQT2+ F12-1		
67	1	Bray Gear Operator Series 04-0800 w/ 12"Wheel & 1.97"Shaft		
68	1	Bray Gear Operator Series 04-0200 w/ 8"Wheel		
69	1	8" PROLINE PROMAG 50W ELECTRONIC MAGFLOW		
70	1	BAV TYPE 375, 2", SCH80 PVC.		
71	2	GEAR OPERATOR 30:1 RATIO, 8000-LB.IN. W/EXTENSION		
72	1	SERIES 540 SS PRV, 2" MNPT X 3" FNPT		
73	2	Burkert 8020-INSERTION flow sensor for continuous flow measurement		
74	2	Burkert PVC Saddle, Long Sensor Version #1501		
75				
76		+++COUPLINGS & CAPS+++		
77	2	Victaulic Coupling, 12"		
78	3	Victaulic Coupling, 14"		
79	5	Victaulic Coupling, 10"		
80	12	Victaulic Coupling, 8"		
81	23	Victaulic Coupling, 6"		
82	32	Victaulic Coupling, 1 1/4"		
83	104	Victaulic Coupling, 2 1/2"		
84	2	Victaulic Coupling, 2"		
85	1	Victaulic Coupling, 3"		
86	6	Victaulic Coupling, 4"		
87	1	SS Victaulic Cap, 10"		
88	1	SS Victaulic Cap, 8"		
89	5	SS Victaulic Cap, 6"		
90	1	SS Victaulic Cap, 6"		
91				
92		+++PIPE SUPPORTS & HARDWARE+++		
93	2	14" SS PIPE STRAP		
94	2	8" SS PIPE STRAP		
95	3	10" SS PIPE STRAP		
96	2	12" SS PIPE STRAP		
97	2	316L SS PIPE CLAMP FOR 8" PIPE ASSEMBLY		
98	4	4" 316L SS UNISTRUT PIPE CLAMP ASSEMBLY		
99	1	316L SS PIPE CLAMP FOR 6" PIPE ASSEMBLY		
100	2	316 SS EXTENDED LENGTH U-BOLT, 7/8"-9, 12" PIPE		
101	4	316 SS EXTENDED LENGTH U-BOLT, 3/4"-10, 10" PIPE		
102	2	316 SS EXTENDED LENGTH U-BOLT, 3/8"-16, 4" PIPE		
103	1	316 SS EXTENDED LENGTH U-BOLT, 5/8"-11, 6" PIPE		
104	1	316 SS U-BOLT, 1/2"-13, 6" PIPE		
105	1	316 SS U-BOLT, 1/2"-13, 8" PIPE		
106	1	8" GROUND PIPE SUPPORT ASSEMBLY		
107	1	GROUND PIPE SUPPORT		
108	2	14" CONCENTRATE HEADER SHIMM (0.842")		
109				
110		+++GENERAL PIPE FITTINGS+++		
111	12	JIS B 2302 Close Nipple 1/2"		
112	1	JIS B 2302 Long Nipple 1/2 x 75mm		
113	3	JIS B 2302 Close Nipple 2"		
114	1	JIS B 2302 Long Nipple 1/2 x 75mm		
115	1	ASME B16.11 Hex Head Plug 1/2		
116	5	Male Adapter 1/2"Mnpt x 1/2"TubeOD		
117	7	SS 1/2" TUBE x 1/2" MNPT MALE CONNECTOR (SS-810-1-8)		

REVISION HISTORY

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
2	UPDATED FEED / FLUSH HEADERS, RELOCATED PERM BTFLY VALVE.	AWS	08/03/11	JS	JS
1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

Biwater

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DRAWN AWS	5/19/2011	SUBMITTAL NO.	
ENGR JS	10/25/2011	SPECS. REF. NO.	
PROJ MGR JS	10/25/2011	PROJECT NUMBER	260
APPROVED JS	10/25/2011		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

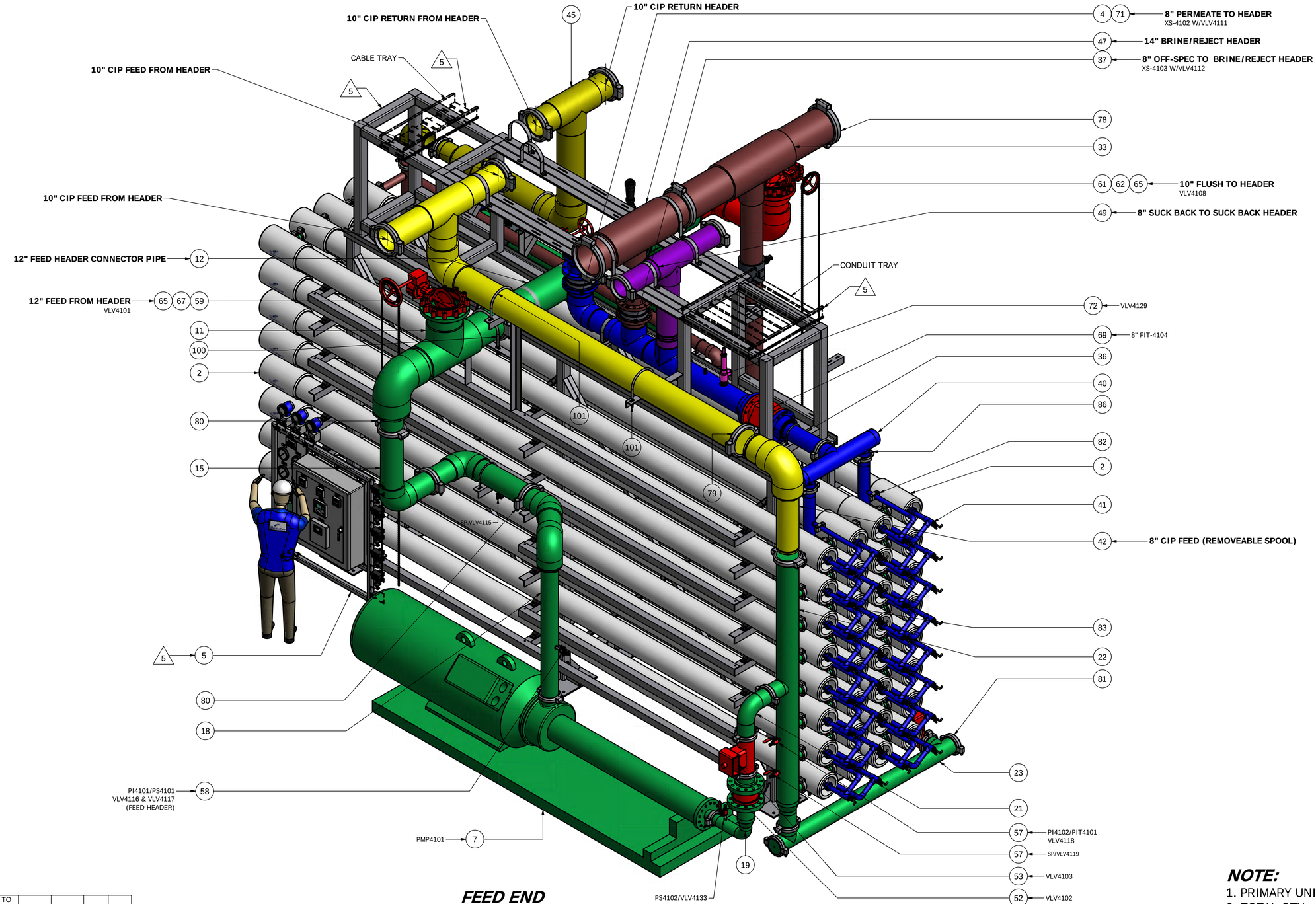
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN BOM

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-101	1 OF 10	5

COLOR CHART

COLOR	SERVICE
GREEN	FEED
YELLOW-BRIGHT	CIP FEED
YELLOW-DARK	CIP RETURN
RED	FLUSH
BLUE	PERMEATE
GRAPE	SUCK-BACK



FEED END

SCALE: 1/19

NOTE:

1. PRIMARY UNITS ARE IN INCHES
2. TOTAL QTY =4

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
2	UPDATED FEED / FLUSH HEADERS, RELOCATED PERM BTFLY VALVE.	AWS	08/03/11	JS	JS
1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

REVISION HISTORY

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DRAWN	AWS	5/19/2011	SUBMITTAL NO.
ENGR	JS	10/25/2011	SPECS. REF. NO.
PROJ MGR	JS	10/25/2011	PROJECT NUMBER 260
APPROVED	JS	10/25/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

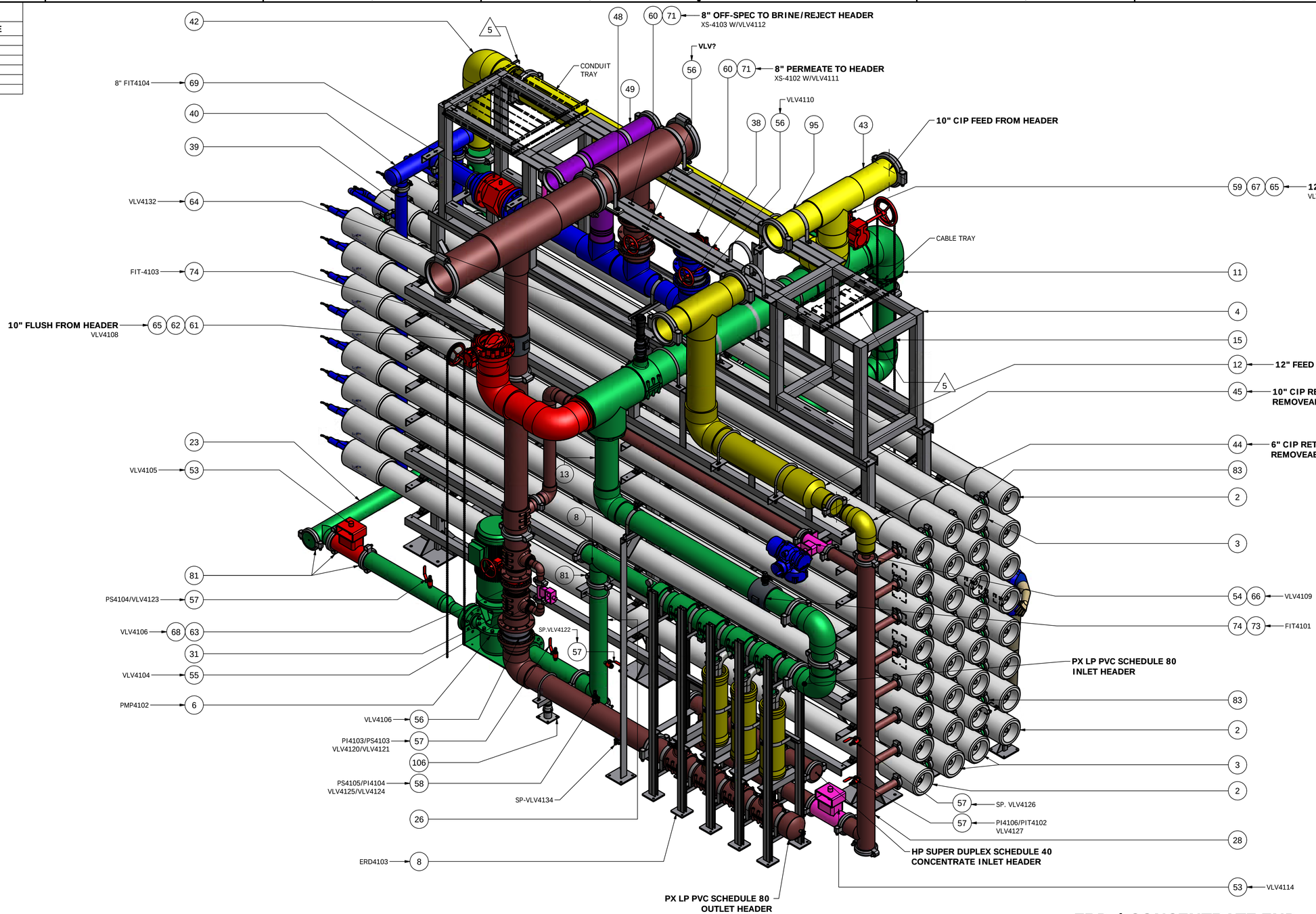
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN
ISOMETRIC ASSEMBLY

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-101	2 OF 10	5

COLOR CHART

COLOR	SERVICE
GREEN	FEED
YELLOW-BRIGHT	CIP FEED
YELLOW-DARK	CIP RETURN
RED	FLUSH
BLUE	PERMEATE
GRAPE	SUCK-BACK



ERD / CONCENTRATE END

SCALE: 1/19

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
2	UPDATED FEED / FLUSH HEADERS, RELOCATED PERM BTFLY VALVE.	AWS	08/03/11	JS	JS
1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	5/19/2011	SUBMITTAL NO.
ENGR	JS	10/25/2011	SPECS. REF. NO.
PROJ MGR	JS	10/25/2011	PROJECT NUMBER 260
APPROVED	JS	10/25/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

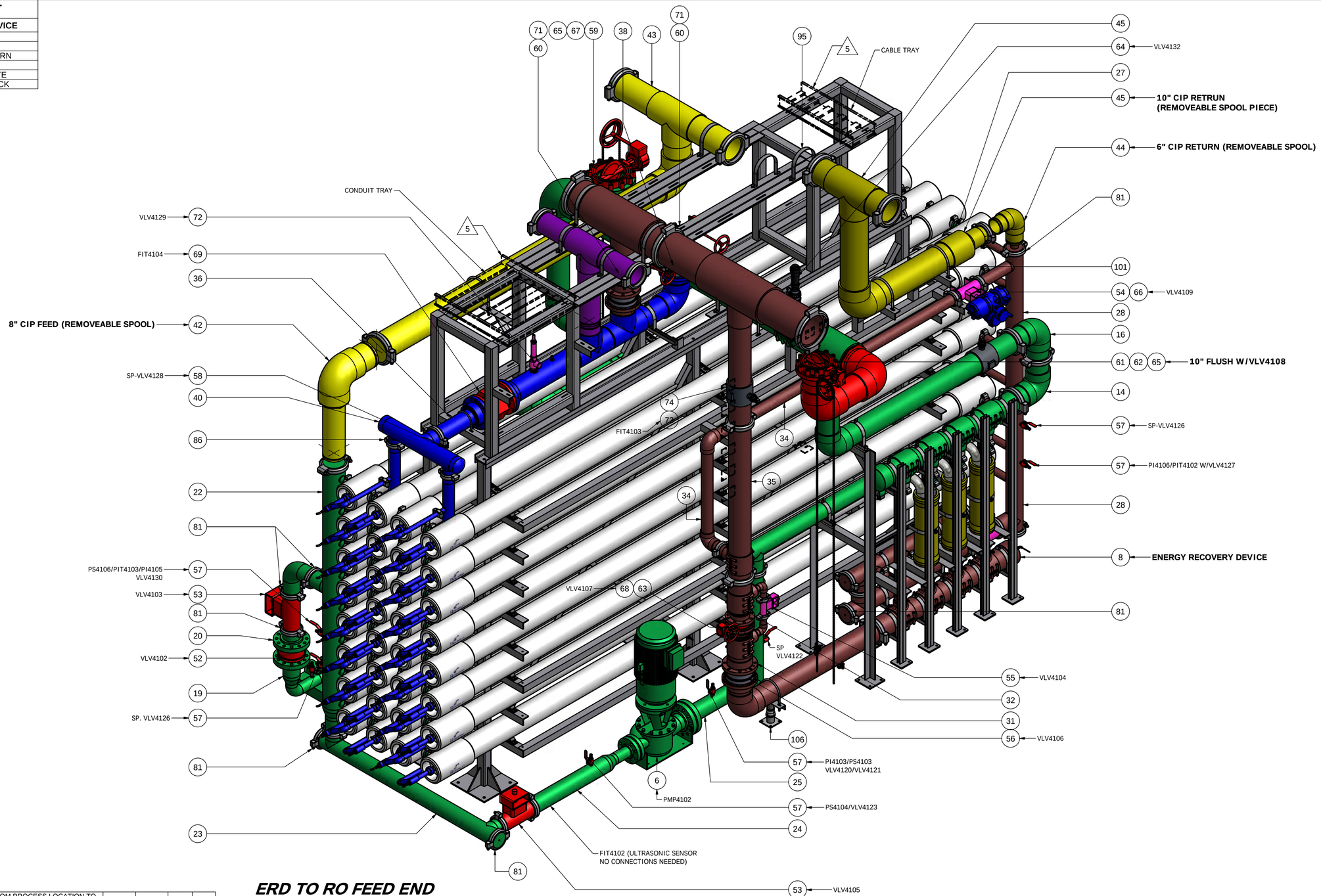
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN ISOMETRIC ASSEMBLY

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-101	3 OF 10	5

COLOR CHART

COLOR	SERVICE
GREEN	FEED
YELLOW-BRIGHT	CIP FEED
YELLOW-DARK	CIP RETURN
RED	FLUSH
BLUE	PERMEATE
GRAPE	SUCK-BACK



ERD TO RO FEED END

SCALE: 1/19

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
2	UPDATED FEED / FLUSH HEADERS, RELOCATED PERM BTFLY VALVE.	AWS	08/03/11	JS	JS
1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

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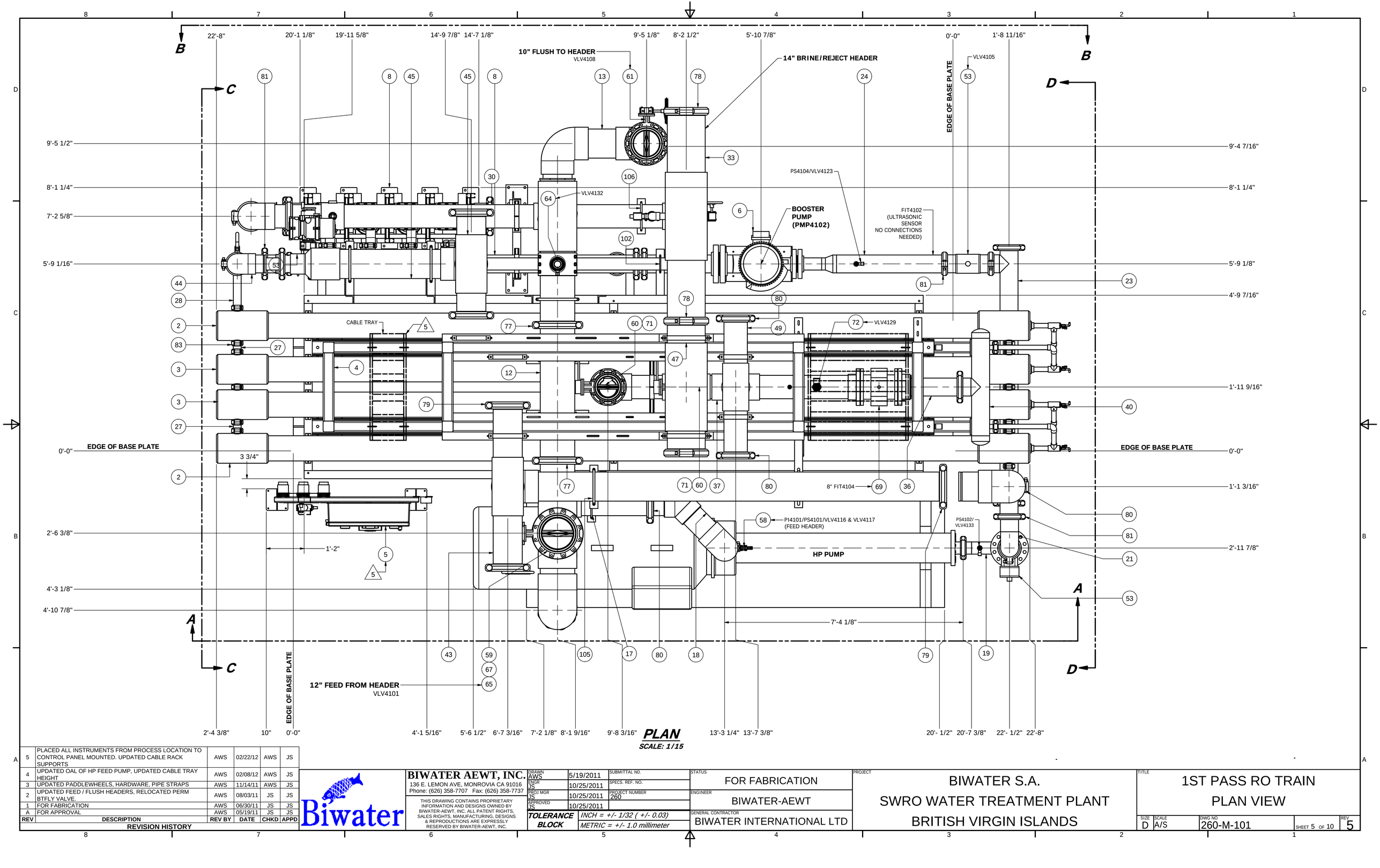
DRAWN	AWS	5/19/2011	SUBMITTAL NO.
ENGR	JS	10/25/2011	SPECS. REF. NO.
PROJ MGR	JS	10/25/2011	PROJECT NUMBER 260
APPROVED	JS	10/25/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN
ISOMETRIC ASSEMBLY

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-101	4 OF 10	5



PLAN
SCALE: 1/15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
2	UPDATED FEED / FLUSH HEADERS, RELOCATED PERM BTFLY VALVE.	AWS	08/03/11	JS	JS
1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

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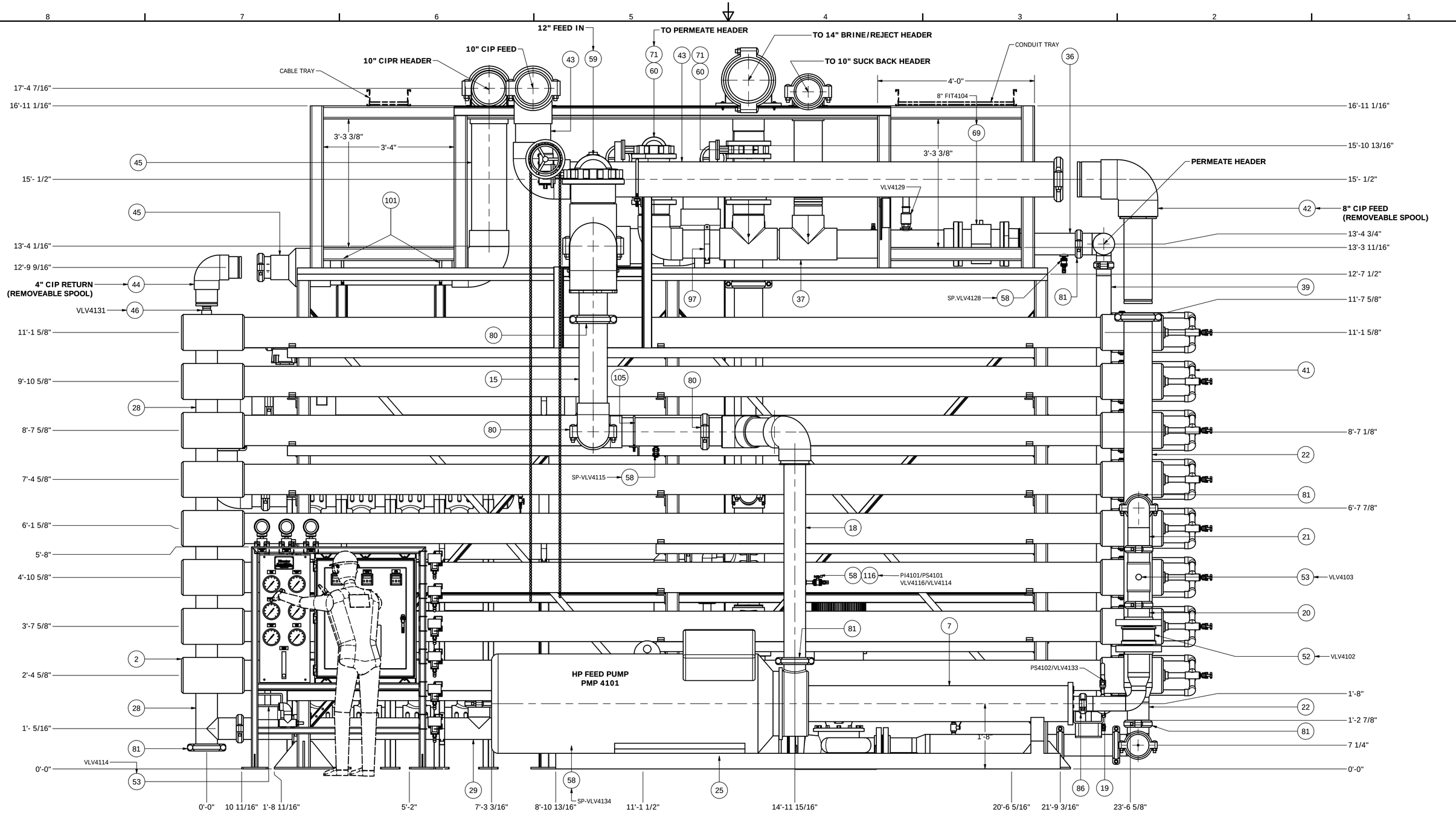
DRAWN	AWS	5/19/2011	SUBMITTAL NO.
ENGR	JS	10/25/2011	SPECS. REF. NO.
PROJ MGR	JS	10/25/2011	PROJECT NUMBER 260
APPROVED	JS	10/25/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN
PLAN VIEW

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-101	5 OF 10	5



VIEW: "A-A"
FEED PUMP ELEVATION
SCALE: 1/14

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
2	UPDATED FEED / FLUSH HEADERS, RELOCATED PERM BTFLY VALVE.	AWS	08/03/11	JS	JS
1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

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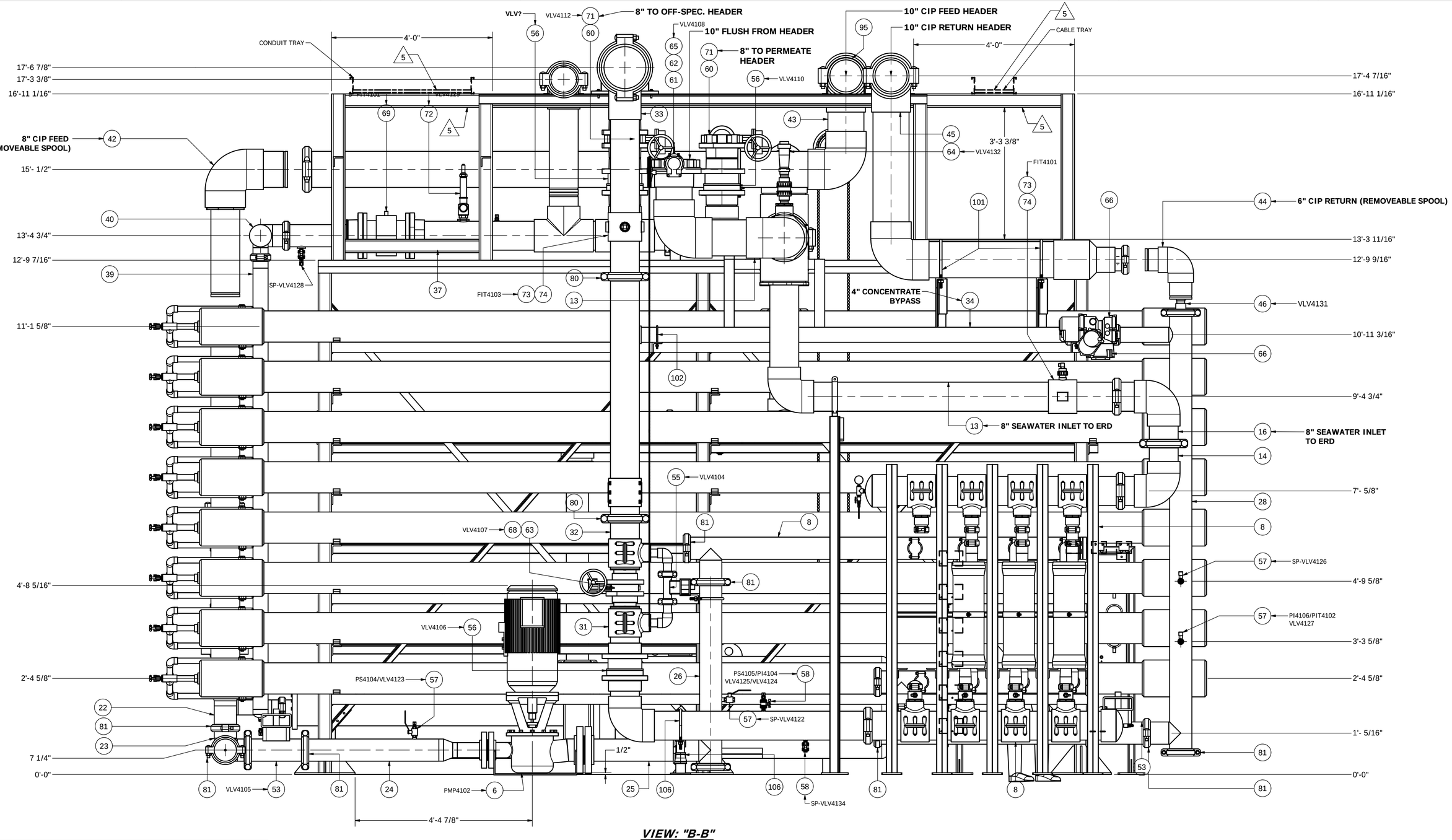
DRAWN AWS	5/19/2011	SUBMITTAL NO.	
ENGR JS	10/25/2011	SPECS. REF. NO.	
PROJ MGR JS	10/25/2011	PROJECT NUMBER	260
APPROVED JS	10/25/2011		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN ELEVATION VIEWS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-101	6 OF 10	5



VIEW: "B-B"

ERD FEED TO RO ELEVATION

SCALE: 1/14

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
2	UPDATED FEED / FLUSH HEADERS, RELOCATED PERM BTFLY VALVE.	AWS	08/03/11	JS	JS
1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

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DRAWN	AWS	5/19/2011	SUBMITTAL NO.
ENGR	JS	10/25/2011	SPECS. REF. NO.
PROJ MGR	JS	10/25/2011	PROJECT NUMBER 260
APPROVED	JS	10/25/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

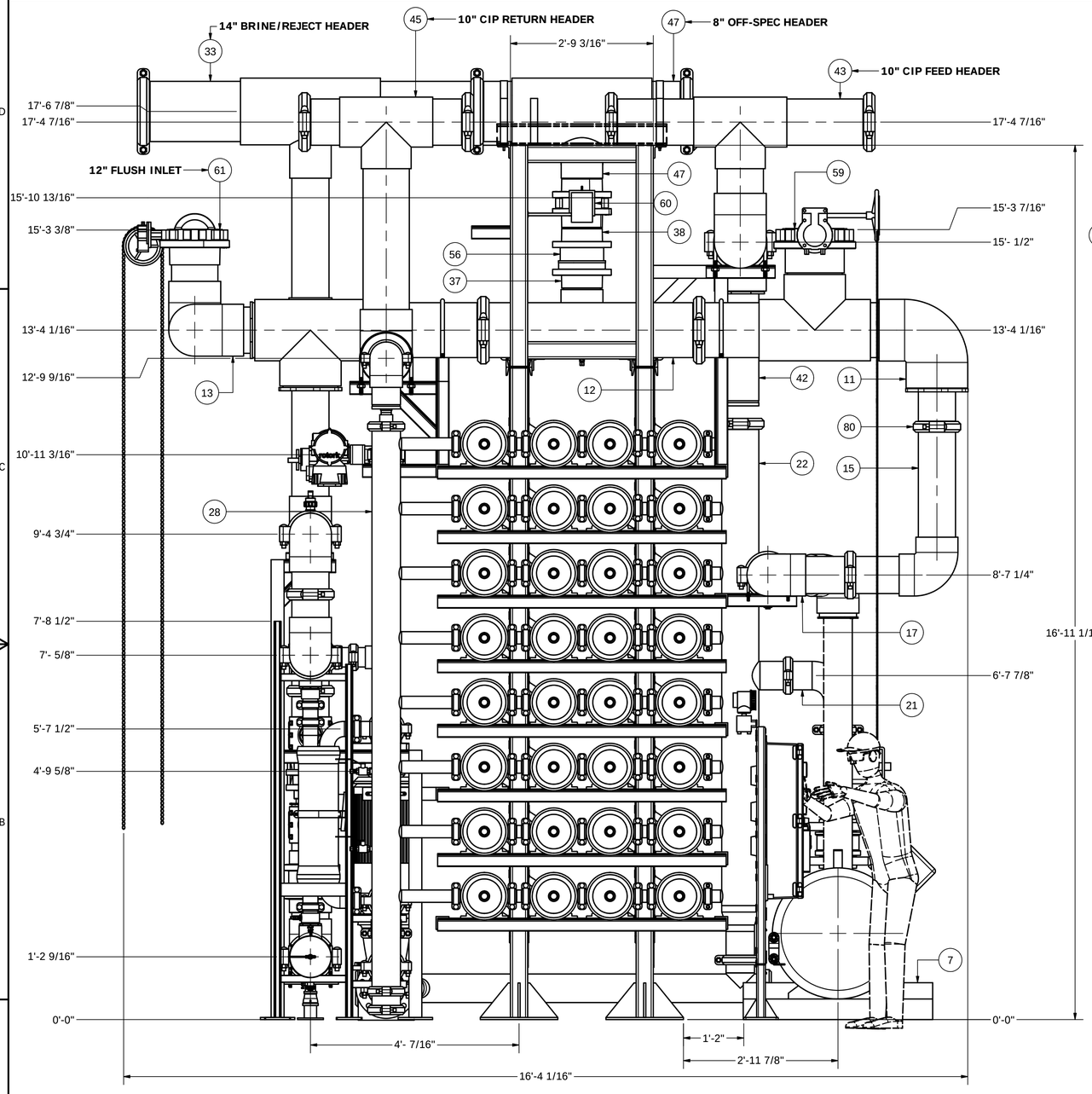
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN ELEVATION VIEW

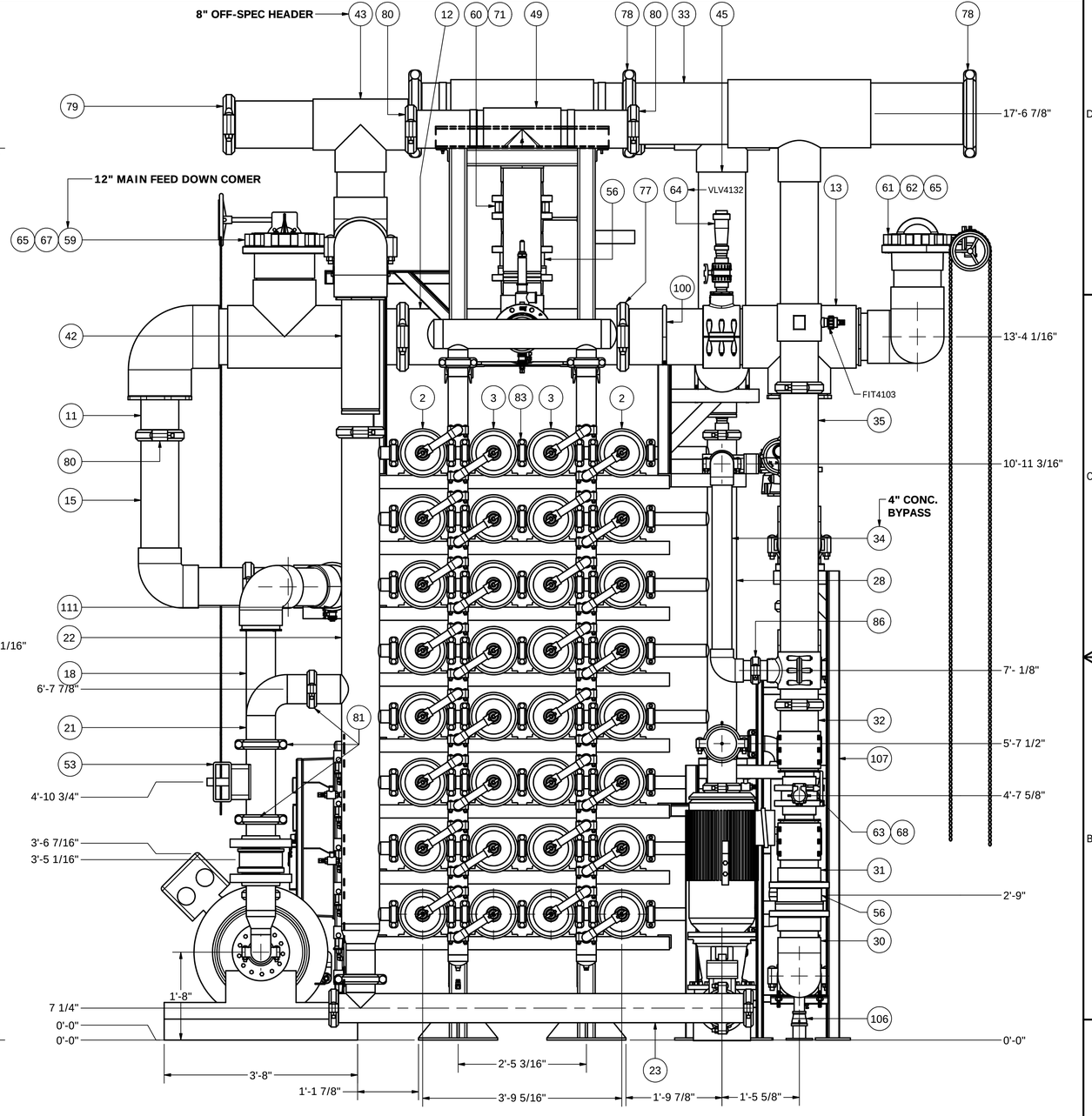
SIZE D | SCALE A/S | DWG NO 260-M-101 | SHEET 7 OF 10 | REV 5



VIEW: C-C

CONCENTRATE END VIEW

SCALE: 1/15



VIEW: D-D

PERMEATE END VIEW

SCALE: 1/15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
2	UPDATED FEED / FLUSH HEADERS, RELOCATED PERM BTFLY VALVE.	AWS	08/03/11	JS	JS
1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

REVISION HISTORY

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DRAWN AWS	5/19/2011	SUBMITTAL NO.
ENGR JS	10/25/2011	SPECS. REF. NO.
PROJ MGR JS	10/25/2011	PROJECT NUMBER 260
APPROVED JS	10/25/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

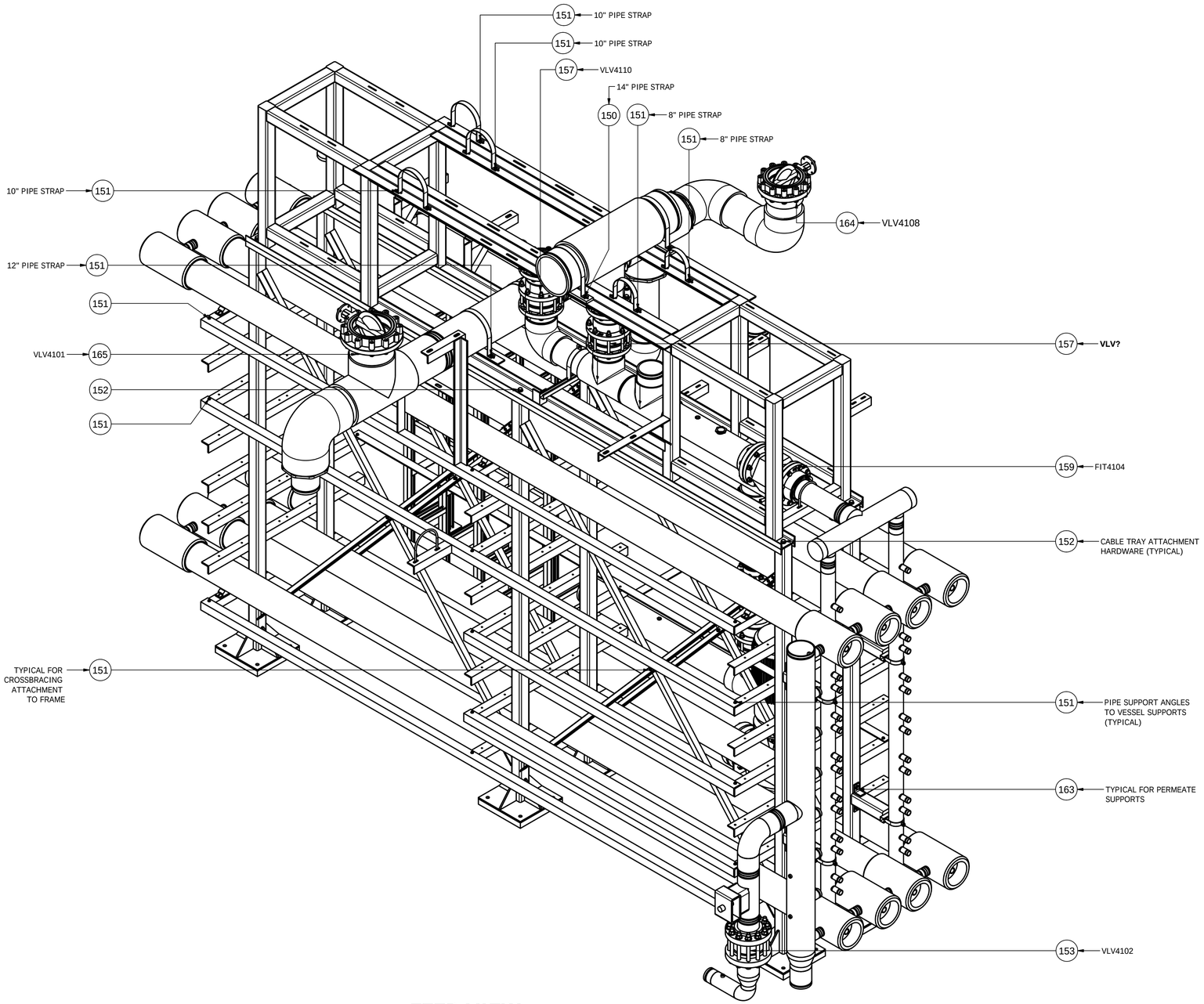
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN
END VIEWS

SIZE D | SCALE A/S | DWG NO 260-M-101 | SHEET 8 OF 10 | REV 5



1ST PASS RO HARDWARE LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
150	4	ANSI/ASME B18.2.1 - 3/8-16 UNC - 2.25	Hex Bolt - UNC (Regular Thread - Inch)
151	74	ANSI/ASME B18.2.1 - 3/8-16 UNC - 1.5	Hex Bolt - UNC (Regular Thread - Inch)
152	6	ANSI/ASME B18.2.1 - 3/4-10 UNC - 1.5	Hex Bolt - UNC (Regular Thread - Inch)
153	12	ANSI/ASME B18.2.1 - 1-8 UNC - 12	Hex Bolt - UNC (Regular Thread - Inch)
155	12	ANSI/ASME B18.2.1 - 1-8 UNC - 6	Hex Bolt - UNC (Regular Thread - Inch)
156	8	ANSI/ASME B18.2.1 - 7/8-9 UNC - 5	Hex Bolt - UNC (Regular Thread - Inch)
157	24	ANSI/ASME B18.2.1 - 3/4-10 UNC - 9.5	Hex Bolt - UNC (Regular Thread - Inch)
158	8	ANSI/ASME B18.2.1 - 3/4-10 UNC - 6	Hex Bolt - UNC (Regular Thread - Inch)
159	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 4	Hex Bolt - UNC (Regular Thread - Inch)
161	24	ANSI/ASME B18.2.1 - 3/4-10 UNC - 2.5	Hex Bolt - UNC (Regular Thread - Inch)
163	8	ANSI/ASME B18.2.1 - 5/8-11 UNC - 5.5	Hex Bolt - UNC (Regular Thread - Inch)
164	12	ANSI/ASME B18.2.1 - 7/8-9 UNC - 2.75	Hex Bolt - UNC (Regular Thread - Inch)
165	12	ANSI/ASME B18.2.1 - 3/4-10 UNC - 3	Hex Bolt - UNC (Regular Thread - Inch)
166	138	ANSI B18.22.1 - 3/4 - narrow - Type A	Plain Washer (Inch)Type A and B
167	154	ANSI B18.22.1 - 3/8 - narrow - Type A	Plain Washer (Inch)Type A and B
168	48	ANSI B18.22.1 - 1 - narrow - Type A	Plain Washer (Inch)Type A and B
169	28	ANSI B18.22.1 - 7/8 - narrow - Type A	Plain Washer (Inch)Type A and B
170	16	ANSI B18.22.1 - 5/8 - narrow - Type A	Plain Washer (Inch)Type A and B
171	76	ANSI B18.2.2 - 3/8 - 16	Hex Nuts (Inch Series) Hex Nut
172	24	ANSI B18.2.2 - 1 - 8	Hex Nuts (Inch Series) Hex Nut
173	48	ANSI B18.2.2 - 3/4 - 10	Hex Nuts (Inch Series) Hex Nut
174	8	ANSI B18.2.2 - 7/8 - 9	Hex Nuts (Inch Series) Hex Nut
176	8	ANSI B18.2.2 - 5/8 - 11	Hex Nuts (Inch Series) Hex Nut
177	2	Gasket-8x150x1_8	Gasket 8" x ANSI 150# x 1/8"thk
178	3	Gasket-6x300x1_8	Gasket 6" x ANSI 300# x 1/8"thk
179	1	Gasket-4x300x1_8	Gasket 4" x ANSI 300# x 1/8"thk

FEED VIEW

SCALE: 1/18

NOTE:

ALL HARDWARE TO BE 316 SS

2. TOTAL QTY = 4 SKIDS

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
2	UPDATED FEED / FLUSH HEADERS, RELOCATED PERM BTFLY VALVE.	AWS	08/03/11	JS	JS
1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

REVISION HISTORY

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DRAWN AWS	5/19/2011	SUBMITTAL NO.
ENGR JS	10/25/2011	SPECS. REF. NO.
PROJ MGR JS	10/25/2011	PROJECT NUMBER 260
APPROVED JS	10/25/2011	
TOLERANCE BLOCK	*INCH = +/- 1/32 (+/- 0.03)*	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

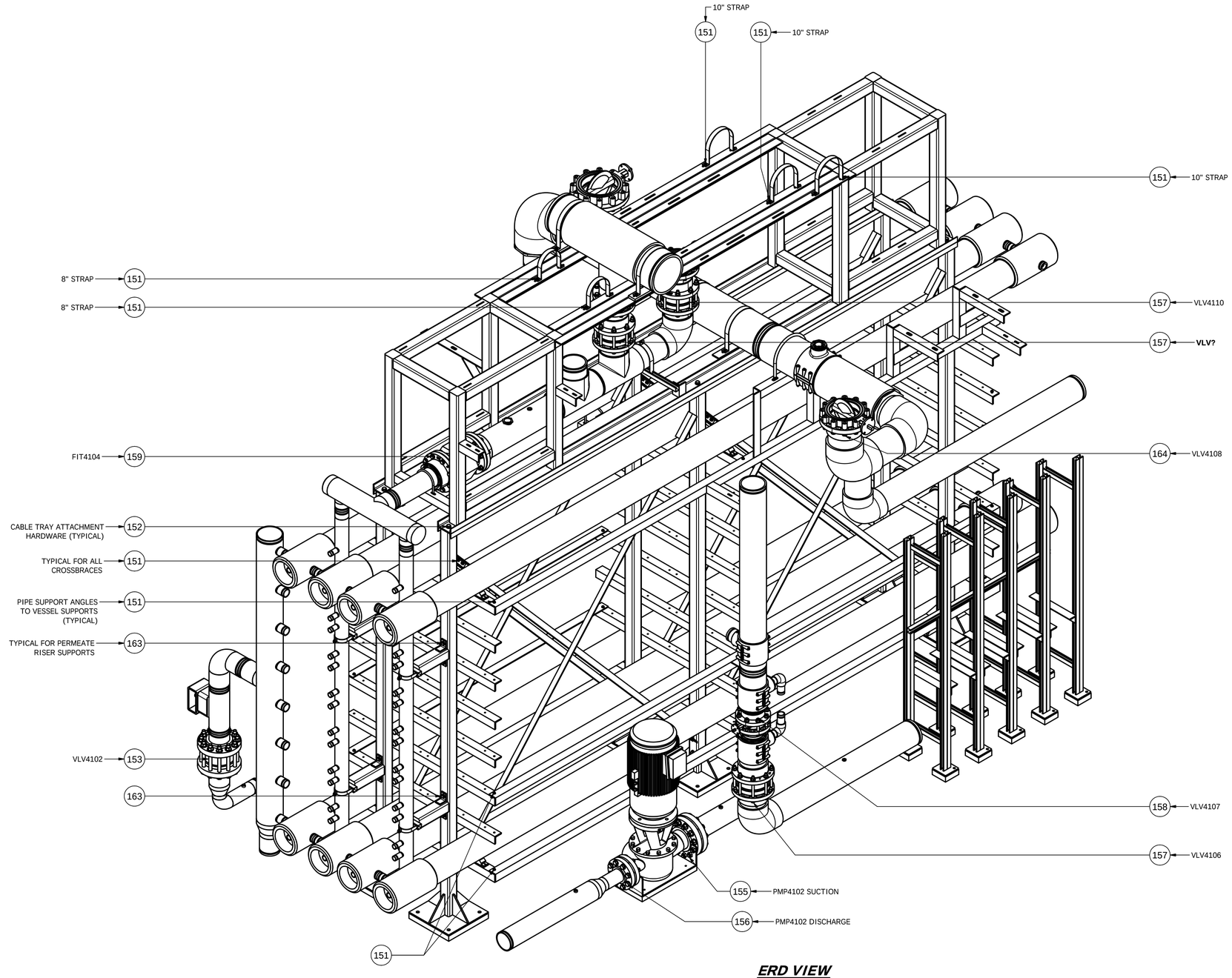
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN HARDWARE LOCATIONS

SIZE D | SCALE A/S | DWG NO 260-M-101 | SHEET 9 OF 10 | REV 5



ERD VIEW
SCALE: 1/18

1ST PASS RO HARDWARE LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
150	4	ANSI/ASME B18.2.1 - 3/8-16 UNC - 2.25	Hex Bolt - UNC (Regular Thread - Inch)
151	74	ANSI/ASME B18.2.1 - 3/8-16 UNC - 1.5	Hex Bolt - UNC (Regular Thread - Inch)
152	6	ANSI/ASME B18.2.1 - 3/4-10 UNC - 1.5	Hex Bolt - UNC (Regular Thread - Inch)
153	12	ANSI/ASME B18.2.1 - 1-8 UNC - 12	Hex Bolt - UNC (Regular Thread - Inch)
155	12	ANSI/ASME B18.2.1 - 1-8 UNC - 6	Hex Bolt - UNC (Regular Thread - Inch)
156	8	ANSI/ASME B18.2.1 - 7/8-9 UNC - 5	Hex Bolt - UNC (Regular Thread - Inch)
157	24	ANSI/ASME B18.2.1 - 3/4-10 UNC - 9.5	Hex Bolt - UNC (Regular Thread - Inch)
158	8	ANSI/ASME B18.2.1 - 3/4-10 UNC - 6	Hex Bolt - UNC (Regular Thread - Inch)
159	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 4	Hex Bolt - UNC (Regular Thread - Inch)
161	24	ANSI/ASME B18.2.1 - 3/4-10 UNC - 2.5	Hex Bolt - UNC (Regular Thread - Inch)
163	8	ANSI/ASME B18.2.1 - 5/8-11 UNC - 5.5	Hex Bolt - UNC (Regular Thread - Inch)
164	12	ANSI/ASME B18.2.1 - 7/8-9 UNC - 2.75	Hex Bolt - UNC (Regular Thread - Inch)
165	12	ANSI/ASME B18.2.1 - 3/4-10 UNC - 3	Hex Bolt - UNC (Regular Thread - Inch)
166	138	ANSI B18.22.1 - 3/4 - narrow - Type A	Plain Washer (Inch)Type A and B
167	154	ANSI B18.22.1 - 3/8 - narrow - Type A	Plain Washer (Inch)Type A and B
168	48	ANSI B18.22.1 - 1 - narrow - Type A	Plain Washer (Inch)Type A and B
169	28	ANSI B18.22.1 - 7/8 - narrow - Type A	Plain Washer (Inch)Type A and B
170	16	ANSI B18.22.1 - 5/8 - narrow - Type A	Plain Washer (Inch)Type A and B
171	76	ANSI B18.2.2 - 3/8 - 16	Hex Nuts (Inch Series) Hex Nut
172	24	ANSI B18.2.2 - 1 - 8	Hex Nuts (Inch Series) Hex Nut
173	48	ANSI B18.2.2 - 3/4 - 10	Hex Nuts (Inch Series) Hex Nut
174	8	ANSI B18.2.2 - 7/8 - 9	Hex Nuts (Inch Series) Hex Nut
176	8	ANSI B18.2.2 - 5/8 - 11	Hex Nuts (Inch Series) Hex Nut
177	2	Gasket-8x150x1_8	Gasket 8" x ANSI 150# x 1/8"thk
178	3	Gasket-6x300x1_8	Gasket 6" x ANSI 300# x 1/8"thk
179	1	Gasket-4x300x1_8	Gasket 4" x ANSI 300# x 1/8"thk

REVISION HISTORY

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED OAL OF HP FEED PUMP, UPDATED CABLE TRAY HEIGHT	AWS	02/08/12	AWS	JS
3	UPDATED PADDLEWHEELS, HARDWARE, PIPE STRAPS	AWS	11/14/11	AWS	JS
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1	FOR FABRICATION	AWS	06/30/11	JS	JS
A	FOR APPROVAL	AWS	05/19/11	JS	JS

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DRAWN	AWS	5/19/2011	SUBMITTAL NO.
ENGR	JS	10/25/2011	SPECS. REF. NO.
PROJ MGR	JS	10/25/2011	PROJECT NUMBER 260
APPROVED	JS	10/25/2011	
TOLERANCE BLOCK		*INCH = +/- 1/32 (+/- 0.03)*	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO TRAIN HARDWARE LOCATIONS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-101	10 OF 10	5

2ND PASS RO PARTS LIST

ITEM	QTY	DESCRIPTION	DRAWING#	SPOOL#
1		+++EQUIPMENT+++		
2	1	2ND PASS FRAME ASSEMBLY	260-S-102	
3	16	CODELINE 80A3, W/7 ELEMENTS, 300 PSI		
4	2	2ND PASS FEED PUMP (GRUNDFOS CR, CRN 64-5-2)		
5	2	INSTRUMENT CONTROL PANEL ASSEMBLY	260-S-104	
6				
10		+++PIPING SPOOLS+++		
11	2	4" 2ND PASS TRAIN 1 & 2 FEED RISER	260-P-102	260-2FW-SS-05
12	2	6" 2ND PASS TRAIN 1 & 2 FEED PUMP DISCHARGE MANIFOLD	260-P-102	260-2FW-SS-01
13	2	4" 2ND PASS TRAIN 1 & 2 FEED PUMP DISCHARGE MANIFOLD	260-P-102	260-2FW-SS-02
14	1	4" 2ND PASS TRAIN 1 FEED PUMP DISCHARGE MANIFOLD	260-P-102	260-2FW-SS-03
15	2	3" 2ND STAGE TRAIN 1 & 2 FEED RISERS	260-P-102	260-2FW-SS-07
16	2	2ND PASS 1ST STAGE 6" PVC PUMP SUCTION HEADER	260-P-103	260-2FW-PV-04
17	1	6" 2ND PASS, TRAIN 1, 1ST STAGE PVC FEED HEADER	260-P-103	260-2FW-PV-03
18	1	6" 2ND PASS, TRAIN 2, 1ST STAGE PVC FEED HEADER	260-P-103	260-2FW-PV-01
19	2	4" 2ND PASS TRAIN 1 & 2 FEED MANIFOLD	260-P-102	260-2FW-SS-04
20	2	4" 2ND PASS TRAIN 1 & 2 FEED MANIFOLD	260-P-102	260-2FW-SS-06
21	1	4" 2ND PASS TRAIN 2 FEED PUMP DISCHARGE MANIFOLD	260-P-102	260-2FW-SS-08
22	1	3" 2ND STAGE TRAIN 1 & 2 CONCENTRATE RISER	260-P-202	260-2CW-SS-03
23	2	3" 2ND PASS 2ND STAGE TRAIN 1 & 2 CONCENTRATE RISER	260-P-202	260-2CW-SS-01
26	2	1 1/2" 2ND PASS 2ND STAGE TRAIN 1 & 2 CONCENTRATE HEADER	260-P-202	260-2CW-SS-06
27	2	1 1/2" 2ND PASS 2ND STAGE TRAIN 1 & 2 CONCENTRATE HEADER	260-P-202	260-2CW-SS-07
28	2	3" 2ND PASS TRAIN 1 & 2 INTERSTAGE REMOVABLE SPOOL PIECE	260-P-102	260-2INT-SS-01
29	2	3" 2ND PASS 1ST STAGE TRAIN 1 & 2 PERMEATE RISER	260-P-302	260-2PW-SS-01
30	2	3" 2ND PASS 2ND STAGE TRAIN 1 & 2 PERMEATE RISER	260-P-302	260-2PW-SS-02
31	16	1 1/4" PVC SCH80 J-BEND ASSEMBLY	260-P-402	260-2JW-PV-01
32	1	3" 2ND PASS, 2ND STAGE TRAIN 2 PVC PERMEATE HEADER	260-P-303	260-2PW-PV-07
33	1	6" 2ND PASS TRAIN 1 & 2 PVC TOTAL PERMEATE HEADER	260-P-303	260-2TPW-PV-01
34	1	3" 2ND PASS, 2ND STAGE TRAIN 1 PVC PERMEATE HEADER	260-P-303	260-2PW-PV-04
35	2	3" 2ND PASS, 2ND STAGE TRAIN 1 & 2 PVC PERMEATE HEADER	260-P-303	260-2PW-PV-05
36	1	4" 2ND PASS, TRAIN 1, 1ST STAGE PVC PERMEATE HEADER	260-P-303	260-2PW-PV-01
37	2	4" 2ND PASS, 1ST STAGE PVC PERMEATE HEADER	260-P-303	260-2PW-PV-02
38	1	4" 2ND PASS, TRAIN 2, 1ST STAGE PVC PERMEATE HEADER	260-P-303	260-2PW-PV-03
39	2	3" 2ND PASS, 2ND STAGE TRAIN 1 & 2 PVC PERMEATE HEADER	260-P-303	260-2PW-PV-06
40	70.272 in	ASTM D 1785 PVC Sch80 Pipe, 6" w/cut groove end	260-P-103	260-2FW-PV-02
41	69.820 in	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove both ends	260-P-203	260-2CW-PV-05
42	1	1 1/2" 2ND PASS 2ND STAGE TRAIN 1 & 2 CONCENTRATE HEADER	260-P-202	260-2CW-SS-04
43	1	2" 2ND STAGE PVC CONCENTRATE HEADER	260-P-203	260-2CW-PV-02
44	42.646 in	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove both ends	260-P-203	260-2CW-PV-04
45	1	2" 2ND STAGE PVC CONCENTRATE HEADER	260-P-203	260-2CW-PV-03
46	1	2" 2ND STAGE PVC CONCENTRATE HEADER	260-P-203	260-2CW-PV-06
47	60.510 in	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove both ends	260-P-203	260-2CW-PV-07
48	2	1 1/2" 2ND PASS 2ND STAGE TRAIN 1 & 2 CONCENTRATE HEADER	260-P-203	260-2CW-PV-01
49	1	1 1/2" 2ND PASS 2ND STAGE TRAIN 1 & 2 CONCENTRATE HEADER	260-P-202	260-2CW-SS-05
50	1	3" 2ND STAGE TRAIN 1 & 2 CONCENTRATE RISER	260-P-202	260-2CW-SS-02
60				
70		+++VALVES & INSTRUMENTS+++		
71	3	BRAY S43-4, HP BFV, ANSI 300#, 4", LUGGED		
72	2	BRAY S42-4, HP BFV, ANSI 300#, 4", WAFER		
73	7	Bray Gear Operator Series 04-0300 w/ 8"Wheel		

2ND PASS RO PARTS LIST

ITEM	QTY	DESCRIPTION	DRAWING#	SPOOL#
74	2	Bray BFV RSDI ANSI 150 6" Lugged S31		
75	14	FLOW-TEK 3 PIECE, THRD'D FULL PORT DUPLEX BV-1/2"		
76	13	BAV TYPE 375, 1/2", SCH80 PVC.		
77	2	Bray Gear Operator Series 04-0200 w/ 8"Wheel		
78	2	CHAINWHEEL ASSEMBLY		
79	2	RITEPRO 30xtz CLASS 300 WAFER TYPE SWING CHECK VALVE, 4"		
80	2	RITEPRO SERIES 300# WAFER FLAPPER STYLE CHECK VALVE, 1 1/2"		
81	2	FLOWTEK VPB V-PORT F30 BAV, 1-1/2" ANSI 300#, 316 SS BODY		
82	2	GEAR OPERATOR 30:1 RATIO, 8000-LB.IN. W/EXTENSION		
83	2	CHAINWHEEL ASSEMBLY		
84	2	GEAR OPERATOR MODEL FTG22 SERIES		
85	2	Wheel w/ endless chain		
86	2	IPEX PVC AIR RELEASE VALVE, 2"		
87	2	HAYWARD PVC WAFER CHECK VALVE W/SPACER, #WC1300ES, 3"		
88	4	Bray BFV RSDI ANSI 150 3" Lugged S31		
89	4	MOUNTING KIT, 2 1/2" TO 4" BFV		
90	4	Burkert 8020-INSERTION flow sensor for continuous flow measurement		
91				
92		+++COUPLINGS & CAPS+++		
93	14	Victaulic Coupling, 3"		
94	2	Victaulic Coupling, 6"		
95	8	Victaulic Coupling, 2"		
96	64	Victaulic Coupling, 2 1/2"		
97	32	Victaulic Coupling, 1 1/4"		
98	6	Victaulic Coupling, 4"		
99	4	Victaulic Coupling, 1 1/2"		
100	2	SS Victaulic Cap, 3"		
101	2	SS Victaulic Cap, 4"		
102	32	Victaulic Cap, 2 1/2"		
103	2	Hex Head Plug		
104				
105		+++PIPE SUPPORTS & HARDWARE		
110	2	316L SS PIPE CLAMP FOR 6" PIPE ASSEMBLY		
111	1	8" SS PIPE STRAP		
113	1	14" SS PIPE STRAP		
114	1	12" SS PIPE STRAP		
115	1	18" SS PIPE STRAP		
116	4	316 SS EXTENDED LENGTH U-BOLT, 3/8"-16, 2" PIPE		
117	2	316 SS EXTENDED LENGTH U-BOLT, 3/8"-16, 1 1/2" PIPE X 2.5"L		
118	12	316 SS EXTENDED LENGTH U-BOLT, 3/8"-16, 3" PIPE		
119	1	8" 2ND PASS SUCKBACK HEADER SHIMM (0.688")		
120	1	14" 2ND PASS CONCENTRATE HEADER SHIMM (1.53")		
121	1	12" 2ND PASS PERMEATE HEADER SHIMM (0.689")		
122	7	Male Adapter 1/2"Mnpt x 1/2"TubeOD		
123				
124		+++GENERAL PIPE FITTINGS+++		
130	12	Close Nipple, 1/2"		
131	4	Long Nipple, 1/2" x 50mm		
132	8	SS 1/2" TUBE x 1/2" MNPT MALE CONNECTOR		
133	2	PVC SCH80 ELBOW, 1/2", FXFX90		
134				

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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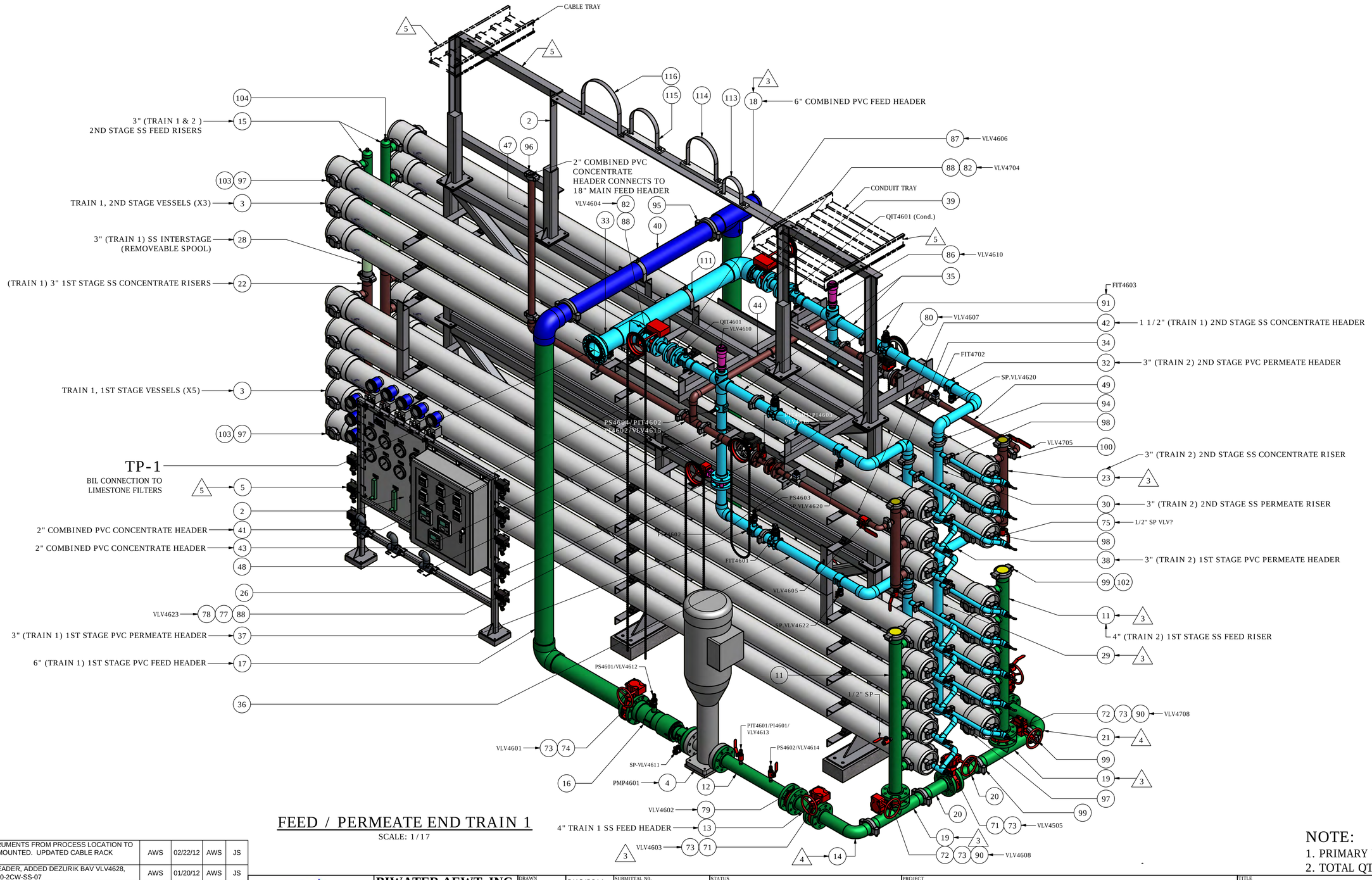
DRAWN	AWS	6/19/2011	SUBMITTAL N0.
ENGR	JS		SPECS. REF. NO.
PROJ MGR	JS		PROJECT NUMBER 260
APPROVED	JS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO TRAIN
BOM

SIZE	SCALE	DWG NO	SHEET	REV
D	NTS	260-M-102	1 OF 11	5



FEED / PERMEATE END TRAIN 1

SCALE: 1/17

NOTE:
1. PRIMARY UNITS ARE IN INCHES
2. TOTAL QTY =1

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

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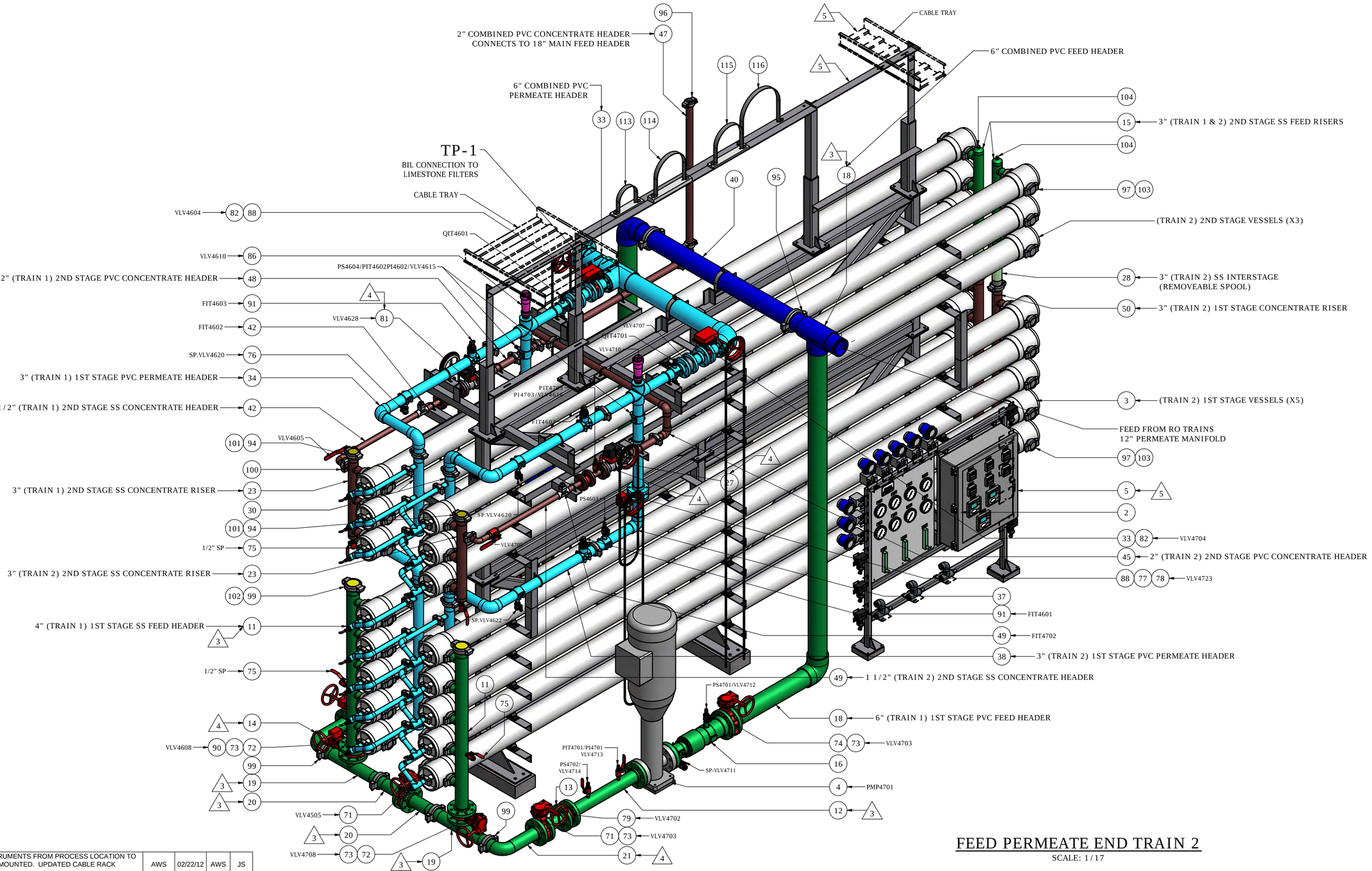
DRAWN	AWS	6/19/2011	SUBMITTAL NO.
ENGR	JS		SPECS. REF. NO.
PROJ MGR	JS		PROJECT NUMBER 260
APPROVED	JS		
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: 2ND PASS RO TRAIN ISOMETRIC ASSEMBLY
SIZE: D | SCALE: A/S | DWG NO: 260-M-102 | SHEET 2 OF 11 | REV: 5



FEED PERMEATE END TRAIN 2

SCALE: 1 / 17

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

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DRAWN AWS	6/19/2011	SUBMITTAL NO.	
ENGR JS		SPECS. REF. NO.	
PROJ MGR JS		PROJECT NUMBER 260	
APPROVED JS			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

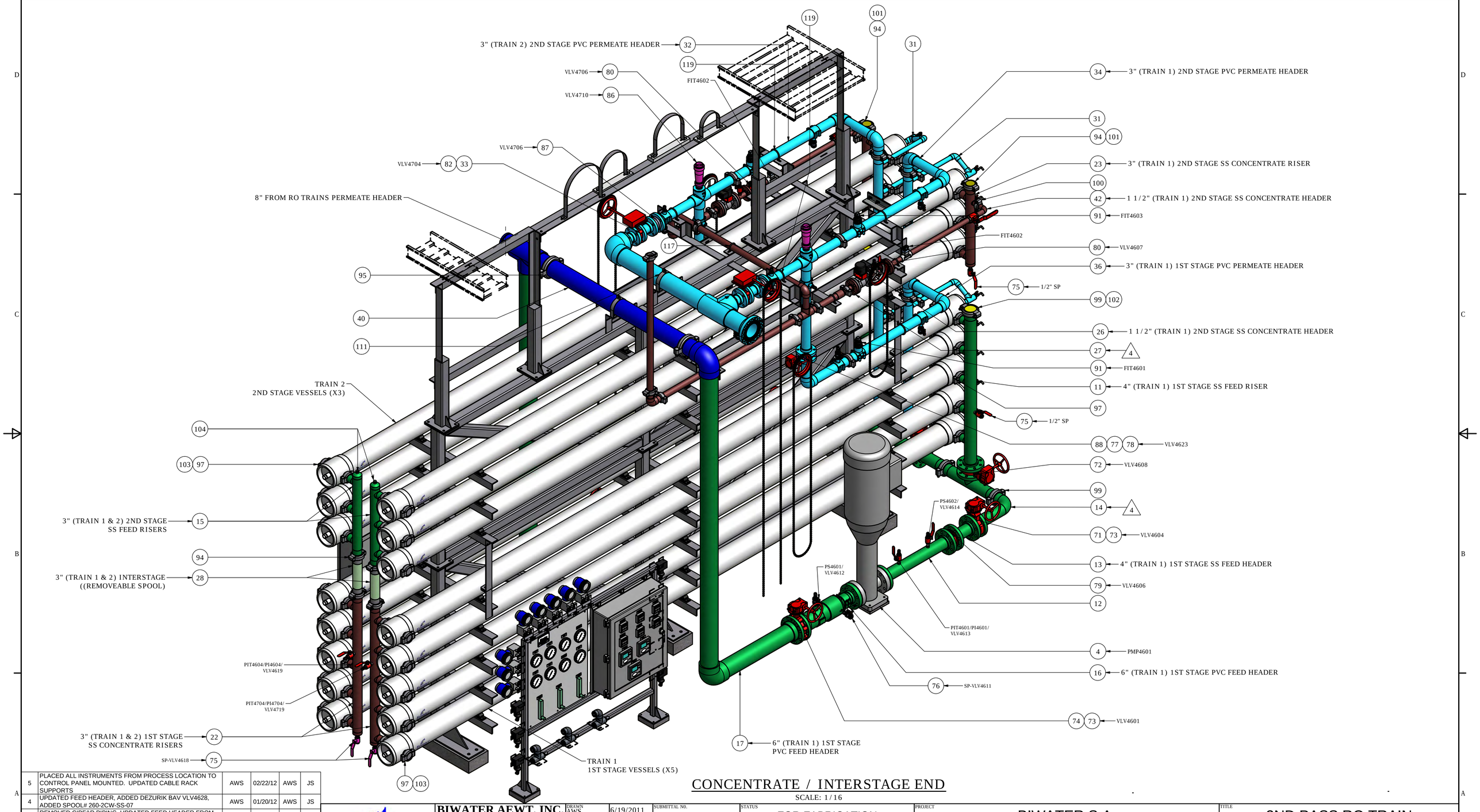
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO TRAIN
ISOMETRIC ASSEMBLY

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-102	3 OF 11	5



CONCENTRATE / INTERSTAGE END

SCALE: 1 / 16

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

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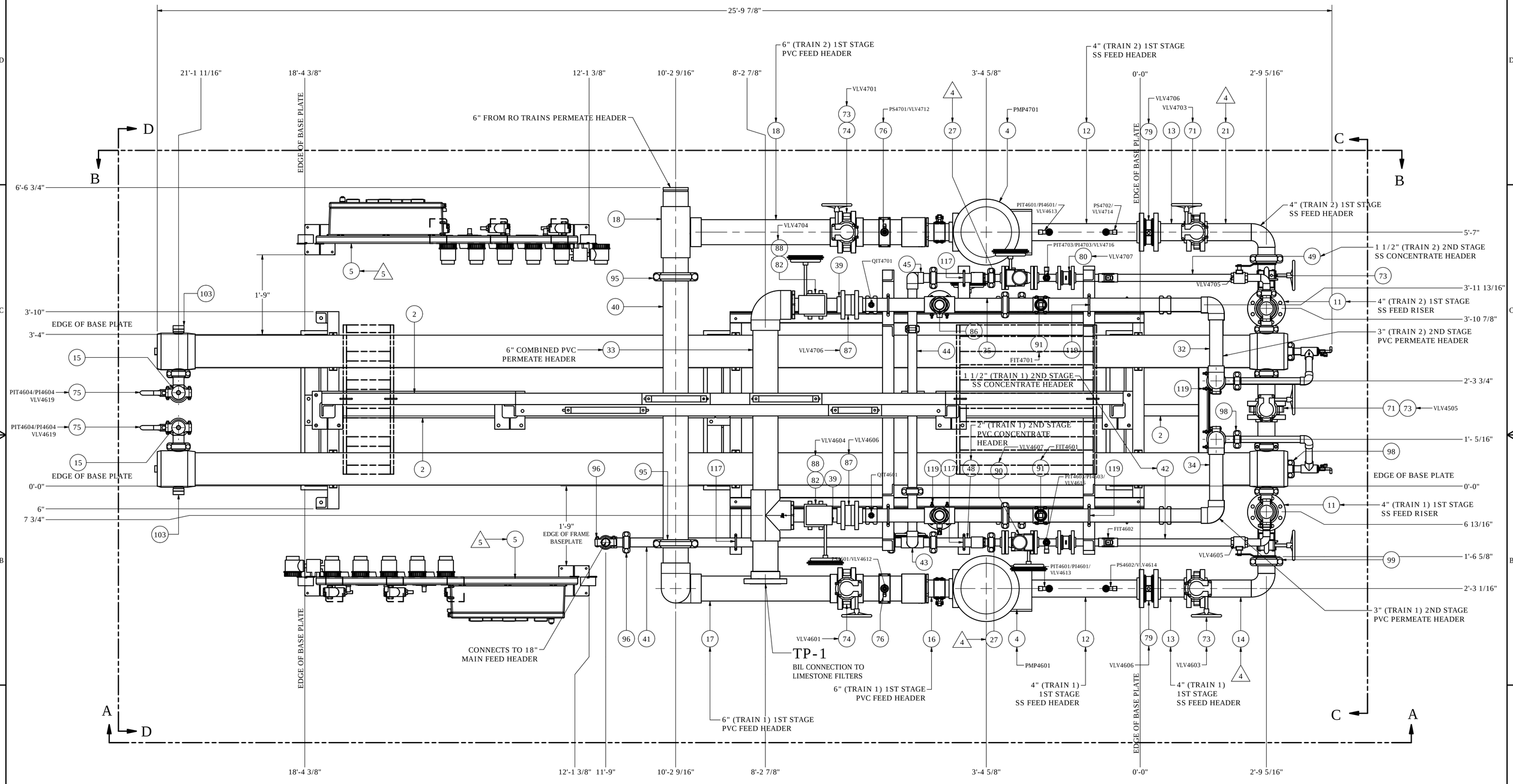
DRAWN	AWS	6/19/2011	SUBMITTAL NO.
ENGR	JS		SPECS. REF. NO.
PROJ MGR	JS		PROJECT NUMBER 260
APPROVED	JS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO TRAIN PLAN VIEW

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-102	4 OF 11	5



PLAN
SCALE: 1/12

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

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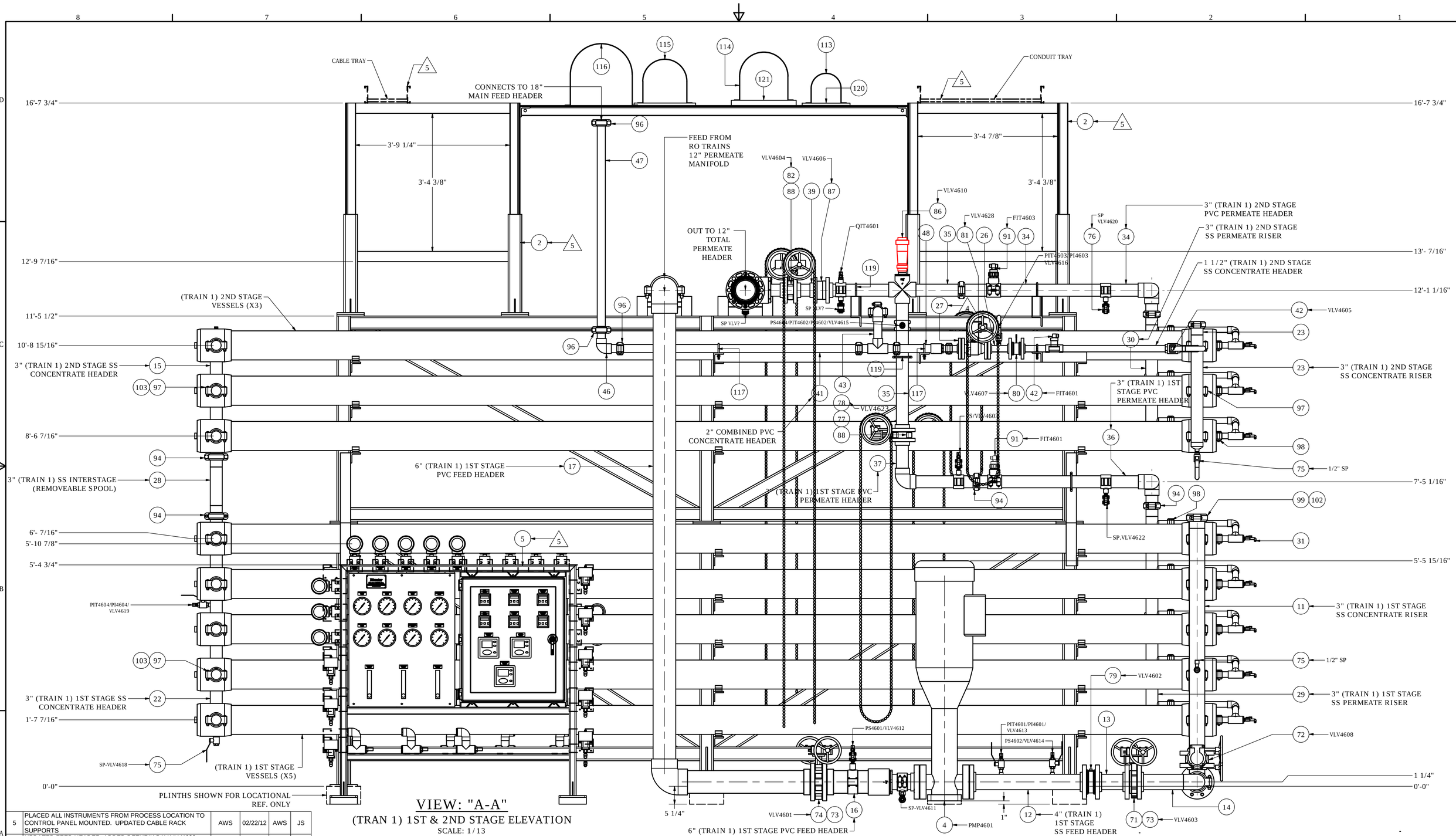
DRAWN	AWS	6/19/2011	SUBMITTAL NO.
ENGR	JS		SPECS. REF. NO.
PROJ MGR	JS		PROJECT NUMBER 260
APPROVED	JS		
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: 2ND PASS RO TRAIN PLAN VIEW
SIZE: D | SCALE: A/S | DWG NO: 260-M-102 | SHEET 5 OF 11 | REV: 5



VIEW: "A-A"

(TRAN 1) 1ST & 2ND STAGE ELEVATION

SCALE: 1/13

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

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DRAWN AWS	6/19/2011	SUBMITTAL NO.	
ENGR JS		SPECS. REF. NO.	
PROJ MGR JS		PROJECT NUMBER 260	
APPROVED JS			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

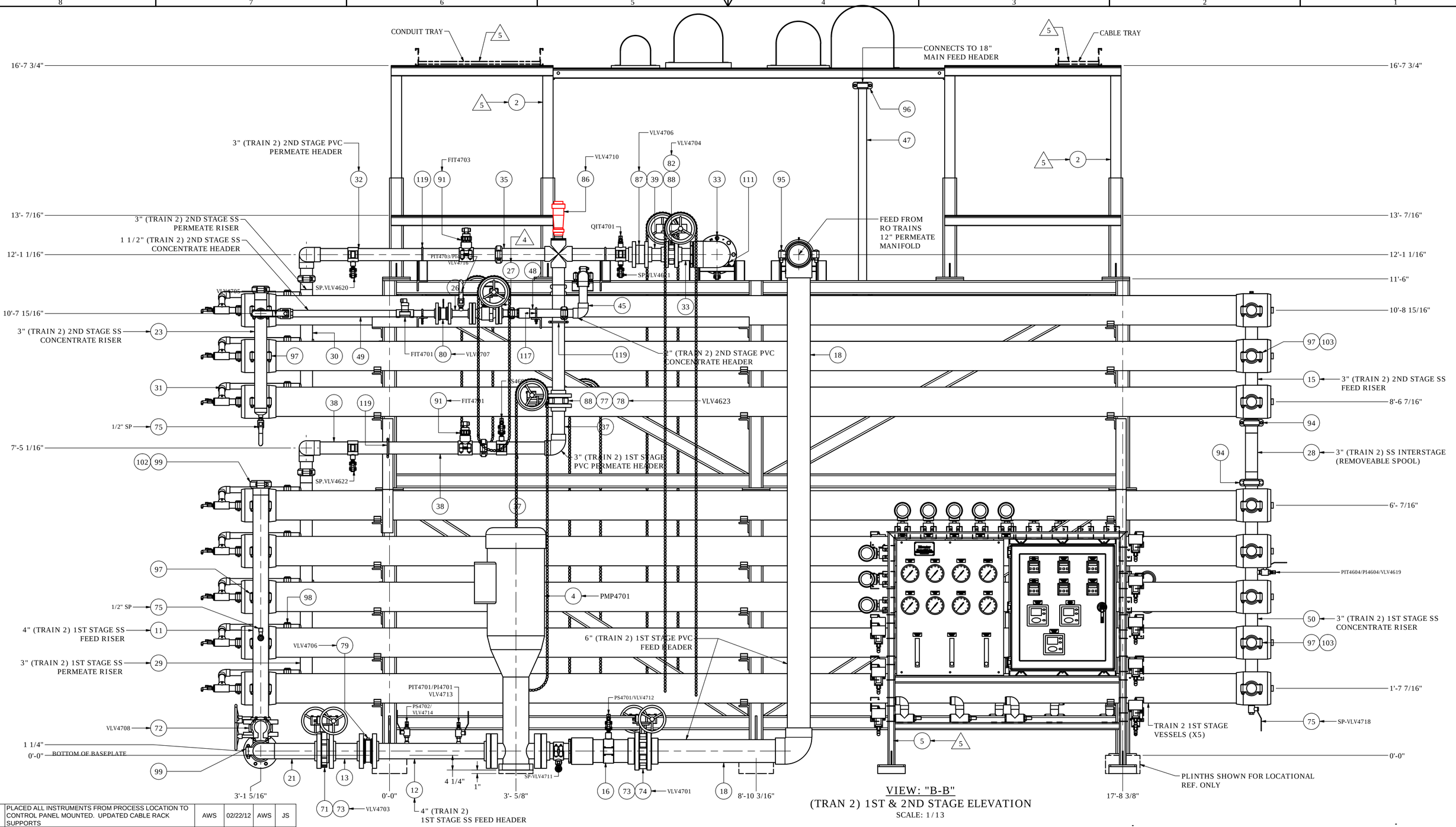
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO TRAIN ELEVATION VIEWS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-102	6 OF 11	5



VIEW: "B-B"

(TRAN 2) 1ST & 2ND STAGE ELEVATION

SCALE: 1/13

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

REVISION HISTORY

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DRAWN AWS	6/19/2011	SUBMITTAL NO.	
ENGR JS		SPECS. REF. NO.	
PROJ MGR JS		PROJECT NUMBER 260	
APPROVED JS			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

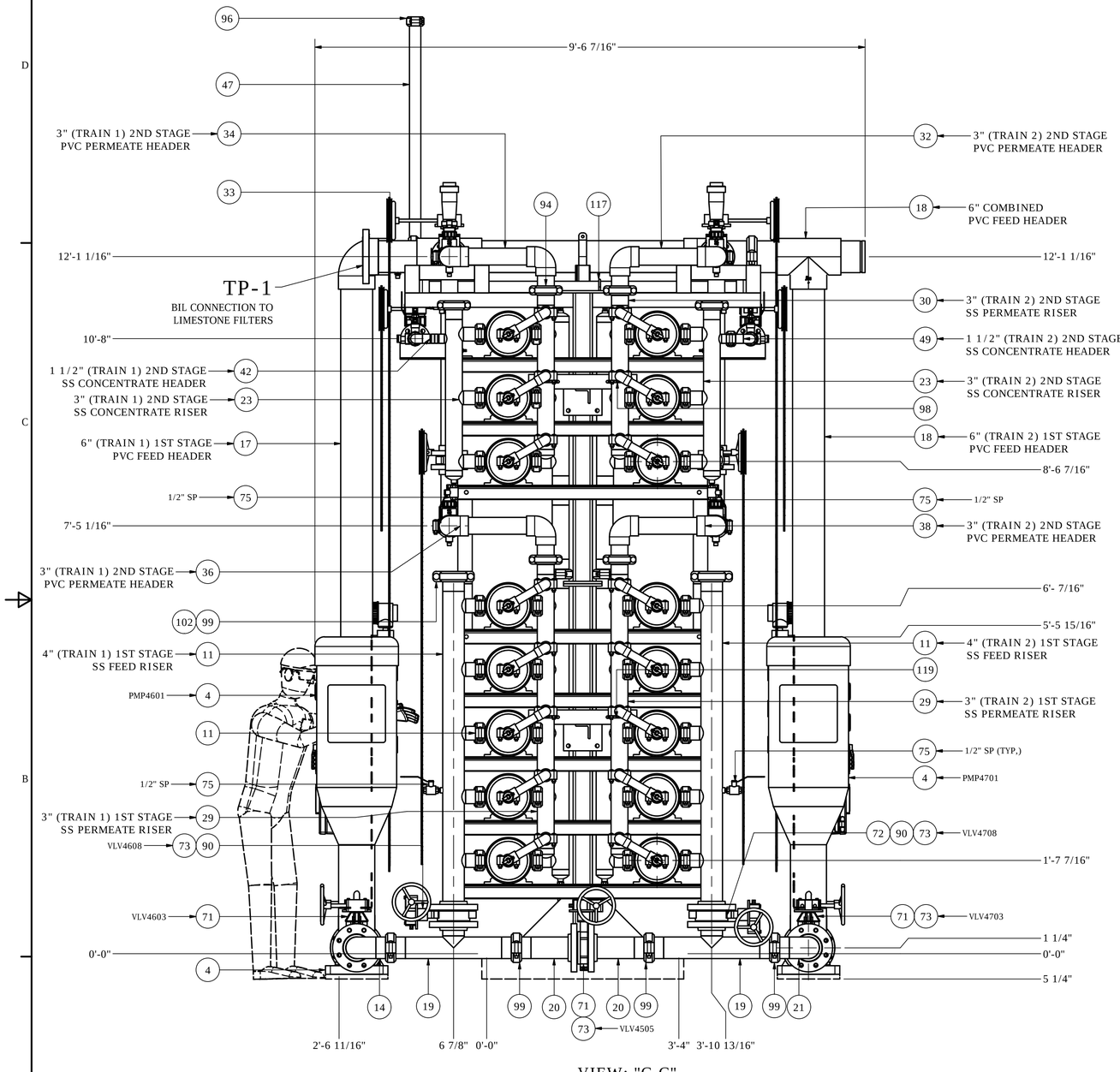
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

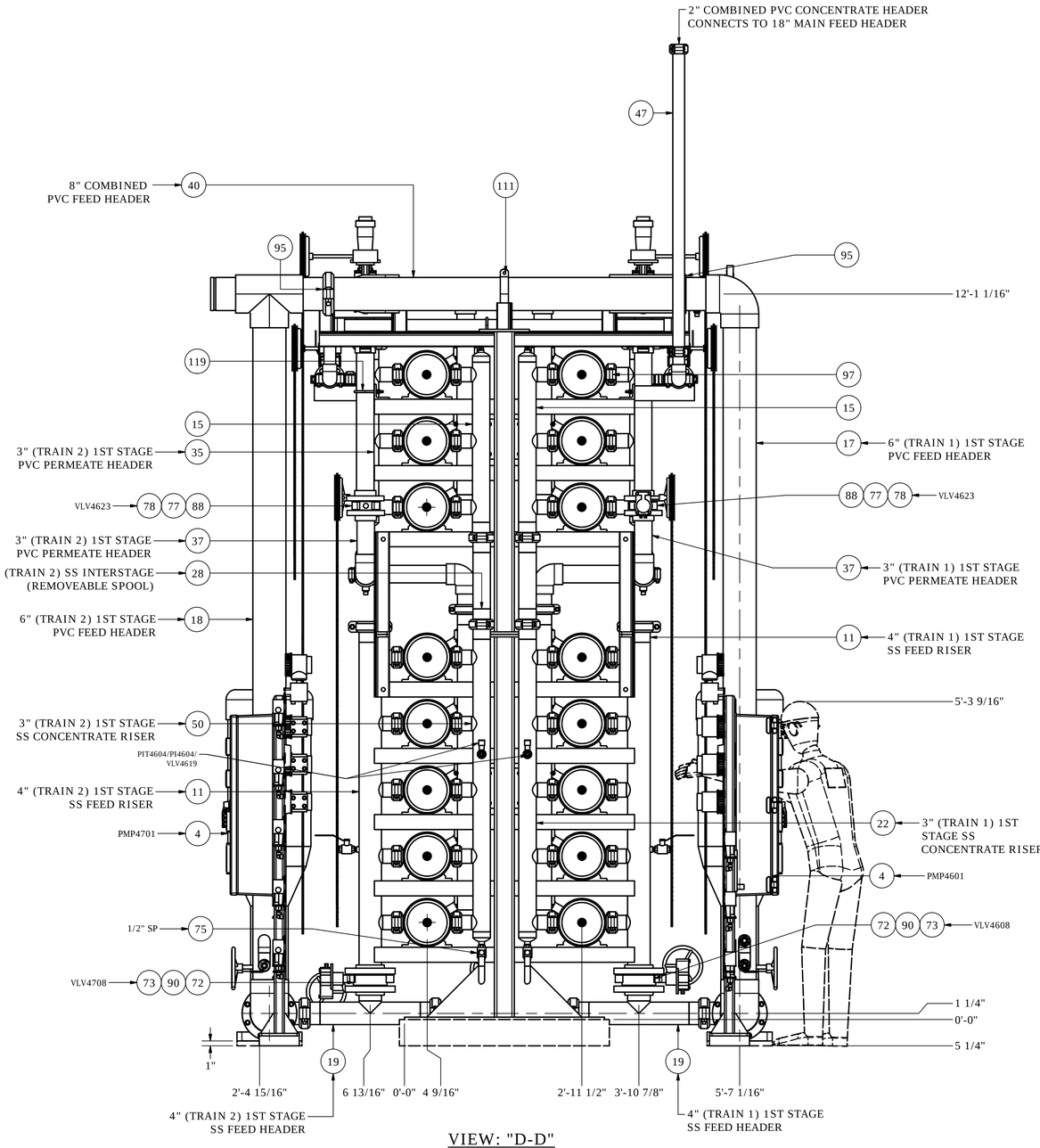
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO TRAIN ELEVATION VIEW

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-102	7 OF 11	5



VIEW: "C-C"
(TRAIN 1 & 2) 1ST & 2ND STAGE FEED / PERMEATE END
CABLE TRAYS REMOVED FOR CLARITY
SCALE: 1 / 13.5



VIEW: "D-D"
(TRAIN 1 & 2) 1ST & 2ND INTERSTAGE END
CABLE TRAYS REMOVED FOR CLARITY
SCALE: 1 / 13.5

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	6/19/2011	SUBMITTAL NO.
ENGR	JS		SPECS. REF. NO.
PROJ MGR	JS		PROJECT NUMBER 260
APPROVED	JS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

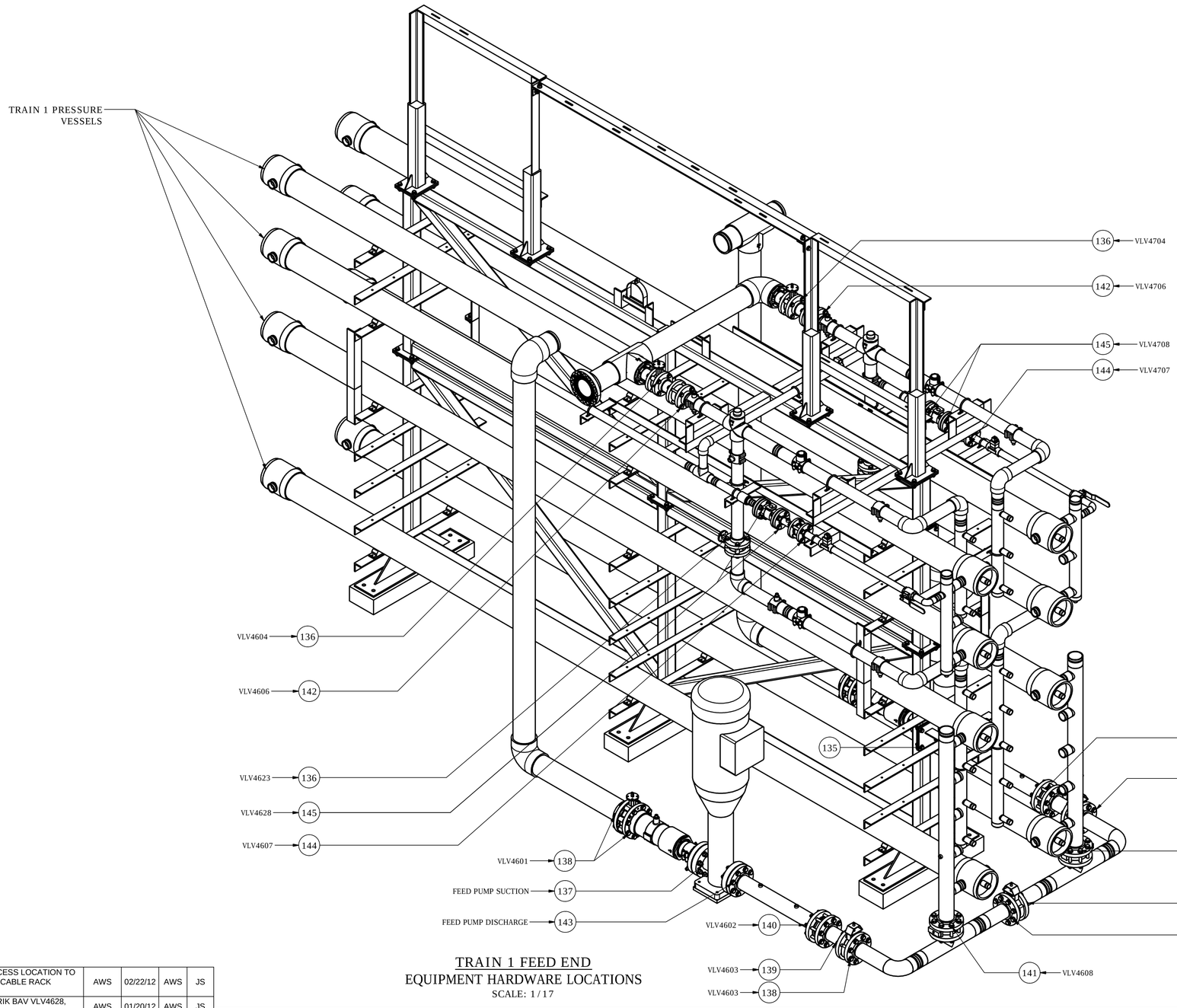
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO TRAIN END VIEWS

SIZE D | SCALE A/S | DWG NO 260-M-102 | SHEET 8 OF 11 | REV 5

2ND PASS RO HARDWARE LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
135	40	ANSI/ASME B18.2.1 - 5/8-11 UNC - 2.25	Hex Bolt - UNC (Regular Thread - Inch)
136	46	ANSI/ASME B18.2.1 - 5/8-11 UNC - 2	Hex Bolt - UNC (Regular Thread - Inch)
137	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 5	Hex Bolt - UNC (Regular Thread - Inch)
138	56	ANSI/ASME B18.2.1 - 3/4-10 UNC - 2.25	Hex Bolt - UNC (Regular Thread - Inch)
139	24	ANSI/ASME B18.2.1 - 3/4-10 UNC - 2.5	Hex Bolt - UNC (Regular Thread - Inch)
140	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 6.5	Hex Bolt - UNC (Regular Thread - Inch)
141	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 6	Hex Bolt - UNC (Regular Thread - Inch)
142	8	ANSI/ASME B18.2.1 - 5/8-11 UNC - 5.5	Hex Bolt - UNC (Regular Thread - Inch)
143	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 4.5	Hex Bolt - UNC (Regular Thread - Inch)
144	8	ANSI/ASME B18.2.1 - 3/4-10 UNC - 5.5	Hex Bolt - UNC (Regular Thread - Inch)
145	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 3	Hex Bolt - UNC (Regular Thread - Inch)
146	4	ANSI/ASME B18.2.1 - 3/8-16 UNC - 1.5	Hex Bolt - UNC (Regular Thread - Inch)
147	4	ANSI B18.2.2 - 3/8 - 16	Hex Nuts (Inch Series) Heavy Hex Nut
148	54	ANSI B18.2.2 - 5/8 - 11	Hex Nuts (Inch Series) Heavy Hex Nut
149	88	ANSI B18.2.2 - 3/4 - 10	Hex Nuts (Inch Series) Hex Nut
150	8	ANSI B18.2.2 - 5/8 - 11	Hex Nuts (Inch Series) Hex Nut
151	8	ANSI B18.22.1 - 3/8 - narrow - Type A	Plain Washer (Inch)Type A and B
152	156	ANSI B18.22.1 - 5/8 - narrow - Type A	Plain Washer (Inch)Type A and B
153	256	ANSI B18.22.1 - 3/4 - narrow - Type A	Plain Washer (Inch)Type A and B
154	18	Gasket-4x300x1_8	Gasket 4" x ANSI 300# x 1/8"thk
155	8	Gasket-1.5x300x1_8	Gasket 1 1/2" x ANSI 300# x 1/8"thk



TRAIN 1 FEED END
EQUIPMENT HARDWARE LOCATIONS
SCALE: 1 / 17

NOTE:
1. TRAIN 1 & 2 HARDWARE IS TYPICAL

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
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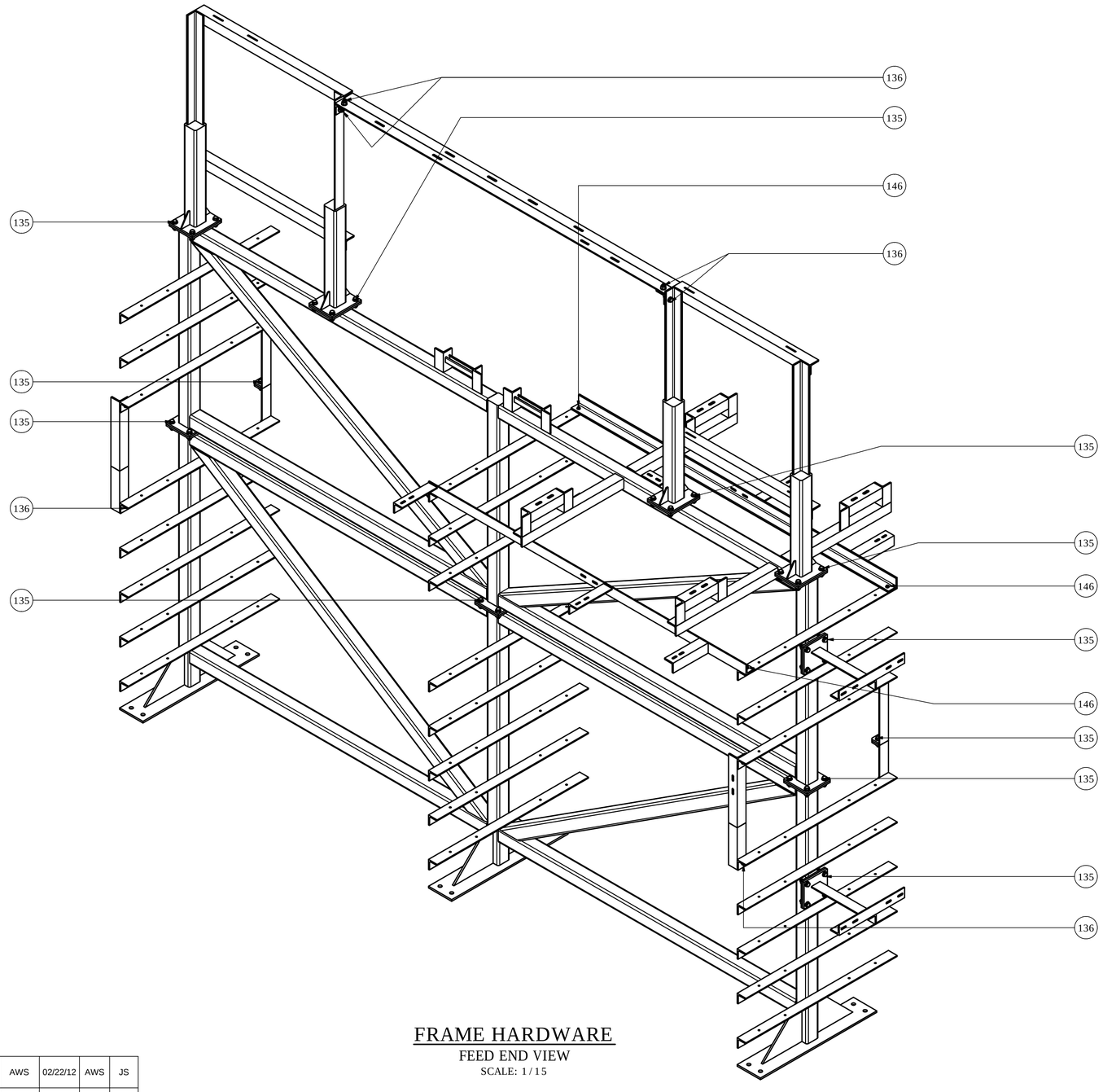
DRAWN AWS	6/19/2011	SUBMITTAL NO.	
ENGR JS		SPECS. REF. NO.	
PROJ MGR JS		PROJECT NUMBER 260	
APPROVED JS			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO TRAIN EQUIPMENT HARDWARE

SIZE D | SCALE A/S | DWG NO 260-M-102 | SHEET 9 OF 11 | REV 5



FRAME HARDWARE

FEED END VIEW

SCALE: 1 / 15

2ND PASS RO HARDWARE LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
135	40	ANSI/ASME B18.2.1 - 5/8-11 UNC - 2.25	Hex Bolt - UNC (Regular Thread - Inch)
136	46	ANSI/ASME B18.2.1 - 5/8-11 UNC - 2	Hex Bolt - UNC (Regular Thread - Inch)
137	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 5	Hex Bolt - UNC (Regular Thread - Inch)
138	56	ANSI/ASME B18.2.1 - 3/4-10 UNC - 2.25	Hex Bolt - UNC (Regular Thread - Inch)
139	24	ANSI/ASME B18.2.1 - 3/4-10 UNC - 2.5	Hex Bolt - UNC (Regular Thread - Inch)
140	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 6.5	Hex Bolt - UNC (Regular Thread - Inch)
141	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 6	Hex Bolt - UNC (Regular Thread - Inch)
142	8	ANSI/ASME B18.2.1 - 5/8-11 UNC - 5.5	Hex Bolt - UNC (Regular Thread - Inch)
143	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 4.5	Hex Bolt - UNC (Regular Thread - Inch)
144	8	ANSI/ASME B18.2.1 - 3/4-10 UNC - 5.5	Hex Bolt - UNC (Regular Thread - Inch)
145	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 3	Hex Bolt - UNC (Regular Thread - Inch)
148	54	ANSI B18.2.2 - 5/8 - 11	Hex Nuts (Inch Series) Heavy Hex Nut
149	88	ANSI B18.2.2 - 3/4 - 10	Hex Nuts (Inch Series) Hex Nut
150	8	ANSI B18.2.2 - 5/8 - 11	Hex Nuts (Inch Series) Hex Nut
152	156	ANSI B18.22.1 - 5/8 - narrow - Type A	Plain Washer (Inch)Type A and B
153	256	ANSI B18.22.1 - 3/4 - narrow - Type A	Plain Washer (Inch)Type A and B
154	18	Gasket-4x300x1_8	Gasket 4" x ANSI 300# x 1/8"thk
155	8	Gasket-1.5x300x1_8	Gasket 1 1/2" x ANSI 300# x 1/8"thk
146	4	ANSI/ASME B18.2.1 - 3/8-16 UNC - 1.5	Hex Bolt - UNC (Regular Thread - Inch)
151	8	ANSI B18.22.1 - 3/8 - narrow - Type A	Plain Washer (Inch)Type A and B
147	4	ANSI B18.2.2 - 3/8 - 16	Hex Nuts (Inch Series) Heavy Hex Nut

REVISION HISTORY

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	PLACED ALL INSTRUMENTS FROM PROCESS LOCATION TO CONTROL PANEL MOUNTED. UPDATED CABLE RACK SUPPORTS	AWS	02/22/12	AWS	JS
4	UPDATED FEED HEADER, ADDED DEZURIK BAV VLV4628, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
3	REMOVED CIPF&R PIPING, UPDATED FEED HEADER FROM 6" TO 4", UPDATED 1ST STAGE PEREATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	ADDED PIPE SUPPORTS & OVERHEAD CABLE & PIPE SUPPORT RACKS	AWS	11/04/11	AWS	JS
1	FOR FABRICATION	AWS	08/03/11	JS	JS

Biwater

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DRAWN	AWS	6/19/2011	SUBMITTAL NO.
ENGR	JS		SPECS. REF. NO.
PROJ MGR	JS		PROJECT NUMBER 260
APPROVED	JS		
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

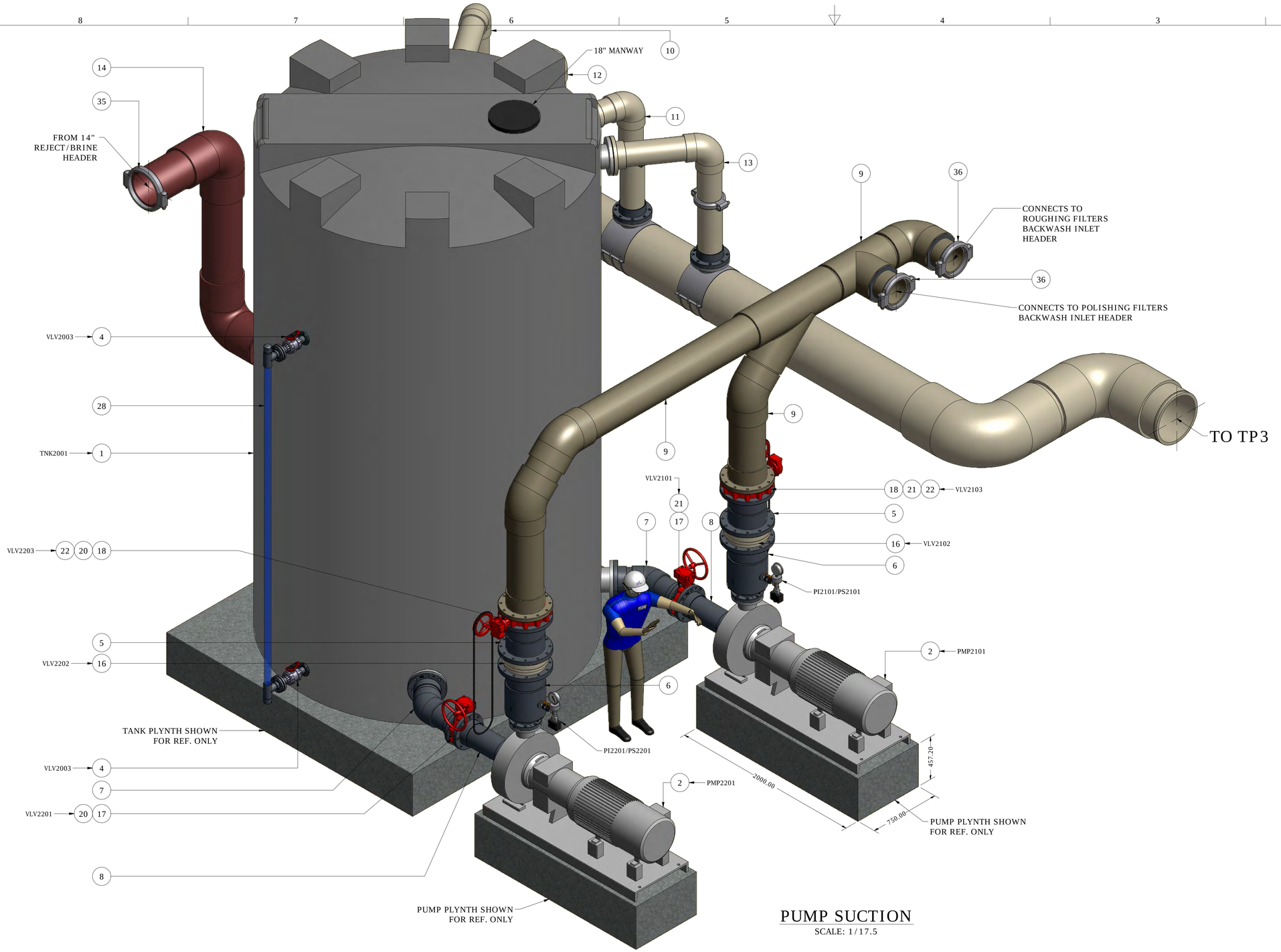
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO TRAIN
FRAME HARDWARE

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-102	10 OF 11	5



PUMP SUCTION

SCALE: 1 / 17.5

BACKWASH SYSTEM PARTS LIST

ITEM	QTY	DESCRIPTION	DRAWING #	SPOOL #
1	1	BACKWASH TANK, 120" DIA. X 201.13" H, 9,500 GAL		
2	2	SUMMIT PUMP MODEL 2196, 6"X8"		
3	1	3" BACKWASH TANK DRAIN	TBD	TBD
4	2	2" SIGHTGLASS PIPING ASSEMBLY	TBD	TBD
5	2	12" BACKWASH PUMP DISCHARGE	TBD	TBD
6	2	12" BACKWASH PUMP DISCHARGE HEADER	TBD	TBD
7	2	8" BACKWASH PUMP SUCTION HEADER	TBD	TBD
8	2	8" BACKWASH PUMP SUCTION HEADER	TBD	TBD
9	1	12" BACKWASH PUMP DISCHARGE HEADER	TBD	TBD
10	1	8" PVC BACKWASH OVERFLOW HEADER	TBD	TBD
11	1	8" PVC BACKWASH OVERFLOW HEADER	TBD	TBD
12	1	8" PVC BACKWASH OVERFLOW HEADER	TBD	TBD
13	1	8" PVC BACKWASH OVERFLOW HEADER	TBD	TBD
14	1	14" BRINE TO BACKWASH TANK HEADER	TBD	TBD
15	1	20" PVC BACKWASH OVERFLOW MANIFOLD	TBD	TBD
16	2	HAYWARD PVC WAFER CHECK VALVE W/SPACER, #WCX102SP, 12"		
17	2	Bray BFV RSDI ANSI 150 8" Lugged S31		
18	2	Bray BFV RSDI ANSI 150 12" Lugged S31		
19	1	Bray BFV RSDI ANSI 150 3" Lugged S31		
20	2	Bray Gear Operator Series 04-0300 w/ 8"Wheel		
21	2	Bray Gear Operator Series 04-0300 w/ 12"Wheel		
22	2	Chainwheel w/ Endless Chain		
23	1	LEVER HANDLE 10"		
24	2	BAV TYPE 375, 1/2", SCH80 PVC.		
25	2	SS DIAPHRAGM SEAL (42MW-01)		
26	2	ASHCROFT TYPE 400, B-SERIES PRESSURE SWITCH		
27	2	Pressure Gauge, 4"Face All Stainless Glycerin Filled		
28	1	SURESITE 2" LEVEL INDICATOR		
29	2	Gasket 6" x ANSI 150# x 1/8"thk		
30	2	Gasket 2" x ANSI 150# x 1/8"thk		
31	2	Gasket 8" x ANSI 150# x 1/8"thk		
32	4	JIS B 2302 Long Nipple 1/2 x 50		
33	2	ASME B16.11 Tee Threaded - Class 3000 1/2"		
34	2	JIS B 2302 Close Nipple 1/2		
35	1	Victaulic Coupling, 14"		
36	2	Victaulic Coupling, 10"		
37	4	Victaulic Coupling, 8"		
1009	2	BACKWASH PUMP PLYNTH		

BACKWASH PVC PIPE NOTES:

1. PRIMARY UNITS IS IN INCHES
2. ALL MATERIAL SHALL BE PVC SCH80.
3. ALL GROOVES WHEN REQUIRED SHALL BE OF THE CUT GROOVE TYPE AS PER VICTAULIC PUBLICATION 25-01.

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED PUMP SUCTION HEADER TO 8", UPDATED PUMP DISCHARGE TO 12", ADDED TANK OVERFLOW HEADER	AWS	11/08/11	AWS	JS
1	FOR FABRICATION	AWS	09/07/11	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
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DRAWN	AWS	9/7/2011
ENGR	JS	9/7/2011
PROJ MGR	AWS	9/7/2011
APPROVED	JS	9/7/2011
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)
		METRIC = +/- 1.0 millimeter

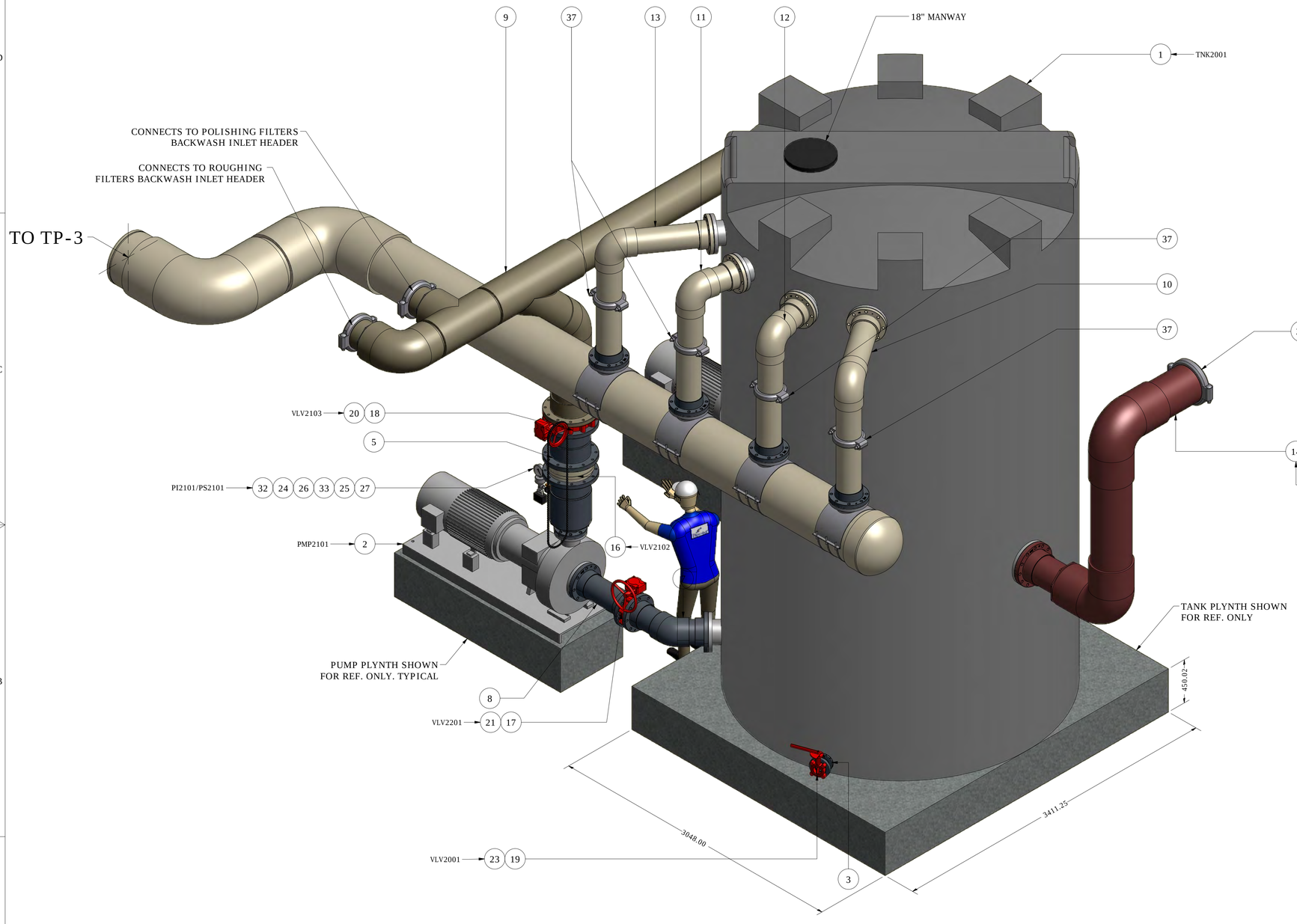
SUBMITTAL NO.
SPECS. REF. NO.
PROJECT NUMBER 260

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: BACKWASH SYSTEM GA ASSEMBLY VIEW

SIZE D | SCALE A/S | DWG NO 260-M-801 | SHEET 1 OF 5 | REV 2



BACKWASH SYSTEM PARTS LIST

ITEM	QTY	DESCRIPTION	DRAWING #	SPOOL #
1	1	BACKWASH TANK, 120" DIA. X 201.13" H, 9,500 GAL		
2	2	SUMMIT PUMP MODEL 2196, 6"X8"		
3	1	3" BACKWASH TANK DRAIN	TBD	TBD
4	2	2" SIGHTGLASS PIPING ASSEMBLY	TBD	TBD
5	2	12" BACKWASH PUMP DISCHARGE	TBD	TBD
6	2	12" BACKWASH PUMP DISCHARGE HEADER	TBD	TBD
7	2	8" BACKWASH PUMP SUCTION HEADER	TBD	TBD
8	2	8" BACKWASH PUMP SUCTION HEADER	TBD	TBD
9	1	12" BACKWASH PUMP DISCHARGE HEADER	TBD	TBD
10	1	8" PVC BACKWASH OVERFLOW HEADER	TBD	TBD
11	1	8" PVC BACKWASH OVERFLOW HEADER	TBD	TBD
12	1	8" PVC BACKWASH OVERFLOW HEADER	TBD	TBD
13	1	8" PVC BACKWASH OVERFLOW HEADER	TBD	TBD
14	1	14" BRINE TO BACKWASH TANK HEADER	TBD	TBD
15	1	20" PVC BACKWASH OVERFLOW MANIFOLD	TBD	TBD
16	2	HAYWARD PVC WAFER CHECK VALVE W/SPACER, #WCX102SP, 12"		
17	2	Bray BFV RSDI ANSI 150 8" Lugged S31		
18	2	Bray BFV RSDI ANSI 150 12" Lugged S31		
19	1	Bray BFV RSDI ANSI 150 3" Lugged S31		
20	2	Bray Gear Operator Series 04-0300 w/ 8"Wheel		
21	2	Bray Gear Operator Series 04-0300 w/ 12"Wheel		
22	2	Chainwheel w/ Endless Chain		
23	1	LEVER HANDLE 10"		
24	2	BAV TYPE 375, 1/2", SCH80 PVC.		
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27	2	Pressure Gauge, 4"Face All Stainless Glycerin Filled		
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35	1	Victaulic Coupling, 14"		
36	2	Victaulic Coupling, 10"		
37	4	Victaulic Coupling, 8"		
1009	2	BACKWASH PUMP PLYNTH		

REAR VIEW

PUMP SUCTION END

SCALE: 1 / 19

BACKWASH PVC PIPE NOTES:

1. PRIMARY UNITS IS IN INCHES
2. ALL MATERIAL SHALL BE PVC SCH80.
3. ALL GROOVES WHEN REQUIRED SHALL BE OF THE CUT GROOVE TYPE AS PER VICTAULIC PUBLICATION 25-01.

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED PUMP SUCTION HEADER TO 8", UPDATED PUMP DISCHARGE TO 12", ADDED TANK OVERFLOW HEADER	AWS	11/08/11	AWS	JS
1	FOR FABRICATION	AWS	09/07/11	AWS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	9/7/2011	SUBMITTAL NO.
ENGR	JS	9/7/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/7/2011	PROJECT NUMBER 260
APPROVED	JS	9/7/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

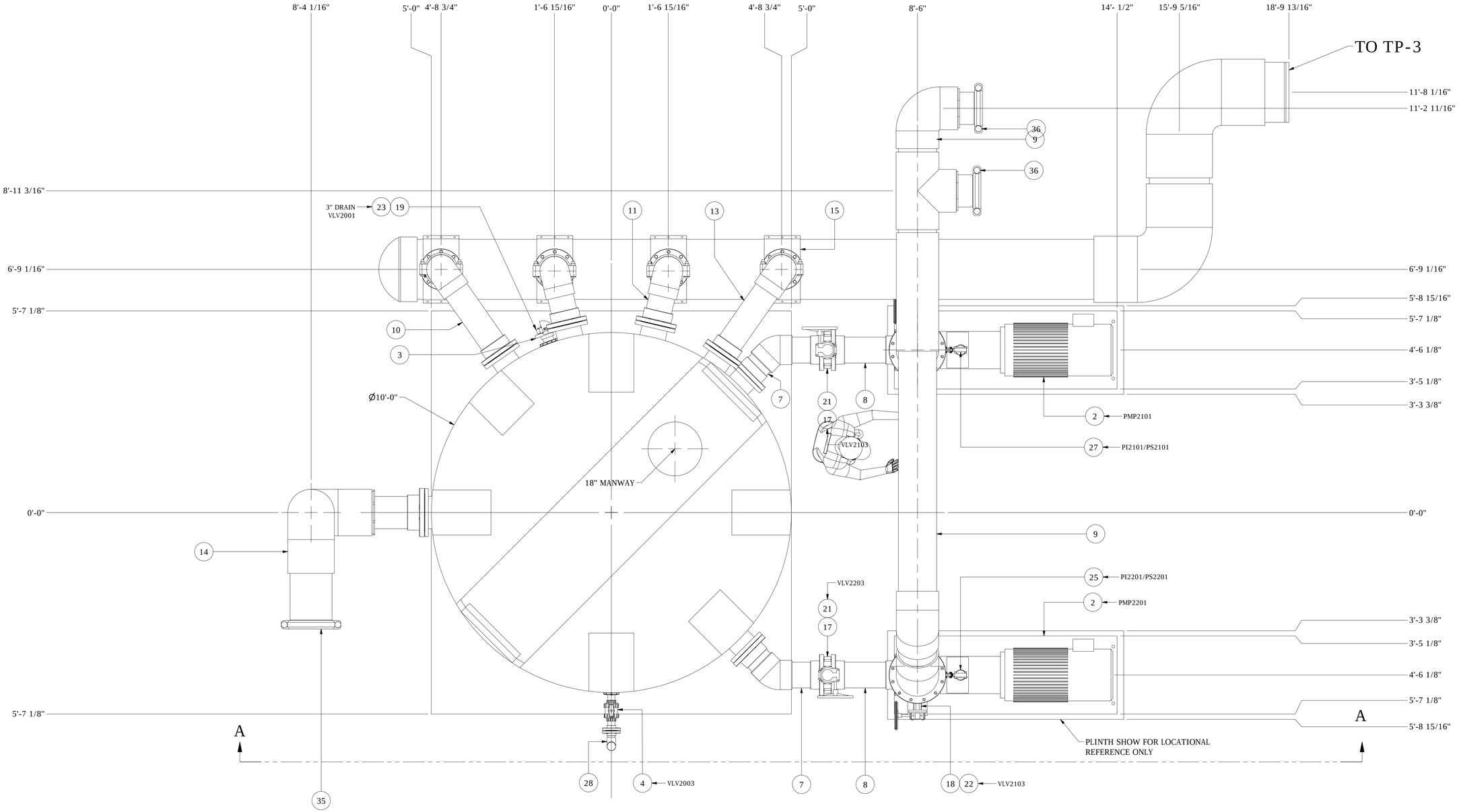
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: BACKWASH SYSTEM GA
FRONT ASSEMBLY VIEW

SIZE D | SCALE A/S | DWG NO 260-M-801 | SHEET 2 OF 5 | REV 2



PLAN

SCALE: 1 / 17

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED PUMP SUCTION HEADER TO 8", UPDATED PUMP DISCHARGE TO 12", ADDED TANK OVERFLOW HEADER	AWS	11/08/11	AWS	JS
1	FOR FABRICATION	AWS	09/07/11	AWS	JS

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DRAWN	AWS	9/7/2011	SUBMITTAL NO.
ENGR	JS	9/7/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/7/2011	PROJECT NUMBER 260
APPROVED	JS	9/7/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

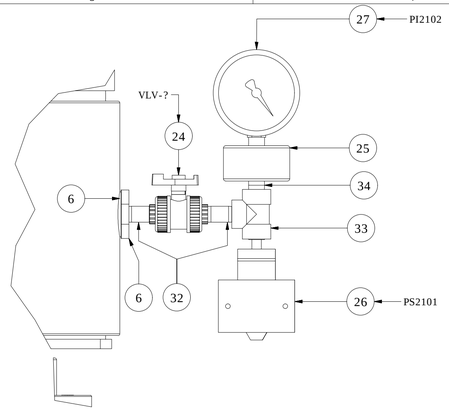
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: BACKWASH SYSTEM GA
PLAN

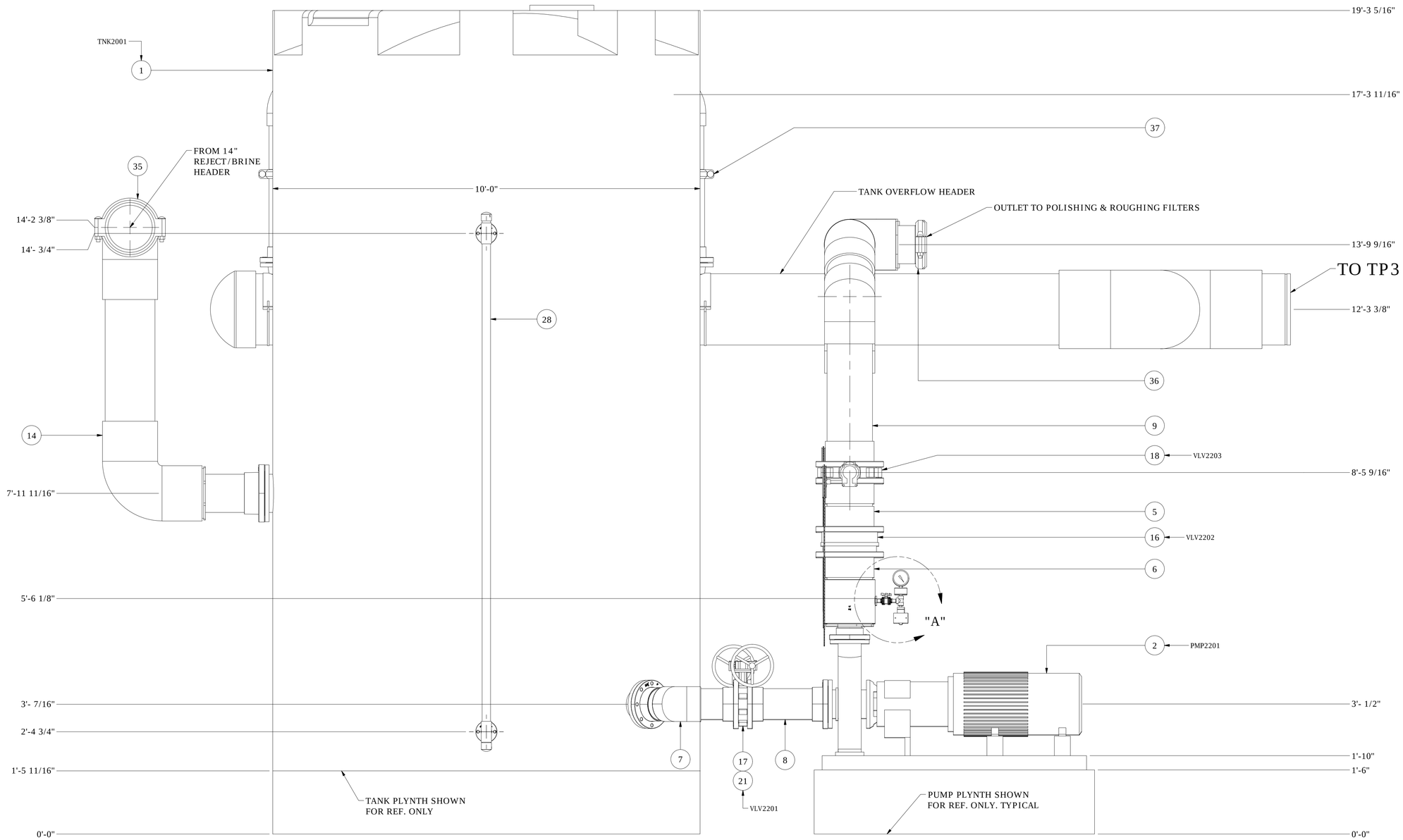
SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-801	3 OF 5	2



DETAIL: "A"

INSTRUMENT LAYOUT

SCALE: 1 / 4



VIEW: "A-A"

SCALE: 1 / 15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED PUMP SUCTION HEADER TO 8", UPDATED PUMP DISCHARGE TO 12", ADDED TANK OVERFLOW HEADER	AWS	11/08/11	AWS	JS
1	FOR FABRICATION	AWS	09/07/11	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	9/7/2011	SUBMITTAL NO.
ENGR	JS	9/7/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/7/2011	PROJECT NUMBER 260
APPROVED	JS	9/7/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

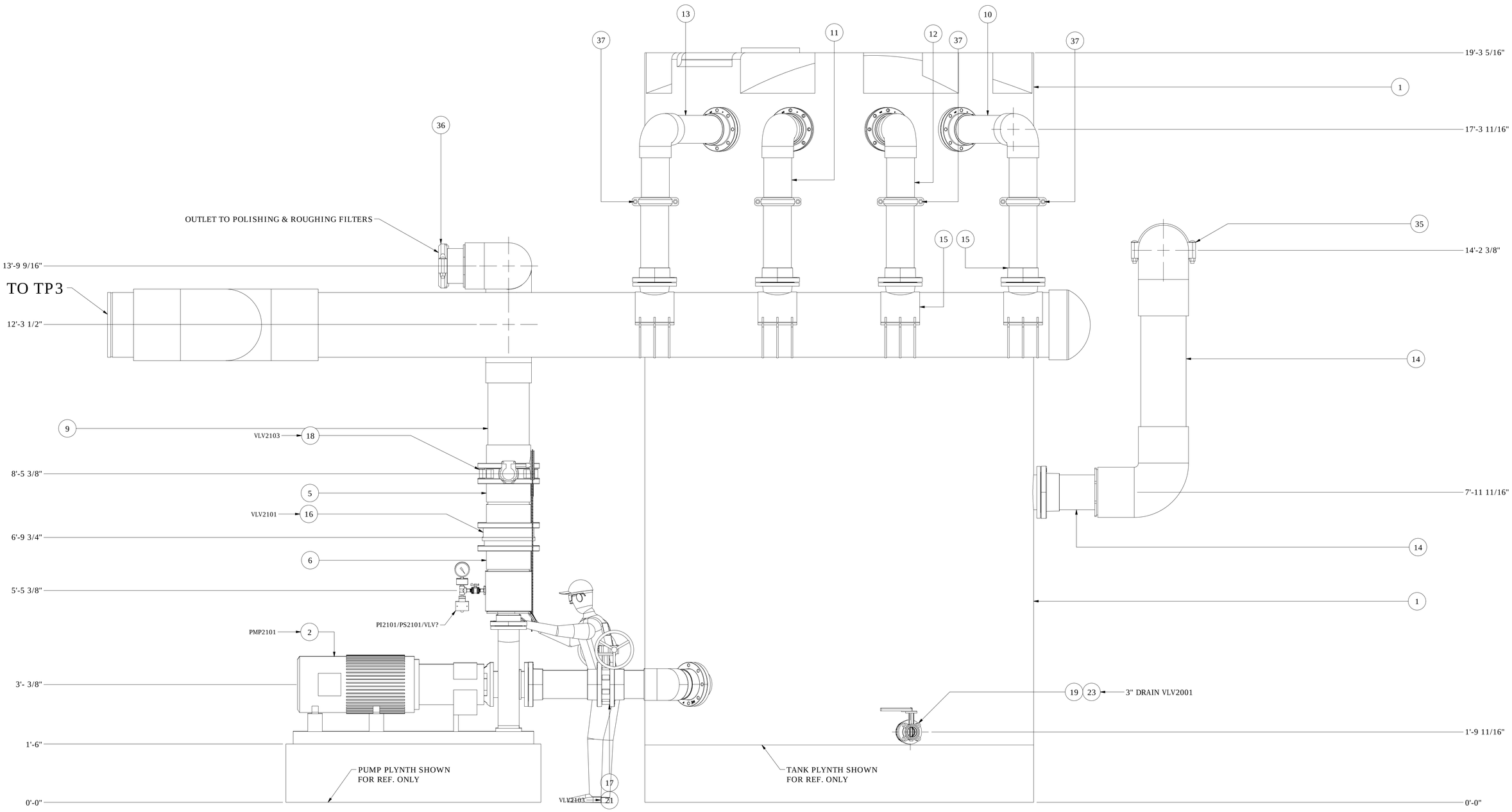
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: BACKWASH SYSTEM GA
SECTION & VIEWS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-801	4 OF 5	2



VIEW: "B-B"
SCALE: 1/15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED PUMP SUCTION HEADER TO 8", UPDATED PUMP DISCHARGE TO 12", ADDED TANK OVERFLOW HEADER	AWS	11/08/11	AWS	JS
1	FOR FABRICATION	AWS	09/07/11	AWS	JS

REVISION HISTORY

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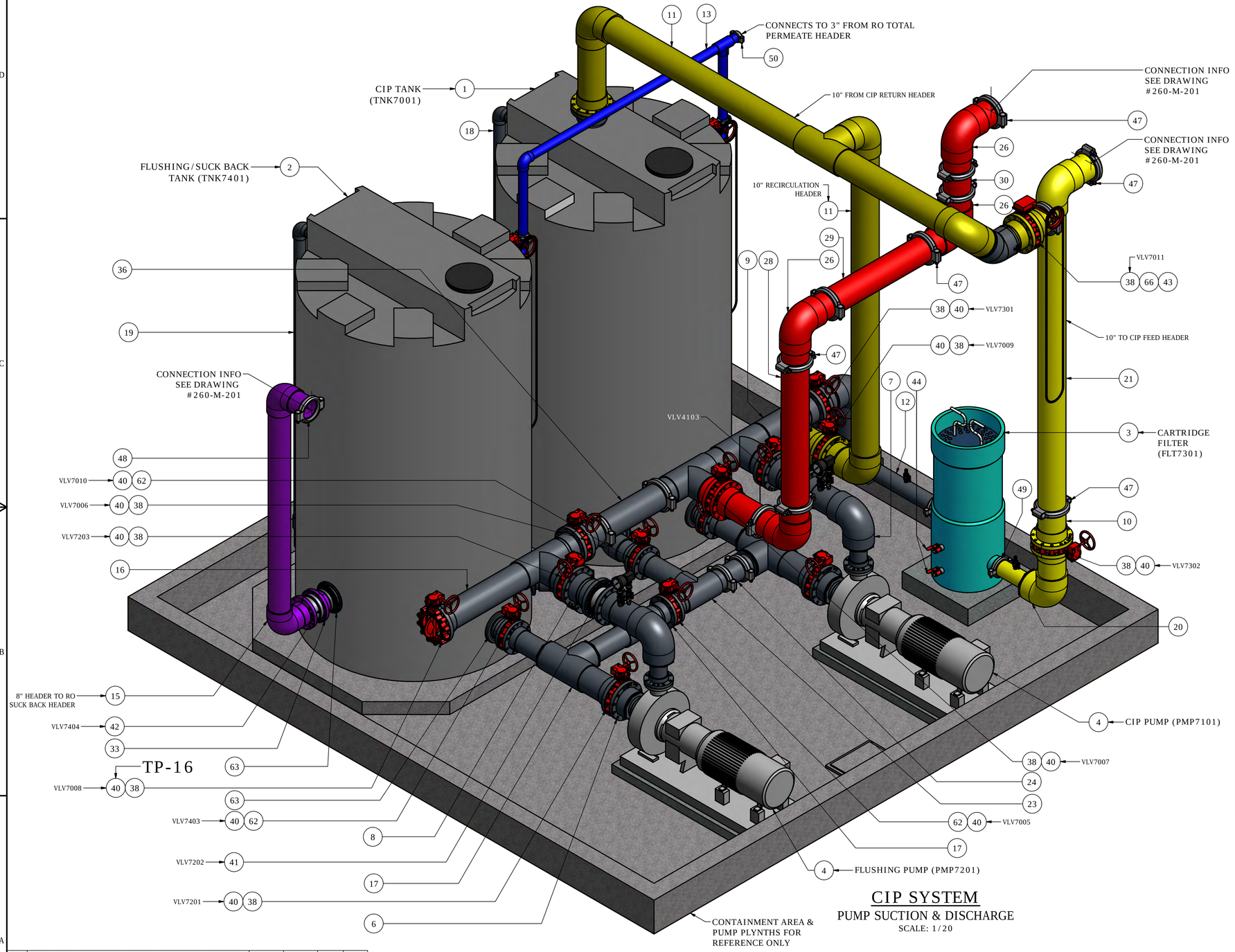
ENGR	JS	9/7/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/7/2011	PROJECT NUMBER 260
APPROVED	JS	9/7/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: BACKWASH SYSTEM GA
SECTION VIEWS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-801	5 OF 5	2



CIP SYSTEM

PUMP SUCTION & DISCHARGE

SCALE: 1/20

CIP SYSTEM

ITEM	QTY	DESCRIPTION	DRAWING	SPOOL #
1	1	7'6" DIA X 13' H CIP TANK (T-901)		
2	1	7'6" DIA X 13' H FLUSHING / SUCK BACK TANK		
3	1	CF, ECH-60-2.5-40-DOE-6VE-150		
4	2	SUMMIT PUMP MODEL 2196, 6"X8"		
5	1	80KW,460V, 3PH, IMMERSION HEATER SS, 150# 8" FLANGE		
6	2	8" PUMP SUCTION X 10" CIP PUMP SUPPLY MANIFOLD	260-P-601	260-CIP-PV-07
7	2	8" CIP PUMP DISCHARGE (260-P-601)	460-P-601	260-CIP-PV-08
8	2	8" CIP PUMP DISCHARGE (260-P-601)	260-P-601	260-CIP-PV-09
9	1	10" CIP PUMP DISCHARGE MANIFOLD (260-P-601)	260-P-601	260-CIP-PV-10
10	1	10" CIP CF DISCHARGE HEADER	260-P-601	260-CIP-PV-15
11	1	10" CIP PUMP DISCHARGE / RECIRCULATION HEADER	260-P-601	260-CIP-PV-22
12	1	10" CIP CF INLET HEADER	260-M-601	260-CIP-PV-13
13	1	3" TOTAL PERMEATE RETURN TO CIP HEADER	260-P-601	260-CIP-PV-23
14	2	3" TOTAL PERMEATE RETURN TO CIP HEADER	260-P-601	260-CIP-PV-24
15	1	8" SUCK BACK HEADER TO OVERHEAD MANIFOLD	260-P-601	260-CIP-PV-27
16	1	10" CIP PUMP DISCHARGE MANIFOLD (260-P-601)	260-P-601	260-CIP-PV-12
17	1	10" CIP PUMP SUCTION MANIFOLD	260-P-601	260-CIP-PV-03
18	1	4" CIP TANK OVERFLOW HEADER	260-P-601	260-CIP-PV-28, 29
19	1	4" FLUSH TANK OVERFLOW HEADER	260-P-601	260-CIP-PV-20
20	1	10" CIP CF DISCHARGE HEADER	260-M-601	260-CIP-PV-14
21	1	10" 1ST PASS CIP FEED HEADER TO CIP SYSTEM	260-P-601	260-CIP-PV-16
22	1	10" CIP PUMP SUCTION MANIFOLD	260-P-601	260-CIP-PV-06
23	1	8" CIP PUMP SUCTION MANIFOLD	260-P-601	260-CIP-PV-04
24	9.471 in	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends	260-P-601	260-CIP-PV-05
25	1	10" CIP PUMP SUCTION MANIFOLD	260-P-601	260-CIP-PV-04
26	4	10" 1ST PASS FLUSH HEADER TO CIP SYSTEM	260-P-601	260-CIP-PV-18
27	1	10" 1ST PASS FLUSH HEADER TO CIP SYSTEM	260-P-601	260-CIP-PV-17
28	66.207 in	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends	260-P-601	260-CIP-PV-19
29	51.832 in	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends	260-P-601	260-CIP-PV-20
30	10.531 in	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends	260-P-601	260-CIP-PV-21
31	2	8" CIP PUMP SUCTION MANIFOLD	260-P-601	260-CIP-PV-01
32	2	8" CIP PUMP SUCTION MANIFOLD	260-P-601	260-CIP-PV-02
33	1	8" SUCK BACK HEADER TO OVERHEAD MANIFOLD	260-P-601	260-CIP-PV-26
34	2	3" TOTAL PERMEATE RETURN TO CIP HEADER	260-P-601	260-CIP-PV-25
35	2	3" FLUSH TANK DRAIN HEADER	260-P-601	260-CIP-PV-30
36	32.471 in	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends	260-P-601	260-CIP-PV-11
37	1	10" CIP PUMP DISCHARGE / RECIRCULATION HEADER	260-P-601	260-CIP-PV-31
38	11	Bray BFV RSDI ANSI 150 10" Lugged S31		
39	4	Bray BFV RSDI ANSI 150 3" Lugged S31		
40	17	Bray Gear Operator Series 04-0300 w/ 8""Wheel & 1.38"Shaft		
41	2	HAYWARD WAFER PVC CHECK VALVE, W/SPACER, 10"		
42	1	HAYWARD PVC WAFER CHECK VALVE W/SPACER, #WC1800ES, 8"		
43	3	CHAINWHEEL ASSEMBLY		
44	2	FLOWTEK 2 PIECE THRD'D FULL PORT BV-1"		
45	6	BAV TYPE 375, 1/2", SCH80 PVC.		
46	2	LEVER HANDLE 10"		
47	13	Victaulic Coupling, 10"		
48	3	Victaulic Coupling, 8"		
49	2	Victaulic Coupling, 6"		
50	3	Victaulic Coupling, 3"		
82	3	Gasket 8" x ANSI 150# x 1/8"thk		
83	1	Gasket 10" x ANSI 150# x 1/8"thk		
53	2	ASHCROFT TYPE 400, B-SERIES PRESSURE SWITCH		
54	6	JIS B 2302 Close Nipple 1/2"		
55	2	ASME B16.11 Tee Threaded - Class 3000 1/2"		
56	2	ASME B16.11 90 Deg Elbow Threaded - Class 3000 1/2"		
57	2	JIS B 2302 Long Nipple 1/2 x 75mm		
58	1	ROSEMOUNT MODEL 400-12 CONDUCTIVITY SENSOR, 3/4" MNPT		
59	4	ASHCROFT TYPE 510 DIAPHRAGM SEAL		
60	2	ASHCROFT TYPE 1259 PRESSURE GAUGE, 4.5" DIA. FACE, VACUUM-20,000 psi, 1/2" MNPT		
61	2	Male Adapter 1/2"Mnpt x 1/2"TubeOD		
62	5	Bray BFV RSDI ANSI 150 8" Lugged S31		
63	5	PVC SCH80 NEW STYLE ADAPTER, 8" (TANK-SXS-NEO)		
64	2	PVC SCH80 TANK ADAPTER, 4" (TANK-SXF-NEO)		
65	2	PVC SCH80 TANK ADAPTER, 3" (TANK-SXF)		
66	1	GEAR OPERATOR 30:1 RATIO, 8000-LB.IN.		
67	2	PVC SCH80 TANK ADAPTER, 3" (TANK-SXF-NEO)		

PVC CIP PIPE NOTES:

1. PRIMARY UNITS IS IN ICNHES
2. ALL MATERIAL SHALL BE PVC SCH80.
3. ALL GROOVES WHEN REQUIRED SHALL BE OF THE CUT GROOVE TYPE AS PER VICTAULIC PUBLICATION 25-01.

REVISION HISTORY

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1	FOR FABRICATION	AWS	10/05/11	AWS	JS
B	REVISED AS PER COMMENTS	AWS	7/01/10	HN	HN
A	FOR APPROVAL	AWS	8/18/09	DAA	HN

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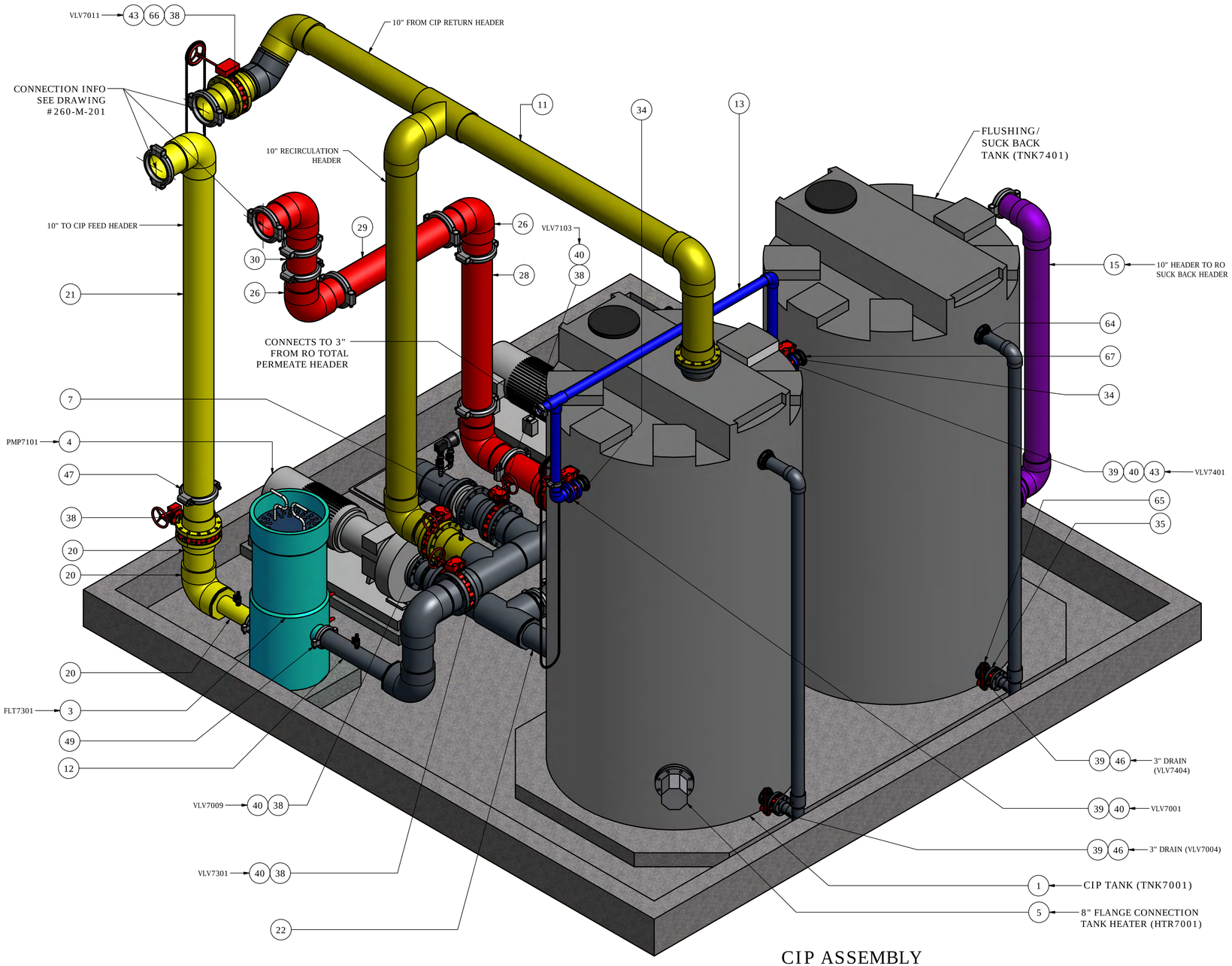
DSGR	JS	10/5/2011	SPECS. REF. NO.
PROJ MGR	AWS	10/5/2011	PROJECT NUMBER 260
APPROVED	HS	10/5/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: CIP GENERAL ARRANGEMENT ASSEMBLY VIEW

SIZE D | SCALE A/S | DWG NO 260-M-601 | SHEET 1 OF 8 | REV 3



CIP ASSEMBLY

SCALE: 1/20

CIP SYSTEM

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1	1	7'6" DIA X 13' H CIP TANK (T-901)		
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4	2	SUMMIT PUMP MODEL 2196, 6"X8"		
5	1	80KW,460V, 3PH, IMMERSION HEATER SS, 150# 8" FLANGE		
6	2	8" PUMP SUCTION X 10" CIP PUMP SUPPLY MANIFOLD	260-P-601	260-CIP-PV-07
7	2	8" CIP PUMP DISCHARGE (260-P-601)	460-P-601	260-CIP-PV-08
8	2	8" CIP PUMP DISCHARGE (260-P-601)	260-P-601	260-CIP-PV-09
9	1	10" CIP PUMP DISCHARGE MANIFOLD (260-P-601)	260-P-601	260-CIP-PV-10
10	1	10" CIP CF DISCHARGE HEADER	260-P-601	260-CIP-PV-15
11	1	10" CIP PUMP DISCHARGE / RECIRCULATION HEADER	260-P-601	260-CIP-PV-22
12	1	10" CIP CF INLET HEADER	260-M-601	260-CIP-PV-13
13	1	3" TOTAL PERMEATE RETURN TO CIP HEADER	260-P-601	260-CIP-PV-23
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15	1	8" SUCK BACK HEADER TO OVERHEAD MANIFOLD	260-P-601	260-CIP-PV-27
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17	1	10" CIP PUMP SUCTION MANIFOLD	260-P-601	260-CIP-PV-03
18	1	4" CIP TANK OVERFLOW HEADER	260-P-601	260-CIP-PV-28, 29
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23	1	8" CIP PUMP SUCTION MANIFOLD	260-P-601	260-CIP-PV-04
24	9.471 in	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends	260-P-601	260-CIP-PV-05
25	1	10" CIP PUMP SUCTION MANIFOLD	260-P-601	260-CIP-PV-04
26	4	10" 1ST PASS FLUSH HEADER TO CIP SYSTEM	260-P-601	260-CIP-PV-18
27	1	10" 1ST PASS FLUSH HEADER TO CIP SYSTEM	260-P-601	260-CIP-PV-17
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A	FOR APPROVAL	AWS	8/18/09	DAA	HN

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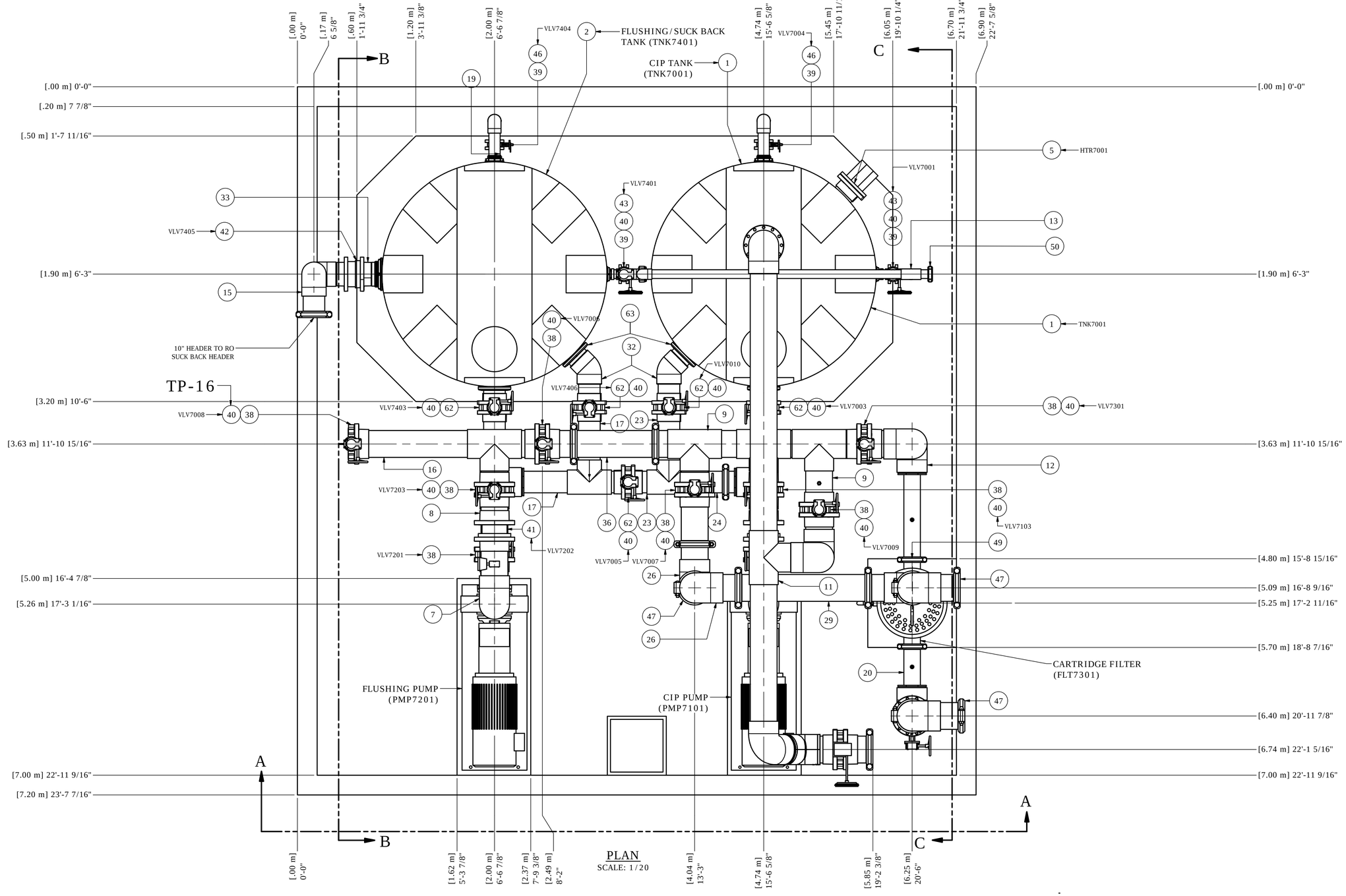
BRITISH VIRGIN ISLANDS

TITLE: CIP GENERAL ARRANGEMENT ASSEMBLY VIEW

SIZE D | SCALE A/S | DWG NO 260-M-601 | SHEET 2 OF 8 | REV 3



PLAN
SCALE: 1/20

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
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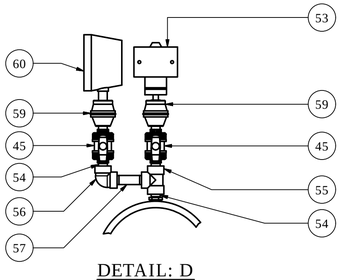
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: CIP GENERAL ARRANGEMENT PLAN VIEW

SIZE D | SCALE A/S | DWG NO 260-M-601 | SHEET 3 OF 8 | REV 3



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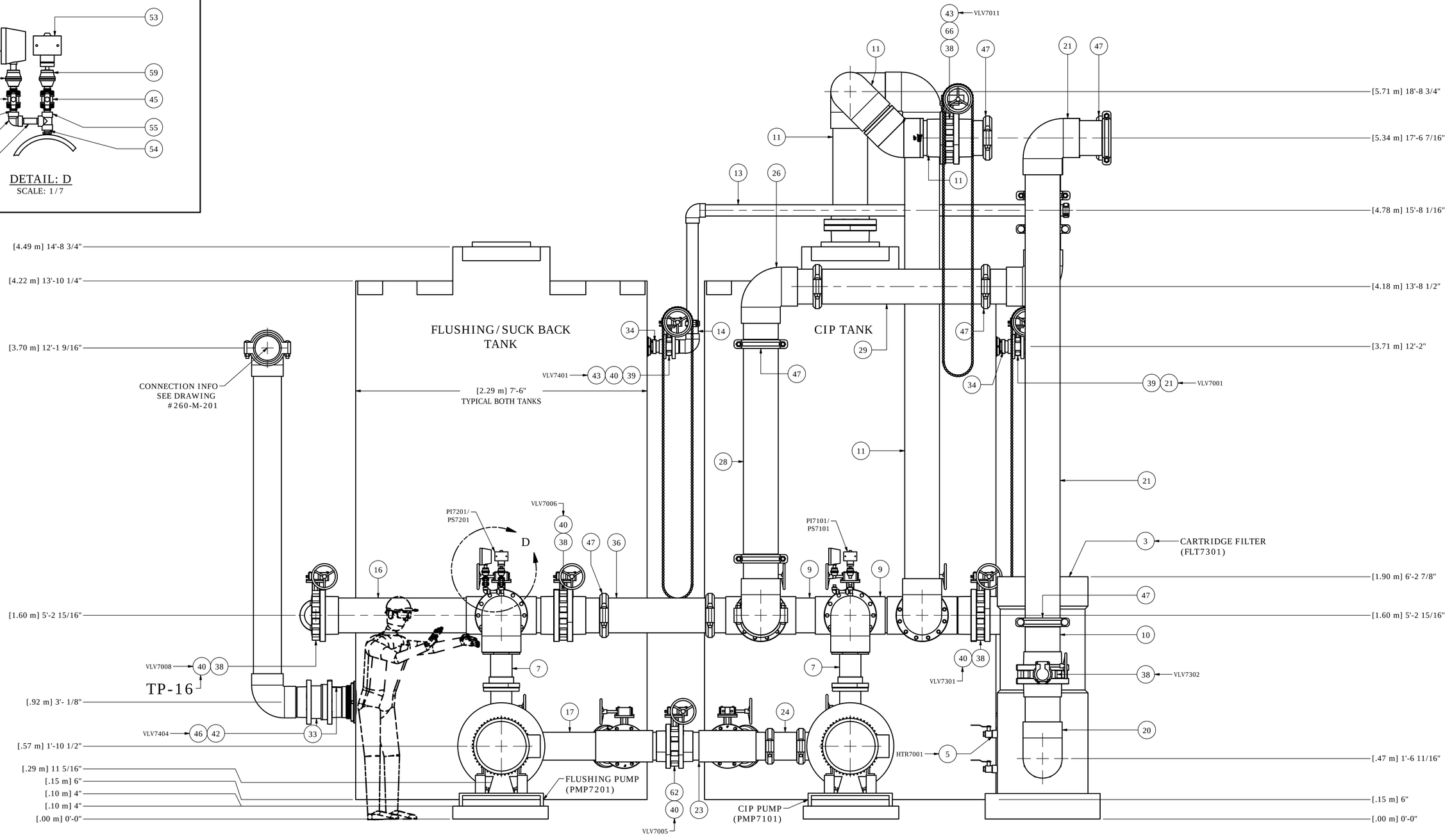
SCALE: 1 / 7



VIEW: A-A
SCALE: 1/15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
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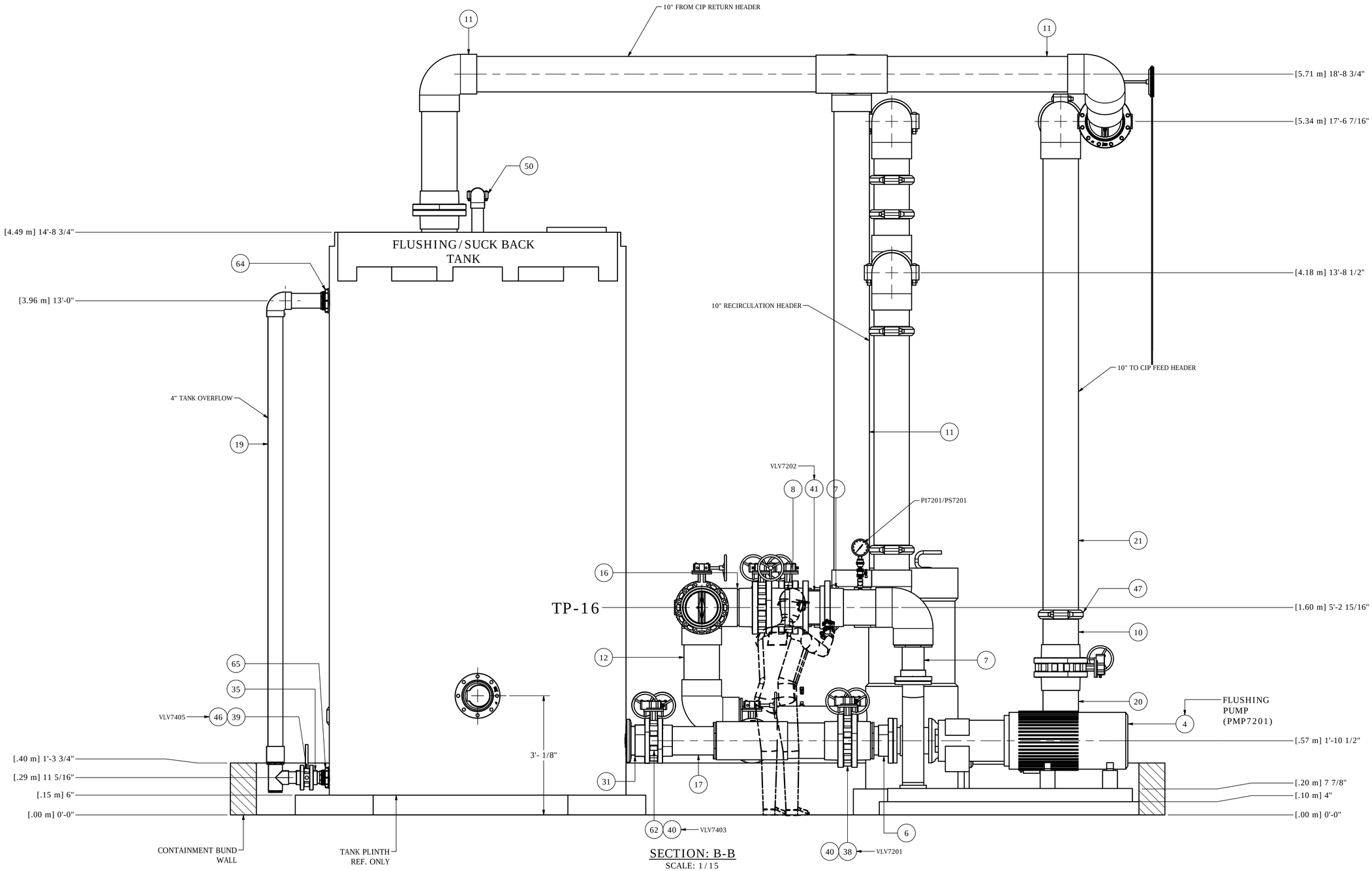
PROJ MGR	AWS	10/5/2011	PROJECT NUMBER 260
APPROVED	HS	10/5/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: CIP GENERAL ARRANGEMENT ELEVATION VIEW

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-601	4 OF 8	3



SECTION: B-B
SCALE: 1 / 15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
3	SPLIT 10" PUMP SUCTION HEADER INTO TWO 8" HEADERS, BOTH TANKS TO ALLOW FOR TANK ADAPTORS & ADDED HARDWARE	AWS	03/14/12	AWS	JS
2	UPDATED PUMP SUCTION TO 10" FROM 12"	AWS	11/08/11	AWS	JS
1	FOR FABRICATION	AWS	10/05/11	AWS	JS
B	REVISED AS PER COMMENTS	AWS	7/01/10	HN	HN
A	FOR APPROVAL	AWS	8/18/09	DAA	HN

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	8/26/2009	SUBMITTAL NO.
ENGR	JS	10/5/2011	SPECS. REF. NO.
PROJ MGR	AWS	10/5/2011	PROJECT NUMBER 260
APPROVED	HS	10/5/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

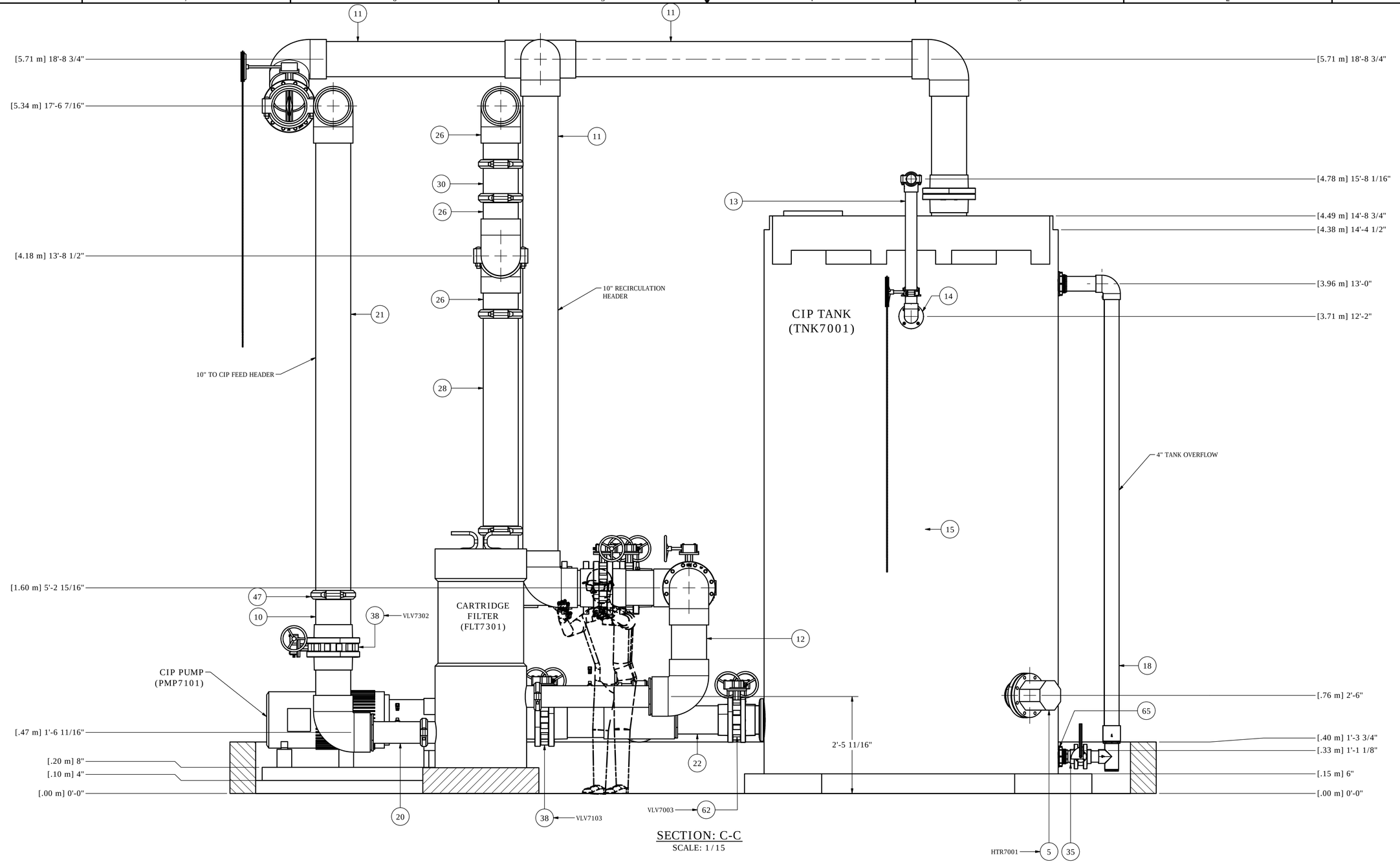
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: CIP GENERAL ARRANGEMENT ELEVATION

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-601	5 OF 8	3



SECTION: C-C
SCALE: 1 / 15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
3	SPLIT 10" PUMP SUCTION HEADER INTO TWO 8" HEADERS, BOTH TANKS TO ALLOW FOR TANK ADAPTORS & ADDED HARDWARE	AWS	03/14/12	AWS	JS
2	UPDATED PUMP SUCTION TO 10" FROM 12"	AWS	11/08/11	AWS	JS
1	FOR FABRICATION	AWS	10/05/11	AWS	JS
B	REVISED AS PER COMMENTS	AWS	7/01/10	HN	HN
A	FOR APPROVAL	AWS	8/18/09	DAA	HN

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DRAWN AWS	8/26/2009	SUBMITTAL NO.	
ENGR JS	10/5/2011	SPECS. REF. NO.	
PROJ MGR AWS	10/5/2011	PROJECT NUMBER 260	
APPROVED HS	10/5/2011		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

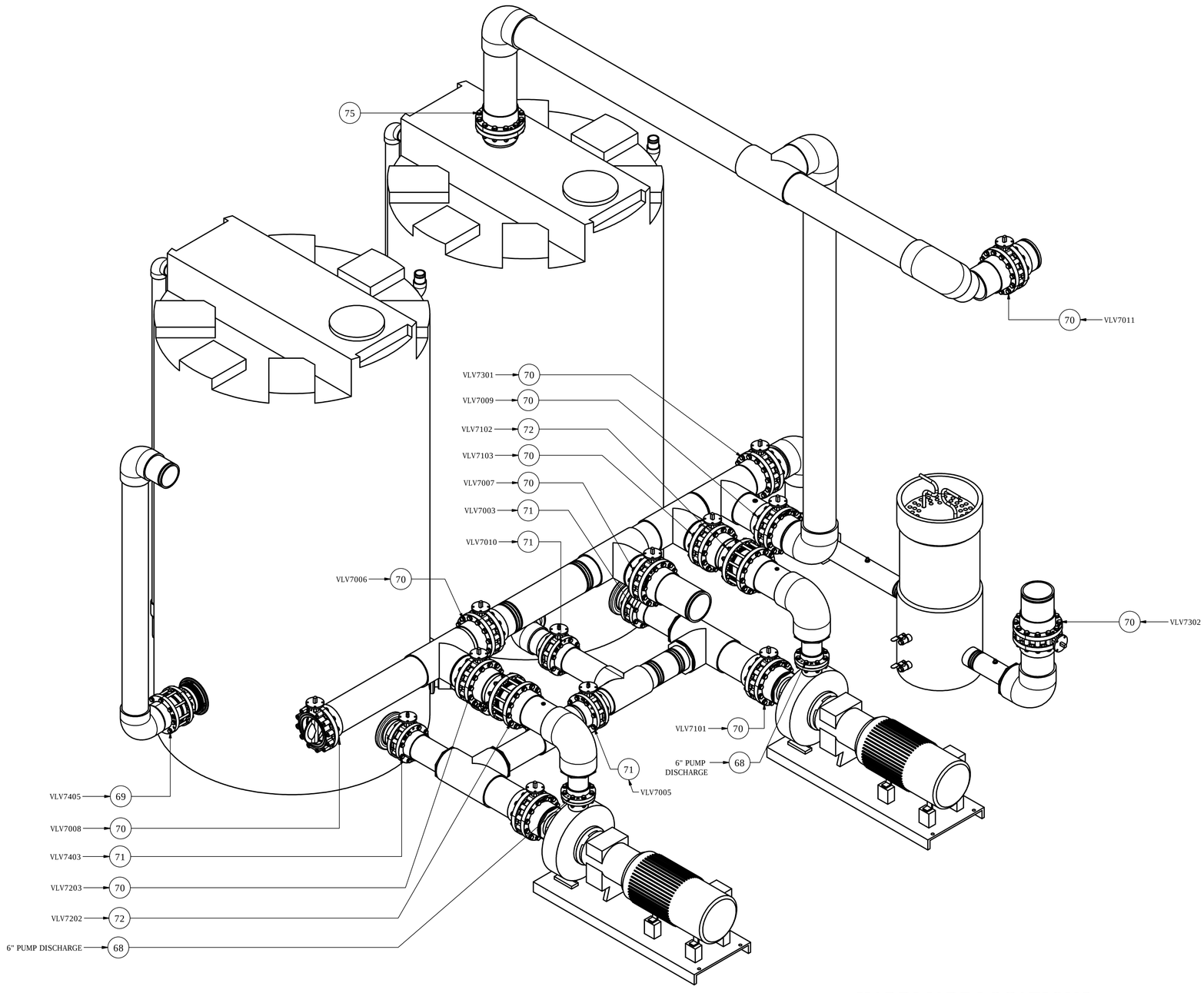
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: CIP GENERAL ARRANGEMENT ELEVATION

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-601	6 OF 8	3

CIP SYSTEM HARDWARE

ITEM	QTY	PART NUMBER	DESCRIPTION
68	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 3.75	Hex Bolt - UNC (Regular Thread - Inch)
69	8	ANSI/ASME B18.2.1 - 3/4-10 UNC - 9.5	Hex Bolt - UNC (Regular Thread - Inch)
70	252	ANSI/ASME B18.2.1 - 7/8-9 UNC - 3	Hex Bolt - UNC (Regular Thread - Inch)
71	80	ANSI/ASME B18.2.1 - 3/4-10 UNC - 2.75	Hex Bolt - UNC (Regular Thread - Inch)
72	24	ANSI/ASME B18.2.1 - 7/8-9 UNC - 10	Hex Bolt - UNC (Regular Thread - Inch)
73	24	ANSI/ASME B18.2.1 - 3/4-10 UNC - 4	Hex Bolt - UNC (Regular Thread - Inch)
74	32	ANSI/ASME B18.2.1 - 5/8-11 UNC - 2	Hex Bolt - UNC (Regular Thread - Inch)
75	12	ANSI/ASME B18.2.1 - 7/8-9 UNC - 5	Hex Bolt - UNC (Regular Thread - Inch)
76	48	ANSI B18.2.2 - 3/4 - 10	Hex Nuts (Inch Series) Hex Nut
77	36	ANSI B18.2.2 - 7/8 - 9	Hex Nuts (Inch Series) Hex Nut
78	176	ANSI B18.22.1 - 3/4 - narrow - Type A	Plain Washer (Inch)Type A and B
79	324	ANSI B18.22.1 - 7/8 - narrow - Type A	Plain Washer (Inch)Type A and B
80	32	ANSI B18.22.1 - 5/8 - narrow - Type A	Plain Washer (Inch)Type A and B
81	2	Gasket-6x150x1_8	Gasket 6" x ANSI 150# x 1/8"thk
82	3	Gasket-8x150x1_8	Gasket 8" x ANSI 150# x 1/8"thk
83	1	Gasket-10x150x1_8	Gasket 10" x ANSI 150# x 1/8"thk



HARDWARE LOCATIONS

FRONT VIEW

SCALE: 1 / 19

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
3	SPLIT 10" PUMP SUCTION HEADER INTO TWO 8" HEADERS, BOTH TANKS TO ALLOW FOR TANK ADAPTORS & ADDED HARDWARE	AWS	03/14/12	AWS	JS
2	UPDATED PUMP SUCTION TO 10" FROM 12"	AWS	11/08/11	AWS	JS
1	FOR FABRICATION	AWS	10/05/11	AWS	JS
B	REVISED AS PER COMMENTS	AWS	7/01/10	HN	HN
A	FOR APPROVAL	AWS	8/18/09	DAA	HN

REVISION HISTORY

Biwater

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DRAWN AWS	8/26/2009	SUBMITTAL NO.
ENGR JS	10/5/2011	SPECS. REF. NO.
PROJ MGR AWS	10/5/2011	PROJECT NUMBER 260
APPROVED HS	10/5/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

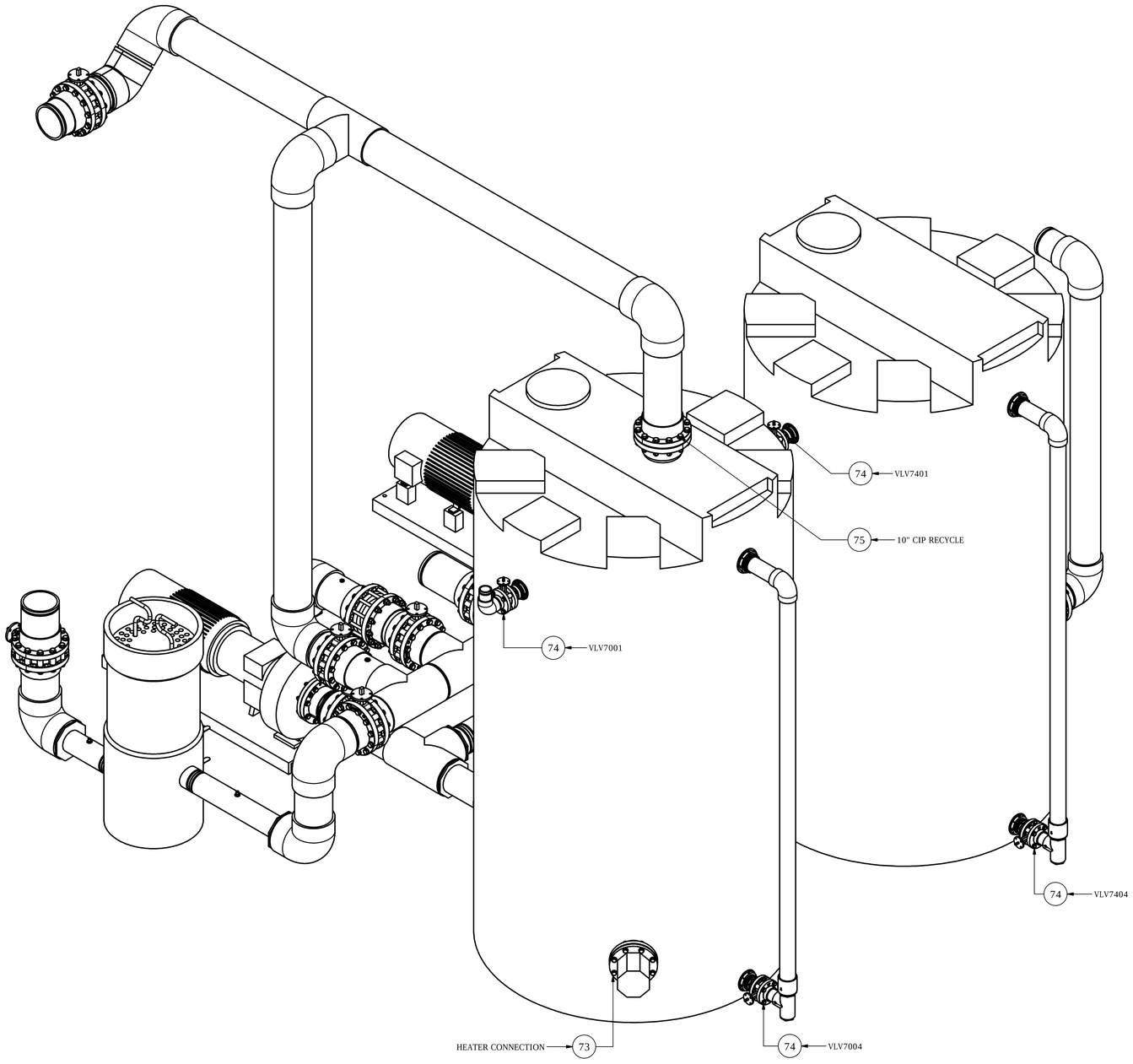
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: CIP GENERAL ARRANGEMENT
HARDWARE LOCATIONS

SIZE D | SCALE A/S | DWG NO 260-M-601 | SHEET 7 OF 8 | REV 3



CIP SYSTEM HARDWARE

ITEM	QTY	PART NUMBER	DESCRIPTION
68	16	ANSI/ASME B18.2.1 - 3/4-10 UNC - 3.75	Hex Bolt - UNC (Regular Thread - Inch)
69	8	ANSI/ASME B18.2.1 - 3/4-10 UNC - 9.5	Hex Bolt - UNC (Regular Thread - Inch)
70	252	ANSI/ASME B18.2.1 - 7/8-9 UNC - 3	Hex Bolt - UNC (Regular Thread - Inch)
71	80	ANSI/ASME B18.2.1 - 3/4-10 UNC - 2.75	Hex Bolt - UNC (Regular Thread - Inch)
72	24	ANSI/ASME B18.2.1 - 7/8-9 UNC - 10	Hex Bolt - UNC (Regular Thread - Inch)
73	24	ANSI/ASME B18.2.1 - 3/4-10 UNC - 4	Hex Bolt - UNC (Regular Thread - Inch)
74	32	ANSI/ASME B18.2.1 - 5/8-11 UNC - 2	Hex Bolt - UNC (Regular Thread - Inch)
75	12	ANSI/ASME B18.2.1 - 7/8-9 UNC - 5	Hex Bolt - UNC (Regular Thread - Inch)
76	48	ANSI B18.2.2 - 3/4 - 10	Hex Nuts (Inch Series) Hex Nut
77	36	ANSI B18.2.2 - 7/8 - 9	Hex Nuts (Inch Series) Hex Nut
78	176	ANSI B18.22.1 - 3/4 - narrow - Type A	Plain Washer (Inch)Type A and B
79	324	ANSI B18.22.1 - 7/8 - narrow - Type A	Plain Washer (Inch)Type A and B
80	32	ANSI B18.22.1 - 5/8 - narrow - Type A	Plain Washer (Inch)Type A and B
81	2	Gasket-6x150x1_8	Gasket 6" x ANSI 150# x 1/8"thk
82	3	Gasket-8x150x1_8	Gasket 8" x ANSI 150# x 1/8"thk
83	1	Gasket-10x150x1_8	Gasket 10" x ANSI 150# x 1/8"thk

HARDWARE LOCATIONS

REAR VIEW

SCALE: 1 / 18

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
3	SPLIT 10" PUMP SUCTION HEADER INTO TWO 8" HEADERS, BOTH TANKS TO ALLOW FOR TANK ADAPTORS & ADDED HARDWARE	AWS	03/14/12	AWS	JS
2	UPDATED PUMP SUCTION TO 10" FROM 12"	AWS	11/08/11	AWS	JS
1	FOR FABRICATION	AWS	10/05/11	AWS	JS
B	REVISED AS PER COMMENTS	AWS	7/01/10	HN	HN
A	FOR APPROVAL	AWS	8/18/09	DAA	HN

REVISION HISTORY

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DRAWN	AWS	8/26/2009	SUBMITTAL NO.
ENGR	JS	10/5/2011	SPECS. REF. NO.
PROJ. MGR	AWS	10/5/2011	PROJECT NUMBER 260
APPROVED	HS	10/5/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

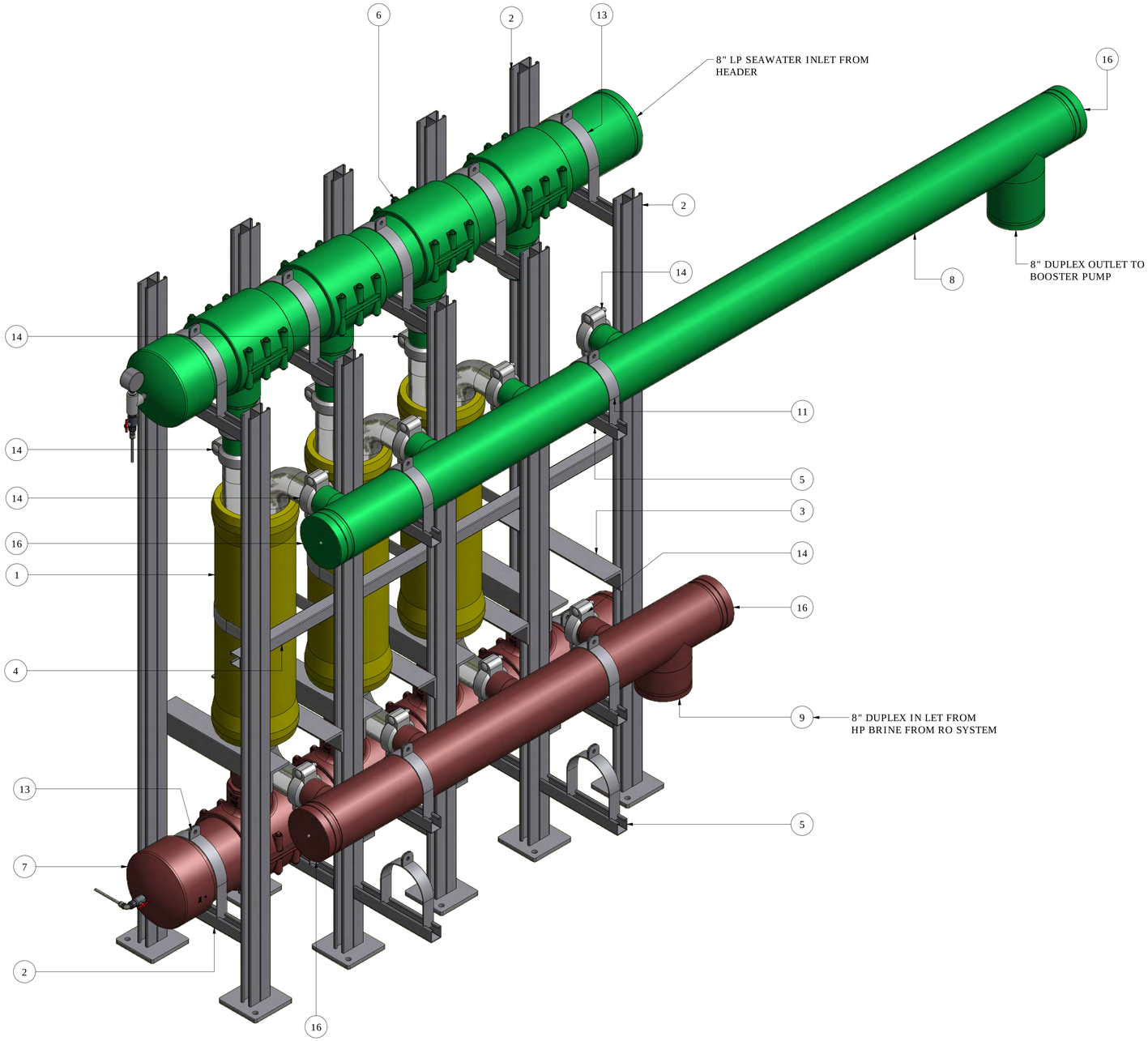
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: CIP GENERAL ARRANGEMENT
HARDWARE LOCATION-REAR VIEW

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-601	8 OF 8	3



ERD PARTS LIST

ITEM	QTY	DESCRIPTION	SPOOL #	DRAWING #
1	3	PRESSURE EXCHANGER, 180 -220 GPM (40.9 - 50.0m3/HR), 3" VICTAULIC GROOVES CONNECTIONS (LP IN, LP OUT, HP IN & HP OUT)		
2	5	CARBON STEEL PX-220 FRAME SECTION		260-S-103
3	8	CS ANGLE, L 3" x 3" x 3/8" THK.		260-S-103
4	1	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"		260-S-103
5	6	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"		260-S-103
6	1	PX 8" LP PVC INLET HEADER	260-PXLP-PV-01	
7	1	8" PX LP PVC CONCENTRATE OUTLET HEADER	260-1CWPXLP-PV-01	
8	1	6" PX DUPLEX HP SEAWATER OUTLET HEADER	260-1FW-DP-10	
9	1	6" PX HP ZERON 100 SUPER DUPLEX CONCENTRATE INLET HEADER	260-1CW-DP-03	260-P-201
10	3	ZERON 100 Super Duplex Sch40S Pipe 3" W/ Cut Groove Bothe Ends	260-ERD-DP-01	260-P-101
11	6	316L SS PIPE CLAMP FOR 6" PIPE ASSEMBLY		
12	3	316L SS PIPE CLAMP FOR 9.27" PIPE ASSEMBLY-PX UNIT		
13	10	316L SS PIPE CLAMP FOR 8" PIPE ASSEMBLY		
14	20	Victaulic Coupling, 3"		
15	4	Victaulic Cap, 3"		
16	4	SS Victaulic Cap, 6"		

NOTE:
1. PRIMARY UNITS ARE IN INCHES
2. TOTAL QTY =4

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	05/19/11	JS	JS

REVISION HISTORY

Biwater

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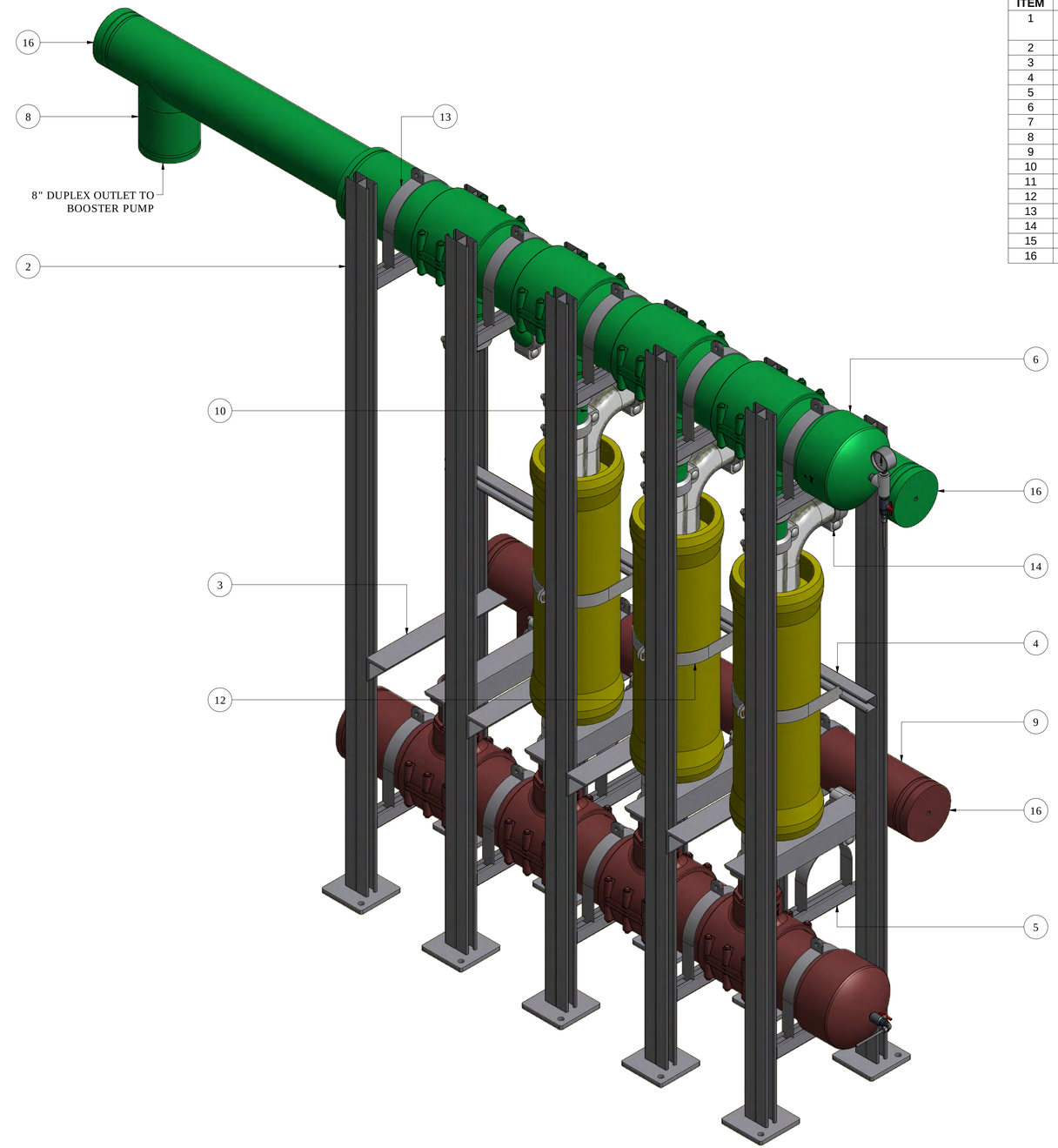
DRAWN	AWS	5/27/2011	SUBMITTAL NO.
ENGR	JS	9/28/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/28/2011	PROJECT NUMBER 260
APPROVED	JS	9/28/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: PARAQUITA BAY SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 65 SERIES PX SYSTEM PX-220 ASSEMBLY DETAILS

SIZE D | SCALE A/S | DWG NO 260-M-501 | SHEET 1 OF 3 | REV 1



ERD PARTS LIST

ITEM	QTY	DESCRIPTION	SPOOL #	DRAWING #
1	3	PRESSURE EXCHANGER, 180 -220 GPM (40.9 - 50.0m3/HR), 3" VICTAULIC GROOVES CONNECTIONS (LP IN, LP OUT, HP IN & HP OUT)		
2	5	CARBON STEEL PX-220 FRAME SECTION		260-S-103
3	8	CS ANGLE, L 3" x 3" x 3/8" THK.		260-S-103
4	1	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"		260-S-103
5	6	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"		260-S-103
6	1	PX 8" LP PVC INLET HEADER	260-PXLP-PV-01	
7	1	8" PX LP PVC CONCENTRATE OUTLET HEADER	260-1CWPXLP-PV-01	
8	1	6" PX DUPLEX HP SEAWATER OUTLET HEADER	260-1FW-DP-10	
9	1	6" PX HP ZERON 100 SUPER DUPLEX CONCENTRATE INLET HEADER	260-1CW-DP-03	260-P-201
10	3	ZERON 100 Super Duplex Sch40S Pipe 3" W/ Cut Groove Bothe Ends	260-ERD-DP-01	260-P-101
11	6	316L SS PIPE CLAMP FOR 6" PIPE ASSEMBLY		
12	3	316L SS PIPE CLAMP FOR 9.27" PIPE ASSEMBLY-PX UNIT		
13	10	316L SS PIPE CLAMP FOR 8" PIPE ASSEMBLY		
14	20	Victaulic Coupling, 3"		
15	4	Victaulic Cap, 3"		
16	4	SS Victaulic Cap, 6"		

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	05/19/11	JS	JS

REVISION HISTORY

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DRAWN AWS	5/27/2011	SUBMITTAL NO.
ENGR JS	9/28/2011	SPECS. REF. NO.
PROJ MGR AWS	9/28/2011	PROJECT NUMBER 260
APPROVED JS	9/28/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

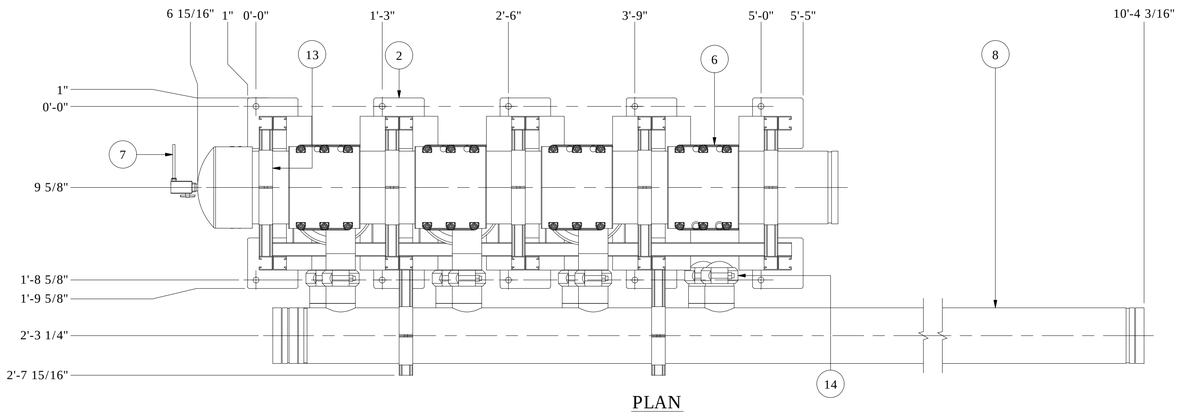
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: PARAQUITA BAY SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 65 SERIES PX SYSTEM PX-220 ASSEMBLY DETAILS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-501	2 OF 3	1



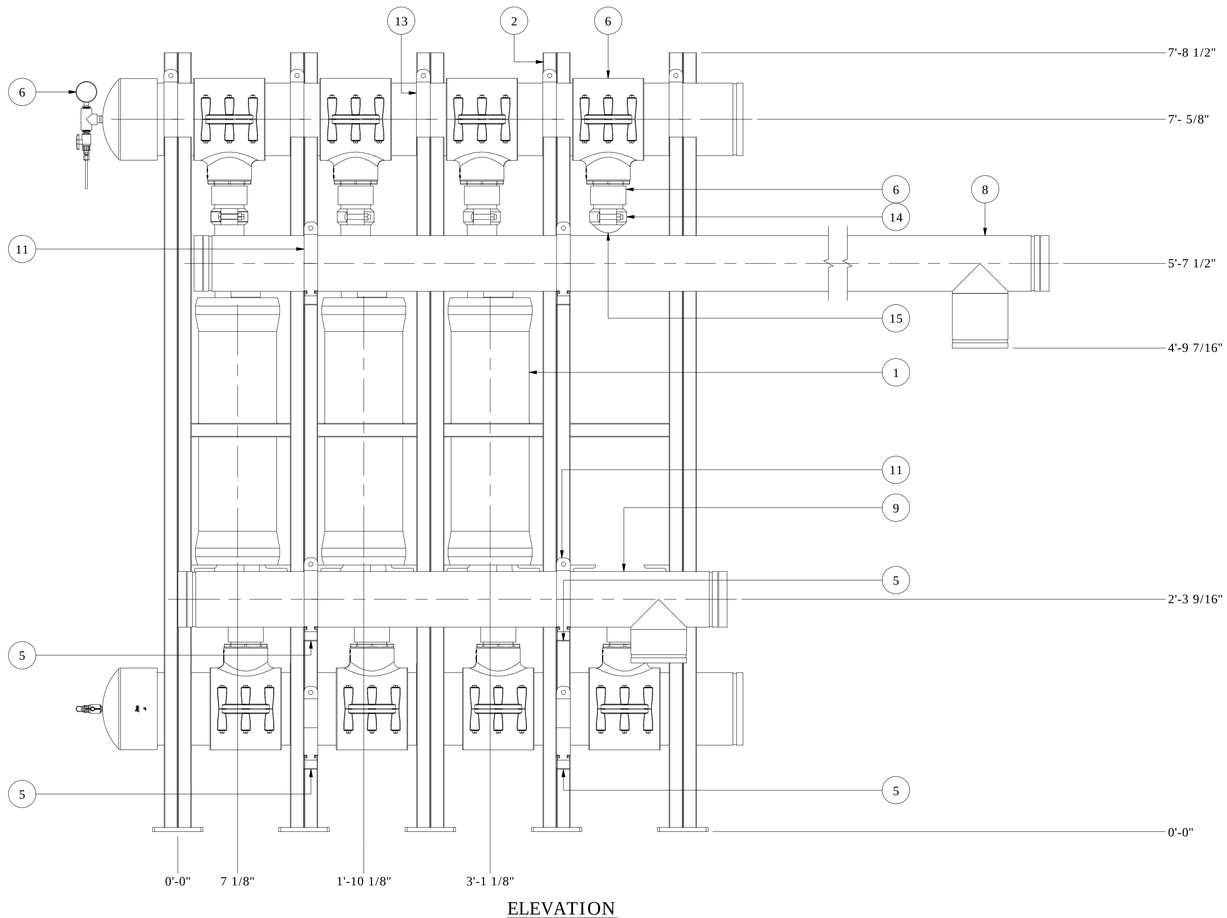
PLAN

NOTE:

1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =4
6. ESTIMATED DRY WEIGHT= 393 lb

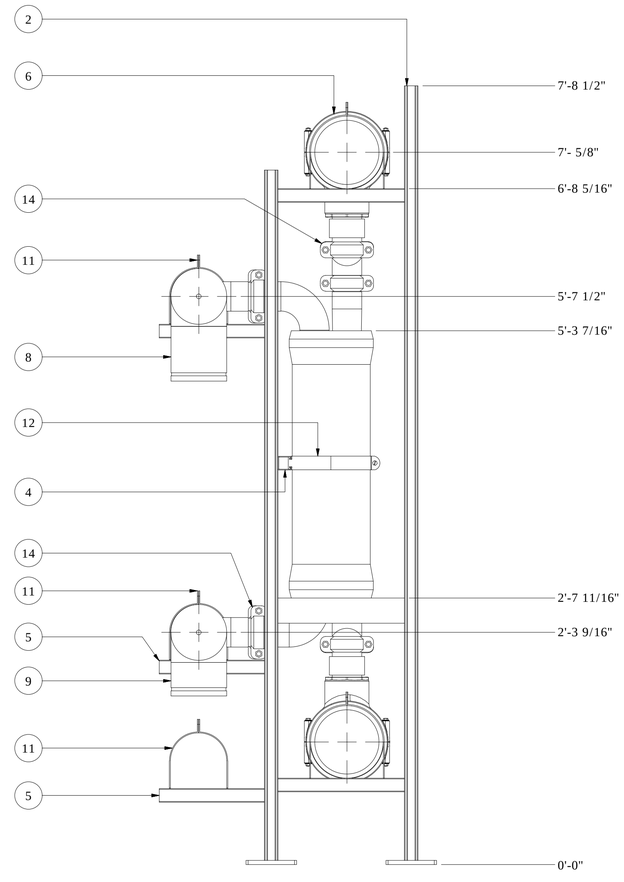
ERD PARTS LIST

ITEM	QTY	DESCRIPTION	SPOOL #	DRAWING #
1	3	PRESSURE EXCHANGER, 180 -220 GPM (40.9 - 50.0m3/HR), 3" VICTAULIC GROOVES CONNECTIONS (LP IN, LP OUT, HP IN & HP OUT)		
2	5	CARBON STEEL PX-220 FRAME SECTION		260-S-103
3	8	CS ANGLE, L 3" x 3" x 3/8" THK.		260-S-103
4	1	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"		260-S-103
5	6	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"		260-S-103
6	1	PX 8" LP PVC INLET HEADER	260-PXLP-PV-01	
7	1	8" PX LP PVC CONCENTRATE OUTLET HEADER	260-1CWPXLP-PV-01	
8	1	6" PX DUPLEX HP SEAWATER OUTLET HEADER	260-1FW-DP-10	
9	1	6" PX HP ZERON 100 SUPER DUPLEX CONCENTRATE INLET HEADER	260-1CW-DP-03	260-P-201
10	3	ZERON 100 Super Duplex Sch40S Pipe 3" W/ Cut Groove Bothe Ends	260-ERD-DP-01	260-P-101
11	6	316L SS PIPE CLAMP FOR 6" PIPE ASSEMBLY		
12	3	316L SS PIPE CLAMP FOR 9.27" PIPE ASSEMBLY-PX UNIT		
13	10	316L SS PIPE CLAMP FOR 8" PIPE ASSEMBLY		
14	20	Victaulic Coupling, 3"		
15	4	Victaulic Cap, 3"		
16	4	SS Victaulic Cap, 6"		



ELEVATION

SCALE: 1 / 9



END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	05/19/11	JS	JS

REVISION HISTORY

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Phone: (626) 358-7707 Fax: (626) 358-7737

DRAWN AWS	5/27/2011	SUBMITTAL NO.	
ENGR JS	9/28/2011	SPECS. REF. NO.	
PROJ MGR AWS	9/28/2011	PROJECT NUMBER	260
APPROVED JS	9/28/2011		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

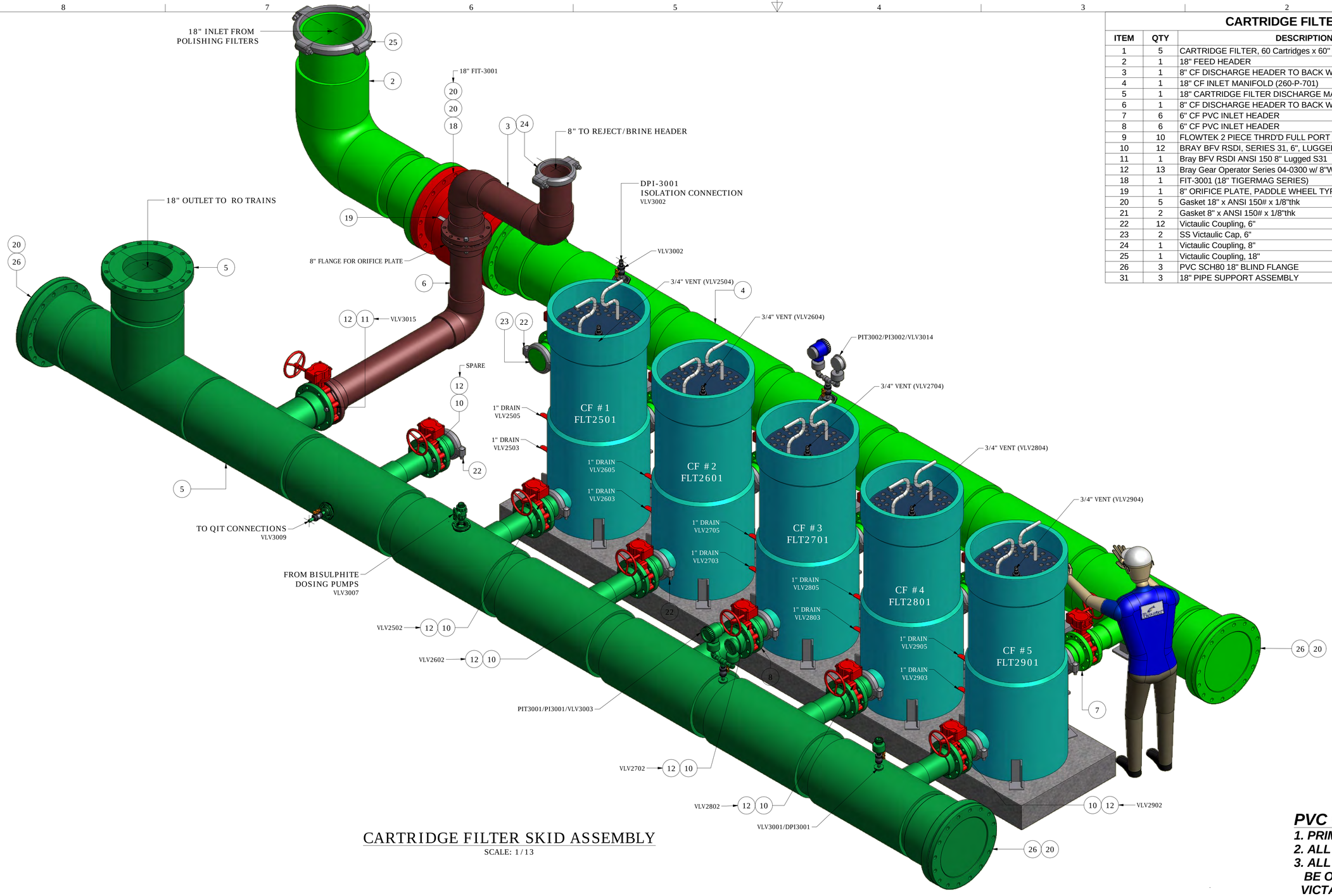
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: PARAQUITA BAY SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 65 SERIES PX SYSTEM PLAN & ELEVATIONS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-501	3 OF 3	1



CARTRIDGE FILTER SKID ASSEMBLY

SCALE: 1 / 13

CARTRIDGE FILTER SKID PARTS LIST

ITEM	QTY	DESCRIPTION	SPOOL #	DRAWING #
1	5	CARTRIDGE FILTER, 60 Cartridges x 60" H		
2	1	18" FEED HEADER	TBD	TBD
3	1	8" CF DISCHARGE HEADER TO BACK WASH TANK	TBD	TBD
4	1	18" CF INLET MANIFOLD (260-P-701)	TBD	TBD
5	1	18" CARTRIDGE FILTER DISCHARGE MANIFOLD (260-P-701)	TBD	TBD
6	1	8" CF DISCHARGE HEADER TO BACK WASH TANK	TBD	TBD
7	6	6" CF PVC INLET HEADER	TBD	TBD
8	6	6" CF PVC INLET HEADER	TBD	TBD
9	10	FLOWTEK 2 PIECE THRD'D FULL PORT BV-1"		
10	12	BRAY BFV RSDI, SERIES 31, 6", LUGGED		
11	1	Bray BFV RSDI ANSI 150 8" Lugged S31		
12	13	Bray Gear Operator Series 04-0300 w/ 8"Wheel		
18	1	FIT-3001 (18" TIGERMAG SERIES)		
19	1	8" ORIFICE PLATE, PADDLE WHEEL TYPE		
20	5	Gasket 18" x ANSI 150# x 1/8"thk		
21	2	Gasket 8" x ANSI 150# x 1/8"thk		
22	12	Victaulic Coupling, 6"		
23	2	SS Victaulic Cap, 6"		
24	1	Victaulic Coupling, 8"		
25	1	Victaulic Coupling, 18"		
26	3	PVC SCH80 18" BLIND FLANGE		
31	3	18" PIPE SUPPORT ASSEMBLY		

PVC CF PIPE NOTES:

1. *PRIMARY UNITS IS IN INCHES*
2. *ALL MATERIAL SHALL BE PVC SCH80.*
3. *ALL GROOVES WHEN REQUIRED SHALL BE OF THE CUT GROOVE TYPE AS PER VICTAULIC PUBLICATION 25-01.*

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED FEED & DISCHARGE MANIFOLDS. UPDATED TAPPING POINTS & ADDED 8" PIPE SPOOL	AWS	11/07/11	AWS	JS
1	FOR FABRICATION	AWS	9/01/09	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	9/1/2011	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	JS		
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

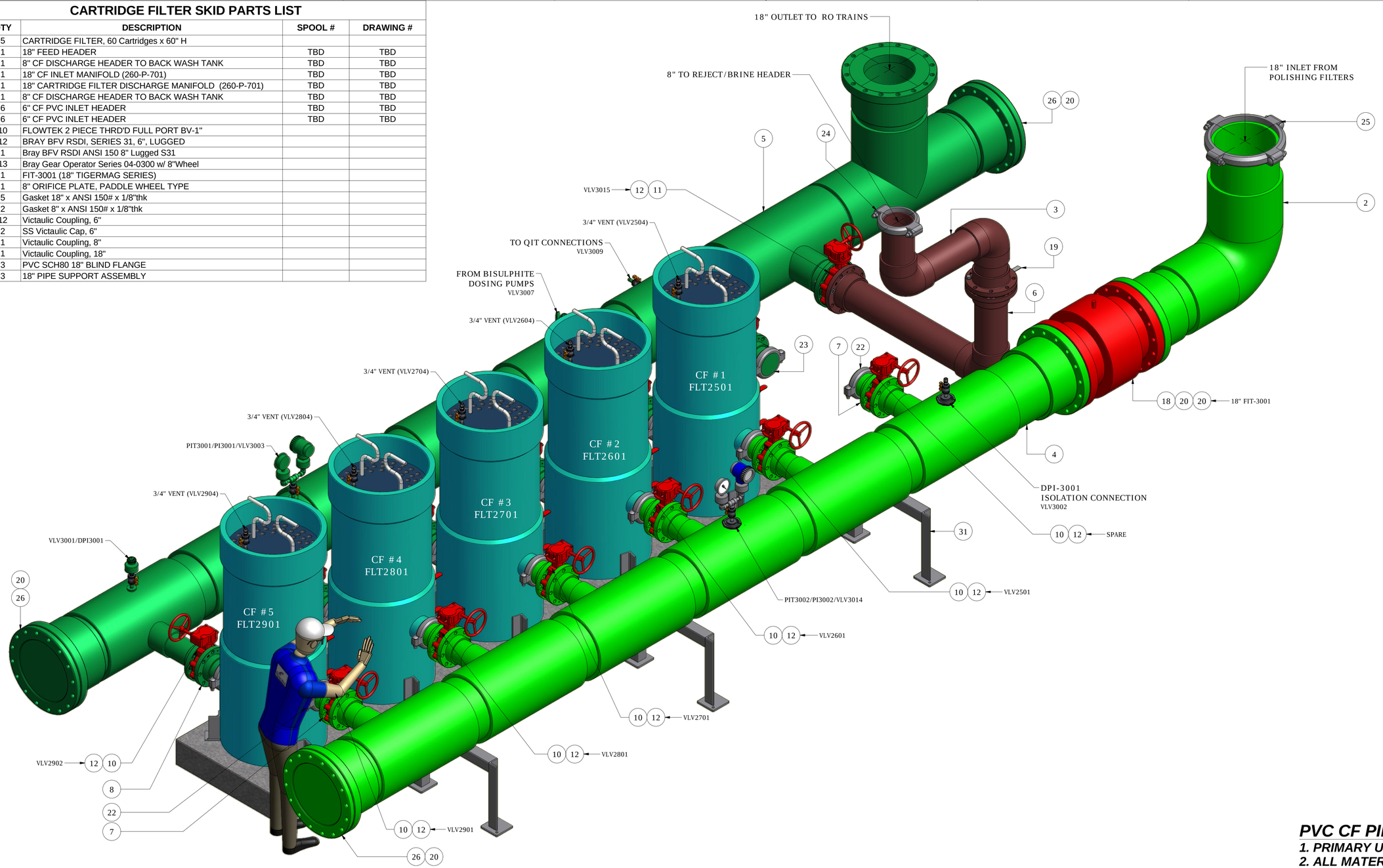
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: CARTRIDGE FILTER SKID GA ASSEMBLY GA

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-701	1 OF 6	2

CARTRIDGE FILTER SKID PARTS LIST

ITEM	QTY	DESCRIPTION	SPOOL #	DRAWING #
1	5	CARTRIDGE FILTER, 60 Cartridges x 60" H		
2	1	18" FEED HEADER	TBD	TBD
3	1	8" CF DISCHARGE HEADER TO BACK WASH TANK	TBD	TBD
4	1	18" CF INLET MANIFOLD (260-P-701)	TBD	TBD
5	1	18" CARTRIDGE FILTER DISCHARGE MANIFOLD (260-P-701)	TBD	TBD
6	1	8" CF DISCHARGE HEADER TO BACK WASH TANK	TBD	TBD
7	6	6" CF PVC INLET HEADER	TBD	TBD
8	6	6" CF PVC INLET HEADER	TBD	TBD
9	10	FLOWTEK 2 PIECE THRD'D FULL PORT BV-1"		
10	12	BRAY BFV RSDI, SERIES 31, 6", LUGGED		
11	1	Bray BFV RSDI ANSI 150 8" Lugged S31		
12	13	Bray Gear Operator Series 04-0300 w/ 8"Wheel		
18	1	FIT-3001 (18" TIGERMAG SERIES)		
19	1	8" ORIFICE PLATE, PADDLE WHEEL TYPE		
20	5	Gasket 18" x ANSI 150# x 1/8"thk		
21	2	Gasket 8" x ANSI 150# x 1/8"thk		
22	12	Victaulic Coupling, 6"		
23	2	SS Victaulic Cap, 6"		
24	1	Victaulic Coupling, 8"		
25	1	Victaulic Coupling, 18"		
26	3	PVC SCH80 18" BLIND FLANGE		
31	3	18" PIPE SUPPORT ASSEMBLY		



CARTRIDGE FILTER SKID ASSEMBLY

SCALE: 1/13

PVC CF PIPE NOTES:

1. *PRIMARY UNITS IS IN INCHES*
2. *ALL MATERIAL SHALL BE PVC SCH80.*
3. *ALL GROOVES WHEN REQUIRED SHALL BE OF THE CUT GROOVE TYPE AS PER VICTAULIC PUBLICATION 25-01.*

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED FEED & DISCHARGE MANIFOLDS. UPDATED TAPPING POINTS & ADDED 8" PIPE SPOOL	AWS	11/07/11	AWS	JS
1	FOR FABRICATION	AWS	9/01/09	JS	JS

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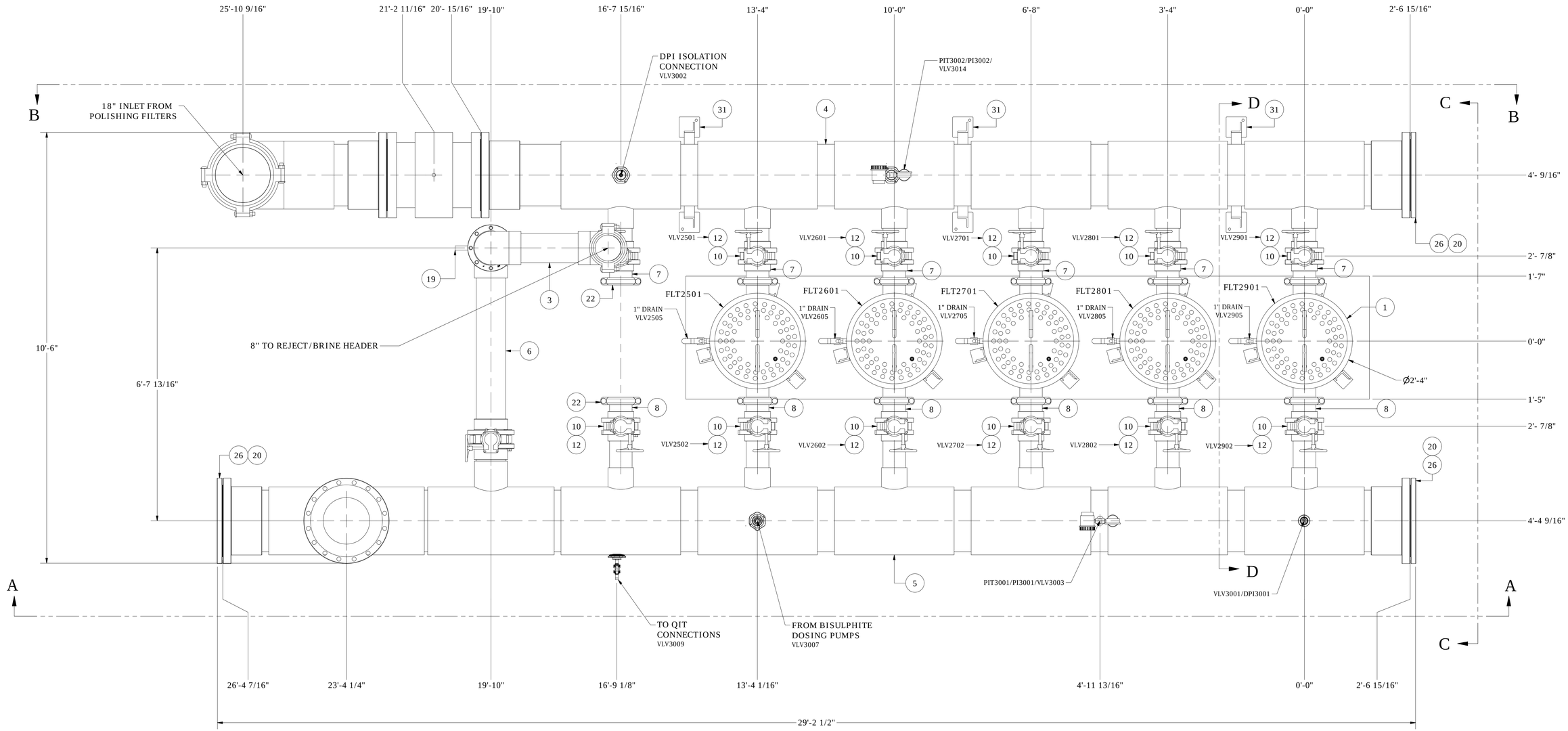
DRAWN AWS	9/1/2011	SUBMITTAL NO. XX
ENGR JS		SPEC'S. REF. NO. XX
PROJ MGR AWS		PROJECT NUMBER 260
APPROVED JS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: CARTRIDGE FILTER SKID GA
ASSEMBLY GA

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-701	2 OF 6	2



PLAN

SCALE: 1 / 15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED FEED & DISCHARGE MANIFOLDS. UPDATED TAPPING POINTS & ADDED 8" PIPE SPOOL	AWS	11/07/11	AWS	JS
1	FOR FABRICATION	AWS	9/01/09	JS	JS

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DRAWN AWS	9/1/2011	SUBMITTAL NO. XX	
ENGR JS		SPECS. REF. NO. XX	
PROJ MGR AWS		PROJECT NUMBER 260	
APPROVED JS			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

ENGINEER: BIWATER-AEWT

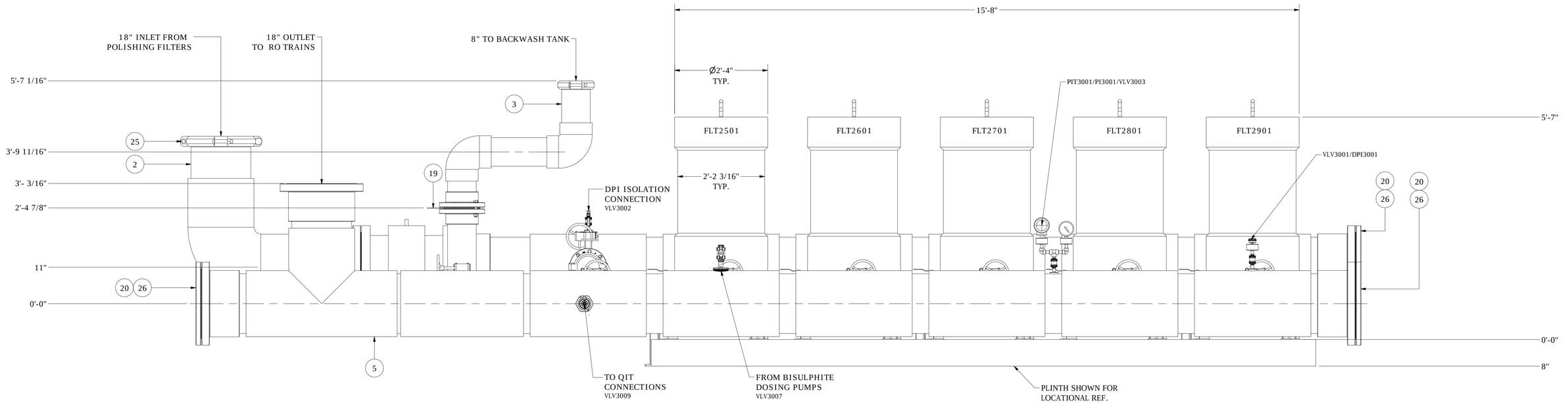
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: CARTRIDGE FILTER SKID GA

PLAN VIEW

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-701	3 OF 6	2



VIEW: "A-A"

18" DISCHARGE MANIFOLD ELEVATION

SCALE: 1/15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED FEED & DISCHARGE MANIFOLDS. UPDATED TAPPING POINTS & ADDED 8" PIPE SPOOL	AWS	11/07/11	AWS	JS
1	FOR FABRICATION	AWS	9/01/09	JS	JS

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DRAWN	AWS	9/1/2011	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	JS		
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

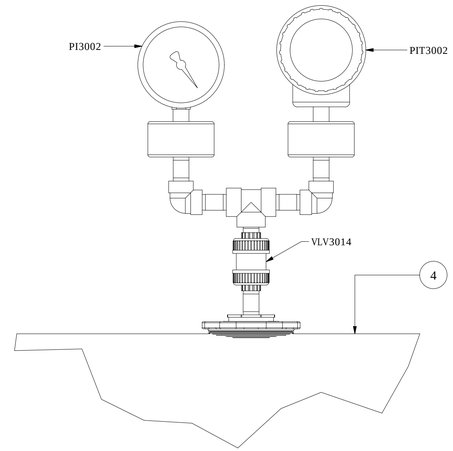
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

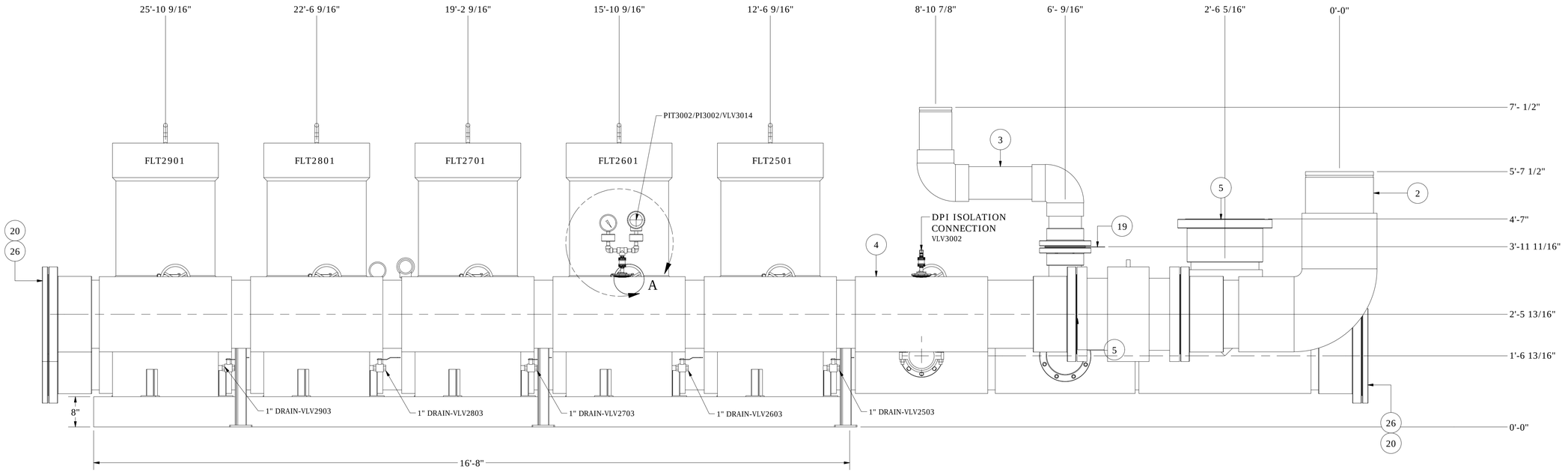
PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: CARTRIDGE FILTER SKID GA
SECTION & VIEWS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-701	4 OF 6	2



DETAIL: "A"
INSTRUMENT ARRANGEMENT
SCALE: 1 / 4



SECTION: "B-B"
18" FEED MANIFOLD FROM SAND FILTERS
SCALE: 1 / 15

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED FEED & DISCHARGE MANIFOLDS. UPDATED TAPPING POINTS & ADDED 8" PIPE SPOOL	AWS	11/07/11	AWS	JS
1	FOR FABRICATION	AWS	9/01/09	JS	JS

REVISION HISTORY

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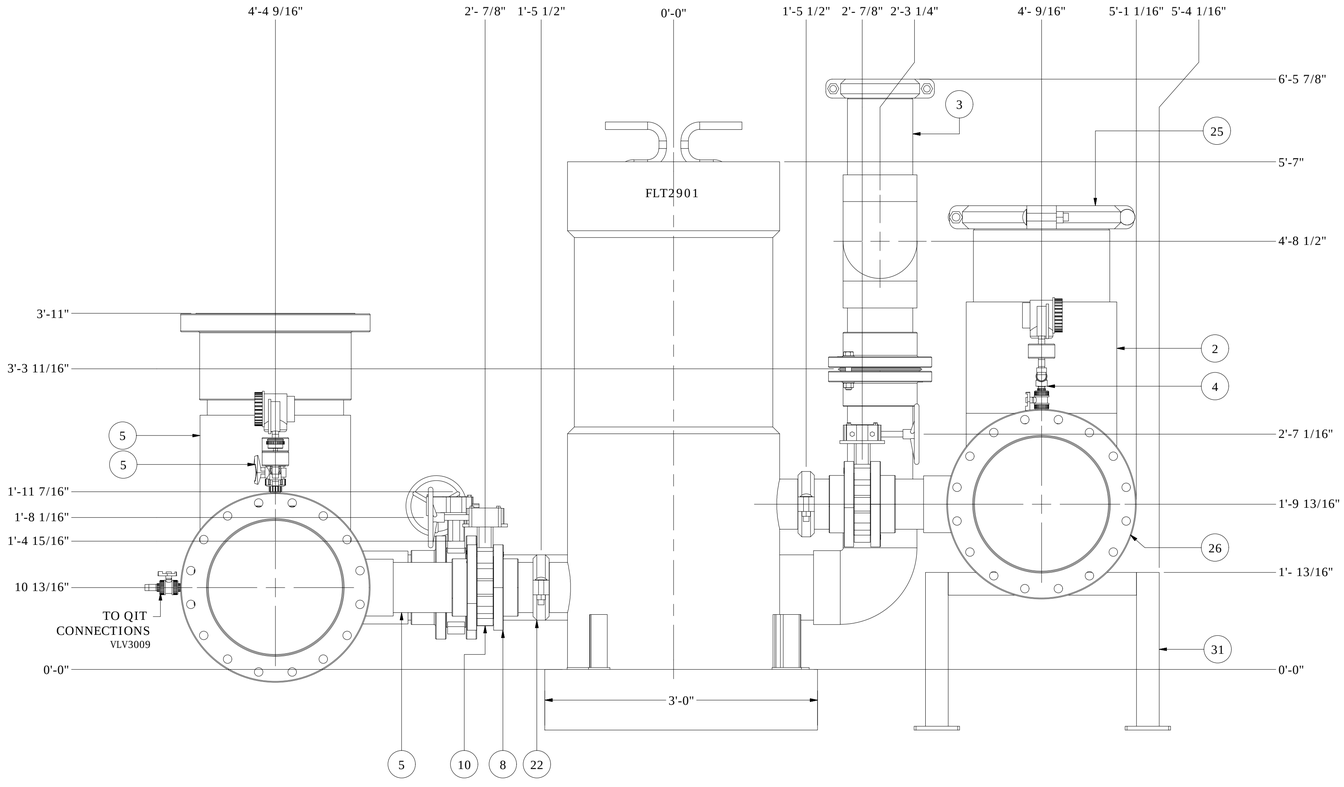
DRAWN AWS	9/1/2011	SUBMITTAL NO. XX	
ENGR JS		SPECS. REF. NO. XX	
PROJ MGR AWS		PROJECT NUMBER 260	
APPROVED JS			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

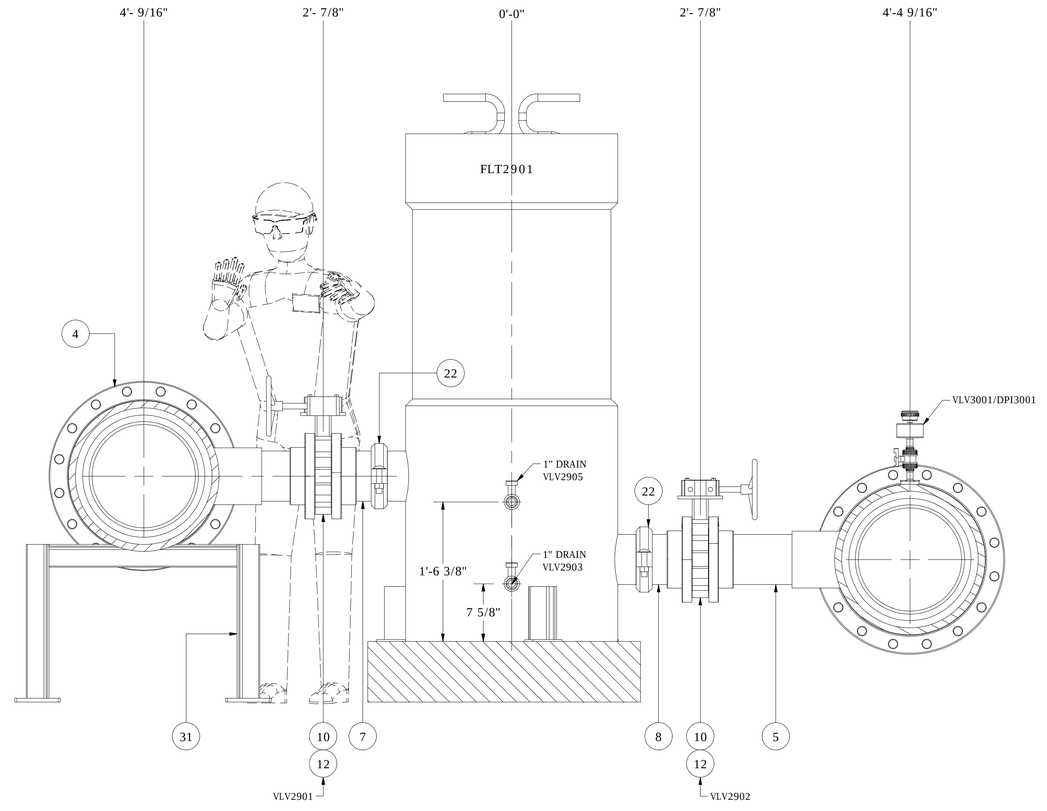
TITLE: CARTRIDGE FILTER SKID GA
SECTION & VIEWS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-701	5 OF 6	2



VIEW: "C-C"

SCALE: 1/10



SECTION: "D-D"

SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED FEED & DISCHARGE MANIFOLDS. UPDATED TAPPING POINTS & ADDED 8" PIPE SPOOL	AWS	11/07/11	AWS	JS
1	FOR FABRICATION	AWS	9/01/09	JS	JS

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DRAWN AWS	9/1/2011	SUBMITTAL NO. XX	
ENGR JS		SPECS. REF. NO. XX	
PROJ MGR AWS		PROJECT NUMBER 260	
APPROVED JS			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

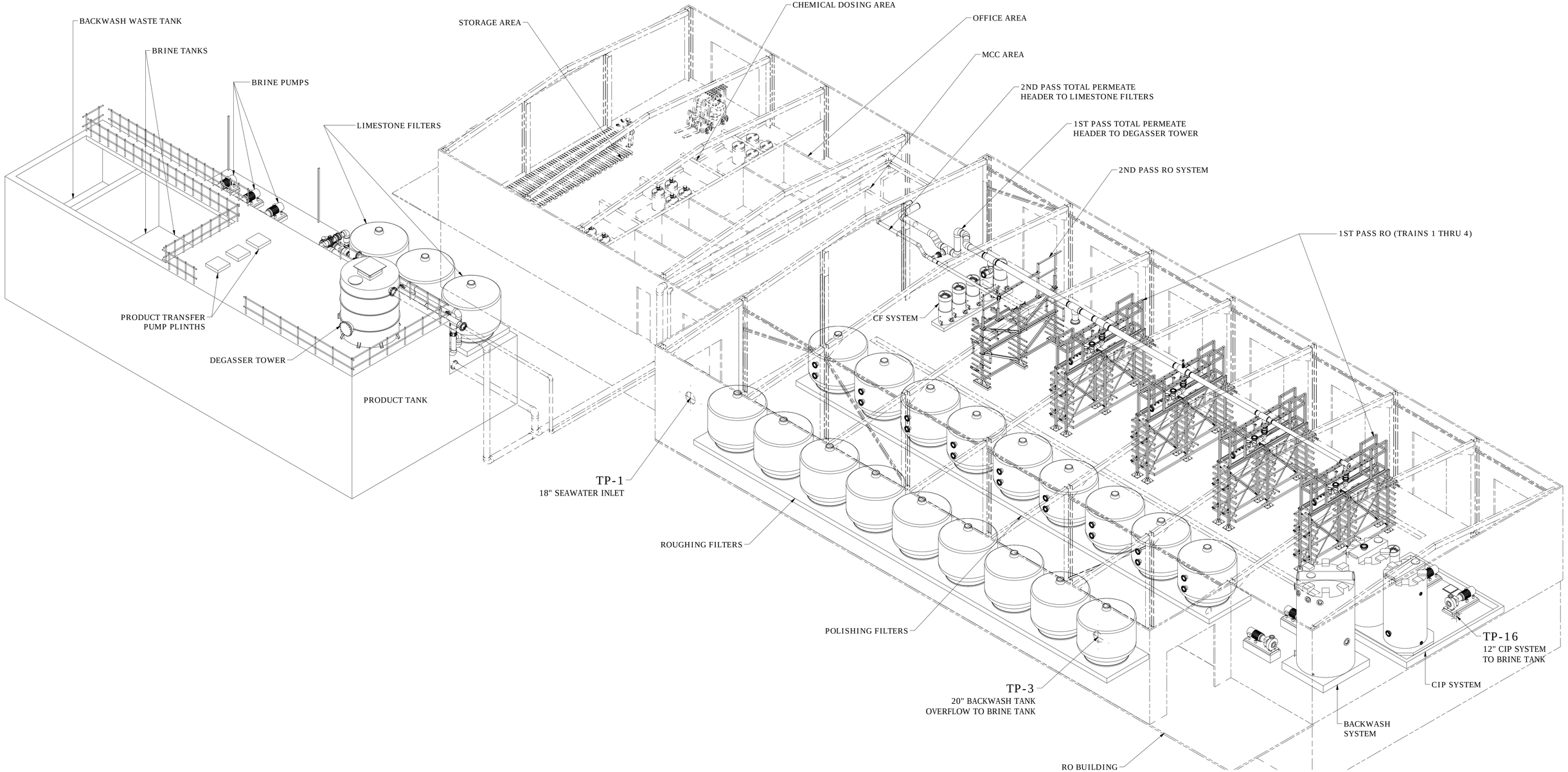
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: CARTRIDGE FILTER SKID GA
SECTION & VIEWS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-701	6 OF 6	2



NOTE:
1. BUILDINGS SHOWN FOR LOCATIONAL REFERENCE ONLY.

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	05/19/11	JS	JS

REVISION HISTORY

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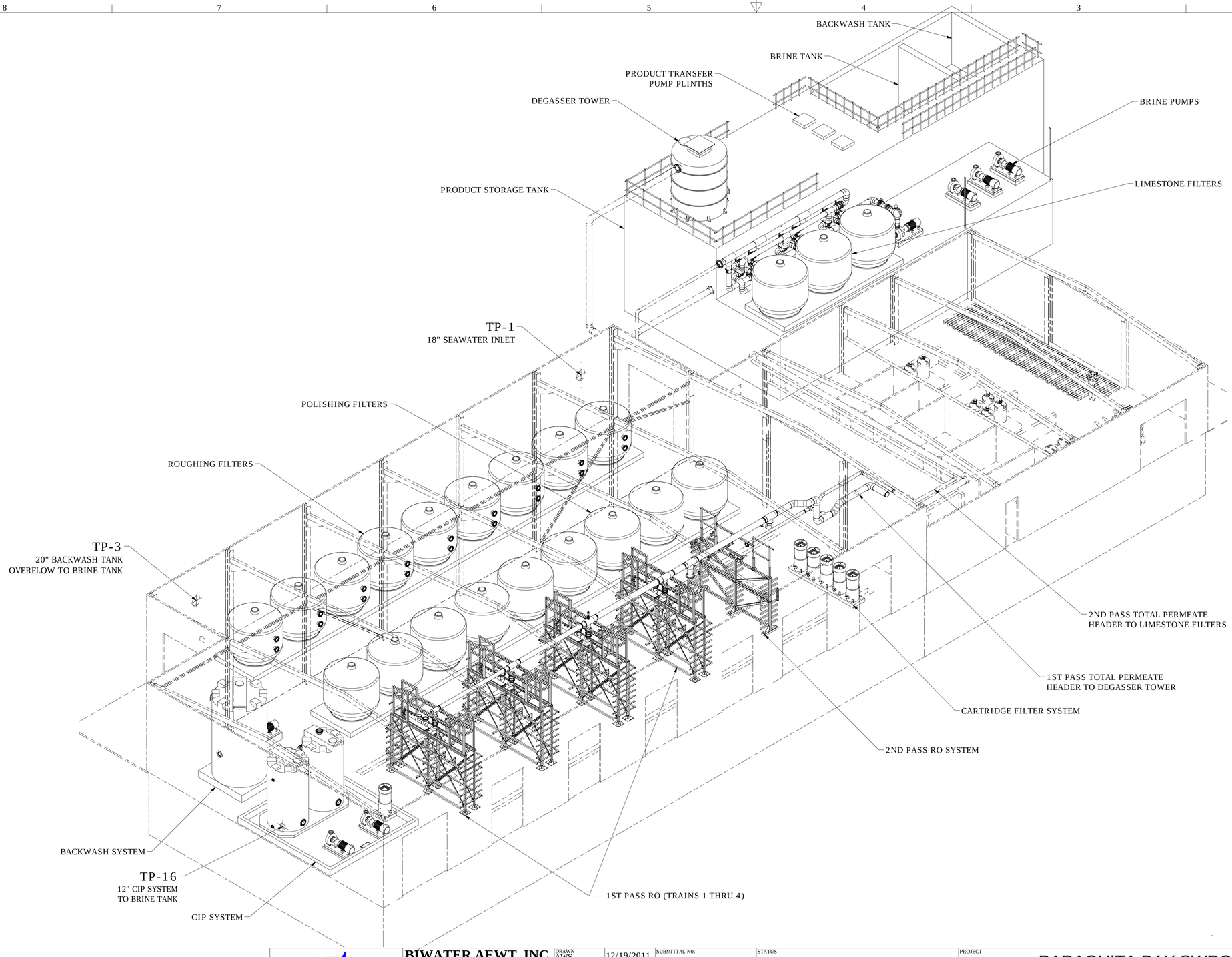
DRAWN AWS	12/19/2011	SUBMITTAL NO.	
ENGR JS	9/28/2011	SPECS. REF. NO.	
PROJ MGR AWS	9/28/2011	PROJECT NUMBER	260
APPROVED JS	9/28/2011		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: PARAQUITA BAY SWRO
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: DOSING & PRODUCT TANKS PUMPING STATION

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-203	1 OF 6	1



REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	05/19/11	JS	JS

REVISION HISTORY

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DRAWN AWS	12/19/2011	SUBMITTAL NO.
ENGR JS	9/28/2011	SPECS. REF. NO.
PROJ MGR AWS	9/28/2011	PROJECT NUMBER 260
APPROVED JS	9/28/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

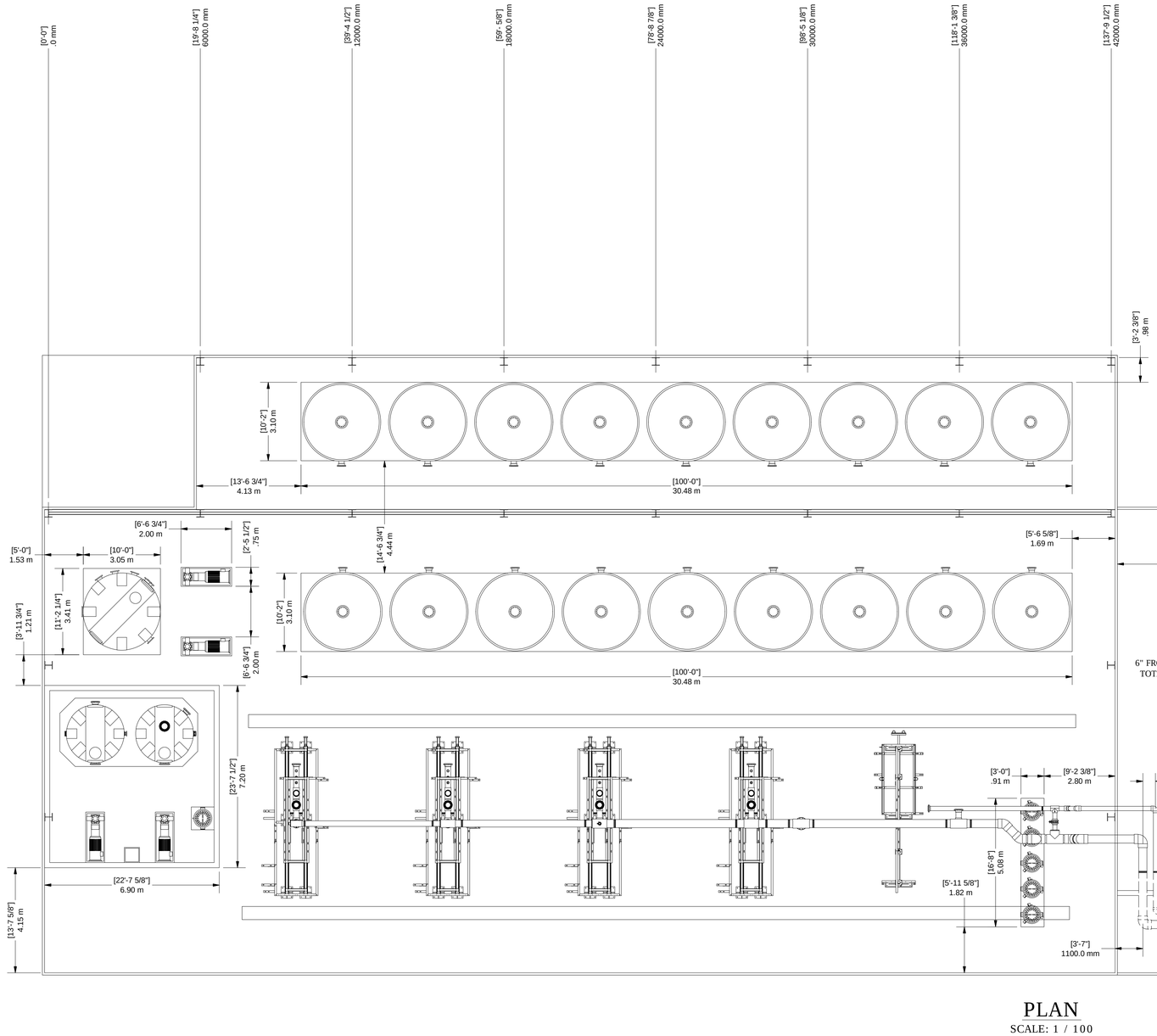
ENGINEER: BIWATER-AEWT

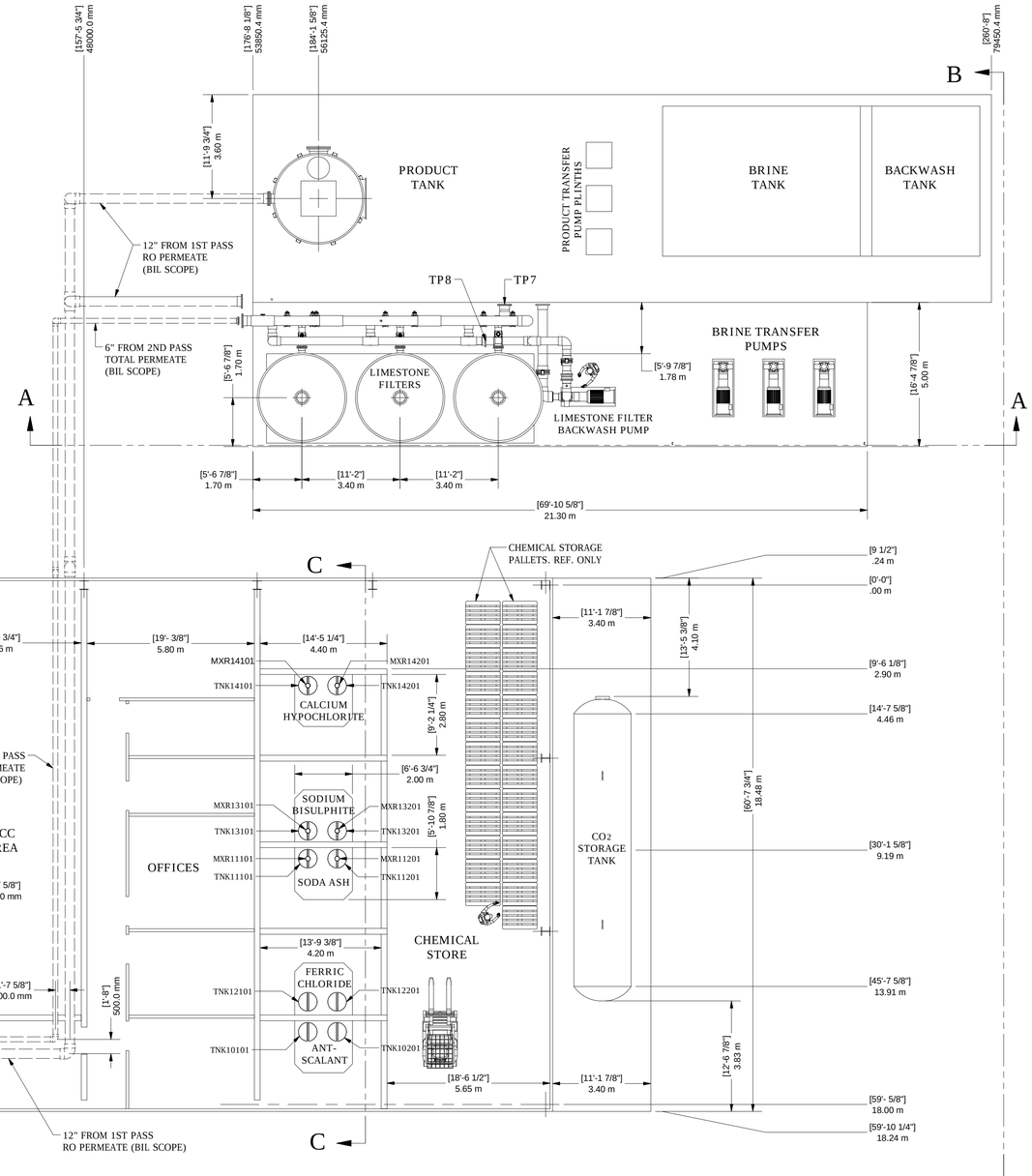
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: PARAQUITA BAY SWRO
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: DOSING & PRODUCT TANKS
PUMPING STATION

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-203	2 OF 6	1





PLAN
SCALE: 1 / 100

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	05/19/11	JS	JS

REVISION HISTORY

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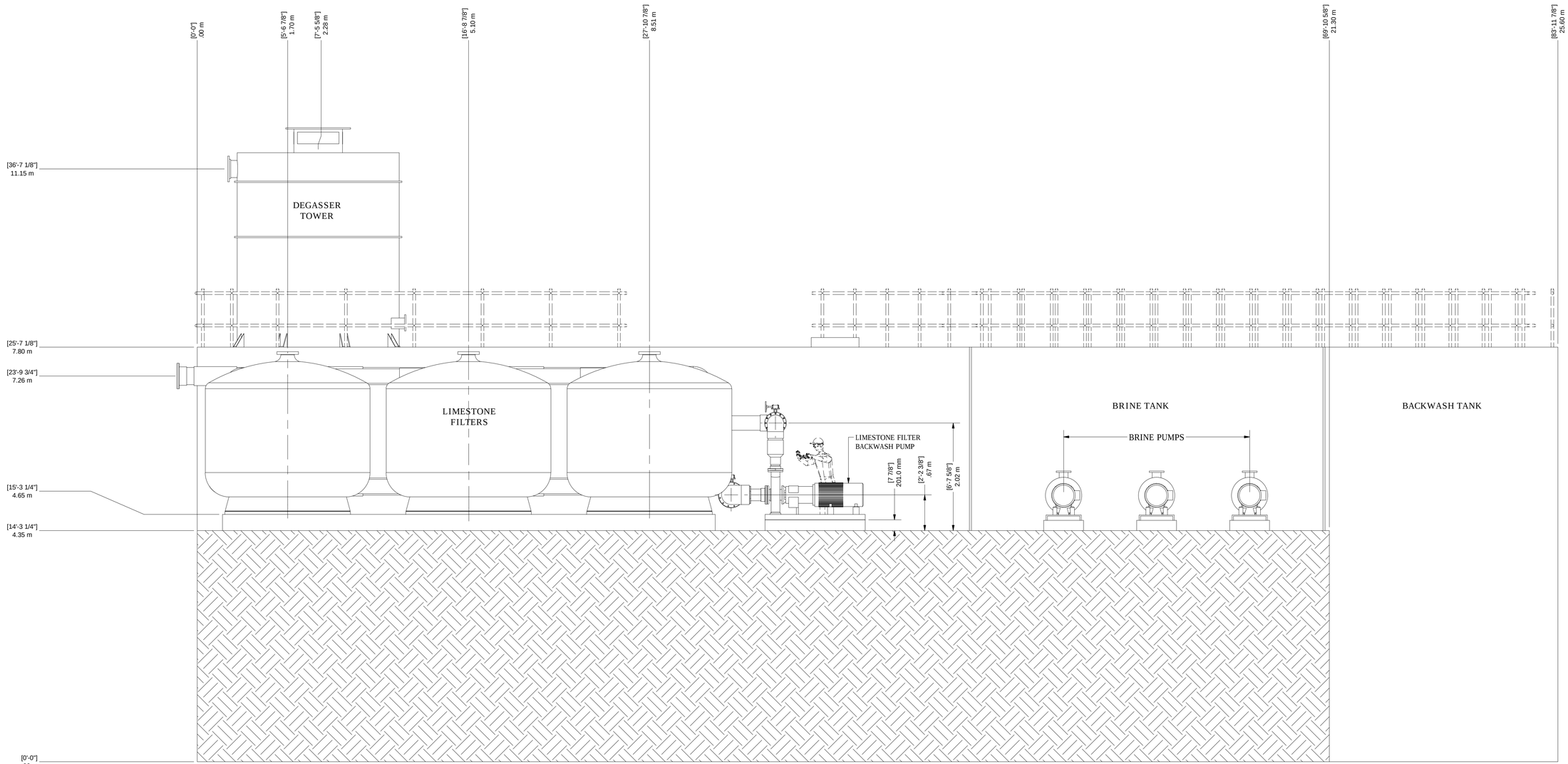
DRAWN	AWS	12/19/2011	SUBMITTAL NO.
ENGR	JS	9/28/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/28/2011	PROJECT NUMBER 260
APPROVED	JS	9/28/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: PARAQUITA BAY SWRO
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: DOSING & PRODUCT TANKS
SITE PLAN

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-203	3 OF 6	1



SECTION: A-A

LIMESTONE FILTERS & DEGASSER TOWER

SCALE: 1 / 40

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	05/19/11	JS	JS

REVISION HISTORY

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DRAWN AWS	12/19/2011	SUBMITTAL NO.	
ENGR JS	9/28/2011	SPECS. REF. NO.	
PROJ MGR AWS	9/28/2011	PROJECT NUMBER	260
APPROVED JS	9/28/2011		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

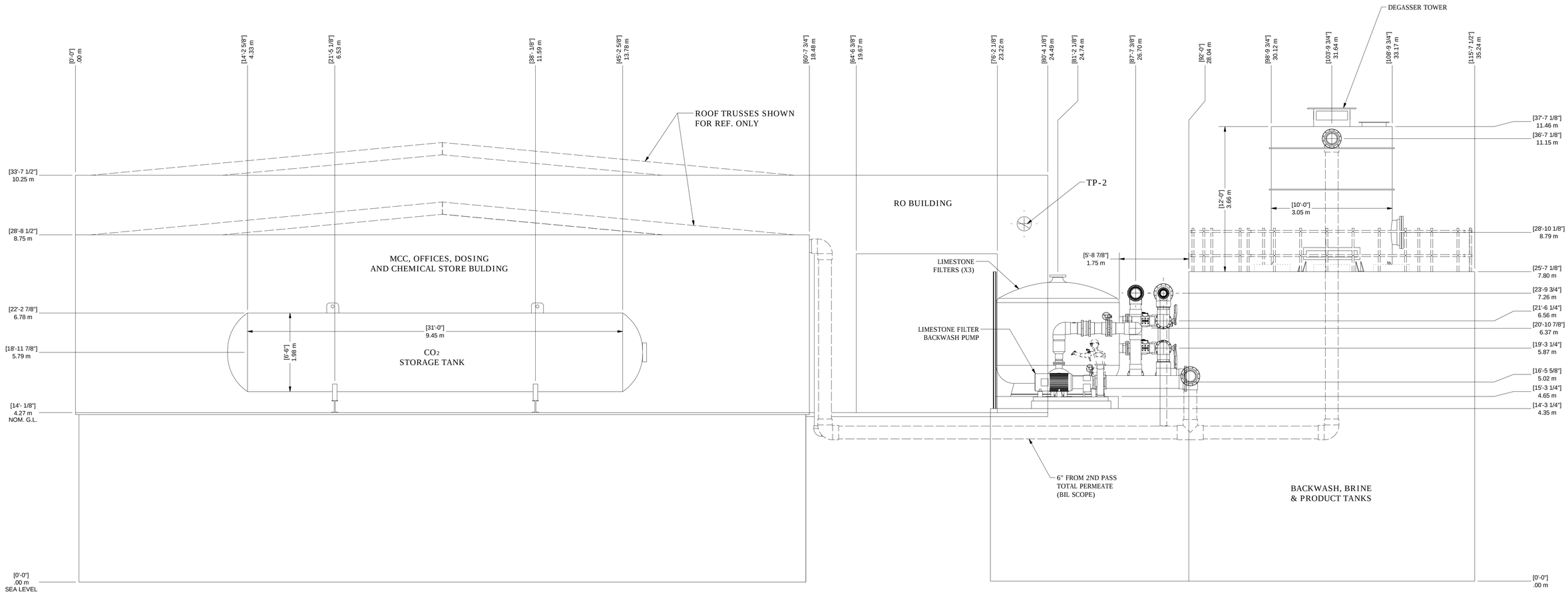
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: PARAQUITA BAY SWRO
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: DOSING & PRODUCT TANKS
LIMESTONE & DEGASSAR

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-203	4 OF 6	1



VIEW B-B

ELEVATION OF CO_2, DOSING, LIMESTONE

SCALE: 1 / 50

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	05/19/11	JS	JS

REVISION HISTORY

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DRAWN	AWS	12/19/2011	SUBMITTAL NO.
ENGR	JS	9/28/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/28/2011	PROJECT NUMBER 260
APPROVED	JS	9/28/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

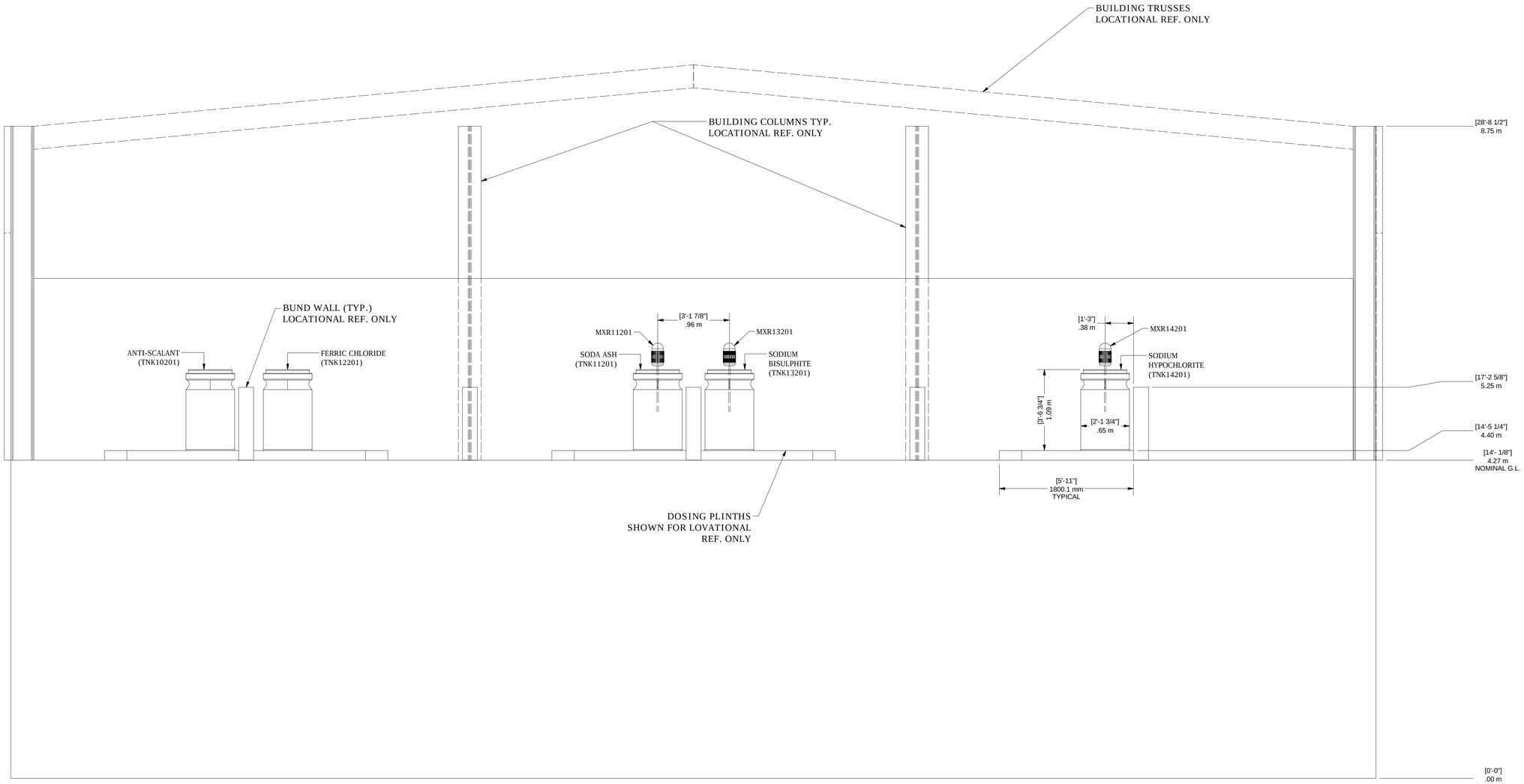
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: PARAQUITA BAY SWRO
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: DOSING & PRODUCT TANKS
CO2 TANK & LIMESTONE FILTERS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-203	5 OF 6	1



SECTION: C-C

CHEMICAL DOSING AREA

SCALE: 1 / 30

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	05/19/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	12/19/2011	SUBMITTAL N0.
ENGR	JS	9/28/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/28/2011	PROJECT NUMBER 260
APPROVED	JS	9/28/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

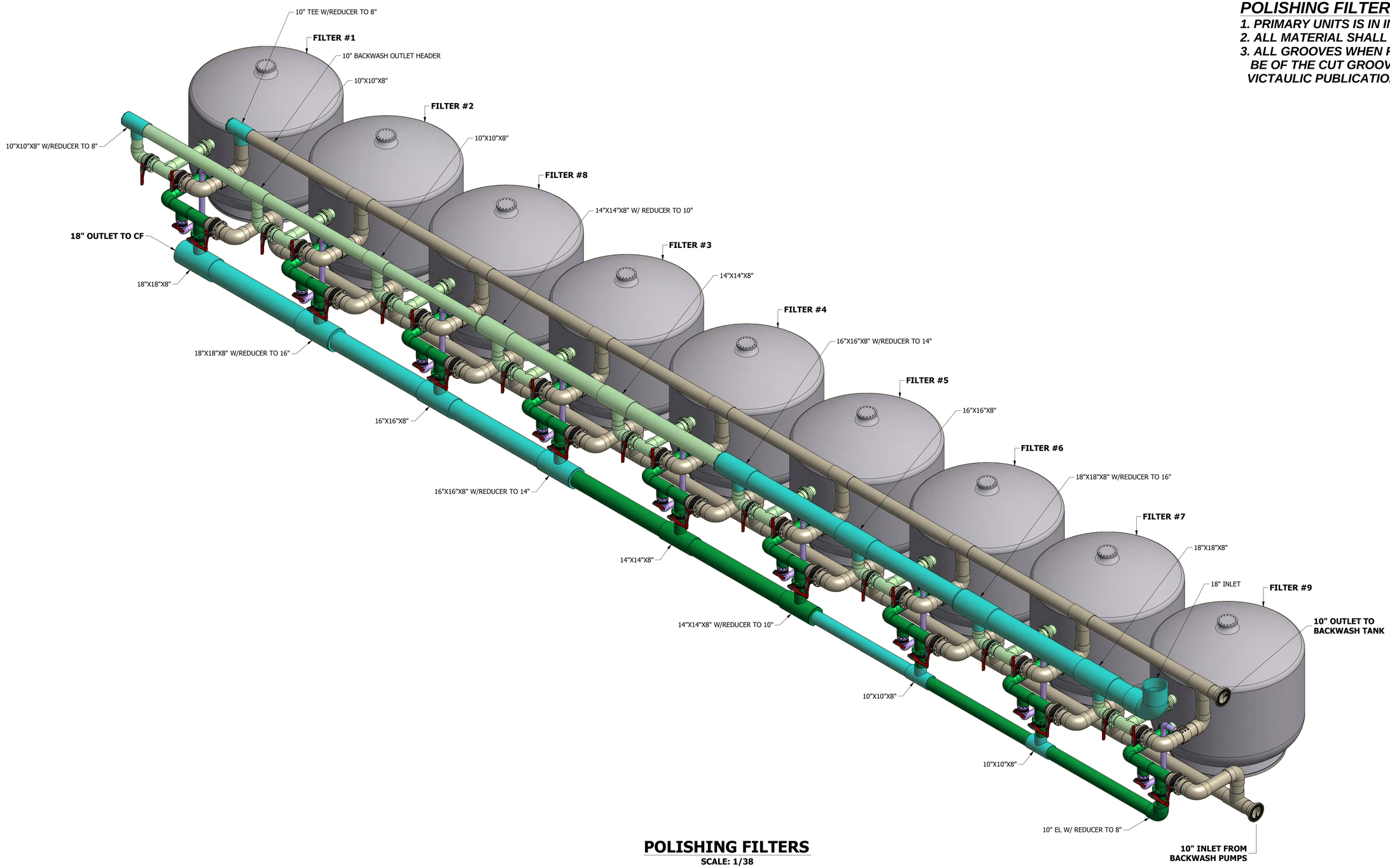
PROJECT: PARAQUITA BAY SWRO
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: DOSING & PRODUCT TANKS
DOSING AREA

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-203	6 OF 6	1

POLISHING FILTER PVC PIPE NOTES:

1. PRIMARY UNITS IS IN INCHES
2. ALL MATERIAL SHALL BE PVC SCH80.
3. ALL GROOVES WHEN REQUIRED SHALL BE OF THE CUT GROOVE TYPE AS PER VICTAULIC PUBLICATION 25-01.



POLISHING FILTERS

SCALE: 1/38

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	ADDED LIMESTONE FILTER ASSEMBLY DRAWING	AWS	01/16/12	AWS	JS
1	FOR FABRICATION	AWS	10/11/11	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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DRAWN	AWS	10/11/2011	SUBMITTAL NO.
ENGR	JS	9/7/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/7/2011	PROJECT NUMBER 260
APPROVED	JS	9/7/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

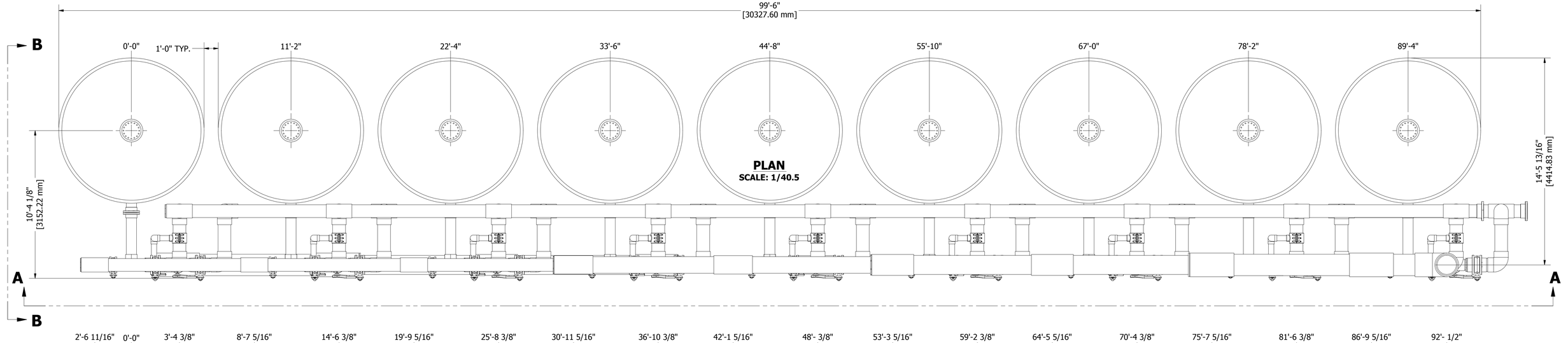
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

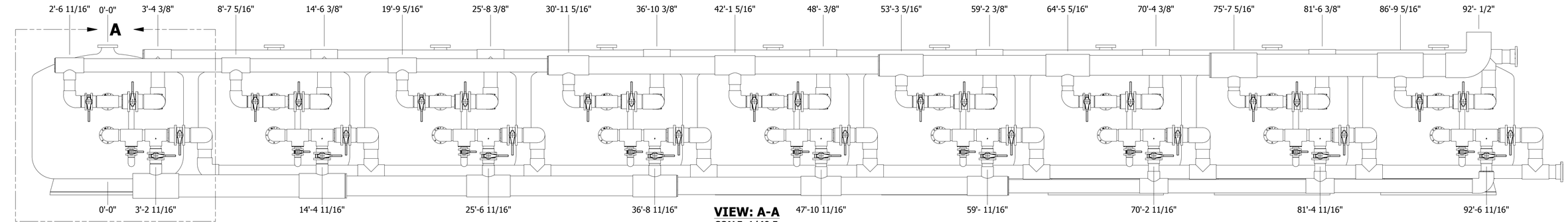
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: ASTRA FILTERS ASSEMBLY POLISHING FILTER

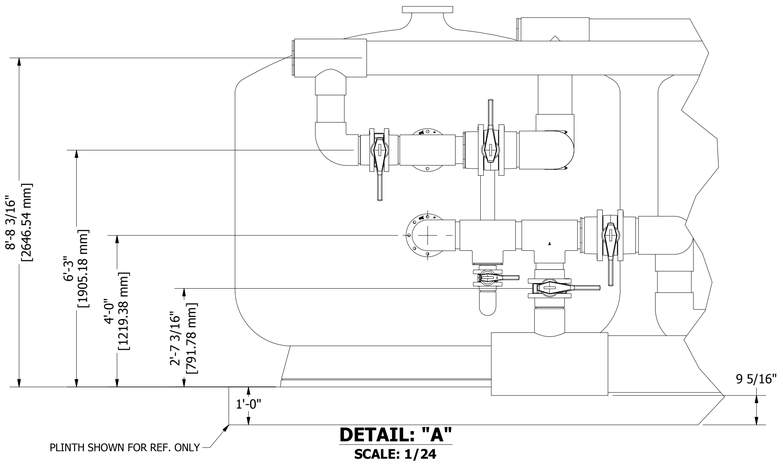
SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-901	1 OF 7	2



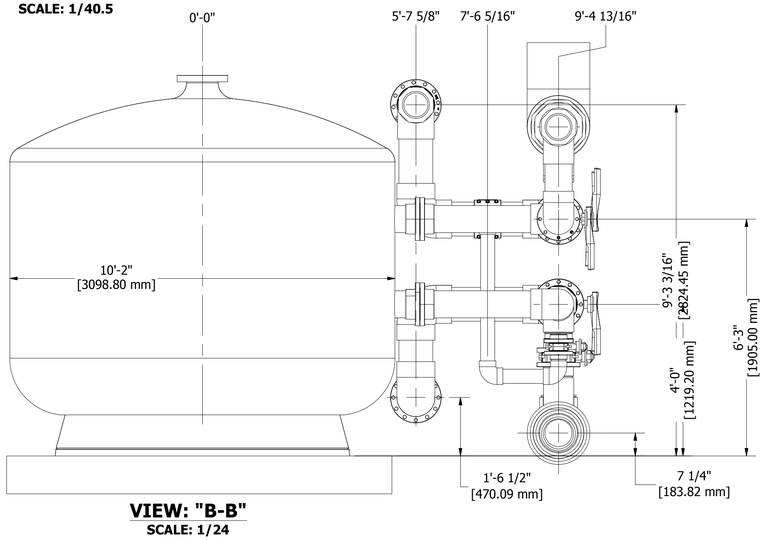
PLAN
SCALE: 1/40.5



VIEW: A-A
SCALE: 1/40.5



DETAIL: "A"
SCALE: 1/24



VIEW: "B-B"
SCALE: 1/24

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	ADDED LIMESTONE FILTER ASSEMBLY DRAWING	AWS	01/16/12	AWS	JS
1	FOR FABRICATION	AWS	10/11/11	AWS	JS

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DRAWN	AWS	10/11/2011	SUBMITTAL NO.
ENGR	JS	9/7/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/7/2011	PROJECT NUMBER 260
APPROVED	JS	9/7/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

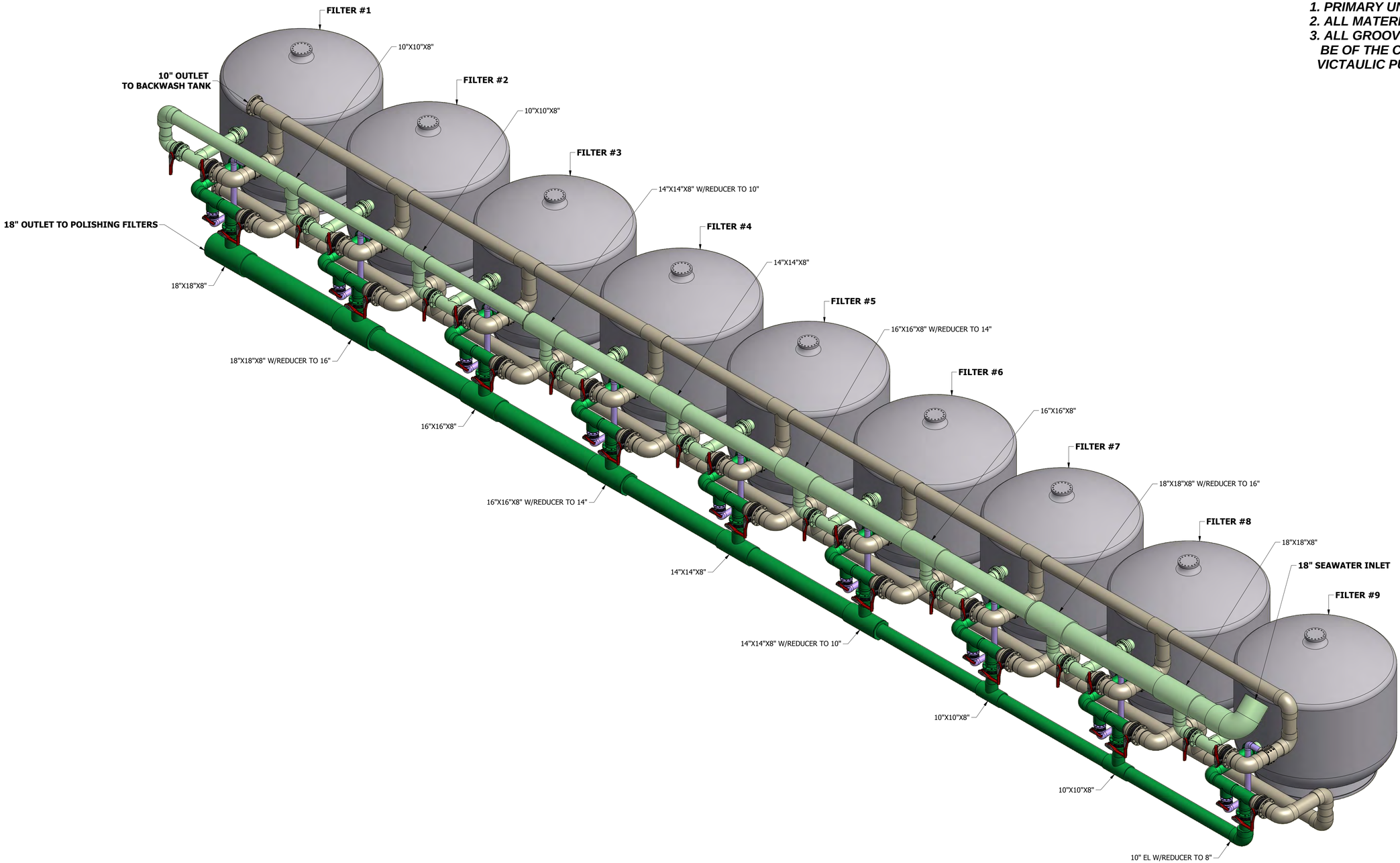
PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ASTRA FILTERS ASSEMBLY
PLAN & ELEVATIONS

SIZE D | SCALE A/S | DWG NO 260-M-901 | SHEET 2 OF 7 | REV 2

ROUGHING FILTER PVC PIPE NOTES:

1. PRIMARY UNITS IS IN INCHES
2. ALL MATERIAL SHALL BE PVC SCH80.
3. ALL GROOVES WHEN REQUIRED SHALL BE OF THE CUT GROOVE TYPE AS PER VICTAULIC PUBLICATION 25-01.



ROUGHING FILTERS

SCALE: 1/38

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	ADDED LIMESTONE FILTER ASSEMBLY DRAWING	AWS	01/16/12	AWS	JS
1	FOR FABRICATION	AWS	10/11/11	AWS	JS

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DRAWN	AWS	10/11/2011	SUBMITTAL NO.
ENGR	JS	9/7/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/7/2011	PROJECT NUMBER 260
APPROVED	JS	9/7/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

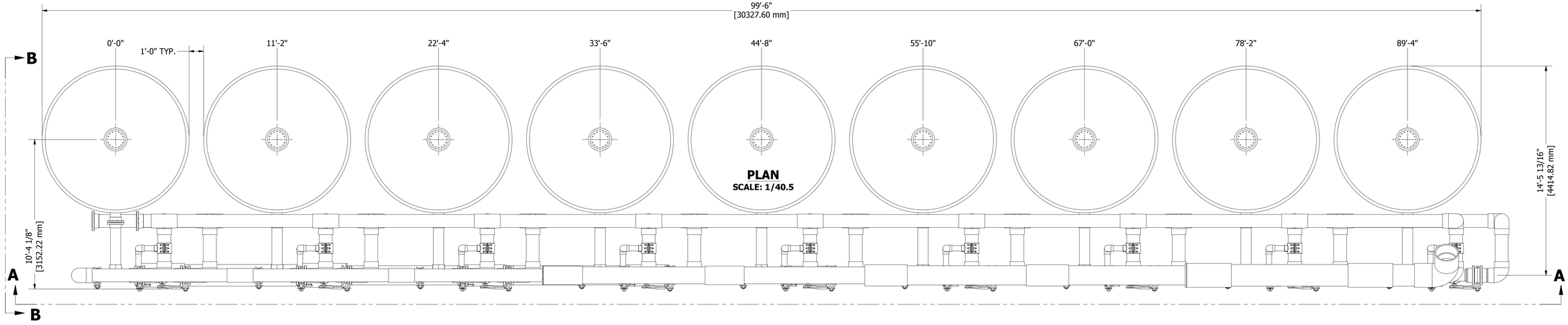
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

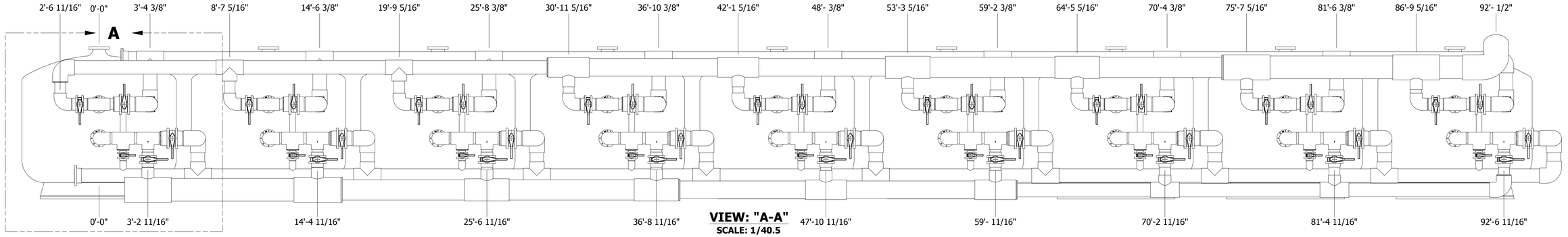
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: ASTRA FILTERS ASSEMBLY ROUGHING FILTER

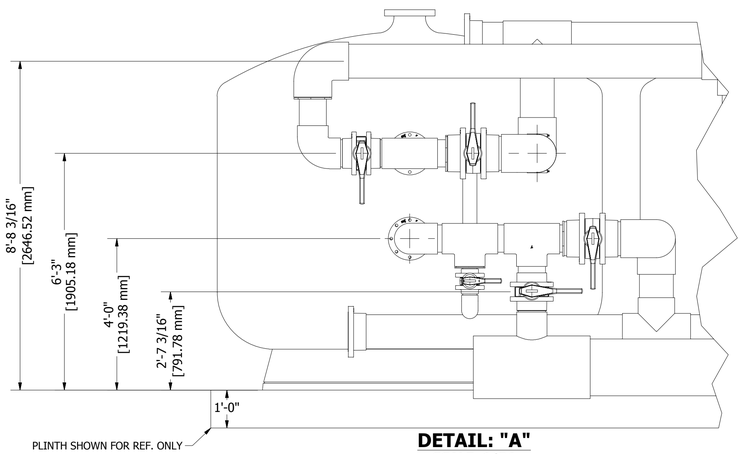
SIZE D | SCALE A/S | DWG NO 260-M-901 | SHEET 3 OF 7 | REV 2



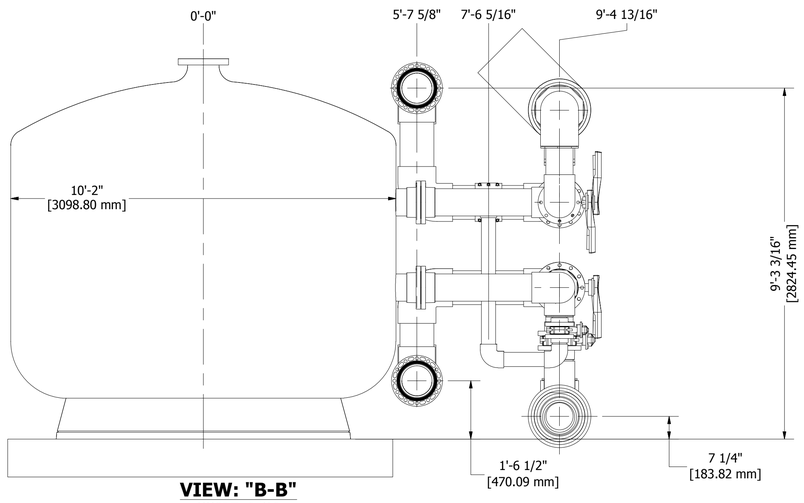
PLAN
SCALE: 1/40.5



VIEW: "A-A"
SCALE: 1/40.5



DETAIL: "A"
SCALE: 1/24



VIEW: "B-B"
SCALE: 1/24

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	ADDED LIMESTONE FILTER ASSEMBLY DRAWING	AWS	01/16/12	AWS	JS
1	FOR FABRICATION	AWS	10/11/11	AWS	JS

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DRAWN	AWS	10/11/2011
ENGR	JS	9/7/2011
PROJ MGR	AWS	9/7/2011
APPROVED	JS	9/7/2011

SUBMITTAL NO.
SPECS. REF. NO.
PROJECT NUMBER 260

TOLERANCE BLOCK
INCH = +/- 1/32 (+/- 0.03)
METRIC = +/- 1.0 millimeter

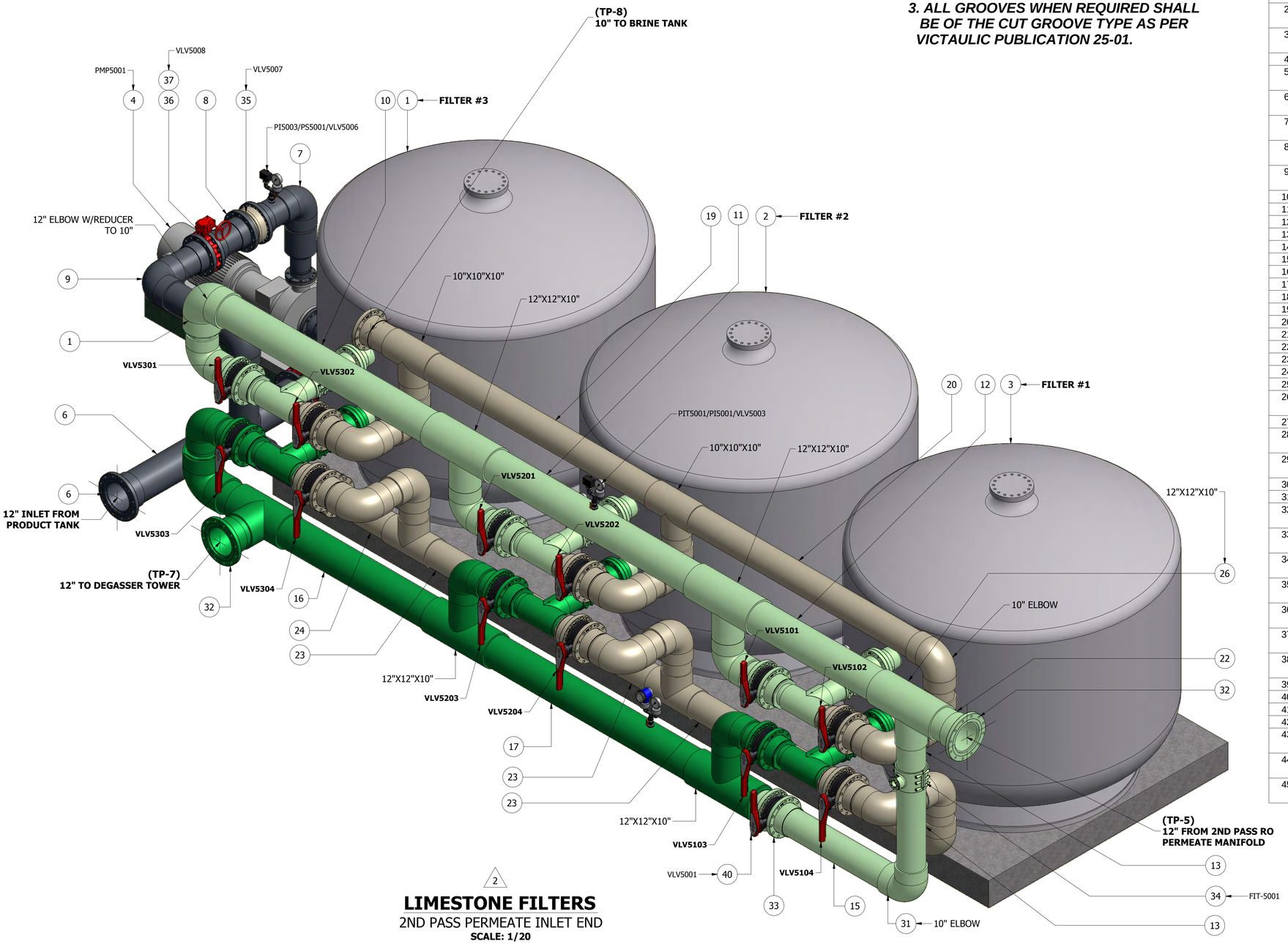
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: ASTRA FILTERS ASSEMBLY SECTION VIEWS

SIZE D | SCALE A/S | DWG NO 260-M-901 | SHEET 4 OF 7 | REV 2

LIMESTONE FILTER PVC PIPE NOTES:

1. PRIMARY UNITS IS IN INCHES
2. ALL MATERIAL SHALL BE PVC SCH80.
3. ALL GROOVES WHEN REQUIRED SHALL BE OF THE CUT GROOVE TYPE AS PER VICTAULIC PUBLICATION 25-01.



2

LIMESTONE FILTERS

2ND PASS PERMEATE INLET END

SCALE: 1/20

PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION	SPOOL #	DRAWING
1	1	ASTRAL 13118-8 LIMESTONE FILTER-01	ASTRAL 13118-8 LIMESTONE FILTER #3		
2	1	ASTRAL 13118-8 LIMESTONE FILTER-02	ASTRAL 13118-8 LIMESTONE FILTER #2		
3	1	ASTRAL 13118-8 LIMESTONE FILTER-03	ASTRAL 13118-8 LIMESTONE FILTER #1		
4	1	SULZER PUMP	SUMMIT PUMP MODEL 2196, 6"X8"		
5	1	LIMESTONE BACKWASH PUMP SUCTION HEADER-01	12" LIMESTONE FILTER BACKWASH PUMP SUCTION HEADER	TBD	TBD
6	1	LIMESTONE BACKWASH PUMP SUCTION HEADER-02	12" LIMESTONE FILTER BACKWASH PUMP SUCTION HEADER	TBD	TBD
7	1	LIMESTONE BACKWASH PUMP DISCHARGE ASSEMBLY-01	10" LIMESTONE FILTER BACKWASH PUMP DISCHARGE HEADER	TBD	TBD
8	1	LIMESTONE BACKWASH PUMP DISCHARGE ASSEMBLY-02	10" LIMESTONE FILTER BACKWASH PUMP DISCHARGE HEADER	TBD	TBD
9	1	LIMESTONE BACKWASH PUMP DISCHARGE ASSEMBLY-03	10" LIMESTONE FILTER BACKWASH PUMP DISCHARGE HEADER	TBD	TBD
10	128.687 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"		
11	121.156 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"		
12	73.642 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"		
13	65.188 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"		
14	12.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"		
15	60.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"		
16	114.250 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"		
17	114.250 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"		
18	15.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"		
19	128.687 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"		
20	121.875 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"		
21	17.610 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"		
22	18.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"		
23	245.374 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"		
24	34.034 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"		
25	1	801-120	PVC SCH80 TEE, 12", SXSXS		
26	1	801-670F	PVC SCH80 TEE REDUCER , 12"x12"x10", SXSXS		
27	3	805-005	PVC SCH80 TEE, 1/2", FXFXF		
28	1	837-670	REDUCER BUSING, 12"X10", SPGXSOC, PVC, SCH.80		
29	2	839-247	PVC SCH80 REDUCER BUSHING 2" x 1/2" (MXF)		
30	6	808-005	PVC SCH80 ELBOW, 1/2", FXFX90		
31	1	806-100	PVC SCH80 ELBOW, 10" (SXSX90)		
32	2	854-120	PVC SCH80 FLANGE, 12", 150# (TWOPIECE-SLIP)		
33	4	854-100	PVC SCH80 FLANGE, 10", 150# (TWOPIECE-SLIP)		
34	1	866-621	PVC SCH80 SADDLE, 10"X2" (SINGLE-SLIP-EPDM-ZINC)		
35	1	CV-HAYWARD-10-SPACER	HAYWARD PVC WAFER CHECK VALVE W/SPACER, #WCX102SP, 10"		
36	1	S31H-10	Bray BFV RSDI ANSI 150 10" Lugged S31		
37	2	S04-30_E0_8WH	Bray Gear Operator Series 04-0300 w/ 8"Wheel		
38	1	S31H-12	Bray BFV RSDI ANSI 150 12" Lugged S31		
39	3	TYPE 375 BALL-.5	BAV TYPE 375, 1/2'', SCH80 PVC.		
40	1	Georg Fischer BFV-567-10-Lever	BFV 10" Lever Operator PVC		
41	16	JIS B 2302 Close Nipple 1/2	PIPE NIPPLE, CLOSE 1/2"		
42	4	42MW-01	SS DIAPHRAGM SEAL		
43	3	Pressure Gauge Type 133.53-1.25 NPT	Pressure Gauge, 4"Face All Stainless Glycerin Filled, 1/4" NPT		
44	2	PS-01	ASHCROFT TYPE 400, B-SERIES PRESSURE SWITCH		
45	1	PT-FOXBORO-IGP10, MODEL RTT20	FOXBORO MODEL IGP10 PRESSURE TRANSMITTER		

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	ADDED LIMESTONE FILTER ASSEMBLY DRAWING	AWS	01/16/12	AWS	JS
1	FOR FABRICATION	AWS	10/11/11	AWS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	10/11/2011	SUBMITTAL NO.
ENGR	JS	9/7/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/7/2011	PROJECT NUMBER 260
APPROVED	JS	9/7/2011	
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

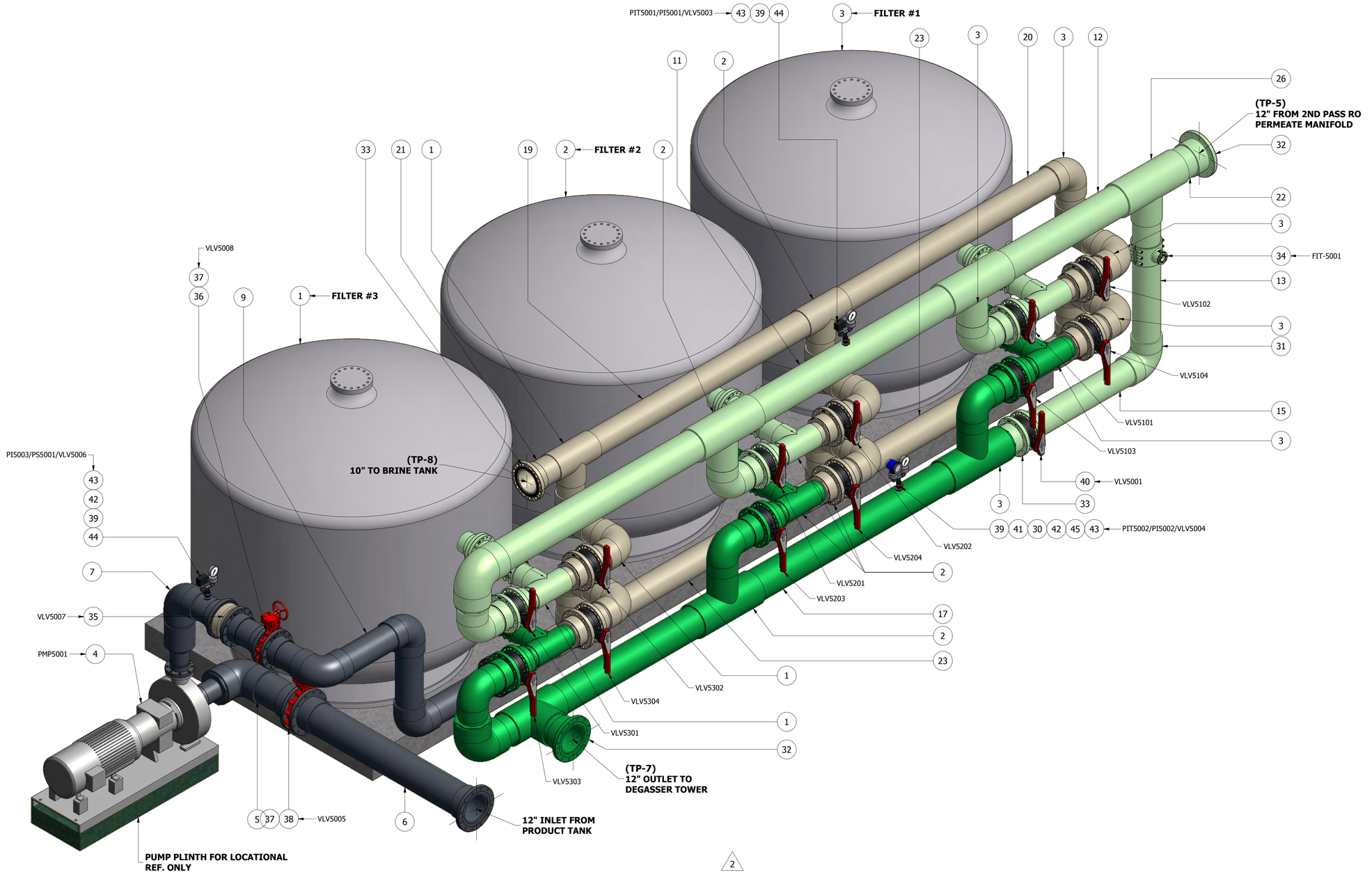
ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ASTRA FILTERS ASSEMBLY
LIMESTONE FILTERS

SIZE	SCALE	DWG NO	SHEET	REV.
D	A/S	260-M-901	5 OF 7	2



2

LIMESTONE FILTERS

FROM PRODUCT TANK END

SCALE: 1/20

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	ADDED LIMESTONE FILTER ASSEMBLY DRAWING	AWS	01/16/12	AWS	JS
1	FOR FABRICATION	AWS	10/11/11	AWS	JS

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DRAWN	AWS	10/11/2011
ENGR	JS	9/7/2011
PROJ MGR	AWS	9/7/2011
APPROVED	JS	9/7/2011

SUBMITTAL NO.
SPECS. REF. NO.
PROJECT NUMBER 260

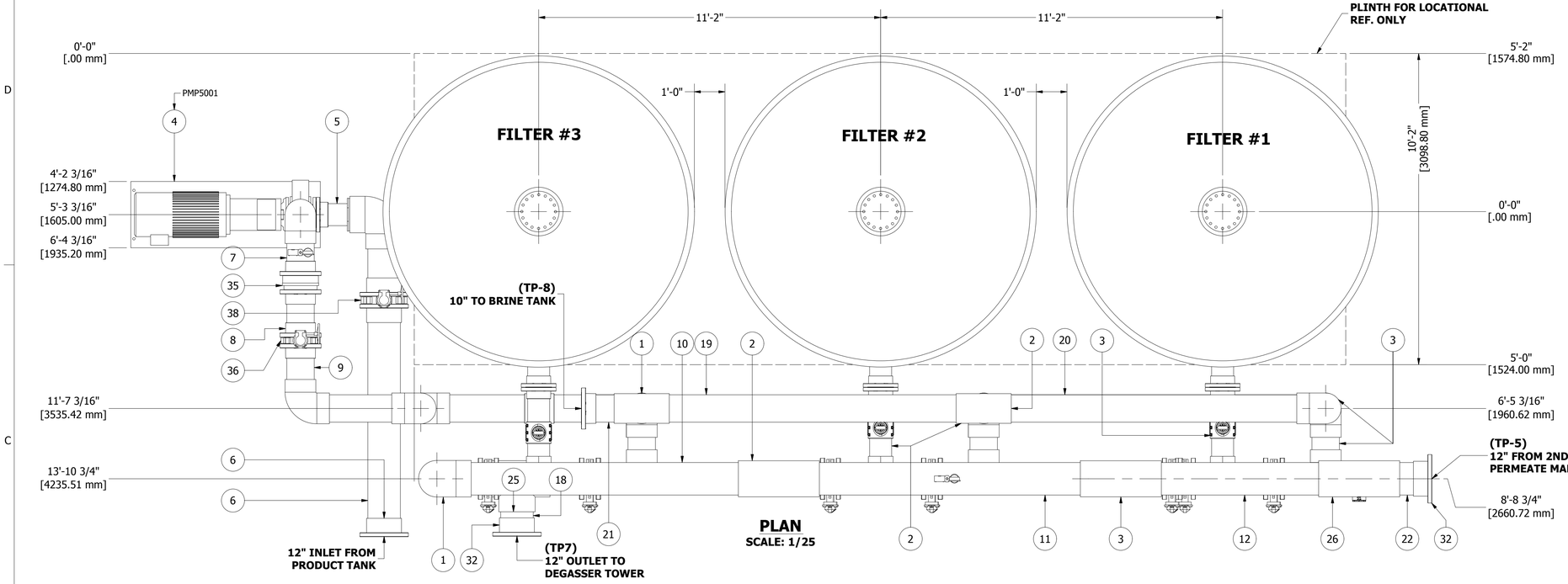
TOLERANCE BLOCK
INCH = +/- 1/32 (+/- 0.03)
METRIC = +/- 1.0 millimeter

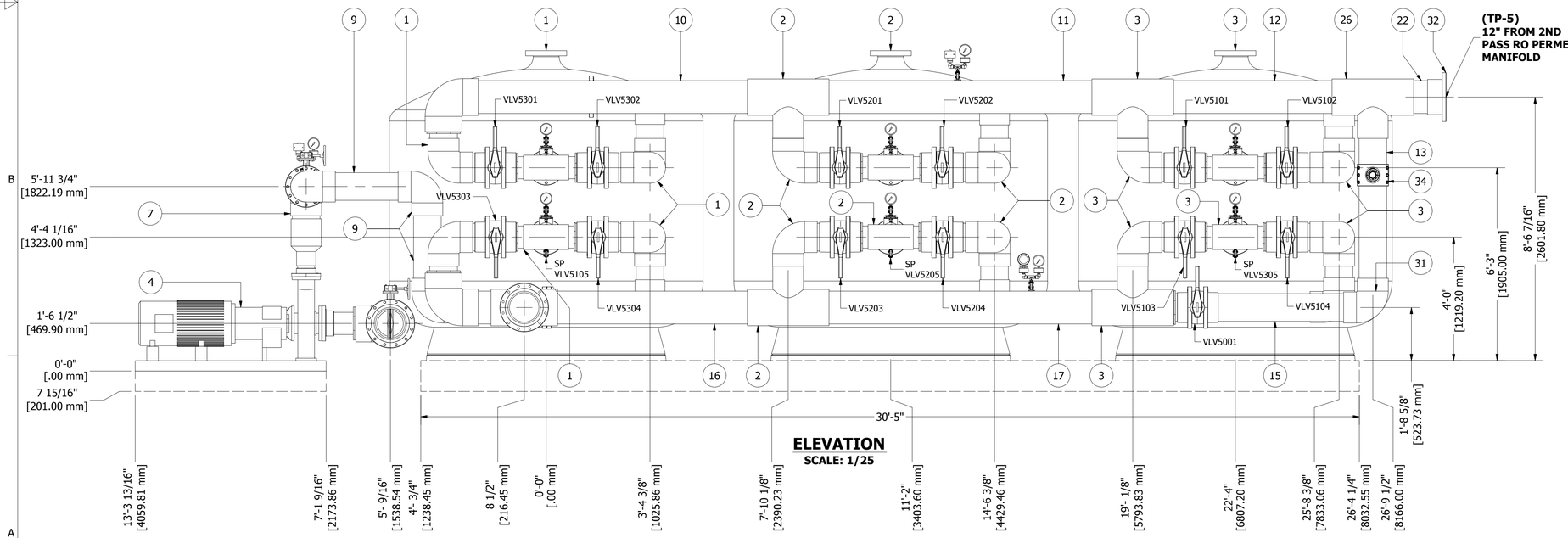
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

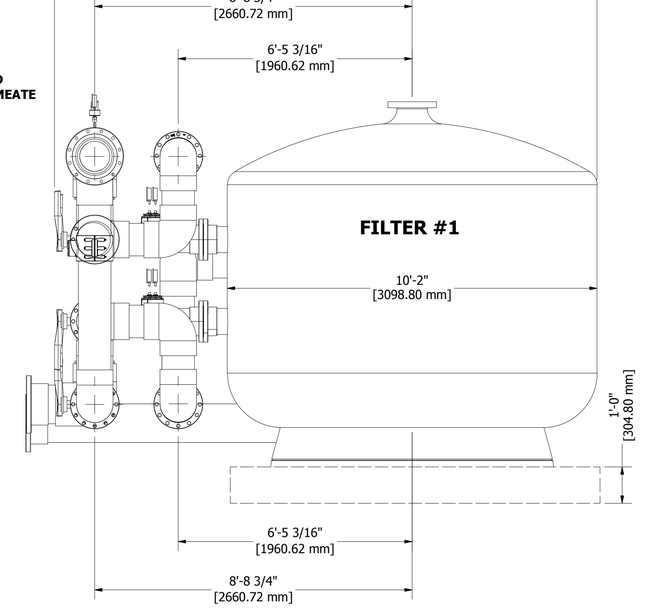
PROJECT: BIWATER
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ASTRA FILTERS ASSEMBLY
LIMESTONE FILTERS

SIZE D | SCALE A/S | DWG NO 260-M-901 | SHEET 6 OF 7 | REV 2







REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	ADDED LIMESTONE FILTER ASSEMBLY DRAWING	AWS	01/16/12	AWS	JS
1	FOR FABRICATION	AWS	10/11/11	AWS	JS

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DRAWN	AWS	10/11/2011
ENGR	JS	9/7/2011
PROJ MGR	AWS	9/7/2011
APPROVED	JS	9/7/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

SUBMITTAL NO.
SPECS. REF. NO.
PROJECT NUMBER 260

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: ASTRA FILTERS ASSEMBLY SECTION VIEWS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-M-901	7 OF 7	2

LIST OF DUPLEX FEED PIPE SPOOLS

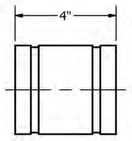
SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-1FW-DP-01	1	4
260-1FW-DP-02	1	4
260-1FW-DP-03	1	4
260-1FW-DP-04	1	4
260-1FW-DP-05	1	4
260-1FW-DP-06	32	128
260-1FW-DP-07	1	4
260-1FW-DP-08	1	4
260-1FW-DP-09	1	4
260-1FW-DP-10	1	4
260-ERD-DP-01	3	12

FEED DUPLEX PIPING NOTES

1. MATERIAL IS SS ZERON 100 SUPER DUPLEX
2. ALL WELDS SHALL BE FULL PENETRATION WELDS. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCRODENCE WITH AWS
3. ALL PIPE SHALL BE PICKLED & PASSIVATED
4. ALL DIMENSIONS ARE IN INCHES

260-ERD-DP-01

ITEM	QTY	DESCRIPTION
1	4.00 in	ZERON 100 Super Duplex Sch40S Pipe 3" W/ Cut Groove Bothe Ends



△3

ELEVATION

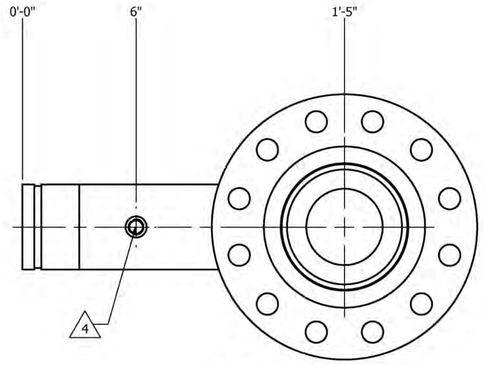
260-ERD-DP-01

ERD VESSEL CONNECTOR PIECE

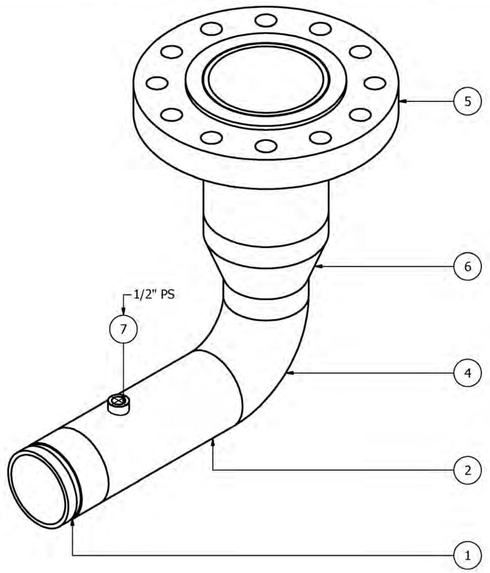
SCALE: 1/3

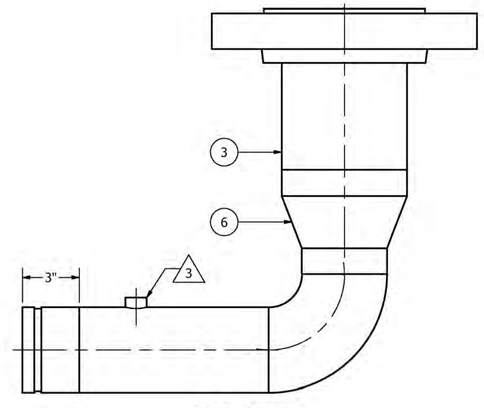
260-1FW-DP-01

ITEM	QTY	DESCRIPTION
1	3.000 in	ZERON 100 Super Duplex Sch40S Seamless, 4" W/Cut Groove End
2	10.000 in	ZERON 100 Super Duplex Sch40S Pipe 4"
3	8.500 in	ZERON 100 Super Duplex Sch40S Pipe 6"
4	1	ZERON 100 Super Duplex Short Radius 90 Deg Elbow 4" x SCH40S
5	1	ZERON 100 Super Duplex ASME B16.5 Flange Slip-On Welding - Class 600 6"
6	1	ZERON 100 Super Duplex ASME B16.9 Reducer 6"X4" - SCH40S
7	1	ZERON 100 Super Duplex Half Coupling Threaded - Class 3000 1/2"



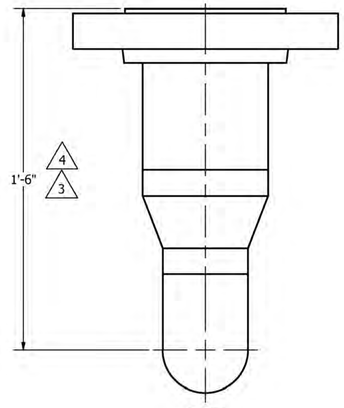
PLAN





ELEVATION

SCALE: 1/4



END

△2

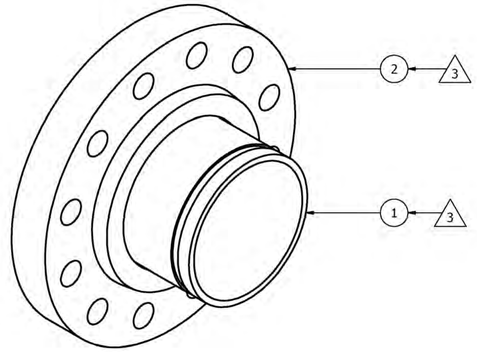
260-1FW-DP-01

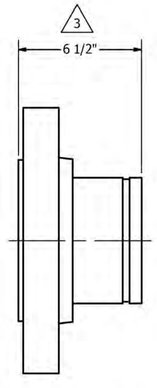
1ST PASS HP PUMP 4" DISCHARGE HEADER

SCALE: 1 / 4

260-1FW-DP-02

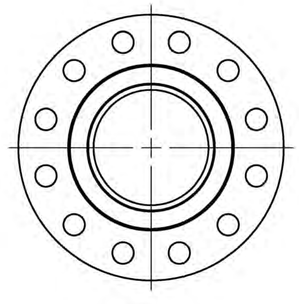
ITEM	QTY	DESCRIPTION
1	6.500 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End
2	1	ZERON 100 Super Duplex Flange Slip-On Welding - Class 600 6"





ELEVATION

SCALE: 1/4



END

△2

260-1FW-DP-02

1ST PASS PUMP 6" DISCHARGE HEADER

SCALE: 1/3

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED PIPE SPOOLS	AWS	03/13/12	AWS	JS
3	UPDATED SPOOLS & MATERIAL CALL OUTS	AWS	08/29/11	JS	JS
2	UPDATED SPOOLS, REMOVED FITTINGS AND ADDED PULL TEES WHERE POSSIBLE	AWS	6/21/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	6/12/2011
ENGR	JS	7/13/2011
PROJ MGR	JS	7/13/2011
APPROVED	H SAID	7/13/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

SUBMITTAL NO.

SPECS. REF. NO.

PROJECT NUMBER 260

STATUS: FOR FABRICATION

ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

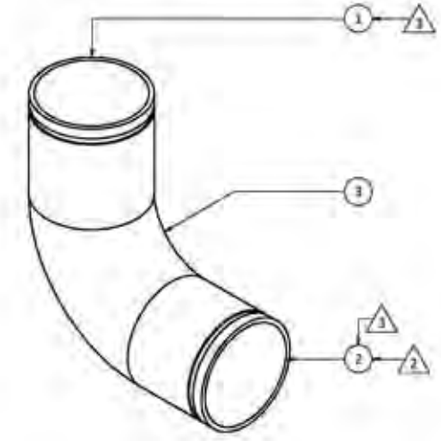
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

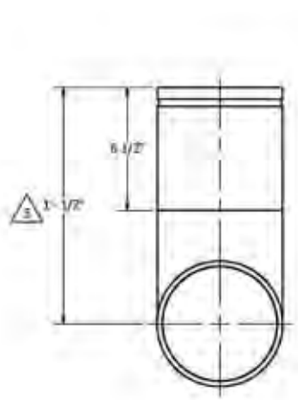
TITLE: 1ST PASS FEED WATER SPOOLS
DUPLEX PIPING SPOOLS

SIZE D | SCALE A/S | DWG NO 260-P-101 | SHEET 1 OF 5 | REV 4

260-1FW-DP-03

ITEM	QTY	DESCRIPTION
1	6.500 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End
2	5.500 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End
3	1	ZERON 100 Super Duplex Short Radius 90 Deg Elbow 6" x SCH40S





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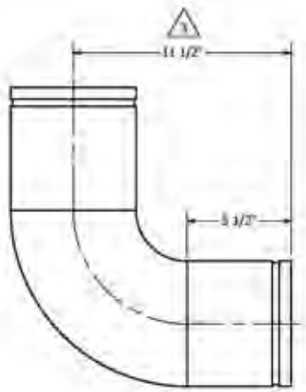
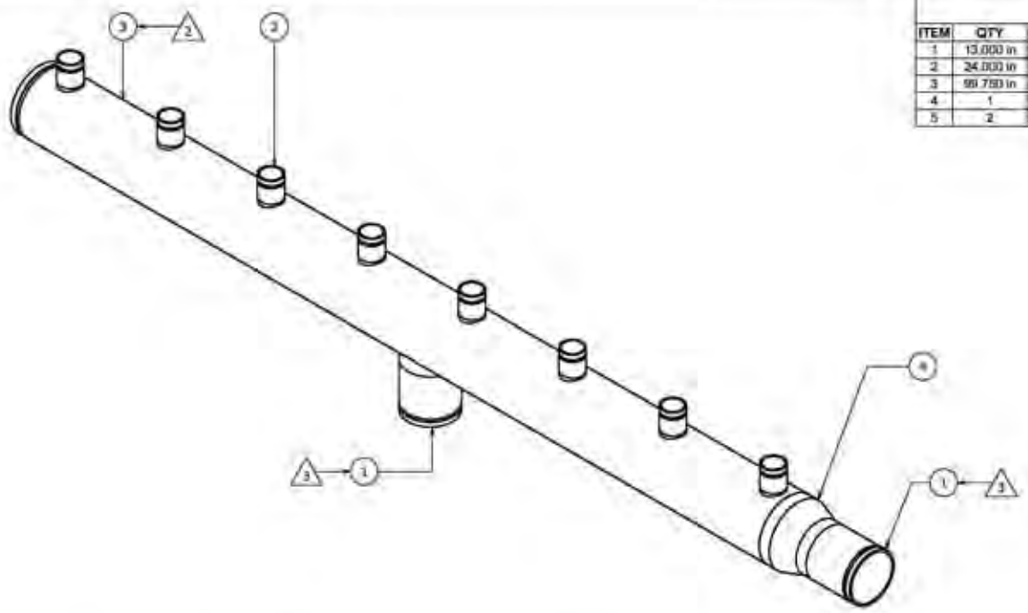
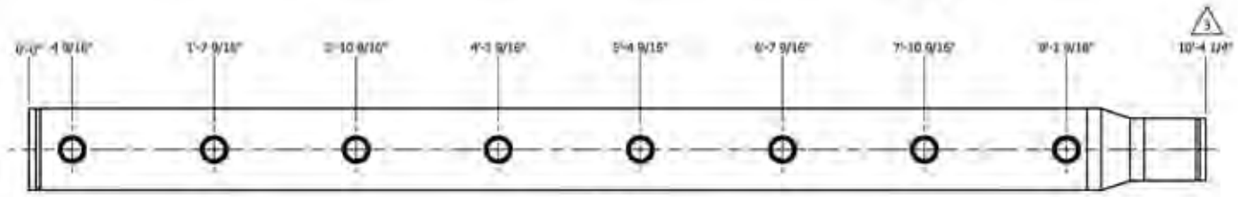


ELEVATION
SCALE: 1/4

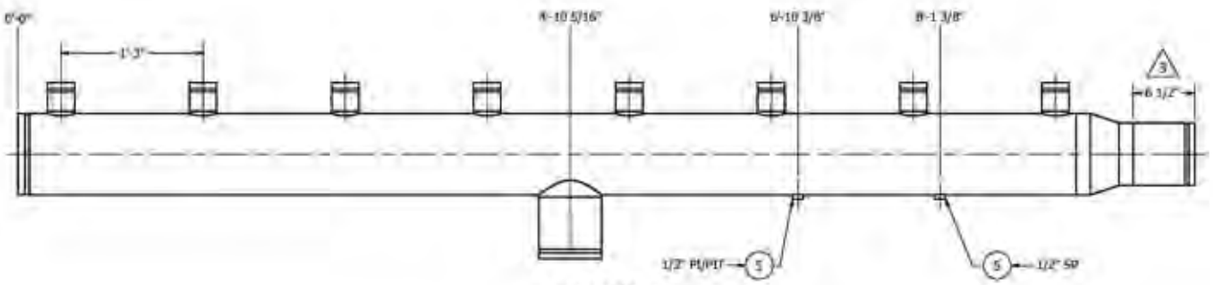
260-1FW-DP-04

ITEM	QTY	DESCRIPTION
1	13.000 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End
2	24.000 in	ZERON 100 Super Duplex Sch40S Seamless, 2 1/2" W/Cut Groove End
3	99.750 in	ZERON 100 Super Duplex Sch40S Pipe 8" W/ Cut Groove End
4	1	ZERON 100 Super DuplexReducer 8"X6" - SCH40S
5	2	ZERON 100 Super Duplex Half Coupling Threaded - Class 3000 1/2"

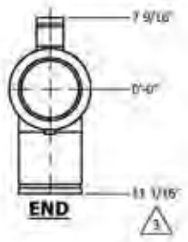




PLAN



ELEVATION
SCALE: 1/8



END

260-1FW-DP-03
1ST PASS PUMP 6" DISCHARGE HEADER
SCALE: 1/4

260-1FW-DP-05
1ST PASS 8" FEED RISER
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
4	UPDATED PIPE SPOOLS	AWS	03/13/12	AWS	JC
3	UPDATED SPOOLS & MATERIAL CALL OUTS	AWS	05/29/11	JS	JS
2	UPDATED SPOOLS & REMOVED FITTINGS AND ADDED PIPE TEES WHERE POSSIBLE	AWS	6/21/11	JS	JC
1	FOR FABRICATION	AWS	06/12/11	JS	JC

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
156 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7727

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DRAWN	AWC	6/13/2011
CHK'D	JC	7/13/2011
APP'D	JC	7/13/2011
MFG APPR		
QA/QC	LSAW	7/13/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) | METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

BIWATER INTERNATIONAL LTD

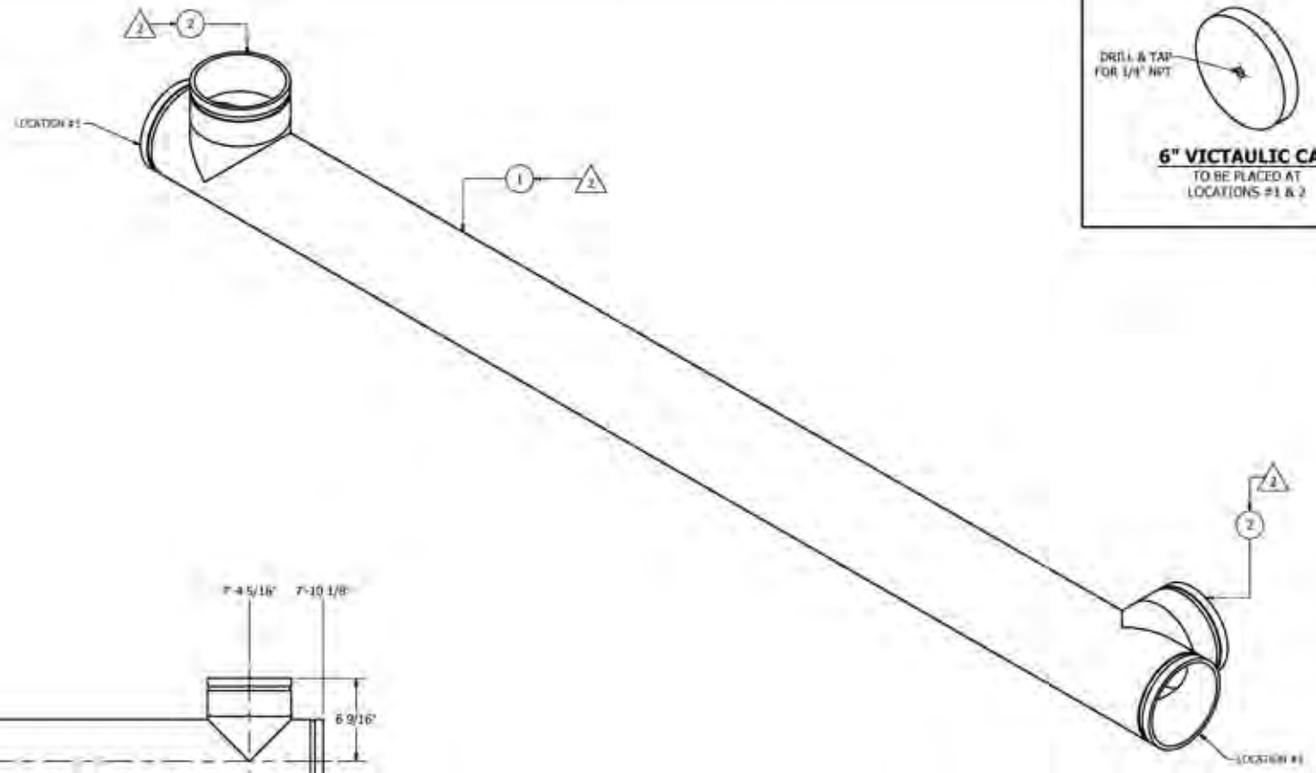
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS FEED WATER SPOOLS
DUPLEX PIPING SPOOLS

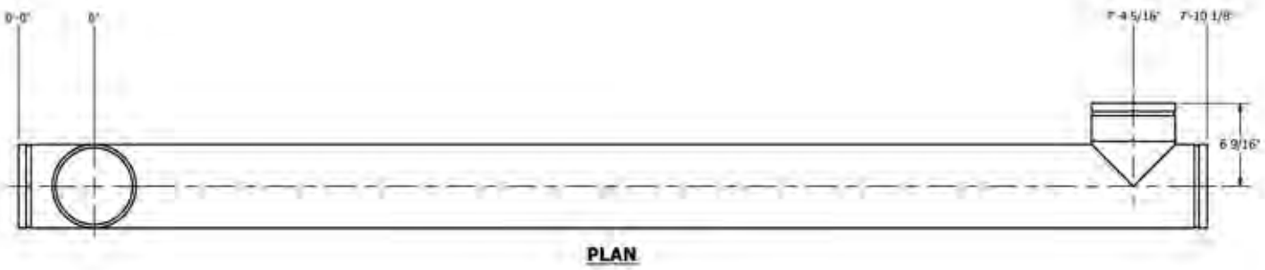
SIZE D | SCALE A/S | DRG NO. 260-P-101 | SHEET 2 of 5 | REV 4

260-1FW-DP-05

ITEM	QTY	DESCRIPTION
1	94.125 in	ZERON 100 Super Duplex Sch40S Pipe 6" W/Cut Groove Both Ends
2	6.000 in	ZERON 100 Super Duplex Sch40S Seamless Pipe 6" W/Cut Groove End

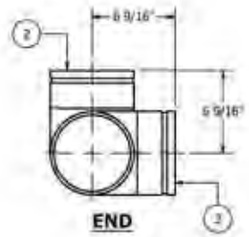


6" VICTAULIC CAP
TO BE PLACED AT
LOCATIONS #1 & 2



PLAN

ELEVATION
SCALE: 1/6



END

4

260-1FW-DP-05

6" PX FEED HEADER TO
8" RO FEED RISER
SCALE: 1/5

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED PIPE SPOOLS	AWB	03/13/13	AWB	JC
3	UPDATED SPOOLS & MATERIAL CALL OUTS	AWB	08/29/11	JS	JS
2	UPDATED SPOOLS, REMOVED FITTINGS AND ADDED PULL TEES WHERE POSSIBLE	AWB	8/21/11	JS	JS
1	FOR FABRICATION	AWB	06/16/11	JS	JC

REVISION HISTORY

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DRAWN	6/12/2011	
CHKD	7/13/2011	
APPD	7/13/2011	
DATE	7/13/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

FOR FABRICATION

BIWATER-AEWT

BIWATER INTERNATIONAL LTD

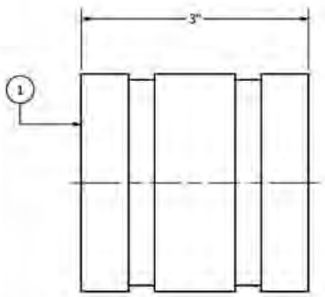
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS FEED WATER SPOOLS
DUPLEX PIPING SPOOLS

SIZE	SCALE	DRAWING NO.	SHEET	REV
D	A/S	260-P-101	3 of 5	4

260-1FW-DP-06

ITEM	QTY	DESCRIPTION
1	3.000 in	ZERON 100 Super Duplex Sch40S Seamless, 2 1/2" W/Cut Groove End



△4

ELEVATION

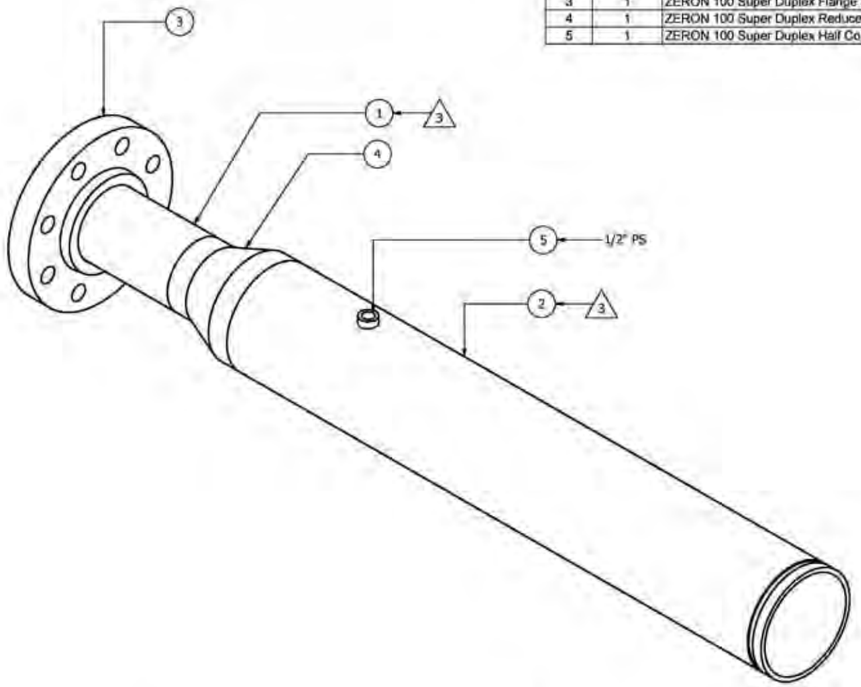
260-1FW-DP-06

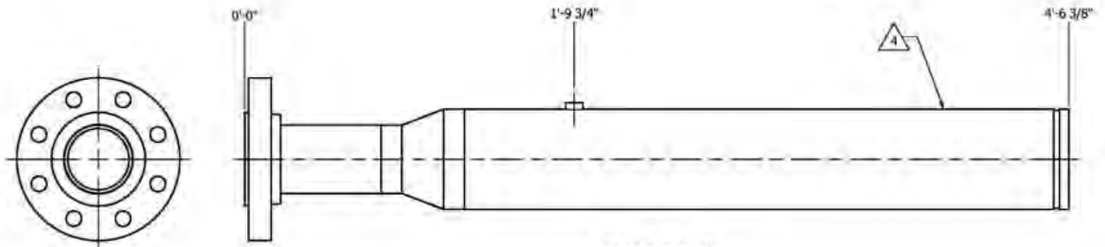
RO VESSEL CONNECTOR PIECE

SCALE: 1 : 1

260-1FW-DP-07

ITEM	QTY	DESCRIPTION
1	9.000 in	ZERON 100 Super Duplex Sch40S Pipe 4"
2	39.886 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End
3	1	ZERON 100 Super Duplex Flange Slip-On Welding - Class 600 4"
4	1	ZERON 100 Super Duplex Reducer 6"X4" - Schedule 40S
5	1	ZERON 100 Super Duplex Half Coupling Threaded - Class 3000 1/2"





ELEVATION

SCALE: 1/5

END

△2

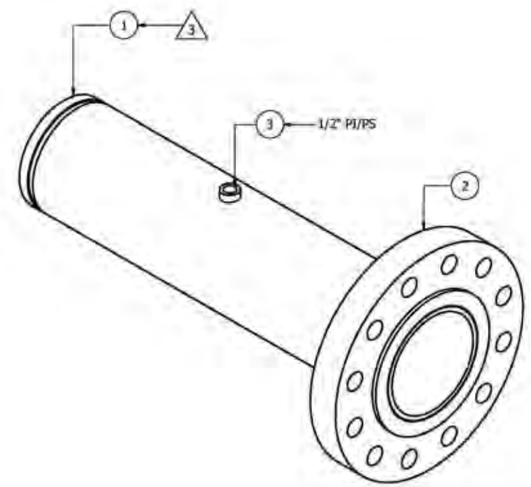
260-1FW-DP-07

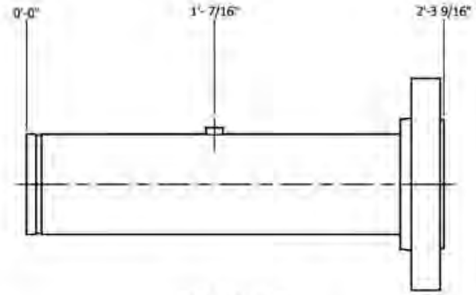
BOOSTER PUMP 4" DISCHARGE HEADER

SCALE: 1/4

260-1FW-DP-08

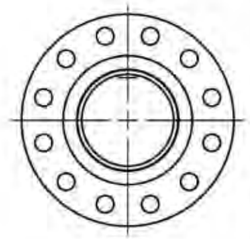
ITEM	QTY	DESCRIPTION
1	27.539 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End
2	1	ZERON 100 Super Duplex Flange Slip-On Welding - Class 600 6"
3	1	ZERON 100 Super Duplex Half Coupling Threaded - Class 3000 1/2"





ELEVATION

SCALE: 1/5



END

△2

260-1FW-DP-08

BOOSTER PUMP 6" SUCTION HEADER

SCALE: 1/4

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED PIPE SPOOLS	AWS	03/13/12	AWS	JS
3	UPDATED SPOOLS & MATERIAL CALL OUTS	AWS	08/29/11	JS	JS
2	UPDATED SPOOLS, REMOVED FITTINGS AND ADDED PULL TEES WHERE POSSIBLE	AWS	6/21/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
139 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN: AWS	6/12/2011	SUBMITTAL NO.
CHK'D: JS	7/13/2011	SPECS. REF. NO.
QUALITY HSE: JS	7/13/2011	PROJECT NUMBER: 260
APPROVED: H.SAID	7/13/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

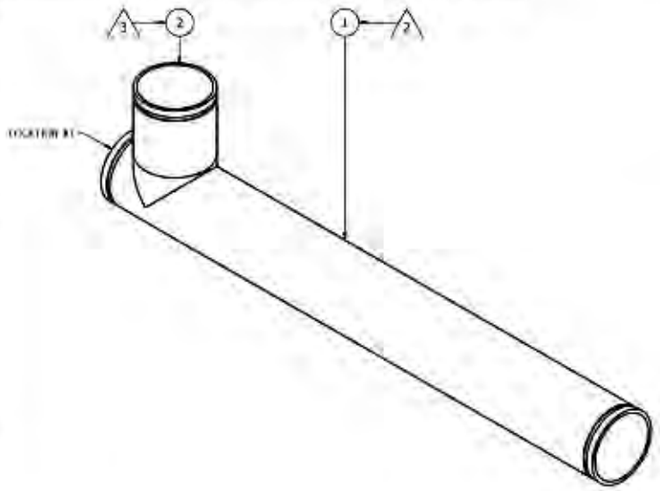
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

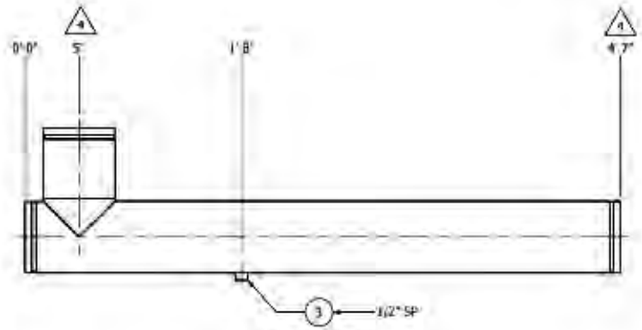
TITLE: 1ST PASS FEED WATER SPOOLS
DUPLEX PIPING SPOOLS

SIZE	SCALE	DWG NO.	SHEET	REV
D	A/S	260-P-101	SHEET 4 OF 5	4

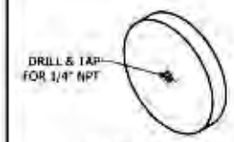
260-1FW-DP-09

ITEM	QTY	DESCRIPTION
1	55.000 in	ZERON 100 Super Duplex Sch40S Pipe 6" W/Cut Groove Both Ends
2	6.500 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End
3	1	ZERON 100 Super Duplex Half Coupling Threaded - Class 3000 1/2"

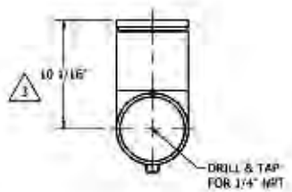




ELEVATION
SCALE: 1/2



6" VICTAULIC CAP
TO BE PLACED AT
LOCATIONS # 1



END

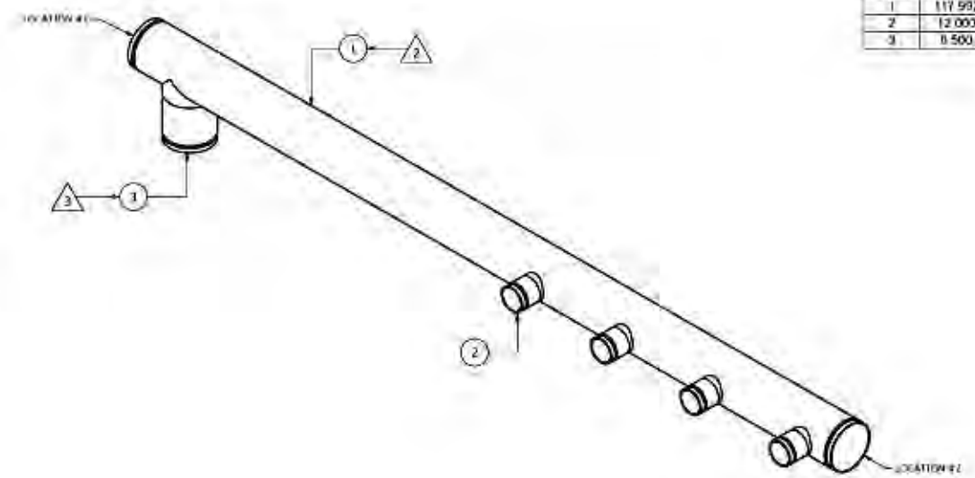
2 4

260-1FW-DP-09

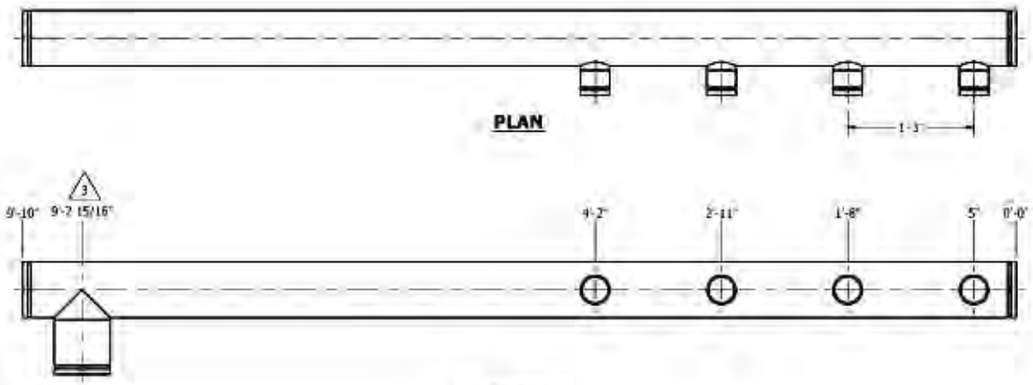
HP PX OUTLET 6" HEADER TO
BOOSTER PUMP SUCTION
SCALE: 1/6

260-1FW-DP-10

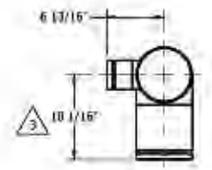
ITEM	QTY	DESCRIPTION
1	117.997 in	ZERON 100 Super Duplex Sch40S Pipe 6" W/Cut Groove Both Ends
2	12.000 in	ZERON 100 Super Duplex Sch40S Seamless Pipe 3" W/Cut Groove End
3	6.500 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End



6" VICTAULIC CAP
TO BE PLACED AT
LOCATIONS # 1 & 2



ELEVATION
SCALE: 1/9



END

2 4

260-1FW-DP-10

6" PX DUPLEX HP
SEAWATER OUTLET HEADER
SCALE: 1/9

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED PIPE SPOOLS	AWS	03/11/12	AWS	JS
3	UPDATED SPOOLS & MATERIAL CALL OUTS	AWS	08/23/11	JS	JS
2	UPDATED SPOOLS, REMOVED FITTINGS AND ADDED FLG TEES WHERE POSSIBLE	AWS	8/21/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	6/12/2011
CHK'D		/13/2011
APP'D	JS	/13/2011
M.C.A.D.		/13/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

FOR FABRICATION

BIWATER-AEWT

BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS FEED WATER SPOOLS
DUPLEX PIPING SPOOLS

SIZE	SCALE	DWG NO	REV
D	A/S	260-P-101	4

SHEET 5 OF 5

1ST PASS DUPLEX CONCENTRATE PIPE SPOOLS

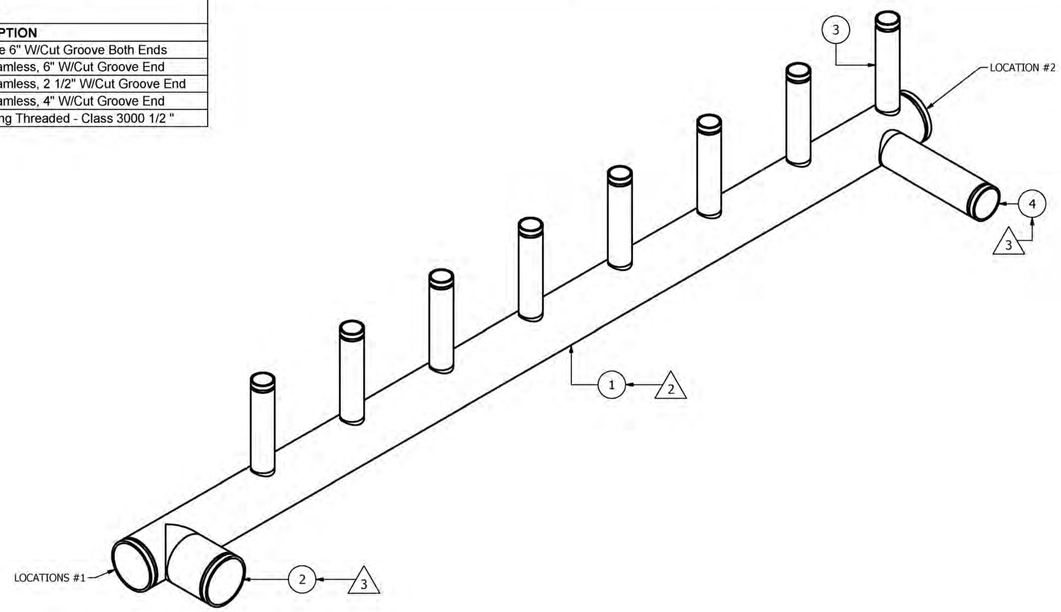
SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-1CW-DP-01	1	4
260-1CW-DP-02	1	4
260-1CW-DP-03	1	4

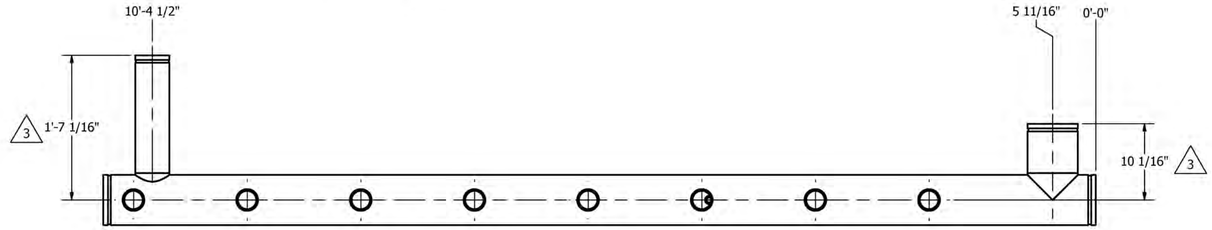
CONCENTRATE DUPLEX PIPING NOTES

1. MATERIAL IS SS 2205 DUPLEX
2. ALL WELDS SHALL BE FULL PENETRATION WELDS. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCRODENCE WITH AWS
3. ALL PIPE SHALL BE PICKLED & PASSIVATED
4. ALL DIMENSIONS ARE IN INCHES

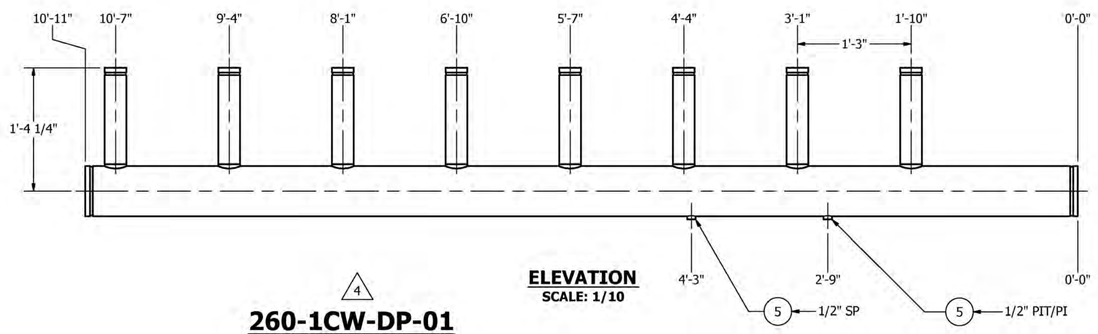
260-1CW-DP-01

ITEM	QTY	DESCRIPTION
1	131.000 in	ZERON 100 Super Duplex Sch40S Pipe 6" W/Cut Groove Both Ends
2	6.500 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End
3	101.352 in	ZERON 100 Super Duplex Sch40S Seamless, 2 1/2" W/Cut Groove End
4	15.500 in	ZERON 100 Super Duplex Sch40S Seamless, 4" W/Cut Groove End
5	2	ZERON 100 Super Duplex Half Coupling Threaded - Class 3000 1/2 "

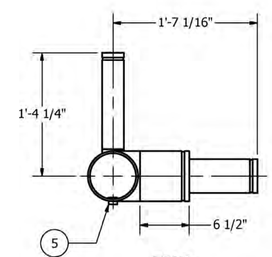




PLAN



ELEVATION
SCALE: 1/10



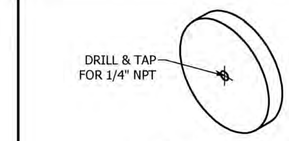
END

4

260-1CW-DP-01

1ST PASS CONCENTRATE MANIFOLD

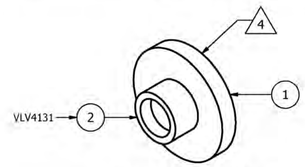
SCALE: 1/9



6" VICTAULIC CAP
TO BE PLACED AT
LOCATION #1

PARTS LIST

ITEM	QTY	DESCRIPTION
1	1	ZERON 100 Super Duplex Victaulic Cap, 6"
2	1	ZERON 100 Super Duplex Half Coupling Threaded - Class 3000 2 "



6" VICTAULIC CAP
TO BE PLACED AT
LOCATION #2

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED SPOOL 260-1CW-DP-01	AWS	03/13/12	AWS	JS
3	UPDATED MATERIAL CALLOUTS TO ZERON	AWS	08/29/11	JS	JS
2	UPDATED SPOOLS, REMOVED FITTINGS AND ADDED PULL TEES WHERE POSSIBLE, ADDED PX SPOOL	AWS	06/22/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	6/12/2011	SUBMITTAL NO.
ENGR	JS		SPECS. REF. NO.
PROJ MGR	JS		PROJECT NUMBER 260
APPROVED	H.SAID		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

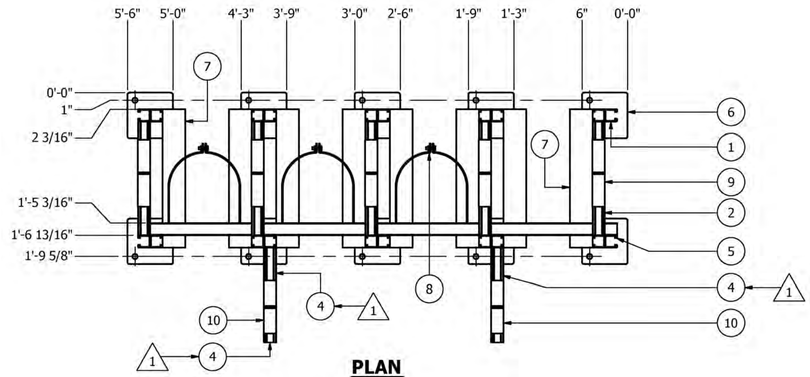
TITLE: 1ST PASS CONC. SPOOLS DUPLEX PIPING SPOOLS

SIZE D | SCALE A/S | DWG NO 260-P-201 | SHEET 1 OF 2 | REV 4

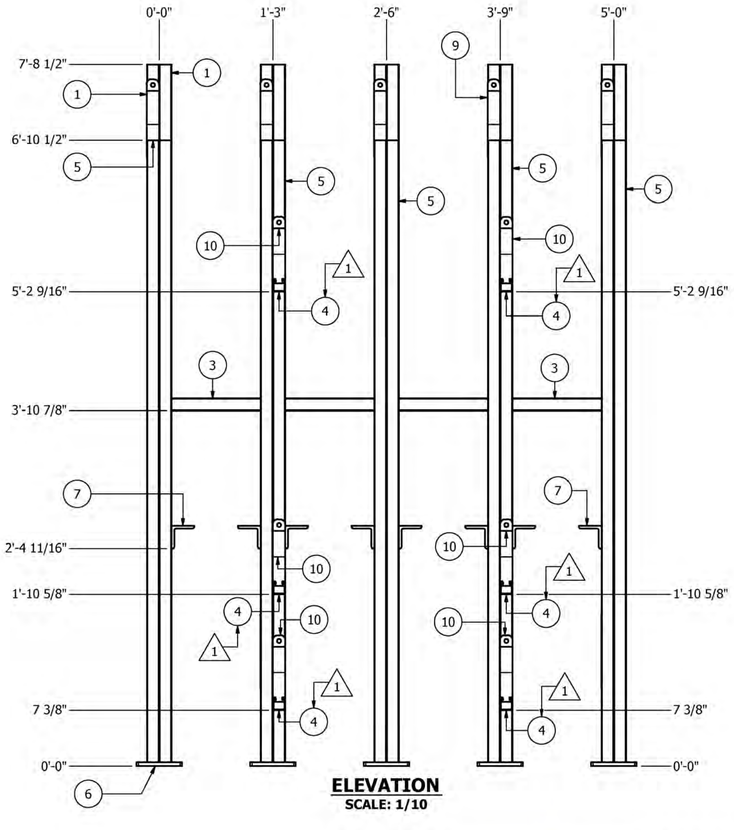
NOTE:
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =4
6. ESTIMATED DRY WEIGHT= 380 lb

ERD SYSTEM FRAME PARTS LIST

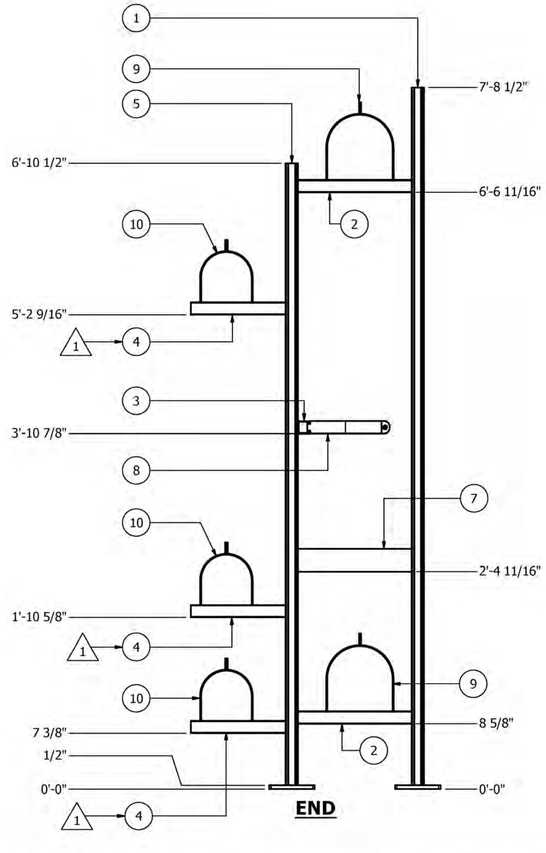
ITEM	QTY	DESCRIPTION	SHEET #
1	10	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"	4
2	10	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"	4
3	1	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"	4
4	6	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"	4
5	10	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"	4
6	10	CS PLATE 6" x 6" x 1/2" THK.	4
7	8	CS ANGLE, L 3" x 3" x 3/8" THK.	4
8	3	316L SS PIPE CLAMP FOR 9.27" PIPE ASSEMBLY-PX UNIT	
9	10	316L SS PIPE CLAMP FOR 8" PIPE ASSEMBLY	
10	6	316L SS PIPE CLAMP FOR 6" PIPE ASSEMBLY	



PLAN



ELEVATION
SCALE: 1/10



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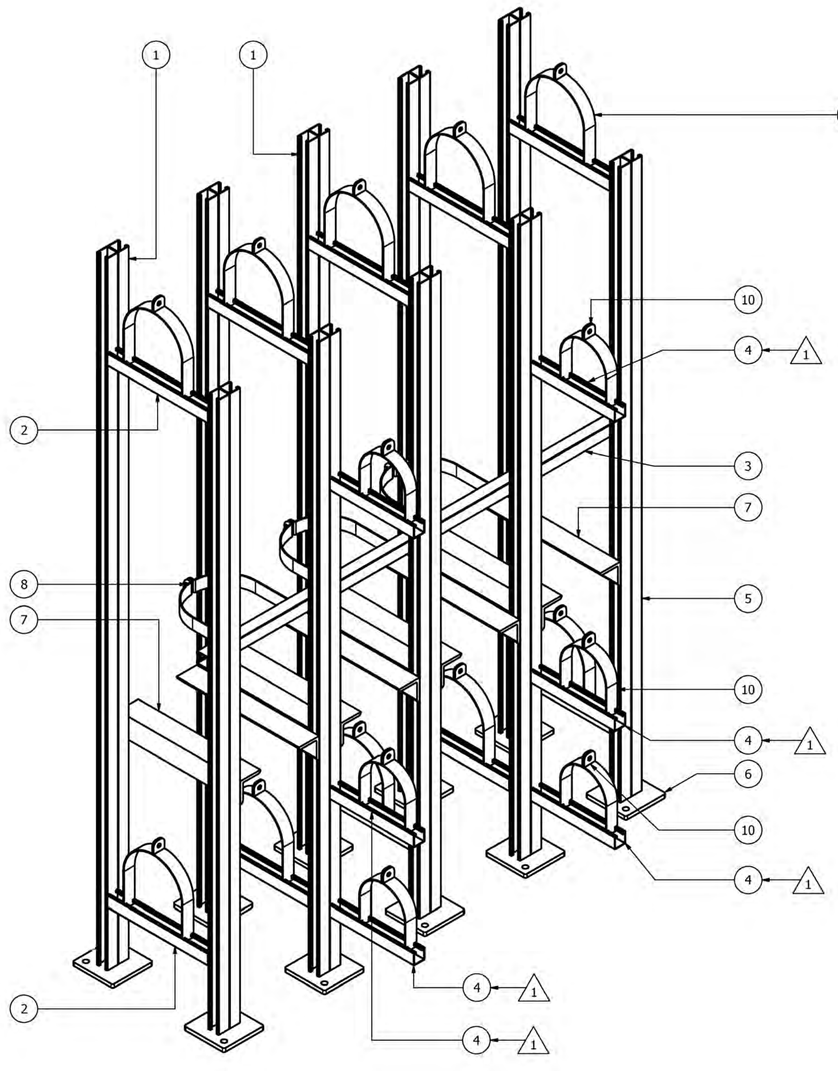

64 SERIES PX FRAME ASSEMBLY
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	CHECKED & RELEASED FOR FABRICATION OF SUPPORTS	AWS	09/28/11	AWS	JS
A	FOR APPROVAL	AWS	05/19/11	AWS	JS

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DRAWN	AWS	5/27/2011
DSGR	JS	9/28/2011
PROJ MGR	AWS	9/28/2011
APPROVED	JS	9/28/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

SUBMITTAL NO.
SPECS. REF. NO.
PROJECT NUMBER 260

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: PARAQUITA BAY SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

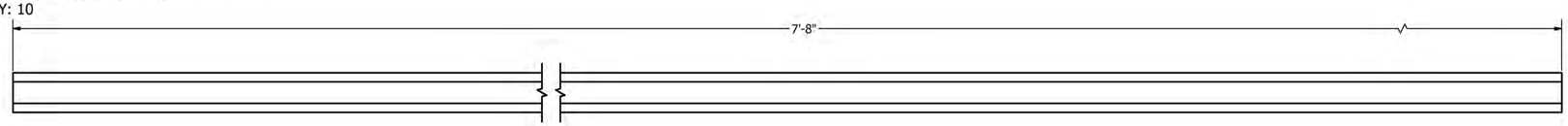
TITLE: 65 SERIES ERD SYSTEM FRAME ASSEMBLY

SIZE D | SCALE A/S | DWG NO 260-S-103 | SHEET 1 OF 2 | REV 1

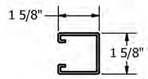
DETAIL OF ITEM #1, SHEET #1

FRAME VERTICLE MEMBERS

QTY: 10



PLAN
SCALE: 1/3



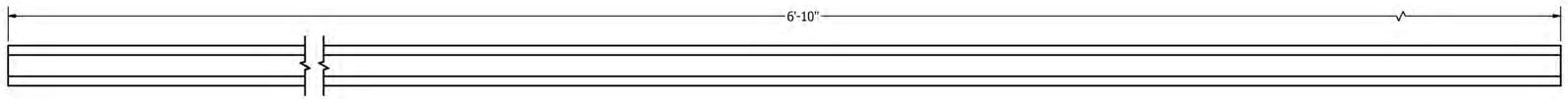
END

PARTS LIST		
ITE	QT	DESCRIPTION
1	1	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"

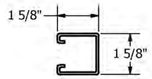
DETAIL OF ITEM #5, SHEET #1

FRAME SHORTER VERTICLE MEMBERS

QTY: 10



PLAN
SCALE: 1/3



END

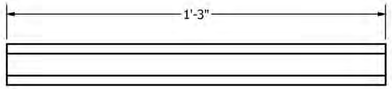
PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"

DETAIL OF ITEM #2, SHEET #1

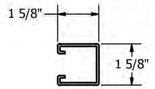
FRAME HORIZONTAL BRACING

QTY: 10

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"



PLAN
SCALE: 1/3



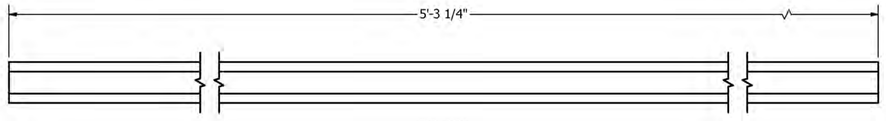
END

DETAIL OF ITEM #3, SHEET #1

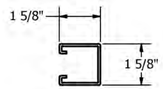
FRAME SUPPORT MEMBERS

QTY: 1

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"



PLAN
SCALE: 1/3



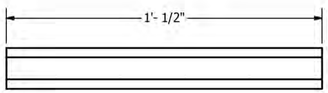
END

DETAIL OF ITEM #4, SHEET #1

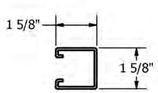
DUPLEX PIPE SUPPORT ANGLE

QTY: 6

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS UNISTRUT CHANNEL, 12 GA., 1-5/8" X 1-5/8"



PLAN
SCALE: 1/3



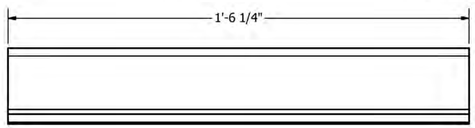
END

DETAIL OF ITEM #7, SHEET #1

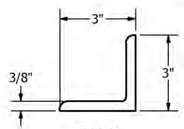
PX SUPPORT ANGLE

QTY: 8

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.



ELEVATION
SCALE: 1/3



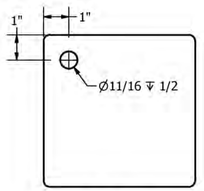
END

DETAIL OF ITEM #6, SHEET #1

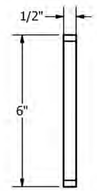
BASE PLATE

QTY: 10

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS PLATE 6" x 6" x 1/2" THK.



PLAN
SCALE: 1/3



END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	CHECKED & RELEASED FOR FABRICATION OF SUPPORTS	AWS	09/28/11	AWS	JS
A	FOR APPROVAL	AWS	05/19/11	AWS	JS

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DRAWN	AWS	5/27/2011	SUBMITTAL NO.
ENGR	JS	9/28/2011	SPECS. REF. NO.
PROJ MGR	AWS	9/28/2011	PROJECT NUMBER 260
APPROVED	JS	9/28/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

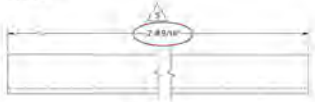
PROJECT: PARAQUITA BAY SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 65 SERIES ERD SYSTEM FABRICATION DETAILS

SIZE D | SCALE A/S | DWG NO 260-S-103 | SHEET 2 OF 2 | REV 1

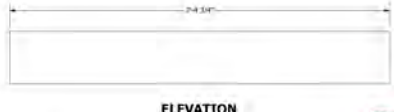
CABLE TRAY FABRICATION DETAILS

DETAIL OF ITEM #5, SHEET #18
DETAIL OF ITEM #4, SHEET #19
CABLE TRAY ANGLES
QTY: 2 PER TRAIN



PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

DETAIL OF ITEM #3, SHEET #18, 19
CABLE TRAY TUBE
QTY: 4 PER TRAIN



NO CHANGE

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4"x4"x1/4" THK

DETAIL OF ITEM #6, SHEET #18
CABLE TRAY SUPPORT ANGLE
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

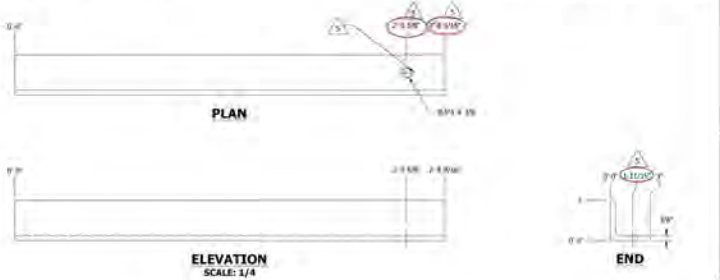
DETAIL OF ITEM #10, SHEET #19
CABLE TRAY SUPPORT ANGLE
QTY: 1 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

NO CHANGE

DETAIL OF ITEM #8, SHEET #18
CABLE TRAY ANGLES
QTY: 1 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

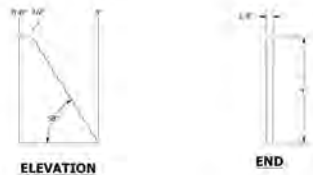


DETAIL OF ITEM #5, SHEET #19
CABLE TRAY SUPPORT ANGLE
QTY: 1 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

DETAIL OF ITEM #2, SHEET #18, 19
CABLE TRAY GUSSET
QTY: 4 PER TRAIN

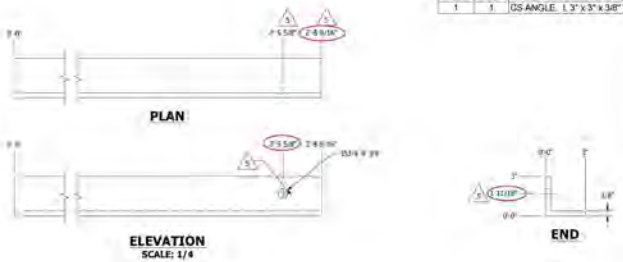
PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS PLATE, 8" x 7" x 1/2" THK GUSSET PLATE



NO CHANGE

DETAIL OF ITEM #9, SHEET #19
CABLE TRAY ANGLES
QTY: 1 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK



REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 5 & UPDATED LOCATION OF ITEM #6, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CPP & CPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	10/6/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	08/11/11	JE	JE
1	FOR FABRICATION	AWS	06/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
158 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN BY	6/12/2011
CHKD BY	6/6/2011
APPD BY	6/6/2011
ENGINEER	6/6/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

STATUS	FOR FABRICATION
PROJECT	BIWATER-AEWT
ORIGINAL CONTRACTOR	BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

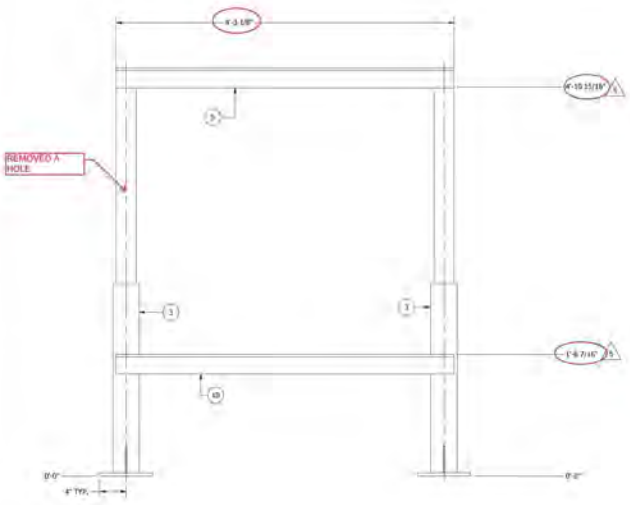
2ND PASS RO FRAME
FABRICATION DETAILS

SIZE	DRAWING NO.	REV.	SHEET
D	A/S	260-S-102	5

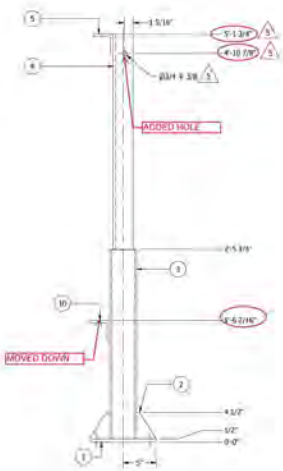
CABLE TRAY PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	2	CS PLATE 8" x 10" x 1/2" THK.	16
2	4	CS PLATE, 8" x 7" x 1/2" THK, GUSSET PLATE	20
3	2	CS TUBE SQ. - 4"x4"x1/4" THK.	20
4	1	CS ANGLE, L 3" x 3" x 3/8" THK.	20
5	1	CS ANGLE, L 3" x 3" x 3/8" THK.	20
9	1	CS ANGLE, L 3" x 3" x 3/8" THK.	20
10	1	CS ANGLE, L 3" x 3" x 3/8" THK.	20

PLAN



ELEVATION
SCALE: 1/8



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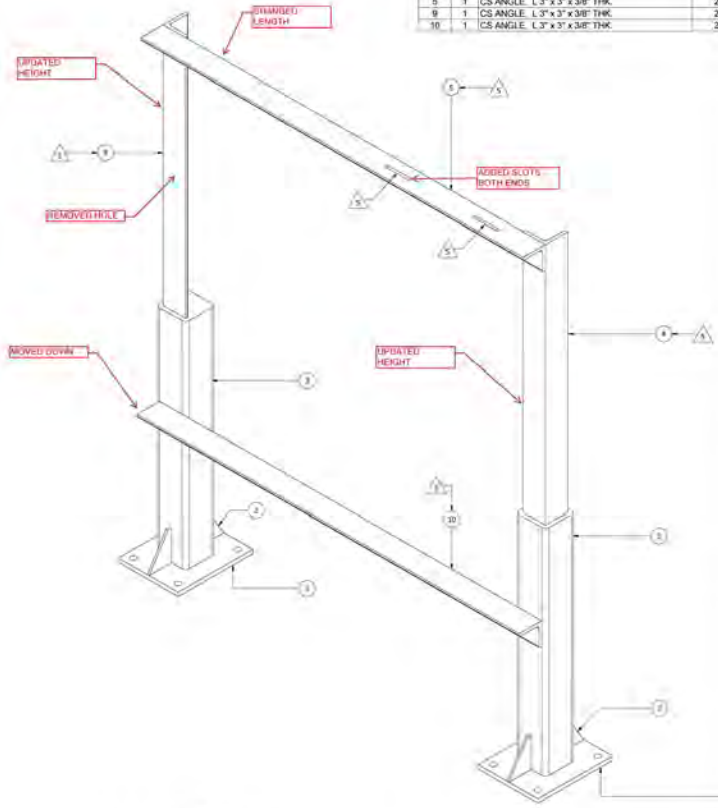

CABLE TRAY SUPPORT ASSEMBLY

DETAIL OF ITEM #6
SEE SHEET #1
SCALE: 1/5

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 9 & UPDATED LOCATION OF ITEM #6, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSPF & CIPR PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLEING OF PARTS	AWS	06/12/11	JE	JE
0	FOR FABRICATION	AWS	06/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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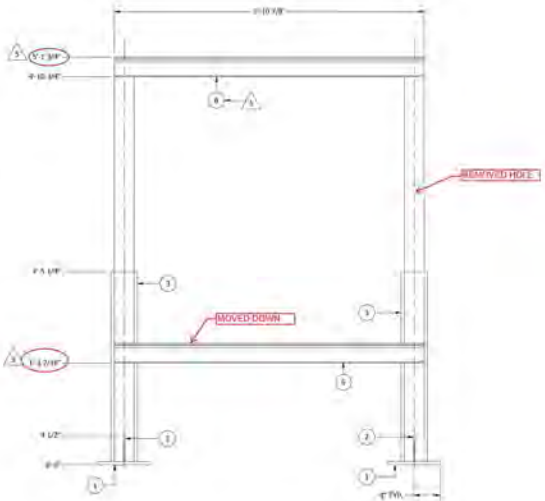
DRAWN	AWS	6/12/2011
CHECKED	JE	6/9/2011
APPROVED	JE	6/9/2011
QA		6/9/2011
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

STATUS	FOR FABRICATION
ENGINEER	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD
PROJECT	BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE	2ND PASS RO FRAME CABLE TRAY SUPPORTS
SIZE / SCALE	D A/S
DWG NO	260-S-102
REV	5

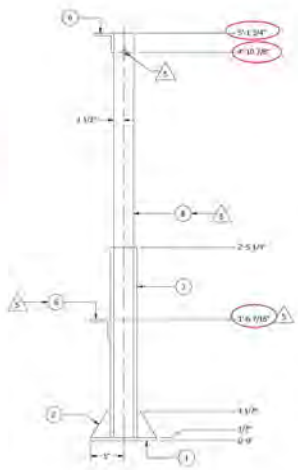
CABLE TRAY PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	2	CS PLATE 8" x 10" x 1/2" THK.	16
2	4	CS PLATE, 8" x 7" x 1/2" THK, GUSSET PLATE	20
3	2	CS TUBE SQ. - 4"x4"x1/4" THK.	20
5	1	CS ANGLE, L 3" x 3" x 3/8" THK.	20
6	2	CS ANGLE, L 3" x 3" x 3/8" THK.	20
8	1	CS ANGLE, L 3" x 3" x 3/8" THK.	20

PLAN



ELEVATION
SCALE: 1/8



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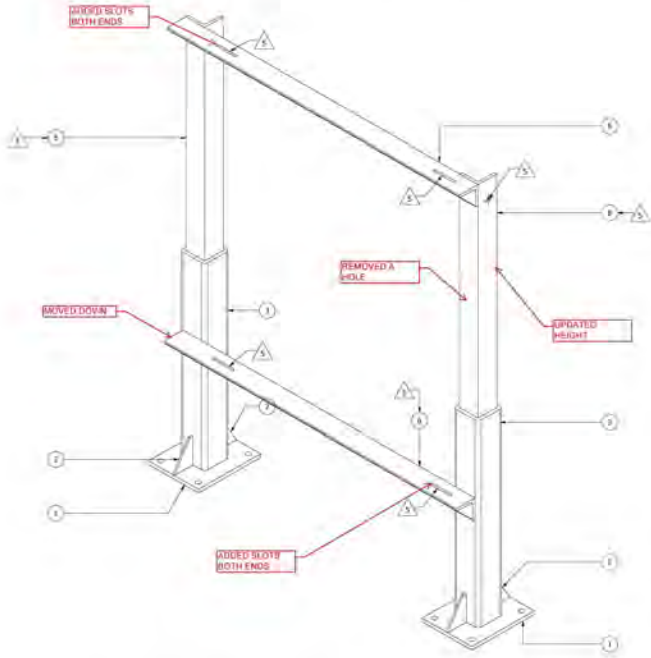

CABLE TRAY SUPPORT ASSEMBLY

DETAIL OF ITEM #5
SEE SHEET #1
SCALE: 1/6

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 8 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSPF & CIPR PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	06/12/11	JE	JE
	FOR FABRICATION	AWS	06/12/11	JE	JE

REVISION HISTORY

Biwater

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DRAWN AWS	6/12/2011
CHK'D JE	8/9/2011
APP'D MGR	8/9/2011
APP'D PE	8/9/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)
	METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

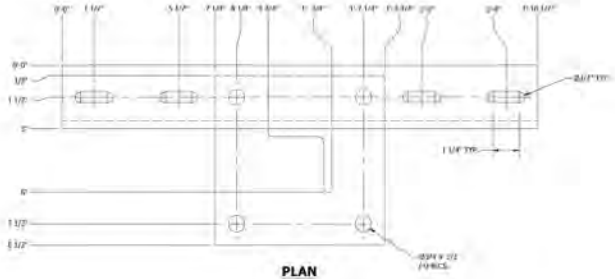
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO FRAME
CABLE TRAY SUPPORTS

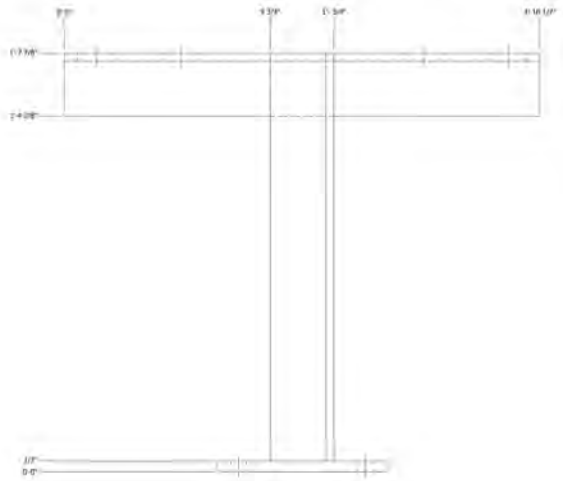
SIZE: D | SCALE: A/S | DWG NO: 260-S-102 | SHEET: 15 OF 20 | REV: 5

DETAIL OF ITEM #3, SHEET #1
3" PERMEATE RISER SUPPORTS
QTY: 2 PER TRAIN

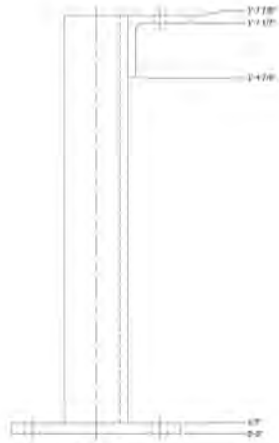
PIPE SUPPORT PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS PLATE 6" x 6" x 1/2" THK.
2	1	CS ANGLE, L 3" x 3" x 3/8" THK.
3	1	CS ANGLE, L 3" x 3" x 3/8" THK.



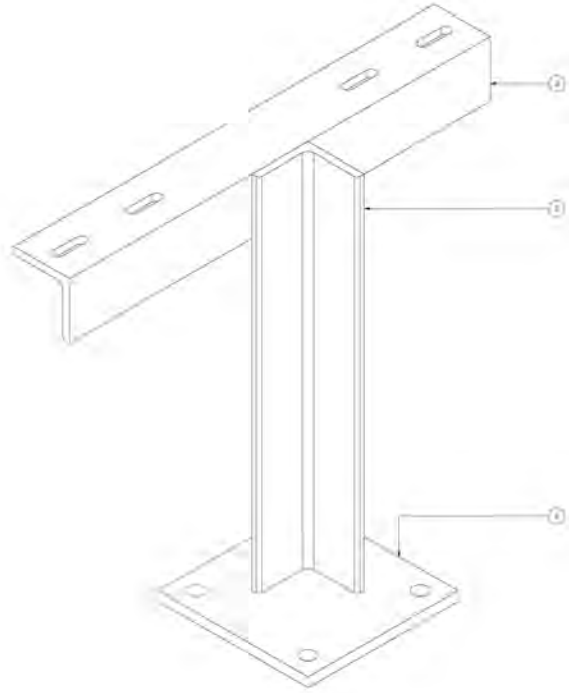
PLAN



ELEVATION
PERMEATE RISER SUPPORTS
SCALE: 1/2.5



END



PERMEATE RISER PIPE SUPPORT
SCALE: 1/2

NO CHANGES ON THIS SHEET

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 6 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CIPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/26/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLEING OF PARTS	AWS	06/12/11	JE	JE
0	FOR FABRICATION	AWS	05/12/11	JE	JE

REVISION HISTORY

Biwater

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Phone: (626) 358-7707 Fax: (626) 358-7737

DRAWN ART	6/12/2011	SUBMITTAL NO.	
CHKD	6/9/2011	CHECK. REF. NO.	
PC MGR	6/9/2011	PROJECT NUMBER	
APPD	6/9/2011	262	
SUPERCHKD	6/9/2011		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
BIWATER-AEWT
BIWATER INTERNATIONAL LTD

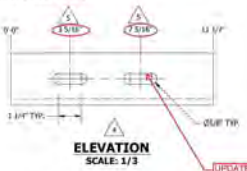
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO FRAME
PIPE SUPPORT DETAILS

SIZE: D | SCALE: A/S | DWG NO: 260-S-102 | SHEET 12 OF 26 | REV: 5

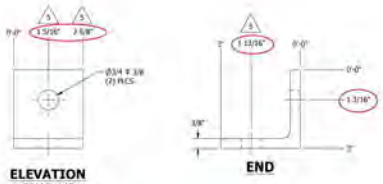
DETAIL OF ITEM #18, SHEET #8
2ND STAGE FRAME PIPE SUPPORT ANGLE
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.



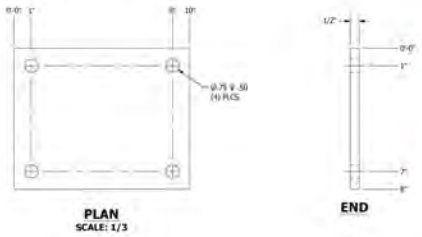
DETAIL OF ITEM #9, SHEET #1
OVERHEAD PIPE SUPPORT ANGLE
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.



DETAIL OF ITEM #19, SHEET #8
DETAIL OF ITEM #1, SHEET #19, 20
CABLE TRAY SUPPORT MOUNTING PLATES
QTY: 8 PER TRAIN

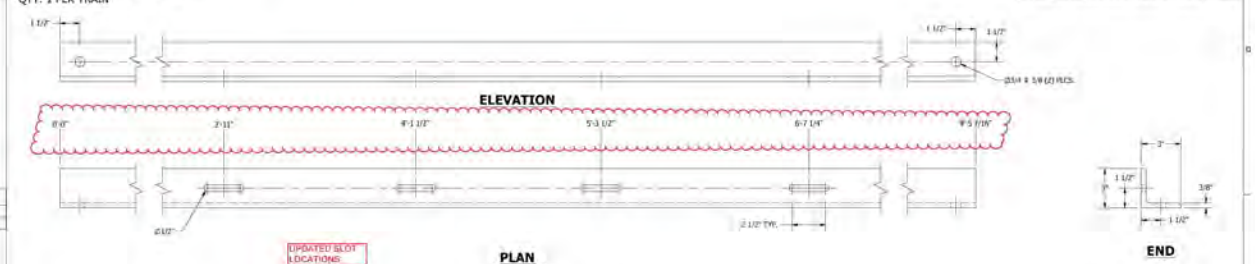
PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS PLATE 8" x 10" x 1/2" THK.



NO CHANGE

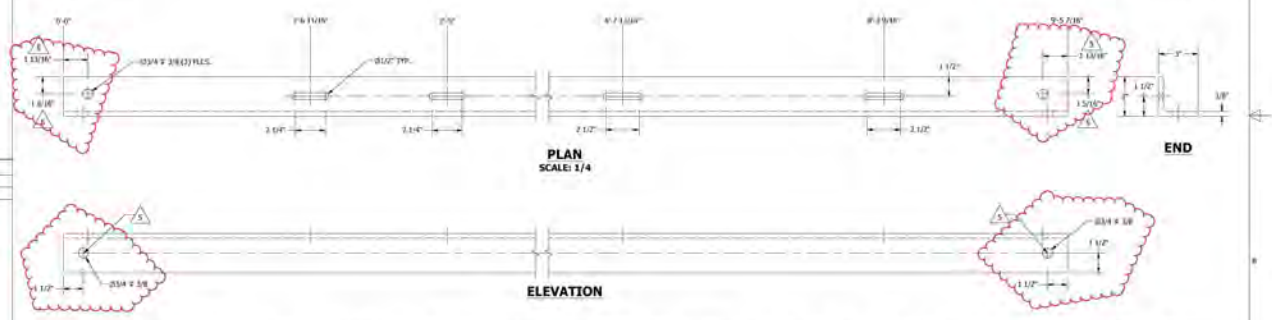
DETAIL OF ITEM #7, SHEET #1
OVERHEAD PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.



DETAIL OF ITEM #8, SHEET #1
OVERHEAD PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

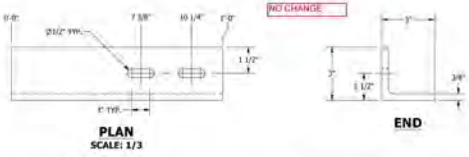
PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.



DETAIL OF ITEM #20, SHEET #8
PIPE SUPPORT ANGLE
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.

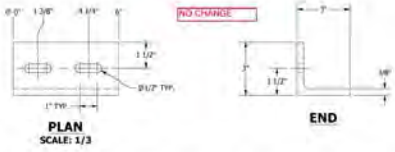
NO CHANGE



DETAIL OF ITEM #21, SHEET #8
PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.

NO CHANGE



REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 8 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CIPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	06/12/11	JE	JE
0	FOR FABRICATION	AWS	6/12/11	JE	JE

REVISION HISTORY

Biwater

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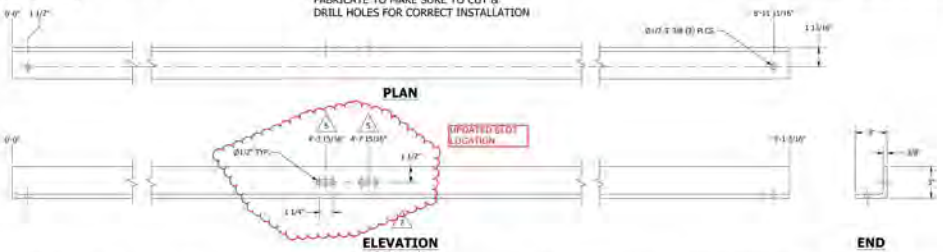
DRAWN BY	AWS
DESIGNED BY	AWS
CHECKED BY	AWS
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter
SUBMITTAL NO.	6/12/2011
SHOP DWG. REF. NO.	8/8/2011
PROJECT NUMBER	260
DATE	8/8/2011
STATUS	FOR FABRICATION
ENGINEER	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD
PROJECT	BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE	2ND PASS RO FRAME FABRICATION DETAILS
SIZE / SCALE	D A/S
DWG NO.	260-S-102
SHEET 16 OF 20	
REV	5

DETAIL OF ITEM #8, 9, SHEET #8
2ND STAGE FRAME ANGLE SUPPORTS
QTY: 2 PER TRAIN

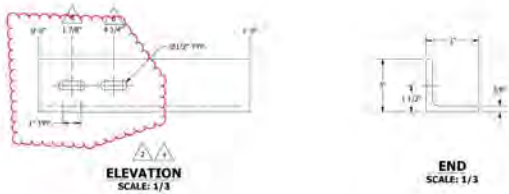
NOTE:
ITEM #9 ON SHEET #8 IS A MIRROR OF ITEM #8 ON SHEET #8, PLEASE FABRICATE TO MAKE SURE TO CUT & DRILL HOLES FOR CORRECT INSTALLATION

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.



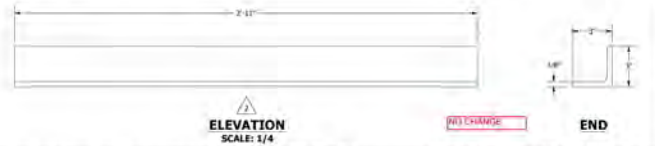
DETAIL OF ITEM #10, SHEET #8
2ND STAGE FRAME PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.



DETAIL OF ITEM #11, SHEET #8
2ND STAGE FRAME PIPE SUPPORT ANGLE
QTY: 4 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.

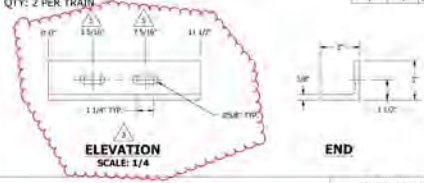


DETAIL OF ITEM #12, SHEET #8
DETAIL OF ITEM #1, SHEET #15
2ND STAGE FRAME PIPE SUPPORT ANGLE
QTY: 12 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.

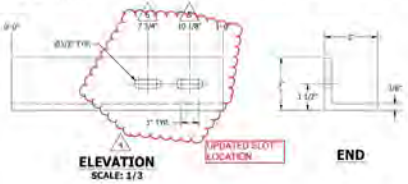
DETAIL OF ITEM #13, SHEET #8
2ND STAGE FRAME PIPE SUPPORT ANGLE
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.



DETAIL OF ITEM #14, SHEET #8
2ND STAGE FRAME PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.

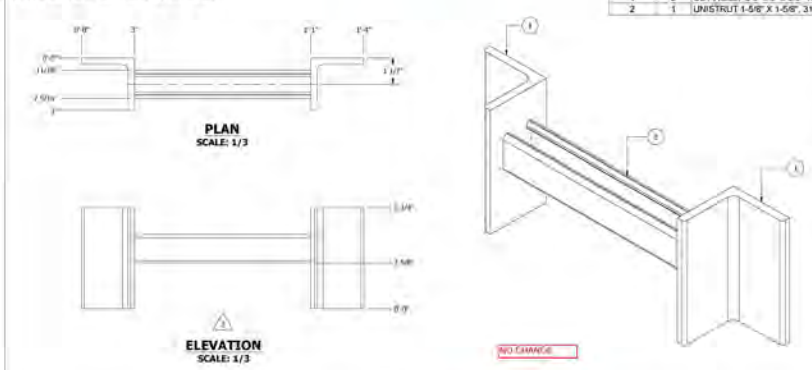


DETAIL OF ITEM #17, SHEET #8
2ND STAGE FRAME PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.

DETAIL OF ITEM #22, SHEET #8
2ND STAGE FRAME PIPE SUPPORTS
QTY: 2 SUPPORT ASSEMBLY'S PER TRAIN

PIPE SUPPORT PARTS LIST		
ITEM	QTY	DESCRIPTION
1	2	CS ANGLE, L 3" x 3" x 3/8" THK
2	1	UNISTRUT 1-5/8" X 1-5/8", 316 SS



REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 9 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CIPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	05/12/11	JE	JE
0	FOR FABRICATION	AWS	05/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN BY	AWS	6/12/2011
CHKD BY	JE	6/6/2011
APPD BY	JE	6/6/2011
ENGINEER	JE	6/6/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
PROJECT: BIWATER-AEWT
ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO FRAME FABRICATION DETAILS

SIZE: D | SCALE: A/S | DWG NO: 260-S-102 | SHEET 15 OF 20 | REV: 5

DETAIL OF ITEM #6, 7, SHEET #8

2ND STAGE FRAME ANGLE SUPPORTS
QTY: 2 PER TRAIN

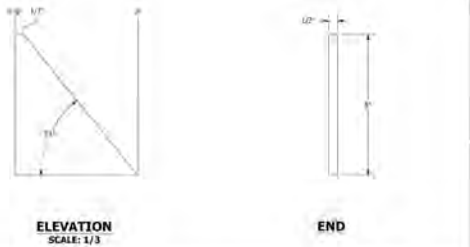
NOTE:
ITEM #6 ON SHEET #8 IS A MIRROR
OF ITEM #7 ON SHEET #8, PLEASE
FABRICATE TO MAKE SURE TO CUT &
DRILL HOLES FOR CORRECT INSTALLATION

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

DETAIL OF ITEM #4, SHEET #6, 7

1ST STAGE GUSSETS
QTY: 6 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS PLATE 8" x 7" x 1/2" THK, GUSSET PLATE



DETAIL OF ITEM #6, SHEET #6, 7

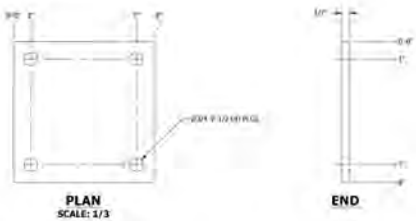
1ST STAGE VESSEL SUPPORT BASE PLATES
QTY: 3 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS PLATE 18" x 18" x 1/2" THK

DETAIL OF ITEM #5, SHEET #6, 7
DETAIL OF ITEM #2, SHEET #10, 11, 12

1ST & 2ND STAGE VESSEL SUPPORT MOUNTING PLATES
QTY: 12 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS PLATE 8" x 6" x 1/2" THK



DETAIL OF ITEM #5, 6, SHEET #4

1ST STAGE FRAME ANGLE SUPPORTS
QTY: 2 PER TRAIN

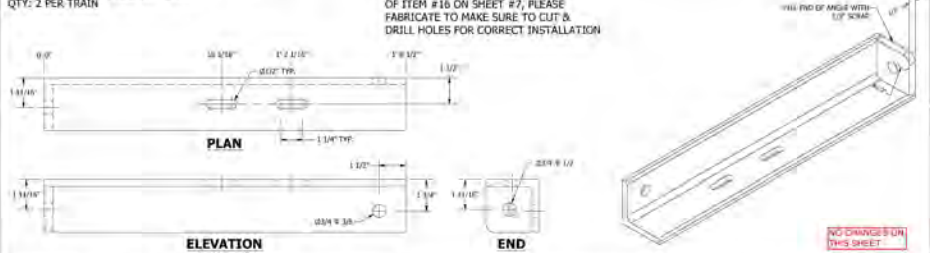
NOTE:
ITEM #6 ON SHEET #4 IS A MIRROR
OF ITEM #5 ON SHEET #4, PLEASE
FABRICATE TO MAKE SURE TO CUT &
DRILL HOLES FOR CORRECT INSTALLATION

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

DETAIL OF ITEM #15, 16, SHEET #8

1ST STAGE FRAME ANGLE SUPPORTS
QTY: 2 PER TRAIN

NOTE:
ITEM #15 ON SHEET #7 IS A MIRROR
OF ITEM #16 ON SHEET #7, PLEASE
FABRICATE TO MAKE SURE TO CUT &
DRILL HOLES FOR CORRECT INSTALLATION



REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS #5, 6 & UPDATED LOCATION OF ITEM #5 ON SHEET #3	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/26/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	08/12/11	JE	JE
0	FOR FABRICATION	AWS	08/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
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DRAWN BY	AWS	8/12/2011
CHKD BY	AWS	8/9/2011
APPD BY	JE	8/9/2011
ENGINEER	JE	8/9/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03)
METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION
PROJECT: BIWATER-AEWT
ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO FRAME FABRICATION DETAILS

SIZE: D | SCALE: A/S | DRAWING NO: 260-S-102 | SHEET 14 OF 26 | REV: 5

DETAIL OF ITEM #3, SHEET #4
DETAIL OF ITEM #4, SHEET #8 2
1ST & 2ND STAGE FRAME HORIZONTAL MEMBERS
QTY: 8 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4" x 4" x 1/4" THK.

ELEVATION
SCALE: 1/8

END

DETAIL OF ITEM #3, SHEET #6, 7
1ST STAGE FRAME VERTICLE MEMBERS
QTY: 3 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4" x 4" x 1/4" THK.

ELEVATION
SCALE: 1/8

END

DETAIL OF ITEM #3, SHEET #10, 11, 12 2
2ND STAGE FRAME VERTICLE MEMBERS
QTY: 3 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4" x 4" x 1/4" THK.

ELEVATION
SCALE: 1/8

END

DETAIL OF ITEM #4, SHEET #4
1ST STAGE FRAME CROSS MEMBERS
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4" x 4" x 1/4" THK.

ELEVATION
SCALE: 1/8

END

DETAIL OF ITEM #5, SHEET #8 2
2ND STAGE FRAME CROSS MEMBERS
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4" x 4" x 1/4" THK.

ELEVATION
SCALE: 1/8

END

DETAIL OF ITEM #1, SHEET #6, 7, 10, 11, 12
1ST STAGE & 2ND STAGE VESSEL SUPPORTS
QTY: 18 PER TRAIN 1

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.

PLAN
SCALE: 1/5

END

DETAIL OF ITEM #2, SHEET #6
DETAIL OF ITEM #4, SHEET #10, 12
1ST STAGE & 2ND STAGE VESSEL SUPPORTS WITH
QTY: 4 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.

ELEVATION

PLAN
SCALE: 1/5

END

DETAIL OF ITEM #4, SHEET #11 1
DETAIL OF ITEM #5, SHEET #12
2ND STAGE VESSEL SUPPORTS
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.

PLAN
SCALE: 1/5

END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #6, 9 & UPDATED LOCATION OF ITEM #6, 7 ON SHEET #1	AWS	2/23/12	AWS	JE
4	REMOVED CPP & CPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED IX SUPPORTS FROM 6" HERM. HEADER TO 3"	AWS	10/6/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	08/12/11	JE	JE
0	FOR FABRICATION	AWS	08/12/11	JE	JE

REVISION HISTORY

THIS CHANGES ON THIS SHEET

Biwater

BIWATER AEWT, INC.
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DRAWN BY	AWS	8/12/2011
CHKD BY	JE	8/9/2011
APP'D BY	JE	8/9/2011
ENGINEER	JE	8/9/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
PROJECT: BIWATER-AEWT
ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

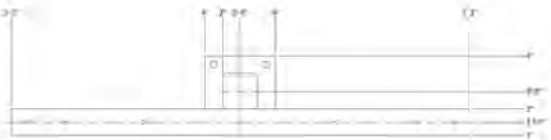
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RQ FRAME FABRICATION DETAILS

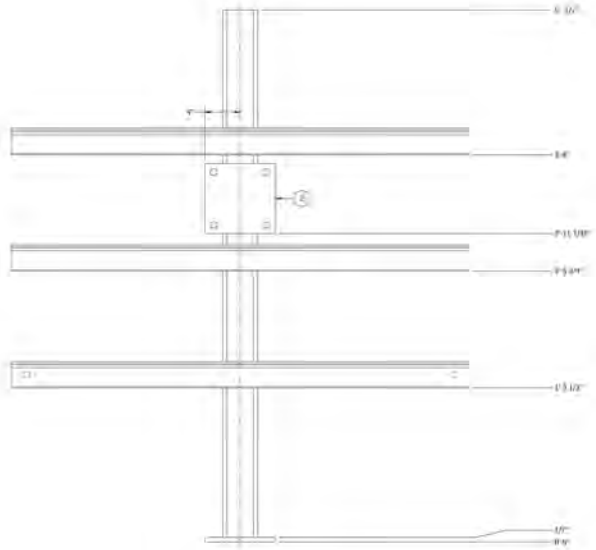
SIZE: D | REV: 5 | DRAWING NO: 260-S-102 | SHEET: 5 OF 26 | REV: 5

2ND STAGE VESSEL SUPPORT ASSY PARTS

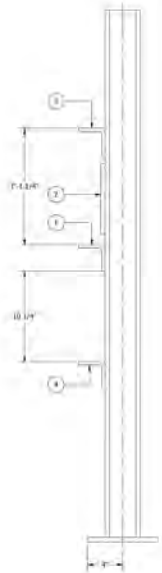
ITEM	QTY	DESCRIPTION	SHEET #
1	1	CS ANGLE, L 3" x 3" x 3/8" THK.	13
2	2	CS PLATE 8" x 8" x 1/2" THK.	14
3	1	CS TUBE SQ., 4" x 4" x 1/4" THK.	13
4	1	CS ANGLE, L 3" x 3" x 3/8" THK.	13
5	1	CS ANGLE, L 3" x 3" x 3/8" THK.	13



PLAN



ELEVATION
2ND STAGE VESSEL SUPPORT
SCALE: 1/6



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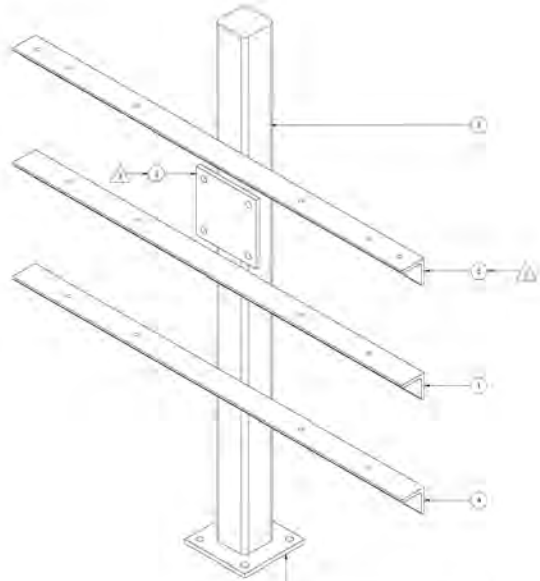

DETAIL OF ITEM #3
VESSEL SUPPORT ASSEMBLY
SEE SHEET #8
QTY: 1
SCALE: 1/5

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 3 & UPDATED LOCATION OF ITEM #6, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	10/6/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	08/02/11	JE	JE
0	FOR FABRICATION	AWS	06/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN BY	AWS	6/12/2011
CHKD BY	JE	6/6/2011
APP'D	JE	6/6/2011
APP'D		6/6/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

STATUS	FOR FABRICATION
PROJECT	BIWATER-AEWT
ORIGINAL CONTRACTOR	BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

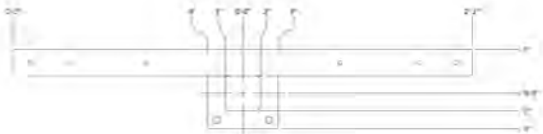
TITLE: 2ND PASS RO FRAME VESSEL SUPPORT DETAILS

SIZE: D | SCALE: A/S | DRAWING NO: 260-S-102 | SHEET: 12 OF 26 | REV: 5

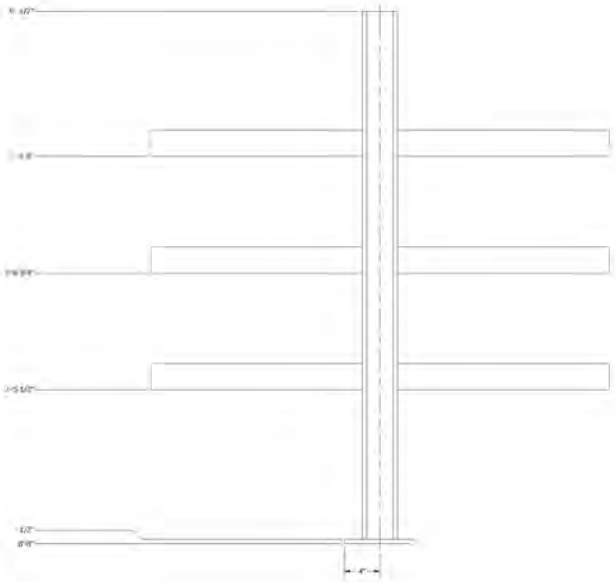
NO CHANGES ON THIS SHEET

2ND STAGE VESSEL SUPPORT ASSY PART

ITEM	QTY	DESCRIPTION	SHEET #
1	2	CS ANGLE, L 3" x 3" x 3/8" THK.	13
2	1	CS PLATE 6" x 6" x 1/2" THK.	14
3	1	CS TUBE SQ. - 4" x 4" x 1/4" THK.	13
4	1	CS ANGLE, L 3" x 3" x 3/8" THK.	13

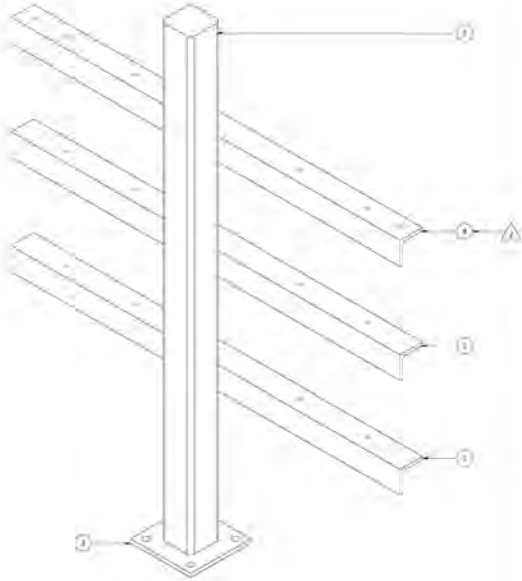


PLAN



ELEVATIONS
2ND STAGE VESSEL SUPPORT
SCALE: 1/6

END



DETAILS OF ITEM #2
VESSEL SUPPORT ASSEMBLY
SEE SHEET #8
QTY: 1
SCALE: 1/5

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 9 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CPP PIPE SUPPORTS, UPDATED SuPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	09/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLEING OF PARTS	AWS	08/11/11	JE	JE
0	FOR FABRICATION	AWS	06/12/11	JE	JE

REVISION HISTORY

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DRAWN BY: AWS	6/12/2011	SUBMITTAL NO.
CHK'D: JE	6/6/2011	PURCH. REF. NO.
APP'D: JE	6/6/2011	CONTRACT NUMBER
APPROVED: AWS	6/6/2011	JOB
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

PROJECT: BIWATER-AEWT

ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

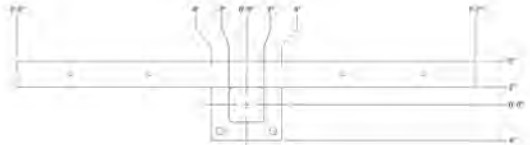
NO CHANGES ON THIS SHEET

TITLE: 2ND PASS RO FRAME VESSEL SUPPORT DETAILS

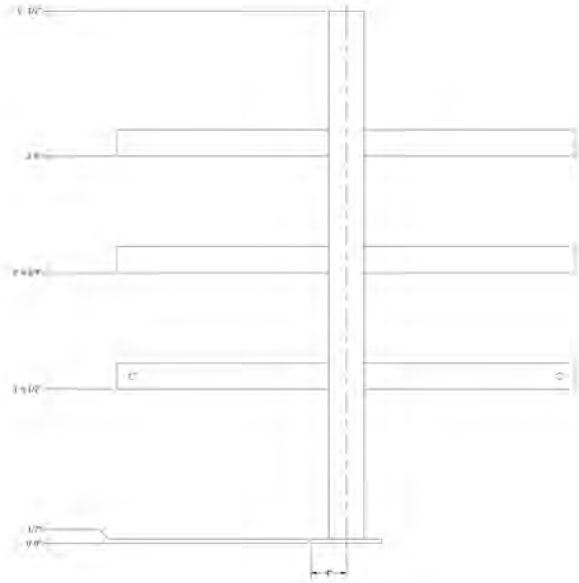
SIZE: D | SCALE: A/S | DRAWING: 260-S-102 | SHEET 11 OF 26 | REV: 5

2ND STAGE VESSEL SUPPORT ASSY PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	2	CS ANGLE, L 3" x 3" x 3/8" THK	13
2	1	CS PLATE 8" x 8" x 1/2" THK	14
3	1	CS TUBE SQ. - 4" x 4" x 1/4" THK	13
4	1	CS ANGLE, L 3" x 3" x 3/8" THK	13

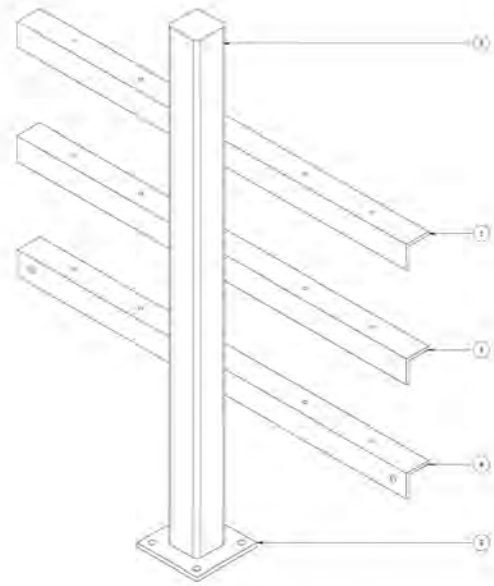


PLAN



ELEVATION
2ND STAGE VESSEL SUPPORT
SCALE: 1/6

END



DETAILS OF ITEM #1
VESSEL SUPPORT ASSEMBLY
SEE SHEET #8
QTY: 1
SCALE: 1/5

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 6 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CIPP PIPE SUPPORTS, UPDATED SuPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/26/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	05/12/11	JE	JE
0	FOR FABRICATION	AWS	05/12/11	JE	JE

REVISION HISTORY

Biwater

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DRAWN	6/12/2011
CHK'D	6/6/2011
APP'D	6/6/2011
DWG NO.	260-S-102
REV	5
SHEET NO.	10
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

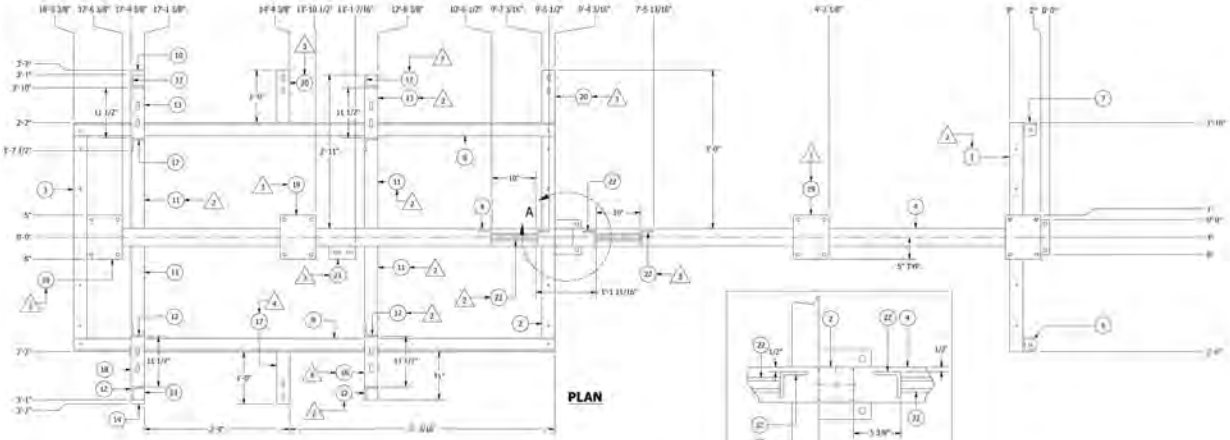
STATUS	FOR FABRICATION
PROJECT	BIWATER-AEWT
ORIGINAL CONTRACTOR	BIWATER INTERNATIONAL LTD

AS CHANGES ON THIS SHEET

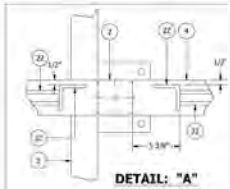
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

2ND PASS RO FRAME
VESSEL SUPPORT DETAILS

SIZE: D | SCALE: AS | DWG NO: 260-S-102 | SHEET: 10 OF 20 | REV: 5



PLAN



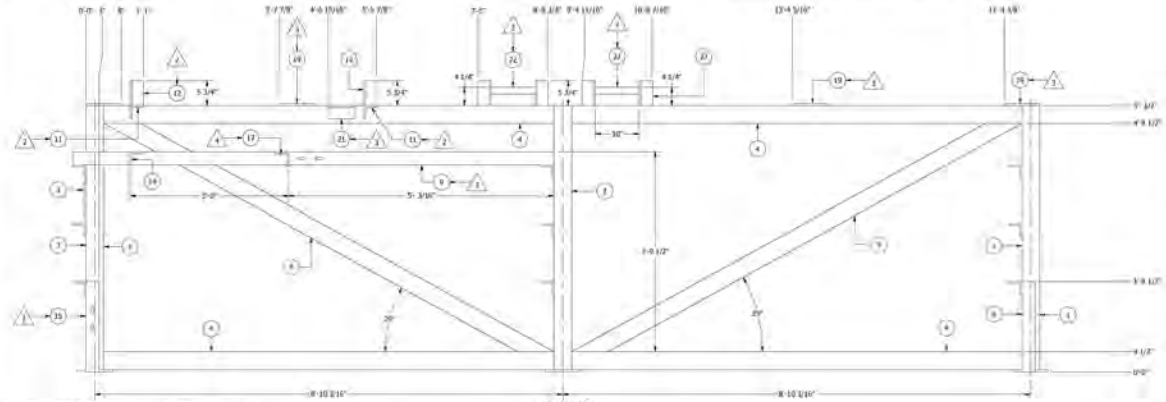
DETAIL: "A"
PIPE SUPPORT
SCALE: 1 / 6

2ND STAGE FRAME PARTS LIST

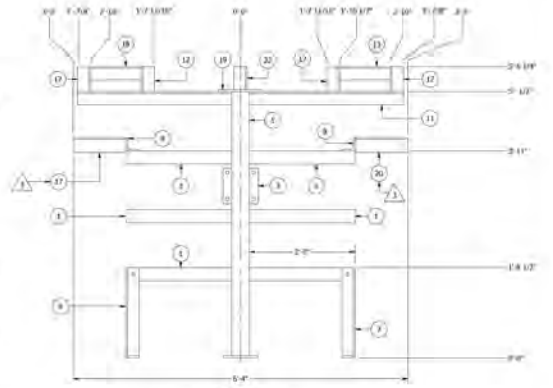
ITEM	QTY	DESCRIPTION	SHEET #
1	1	2ND STAGE VESSEL SUPPORT COLUMN	10
2	1	2ND STAGE VESSEL SUPPORT COLUMN	11
3	1	2ND STAGE VESSEL SUPPORT COLUMN	12
4	4	CS TUBE SQ. - 4" x 4" x 1/4" THK.	13
5	2	CS TUBE SQ. - 4" x 4" x 1/4" THK.	13
6	1	CS ANGLE, L 3" x 3" x 3/8" THK.	14
7	1	CS ANGLE, L 3" x 3" x 3/8" THK.	14
8	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
9	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
10	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
11	4	CS ANGLE, L 3" x 3" x 3/8" THK.	15
12	8	CS ANGLE, L 3" x 3" x 3/8" THK.	15
13	2	CS ANGLE, L 3" x 3" x 3/8" THK.	15
14	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
15	1	CS ANGLE, L 3" x 3" x 3/8" THK.	14
16	1	CS ANGLE, L 3" x 3" x 3/8" THK.	14
17	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
18	2	CS ANGLE, L 3" x 3" x 3/8" THK.	10
19	4	CS PLATE 8" x 10" x 1/2" THK.	16
20	2	CS ANGLE, L 3" x 3" x 3/8" THK.	16
21	1	CS ANGLE, L 3" x 3" x 3/8" THK.	16
22	2	6" PIPE SUPPORT ASSEMBLY	15

NOTE:

1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =1
6. ESTIMATED DRY WEIGHT= 1,643 lbs



ELEVATION
SCALE: 1/12



END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 9 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLEING OF PARTS	AWS	05/12/11	JE	JE
0	FOR FABRICATION	AWS	05/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN BY	6/12/2011
CHKD BY	6/9/2011
APP'D BY	6/9/2011
ENGR'G	6/9/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

FOR FABRICATION

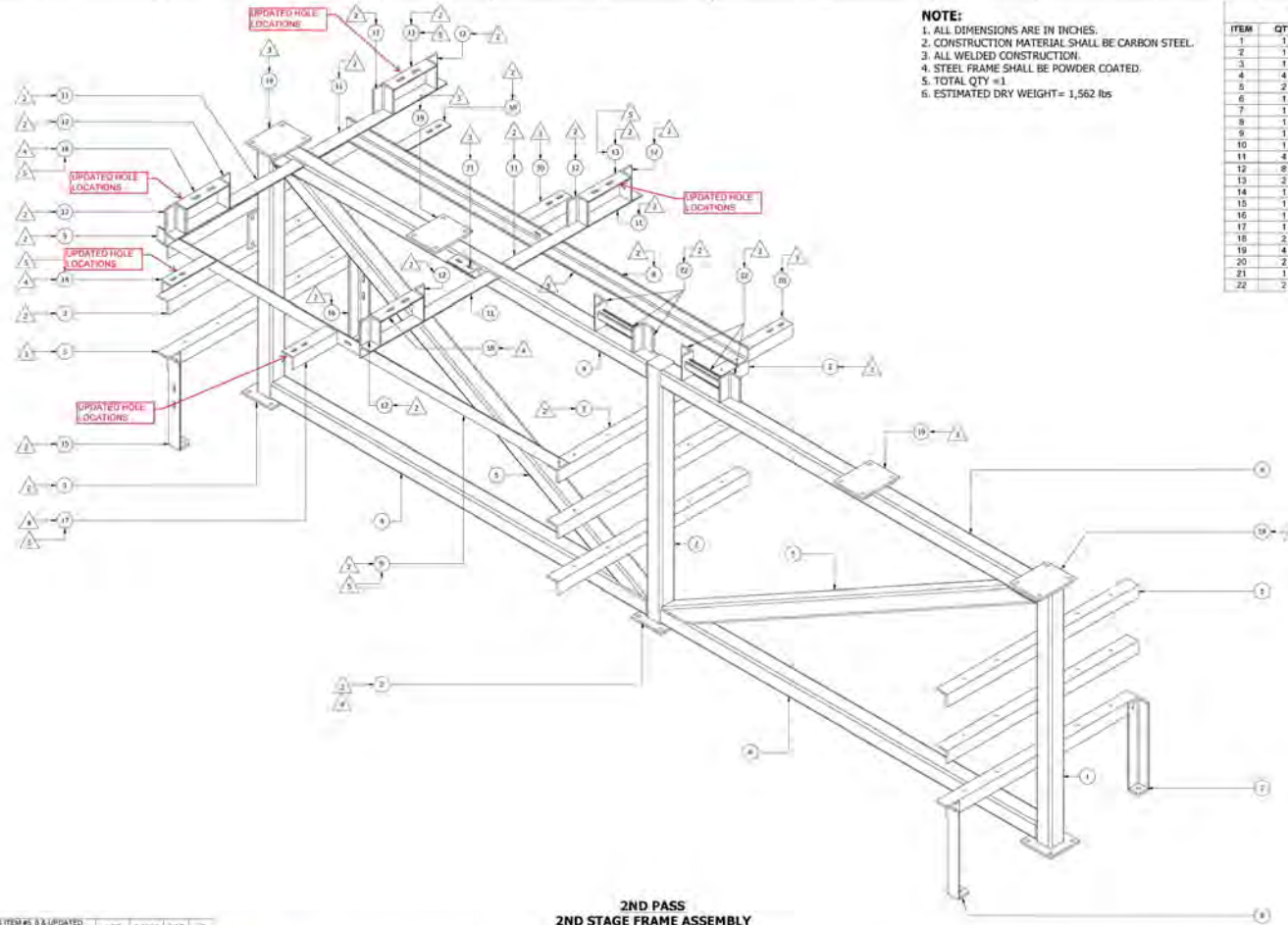
BIWATER-AEWT

BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

2ND PASS RO FRAME
2ND STAGE FRAME ASSEMBLY

SIZE: D | SCALE: A/S | DWG NO: 260-S-102 | REV: 5



NOTE:
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =1
6. ESTIMATED DRY WEIGHT= 1,562 lbs

2ND STAGE FRAME PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	1	2ND STAGE VESSEL SUPPORT COLUMN	10
2	1	2ND STAGE VESSEL SUPPORT COLUMN	11
3	1	2ND STAGE VESSEL SUPPORT COLUMN	12
4	4	CS TUBE SQ. - 4" x 4" x 1/4" THK.	13
5	2	CS TUBE SQ. - 4" x 4" x 1/4" THK.	13
6	1	CS ANGLE, L 3" x 3" x 3/8" THK.	14
7	1	CS ANGLE, L 3" x 3" x 3/8" THK.	14
8	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
9	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
10	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
11	4	CS ANGLE, L 3" x 3" x 3/8" THK.	15
12	8	CS ANGLE, L 3" x 3" x 3/8" THK.	15
13	2	CS ANGLE, L 3" x 3" x 3/8" THK.	15
14	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
15	1	CS ANGLE, L 3" x 3" x 3/8" THK.	14
16	1	CS ANGLE, L 3" x 3" x 3/8" THK.	14
17	1	CS ANGLE, L 3" x 3" x 3/8" THK.	15
18	2	CS ANGLE, L 3" x 3" x 3/8" THK.	10
19	4	CS PLATE 8" x 10" x 1/2" THK.	16
20	2	CS ANGLE, L 3" x 3" x 3/8" THK.	16
21	1	CS ANGLE, L 3" x 3" x 3/8" THK.	16
22	2	6" PIPE SUPPORT ASSEMBLY	15

2ND PASS
2ND STAGE FRAME ASSEMBLY
SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 9 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CIPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	05/12/11	JE	JE
0	FOR FABRICATION	AWS	05/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	6/12/2011
CHKD	AWS	8/9/2011
PROJ MGR	JE	8/9/2011
APPD	JE	8/9/2011

TOLERANCE BLOCK
INCH = +/- 1/32 (+/- 0.03)
METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION
PROJECT: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

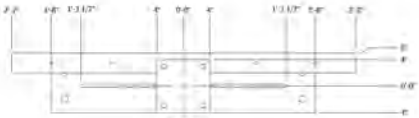
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO FRAME
2ND STAGE FRAME ASSEMLY

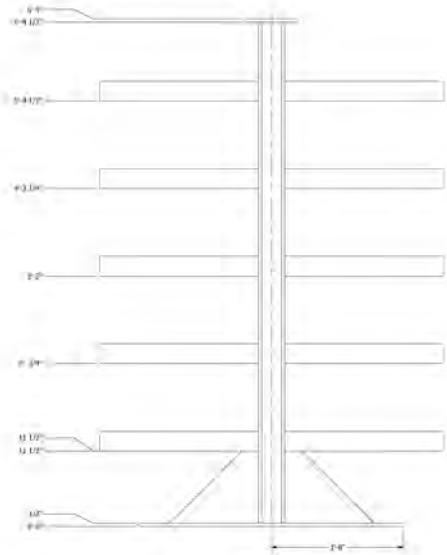
SIZE: D | SCALE: A/S | DWG NO: 260-S-102 | REV: 5

1ST STAGE VESSEL SUPPORT ASSY PARTS LIST

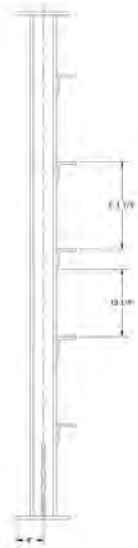
ITEM	QTY	DESCRIPTION	SHEET #
1	5	CS ANGLE, L 3" x 3" x 3/8" THK	13
3	1	CS TUBE SQ. - 4" x 4" x 1/4" THK	13
4	2	CS PLATE, 8" x 7" x 1/2" THK, GUSSET PLATE	14
5	1	CS PLATE 8" x 8" x 1/2" THK	14
6	1	CS PLATE 18" x 18" x 1/2" THK	14



PLAN



ELEVATION
1ST STAGE VESSEL SUPPORT
SCALE: 1/8



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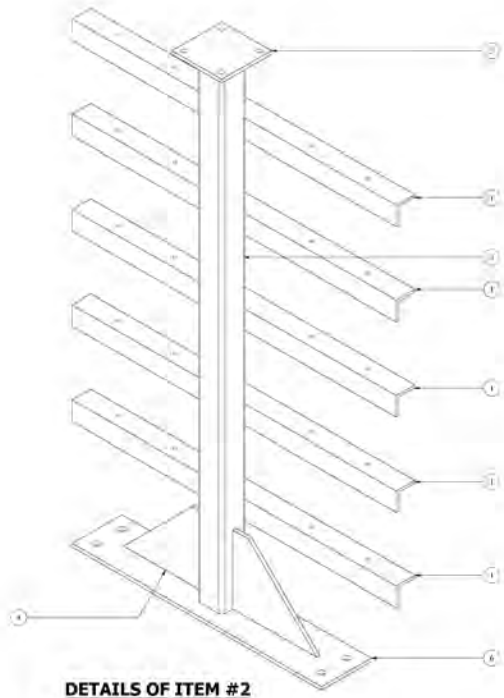

DETAILS OF ITEM #2
VESSEL SUPPORT ASSEMBLY
QTY: 1
SEE SHEET #4
SCALE: 1/6

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 6 & UPDATED LOCATION OF ITEM #6, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	05/12/11	JE	JE
0	FOR FABRICATION	AWS	05/12/11	JE	JE

REVISION HISTORY

NO CHANGES ON THIS SHEET

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN BY	6/12/2011	SUBMITTAL NO.
CHKD	6/6/2011	PURCH. REF. NO.
QC	6/6/2011	CONTRACT NUMBER
APPD	6/6/2011	2ND
APPROVED	6/6/2011	

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03)
METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION
BIWATER-AEWT
ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

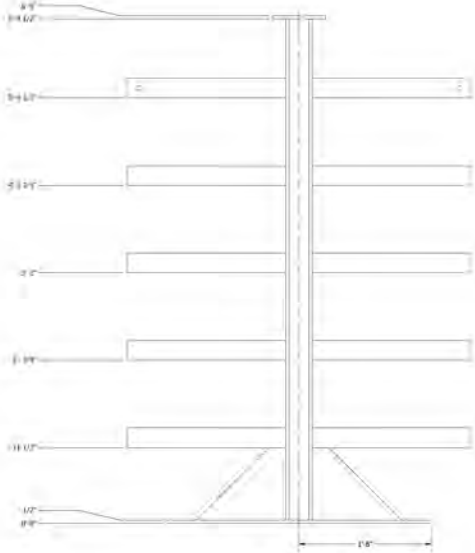
TITLE: 2ND PASS RO FRAME VESSEL SUPPORT DETAILS

SIZE: D | SCALE: A/S | DWG NO: 260-S-102 | REV: 5

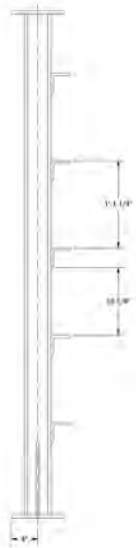
1ST STAGE VESSEL SUPPORT ASSY PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	4	CS ANGLE, L 3" x 3" x 3/8" THK	13
2	1	CS ANGLE, L 3" x 3" x 3/8" THK	13
3	1	CS TUBE, SQ. - 4" x 4" x 1/4" THK.	13
4	2	CS PLATE, 8" x 7" x 1/2" THK. GUSSET PLATE	14
5	1	CS PLATE 8" x 8" x 1/2" THK.	14
6	1	CS PLATE 18" x 18" x 1/2" THK	14

PLAN



ELEVATIONS
1ST STAGE VESSEL SUPPORT
SCALE: 1/8



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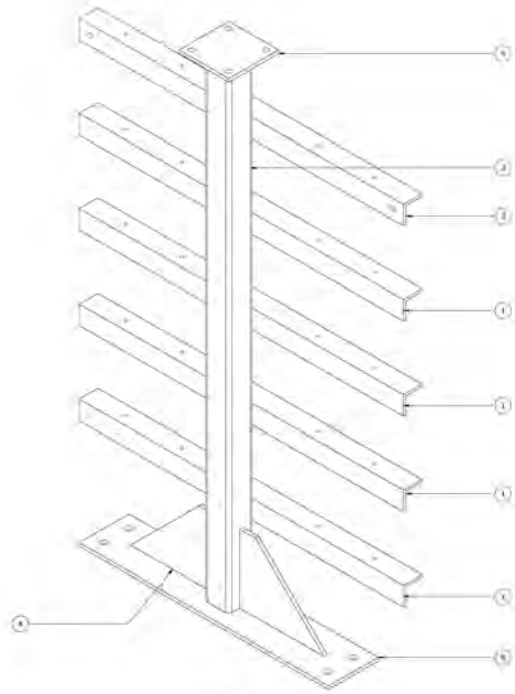

DETAILS OF ITEM #1
VESSEL SUPPORT ASSEMBLY
QTY: 2
SEE SHEET #4
SCALE: 1/6

NO CHANGES ON THIS SHEET

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 6 & UPDATED LOCATION OF ITEM #6, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSPF & CPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLEING OF PARTS	AWS	05/12/11	JE	JE
0	FOR FABRICATION	AWS	05/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7737 Fax: (626) 358-7737

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DRAWN BY	6/12/2011
CHK'D	6/6/2011
APP'D	6/6/2011
DWG NO	5/6/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)
	METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

2ND PASS RO FRAME
VESSEL SUPPORT DETAILS

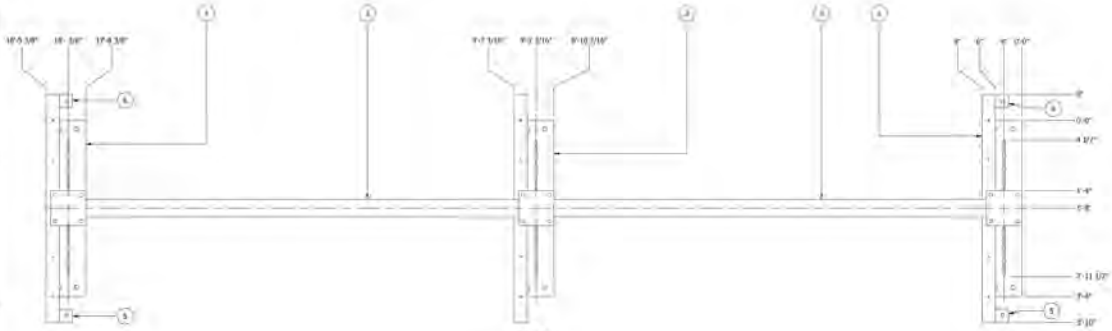
SIZE D SCALE A/S DWG NO 260-S-102 REV 5

1ST STAGE FRAME PARTS LIST

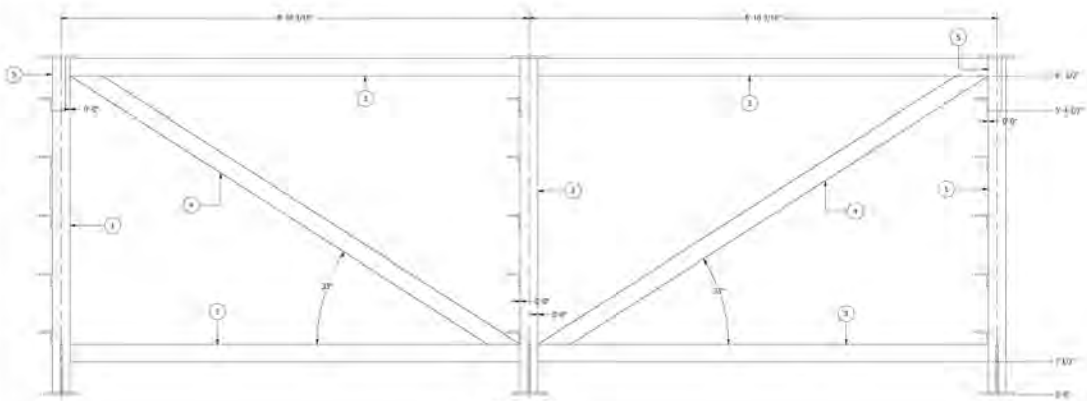
ITEM	QTY	DESCRIPTION	SHEET #
1	2	2ND STAGE VESSEL SUPPORT COLUMN	6
2	1	1ST STAGE VESSEL SUPPORT COLUMN	7
3	4	CS TUBE SQ. - 4" x 4" x 1/4" THK.	13
4	2	CS TUBE SQ. - 4" x 4" x 1/4" THK.	13
5	2	CS ANGLE, L 3" x 3" x 3/8" THK.	14
6	2	CS ANGLE L 3" x 3" x 3/8" THK.	14

NOTE:

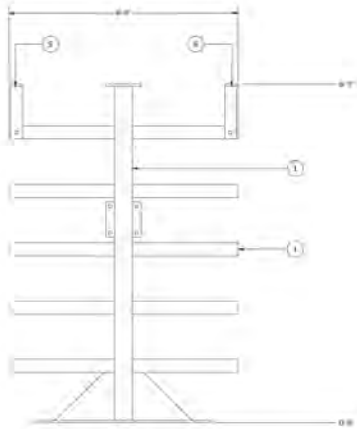
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =1
6. ESTIMATED DRY WEIGHT= 1,630 lbs



PLAN



ELEVATION
SCALE: 1/12



END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 9 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CIPP PIPE SUPPORTS, UPDATED SuPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/26/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLEING OF PARTS	AWS	05/12/11	JE	JE
0	FOR FABRICATION	AWS	05/12/11	JE	JE

REVISION HISTORY

Biwater

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138 E. LEMON AVE, MONROVIA CA 91016
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DRAWN BY	6/12/2011
CHECKED BY	6/5/2011
QC BY	6/5/2011
APPROVED BY	6/5/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)
	METRIC = +/- 1.0 millimeter

STATUS	FOR FABRICATION
PROJECT	BIWATER-AEWT
ORIGINAL CONTRACTOR	BIWATER INTERNATIONAL LTD

NO CHANGES ON THIS SHEET

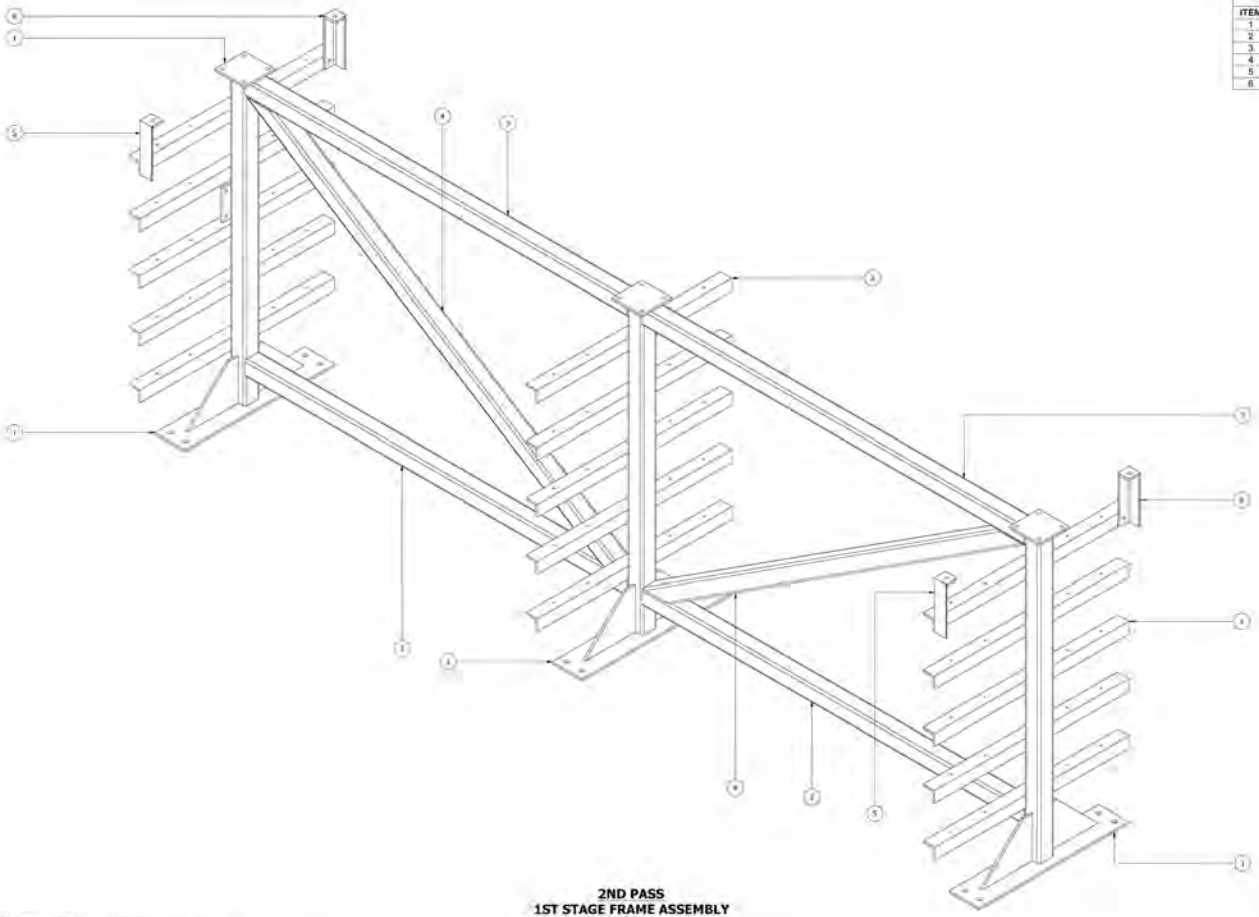
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

2ND PASS RO FRAME
1ST STAGE FRAME ASSEMBLY

SIZE	SCALE	DRAWING	REV
D	N/S	260-S-102	5

1ST STAGE FRAME PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	2	2ND STAGE VESSEL SUPPORT COLUMN	6
2	1	1ST STAGE VESSEL SUPPORT COLUMN	7
3	4	CS TUBE SQ. - 4" x 4" x 1/4" THK.	13
4	2	CS TUBE SQ. - 4" x 4" x 1/4" THK.	13
5	2	CS ANGLE, L 3" x 3" x 3/8" THK.	14
6	2	CS ANGLE, L 3" x 3" x 3/8" THK.	14



2ND PASS
1ST STAGE FRAME ASSEMBLY
SCALE: 1/10

NO CHANGES ON THIS SHEET

NOTE:
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY = 1
6. ESTIMATED DRY WEIGHT= 1,630 lbs

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 9 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSPF & CIPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	09/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLEING OF PARTS	AWS	08/11/11	JE	JE
0	FOR FABRICATION	AWS	06/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN BY	6/12/2011	SUBMITTAL NO.
CHK'D	6/9/2011	CHK'D. REF. NO.
ENG. MGR.	6/9/2011	PROJECT NUMBER 262
APP'D	6/9/2011	
ENGINEER	6/9/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

PROJECT: BIWATER-AEWT

ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

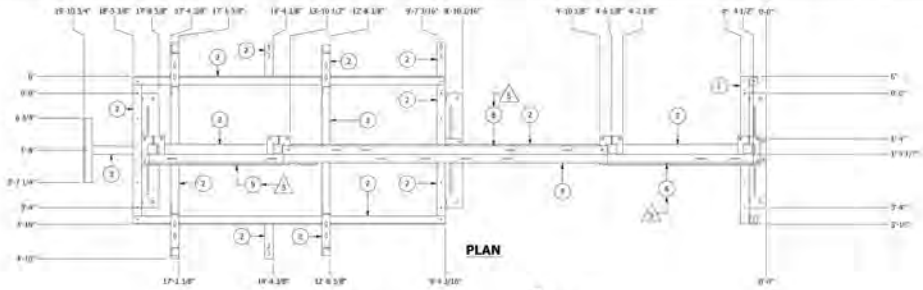
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO FRAME
1ST STAGE FRAME ASSEMBLY

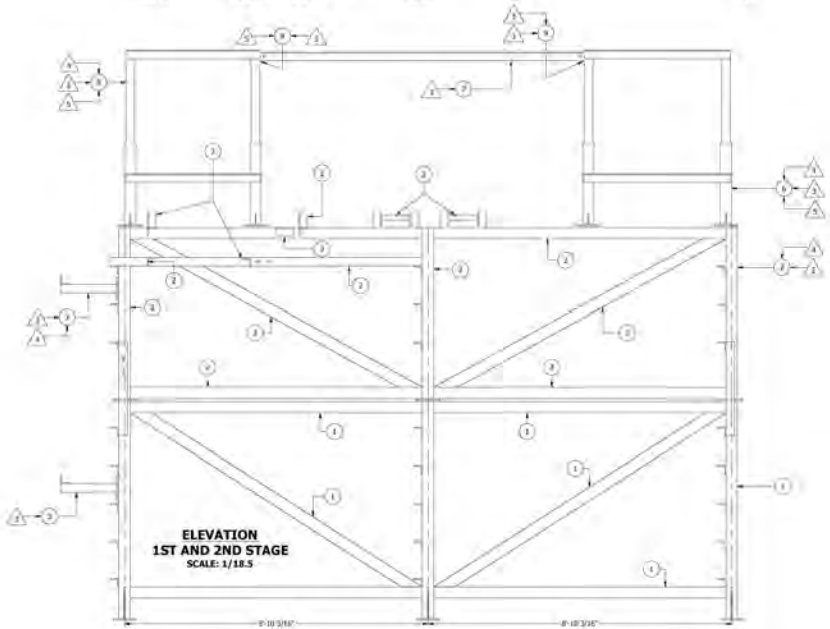
SIZE: D | SCALE: A/S | DWG NO: 260-S-102 | REV: 5

2ND PASS FRAME PARTS LIST

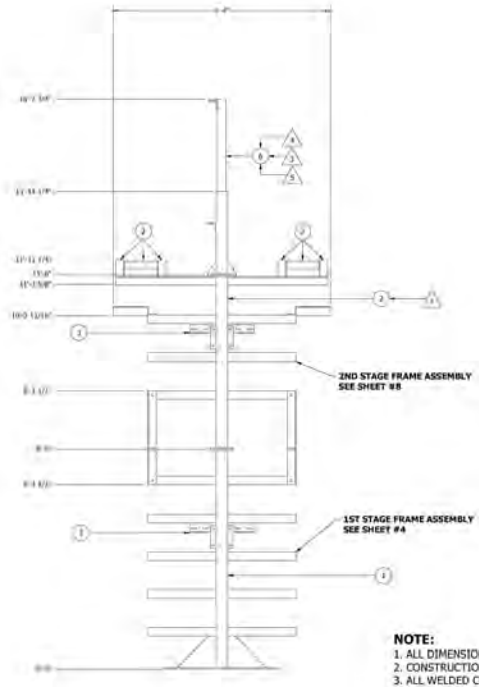
ITEM	QTY	DESCRIPTION	SHEET #
1	1	2ND PASS, 1ST STAGE FRAME ASSEMBLY	4
2	1	2ND PASS, 2ND STAGE FRAME ASSEMBLY	6
3	2	3" 1ST STAGE PERMEATE PIPE SUPPORT ASSEMBLY	17
5	1	2ND PASS CABLE TRAY SUPPORT ASSEMBLY	18
6	1	2ND PASS CABLE TRAY SUPPORT ASSEMBLY	19
7	1	CS ANGLE, L 3" x 3" x 3/8" THK	16
8	1	CS ANGLE, L 3" x 3" x 3/8" THK	16
9	2	CS ANGLE, L 3" x 3" x 3/8" THK	16



PLAN



ELEVATION
1ST AND 2ND STAGE
SCALE: 1/18.5



END

NOTE:
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =1
6. ESTIMATED DRY WEIGHT= 2,700 lb

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 6 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CPP PIPE SUPPORTS, UPDATED SuPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	1/06/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLEING OF PARTS	AWS	06/12/11	JE	JE
0	FOR FABRICATION	AWS	06/12/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN BY	6/12/2011	SUBMITTAL NO.
CHKD	6/6/2011	CHECK. REF. NO.
ENG MGR	6/6/2011	PROJECT NUMBER
APPD	6/6/2011	260
QA	6/6/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

PROJECT: BIWATER-AEWT

ORIGINAL COPY HOLDER: BIWATER INTERNATIONAL LTD

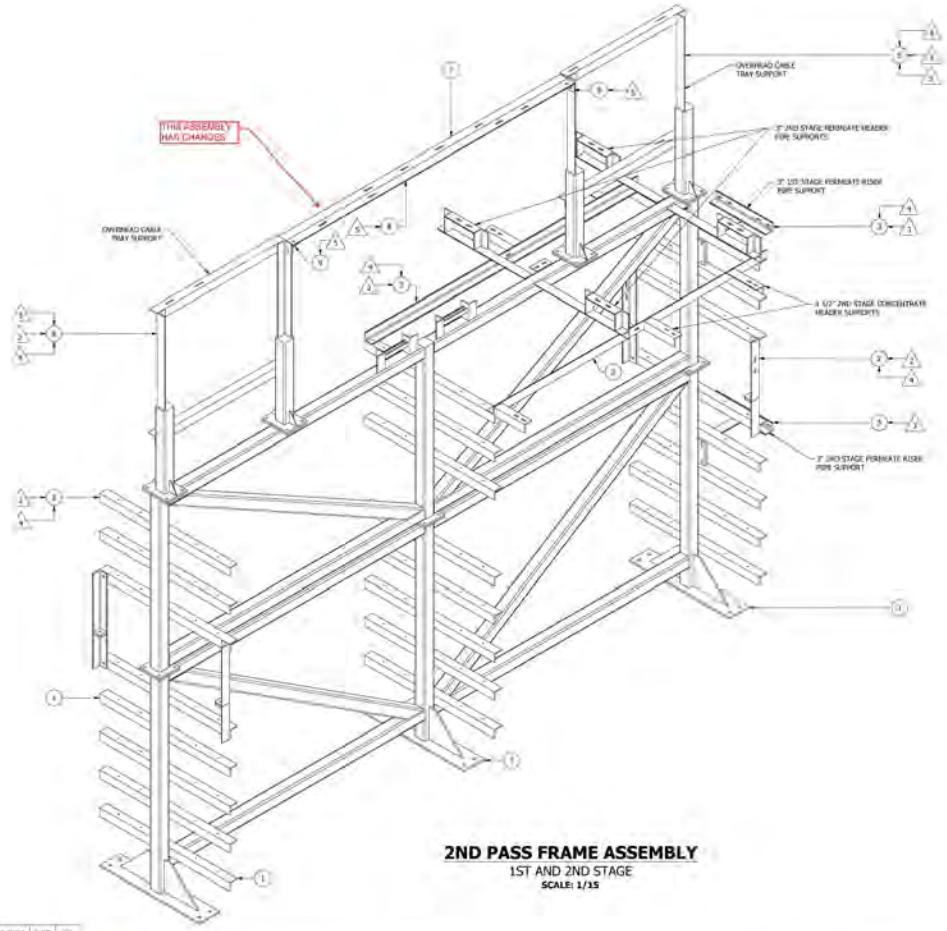
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO FRAME
FRAME ASSEMBLY

SIZE: D | SCALE: A/S | DWG NO: 260-S-102 | REV: 5

2ND PASS FRAME PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	1	2ND PASS, 1ST STAGE FRAME ASSEMBLY	4
2	1	2ND PASS, 2ND STAGE FRAME ASSEMBLY	6
3	2	3" 1ST STAGE PERMEATE PIPE SUPPORT ASSEMBLY	17
5	1	2ND PASS CABLE TRAY SUPPORT ASSEMBLY	18
6	1	2ND PASS CABLE TRAY SUPPORT ASSEMBLY	19
7	1	CS ANGLE, L 3" x 3" x 3/8" THK	16
8	1	CS ANGLE, L 3" x 3" x 3/8" THK	16
9	2	CS ANGLE, L 3" x 3" x 3/8" THK	16



2ND PASS FRAME ASSEMBLY

1ST AND 2ND STAGE

SCALE: 1/15

NOTE:

1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =1
6. ESTIMATED DRY WEIGHT= 4,023.10 lbs

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 6 & UPDATED LOCATION OF ITEM #8, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CSP & CPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	10/6/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	08/11/11	JE	JE
	FOR FABRICATION	AWS	08/12/11	JE	JE

REVISION HISTORY

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DRAWN BY: AWS	8/12/2011	SUBMITTAL NO.
CHKD BY: AWS	8/9/2011	PROJ. REF. NO.
APPD BY: AWS	8/9/2011	CONTRACT NUMBER: 2402
ENGINEER: JE	8/9/2011	

TOLERANCE BLOCK INCH = +/- 1/32 (+/- 0.03)
METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION

PROJECT: BIWATER-AEWT

ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

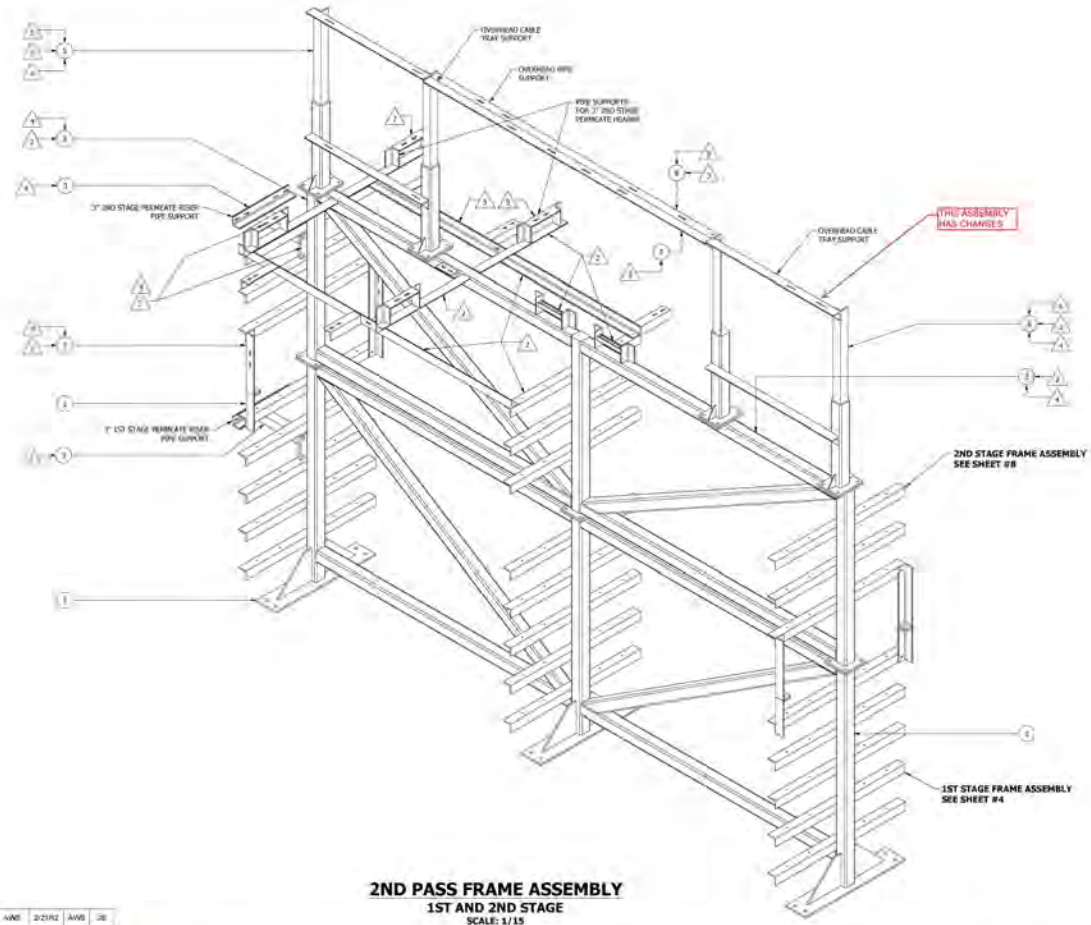
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS RO FRAME
FRAME ASSEMBLY

SIZE: D | SCALE: N/S | DRAWING NO.: 260-S-102 | SHEET 1 OF 21 | REV.: 5

2ND PASS FRAME PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	1	2ND PASS, 1ST STAGE FRAME ASSEMBLY	4
2	1	2ND PASS, 2ND STAGE FRAME ASSEMBLY	6
3	2	3" 1ST STAGE PERMEATE PIPE SUPPORT ASSEMBLY	17
5	1	2ND PASS CABLE TRAY SUPPORT ASSEMBLY	18
6	1	2ND PASS CABLE TRAY SUPPORT ASSEMBLY	19
7	1	CS ANGLE, L 3" x 3" x 3/8" THK	16
8	1	CS ANGLE, L 3" x 3" x 3/8" THK	16
9	2	CS ANGLE, L 3" x 3" x 3/8" THK	16



2ND PASS FRAME ASSEMBLY
1ST AND 2ND STAGE
SCALE: 1/15

NOTE:
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =1
6. ESTIMATED DRY WEIGHT= 3,828 lbs

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
5	UPDATED CABLE TRAY SUPPORTS ITEM #5, 6 & UPDATED LOCATION OF ITEM #6, 7 ON SHEET #1	AWS	2/21/12	AWS	JE
4	REMOVED CPP & CPP PIPE SUPPORTS, UPDATED SUPPORTS FOR FEED FROM 6" TO 4", UPDATED PERM. CONCENTRATES FROM 4" TO 3", UPDATED SUPPORTS FROM 6" PERM. HEADER TO 3"	AWS	10/6/11	AWS	JE
3	ADDED CABLE TRAY SUPPORTS & EXTRA PIPE SUPPORTS	AWS	9/28/11	AWS	JE
2	ADDED PIPE SUPPORTS TO 2ND STAGE FRAME ASSEMBLY	AWS	08/11/11	JE	JE
1	GENERAL REVISIONS ON QTY OF PARTS AND LABELLING OF PARTS	AWS	08/02/11	JE	JE
0	FOR FABRICATION	AWS	06/12/11	JE	JE

REVISION HISTORY

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DRAWN BY	AWS	6/12/2011
CHK'D	AWS	6/6/2011
APP'D	JE	6/6/2011
ENGR	JE	6/6/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
PROJECT: BIWATER-AEWT
ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

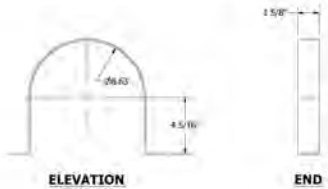
TITLE: 2ND PASS RO FRAME
FRAME ASSEMBLY

SIZE: D | SCALE: A/S | DRAWING: 260-S-102 | SHEET: 5 OF 21 | REV: 5

1ST PASS SUCK-BACK HEADER
ITEM #970, SHEET #18
8" PIPE STRAP, TRAINS # 1 THRU 4
QTY PER PROJECT :8

1ST PASS PERMEATE HEADER
ITEM #970, SHEET #18
8" PIPE STRAP, TRAIN #1, 2
QTY PER PROJECT :2

2ND PASS SUCK-BACK HEADER
ITEM #970, SHEET #18
8" PIPE STRAP
QTY PER PROJECT :1

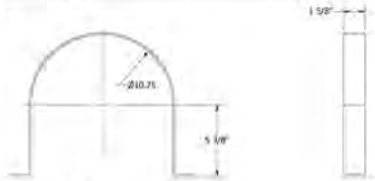


ELEVATION
SCALE: 1/4

END

1ST PASS CIP FEED/RETURN HEADER
ITEM #968, SHEET #18
10" PIPE STRAP, TRAINS # 1 THRU 4
QTY PER PROJECT :6 (CIPF), 4 (CIPR)

1ST PASS FLUSH HEADER
ITEM #968, SHEET #18
10" PIPE STRAP, TRAINS # 1 THRU 4
QTY PER PROJECT :8



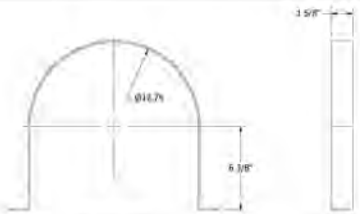
ELEVATION
SCALE: 1/4

END

1ST PASS FEED HEADER
ITEM #969, SHEET #18
12" PIPE STRAP, TRAIN #1 THRU 4
QTY PER PROJECT :10

1ST PASS PERMEATE HEADER
ITEM #969, SHEET #18
12" PIPE STRAP, TRAIN #3, 4
QTY PER PROJECT :3

2ND PASS PERMEATE HEADER
ITEM #969, SHEET #18
12" PIPE STRAP
QTY PER PROJECT :1



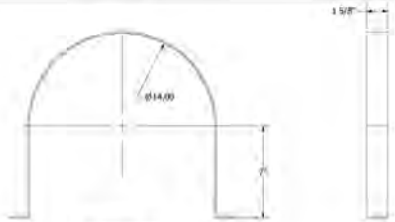
ELEVATION
SCALE: 1 / 4

END

1ST PASS BRINE HEADER
ITEM #971, SHEET #18
14" PIPE STRAP, TRAINS # 1 THRU 4
QTY PER PROJECT :8

1ST PASS FEED HEADER
ITEM #971, SHEET #18
14" PIPE STRAP, TRAIN #3
QTY PER PROJECT: 2

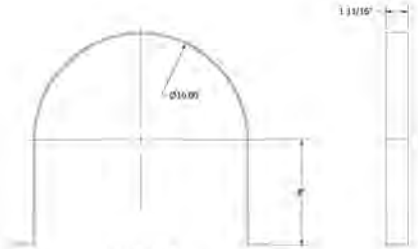
2ND PASS BRINE HEADER
ITEM #971, SHEET #18
14" PIPE STRAP
QTY PER TRAIN: 1
QTY PER PROJECT :1



ELEVATION
SCALE: 1/4

END

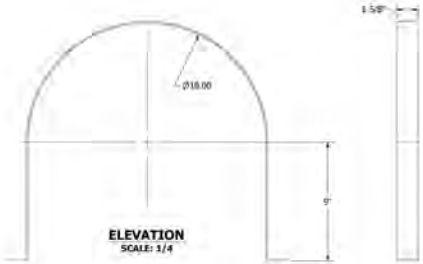
1ST PASS FEED HEADER
ITEM #973, SHEET #18
16" PIPE STRAP, TRAIN #4
QTY PER PROJECT :2



ELEVATION
SCALE: 1/4

END

2ND PASS FEED HEADER
ITEM #972, SHEET #18
18" PIPE STRAP
QTY PER PROJECT :1



ELEVATION
SCALE: 1/4

END

NOTE:
1. FABRICATE PIPE STRAPS FROM RECOMMENDED BENDABLE STEEL
2. FABRICATION PIPE SHIMMS FOR CHEAPEST METHOD

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS. ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	08/12/11	JS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	8/9/2011
CHKD	JS	8/9/2011
APPD	AWS	8/9/2011
M.GR	JS	8/9/2011

TOLERANCE BLOCK INCH = +/- 1/32 (+/- 0.03)
METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

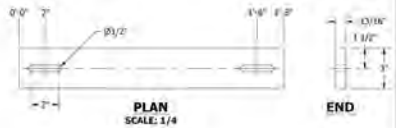
BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

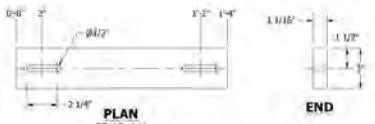
1ST PASS RO FRAME
PIPE STRAP DETAIL

SIZE: D | SCALE: N/S | DRAWING NO: 260-S-101 | SHEET 21 OF 21 | REV: 4

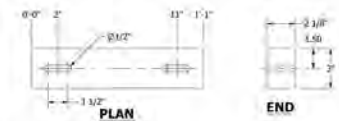
DETAIL OF ITEM #974, SHEET 18
1ST PASS, TRAIN #1, 2, 3, 4
14" CONCENTRATE HEADER SHIMM (0.842")



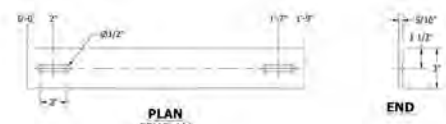
DETAIL OF ITEM #975, SHEET 18
1ST PASS, TRAIN #2
10" PERMEATE HEADER SHIMM (1.091")



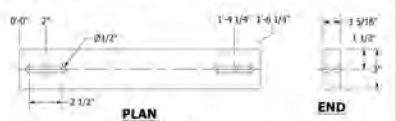
DETAIL OF ITEM #976, SHEET 18
1ST PASS, TRAIN #3
8" PERMEATE HEADER SHIMM (2.154")



DETAIL OF ITEM #977, SHEET 18
1ST PASS, TRAIN #4
16" FEED HEADER SHIMM (0.312")

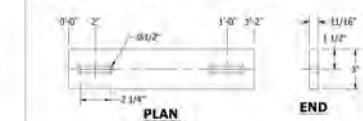


DETAIL OF ITEM #978, SHEET 18
1ST PASS, TRAIN #3
14" FEED HEADER SHIMM (1.312")

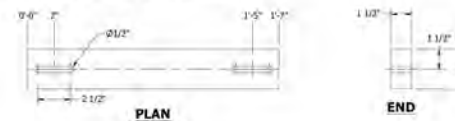


DETAIL OF ITEM #979, SHEET 18
1ST PASS, TRAIN #2
12" FEED HEADER SHIMM (1.94")

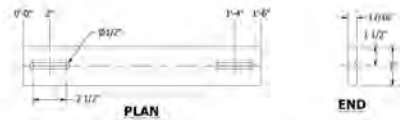
DETAIL OF ITEM #980, SHEET 18
2NS PASS
8" 2ND PASS SUCKBACK HEADER SHIMM (0.688")



DETAIL OF ITEM #981, SHEET 18
2NS PASS
14" 2ND PASS CONCENTRATE HEADER SHIMM (1.53")



DETAIL OF ITEM #982, SHEET 18
2NS PASS
12" 2ND PASS PERMEATE HEADER SHIMM (0.689")



NOTE:
1. FABRICATE PIPE STRAPS FROM RECOMMENDED BENDABLE STEEL
2. FABRICATION PIPE SHIMMS FOR CHEAPEST METHOD

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED HEIGHT OF CABLE TRAY SUPPORTS, ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS, ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS, UPDATED PAGE LOCATION OF PARTS ON SHEET #6, 10, ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	08/12/11	JS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	8/9/2011
CHK'D	JS	8/9/2011
APP'D	AWS	8/9/2011
M'GR	JS	8/9/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter	

STATUS	FOR FABRICATION
PROJECT	BIWATER-AEWT
ORIGINAL CONTRACTOR	BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

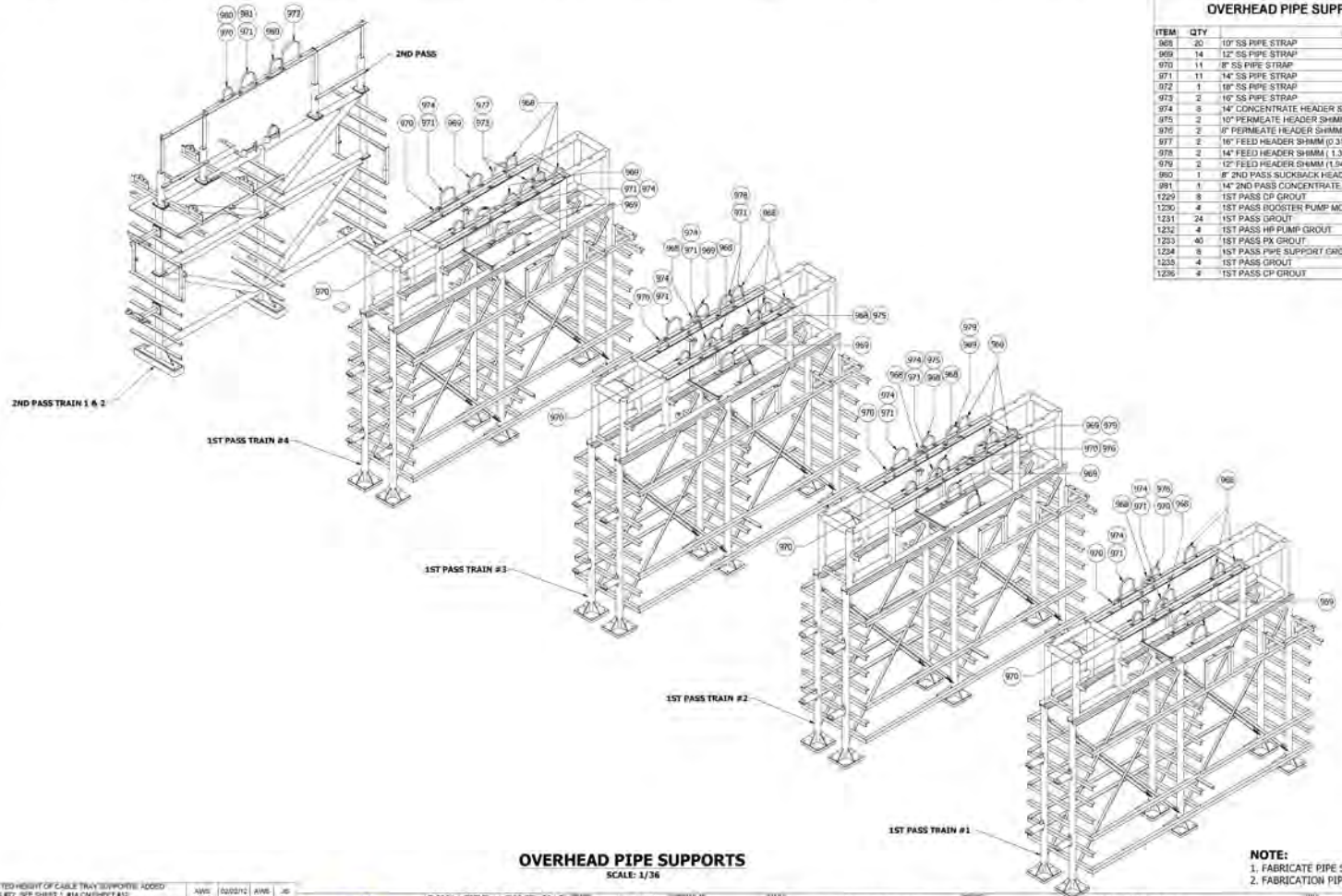
1ST PASS RO FRAME
SHIMM FABRICATION DETAILS

SIZE	SCALE	DRAWING	REV
D	A/S	260-S-101	4

SHEET 20 OF 21

OVERHEAD PIPE SUPPORTS & SHIMMS PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
968	20	10" SS PIPE STRAP	20
969	14	12" SS PIPE STRAP	20
970	11	8" SS PIPE STRAP	20
971	11	14" SS PIPE STRAP	20
972	1	18" SS PIPE STRAP	20
973	2	16" SS PIPE STRAP	20
974	8	14" CONCENTRATE HEADER SHIMM (0.842")	19
975	2	10" PERMEATE HEADER SHIMM (1.091")	19
976	2	8" PERMEATE HEADER SHIMM (2.154")	19
977	2	16" FEED HEADER SHIMM (0.312")	19
978	2	14" FEED HEADER SHIMM (1.312")	19
979	2	12" FEED HEADER SHIMM (1.94")	19
980	1	8" 2ND PASS SUCKBACK HEADER SHIMM (0.688")	19
991	1	14" 2ND PASS CONCENTRATE HEADER SHIMM (1.53")	19
1229	8	1ST PASS CP GROUT	
1230	4	1ST PASS BOOSTER PUMP MOUNTING PLATE	
1231	24	1ST PASS GROUT	
1232	4	1ST PASS HP PUMP GROUT	
1233	40	1ST PASS PX GROUT	
1234	8	1ST PASS PIPE SUPPORT GROUT	
1235	4	1ST PASS GROUT	
1236	4	1ST PASS CP GROUT	



OVERHEAD PIPE SUPPORTS

SCALE: 1/36

NOTE:
1. FABRICATE PIPE STRAPS FROM RECOMMENDED BENDABLE STEEL
2. FABRICATION PIPE SHIMMS FOR CHEAPEST METHOD

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1. #14 ON SHEET #12.	AWS	02/22/12	AWS	JS
3	UPDATED PIPE SUPPORTS. ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RAKES	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	08/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
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DRAWN	AWS	6/9/2011	SUBMITTAL NO.
CHK'D	AWS	6/9/2011	CHK'D. REF. NO.
APP'D	AWS	6/9/2011	PROJECT NUMBER 260
DATE		6/9/2011	
SCALE		1/36	
TOLERANCE		INCH = +/- 1/32 (+/- 0.03)	
BLOCK		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

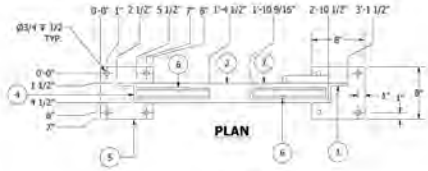
CUSTOMER: BIWATER-AEWT

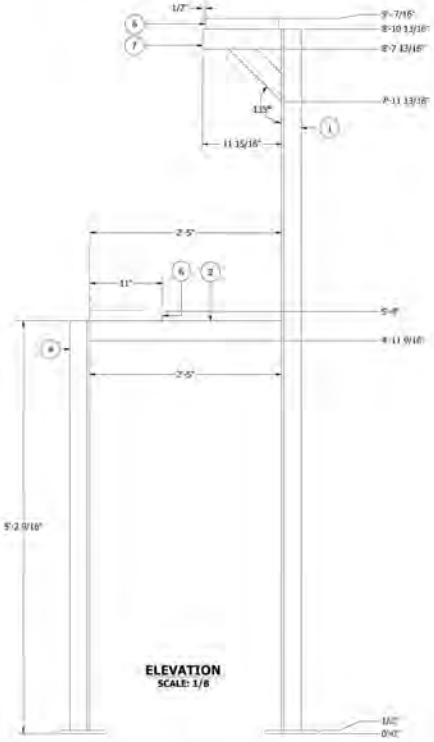
ORIGINAL EQUIPMENT MANUFACTOR: BIWATER INTERNATIONAL LTD

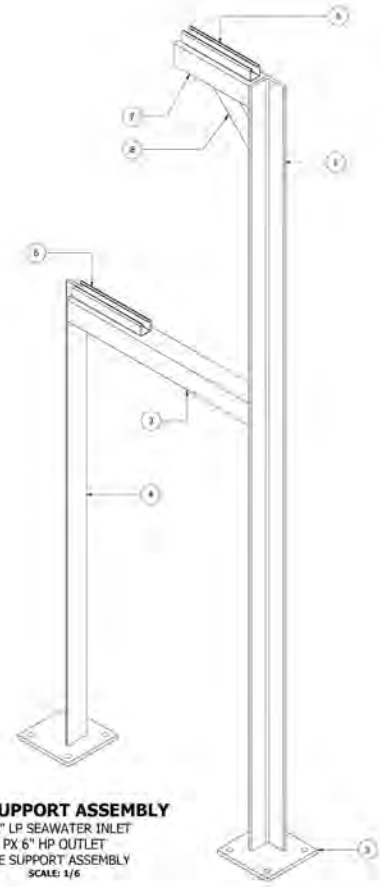
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO FRAME OVERHEAD SPRTS & SHIMMS

SIZE: D | SCALE: AS | DRAWING: 260-S-101 | SHEET: 19 OF 21 | REV: 4







PIPE SUPPORT PARTS LIST

ITEM	QTY	DESCRIPTION
1	106.289 in	CS ANGLE - L 3" x 3" x 3/8" THK.
2	29.000 in	CS ANGLE - L 3" x 3" x 3/8" THK.
4	62.048 in	CS ANGLE - L 3" x 3" x 3/8" THK.
5	2	CS PLATE 8" x 8" x 1/2" THK.
6	22.000 in	UNISTRUT 1-5/8" X 1-5/8", 316 SS
7	11.956 in	CS ANGLE - L 3" x 3" x 3/8" THK.
8	1	CS ANGLE - L 3" x 3" x 3/8" THK.

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS; ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS; ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS; UPDATED PAGE LOCATION OF PARTS ON SHEET #6, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	06/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

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DRAWN	AWS	6/9/2011
CHECKED	JS	6/9/2011
APPROVED	AWS	6/9/2011
PROJECT MANAGER	JS	6/9/2011
TOLERANCE	INCH ± +/- 1/32 (+/- 0.03)	
BLOCK	METRIC ± +/- 1.0 millimeter	

STATUS	FOR FABRICATION
CLIENT	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD

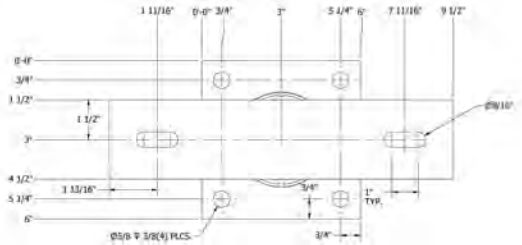
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

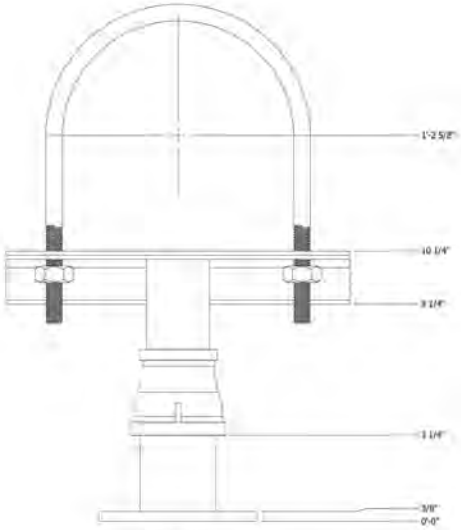
1ST PASS RO FRAME
OVERHEAD PIPE SUPPORT

SIZE	DRAWING NO.	REV.
D	260-S-101	4

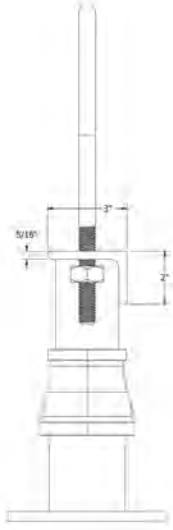
SHEET 18 OF 21

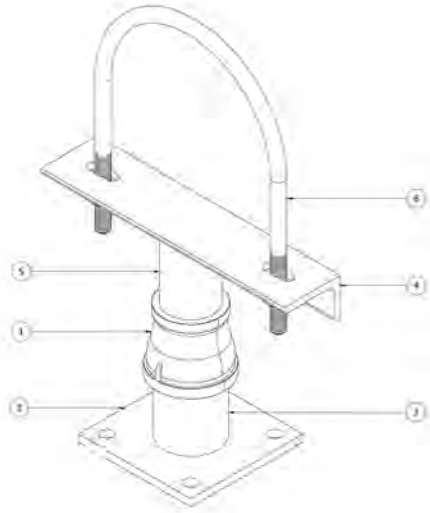
PIPE SUPPORT PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	SS Pipe Reducer 2-1/2" x 2" Threaded
2	1	SS Plate 5" x 6" x 3/8"
3	4.022 in	SS Pipe 2-1/2" Sch40 w/ NPT Thread
4	1	SS Angle 3" X 2" X 5/16"
5	1	SS Pipe 2" Sch40 w/ NPT Thread
6	1	316 SS EXTENDED LENGTH U-BOLT, 5/8"-11, 8" PIPE





ELEVATION
PX INLET PIPE SUPPORT
SCALE: 1/2





GROUND PIPE SUPPORT
PX LP BRINE OUTLET HEADER
SCALE: 1/2

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/22/12	AWS	JS
3	UPDATED PIPE SUPPORTS, ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #10	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	05/12/11	JS	JS

REVISION HISTORY

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DRAWN	AWS	6/9/2011
CHK'D	JS	6/9/2011
APP'D	JS	6/9/2011
DRAWING NO.		260
SCALE		1/2
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

STATUS	FOR FABRICATION
OWNER	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS RO FRAME
PIPE SUPPORT DETAIL

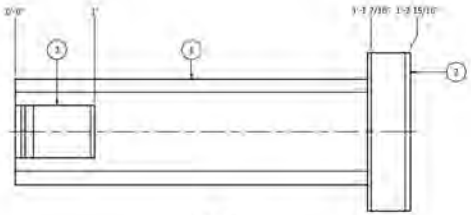
DR. SIZE	DRAWING	REV.
D /A/S	260-S-101	4

SHEET 17 OF 21

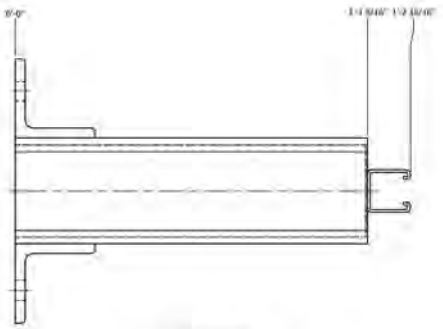
DETAIL OF ITEM #5, SHEET #1
PERMEATE PIPE SUPPORTS
QTY: 4 PER TRAIN

PERMEATE SUPPORT PARTS LIST

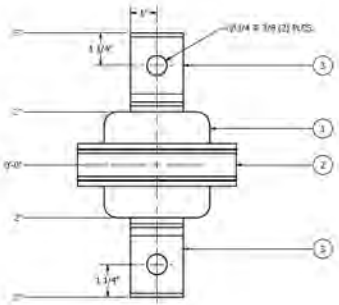
ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ - 4" x 4" x 1/4" THK.
2	6.083 in	CS UNISTRUT 1-5/8" X 1-5/8", 316 SS
3	2	CS ANGLE, 4.3" x 3" x 3/8" THK



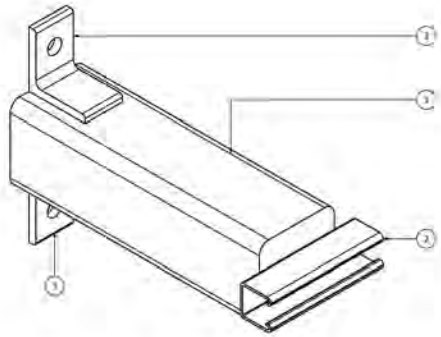
PLAN



ELEVATION
SCALE: 1/2



END



PERMEATE PIPE SUPPORT
SCALE: 1/2

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
*	UPDATED HEIGHT OF CABLE TRAY SUPPORTS, ADDED ITEMS #22, SEE SHEET 1 #14 ON SHEET #12	AWS	01/27/12	AWS	JS
3	UPDATED PIPE SUPPORTS, ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/07/11	AWS	JS
2	ADDED PIPE SUPPORTS, UPDATED PAGE, LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #10	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	08/12/11	JS	JS

REVISION HISTORY

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DWG	6/9/2011	SUPPLIER:
CK	6/9/2011	APPD BY: JS
QUOTE	6/9/2011	PROJECT MANAGER: JS
CAD	6/9/2011	
TOLERANCE	[INCH = +/- 1/32 (+/- 0.03)	
BLOCK	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

CUSTOMER: BIWATER-AEWT

OWNER / END USER: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

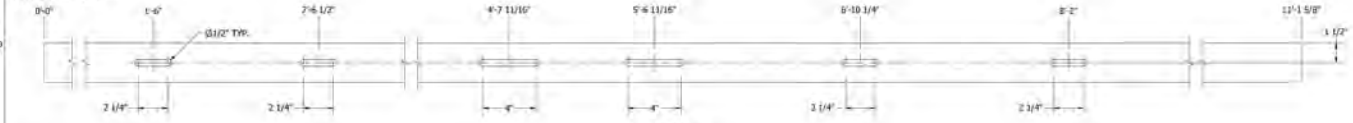
TITLE: 1ST PASS RO FRAME
PIPE SUPPORTS

SIZE	SCALE	DWG No	REV
D	A/S	260-S-101	4

Sheet 16 of 21

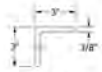
DETAIL OF ITEM #11, SHEET #12

OVERHEAD PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN



PLAN
SCALE: 1/4

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.



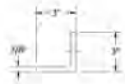
END

DETAIL OF ITEM #12, SHEET #12

OVERHEAD PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

PLAN
SCALE: 1/4

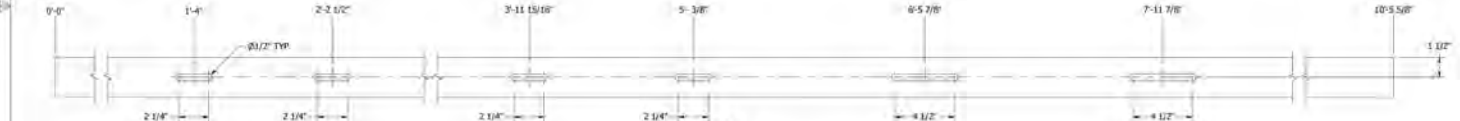
PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.



END

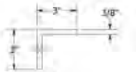
DETAIL OF ITEM #14, SHEET #12

OVERHEAD PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN



PLAN
SCALE: 1/4

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.



END

DETAIL OF ITEM #15, SHEET #12

OVERHEAD PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

PLAN
SCALE: 1/4

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS, ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS, ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RAKES	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS, UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	06/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

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AWS	6/9/2011	DRAWING NO.	
JS	6/9/2011	PROJECT NO.	260
AWS	6/9/2011		
AWS	6/9/2011		

TOLERANCE BLOCK INCH = +/- 1/32 (+/- 0.03)
METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION
DRAWN: BIWATER-AEWT
ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO FRAME RACK FABRICATION DETAILS

SIZE: D | SHEET: A/S | DRAWING NO.: 260-S-101 | SHEET: 15 OF 21 | REV: 4

PIPE RACK & CABLE TRAY PARTS FABRICATION DETAILS

DETAIL OF ITEM #1, SHEET #12
SQ. TUBING
QTY: 2 PER TRAIN

ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4"x4"x1/4" THK.

ELEVATION
SCALE: 1/10

END

DETAIL OF ITEM #2, SHEET #12
SQ. TUBING
QTY: 8 PER TRAIN

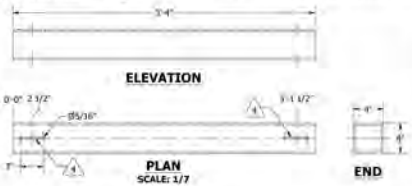
ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4"x4"x1/4" THK.

ELEVATION
SCALE: 1/10

END

DETAIL OF ITEM #3, SHEET #12
SQ. TUBING
QTY: 4 PER TRAIN

ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4"x4"x1/4" THK.



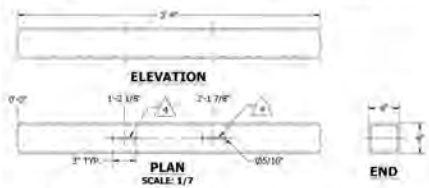
ELEVATION

PLAN
SCALE: 1/7

END

DETAIL OF ITEM #17, SHEET #12
SQ. TUBING
QTY: 4 PER TRAIN

ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4"x4"x1/4" THK.



ELEVATION

PLAN
SCALE: 1/7

END

DETAIL OF ITEM #4, SHEET #12
SQ. TUBING
QTY: 6 PER TRAIN

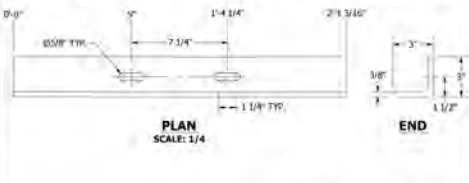
ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ. - 4"x4"x1/4" THK.

ELEVATION
SCALE: 1/8

END

DETAIL OF ITEM #5, SHEET #12
PERMEATE PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

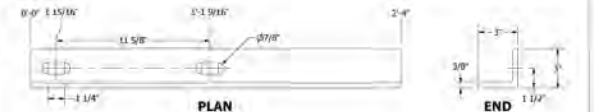


PLAN
SCALE: 1/4

END

DETAIL OF ITEM #6, SHEET #12
CIP FEED PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

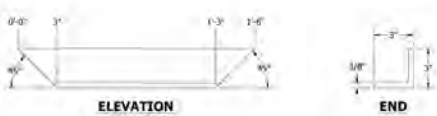


PLAN
SCALE: 1/4

END

DETAIL OF ITEM #7, SHEET #12
CIP FEED PIPE SUPPORT ANGLE
QTY: 1 PER TRAIN

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

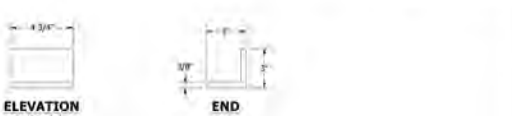


ELEVATION
SCALE: 1 / 4

END

DETAIL OF ITEM #8, SHEET #12
PERMEATE PIPE SUPPORT ANGLE
QTY: 2 PER TRAIN

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.



ELEVATION
SCALE: 1 / 4

END

DETAIL OF ITEM #10, SHEET #12
PERMEATE PIPE SUPPORT UNISTRUT
QTY: 1 PER TRAIN

ITEM	QTY	DESCRIPTION
1	1	UNISTRUT 1-5/8" X 1-5/8", 316 SS

PLAN
SCALE: 1/4

END

DETAIL OF ITEM #13, SHEET #12
FEED HEADER PIPE SUPPORT ANGLE
QTY: 2 PER TRAIN

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

PLAN
SCALE: 1/4

END

DETAIL OF ITEM #16, SHEET #12
3" PERMEATE PIPE SUPPORT ANGLES
QTY: 2 FOR 1 SKID ONLY

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

PLAN
SCALE: 1/4

END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS; ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/03/12	AWS	JS
3	UPDATED PIPE SUPPORTS; ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RAKES	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS; UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	09/23/11	JS	JS
1	FOR FABRICATION	AWS	09/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
158 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 359-7707 Fax: (626) 359-7737

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DRAWN	AWS	8/9/2011
CHECKED	JS	8/9/2011
APPROVED	AWS	8/9/2011
PE STAMP		8/9/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter	

FOR FABRICATION

BIWATER-AEWT

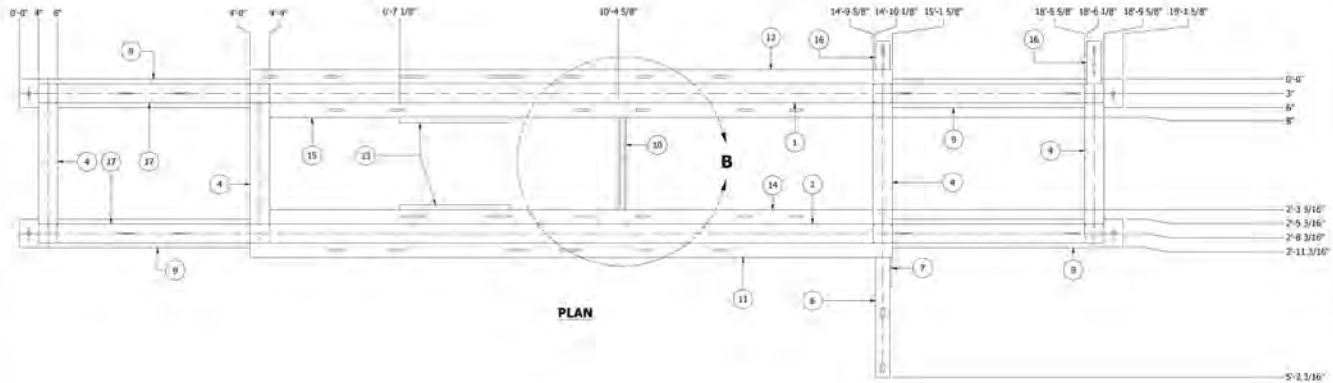
BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

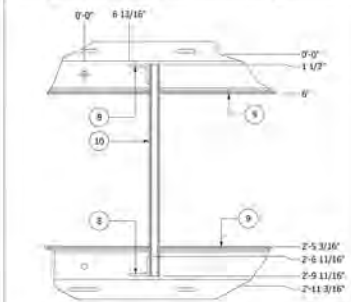
1ST PASS RO FRAME
RACK FABRICATION DETAILS

SIZE	DWG NO	REV
D	260-S-101	4

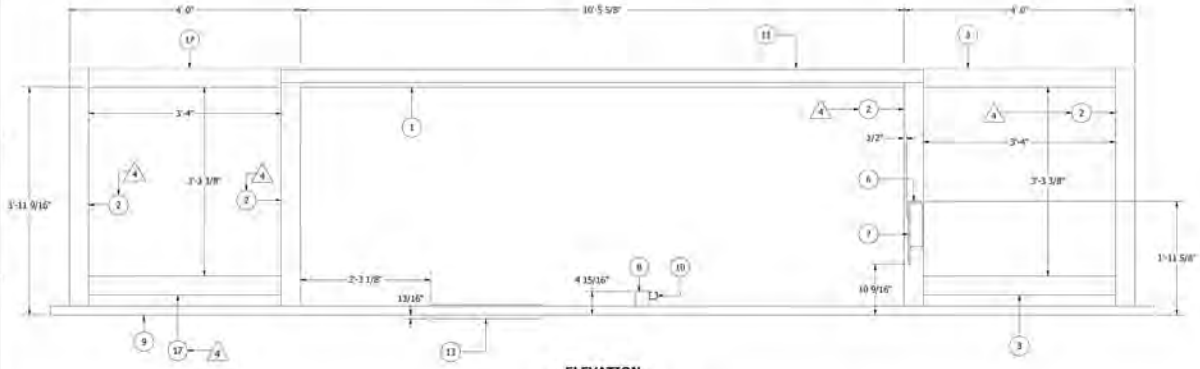
SHEET 14 OF 21



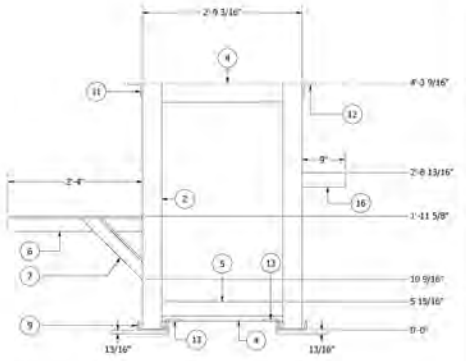
PLAN



DETAIL: "B"
8" PERMEATE HEADER PIPE SUPPORT
SCALE: 1/8



ELEVATION
SCALE: 1/11



END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS, ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #10	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	05/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7757

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DRAWN	AWS	6/9/2011
CHK'D	JS	6/9/2011
APPD	JS	6/9/2011
DRAWING NO.		260
DATE		6/9/2011
TOLERANCE	INCH = +/- 1/32 (+/- 0.03)	
BLOCK	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

CLIENT: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

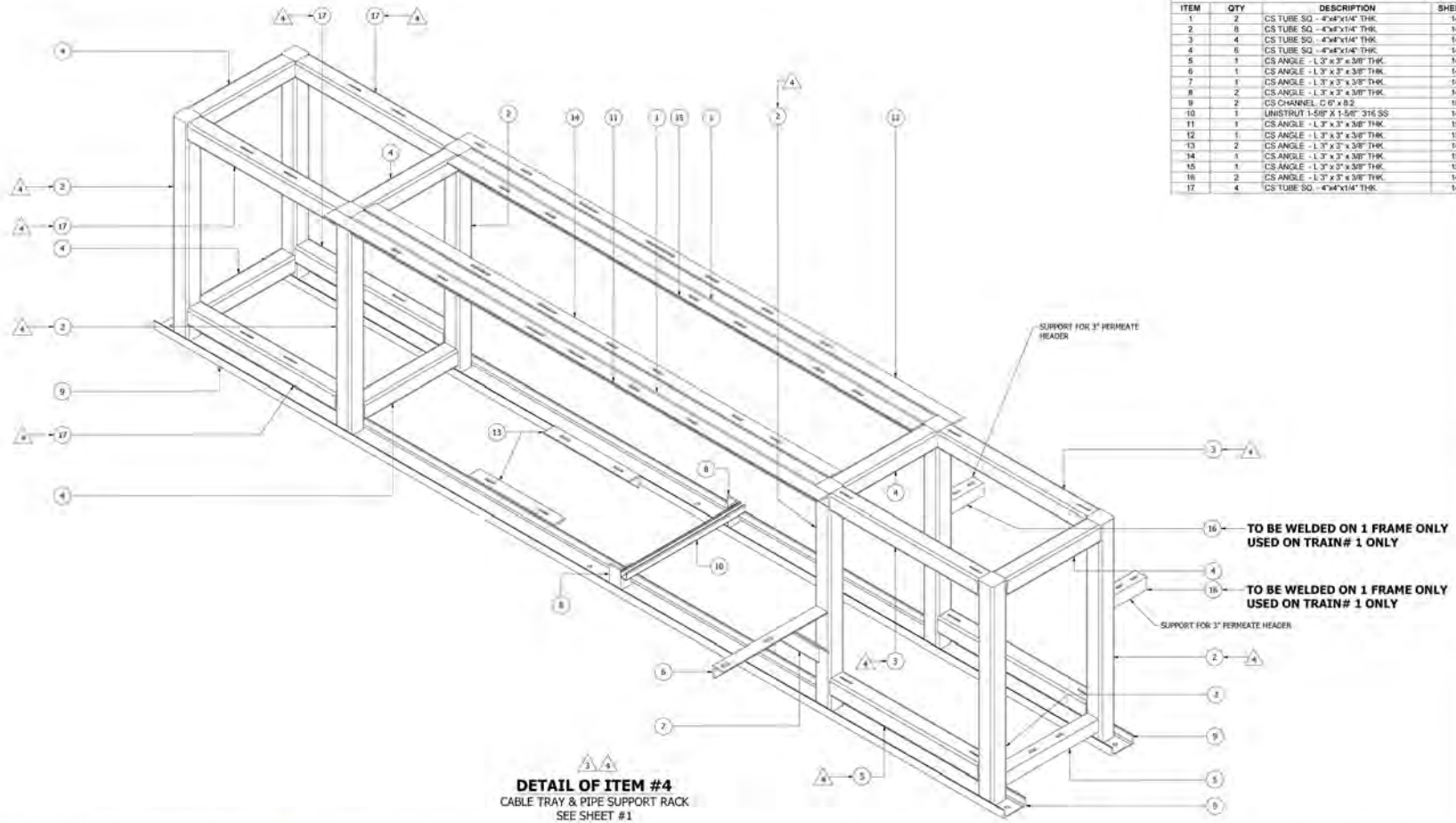
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO FRAME
CABLE TRAY & PIPE RACK

SIZE: D | SCALE: A/S | DRAWING: 260-S-101 | SHEET: 13 OF 21 | REV: 4

CABLE TRAY & PIPE SUPPORT RACK PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	2	CS TUBE SQ. - 4"x4"x1/4" THK.	14
2	8	CS TUBE SQ. - 4"x4"x1/4" THK.	14
3	4	CS TUBE SQ. - 4"x4"x1/4" THK.	14
4	6	CS TUBE SQ. - 4"x4"x1/4" THK.	14
5	1	CS ANGLE - L 3" x 3" x 3/8" THK.	14
6	1	CS ANGLE - L 3" x 3" x 3/8" THK.	14
7	1	CS ANGLE - L 3" x 3" x 3/8" THK.	14
8	2	CS ANGLE - L 3" x 3" x 3/8" THK.	14
9	2	CS CHANNEL, C 6" x 8.2	10
10	1	UNISTRUT 1-5/8" X 1-5/8" .316 SS	14
11	1	CS ANGLE - L 3" x 3" x 3/8" THK.	15
12	1	CS ANGLE - L 3" x 3" x 3/8" THK.	15
13	2	CS ANGLE - L 3" x 3" x 3/8" THK.	14
14	1	CS ANGLE - L 3" x 3" x 3/8" THK.	15
15	1	CS ANGLE - L 3" x 3" x 3/8" THK.	15
16	2	CS ANGLE - L 3" x 3" x 3/8" THK.	14
17	4	CS TUBE SQ. - 4"x4"x1/4" THK.	14



DETAIL OF ITEM #4
CABLE TRAY & PIPE SUPPORT RACK
SEE SHEET #1
SCALE: 1/9

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1. #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS. ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #10	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	05/12/11	JS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	6/9/2011
CHK'D	JS	6/9/2011
APPROVED	AWS	6/9/2011
M DATE		6/9/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter	

STATUS	FOR FABRICATION
PROJECT	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO FRAME
CABLE TRAY & PIPE RACK

SIZE	DRAWING	REV
D /A/S	260-S-101	4

SHEET 13 OF 21

DETAIL OF ITEM #7, SHEET #1

FRAME CROSS BRACES
QTY: 8 PER TRAIN

ELEVATION
SCALE: 1/3

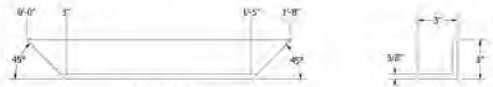
END

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 2" x 2" x 3/8" THK.

DETAIL OF ITEM #21, SHEET #2

4" PVC REJECT PIPE SUPPORT ANGEL
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.



ELEVATION
SCALE: 1/4

END

DETAIL OF ITEM #19, SHEET #2

4" PVC REJECT PIPE SUPPORT ANGEL
QTY: 2 PER TRAIN

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

ELEVATION
SCALE: 1/4

END

DETAIL OF ITEM #22, SHEET #1

VESSEL SUPPORT ANGLES
QTY: 2 PER TRAIN

REVISABLE

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

PLAN
SCALE: 1/5

END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED HEIGHT OF CABLE TRAY SUPPORTS; ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/03/12	AWS	JS
3	UPDATED PIPE SUPPORTS; ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RAKES	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS; UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

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158 E. LEMON AVE, MONROVIA CA 91016
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DRAWN	AWS	6/9/2011	
CHK'D	JS	6/9/2011	
APP'D	AWS	6/9/2011	
M GMD		6/9/2011	
TOLERANCE BLOCK	INCH ± +/- 1/32 (+/- 0.03)		
	METRIC ± +/- 1.0 millimeter		

STATUS	FOR FABRICATION
CLIENT	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD

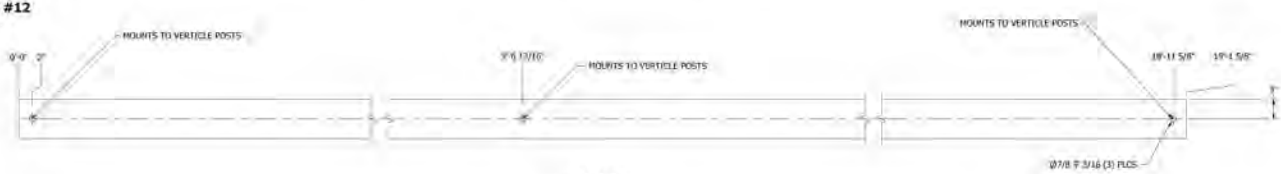
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS RO FRAME
FABRICATION DETAILS

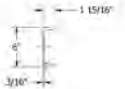
DWG SIZE	DWG NO	REV
D A/S	260-S-101	4

SHEET 11 OF 21

DETAIL OF ITEM #13, SHEET # 1
DETAIL OF ITEM #9, SHEET #12
OVERHEAD PIPE SUPPORT CHANNEL
QTY: 4 PER TRAIN



PLAN



END

ELEVATION
SCALE: 1/8

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS CHANNEL, C 6" x 8.2

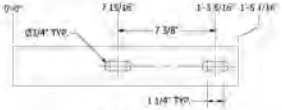
DETAIL OF ITEM #10, SHEET #1
PIPE SUPPORT ANGLE
QTY: 6 PER TRAIN

PLAN
SCALE: 1/8

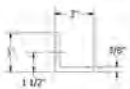
END

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

DETAIL OF ITEM #12, SHEET #2
PX FEED TO BOOSTER PUMP SUPPORT ANGEL
QTY: 1 PER TRAIN



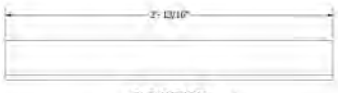
ELEVATION
SCALE: 1/4



END

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

DETAIL OF ITEM #15, SHEET #1
MAIN FEED PIPE SUPPORT ANGLE
QTY: 3 PER TRAIN

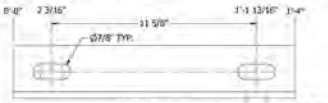


ELEVATION
SCALE: 1/4

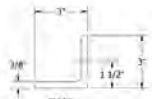
END

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

DETAIL OF ITEM #18, SHEET #1
CIP FEED PIPE SUPPORT ANGEL
QTY: 1 PER TRAIN



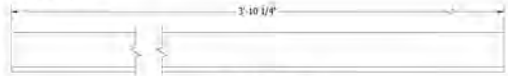
ELEVATION
SCALE: 1/3



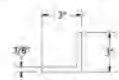
END

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

DETAIL OF ITEM #17, SHEET #1
MAIN FEED PIPE SUPPORT ANGEL
QTY: 1 PER TRAIN



ELEVATION
SCALE: 1/4



END

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

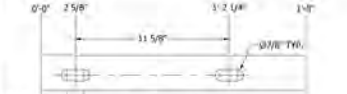
DETAIL OF ITEM #16, SHEET #1
MAIN FEED PIPE SUPPORT ANGLE
QTY: 2 PER TRAIN

ELEVATION
SCALE: 1/4

END

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

DETAIL OF ITEM #20, SHEET #1
CIP RETURN PIPE SUPPORT ANGEL
QTY: 2 PER TRAIN



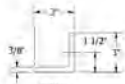
ELEVATION
SCALE: 1/4

END

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

DETAIL OF ITEM #14, SHEET #1
4" PVC REJECT PIPE SUPPORT ANGEL
QTY: 2 PER TRAIN

ELEVATION
SCALE: 1/4



END

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK.

REVISION HISTORY					
REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS; ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/03/12	AWS	JS
3	UPDATED PIPE SUPPORTS; ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RAKES	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS; UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

Biwater

BIWATER AEWT, INC.			
158 E. LEMON AVE, MONROVIA CA 91016	AWS	6/9/2011	
Phone: (626) 358-7707 Fax: (626) 358-7737	JS	6/9/2011	
	AWS	6/9/2011	
	JS SAVO	6/9/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter		

STATUS	FOR FABRICATION
CLIENT	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD

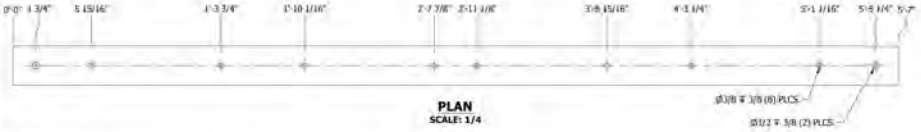
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS RO FRAME
FABRICATION DETAILS

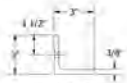
DR. BY	SHEET	REV.
D. A/S	260-S-101	4

RO FRAME
PARTS FABRICATION DETAILS

DETAIL OF ITEM #1, SHEETS 6, 7, 8
VESSEL SUPPORT ANGLES
QTY:14 PER TRAIN



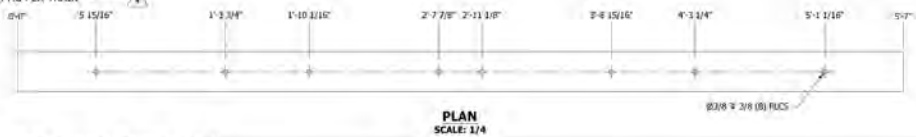
PLAN
SCALE: 1/4



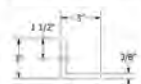
END

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

DETAIL OF ITEM #2, SHEETS 6, 7, 8
VESSEL SUPPORT ANGLES
QTY:8 PER TRAIN



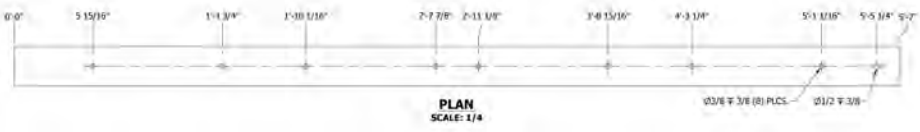
PLAN
SCALE: 1/4



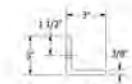
END

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

DETAIL OF ITEM #7, SHEETS 7,8
VESSEL SUPPORT ANGLES
QTY:2 PER TRAIN



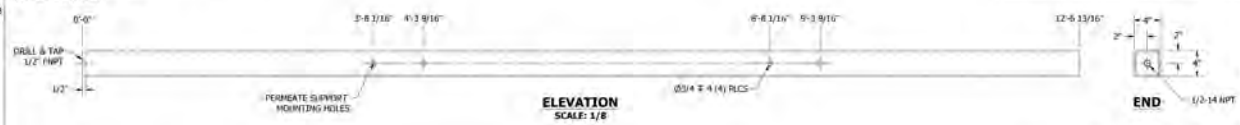
PLAN
SCALE: 1/4



END

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE, L 3" x 3" x 3/8" THK

DETAIL OF ITEM #7, SHEET 6
FRAME VERTICLE MEMBERS
QTY: 2 PER TRAIN

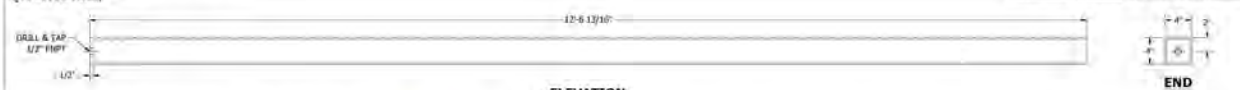


ELEVATION
SCALE: 1/8

END

ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ, - 4" x 4" x 1/4" THK

DETAIL OF ITEM #6, SHEET 7 ,8
FRAME VERTICLE MEMBERS
QTY: 4 PER TRAIN

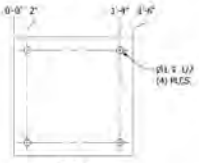


ELEVATION
SCALE: 1/8

END

ITEM	QTY	DESCRIPTION
1	1	CS TUBE SQ, - 4" x 4" x 1/4" THK

DETAIL OF ITEM #4, SHEET 6, 7,8
BASE PLATES
QTY: 6 PER TRAIN

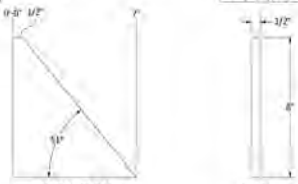


PLAN
SCALE: 1/8

END

ITEM	QTY	DESCRIPTION
1	1	CS PLATE 18" x 18" x 1/2" THK

DETAIL OF ITEM #5, SHEET 6, 7, 8
BASE PLATE GUSSETS
QTY: 96

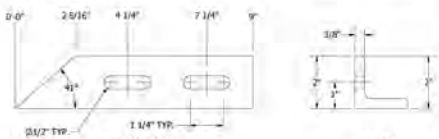


ELEVATION
SCALE: 1/3

END

ITEM	QTY	DESCRIPTION
1	1	CS PLATE, 8" x 7" x 1/2" THK, GUSSET PLATE

DETAIL OF ITEM #3, SHEET 6, 7, 8
TOP & BOTTOM CROSSBRACE ANGLES
QTY: 16 PER TRAIN

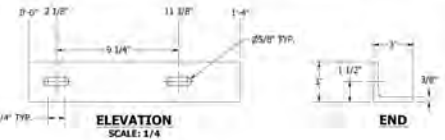


ELEVATION
SCALE: 1/2

END

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 2" x 2" x 3/8" THK

DETAIL OF ITEM #8, SHEET 1
FEED PIPE SUPPORT ANGEL
QTY: 2 PER TRAIN



ELEVATION
SCALE: 1/4

END

ITEM	QTY	DESCRIPTION
1	1	CS ANGLE - L 3" x 3" x 3/8" THK

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
8	UPDATED HEIGHT OF CABLE TRAY SUPPORTS, ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS, ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RAKES	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS, UPDATED PAGE LOCATION OF PARTS ON SHEET #6, 10, ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
158 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	6/9/2011
CHECKED	JS	6/9/2011
APPROVED	JS	6/9/2011
W.O. NO.	AWS	6/9/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
PROJECT: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

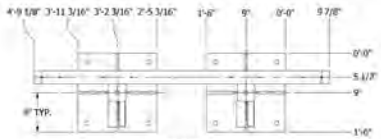
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO FRAME
FRAME SUB-ASSEMBLY

SIZE: D | SCALE: A/S | DRAWING NO: 260-S-101 | SHEET 9 OF 21 | REV: 4

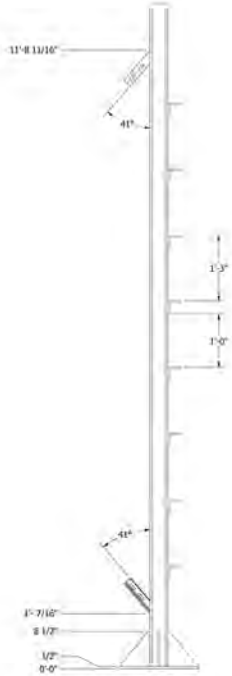
ITEM #3 PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	3	CS ANGLE, L 3" x 3" x 3/8" THK.	9
2	4	CS ANGLE, L 3" x 3" x 3/8" THK.	9
3	4	CS ANGLE - L 2" x 2" x 3/8" THK.	9
4	2	CS PLATE 16" x 16" x 1/2" THK	9
5	8	CS PLATE, 8" x 7" x 1/2" THK, GUSSET PLATE	9
6	2	CS TUBE SQ. - 4" x 4" x 1/4" THK.	9
7	1	CS ANGLE, L 3" x 3" x 3/8" THK.	9

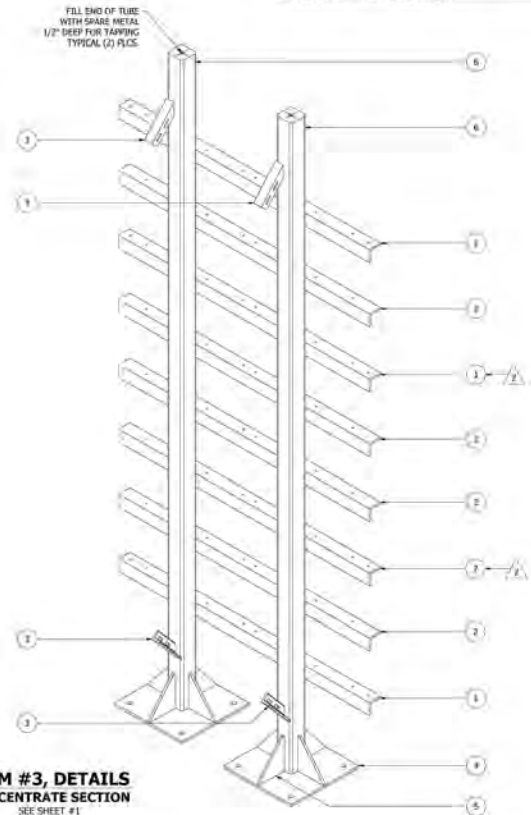


PLAN

ELEVATION



END



ITEM #3, DETAILS
CONCENTRATE SECTION
SEE SHEET #1
SCALE: 1/10

SCALE: 1/12

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/25/12	AWS	JS
3	UPDATED PIPE SUPPORTS, ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RAKES.	AWS	09/28/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #10	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	06/13/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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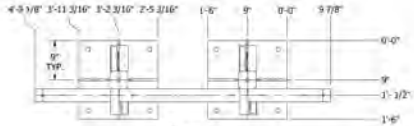
DRAWN	AWS	6/9/2011
CHK'D	JS	6/9/2011
APPR'D	AWS	6/9/2011
M. DATE		6/9/2011
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION
PROJECT: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

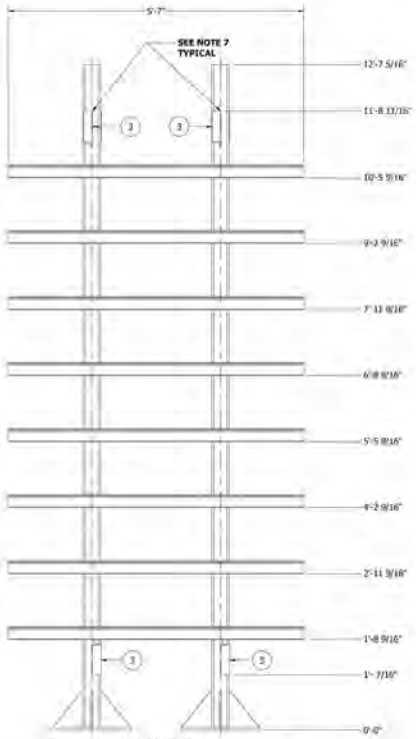
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO FRAME
FRAME SUB-ASSEMBLY

SIZE: D | CAD FILE: A/S | DWG NO: 260-S-101 | SHEET 4 of 21 | REV: 4

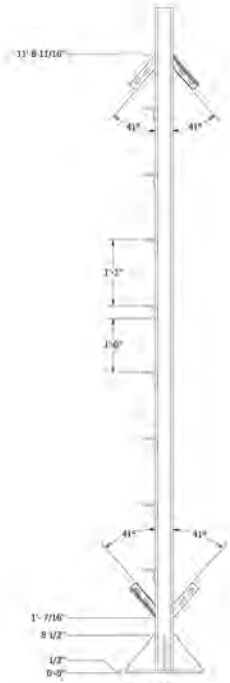


PLAN



ELEVATION
SCALE: 1/12

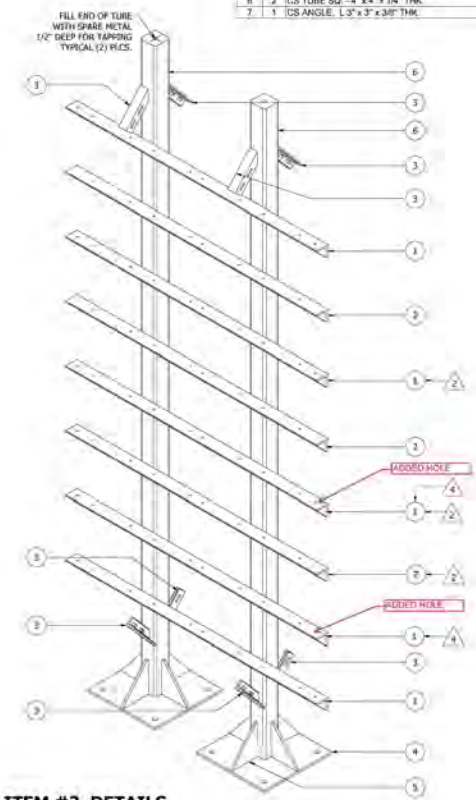
NOTE:
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =4
6. ESTIMATED DRY WEIGHT= 4,200.0 lb
7. PLEASE ASSEMBLE CROSSBRACE COMPONENTS THEN WELD ASSEMBLY TO VERTICLE MEMBERS CENTERED ON VERTICLE COLUMN.



END

ITEM #2 PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	5	CS ANGLE, L 3" x 3" x 3/8" THK.	9
2	2	CS ANGLE, L 3" x 3" x 3/8" THK.	9
3	8	CS ANGLE - L 2" x 2" x 3/8" THK.	9
4	2	CS PLATE 16" x 16" x 1/2" THK.	9
5	8	CS PLATE, 8" x 7" x 1/2" THK, GUSSET PLATE	9
6	2	CS TUBE SQ. - 4" x 4" x 1/4" THK.	9
7	1	CS ANGLE, L 3" x 3" x 3/8" THK.	9



ITEM #2, DETAILS
CENTER SECTION
SEE SHEET #1
SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
9	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12.	AWS	02/22/12	AWS	JS
8	UPDATED PIPE SUPPORTS, ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	06/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	6/9/2011
CHKD	JS	6/9/2011
APPD	AWS	6/9/2011
M DATE		6/9/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter	

SUBMITTED TO: FOR FABRICATION
PROJECT: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO FRAME
FRAME SUB-ASSEMLY

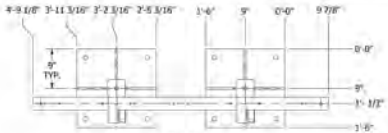
SIZE: D | SCALE: A/S | DRAWING: 260-S-101 | SHEET 7 OF 21 | REV: 4

NOTE:

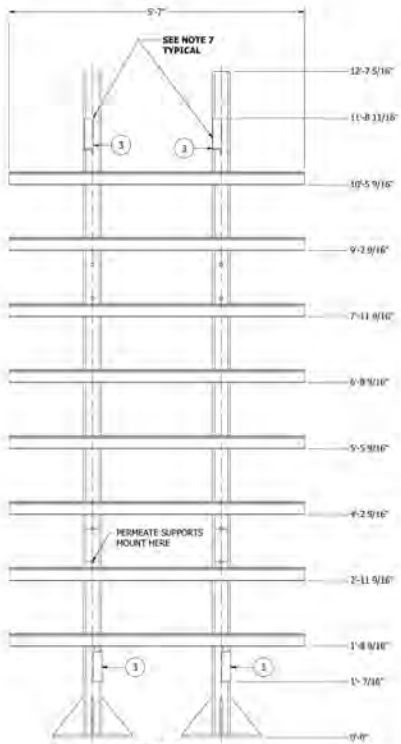
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =4
6. ESTIMATED DRY WEIGHT= 4,200.0 lb
7. PLEASE ASSEMBLE CROSSBRACE COMPONENTS THEN WELD ASSEMBLY TO VERTICLE MEMBERS CENTERED ON VERTICLE COLUMN.

ITEM #1 PARTS LIST

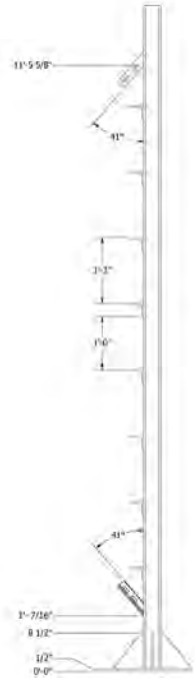
ITEM	QTY	DESCRIPTION	SHEET #
1	6	CS ANGLE - L 3" x 3" x 3/8" THK	9
2	2	CS ANGLE - L 3" x 3" x 3/8" THK	9
3	4	CS ANGLE - L 2" x 2" x 3/8" THK	9
4	2	CS PLATE 18" x 18" x 1/2" THK	9
5	8	CS PLATE, 8" x 7" x 1/2" THK, GUSSET PLATE	9
7	2	CS TUBE SQ. - 4" x 4" x 1/4" THK.	9



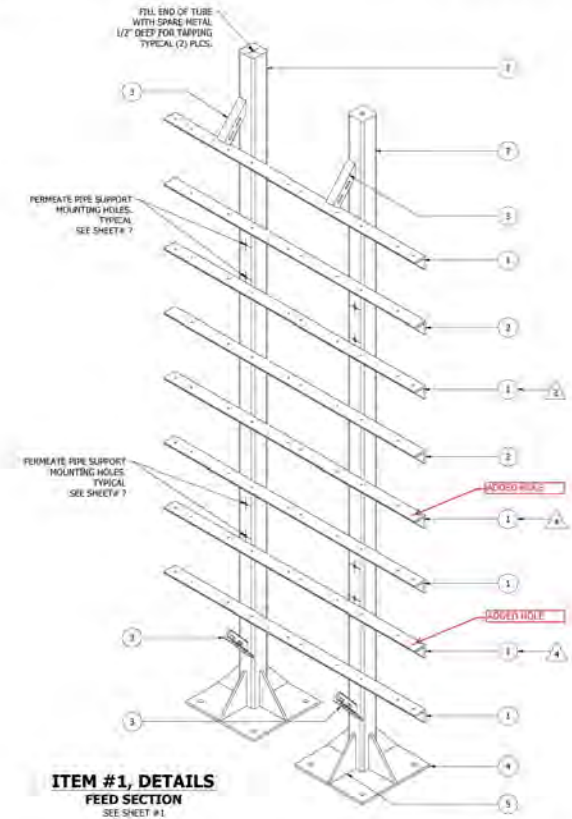
PLAN



ELEVATION
SCALE: 1/12



END



ITEM #1, DETAILS
FEED SECTION
SEE SHEET #1
SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1. #14 ON SHEET #12	AWS	02/22/12	AWS	JS
3	UPDATED PIPE SUPPORTS. ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS.	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #10	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE. MONROVIA CA 91016
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DRAWN	AWS	6/9/2011
CHECKED	JS	6/9/2011
APPROVED	AWS	6/9/2011
DATE		6/9/2011

TOLERANCE	INCH = +/- 1/32 (+/- 0.03)
BLOCK	METRIC = +/- 1.0 millimeter

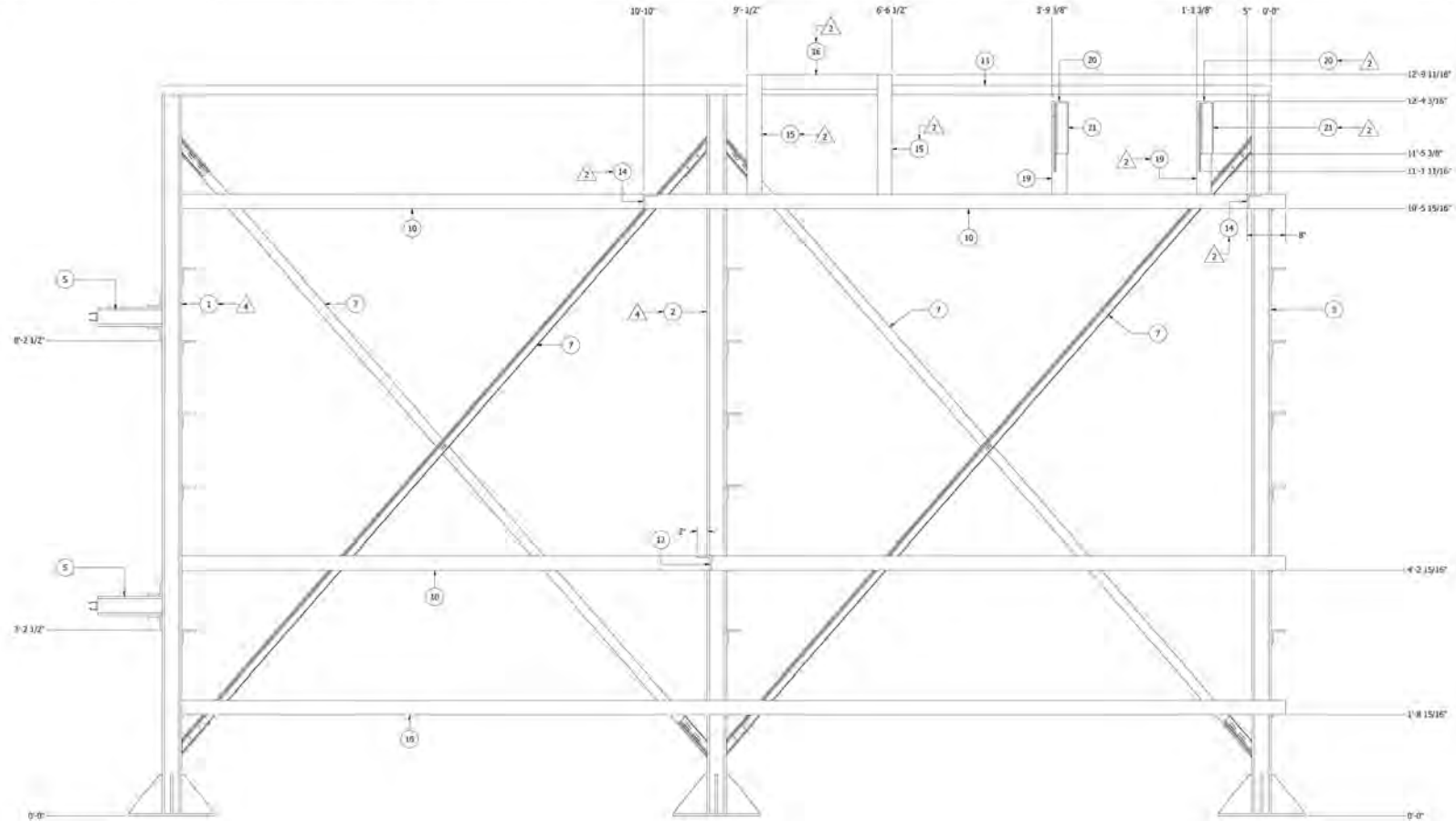
STATUS	FOR FABRICATION
PROJECT	BIWATER-AEWT
CLIENT / END USER	BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS RO FRAME
FRAME SUB-ASSEMBLY

SIZE	DRAWING	REV
D A/S	260-S-101	4

SHEET 6 OF 21



VIEW: "A-A"

CABLE TRAY & PIPE RACK REMOVED FOR CLARITY

SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS. ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #10	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	6/9/2011	SUBMITTAL NO.
CHK'D	JS	6/9/2011	SHOP DWG. NO.
APPROVED	AWS	6/9/2011	PROJECT NUMBER 260
M. DATE		6/9/2011	
TOLERANCE		INCH = +/- 1/32 (+/- 0.03)	
BLOCK		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION

OWNER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO FRAME
VIEW A-A

SIZE: D /A/S | DWG NO: 260-S-101 | SHEET: 5 OF 21 | REV: 4

NOTE:

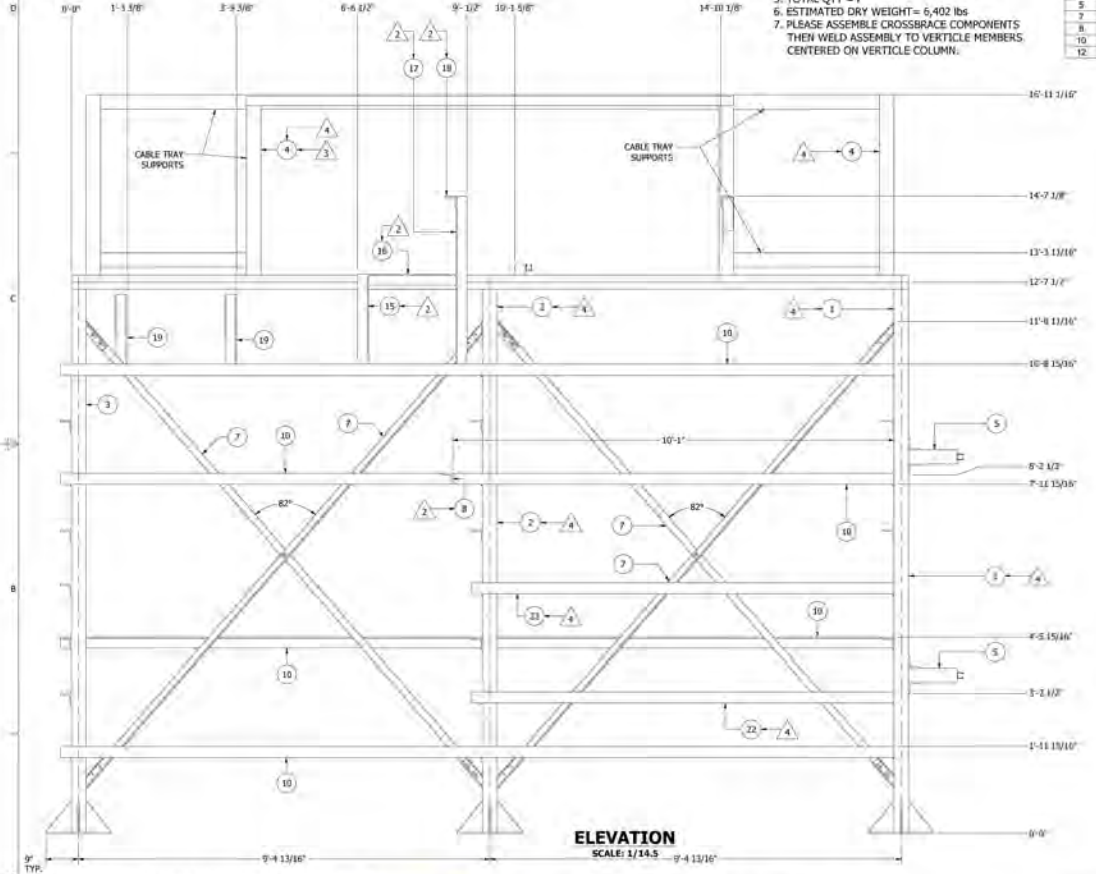
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =4
6. ESTIMATED DRY WEIGHT= 6,402 lbs
7. PLEASE ASSEMBLE CROSSBRACE COMPONENTS THEN WELD ASSEMBLY TO VERTICLE MEMBERS CENTERED ON VERTICLE COLUMN.

1ST PASS RO FRAME PARTS LIST

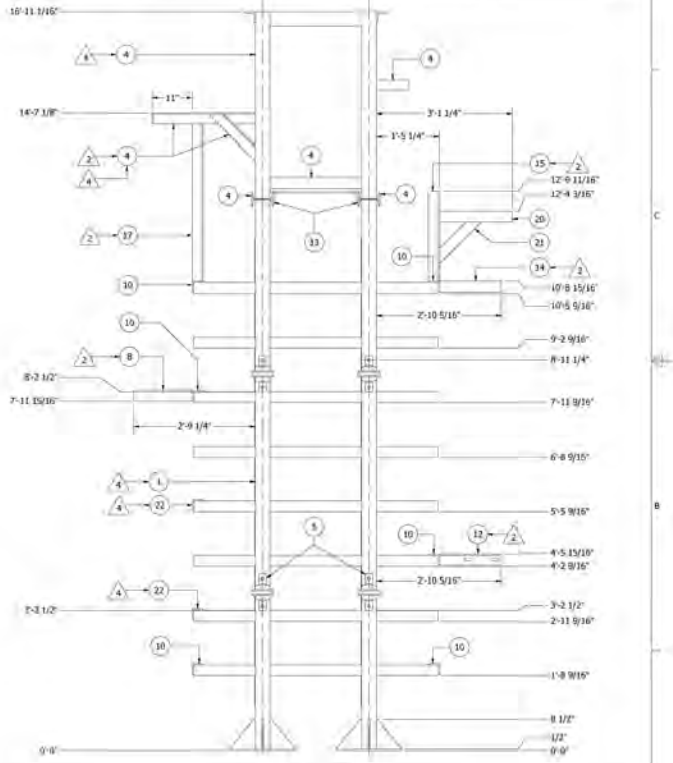
ITEM	QTY	DESCRIPTION	SHEET #
1	1	FRAME ASSEMBLY-FEED SECTION	6
2	1	FRAME ASSEMBLY-CENTER SECTION	7
3	1	FRAME ASSEMBLY-CONCENTRATE SECTION	8
4	1	1ST PASS PIPE AND CABLE TRAY RACK	12
5	4	PIPE SUPPORT FOR 3" PERMEATE RISERS	16
7	8	CS ANGLE - L 2" x 2" x 3/8" THK.	11
8	1	CS ANGLE - L 3" x 3" x 3/8" THK.	9
10	6	CS ANGLE - L 3" x 3" x 3/8" THK.	10
12	1	CS ANGLE - L 3" x 3" x 3/8" THK.	10

1ST PASS RO FRAME PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
13	2	CS CHANNEL, C 6" x 8.2	10
14	2	CS ANGLE - L 3" x 3" x 3/8" THK.	10
15	3	CS ANGLE - L 3" x 3" x 3/8" THK.	10
16	2	CS ANGLE - L 3" x 3" x 3/8" THK.	10
17	1	CS ANGLE - L 3" x 3" x 3/8" THK.	10
18	1	CS ANGLE - L 3" x 3" x 3/8" THK.	10
19	2	CS ANGLE - L 3" x 3" x 3/8" THK.	11
20	2	CS ANGLE - L 3" x 3" x 3/8" THK.	10
21	2	CS ANGLE - L 3" x 3" x 3/8" THK.	11
22	2	CS ANGLE - L 3" x 3" x 3/8" THK.	11



ELEVATION
SCALE: 1/14.5



END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS, ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #10	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	05/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	6/9/2011	
CHK'D	JS	6/9/2011	
APP'D	JS	6/9/2011	
DRAWING NO.		260	
SCALE	AWS	6/9/2011	
DATE	JS	6/9/2011	
TOLERANCE	INCH = +/- 1/32 (+/- 0.03)		
BLOCK	METRIC = +/- 1.0 millimeter		

FOR FABRICATION

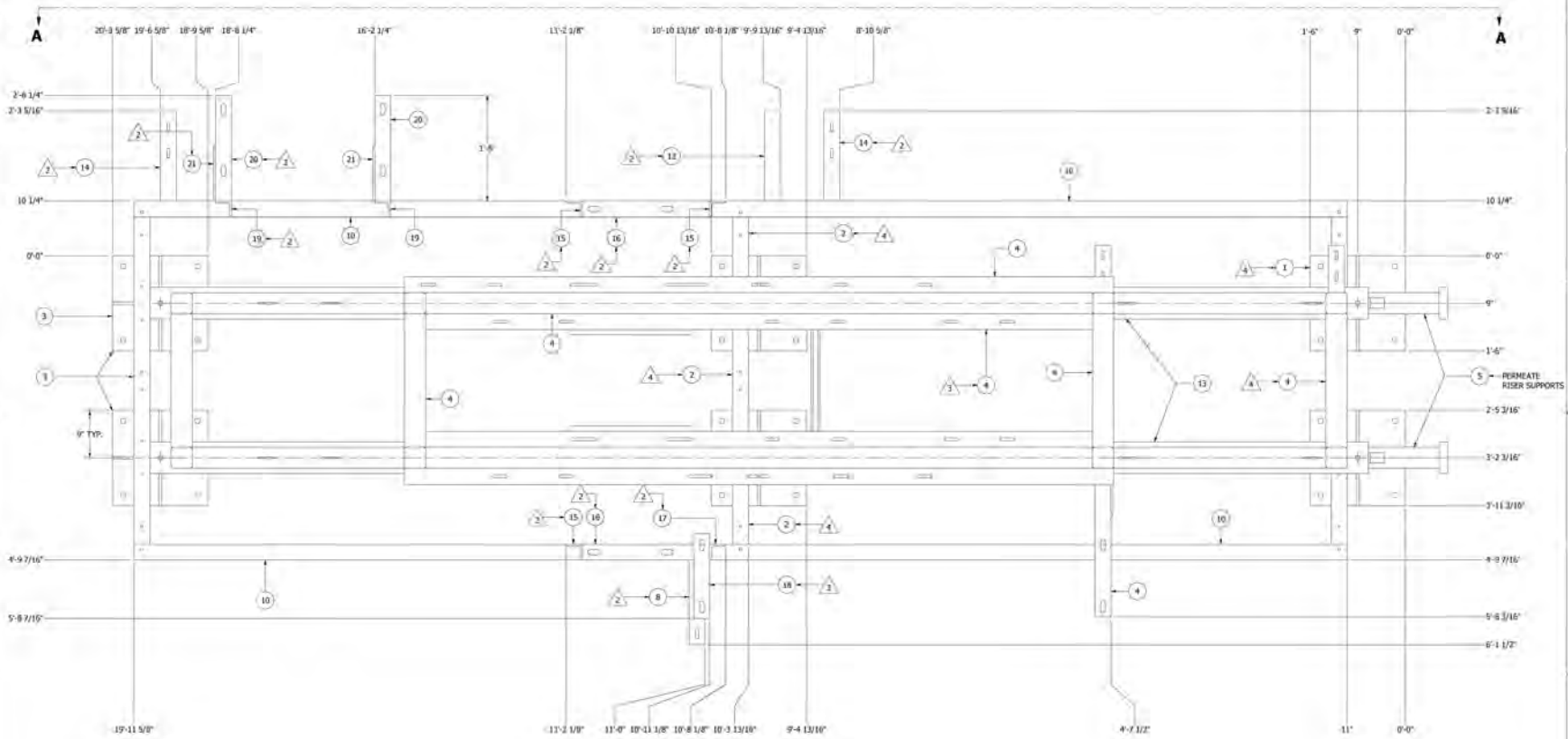
BIWATER-AEWT

BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS RO FRAME ELEVATIONS

SIZE: D | SHEET: A/5 | DRAWING: 260-S-101 | SHEET # of 21 | REV: 4



PLAN

CABLE TRAY & PIPE RACK REMOVED FOR CLARITY

SCALE: 1/9

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1. #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS. ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #10	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

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DRAWN	AWS	6/9/2011	SUBMITTAL NO.
CHK'D	JS	6/9/2011	WORK ORD. NO.
APPROVED	AWS	6/9/2011	PROJECT NUMBER 260
DATE		6/9/2011	

TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)
	METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION

OWNER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

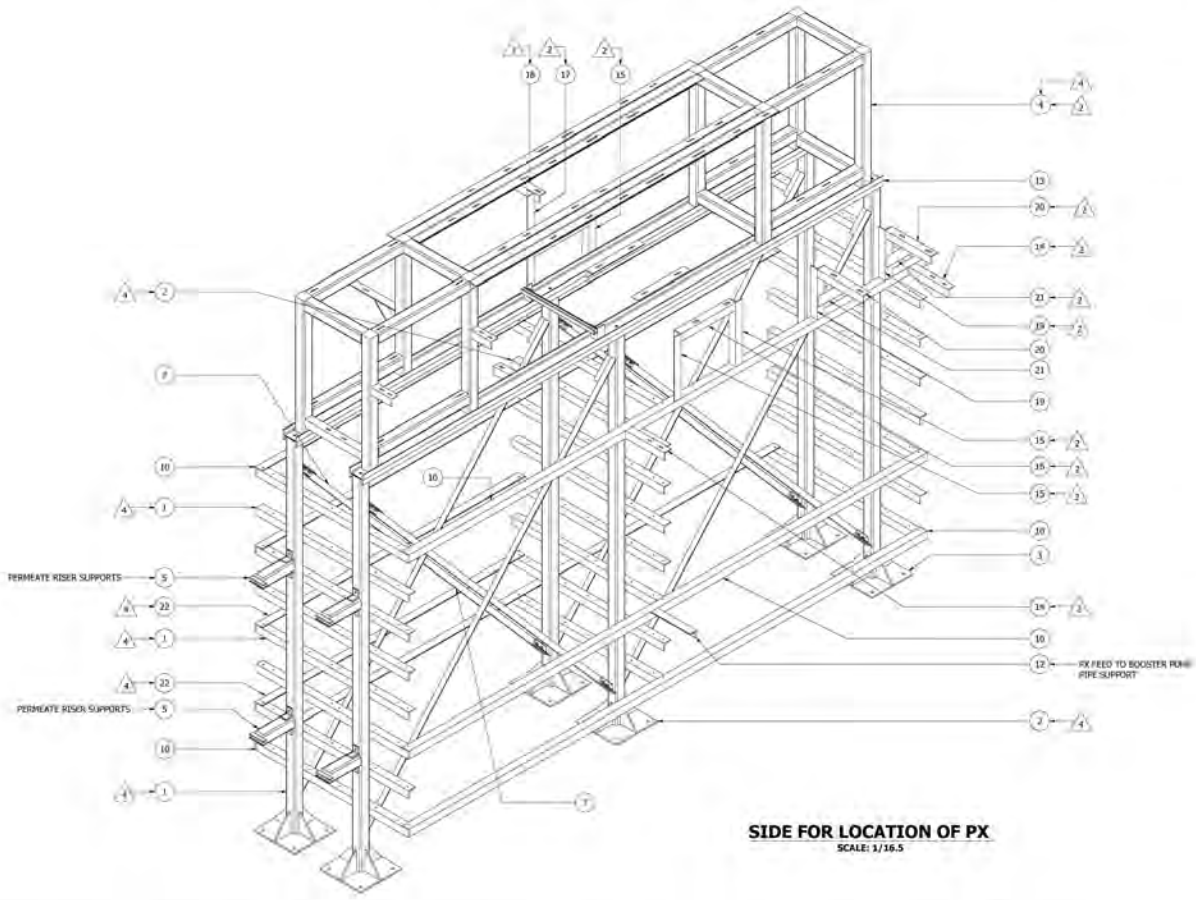
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS RO FRAME
PLAN VIEW

SIZE	DRAWING	SHEET	REV
D /A/S	260-S-101	sheet 3 of 21	4

1ST PASS RO FRAME PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	1	FRAME ASSEMBLY-FEED SECTION	6
2	1	FRAME ASSEMBLY-CENTER SECTION	7
3	1	FRAME ASSEMBLY-CONCENTRATE SECTION	8
4	1	1ST PASS PIPE AND CABLE TRAY RACK	12
5	4	PIPE SUPPORT FOR 3" PERMEATE RISERS	18
7	6	CS ANGLE - L 2" x 2" x 3/8" THK.	11
9	1	CS ANGLE - L 3" x 3" x 3/8" THK.	9
10	6	CS ANGLE - L 3" x 3" x 3/8" THK.	10
12	1	CS ANGLE - L 3" x 3" x 3/8" THK.	10
13	2	CS CHANNEL, C 6" x 8.2	10
14	2	CS ANGLE - L 3" x 3" x 3/8" THK.	10
15	3	CS ANGLE - L 3" x 3" x 3/8" THK.	10
16	2	CS ANGLE - L 3" x 3" x 3/8" THK.	10
17	1	CS ANGLE - L 3" x 3" x 3/8" THK.	10
18	1	CS ANGLE - L 3" x 3" x 3/8" THK.	10
19	2	CS ANGLE - L 3" x 3" x 3/8" THK.	11
20	2	CS ANGLE - L 3" x 3" x 3/8" THK.	10
21	2	CS ANGLE - L 3" x 3" x 3/8" THK.	11
22	2	CS ANGLE - L 3" x 3" x 3/8" THK.	11



SIDE FOR LOCATION OF PX
SCALE: 1/16.5

NOTE:
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =4
6. ESTIMATED DRY WEIGHT= 6,402 lbs
7. PLEASE ASSEMBLE CROSSBRACE COMPONENTS THEN WELD ASSEMBLY TO VERTICLE MEMBERS CENTERED ON VERTICLE COLUMN.

REVISION HISTORY

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
9	UPDATED HEIGHT OF CABLE TRAY SUPPORTS; ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS; ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS; UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	06/23/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

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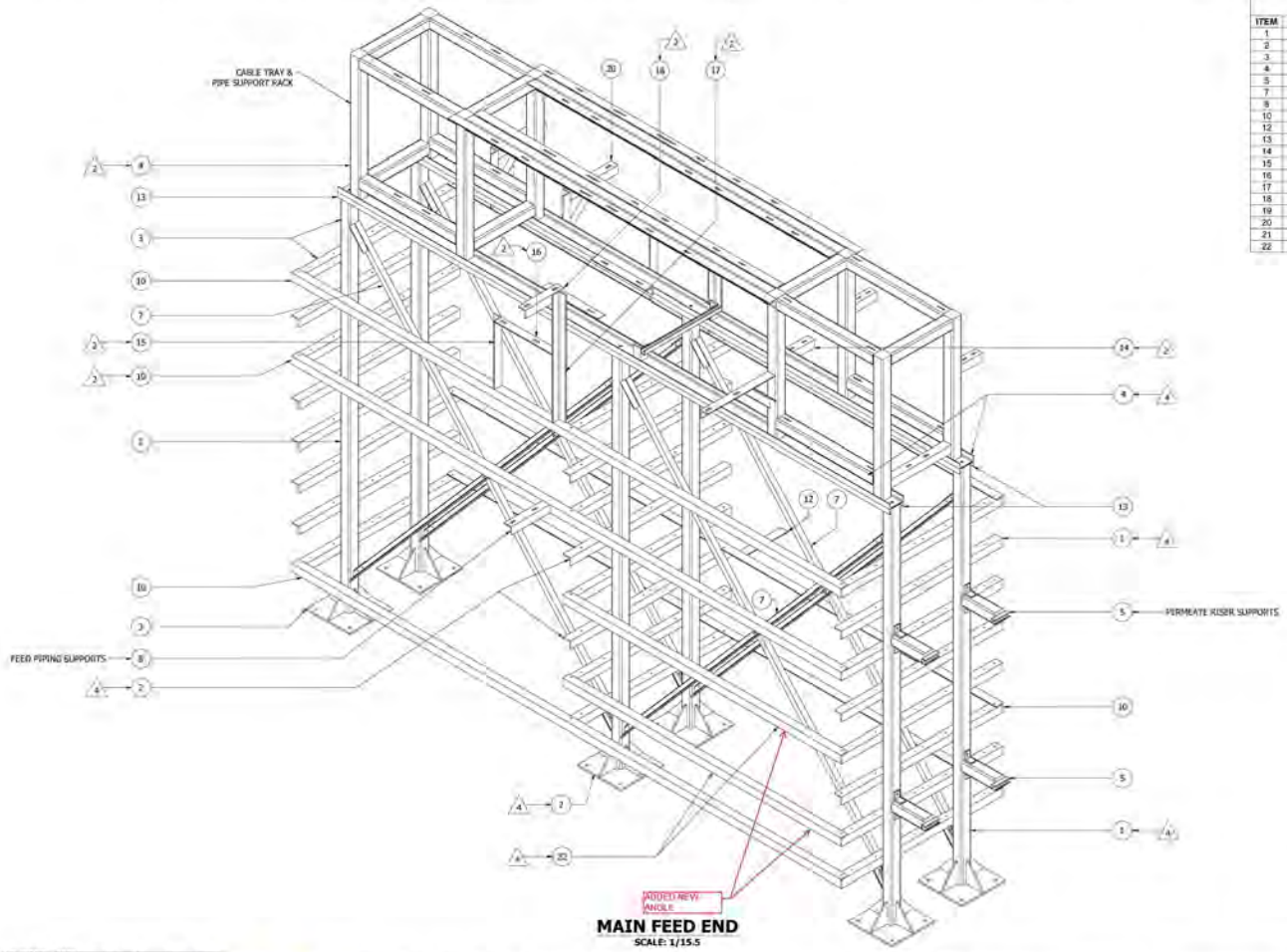
DRAWN	AWS	6/9/2011
CHKD	JS	6/9/2011
APPD	AWS	6/9/2011
M'GR	JS	6/9/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter	

STATUS	FOR FABRICATION
PROJECT	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS RO FRAME
FRAME ASSEMBLY

SIZE	DRAWING	SHEET	REV
D	A/S	260-S-101	4



MAIN FEED END
SCALE: 1/15.5

1ST PASS RO FRAME PARTS LIST

ITEM	QTY	DESCRIPTION	SHEET #
1	1	FRAME ASSEMBLY-FEED SECTION	6
2	1	FRAME ASSEMBLY-CENTER SECTION	7
3	1	FRAME ASSEMBLY-CONCENTRATE SECTION	8
4	1	1ST PASS PIPE AND CABLE TRAY RACK	12
5	4	PIPE SUPPORT FOR 3" PERMEATE RISERS	10
7	6	CS ANGLE - L 2" x 2" x 3/8" THK.	11
9	1	CS ANGLE - L 3" x 3" x 3/8" THK.	9
10	6	CS ANGLE - L 3" x 3" x 3/8" THK.	10
12	1	CS ANGLE - L 3" x 3" x 3/8" THK.	10
13	2	CS CHANNEL, C 6" x 8.2	10
14	2	CS ANGLE - L 3" x 3" x 3/8" THK.	10
15	3	CS ANGLE - L 3" x 3" x 3/8" THK.	10
16	2	CS ANGLE - L 3" x 3" x 3/8" THK.	10
17	1	CS ANGLE - L 3" x 3" x 3/8" THK.	10
18	1	CS ANGLE - L 3" x 3" x 3/8" THK.	10
19	2	CS ANGLE - L 3" x 3" x 3/8" THK.	11
20	2	CS ANGLE - L 3" x 3" x 3/8" THK.	10
21	2	CS ANGLE - L 3" x 3" x 3/8" THK.	11
22	2	CS ANGLE - L 3" x 3" x 3/8" THK.	11

NOTE:
1. ALL DIMENSIONS ARE IN INCHES.
2. CONSTRUCTION MATERIAL SHALL BE CARBON STEEL.
3. ALL WELDED CONSTRUCTION.
4. STEEL FRAME SHALL BE POWDER COATED.
5. TOTAL QTY =4
6. ESTIMATED DRY WEIGHT= 6,402 lbs
7. PLEASE ASSEMBLE CROSSBRACE COMPONENTS THEN WELD ASSEMBLY TO VERTICLE MEMBERS CENTERED ON VERTICLE COLUMN.

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED HEIGHT OF CABLE TRAY SUPPORTS. ADDED ITEMS #22. SEE SHEET 1, #14 ON SHEET #12.	AWS	02/02/12	AWS	JS
3	UPDATED PIPE SUPPORTS. ADDED ANGLES FOR OVERHEAD PIPE SUPPORTS TO CABLE TRAY RACKS.	AWS	09/08/11	AWS	JS
2	ADDED PIPE SUPPORTS. UPDATED PAGE LOCATION OF PARTS ON SHEET #9, 10. ADDED PARTS FOR PIPE SUPPORTS ON SHEET #12	AWS	08/23/11	JS	JS
1	FOR FABRICATION	AWS	08/12/11	JS	JS

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DRAWN	AWS	6/9/2011
CHK'D	JS	6/9/2011
APP'D	AWS	6/9/2011
M. DAVIS		6/9/2011
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

SUBMITTAL NO.
SHOP DWG. REF. NO.
PROJECT NUMBER 260

STATUS: FOR FABRICATION
PROJECT: BIWATER-AEWT
ORIGINAL EQUIPMENT MANUFACTURER: BIWATER INTERNATIONAL LTD

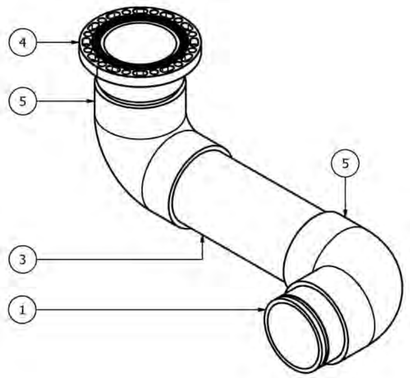
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

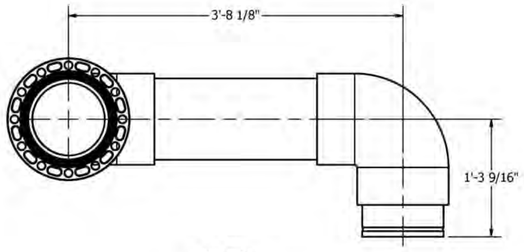
TITLE: 1ST PASS RO FRAME
FRAME ASSEMBLY

SIZE: D | SCALE: NA | DRAWING: 260-S-101 | SHEET 1 OF 21 | REV: 4

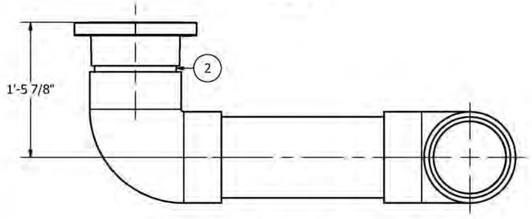
260-BW-PV-14

ITEM	QTY	PART NUMBER	DESCRIPTION
1	10.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	12.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
3	33.004 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
4	1	854-100	PVC SCH80 FLANGE, 10", 150# (TWOPIECE-SLIP)
5	2	806-100	PVC SCH80 ELBOW, 10" (SXSX90)





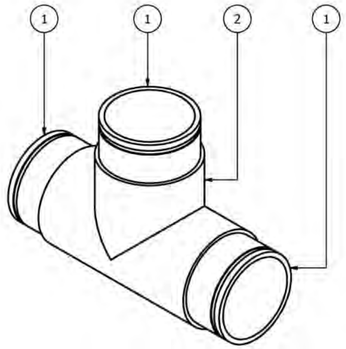
PLAN

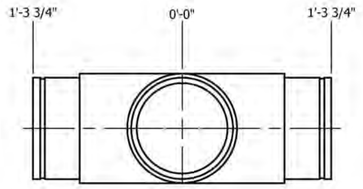


ELEVATION
SCALE: 1/10

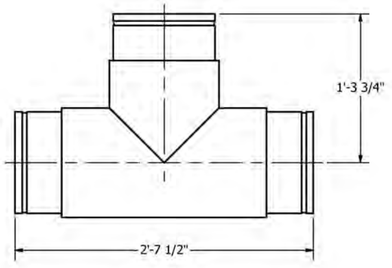
260-BW-PV-16

ITEM	QTY	PART NUMBER	DESCRIPTION
1	30.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	1	801-100	PVC SCH80 TEE, 10", SXSXS





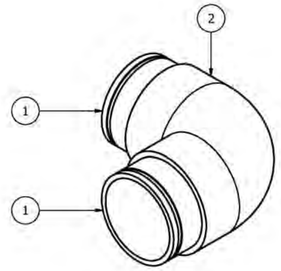
PLAN

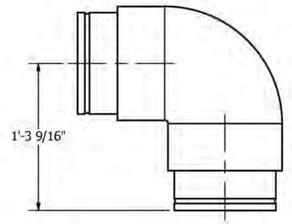


ELEVATION
SCALE: 1/8

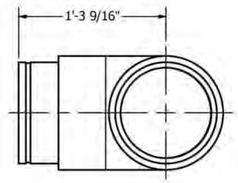
260-BW-PV-18

ITEM	QTY	PART NUMBER	DESCRIPTION
1	20.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	1	806-100	PVC SCH80 ELBOW, 10" (SXSX90)





PLAN



ELEVATION
SCALE: 1/8

260-BW-PV-14
10" PF BACKWASH
OUTLET HEADER
SCALE: 1/10

260-BW-PV-16
10" PF & RF TOTAL
BACKWASH HEADER
SCALE: 1/8

260-BW-PV-18
10" PF & RF TOTAL
BACKWASH HEADER
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ. MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

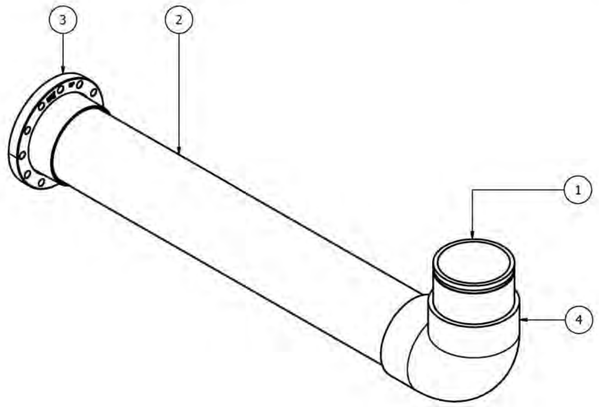
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

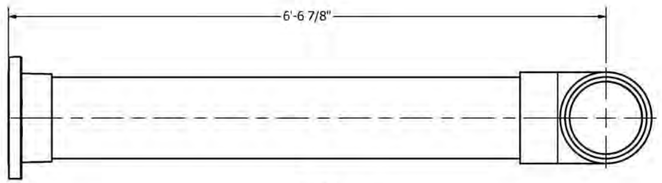
TITLE: ALL EXTERNAL PVC PIPE
BACKWASH PIPE SPOOLS

SIZE: D | SCALE: A/S | DWG NO: 260-P-802 | SHEET 29 OF 29 | REV 1

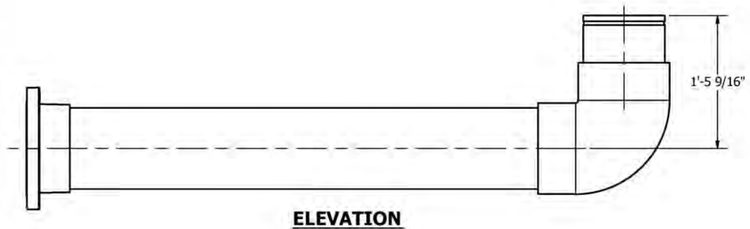
260-BW-PV-09

ITEM	QTY	PART NUMBER	DESCRIPTION
1	12.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	73.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
3	1	854-100	PVC SCH80 FLANGE, 10", 150# (TWOPIECE-SLIP)
4	1	806-100	PVC SCH80 ELBOW, 10" (SXSX90)





PLAN

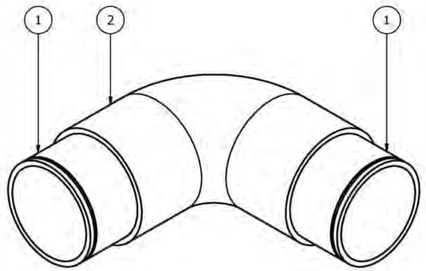


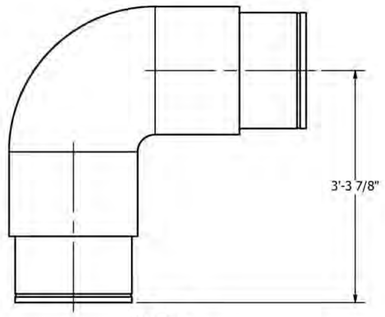
ELEVATION
SCALE: 1/10

260-BW-PV-09
10" BACKWASH PUMP DISCHARGE
TO RF INLET
SCALE: 1/10

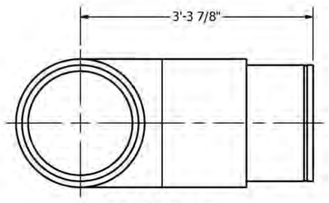
260-BW-PV-10

ITEM	QTY	PART NUMBER	DESCRIPTION
1	42.807 in	ASTM D 1785 Pipe 20 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 20" w/cut groove end
2	1	806-200F	PVC SCH80 ELBOW, 20", (SXSX90)





PLAN

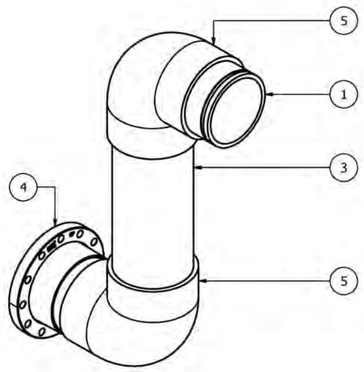


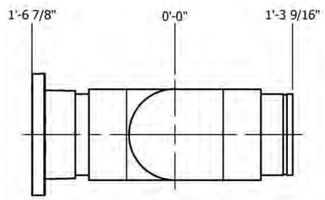
ELEVATION
SCALE: 1/13

260-BW-PV-10
20" BACKWASH TANK
OVERFLOW HEADER
SCALE: 1/13

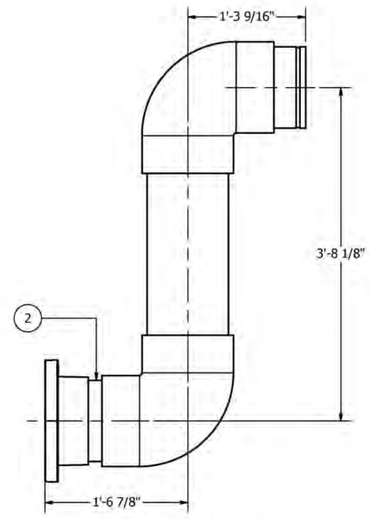
260-BW-PV-12

ITEM	QTY	PART NUMBER	DESCRIPTION
1	10.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	13.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
3	33.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
4	1	854-100	PVC SCH80 FLANGE, 10", 150# (TWOPIECE-SLIP)
5	2	806-100	PVC SCH80 ELBOW, 10" (SXSX90)





PLAN



ELEVATION
SCALE: 1/10

260-BW-PV-12
10" RF BACKWASH
OUTLET HEADER
SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

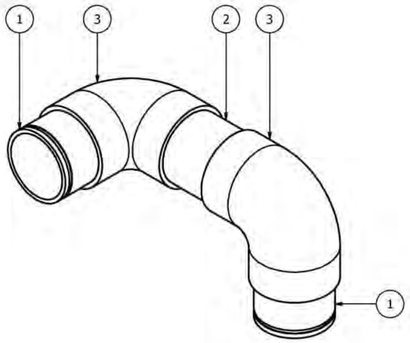
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

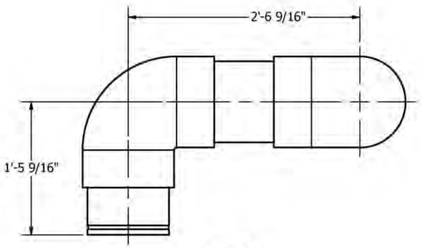
TITLE: ALL EXTERNAL PVC PIPE
BACKWASH PIPE SPOOLS

SIZE	SCALE:	DWG NO	SHEET	REV
D	A/S	260-P-802	28 OF 29	1

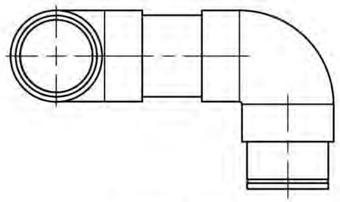
260-BW-PV-02

ITEM	QTY	PART NUMBER	DESCRIPTION
1	24.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	19.425 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
3	2	806-100	PVC SCH80 ELBOW, 10" (SXSX90)

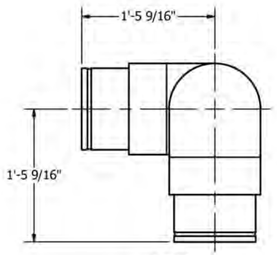




PLAN



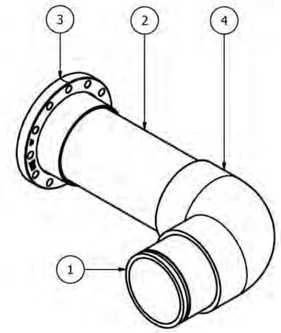
ELEVATION
SCALE: 1/10

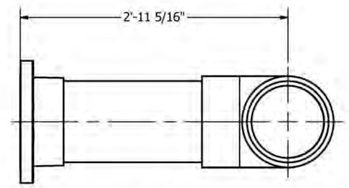


END

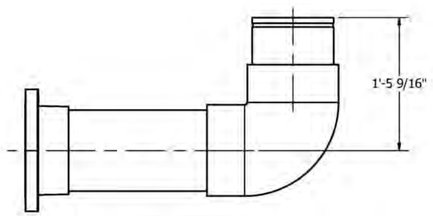
260-BW-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	12.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	29.481 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
3	1	854-100	PVC SCH80 FLANGE, 10", 150# (TWOPIECE-SLIP)
4	1	806-100	PVC SCH80 ELBOW, 10" (SXSX90)





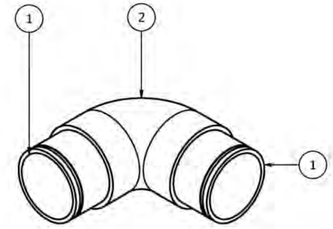
PLAN

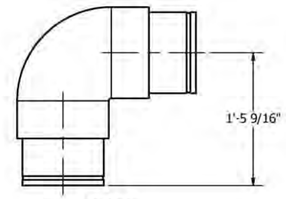


ELEVATION
SCALE: 1/10

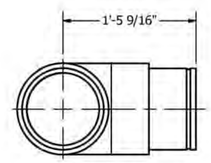
260-BW-PV-06

ITEM	QTY	PART NUMBER	DESCRIPTION
1	24.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	1	806-100	PVC SCH80 ELBOW, 10" (SXSX90)





PLAN



ELEVATION
SCALE: 1/10

260-BW-PV-02
10" BACKWASH PUMP DISCHARGE
TO PF INLET
SCALE: 1/10

260-BW-PV-04
10" BACKWASH PUMP DISCHARGE
TO PF INLET
SCALE: 1/10

260-BW-PV-06
10" BACKWASH PUMP DISCHARGE
TO RF INLET
SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (628) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ. MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

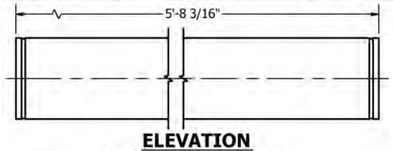
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE BACKWASH PIPE SPOOLS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-802	27 OF 29	1

260-BW-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	68.163 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



ELEVATION

260-BW-PV-01

BACKWASH PUMP DISCHARGE TO PF
10" CONNECTOR PIPE
SCALE: 1/10

260-BW-PV-03

ITEM	QTY	PART NUMBER	DESCRIPTION
1	99.678 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends

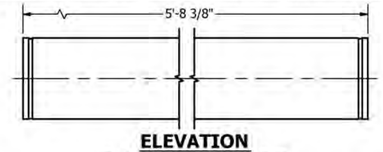
ELEVATION

260-BW-PV-03

BACKWASH PUMP DISCHARGE TO PF
10" CONNECTOR PIPE
SCALE: 1/10

260-BW-PV-05

ITEM	QTY	PART NUMBER	DESCRIPTION
1	68.350 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



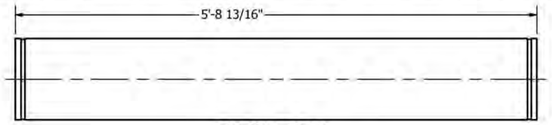
ELEVATION

260-BW-PV-05

BACKWASH PUMP DISCHARGE TO RF
10" CONNECTOR PIPE
SCALE: 1/10

260-BW-PV-07

ITEM	QTY	PART NUMBER	DESCRIPTION
1	68.824 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



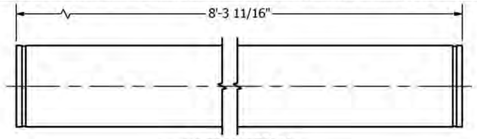
ELEVATION

260-BW-PV-07

BACKWASH PUMP DISCHARGE TO RF
10" CONNECTOR PIPE
SCALE: 1/10

260-BW-PV-08

ITEM	QTY	PART NUMBER	DESCRIPTION
1	99.678 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



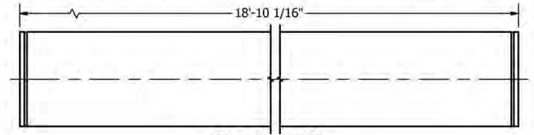
ELEVATION

260-BW-PV-08

BACKWASH PUMP DISCHARGE TO RF
10" CONNECTOR PIPE
SCALE: 1/10

260-BW-PV-11

ITEM	QTY	PART NUMBER	DESCRIPTION
1	226.063 in	ASTM D 1785 Pipe 20 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 20" w/cut groove both ends



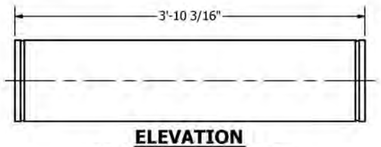
ELEVATION

260-BW-PV-11

BACKWASH TANK OVERFLOW
20" CONNECTOR PIPE
SCALE: 1/16

260-BW-PV-13

ITEM	QTY	PART NUMBER	DESCRIPTION
1	46.208 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



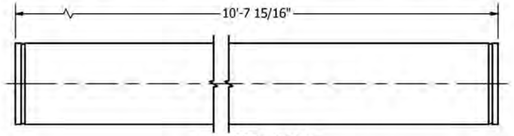
ELEVATION

260-BW-PV-13

RF BACKWASH OUTLET
10" CONNECTOR PIPE
SCALE: 1/10

260-BW-PV-15

ITEM	QTY	PART NUMBER	DESCRIPTION
1	127.949 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



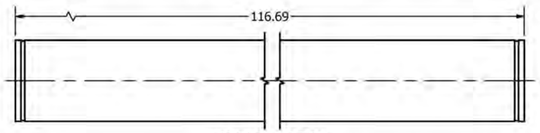
ELEVATION

260-BW-PV-15

PF BACKWASH OUTLET TO RF BACKWASH OUTLET
10" CONNECTOR PIPE
SCALE: 1/10

260-BW-PV-17

ITEM	QTY	PART NUMBER	DESCRIPTION
1	116.692 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



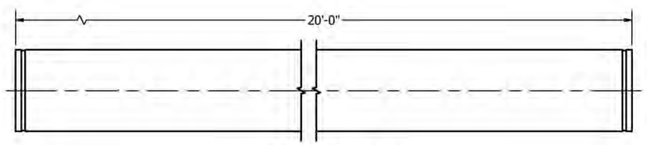
ELEVATION

260-BW-PV-17

RF BACKWASH OUTLET TO
10" CONNECTOR PIPE
SCALE: 1/10

260-BW-PV-19

ITEM	QTY	PART NUMBER	DESCRIPTION
1	240.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



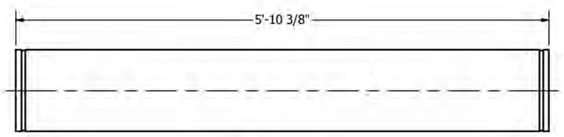
ELEVATION

260-BW-PV-19

RF & PF TOTAL BACKWASH OUTLET
10" CONNECTOR PIPE
SCALE: 1/10

260-BW-PV-20

ITEM	QTY	PART NUMBER	DESCRIPTION
1	70.382 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



ELEVATION

260-BW-PV-20

RF & PF TOTAL BACKWASH OUTLET
10" CONNECTOR PIPE
SCALE: 1/10

REVISION HISTORY

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

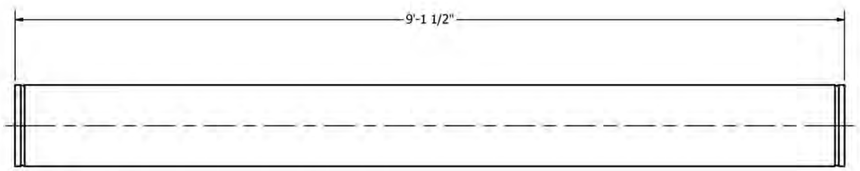
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
BACKWASH PIPE SPOOLS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-802	26 OF 29	1

260-CIPR-PV-01

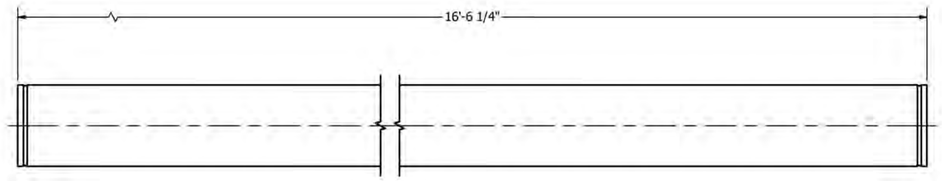
ITEM	QTY	PART NUMBER	DESCRIPTION
1	109.474 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



ELEVATION
260-CIPR-PV-01
TRAIN #1, 10" CIP RETURN HEADER
TO CIP SYSTEM
SCALE: 1/10

260-CIPR-PV-02

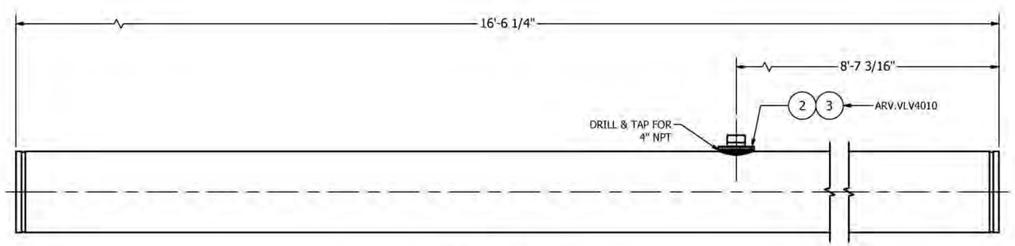
ITEM	QTY	PART NUMBER	DESCRIPTION
1	198.250 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



ELEVATION
260-CIPR-PV-02
TRAIN #1 & 2 CIP RETURN
10" CONNECTOR PIPE
SCALE: 1/10

260-CIPR-PV-03

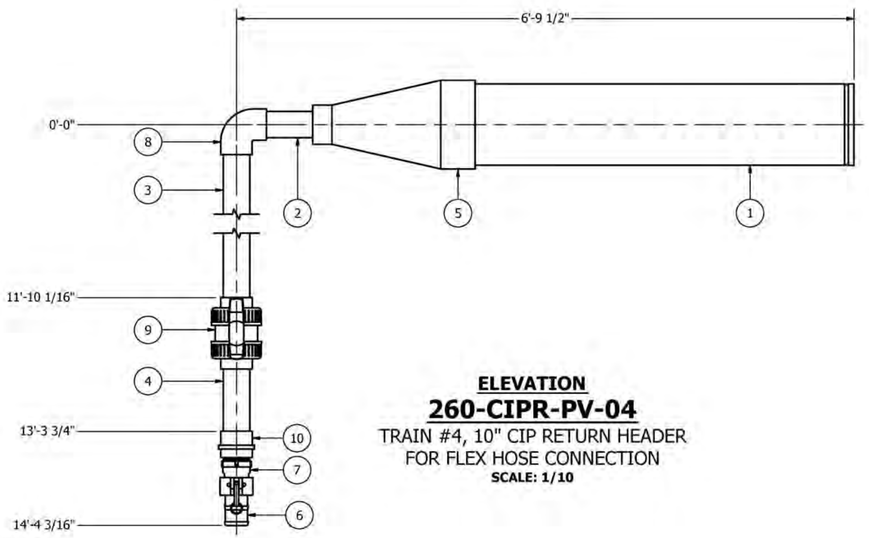
ITEM	QTY	PART NUMBER	DESCRIPTION
1	198.250 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends
2	1	839-420SR	PVC SCH80 REDUCER BUSHING 4"x2" (MXSRF)
3	1	JIS B 2302 Close Nipple 2	Nipple



ELEVATION
260-CIPR-PV-03
TRAIN #3 & 4 CIP RETURN
10" CONNECTOR PIPE
SCALE: 1/10

260-CIPR-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	55.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	12.000 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
3	142.000 in	260-ASTM D 1785 Pipe 3 - Schedule 80 - 33	ASTM D 1785 PVC Sch80 Pipe, 3"
4	12.000 in	260-ASTM D 1785 Pipe 3 - Schedule 80 - 34	ASTM D 1785 PVC Sch80 Pipe, 3"
5	1	829-623F	PVC SCH80 REDUCER COUPLING 10"x3" (SXS)
6	1	FEMALE COUPLER-03	FRP 3" Female Coupler x 3" Hose Shank
7	1	MALE ADAPTER-03-01	FRP 3" MALE ADAPTER X 3" MALE THREAD
8	1	806-030	PVC SCH80 ELBOW, 3" (SXSX90)
9	1	TYPE 375 BALL-3	BAV TYPE 375, 3", SCH80 PVC.
10	1	835-030SR	ASTM D PVC SCH80 ADAPTER 3", SXSRF



ELEVATION
260-CIPR-PV-04
TRAIN #4, 10" CIP RETURN HEADER
FOR FLEX HOSE CONNECTION
SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	YS		SPEC'S. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

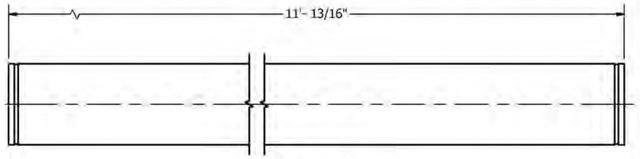
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
CIP RETURN PIPE SPOOLS

SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 25 OF 29 | REV 1

260-CIPF-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	132.788 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



ELEVATION

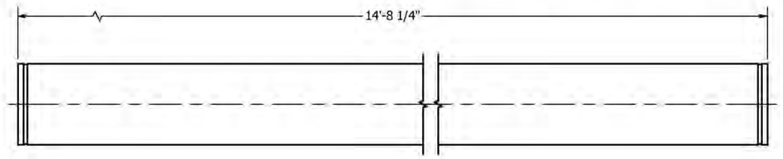
260-CIPF-PV-01

TRAIN #1, 10" CIP FEED HEADER
FROM CIP SYSTEM

SCALE: 1/10

260-CIPF-PV-02

ITEM	QTY	PART NUMBER	DESCRIPTION
1	176.250 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



ELEVATION

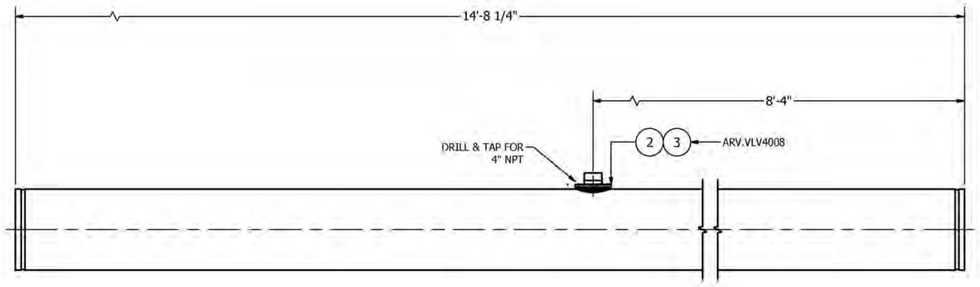
260-CIPF-PV-02

TRAIN #1 & 2 CIP FEED
10" CONNECTOR PIPE

SCALE: 1/10

260-CIPF-PV-03

ITEM	QTY	PART NUMBER	DESCRIPTION
1	176.250 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends
2	1	839-420SR	PVC SCH80 REDUCER BUSHING 4"x2" (MXSRF)
3	1	JIS B 2302 Close Nipple 2	Nipple



ELEVATION

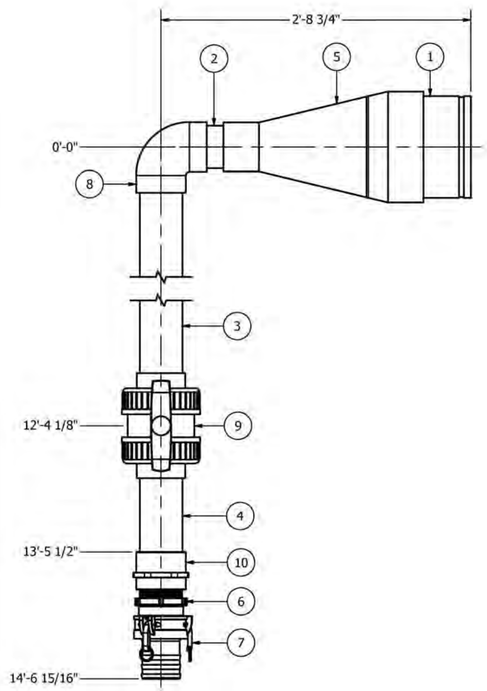
260-CIPF-PV-03

TRAIN #3 & 4 CIP FEED
10" CONNECTOR PIPE

SCALE: 1/10

260-CIPF-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	11.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	8.000 in	ASTM D 1785 Pipe 4 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 4"
3	142.000 in	ASTM D 1785 Pipe 4 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 4"
4	12.000 in	ASTM D 1785 Pipe 4 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 4"
5	1	829-624F	PVC SCH80 REDUCER COUPLING 10"x4" (SXS)
6	1	MALE COUPLER-04-01	FRP 4" MALE ADAPTER X 4" MALE THREAD
7	1	FEMALE COUPLER-04	FRP 4" Female Coupler x 4" Hose Shank
8	1	806-040	PVC SCH80 ELBOW, 4" (SXSX90)
9	1	TYPE 375 BALL-4	BAV TYPE 375, 3", SCH80 PVC.
10	1	835-040	ASTM D PVC SCH80 ADAPETER 4", SXF



ELEVATION

260-CIPF-PV-04

TRAIN #4, 10" CIP FEED HEADER
FOR FLEX HOSE CONNECTION

SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION

ENGINEER: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

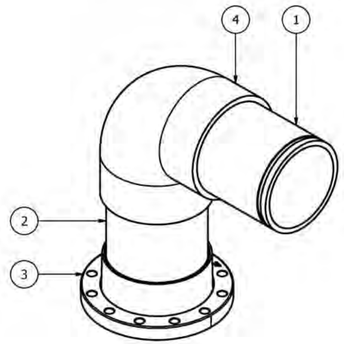
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

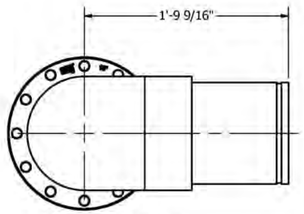
TITLE: ALL EXTERNAL PVC PIPE
CIP FEED PIPE SPOOLS

SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 24 OF 29 | REV 1

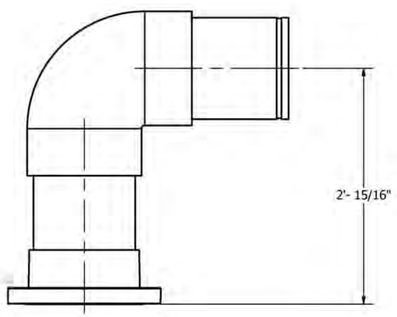
260-FLSH-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	16.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	19.087 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
3	1	854-100	PVC SCH80 FLANGE, 10", 150# (TWOPIECE-SLIP)
4	1	806-100	PVC SCH80 ELBOW, 10" (SXSX90)





PLAN

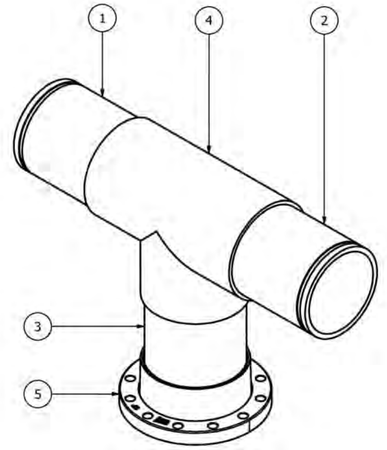


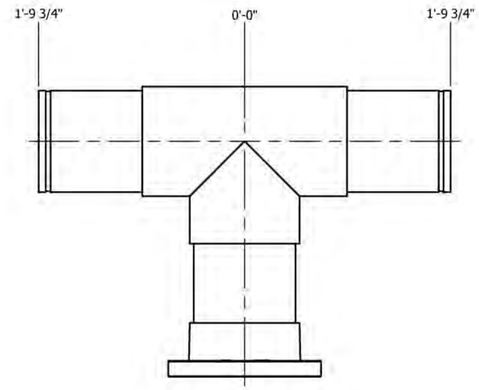
ELEVATION
SCALE: 1/8

260-FLSH-PV-01
10" TRAIN #4 FLUSHING HEADER
SCALE: 1/8

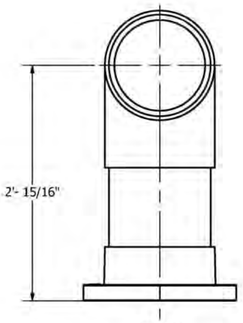
260-FLSH-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	16.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	16.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
3	18.900 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
4	1	801-100	PVC SCH80 TEE, 10", SXSXS
5	1	854-100	PVC SCH80 FLANGE, 10", 150# (TWOPIECE-SLIP)





ELEVATION
SCALE: 1/8



END

260-FLSH-PV-04
10" TRAIN #1
FLUSH DOWNCOMER
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		CONTRS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

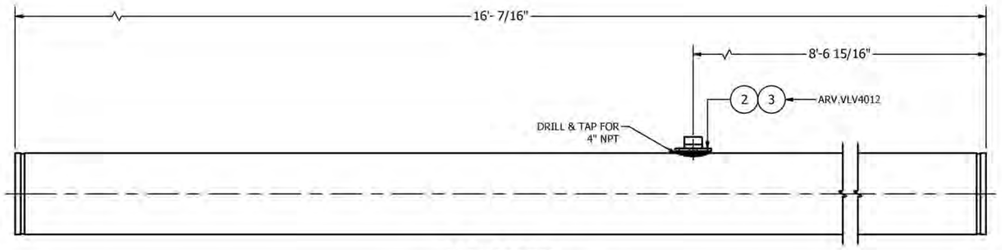
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
FLUSHING PIPE SPOOLS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-802	23 OF 29	1

260-FLSH-PV-02

ITEM	QTY	PART NUMBER	DESCRIPTION
1	192.437 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends
2	1	839-420SR	PVC SCH80 REDUCER BUSHING 4"x2" (MXSRF)
3	1	JIS B 2302 Close Nipple 2	Nipple



ELEVATION

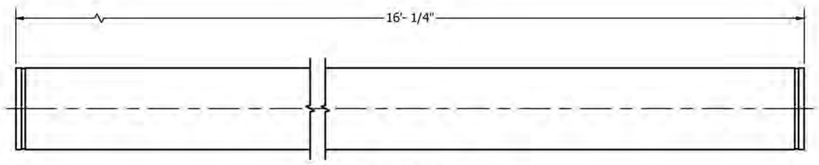
260-FLSH-PV-02

TRAIN #4 & 3 FLUSHING
10" CONNECTOR PIPE

SCALE: 1/10

260-FLSH-PV-03

ITEM	QTY	PART NUMBER	DESCRIPTION
1	192.250 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



ELEVATION

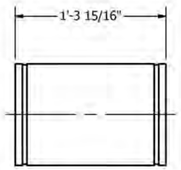
260-FLSH-PV-03

10" FLUSHING HEADER CONNECTOR PIPE
CONNECTS TRAINS #3 TO 2, 2 TO 1

SCALE: 1/10

260-FLSH-PV-05

ITEM	QTY	PART NUMBER	DESCRIPTION
1	15.909 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



ELEVATION

260-FLSH-PV-05

TRAIN #1 TO CIP SYSTEM
10" CONNECTOR PIPE

SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		CONTR. REF. NO. XX
PROJ. MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

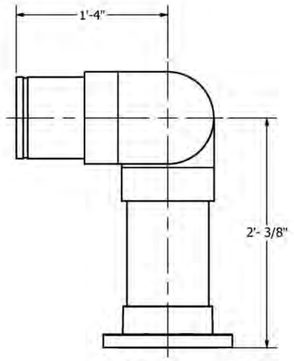
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
FLUSHING PIPE SPOOLS

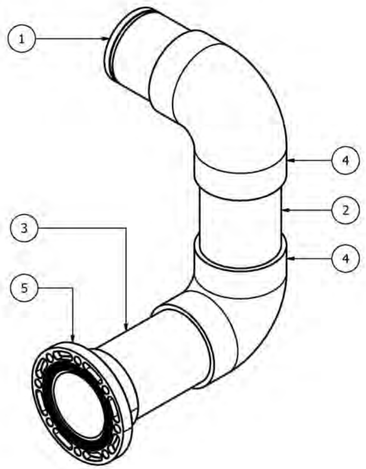
SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 22 OF 29 | REV 1

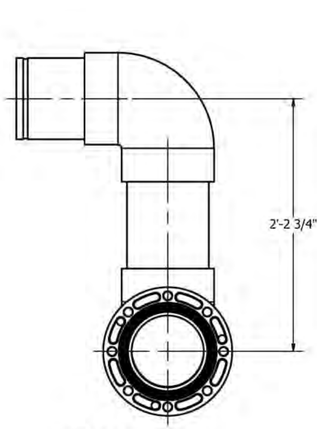
260-SCKBCK-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	12.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	18.749 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
3	20.054 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
4	2	806-080	PVC SCH80 ELBOW, 8", SXSX90
5	1	854-080	PVC SCH80 FLANGE, 8", 150# (TWOPIECE-SLIP)

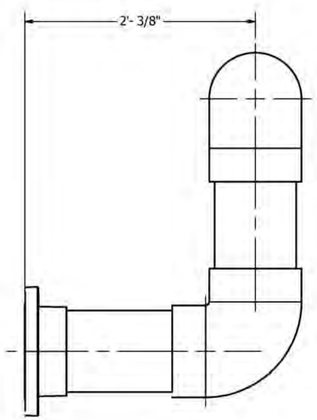


PLAN





ELEVATION
SCALE: 1/8



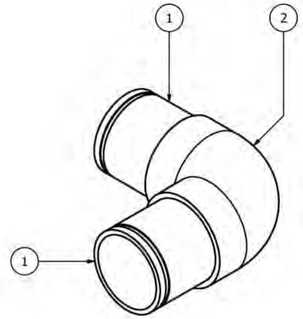
END

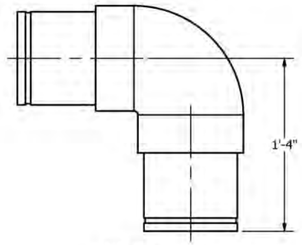
260-SCKBCK-PV-01

1ST PASS 8" SUCK BACK CROSSOVER TO
1ST PASS TOTAL PERMEATE
SCALE: 1/8

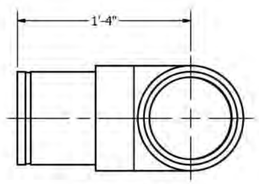
260-SCKBCK-PV-06

ITEM	QTY	PART NUMBER	DESCRIPTION
1	24.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	1	806-080	PVC SCH80 ELBOW, 8", SXSX90





PLAN



ELEVATION
SCALE: 1/7

260-SCKBCK-PV-06

8" SUCK BACK HEADER
TRAIN #1 TO BACKWASH TANK
SCALE: 1/7

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	YS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

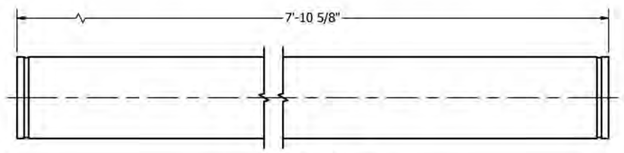
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
SUCK BACK PIPE SPOOLS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-802	21 OF 29	1

260-SCKBCK-PV-02

ITEM	QTY	PART NUMBER	DESCRIPTION
1	94.607 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends



ELEVATION

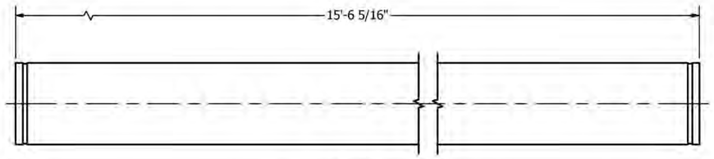
260-SCKBCK-PV-02

8" SUCK BACK CONNECTOR PIPE
OVER 2ND PASS

SCALE: 1/8

260-SCKBCK-PV-03

ITEM	QTY	PART NUMBER	DESCRIPTION
1	186.339 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut Groove Both ends



ELEVATION

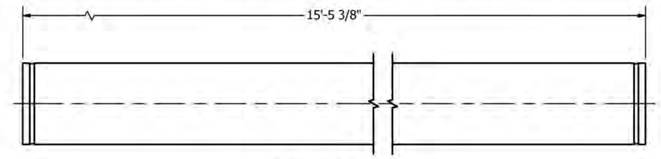
260-SCKBCK-PV-03

8" SUCK BACK HEADER CONNECTOR PIPE
2ND PASS TO TRAIN #4

SCALE: 1/8

260-SCKBCK-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	185.402 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends



ELEVATION

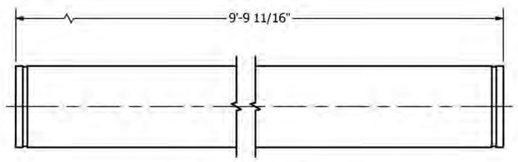
260-SCKBCK-PV-04

8" SUCK BACK HEADER CONNECTOR PIPE
CONNECTS TRAINS #4 TO 3, 3 TO 2, 2 TO 1

SCALE: 1/8

260-SCKBCK-PV-05

ITEM	QTY	PART NUMBER	DESCRIPTION
1	117.697 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends



ELEVATION

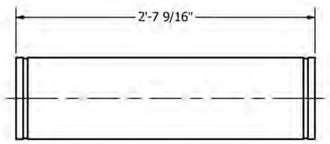
260-SCKBCK-PV-05

TRAIN #1, 8" SUCKBACK CONNECTOR PIPE
TO BACKWASH TANK

SCALE: 1/8

260-SCKBCK-PV-07

ITEM	QTY	PART NUMBER	DESCRIPTION
1	31.561 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends



ELEVATION

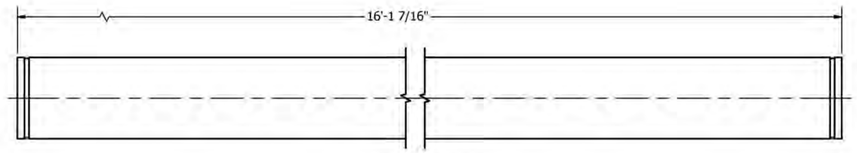
260-SCKBCK-PV-07

TRAIN #1, 8" SUCKBACK CONNECTOR PIPE
TO BACKWASH TANK

SCALE: 1/8

260-SCKBCK-PV-08

ITEM	QTY	PART NUMBER	DESCRIPTION
1	193.438 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends



ELEVATION

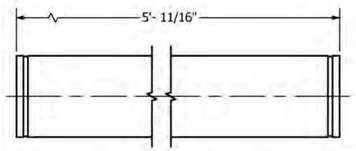
260-SCKBCK-PV-08

TRAIN #1, 8" SUCKBACK CONNECTOR PIPE
TO BACKWASH TANK

SCALE: 1/8

260-SCKBCK-PV-09

ITEM	QTY	PART NUMBER	DESCRIPTION
1	60.680 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends



ELEVATION

260-SCKBCK-PV-09

TRAIN #1, 8" SUCKBACK CONNECTOR PIPE
TO BACKWASH TANK

SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

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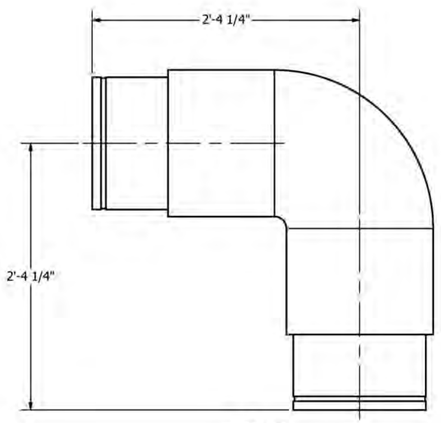
DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		SPEC'S. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

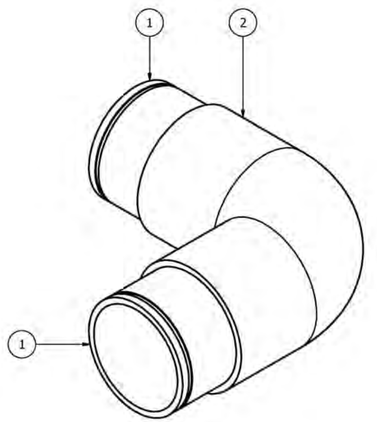
TITLE: ALL EXTERNAL PVC PIPE
SUCK BACK PIPE SPOOLS

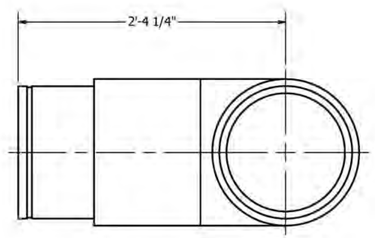
SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 20 OF 29 | REV 1

260-CW-PV-09			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	30.000 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove end
2	1	806-140	PVC SCH80 ELBOW, 14", SXSX90

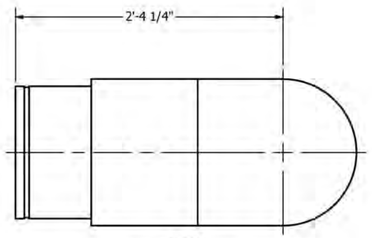


PLAN





ELEVATION
SCALE: 1/8



END

260-CW-PV-09

14" BRINE HEADER FROM TRAIN #1
TO BACKWASH TANK
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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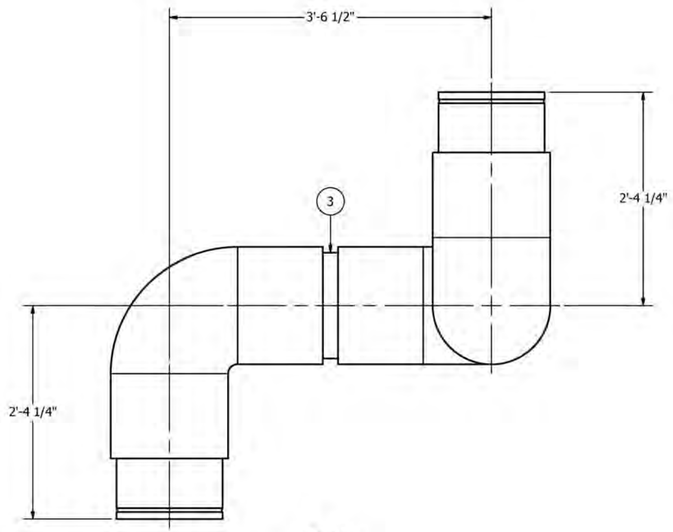
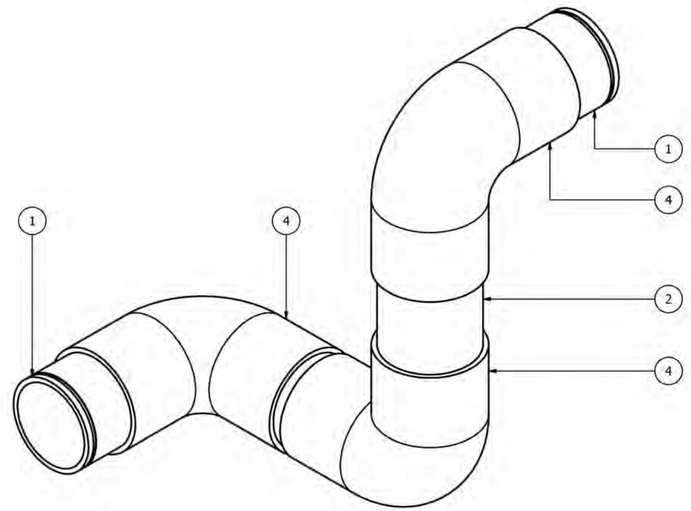
DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		SPEC'S. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: ALL EXTERNAL PVC PIPE CONCENTRATE PIPE SPOOLS
SIZE: D | SCALE: A/S | DWG NO: 260-P-802 | SHEET 19 OF 29 | REV: 1

260-CW-PV-07			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	30.000 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove end
2	26.290 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14"
3	16.000 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14"
4	3	806-140	PVC SCH80 ELBOW, 14", SXSX90



PLAN



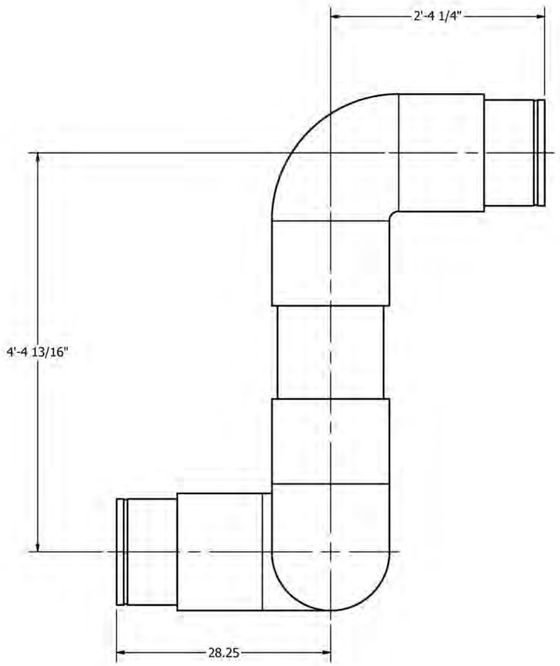
260-CW-PV-07

14" BRINE HEADER FROM TRAIN #1
TO BACKWASH TANK

SCALE: 1/10

ELEVATION

SCALE: 1/10



END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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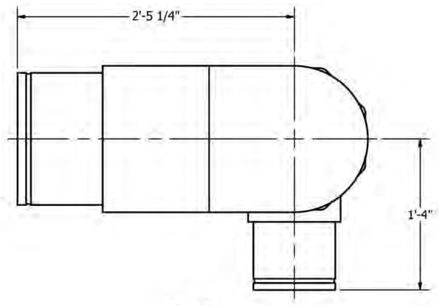
DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	YS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

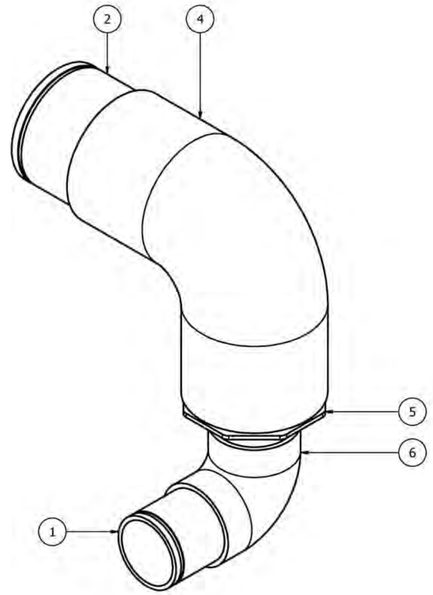
TITLE: ALL EXTERNAL PVC PIPE CONCENTRATE PIPE SPOOLS

SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 18 OF 29 | REV 1

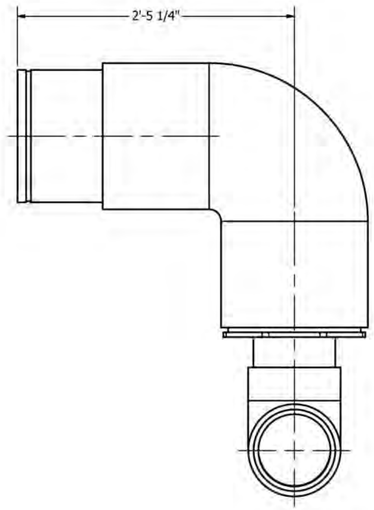
260-CW-PV-02			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	12.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	16.000 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove end
3	12.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
4	1	806-140	PVC SCH80 ELBOW, 14", SXSX90
5	1	837-698F	PVC SCH80 REDUCER BUSHING 14"x8" (SPXS)
6	1	806-080	PVC SCH80 ELBOW, 8", SXSX90



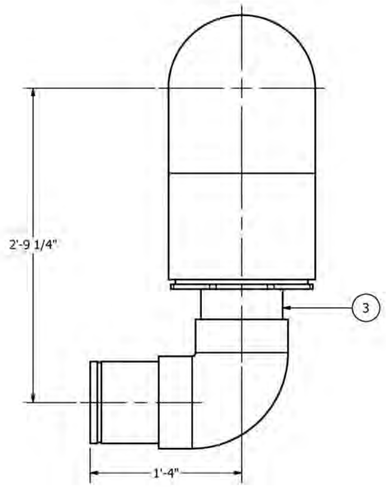
PLAN



260-CW-PV-02
BRINE HEADER FROM CF
TO OVERHEAD BRINE HEADER
SCALE: 1/8



ELEVATION
SCALE: 1/8



END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
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DRAWN: AWS	7/7/2009	SUBMITTAL NO.: XX	
ENGR: YS		SPEC'S. REF. NO.: XX	
PROJ MGR: AWS		PROJECT NUMBER: 260	
APPROVED: HS			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

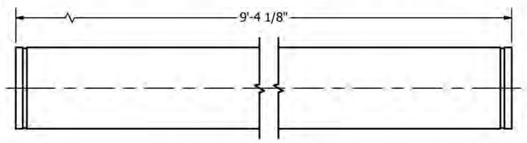
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE CONCENTRATE PIPE SPOOLS

SIZE	SCALE:	DWG NO:	SHEET	REV
D	A/S	260-P-802	17 OF 29	1

260-CW-PV-01

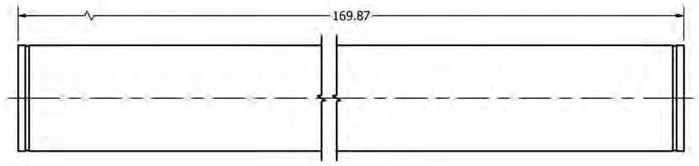
ITEM	QTY	PART NUMBER	DESCRIPTION
1	112.150 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends



ELEVATION
260-CW-PV-01
BRINE HEADER FROM CF
TO OVERHEAD BRINE HEADER
8" CONNECTOR PIPE
SCALE: 1/8

260-CW-PV-03

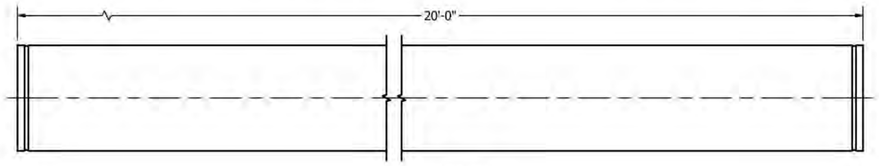
ITEM	QTY	PART NUMBER	DESCRIPTION
1	169.872 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove both ends



ELEVATION
260-CW-PV-03
BRINE HEADER OVER 2ND PASS
14" CONNECTOR PIECE
SCALE: 1/10

260-CW-PV-04

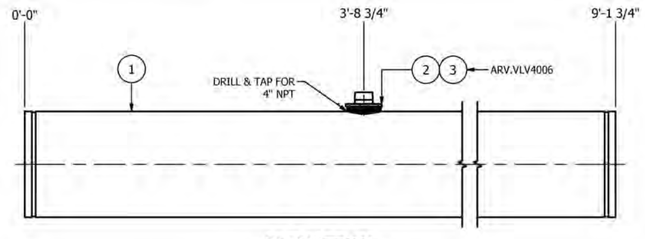
ITEM	QTY	PART NUMBER	DESCRIPTION
1	240.000 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove both ends



ELEVATION
260-CW-PV-04
BRINE HEADER OVER 2ND PASS
14" CONNECTOR PIECE
SCALE: 1/10

260-CW-PV-05

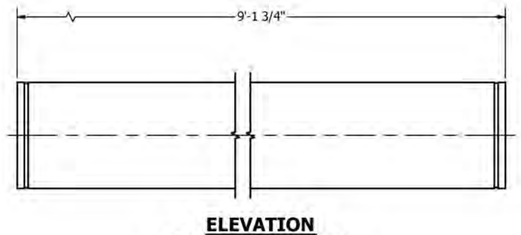
ITEM	QTY	PART NUMBER	DESCRIPTION
1	109.747 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove both ends
2	1	839-420SR	PVC SCH80 REDUCER BUSHING 4"x2" (MXSRF)
3	1	JIS B 2302 Close Nipple 2	Nipple



ELEVATION
260-CW-PV-05
TRAIN #4, 3
14" BRINE CONNECTOR PIPE
SCALE: 1/10

260-CW-PV-06

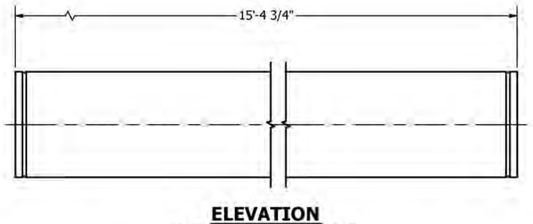
ITEM	QTY	PART NUMBER	DESCRIPTION
1	109.747 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove both ends



ELEVATION
260-CW-PV-06
TRAIN #3, 2 / TRAIN #2, 1
14" BRINE CONNECTOR PIPE
SCALE: 1/10

260-CW-PV-08

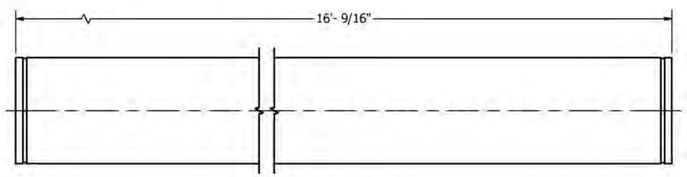
ITEM	QTY	PART NUMBER	DESCRIPTION
1	184.764 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove both ends



ELEVATION
260-CW-PV-08
14" BRINE HEADER FROM TRAIN #1
TO BACKWASH TANK
SCALE: 1/10

260-CW-PV-10

ITEM	QTY	PART NUMBER	DESCRIPTION
1	192.549 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove both ends



ELEVATION
260-CW-PV-10
14" BRINE HEADER FROM TRAIN #1
TO BACKWASH TANK
SCALE: 1/10

REVISION HISTORY

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

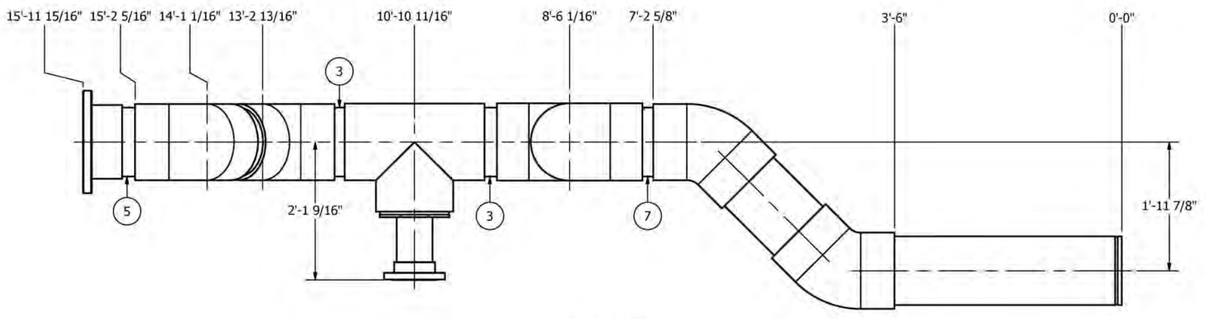
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
CONCENTRATE PIPE SPOOLS

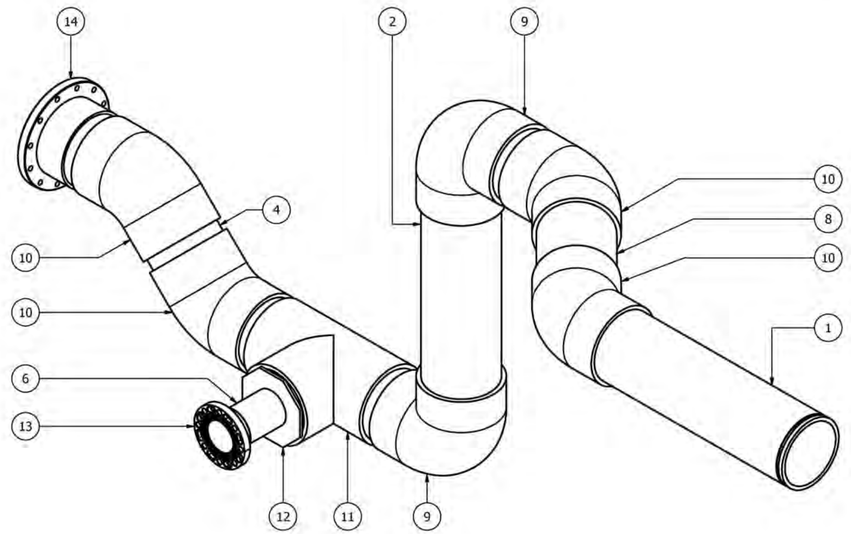
SIZE D | SCALE: A/S | DWG NO: 260-P-802 | SHEET 16 OF 29 | REV 1

260-PW-PV-19

ITEM	QTY	PART NUMBER	DESCRIPTION
1	48.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove end
2	46.215 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
3	42.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
4	14.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
5	15.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
6	14.839 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
7	14.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
8	25.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
9	2	806-120	PVC SCH80 ELBOW, 12", SXSX90
10	4	817-120	PVC SCH80 12" 45Deg ELBOW (SXS45)
11	1	801-120	PVC SCH80 TEE, 12", SXSXS
12	1	837-666	PVC SCH80 REDUCER BUSHING 12"x6" (SPXS)
13	1	854-060	PVC SCH80 FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 6"
14	1	854-120	PVC SCH80 FLANGE, 12", 150# (TWOPIECE-SLIP)



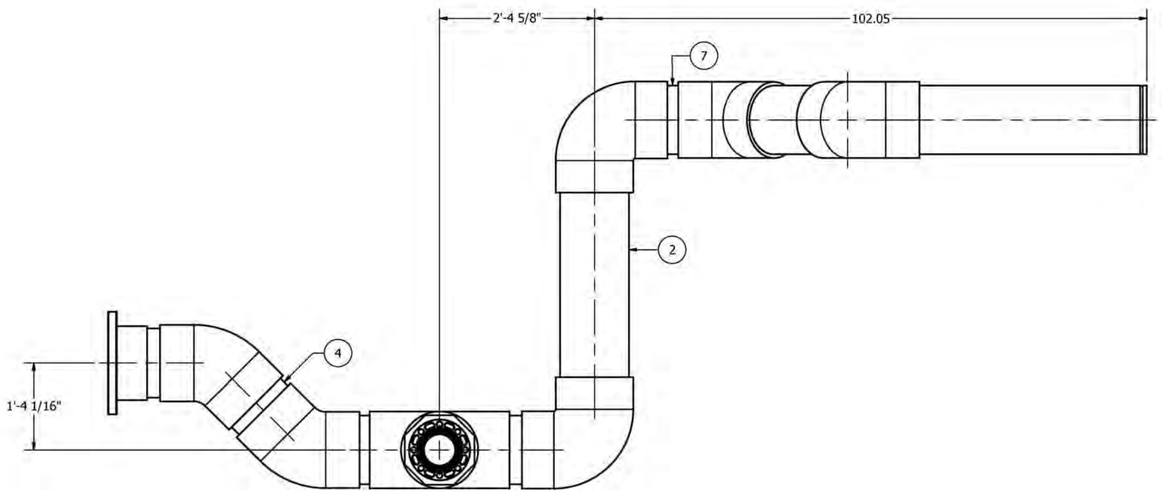
PLAN



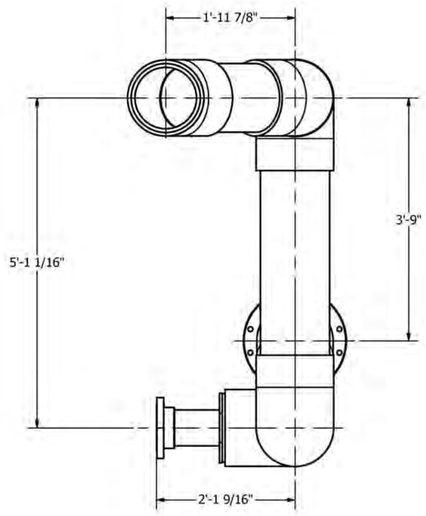
260-PW-PV-19

12" 1ST PASS TOTAL PERMEATE TO DEGASSER TOWER
W/ 6" CROSSOVER TO 2ND PASS PERMEATE

SCALE: 1/12



ELEVATION
SCALE: 1/14



END

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		SPEC'S. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

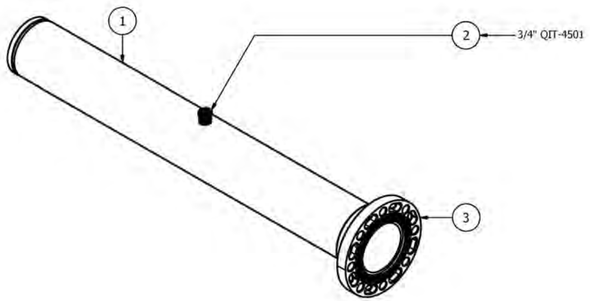
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

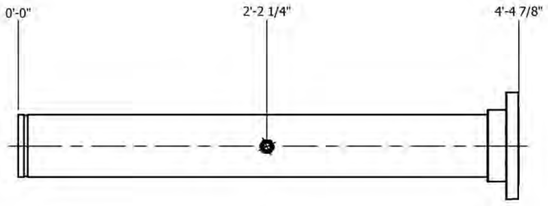
TITLE: ALL EXTERNAL PVC PIPE PERMEATE PIPE SPOOLS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-802	15 OF 29	1

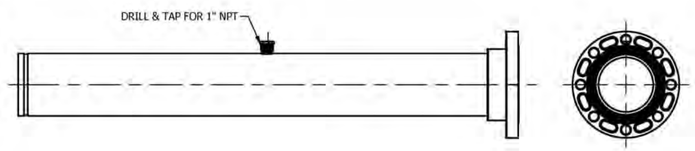
260-PW-PV-16

ITEM	QTY	PART NUMBER	DESCRIPTION
1	52.536 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6" w/cut groove end
2	1	839-131	ASTM D PVC SCH80 REDUCER BUSHING 1"x3/4", MXF
3	1	854-060	PVC SCH80 FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 6"





PLAN



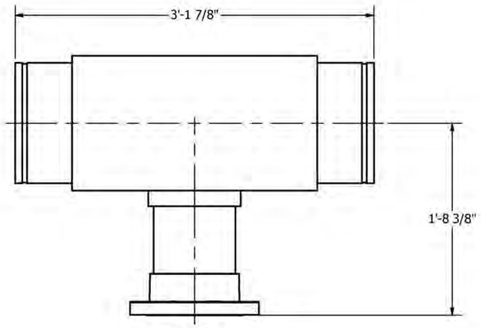
ELEVATION
SCALE: 1/8

END

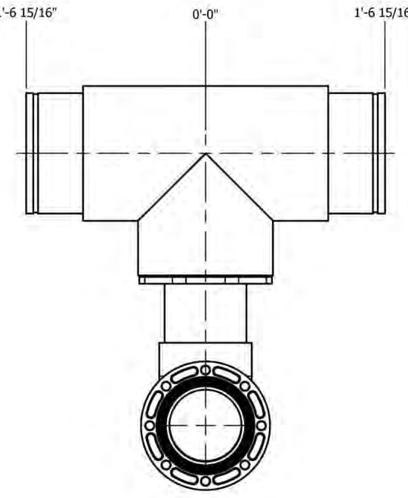
260-PW-PV-16
1ST PASS PERMEATE DOWNCOMER
TO 2ND PASS FEED HEADER
SCALE: 1/8

260-PW-PV-18

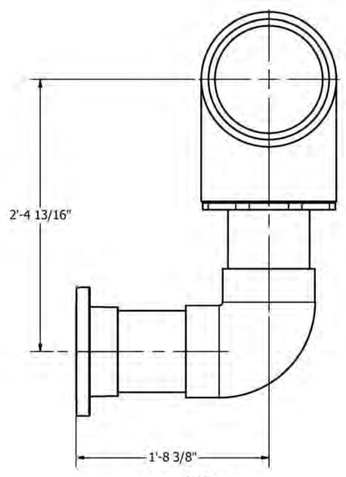
ITEM	QTY	PART NUMBER	DESCRIPTION
1	24.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove end
2	15.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
3	16.054 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
4	1	801-120	PVC SCH80 TEE, 12", SXSXS
5	1	837-668	PVC SCH80 REDUCER BUSHING 12"x8", (SPXS)
6	1	806-080	PVC SCH80 ELBOW, 8", SXSX90
7	1	854-080	PVC SCH80 FLANGE, 8", 150# (TWOPIECE-SLIP)



PLAN

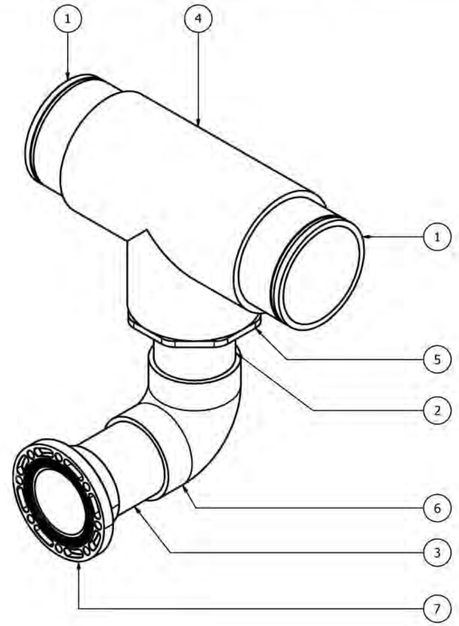


ELEVATION
SCALE: 1/8



END

260-PW-PV-18
1ST PASS TOTAL PERMEATE
& 8" SUCK BACK CROSSOVER
SCALE: 1/8



REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN: AWS	7/7/2009	SUBMITTAL NO.: XX	
ENGR: YS		SPECS. REF. NO.: XX	
PROJ. MGR: AWS		PROJECT NUMBER: 260	
APPROVED: HS			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

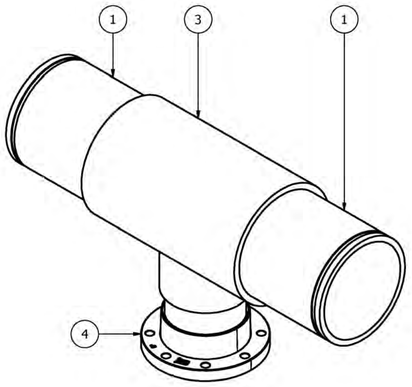
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

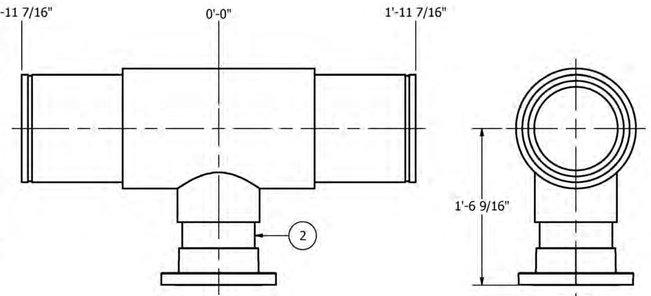
TITLE: ALL EXTERNAL PVC PIPE
PERMEATE PIPE SPOOLS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-802	14 OF 29	1

260-PW-PV-11

ITEM	QTY	PART NUMBER	DESCRIPTION
1	36.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove end
2	11.159 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
3	1	801-668	PVC SCH80 TEE REDUCER , 12"x12"x8", SXSXS
4	1	854-080	PVC SCH80 FLANGE, 8", 150# (TWOPIECE-SLIP)





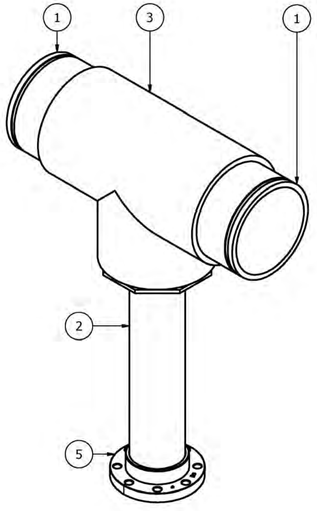
ELEVATION
SCALE: 1/9

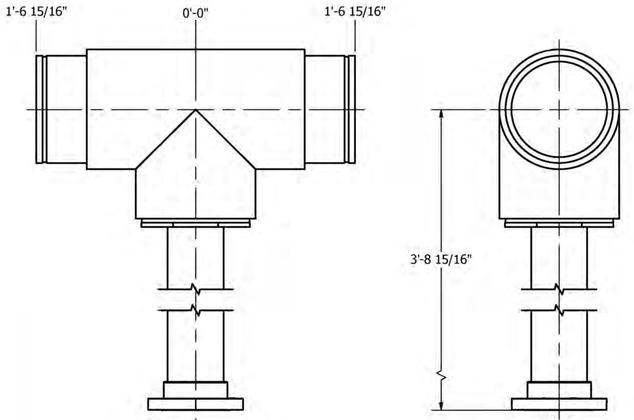
END

260-PW-PV-11
TRAIN #4
PERMEATE DOWNCOMER
SCALE: 1/8

260-PW-PV-13

ITEM	QTY	PART NUMBER	DESCRIPTION
1	24.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove end
2	37.682 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
3	1	801-120	PVC SCH80 TEE, 12", SXSXS
4	1	837-666	PVC SCH80 REDUCER BUSHING 12"x6" (SPXS)
5	1	854-060	PVC SCH80 FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 6"





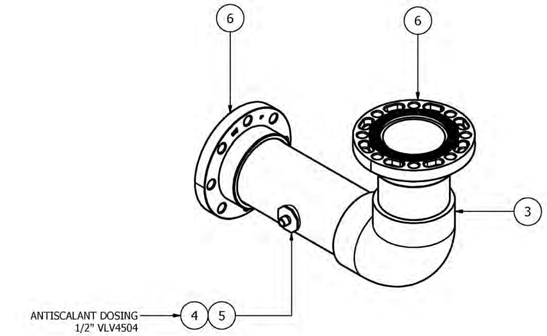
ELEVATION
SCALE: 1/9

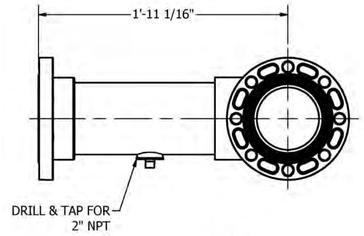
END

260-PW-PV-13
12" 1ST PASS PERMEATE DOWNCOMER
TO 2ND PASS FEED HEADER
SCALE: 1/9

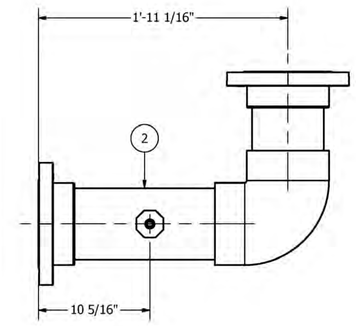
260-PW-PV-14

ITEM	QTY	PART NUMBER	DESCRIPTION
1	10.000 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
2	19.000 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
3	1	806-060	PVC SCH80 ELBOW, 6" (SXSX90)
4	1	JIS B 2302 Close Nipple 1/2	Nipple
5	1	839-247	PVC SCH80 REDUCER BUSHING 2" x 1/2" (MXF)
6	2	854-060	PVC SCH80 FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 6"

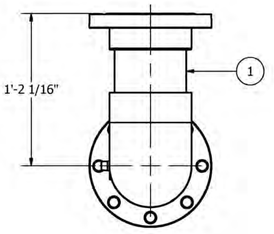




PLAN



ELEVATION
SCALE: 1/7



END

260-PW-PV-14
12" 1ST PASS PERMEATE DOWNCOMER
TO 2ND PASS FEED HEADER
SCALE: 1/7

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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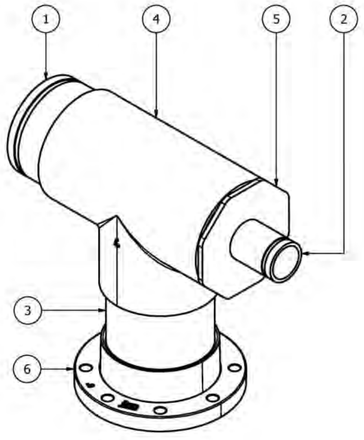
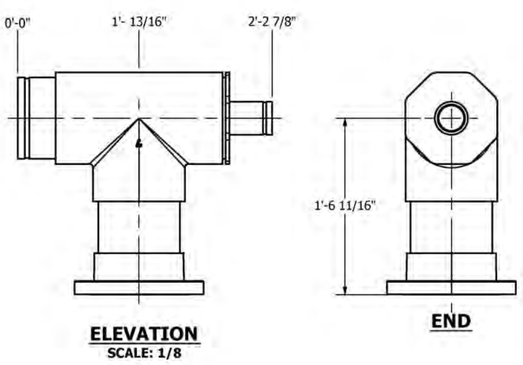
DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS
TITLE: ALL EXTERNAL PVC PIPE
PERMEATE PIPE SPOOLS
SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 13 OF 29 | REV 1

260-PW-PV-05

ITEM	QTY	PART NUMBER	DESCRIPTION
1	8.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	6.374 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
3	13.438 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
4	1	801-080	PVC SCH80 TEE, 8", SXSXS
5	1	837-580	PVC SCH80 REDUCER BUSHING 8"x3" (SPXS)
6	1	854-080	PVC SCH80 FLANGE, 8", 150# (TWOPIECE-SLIP)





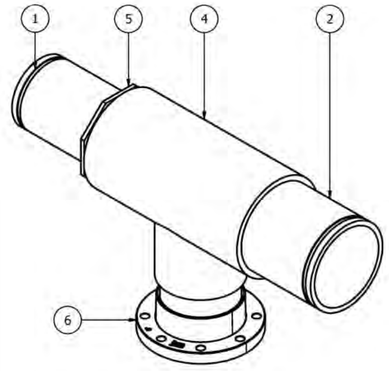
ELEVATION
SCALE: 1/8

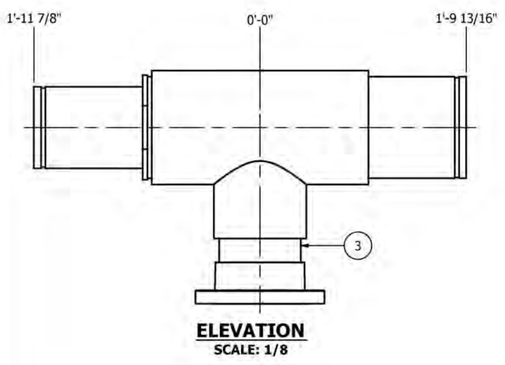
END

260-PW-PV-05
TRAIN #1
PERMEATE DOWNCOMER
SCALE: 1/6

260-PW-PV-07

ITEM	QTY	PART NUMBER	DESCRIPTION
1	16.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	15.844 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
3	10.625 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
4	1	801-628	PVC SCH80 TEE REDUCER , 10"x10"x8", SXSXS
5	1	837-628	PVC REDUCER BUSHING, 10"SPIG X 8"SOC, Sch80
6	1	854-080	PVC SCH80 FLANGE, 8", 150# (TWOPIECE-SLIP)





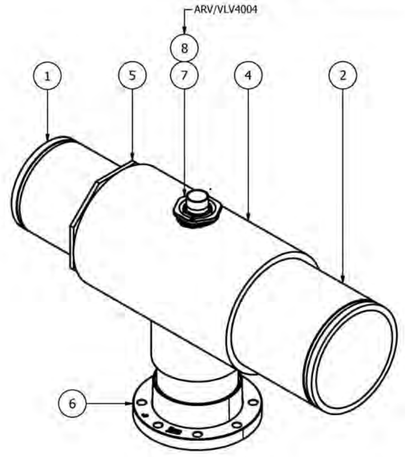
ELEVATION
SCALE: 1/8

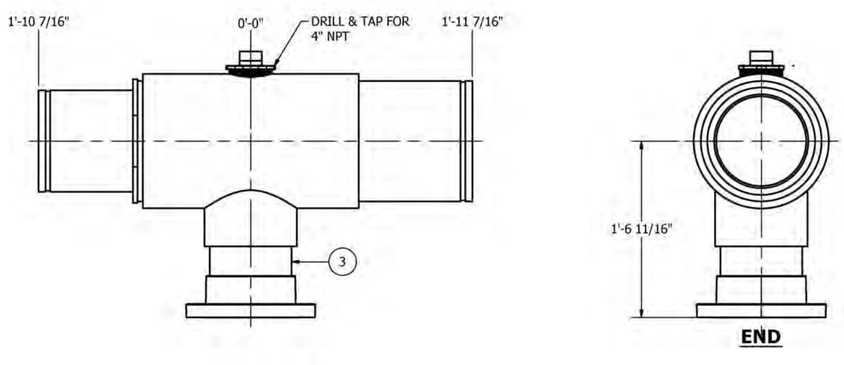
END

260-PW-PV-07
TRAIN #2
PERMEATE DOWNCOMER
SCALE: 1/8

260-PW-PV-09

ITEM	QTY	PART NUMBER	DESCRIPTION
1	15.844 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	18.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove end
3	11.250 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
4	1	801-668	PVC SCH80 TEE REDUCER , 12"x12"x8", SXSXS
5	1	837-670	REDUCER BUSING, 12"X10", SPGXSOC, PVC, SCH.80
6	1	854-080	PVC SCH80 FLANGE, 8", 150# (TWOPIECE-SLIP)
7	1	839-420SR	PVC SCH80 REDUCER BUSHING 4"x2" (MXSRF)
8	1	JIS B 2302 Close Nipple 2	Nipple





ELEVATION
SCALE: 1/8

END

260-PW-PV-09
TRAIN #3
PERMEATE DOWNCOMER
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

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136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	7/7/2009
DSGR	JS	
PROJ MGR	AWS	
APPROVED	JS	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

SUBMITTAL NO. XX
SPEC'S. REF. NO. XX
PROJECT NUMBER 260

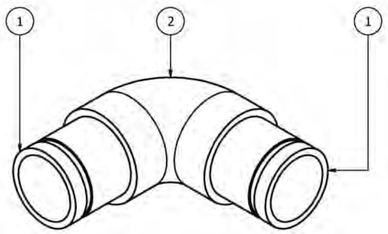
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

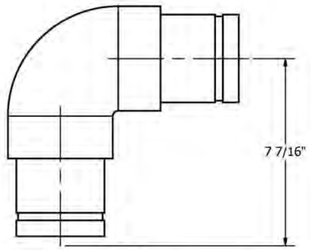
TITLE: ALL EXTERNAL PVC PIPE
PERMEATE PIPE SPOOLS

SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 12 OF 29 | REV 1

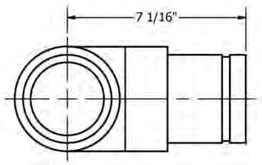
260-PW-PV-02

ITEM	QTY	PART NUMBER	DESCRIPTION
1	10.000 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
2	1	806-030	PVC SCH80 ELBOW, 3" (SXSX90)





PLAN

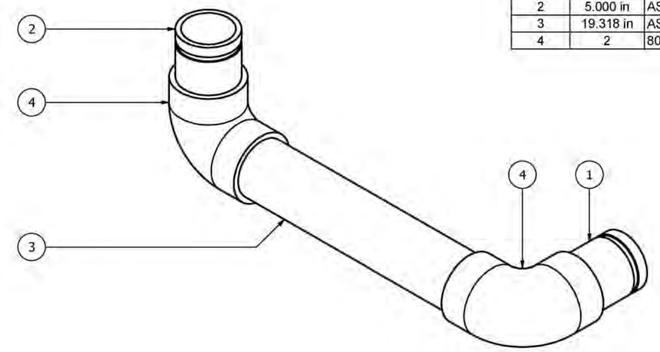


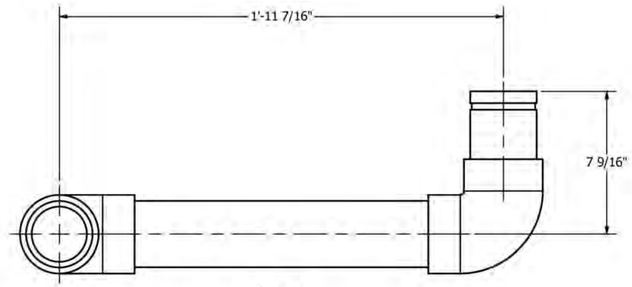
ELEVATION
SCALE: 1/3

260-PW-PV-02
TRAIN #1
3" TOTAL PERMEATE TO CIP
SCALE: 1/3

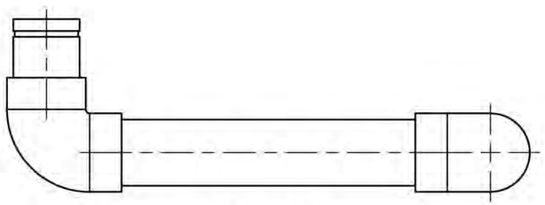
260-PW-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	5.500 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
2	5.000 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
3	19.318 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
4	2	806-030	PVC SCH80 ELBOW, 3" (SXSX90)

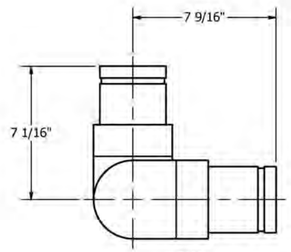




PLAN



ELEVATION
SCALE: 1/4



END

260-PW-PV-04
TRAIN #1
3" TOTAL PERMEATE TO CIP
SCALE: 1/4

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

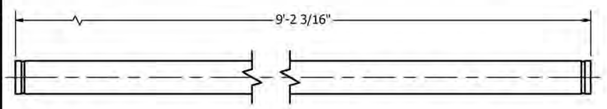
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
PERMEATE PIPE SPOOLS

SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 11 OF 29 | REV 1

260-PW-PV-01

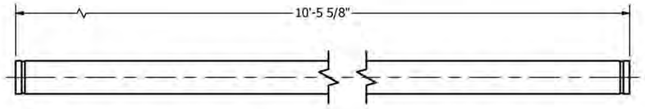
ITEM	QTY	PART NUMBER	DESCRIPTION
1	110.210 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove both ends



ELEVATION
260-PW-PV-01
CIP TO RO TRAIN #1
3" CONNECTOR PIPE
SCALE: 1/8

260-PW-PV-03

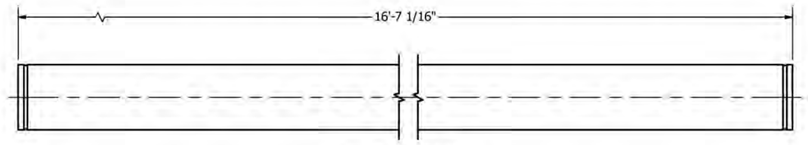
ITEM	QTY	PART NUMBER	DESCRIPTION
1	125.616 in	260-ASTM D 1785 Pipe 3 - Schedule 80 - 31	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove both ends



ELEVATION
260-PW-PV-03
CIP TO RO TRAIN #1
3" CONNECTOR PIPE
SCALE: 1/8

260-PW-PV-06

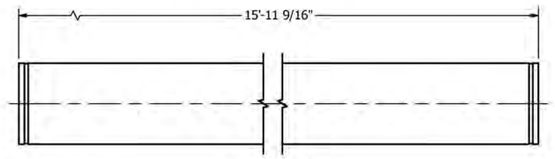
ITEM	QTY	PART NUMBER	DESCRIPTION
1	199.062 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends



ELEVATION
260-PW-PV-06
TRAIN #1 & 2
8" CONNECTOR PIPE
SCALE: 1/10

260-PW-PV-08

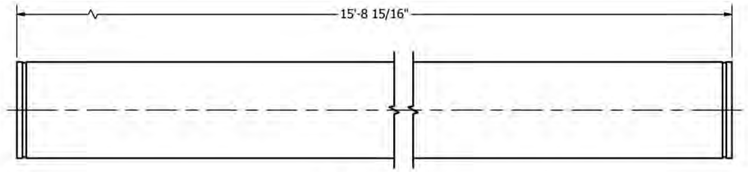
ITEM	QTY	PART NUMBER	DESCRIPTION
1	191.562 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove both ends



ELEVATION
260-PW-PV-08
TRAIN #2 & 3
10" CONNECTOR PIECE
SCALE: 1/10

260-PW-PV-10

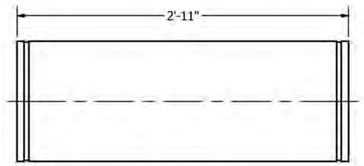
ITEM	QTY	PART NUMBER	DESCRIPTION
1	188.937 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove both ends



ELEVATION
260-PW-PV-10
TRAIN #3 & 4
12" CONNECTOR PIECE
SCALE: 1/10

260-PW-PV-12

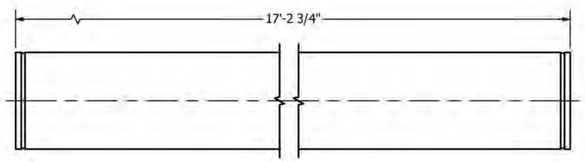
ITEM	QTY	PART NUMBER	DESCRIPTION
1	35.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove both ends



ELEVATION
260-PW-PV-12
TRAIN #4 TO 2ND PASS
12" CONNECTOR PIPE
SCALE: 1/8

260-PW-PV-17

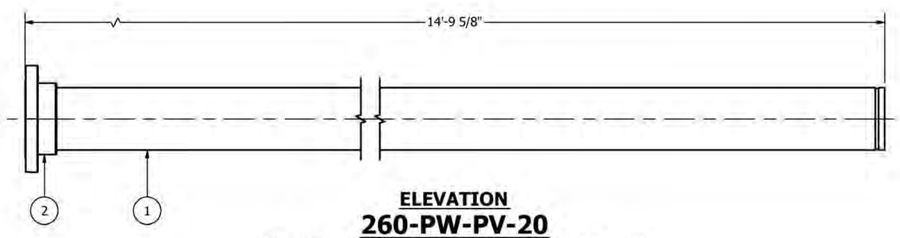
ITEM	QTY	PART NUMBER	DESCRIPTION
1	206.776 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove both ends



ELEVATION
260-PW-PV-17
12" 1ST PASS TOTAL PERMEATE
TO DEGASSER TOWER
SCALE: 1/10

260-PW-PV-20

ITEM	QTY	PART NUMBER	DESCRIPTION
1	177.336 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6" w/cut groove end
2	1	854-060	PVC SCH80 FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 6"



ELEVATION
260-PW-PV-20
2ND PASS PERMEATE TO LIMESTONE FILTERS
6" CONNECTOR PIPE
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		SPEC'S. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

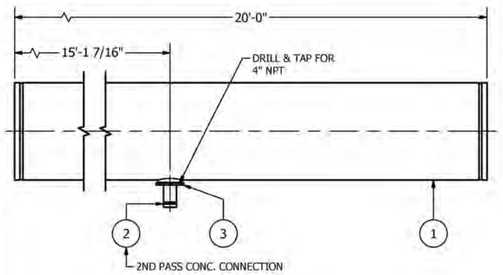
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
PERMEATE CONNECTOR PIPE

SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 10 OF 29 | REV 1

260-FW-PV-12

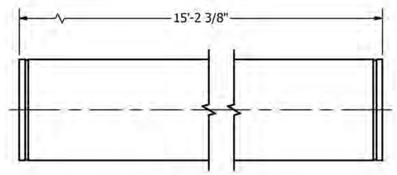
ITEM	QTY	PART NUMBER	DESCRIPTION
1	240.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove both ends
2	4.177 in	260-ASTM D 1785 Pipe 2 - Schedule 80 - 20	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove end
3	1	837-420	PVC SCH80 REDUCER BUSHING 4"x2" (SPXS)



ELEVATION
260-FW-PV-12
18" MAIN RO TRAIN FEED HEADER
SCALE: 1/14

260-FW-PV-14

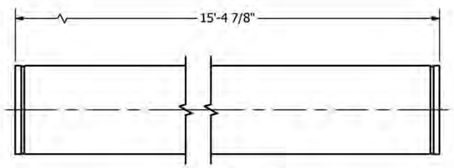
ITEM	QTY	PART NUMBER	DESCRIPTION
1	182.384 in	ASTM D 1785 Pipe 16 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 16" w/cut groove both ends



ELEVATION
260-FW-PV-14
16" TRAIN #4 & 3 CONNECTOR PIECE
SCALE: 1/12

260-FW-PV-15

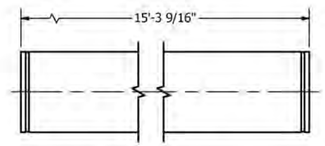
ITEM	QTY	PART NUMBER	DESCRIPTION
1	184.884 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove both ends



ELEVATION
260-FW-PV-15
14" TRAIN #3 & 2 CONNECTOR PIECE
SCALE: 1/12

260-FW-PV-17

ITEM	QTY	PART NUMBER	DESCRIPTION
1	183.572 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove both ends



ELEVATION
260-FW-PV-17
12" TRAIN #2 & 1 CONNECTOR PIECE
SCALE: 1/12

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
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DRAWN	AWS	7/7/2009
DSGR	JS	
PROJ MGR	AWS	
APPROVED	HS	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

SUBMITTAL NO.: XX
SPEC'S. REF. NO.: XX
PROJECT NUMBER: 260

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

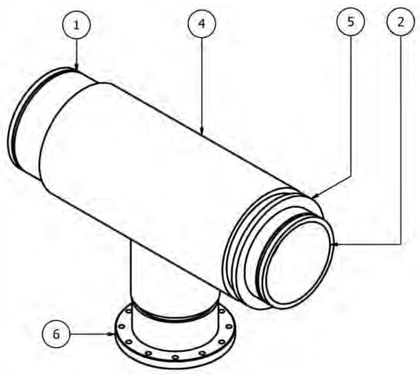
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

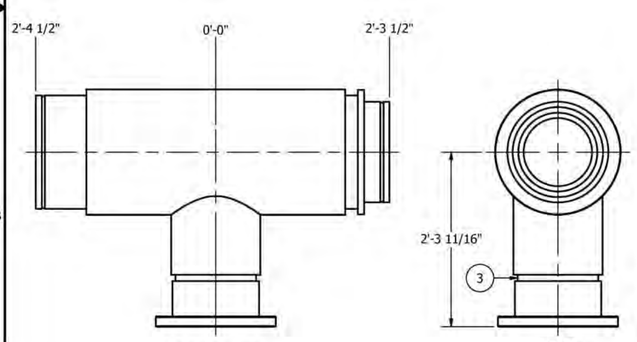
TITLE: ALL EXTERNAL PVC PIPE
FEED CONNECTOR PIPE

SIZE: D | SCALE: A/S | DWG NO: 260-P-802 | SHEET 9 OF 29 | REV: 1

260-FW-PV-13

ITEM	QTY	PART NUMBER	DESCRIPTION
1	20.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
2	10.000 in	ASTM D 1785 Pipe 16 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 16" w/cut groove end
3	13.634 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
4	1	801-792F	PVC SCH80 TEE REDUCER , 18"x18"x12", SXSXS
5	1	837-796F	REDUCER BUSHING 18"x12" Sch80 PVC
6	1	854-120	PVC SCH80 FLANGE, 12", 150# (TWOPIECE-SLIP)



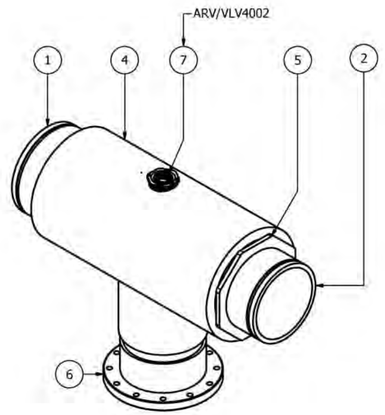


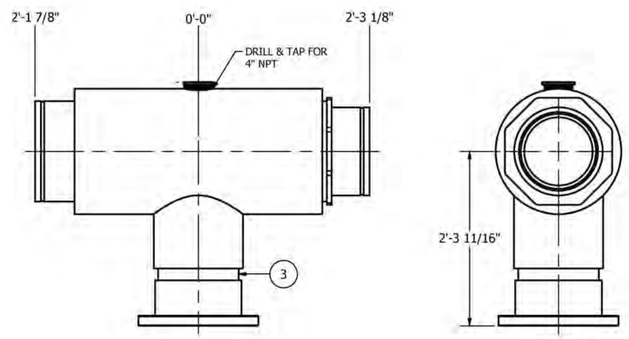
ELEVATION
SCALE: 1/12

END

260-FW-PV-14

ITEM	QTY	PART NUMBER	DESCRIPTION
1	18.241 in	ASTM D 1785 Pipe 16 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 16" w/cut groove end
2	12.000 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove end
3	14.509 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
4	1	801-762F	PVC SCH80 TEE REDUCER , 16"x12"x12", SXSXS
5	1	837-764F	PVC SCH80 REDUCER BUSHING 16"x14" (SPXS)
6	1	854-120	PVC SCH80 FLANGE, 12", 150# (TWOPIECE-SLIP)
7	1	839-420SR	PVC SCH80 REDUCER BUSHING 4"x2" (MXSRF)



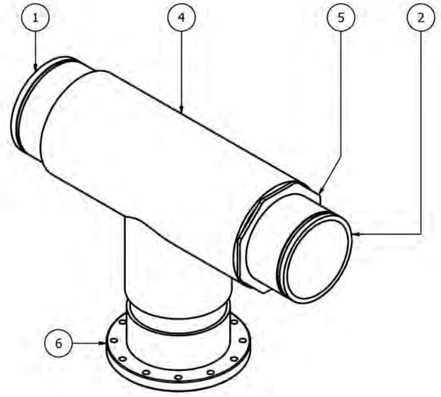


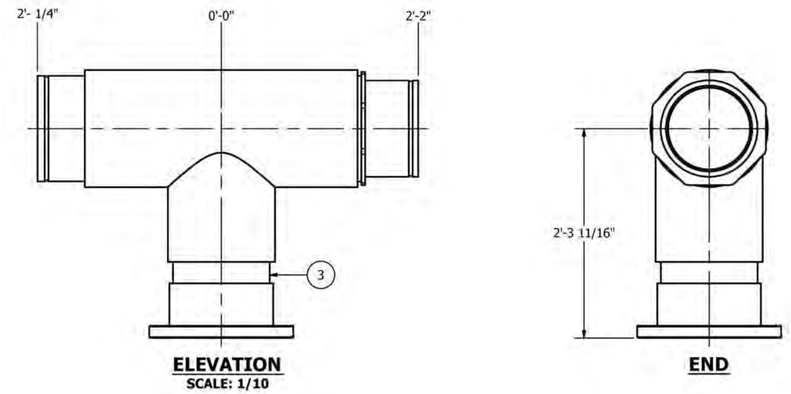
ELEVATION
SCALE: 1/12

END

260-FW-PV-16

ITEM	QTY	PART NUMBER	DESCRIPTION
1	18.241 in	ASTM D 1785 Pipe 14 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 14" w/cut groove end
2	13.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove end
3	15.450 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
4	1	801-702F	PVC SCH80 TEE REDUCER , 14"x12"x12", SXSXS
5	1	837-702F	PVC SCH80 REDUCER BUSHING 14"x12" (SPXS)
6	1	854-120	PVC SCH80 FLANGE, 12", 150# (TWOPIECE-SLIP)





ELEVATION
SCALE: 1/10

END

260-FW-PV-13
TRAIN #4 FEED DOWNCOMER
SCALE: 1/12

260-FW-PV-14
TRAIN #3 FEED DOWNCOMER
SCALE: 1/12

260-FW-PV-16
TRAIN #2 FEED DOWNCOMER
SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	7/7/2009
DSGR	JS	
PROJ MGR	AWS	
APPROVED	HS	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

SUBMITTAL NO. XX
SPEC'S. REF. NO. XX
PROJECT NUMBER 260

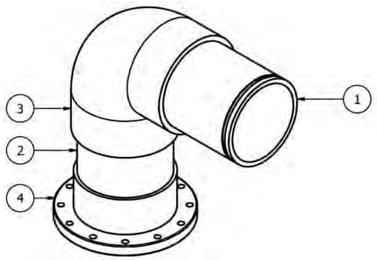
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

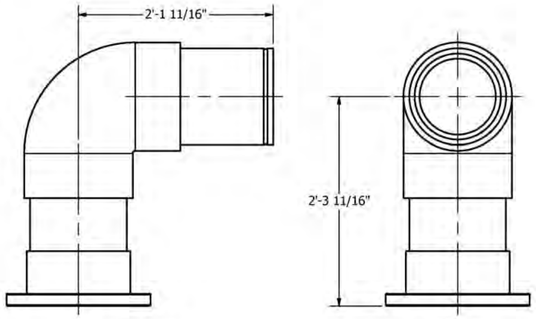
TITLE: ALL EXTERNAL PVC PIPE MAIN FEED PIPE SPOOLS

SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-802	8 OF 29	1

260-FW-PV-18

ITEM	QTY	PART NUMBER	DESCRIPTION
1	18.241 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove end
2	19.638 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
3	1	806-120	PVC SCH80 ELBOW, 12", SXSX90
4	1	854-120	PVC SCH80 FLANGE, 12", 150# (TWOPIECE-SLIP)





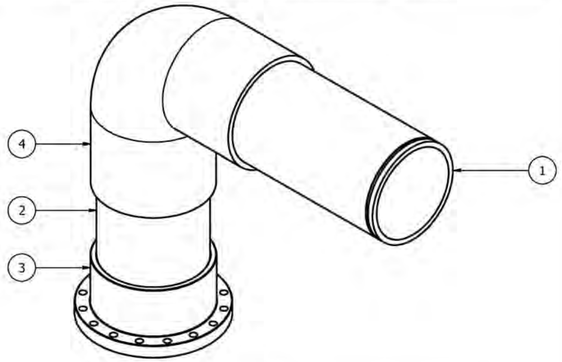
ELEVATION
SCALE: 1/10

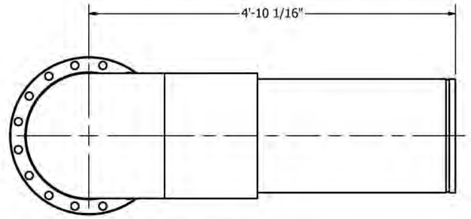
END

260-FW-PV-18
TRAIN #1 12" FEED DOWNCOMER
SCALE: 1/10

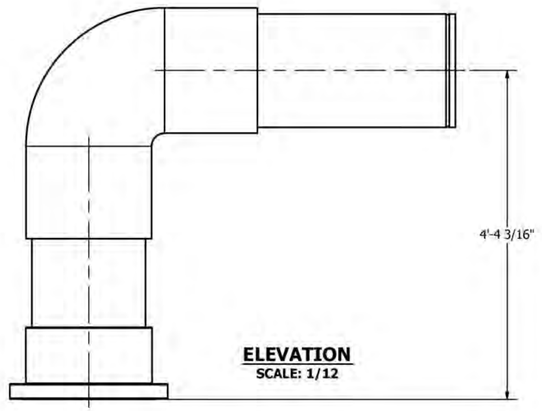
260-FW-PV-10

ITEM	QTY	PART NUMBER	DESCRIPTION
1	40.385 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
2	32.063 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18"
3	1	854-180	FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 18"
4	1	806-180F	PVC SCH80 ELBOW, 18", SXSX90





PLAN

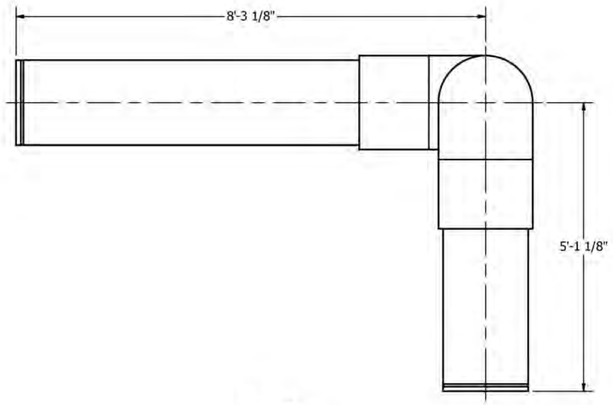


ELEVATION
SCALE: 1/12

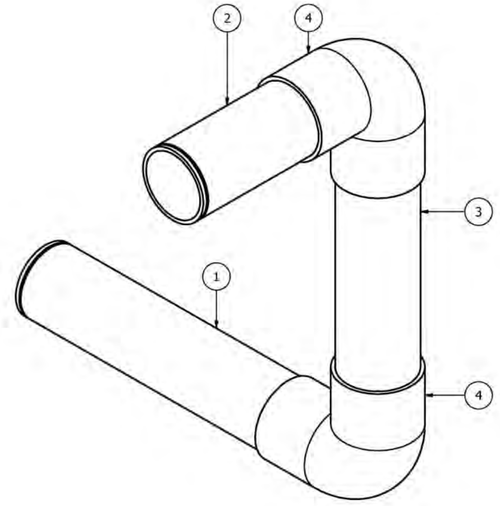
260-FW-PV-10
18" CF OUTLET FEED HEADER
TO RO TRAINS
SCALE: 1/12

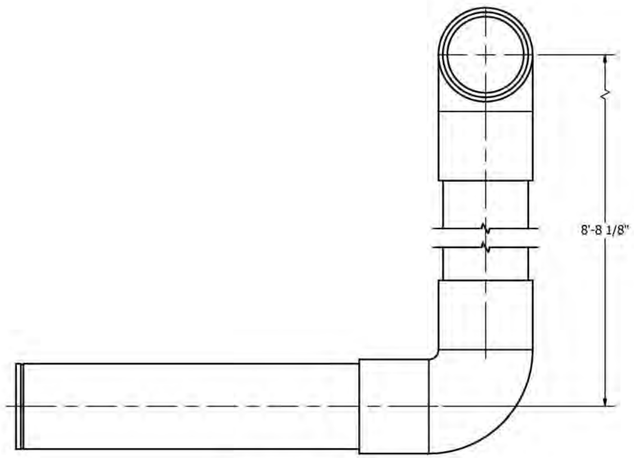
260-FW-PV-11

ITEM	QTY	PART NUMBER	DESCRIPTION
1	81.444 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
2	43.437 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
3	68.738 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18"
4	2	806-180F	PVC SCH80 ELBOW, 18", SXSX90

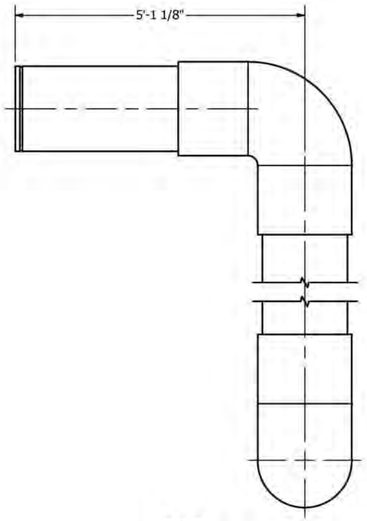


PLAN





ELEVATION
SCALE: 1/16



END

260-FW-PV-11
18" CF OUTLET FEED HEADER
TO RO TRAINS
SCALE: 1/16

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DESGR.	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

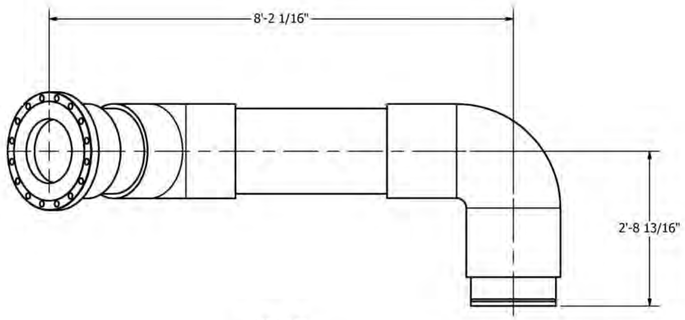
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
MAIN FEED PIPE SPOOLS

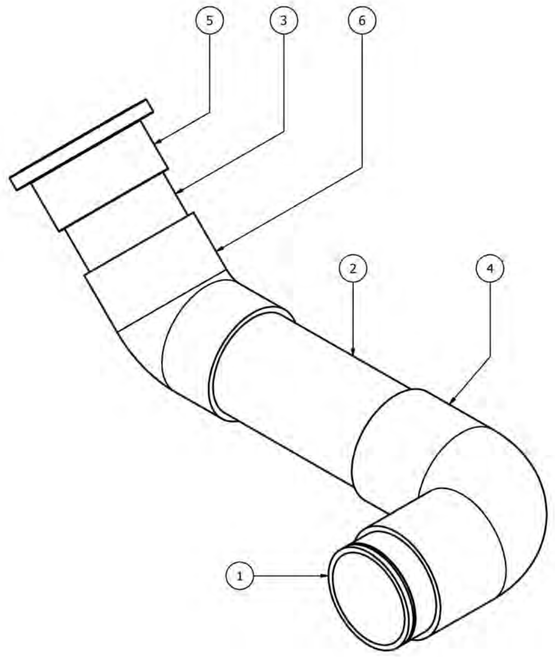
SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 7 OF 29 | REV 1

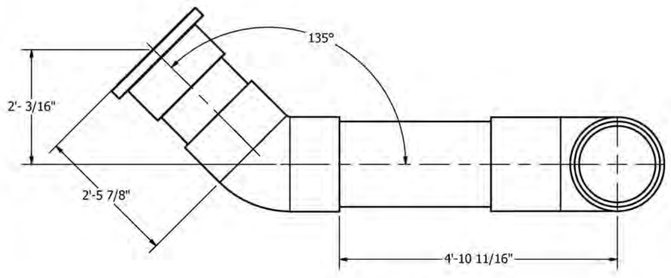
260-FW-PV-08

ITEM	QTY	PART NUMBER	DESCRIPTION
1	15.145 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
2	50.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18"
3	26.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18"
4	1	806-180F	PVC SCH80 ELBOW, 18", SXSX90
5	1	854-180	FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 18"
6	1	817-180	PVC SCH80 ELBOW, 18" (SXSX90)

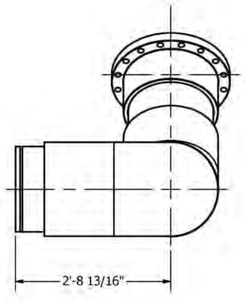


PLAN





ELEVATION
SCALE: 1/16



END

260-FW-PV-08

18" PF OUTLET TO CF INLET HEADER

SCALE: 1/12

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

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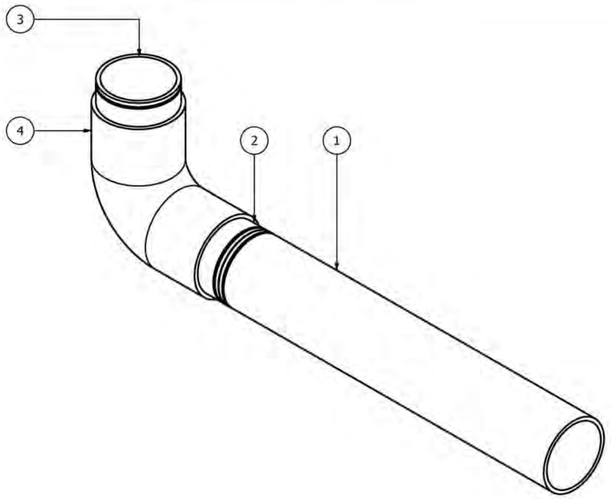
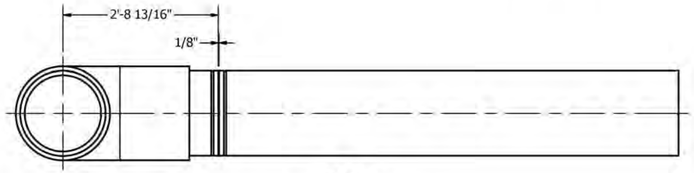
DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		CONTRS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A — SWRO WATER TREATMENT PLANT — BRITISH VIRGIN ISLANDS
TITLE: ALL EXTERNAL PVC PIPE — MAIN FEED PIPE SPOOLS
SIZE: D | SCALE: A/S | DWG NO: 260-P-802 | SHEET 6 OF 29 | REV: 1

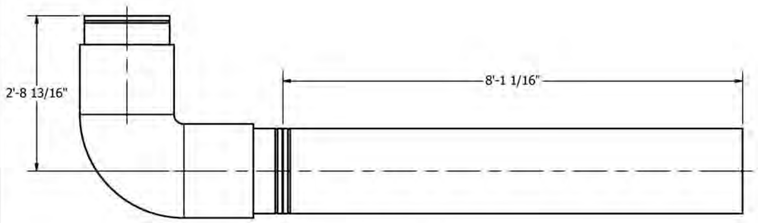
260-FW-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	97.068 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
2	15.145 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
3	15.145 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
4	1	806-180F	PVC SCH80 ELBOW, 18", SXSX90





PLAN

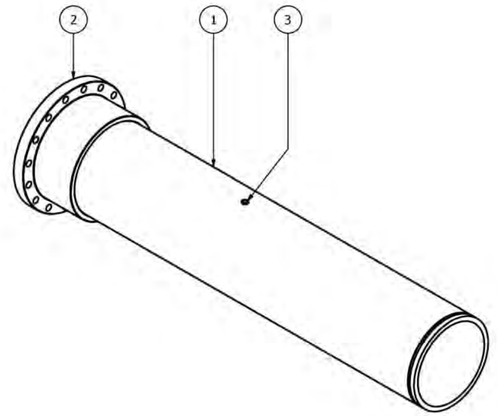


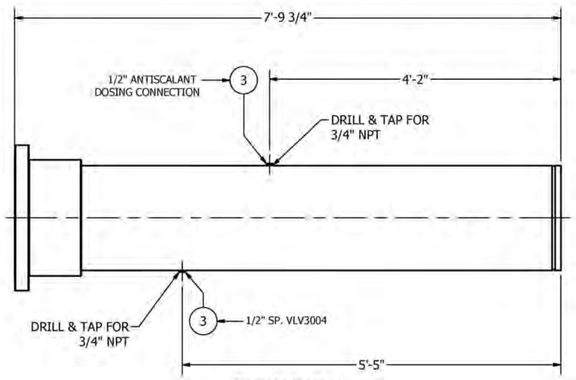
ELEVATION
SCALE: 1/16

260-FW-PV-04
18" PF OUTLET TO CF INLET HEADER
SCALE: 1/16

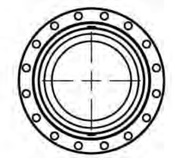
260-FW-PV-07

ITEM	QTY	PART NUMBER	DESCRIPTION
1	91.317 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
2	1	854-180	FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 18"
3	2	ASME B16.11 Hex Head Bushing 3/4 x 1/2	Hex Head Bushing





ELEVATION
SCALE: 1/13



END

260-FW-PV-07
18" PF OUTLET TO CF INLET HEADER
SCALE: 1/13

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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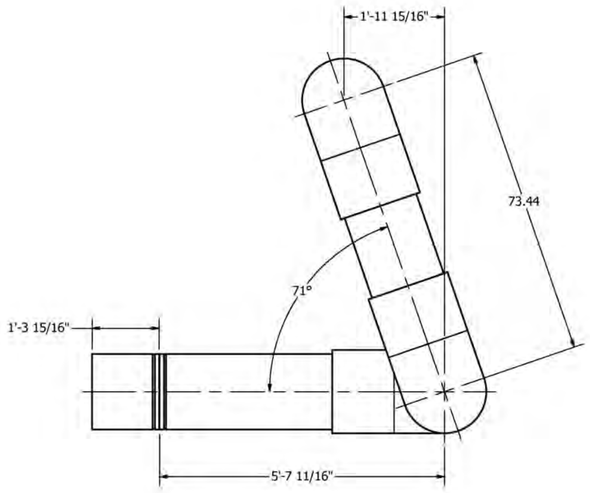
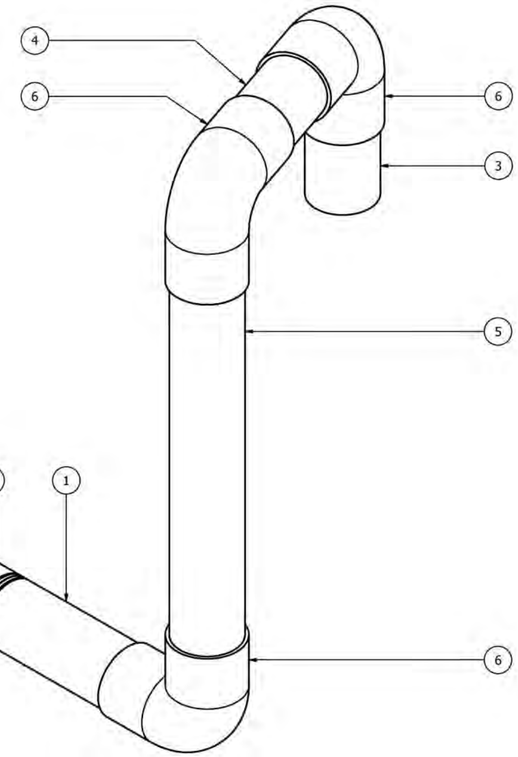
DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		SPEC'S. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

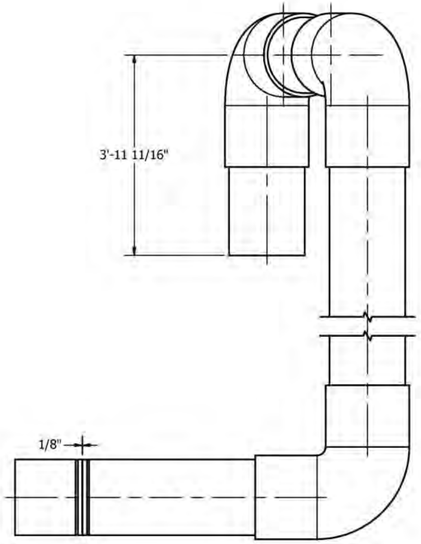
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: ALL EXTERNAL PVC PIPE MAIN FEED PIPE SPOOLS
SIZE: D | SCALE: A/S | DWG NO: 260-P-802 | SHEET 5 OF 29 | REV: 1

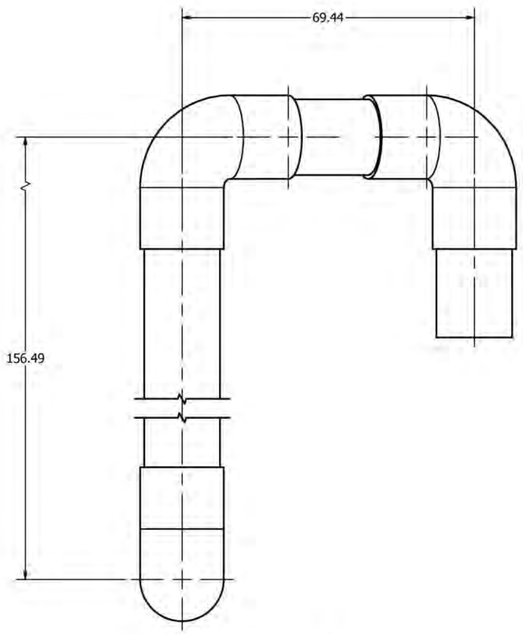
260-FW-PV-03			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	50.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
2	15.912 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
3	30.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18"
4	38.063 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18"
5	121.112 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18"
6	3	806-180F	PVC SCH80 ELBOW, 18", SXSX90



PLAN







ELEVATION
SCALE: 1/18

END

260-FW-PV-03

18" FEED HEADER FROM RF TO PF
SCALE: 1/18

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

Biwater

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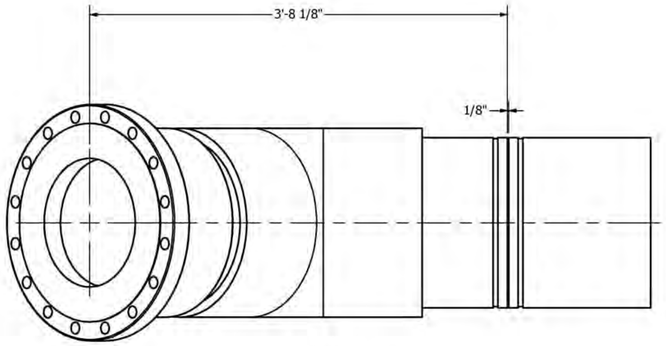
DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
DSGR	JS		SPEC'S. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

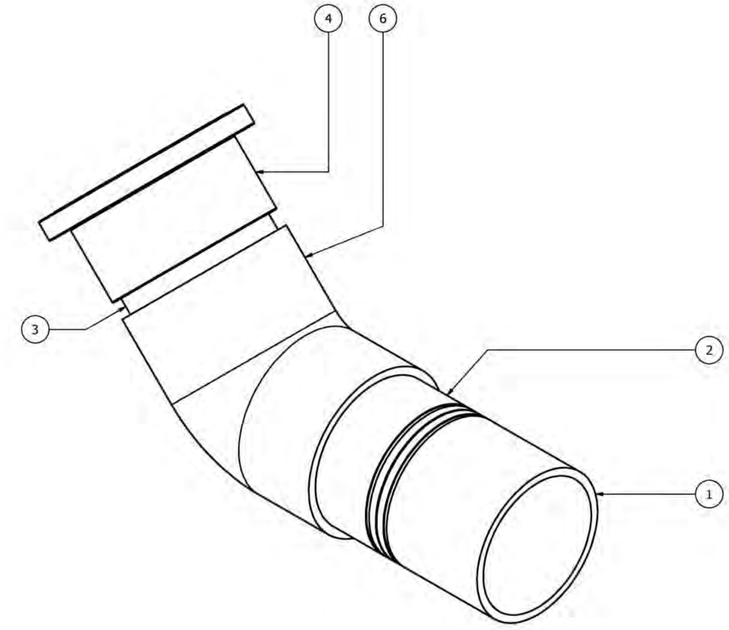
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: ALL EXTERNAL PVC PIPE MAIN FEED PIPE SPOOLS
SIZE: D | SCALE: A/S | DWG NO: 260-P-802 | SHEET 4 OF 29 | REV: 1

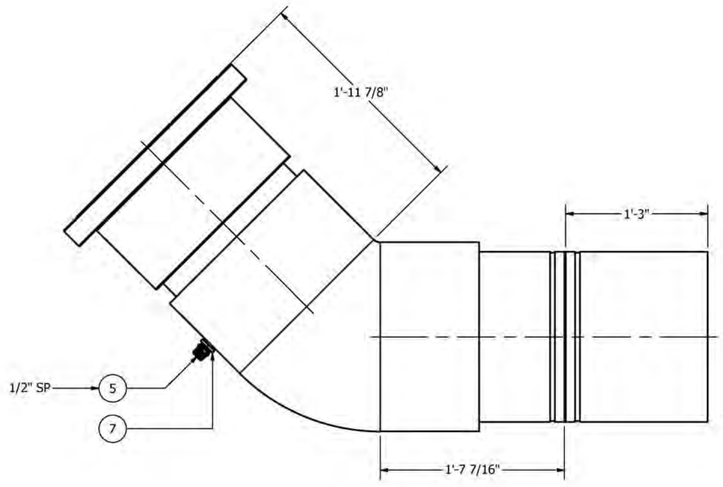
260-FW-PV-02

ITEM	QTY	PART NUMBER	DESCRIPTION
1	15.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
2	18.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
3	20.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18"
4	1	854-180	FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 18"
5	1	884-020	PVC SCH80 NIPPLE, 1"x2" (MXM)
6	1	817-180	PVC SCH80 ELBOW, 18" (SXSX90)
7	1	ASME B16.11 Hex Head Bushing 1 1/4 x 1	Hex Head Bushing

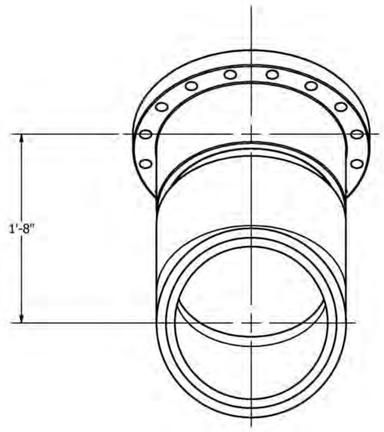


PLAN





ELEVATION
SCALE: 1/8



END

260-FW-PV-02
18" MAIN FEED HEADER
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	03/05/12	AWS	JS

REVISION HISTORY

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DRAWN	AWS	7/7/2009	SUBMITTAL NO. XX
ENGR	JS		SPECS. REF. NO. XX
PROJ MGR	AWS		PROJECT NUMBER 260
APPROVED	HS		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

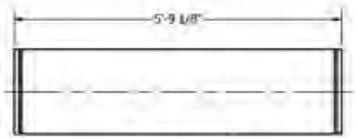
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: ALL EXTERNAL PVC PIPE
MAIN FEED PIPE SPOOLS

SIZE D | SCALE A/S | DWG NO 260-P-802 | SHEET 3 OF 29 | REV 1

260-FW-PV-05

ITEM	QTY	PART NUMBER	DESCRIPTION
1	69.128 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove both ends



ELEVATION

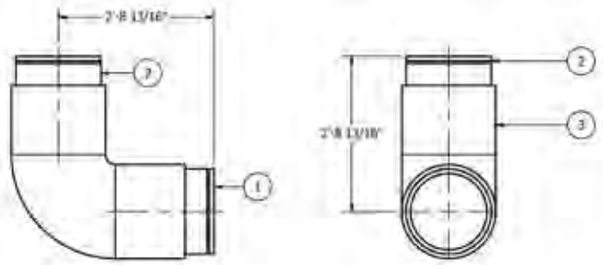
260-FW-PV-05

18" PF OUTLET TO CF INLET HEADER

SCALE: 1/16

260-FW-PV-06

ITEM	QTY	PART NUMBER	DESCRIPTION
1	15.145 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
2	15.145 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove end
3	1	806-180F	PVC SCH80 ELBOW, 18", SXSX90



ELEVATION

260-FW-PV-06

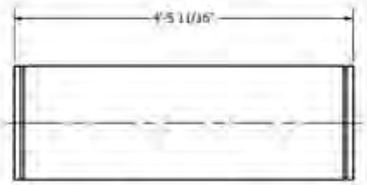
18" PF OUTLET TO CF INLET HEADER

SCALE: 1/16

END

260-FW-PV-09

ITEM	QTY	PART NUMBER	DESCRIPTION
1	53.656 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18" w/cut groove both ends



ELEVATION

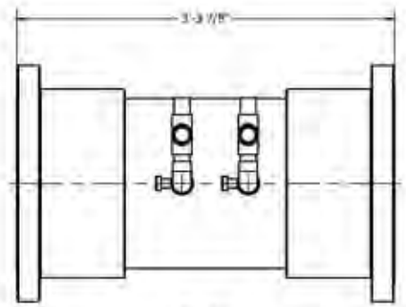
260-FW-PV-09

18" PF OUTLET TO CF INLET HEADER

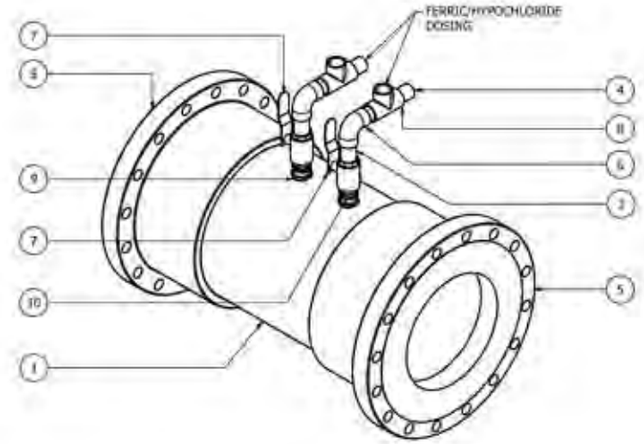
SCALE: 1/12

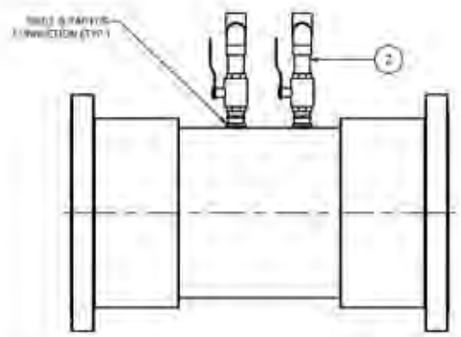
260-FW-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	35.000 in	ASTM D 1785 Pipe 18 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 18"
2	6.000 in	ASTM D 1785 Pipe 1 1/4 - Schedule 80 - 1/2	ASTM D 1785 PVC Sch80 Pipe, 1 1/4"
3	6.000 in	260-ASTM D 1785 Pipe 1 1_4 - Schedule 80 - 03	ASTM D 1785 PVC Sch80 Pipe, 1 1/4"
4	6.000 in	260-ASTM D 1785 Pipe 1 1_4 - Schedule 80 - 04	ASTM D 1785 PVC Sch80 Pipe, 1 1/4"
5	2	854-180	FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 18"
6	2	806-012	PVC SCH80 ELBOW, 1-1/4", SXSX90
7	2	FLOWTEK-SES80-BAV-1.25	FLOW-TEK 2 PIECE THRD'D FULL PORT BV-1 1/4"
8	2	801-012	PVC SCH80 TEE, 1-1/4", SXSXS
9	2	ASME B16.11 Hex Head Bushing 1 1/2 x 1 1/4	Hex Head Bushing
10	2	ISO 4144 Hexagon Nipples N1 1 1/4	Pipework-stainless steel fittings threaded in accordance with ISO 7-1 - Hexagon nipples N1



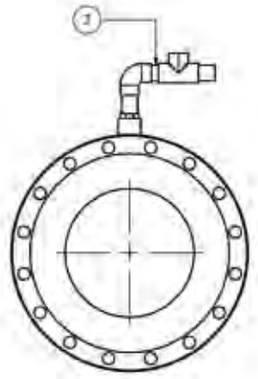
PLAN





ELEVATION

SCALE: 1/8



END

260-FW-PV-01

18" MAIN FEED HEADER

SCALE: 1/8

REV	DESCRIPTION	BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	07/10/12	AWS	JC

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
156 E. LEMON AVE. MONROVIA CA 91016
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DRAWN	AWS	7/7/2009	
CHECKED	JC		
APPROVED			
RELEASED			

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) | METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

BIWATER INTERNATIONAL LTD

BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

ALL EXTERNAL PVC PIPE
MAIN FEED PIPE SPOOLS

SIZE: D | SCALE: A/S | DRG NO: 260-P-802 | SHEET 2 OF 29 | REV: 1

EXTERNAL PVC FEED SPOOLS

SPOOL NUMBER	TOTAL QTY
260-FW-PV-01	1
260-FW-PV-02	1
260-FW-PV-03	1
260-FW-PV-04	1
260-FW-PV-05	1
260-FW-PV-06	1
260-FW-PV-07	1
260-FW-PV-08	1
260-FW-PV-09	1
260-FW-PV-10	1
260-FW-PV-11	1
260-FW-PV-12	1
260-FW-PV-13	1
260-FW-PV-14	1
260-FW-PV-15	1
260-FW-PV-16	1
260-FW-PV-17	1
260-FW-PV-18	1

EXTERNAL PVC SUCK BACK SPOOLS

SPOOL NUMBER	TOTAL QTY
260-SCKBCK-PV-01	1
260-SCKBCK-PV-02	1
260-SCKBCK-PV-03	1
260-SCKBCK-PV-04	3
260-SCKBCK-PV-05	1
260-SCKBCK-PV-06	3
260-SCKBCK-PV-07	1
260-SCKBCK-PV-08	1
260-SCKBCK-PV-09	1

EXTERNAL PVC PERM. SPOOLS

SPOOL NUMBER	TOTAL QTY
260-PW-PV-01	1
260-PW-PV-02	1
260-PW-PV-03	1
260-PW-PV-04	1
260-PW-PV-05	1
260-PW-PV-06	1
260-PW-PV-07	1
260-PW-PV-08	1
260-PW-PV-09	1
260-PW-PV-10	1
260-PW-PV-11	1
260-PW-PV-12	1
260-PW-PV-13	1
260-PW-PV-14	1
260-PW-PV-15	1
260-PW-PV-16	1
260-PW-PV-17	1
260-PW-PV-18	1
260-PW-PV-19	1
260-PW-PV-20	1

EXTERNAL PVC FLUSHING SPOOLS

SPOOL NUMBER	TOTAL QTY
260-FLSH-PV-01	1
260-FLSH-PV-02	1
260-FLSH-PV-03	2
260-FLSH-PV-04	1
260-FLSH-PV-05	1

EXTERNAL PVC CIP FEED SPOOLS

SPOOL NUMBER	TOTAL QTY
260-CIPF-PV-01	1
260-CIPF-PV-02	2
260-CIPF-PV-03	1
260-CIPF-PV-04	1

EXTERNAL PVC CIP RETURN SPOOLS

SPOOL NUMBER	TOTAL QTY
260-CIPR-PV-01	1
260-CIPR-PV-02	2
260-CIPR-PV-03	1
260-CIPR-PV-04	1

EXTERNAL PVC CONC. SPOOLS

SPOOL NUMBER	TOTAL QTY
260-CW-PV-01	1
260-CW-PV-02	1
260-CW-PV-03	1
260-CW-PV-04	1
260-CW-PV-05	1
260-CW-PV-06	2
260-CW-PV-07	1
260-CW-PV-08	1

EXTERNAL PVC BACKWASH SPOOLS

SPOOL NUMBER	TOTAL QTY
260-BW-PV-01	1
260-BW-PV-02	1
260-BW-PV-03	1
260-BW-PV-04	1
260-BW-PV-05	1
260-BW-PV-06	3
260-BW-PV-07	1
260-BW-PV-08	1
260-BW-PV-09	1
260-BW-PV-10	1
260-BW-PV-11	1
260-BW-PV-12	1
260-BW-PV-13	1
260-BW-PV-14	1
260-BW-PV-15	1
260-BW-PV-16	1
260-BW-PV-17	1
260-BW-PV-18	1
260-BW-PV-19	5
260-BW-PV-20	1

PVC PIPE NOTES:

1. *PRIMARY UNITS IS IN ICNHES*
2. *ALL MATERIAL SHALL BE CPVC SCH80.*
3. *ALL GROOVES WHEN REQUIRED SHALL BE OF THE CUT GROOVE TYPE AS PER VICTAULIC PUBLICATION 25-01.*
4. *PIPING TO BE ASSEMBLED ON SITE.*

REVISION HISTORY

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWC	03/10/10	AWC	JC

Biwater

BIWATER AEWT, INC.
156 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 256-7701 Fax: (626) 358-7727

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DRAWN	AWC	7/7/2009	
CHKD			
APPD			
MFG			
QC			

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) | METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

BIWATER INTERNATIONAL LTD

BIWATER S.A
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

ALL EXTERNAL PVC PIPE
OVERHEAD SPOOL COUNTS

SIZE	SCALE	DRAWING NO.	SHEET	REV
D	A/S	260-P-802	sheet 1 of 29	1

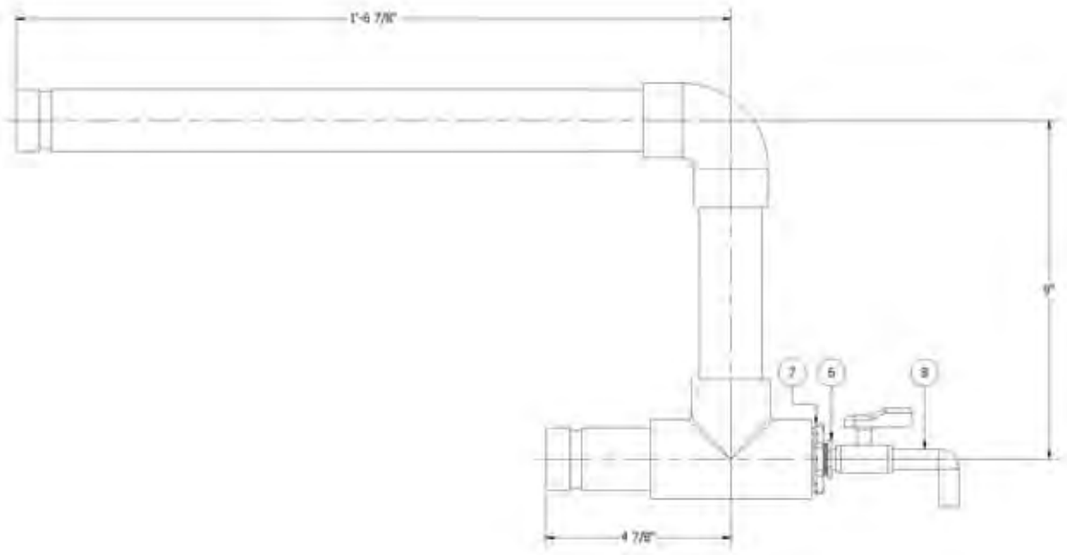
2ND PASS PVC J-BEND SPOOL

SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-2JW-PV-01	8	16

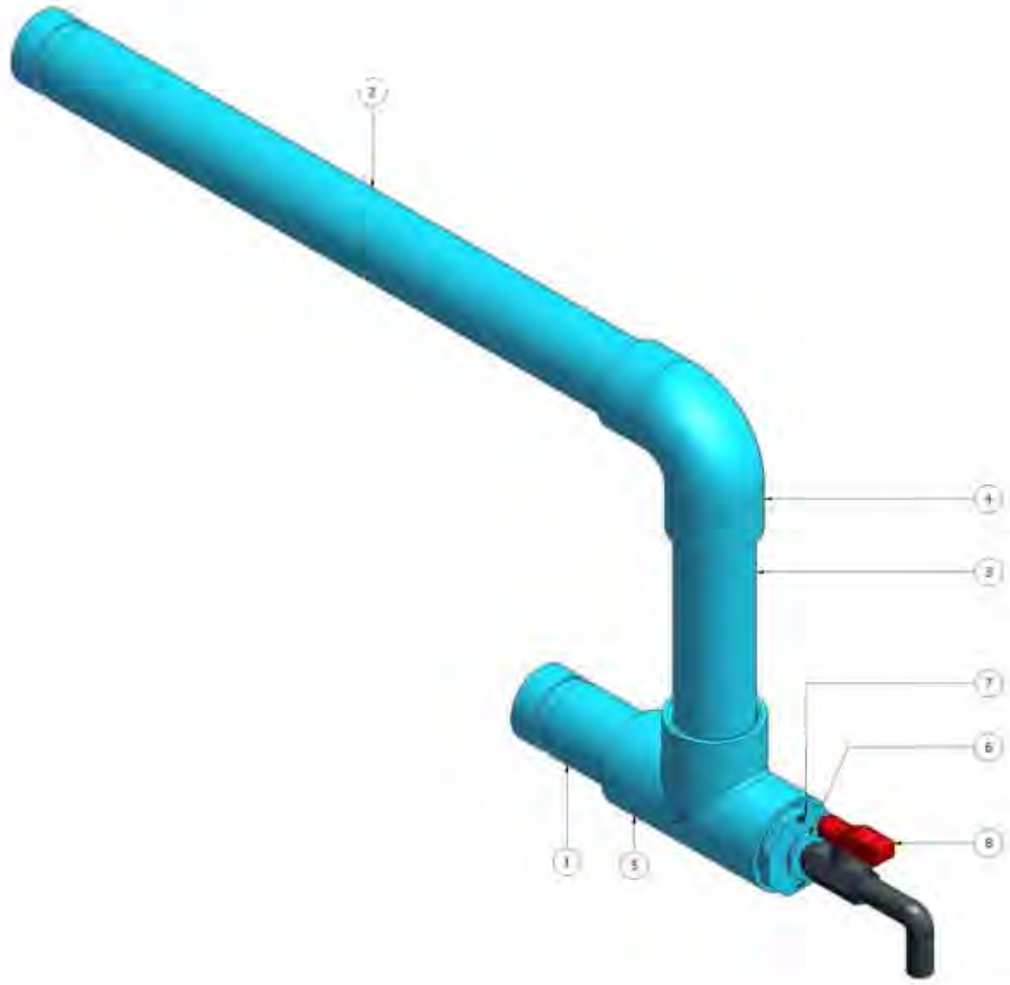
260-2JW-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	4.000 in	ASTM D 1785 Pipe 1 1_4 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 1-1/4" w/out groove end
2	17.593 in	ASTM D 1785 Pipe 1 1_4 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 1-1/4" w/out groove end
3	8.813 in	ASTM D 1785 Pipe 1 1_4 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 1-1/4"
4	1	806-012	PVC SCH80 ELBOW, 1-1/4", SXSX90
5	1	801-012	PVC SCH80 TEE, 1-1/4", SXSXS
6	1	839-072	PVC SCH80 REDUCER BUSHING 1/2"x1/4" (MXF)
7	1	838-166	PVC SCH80 REDUCER BUSHING 1 1/4"x1/2" (SPXF)
8	1	Labcock- 25Male ThrdxElbowTube	LABCOCK, 1/4"-18 NPT MALE THREAD X ELBOW

PLAN



ELEVATION
SCALE: 1 / 2



260-2JW-PV-01
2ND PASS
J-BEND ASSEMBLY
SCALE: 1/1.5

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	CHANGED FROM SS TO PVC. ADDED TEE, ELBOW AND FITTINGS FOR ATTACH LABCOCK VALVE	AWS	01/24/12	AWS	JS
1	FOR FABRICATION	AWS	06/13/11	JS	JS

REVISION HISTORY

Biwater

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136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

DRAWN	AWS	6/13/2011
CHK'D	JS	
ENG'R	JS	
APPROVED	H SAID	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
PROJECT: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

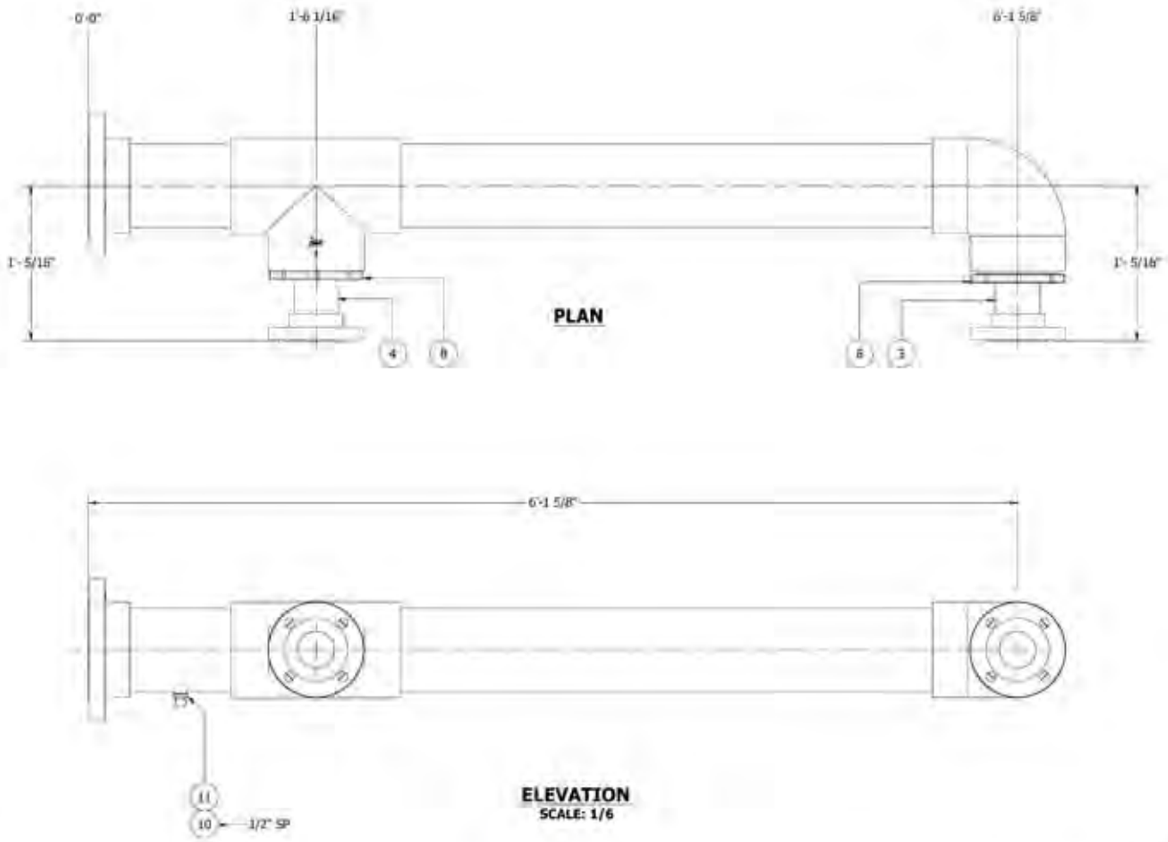
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS J-BEND ASSY.
PVC SCH80 PIPING SPOOLS

SIZE: D | SCALE: A/S | DWG NO: 260-P-402 | SHEET 1 OF 1 | REV: 2

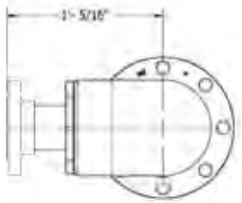
260-2TPW-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	48.016 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
2	14.000 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
3	5.807 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
4	6.000 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
5	1	801-060	PVC SCH80 TEE, 6" (SXSXS)
6	2	854-030	PVC SCH80 FLANGE, 3", 150# (TWOPIECE-SLIP)
7	1	854-060	PVC SCH80 FLANGE (TWOPIECE-SLIP), VANSTONE, PVC SCH80, 6"
8	2	837-530	PVC SCH80 REDUCER BUSHING 6"x3" (SPXS)
9	1	806-060	PVC SCH80 ELBOW, 6" (SXSX90)
10	1	JIS B 2302 Close Nipple 1/2	JIS B 2302 Close Nipple 1/2"
11	1	ASME B16.11 Hex Head Bushing 3/4 x 1/2	Hex Head Bushing



PLAN

ELEVATION
SCALE: 1/6



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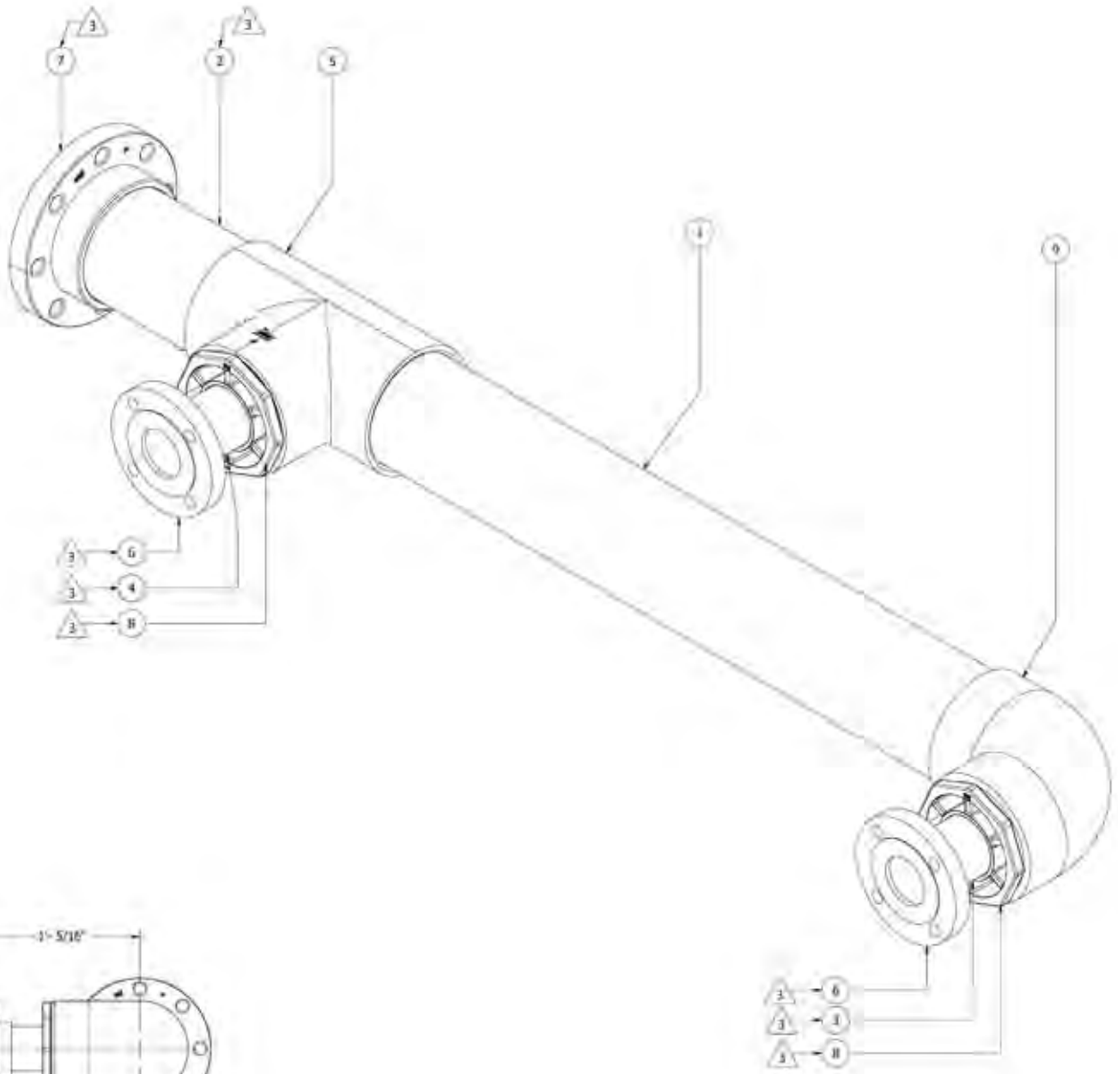

260-2TPW-PV-01
2ND PASS, TRAIN 1 & 2
TOTAL PERMEATE HEADER

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED PIPE SPOOLS	AWS	03/05/12	AWS	JE
3	CHANGED PIPE SIZE FROM 4" TO 3" ON PRIMEATE HEADER, UPDATED 2PW-PV-05, 06 FROM 6" TO 3", UPDATED LAYOUT OF 2TPW-PV-01	AWS	01/10/12	AWS	JE
2	UPDATED SPOOLS, REMOVED SADDLES FOR INST. TAPS, USED BUSHING FOR INST TAPS, UPDATED TITLE BLOCK	AWS	11/15/11	AWS	JE
1	FOR FABRICATION	AWS	06/16/11	JE	JE

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7727

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DRAWN	AWS	6/13/2011
CHECK	JE	11/15/2011
APPROVED	AWS	11/15/2011
RELEASED	H SAID	11/15/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

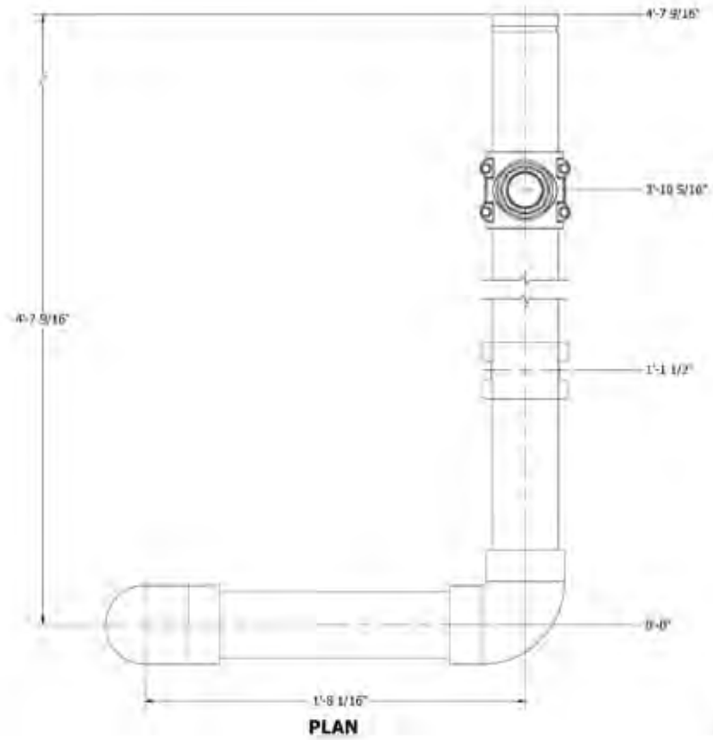
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

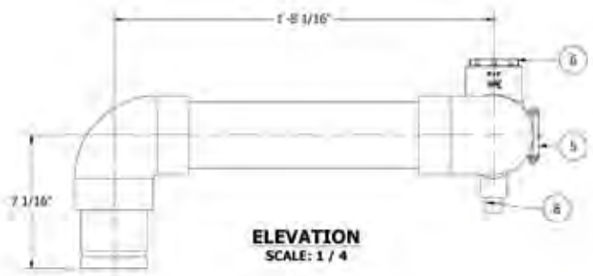
TITLE: 2ND PASS PERM PIPE SPOOLS
ASTM D 1785 PVC SPOOLS

SIZE: D | SCALE: A/S | DWG NO: 260-P-303 | SHEET 7 of 7 | REV: 4

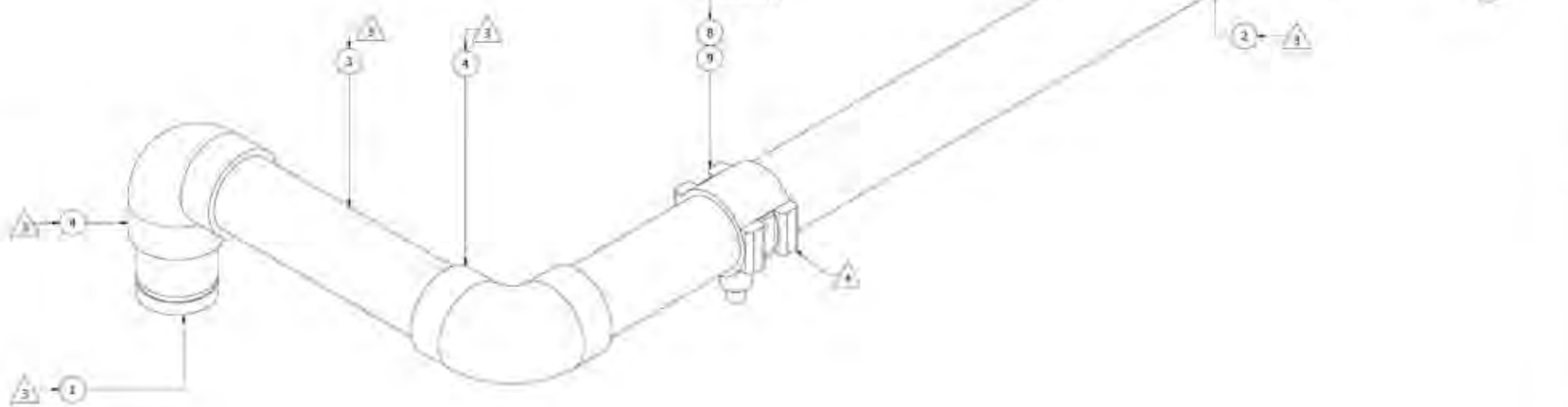
260-2PW-PV-07			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	5.000 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
2	53.528 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
3	15.945 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
4	2	806-030	PVC SCH80 ELBOW, 3" (SXSX90)
5	1	868-338	PVC SCH80 SADDLE, 3"X2" (SINGLE-SLIP-EPDM-ZINC)
6	1	837-251	PVC SCH80 REDUCER BUSHING 2"x1-1/2" (SPXS)
8	1	JIS B 2302 Close Nipple 1/2	JIS B 2302 Close Nipple 1/2"
9	1	867-333SR	PVC SCH80 SADDLE, 3"X1/2" (SINGLE-SRF-EPDM-ZINC)



PLAN



ELEVATION
SCALE: 1 / 4



3

260-2PW-PV-07
2ND PASS, 2ND STAGE
TRAIN 1 PERMEATE HEADER

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED PIPE SPOOLS	AWS	03/05/12	AWS	JS
3	CHANGED PIPE SIZE FROM 4" TO 3" ON PERMEATE HEADER, UPDATED 2PW-PV-05, 06 FROM 6" TO 3", UPDATED LAYOUT OF 2TPW-PV-01	AWS	01/10/12	AWS	JS
2	UPDATED SPOOLS, REMOVED SADDLES FOR INST. TAPS, USED BUSHING FOR INST TAPS, UPDATED TITLE BLOCK	AWS	11/15/11	AWS	JS
1	FOR FABRICATION	AWS	08/16/11	JS	JS

REVISION HISTORY

Biwater

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DRAWN	AWS	6/13/2011
CHECK	JS	11/15/2011
APPROV	AWS	11/15/2011
RELEASED	H.SAID	11/15/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

SUBMITTAL NO.
VENDOR DOC. NO.
PROJECT NUMBER 260

STATUS: FOR FABRICATION

FACILITY: BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

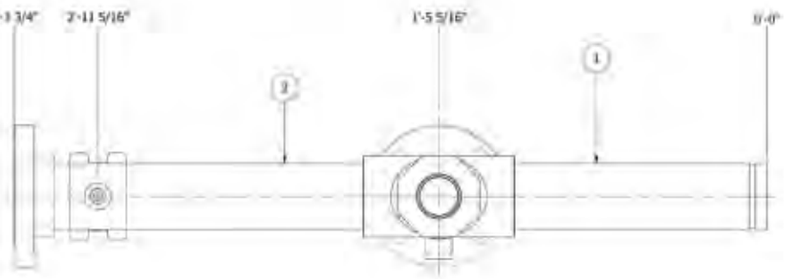
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS PERM PIPE SPOOLS
ASTM D 1785 PVC SPOOLS

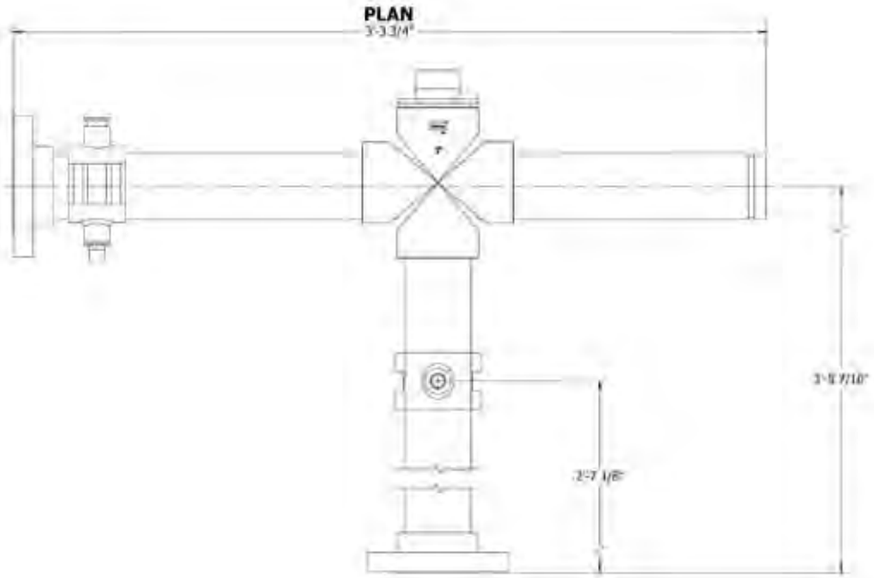
SIZE: D | SCALE: A/S | DWG NO: 260-P-303 | SHEET 5 of 7 | REV: 4

260-2PW-PV-05

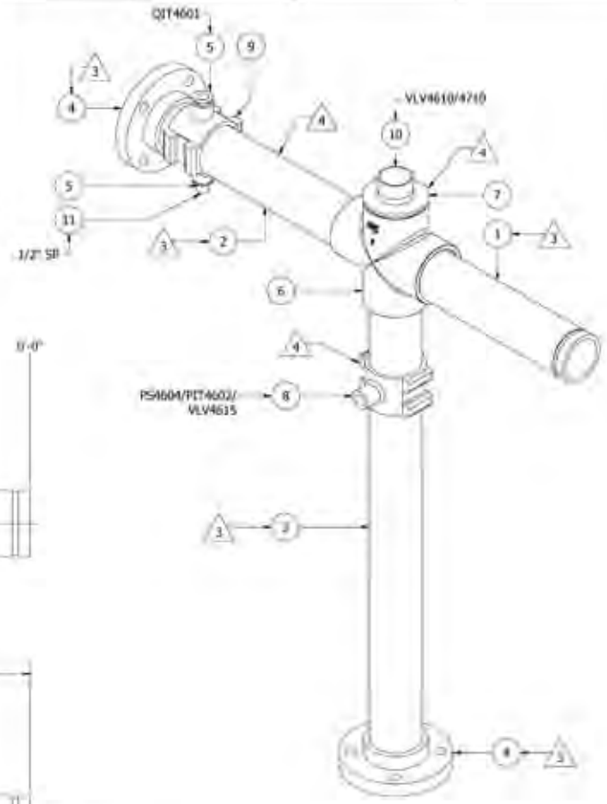
ITEM	QTY	PART NUMBER	DESCRIPTION
1	15.264 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
2	20.000 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
3	39.139 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
4	2	854-030	PVC SCH80 FLANGE, 3", 150# (TWOPIECE-SLIP)
5	2	839-101	PVC SCH80 REDUCER BUSHING 3/4" x 1/2" (MXF)
6	1	820-030	ASTM D PVC SCH80 CROSS 3", SXSXSXS
7	1	838-336	PVC SCH80 REDUCER BUSHING 3" x 2" (SPXF)
8	1	867-333SR	PVC SCH80 SADDLE, 3"X1/2" (SINGLE-SRF-EPDM-ZINC)
9	1	869-334SR	PVC SCH80 SADDLE, 3"X3/4" (DOUBLE-SRF-EPDM-ZINC)
10	1	JIS B 2302 Close Nipple 2	Nipple
11	1	JIS B 2302 Close Nipple 1/2	Nipple



PLAN
3'-3 3/4"



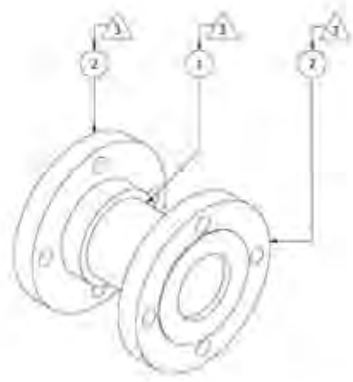
ELEVATION
SCALE: 1/4

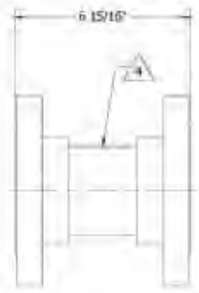


260-2PW-PV-05
2ND PASS, 2ND STAGE
TRAIN 1 & 2 PERMEATE HEADER
SCALE: 1/5

260-2PW-PV-06

ITEM	QTY	PART NUMBER	DESCRIPTION
1	8.315 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
2	2	854-030	PVC SCH80 FLANGE, 3", 150# (TWOPIECE-SLIP)





ELEVATION
SCALE: 1/3

260-2PW-PV-06
2ND PASS, 2ND STAGE
TRAIN 1 & 2 PERMEATE HEADER
SCALE: 1/3

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
4	UPDATED PIPE SPOOLS	AWS	03/05/12	AWS	JS
3	CHANGED PIPE SIZE FROM 4" TO 3" ON PERMEATE HEADER, UPDATED 2PW-PV-05, 06 FROM 6" TO 3", UPDATED LAYOUT OF 2TPW-PV-01	AWS	01/10/12	AWE	JS
2	UPDATED SPOOLS, REMOVED SADDLES FOR INST. TAPS, USED BUSHING FOR INST TAPS, UPDATED TITLE BLOCK	AWS	11/15/11	AWS	JS
1	FOR FABRICATION	AWS	06/16/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7727

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DRAWN	AWS	6/13/2011
CHK'D	JS	11/15/2011
APPROVED	AWS	11/15/2011
APPROVED	H SAID	11/15/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
OWNER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

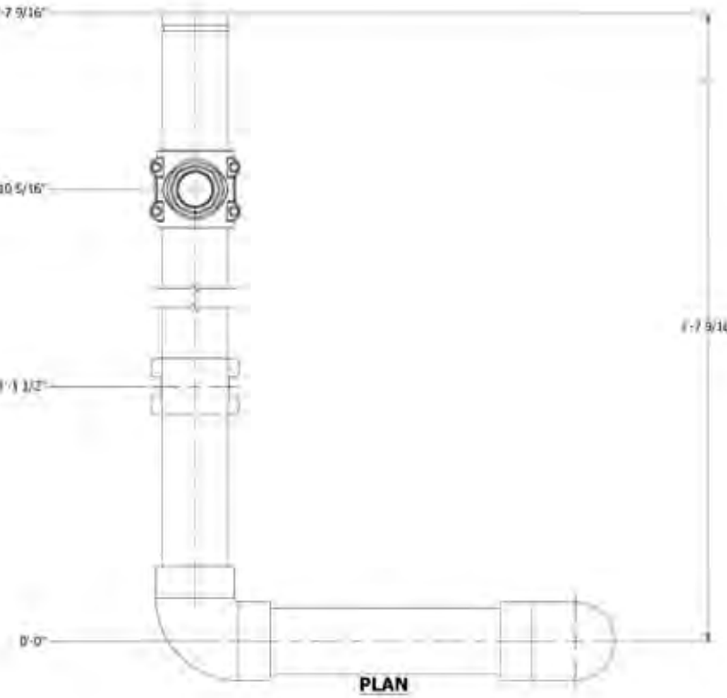
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS PERM PIPE SPOOLS
ASTM D 1785 PVC SPOOLS

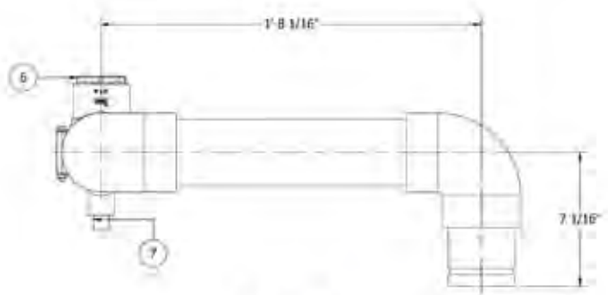
SIZE: D | SCALE: A/S | DWG NO: 260-P-303 | SHEET 5 OF 7 | REV: 4

260-2PW-PV-04

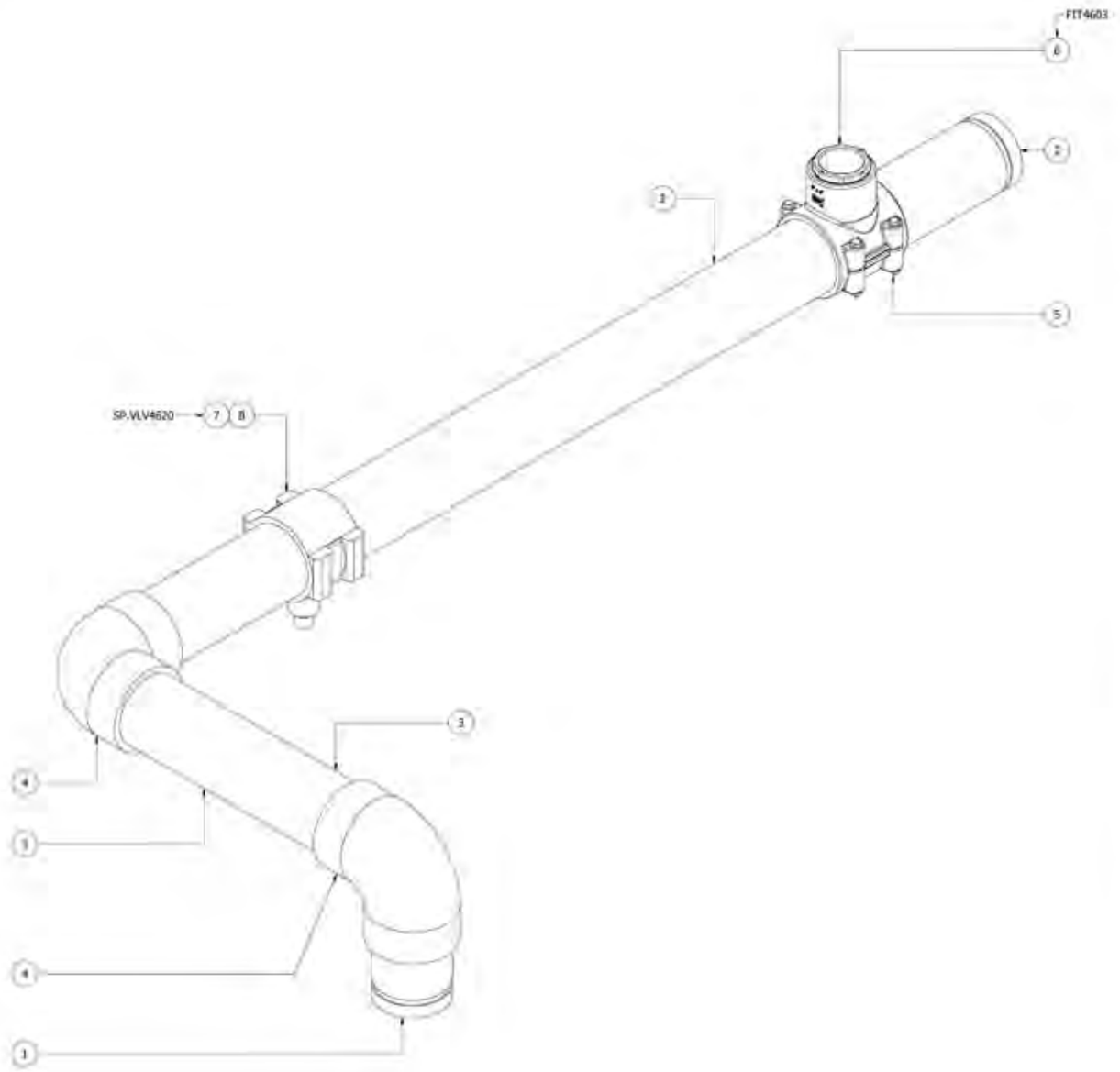
ITEM	QTY	PART NUMBER	DESCRIPTION
1	5.000 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
2	53.528 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
3	15.945 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
4	2	806-030	PVC SCH80 ELBOW, 3" (SXSX90)
5	1	866-338	PVC SCH80 SADDLE, 3"X2" (SINGLE-SLIP-EPDM-ZINC)
6	1	837-251	PVC SCH80 REDUCER BUSHING 2"x1-1/2" (SPXS)
7	1	JIS B 2302 Close Nipple 1/2	JIS B 2302 Close Nipple 1/2"
8	1	867-333SR	PVC SCH80 SADDLE, 3"X1/2" (SINGLE-SRF-EPDM-ZINC)



PLAN



ELEVATION
SCALE: 1/4



260-2PW-PV-04
2ND PASS, 2ND STAGE
TRAIN 1 PERMEATE HEADER
SCALE: 1/3

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
4	UPDATED PIPE SPOOLS	AWS	03/05/12	AWS	JC
3	CHANGED PIPE SIZE FROM 4" TO 3" ON PERMEATE HEADER, UPDATED 2PW-PV-05, 06 FROM 6" TO 3", UPDATED LAYOUT OF 2TPW-PV-01	AWS	01/10/12	AWS	JC
2	UPDATED SPOOLS, REMOVED SADDLES FOR INST. TAPS, USED BUSHING FOR INST TAPS, UPDATED TITLE BLOCK	AWS	11/15/11	AWS	JC
1	FOR FABRICATION	AWS	08/16/11	JR	JC

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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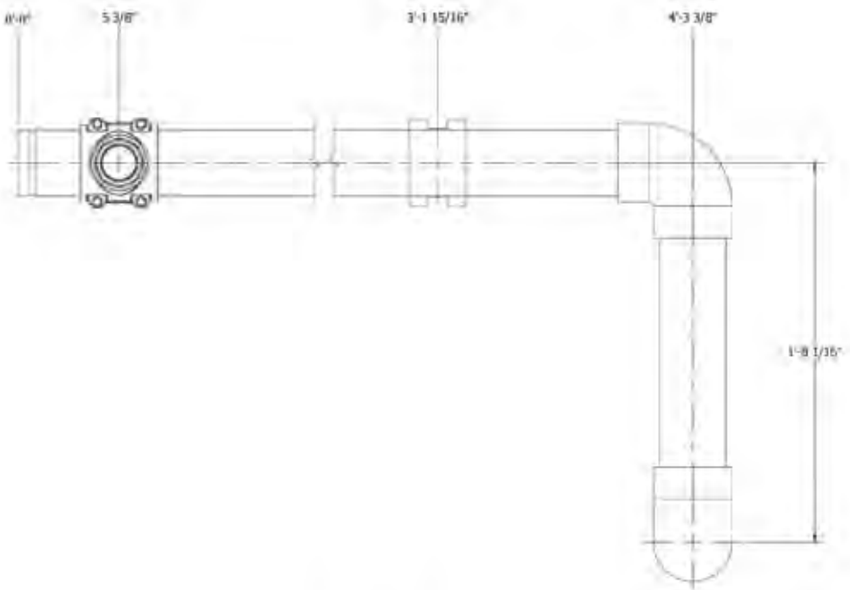
DRAWN AWS	6/13/2011	SUBMITTED BY
CHK'D JC	11/15/2011	SHOP DWG. NO.
ENGINEER AWS	11/15/2011	PROJECT NUMBER 260
APP'D H SAID	11/15/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

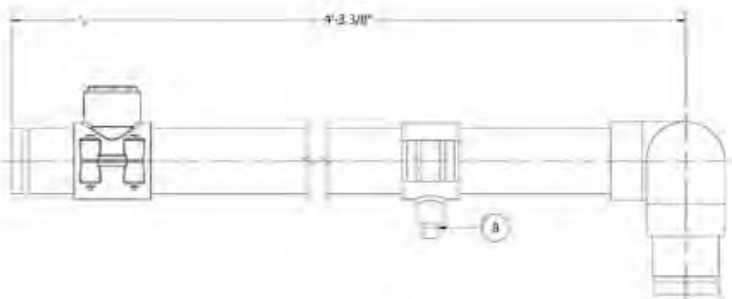
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS PERM PIPE SPOOLS
ASTM D 1785 PVC SPOOLS

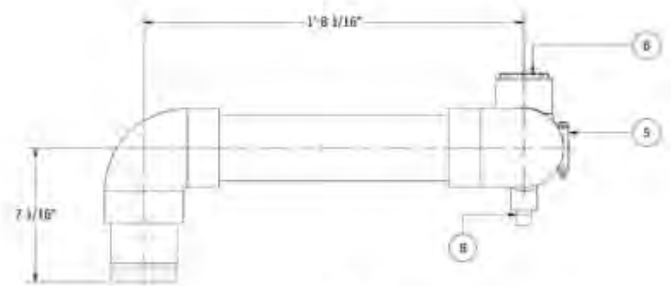
SIZE: D | SCALE: A/S | DWG NO: 260-P-303 | SHEET 4 OF 7 | REV: 4



PLAN



ELEVATION
SCALE: 1/4



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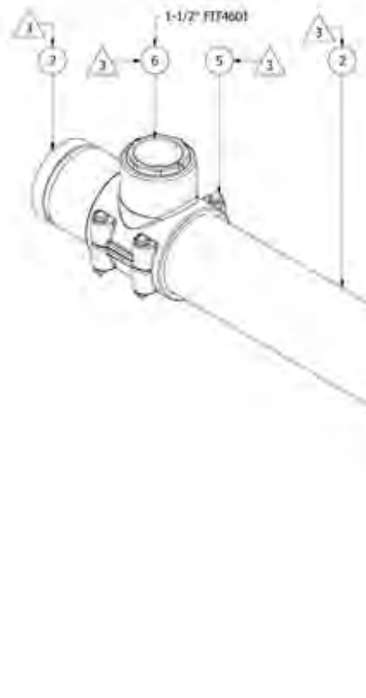

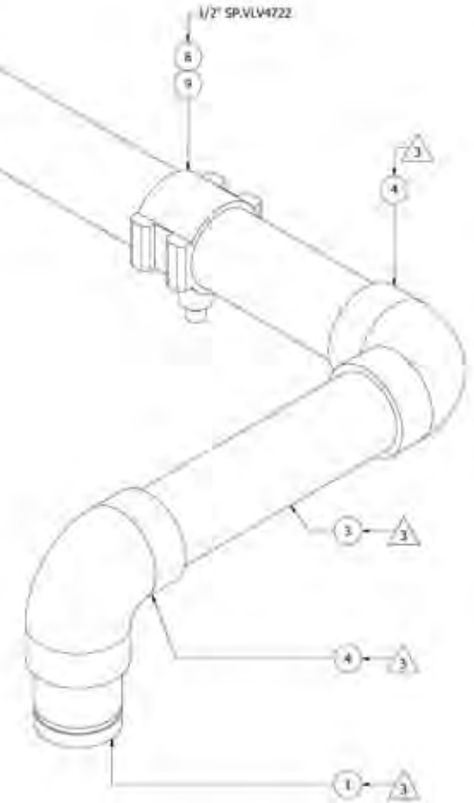

260-2PW-PV-03

ITEM	QTY	PART NUMBER	DESCRIPTION
1	5.000 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
2	49.313 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/cut groove end
3	15.942 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
4	2	806-030	PVC SCH80 ELBOW, 3" (SXSX90)
5	1	866-338	PVC SCH80 SADDLE, 3"X2" (SINGLE-SLIP-EPDM-ZINC)
6	1	837-251	PVC SCH80 REDUCER BUSHING 2"x1-1/2" (SPXS)
8	1	JIS B 2302 Close Nipple 1/2	JIS B 2302 Close Nipple 1/2"
9	1	867-3335R	PVC SCH80 SADDLE, 3"X1/2" (SINGLE-SRF-EPDM-ZINC)

3

260-2PW-PV-03
2ND PASS TRAIN 2
1ST STAGE PERMEATE HEADER
SCALE: 1/3

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED PIPE SPOOLS	AWS	03/05/12	AWS	JE
3	CHANGED PIPE SIZE FROM 4" TO 3" ON PERMEATE HEADER, UPDATED 2PW-PV-05, 06 FROM 6" TO 3", UPDATED LAYOUT OF 2TPW-PV-01	AWS	01/10/12	AWE	JE
2	UPDATED SPOOLS, REMOVED SADDLES FOR INST. TAPS, USED BUSHING FOR INST TAPS, UPDATED TITLE BLOCK	AWS	11/15/11	AWS	JE
1	FOR FABRICATION	AWS	08/16/11	JE	JE

REVISION HISTORY

Biwater

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DRAWN	AWS	6/13/2011
CHK'D	JE	11/15/2011
ENG'R	AWS	11/15/2011
APPR'D	H SAID	11/15/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION
ACCNDD: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

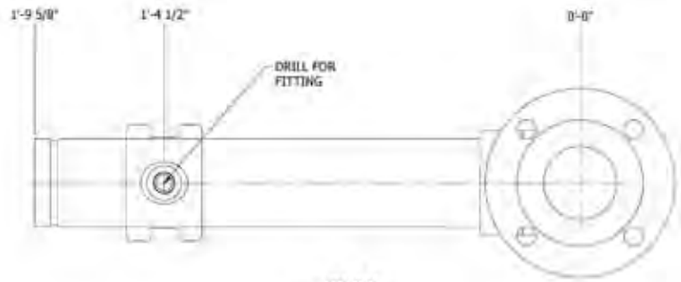
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS PERM PIPE SPOOLS
ASTM D 1785 PVC SPOOLS

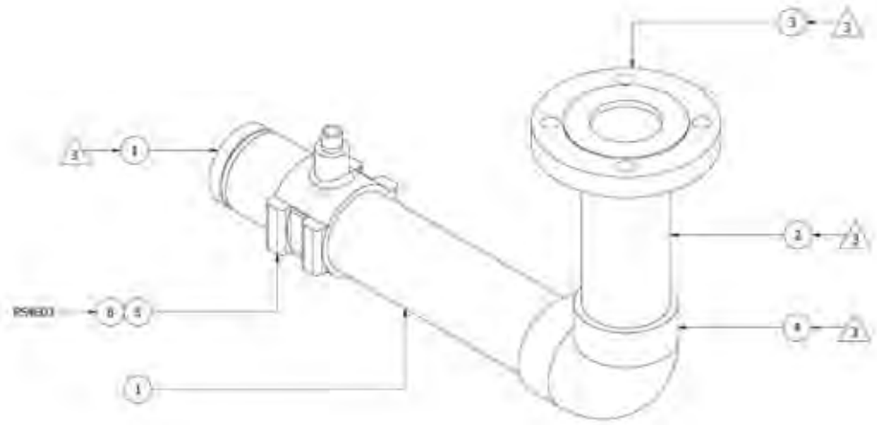
SIZE: D | SCALE: A/S | DWG NO: 260-P-303 | SHEET 1 of 7 | REV: 4

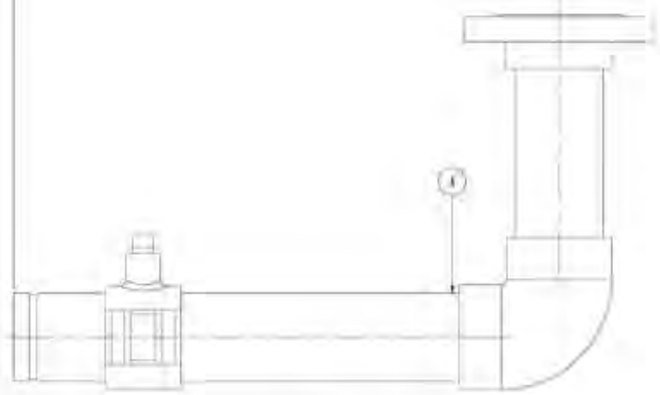
260-2PW-PV-02

ITEM	QTY	PART NUMBER	DESCRIPTION
1	19.542 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
2	10.412 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
3	1	854-030	PVC SCH80 FLANGE, 3", 150# (TWOPIECE-SLIP)
4	1	606-030	PVC SCH80 ELBOW, 3" (SXSX90)
5	1	867-333SR	PVC SCH80 SADDLE, 3"X1/2" (SINGLE-SRF-EPDM-ZINC)
6	1	JIS B 2302 Close Nipple 1/2	Nipple

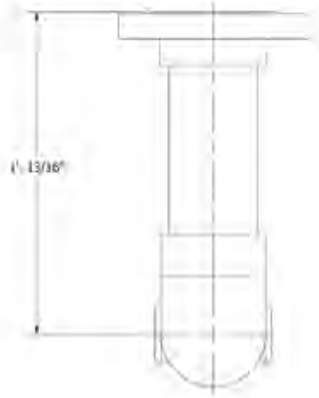


PLAN





ELEVATION
SCALE: 1/3



END

3

260-2PW-PV-02
2ND PASS TRAIN 1 & 2
1ST STAGE PERMEATE HEADER
SCALE: 1/3

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
4	UPDATED PIPE SPOOLS	AWS	03/05/12	AWS	JC
3	CHANGED PIPE SIZE FROM 4" TO 3" ON PERMEATE HEADER, UPDATED 2PW-PV-05, 06 FROM 6" TO 3", UPDATED LAYOUT OF 2TPW-PV-01	AWS	01/10/12	AWE	JC
2	UPDATED SPOOLS, REMOVED SADDLES FOR INST. TAPS, USED BUSHING FOR INST TAPS, UPDATED TITLE BLOCK	AWS	11/15/11	AWS	JC
1	FOR FABRICATION	AWS	06/16/11	JR	JC

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7727

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DRAWN	AWS	6/13/2011
CHECKED	JS	11/15/2011
ENGINEER	AWS	11/15/2011
APPROVED	H SAID	11/15/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) ; METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS PERM PIPE SPOOLS
ASTM D 1785 PVC SPOOLS

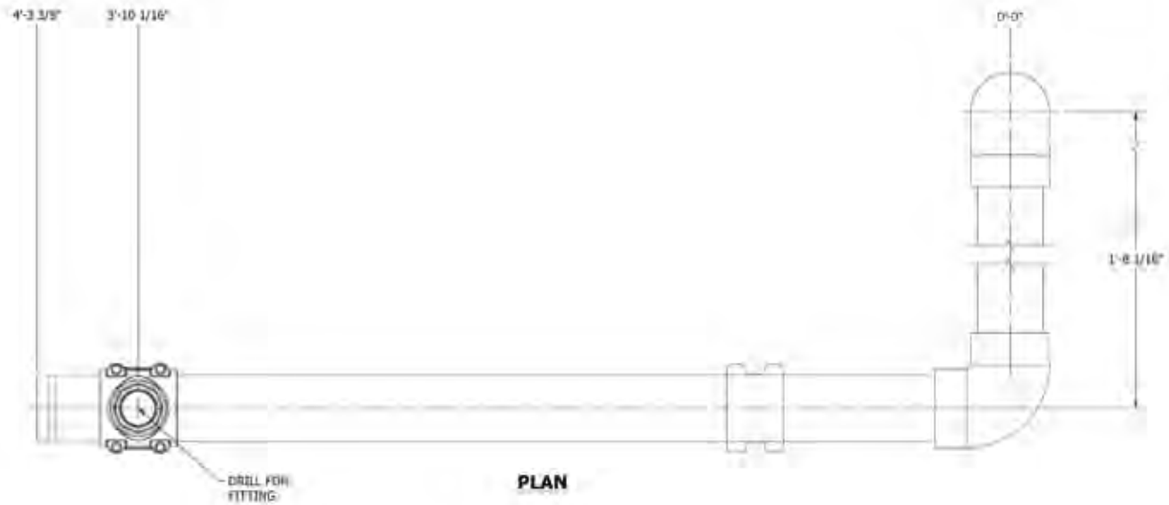
SIZE: D | SCALE: A/S | DWG NO: 260-P-303 | SHEET 2 OF 7 | REV: 4

2ND PASS PERMEATE PVC PIPE SPOOLS

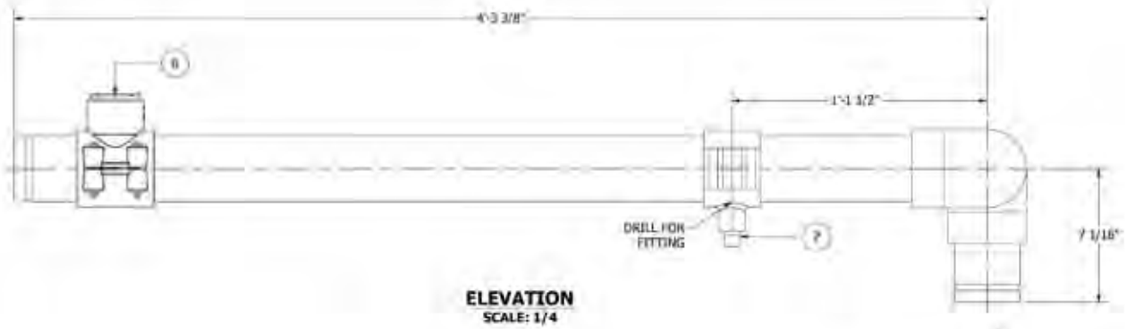
SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-2PW-PV-01	1	1
260-2PW-PV-02	2	2
260-2PW-PV-03	1	1
260-2PW-PV-04	1	1
260-2PW-PV-05	2	2
260-2PW-PV-06	2	2
260-2PW-PV-07	1	1
260-2TPW-PV-01	1	1

PVC PIPING NOTES

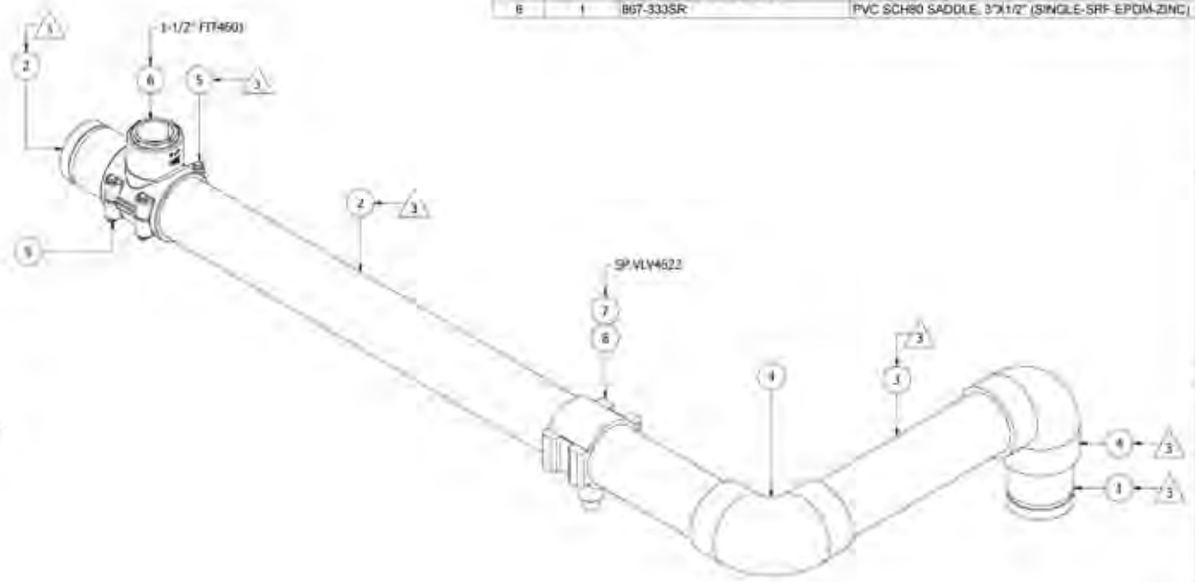
1. MATERIAL IS PVC SCH80 (ASTM D-1785)
2. ALL DIMENSIONS ARE IN INCHES



PLAN



ELEVATION
SCALE: 1/4



260-2PW-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	5.000 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/out groove end
2	49.313 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3" w/out groove end
3	15.942 in	ASTM D 1785 Pipe 3 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 3"
4	2	806-030	PVC SCH80 ELBOW, 3" (SXSX90)
5	1	866-338	PVC SCH80 SADDLE, 3"X2" (SINGLE-SLIP-EPDM-ZINC)
6	1	837-251	PVC SCH80 REDUCER BUSHING 2"x1-1/2" (SPXS)
7	1	JIS B 2302 Close Nipple 1/2	JIS B 2302 Close Nipple 1/2"
8	1	867-333SR	PVC SCH80 SADDLE, 3"X1/2" (SINGLE-SRF-EPDM-ZINC)

260-2PW-PV-01
TRAIN 1, 2ND PASS 1ST STAGE PERMEATE HEADER
SCALE: 1/4

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
4	UPDATED PIPE SPOOLS	AWS	03/05/12	AWS	JC
3	CHANGED PIPE SIZE FROM 4" TO 3" ON PRIMEATE HEADER, UPDATED 2PW-PV-05, 06 FROM 6" TO 3", UPDATED LAYOUT OF 2TPW-PV-01	AWS	01/10/12	AWE	JC
2	UPDATED SPOOLS, REMOVED SADDLES FOR INST. TAPS, USED BUSHING FOR INST TAPS, UPDATED TITLE BLOCK	AWS	11/15/11	AWS	JC
1	FOR FABRICATION	AWS	06/16/11	JS	JC

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE. MONROVIA CA 91016
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DRAWN	AWS	6/13/2011
CHECKED	JC	11/15/2011
APPROVED	AWS	11/15/2011
RELEASED	IT SAID	11/15/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

SUBMITTED BY:
VENDOR REF. NO.:
PROJECT NUMBER: 260
FOR FABRICATION
BIWATER-AEWT
GENERAL CONTRACTOR
BIWATER INTERNATIONAL LTD

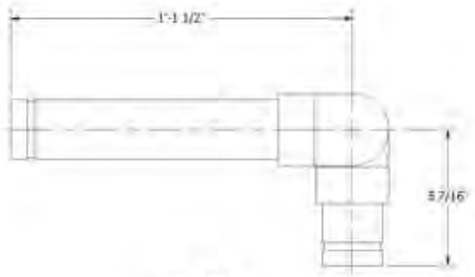
PROJECT
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE
2ND PASS PERM PIPE SPOOLS
ASTM D 1785 PVC SPOOLS

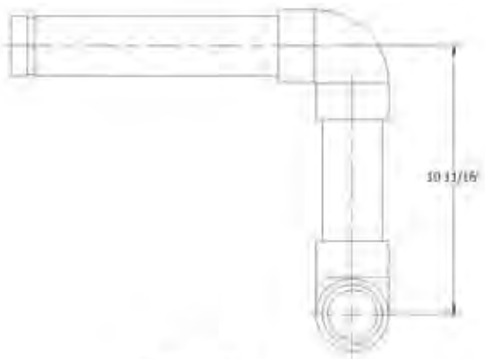
SIZE D | SCALE A/S | DRAWING NO. 260-P-303 | SHEET 1 of 7 | REV 4

260-2CW-PV-03

ITEM	QTY	PART NUMBER	DESCRIPTION
1	3.937 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/out groove end
2	12.008 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/out groove end
3	7.704 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2"
4	2	806-020	PVC SCH80 ELBOW, 2", SXSX90



PLAN



ELEVATION
SCALE: 1/3

260-2CW-PV-03
2ND PASS, 2ND STAGE TRAIN 2
CONCENTRATE HEADER
SCALE: 1/3

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	REMOVED CIPR SPOOLS & UPDATED SPOOLS	AWS	03/05/12	AWS	JC
3	MODIFIED SPOOL LAYOUTS	AWS	01/10/12	AWS	JC
2	ADDED CONCENTRATE PVC SPOOLS ,UPDATED TITLE BLOCK	AWS	11/18/11	AWS	JC
1	FOR FABRICATION	AWS	08/16/11	AWS	JC

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

DRAWN	AWS	8/17/2011
CHKD	JS	8/17/2011
ENGINEER	AWS	8/17/2011
QA/QC	AWS	8/17/2011
HEAD		

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

SUBMITTED FOR: FOR FABRICATION

CLIENT: BIWATER-AEWT

LEMNA CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS CONC. & CIPR SPOOLS ASTM D 1785 PVC SPOOLS

SIZE: D | SCALE: A/S | DRG NO: 260-P-203 | SHEET 2 OF 2 | REV: 4

2ND PASS CONCENTRATE PVC PIPE SPOOLS

SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-2CW-PV-01	2	2
260-2CW-PV-02	1	1
260-2CW-PV-03	1	1
260-2CW-PV-04	1	1
260-2CW-PV-05	1	1
260-2CW-PV-06	1	1
260-2CW-PV-07	1	1

PVC PIPING NOTES

1. MATERIAL IS PVC SCH80 (ASTM D-1785)
2. ALL DIMENSIONS ARE IN INCHES

260-2CW-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	42.646 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove both ends

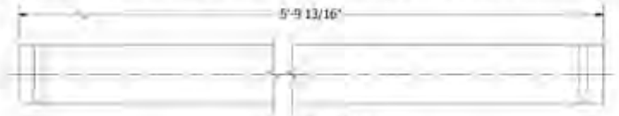
ELEVATION

260-2CW-PV-04

2ND PASS, 2ND STAGE TRAIN 1 & 2
CONCENTRATE CONNECTOR PIPE
SCALE: 1/3

260-2CW-PV-06

ITEM	QTY	PART NUMBER	DESCRIPTION
1	69.820 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove both ends



ELEVATION

260-2CW-PV-05

2ND PASS, 2ND STAGE TRAIN 1 & 2
CONCENTRATE CONNECTOR PIPE
SCALE: 1/3

260-2CW-PV-07

ITEM	QTY	PART NUMBER	DESCRIPTION
1	60.510 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove both ends

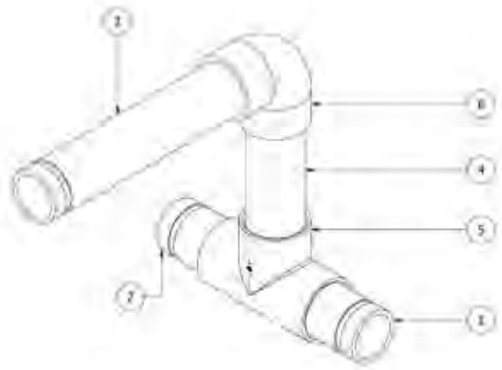
ELEVATION

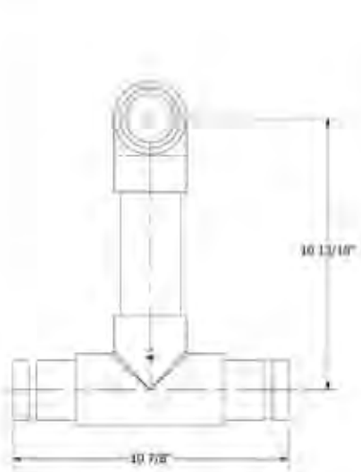
260-2CW-PV-07

2ND PASS, 2ND STAGE TRAIN 1 & 2
CONCENTRATE CONNECTOR PIPE
SCALE: 1/4

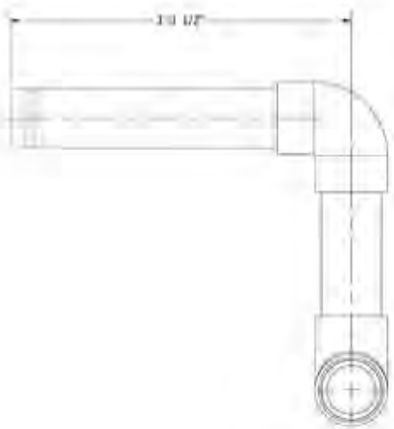
260-2CW-PV-02

ITEM	QTY	PART NUMBER	DESCRIPTION
1	4.000 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove end
2	4.000 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove end
3	12.000 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove end
4	7.815 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2"
5	1	801-020	PVC SCH80 TEE, 2", SXSXS
6	1	806-020	PVC SCH80 ELBOW, 2", SXSX90





ELEVATION
SCALE: 1/3



END

260-2CW-PV-02

2ND PASS, 2ND STAGE TRAIN 1 & 2
CONCENTRATE HEADER
SCALE: 1/3

260-2CW-PV-06

ITEM	QTY	PART NUMBER	DESCRIPTION
1	8.000 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove end
2	1	806-020	PVC SCH80 ELBOW, 2", SXSX90

ELEVATION
SCALE: 1/3

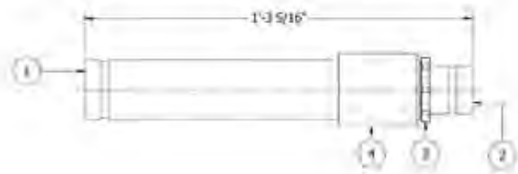
END

260-2CW-PV-06

2ND PASS, 2ND STAGE TRAIN 1 & 2
CONCENTRATE CONNECTOR PIPE
SCALE: 1/3

260-2CW-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	11.676 in	ASTM D 1785 Pipe 2 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 2" w/cut groove end, 2" MNPT other end
2	3.000 in	ASTM D 1785 Pipe 1 1/2 - Schedule 80 - 10	ASTM D 1785 PVC Sch80 Pipe, 1 1/2" w/cut groove end
3	1	807-251	PVC SCH80 REDUCER BUSHING 2"x1-1/2" (SPX5)
4	1	829-020	ASTM D PVC SCH80 COUPLING, 2", SXS



ELEVATION

260-2CW-PV-01

2ND PASS, 2ND STAGE
TRAIN 1 & 2 CONCENTRATE HEADER
SCALE: 1/3

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	REMOVED CIPR SPOOLS & UPDATED SPOOLS	AWS	03/05/12	AWS	JC
3	MODIFIED SPOOL LAYOUTS	AWS	01/10/12	AWS	JC
2	ADDED CONCENTRATE PVC SPOOLS / UPDATED TITLE BLOCK	AWS	11/18/11	AWS	JC
1	FOR FABRICATION	AWS	08/16/11	AWS	JC

REVISION HISTORY

Biwater

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136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7727

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DRAWN	AWS	8/17/2011
CHK'D	JS	8/17/2011
APPROVED	AWS	8/17/2011
APPD	H SAID	8/17/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) ; METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

BIWATER INTERNATIONAL LTD

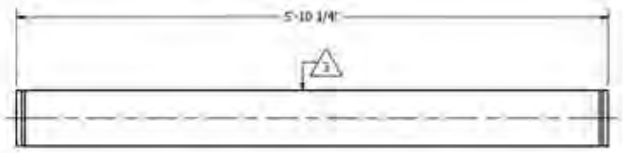
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

2ND PASS CONC. & CIPR SPOOLS
ASTM D 1785 PVC SPOOLS

SIZE	SCALE	DWG NO	SHEET 1 of 2	REV
D	A/S	260-P-203		4

260-2FW-PV-02

ITEM	QTY	DESCRIPTION
1	70.272 in	ASTM D 1785 PVC Sch80 Pipe, 6" w/out groove end



END

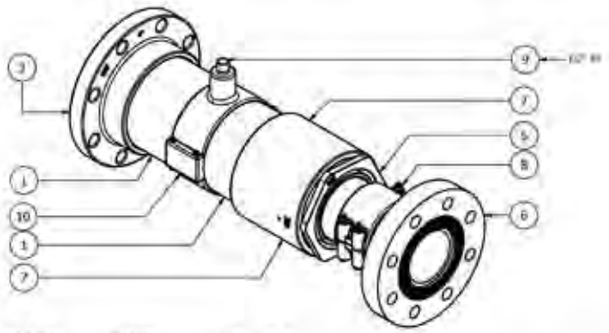
ELEVATION

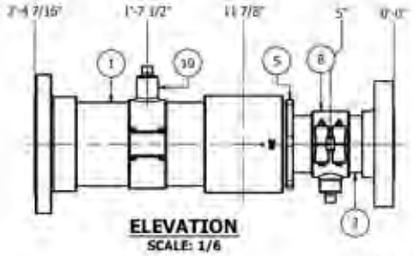
260-2FW-PV-02

2ND PASS MAIN FEED HEADER
TRAIN 1 & 2 CONNECTOR PIPE
SCALE: 1/9

260-2FW-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	15.938 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
2	10.000 in	ASTM D 1785 Pipe 4 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 4"
3	1	551-060	PVC SCH80 FLANGE, 6", 150# (ONEPIECE-SLIP)
5	1	437-532	PVC SCH80 REDUCER BUSHING 6"x4" (SPXS)
6	1	854-040-CL300	ASTM D PVC SCH80 FLANGE , 4", VANSTONE, SLIP, CLASS 300
7	1	829-060	ASTM D PVC SCH80 COUPLING 6", SXS
8	1	867-415	Saddle 4"x 1/2"FIPT
9	2	JIS B 2302 Close Nipple 1/2	Nipple
10	1	867-523	PVC SADDLE 6" X 1/2"FIPT





ELEVATION
SCALE: 1/6

END

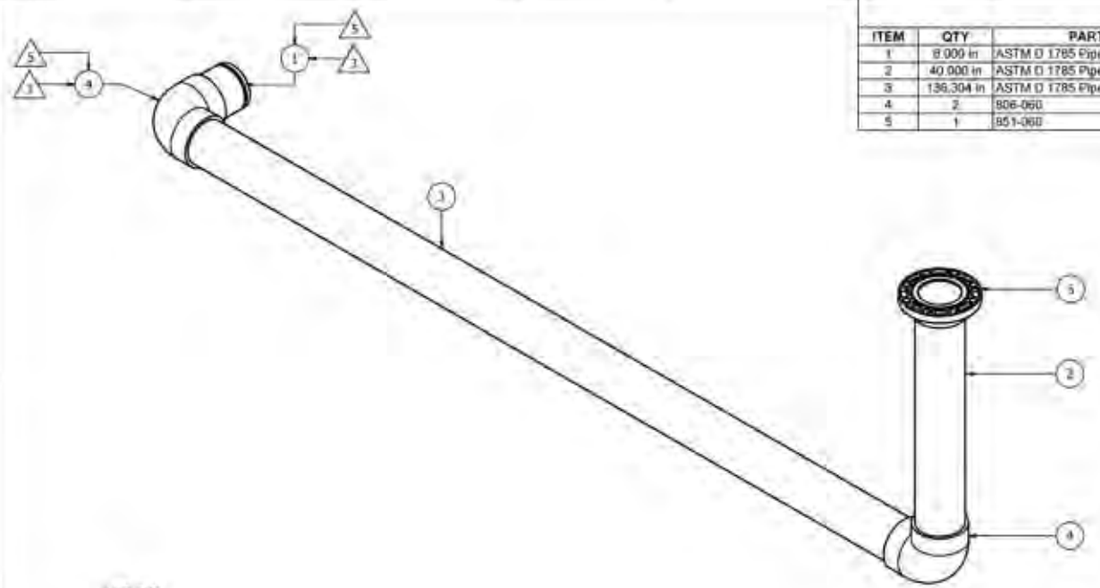
4

260-2FW-PV-04

2ND PASS TRAIN 1 & 2
PUMP SUCTION HEADER

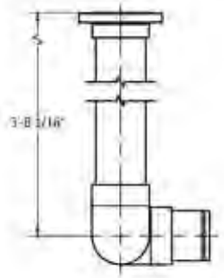
260-2FW-PV-03

ITEM	QTY	PART NUMBER	DESCRIPTION
1	8.000 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6" w/out groove end
2	40.000 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
3	136.304 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
4	2	806-060	PVC SCH80 ELBOW, 6" (SXSX90)
5	1	851-060	PVC SCH80 FLANGE, 6", 150# (ONEPIECE-SLIP)



PLAN

ELEVATION
SCALE: 1/10



END

260-2FW-PV-03

2ND PASS TRAIN 1
MAIN FEED HEADER
SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED SPOOLS 3"W-PV-01 '01	AWS	03/19/12	AWS	JE
4	REMOVED CIP FEED SPOOLS	AWS	03/07/12	AWS	JE
3	UPDATED COMBINED FEED HEADER FROM 12" TO 6" WITH VICTAULIC CONNECTION. REMOVED CIP PIPE SPOOLS. CHANGED COMBINED FEED HEADER FROM 5" TO 6"	AWS	01/10/12	AWS	JE
2	ADDED SPOOLS 2W-CIP-PV-06. UPDATED SPOOL LENGTHS & DESRIPTIONS. REPLACED SADDLES FOR BUSHING FOR INST. TAPS. UPDATED TITLE BLOCK.	AWS	11/15/11	AWS	JE
1	FOR FABRICATION	AWS	08/16/11	JE	JE

REVISION HISTORY

Biwater

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158 E. LEMON AVE. MONROVIA CA 91016
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DRAWN	AWS	8/16/2011
CHK'D	JE	11/15/2011
APP'D	AWS	11/15/2011
M CAD		11/15/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) | METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

2ND PASS FEED SPOOLS
ASTM D 1785 PVC SPOOLS

SIZE D | SCALE A/S | DRG NO. 260-P-103 | SHEET 2 OF 2 | REV 5

2ND PASS PVC FEED PIPE SPOOLS

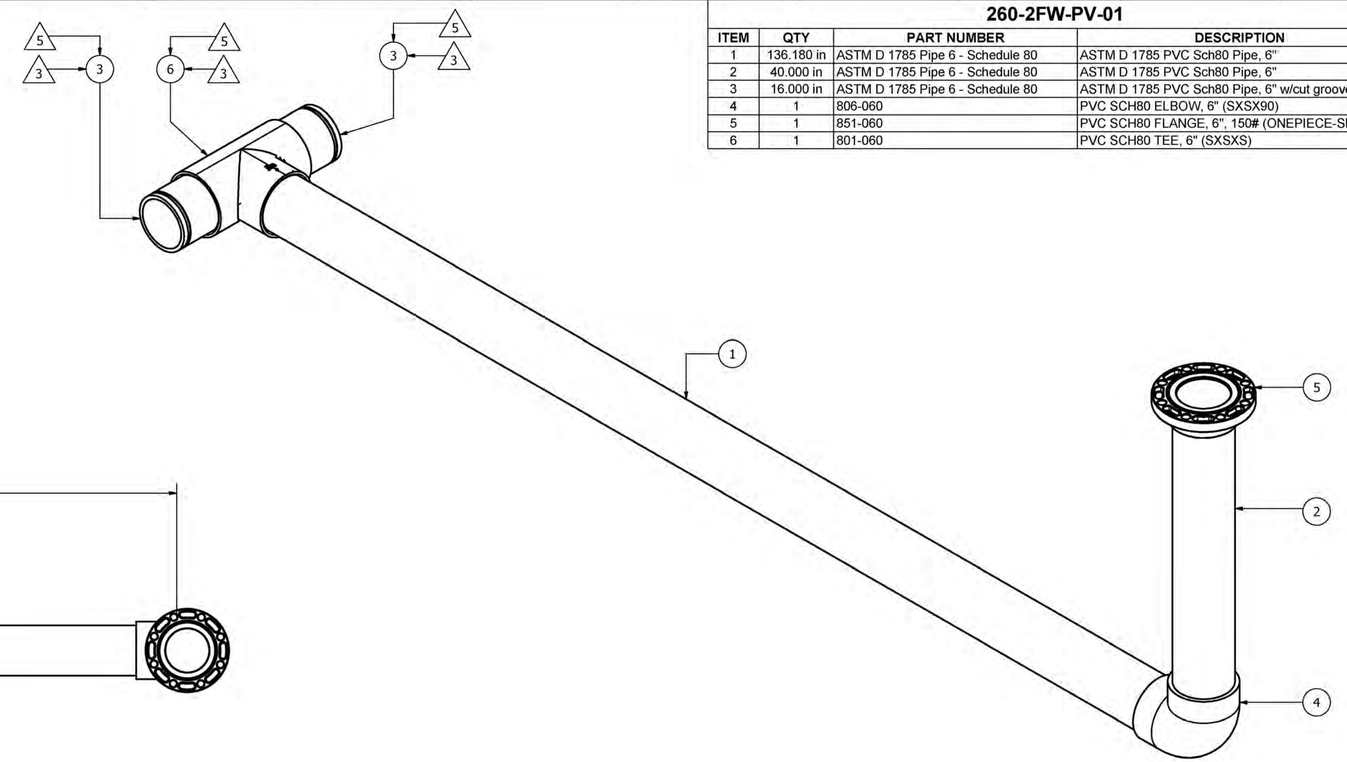
SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-2FW-PV-01	1	1
260-2FW-PV-02	1	1
260-2FW-PV-03	1	1
260-2FW-PV-04	2	2

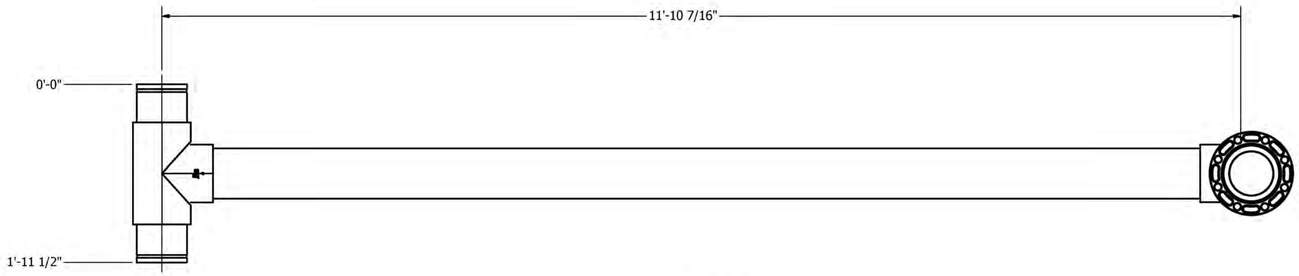
PVC PIPING NOTES

1. MATERIAL IS PVC SCH80 (ASTM D-1785)
2. ALL DIMENSIONS ARE IN INCHES

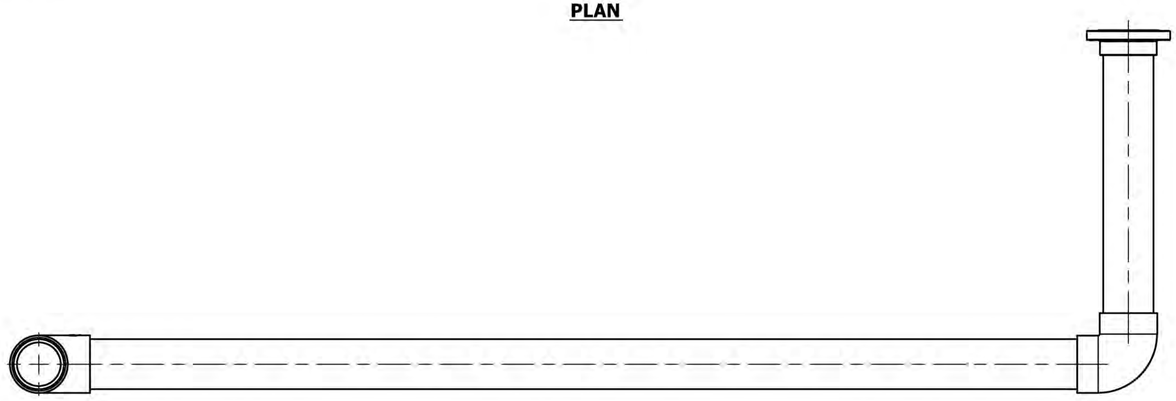
260-2FW-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	136.180 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6''
2	40.000 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6"
3	16.000 in	ASTM D 1785 Pipe 6 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 6" w/cut groove end
4	1	806-060	PVC SCH80 ELBOW, 6" (SXSX90)
5	1	851-060	PVC SCH80 FLANGE, 6", 150# (ONEPIECE-SLIP)
6	1	801-060	PVC SCH80 TEE, 6" (SXSXS)

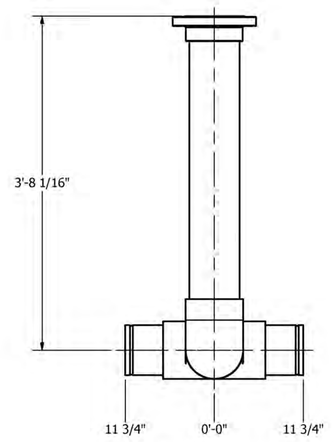




PLAN



ELEVATION
SCALE: 1/10



END

260-2FW-PV-01

2ND PASS TRAIN 2
MAIN FEED HEADER

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED SPOOLS 2FW-PV-01, 03	AWS	03/13/12	AWS	JS
4	REMOVED CIP FEED SPOOLS	AWS	03/02/12	AWS	JS
3	UPDATED COMBINED FEED HEADER FROM 12" TO 8" WITH VICTAULIC CONNECTION. REMOVED CIPF PIPE SPOOLS, CHANGED COMBINED FEED HEADER FROM 6" TO 8"	AWS	01/10/12	AWS	JS
2	ADDED SPOOL# 260-2CIPF-PV-05, UPDATED SPOOL LENGTHS & DESRIPTIONS. REPLACED SADDLES FOR BUSHING FOR INST. TAPS, UPDATED TITLE BLOCK	AWS	11/15/11	AWS	JS
1	FOR FABRICATION	AWS	08/16/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	8/16/2011	SUBMITTAL NO.
ENGR	JS	11/15/2011	SPECS. REF. NO.
PROJ MGR	AWS	11/15/2011	PROJECT NUMBER 260
APPROVED	H.SAID	11/15/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS FEED SPOOLS ASTM D 1785 PVC SPOOLS

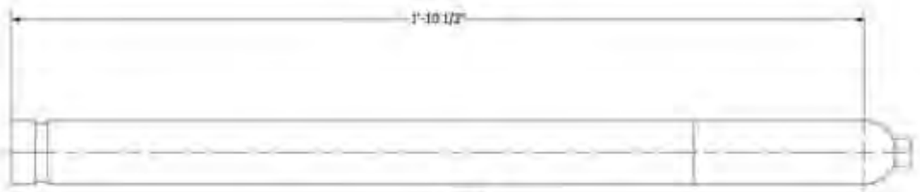
SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-103	1 OF 2	5

2ND PASS SS J-BEND SPOOL

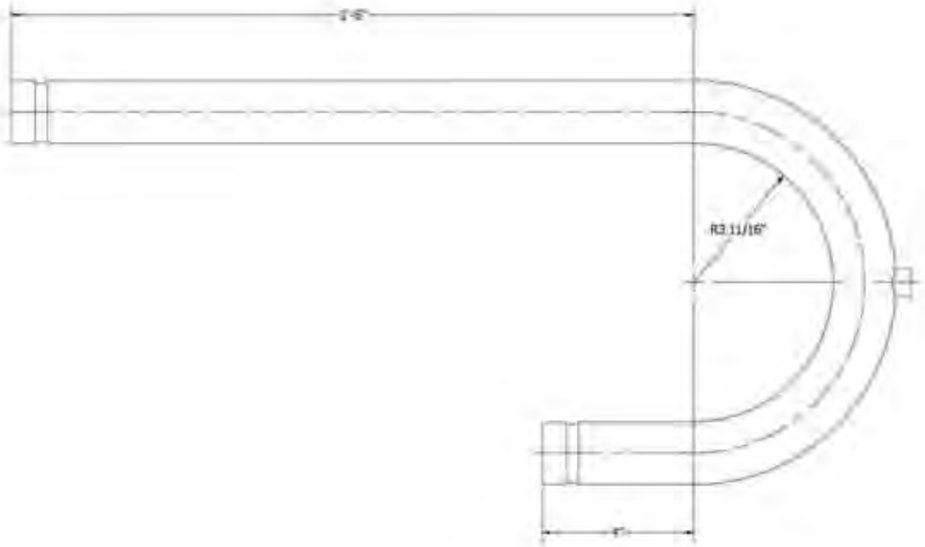
SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-2JW-SS-01	16	16

260-2JW-SS-01

ITEM	QTY	DESCRIPTION
1	1	A312 SS PIPE, 1 1/4" Sch10S 316L Seamless W/Cut Groove Both Ends
2	1	ASME B16.11 Half Coupling Threaded - Class 3000 1/4"



PLAN



ELEVATION
SCALE: 1 / 2

260-2JW-SS-01
2ND PASS
J-BEND ASSEMBLY
SCALE: 1/2

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
1	FOR FABRICATION	AWS	09/13/11	AS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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Phone: (626) 358-7707 Fax: (626) 358-7737

DRAWN	AWS	6/13/2011
DESIGN	JS	
CHECKED	AWS	
APPROVED	H SAID	

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) | METRIC = +/- 1.0 millimeter

PROJECT NUMBER: 260

STATUS: FOR FABRICATION

PROJECT: BIWATER-AEWT

ORIGINATING ORGANIZATION: BIWATER INTERNATIONAL LTD

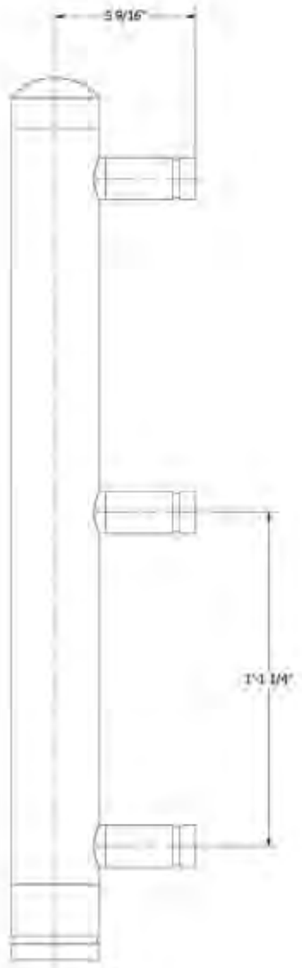
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

2ND PASS J-BEND ASSY.
316L SS PIPING SPOOLS

SIZE: D | A/S | DRAWING NO: 260-P-402 | SHEET 1 OF 1 | REV: 1

260-2PW-SS-02

ITEM	QTY	DESCRIPTION
1	10.589 in	A312 SS PIPE, 1 1/4" Sch40S 316L Seamless W/Cut Groove End
2	3.000 in	A312 SS PIPE, 3" Sch40S 316L Seamless W/Cut Groove End
3	30.000 in	A312 SS PIPE, 3" Sch10S 316L
4	1	ASME B16.9 Cap 3", Sch10S, 316L



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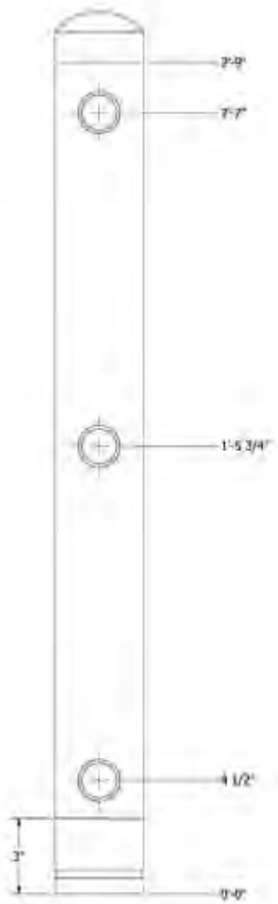
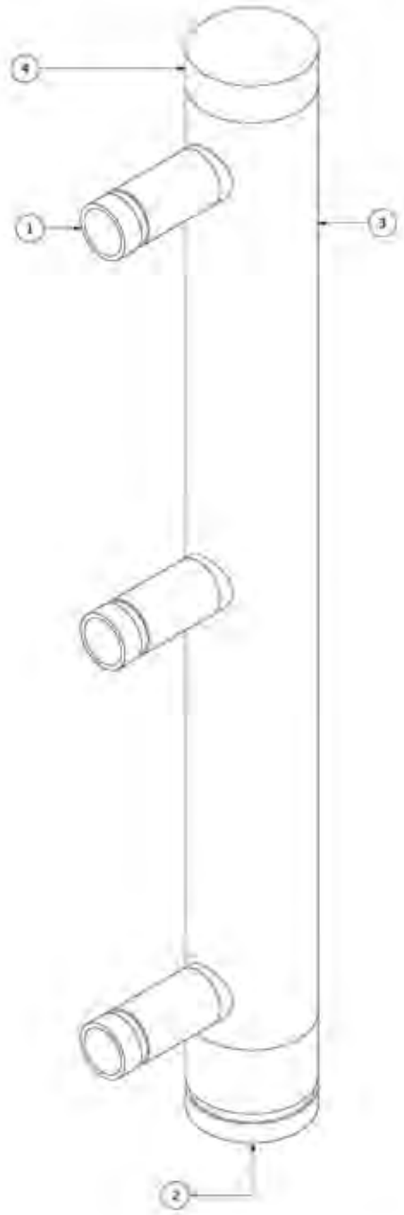


ELEVATION
SCALE: 1/3



260-2PW-SS-02

2ND PASS, TRAIN 1 & 2
2ND STAGE PERMEATE RISER
SCALE: 1/2

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
3	UPDATED 1ST STAGE PERMEATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	UPDATED SIZE OF 1ST STAGE PERM. TO 4", 2ND STAGE TO 3", BASIC REVISIONS	AWS	8/23/11	JS	JS
1	FOR FABRICATION	AWS	06/13/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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DRAWN	AWS	6/13/2011	
CHK'D	JS		
APP'D	JS		
MFG APP'D	AWS		
ENG APP'D	H SAID		

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) | METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS PERM.WATER SPOOLS
316L SS PIPING SPOOLS

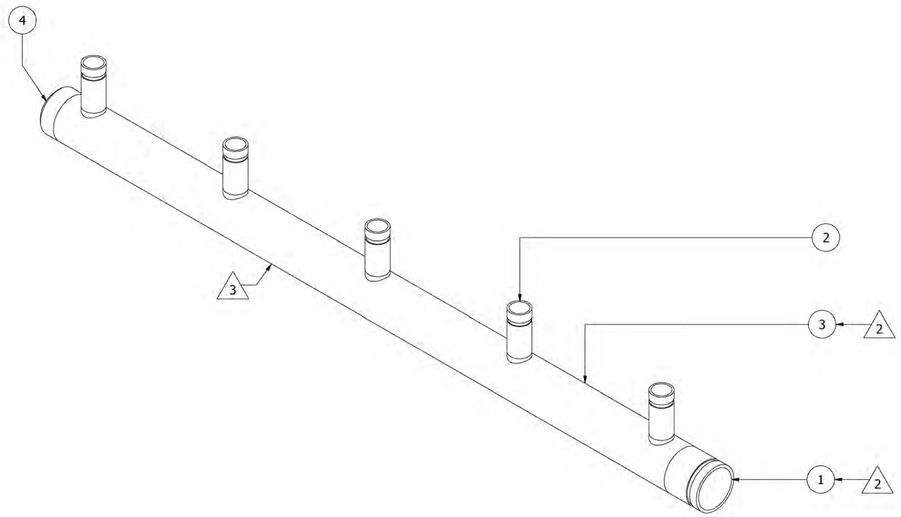
SIZE: D | SCALE: A/S | DWG NO: 260-P-302 | sheet 2 of 2 | REV: 3

2ND PASS SS PERMEATE PIPE SPOOLS

SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-2PW-SS-01	2	2
260-2PW-SS-02	2	2

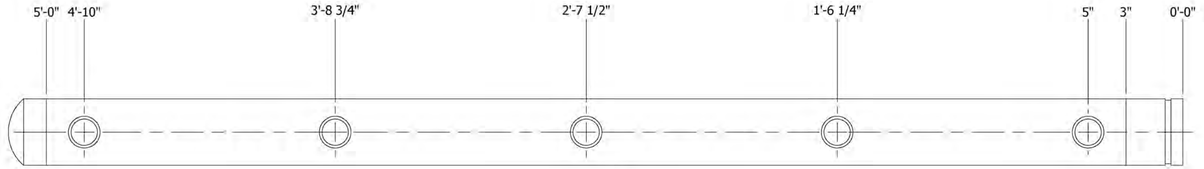
STAINLESS STEEL PIPING NOTES

1. MATERIAL IS STAINLESS STEEL TYPE 316L (ASTM A-312)
2. ALL WELDS SHALL BE FULL PENETRATION WELDS. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCRODENCE WITH AWS
3. ALL PIPE SHALL BE PICKLED & PASSIVATED
4. ALL DIMENSIONS ARE IN INCHES
5. ALL PIPING SHALL BE HYDROSTATICALLY TESTED AT 1.5 TIMES DESIGN PRESSURE OF 300 PSIG (1.5 X 300 = 450 PSIG).

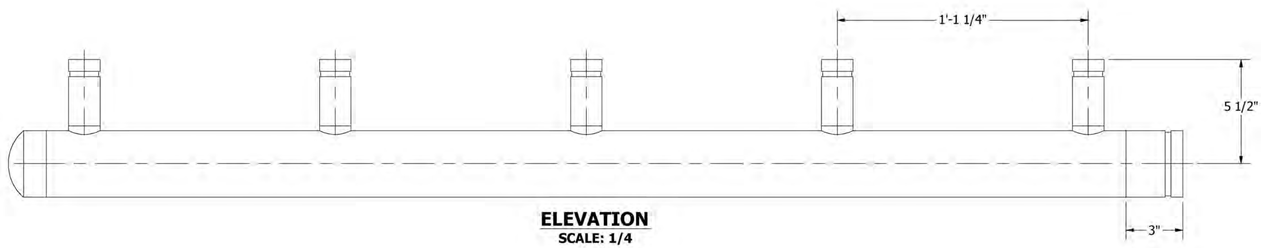


260-2PW-SS-01

ITEM	QTY	DESCRIPTION
1	3.000 in	A312 SS PIPE, 3" Sch40S 316L Seamless W/Cut Groove End
2	17.500 in	A312 SS PIPE, 1 1/4" Sch40S 316L Seamless W/Cut Groove End
3	57.000 in	A312 SS PIPE, 3" Sch10S 316L
4	1	ASME B16.9 Cap 4", Sch10S, 316L



PLAN



ELEVATION
SCALE: 1/4

260-2PW-SS-01

2ND PASS, TRAIN 1 & 2
1ST STAGE PERMEATE RISER
SCALE: 1/5

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
3	UPDATED 1ST STAGE PERMEATE RISERS FROM 4" TO 3"	AWS	01/10/12	AWS	JS
2	UPDATED SIZE OF 1ST STAGE PERM. TO 4", 2ND STAGE TO 3", BASIC REVISIONS	AWS	6/23/11	JS	JS
1	FOR FABRICATION	AWS	06/13/11	JS	JS

REVISION HISTORY

Biwater

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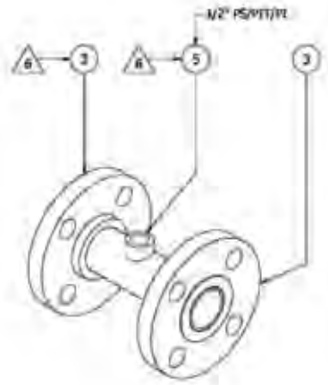
DRAWN AWS	6/13/2011	SUBMITTAL NO.	
ENGR JS		SPECS. REF. NO.	
PROJ. MGR AWS		PROJECT NUMBER 260	
APPROVED H SAID			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

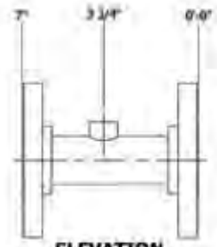
STATUS	FOR FABRICATION
ENGINEER	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD
PROJECT	BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE	2ND PASS PERM.WATER SPOOLS 316L SS PIPING SPOOLS			
SIZE D	SCALE A/S	DWG NO 260-P-302	SHEET 1 OF 2	REV 3

260-2CW-SS-06

ITEM	QTY	DESCRIPTION
1	7.000 in	A312 SS PIPE, 1 1/2" Sch10S 316L
3	2	ASME B16.5 Flange Slip-On Welding - Class 300 1 1/2", 316L
5	1	ASME B16.11 Half Coupling Threaded - Class 3000 1/2", 316L





ELEVATION
SCALE: 1/3

END

4 5

260-2CW-SS-06
2ND PASS, 2ND STAGE
TRAIN 1 & 2 CONCENTRATE HEADER
SCALE: 1/3

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
7	UPDATED LENGTH OF OF SPOOL# 2CW-SS-04, 05 TO ACCOMODATE NEW FLOWATER VALVE	AWS	01/05/12	AWS	JS
6	UPADATED PIPE SPOOLS & ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
5	UPDATED PIPE SIZE FROM 4" TO 3", 2CW-SS-01 CHANGED FROM 2-1/2" TO 3"	AWS	01/20/12	AWS	JS
4	UPDATED SPOOL# 260-2CW-SS-01, UPDATED SPOOL 260-2CW-SS-03, 04, 05, 06	AWS	11/14/11	AWS	JS
3	ADDED 1ST PASS 4" CONCENTRATE SPOOL	AWS	09/30/11	JS	JS
2	UPDATED PIPE SIZE TO 4"	AWS	9/23/11	JS	JS
1	FOR FABRICATION	AWS	06/13/11	JS	JS

REVISION HISTORY

Biwater

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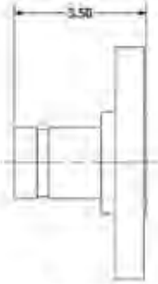
DRAWN	AWS	6/13/2011
CHK'D	JS	11/14/2011
APPROVED	AWS	11/14/2011
PI SAID		11/14/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
OWNER: BIWATER-AEWT
CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS
TITLE: 2ND PASS CONC. SPOOLS
316L SS PIPING SPOOLS
SIZE: D | SCALE: A/S | DWG NO: 260-P-202 | REV: 7

260-2CW-SS-07

ITEM	QTY	DESCRIPTION
1	3.500 in	A312 SS PIPE, 1 1/2" Sch40S 316L Seamless W/Cut Groove End
2	1	ASME B16.5 Flange Slip-On Welding - Class 300 1 1/2", 316L



ELEVATION
SCALE: 1/2

END

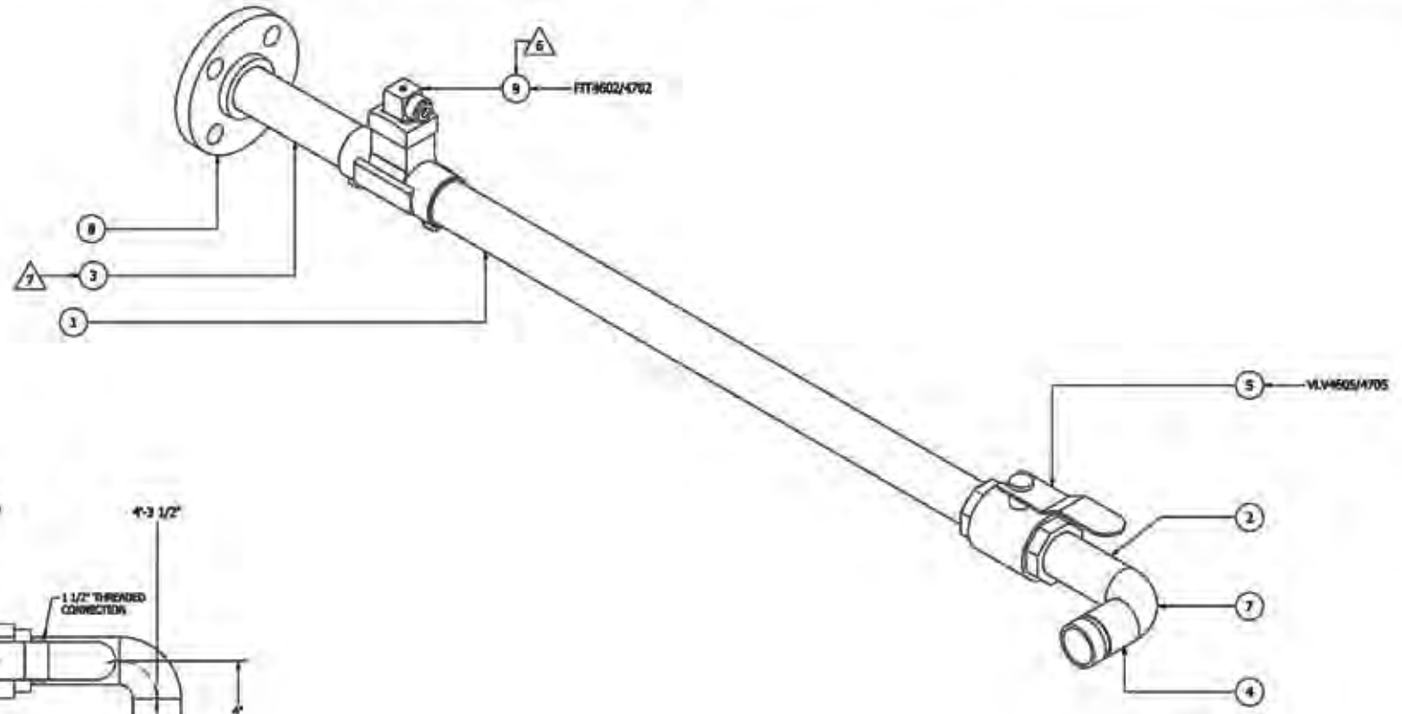
6

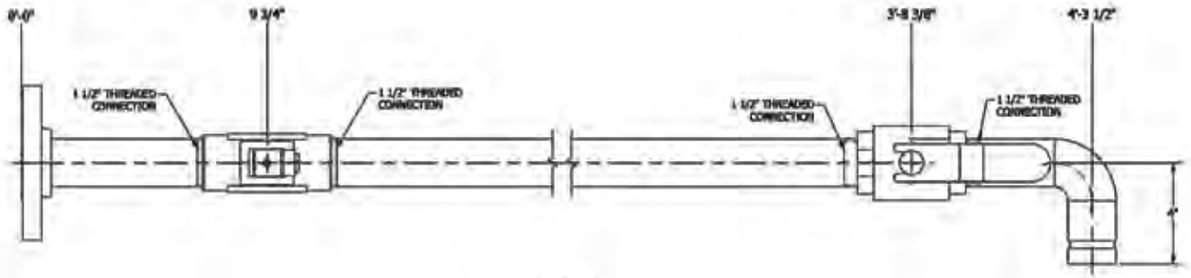
260-2CW-SS-07
2ND PASS, 2ND STAGE
TRAIN 1 & 2 CONCENTRATE HEADER
SCALE: 1/2

APPROVED

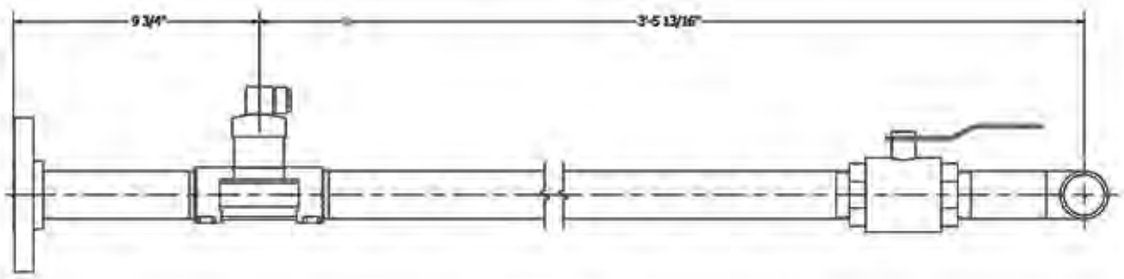
260-2CW-SS-05

ITEM	QTY	DESCRIPTION
1	31.000 in	A312 SS PIPE, 1 1/2" Sch10S 316L w/ 1 1/2" MNPT END
2	4.000 in	A312 SS PIPE, 1 1/2" Sch10S 316L w/ 1 1/2" MNPT END
3	6.000 in	A312 SS PIPE, 1 1/2" Sch10S 316L w/ 1 1/2" MNPT END
4	2.500 in	A312 SS PIPE, 1 1/2" Sch40S 316L Seamless W/Cut Groove End
5	1	FLOW-TEK 2 PIECE THRD'D FULL PORT BV-1 1/2"
7	1	ASME B16.9 Short Radius 90 Deg Elbow 1 1/2" x Sch10S, 316L
8	1	ASME B16.5 Flange Slip-On Welding - Class 300 1 1/2", 316L
9	1	Bailorel 8230 Inline Flow Sensor, 1 1/2" FNPT (Part# 424014-422913)

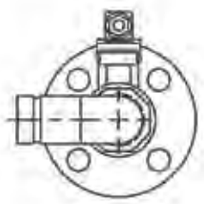




PLAN



ELEVATION
SCALE: 1/3



END

5 6

260-2CW-SS-05
2ND PASS, TRAIN 2
2ND STAGE CONCENTRATE HEADER
SCALE: 1/3

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
7	UPDATED LENGTH OF OF SPOOLS 2CW-SS-04, 05 TO ACCOMODATE NEW FLOWTEK VALVE	AWB	01/25/12	AWB	JS
6	UPDATED PIPE SPOOLS, ADDED SPOOLS 260-2CW-SS-07	AWB	01/20/12	AWB	JS
5	UPDATED PIPE SIZE FROM 4" TO 3", 2CW-SS-01 CHANGED FROM 2-1/2" TO 3"	AWB	01/09/12	AWB	JS
4	UPDATED SPOOLS # 260-2CW-SS-01, UPDATED SPOOL 260-2CW-SS-02, 04, 05, 06	AWB	11/14/11	AWB	JS
3	ADDED YET PASS 4" CONCENTRATE SPOOL	AWB	08/09/11	JS	JS
2	UPDATED PIPE SIZE TO 4"	AWB	6/25/11	JS	JS
1	FOR FABRICATION	AWB	06/13/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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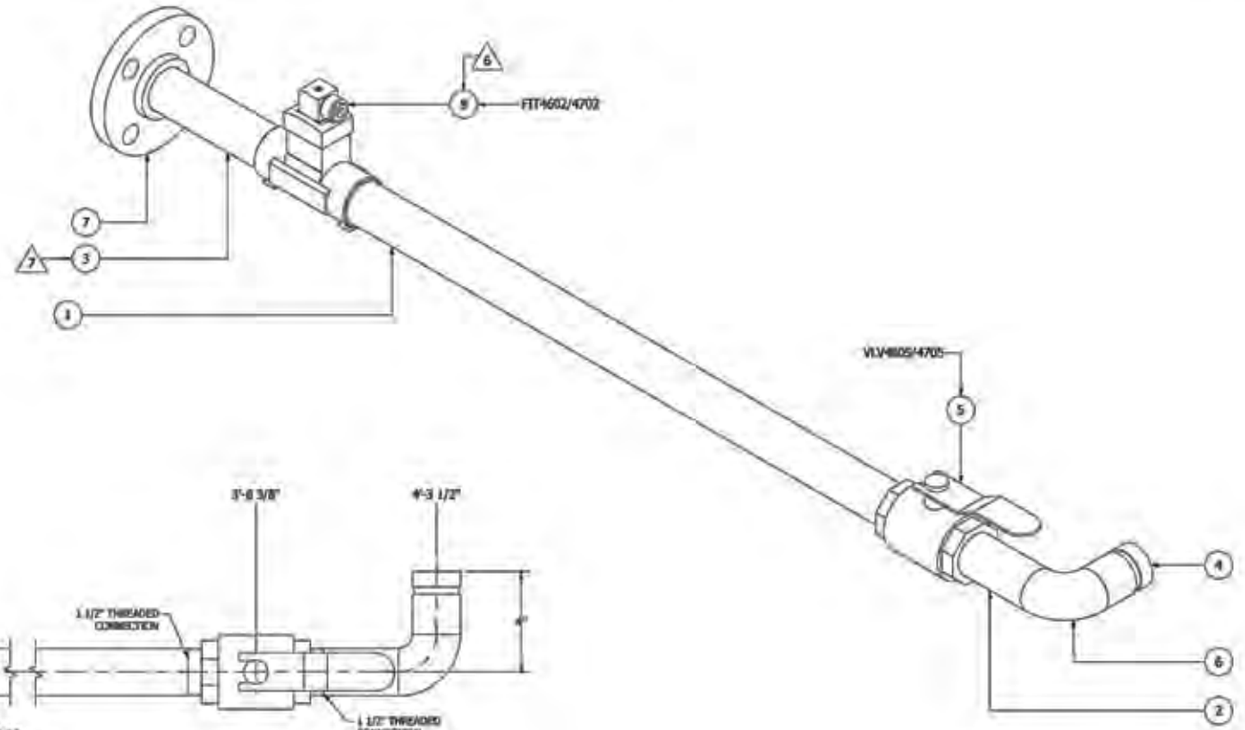
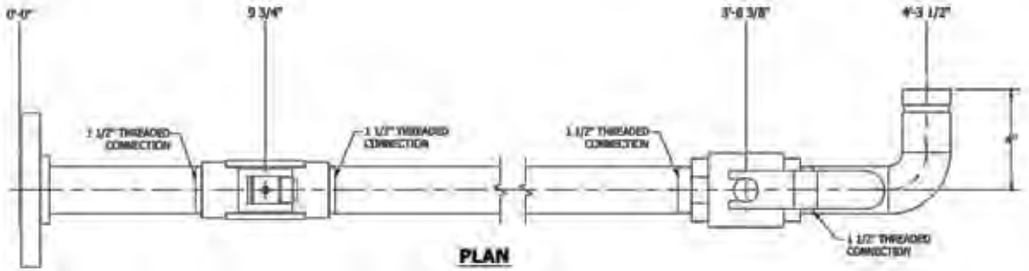
DRAWN	6/13/2011	SUBMITTAL NO.
CHK'D	11/14/2011	SPECS. REF. NO.
ENGR'D	11/14/2011	PROJECT NUMBER 260
APP'D	11/14/2011	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS	FOR FABRICATION
CLIENT	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD
PROJECT	BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE	2ND PASS CONC. SPOOLS 316L SS PIPING SPOOLS
SIZE	D
SCALE	A/S
DWG NO	260-P-202
SHEET 5 OF 6	REV 7

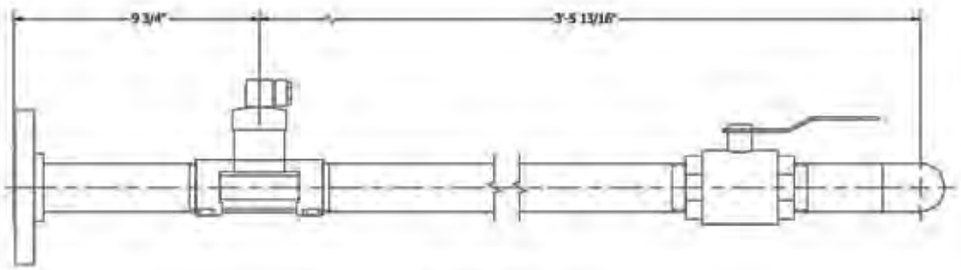
260-2CW-SS-04

ITEM	QTY	DESCRIPTION
1	31.000 in	A312 SS PIPE, 1 1/2" Sch10S 316L w/ 1 1/2" MNPT END
2	4.000 in	A312 SS PIPE, 1 1/2" Sch10S 316L w/ 1 1/2" MNPT END
3	8.000 in	A312 SS PIPE, 1 1/2" Sch10S 316L w/ 1 1/2" MNPT END
4	2.500 in	A312 SS PIPE, 1 1/2" Sch40S 316L Seamless W/Cut Groove End
5	1	FLOW-TEK 2 PIECE THRD'D FULL PORT BV-1 1/2"
6	1	ASME B16.9 Short Radius 90 Deg Elbow 1 1/2" x Sch10S, 316L
7	1	ASME B16.5 Flange Slip-On Welding - Class 300 1 1/2", 316L
8	1	Burkert 8030 Inline Flow Sensor, 1 1/2" FNPT (Part# 424014-423913)





PLAN



ELEVATION
SCALE: 1/3

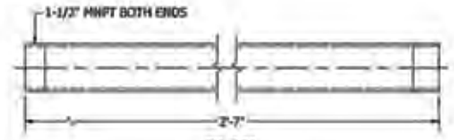
END

4 5 6

260-2CW-SS-04
2ND PASS, TRAIN 1
2ND STAGE CONCENTRATE HEADER
SCALE: 1/3

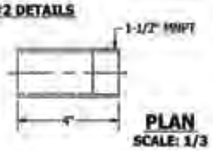
FABRICATION DETAILS
FOR SPOOLS 260-2CW-SS-04, 05

ITEM #1 DETAILS



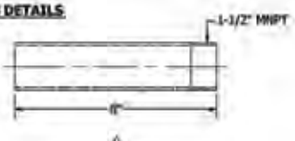
PLAN
SCALE: 1/3

ITEM #2 DETAILS



PLAN
SCALE: 1/3

ITEM #3 DETAILS



PLAN
SCALE: 1/3

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
7	UPDATED LENGTH OF GF SPOOL# 2CW-SS-04, 05 TO ACCOMODATE NEW FLOWTEK VALVE	AWS	01/25/12	AWS	JS
6	UPDATED PIPE SPOOLS, ADDED SPOOL# 260-2CW-SS-07	AWS	01/20/12	AWS	JS
5	UPDATED PIPE SIZE FROM 4" TO 3", 2CW-SS-01 CHANGED FROM 3-1/2" TO 3"	AWS	01/09/12	AWS	JS
4	UPDATED SPOOL# 260-2CW-SS-01, UPDATED SPOOL 260-2CW-SS-02, 04, 05, 09	AWS	11/14/11	AWS	JS
3	ADDED 1ST PASS 4" CONCENTRATE SPOOL	AWS	08/29/11	JS	JS
2	UPDATED PIPE SIZE TO 4"	AWS	5/23/11	JS	JS
1	FOR FABRICATION	AWS	05/13/11	JS	JS

REVISION HISTORY

Biwater

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BIWATER AEWT, INC.
158 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7727

DRAWN	AWS	5/13/2011
CHK'D	JS	11/14/2011
ENG'R	AWS	11/14/2011
APP'D	H.SAIB	11/14/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) | METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

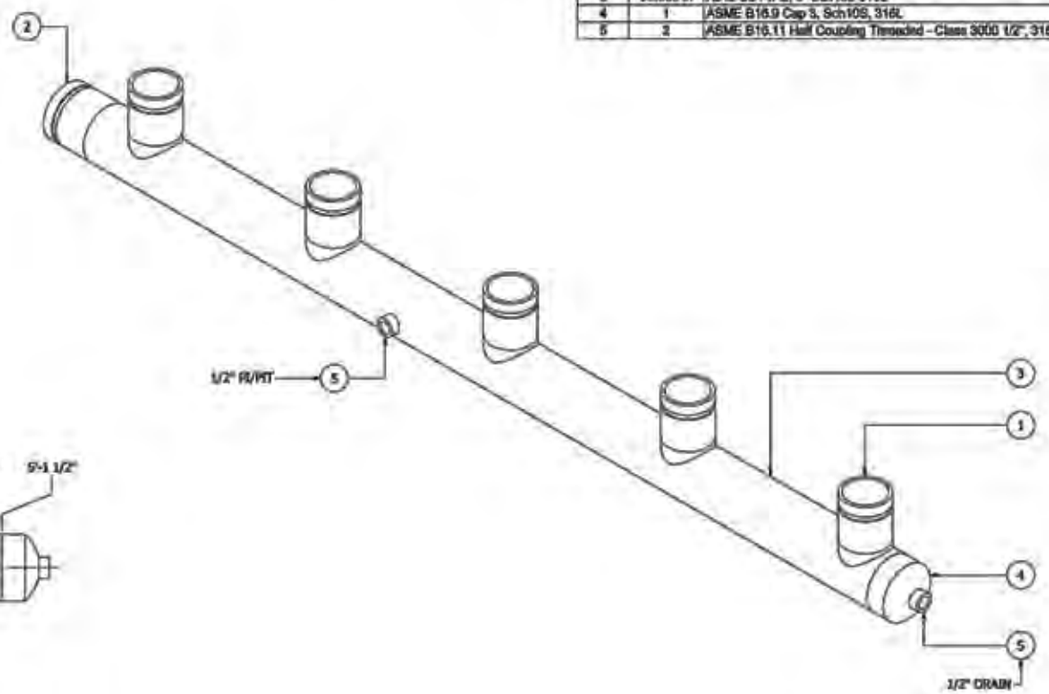
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

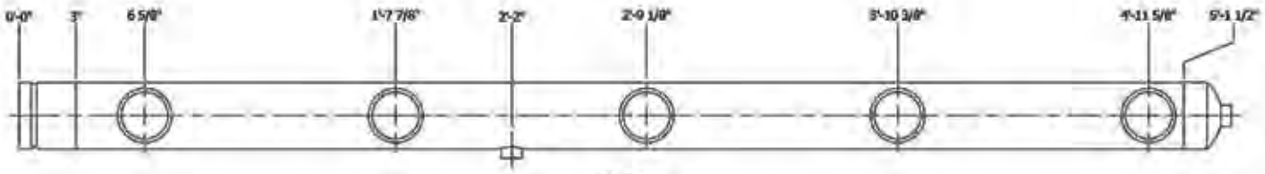
TITLE: 2ND PASS CONC. SPOOLS
316 SS PIPING SPOOLS

SIZE D | SCALE A/S | DWG NO 260-P-202 | SHEET 4 OF 6 | REV 7

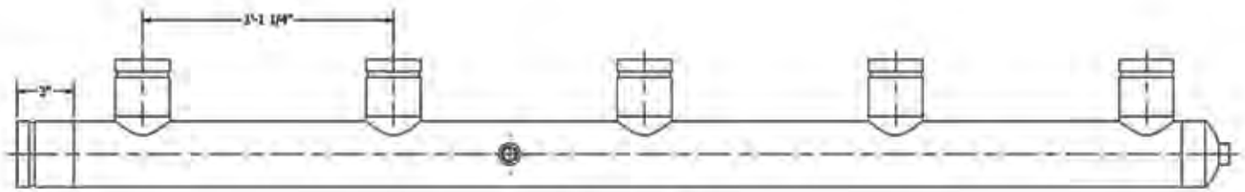
APPROVED

260-2CW-SS-03		
ITEM	QTY	DESCRIPTION
1	15.000 in	A312 SS PIPE, 2 1/2" Sch40S 316L Seamless W/Cut Groove End
2	3.000 in	A312 SS PIPE, 3" Sch40S 316L Seamless W/Cut Groove End
3	58.500 in	A312 SS PIPE, 3" Sch10S 316L
4	1	ASME B16.9 Cap 3, Sch10S, 316L
5	2	ASME B16.11 Half Coupling Threaded - Class 3000 1/2", 316L

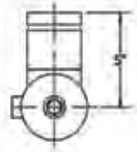




PLAN



ELEVATION
SCALE: 1/4



END

5

260-2CW-SS-03

2ND PASS, TRAIN 2
1ST STAGE CONCENTRATE RISER
SCALE: 1/4

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
7	UPDATED LENGTH OF DP SPOOLS 2CW-SS-01, 05 TO ACCOMODATE NEW FLOWTEK VALVE	AWB	9/25/13	AWB	JS
6	UPDATED PIPE SPOOLS, ADDED SPOOLS 260-2CW-SS-07	AWB	01/23/13	AWB	JS
5	UPDATED PIPE SIZE FROM 4" TO 3", 2CW-SS-01 CHANGED FROM 3-1/2" TO 3"	AWB	01/08/13	AWB	JS
4	UPDATED SPOOLS 260-2CW-SS-01, UPDATED SPOOL 260-2CW-SS-02, 04, 05, 06	AWB	11/14/11	AWB	JS
3	ADDED 1ST PASS 4" CONCENTRATE SPOOL	AWB	06/30/11	JS	JS
2	UPDATED PIPE SIZE TO 4"	AWB	5/25/11	JS	JS
1	FOR FABRICATION	AWB	05/13/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
139 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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AWS	5/13/2011	
JS	11/14/2011	
AWS	11/14/2011	260
JS SAVE	11/14/2011	

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) | METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

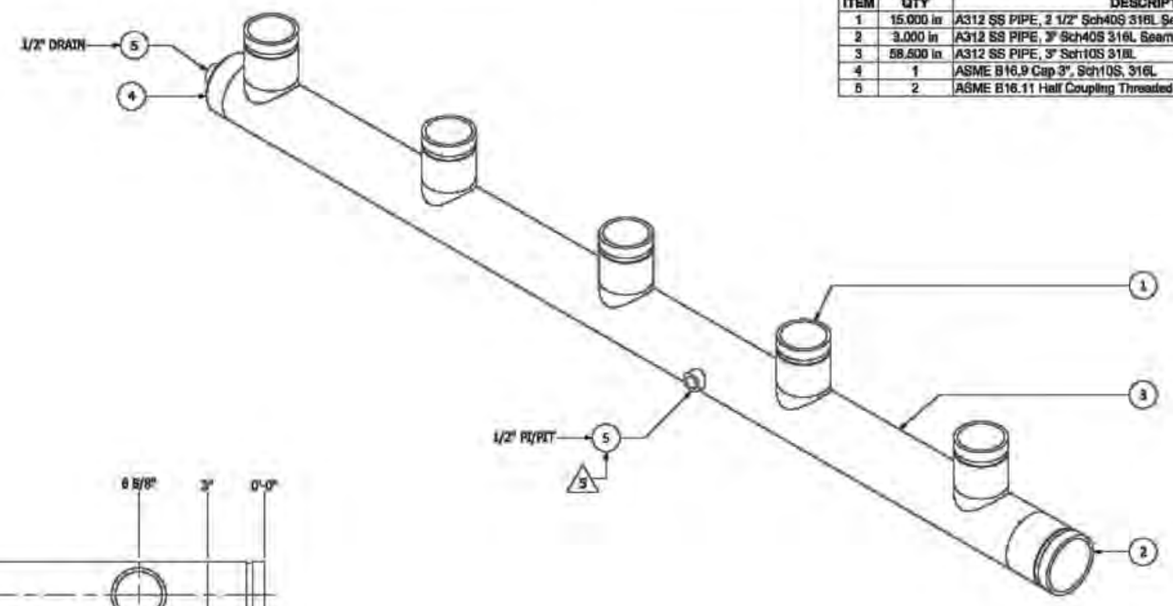
BIWATER INTERNATIONAL LTD

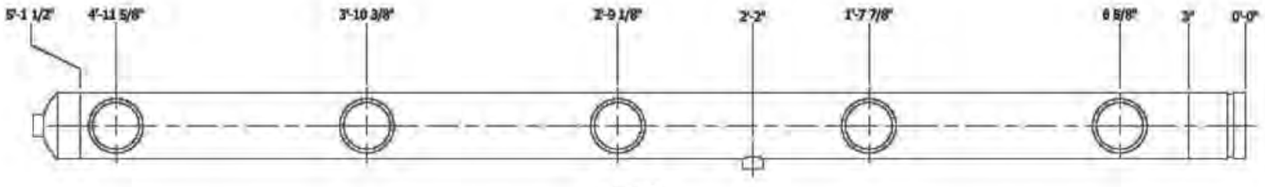
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

2ND PASS CONC. SPOOLS
316 SS PIPING SPOOL

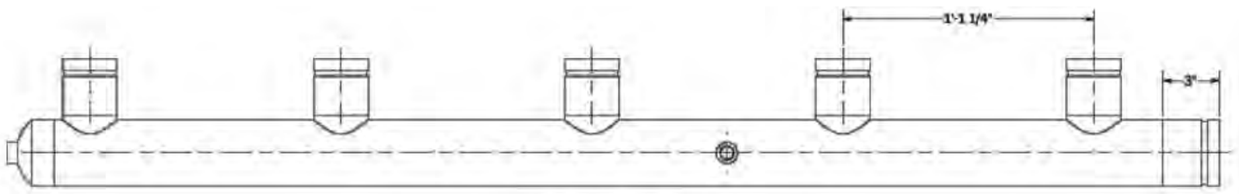
SIZE D | SCALE A/S | 260-P-202 | SHEET 3 OF 6 | 7

260-2CW-SS-02		
ITEM	QTY	DESCRIPTION
1	15.000 in	A312 SS PIPE, 2 1/2" Sch40S 316L Seamless W/Cut Groove End
2	3.000 in	A312 SS PIPE, 3" Sch40S 316L Seamless W/Cut Groove End
3	58.500 in	A312 SS PIPE, 3" Sch10S 316L
4	1	ASME B16.9 Cap 3", Sch10S, 316L
5	2	ASME B16.11 Half Coupling Threaded - Class 3000 1/2", 316L

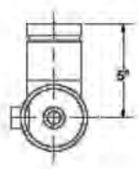




PLAN



ELEVATION
SCALE: 1/4



END

3 5

260-2CW-SS-02

2ND PASS, TRAIN 1
1ST STAGE CONCENTRATE RISER
SCALE: 1/4

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
7	UPDATED LENGTH OF OF SPOOL# 2CW-SS-04, 05 TO ACCOMODATE NEW FLOWTEK VALVE	AWS	01/26/12	AWS	JS
6	UPADETED PIPE SPOOLS, ADDED SPOOL#260-2CW-SS-07	AWS	01/20/12	AWS	JS
5	UPDATED PIPE SIZE FROM 4" TO 3", 2CW-SS-01 CHANGED FROM 2-1/2" TO 3"	AWS	01/09/12	AWS	JS
4	UPDATED SPOOLS# 260-2CW-SS-01, UPDATED SPOOL 260-2CW-SS-03, 04, 05, 06	AWS	11/14/11	AWS	JS
3	ADDED 1ST PASS 4" CONCENTRATE SPOOL	AWS	06/30/11	JS	JS
2	UPDATED PIPE SIZE TO 4"	AWS	9/23/11	JS	JS
1	FOR FABRICATION	AWS	06/13/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
135 E. LEMON AVE, MONROVIA CA 91016
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DRAWN	AWS	6/13/2011
CHECKED	JS	11/14/2011
ENGINEER	AWS	11/14/2011
APPROVED	H SAID	11/14/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

SUBMITTAL NO.
SPECIF. REF. NO.
PROJECT NUMBER: 260

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS CONC. SPOOLS
316 SS PIPING SPOOLS

SIZE	SCALE	DWG NO	SHEET 2 OF 5	REV
D	A/S	260-P-202		7

2ND PASS SS CONCENTRATE PIPE SPOOLS

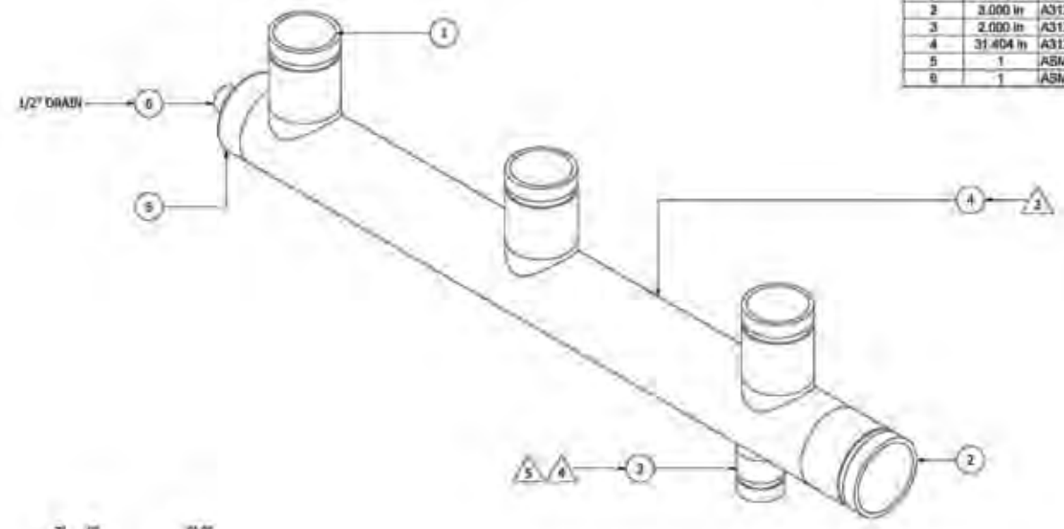
SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-2CW-SS-01	2	2
260-2CW-SS-02	1	1
260-2CW-SS-03	1	1
260-2CW-SS-04	1	1
260-2CW-SS-05	1	1
260-2CW-SS-06	2	2
260-2CW-SS-07	2	2

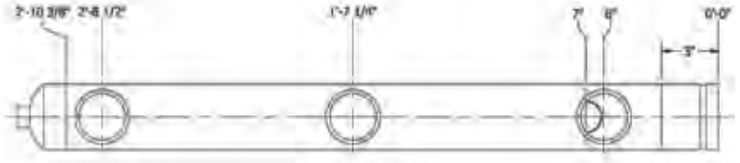
STAINLESS STEEL PIPING NOTES

1. MATERIAL IS STAINLESS STEEL TYPE 316L (ASTM A-312)
2. ALL WELDS SHALL BE FULL PENETRATION WELDS. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCRODENCE WITH AWS
3. ALL PIPE SHALL BE PICKLED & PASSIVATED
4. ALL DIMENSIONS ARE IN INCHES
5. ALL PIPING SHALL BE HYDROSTATICALLY TESTED AT 1.5 TIMES DESIGN PRESSURE OF 300 PSIG (1.5 X 300 = 450 PSIG).

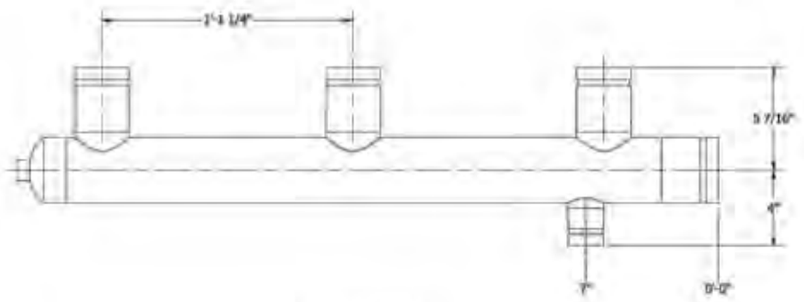
260-2CW-SS-01

ITEM	QTY	DESCRIPTION
1	10.299 in	A312 SS PIPE, 2 1/2" Sch40S 316L Seamless W/Cut Groove End
2	3.000 in	A312 SS PIPE, 3" Sch40S 316L Seamless W/Cut Groove End
3	2.000 in	A312 SS PIPE, 1 1/2" Sch40S 316L Seamless W/Cut Groove End
4	31.404 in	A312 SS PIPE, 3" Sch10S 316L
5	1	ASME B16.9 Cap 3", Sch10S 316L
6	1	ASME B16.11 Half Coupling Threaded - Class 3000 1/2", 316L

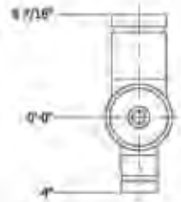




PLAN



ELEVATION
SCALE: 1/4



END

△2 △5

260-2CW-SS-01

2ND PASS, TRAIN 1 & 2
2ND STAGE CONCENTRATE RISER
SCALE: 1/3

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
7	UPDATED LENGTH OF OF SPOOLS #2CW-SS-04, 05 TO ACCOMODATE NEW FLOWTEK VALVE	AWS	01/25/12	AWS	JS
6	UPDATED PIPE SPOOLS, ADDED SPOOLS #260-2CW-SS-07	AWS	01/20/12	AWS	JS
5	UPDATED PIPE SIZE FROM 4" TO 3", 2CW-SS-01 CHANGED FROM 2-1/2" TO 3"	AWS	01/20/12	AWS	JS
4	UPDATED SPOOLS #260-2CW-SS-01, UPDATED SPOOL 260-2CW-SS-02, 3A, 5, 6	AWS	11/14/11	AWS	JS
3	ADDED 1ST PASS 4" CONCENTRATE SPOOL	AWS	09/09/11	JS	JS
2	UPDATED PIPE SIZE TO 4"	AWS	5/23/11	JS	JS
1	FOR FABRICATION	AWS	05/13/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 S. LEMON AVE. MONROVIA CA 91016
Phone: (626) 538-7707 Fax: (626) 358-7727

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DRAWN	AWS	5/13/2011
CHECKED	JS	11/14/2011
APPROVED	AWS	11/14/2011
PROJECT MGR	JS SAID	11/14/2011

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION
DESIGNED: BIWATER-AEWT
CONSULTING CONTRACTOR: BIWATER INTERNATIONAL LTD

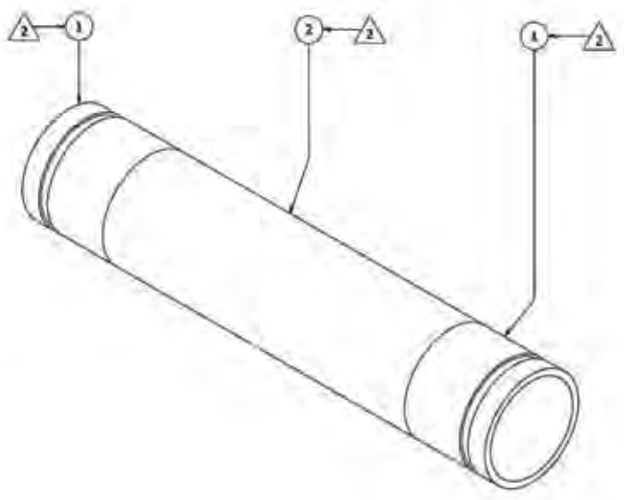
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS CONC. SPOOLS
316L SS PIPING SPOOLS

SIZE: D | SCALE: A/S | DWG NO: 260-P-202 | SHEET 1 OF 8 | REV: 7

260-2INT-SS-01

ITEM	QTY	DESCRIPTION
1	6.000 in	A312 SS PIPE, 3" Sch40S 316L Seamless W/Cut Groove End
2	11.257 in	A312 SS PIPE, 3" Sch10S 316L



ELEVATION
SCALE: 1 / 2

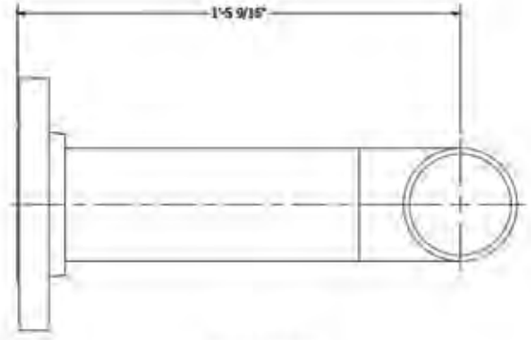
4

260-2INT-SS-01
2ND PASS, TRAIN 1 & 2
INTERSTAGE REMOVEABLE SPOOL
SCALE: 1/2

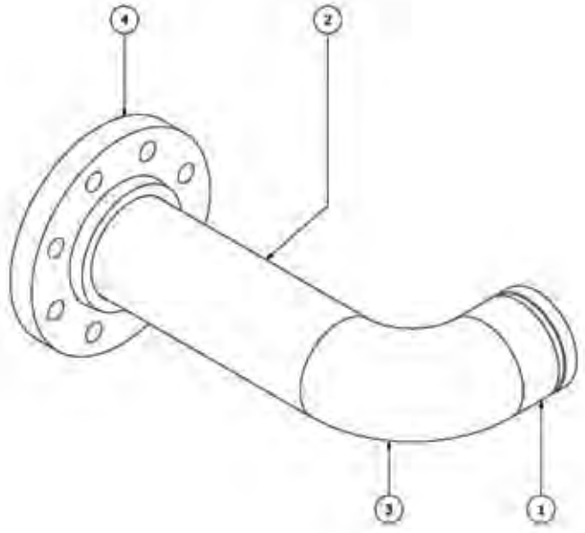
APPROVED

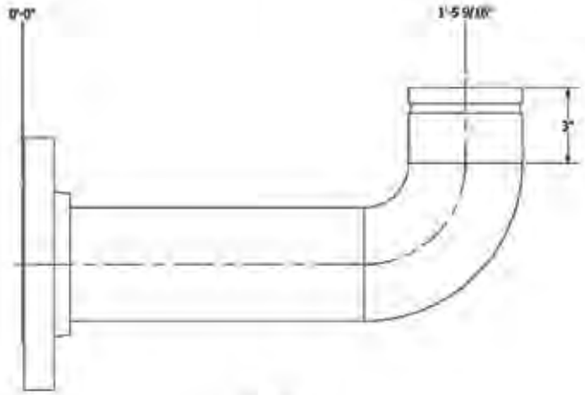
260-2FW-SS-08

ITEM	QTY	DESCRIPTION
1	3.000 in	A312 SS PIPE, 4" Sch40S 316L Seamless W/Cut Groove End
2	13.536 in	A312 SS PIPE, 4" Sch10S 316L
3	1	ASME B16.9 Short Radius 90 Deg Elbow 4" X Sch10S, 316L
4	1	ASME B16.5 Flange Slip-On Welding - Class 300 4", 316L

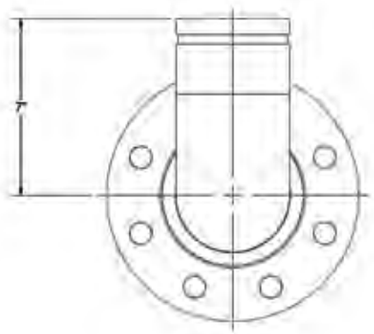


ELEVATION





PLAN
SCALE: 1/3



END

4 5

260-2FW-SS-08
2ND PASS, TRAIN 2
1ST STAGE FEED MANIFOLD
SCALE:1/3

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED FEED SPOOLS	AWS	01/20/12	AWS	JG
4	CHANGED PIPE SIZE FROM 6" TO 4" ON 1ST PASS FEED. 2ND STAGE FEED CHANGED FROM 4" TO 3"	AWS	1/09/12	AWS	JG
3	UPDATED SPOOLS	AWS	09/15/11	JS	JG
2	CHANGED FEED PIPING TO 6" FROM 4", CHANGED 2ND PASS FEED FROM 2 1/2" TO 4", INTERSTAGE CHANGED FROM 2 1/2" TO 4"	AWS	8/22/11	JS	JG
1	FOR FABRICATION	AWS	05/13/11	JS	JG

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
138 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7727

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DRAWN	AWS	6/13/2011
CHK'D		
APP'D		
ISSUED FOR		
QA		
H. CARD		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

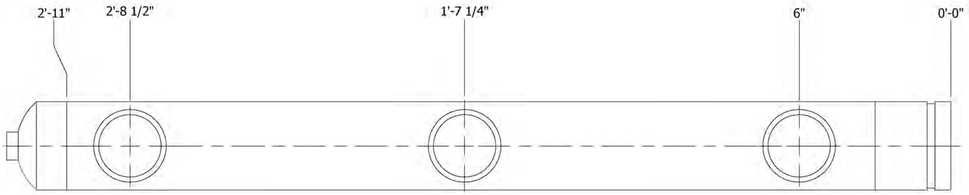
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS FEED WATER SPOOLS
316L SS PIPING SPOOLS

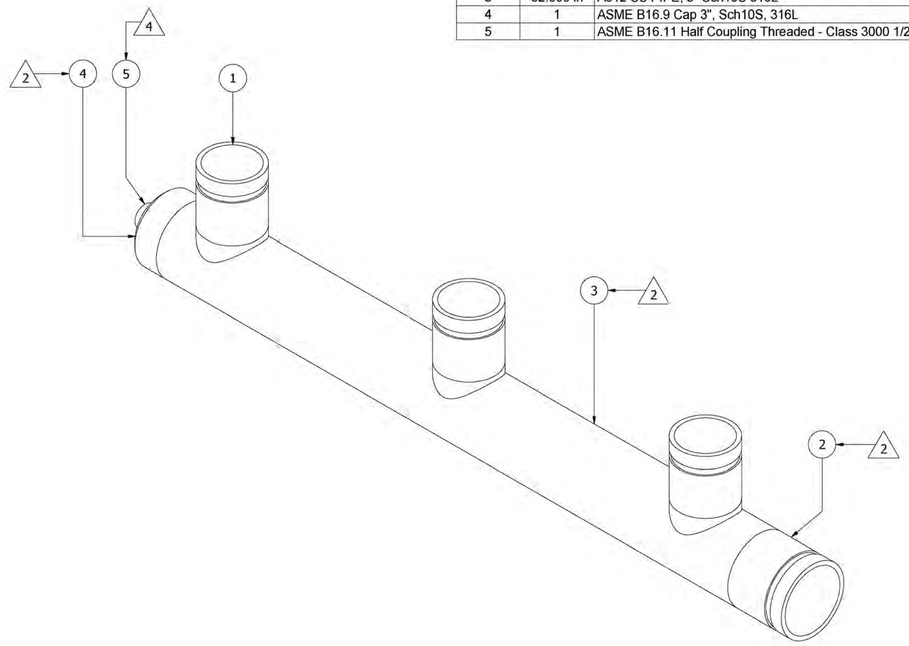
SIZE: D | SCALE: A/S | DRAWING NO: 260-P-102 | SHEET 4 OF 4 | REV: 5

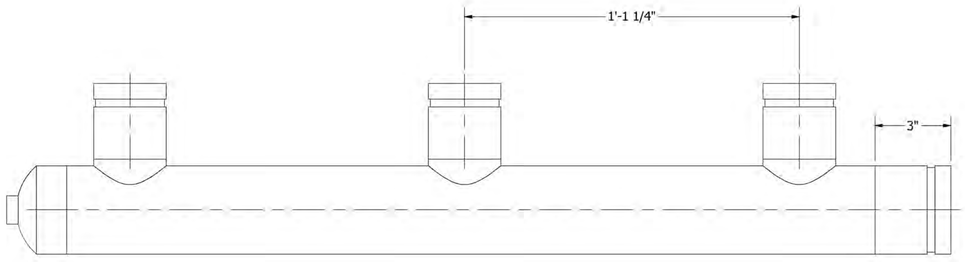
260-2FW-SS-07

ITEM	QTY	DESCRIPTION
1	9.000 in	A312 SS PIPE, 2 1/2" Sch40S 316L Seamless W/Cut Groove End
2	3.000 in	A312 SS PIPE, 3" Sch40S 316L Seamless W/Cut Groove End
3	32.000 in	A312 SS PIPE, 3" Sch10S 316L
4	1	ASME B16.9 Cap 3", Sch10S, 316L
5	1	ASME B16.11 Half Coupling Threaded - Class 3000 1/2", 316L

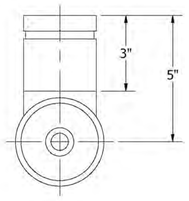


PLAN





ELEVATION
SCALE: 1/3



END

2 4

260-2FW-SS-07

2ND PASS, TRAIN 1 & 2
2ND STAGE FEED RISER
SCALE: 1/3

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED FEED SPOOLS	AWS	01/20/12	AWS	JS
4	CHANGED PIPE SIZE FROM 6" TO 4" ON 1ST PASS FEED, 2ND STAGE FEED CHANGED FROM 4" TO 3"	AWS	1/09/12	AWS	JS
3	UPDATED SPOOLS	AWS	08/16/11	JS	JS
2	CHANGED FEED PIPING TO 6" FROM 4", CHANGED 2ND PASS FEED FROM 2 1/2" TO 4". INTERSTAGE CHANGED FROM 2 1/2" TO 4"	AWS	6/22/11	JS	JS
1	FOR FABRICATION	AWS	06/13/11	JS	JS

REVISION HISTORY

Biwater

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DRAWN AWS	6/13/2011	SUBMITTAL NO.	
ENGR JS		SPECS. REF. NO.	
PROJ MGR JS		PROJECT NUMBER 260	
APPROVED H SAID			
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

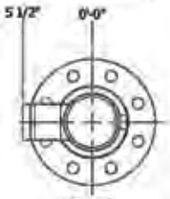
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS FEED WATER SPOOLS 316L SS PIPING SPOOLS

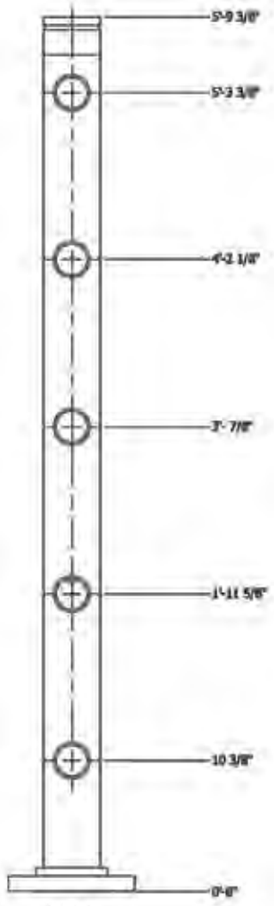
SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-102	3 OF 4	5

260-2FW-SS-05

ITEM	QTY	DESCRIPTION
1	15.000 in	A312 SS PIPE, 2 1/2" Sch40S 316L Seamless W/Cut Groove End
2	3.000 in	A312 SS PIPE, 4" Sch40S 316L Seamless W/Cut Groove End
3	66.398 in	A312 SS PIPE, 4" Sch10S 316L
4	1	ASME B16.5 Flange Slip-On Welding - Class 300 4", 316L
5	1	ASME B16.11 Half Coupling Threaded - Class 3000 1/2", 316L



PLAN



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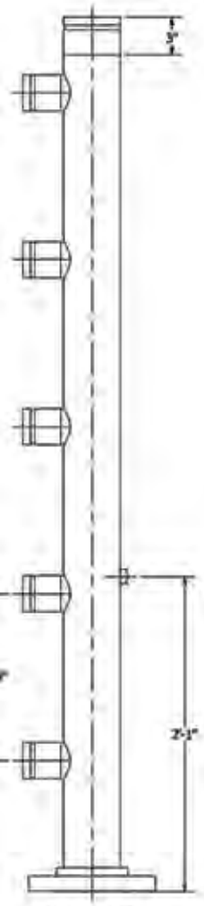
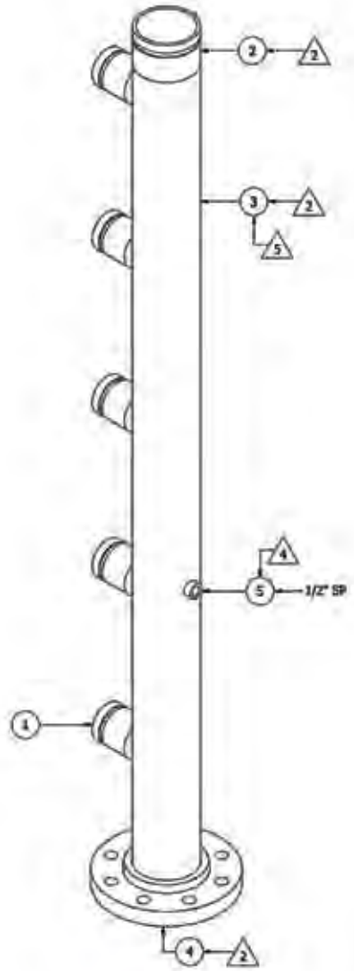


ELEVATION
SCALE: 1/6



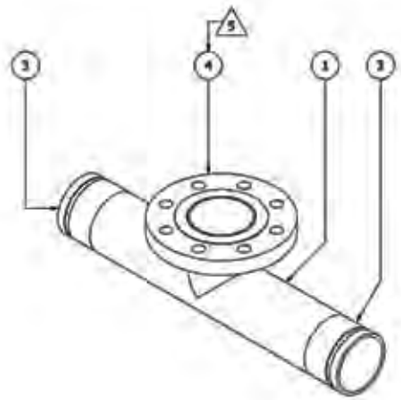
APPROVED

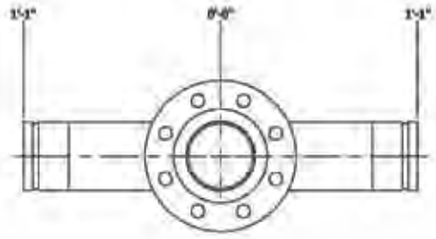
2 4

260-2FW-SS-05
2ND PASS, TRAIN 1 & 2
1ST STAGE FEED RISER
SCALE: 1/5

260-2FW-SS-04

ITEM	QTY	DESCRIPTION
1	20.026 in	A312 SS PIPE, 4" Sch10S 316L
2	3.000 in	A312 SS PIPE, 4" Sch10S 316L
3	8.000 in	A312 SS PIPE, 4" Sch40S 316L Seamless W/Cut Groove End
4	1	ASME B16.5 Flange Slip-On Welding - Class 300 4", 316L





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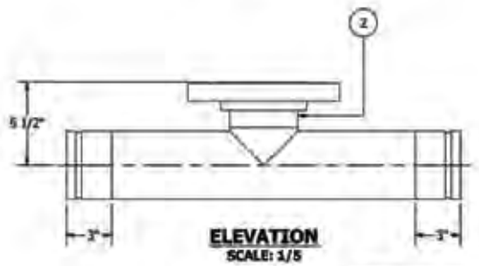


ELEVATION
SCALE: 1/5

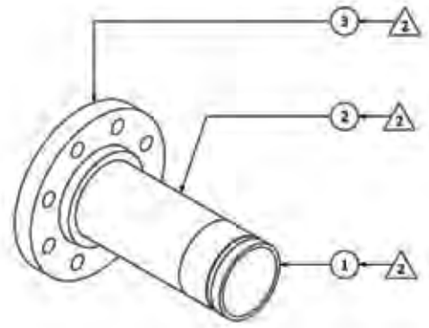
APPROVED

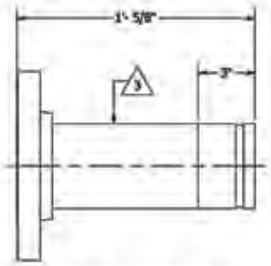
2 4

260-2FW-SS-04
2ND PASS, TRAIN 1 & 2
1ST STAGE FEED MANIFOLD
SCALE: 1/5

260-2FW-SS-06

ITEM	QTY	DESCRIPTION
1	3.000 in	A312 SS PIPE, 4" Sch40S 316L Seamless W/Cut Groove End
2	9.898 in	A312 SS PIPE, 4" Sch10S 316L
3	1	ASME B16.5 Flange Slip-On Welding - Class 300 4", 316L





ELEVATION
SCALE: 1/4

END

APPROVED

2 4

260-2FW-SS-06
2ND PASS, TRAIN 1 & 2
1ST STAGE FEED MANIFOLD
SCALE: 1/4

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED FEED SPOOLS	AWS	01/03/13	AWS	JS
4	CHANGED PIPE SIZE FROM 6" TO 4" ON 1ST PASS FEED, 2ND STAGE FEED CHANGED FROM 4" TO 3"	AWS	9/28/12	AWS	JS
3	UPDATED SPOOLS	AWS	09/16/11	JS	JS
2	CHANGED FEED PIPING TO 6" FROM 4", CHANGED 2ND PASS FEED FROM 2 1/2" TO 4", INTERSTAGE CHANGED FROM 2 1/2" TO 4"	AWS	8/22/11	JS	JS
1	FOR FABRICATION	AWS	05/13/11	JS	JS

REVISION HISTORY

Biwater

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DRAWN BY	AWS	6/13/2011
CHKD		
APPD		
MFG APPR		
QA		
R SATO		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

SUBMITTAL No.
SPECIAL REF. No.
PROJECT NUMBER: 2261

STATUS: FOR FABRICATION
DRAWING: BIWATER-AEWT
ORIGINAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 2ND PASS FEED WATER SPOOLS
316L SS PIPING SPOOLS

SIZE: D | SCALE: A/S | DRAWING NO: 260-P-102 | SHEET 2 OF 4 | REV: 5

2ND PASS SS FEED PIPE SPOOLS

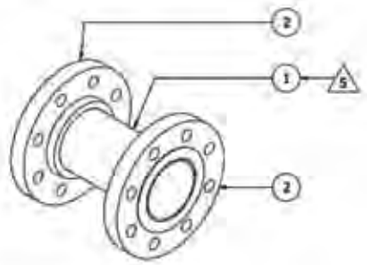
SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-2FW-SS-01	2	2
260-2FW-SS-02	2	2
260-2FW-SS-03	1	1
260-2FW-SS-04	2	2
260-2FW-SS-05	2	2
260-2FW-SS-06	2	2
260-2FW-SS-07	2	2
260-2FW-SS-08	1	1
260-2INT-SS-01	2	2

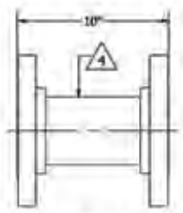
STAINLESS STEEL PIPING NOTES

1. MATERIAL IS STAINLESS STEEL TYPE 316L (ASTM A-312)
2. ALL WELDS SHALL BE FULL PENETRATION WELDS. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCRODENCE WITH AWS
3. ALL PIPE SHALL BE PICKLED & PASSIVATED
4. ALL DIMENSIONS ARE IN INCHES
5. ALL PIPING SHALL BE HYDROSTATICALLY TESTED AT 1.5 TIMES DESIGN PRESSURE OF 300 PSIG (1.5 X 300 = 450 PSIG).

260-2FW-SS-02

ITEM	QTY	DESCRIPTION
1	10.000 in	A312 SS PIPE, 4" Sch10S 316L
2	2	ASME B16.5 Flange Slip-On Welding - Class 300 4"





ELEVATION
SCALE: 1/5

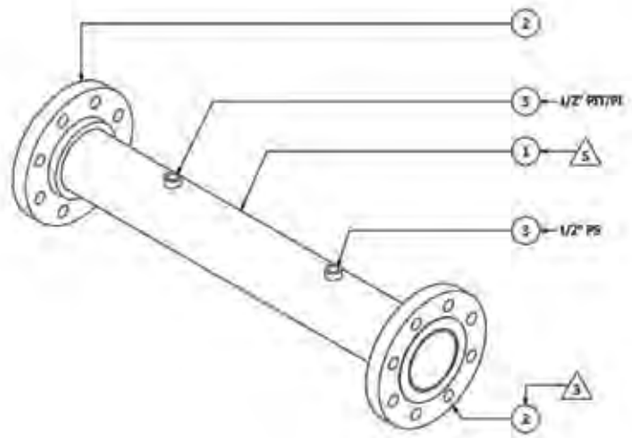
END

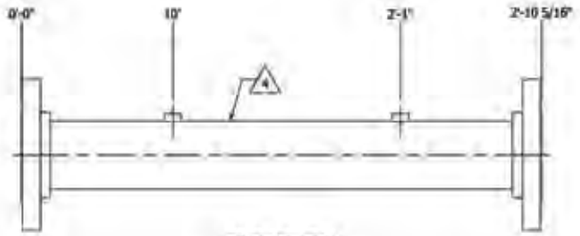
APPROVED

△2
260-2FW-SS-02
2ND PASS TRAIN 1 & 2 FEED PUMP
DISCHARGE MANIFOLD
SCALE: 1/5

260-2FW-SS-01

ITEM	QTY	DESCRIPTION
1	34.288 in	A312 SS PIPE, 4" Sch10S 316L
2	2	ASME B16.5 Flange Slip-On Welding - Class 300 4", 316L
3	2	ASME B16.11 Half Coupling Threaded - Class 3000 1/2", 316L





ELEVATION
SCALE: 1/5

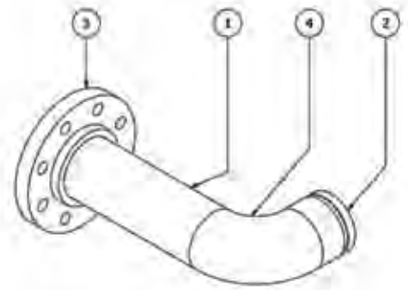
END

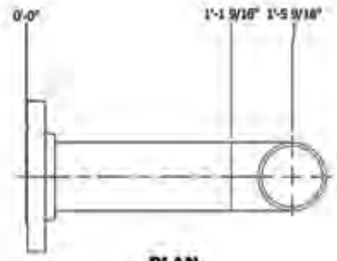
△2
260-2FW-SS-01
2ND PASS TRAIN 1 & 2 FEED PUMP
DISCHARGE MANIFOLD
SCALE: 1/5

APPROVED

260-2FW-SS-03

ITEM	QTY	DESCRIPTION
1	13.536 in	A312 SS PIPE, 4" Sch10S 316L
2	3.000 in	A312 SS PIPE, 4" Sch40S 316L Seamless W/Cut Groove End
3	1	ASME B16.5 Flange Slip-On Welding - Class 300 4", 316L
4	1	ASME B16.9 Short Radius 90 Deg Elbow 4" , Sch10S, 316L





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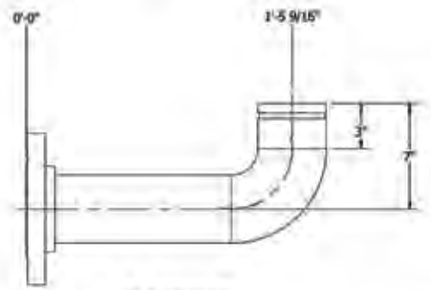
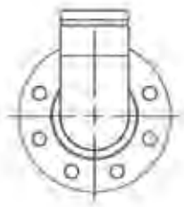


ELEVATION
SCALE: 1/5



END

△3 △4 △5
260-2FW-SS-03
2ND PASS, TRAIN 1
1ST STAGE FEED MANIFOLD
SCALE: 1/5

APPROVED

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
5	UPDATED FEED SPOOLS	AWS	01/20/15	AWS	JG
4	CHANGED PIPE SIZE FROM 6" TO 4" ON 1ST PASS FEED, 2ND STAGE FEED CHANGED FROM 4" TO 3"	AWS	1/09/12	AWS	JG
3	UPDATED SPOOLS	AWS	09/19/11	JG	JG
2	CHANGED FEED PIPING TO 6" FROM 4", CHANGED 2ND PASS FEED FROM 2 1/2" TO 4", INTERSTAGE CHANGED FROM 3 1/2" TO 4"	AWS	8/2011	JG	JG
1	FOR FABRICATION	AWS	05/13/11	JG	JG

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
130 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 256-7707 Fax: (626) 358-7727

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DRAWN	AWS	6/13/2011	SUBMITTAL No.
CHK			MODEL REF. No.
APP			
SALES REP			PROJECT NUMBER
PM			260
DESIGNED	H SAID		
TOLERANCE BLOCK		INCH = +/- 1/32 (+/- 0.03)	
		METRIC = +/- 1.0 millimeter	

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
ORIGINAL CUST VENDOR: BIWATER INTERNATIONAL LTD

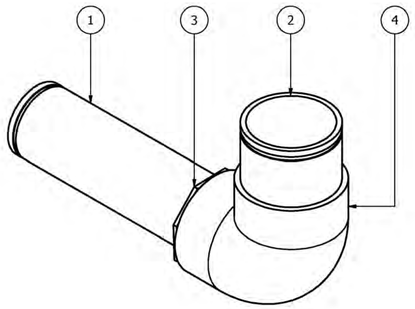
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

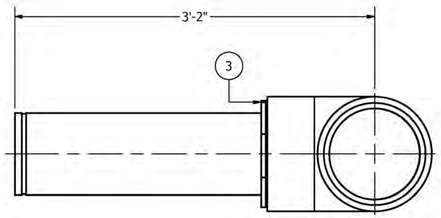
TITLE: 2ND PASS FEED WATER SPOOLS
316L SS PIPING SPOOLS

SIZE: D | SCALE: A/S | DWG NO: 260-P-102 | SHEET 1 OF 4 | REV: 5

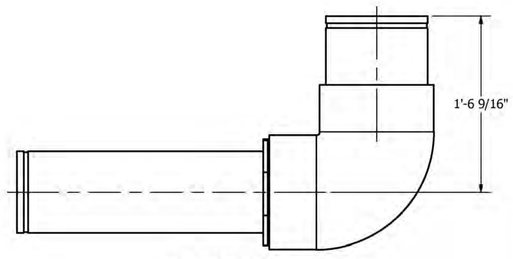
260-1CIPF-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	30.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	13.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
3	1	837-628	PVC REDUCER BUSHING, 10"SPIG X 8"SOC, Sch80
4	1	806-100	PVC SCH80 ELBOW, 10" (SXSX90)





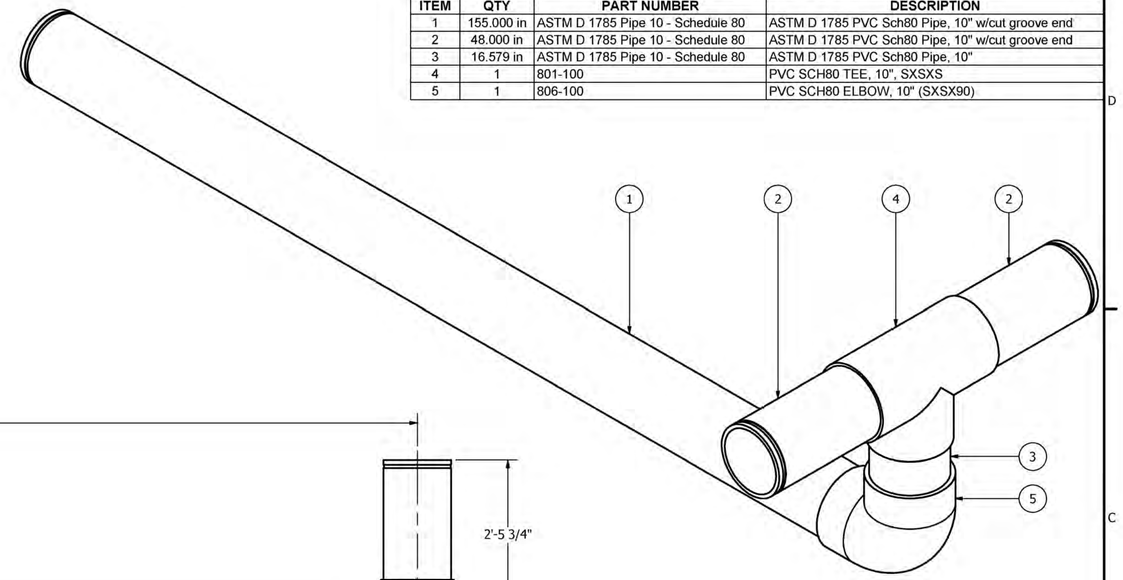
PLAN

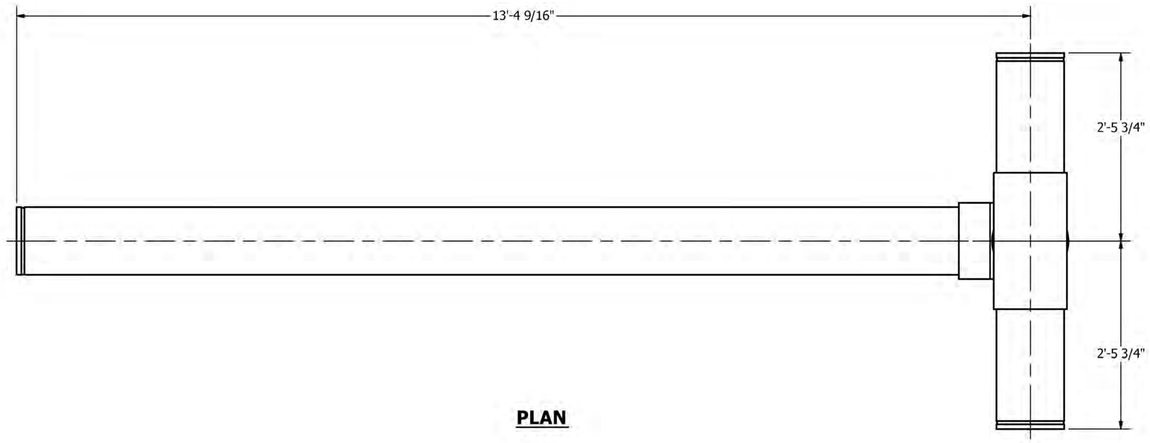


ELEVATION
SCALE: 1/8

260-1CIPF-PV-02

ITEM	QTY	PART NUMBER	DESCRIPTION
1	155.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
2	48.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10" w/cut groove end
3	16.579 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
4	1	801-100	PVC SCH80 TEE, 10", SXSXS
5	1	806-100	PVC SCH80 ELBOW, 10" (SXSX90)





PLAN

ELEVATION
SCALE: 1/12

260-1CIPF-PV-01
1ST PASS PVC CIP FEED HEADER
SCALE: 1/8

260-1CIPF-PV-02
1ST PASS PVC CIP FEED HEADER
SCALE: 1/10

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED SPOOLS	AWS	03/02/12	AWS	JS
1	FOR FABRICATION	AWS	08/16/11	JS	JS

REVISION HISTORY

Biwater

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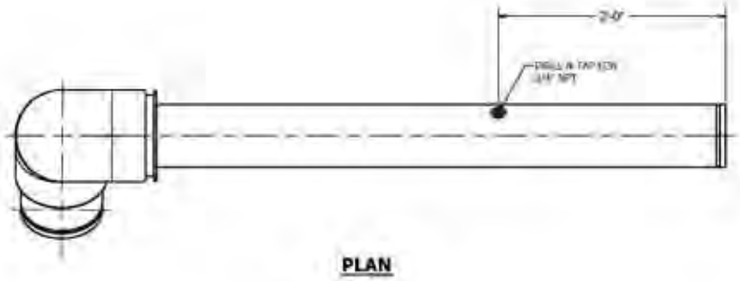
DRAWN	AWS	8/29/2011	SUBMITTAL NO.
CHKR	JS		SPECS. REF. NO.
PROJ MGR	JS		PROJECT NUMBER 260
APPROVED	H SAID		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

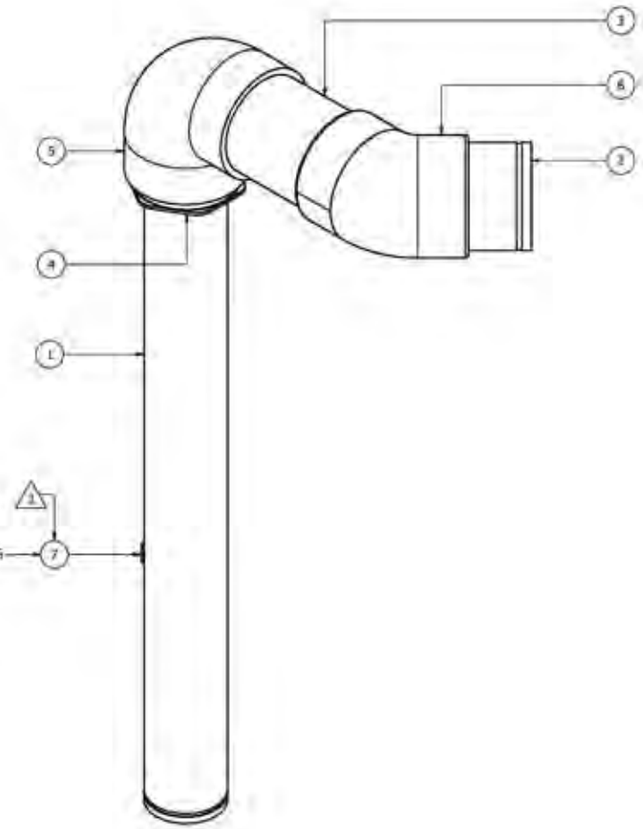
STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD
PROJECT: BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE: 1ST PASS FEED & CIPF SPOOLS ASTM D 1785 PVC SPOOLS
SIZE: D | SCALE: A/S | DWG NO: 260-P-104 | SHEET 6 OF 7 | REV: 2

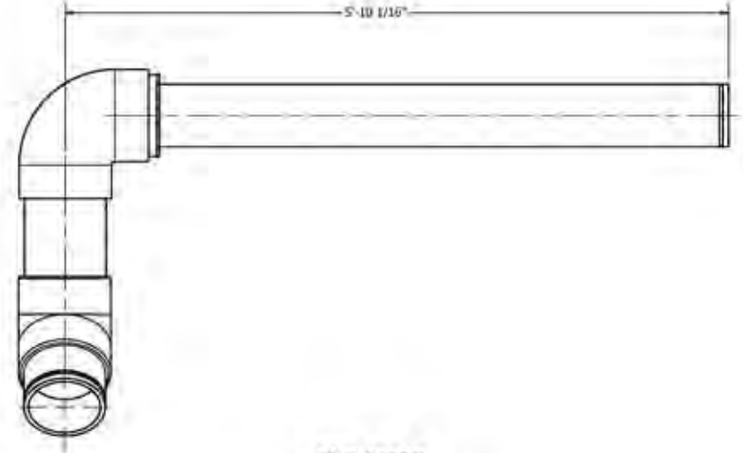
260-1FW-PV-07

ITEM	QTY	PART NUMBER	DESCRIPTION
1	54.132 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	9.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
3	17.031 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8"
4	1	837-585	PVC SCH80 REDUCER BUSHING 8"x6" (SPXS)
5	1	806-090	PVC SCH80 ELBOW, 6", SXSX90
6	1	817-080	PVC SCH80 ELBOW, 8", SXSX45
7	1	839-161	PVC SCH80 REDUCER BUSHING 3/4" x 1/2" (MXF)

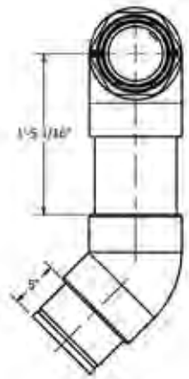


PLAN





ELEVATION
SCALE: 1/8



END

260-1FW-PV-07
1ST PASS PUMP SUCTION HEADER
SCALE: 1/6

REV	DESCRIPTION	REV BY	DATE	CHK'D	APP'D
2	UPDATED SPOOLS	AWS	03/2012	AWS	JS
1	FOR FABRICATION	AWS	08/16/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 256-7701 Fax: (626) 358-7727

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DRAWN AWS	8/29/2011	
CHK'D		
APP'D		
DWG NO.		260
SCALE	1 CATH	

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) ; METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

PREPARED FOR BIWATER INTERNATIONAL LTD

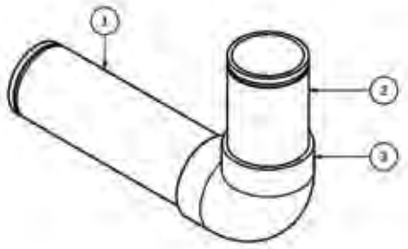
BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

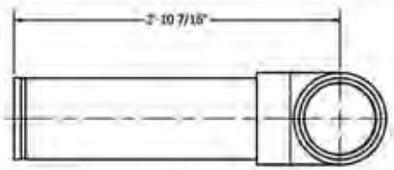
1ST PASS FEED & CIPF SPOOLS
ASTM D 1785 PVC SPOOLS

REV	SCALE	DWG NO.	SHEET 5 OF 7
D	A/S	260-P-104	2

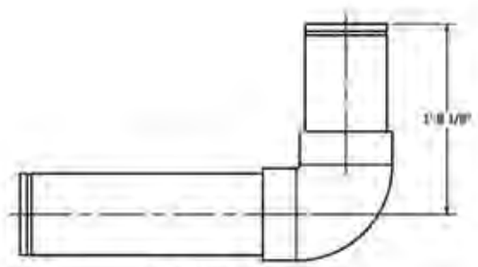
260-1FW-PV-05

ITEM	QTY	PART NUMBER	DESCRIPTION
1	30.417 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	10.131 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
3	1	806-090	PVC SCH80 ELBOW, 8", SXSX90





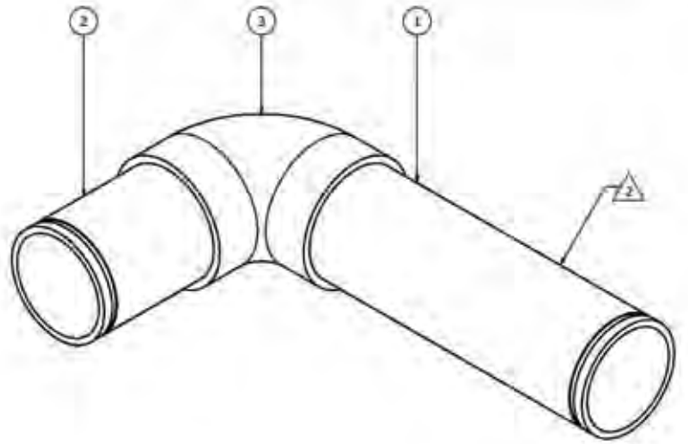
PLAN

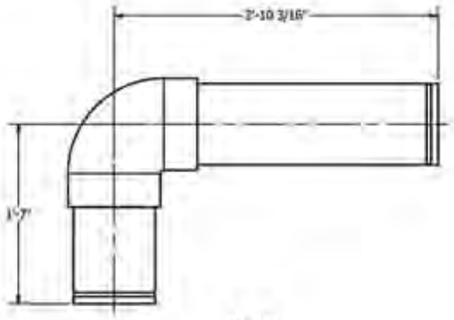


ELEVATION
SCALE: 1/8

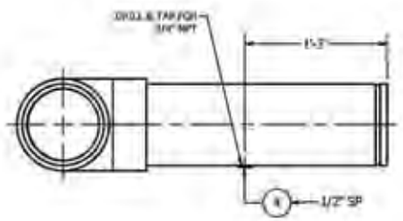
260-1FW-PV-06

ITEM	QTY	PART NUMBER	DESCRIPTION
1	30.195 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	16.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
3	1	806-060	PVC SCH80 ELBOW, 8", SXSX60
4	1	839-101	PVC SCH80 REDUCER BUSHING 3/4" x 1/2" (MXF)

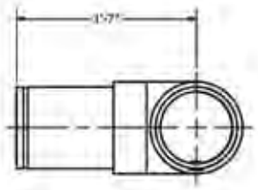




PLAN



ELEVATION
SCALE: 1/8



END

260-1FW-PV-05
1ST PASS PVC FEED HEADER
SCALE: 1/8

260-1FW-PV-06
1ST PASS PVC PUMP SUCTION HEADER
SCALE: 1/5

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED SPOOLS	AWS	03/02/12	AWS	JS
1	FOR FABRICATION	AWS	08/16/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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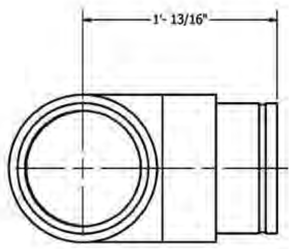
DRAWN BY	AWS
CHKD BY	
APPD BY	
QUOT NO.	
JOB NO.	
SCALE	AS SAW
DATE	8/29/2011
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)
	METRIC = +/- 1.0 millimeter

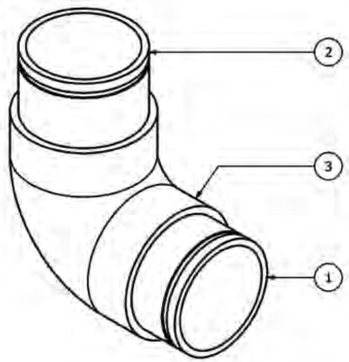
STATUS	FOR FABRICATION
CUSTOMER	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD
PROJECT	BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE	1ST PASS FEED & CIPF SPOOLS ASTM D 1785 PVC SPOOLS
SIZE	D
SCALE	AS
DWG NO.	260-P-104
SHEET 4 OF 7	
REV	2

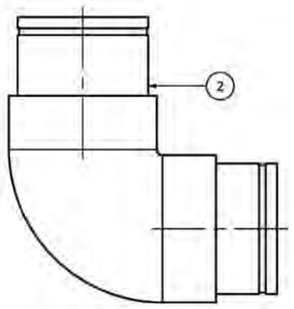
260-1FW-PV-04

ITEM	QTY	PART NUMBER	DESCRIPTION
1	8.808 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	10.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
3	1	806-080	PVC SCH80 ELBOW, 8", SXSX90

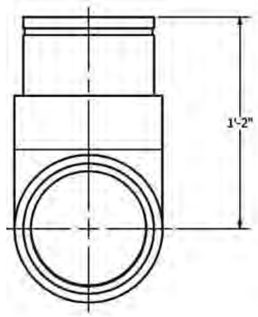


PLAN





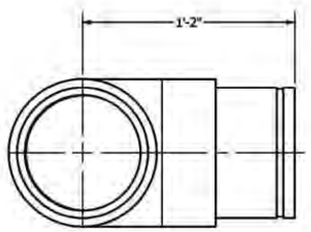
ELEVATION
SCALE: 1/5



END

260-1FW-PV-08

ITEM	QTY	PART NUMBER	DESCRIPTION
1	10.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
2	1	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
3	1	806-080	PVC SCH80 ELBOW, 8", SXSX90



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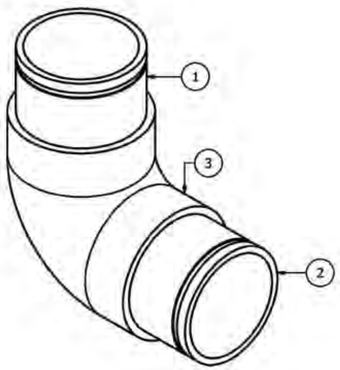
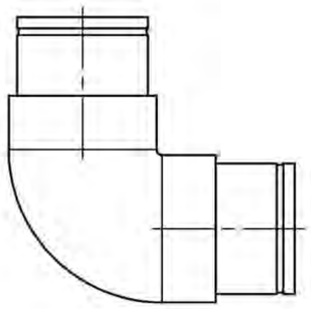
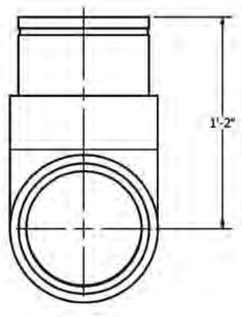




ELEVATION
SCALE: 1/5



END

260-1FW-PV-04
1ST PASS PX LP SEAWATER INLET HEADER
SCALE: 1/5

260-1FW-PV-08
1ST PASS PX LP SEAWATER INLET HEADER
SCALE: 1/5

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED SPOOLS	AWS	03/02/12	AWS	JS
1	FOR FABRICATION	AWS	08/16/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
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DRAWN	AWS	8/29/2011
CHK'R	JS	
PROJ MGR	JS	
APPROVED	H SAID	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

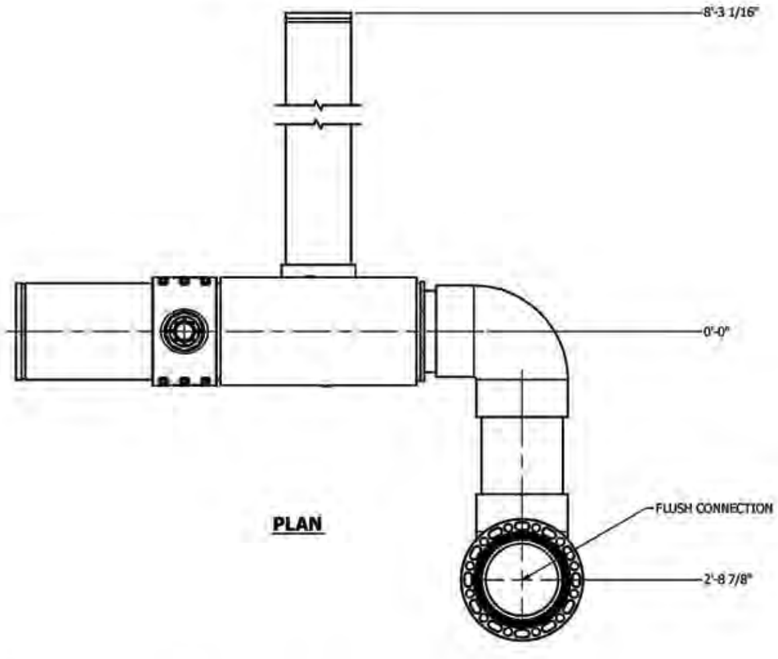
SUBMITTAL NO.
SPECS. REF. NO.
PROJECT NUMBER
260

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

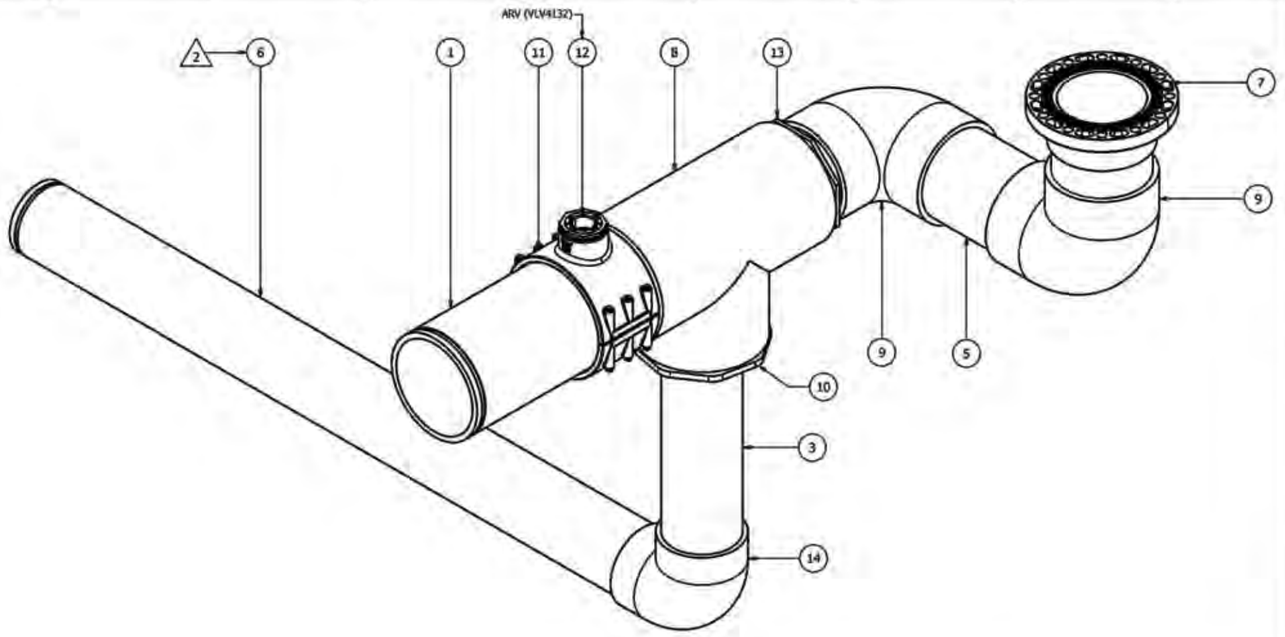
PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

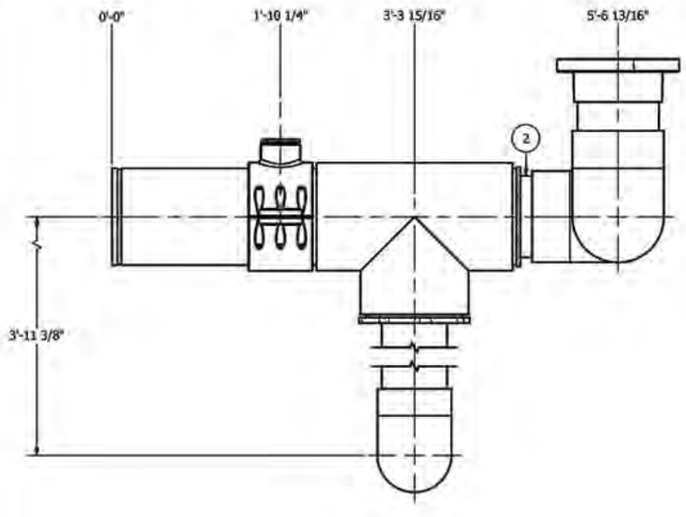
TITLE: 1ST PASS FEED & CIPF SPOOLS
ASTM D 1785 PVC SPOOLS

SIZE: D | SCALE: A/S | DWG NO: 260-P-104 | SHEET 3 OF 7 | REV: 2

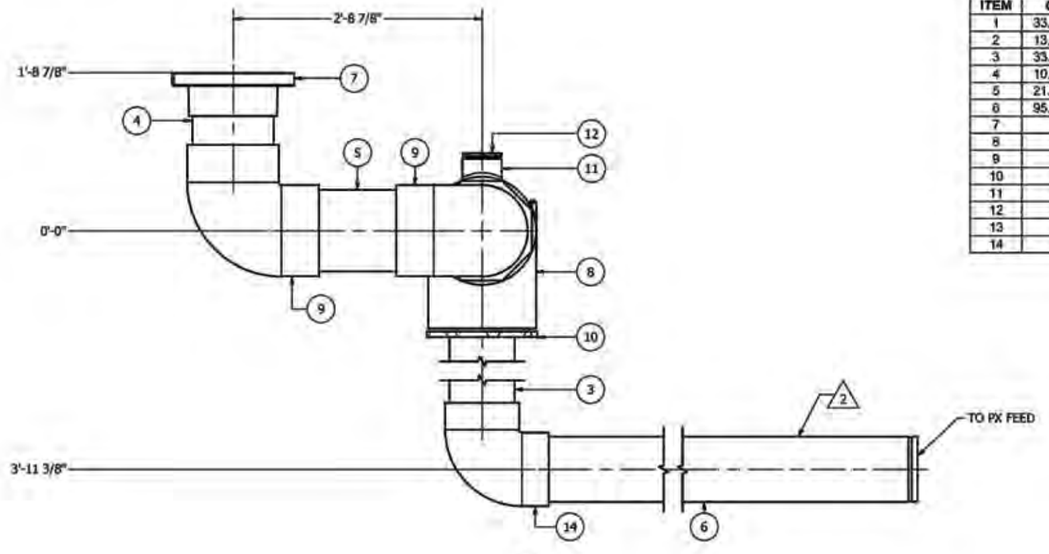


PLAN





ELEVATION
SCALE: 1/10



END

260-1FW-PV-03			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	33.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" w/cut groove end
2	13.219 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
3	33.304 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove end
4	10.000 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
5	21.750 in	ASTM D 1785 Pipe 10 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 10"
6	95.060 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove both ends
7	1	854-100	PVC SCH80 FLANGE, 10", 150# (TWOPIECE-SLIP)
8	1	801-120	PVC SCH80 TEE, 12", SXSXS
9	2	806-100	PVC SCH80 ELBOW, 10" (SXSX90)
10	1	837-868	PVC SCH80 REDUCER BUSHING 12"x8", (SPXS)
11	1	866-664	PVC SCH80 SADDLE, 12"X4" (SINGLE-SLIP-EPDM-ZINC)
12	1	837-420	PVC SCH80 REDUCER BUSHING 4"x2" (SPXS)
13	1	837-670	REDUCER BUSING, 12"X10", SPGXSOC, PVC, SCH.80
14	1	806-080	PVC SCH80 ELBOW, 8", SXSX90

260-1FW-PV-03
1ST PASS FEED TO ERD &
FLUSH CONNECTION
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED SPOOLS	AWS	03/02/12	AWS	JS
1	FOR FABRICATION	AWS	08/18/11	JS	JS

REVISION HISTORY

Biwater

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BIWATER AEWT, INC.
136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

DRAWN: AWS | 8/29/2011 | SUBMITTAL NO.:
CHK'R: JS | SPECS. REF. NO.:
APP'D: JS | PROJECT NUMBER: 260
APPROVED: H SAID

TOLERANCE BLOCK: INCH = +/- 1/32 (+/- 0.03) | METRIC = +/- 1.0 millimeter

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS FEED & CIPF SPOOLS
ASTM D 1785 PVC SPOOLS

SIZE: D | SCALE: A/S | DWG NO: 260-P-104 | SHEET 2 OF 7 | REV: 2

1ST PASS PVC FEED & CIPF PIPE SPOOLS

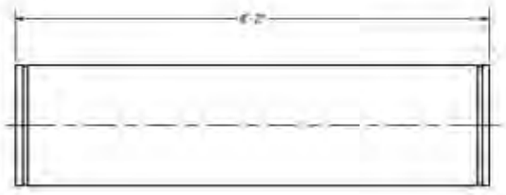
SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-1FW-PV-01	1	4
260-1FW-PV-02	1	4
260-1FW-PV-03	1	4
260-1FW-PV-04	1	4
260-1FW-PV-05	1	4
260-1FW-PV-06	1	4
260-1FW-PV-07	1	4
260-1FW-PV-08	1	4
260-1CIPF-PV-01	1	4
260-1CIPF-PV-02	1	4
260-FWPXLP-PV-01	1	4

PVC PIPING NOTES

1. MATERIAL IS PVC SCH80 (ASTM D-1785)
2. ALL DIMENSIONS ARE IN INCHES

260-1FW-PV-02

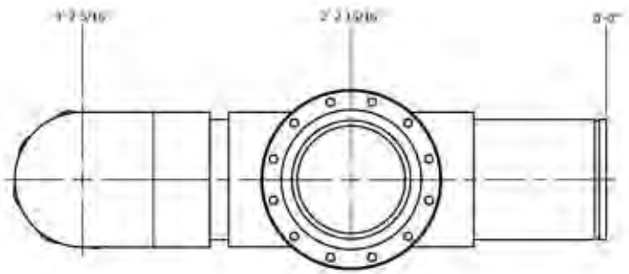
ITEM	QTY	DESCRIPTION
1	50.000 in	ASTM D 1785 PVC SCH80 Pipe, 12" w/cut groove both ends



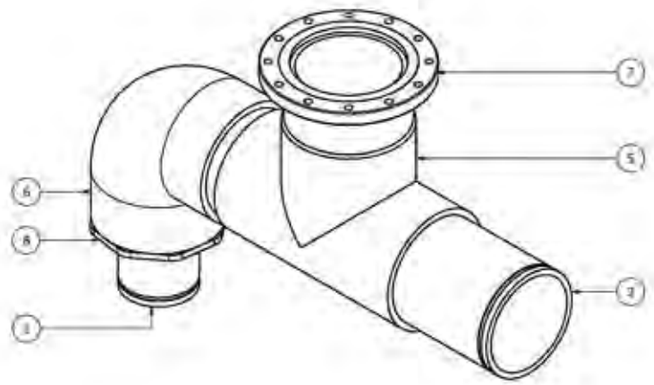
260-1FW-PV-02
ELEVATION
SCALE: 1/8

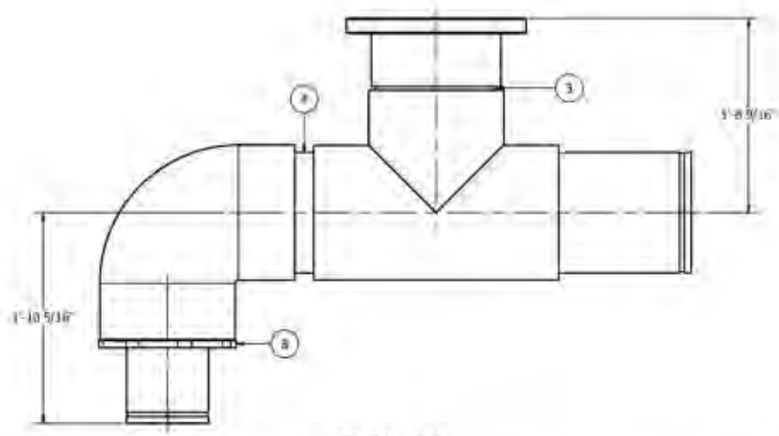
260-1FW-PV-01

ITEM	QTY	PART NUMBER	DESCRIPTION
1	12.000 in	ASTM D 1785 Pipe 8 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 8" w/cut groove ends
2	20.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12" W/ Cut Groove End
3	13.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
4	14.000 in	ASTM D 1785 Pipe 12 - Schedule 80	ASTM D 1785 PVC Sch80 Pipe, 12"
5	1	801-120	PVC SCH80 TEE, 12", SXSXS
6	1	806-120	PVC SCH80 ELBOW, 12", SXSX90
7	1	854-120	PVC SCH80 FLANGE, 12", 150# (TWORECE-SLIP)
8	1	837-669	PVC SCH80 REDUCER BUSHING 12"x8", (SPXS)

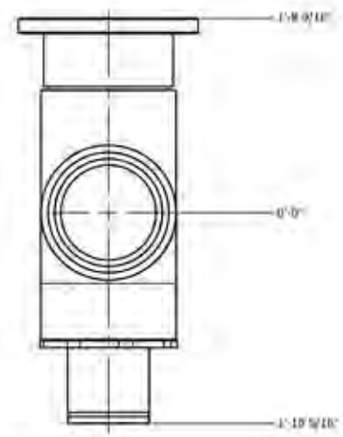


PLAN





ELEVATION
SCALE: 1/8



END

260-1FW-PV-01
1ST PASS FEED HEADER DOWNCOMER
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	UPDATED SPOOLS	AWS	03/02/12	AWS	JS
1	FOR FABRICATION	AWS	08/16/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE. MONROVIA CA 91016
Phone: (626) 256-7707 Fax: (626) 358-7737

DRAWN	AWS	8/29/2011
CHKD	JS	
APPD	JS	
SCALE	1:4(D)	
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)	
	METRIC = +/- 1.0 millimeter	

STATUS	FOR FABRICATION
PROJECT	BIWATER-AEWT
CONTRACTOR	BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

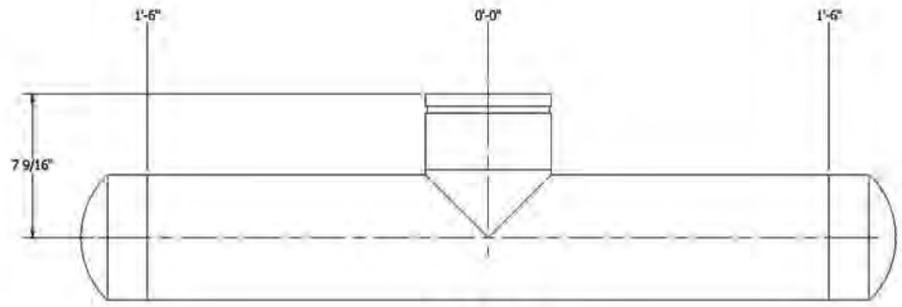
1ST PASS FEED & CIPF SPOOLS
ASTM D 1785 PVC SPOOLS

SIZE	FSCM NO.	DWG NO.	REV
D	A/S	260-P-104	2

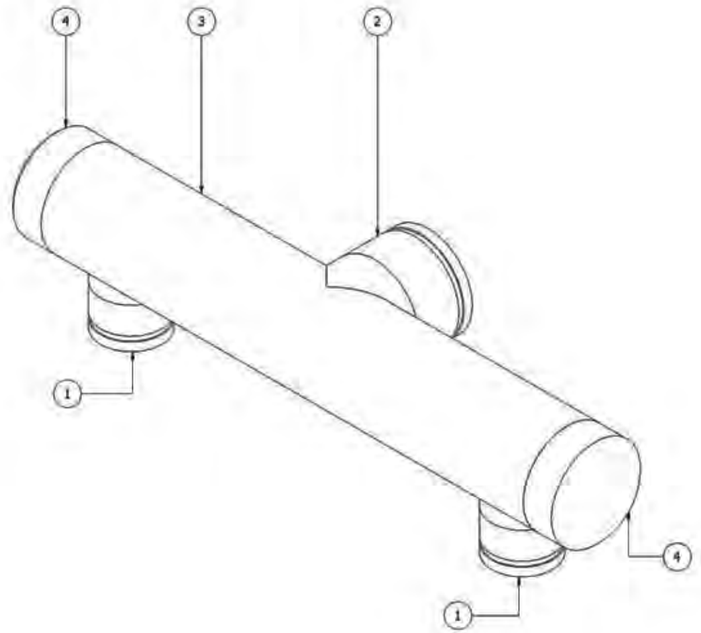
SHEET 1 OF 7

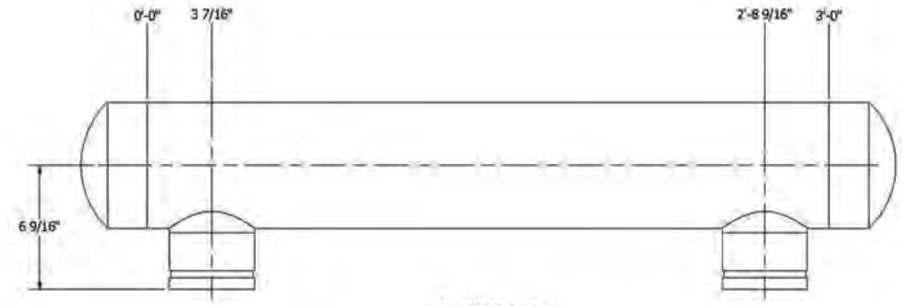
260-1PW-SS-02

ITEM	QTY	DESCRIPTION
1	6.000 in	A312 SS PIPE, 4" Sch10S 316L Seamless W/Cut Groove End
2	4.000 in	A312 SS PIPE, 6" Sch10S 316L Seamless W/Cut Groove End
3	36.000 in	A312 SS PIPE, 6" Sch10S 316L
4	2	ASME B16.9 Cap 6"



PLAN





ELEVATION
SCALE: 1 / 4

2

260-1PW-SS-02
1ST PASS PERMEATE HEADER
SCALE: 1 / 4

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	ADDED SPOOL# 260-1PW-SS-02 & UPDATED 260-1PW-SS-01	AWS	08/29/11	JS	JS
1	FOR FABRICATION	AWS	08/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
Phone: (626) 358-7707 Fax: (626) 358-7737

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DRAWN	AWS	6/12/2011	SUBMITTAL NO.
DESIGN	JS		SPECIFICATION NO.
ENGINEER	JS		260
CHECKED	JS		PROJECT NUMBER
APPROVED	H SAID		
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)		
	METRIC = +/- 1.0 millimeter		

STATUS: FOR FABRICATION
ENGINEER: BIWATER-AEWT
GENERAL CONTRACTOR: BIWATER INTERNATIONAL LTD

PROJECT: BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

TITLE: 1ST PASS PERMEATE SPOOLS
A316L SS PIPE SPOOLS

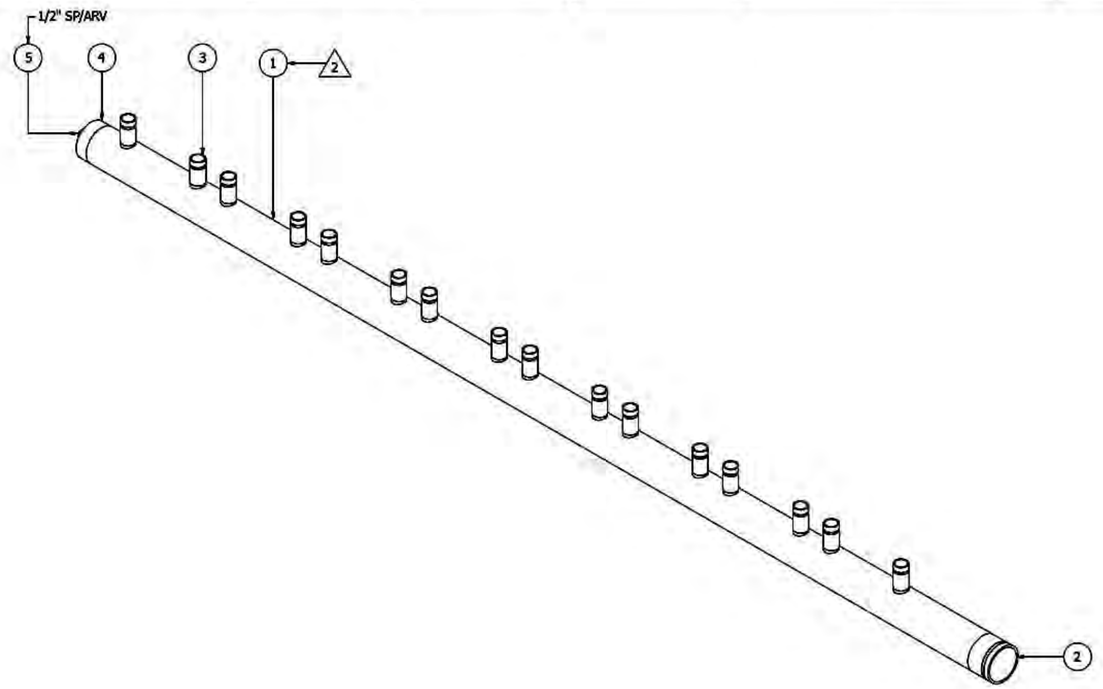
SIZE	SCALE	DWG NO	SHEET	REV
D	A/S	260-P-301	SHEET 2 OF 2	2

1ST PASS SS PERMEATE PIPE SPOOLS

SPOOL NUMBER	QTY PER TRAIN	TOTAL QTY
260-1PW-SS-01	2	8
260-1PW-SS-02	1	4

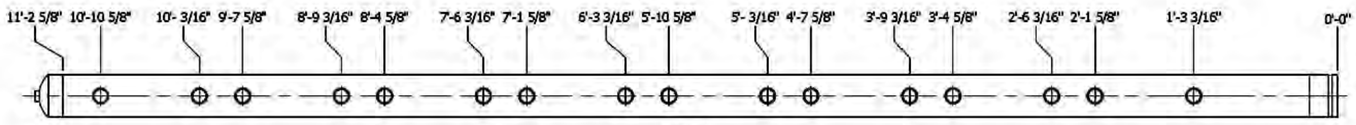
PERMEATE STAINLESS PIPING NOTES

1. MATERIAL IS SS 316L
2. ALL WELDS SHALL BE FULL PENETRATION WELDS. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCRODENCE WITH AWS
3. ALL PIPE SHALL BE PICKLED & PASSIVATED
4. ALL DIMENSIONS ARE IN INCHES

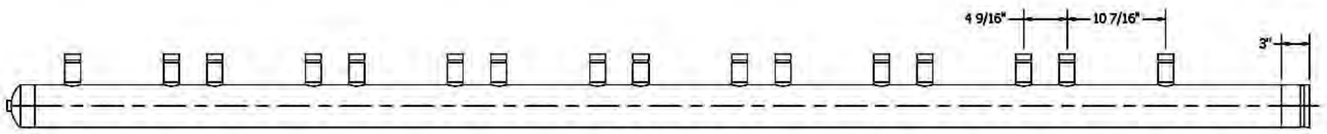


260-1PW-SS-01

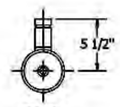
ITEM	QTY	DESCRIPTION
1	131.644 in	A312 SS PIPE, 4" Sch10S 316L
2	3.000 in	A312 SS PIPE, 4" Sch10S 316L Seamless W/Cut Groove End
3	48.000 in	A312 SS PIPE, 1 1/4" Sch10S 316L Seamless W/Cut Groove End
4	1	ASME B16.9 Cap 4", SCH10S
5	1	ASME B16.11 Half Coupling Threaded - Class 3000 1/2"



PLAN



ELEVATION
SCALE: 1/8



END

260-1PW-SS-01

1ST PASS 4" PERMEATE RISER
SCALE: 1/8

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
2	ADDED SPOOL# 260-1PW-SS-02 & UPDATED 260-1PW-SS-01	AWS	08/29/11	JS	JS
1	FOR FABRICATION	AWS	06/12/11	JS	JS

REVISION HISTORY

Biwater

BIWATER AEWT, INC.
136 E. LEMON AVE, MONROVIA CA 91016
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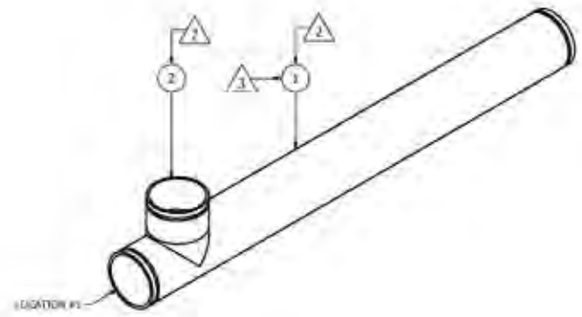
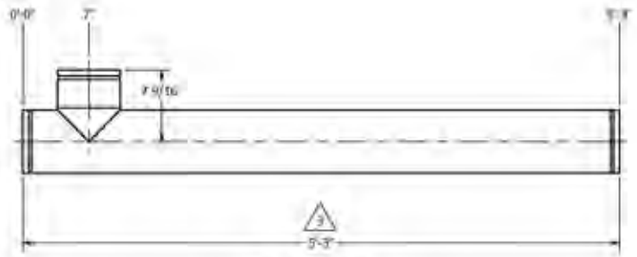
DRAWN	AWS
CHKD	TS
PROJ MGR.	JS
APPROVED	H SAID
DATE	6/12/2011
SUBMITTAL NO.	
SPECS. REF. NO.	
PROJECT NUMBER	260
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)
	METRIC = +/- 1.0 millimeter

STATUS	FOR FABRICATION
ENGINEER	BIWATER-AEWT
GENERAL CONTRACTOR	BIWATER INTERNATIONAL LTD
PROJECT	BIWATER S.A. SWRO WATER TREATMENT PLANT BRITISH VIRGIN ISLANDS
TITLE	1ST PASS PERMEATE SPOOLS A316L SS PIPE SPOOLS
SIZE	D
SCALE	A/S
DWG NO	260-P-301
SHEET	1 OF 2
REV	2

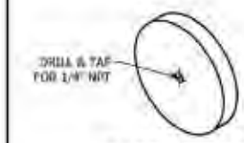
260-1CW-DP-02

ITEM	QTY	DESCRIPTION
1	63.019 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove Both Ends
2	4.000 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End

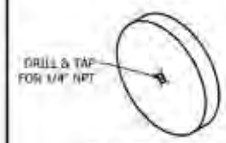




ELEVATION
SCALE: 1/8



6" VICTAULIC CAP
TO BE PLACED AT
LOCATION #1

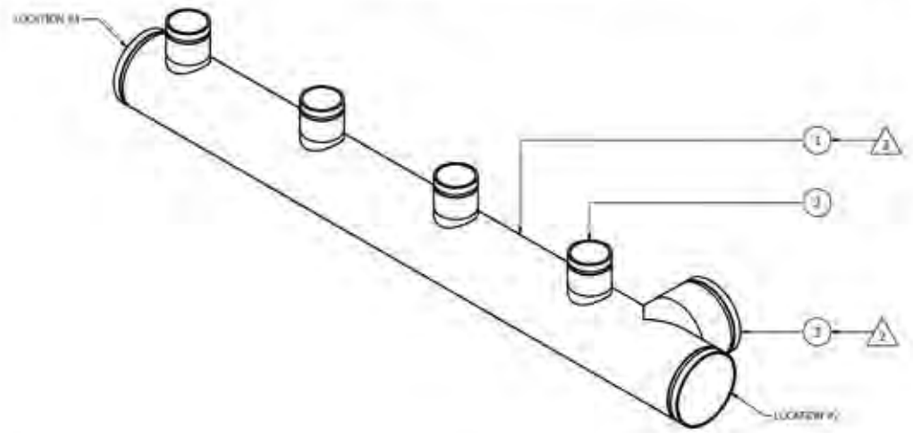


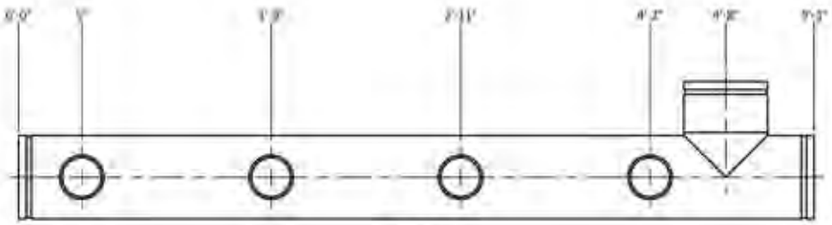
6" VICTAULIC CAP
TO BE PLACED AT
LOCATIONS #1 & 2

260-1CW-DP-02
1ST PASS 6" CONCENTRATE HEADER
TO PX HP INLET
SCALE: 1/8

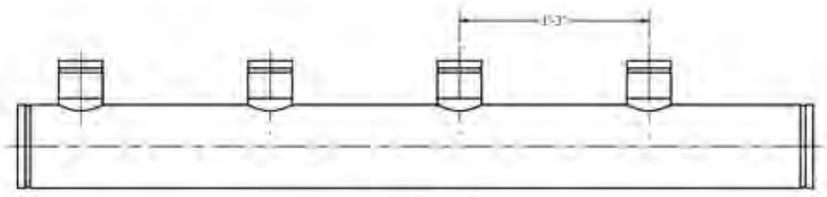
260-1CW-DP-03

ITEM	QTY	DESCRIPTION
1	63.000 in	ZERON 100 Super Duplex Sch40S Pipe 6" W/Cut Groove Both Ends
2	12.000 in	ZERON 100 Super Duplex Sch40S Seamless Pipe 3" W/Cut Groove End
3	4.000 in	ZERON 100 Super Duplex Sch40S Seamless, 6" W/Cut Groove End

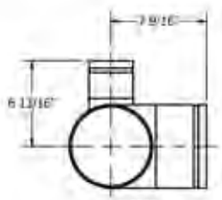




PLAN



ELEVATION
SCALE: 1/6



END

260-1CW-DP-03
PX 6" HP BRINE INLET HEADER
SCALE: 1/6

REV	DESCRIPTION	REV BY	DATE	CHKD	APPD
4	UPDATED SPOOL 260-1CVALDP-01	AWS	08/13/12	AWS	JC
3	UPDATED MATERIAL CALLOUTS TO ZERON.	AWS	08/29/11	JC	JC
2	UPDATED SPOOLS. REMOVED FITTINGS AND ADDED FULL TEES WHERE POSSIBLE. ADDED PX SPOOL	AWS	08/22/11	JS	JC
1	FOR FABRICATION	AWS	05/17/11	JS	JC

REVISION HISTORY

Biwater

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DRAWN	AWS 6/12/2011
CHECKED	JC
APPROVED	JC
DRAWING NUMBER	260
CAD FILE	H:\CAD\
TOLERANCE BLOCK	INCH = +/- 1/32 (+/- 0.03)
	METRIC = +/- 1.0 millimeter

FOR FABRICATION

BIWATER-AEWT

BIWATER INTERNATIONAL LTD

BIWATER S.A.
SWRO WATER TREATMENT PLANT
BRITISH VIRGIN ISLANDS

1ST PASS CONC. SPOOLS
DUPLEX PIPING SPOOLS

SIZE D | SCALE A/S | DRAWING NO. 260-P-201 | SHEET 2 of 2 | REV 4