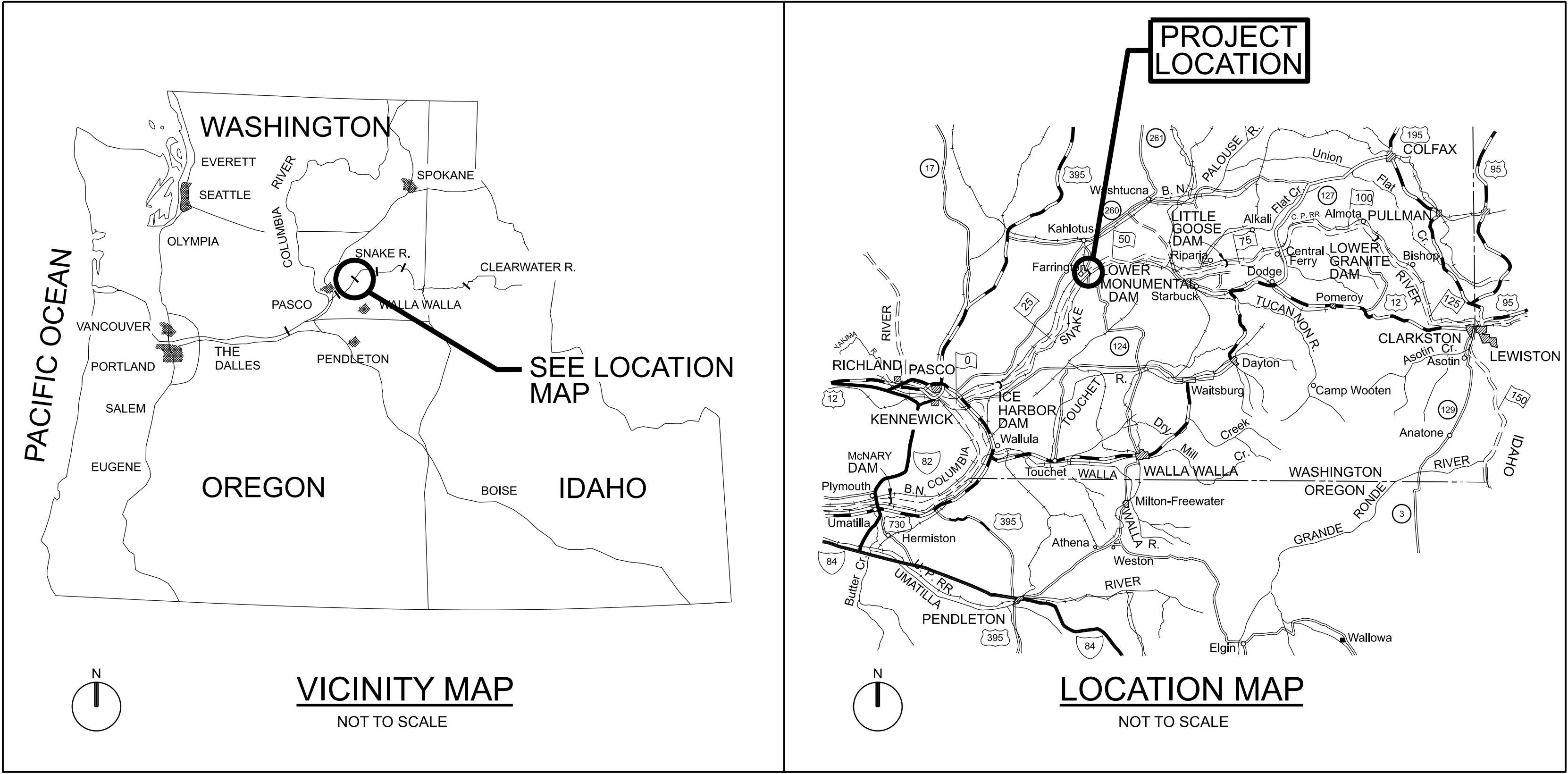
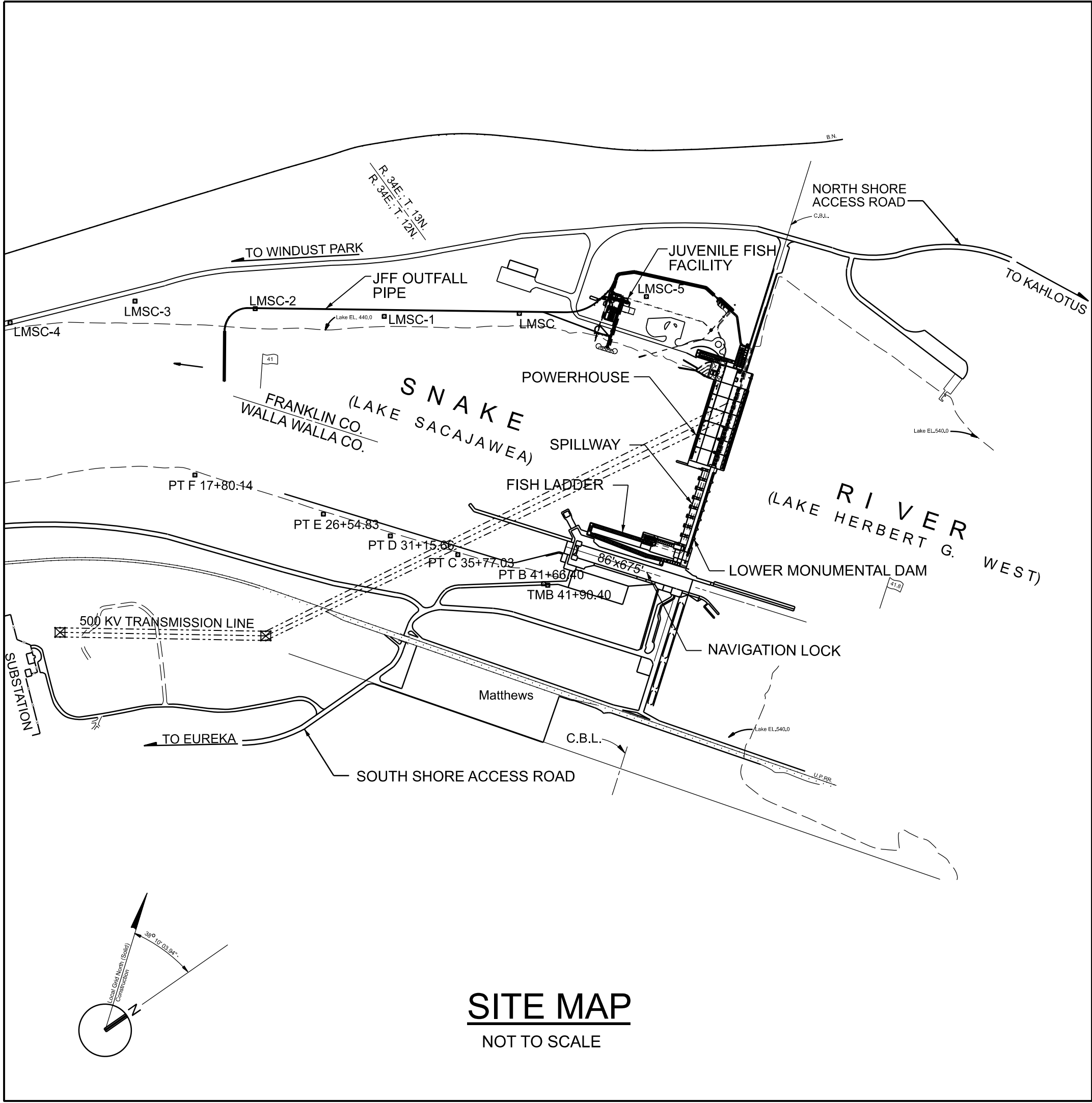


US Army Corps
of Engineers®
WALLA WALLA DISTRICT

LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON AND IDAHO
POWERHOUSE
FIRE DAMAGED COMPONENTS SUPPLY - COOLERS

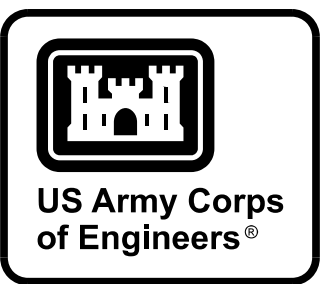


SOLICITATION NO.: W912EF23Q0045
CONTRACT NO.:
ISSUE DATE: JUNE 2023



This project was designed by the Walla Walla District of the U.S. Army Corps of Engineers. The initials or signatures and registration designations of individuals appear on these project documents within the scope of their employment as required by ER 1110-1-8152.

APPROVED BY:
DWAYNE WESTON, P.E. CHIEF OF ENGINEERING & CONST DIV. WALLA WALLA DISTRICT
SUBMITTED BY:
MARCUS PALMER, P.E. CHIEF OF DESIGN BRANCH WALLA WALLA DISTRICT
SUBMITTED BY:
KEVIN RENSHAW, P.E. CHIEF OF MECHANICAL DESIGN SECTION WALLA WALLA DISTRICT



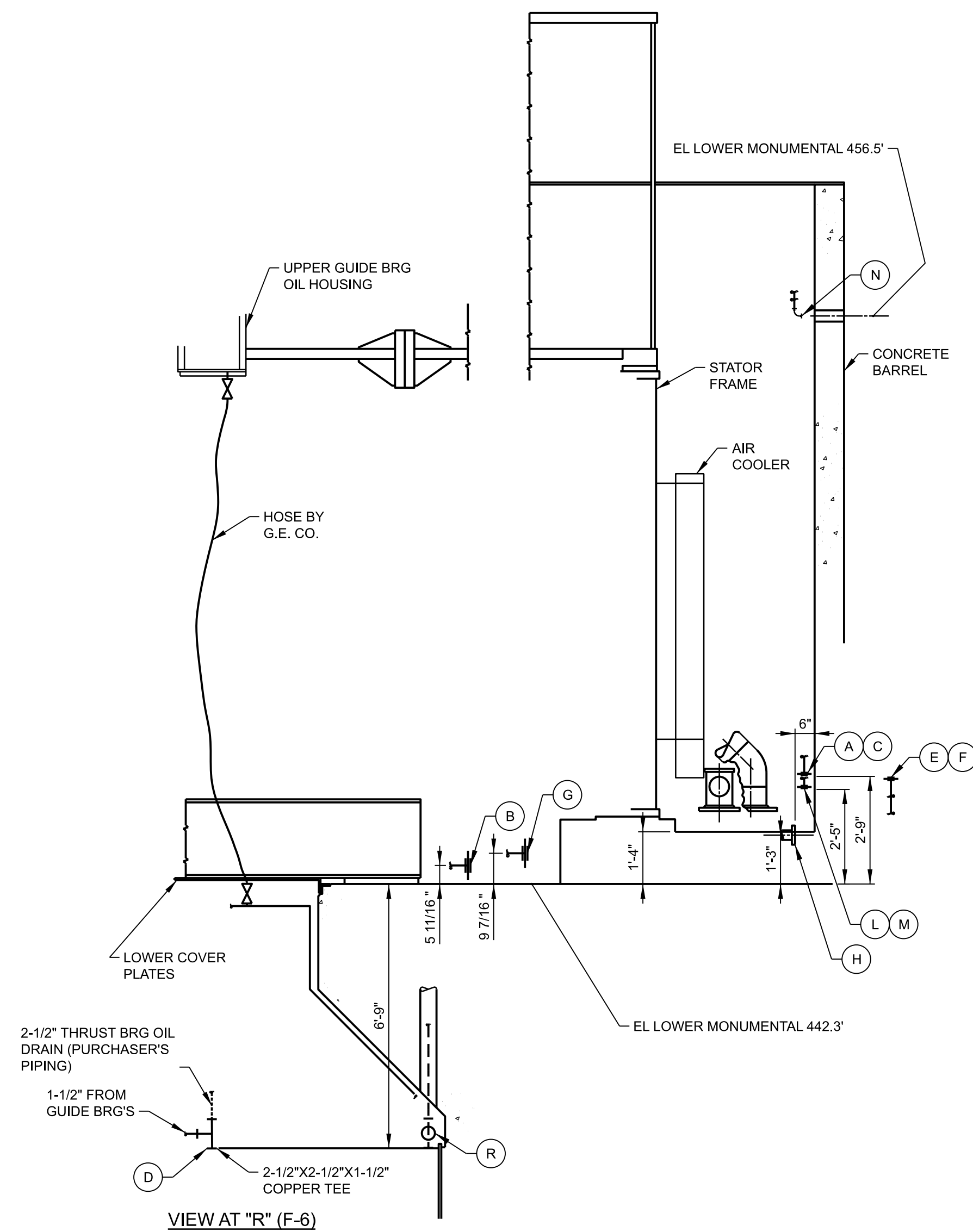
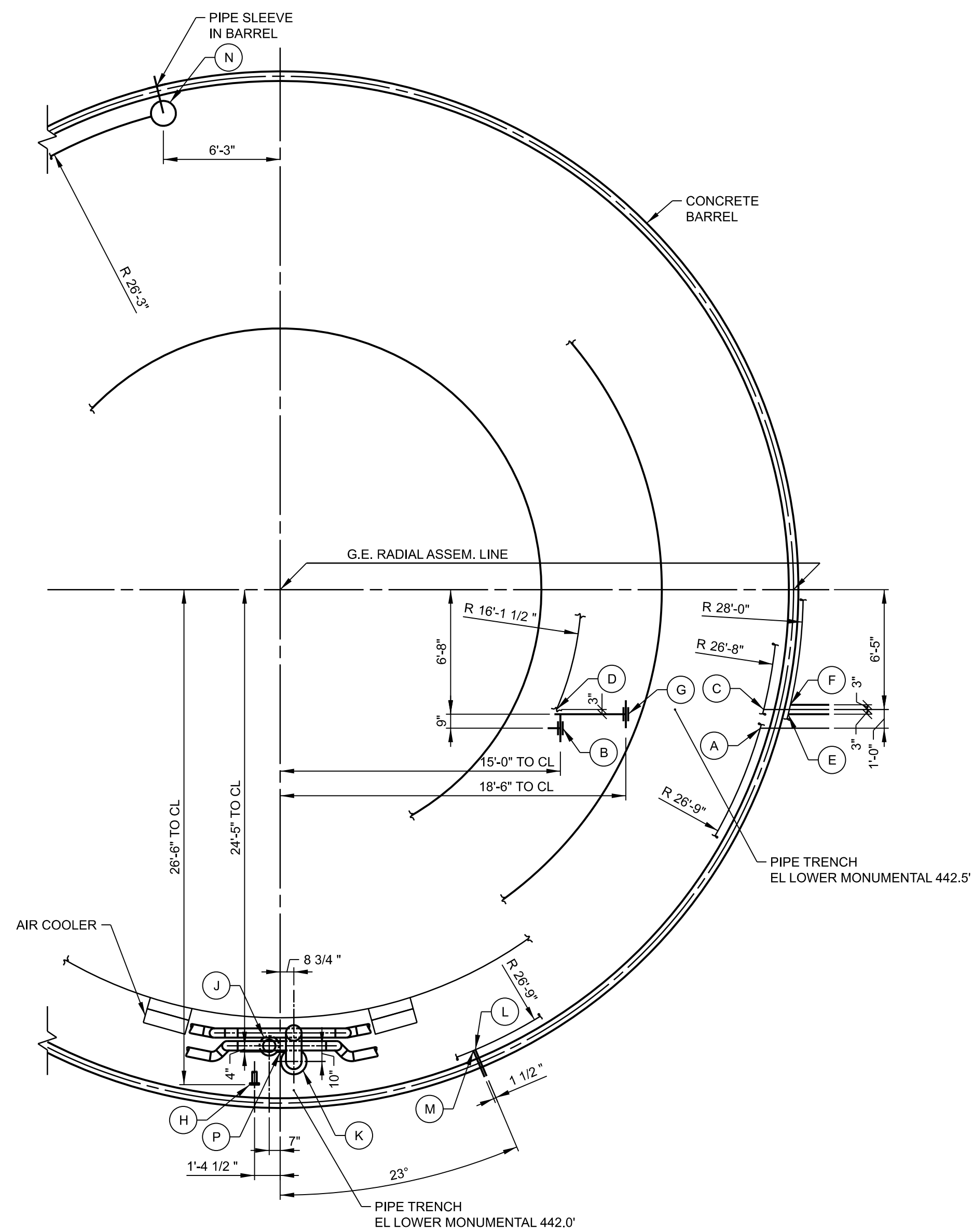
OFFICE COPY
05/09/2023

DESIGNED BY:	ISSUE DATE:
M. FLANAGAN	JUNE 2023
DRAWN BY:	SOLICITATION NO.:
T. BALLAS	W912EF23Q0045
CHECKED BY:	CONTRACT NO.:
T. BALLAS	
SUBMITTED BY:	FILE NO.:
KEVIN RENSHAW, P.E.	LMP-1-0-120
SIZE:	ANSI D

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 N 3RD AVE
WALLA WALLA, WASHINGTON

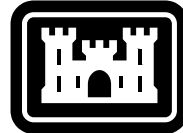
LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON AND IDAHO
POWERHOUSE
FIRE DAMAGED COMPONENTS SUPPLY - COOLERS
COVER SHEET AND LOCATION MAPS

SHEET ID
G-001



GENERAL SHEET NOTES

1. CO2 PIPE SIZES TO BE DETERMINED BY CO2 MANUFACTURER.



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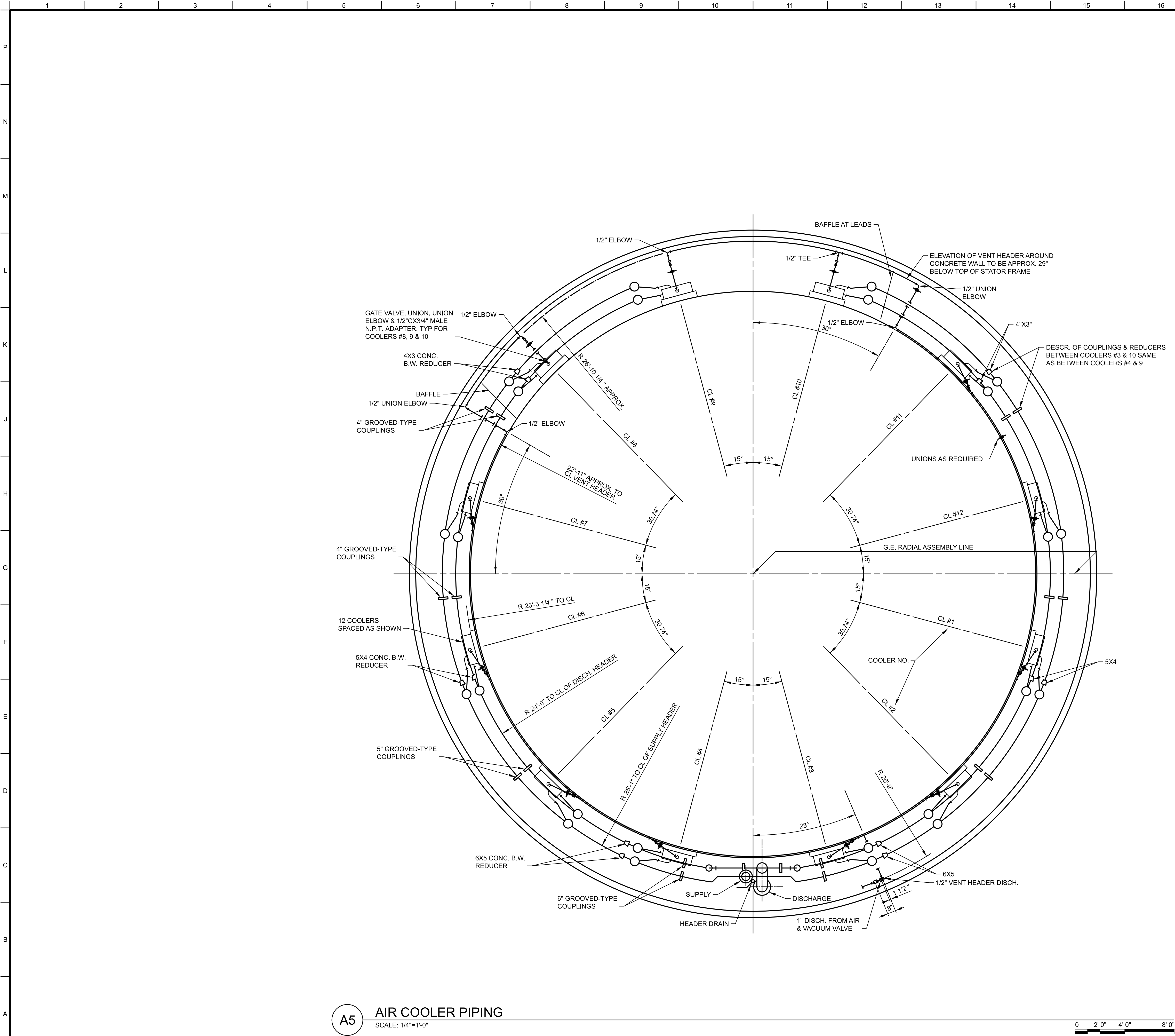
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U.S. ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT 201 N 3RD AVE WALLA WALLA, WASHINGTON	DESIGNED BY:	T. BALLAS	ISSUE DATE:	JUNE 2023
	DRAWN BY:	R. FUJIAN	SOLICITATION NO.:	W912EF23Q0045
	CHECKED BY:	D. KLOEWEER	CONTRACT NO.:	
	SUBMITTED BY:			
	SIZE:	FILE NO.:		

LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON AND IDAHO
POWERHOUSE
FIRE DAMAGED COMPONENT'S SUPPLY - COOLERS
POWERHOUSE
UNITS 1-3 STATOR AIR COOLERS
PIPING TERMINATIONS

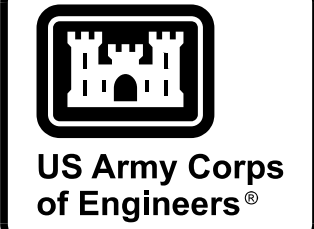
SHEET ID
M-101



GENERAL NOTES

1. ALL PIPE, VALVES & FITTINGS SHOWN ON THIS DWG & DWG RM003.
2. PIPE INSULATION RM003.
3. AIR COOLER OUTLINE - M-506.
4. GENERATOR OUTLINE - RM005 & RM006
5. FOR SPECIFICATIONS, LIMITS & NOTES PERTAINING TO THIS DWG SEE - RM003.
6. FABRICATE SUPPLY & DISCHARGE NOZZLES ON EACH COOLER 3" LONGER THAN DIMENSION TO ALLOW FOR FIELD ADJUSTMENT.
7. ALL SUPPORTS WILL BE FURNISHED BY THE G.E. CO. SEE DWG RM007. LOCATE TO SUIT AT ASM.
8. FOR INSTRUCTIONS FOR INSTALLING GROOVED-TYPE COUPLINGS, SEE RM008.
9. FABRICATOR TO FURNISH ALL THREADED NIPPLES, VALVES & FITTINGS, PLUS A SUFFICIENT QTY. OF STRAIGHT PIPE FOR FIELD FABRICATION OF 1/2" VENT HEADER, VENT CONNECTIONS TO COOLERS, DISCH. FROM VENT HEADER, COOLER DRAINS & 1" DISCHARGE FROM AIR & VACUUM RELEASE VALVE. ALL OF THESE LINES ARE TO BE BRASS & COPPER. SEE NOTE #4 OF DWG RM003.
10. FOR INSTRUCTIONS PERTAINING TO FIELD & SHOP GALVANIZING, SEE NOTE #8 OF DWG RM003.

GENERAL SHEET NOTES



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DESIGNED BY: T. BALLAS	ISSUE DATE: JUNE 2023
DRAWN BY: D. KLOEPPER	SOLICITATION NO.: W91CE0005
CHECKED BY: D. KLOEPPER	CONTRACT NO.:
SUBMITTED BY: KEVIN RENSHAW, P.E.	
SIZE: ANSI D	FILE NO.: LMP-13-12/2

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 N 3RD AVE
WALLA WALLA, WASHINGTON

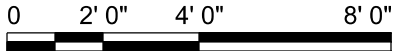
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SNAKE RIVER OREGON, WASHINGTON AND IDAHO
POWERHOUSE
FIRE DAMAGED COMPONENTS SUPPLY - COOLERS

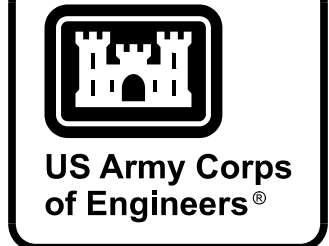
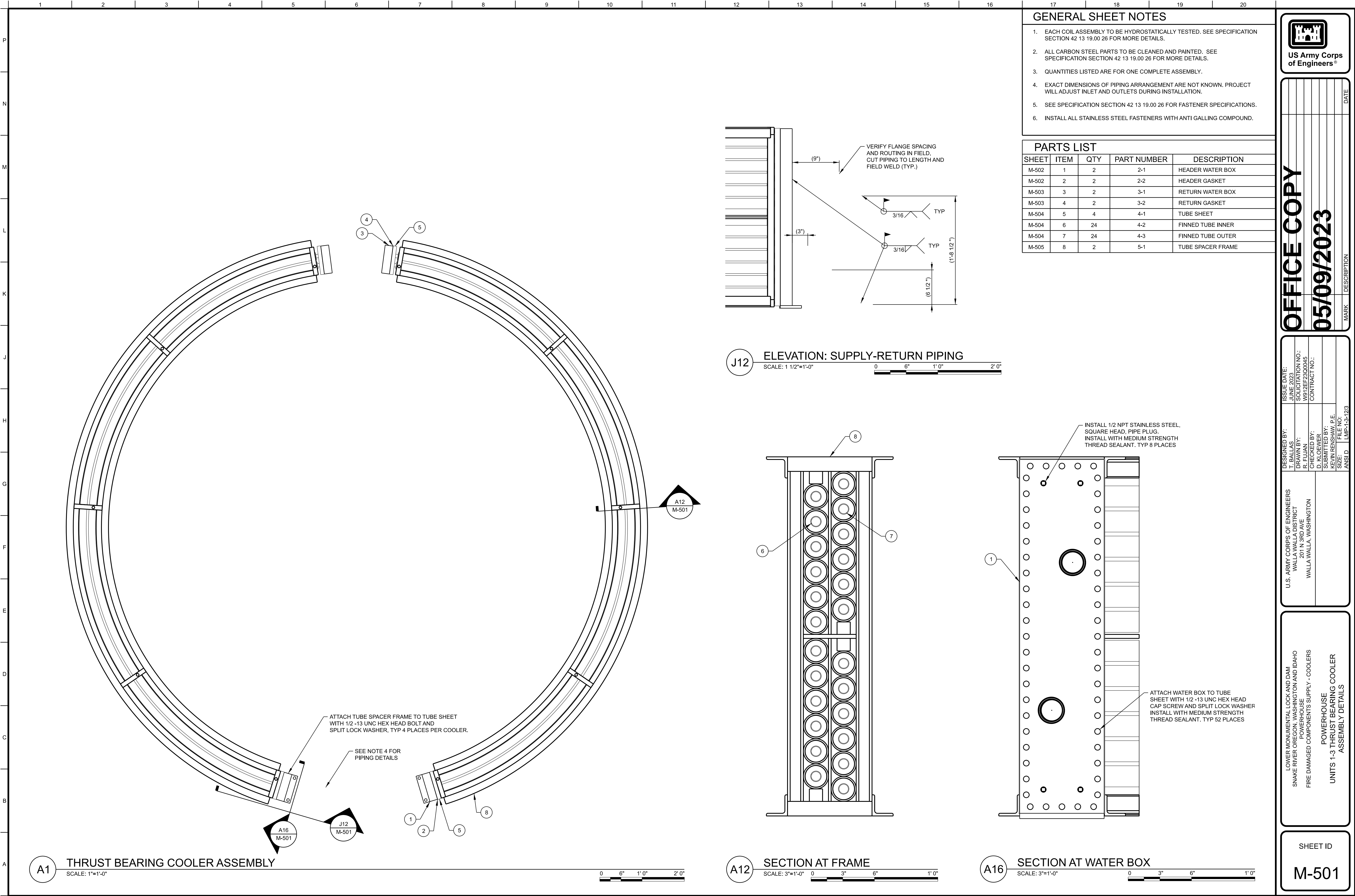
POWERHOUSE
UNITS 1-3 STATOR AIR COOLERS
AIR COOLER PIPING

SHEET ID
M-102

A5

AIR COOLER PIPING
SCALE: 1/4"=1'-0"





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ISSUE DATE:
JUNE 2023
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W91CE00045
CONTRACT NO.:
DESIGNED BY:
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D. KLOEMER
CHECKED BY:
D. KLOEMER
SUBMITTED BY:
KEVIN RENSHAW, P.E.
SIZE:
FILE NO.:
LMP-4-3-12/3

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 N 3RD AVE
WALLA WALLA, WASHINGTON

LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON AND IDAHO
POWERHOUSE
FIRE DAMAGED COMPONENTS SUPPLY - COOLERS

POWERHOUSE
UNITS 1-3 THRUST BEARING COOLER
ASSEMBLY DETAILS

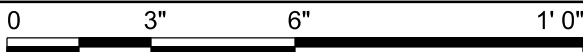
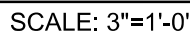
SHEET ID
M-501

1. BREAK ALL CORNERS AND EDGES.
2. LINEAR TOLERANCES SHALL BE $\pm 1/32$ ".
3. SURFACE FINISH ON MACHINED PARTS SHALL BE 125 MICROINCH UNLESS NOTED OTHERWISE.
4. SUPPLY AND RETURN PIPING IS A SEPARATE PART AND NOT SHOWN.



05/09/2023

MARK	DESCRIPTION	DATE
------	-------------	------



POWERHOUSE
UNITS 1-3 THRUST BEARING COOLER
HEADER WATER BOX DETAILS

DESIGNED BY:	T. BALLAS	ISSUE DATE:	JUNE 2023
DRAWN BY:	R. RUJAN	SOLICITATION NO.:	W912EF23Q0045
CHECKED BY:	D. KLOEWER	CONTRACT NO.:	
SUBMITTED BY:	D. KLOEWER		
SIZE:	FILE NO:		
ANSI D	LMP-1-3-12/4		

SHEET ID

M-502

1. BREAK ALL CORNERS AND EDGES.
2. LINEAR TOLERANCES SHALL BE $\pm 1/32"$.
3. SURFACE FINISH ON MACHINED PARTS SHALL BE 125 MICROINCH UNLESS NOTED OTHERWISE.



05/09/2023

DESCRIPTION	DATE
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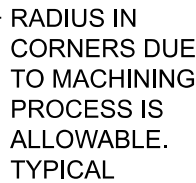
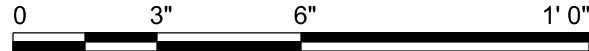
U.S. ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT 201 N 3RD AVE WALLA WALLA, WASHINGTON	DESIGNED BY: T. BALLAS	ISSUE DATE: JUNE 2023
	DRAWN BY: P. FULM	PROJECT NO: W91CE22004
	CHECKED BY: D. KLOEWER	CONTRACT NO.:
	SUBMITTED BY: P.E. JASON KENNEDY	
	SCALE: SIZE: 11x17	FILE NO: LMP-13-12/5

LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON AND IDAHO
POWERHOUSE
FIRE DAMAGED COMPONENTS SUPPLY - COOLERS
POWERHOUSE
UNITS 1-3 THRUST BEARING COOLER
RETURN WATER BOX DETAILS

SHEET ID
M-503



SCALE: 3"=1'-0"



BACK



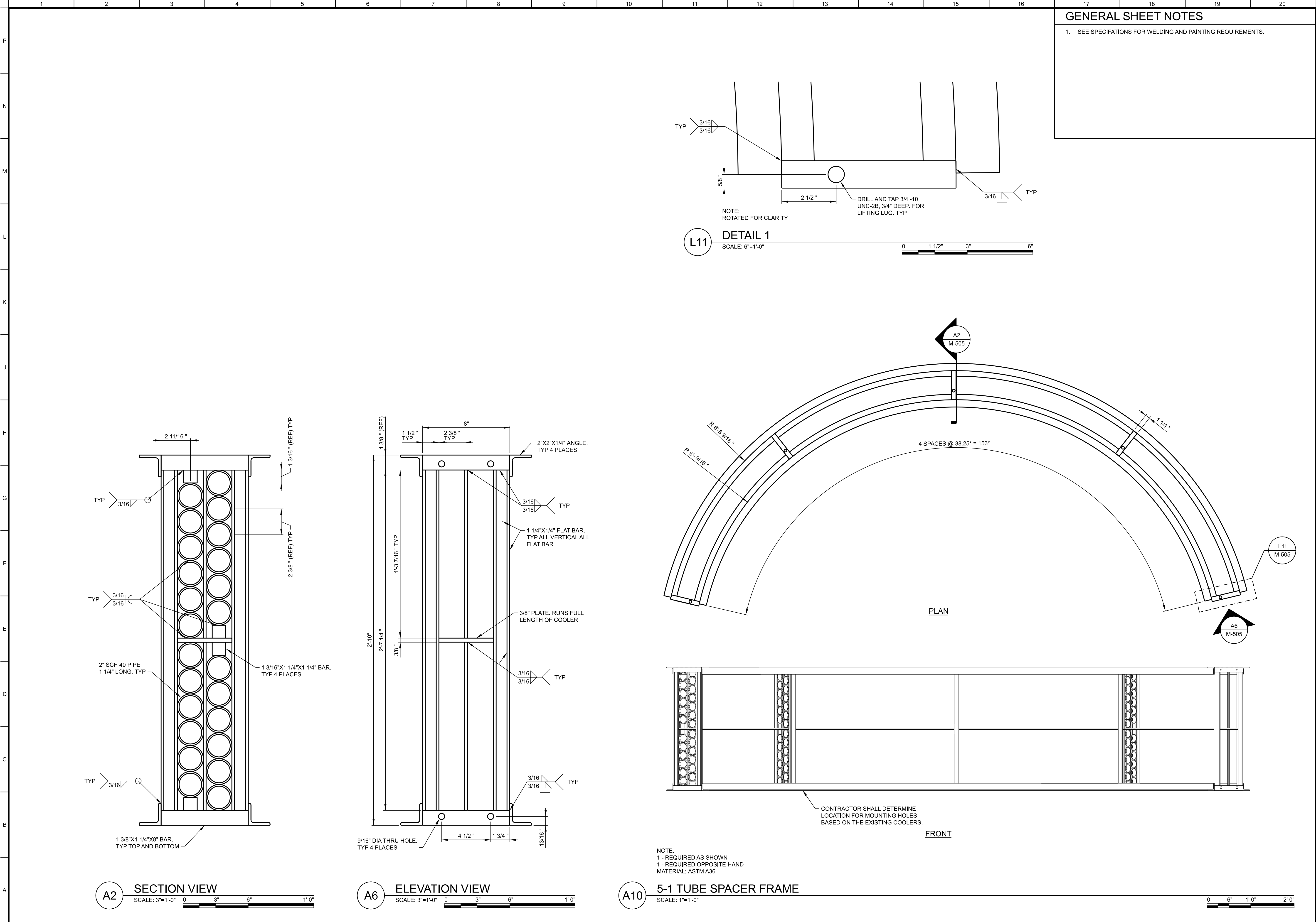
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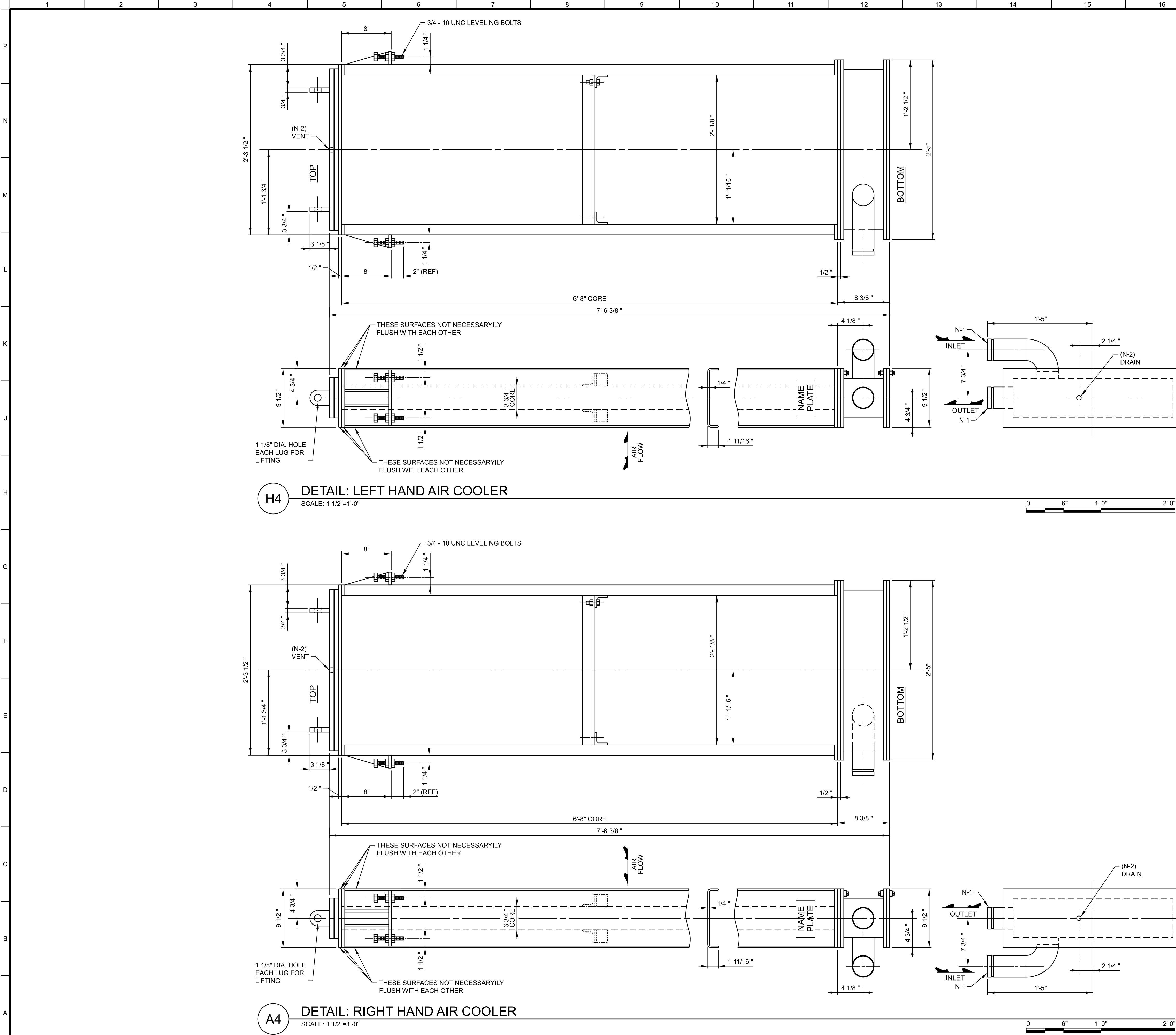


FRONT









GENERAL SHEET NOTES

- ALL VENTS AND DRAINS PLUGGED.
- ALL STEEL PARTS WILL BE HOT DIP GALVANIZED.
- ALL HARDWARE WILL BE HOT DIP GALVANIZED.
- ALL GASKET SURFACES MAY BE LOCALLY GROUND & ALL GALVANIZED SURFACES MAY BE TOUCHED UP WITH ZINC RICH CHROMATE, IF DEEMED NECESSARY BY PERFEX.
- WATER PRESSURE TEST AT 75 PSI FOR ONE HOUR.
- FINAL COOLER PERFORMANCE DATA:

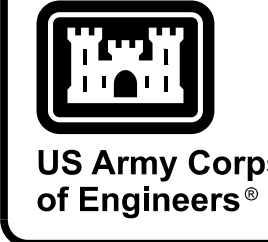
	FIN SIDE	TUBE SIDE
FLUID CIRCULATED	AIR	WATER
TOTAL FLUID ENTERING	101627 SCFM	1140 GPM
TEMPERATURE IN	164.6°F	72.2°F
TEMPERATURE OUT	104°F	86.3°F
NUMBER OF PASSES	ONE	TWO
VELOCITY	750 FPM	6.1 FPS
PRESSURE DROP	0.5 IWG	9 FWG
HEAT EXCHANGED	1950 KW	
- ALL WELDING WILL BE PERFORMED BY ASME CODE QUALIFIED WELDERS.
- THIS UNIT IS NOT ASME CODE STAMPED. WELDS ARE NOT DESIGNED PER THE ASME CODE AND RECORDS OF THE WELDING WILL NOT BE DOCUMENTED.

NOZZLE SIZES	
N-1	3 STD VITALLIC GROOVE
N-2	3/4" NPT TAP

MATERIALS	
WATERBOXES	STEEL
NOZZLES	STEEL
COVERS	STEEL
TUBESHEETS	MUNTZ
TUBES	ASTM-111-706
GASKETS	J.M. 107
FINN	COPPER

DESIGN CONDITIONS		
	FINN	TUBES
DESIGN PRESSURE	-	50 PSIG
TEST PRESSURE	-	75 PSIG
DESIGN TEMPERATURE	200°F	100°F
CORR. ALLOW.	-	-
X-RAY	-	-
STRESS RELIEF	-	-
CODE	-	-

SIZE NO.	24/80-R-32
TYPE	"L"-UNIT
SURFACE EACH	1292 FT2
TOTAL	-
NO. PASSES FINN	1
NO. PASSES TUBES	2
TUBES	47 @ 5/8 O.D. 18 A. BWG 80" B.T.S. LG.
FINN	0.008" THK. PLATE ~ 15 FPI ~ FLAT
WEIGHT	1035#
UNIT	LBS.
WEIGHT - UNIT FLOODED	1105#

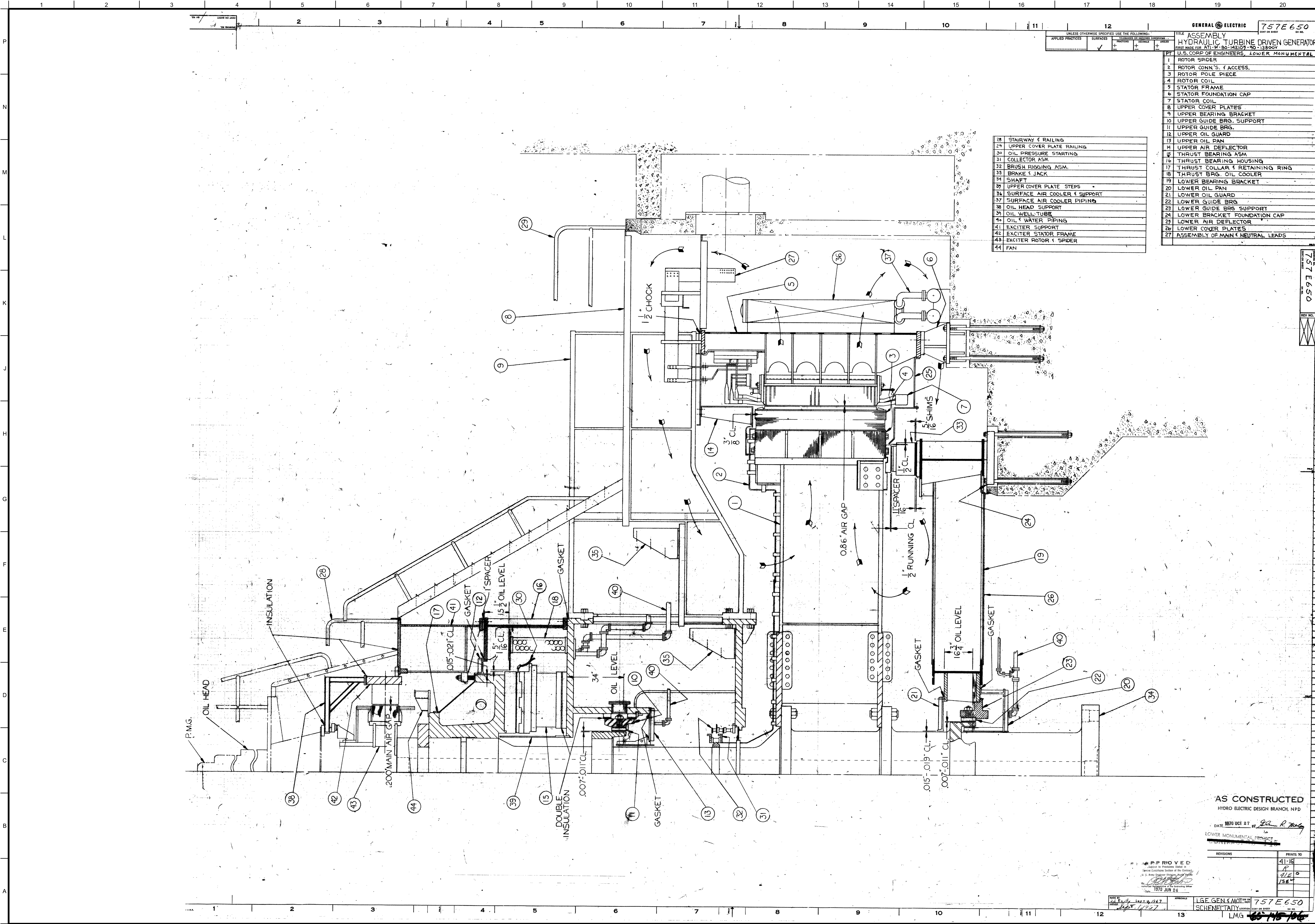


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DESIGNED BY: T. BALLAS	ISSUE DATE: JUNE 2023
DRAWN BY: D. KLOEMER	SOLICITATION NO.: W91CEZ0045
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SUBMITTED BY: KEVIN RENSHAW, P.E.	FILE NO.:
SIZE: ANSI D	LMP-1-3-12/8

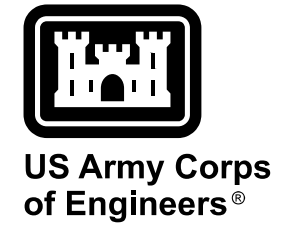
LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON AND IDAHO
POWERHOUSE
FIRE DAMAGED COMPONENTS SUPPLY - COOLERS
POWERHOUSE
UNITS 1-3 STATOR AIR COOLERS
DETAILS

SHEET ID
M-506



28	STAIRWAY & RAILING
29	UPPER COVER PLATE RAILING
30	OIL PRESSURE STARTING
31	COLLECTOR ASM.
32	BRUSH RIGGING ASM.
33	BRAKE & JACK
34	SHAFT
35	UPPER COVER PLATE STEPS
36	SURFACE AIR COOLER & SUPPORT
37	SURFACE AIR COOLER PIPING
38	OIL HEAD SUPPORT
39	OIL WELL TUBE
40	OIL & WATER PIPING
41	EXCITER SUPPORT
42	EXCITER STATOR FRAME
43	EXCITER ROTOR & SPIDER
44	FAN

GENERAL ELECTRIC		757E650
TITLE ASSEMBLY HYDRAULIC TURBINE DRIVEN GENERATOR		
FIRST MADE FOR ATL-W-80-142, 1970-1380V		
U.S. CORP OF ENGINEERS, LOWER MONUMENTAL		
PT	1	ROTOR SPIDER
2	2	ROTOR CONN'S. & ACCESS.
3	3	ROTOR POLE PIECE
4	4	ROTOR COIL
5	5	STATOR FRAME
6	6	STATOR FOUNDATION CAP
7	7	STATOR COIL
8	8	UPPER COVER PLATES
9	9	UPPER BEARING BRACKET
10	10	UPPER GUIDE BRG. SUPPORT
11	11	UPPER GUIDE BRG.
12	12	UPPER OIL GUARD
13	13	UPPER OIL PAN
14	14	UPPER AIR DEFLECTOR
15	15	THRUST BEARING ASM
16	16	THRUST BEARING HOUSING
17	17	THRUST COLLAR & RETAINING RING
18	18	THRUST BRG. OIL COOLER
19	19	LOWER BEARING BRACKET
20	20	LOWER OIL PAN
21	21	LOWER OIL GUARD
22	22	LOWER GUIDE BRG
23	23	LOWER GUIDE BRG SUPPORT
24	24	LOWER BRACKET FOUNDATION CAP
25	25	LOWER AIR DEFLECTOR
26	26	LOWER COVER PLATES
27	27	ASSEMBLY OF MAIN & NEUTRAL LEADS



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DRAWN BY:	WALLA WALLA DISTRICT
CHECKED BY:	201 N 3RD AVE
SUBMITTED BY:	WALLA WALLA, WASHINGTON
SIZE:	ANSI D
FILE NO.:	757E650

MAIN UNIT
GENERATORS 1 THRU 3
ASSEMBLY HYDRAULIC TURBINE DRIVEN GENERATOR

SHEET ID
RM002

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 1970 OCT 27 BY GA R. H. H.

LOWER MONUMENTAL PROJECT

REVISIONS

PRINTS TO

41-16

R

1/58

1970 JUN 28

APPROVED

LGE GEN & MOT. 757E650

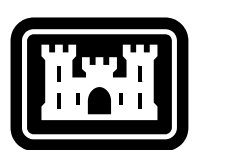
SCHENECTADY LMG 66-145-106

P
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A

GENERAL ELECTRIC		268A4719	
REV. NO.	TITLE	CONT ON SHEET	SH. NO.
	NOTES & SPECIFICATIONS FOR AIR COOLER PIPING	2	1
FIRST MADE FOR			
LOWER MONUMENTAL DAM LITTLE GOOSE DAM LOWER GRANITE DAM CONTRACT NO. DACW 68-75-C-0133		REVISIONS	
1. All pipe headers and branches to coolers to be ASTM A53, type S, grade A, schedule 40, steel. Butt welding fittings to conform to ANSI B16.9-latest issue. Steel flanges, unless otherwise specified, shall be raised face and shall conform to ANSI B16.5 latest issue. Pipe couplings shall be Gustin-Bacon gruvagrip series 100 with their type 1 Buna-N gaskets. Couplings must conform to specification MIL-C-10387F and AM.-1, "couplings, clamp, pipe with bolts and synthetic rubber gasket, for grooved pipe and tube" except to the torsional stiffness requirement and dimensions for the gaskets, also the couplings shall be furnished hot dipped galvanized with galvanized hardware. Pipe fabricator to supply G.E. Co. certificate of compliance to above MIL spec. (10 copies.)			
2. All joints made in fabricators shop except where backing rings are used, shall be sized to the i.d. of the pipe to remove icicles, weld spatter, etc.			
3. Valves for surface air cooler piping to be 125 lb., angle, flanged, iron body bronze trimmed, yoke bonnet. Crane no. 353 or equal.			
4. 1/2" vent header, connections from vent header to coolers, 1/2" discharge from vent header, 1" discharge from air & vacuum release valve and 1" header drain piping to be ASTM B88, type "K" hard copper tube. Fittings to be solder type and valves, unless otherwise specified on dwg., are to be std. bronze gate with bronze seats & stems, solder ends. 1/2" cooler drains to be threaded std. wt. brass. The above lines are to be furnished in accordance with note #9 of the dwg. by the piping vendor.			
5. Air & vacuum release valve at top of loop to be furnished by the piping vendor & shall be 1" model no. 143C "heavy duty" manufactured by Valve and Primer Corp., 625 W. 58th St., Chicago, Ill., 60621.			
6. Air coolers may vary from the drawing location as much as 1" in vertical and horizontal planes, and may be out of line angularly. To facilitate piping to these coolers field welding as indicated on the drawing will be necessary.			
APPROVED CORPS OF ENGINEERS, U.S. ARMY NORTH PACIFIC DIVISION DATE 15 OCT 1980 BY [Signature] HYDRO-ELECTRIC DESIGN BRANCH		PRINTS TO	
MADE BY F. Bradley G-7-76 ISSUED June 10, 1976		APPROVALS L.M. & G. SCHEENCTADY DIV OR DEPT. 268A4719 LOCATION CONT ON SHEET 2 SH. NO. 1	
75C-133-25		LOWER GRANITE LOCK AND DAM	

GENERAL ELECTRIC		268A4719	
REV. NO.	TITLE	CONT ON SHEET	SH. NO.
	NOTES & SPECIFICATIONS FOR AIR COOLER PIPING	3	2
FIRST MADE FOR			
LOWER MONUMENTAL DAM LITTLE GOOSE DAM LOWER GRANITE DAM CONTRACT NO. DACW 68-75-C-0133		REVISIONS	
7. Headers to be welded complete by vendor. Except for indicated field welds, all welds on the branches to be made by vendor. After welding fittings in place, vendor must partially assemble pipe to check dimensions and location of nozzles. Vendor shall guarantee that material and workmanship are adequate to meet system hydro-static test pressure of 75 p.s.i. after installation without leaks for a period of one hour.			
8. The loop & the main headers, including branch connections to the valves shall be hot dip galvanized after welding by the fabricator in his shop. The connections between the coolers and the valves are to be field galvanized at G.E. Co. expense after fitting and field welding is completed. Field galvanizing is to be the hot dip process. The valves are not to be galvanized.			
9. All pipes and fittings shall be free from rust, loose scale, dirt or any foreign matter both inside and outside. Before shipment outside of pipe shall be covered with film of oil and ends sealed. <u>DO NOT PAINT WITH RED LEAD.</u>			
10. Suitable supports are to be provided by G.E. Co. for supporting piping and are to be located when installing piping inside generator housing.			
11. Two weeks prior to the completion of the assemblies in vendor's factory, the General Electric Co. shall be notified to allow inspection of the piping.			
12. Piping supplied by fabricator shall include without exception all valves and fittings shown in the piping arrangements.			
13. At time of shipment two copies of packing list to be sent to:			
ATTN: General Electric Co. Mrs. J. A. Kätler Bldg. 16 L.M.G. Order Service 1 River Road Schenectady, N.Y.		PELP	
The G.E. purchase order number shall be referred to in the accompanying these lists.			
APPROVED CORPS OF ENGINEERS, U.S. ARMY NORTH PACIFIC DIVISION DATE 15 OCT 1980 BY [Signature] HYDRO-ELECTRIC DESIGN BRANCH		PRINTS TO	
MADE BY F. Bradley G-7-76 ISSUED June 10, 1976		APPROVALS L.M. & G. SCHEENCTADY DIV OR DEPT. 268A4719 LOCATION CONT ON SHEET 3 SH. NO. 2	
75C-133-26		LOWER GRANITE LOCK AND DAM	

GENERAL ELECTRIC		268A4719	
REV. NO.	TITLE	CONT ON SHEET	SH. NO.
	NOTES & SPECIFICATIONS FOR AIR COOLER PIPING	---	3
FIRST MADE FOR			
LOWER MONUMENTAL DAM LITTLE GOOSE DAM LOWER GRANITE DAM CONTRACT NO. DACW 68-75-C-0133		REVISIONS	
14. Fabricator must match mark all pipe joints that are to be made up in field, by stamping matching numbers at adjacent joints. (Not by a tag or paint). For multiple units the same numbers must not be repeated. Vendor may use the prefix 1 for the 1st unit, 2 for the 2nd unit etc. This would result in numbered joints as follows: Unit 1 would be 11, 12, 13, 14, 15, 16, 17, 18, 19, 110 etc. Unit 2 would be 21, 22, 23, 24, 25, 26, 27, 28, 29, 210, 211 etc.			
15. Gaskets Crane Co.'s ring type "C-C" rubber packing 1/16" thick or equivalent shall be supplied by fabricator for all flanged joints.			
16. Fabricator shall supply complete sets of galvanized nuts, bolts and studs for each flanged connection.			
APPROVED CORPS OF ENGINEERS, U.S. ARMY NORTH PACIFIC DIVISION DATE 15 OCT 1980 BY [Signature] HYDRO-ELECTRIC DESIGN BRANCH		PRINTS TO	
MADE BY F. Bradley G-7-76 ISSUED June 10, 1976		APPROVALS L.M. & G. SCHEENCTADY DIV OR DEPT. 268A4719 LOCATION CONT ON SHEET --- SH. NO. 3	
75C-133-27		LOWER GRANITE LOCK AND DAM	



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MARK DESCRIPTION

ISSUE DATE: JUNE 2023
SOLICITATION NO.: 1912E20005
CONTRACT NO.:

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 N 3RD AVE
WALLA WALLA, WASHINGTON

LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON AND IDAHO
POWERHOUSE
FIRE DAMAGED COMPONENTS SUPPLY - COOLERS

NOTES AND SPECIFICATIONS
FOR AIR COOLER PIPING

SHEET ID
RM003

RM004

NOTES:

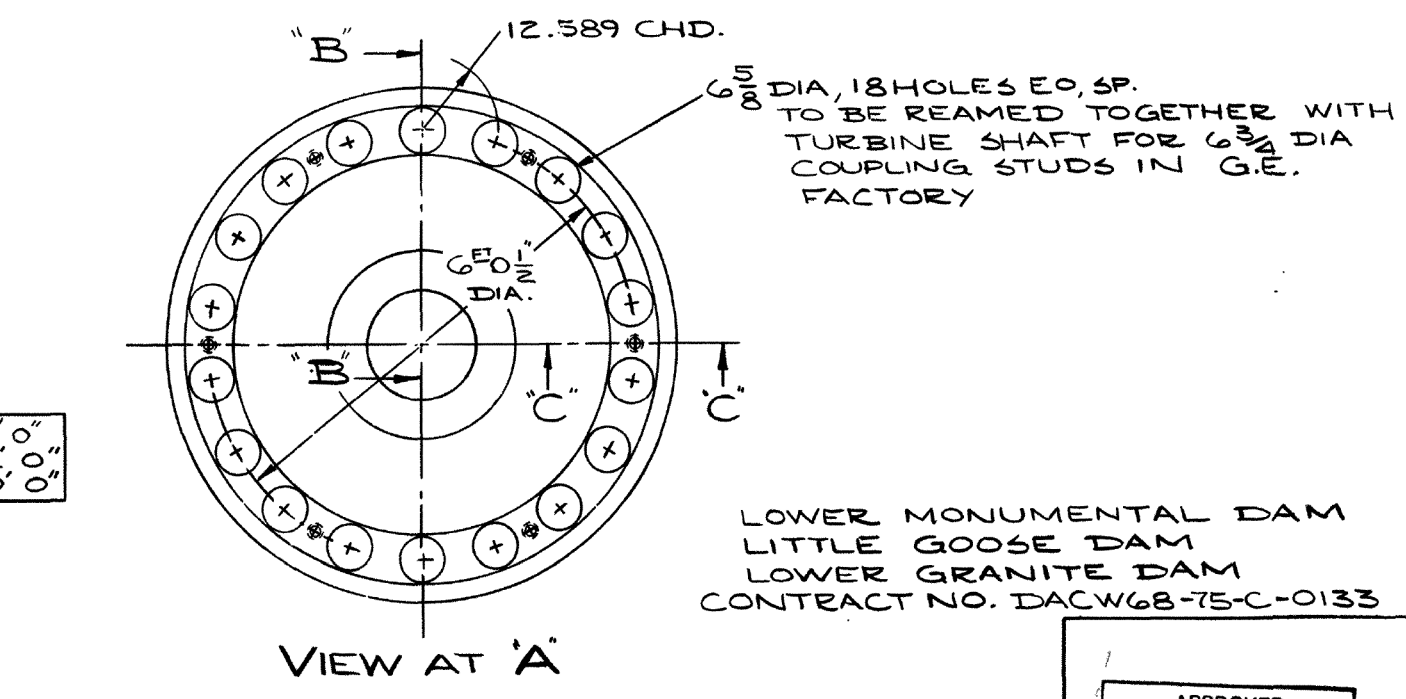
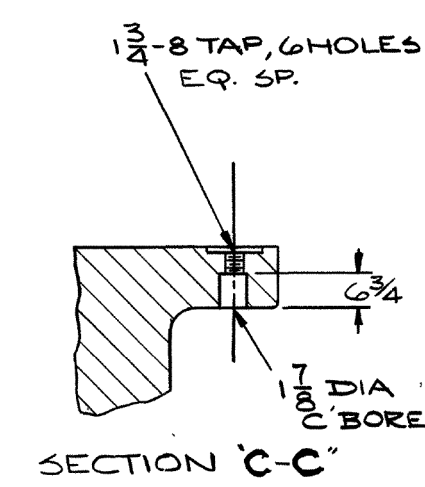
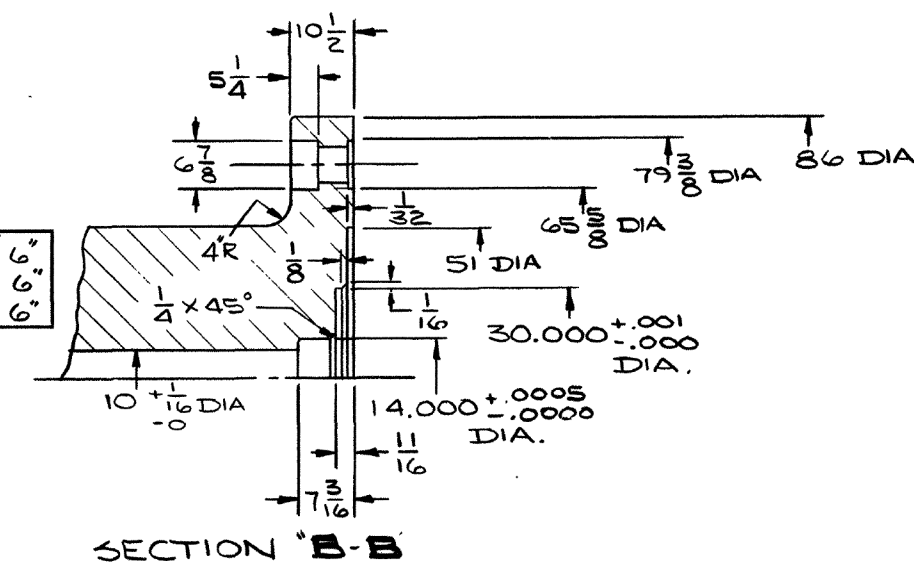
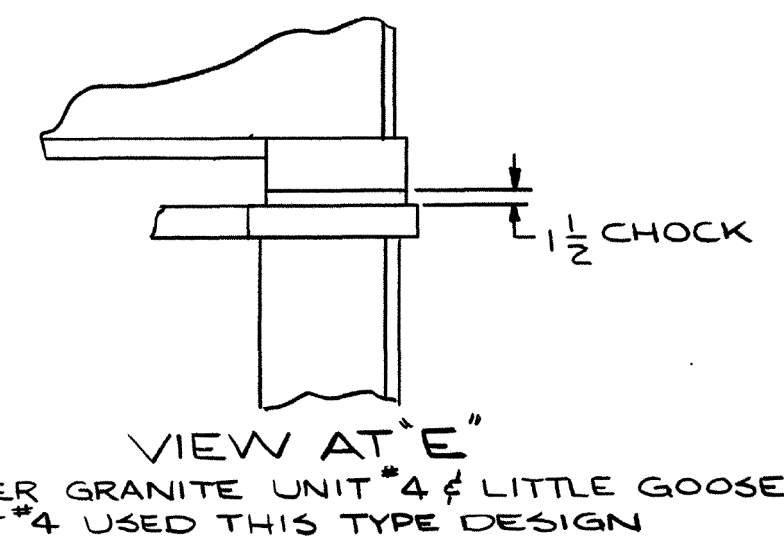
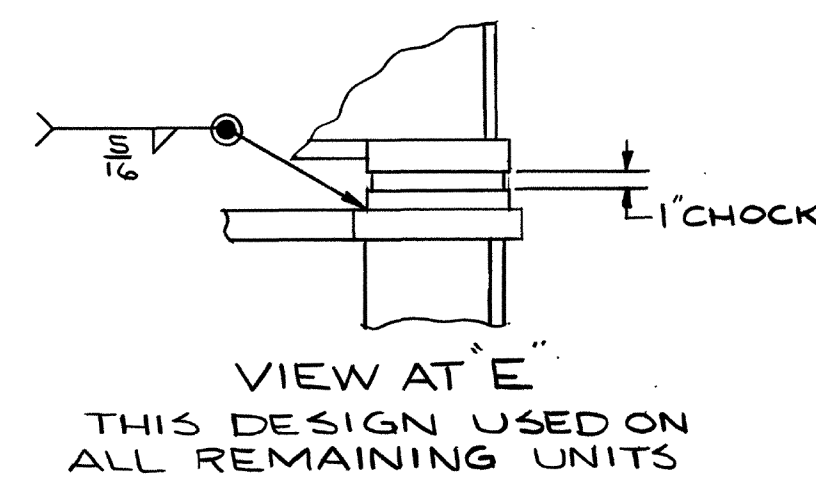
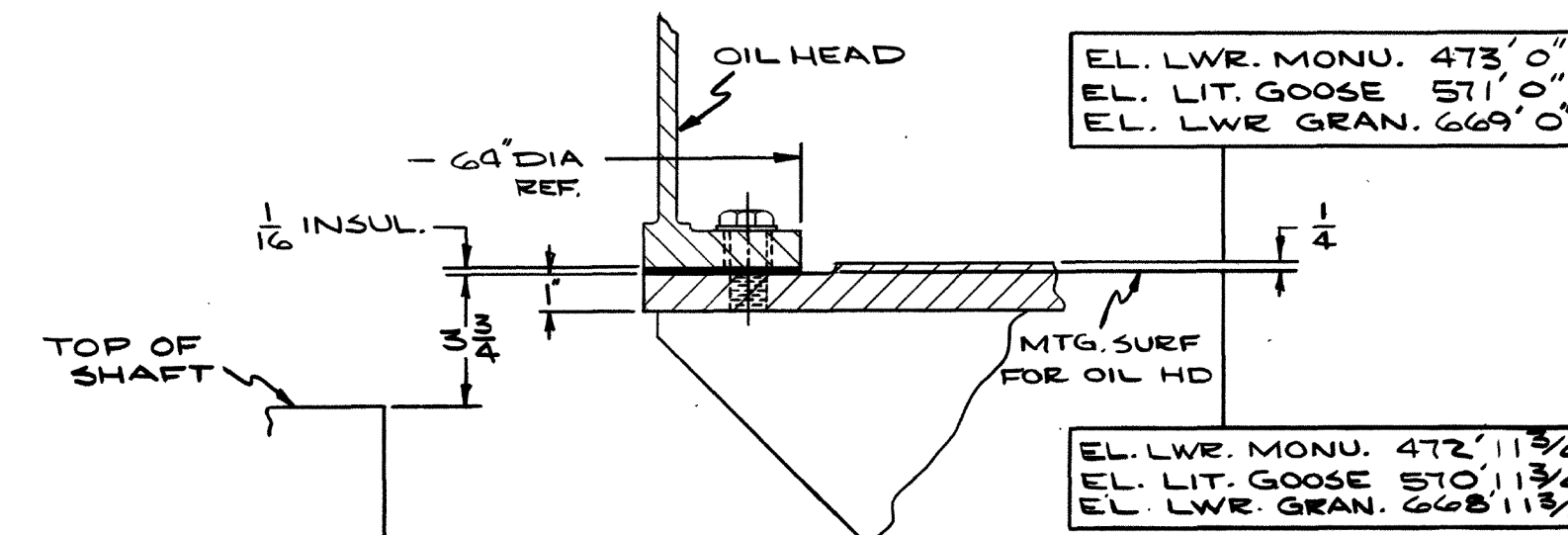
- 1-COUPLING STUDS & NUTS TO BE FURNISHED BY G.E. CO.
- 2-FOUNDATION STUDS, PIPE SLEEVES & NUT PLATES TO BE FURNISHED BY G.E. CO.
- 3-USE PRICK PUNCH MARKS ON INSIDE DIA. OF TOP RING OF STATOR FRAME WHEN LEVELING AND SETTING STATOR. DIMEN. STAMPED ON O.D. OF STATOR FRAME WRAPPER IS DIMEN. FROM TOP OF UPPER HEEL RING TO PRICK PUNCH MARKS.
- 4-INSULATION & INSULATED BOLTS AND DOWELS TO BE FURNISHED BY G.E. CO.
- 5-EMBEDDED PARTS FOR COVER PLATES & HANDRAIL TO BE FURNISHED BY G.E. CO.

LIST OF REFERENCE DWGS:

SHIPPING WGT'S & DIM'S	135D5327
LIFTING DIAG. GEN. PARTS	135D5130 & 135D5131
PIPING TERMINATIONS	135D5236
PREFERRED POSITION CO ₂ PIPING	167C6829
TERM. BD. ARRANGEMENT & WIRING DIAG.	554E536 SH-1 & SH-2
MAIN & NEUTRAL LEAD TERMINATIONS	112F292

AS BUILT

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
1		REVISED & UPDATED PER REQUIS.	4/16/76
2		REVISE PER COST. & OIL HD. MFG. REQUEST	1/14/76
3		ADDED VIEW AT E, UPDATED NOTES	1/3/77



BALCONY FLUSH WITH TOP OF GEN. AT LWR GRANITE

LOWER MONUMENTAL DAM
LITTLE GOOSE DAM
LOWER GRANITE DAM
CONTRACT NO. DACW68-75-C-0133

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES—
TOLERANCES ON:
2-PLACE DECIMALS ±
3-PLACE DECIMALS ±
ANGLES ±
FRACTIONS ±
MATERIAL—

SIGNATURES	DATE	NO.	BY
DESIGNED	15	8	75
ISSUED	20	8	75
ENGINEER	20	8	75
DATE			

GENERAL ELECTRIC
LM6 DEPT. LOC. SCHENECTADY
OUTLINE
HYDRAULIC TURB. DRIVEN GENERATOR

ATL-W-80-142 105-90-13800V
SIZE CODE IDENT NO. 112F291
SCALE SHEET 1 OF 2

US Army Corps of Engineers

OFFICE COPY

05/09/2023

ISSUE DATE: JUNE 2023
SOLICITATION NO.: 1512E20005
CONTRACT NO.: 112F291-1

DESIGNED BY: U.S. ARMY CORPS OF ENGINEERS
DRAWN BY: WALLA WALLA DISTRICT
CHECKED BY: 201 N 3RD AVE
SUBMITTED BY: WALLA WALLA, WASHINGTON

LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON AND IDAHO
POWERHOUSE
FIRE DAMAGED COMPONENTS SUPPLY - COOLERS

OUTLINE HYDRAULIC
TURBINE DRIVEN GENERATOR

SHEET ID
RM005

~~75-C-133-28~~



P
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GENERAL ELECTRIC

211A1640

CONT ON SHEET 2 SH NO. 1

REV NO.

211A1640

CONT ON SHEET 2 SH NO. 1

TITLE

INSTRUCTIONS FOR INSTALLING GUSTIN-BACON COUPLINGS

FIRST MADE FOR Power Equipment Line

100 SERIES "GRUVAGRIP" COUPLINGS

1. Check pipe ends and remove all nicks, burrs, scores & other imperfections that can interfere with the gasket seating properly.

2. Stretch gasket over one pipe end and slip back on pipe.

3. Bring pipe ends together in alignment, slide gasket so it is centered between grooves. Lubricate gasket grooves of coupling halves.

4. Seat coupling halves over gasket & run nuts down finger-tight.

5. Draw coupling halves down uniformly, alternately tightening bolts.

200 SERIES "ROLAGRIP" COUPLINGS

1. Same as 1 above

2. Mark each pipe at a distance from the end equal to one-half width of gasket.

3. Stretch gasket over one pipe end and slip back on pipe.

4. Bring pipe ends together in alignment, slide gasket so it is centered between marks. Lubricate gasket grooves of coupling halves.

5. Place coupling halves over gasket and install bolts and nuts. Draw nuts down equally on both sides.

CAUTION

Rolagrip couplings feature a tongue & groove construction which assures proper alignment of coupling halves. Mating halves must be installed so that tongues and grooves are engaged.

APPROVED

CORPS OF ENGINEERS, U.S. ARMY

NORTH PACIFIC DIVISION

DATE 15 OCT 1980

BY Donald J. Evans

HYDRO-ELECTRIC DESIGN BRANCH

MADE BY

12-16-68

APPROVALS

L.G. & M.

DIV OR DEPT.

211A1640

ISSUED

75C-133-15

Schenectady

LOCATION

CONT ON SHEET 2

SH NO. 1

CODE IDENT NO.

FF-803-WA (5-68)

PRINTED IN U.S.A.

LOWER GRANITE LOCK AND DAM

GENERAL ELECTRIC

211A1640

CONT ON SHEET 2 SH NO. 1

REV NO.

211A1640

CONT ON SHEET 2 SH NO. 1

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LOWER GRANITE LOCK AND DAM

GENERAL ELECTRIC

211A1640

CONT ON SHEET final SH NO. 2

REV NO.

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CONT ON SHEET final SH NO. 2

TITLE

INSTRUCTIONS FOR INSTALLING GUSTIN-BACON COUPLINGS

FIRST MADE FOR Power Equipment Line

6. Torque bolts as shown in following table:

PIPE SIZE	BOLT TORQUE (LB. FT.)
1 1/2"	100
2, 2 1/2"	150
3, 3 1/2, 4	200
5	250
6	200
8, 10	300
12	350

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CORPS OF ENGINEERS, U.S. ARMY

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FF-803-WA (5-68)

PRINTED IN U.S.A.

LOWER GRANITE LOCK AND DAM

OFFICE COPY
05/09/2023

DESIGNED BY:
JUNE 2023
SOLICITATION NO.:
1912E20045
CONTRACT NO.:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE:
FILE NO.:
ANSID: 211A1640

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 N 3RD AVE
WALLA WALLA, WASHINGTON
LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON
POWERHOUSE
FIRE DAMAGED COMPONENTS SUPPLY - COOLERS
INSTRUCTIONS FOR INSTALLING
GUSTIN-BACON COUPLINGS

SHEET ID
RM008

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PD: AEC_pdf.plt
643:04-AM 5/9/2023
FINAL