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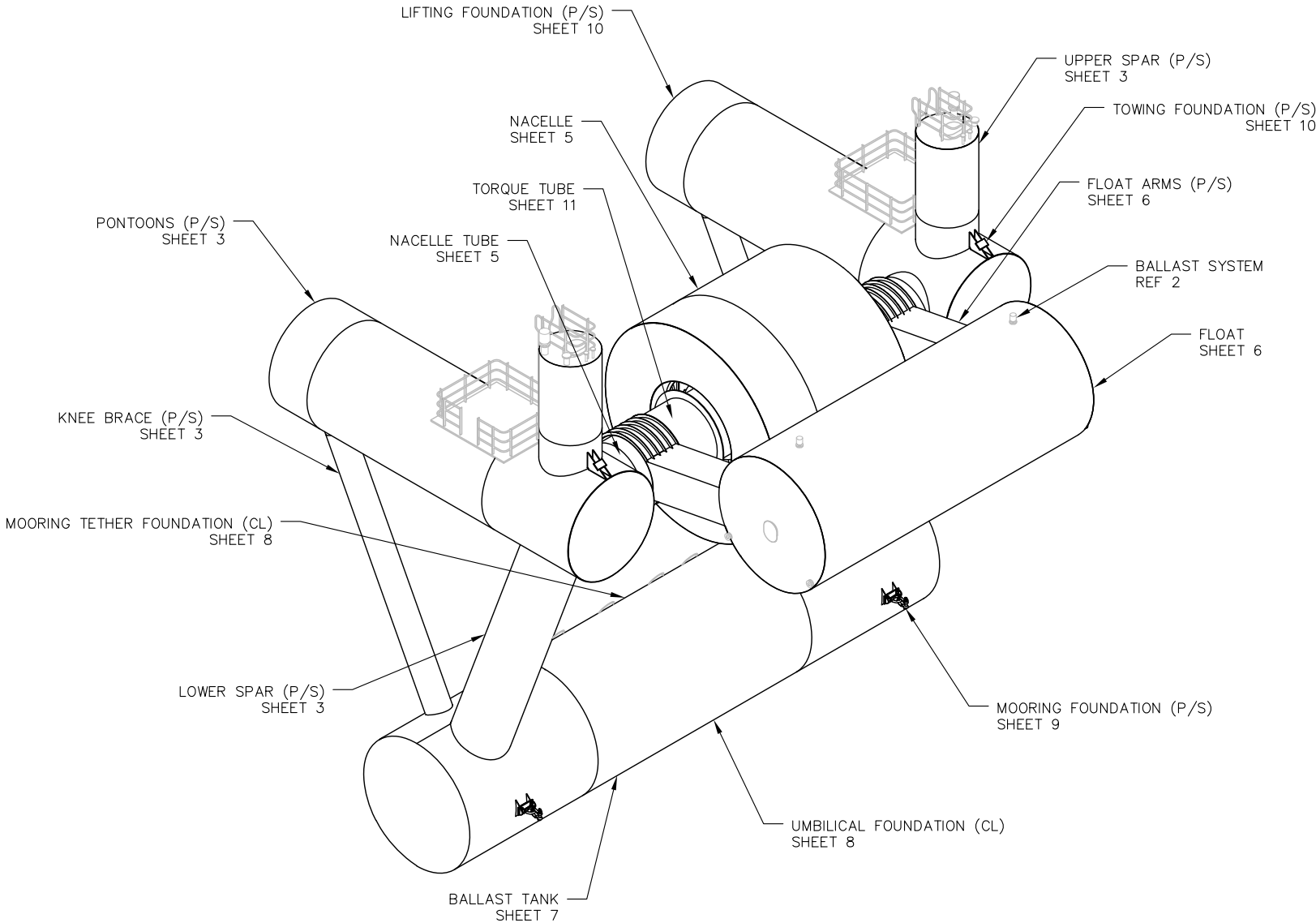
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ISOMETRIC 1-5A
WEC HULL STRUCTURE

SHEET LIST

SHT	TITLE
1	ISOMETRIC COVER
2	HULL DIMENSIONS
3	LONGITUDINAL SECTION
4	PONTOON NODE DETAILS
5	NACELLE SECTION
6	NACELLE BHD AND FLOAT SECTION
7	BALLAST TANK SECTION
8	TETHER AND UMBILICAL FOUNDATIONS
9	MOORING FOUNDATIONS
10	TOWING AND LIFTING FOUNDATIONS
11	TYPICAL DETAILS AND TORQUE TUBE

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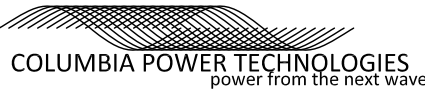
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16"$
ANG: MACH $\pm 0.5^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL ± 0.010
THREE PLACE DECIMAL ± 0.005

INTERPRET GEOMETRIC TOLERANCING PER:

MATERIAL
SEE GENERAL NOTES

FINISH

DO NOT SCALE DRAWING



	NAME	DATE
Drawn By	KAD	7/3/18
Init. Review	ALG	7/3/18
Interm. Review	ALG	7/3/18
Final Review	JMM	7/3/18
Approval		

TITLE:

ISO COVER

SIZE
B

DWG. NO.

18024-100-01 STRUCTURAL ARRANGEMENT

REV
B

SCALE: 1:1

WEIGHT:

SHEET 1 OF 11

GENERAL NOTES

- ALL MATERIALS, SCANTLINGS, WELDING, AND FIT UP SHALL COMPLY WITH THE DNV RULES FOR CERTIFICATION OF TIDAL AND WAVE ENERGY CONVERTERS.
- ALL WORK SHALL BE TO THE SATISFACTION OF THE ATTENDING SURVEYOR AND OWNER'S REPRESENTATIVE.
- MATERIAL DESIGNATION AS FOLLOWS:
 - CYLINDRICAL SHELL PLATING NV AH36
 - TUBE ASTM A500 GR B
 - ALL OTHER MATERIAL NV A UNLESS NOTED OTHERWISE
- ALL WELDERS SHALL BE CERTIFIED BY DNV.
- ONLY LOW HYDROGEN ELECTRODES 70XX SHALL BE USED.
- ALL WELDS EXPOSED TO WEATHER SHALL BE DOUBLE CONTINUOUS.
- ALL WELDS IN WAY OF FOUNDATIONS SHALL BE DOUBLE CONTINUOUS.
- ALL WELDS INSIDE WATER BALLAST TANKS SHALL BE DOUBLE CONTINUOUS.
- ALL NON-TIGHT STRUCTURAL MEMBERS SHALL HAVE A 1" RADIUS SCALLOP IN WAY OF ALL PLATE SEAMS UNLESS NOTED OTHERWISE.
- ALL NON-TIGHT STRUCTURAL MEMBERS AND STIFFENERS SHALL HAVE AIR AND LIMBER HOLES TO FACILITATE DRAINAGE.
- DIMENSIONS ARE GIVEN IN FEET-INCHES. METRIC UNITS ARE INDICATED AS [MILLIMETERS]. ALL DIMENSIONS ARE SHOWN NEAT AND NO ALLOWANCE FOR FIT-UP, SHRINKAGE, OR ERECTION HAS BEEN INCLUDED.
- ALL SHARP PLATE EDGES SHALL BE GROUND SMOOTH.
- BRACKETS OR EFFECTIVE END CONNECTIONS SHALL BE PROVIDED AT THE ENDS OF ALL STIFFENERS ON WATERTIGHT SHELL ENVELOPE AND TANK BOUNDARIES. BRACKETS AND END CONNECTIONS SHALL BE SIZED IN ACCORDANCE WITH DNV RULES.
- ALL CUTOUTS ARE TO BE CONFIRMED PRIOR TO CUT AND INSTALLATION. SHIPYARD TO MAINTAIN STRUCTURAL INTEGRITY WHERE STEEL IS REMOVED DUE TO ELECTRICAL, PIPING, OR OTHER PENETRATIONS. COMPENSATION FOR CUT OUTS IS DEPENDENT UPON CUT OUT SIZE.
- DAMAGED COATINGS SHALL BE REPAIRED IN KIND.

REFERENCES

- SOLIDWORKS ASSEMBLY – 18024.SLDASM
- WEC BALLAST SYSTEM, GLOSTEN DWG NO. 18024-529-01, REV A

REVISIONS


ZONE	REV	DESCRIPTION	DATE	APPD
SHT 8-11	A	1. ADDED SHEETS	7/3/2018	JMM
SHT 5	A	2. MOVED NACELLE BHD	7/3/2018	JMM
SHT 2	A	3. UPDATED BALLAST TANK DIAMETER	7/3/2018	JMM
SHT 2	A	4. UPDATED ANGLE OF LOWER SPAR AND KNEE BRACE	7/3/2018	JMM
SHT 7	A	5. ADDED BALLAST TANK SWASH BHD	7/3/2018	JMM
SHT 3-7	B	1. INCORPORATE 8/13/18 DRAWING REDLINE EDITS.	4/26/2019	JMM
SHT 6	B	2. ADJUST FLOAT DECK LOCATION AND END BHD STIFFENERS.	4/26/2019	JMM
SHT 3,7	B	3. REVISE BALLAST TANK TOP AND END BHD SCANTLINGS	4/26/2019	JMM

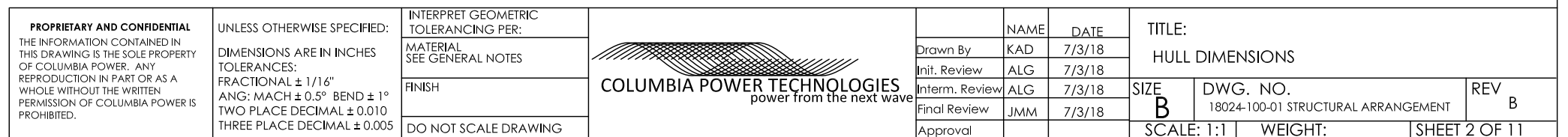
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 2-5

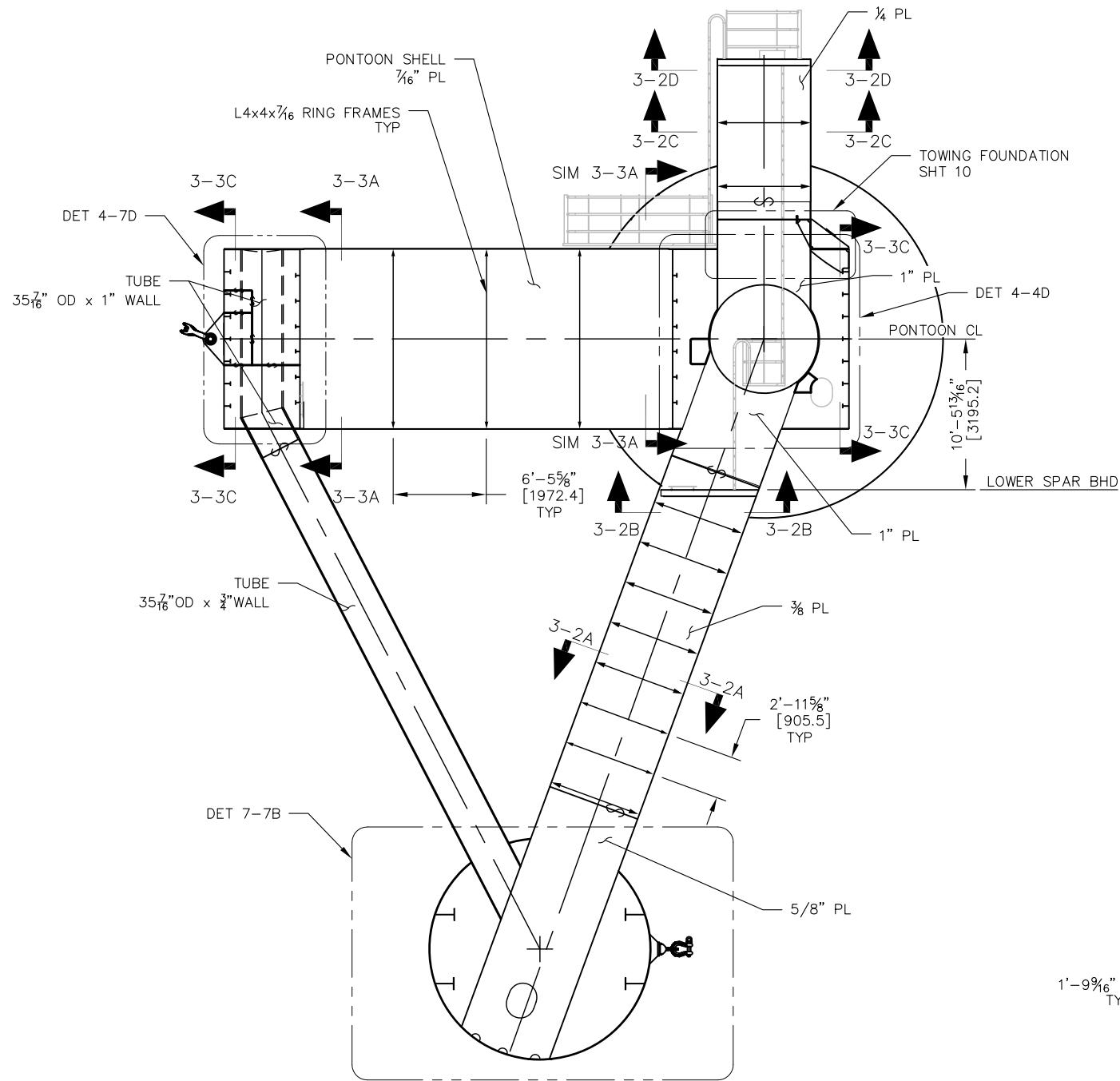


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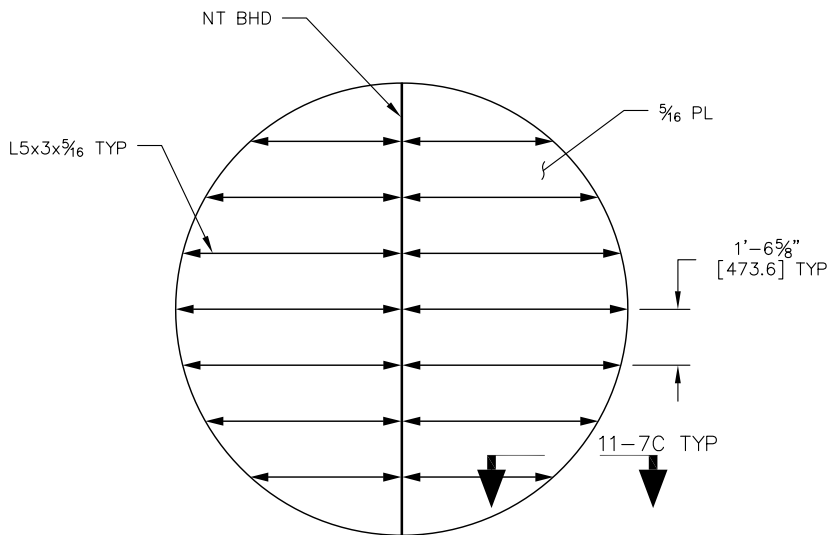
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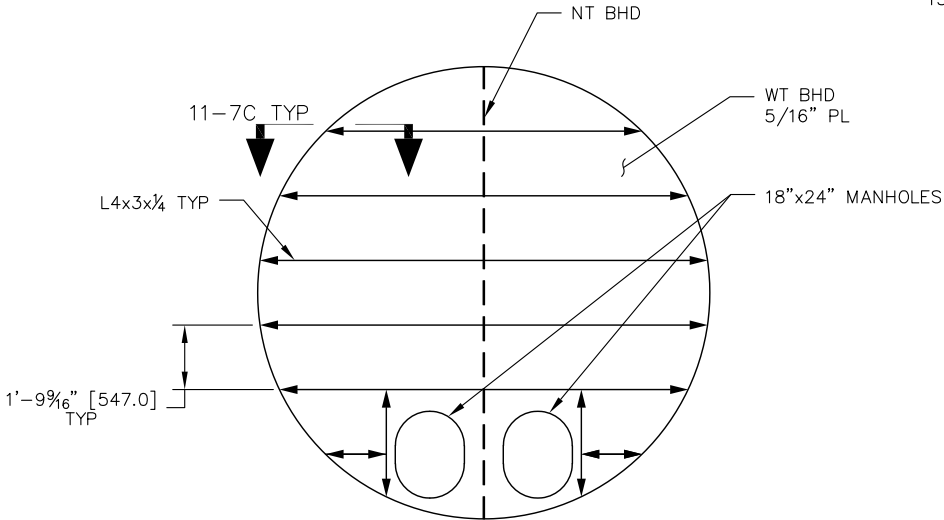
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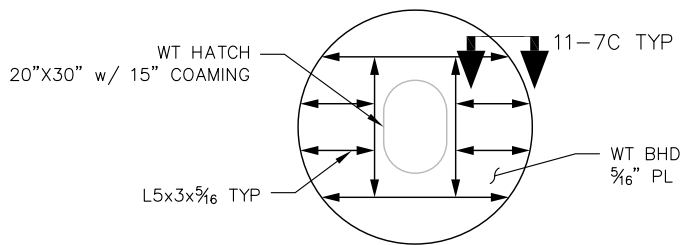
SECTION 3-6A
LOOKING PORT
3/32"=1'-0" B₁



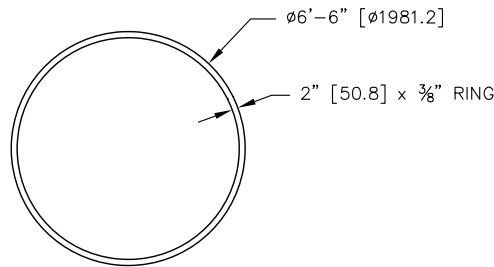
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PONTON END WT BULKHEAD TYP
3/16"=1'-0"



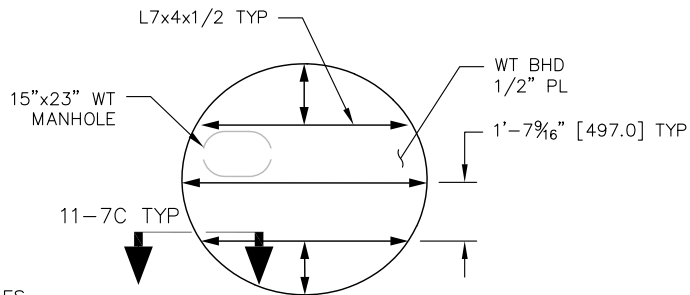
VIEW 3-3A
PONTON INTERIOR WT BULKHEAD TYP
3/16"=1'-0" B₁



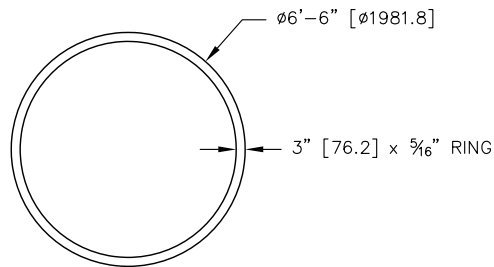
VIEW 3-2D
UPPER SPAR WT END BHD TYP
3/16"=1'-0"




VIEW 3-2C
UPPER SPAR RING FRAME TYP
3/16"=1'-0"

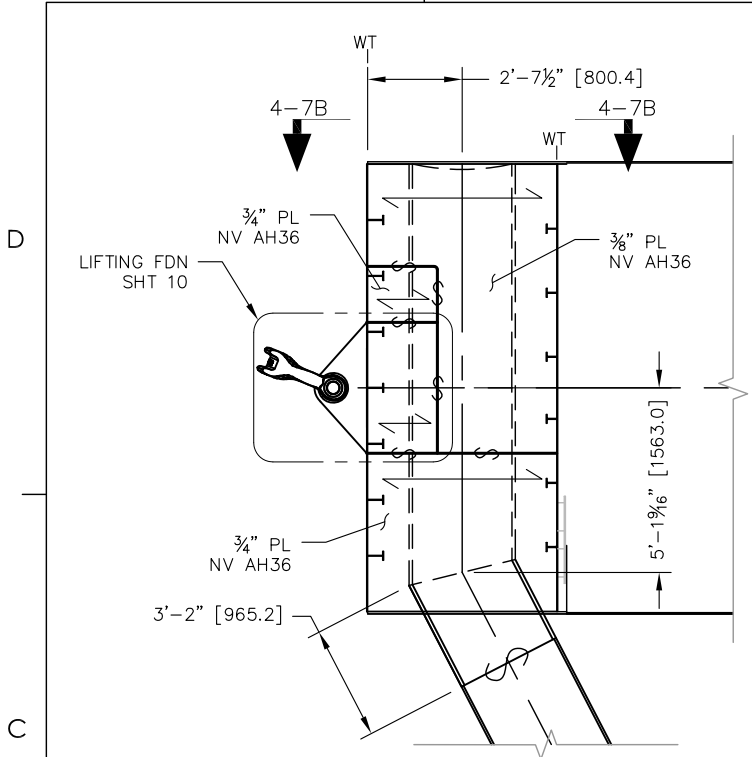


VIEW 3-2B
LOWER SPAR INTERIOR WT BULKHEAD TYP B₃
3/16"=1'-0"

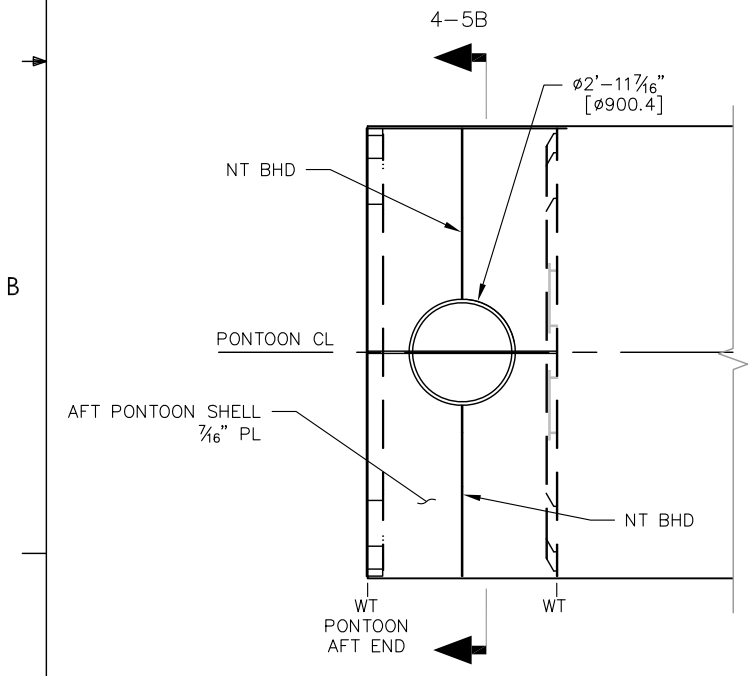


VIEW 3-2A
LOWER SPAR RING FRAME TYP
3/16"=1'-0"

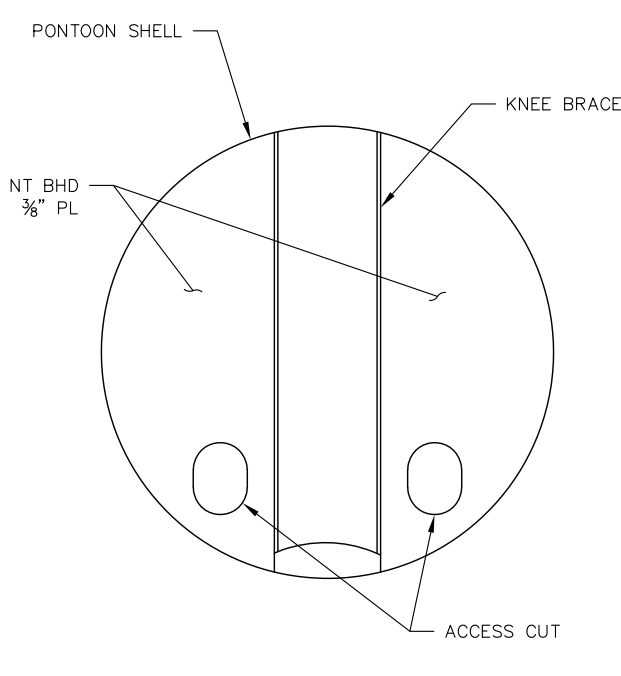
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	DIMENSIONS ARE IN INCHES	MATERIAL SEE GENERAL NOTES		Drawn By	KAD	7/3/18			
	TOLERANCES:	FINISH		Init. Review	ALG	7/3/18	SIZE B	DWG. NO. 18024-100-01 STRUCTURAL ARRANGEMENT	REV B
	FRACTIONAL ± 1/16"	DO NOT SCALE DRAWING		Interm. Review	ALG	7/3/18			
	ANG: MACH ± 0.5° BEND ± 1°			Final Review	JMM	7/3/18			
	TWO PLACE DECIMAL ± 0.010			Approval					
	THREE PLACE DECIMAL ± 0.005								



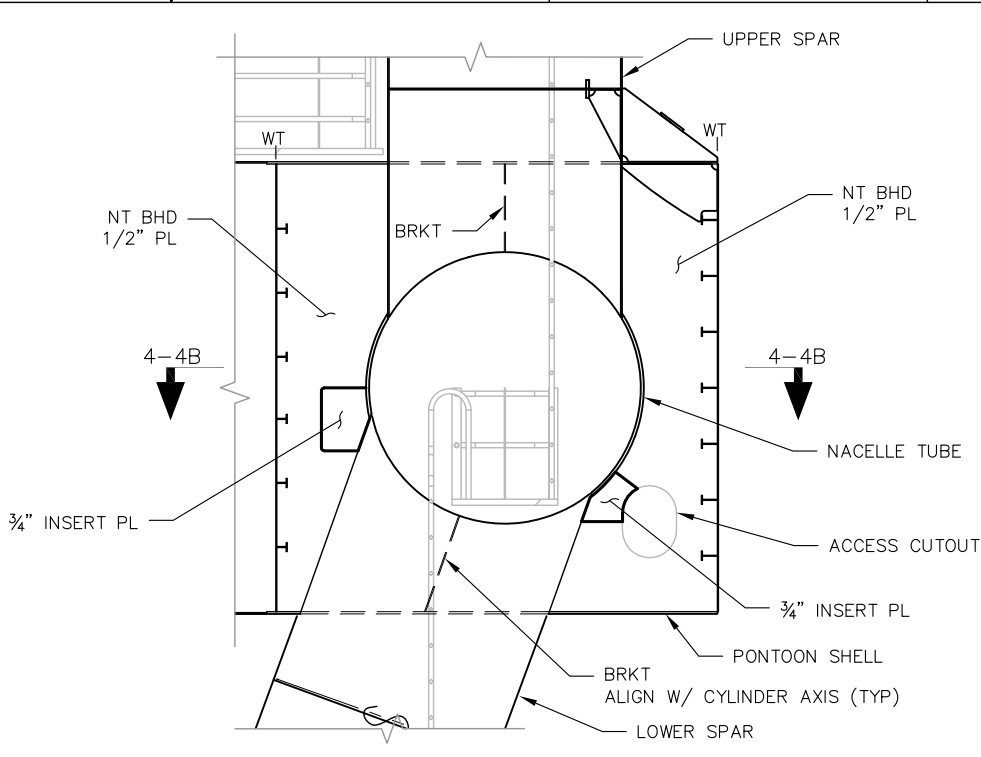
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PONTON AND KNEE BRACE NODE
LKG PORT FROM PONTON CL
3/16"=1'-0"



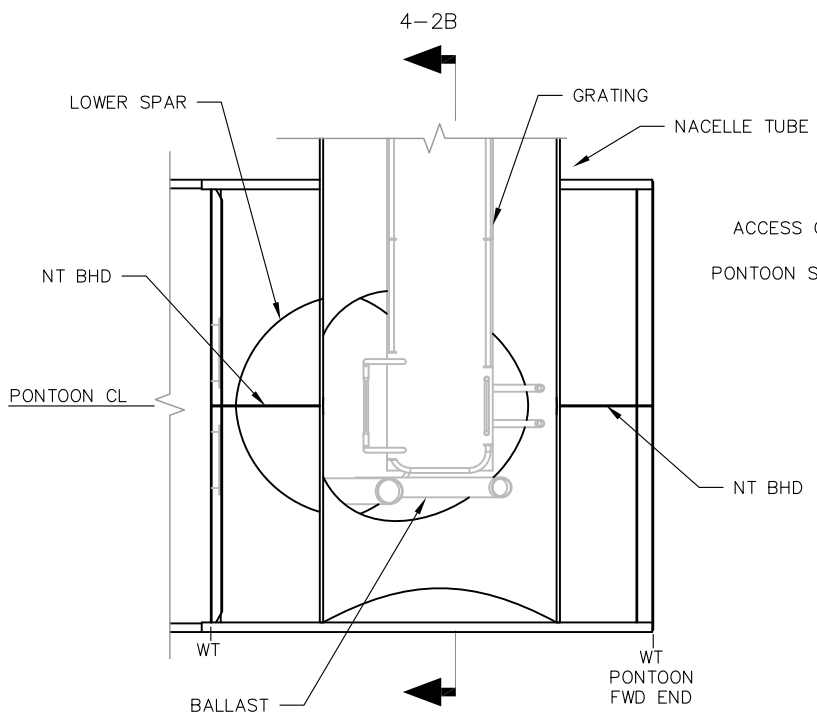
VIEW 4-7B
PONTON AND KNEE BRACE NODE
LKG DOWN
3/16"=1'-0"



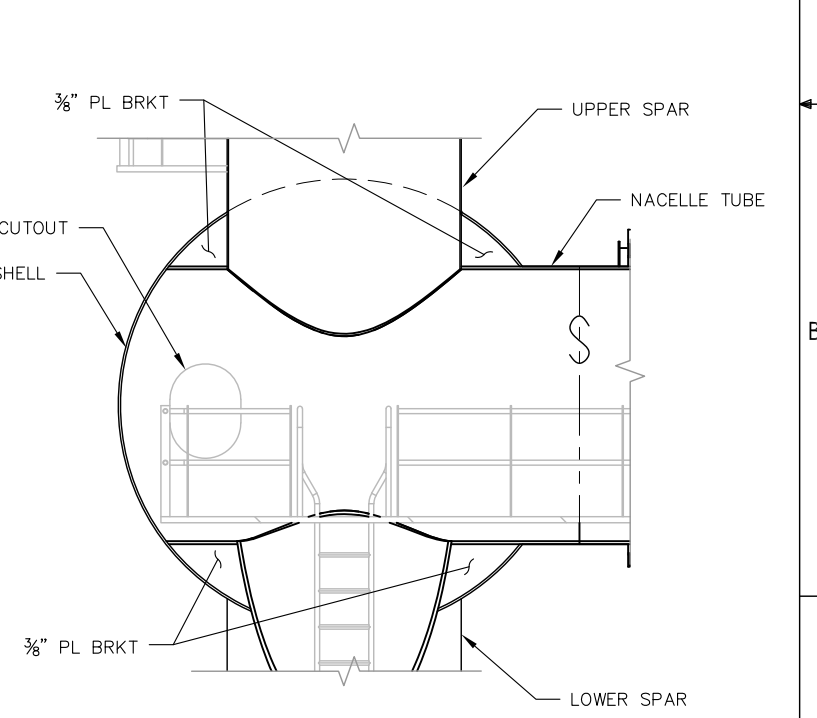
VIEW 4-5B
PONTON AND KNEE BRACE NT BHD
LKG AFT
3/16"=1'-0"



VIEW 4-4D
PONTON, LOWER, AND UPPER SPAR NODE
LKG PORT FROM PONTON CL
3/16"=1'-0"



VIEW 4-4B
PONTON, LOWER, AND UPPER SPAR NODE
LKG DOWN
3/16"=1'-0"



VIEW 4-2B
PONTON, LOWER, AND UPPER SPAR NODE
LKG AFT
3/16"=1'-0"

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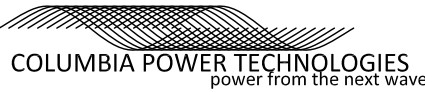
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INTERPRET GEOMETRIC TOLERANCING PER:

MATERIAL SEE GENERAL NOTES

FINISH

DO NOT SCALE DRAWING



	NAME	DATE
Drawn By	KAD	7/3/18
Init. Review	ALG	7/3/18
Interm. Review	ALG	7/3/18
Final Review	JMM	7/3/18
Approval		

TITLE:
PONTON NODE DETAILS

SIZE
B

DWG. NO.
18024-100-01 STRUCTURAL ARRANGEMENT


REV
B

SCALE: 1:1


WEIGHT:

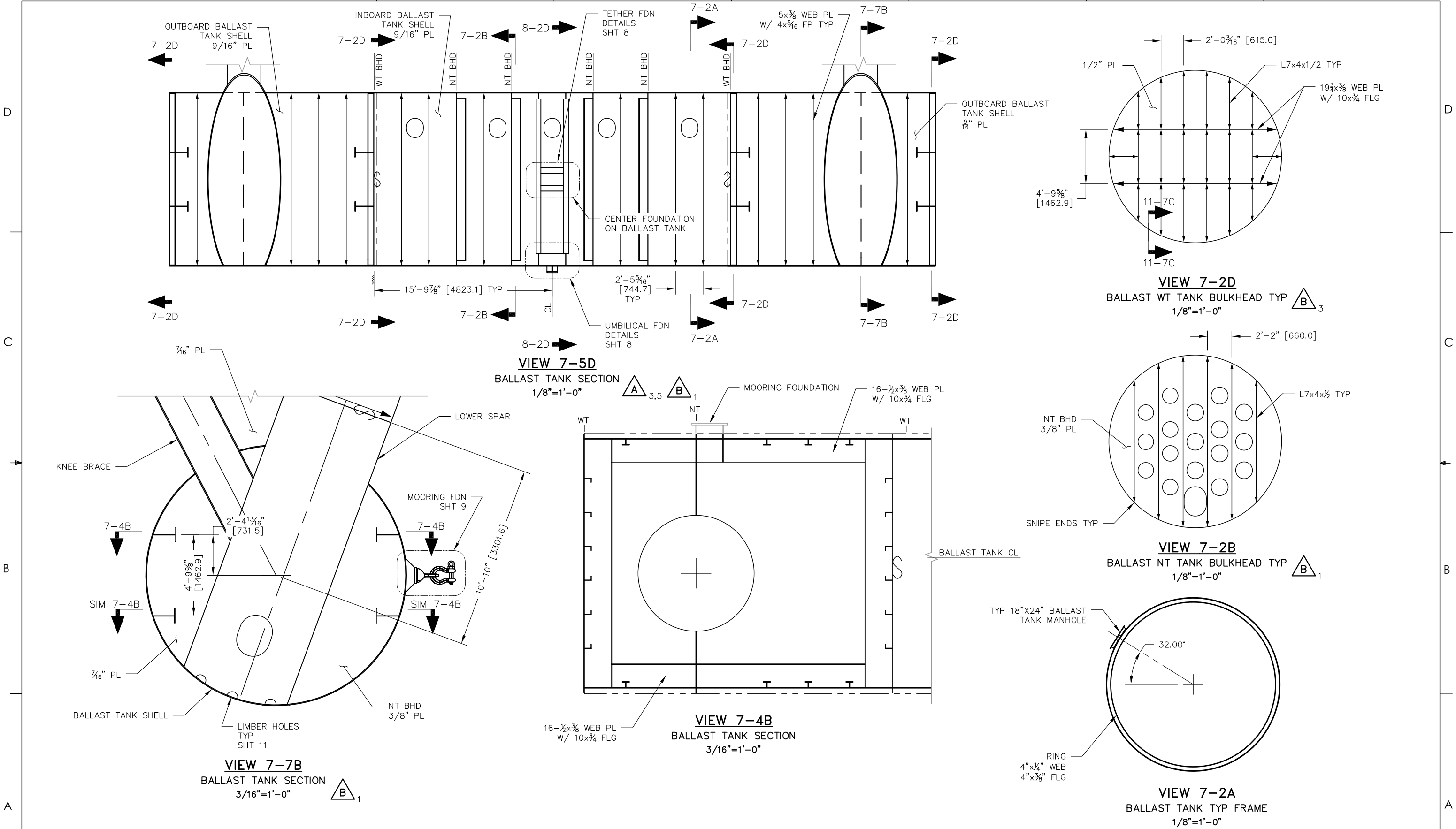
SHEET 4 OF 11




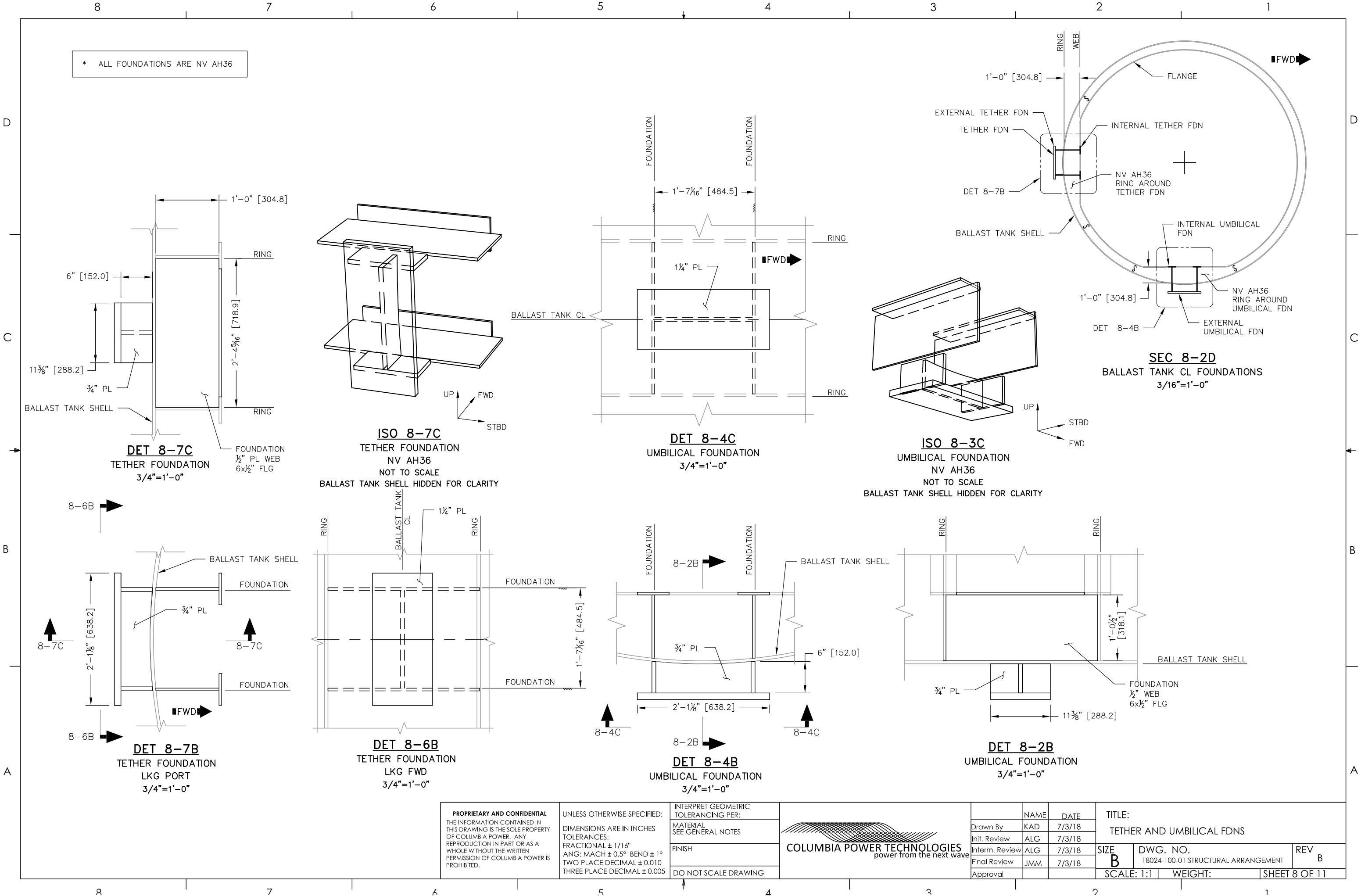
<div>PROPRIETARY AND CONFIDENTIAL</div> <div>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF COLUMBIA POWER. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF COLUMBIA POWER IS PROHIBITED.</div>	UNLESS OTHERWISE SPECIFIED:	INTERPRET GEOMETRIC TOLERANCING PER:	<div></div> <div>COLUMBIA POWER TECHNOLOGIES</div> <div>power from the next wave</div>		NAME	DATE	TITLE:		
	DIMENSIONS ARE IN INCHES TOLERANCES:	MATERIAL SEE GENERAL NOTES		Drawn By	KAD	7/3/18	NACELLE SECTION		
	FRACTIONAL $\pm 1/16"$	FINISH		Init. Review	ALG	7/3/18	SIZE B	DWG. NO. 18024-100-01 STRUCTURAL ARRANGEMENT	REV B
	ANG: MACH $\pm 0.5^\circ$ BEND $\pm 1^\circ$			Interm. Review	ALG	7/3/18			
	TWO PLACE DECIMAL ± 0.010			Final Review	JMM	7/3/18			
THREE PLACE DECIMAL ± 0.005	DO NOT SCALE DRAWING	Approval			SCALE: 1:1	WEIGHT:	SHEET 5 OF 11		



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		MATERIAL SEE GENERAL NOTES		Drawn By	KAD	7/3/18	NACELLE BHD AND FLOAT		
		FINISH		Init. Review	ALG	7/3/18	SIZE B	DWG. NO. 18024-100-01 STRUCTURAL ARRANGEMENT	REV B
				Interm. Review	ALG	7/3/18			
				Final Review	JMM	7/3/18			
DO NOT SCALE DRAWING	Approval			SCALE: 1:1	WEIGHT:	SHEET 6 OF 11			



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		MATERIAL SEE GENERAL NOTES		Drawn By	KAD	7/3/18	BALLAST TANK SECTION		
		FINISH		Init. Review	ALG	7/3/18	SIZE B	DWG. NO. 18024-100-01 STRUCTURAL ARRANGEMENT	REV B
		DO NOT SCALE DRAWING		Interm. Review	ALG	7/3/18			
				Final Review	JMM	7/3/18			
		Approval			SCALE: 1:1	WEIGHT:	SHEET 7 OF 11		



D

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B

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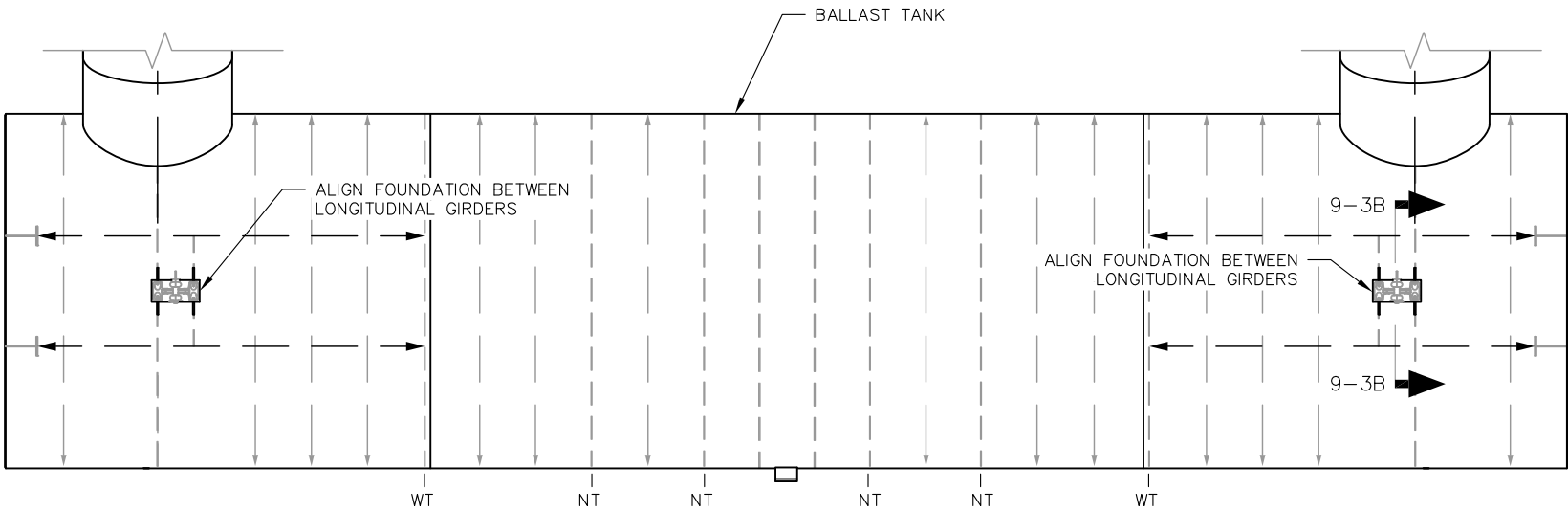
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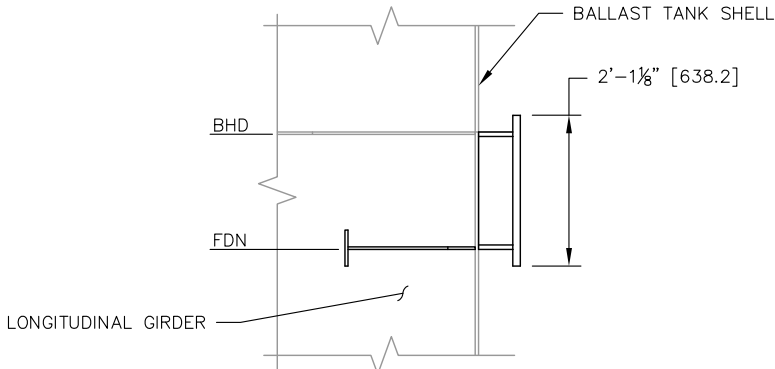
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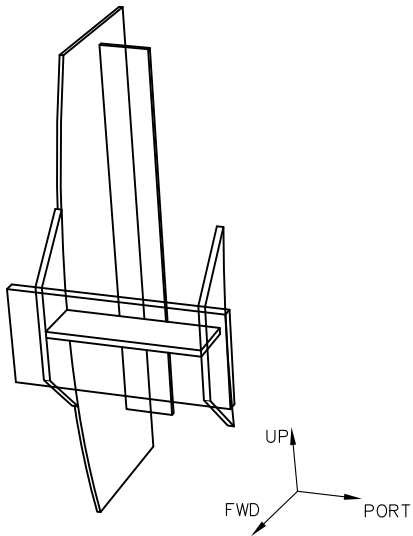
* ALL FOUNDATIONS ARE NV AH36



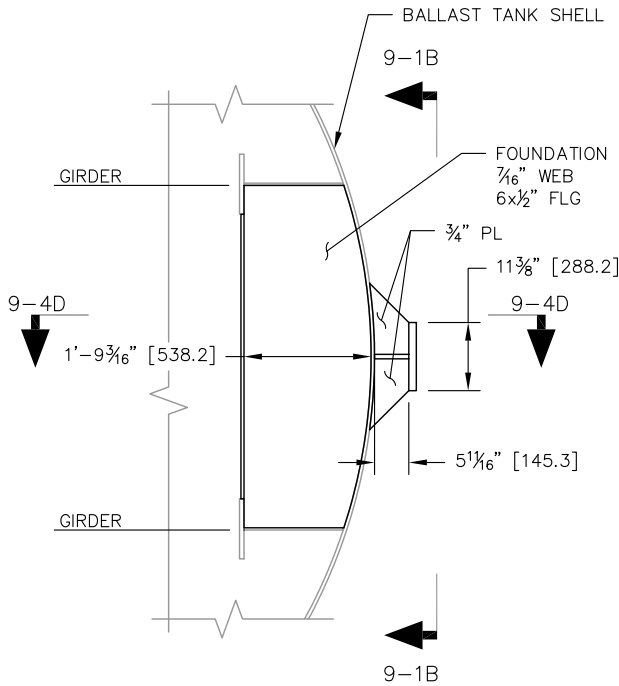
DET 9-6C
MOORING FOUNDATIONS
LKG AFT
1/8"=1'-0"



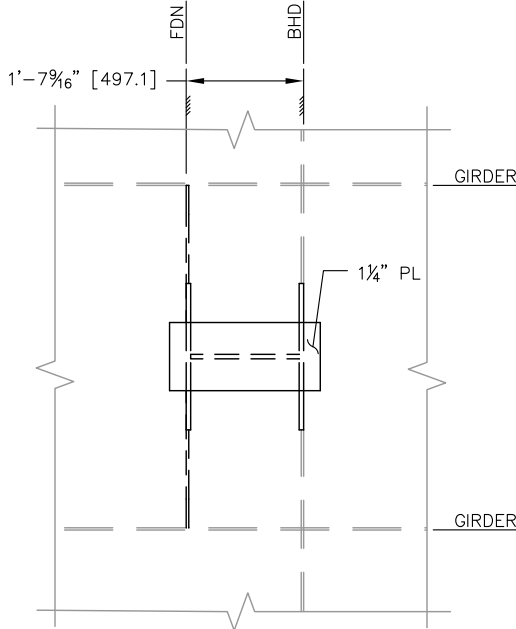
DET 9-4D
MOORING FOUNDATION
LKG DOWN
2 PLACES, P/S
3/8"=1'-0"



ISO 9-1C
MOORING FOUNDATION
NV AH36
PORT SHOWN, STBD SIM
NOT TO SCALE
BALLAST TANK SHELL HIDDEN FOR CLARITY



DET 9-3B
MOORING FOUNDATION
LKG PORT
2 PLACES, P/S
3/8"=1'-0"



DET 9-1B
MOORING FOUNDATION
LKG AFT
2 PLACES, P/S
3/8"=1'-0"

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TWO PLACE DECIMAL ± 0.010
THREE PLACE DECIMAL ± 0.005

INTERPRET GEOMETRIC TOLERANCING PER:

MATERIAL SEE GENERAL NOTES

FINISH

DO NOT SCALE DRAWING

COLUMBIA POWER TECHNOLOGIES
power from the next wave

	NAME	DATE
Drawn By	KAD	7/3/18
Init. Review	ALG	7/3/18
Interm. Review	ALG	7/3/18
Final Review	JMM	7/3/18
Approval		

TITLE:
MOORING FDNS

SIZE
B

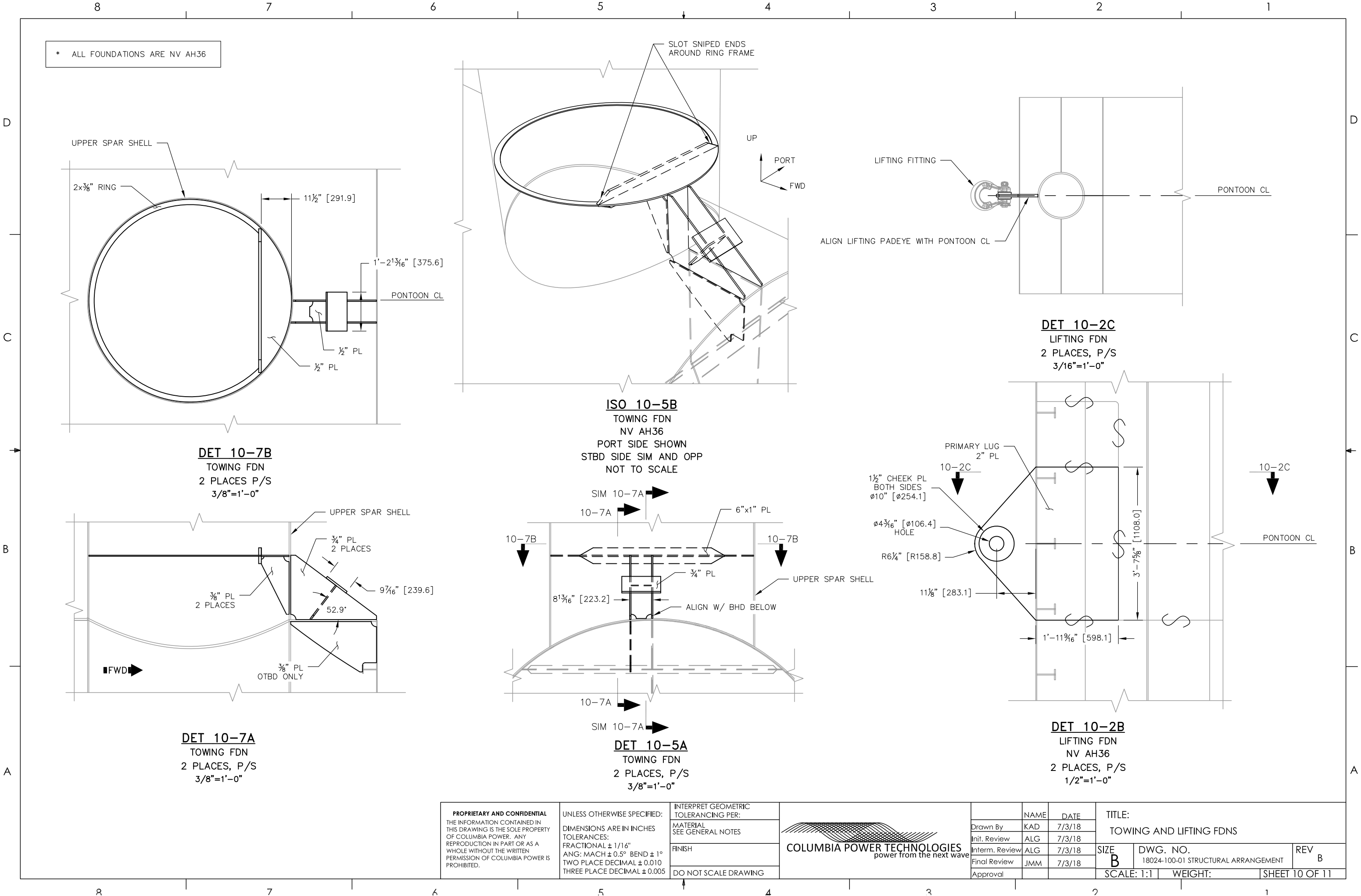
DWG. NO.
18024-100-01 STRUCTURAL ARRANGEMENT


REV
B

SCALE: 1:1

WEIGHT:

SHEET 9 OF 11



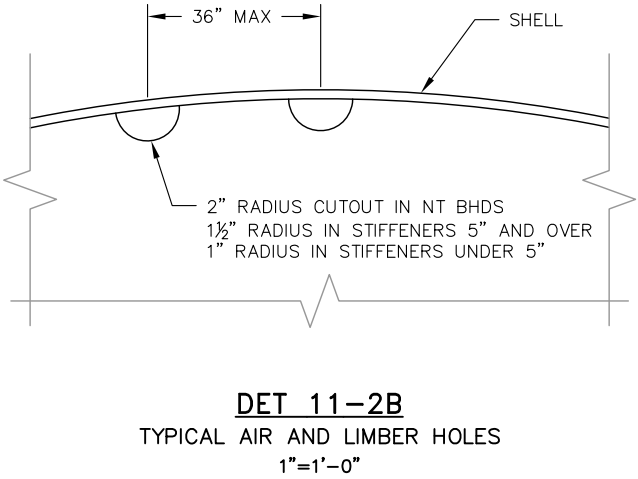
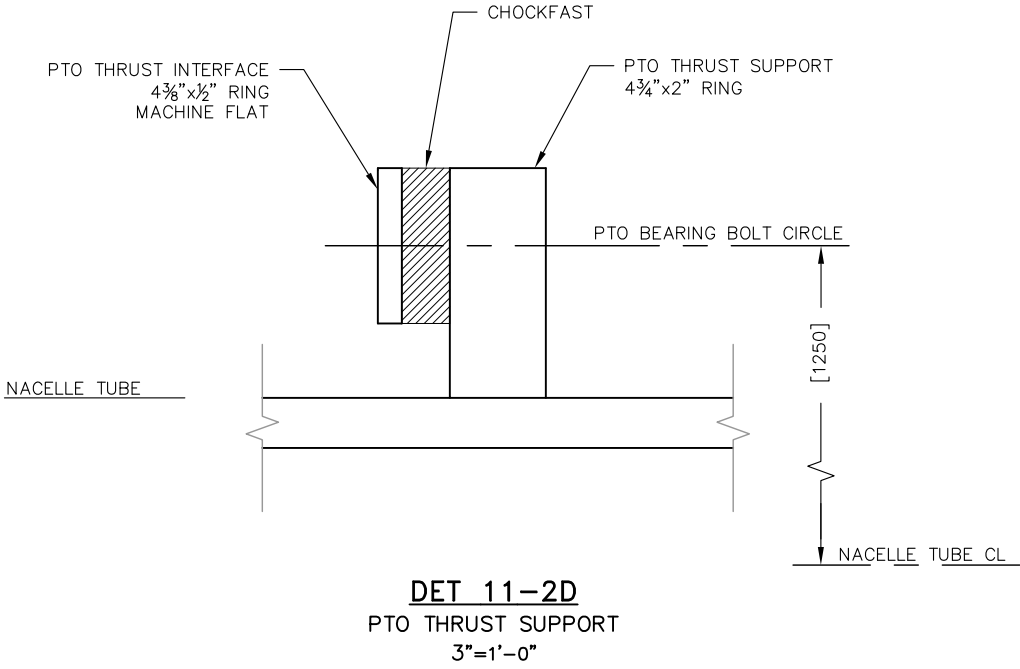
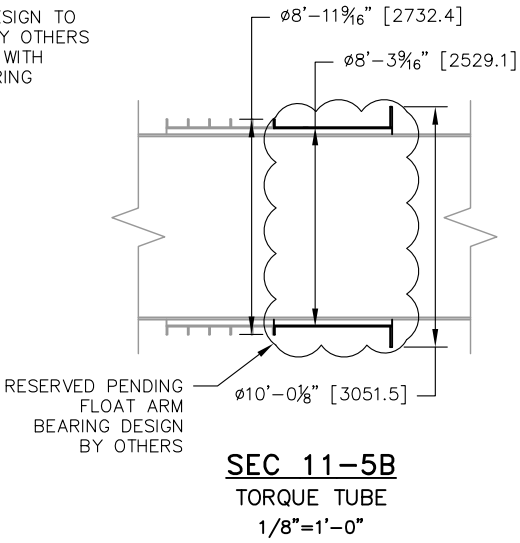
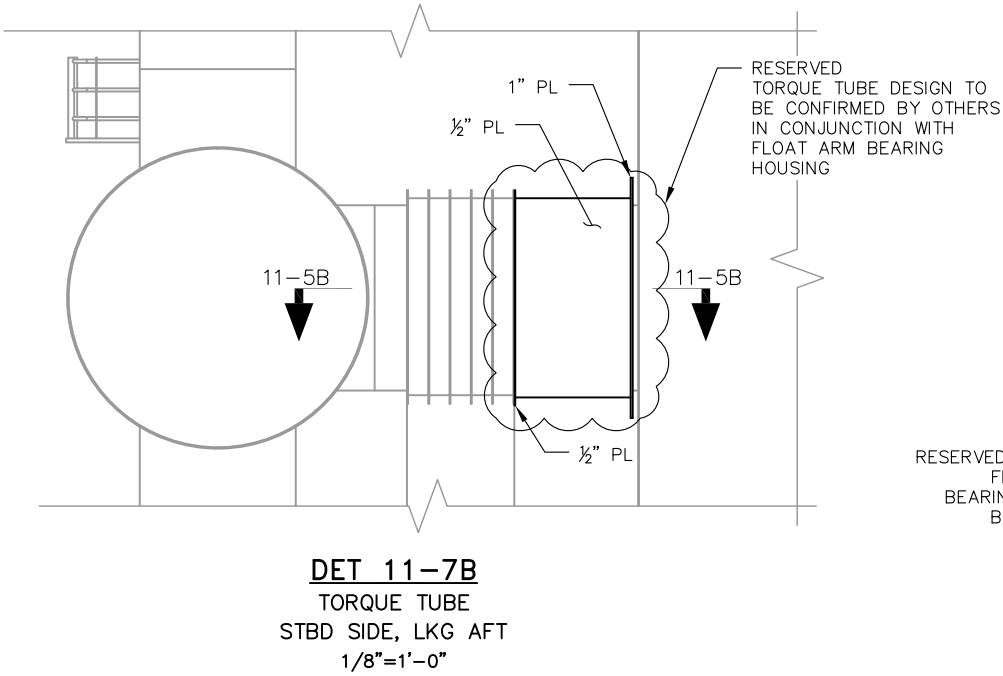
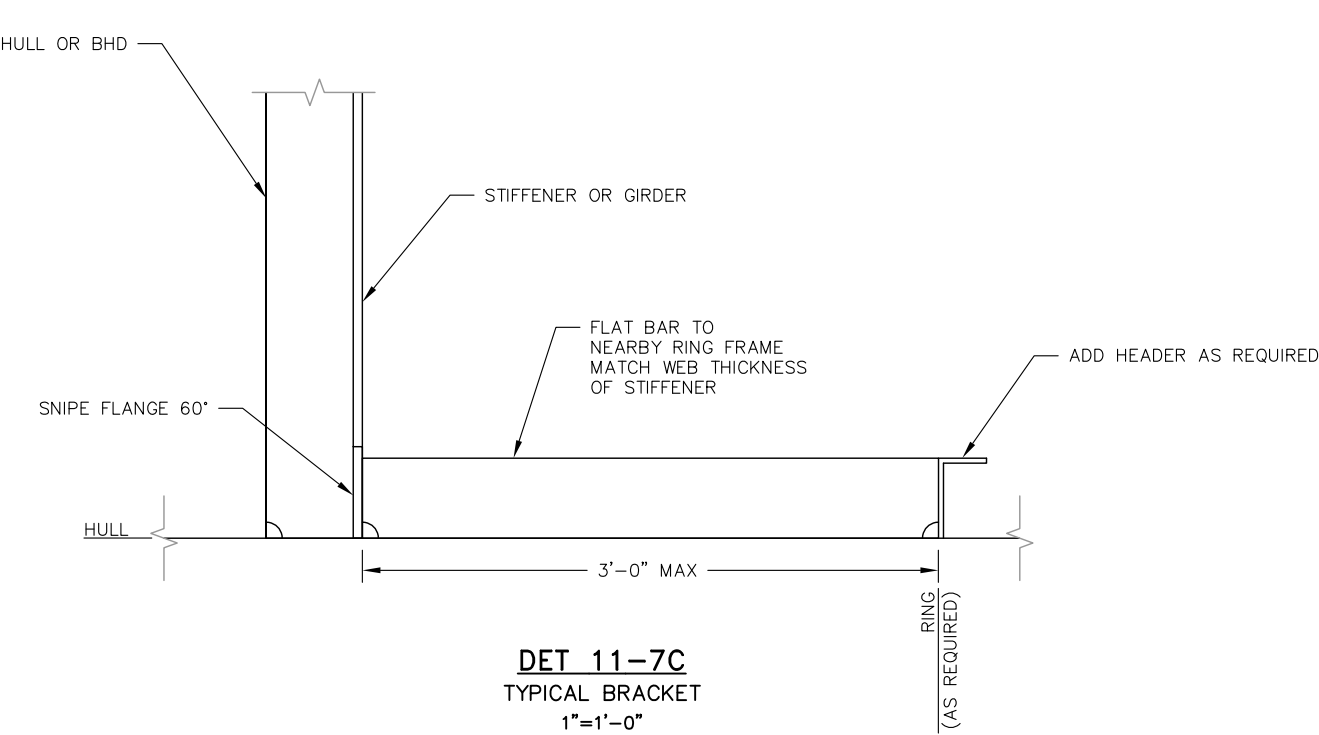
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		MATERIAL SEE GENERAL NOTES		Drawn By	KAD	7/3/18	SIZE B	DWG. NO. 18024-100-01 STRUCTURAL ARRANGEMENT	REV B
		FINISH		Init. Review	ALG	7/3/18			
				Interm. Review	ALG	7/3/18			
				Final Review	JMM	7/3/18			
DO NOT SCALE DRAWING		Approval			SCALE: 1:1		WEIGHT:	SHEET 10 OF 11	

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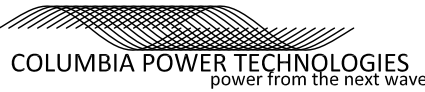
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THREE PLACE DECIMAL ± 0.005

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TOLERANCING PER:

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Init. Review	ALG	7/3/18
Interm. Review	ALG	7/3/18
Final Review	JMM	7/3/18
Approval		

TITLE:

TYPICAL DETAILS AND TORQUE TUBE

SIZE
B

DWG. NO.

18024-100-01 STRUCTURAL ARRANGEMENT

REV

B

SCALE: 1:1

WEIGHT:

SHEET 11 OF 11