HANFORD TANK WASTE TREATMENT

AND

IMMOBILIZATION PLANT

BIDDER REQUEST FOR INTEREST & PRE-QUALIFICATION PACKAGE

OFFICIAL USE ONLY (*when completed)*
May be exempt from public release under the Freedom of Information Act (5 U.S.C. 552), exemption number and category: 4. Commercial/Proprietary
Department of Energy Review required before public release
Name/Org: Jose Velasquez/ P&S Date: 12/28/2023
Guidance (if applicable): N/A

Requisition No. 24590-QL-MRA-MKE0-TBD1

Melter Wet Electrostatic Precipitator (WESP)

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COMPANY NAME: _____

BIDDER REQUEST FOR INTEREST & PREQUALIFICATION

CRITERIA AND RESPONSE

1.0 Introduction

Bechtel National Inc., herein referred to as Contractor, intends to issue a Request for Proposal (RFP) for Permanent Plant Equiment - **Wet Electrostatic Precipitators and Power Supplies, [Qty. 2 each]** for the Hanford Waste Treatment and Immobilization Plant (WTP) project in Richland, WA. Companies must be pre-qualified by Contractor to be included on the bid list. To support the pre-qualification evaluation process, the prime potential bidder (1st tier subcontractor) must provide the requested information and respond to questions within this document. The Experience Statement should include relevant information for both the prime bidder and any planned lower-tier supplier or subcontractor. Additional supporting documentation such as brochures and company profiles may also be submitted.

***Please note that additional supporting documentation will be required as part of the formal RFP process.**

2.0 Project Description and Location

The Hanford Tank Waste Treatment and Immobilization Plant (WTP) is a complex of radioactive waste treatment processing facilities designed and constructed by Bechtel National, Inc. for the Department of Energy (DOE). The facility will process the Hanford Site tank waste and convert the waste into a stable glass form.

The Project site is located in the 200 East Area of the Hanford Reservation near Richland, Washington, along the Columbia River. The site elevation varies from 662 to 684 feet above mean sea level. Ambient temperature range is -23 degrees F minimum to 113 degrees F maximum, with relative humidity of 5% minimum to 100% maximum. The project design life is 40 years.

Information about the WTP Project can be found on **http://www.hanfordvitplant.com**.

3.0 Scope of Work

Requisition Number: ***24590-QL-MRA-MKE0-TBD1***
Quality Level: ***QL***
Award Type: ***Fixed Price with Economic Price Adjustment***
Estimated RFP Date: ***March 2026***

The goal of posting Request for Interest (RFI) document packages online in advance of the anticipated solicitation date is to proactively engage Suppliers that may intend to bid on the scope of work outlined in this request. The WTP project intends to produce specifications and requirements documents for procurement award that closely align with standard commercial applications, for those items that do not have a nuclear safety function. WTP encourages feedback from interested Suppliers relative to things that can reduce delivery duration, item complexity, and unplanned costs from awarded value (examples: Document submittals that are in excess of what would normally be required for commercial application, special tests that duplicate available data, excessive oversight, size of requirements document set, and conflicts in specifications).

For components that have a nuclear safety function, WTP intends to consider both Suppliers with NQA-1-2022 programs and Suppliers that have other QA programs (example: ISO 9001). For cases in which Supplier is not NQA-1 compliant, WTP will provide required testing, oversight, and source verification to demonstrate compliance with NQA-1-2022.

COMPANY NAME: _____

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We encourage interested Suppliers to contact WTP (per website contact info/directions) to set up meetings with WTP engineering and procurement staff to ask questions, discuss areas that could be adjusted to simplify the procurement process, resulting in a fit for purpose specification that aligns with what the supply chain produces (buy what they make) and recommendations for how best to develop a mutually beneficial collaborative partnership.

3.1 Design and Fabricate two Wet Electrostatic Precipitator (WESP) vessels for use in the High Level Waste (HLW) facility at WTP. The WESP vessels are used on the melter offgas treatment system, downstream of submerged bed scrubbers, to remove radioactive particulate and aerosols as described in the mechanical datasheet.

The WESP consists of:

- Vessel with a support skirt, mounting rings and anchor chairs
- Collector Surface and supports
- Discharge electrodes and supports
- Offgas distribution plate
- Internal flush water piping and distribution manifold
- High voltage insulators and housings including leads, and bushings
- Required nozzles
- HVAC Bib in exterior shell

3.2 The Buyer has designed the vessel body to meet ASME VIII, Division 1 requirements, which are provided in design proposal drawings (DPDs), shown in Attachment A. The internals of the vessel are conceptually modeled but the final design is requested from the Buyer. The WESP shall be floor mounted, using a circular support ring beam, to be designed by the vendor.

3.3 The vessels skirt and body will be installed in a space that has been designated as black-cell and hard-to-reach. The vessel head will be accessible through 15 x 14.7 foot shield plate. Internals of the vessel shall be designed to be removable through semi-remote means by removing the vessel head and lifting internals out with a tower crane or heavy lift crane.

<u>Equipment and Materials Required</u>

Work to include (but is not be limited to):

- Purchase of material and fabrication of two (2) WESP vessels
- Documentation services as necessary
- Enhanced factory acceptance testing to validate particulate removal efficiency and determine recommended parameters for washing vessel internals and insulator purge air rates and temperature
- Provide special equipment and tooling for installation/and or maintenance of the vessels
- Provide maintenance plan for replacement of vessel internals
- Provide startup procedures and testing recommendations
- ASME Section VIII, Division 1, UG-120 code analysis of vessel
- Pressure vessels U-stamped and registered with the National Board Inspection Code (NBIC)

Documentation:

Documentation including drawings, procedures, calculations shall be reviewed and concurred to by the Buyer prior to starting fabrication or tests, at specified hold points that will be identified in the material requisition (MR):

Documentation is to include (but not be limited to):

- All drawings and technical documents must be checked and signed off. Drawings include bill of materials, weld symbols, NDE for each weld, shop detail drawings. Locations of center of gravity, in all three directions
- Welding procedure specifications per ASME Section IX
- Procedures for storage and control of weld filler material shall be described in detail the procurement, receipt, storage, and dispersal (traceability) of fill material
- Postweld heat treatment procedures including cleaning requirements, heating and cooling rates, thermocouple locations, and type of heating equipment
- For repair of weld either the original welding procedure specification (WPS) or one submitted as a designated repair WPS shall be used
- Repair plans that use welding for repairs of welds or base metals
- NDE procedures, including visual examinations, radiographic, liquid penetrant examination (etc.) meeting the requirements of ASME Sections V & VIII
- Test and inspection records and work plan
- All record pertaining to NDE, base materials, filler materials, fabrication and inspection shall be traceable to the area and part inspected
- Pressure testing reports
- Mechanical test reports
- Inspection and verification reports
- Test results for software
- Installation instruction manuals
- User manuals
- Storage and handling requirements
- Certificates of conformance
- Material certificates of compliance
- Records of positive material identification (PMI)

Optional:

3.4 The Buyer may supply two (2) vessel bodies for repair and re-work to bring into compliance with the new design. See Attachments B and C for details on existing vessel bodies and known non-conformances on the vessel body that require adjudication for use.

3.5 Additional Work may include or be subcontracted*:

- Design, fabricate, assemble, and test two high voltate (HV) DC, pulse-width modulated (PWM), power supply units including ancillary equipment for energizing WESPs.

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- Control equipment, all controls and functions required for safe, reliable and continuous operation of the precipitator, its power supplies and ancillary equipment provided by the Seller. Seller shall provide the necessary hardware and software to integrate the controls into Buyer's integrated network (ICN).

Note: For factory acceptance testing of the WESPs the Power Supplies are required, the Seller shall coordinate with subcontractors so that testing can be completed.

Power Supply and Control equipment includes but is not limited to:

- Transformers
- Rectifiers
- Current-limiting reactors (if required)
- Seller designed and supplied high voltage DC cables from the WESP vessel to the power supply. High voltage DC terminators at both ends, and DC circuit return path equipment
- Fully metal-enclosured high voltage termination housing surrounding the high voltage DC busings on the WESP vessel
- Control equipment, all controls and functions required for safe reliable and continuous operation of the precipitator, its power supplies and anciliarry equipment provided by Seller. Seller shall provide the necessary hardware and software to integrate the controls into Buyer's integrated control network (ICN).

3.6 Codes

The following Codes and Standards shall be adhered to for design and fabrication of WESP vessels:

- AISC N690, 1994, Specification for the Design, Fabrication, and Erection of Steel Safety-Related Structures for Nuclear Facilities
- ANSI/ISA-7.0.01, Quality Standards for Air Instruments
- ASME Boiler and Pressure Vessel Code Section II, Material, American Society of Mechanical Engineers
- ASME Boiler and Pressure Vessel Code Section V, Nondestructive Examination, American Society of Mechanical Engineers
- ASME Boiler and Pressure Vessel Code Section VIII, Division I, Rules for Construction of Pressure Vessels, American Society of Mechanical Engineers
- ASME Section IX, Boiler and Pressure Vessel Code, Welding, Brazing, and Fusing Qualifications
  ASME B31.3, Process Piping, 1996[1], American Society of Mechanical Engineers
  [[1]1996 for design, latest edition for fabrication and procurement

3.7 Codes

The following Codes and Standards shall be adhered to for design and fabrication of WESP Power Supplies and Control Equipment:

- National Fire Protection Association (NFPA) – NFPA 70 (2023), National Electrical Code, Article 250, Grounding
- NEMA 250, Enclosures for Electrical Equipment (1000 Volts Maximum)

3.8 Standards

- IEEE 519, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems
- NEMA ICS – 1 Industrial Control and Systems General Requirements
- UL, Underwriters Laboratories

COMPANY NAME: _____

BIDDER REQUEST FOR INTEREST & PREQUALIFICATION

CRITERIA AND RESPONSE

- UL 94, Standard for Safety, Test for Flammability of Plastic Material for Parts in Devices and Appliances
- UL 508, Standard for Safety Electrical Industrial Control Equipment
- UL 1072, Standard for Safety Medium-Voltage Power Cables

Please note that this solicitation may result in material procurements and proposals greater than $10,000 and must comply with FAR 52.225-11 Buy American Act – Construction Materials Under Trade Agreements (SEP 2010). If you cannot comply or foresee any issues with compliance, please provide a detailed explanation.

If your company is **interested** in this solicitation, see **Section 4.0** and complete the sections as requested. The BNI Acquisition Services Purchasing group is responsible for collection, evaluation, and internal publication of potential bidders' information for the purpose of pre-qualification for all solicitations.

4.0 **Response Submittal**

4.1 Submission Due Date: **8/29/2025**

4.2 Submission Method: Submissions must be received no later than the due date to the Purchasing Representative, Andrea Riste, via email at adriste@bechtel.us. For questions, call (509) 430-9055.

Pre-Selection Criteria

5.0 Company Response

5.1

Prime Subcontractor Company Name:

Address: _____

_____

_____

Pre-qualification Contact Name: _____

Phone Number: _____

E-mail Address: _____

DUNS No. (Dun & Bradstreet): _____

5.2 North American Industry Classification System Code (NAICS)

The NAICS (**North American Industry Classification System) code for this work is 333410.** The SBA size standard for this code is **500 employees**. For pre-qualification purposes, you are a small business if your company's employees do not exceed 500.

Business Size Classification (according to U.S. Small Business Administration Criteria)

☐ Small

☐ Small Disadvantaged Business

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COMPANY NAME: _____

BIDDER REQUEST FOR INTEREST & PREQUALIFICATION

CRITERIA AND RESPONSE

☐ Woman Owned Small Business
☐ HUBZone Business
☐ Veteran-Owned Small Business Concern
☐ Service-Disabled Veteran-Owned Small Business Concern.
☐ N/A – Registered as a Large Business

5.3 Quality Assurance Requirements Program

Programmatic Quality Assurance (QA) requirements for subcontracts or purchase orders performed in the WTP Jobsite will be:

	Non-Permanent or Temporary Work - Generally no QA program required
	Commercial Quality - Based on DOE Order 414.1C
	Nuclear Level Quality - Based on ASME NQA-1 2022

A. Does your Company have a written Quality Assurance Program?

☐Yes ☐ No

B. Which QA standards does this program meet? _____

☐ DOE/RW/0333P ☐ ASME NQA-1 ☐ ASME Section VIII ☐ ISO-9000 ☐ Other

C. If selected “other” above, please furnish a copy of its QA Program Table of Contents and a brief summary identifying each of the requirements listed below. The level of rigor applied to the elements shall be commensurate with the risks associated with the Work.

- A description of the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the Work.
- Personnel Training and Qualifications
- Quality Improvement
- Control of Documents and Records
- Work Processes
- Design
- Procurement
- Product Identification and Traceability
- Inspection and Acceptance Testing
- Control of the Testing Equipment
- Control of Non-Conforming Product
- Corrective and Preventative Actions

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- Handling, Storage and Shipping Procedures
- Management Assessment
- Independent Assessment

_____

D. Your company has the option to submit their full Quality Assurance Plan with this interest.

5.4 Commercial Data

Potential bidders **are required** to register on the **Bechtel Supplier and Contractor Portal: https://www.Bechtel.com/supplier/** in order to be considered.

Date your company registered or updated its information on the Portal?

Date Updated:_____

A. Rough Order of Magnitude for Scope of Work (USD): $_____

B. Estimated Delivery Schedule:

i. Engineering/Design: _____ weeks
ii. Material Procurement: _____ weeks
iii. Fabrication: _____ weeks
iv. Delivery: _____ weeks

C. Long lead items to be aware of? (if yes, please specify)

_____
_____

D. Does your company have a suggested alternate offering/product that offers an improvement, is more cost effective, or offers shorter delivery (i.e. “buy what you make”)?

☐ No, we will supply an identical or similar product.

☐ Yes, we have an alternate offering. **DESCRIPTION OF ALTERNATE**:

_____
_____
_____

E. What risks do you foresee with this procurement that BNI should be aware of and possibly mitigate?_____
_____
_____

5.5 Technical Criteria

Technical Criteria **Section 3.3**

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COMPANY NAME: _____

BIDDER REQUEST FOR INTEREST & PREQUALIFICATION

CRITERIA AND RESPONSE

A. Question 1: **Do you have experience designing ASME VIII, Division 1 vessels?**

☐ Yes ☐ No

Explanation:

_____

_____

B. Question 2: **Can you perform NDE of vessels and piping designed in accordance with ASME standards?**

☐ Yes ☐ No

Explanation:

_____

_____

C. Question 3: **Do you have experience designing wet electrostatic precipitators?**

☐ Yes ☐ No

Explanation:

_____

_____

D. Question 4: **Can you perform NDE of vessels and piping designed in accordance with ASME standards?**

☐ Yes ☐ No

Explanation:

_____

_____

E. Question 5: **Do you excel in modular design of equipment?**

☐ Yes ☐ No

Explanation:

_____

_____

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COMPANY NAME: _____

BIDDER REQUEST FOR INTEREST & PREQUALIFICATION

CRITERIA AND RESPONSE

F. Question 6: **Do you have experience performing advanced factory acceptance tests?**

☐ Yes ☐ No

Explanation:

_____

_____

Technical Criteria **Section 3.4**

G. Question 1: **Is your preference to repair existing vessels to re-use?**

☐ Yes ☐ No

Explanation:

_____

_____

H. Question 2: **Is your preference to source vessel material and build new?**

☐ Yes ☐ No

Explanation:

_____

_____

Technical Criteria Section 3.5

I. Question 1: **Do you have the capability to design Power Supplies?**

☐ Yes ☐ No

Explanation:

_____

_____

J. Question 2: **Will power supply design be subcontracted?**

☐ Yes ☐ No

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Explanation:
_____
_____

K. Question 3: **Do you have the capability to design control equipment?**

☐ Yes ☐ No

Explanation:
_____
_____

L. Question 4: **Will power supply design be subcontracted?**

☐ Yes ☐ No

Explanation:
_____
_____

M. Question 5: **Is it the Suppliers preference to have WTP subcontract this work to other suppliers?**

☐ Yes ☐ No

Explanation:
_____
_____

N. **Direct Relevant Experience Documentation**: If Respondent has answered "yes" to the questions above, provide a reference list of example projects over the last ten years, on the included Experience Statement, that demonstrate direct relevant project experience to support each "yes" response. Example projects should be detailed as to both the technical scope of the project and your participation in the project.

Column completion notes for the below, Experience Statement, to be completed by the Prime contractor:

A. Customer Name, Address, Contact Name and Phone No.- So that we may contact as a reference as needed.

B. Work Description and Location- Describe work scope and location, and then indicate if prime or subcontract.

C. Original/ Final Contract Value- Original award value and final closeout contract value.

D. Commencement/ Completion Dates- Provide starting date and actual completion (or forecast if still in progress)

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BIDDER REQUEST FOR INTEREST & PREQUALIFICATION

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by month/year format (e.g., Jan 2006/Sept 2007)

Customer Name, Address, Contact Name and Phone No.	Work Description and Location	Original/Final Contract Values	Commence/ Complete Dates

6.0 Pre-Qualification Document Checklist

Companies are encouraged to use this checklist to ensure their submittal is complete.

☐ Interest & Prequalification Criteria and Response Package (this document)

☐ QA Program Table of Contents and summary *or* a copy of QA Plan

☐ Responses to **TECHNICAL CRITERIA Section 5.5**

☐ Additional supporting documentation such as brochures and company profiles.

☐ Direct Relevant Experience Documentation (included in this document or provided as attachment)

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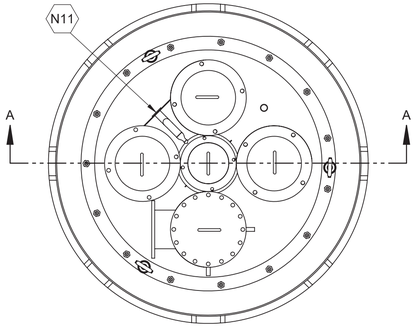
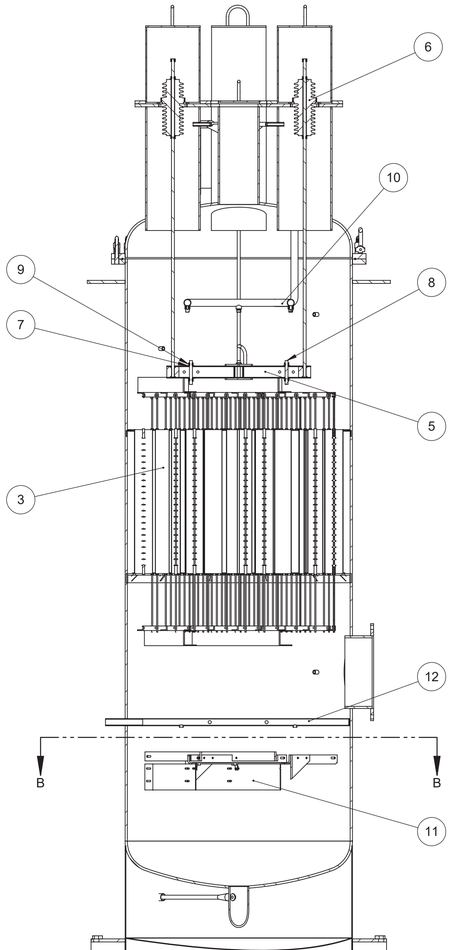
ATTACHMENT A
DESIGN PROPOSAL DRAWINGS

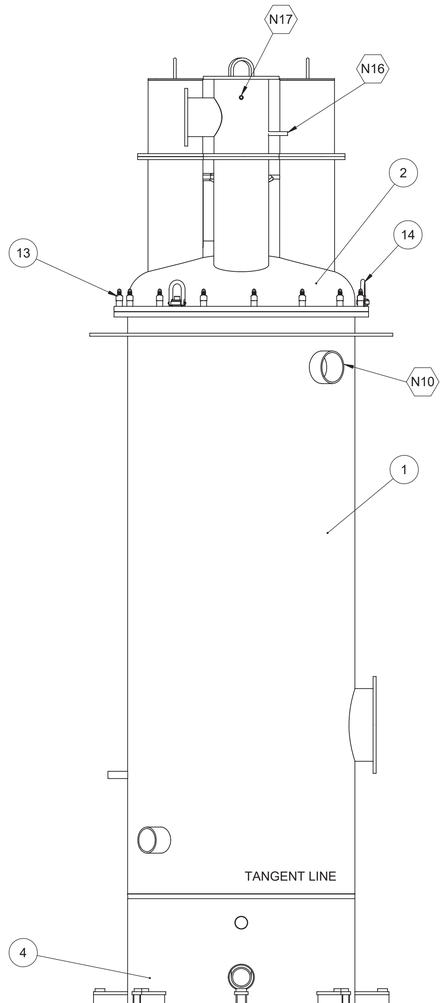
NOTES:

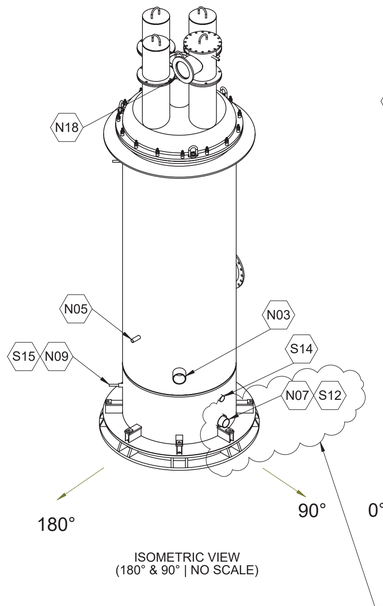
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ENGINEERING SPECIFICATION PROVIDED IN PURCHASE ORDER.
2. SELECTION OF COMPONENTS ON THIS DRAWING IS A PROPOSAL ONLY. THE SELLER SHALL BE RESPONSIBLE FOR FULL VALIDATION OF THE COMPONENTS SELECTED FOR THE CONTRACTED APPLICATION, WHETHER IDENTICAL TO THE BUYER PROPOSAL OR OTHERWISE.
3. THIS DRAWING PROVIDES BASIC OUTLINES, DESIGN OBJECTIVES AND BOUNDING DIMENSIONS TO CONTRACTED DESIGN OR FABRICATION SUPPLIER(S) AND SHALL NOT BE USED TO CONFIRM THE AS BUILT WTP STRUCTURE, SYSTEM OR COMPONENT IDENTIFIED HEREIN. SEE SELLER INFORMATION FOR FINAL CONFIGURATION PROVIDED IN CONFORMANCE TO PURCHASE ORDER.
4. ALL DIMENSIONS, TOLERANCES, LIMITS OF SIZE, FORM, LOCATION AND RELATED TERMINOLOGY AND SYMBOLS SHALL BE INTERPRETED IN ACCORDANCE WITH ASME Y14.5-2018.
5. BREAK ALL SHARP EDGES AND REMOVE ALL BURRS.
6. UNLESS OTHERWISE SPECIFIED, MACHINED SURFACE FINISH SHALL BE 125 MICROINCHES OR GREATER.
7. WELDS OF ALL NOZZLES SHALL BE INSPECTED THROUGH PT/RT METHODS.
8. SUPPLIER TO PROVIDE PROOF OF OPERABILITY TOWARDS MAINTAINANCE OF THE VESSEL.
9. APPLY NO FINISH TO THE VESSEL.
10. THIS AREA IS NOT FINALIZED PENDING AN UPDATED STRESS ANALYSIS REPORT
11. ALL "Z" DIMENSIONS MEASURED FROM THE 37' 10" ELEVATION TO THE CENTER LINEOF NOZZLE UNLESS OTHERWISE NOTED.



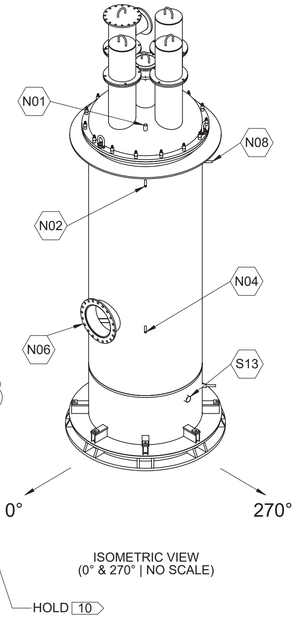


SECTION A-A





ISOMETRIC VIEW
(180° & 90° | NO SCALE)



ISOMETRIC VIEW
(0° & 270° | NO SCALE)

HOLD 10

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	DOCUMENT NUMBER	MATERIAL
1	1	WESP MAIN VESSEL ASSEMBLY	24590-HLW-MV-HOP-00004002	-
2	1	WESP TOP VESSEL HEAD ASSEMBLY	24590-HLW-MV-HOP-00004003	-
3	1	WESP COLLECTING TUBE ARRAY ASSEMBLY	24590-HLW-MV-HOP-00004005	-
4	1	WESP LOWER SKIRT ASSEMBLY	24590-HLW-MV-HOP-00004006	-
5	1	WESP MAIN BEAM ASSEMBLY	24590-HLW-MV-HOP-00004008	-
6	4	WESP INSULATOR ASSEMBLY	24590-HLW-MV-HOP-00004007	-
7	8	316 STAINLESS STEEL WASHER	-	316 Stainless Steel
8	4	WESP MAIN BEAM THREADED ROD	-	18-8 Stainless Steel
9	8	18-8 STAINLESS STEEL HEX NUT	-	18-8 Stainless Steel
10	1	WESP UPPER SPRAY RING ASSEMBLY	24590-HLW-MV-HOP-00004009	-
11	1	WESP BAFFLE PLATE ASSEMBLY	24590-HLW-MV-HOP-00004010	-
12	1	WESP INTERNALS LOWER FLUSH WATER HEADER	24590-HLW-MV-HOP-00004004	-
13	15	WESP REMOTE NUT	-	ASTM A194 Steel
14	3	STEEL HOIST RING FOR LIFTING	-	ASME B30.26 Steel

NOZZLE SCHEDULE

NOZZLE	SIZE	SERVICE/REMARKS	SCH.	"Z" DIM.	WELD CONNECTION DETAIL PER 24590-WTP-MV-M59T-00016001
N01	2"	FLUSH WATER UPPER	80	21'-9"	DETAIL 3
N02	1"	PRESSURE TRANSMITTER 1	160	18'-8"	DETAIL 2
N03	8"	OFF GAS INLET	80	5'-8"	DETAIL 2
N04	1"	PRESSURE TRANSMITTER 2	160	8'-10"	DETAIL 2
N05	2"	FLUSH WATER LOWER	80	7'-5"	DETAIL 2
N06	24"	VESSEL INSPECTION PORT	40	8'-10"	DETAIL 2
N07	6"	VESSEL DRAIN	80	1'-11"	DETAIL 1
N08	1"	LEVEL TRANSMITTER 1	160	17'-9"	DETAIL 2
N09	1"	LEVEL TRANSMITTER 2	80	2'-8"	DETAIL 6
N10	10"	OFF GAS OUTLET	NA	18'-8"	DETAIL 2
N11	2"	TOP PURGE AIR	80	21'-11"	DETAIL 10
S12	8"	SKIRT SLEEVE 1	40	1'-11"	DETAIL 2
S13	4"	SKIRT VENT 1	40	3'-5"	DETAIL 2
S14	4"	SKIRT VENT 2	40	3'-5"	DETAIL 2
S15	2"	SKIRT SLEEVE 2	40	2'-8"	DETAIL 2
N16	1"	TOP PURGE AIR 2	160	-	DETAIL 2
N17	1"	TOP PURGE AIR 3	160	-	DETAIL 2
N18	12"	ELECTRICAL PORT	NA	25'-7"	DETAIL 8

DRAWING INDEX

SH	DWG NO.	TITLE
001	24590-HLW-MV-HOP-00004001	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY
002	24590-HLW-MV-HOP-00004002	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY
003	24590-HLW-MV-HOP-00004003	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY
004	24590-HLW-MV-HOP-00004004	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY
005	24590-HLW-MV-HOP-00004005	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY
006	24590-HLW-MV-HOP-00004006	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY
007	24590-HLW-MV-HOP-00004007	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY
008	24590-HLW-MV-HOP-00004008	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY
009	24590-HLW-MV-HOP-00004009	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY
010	24590-HLW-MV-HOP-00004010	HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
A	ISSUED FOR PROPOSAL	BMS	KMB	JEP	JLM	SEE STAMPS

QUALITY DESIGNATOR: Q

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS SPECIFIED

NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18851 LBS

SUPPLIER DWG NO.

ISSUE STAMP

	BY	DATE
ORIGINATOR	B. SHOBE	
CHECKER	K. BAILEY	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. N/A REV: N/A

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30 (HLW)

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

SCALE: 1:25

24590-HLW-MV-HOP-00004001

REV A

SHT 1 OF 10

LAST SAVED BY: bshobe
FILE NAME: 24590-HLW-MV-HOP-00004001
DATE: 5/6/2025 2:33:11 PM

FORMAT WTP ANSI INCH SIZE D (22x34)

'D' SIZE - 22in*34in

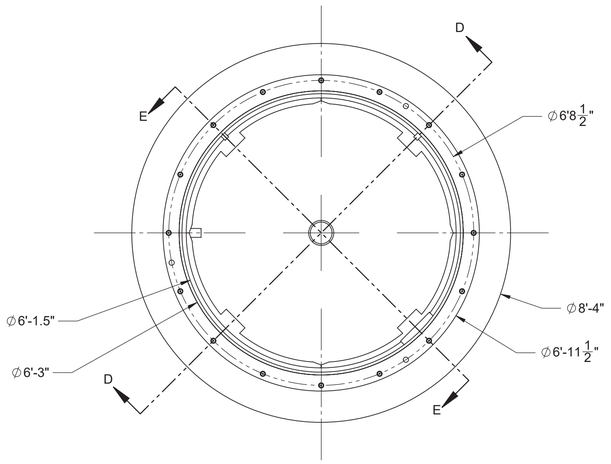
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

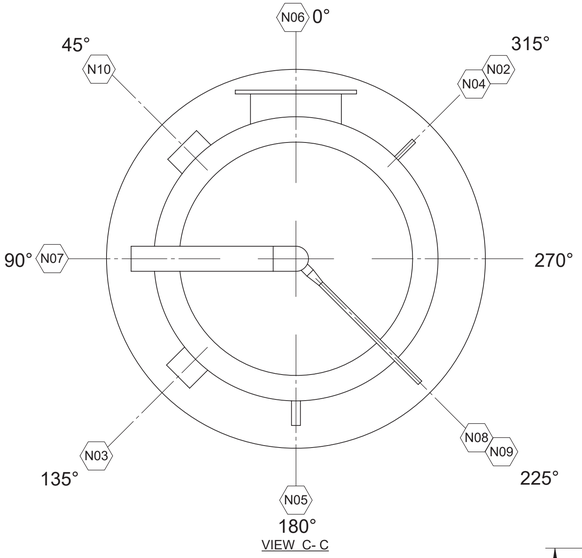
ATTACHMENT A
DESIGN PROPOSAL DRAWINGS

NOZZLE SCHEDULE				
NOZZLE	SIZE	SERVICE/REMARKS	SCH.	"Z" DIM.
N02	1"	PRESSURE TRANSMITTER 1	160	18'-8"
N03	8"	OFF GAS INLET	80	5'-8"
N04	1"	PRESSURE TRANSMITTER 2	160	8'-10"
N05	2"	FLUSH WATER LOWER	80	7'-5"
N06	24"	VESSEL INSPECTION PORT	40	8'-10"
N07	6"	VESSEL DRAIN	80	1'-11"
N08	1"	LEVEL TRANSMITTER 1	160	17'-9"
N09	1"	LEVEL TRANSMITTER 2	80	2'-8"
N10	10"	OFF GAS OUTLET	NA	18'-8"

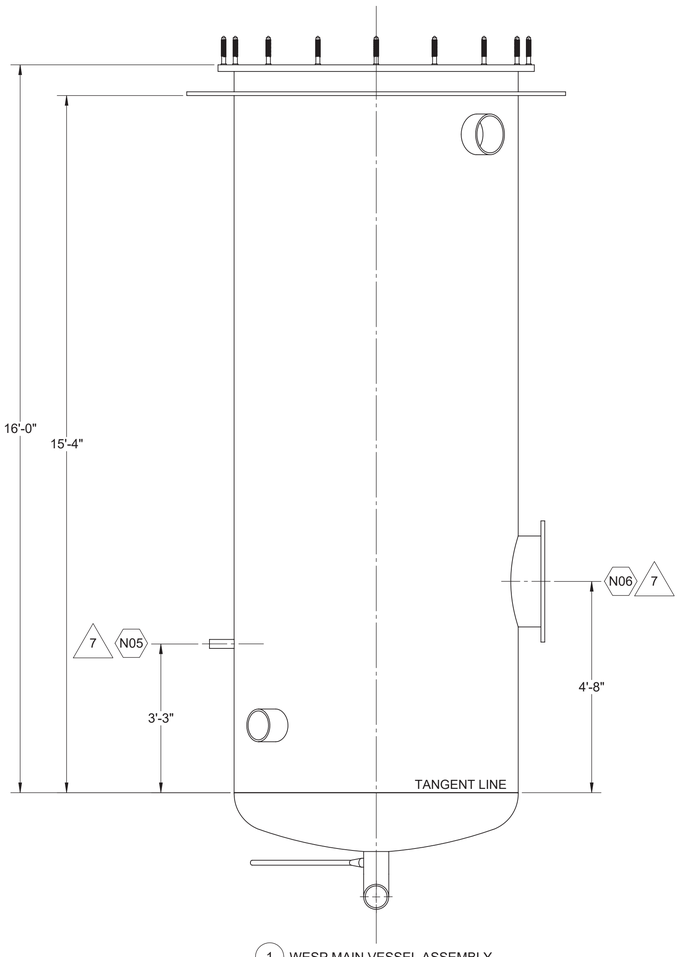
NOTES:

FOR NOTES, DRAWING INDEX, REFERENCE DRAWINGS AND PART LISTS, SEE 24590-HLW-MV-HOP-00004001.

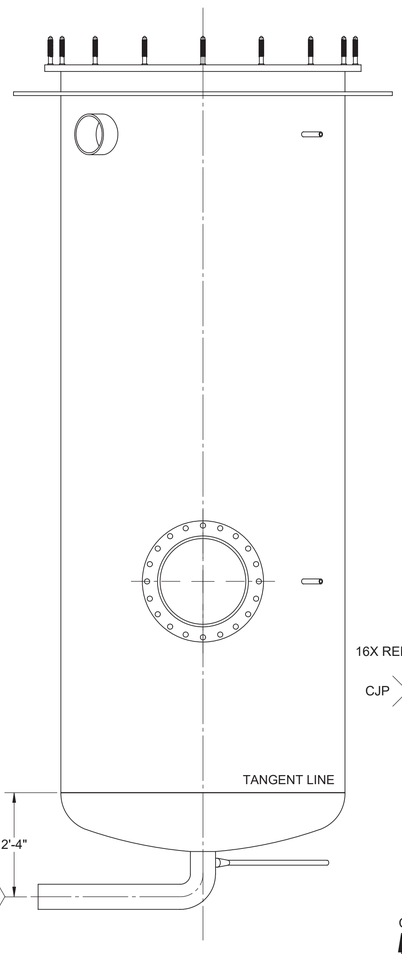


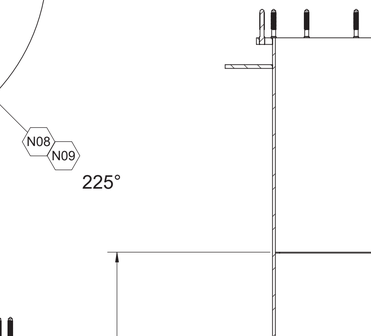


VIEW C- C

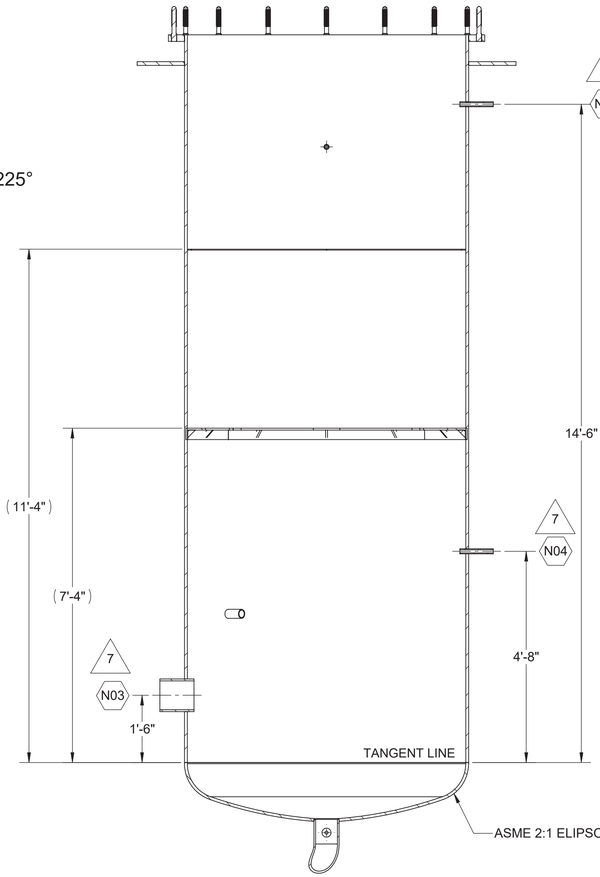


1 WESP MAIN VESSEL ASSEMBLY

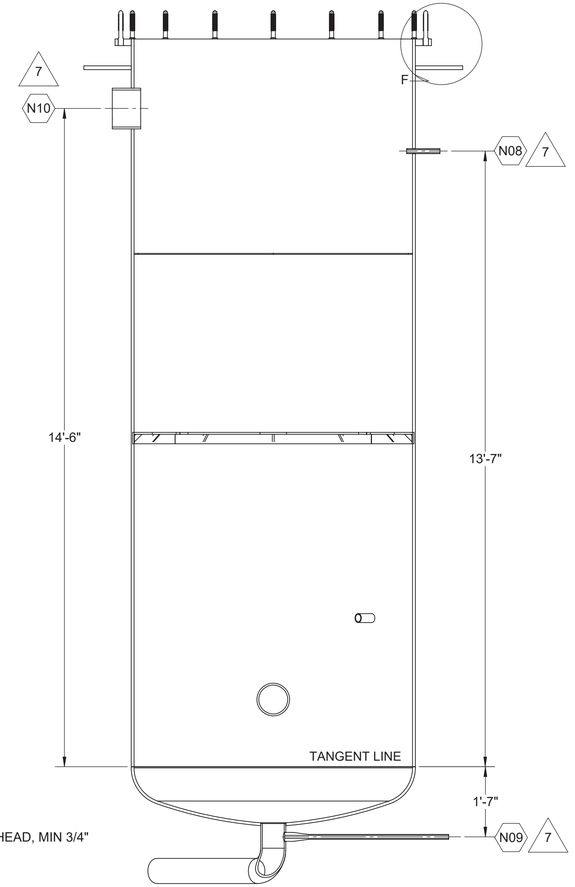




DETAIL F
SCALE 1 : 10



SECTION D-D



SECTION E-E
SCALE 1 : 20

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
A	ISSUED FOR PROPOSAL	BMS	KMB	JEP	JLM	SEE STAMPS

REVISION HISTORY

Q QUALITY DESIGNATOR

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS SPECIFIED

NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18161.83 LBS

SUPPLIER DWG NO.

ISSUE STAMP

	BY	DATE
ORIGINATOR	B. SHOBE	
CHECKER	K. BAILEY	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. N/A REV: N/A

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30 (HLW)

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

SCALE: 1:20

24590-HLW-MV-HOP-00004002

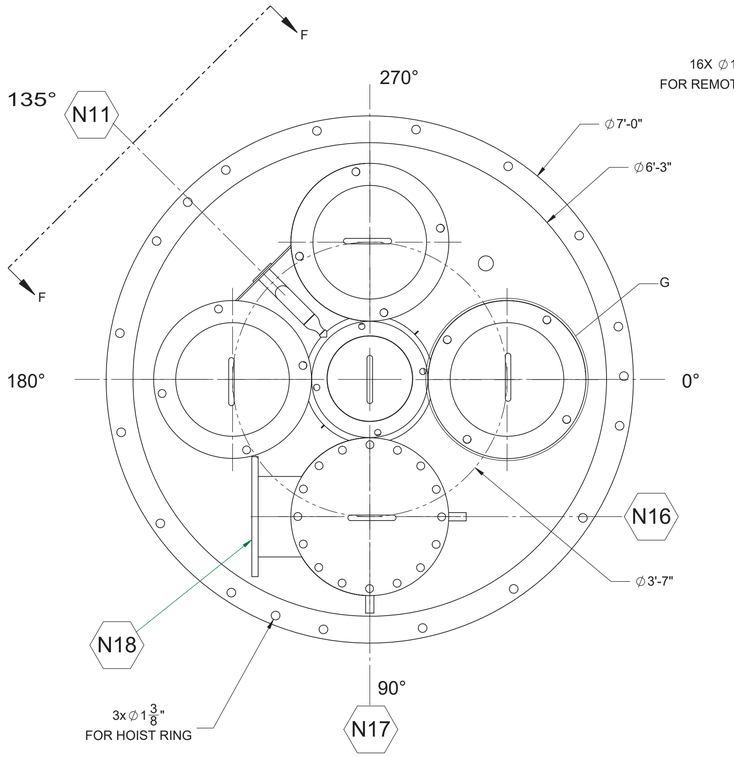
REV A

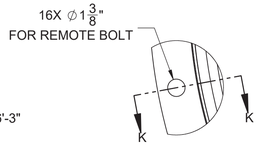
SHT 2 OF 10

LAST SAVED BY: bshobe
FILE NAME: 24590-HLW-MV-HOP-00004
DATE: 5/6/2025 5:40:39 PM

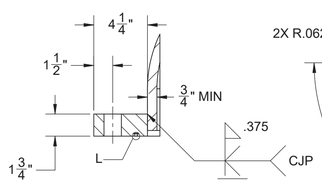
FORMAT WTP ANSI INCH SIZE D (22x34)

"D" SIZE - 22in*34in
COMPUTER GENERATED - MANUAL
DESIGN CHANGES NOT PERMITTED

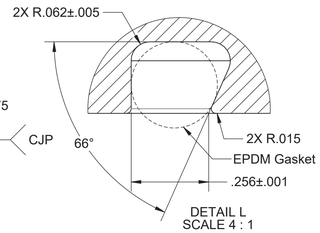




DETAIL J
SCALE 1 : 6



SECTION K-K
SCALE 1 : 6

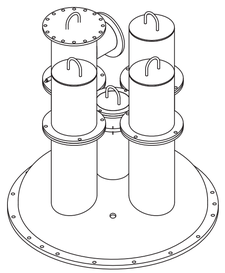


DETAIL L
SCALE 4 : 1

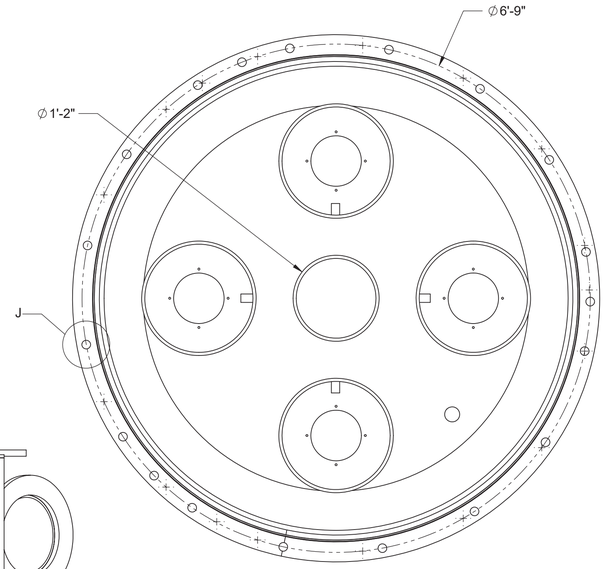
NOZZLE SCHEDULE				
NOZZLE	SIZE	SERVICE/REMARKS	SCH.	"Z" DIM.
N11	2"	TOP PURGE AIR	80	21'-11"
N16	1"	TOP PURGE AIR 2	160	25' - 1"
N17	1"	TOP PURGE AIR 3	160	26' - 1"
N18	12"	ELECTRICAL PORT	NA	25'-7"

NOTES:

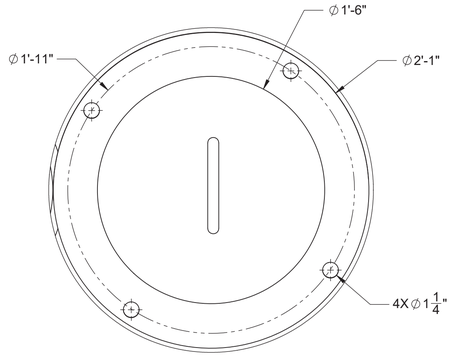
FOR NOTES, DRAWING INDEX, REFERENCE DRAWINGS AND PART LISTS, SEE 24590-HLW-MV-HOP-00004001.



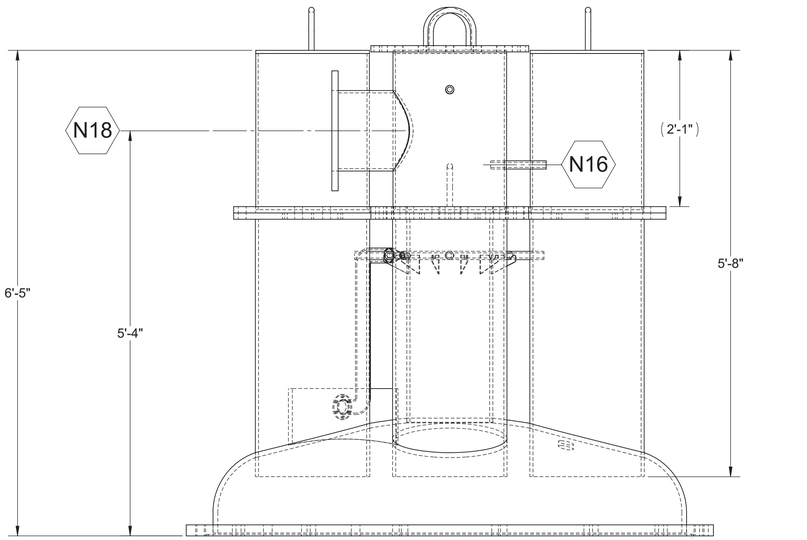
ISOMETRIC VIEW
(NO SCALE)



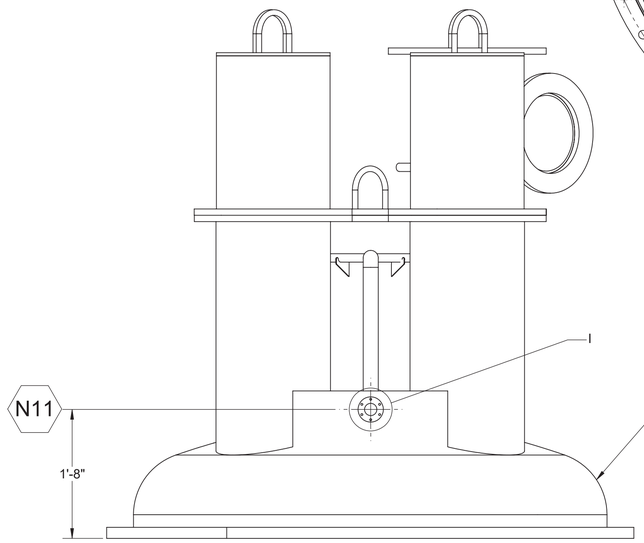
VIEW H-H



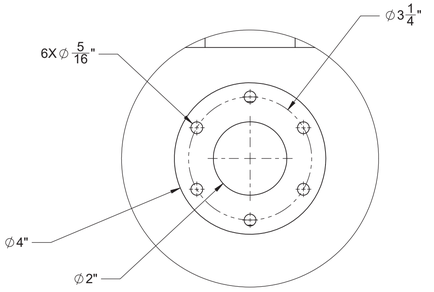
4X DETAIL G
SCALE 1 : 6



2 WESP TOP VESSEL HEAD ASSEMBLY



VIEW F- F
◠ 135.00°



DETAIL I
SCALE 1 : 2

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
A	ISSUED FOR PROPOSAL	BMS	KMB	JEP	JLM	SEE STAMPS

REVISION HISTORY

Q
QUALITY DESIGNATOR

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS SPECIFIED

NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18161.83 LBS

SUPPLIER DWG NO.

ISSUE STAMP

	BY	DATE
ORIGINATOR	B. SHOBE	
CHECKER	K. BAILEY	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. N/A REV: N/A

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30 (HLW)

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

SCALE: 1:12

24590-HLW-MV-HOP-00004003

REV A

SHT 3 OF 10

LAST SAVED BY: bshobe
FILE NAME: 24590-HLW-MV-HOP-00004
DATE: 5/6/2025 5:40:39 PM

FORMAT WTP ANSI INCH SIZE D (22x34)

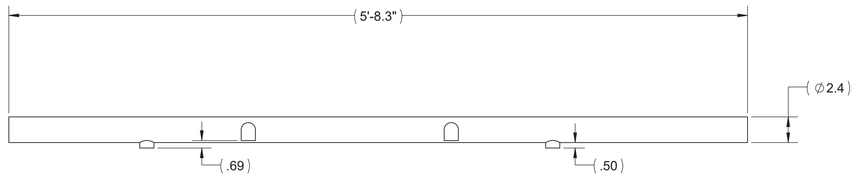
'D' SIZE - 22in*34in

COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

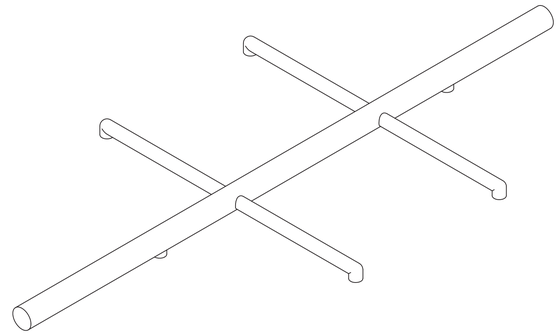
ATTACHMENT A
DESIGN PROPOSAL DRAWINGS

NOTES:

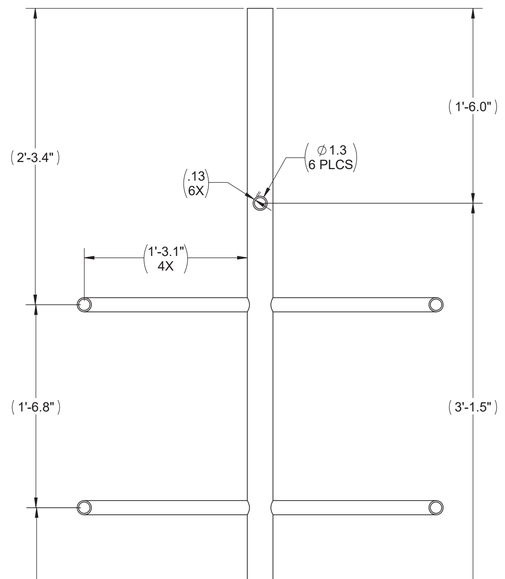
FOR NOTES, DRAWING INDEX, REFERENCE DRAWINGS AND PART LISTS, SEE 24590-HLW-MV-HOP-00004001.



SIDE VIEW



ISOMETRIC VIEW
(NO SCALE)



TOP VIEW

(12) WESP INTERNALS LOWER FLUSH WATER HEADER

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
A	ISSUED FOR PROPOSAL	KMB	BMS	JEP	JLM	see stamp

REVISION HISTORY

QUALITY DESIGNATOR: Q

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS SPECIFIED

NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18161.85 LBS

SUPPLIER DWG NO.

ISSUE STAMP

	BY	DATE
ORIGINATOR	K. BAILEY	
CHECKER	B. SHOBE	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. N/A REV: N/A

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30 (HLW)

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

SCALE: 1:7

24590-HLW-MV-HOP-00004004

REV A

SHT 4 OF 10

LAST SAVED BY: lstroble
FILE NAME: 24590-HLW-MV-HOP-00004
DATE: 5/6/2025 5:44:54 PM

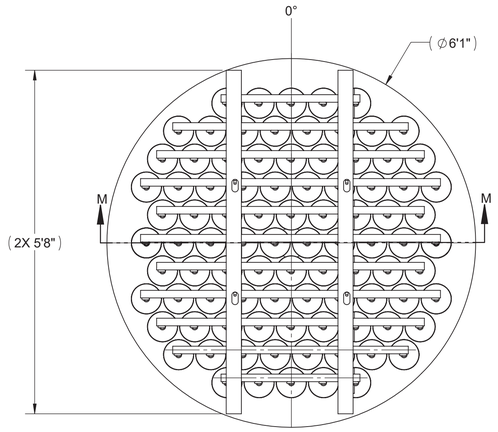
FORMAT WTP ANSI INCH SIZE D (22x34)

"D" SIZE - 22in*34in
COMPUTER GENERATED - MANUAL
DESIGN CHANGES NOT PERMITTED

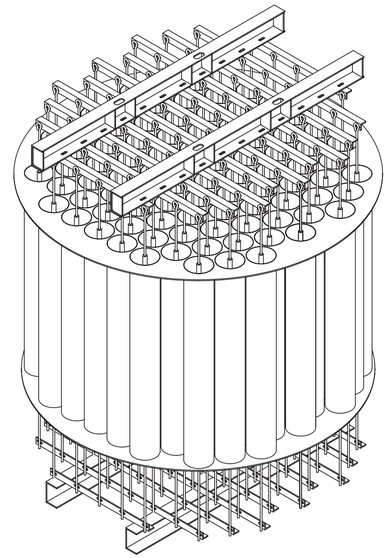
ATTACHMENT A
DESIGN PROPOSAL DRAWINGS

NOTES:

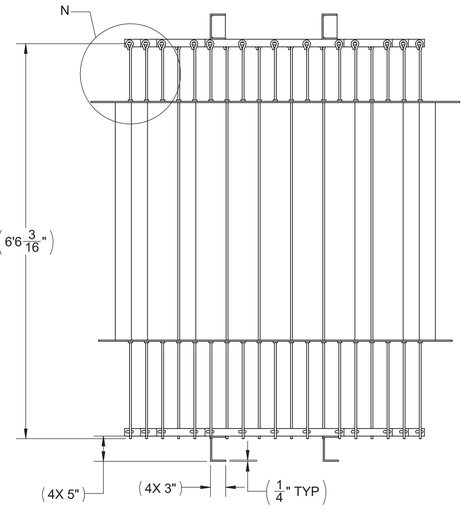
FOR NOTES, DRAWING INDEX, REFERENCE DRAWINGS AND PART/MATERIAL LISTS, SEE 24590-HLW-MV-HOP-00004001.



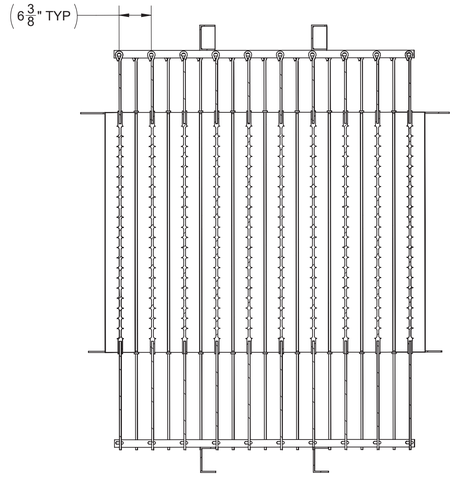
3 WESP COLLECTING TUBE ARRAY ASSEMBLY
TOP VIEW



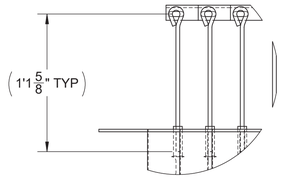
ISOMETRIC VIEW
(NO SCALE)



SIDE VIEW



SECTION M-M



DETAIL N
SCALE 2 : 15

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
A	ISSUED FOR PROPOSAL	KMB	BMS	JEP	JLM	see stamp

REVISION HISTORY

Q QUALITY DESIGNATOR

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS SPECIFIED

NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18161.85 LBS

SUPPLIER DWG NO.

ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	30 (HLW)	
	BY	DATE
ORIGINATOR	K. BAILEY	
CHECKER	B. SHOBE	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. N/A REV: N/A

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

SCALE: 1:15

24590-HLW-MV-HOP-00004005

REV A

SHT 5 OF 10

LAST SAVED BY: kbailey
FILE NAME: 24590-HLW-MV-HOP-00004
DATE: 5/7/2025 6:46:12 AM

FORMAT WTP ANSI INCH SIZE D (22x34)

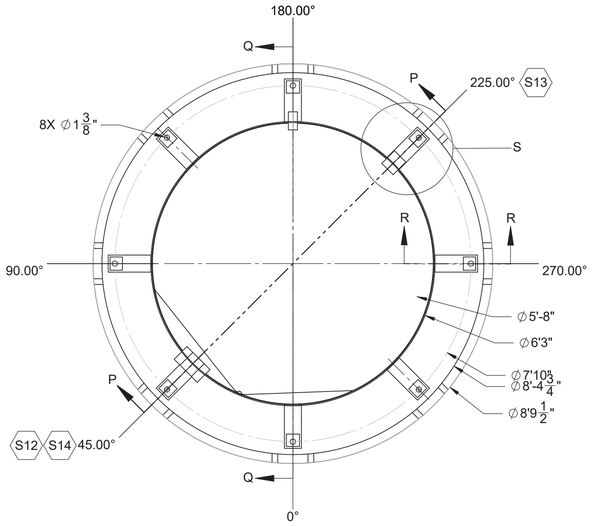
'D' SIZE - 22in*34in
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

ATTACHMENT A
DESIGN PROPOSAL DRAWINGS

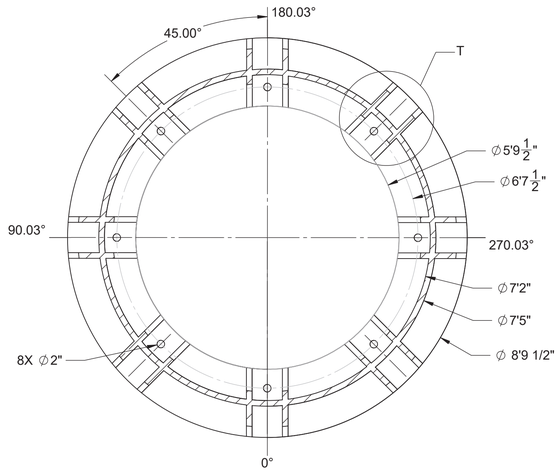
NOZZLE SCHEDULE				
NOZZLE	SIZE	SERVICE/REMARKS	SCH.	"Z" DIM.
S12	-	SKIRT SLEEVE 1	40	1'-11"
S13	-	SKIRT VENT 1	40	3'-5"
S14	-	SKIRT VENT 2	40	3'-5"
S15	-	SKIRT SLEEVE 2	40	2'-8"

NOTES:

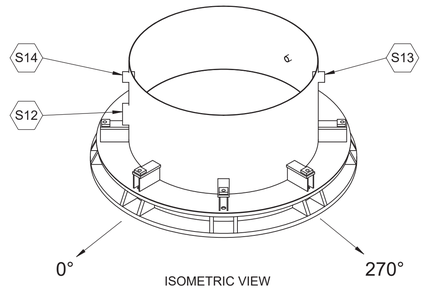
FOR NOTES, DRAWING INDEX, REFERENCE DRAWINGS AND PART/MATERIAL LISTS, SEE 24590-HLW-MV-HOP-00004001.



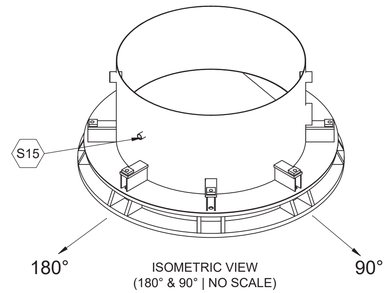
4 WESP LOWER SKIRT ASSEMBLY
TOP VIEW



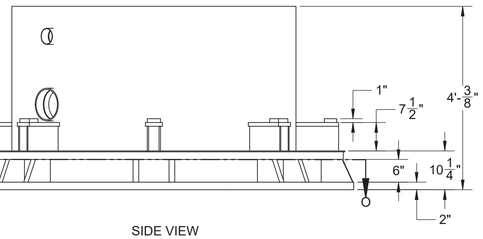
BOTTOM VIEW
SECTION O-O



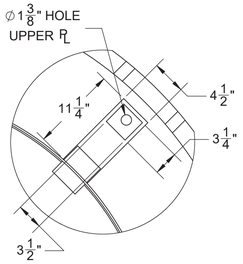
ISOMETRIC VIEW
(0° & 270° | NO SCALE)



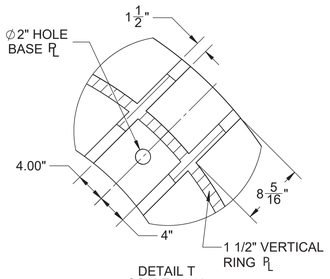
ISOMETRIC VIEW
(180° & 90° | NO SCALE)



SIDE VIEW

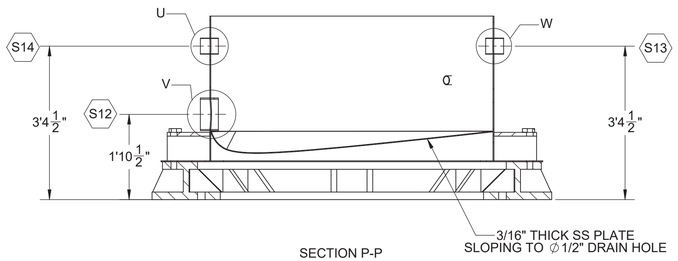


DETAIL S
SCALE 1 : 10



DETAIL T
SCALE 1 : 10

SECTION R-R
SCALE 1 : 10



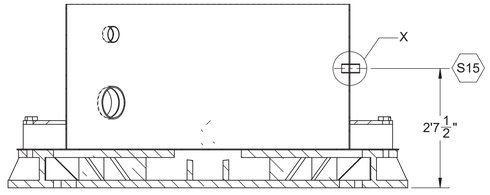
SECTION P-P

DETAIL W
SCALE 1 : 10

DETAIL U
SCALE 1 : 10

DETAIL V
SCALE 1 : 10

DETAIL X
SCALE 1 : 10



SECTION Q-Q

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
A	ISSUED FOR PROPOSAL	KMB	BMS	JEP	JLM	see stamp

REVISION HISTORY

QUALITY DESIGNATOR: Q

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES UNLESS SPECIFIED
NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18172.85 LBS
SUPPLIER DWG NO.

ISSUE STAMP

	BY	DATE
ORIGINATOR	K. BAILEY	
CHECKER	B. SHOBE	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30 (HLW)

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. N/A REV: N/A

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

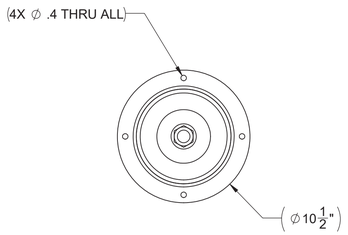
SCALE: 1:20
24590-HLW-MV-HOP-00004006
REV A
SHT 6 OF 10

LAST SAVED BY: bshobe
FILE NAME: 24590-HLW-MV-HOP-00004
DATE: 5/6/2025 2:45:41 PM

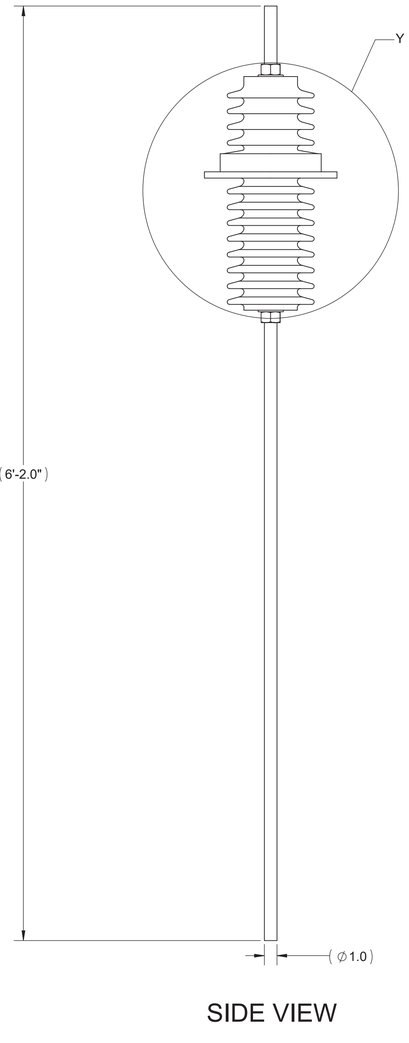
FORMAT WTP ANSI INCH SIZE D (22x34)
"D" SIZE - 22in*34in
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

NOTES:

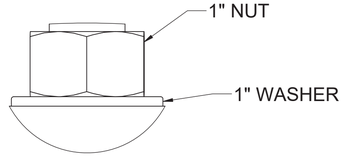
FOR NOTES, DRAWING INDEX, REFERENCE DRAWINGS AND PART LISTS, SEE 24590-HLW-MV-HOP-00004001.



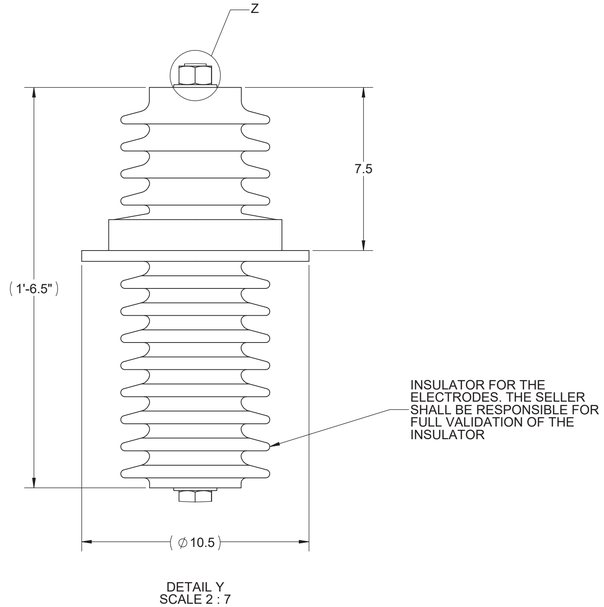
TOP VIEW



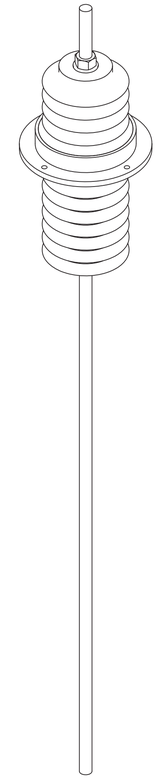
SIDE VIEW



DETAIL Z
SCALE 1 : 1



DETAIL Y
SCALE 2 : 7



ISOMETRIC VIEW
(NO SCALE)

6 WESP INSULATOR ASSEMBLY

Q	A	ISSUED FOR PROPOSAL	KMB	BMS	JEP	JLM	see stamp
QUALITY DESIGNATOR	REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE

REVISION HISTORY

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS SPECIFIED

NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18161.85 LBS

SUPPLIER DWG NO.

ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30 (HLW)

	BY	DATE
ORIGINATOR	K. BAILEY	
CHECKER	B. SHOBE	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. N/A REV: N/A

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

SCALE: 1:6

24590-HLW-MV-HOP-00004007

REV A

SHT 7 OF 10

LAST SAVED BY: tbailey
FILE NAME: 24590-HLW-MV-HOP-00004
DATE: 5/7/2025 6:46:12 AM

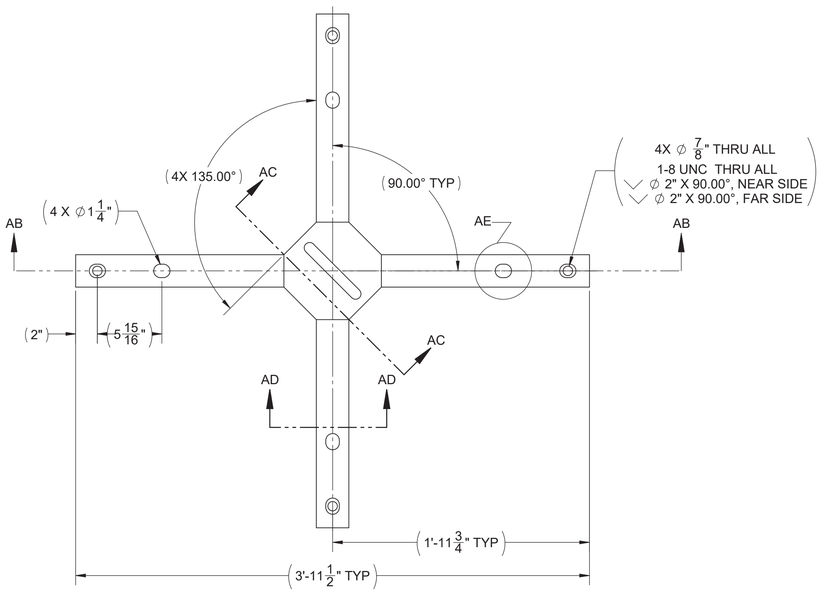
FORMAT WTP ANSI INCH SIZE D (22x34)

"D" SIZE - 22in*34in
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

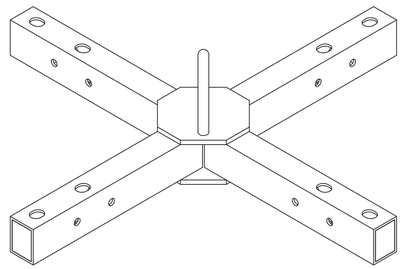
ATTACHMENT A
DESIGN PROPOSAL DRAWINGS

NOTES:

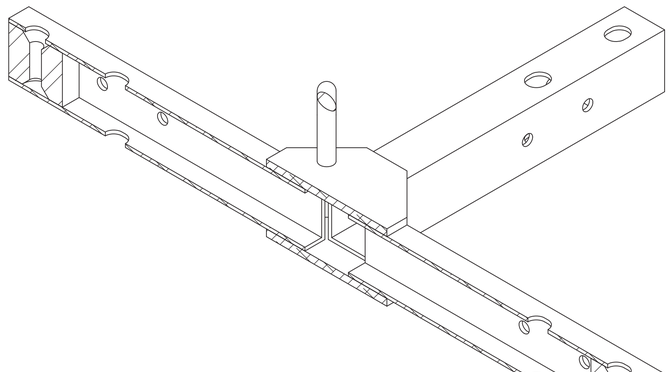
FOR NOTES, DRAWING INDEX, REFERENCE DRAWINGS AND PART/MATERIAL LISTS, SEE 24590-HLW-MV-HOP-00004001.



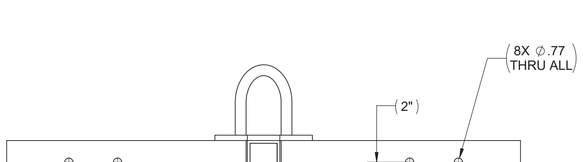
5 MAIN BEAM ASSEMBLY
TOP VIEW
SCALE 1:7



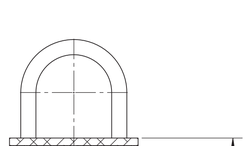
ISOMETRIC VIEW
(NO SCALE)



ISOMETRIC
SECTION AB-AB
SCALE 1 : 4

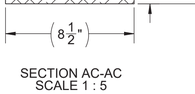


SIDE VIEW



SECTION AC-AC
SCALE 1 : 5

DETAIL AE
SCALE 2 : 7



SECTION AD-AD TYP
SCALE 1 : 5

k

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
A	ISSUED FOR PROPOSAL	KMB	BMS	JEP	JLM	see stamp

REVISION HISTORY

Q
QUALITY DESIGNATOR

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS SPECIFIED

NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18161.85 LBS

SUPPLIER DWG NO.

ISSUE STAMP

	BY	DATE
ORIGINATOR	K. BAILEY	
CHECKER	B. SHOBE	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. N/A REV: N/A

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30 (HLW)

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

SCALE: 1:7

24590-HLW-MV-HOP-00004008

REV A

SHT 8 OF 10

LAST SAVED BY: kbailey
FILE NAME: 24590-HLW-MV-HOP-00004
DATE: 5/7/2025 6:46:12 AM

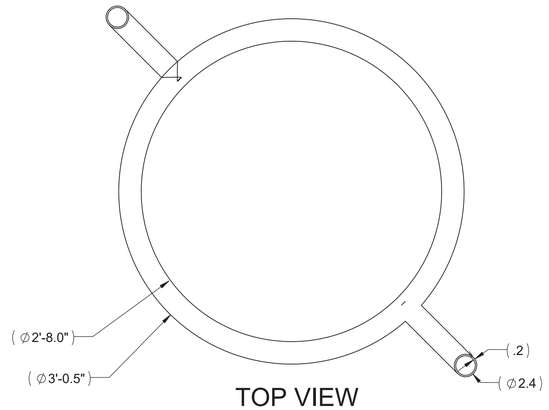
FORMAT WTP ANSI INCH SIZE D (22x34)

"D" SIZE - 22in*34in
COMPUTER GENERATED - MANUAL
DESIGN CHANGES NOT PERMITTED

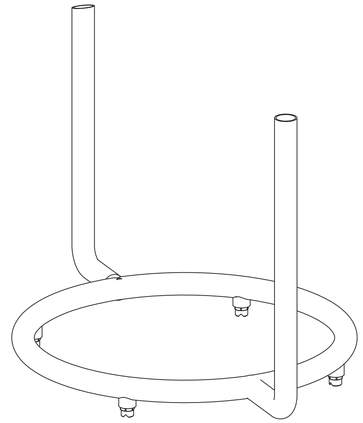
ATTACHMENT A
DESIGN PROPOSAL DRAWINGS

NOTES:

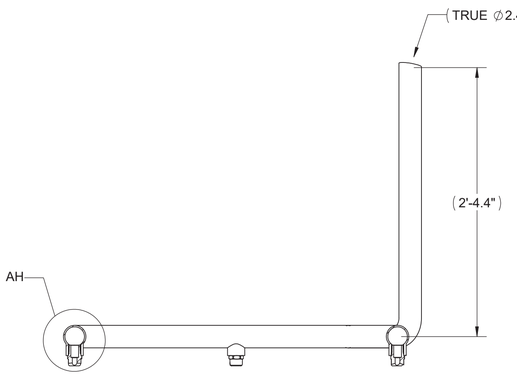
FOR NOTES, DRAWING INDEX, REFERENCE DRAWINGS AND PART LISTS, SEE 24590-HLW-MV-HOP-00004001.



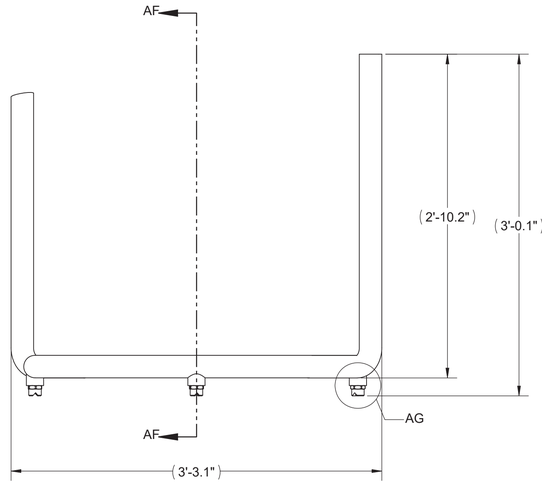
TOP VIEW



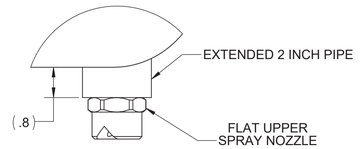
ISOMETRIC VIEW
(NO SCALE)



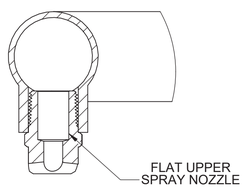
SECTION AF-AF



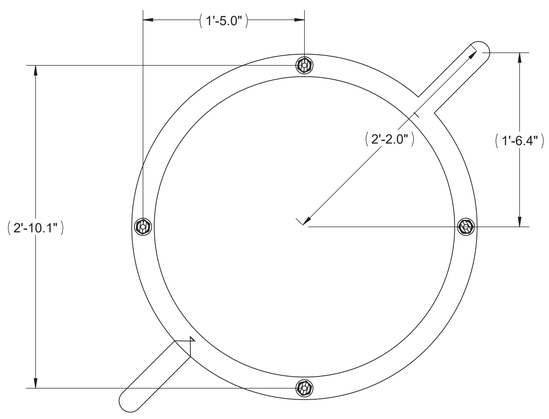
SIDE VIEW



DETAIL AG
SCALE 1 : 2



DETAIL AH
SCALE 1 : 2



BOTTOM VIEW

(10) WESP UPPER SPRAY RING ASSEMBLY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
A	ISSUED FOR PROPOSAL	KMB	BMS	JEP	JLM	see stamps

REVISION HISTORY

Q
QUALITY DESIGNATOR

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS SPECIFIED

NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18161.85 LBS

SUPPLIER DWG NO.

ISSUE STAMP

	BY	DATE
ORIGINATOR	K. BAILEY	
CHECKER	B. SHOBE	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. N/A REV: N/A

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30 (HLW)

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

SCALE: 1:8

24590-HLW-MV-HOP-00004009

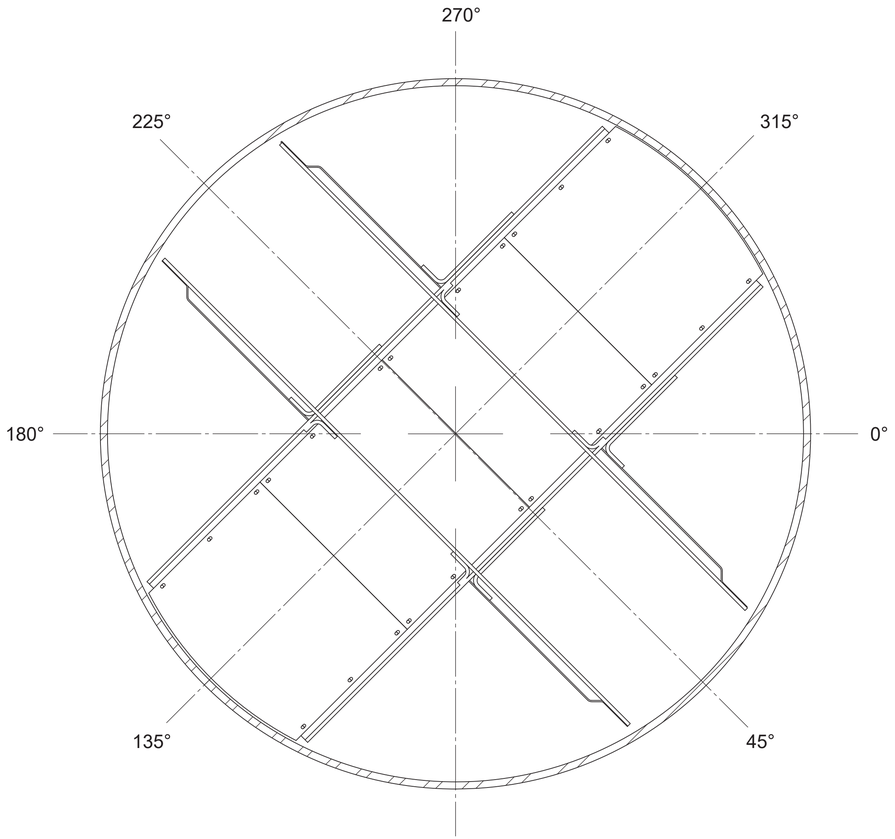
REV A

SHT 9 OF 10

LAST SAVED BY: bshobe
FILE NAME: 24590-HLW-MV-HOP-00004
DATE: 9/6/2025 5:44:54 PM

FORMAT WTP ANSI INCH SIZE D (22x34)

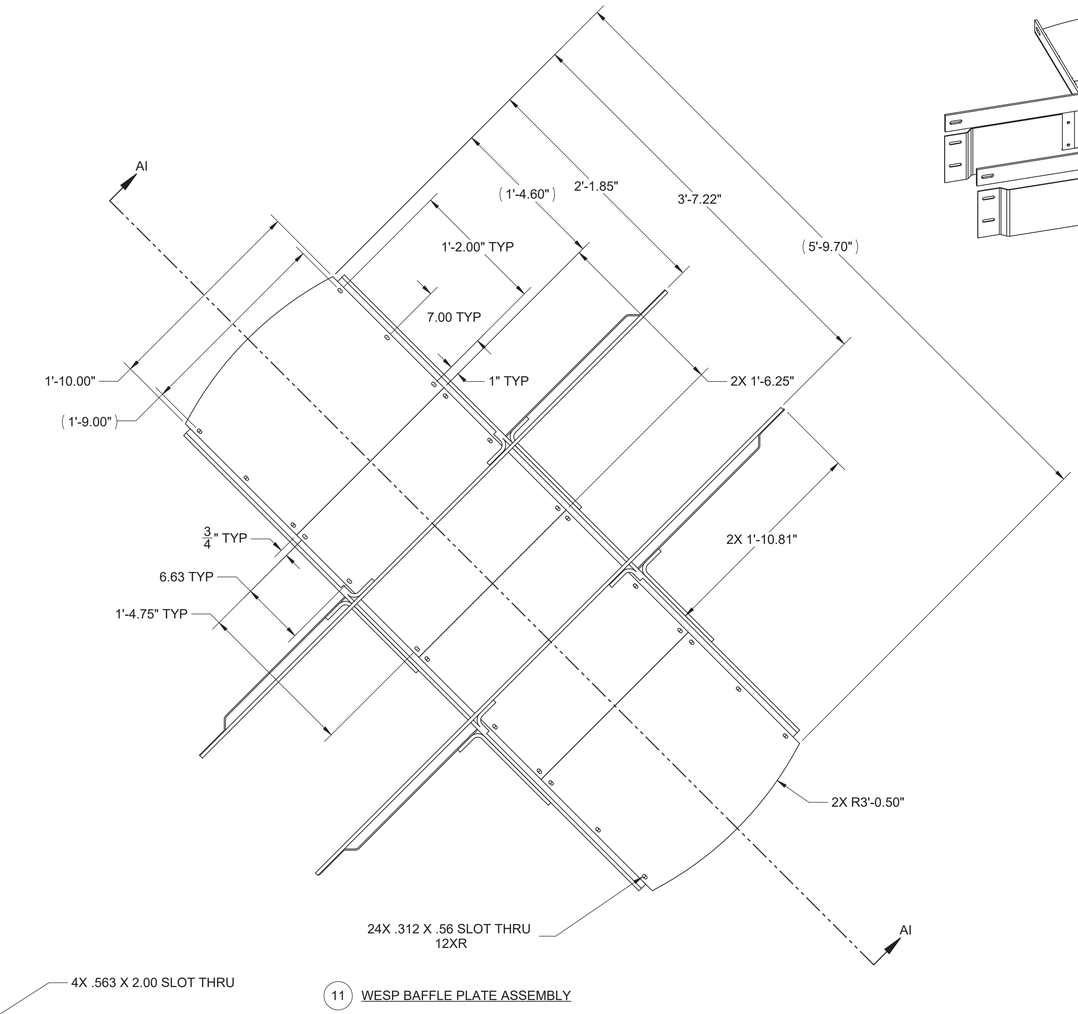
'D' SIZE - 22in*34in



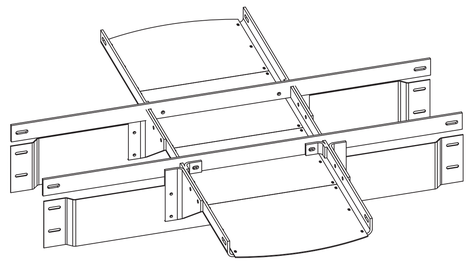
SECTION B-B
SEE SECTION A-A ON
24590-HLW-MV-HOP-00004001

NOTES:

FOR NOTES, DRAWING INDEX, REFERENCE DRAWINGS AND PART LISTS, SEE 24590-HLW-MV-HOP-00004001.



11 WESP BAFFLE PLATE ASSEMBLY



ISOMETRIC VIEW
(NO SCALE)

SECTION AI-AI

REV	DESCRIPTION	ORG	CHKD	RVWD	APRVD	DATE
A	ISSUED FOR PROPOSAL	BMS	KMB	JEP	JLM	SEE STAMPS

REVISION HISTORY

QUALITY DESIGNATOR: Q

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS SPECIFIED

NO TOLERANCES ARE APPLIED TO DIMENSIONS UNLESS NOTED

WEIGHT 18172.85 LBS

SUPPLIER DWG NO.

ISSUE STAMP

	BY	DATE
ORIGINATOR	B. SHOBE	
CHECKER	K. BAILEY	
REVIEWER	J. PATTERSON	
APPROVER	J. MAUSS	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. N/A REV: N/A

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30 (HLW)

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
450 HILLS STREET
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136 WTP SUBCONTRACT No:

HLW VITRIFICATION SYSTEM DESIGN PROPOSAL DRAWING WESP FULL ASSEMBLY

SCALE: 1:8

24590-HLW-MV-HOP-00004010

REV A

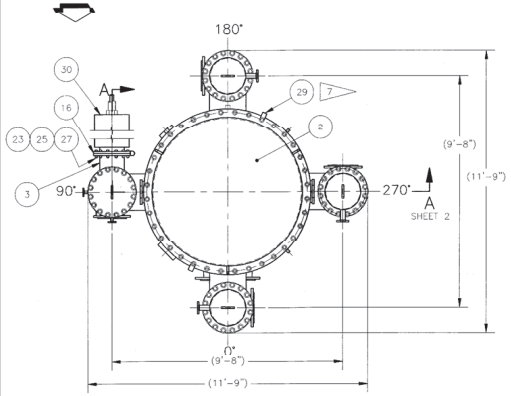
SHT 10 OF 10

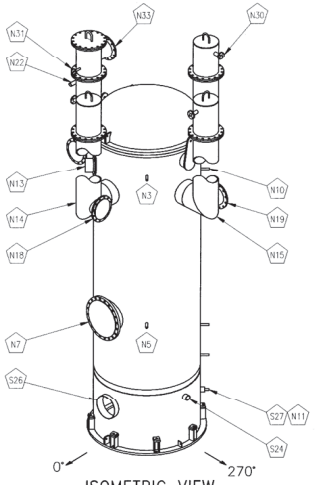
LAST SAVED BY: bshobe
FILE NAME: 24590-HLW-MV-HOP-00004
DATE: 5/6/2025 2:45:41 PM

FORMAT WTP ANSI INCH SIZE D (22x34)

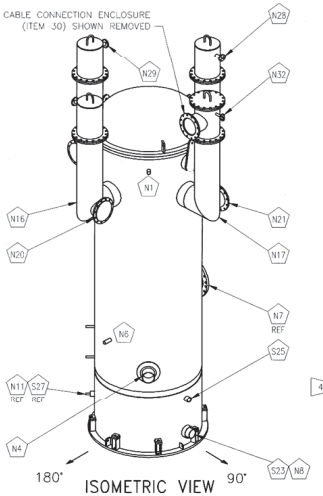
'D' SIZE - 22in*34in
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

ATTACHMENT B

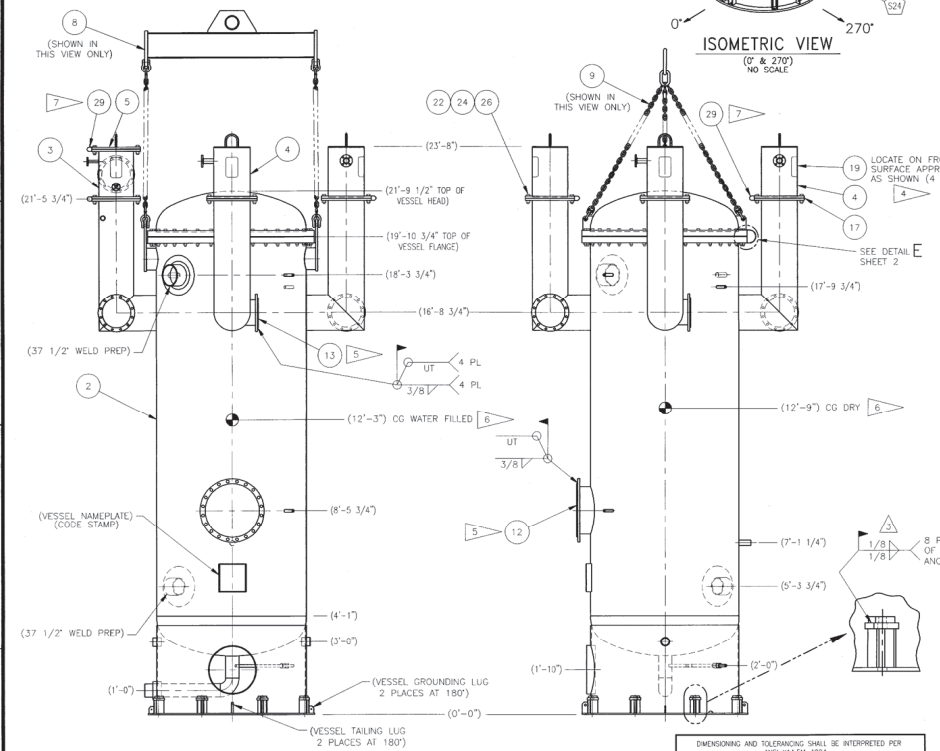




ISOMETRIC VIEW
(0° & 270°)
NO SCALE



ISOMETRIC VIEW
(180° & 90°)
NO SCALE



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

PARTS LIST/MATERIAL LIST

QTY (X'D)	PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION	MATERIAL/REFERENCE	SHEET	ITEM NO.
X	-010	VESSEL ASSEMBLY		1	1
1	4145-M-402-010	VESSEL SUBASSEMBLY			2
1	4145-M-403-010	INSULATOR SPOOL - ELECTRICAL WELDMENT			3
3	4145-M-403-020	INSULATOR SPOOL - WELDMENT			4
1	4145-M-403-030	18" BLIND FLANGE			5
1	4145-M-051-010	HLW BAFFLE PLATE ASSEMBLY			6
					7
1	4145-M-304-010	VESSEL LIFTING FIXTURE ASSEMBLY			8
1	4145-M-304-020	VESSEL HEAD LIFTING SLING ASSEMBLY			9
					10
					11
1		BLANKING PLATE, PLATE, 1/2 THK X 27.0 OD	ASTM B688/ASME SB688 UNS N08367		12
4		BLANKING PLATE, PLATE, 1/2 THK X 15.0 OD	ASTM B688/ASME SB688 UNS N08367		13
					14
					15
1	11-12FF12	GASKET, 60 ±5 DURO SHORE A (EPDM, FULL FACE, 150 LB)	FORT WORTH GASKET		16
5	11-18FF12	GASKET, 60 ±5 DURO SHORE A (EPDM, FULL FACE, 150 LB)	FORT WORTH GASKET		17
1	DC03-2791-M01	PRECIPITATOR GENERAL ARRANGEMENT HLW WESP	DUCON		18
4	1K981	SIGN, DANGER HIGH VOLTAGE, 10" X 7", SELF-STICK (OSHA COMPLIANT)	GRAINGER SUPPLY		19
					20
					21
80		BOLT, HEX HD, 1 1/8-7 UNC-2A X 4 LONG	ASTM A193 GR B8		22
12		BOLT, HEX HD, 7/8-9 UNC-2A X 3 1/2 LONG	ASTM A193 GR B8		23
80		HEX NUT, 1 1/8-7 UNC-2B	ASTM A194 GR 8F		24
12		HEX NUT, 7/8-9 UNC-2B	ASTM A194 GR 8F		25
160		PLAIN WASHER, 1 1/8 (SERIES AND TYPE OPTIONAL)	18-8 SST		26
24		PLAIN WASHER, 7/8 (SERIES AND TYPE OPTIONAL)	18-8 SST		27
16		BOLT, HEX HD, 3/8-16 UNC-2A X 1 1/2 LONG	ASME B18.2.1 UNS N08367		28
AR		SHEET, 16 GA	ASTM A240 TYPE 304/304L SST		29
1	4145-M-204-010	CABLE CONNECTION ENCLOSURE ASSEMBLY			30

NOZZLE IDENTIFICATION

X	DESCRIPTION	SIZE
N1	FLUSH WATER (UPPER)	2"
N2	NOT USED	—
N3	PRESSURE TRANSMITTER 1	1"
N4	OFF GAS INLET	8"
N5	PRESSURE TRANSMITTER 2	1"
N6	FLUSH WATER (LOWER)	2"
N7	VESSEL INSPECTION PORT	24"
N8	VESSEL DRAIN	6"
N9	NOT USED	—
N10	LEVEL TRANSMITTER 1	1"
N11	LEVEL TRANSMITTER 2	1"
N12	NOT USED	—
N13	OFF GAS OUTLET	10"
N14	INSULATOR NOZZLE 1	18"
N15	INSULATOR NOZZLE 2	18"
N16	INSULATOR NOZZLE 3	18"
N17	INSULATOR NOZZLE 4	18"
N18	INSULATOR ASSY PORT 1	12"
N19	INSULATOR ASSY PORT 2	12"
N20	INSULATOR ASSY PORT 3	12"
N21	INSULATOR ASSY PORT 4	12"
N22	PURGE AIR 4	2"
S23	SKIRT SLEEVE	8"
S24	SKIRT VENT 1	4"
S25	SKIRT VENT 2	4"
S26	SKIRT INSPECTION PORT	24"
S27	SKIRT SLEEVE	2"
N28	TOP PURGE AIR 1	2"
N29	TOP PURGE AIR 2	2"
N30	TOP PURGE AIR 3	2"
N31	TOP PURGE AIR 4	2"
N32	TOP PURGE AIR 5	1"
N33	ELECTRICAL PORT	12"

GENERAL NOTES:

1. FABRICATION AND WELDING SHALL BE IN ACCORDANCE WITH THIS DRAWING AND SPECIFICATION DMP-4145-FS-001.
2. ABBREVIATIONS ARE IN ACCORDANCE WITH ANSI Y1.1.
3. REMOVE ALL BURRS AND BREAK ALL SHARP EDGES.
4. ATTACH ITEM 19 (HIGH VOLTAGE SIGN) TO THE INSULATOR SPOOLS (ITEMS 3 & 4).
5. FIELD WELD BLANKING PLATES (ITEMS 12 & 13) IN PLACE AFTER FINAL ON-SITE INSTALLATION OF PRECIPITATOR.
6. TOTAL ASSEMBLY DRY WEIGHT IS 24,000 LBS. TOTAL ASSEMBLY WEIGHT WATER FILLED 65,000 LBS.
7. ALL FLANGED CONNECTIONS, INCLUDING VESSEL HEAD, SHALL BE ELECTRICALLY BONDED AS SHOWN IN DETAIL E ON SHEET 2.
8. TACK WELD NUTS FOR HLW BAFFLE ASSEMBLY (ITEM 6) AS REQUIRED AFTER FINAL ON-SITE ASSEMBLY TO PREVENT BOLTS FROM LOOSENING.
9. FOR EACH ANCHOR BOLT CHAIR, PROVIDE A SHIM PACK CONSISTING OF THE FOLLOWING 10" SQUARE STAINLESS STEEL PLATES:
   A. 2 EA 1/4" THICK PLATES - ASTM A240 TYPE 304 SST.
   B. 1 EA 1/8" THICK PLATES - ASTM A240 TYPE 304 SST.
   C. 2 EA 1/16" THICK PLATES - ASTM A240 TYPE 304 SST.

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994.
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ±.1 .XX ±.06 .XXX ±.030
ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT USED ON:	DMP 4145-M-001

REV NO.	DESCRIPTION
3	INCORPORATE DCN-080 CHANGE WELD SYMBOL
2	INCORPORATE DCN-070 ADD HLW BAFFLE PLATE ASSY CHANGE PARTS LIST AND GENERAL NOTES
1	INCORPORATED DCN-016
0	RELEASED FOR CONSTRUCTION

REVISION
FILE NAME: M-401_01_REV 3.DWG

DRAWN:	RK FISHER
CHECKED:	JW LEINGANG
ENGR:	DJ HARRIS
ENGR:	HL MASHAW
QA:	MM PERERA
SPEC APPROVAL:	R HERNANDEZ

SIGNATURE: N/A — DATE: 7/14/03
SIGNATURES ON FILE

EXPIRES: 01/31/06

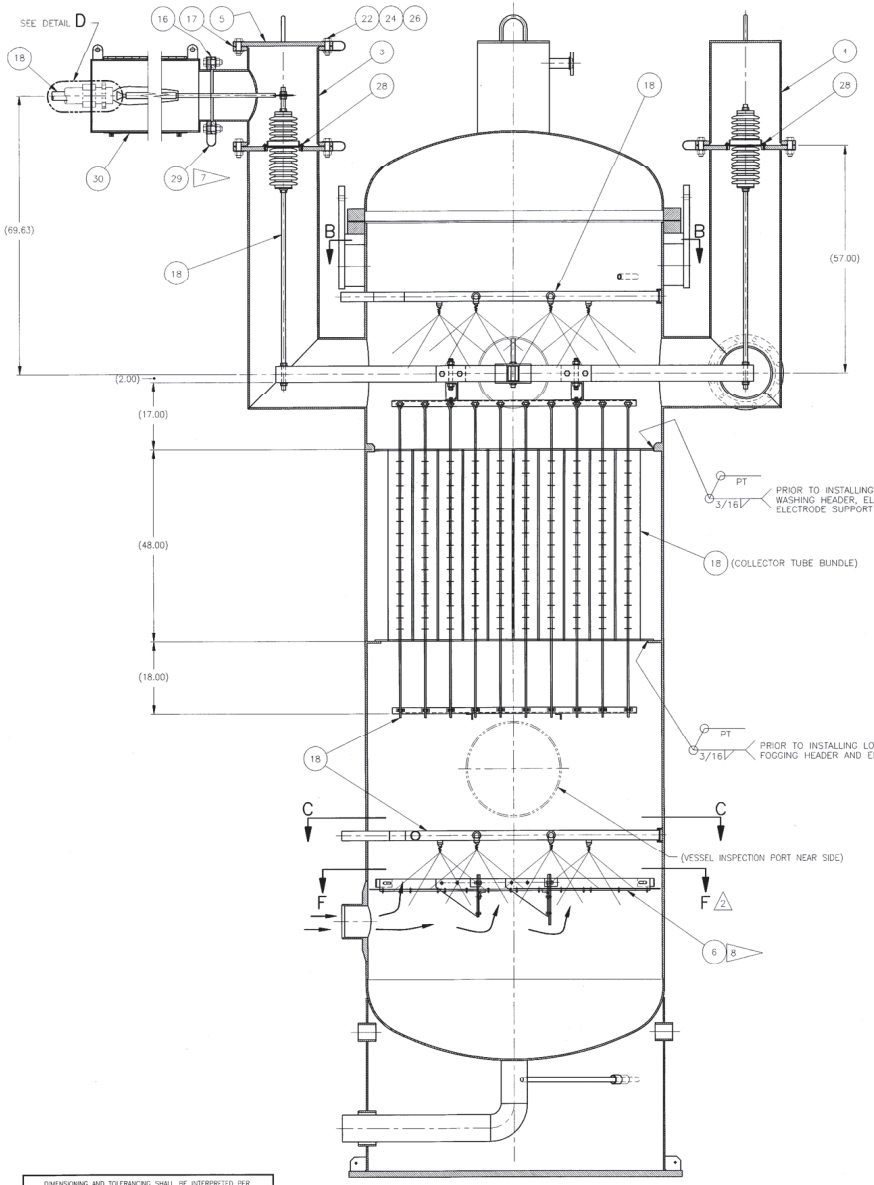
PO 24590-QL-POA-MKEO-00001
PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC
PREPARED BY: GForce engineering & technology

HLW-2
WESP VESSEL ASSEMBLY
HOP-WESP-0002

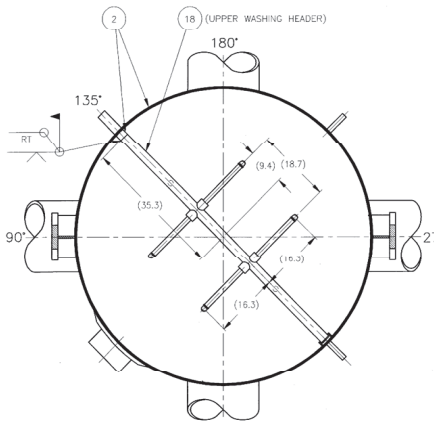
DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-401	3
DRG SCALE: SHOWN		TRANSMITTAL NO:	SHEET 1 OF 2

2nd QC. Ref. TREO-0001-09-01 Rev 00E.

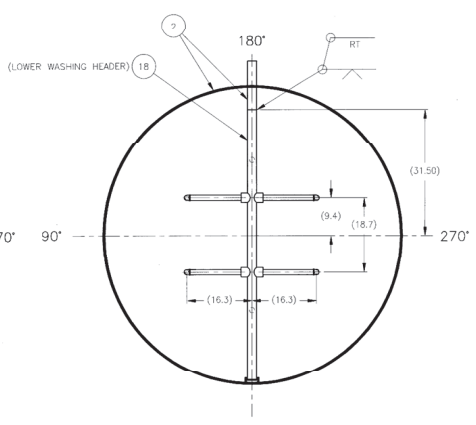
ATTACHMENT B



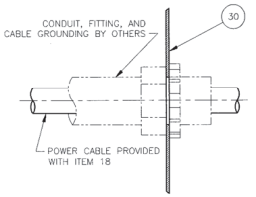
SECTION A–A
SCALE: 1"=1'-0"
(FROM SHEET 1)
FOR TRUE ORIENTATION OF NOZZLES SEE SECTION B–B, C–C, & SHEET 1



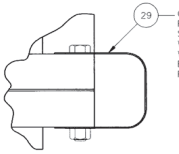
SECTION B–B
SCALE: 1"=1'-0"



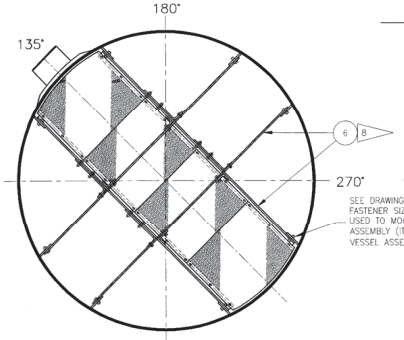
SECTION C–C
SCALE: 1"=1'-0"



DETAIL D
SCALE: 1/4



DETAIL E
SCALE: 1/4
(FROM SHEET 1)



SECTION F–F
SCALE: 1"=1'-0"

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ± .1 .XX ± .06 .XXX ± .030
ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REV	DESCRIPTION	ORIG BY / DATE	CHECK BY / DATE	ENGR APPR / DATE	QA / DATE
3	NO CHANGE	JMC			
2	INCORPORATE DCN-070 ADD HLW BAFFEL PLATE ASSY ADD SECTION F-F	DMD	SIGNATURES ON FILE		
1	INCORPORATE DCN-016	JMC	SIGNATURES ON FILE		
0	RELEASED FOR CONSTRUCTION	N/A	N/A	N/A	N/A

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT USED ON:	

REVISION
FILE NAME: M-401_02_REV 3.DWG

	NAME	SIGNATURE	DATE
DRAWN BY	RK FISHER	N/A	7/17/03
CHECKED BY	JW LEINGANG	SIGNATURES ON FILE	
ENGR.	DJ HARRIS		
QUALIFICATION	HL WASHAW		
QA	MM PEREIRA		
PROJ. MANAGER	R HERNANDEZ		

PO 24590-QL-POA-MKEO-00001
PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC
PREPARED BY: GForce engineering & technology

HLW-2
WESP VESSEL ASSEMBLY
HOP-WESP-0002

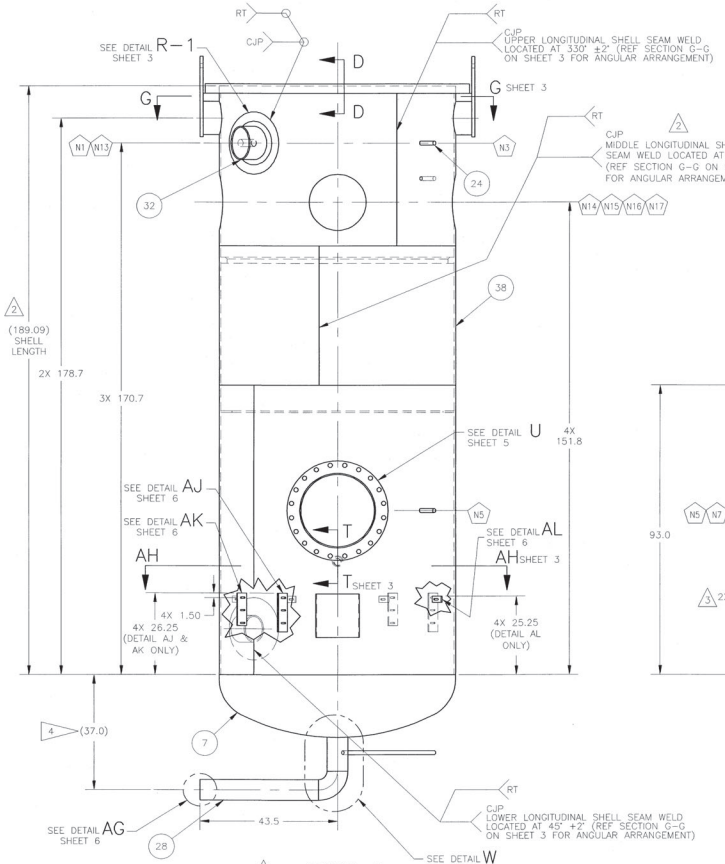
DWG SIZE	BLOC NO.	DWG NO.	REV
F	N/A	DMP 4145-M-401	3
DWG SCALE: SHOWN	TRANSMITTAL NO.	SHEET 2 OF	

Job No. 24590
ISSUED DOCUMENT STATUS
1 Work may proceed.
2 Revise and resubmit. Work may proceed subject to resolution of indicated comments.
3 Revise and resubmit. Work may not proceed.
4 Review not required. Work may proceed.
REVIEWED
Approved by DOE Document No. N/A
(When applicable)
Accepted by N/A
Released by N/A
(When applicable)

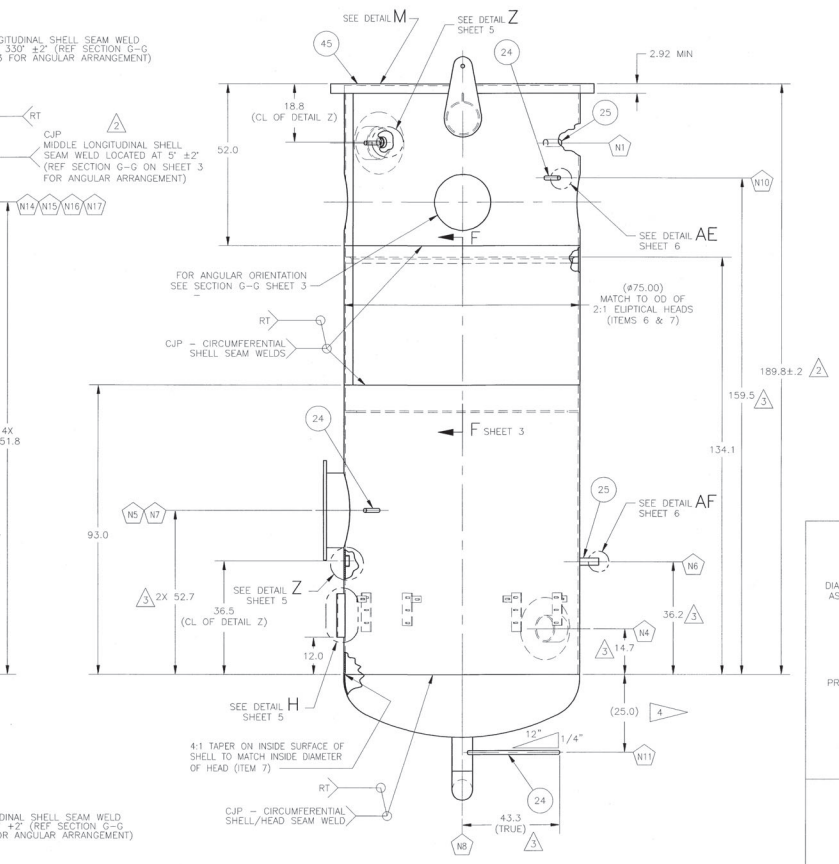
CHARLES W. HOLMES REGISTERED PROFESSIONAL ENGINEER
EXPIRES 01/31/06

2MLP@DL:DOE-WTP-ED-00001-09.02.9.dwg

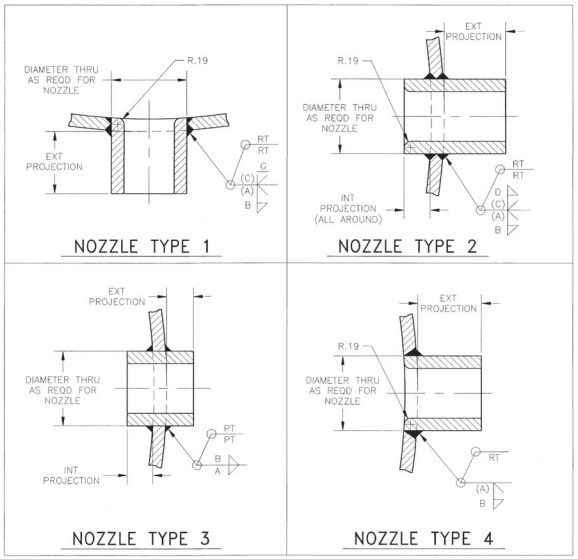
ATTACHMENT B

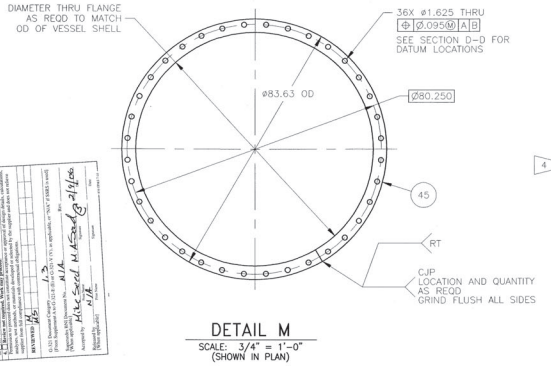


DETAIL A
SCALE: 3/4" = 1'-0"
(FROM SHEET 1)
INSULATOR HOUSINGS NOT SHOWN FOR CLARITY

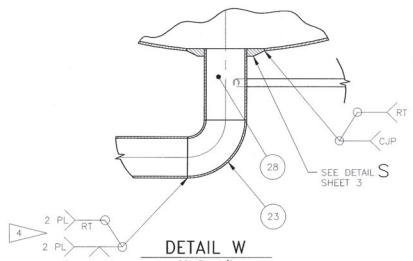


X	NOZZLE SCHEDULE							
				WELD				
MARK	TYPE	EXT PROJECTION	ITEM	INT PROJECTION	A	B	C	D
N1	2	5.8	25	1.6	1/4	1/8	1/4	3/16
N2	—	—	—	—	—	—	—	—
N3	2	5.9	24	.5	1/4	3/16	1/4	3/16
N4	2	6.0	29	2.0	5/8	3/8	5/8	3/8
N5	2	6.0	24	1.8	1/4	3/16	1/4	3/16
N6	2	6.0	25	5.3	1/4	1/8	1/4	3/16
N7	2	6.0	35	2.0	1/4	3/8	1/4	7/16
N8	1	AS SPECIFIED	28	0	5/8	1/4	5/8	—
N9	—	—	—	—	—	—	—	—
N10	2	5.9	24	.4	1/4	3/16	1/4	3/16
N11	4	AS SPECIFIED	24	0	9/32	1/8	—	—
N12	—	—	—	—	—	—	—	—
N13	2	6.0	32	.5	5/8	3/8	5/8	7/16
N14	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N15	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N16	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N17	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N18	4	3.0	33	0	3/8	3/8	—	—
N19	4	3.0	33	0	3/8	3/8	—	—
N20	4	3.0	33	0	3/8	3/8	—	—
N21	4	3.0	33	0	3/8	3/8	—	—
N22	4	6.0	25	0	3/8	1/8	—	—
S23	3	2.0	30	2.0	1/8	1/8	1/8	1/8
S24	3	2.0	27	2.0	1/8	1/8	1/8	1/8
S25	3	2.0	27	2.0	1/8	1/8	1/8	1/8
S26	3	2.0	31	2.0	1/8	1/8	1/8	1/8
S27	3	2.0	26	2.0	1/8	1/8	1/8	1/8

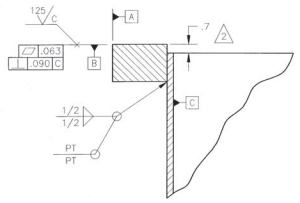




DETAIL M
SCALE: 3/4" = 1'-0"
(SHOWN IN PLAN)



DETAIL W
SCALE: 1/8



SECTION D-D
SCALE: 1/4

REV	REV BY	DESCRIPTION	DRAWN JW	CHECKED RK	ENGR DJ	ENGR MH	QA MH
4	JWL	NO CHANGE	10/06	10/06	10/06	10/06	10/06
3	JWL	INCORPORATED DCN-081 CHANGE DWG ON DETAIL A CHANGE NOZZLE SCHEDULE LENGTHS	10/06	SIGNATURES ON FILE			
2	DAO	INCORPORATED DCN-018 INCORPORATED DCN-072 CHANGE SECTION D-D & DETAIL A	10/06	SIGNATURES ON FILE			
1	JWL	INCORPORATED DCN-003 & -004	10/06	SIGNATURES ON FILE			
0	RELEASED FOR CONSTRUCTION		N/A	N/A	N/A	N/A	N/A

	SIGNATURE	DATE
DRAWN JW LEINGANG	N/A	7/24/03
CHECKED RK FISHER	SIGNATURES ON FILE	
ENGR DJ HARRIS		
ENGR MANAGER H. MASHAW		
QA MH PEREIRA		
PROJ MANAGER R HERNANDEZ		

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ± .1 .XX ± .06 .XXX ± .030
ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT USED ON:	

REVISION
FILE NAME: M-402_02_REV 4.DWG

STATE OF WASHINGTON — RICHARD KEITH HERNANDEZ — 21644 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 01/31/06 — 7-14-06

FOR PARTS LIST AND GENERAL NOTES SEE SHEET 1

PO 24590-QL-POA-MKEO-00001

PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC

PREPARED BY: GForce 2000 — engineering & consulting

HLW-2
VESSEL DETAILS
HOP-WESP-0002

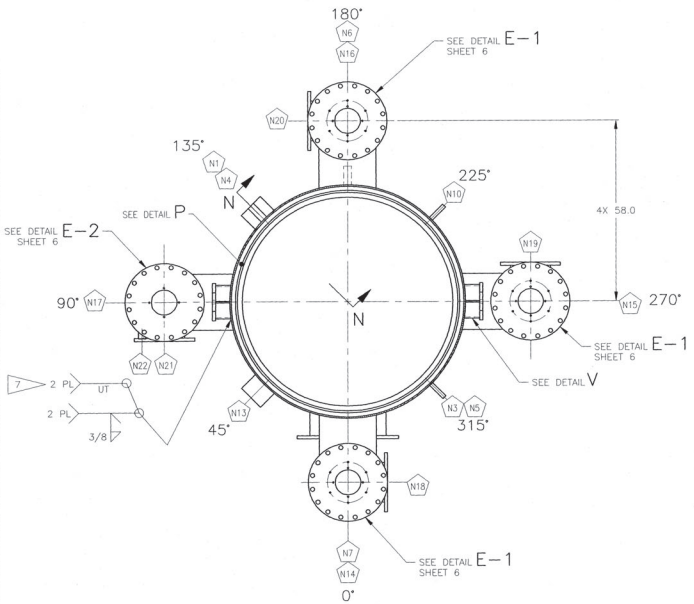
DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-402	4
DWG SCALE: SHOWN		TRANSMITTAL NO.	SHEET 2 OF

RPP-WTP RECEIVED JAN 19 2006 BY PDC

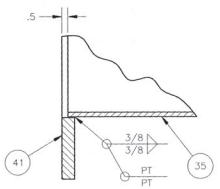
24590-QL-POA-MKEO-00001-09-05 Rev 00E

GForce TITLE BLOCK 01-1

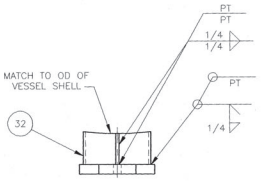
ATTACHMENT B

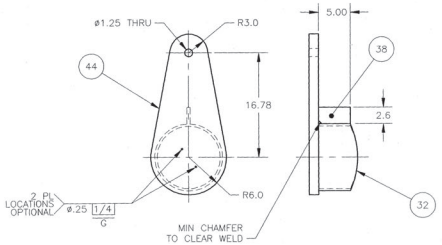


SECTION G-G
SCALE: 3/4" = 1'-0"
(FROM SHEET 2)

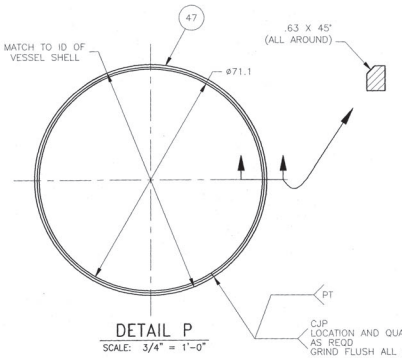


SECTION T-T
SCALE: 1/4
(FROM SHEET 2)

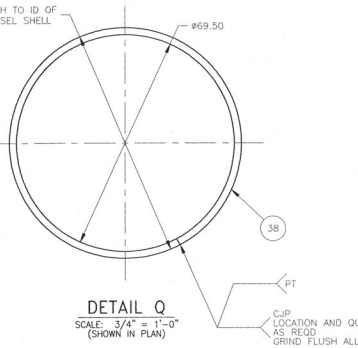




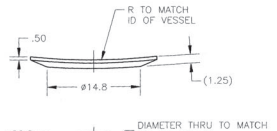
DETAIL V
SCALE: 1/8
(2 REQD)
ROTATED 90° CW

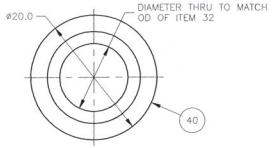


DETAIL P
SCALE: 3/4" = 1'-0"

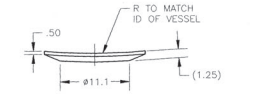


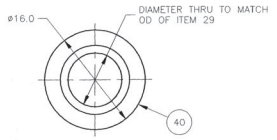
DETAIL Q
SCALE: 3/4" = 1'-0"
(SHOWN IN PLAN)



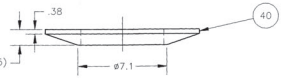


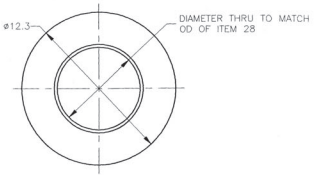
DETAIL R-1
SCALE: 1/8
(FROM SHEET 2)



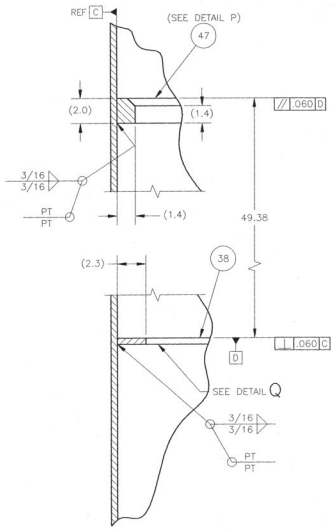


DETAIL R-2
SCALE: 1/8

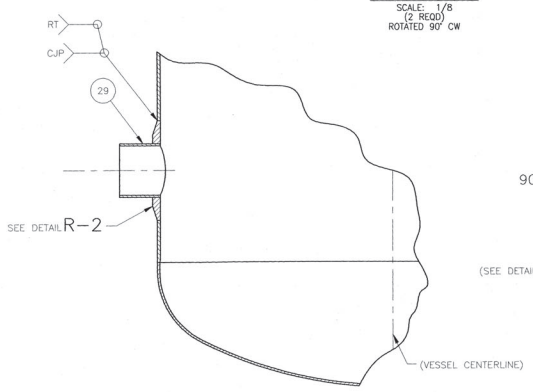




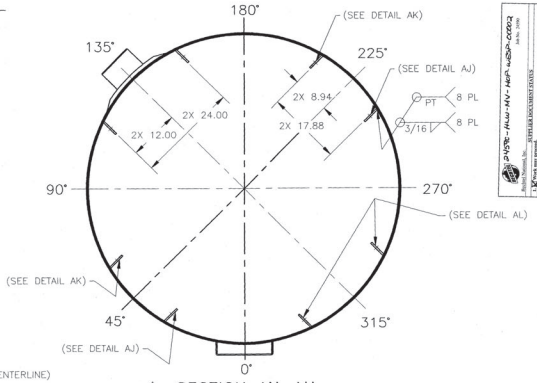
DETAIL S
SCALE: 1/4
(SHOWN IN PLAN)
(FROM SHEET 2)



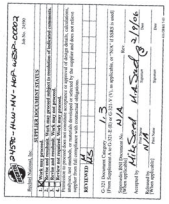
SECTION F-F
SCALE: 1/4
(FROM SHEET 2)



SECTION N-N
SCALE: 1/8



SECTION AH-AH
SCALE: 1"=1'-0"



FOR PARTS LIST AND GENERAL NOTES SEE SHEET 1

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REV NO.	DESCRIPTION	DRAWN BY / DATE	CHECKED BY / DATE	CHECKED BY / DATE	ENGR MGR / DATE	QA / DATE
4	NO CHANGE	JWL	SIGNATURES ON FILE			
3	NO CHANGE	JWL	SIGNATURES ON FILE			
2	INCORPORATE DCN-072 CHANGE SECTION G-G & SECTION N-N ADD SECTION AH-AH	DJH	SIGNATURES ON FILE			
1	INCORPORATED DCN-003 & -004	JWL	SIGNATURES ON FILE			

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT USED ON:	

REVISION
FILE NAME: M-402_03_REV 4.DWG

DRAWN BY	JW LEINGANG	7/24/03
CHECKED BY	RK FISHER	
ENGR MANAGER	DJ HARRIS	
QA	MM PEREIRA	
PROJ MANAGER	R HERNANDEZ	

SIGNATURES ON FILE

CHARLES T. JOHNSON — STATE OF WASHINGTON — 21607 — REGISTERED PROFESSIONAL ENGINEER
1-16-06
EXPIRES 01/31/06

PO 24590-QL-POA-MKE0-00001

PREPARED FOR:
DIVERSIFIED METAL PRODUCTS INC

PREPARED BY:
GForce 1985 engineering & technology

HLW-2
VESSEL DETAILS
HOP-WESP-0002

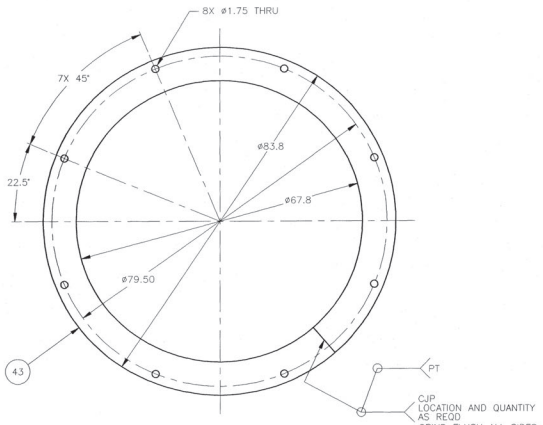
DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-402	4
DWG SCALE: SHOWN		TRANSMITTAL NO.	SHEET 3 OF

GForce TITLE BLOCK 01-1

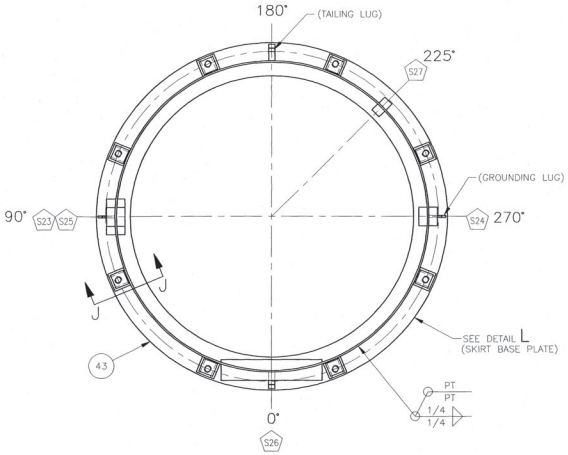
RPP-WTP RECEIVED
JAN 19 2006
BY PDC

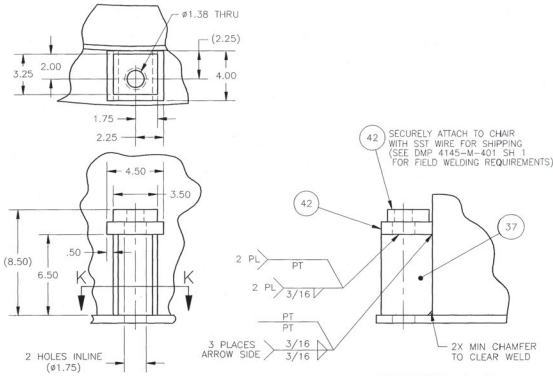
24590-QL-POA-MKE0-00001-09-06 Rev 00E

ATTACHMENT B

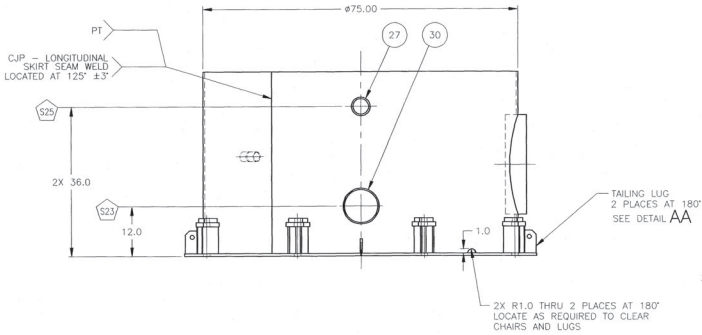


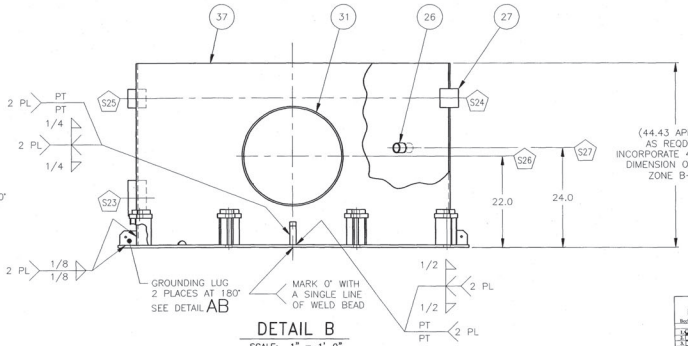
DETAIL L
SCALE: 1" = 1'-0"



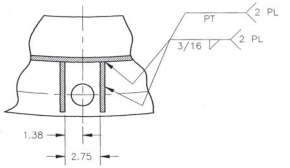


SECTION J-J
SCALE: 1/4
(8 PLACES TYP)

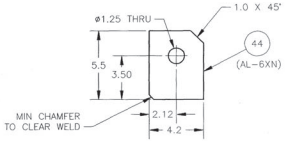




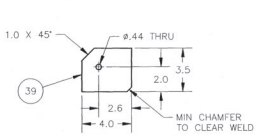
DETAIL B
SCALE: 1" = 1'-0"
(FROM SHEET 1)



SECTION K-K
SCALE: 1/4

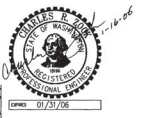


DETAIL AA
SCALE: 1/4
(2 REQD)



DETAIL AB
SCALE: 1/4
(2 REQD)

FOR PARTS LIST AND
GENERAL NOTES SEE SHEET 1



4	4	NO CHANGE	JWL	SIGNATURES ON FILE					
3	3	NO CHANGE	JWL	SIGNATURES ON FILE					
2	2	NO CHANGE	JWL	SIGNATURES ON FILE					
1	1	NO CHANGE	JWL	SIGNATURES ON FILE					
0	0	RELEASED FOR CONSTRUCTION	N/A	N/A	N/A	N/A	N/A		
	MFG	REV NO.	DESCRIPTION	REV BY / DATE	CHECK BY / DATE	ENGR DATE	ENGR MGR DATE	QA DATE	

DESIGN	RK FISHER	N/A	7/18/03
CHECKED	JW LEINGANG		
ENGR	DJ HARRIS		
ENGR MANAGER	HL MASHAW		
QA	MM PEREIRA		
PROJ MANAGER	R HERNANDEZ		

SIGNATURES ON FILE

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994.
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ± .1 .XX ± .06 .XXX ± .030
ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERFECTLY WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	REVISION
NEXT USED ON:	FILE NAME: M-402_04_REV 4.DWG

PO 24590-QL-POA-MKE0-00001

PREPARED FOR:
DIVERSIFIED METAL PRODUCTS INC

PREPARED BY:
GForce engineering & technology

HLW-2
VESSEL DETAILS
HOP-WESP-0002

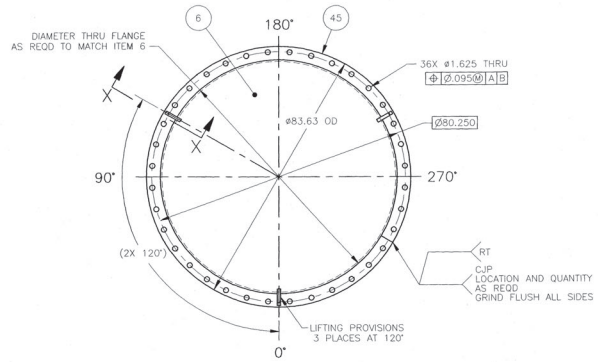
SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-402	4
SCALE: SHOWN	TRANSMITTAL NO.	SHEET 4 OF	

GForce TITLE BLOCK 01-1

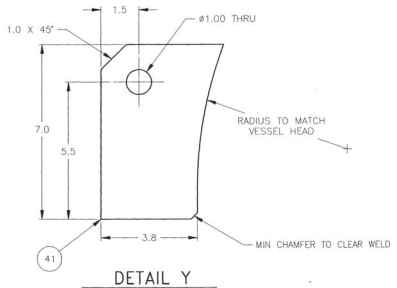
RPP-WTP
RECEIVED
JAN 19 2006
BY PDC

24590-QL-POA-MKE0-00001-09-07
Rev 00E

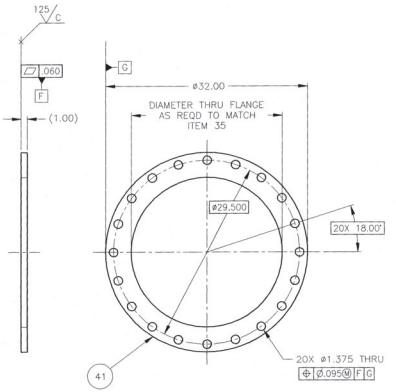
ATTACHMENT B



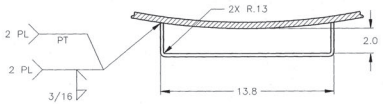
2 VESSEL HEAD WELDMENT
SCALE: 3/4" = 1'-0"

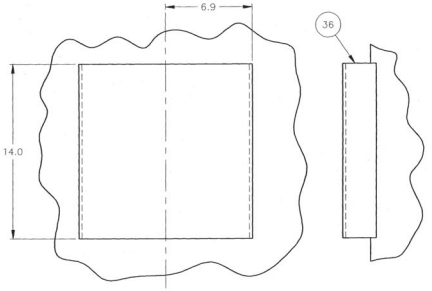


DETAIL Y
SCALE: 1/2
(3 REQD)

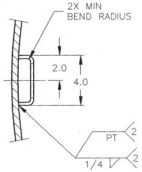


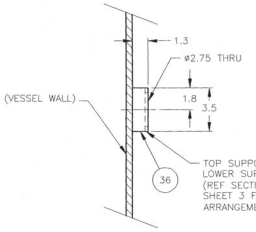
DETAIL U
SCALE: 1/8
(FROM SHEET 2)



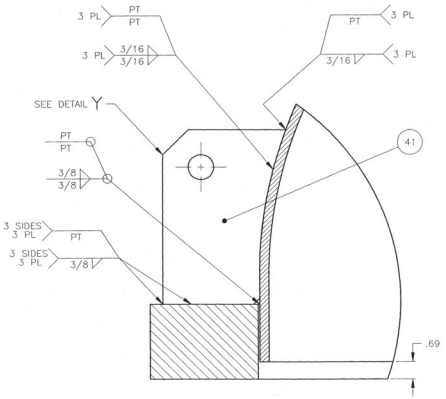


DETAIL H
SCALE: 1/4
(FROM SHEET 2)

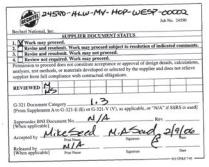




DETAIL Z
SCALE: 1/4
(FROM SHEET 2)
(TYPICAL 2 PLACES)



SECTION X-X
SCALE: 1/2
(ROTATED 30° CCW)



FOR PARTS LIST AND GENERAL NOTES SEE SHEET 1

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
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ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF. NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT ASSY USED ON:	

MFG REV. NO.	REV.	DESCRIPTION	REV BY / DATE	CHECK BY / DATE	ENGR MGR / DATE	QA / DATE
	4	NO CHANGE	JWL 1/19/06	SIGNATURES ON FILE	SIGNATURES ON FILE	SIGNATURES ON FILE
	3	NO CHANGE	JWL 12/16/05	SIGNATURES ON FILE	SIGNATURES ON FILE	SIGNATURES ON FILE
	2	NO CHANGE	DJH 11/16/05	SIGNATURES ON FILE	SIGNATURES ON FILE	SIGNATURES ON FILE
	1	INCORPORATED DCN-003 & -006	JWL 10/14/05	SIGNATURES ON FILE	SIGNATURES ON FILE	SIGNATURES ON FILE
	0	RELEASED FOR CONSTRUCTION	N/A	N/A	N/A	N/A

REVISION
FILE NAME: M-402_05_REV 4.DWG

	SIGNATURE	DATE
DRAWN BY: RK FISHER	N/A	07/22/03
CHECKED BY: JW LEINGANG	SIGNATURES ON FILE	
ENGR: DJ HARRIS		
ENGR MANAGER: HL MASHAW		
QA: MM PEREIRA		
PROJ MANAGER: R HERNANDEZ		

STATE OF WASHINGTON — JAMES W. LEINGANG — REGISTERED PROFESSIONAL ENGINEER — 1998
EXPIRES 01/31/06
1-18-06

PO 24590-QL-POA-MKE0-00001
PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC
PREPARED BY: GForce engineering & technology

HLW-2
VESSEL DETAILS
HOP-WESP-0002

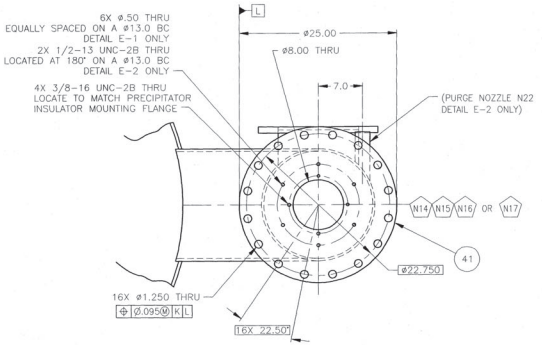
DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-402	4
DWG SCALE: SHOWN		TRANSMITTAL NO:	SHEET 5 OF

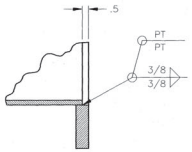
RPP-WTP RECEIVED
JAN 19 2006
BY PDC

24590-QL-POA-MKE0-00001-09-08
Rev 00E

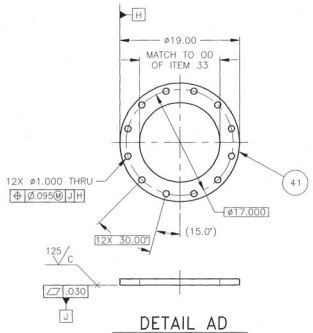
GForce TITLE BLOCK 01-1

ATTACHMENT B

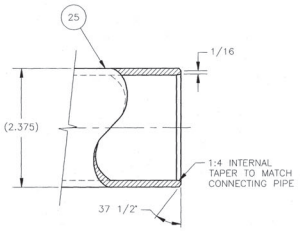




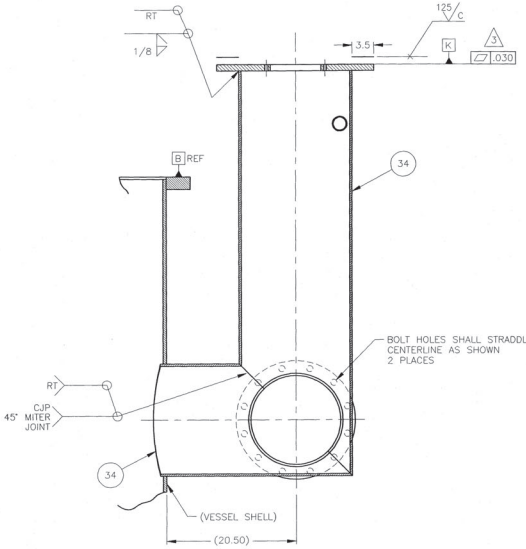
DETAIL AC
SCALE: 1/4



DETAIL AD
SCALE: 1/8
ROTATED 90° CW

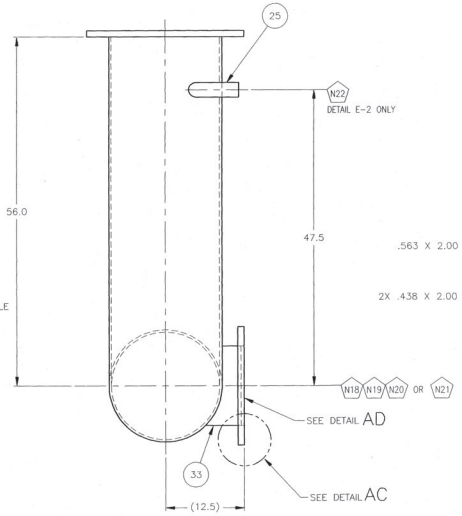


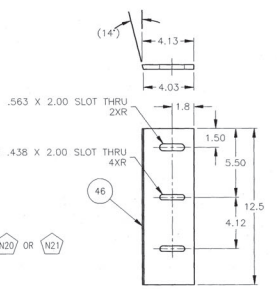
DETAIL AF
SCALE: FULL
(FROM SHEET 2)
(APPLIES TO NOZZLE
N1, N6 & N22)



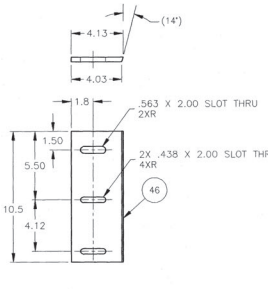
DETAIL E-1
SCALE: 1/8
(FROM SHEET 3)
(3 PLACES)

DETAIL E-2
SCALE: 1/8
(FROM SHEET 3)
(1 PLACE)

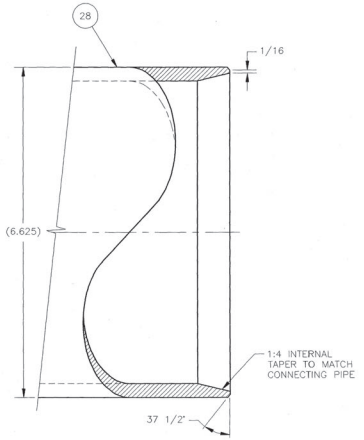




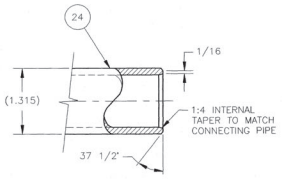
DETAIL AJ 2
SCALE: 1/4
(FROM SHEET 2)
(1 AS SHOWN & 1 WITH BEVELED
END OPPOSITE HAND)



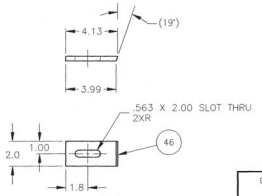
DETAIL AK 2
SCALE: 1/4
(FROM SHEET 2)
(1 AS SHOWN & 1 WITH BEVELED
END OPPOSITE HAND)



DETAIL AG
SCALE: FULL
(FROM SHEET 2)
(APPLIES TO NOZZLE N8)



DETAIL AE
SCALE: FULL
(FROM SHEET 2)
(APPLIES TO NOZZLE
N3, N5, N10 & N11)



DETAIL AL 2
SCALE: 1/4
(FROM SHEET 2)
(4 REQD)

24590-HLW-MV-HOP-WESP-00002
Job No. 24590
Babcock Lamont, Inc.
SUPPLIER DOCUMENT STATUS
1. Work may proceed.
2. Review and resubmit. Work may proceed subject to resolution of indicated comments.
3. Review and resubmit. Work may not proceed.
4. Review not required. Work may proceed.
Acceptance is general and does not constitute acceptance or approval of design details, calculations, analyses, test methods, or materials developed or selected by the supplier and does not relieve supplier from full compliance with contractual obligations.
REVIEWED
G-321 Document Category 1.3
(From Supplement A to G-321-E-(E) or G-321-V (V), as applicable, or "N/A" if SSRS is used)
Supersedes BMI Document No. N/A Rev.
(When applicable)
Accepted by: Mike Sredl M.Sredl 2/4/06
Signature Date
Released by N/A
(When applicable) Signature Date

STATE OF WASHINGTON
CHARLES E. BUNCH
2006
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES 01/31/06
1-18-06

FOR PARTS LIST AND
GENERAL NOTES SEE SHEET 1

4	4	NO CHANGE	JWL	1/18/06	JWL	1/18/06	JWL	1/18/06	
3	3	INCORPORATED DCN-081 DELETE PARALLELISM REQUIREMENT	JWL	12/14/05	DJH	12/14/05	SIGNATURES ON FILE		
2	2	INCORPORATED DCN-073 ADD DETAIL AJ, DETAIL AK & DETAIL AL	DJH	11/16/05	DJH	11/16/05	SIGNATURES ON FILE		
	1	INCORPORATED DCN-003 & -004	JWL	10/31/05	DJH	10/31/05	SIGNATURES ON FILE		
	0	RELEASED FOR CONSTRUCTION	N/A	N/A	N/A	N/A	N/A	N/A	
	MFG REV REL	DESCRIPTION	REV BY DATE	CHECK BY DATE	ENGR DATE	ENGR MGR DATE	QA DATE		

DRAWN BY	RK FISHER	DATE 07/22/03
CHECKED BY	JW LEINGANG	
ENGR.	DJ HARRIS	
ENGR MANAGER	HL MASHAW	
QA	MM PEREIRA	
PROJ MANAGER	R HERNANDEZ	

SIGNATURES ON FILE

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
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ANGULAR ± 1
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	

REVISION
NEXT USED ON:
FILE NAME: M-402_06_REV 4.DWG

PO 24590-QL-POA-MKE0-00001
PREPARED FOR:
DIVERSIFIED METAL PRODUCTS INC
PREPARED BY:
GForce engineering & technology

HLW-2
VESSEL DETAILS
HOP-WESP-0002

SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-402	4
DWG SCALE: SHOWN	TRANSMITTAL NO.	SHEET 6 OF	

GForce TITLE BLOCK 01-1

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JAN 19 2006
BY PDC

24590-QL-POA-MKE0-00001-09-09
Rev 00E

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0489

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

24590-WTP-NCR-MGT-22-0489

NCR Header

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0489

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Email	NCR Priority	Supplier/SubContractor
rajanyse@bechtel.us	2	Diversified Metal Products, Inc

Contract Number / Purchase Order	Quality Level	Custody Currently With
24590-QL-POA-MKE0-00001	Q	Construction

ASME Code Stamped Component or Assembly	Suspect/Counterfeit?	Commissioning Breakdown Structure
Yes	No	

Nonconformance Description

Inspection of all accessible external welds on the HOP-WESP-00001 was performed as per 24590-WTP-RPT-ENG-22-003.

1. Numerous welds were found to be rejectable.
2. There were rejectable surface defects (arc strikes).
3. In one case the weld specified was not actually obtainable due to configuration of the vessel head and flange.

See attachment 1, 2 & 3 of NCR for details

Additional Information

Drawing/Specification References:

Document Number	Rev	Document Title	Sections	Comments
24590-WTP-MRR-PROC-0017737	001	DIVERSIFIED METAL PRODUCTS INC		
24590-WTP-MN-CON-01-001-10-26	002	VT-ASME VIII NONDESTRUCTIVE EXAMINATION STANDARD		
24590-QL-POA-MKE0-00001-09-19	00F	DRAWING - HLW-1 VESSEL DETAILS HOP-WESP-0001		
24590-QL-POA-MKE0-00001-09-18	00F	DRAWING - HLW-1 VESSEL DETAILS HOP-WESP-0001		
24590-QL-POA-MKE0-00001-09-16	00F	DRAWING - HLW-1 VESSEL DETAILS HOP-WESP-0001		
24590-QL-POA-MKE0-00001-09-15	00F	DRAWING - HLW-1 VESSEL DETAILS HOP-WESP-0001		
24590-QL-POA-MKE0-00001-09-14	00F	DRAWING - HLW-1 VESSEL SUBASSEMBLY HOP-WESP-0001		
24590-QL-POA-MKE0-00001-09-13	00E	DRAWING - HLW-1 WESP VESSEL ASSEMBLY HOP-WESP-0001		
24590-QL-POA-MKE0-00001-09-12	00E	DRAWING - HLW-1 WESP VESSEL ASSEMBLY HOP-WESP-0001		

Applicable Items

Item Number	Parent ID	Item Description	Item Location	Item Quantity
24590-HLW-MK-HOP-WESP-00001	HOP-WESP-00001	MELTER 1 WET ELECTROSTATIC PRECIPITATOR (WESP)	MHF - 4N545 W407	

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0489

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Validate and Screen

Step 1: Is the NCR valid?

Yes

NCR Title

HLW - HOP-WESP-00001 accessible external vendor weld inspection

Step 2: Are hold tags required?

Yes

Comments for Hold Tags

Step 3: Select the NCR Category

Supplier

Step 4: Stop Work?

No

Occurrence Reporting

No

Is this NCR related to an electrical item?

No

Step 5. Please check each WTP Area that is affected by this NCR.

HLW

Step 6. Select the Disposition Approval Authority to notify.

Skiffington, Mark

Step 7. Select the RQO to notify.

Padilla, Richard×

Condition Reports

Condition Reports Associated with this NCR

Are there any Condition Reports associated with this CR? If applicable, identify any Condition Reports associated to this NCR in the Condition Report section below.

If there are no associated Condition Reports, please enter N/A.

Condition Reports Associated to this NCR

Condition Report Number

✖ Remove

Add CR Number

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0489

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Enter a Standing/Shift Order Number:

If not applicable please enter N/A.

Related Processes

Hold Tags

Hold Tags - View

Tags Hung	Tags Removed	All Tags Removed or Accounted For?
0	0	False

Conditional Releases

Interim Dispositions

Dispositions

Disposition #001 - View Status: In Progress NOT Ready for Implementation

Recommended Disposition Type	Marked for Final	Submitted Date	Submitted By	Process Status
Other	No	3/13/2023 6:07 PM	Padilla, Richard	Active

Process Task

Checker Concurs, Final Disposition

Is this a superseded Disposition?

☐ Check this box to hide this Disposition until closure

Currently Active Users

Wells, Donnie

VA Concurrence Date	DAA Approval Date	Recommended Disposition
-	5/2/2024 4:26 PM	Route to Engineering to provide Disposition.

Final Disposition Type	Submitted Date	Submitted By
Use-As-Is	5/2/2024 5:58 PM	Sanvictores, Mac

Final Disposition

See attached NCR 24590-WTP-NCR-MGT-22-0489 ATTACHMENT 1 - USE-AS-IS

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0489

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

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New Interim Disposition New Disposition

Currently Active Users

Mccann, Adam, Hartsfield, Gregg, Yetter, Kevin, Skiffington, Mark, Bhatt, Ajay, Opet, Paul, Bentley, Tom, Rehwalt, Andrew, George, Ronald, Cowan, Chris, Kump, Greg, Rogers, Rich, Walling, Joe

VA Concurrence Date	DAA Approval Date	Recommended Disposition
-	-	SEE ATTACHED NCR 24590-WTP-NCR-MGT-22-0489 ATTACHMENT 2-REPAIR

Final Disposition Type	Submitted Date	Submitted By
	-	

Final Disposition

Attachments

REQUIRED FOR FINAL RECORD—Files attached here are part of the final record and will print with NCR.

Please ensure these files are formatted properly, and that documents (i.e. Word, Excel, emails, etc.) are converted to a PDF file format.

24590-WTP-NCR-MGT-22-0489 Rejected inspections HOP-WESP-00001.pdf	View Download History	12/16/2022 6:08 PM	Janysek, Roy
NCR-22-0489 photos WESP-00001.pdf	View Download History	12/16/2022 6:09 PM	Janysek, Roy
NCR-22-0489 weld maps WESP-00001a.pdf	View Download History	12/16/2022 6:08 PM	Janysek, Roy

Attach ...

Comments

Use this section to add comments to this NCR

Add Comment

User	Date	Comment
Skiffington, Mark	3/13/2023 11:19 AM	reference 24590-HLW-FIR-CON-22-00006

Save Comments

Routing Slip

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0489

Press F5 To refresh

Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

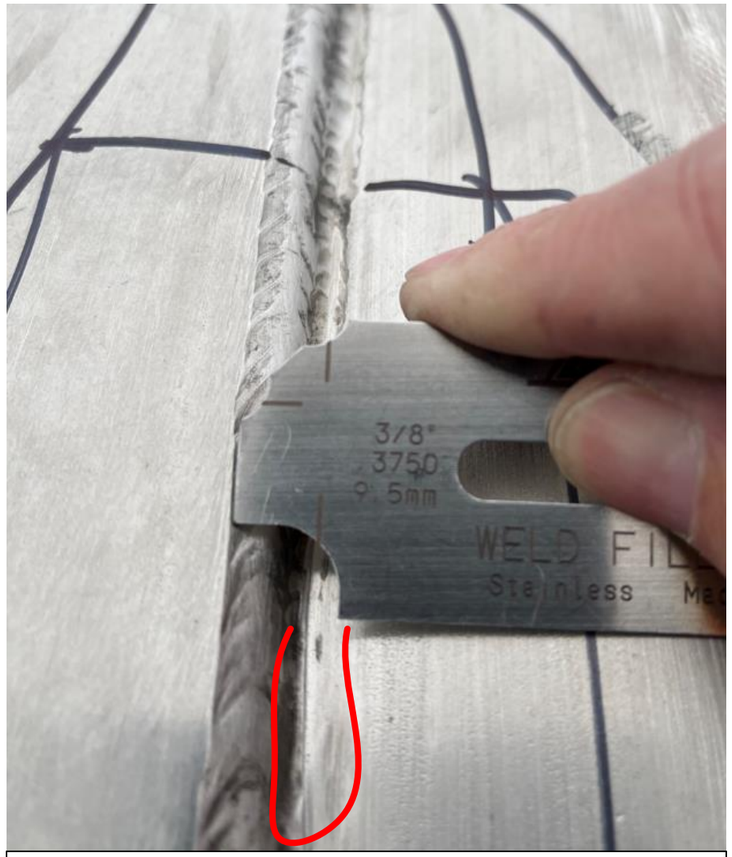
New Interim Disposition New Disposition

Janysek, Roy	3/13/2023	Notified		
RQO Notified for Hold Tags	**3/13/2023 2:21 PM**			
Padilla, Richard	3/13/2023	Notified		
Disposition Approval Authority Assigns Responsible Individual	**3/13/2023 2:21 PM**			
Skiffington, Mark	3/13/2023	Completed	Assign Responsible Individual	
Responsible Individual Creates Conditional Releases and Dispositions	**3/13/2023 2:23 PM**			
Padilla, Richard	-	*Active*		

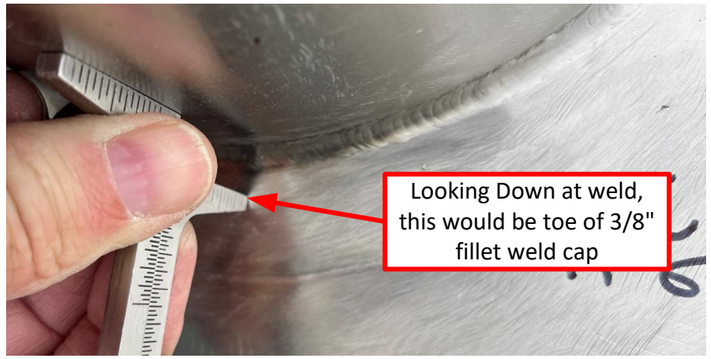
24590-WTP-NCR-MGT-22-0489
Attachment 1
List of Rejects from 24590-HLW-FIR-CON-22-00006

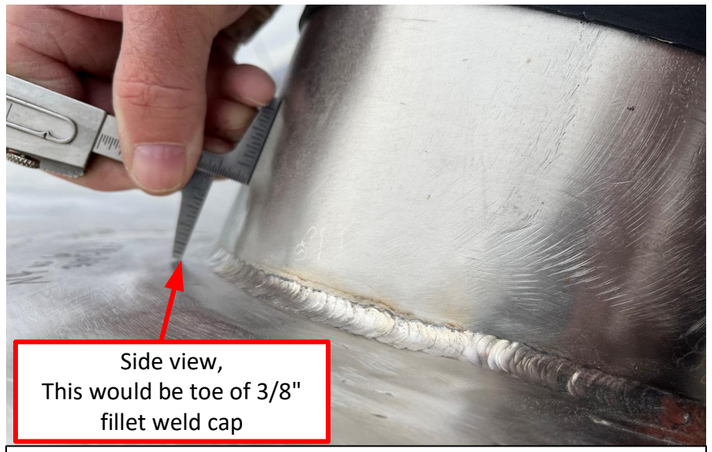
HOP-WESP-00001
Initial Inspection at MHF

Weld ID/Description			See Weld map sht #	Dia.	Weld Type	Weld Size ID	Weld Size OD	Acc/Rej	By /Date	inspection remarks
WM-21 w-1	Skirt to Head	sht 1 detail C	1	NA	fs	NA	3/8"	**REJECT**	RAJ 10-29-22	~20" was undersized by ~1/16". Not able to inspect area from ~270° to 90°, weld hidden by the vessel support saddle & cribbing
WM-22 W-6	N-04, 8" sch 40 to 1-1/4" plate	sht 2 Nozzle type 2	2	8"	cjp/fw	3/8"	3/8"	**REJECT**	RAJ 10-28-22	Weld undersized
adjacent to WM-22 W-32	N-08, 6" pipe to repad insert	sht 2 Nozzle type 1, detail W sht 2	2	6"	cjp/fw	NA	1/4"	**REJECT**	RAJ 10-29-22	Arc strikes adjacent to W32
WM-23 W-1	10" tube to shell Lifting Lug Assembly @ Az 90	Section G-G sht 3	3	10"	cjp/fw	NA	3/8"	**REJECT**	TRB 10-29-22	insufficient throat at 2-3 O'clock
WM-23 W-2	10" tube to shell Lifting Lug Assembly @ Az 270	Section G-G sht 3	3	10"	cjp/fw	NA	3/8"	**REJECT**	TRB 10-29-22	insufficient throat at 7-10 O'clock
WM25 W-6	Det Y lug to flange @ Az 0	vessel head weldment detail , x-x	5	NA	fw	NA	3/8"	**REJECT**	RAJ 10-28-22	Configuration of lug to head only permits 1/4" fillet on OD of lug to head Flange
WM25 W-7	Det Y lug to flange @ Az 120	vessel head weldment detail , x-x	5	NA	fw	NA	3/8"	**REJECT**	RAJ 10-28-22	Configuration of lug to head only permits 1/4" fillet on OD of lug to head Flange
WM25 W-8	Det Y lug to flange @ Az 240	vessel head weldment detail , x-x	5	NA	fw	NA	3/8"	**REJECT**	RAJ 10-28-22	Configuration of lug to head only permits 1/4" fillet on OD of lug to head Flange
Adjacent to WM26 W-12	N-17, 18" tube, 45 degree Girth Seam @ Az 90	Detail E-1	6	18"	cjp	NA	3/32"	**REJECT**	RAJ 10-29-22	Arc strikes adjacent to W12 on nozzle N-17 shell
WM26 W-21	N-18 tie-in weld to 18" N14 tube @ Az 0	Nozzle Type 4 sht2	2 /6	12"	cjp/FW	NA	3/8"	**REJECT**	TRB 10-29-22	Insufficient weld throat @ 7 O'clock to 1 O'clock
WM26 W-22	N-19 tie-in weld to 18" N15 tube @ Az 270	Nozzle Type 4 sht2	2 /6	12"	cjp/FW	NA	3/8"	**REJECT**	TRB 10-29-22	Undersized weld, & Insufficient weld throat @ 11-12 O'clock and 2-3 O'clock
WM26 W-23	N-20 tie-in weld to 18" N16 tube@ Az 180	Nozzle Type 4 sht2	2 /6	12"	cjp/FW	NA	3/8"	**REJECT**	RAJ 10-28-22	Undersized ~ 12" long section
WM26 W-30	N-20, flange to 12" tube @ Az 180	Detail E-1, A-C	6	12"	fw	NA	3/8"	**REJECT**	RAJ 10-28-22	Undersized weld ~12" long @ 9 & 3 O clock.
WM26 W-32	N-21, flange to 12" tube @ Az 90	Detail E-1, A-C	6	12"	fw	NA	3/8"	**REJECT**	TRB 10-29-22	Insufficient weld throat for 90% of weld length
Adjacent to WM26 W-32	N-21, flange to 12" tube @ Az 90	Detail E-1, A-C	6	12"	fw	NA	3/8"	**REJECT**	RAJ 10-29-22	Arc Strikes adjacent to W-32 on N-21 shell
Adjacent to WM27 W-18 & 19	7/8" bar to 1" flange w/with N-16	sec C-C, 303, sh1	7	NA	fw	NA	1/4"	**REJECT**	RAJ 10-28-22	Arc strikes adjacent to W18 & 19

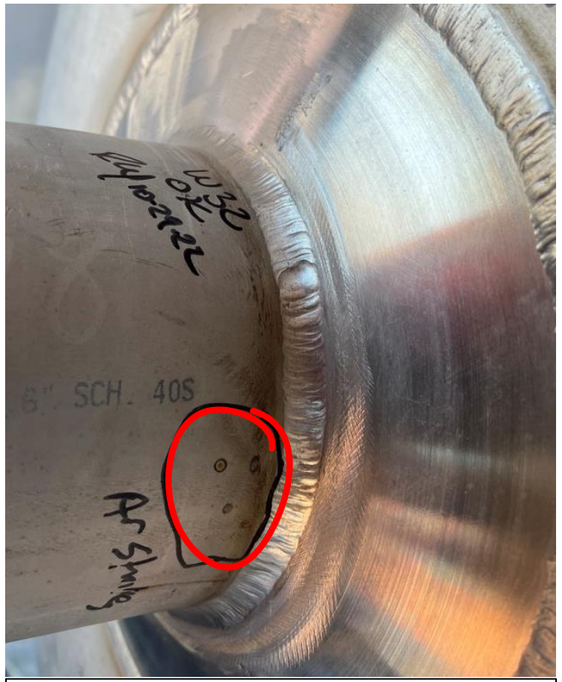


WM-21, W-1 Reject, ~20" overground, weld undersized by ~ 1/16"

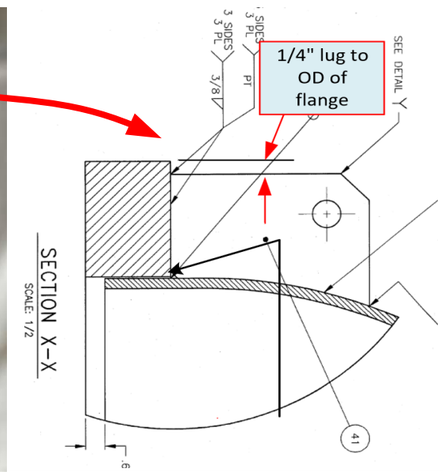




WM-22, W-6, Reject, overground,
re-enforcement fillet weld cap undersized by ~ 1/4"



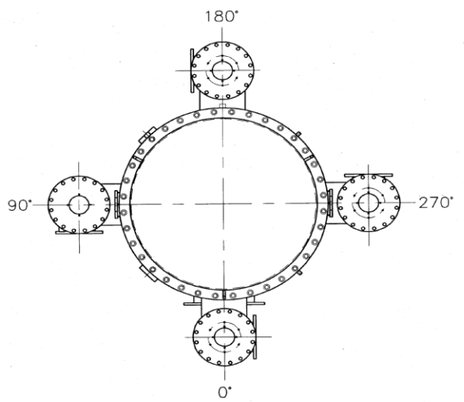
WM-22, W-32,Arc strikes adjacent to W-32

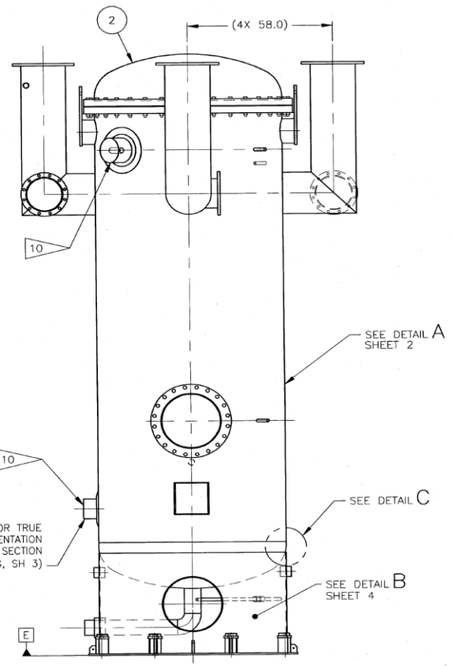


WM-25 W-6, 7 & 8 - 3/8" fillet weld not achievable.
Configuration of lug to head only permits 1/4" fillet on Outside edge of lug to Top head Flange.

24590-WTP-NCR-MGT-22-0489
Attachment 3,
1 of 3
Photos of areas rejected

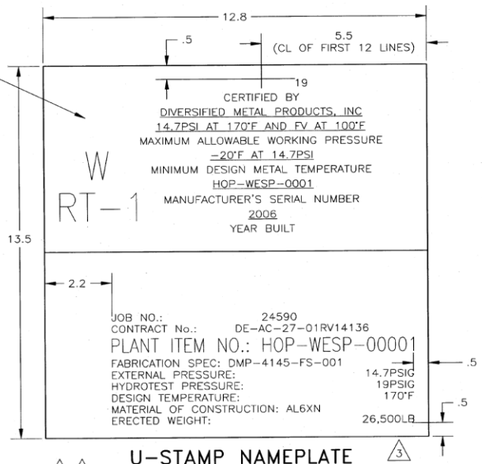
ATTACHMENT C



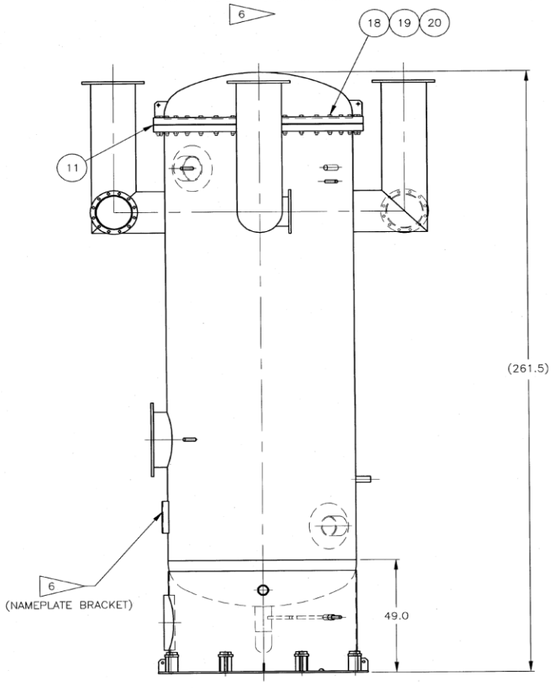


1 VESSEL SUBASSEMBLY
SCALE: 1/2" = 1'-0"

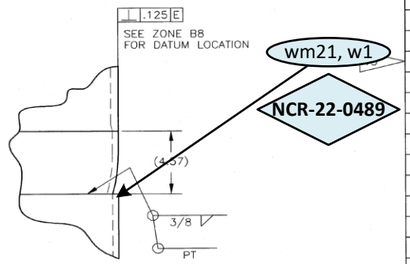
4 THIS AREA RESERVED FOR THE "U" STAMP CODE SYMBOL. THE CODE SYMBOL SHALL BE APPLIED AFTER ALL CODE REQUIREMENTS HAVE BEEN MET.



4 2 U-STAMP NAMEPLATE
SCALE: 1/2
LOCATE ON BRACKET CENTERED UNDER THE 24" INSPECTION PORT



VESSEL TO BE CONSTRUCTED IN STRICT ACCORDANCE WITH 2001 EDITION, 2002 ADDENDA OF THE ASME CODE SECTION VIII DIVISION 1 FOR PRESSURE VESSELS AND IS TO BE SO STAMPED. INSPECTION BY HSB GLOBAL STANDARDS				
	DESIGN	MAX A WORKING	MAX A N & C	HYDRO TEST
PRESSURE PSIG @	14.7/FV	16	125	19
TEMPERATURE °F	170	170	AMBIENT	AMBIENT
LIMITED BY	NA	NA	NA	NA
WIND PRESS. LBS/SQ FT	NA	CORROSION ALLOW INCHES		.04
SEISMIC COEFFICIENT	NA	RADIOGRAPHIC EXAMINATION		RT-1
WEIGHT FULL W/ WATER LBS	65,000	POST WELD HEAT TREATMENT @ 1100 °F		NA
OPERATING WEIGHT LBS	26,500			



DETAIL C
SCALE: 1/4

wm21, w1

NCR-22-0489

GENERAL NOTES:

1. FABRICATION AND WELDING SHALL BE IN ACCORDANCE WITH THIS DRAWING AND SPECIFICATION DMP-4145-FS-001.
2. ABBREVIATIONS ARE IN ACCORDANCE WITH ANSI Y1.1.
3. REMOVE ALL BURRS AND BREAK ALL SHARP EDGES.
4. ATTACH DRAIN LINE AND LEVEL TRANSMITTER LINE AFTER THE SKIRT IS WELDED TO THE VESSEL TO ENSURE PROPER FIT UP WITH NOZZLE OUTLETS THROUGH SKIRT.
5. OVERSIZE THICKNESS OF PLATES FOR FINISH MACHINING OF HEAD, VESSEL FLANGES AND REINFORCEMENT PADS IF REQD.
6. U-STAMP NAMEPLATE SHALL BE IN ACCORDANCE WITH ASME PRESSURE VESSEL STANDARDS. WELD NAMEPLATE TO NAMEPLATE BRACKET WITH CONTINUOUS FILLET AFTER FINAL TESTING.
7. THE LOCATION OF THE SHELL DIRECTLY UNDER THE LIFTING LUGS WILL BE ULTRASONICALLY EXAMINED OVER 100% OF THE AREA EXTENDING OUT 3 INCHES BEYOND THE PIPE WELDMENT.
8. TUBES (ITEMS 32, 33, 34, & 35) SHALL BE FABRICATED FROM 3/8" THK PLATE WITH FULL PENETRATION SEAM WELDS. SEAM WELDS SHALL BE 100% RADIOGRAPHED. SEAM LOCATIONS OPTIONAL.
9. VESSEL HEADS ARE 2:1 ELLIPSOIDAL WITH A 75.00 OD X 3/8 WALL THICKNESS. (ITEM 7) SHALL HAVE A 1.5 INCH STRAIGHT FLANGE AND SHALL BE WELD PREPPED, (ITEM 6) SHALL HAVE A 3.3 INCH STRAIGHT FLANGE AND SHALL NOT BE WELD PREPPED.
10. PREP NOZZLES N4 & N13 FOR A 37 1/2° BEVEL WELD.
11. PRIOR TO WELDING, ULTRASONIC EXAMINATION OF THE VESSEL BOUNDARY IS REQUIRED IN THE VICINITY WHERE COMPONENTS ARE ATTACHED BY FULL OR PARTIAL PENETRATION WELD.
12. ITEM 31 MAY BE FABRICATED FROM 3/8 THK PLATE (ITEM 37) WITH FULL PENETRATION SEAM WELD. SEAM WELD REQUIRES PENETRANT EXAMINATION. SEAM LOCATION OPTIONAL.
13. THE SPIRAL WOUND GASKET (ITEM 11) SHALL BE A RWI, OUTER RING 78 1/2" OD X 77 1/4" ID, INNER RING 76" OD X 75" ID. INNER RING, OUTER RING, AND WINDING MATERIAL SHALL BE AL6XN UNS N08367. FILLER MATERIAL SHALL BE GRAFOIL.
14. POST WELD HEAT TREAT AS REQD AT A LATER DATE.
15. ON NOZZLE N5 DUE TO SIZE AND SPACE RESTRAINTS RADIOGRAPHIC TESTING FOR THE WELD MAY NOT BE ACCURATELY COMPLETED. ULTRASONIC TESTING OF THE WELD IS AN ACCEPTABLE SUBSTITUTE IF NECESSARY.

PARTS LIST/MATERIAL LIST

QTY -020	QTY -010	PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION	MATERIAL/REFERENCE	SHEET	ITEM NO
	X	-010	VESSEL SUBASSEMBLY		1	1
X	1	-020	VESSEL HEAD WELDMENT		5	2
						3
						4
						5
1			TOP VESSEL HEAD	ASTM B688/ASME SB688 UNS N08367		6
	1		BOTTOM VESSEL HEAD	ASTM B688/ASME SB688 UNS N08367		7
						8
						9
						10
	1		SPIRAL WOUND GASKET	GARLOCK		11
						12
						13
						14
						15
						16
						17
	36		BOLT, HEX HD, 1 1/2-6 UNC-2A X 8" LONG	ASTM A193 GR B8		18
	36		HEX NUT, 1 1/2-6 UNC-2B	ASTM A194 GR 8F		19
	72		PLAIN WASHER, 1 1/2 (SERIES AND TYPE OPTIONAL)	18-8 SST		20
						21
						22
	1		ELBOW, 90° 6" SR, SCHED 40, BUTT WELD	ASTM B366/ASME SB366 UNS N08367		23
	AR		PIPE, 1" SCHED 40	ASTM B675/ASME SB675 UNS N08367		24
	AR		PIPE, 2" SCHED 40	ASTM B675/ASME SB675 UNS N08367		25
	AR		PIPE, 2" SCHED 40	ASTM A312/ASME SA312 GR TP 304L		26
	AR		PIPE, 4" SCHED 40	ASTM A312/ASME SA312 GR TP 304L		27
	AR		PIPE, 6" SCHED 40	ASTM B675/ASME SB675 UNS N08367		28
	AR		PIPE, 8" SCHED 40	ASTM B675/ASME SB675 UNS N08367		29
	AR		PIPE, 8" SCHED 40	ASTM A312/ASME SA312 GR TP 304L		30
	AR		PIPE, 24" SCHED 40S	ASTM A312/ASME SA312 GR TP 304L		31
	AR		TUBE, 10.75 OD X 10.00 ID	ASTM B688/ASME SB688 UNS N08367		32
	AR		TUBE, 12.75 OD X 12.00 ID	ASTM B688/ASME SB688 UNS N08367		33
	AR		TUBE, 18.00 OD X 17.25 ID	ASTM B688/ASME SB688 UNS N08367		34
	AR		TUBE, 24.00 OD X 23.25 ID	ASTM B688/ASME SB688 UNS N08367		35
	AR		PLATE, 1/4 THK	ASTM B688/ASME SB688 UNS N08367		36
	AR		PLATE, 3/8 THK	ASTM A240/ASME SA240 TYPE 304L		37
	AR		PLATE, 1/2 THK	ASTM B688/ASME SB688 UNS N08367		38
	AR		PLATE, 1/2 THK	ASTM A240/ASME SA240 TYPE 304L		39
	AR		PLATE, 1 1/4 THK	ASTM B688/ASME SB688 UNS N08367		40
	AR		PLATE, 1" THK	ASTM B688/ASME SB688 UNS N08367		41
	AR		PLATE, 1" THK	ASTM A240/ASME SA240 TYPE 304L		42
	AR		PLATE, 5/8 THK	ASTM A240/ASME SA240 TYPE 304L		43
	AR		PLATE, 1 1/2 THK	ASTM B688/ASME SB688 UNS N08367		44
AR	AR		PLATE, 3 THK	ASTM B688/ASME SB688 UNS N08367		45
AR	AR		PLATE, 3/8 THK	ASTM B688/ASME SB688 UNS N08367		46
	AR		PLATE, 2 THK	ASTM B688/ASME SB688 UNS N08367		47
	2		~~PIPE, 3" SCHED 40 X 1 1/4" LONG~~	~~ASTM B675/ASME SB675 UNS N08367~~		~~48~~

24590-WTP-NCR-MGT-22-0489
Attachment 2,
1 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

REV	DESCRIPTION
5	NO CHANGE
4	INCORPORATE DCN-082 CHANGE U-STAMP NAMEPLATE AND VESSEL DATA TABLE
3	INCORPORATE DCN-079 CHANGE U-STAMP NAMEPLATE
2	INCORPORATE DCN-019 INCORPORATE DCN-071 CHANGE U-STAMP NAMEPLATE
1	INCORPORATED DCN-001, -002 & -
0	RELEASED FOR CONSTRUCTION

REVISION
FILE NAME: M-302_01_REV 5.DWG

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ± .1 .XX ± .06 .XXX ± .030
ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT USED ON: DMP 4145-M-301	

24590-HLW-FIR-CON-22-00006
Attachment 2
Weld Map - Sheet 1 of 10

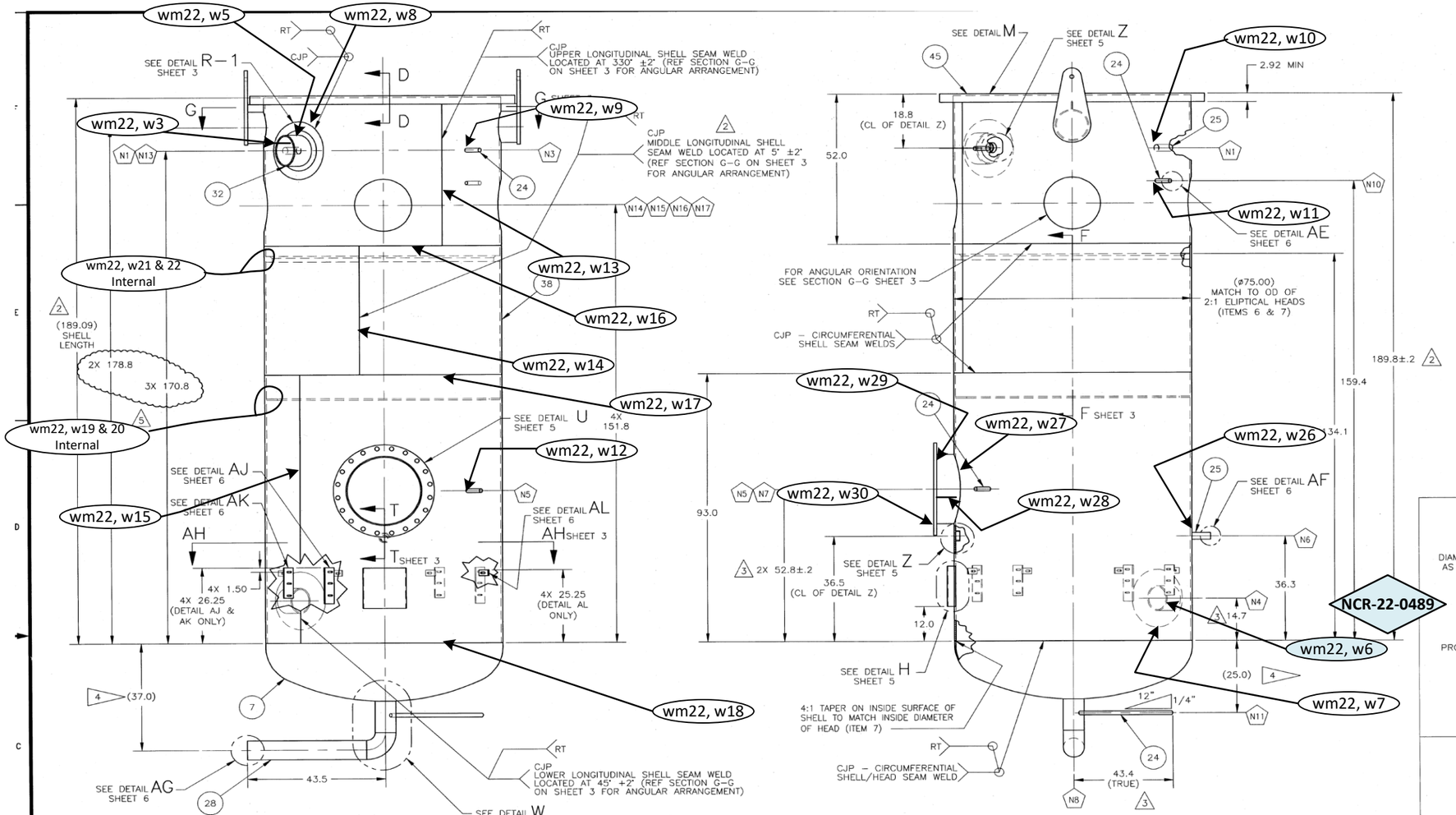
From 24590-QL-POA-MKE0-00001-09-14
24590-HLW-FIR-CON-22-00006

Page _____ of _____

PO 24590-QL-POA-MKE0-00001-09-14
PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC REV. 00F
PREPARED BY: GForce
HLW-1
VESSEL SUBASSEMBLY
HOP-WESP-0001

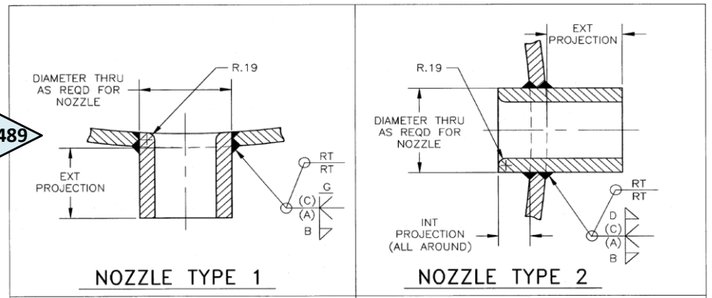
DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-302	5
DWG SCALE: SHOWN	TRANSMITTAL NO.	SHEET 1 OF 6	

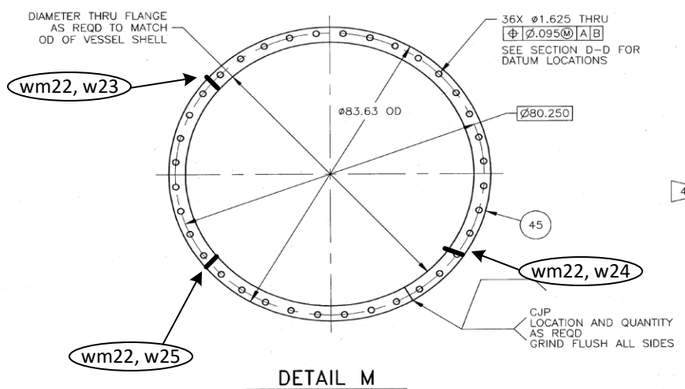
ATTACHMENT C

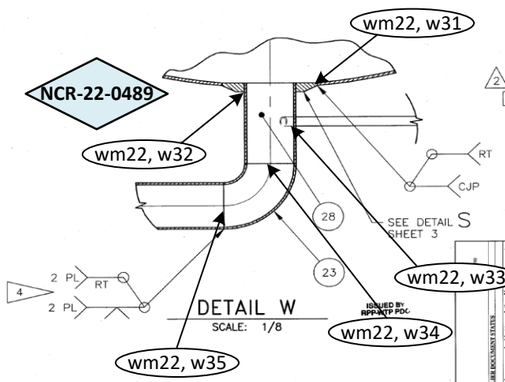


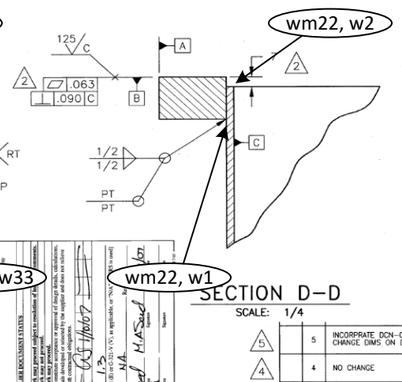
MARK	TYPE	EXT PROJECTION	ITEM	INT PROJECTION	A	B	C	D
N1	2	5.9	25	1.7	1/4	1/8	1/4	3/16
N2	—	—	—	—	—	—	—	—
N3	2	5.9	24	.5	1/4	3/16	1/4	3/16
N4	2	6.0	29	2.0	5/8	3/8	5/8	3/8
N5	2	5.9	24	1.9	1/4	3/16	1/4	3/16
N6	2	5.9	25	5.5	1/4	1/8	1/4	3/16
N7	2	6.0	35	2.0	1/4	3/8	1/4	7/16
N8	1	AS SPECIFIED	28	0	5/8	1/4	5/8	—
N9	—	—	—	—	—	—	—	—
N10	2	5.9	24	.5	1/4	3/16	1/4	3/16
N11	4	AS SPECIFIED	24	0	9/32	1/8	—	—
N12	—	—	—	—	—	—	—	—
N13	2	6.0	32	.5	5/8	3/8	5/8	7/16
N14	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N15	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N16	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N17	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N18	4	3.0	33	0	3/8	3/8	—	—
N19	4	3.0	33	0	3/8	3/8	—	—
N20	4	3.0	33	0	3/8	3/8	—	—
N21	4	3.0	33	0	3/8	3/8	—	—
N22	4	6.0	25	0	3/8	1/8	—	—
S23	3	2.0	30	2.0	1/8	1/8	1/8	1/8
S24	3	2.0	27	2.0	1/8	1/8	1/8	1/8
S25	3	2.0	27	2.0	1/8	1/8	1/8	1/8
S26	3	2.0	31	2.0	1/8	1/8	1/8	1/8
S27	3	2.0	26	2.0	1/8	1/8	1/8	1/8

NOZZLE SCHEDULE
WELD









DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M–1994.
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ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT USED ON:	

MFG	REV NO.	DESCRIPTION
	5	INCORPRATE DCN–085 CHANGE DIMS ON DETAIL A
	4	NO CHANGE
	3	INCORPORATE DCN–079 CHANGE DIMS ON DETAIL A CHANGE NOZZLE SCHEDULE LENGTHS
	2	INCORPORATE DCN–017 INCORPORATE DCN–071 CHANGE SECTION D–D, AND DETAIL A
	1	INCORPORATED DCN–001 & –002

REVISION
FILE NAME: M–302_02_REV 5.DWG

24590-WTP-NCR-MGT-22-0489
Attachment 2,
2 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

FOR PARTS LIST AND GENERAL NOTES SEE SHEET 1

24590-HLW-FIR-CON-22-00006
Attachment 2
Weld Map - Sheet 2 of 10

From 24590-QL-POA-MKE0-00001-09-15

24590-HLW-FIR-CON-22-00006

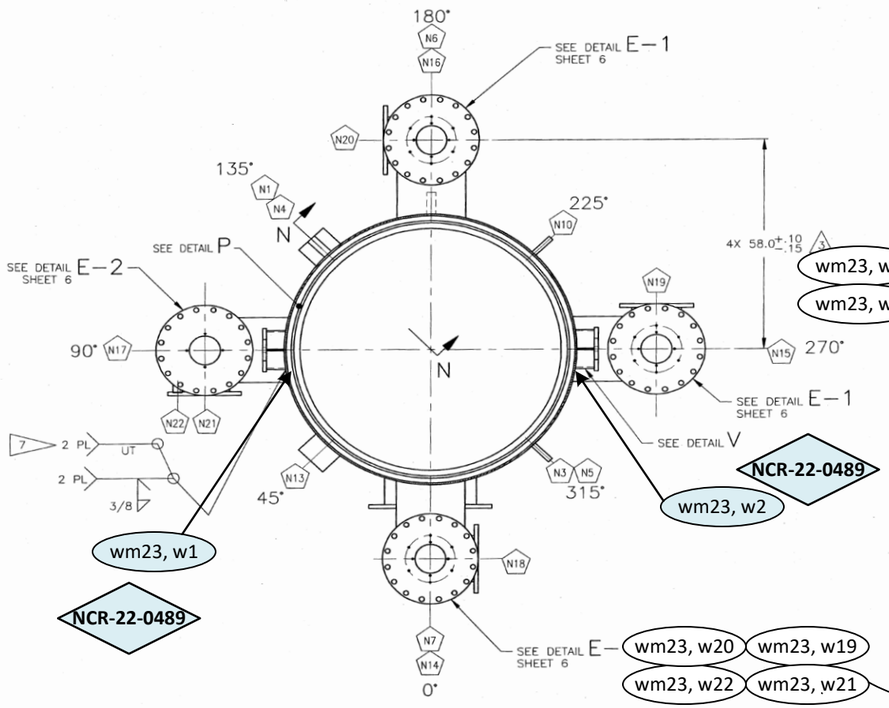
Page _____ of _____

PO 24590-QL-POA-MKE0-00001-09-15
PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC
Rev. 00F
PREPARED BY: GForce engineering & technology

HLW–1
VESSEL DETAILS
HOP–WESP–0001

DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145–M–302	5
DWG SCALE: SHOWN		TRANSMITTAL NO:	SHEET 2 OF

ATTACHMENT C



wm23, w1

NCR-22-0489

NCR-22-0489

wm23, w2

wm23, w5

wm23, w7

wm23, w6

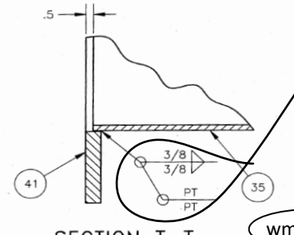
wm23, w8

wm23, w3

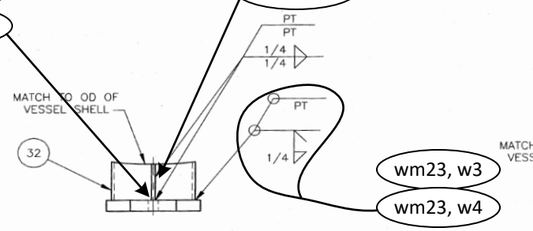
wm23, w4

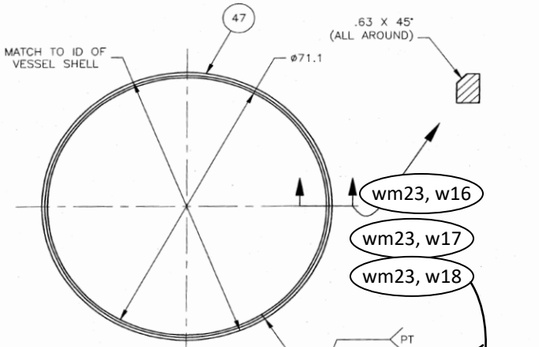
wm22, w30

wm22, w29



SECTION T-T
SCALE: 1/4
(FROM SHEET 2)



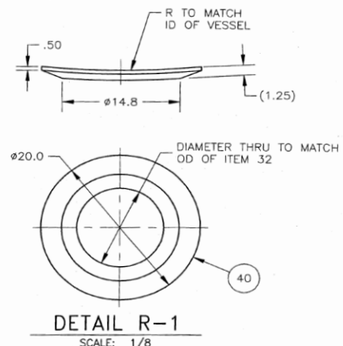


wm23, w16

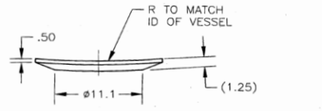
wm23, w17

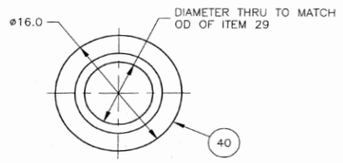
wm23, w18

DETAIL P
SCALE: 3/4" = 1'-0"

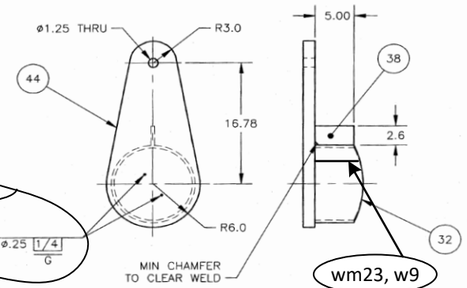


DETAIL R-1
SCALE: 1/8
(FROM SHEET 2)





DETAIL R-2
SCALE: 1/8



wm23, w20

wm23, w19

wm23, w22

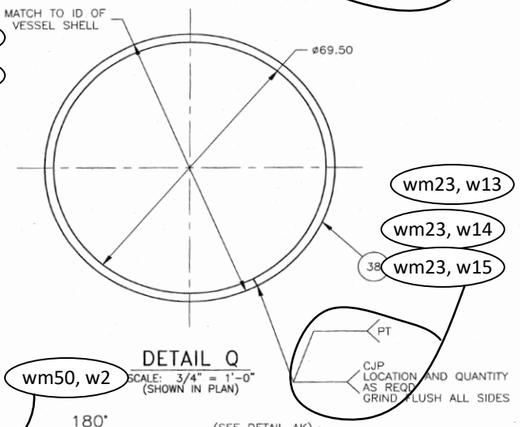
wm23, w21

2 PL
LOCATIONS
OPTIONAL
ø.25 1/4 G

wm23, w9

wm23, w10

DETAIL V
SCALE: 1/8
(2 REQD)
ROTATED 90° CW

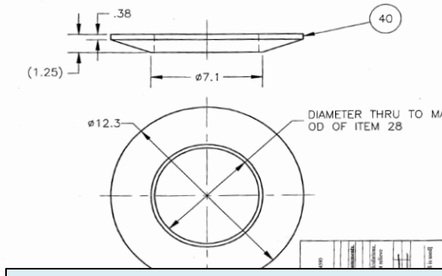


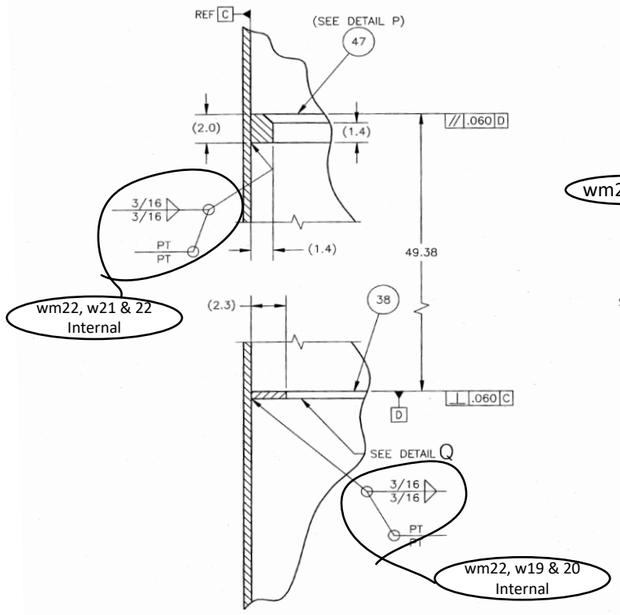
wm23, w13

wm23, w14

wm23, w15

DETAIL Q
SCALE: 3/4" = 1'-0"
(SHOWN IN PLAN)

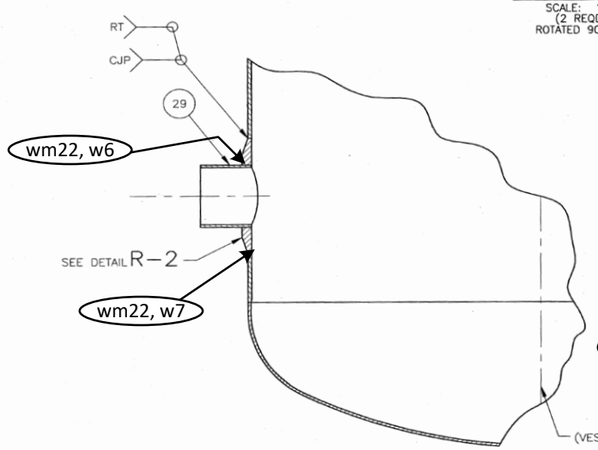




wm22, w21 & 22
Internal

wm22, w19 & 20
Internal

SECTION F-F
SCALE: 1/4
(FROM SHEET 2)



wm22, w6

wm22, w7

wm50, w2

wm50, w5

wm50, w1

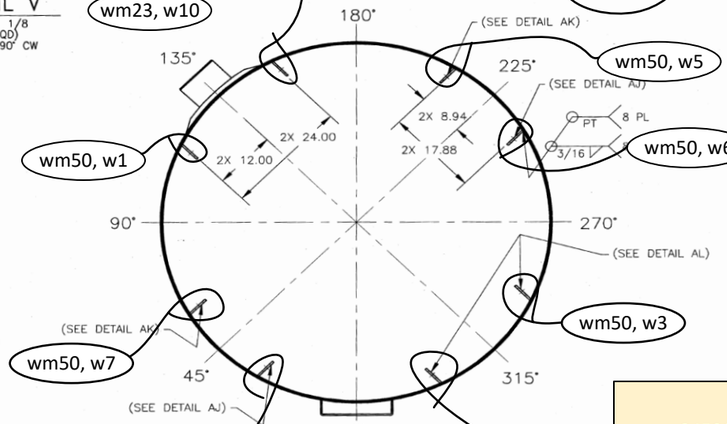
wm50, w6

wm50, w7

wm50, w3

wm50, w8

wm50, w4



SECTION AH-AH
SCALE: 1"=1'-0"

SECTION N-N
SCALE: 1/8

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ±.1 .XX ±.06 .XXX ±.030
ANGULAR ± 1°

ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS

ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT USED ON:	

	WTD	REV NO.	DESCRIPTION	REV BY / DATE	CHKD BY
5		5	NO CHANGE	JWL	
4		4	NO CHANGE	JWL	
3		3	INCORPORATE DCN-079 CHANGE DIM ON SECTION G-G	JWL	
2		2	INCORPORATE DCN-071 CHANGE SECTION G-G & SECTION N-N ADD SECTION AH-AH	DAD	

REVISION

FILE NAME: M-302_03_REV_5.DWG

24590-WTP-NCR-MGT-22-0489
Attachment 2,
3 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

24590-HLW-FIR-CON-22-00006
Attachment 2
Weld Map - Sheet 3 of 10

From 24590-QL-POA-MKE0-00001-09-16

24590-HLW-FIR-CON-22-00006

Page _____ of _____

FOR PARTS LIST AND GENERAL NOTES SEE SHEET 1

PO 24590-QL-POA-MKE0-00001-09-16 Rev.00F

ED FOR: DIVERSIFIED METAL PRODUCTS INC

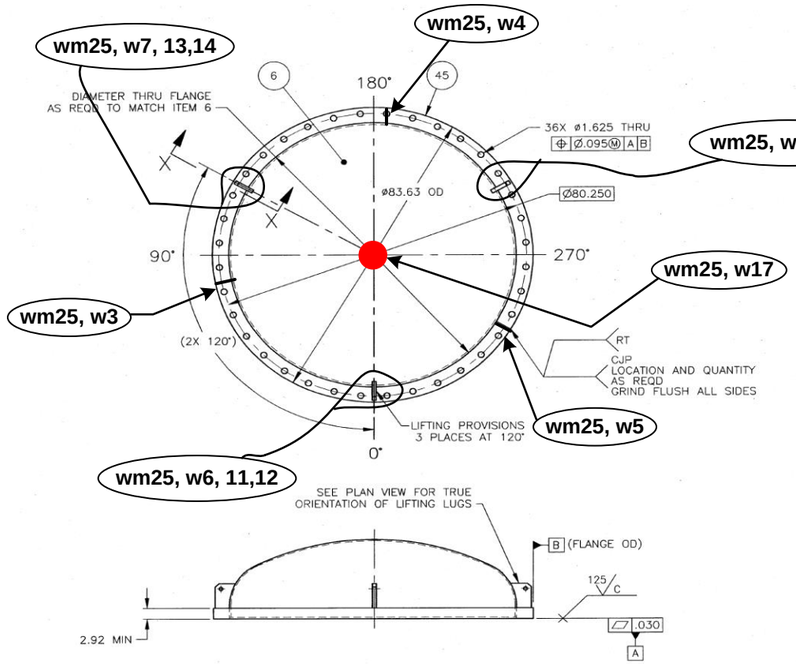
ED BY: GForce engineering & technology

HLW-1
VESSEL DETAILS
HOP-WESP-0001

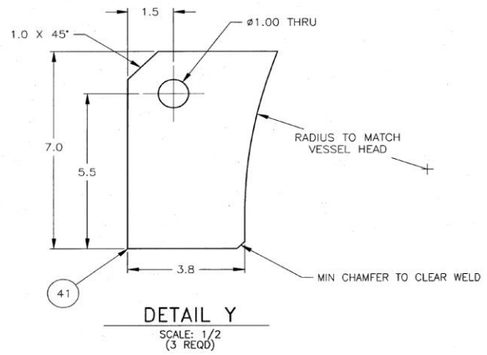
BLDG NO. N/A | DWG NO. DMP 4145-M-302 | REV 5

TITLE BLOCK 01-1

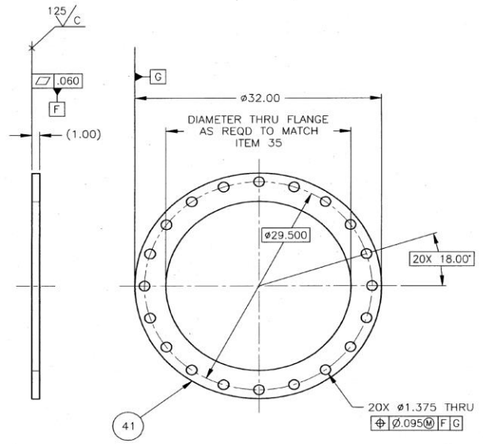
ATTACHMENT C



2 VESSEL HEAD WELDMENT
SCALE: 3/4" = 1'-0"



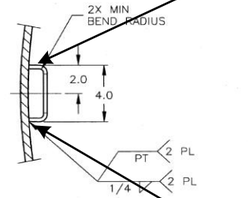
DETAIL Y
SCALE: 1/2
(3 REQD)



DETAIL U
SCALE: 1/8
(FROM SHEET 2)

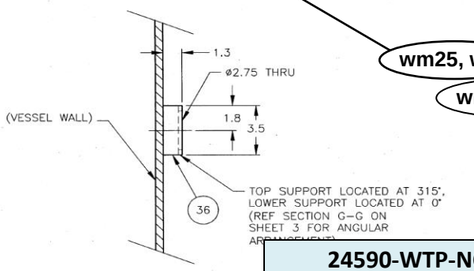
wm25, w18 Lower support

wm25, w21 Upper support



wm25, w19 Lower support

wm25, w20 Upper support

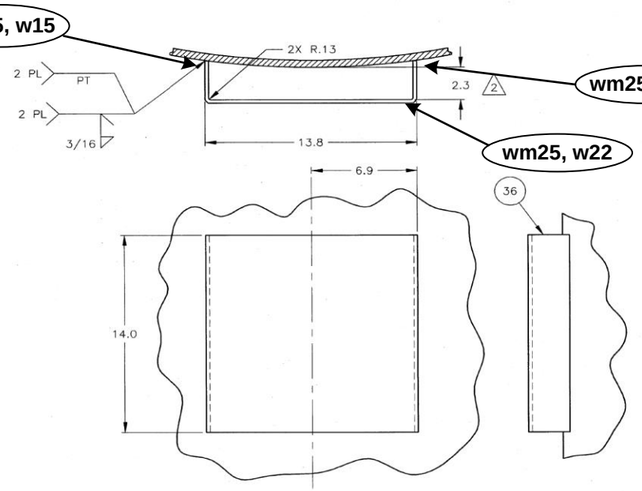


DETAIL Z
SCALE: 1/4
(FROM SHEET 2)
(TYPICAL 2 PLACES)

wm25, w15

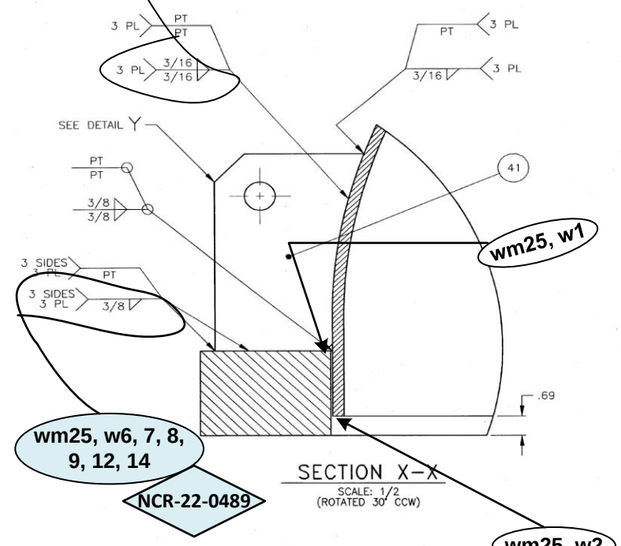
wm25, w16

wm25, w22



DETAIL H
SCALE: 1/4
(FROM SHEET 2)

wm25, w10, 11, 13



SECTION X–X
SCALE: 1/2
(ROTATED 30° CCW)

24590-WTP-NCR-MGT-22-0489
Attachment 2,
4 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M–1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ± .1 .XX ± .06 .XXX ± .030
ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	

NEXT USED ON:

MFD	REV NO.	DESCRIPTION	REV BY / DATE
	5	NO CHANGE	JWL
	4	NO CHANGE	JWL
	3	NO CHANGE	JWL
	2	INCORPORATE DCN–071 CHANGE DETAIL H	DAD
	1	INCORPORATED DCN–001 & –005	JWL
	0	RELEASED FOR CONSTRUCTION	N/A

REVISION

FILE NAME: M–302_05_REV 5.DWG

24590-HLW-FIR-CON-22-00006
Attachment 2
Weld Map - Sheet 5 of 10

From 24590-QL-POA-MKE0-00001-09-18

24590-HLW-FIR-CON-22-00006

Page _____ of _____

PO 24590–QL–POA–MKE0–00001–09–18

RED FOR: DIVERSIFIED METAL PRODUCTS INC

RED BY: GForce engineering & technology

HLW–1
VESSEL DETAILS
HOP–WESP–0001

BLDG NO.	DWG NO.	REV
N/A	DMP 4145–M–302	5
SHOWN	TRANSMITTAL NO:	SHEET 5 OF

ATTACHMENT C

wm26, w5 N14 @ 0º
wm26, w6 N15 @ 270º
wm26, w7 N16 @ 180º
wm26, w8 N17 @ 90º

wm26, w20 N14 @ 0º
wm26, w19 N15 @ 270º
wm26, w18 N16 @ 180º
wm26, w17 N17 @ 90º

wm26, w26 N18 @ 0º
wm26, w28 N19 @ 270º
wm26, w30 N20 @ 180º
m26, w32 N21 @ 90º

NCR-22-0489
NCR-22-0489

wm26, w25 N18 @ 0º
wm26, w27 N19 @ 270º
wm26, w29 N20 @ 180º
m26, w31 N21 @ 90º

m26, w33 N17 @ 90º

m26, w24 N21 @ 90º
wm26, w23 N20 @ 180º
wm26, w22 N19 @ 270º
wm26, w21 N18 @ 0º

NCR-22-0489
NCR-22-0489
NCR-22-0489

wm26, w13 N14 @ 0º
wm26, w14 N15 @ 270º
wm26, w15 N16 @ 180º
wm26, w16 N17 @ 90º

wm26, w1 N14 @ 0º
wm26, w2 N15 @ 270º
wm26, w3 N16 @ 180º
wm26, w4 N17 @ 90º

wm26, w9 N14 @ 0º
wm26, w10 N15 @ 270º
wm26, w11 N16 @ 180º
wm26, w12 N17 @ 90º

NCR-22-0489

wm26, w34 N18 @ 0º
wm26, w35 N19 @ 270º
wm26, w36 N20 @ 180º
m26, w37 N21 @ 90º

6X ø.50 THRU EQUALLY SPACED ON A ø13.0 BC DETAIL E-1 ONLY
2X 1/2-13 UNC-2B THRU LOCATED AT 180° ON A ø13.0 BC DETAIL E-2 ONLY
4X 3/8-16 UNC-2B THRU LOCATE TO MATCH PRECIPITATOR INSULATOR MOUNTING FLANGE
ø25.00
ø8.00 THRU
7.0
(PURGE NOZZLE N22 DETAIL E-2 ONLY)
N14 N15 N16 OR N17
41
ø22.750
16X ø1.250 THRU
⌖ ø.095Ⓜ K L
16X 22.50°

DETAIL AC
SCALE: 1/4

DETAIL AD
SCALE: 1/8
ROTATED 90° CW

DETAIL AF
SCALE: FULL
(FROM SHEET 2)
(APPLIES TO NOZZLE N1, N6 & N22)

DETAIL AG
SCALE: FULL
(FROM SHEET 2)
(APPLIES TO NOZZLE N8)

DETAIL AJ 2
SCALE: 1/4
(FROM SHEET 2)
(1 AS SHOWN & 1 WITH BEVELED END OPPOSITE HAND)

DETAIL AK 2
SCALE: 1/4
(FROM SHEET 2)
(1 AS SHOWN & 1 WITH BEVELED END OPPOSITE HAND)

DETAIL AE
SCALE: FULL
(FROM SHEET 2)
(APPLIES TO NOZZLE N3, N5, N10 & N11)

DETAIL AL 2
SCALE: 1/4
(FROM SHEET 2)
(4 REQD)

DETAIL E-1
SCALE: 1/8
(FROM SHEET 3)
(3 PLACES)

DETAIL E-2
SCALE: 1/8
(FROM SHEET 3)
(1 PLACE)

Long Seam
Diagonal Girth Seam
Long Seam
Long Seam
BOLT HOLES SHALL STRADDLE CENTERLINE AS SHOWN 2 PLACES
(VESSEL SHELL)
(20.50)
SEE DETAIL AD
SEE DETAIL AC
N18 N19 N20 OR N21
CJP 45° MITER JOINT

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ±.1 .XX ±.06 .XXX ±.030
ANGULAR ±1
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REV NO.	DESCRIPTION	BY	DATE	CHK BY
5	NO CHANGE	JWL	ISSUED FOR CONSTRUCTION	
4	NO CHANGE	JWL	SIGNATURE	
3	NO CHANGE	JWL	SIGNATURE	
2	INCORPORATE DCN-071 ADD DETAIL AJ, DETAIL AK & DETAIL AL	DAD	SIGNATURE	
1	INCORPORATED DCN-001 & -002	JWL	SIGNATURE	
0	RELEASED FOR CONSTRUCTION	N/A	N/A	

REFERENCE DOCUMENTS — REVISION
REF NUMBER | DOCUMENT TITLE
NEXT USED ON:
FILE NAME: M-302_06_REV 5.DWG

SUPPLIER DOCUMENT STATUS
Job No. 24590
Bechtel National, Inc.
1. ☒ Work may proceed.
2. ☐ Revise and resubmit. Work may proceed subject to resolution of indicated comments.
3. ☐ Revise and resubmit. Work may not proceed.
4. ☐ Review not required. Work may proceed.
Permission to proceed does not constitute acceptance or approval of design details, calculations, analyses, test methods, or materials developed or selected by the supplier and does not relieve supplier from full compliance with contractual obligations.
REVIEWED: 05/1/07
G-321 Document Category: 1 or 2
[From Supplement A to G-321-E (E) or G-321-V (V), as applicable, or "N/A" if SSRS is used]
Supersedes this Document No.: N/A Rev.:
[When applicable]
Accepted: Mike Seed Signature 4/24/07 Date
Returned by: N/A Print Name Signature Date
(A-DP45-F-02)

24590-WTP-NCR-MGT-22-0489
Attachment 2,
5 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

24590-HLW-FIR-CON-22-00006
Attachment 2
Weld Map - Sheet 6 of 10

From 24590-QL-POA-MKE0-00001-09-19

24590-HLW-FIR-CON-22-00006

Page _____ of _____

PO 24590-QL-POA-MKE0-00001-09-19
FOR: DIVERSIFIED METAL PRODUCTS INC
BY: GForce engineering & technology

HLW-1
VESSEL DETAILS
HOP-WESP-0001

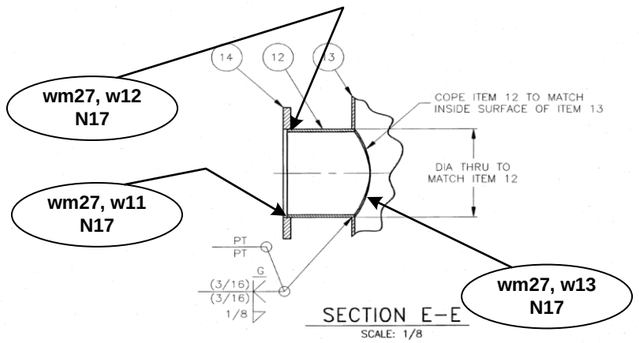
BLDG NO. N/A | DWG NO. DMP 4145-M-302 | REV 5
SHOWN | TRANSMITTAL NO. | SHEET 6 OF

ATTACHMENT C

wm27, w12 N17

wm27, w11 N17

wm27, w13 N17



SECTION E–E
SCALE: 1/8

wm27, w15 N14

wm27, w17 N15

wm27, w19 N16

NCR-22-0489

wm27, w14 N14

wm27, w16 N15

wm27, w18 N16

NCR-22-0489

PARTS LIST/MATERIAL LIST

QTY -030	QTY -020	QTY -010	PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION	MATERIAL/REFERENCE	SHEET	ITEM NO
		X	-010	INSULATOR SPOOL – ELECTRICAL WELDMENT		1	1
	X		-020	INSULATOR SPOOL – WELDMENT		1	2
X			-030	18" BLIND FLANGE		2	3
							4
							5
							6
							7
		2		PIPE FLANGE, SLIP–ON, 1" CLASS 150 FL FACE	ASTM A182/ASME SA182 GR TP 304L		8
	1			PIPE FLANGE, SLIP–ON, 2" CLASS 150 FL FACE	ASTM B462/ASME SB462 UNS N08367		9
		AR		PIPE, 1" SCHED 40S	ASTM A312/ASME SA312 GR TP 304L		10
	AR			PIPE, 2" STD WALL (.154 THK)	ASTM B675/ASME SB675 UNS N08367		11
		AR		PIPE, 12" SCHED 40S	ASTM A312/ASME SA312 GR TP 304L		12
		AR		PIPE, 18" SCHED 40S	ASTM A312/ASME SA312 GR TP 304L		13
AR		AR		PLATE, 1" THK	ASTM A240/ASME SA240 TYPE 304L		14
	AR			PLATE, 1" THK	ASTM B688/ASME SB688 UNS N08367		15
	AR			PLATE, 1/2 THK	ASTM B688/ASME SB688 UNS N08367		16
	1			TUBE, 18.00 OD X 17.25 ID X 24.00 LONG	ASTM B688/ASME SB688 UNS N08367		17
	AR			BAR STOCK, ø7/8	ASTM A479/ASME SA479 TYPE 304L		18
AR				BAR STOCK, ø1–1/8	ASTM A479/ASME SA479 TYPE 304L		19

wm27, w5 N32

wm27, w7 N31

wm27, w25 N30

wm27, w23 N29

wm27, w21 N28

wm27, w10 N17

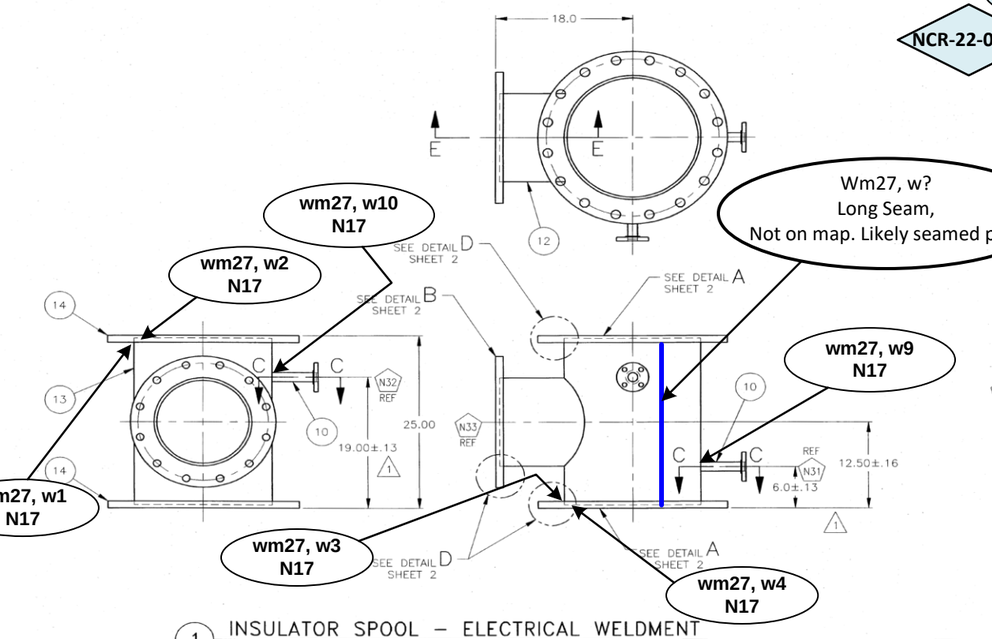
wm27, w2 N17

wm27, w9 N17

wm27, w1 N17

wm27, w3 N17

wm27, w4 N17



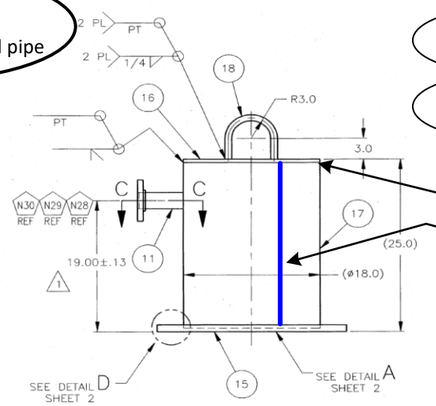
1 INSULATOR SPOOL – ELECTRICAL WELDMENT

Wm27, w?
Long Seam,
Not on map. Likely seamed pipe

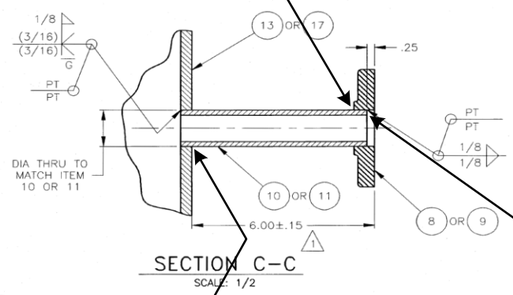
wm27, w29 N14

wm27, w30 N15

wm27, w31 N16



2 INSULATOR SPOOL – WELDMENT



SECTION C–C
SCALE: 1/2

wm27, w38 N14

wm27, w39 N15

wm27, w40 N16

wm27, w26 N14

wm27, w27 N15

wm27, w28 N16

wm27, w6 N32

wm27, w8 N31

wm27, w24 N30

wm27, w22 N29

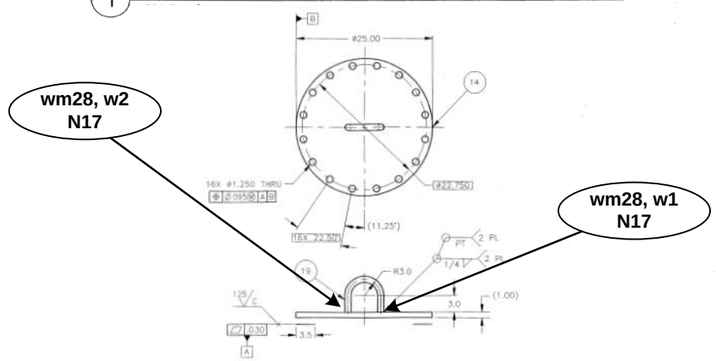
wm27, w20 N28

GENERAL NOTES:

FABRICATION AND WELDING SHALL BE IN ACCORDA
DRAWING AND SPECIFICATION DMP–4145–FS–0
ABBREVIATIONS ARE IN ACCORDANCE WITH ANS
3. REMOVE ALL BURRS AND BREAK ALL SHARP EDGES.
PIPE FLANGE DIMENSIONS SHALL BE IN ACCORDANC
UBE (ITEM 17) SHALL BE FABRICATED FROM 3

wm28, w2 N17

wm28, w1 N17



3 18" BLIND FLANGE
SCALE: 1/8

wm27, w32 N14

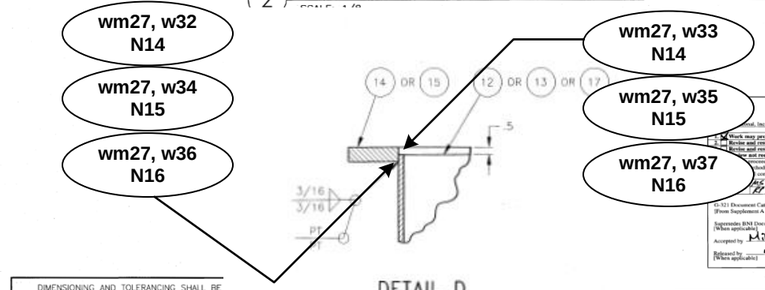
wm27, w34 N15

wm27, w36 N16

wm27, w33 N14

wm27, w35 N15

wm27, w37 N16



DETAIL D
SCALE: 1/4
(FROM SHEET 1)

DIMENSIONING AND TOLERANCING SHALL BE ANSI Y14.5M–1994
DIMENSIONS ARE IN INCHES UNLESS OTHE
UNSPECIFIED TOLERANCES SHALL
DECIMAL .X ±.1 .XX ±.06
ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERF
THE GREATEST TOLERANCE OF THE LIN
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REFERENCE DOCUMENTS
NEXT USED ON: DMP 4145–M–301
REVISION
FILE NAME: M–303_01_REV 1.DWG

RPORATE DCN–074
E INSULATOR SPOOL–ELECTRICAL WELDMENT
IGE INSULATOR SPOOL–WELDMENT
IGE SECTION C–C
ASED FOR CONSTRUCTION
DESCRIPTION

24590-WTP-NCR-MGT-22-0489
Attachment 2,
6 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

24590-HLW-FIR-CON-22-00006
Attachment 2
Weld Map - Sheet 7 of 10

From 24590-QL-POA-MKE0-00001-09-20 & 21

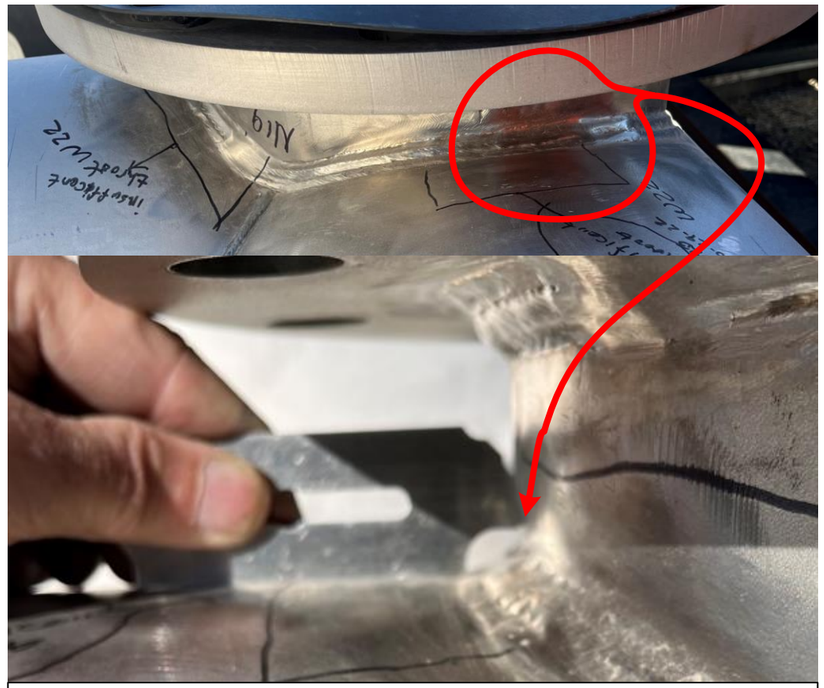
24590-HLW-FIR-CON-22-00006

Page _____ of _____

PO 24590–QL–POA–MKE0–00001
ED FOR: DIVERSIFIED METAL PRODUCTS INC
ED BY: GForce engineering & technology
HLW–1
WELDMENTS & DETAILS
HOP–WESP–0001
BLDG NO. N/A
DWG NO. DMP 4145–M–303
REV 1
DWG SCALE: SHOWN
TRANSMITTAL NO.
SHEET 1 OF 2

Document 24590-QL-POA-MKE0-00001-09-20 Page 76 of 91

WM-26 W-21
Insufficient weld throat by ~ 1/16" between 7 to 1 O'clock



WM-26 W-22
Undersized weld by ~1/16", & Insufficient weld throat @ 11-12 O'clock and 2-3 O'clock

WM-26 W-23
Undersized weld by ~1/16", & Insufficient weld throat

WM-26 W-30
Undersized weld by ~ 1/16", & Insufficient weld throat

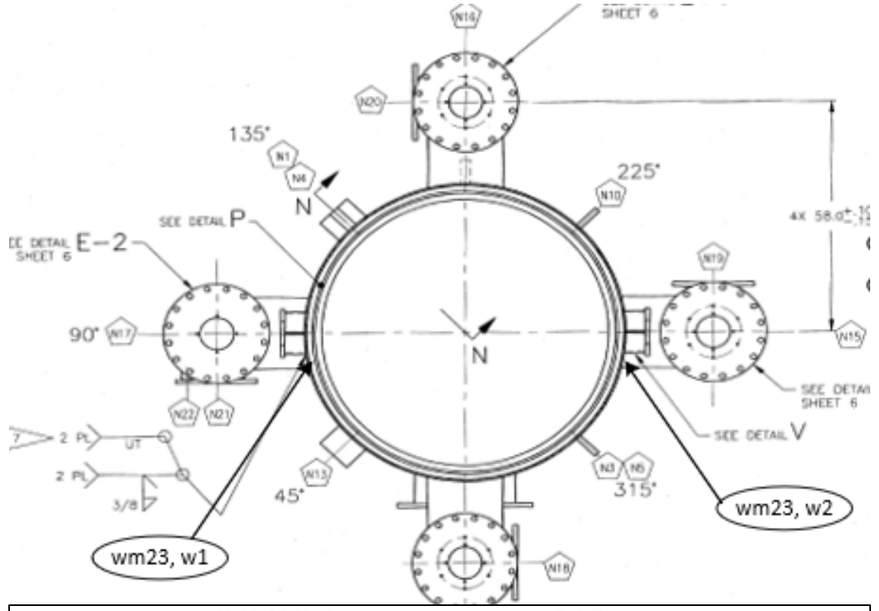
24590-WTP-NCR-MGT-22-0489
Attachment 3,
2 of 3
Photos of areas rejected

24590-HLW-FIR-CON-22-00006
Attachment 3
HOP-WESP-00001
Rejected welds - Sheet 2 of 3

24590-HLW-FIR-CON-22-00006

Page _____ of _____

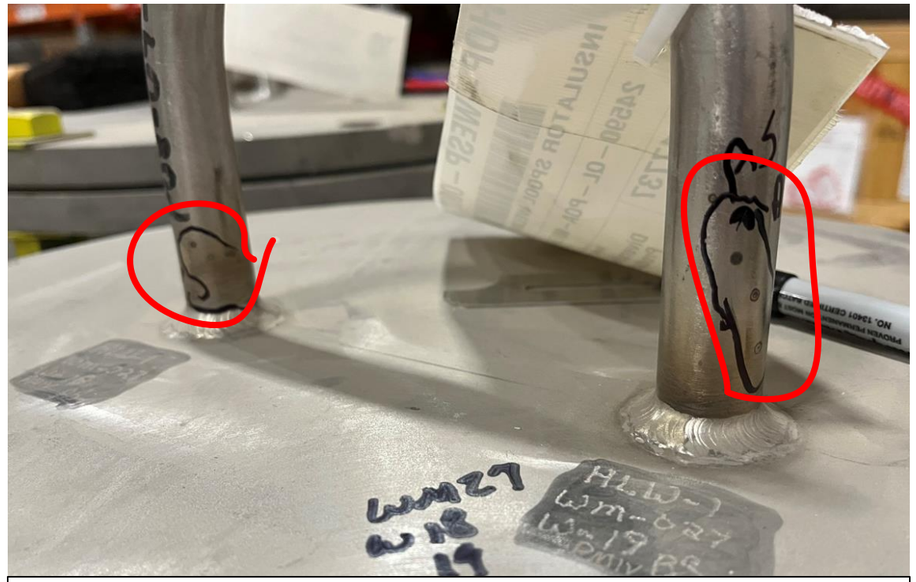
WM-26 W-32
Undersized weld, & Insufficient weld throat ~ 90% of over-all weld length



WM-23 W-1 - insufficient throat at 2-3 O'clock
NO PHOTO WAS TAKEN
10" tube to shell Lifting Lug Assembly @ Az 90

WM-23 W-2 – Insufficient throat at 7-10 O'clock
NO PHOTO WAS TAKEN
10" tube to shell Lifting Lug Assembly @ Az 270

Arc Strikes adjacent to WM-26 W-12



Arc Strikes adjacent to WM-27 W-18& 19

24590-WTP-NCR-MGT-22-0489
Attachment 3,
3 of 3
Photos of areas rejected

24590-HLW-FIR-CON-22-00006
Attachment 3
HOP-WESP-00001
Rejected welds - Sheet 3 of 3

24590-HLW-FIR-CON-22-00006

Page _____ of _____

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0490

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

24590-WTP-NCR-MGT-22-0490

NCR Header

HOP-WESP-00002
Initial Inspection

Weld ID/Description			See Weld map sht #	Dia.	Weld Type	Weld Size ID	Weld Size OD	Acc/Rej	By /Date	
WM-30 w-1	Skirt to Head	sht 1 detail C	1	NA	fs	NA	3/8"	**REJECT**	RAJ 10-29-22	~20" was undersized by ~1/16". Not able to inspect area from ~270° to 90°, weld hidden by the vessel support saddle & cribbing
WM-31 W-5	N-13, 10" tube to 1-1/4" plate	sht 2 Nozzle type 2	2	10"	cjp/fw	7/16"	3/8"	**REJECT**	TRB 10-28-22	Weld undersized @ 11:30- 2 and 4-5 Oclock
WM-32 W-1	10" tube to shell Lifting Lug Assembly @ Az 90	Section G-G sht 3	3	10"	cjp/fw	NA	3/8"	**REJECT**	TRB 10-29-22	insufficient throat at 1-3 & 4-5 O'clock
WM-32 W-2	10" tube to shell Lifting Lug Assembly @ Az 270	Section G-G sht 3	3	10"	cjp/fw	NA	3/8"	**REJECT**	TRB 10-29-22	insufficient throat for 1-1/2" area @ 8 O'clock
WM-34 W-6	Det Y lug to flange @ Az 0	vessel head weldment detail , x-x	5	NA	fw	NA	3/8"	**REJECT**	RAJ 10-28-22	Configuration of lug to head only permits 1/4" fillet on OD of lug to head Flange
WM-34 W-7	Det Y lug to flange @ Az 120	vessel head weldment detail , x-x	5	NA	fw	NA	3/8"	**REJECT**	RAJ 10-28-22	Configuration of lug to head only permits 1/4" fillet on OD of lug to head Flange
WM-34 W-8	Det Y lug to flange @ Az 240	vessel head weldment detail , x-x	5	NA	fw	NA	3/8"	**REJECT**	RAJ 10-28-22	Configuration of lug to head only permits 1/4" fillet on OD of lug to head Flange
WM-35 W-30	N-20, flange to 12" tube @ Az 180	Detail E-1, A-C	6	12"	fw	NA	3/8"	**REJECT**	RAJ 10-28-22	Undersized weld ~6" long @ 3 O clock by ~ 1/16".
WM-36 W-13	N-33 to N-17 Insulator spool weldment shell	sec C-C, 303, sh1	7	12"	cjp/fw	NA	1/8"	**REJECT**	RAJ 10-29-22	undersized weld ~1-1/2" long @ 2 O clock.
adjacent to WM-36 W-15	7/8" bar to 1" flange w/with N-14	sec C-C, 303, sh1	7	NA	fw	NA	1/4"	**REJECT**	RAJ 10-29-22	Arc strikes
WM-36 W-18	7/8" bar to 1" flange w/with N-16	sec C-C, 303, sh1	7	NA	fw	NA	1/4"	**REJECT**	RAJ 10-29-22	Undersized in weld throat by ~ 1/32"
adjacent to WM-36 W-18	7/8" bar to 1" flange w/with N-16	sec C-C, 303, sh1	7	NA	fw	NA	1/4"	**REJECT**	RAJ 10-29-22	Arc strikes
WM-36 W-19	7/8" bar to 1" flange w/with N-16	sec C-C, 303, sh1	7	NA	fw	NA	1/4"	**REJECT**	RAJ 10-29-22	Undersized in weld throat by ~ 1/32"

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0490

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Email	NCR Priority	Supplier/SubContractor
rajanyse@bechtel.us	2	Diversified Metal Products, Inc

Contract Number / Purchase Order	Quality Level	Custody Currently With
24590-QL-POA-MKE0-00001	Q	Construction

ASME Code Stamped Component or Assembly	Suspect/Counterfeit?	Commissioning Breakdown Structure
Yes	No	

Nonconformance Description

Inspection of all accessible external welds on the HOP-WESP-00002 was performed as per 24590-WTP-RPT-ENG-22-00003.

1. Numerous welds were found to be rejectable.
2. There were rejectable surface defects (arc strikes).
3. In one case the weld specified was not actually obtainable due to configuration of the vessel head and flange.

   See attachment 1, 2 & 3 of NCR for details

Additional Information

Drawing/Specification References:

Document Number	Rev	Document Title	Sections	Comments
24590-WTP-MRR-PROC-0017737	001	DIVERSIFIED METAL PRODUCTS INC		
24590-WTP-MN-CON-01-001-10-26	002	VT-ASME VIII NONDESTRUCTIVE EXAMINATION STANDARD		
24590-QL-POA-MKE0-00001-09-10	00C	DRAWING - HLW-2 WESP WELDMENTS & DETAILS, DMP 4145-M-403		
24590-QL-POA-MKE0-00001-09-09	00E	DRAWING - HLW-2 VESSEL DETAILS HOP-WESP-0002		
24590-QL-POA-MKE0-00001-09-08	00E	DRAWING - HLW-2 VESSEL DETAILS HOP-WESP-0002		
24590-QL-POA-MKE0-00001-09-06	00E	DRAWING - HLW-2 VESSEL DETAILS HOP-WESP-0002		
24590-QL-POA-MKE0-00001-09-05	00E	DRAWING - HLW-2 VESSEL DETAILS HOP-WESP-0002		
24590-QL-POA-MKE0-00001-09-04	00E	DRAWING - HLW-2 VESSEL SUBASSEMBLY HOP-WESP-0002		
24590-QL-POA-MKE0-00001-09-03	00E	DRAWING - HLW-2 WESP VESSEL ASSEMBLY HOP-WESP-00002		
24590-QL-POA-MKE0-00001-09-01	00E	DRAWING - HLW-2 WESP VESSEL ASSEMBLY HOP-WESP-0002		

Applicable Items

Item Number	Parent ID	Item Description	Item Location	Item Quantity
24590-HLW-MK-HOP-WESP-00002	HOP-WESP-00002	MELTER 2 WET ELECTROSTATIC PRECIPITATOR (WESP)	MHF - 4N545 W407	1

Condition Reports Associated with this NCR

Validator	Validation Date

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0490

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Yes

NCR Title

HLW - HOP-WESP-00002

Step 2: Are hold tags required?

Yes

Comments for Hold Tags

Step 3: Select the NCR Category

Supplier

Step 4: Stop Work?

No

Occurrence Reporting

No

Is this NCR related to an electrical item?

No

Step 5. Please check each WTP Area that is affected by this NCR.

HLW

Step 6. Select the Disposition Approval Authority to notify.

Skiffington, Mark

Step 7. Select the RQO to notify.

Padilla, Richard×

Condition Reports

Condition Reports Associated with this NCR

Are there any Condition Reports associated with this CR? If applicable, identify any Condition Reports associated to this NCR in the Condition Report section below.

If there are no associated Condition Reports, please enter N/A.

Condition Reports Associated to this NCR

Add CR Number

Work Order/Work Request and Standing/Shift Order Numbers

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0490

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Enter a Standing/Shift Order Number:

If not applicable please enter N/A.

Related Processes

Hold Tags

Hold Tags - View

Tags Hung	Tags Removed	All Tags Removed or Accounted For?
0	0	False

Conditional Releases

Interim Dispositions

Dispositions

Disposition #001 - View Status: In Progress NOT Ready for Implementation

Recommended Disposition Type	Marked for Final	Submitted Date	Submitted By	Process Status
Other	No	3/13/2023 6:18 PM	Padilla, Richard	Active

Process Task
Engineer Submits Final Disposition, Final Disposition

Is this a superseded Disposition?
☐ Check this box to hide this Disposition until closure

Currently Active Users
Castaneda, Melissa

VA Concurrence Date	DAA Approval Date	Recommended Disposition
-	-	Route to Engineering for Disposition.

Final Disposition Type	Submitted Date	Submitted By
	-	

Final Disposition

Attachments

REQUIRED FOR FINAL RECORD—Files attached here are part of the final record and will print with NCR.

Please ensure these files are formatted properly, and that documents (i.e. Word, Excel, emails, etc.) are converted to a PDF file format.

NCR 22-0490 FIR reject list HOP-WESP-00002.pdf	View Download History	12/16/2022 6:52 PM	Janysek, Roy
NCR-22-0490 Reject Photos HOP-WESP-00002.pdf	View Download History	12/16/2022 6:52 PM	Janysek, Roy
NCR-22-0490 weld map WESP-00002.pdf	View Download History	12/16/2022 6:52 PM	Janysek, Roy

Attach ...

Comments

ATTACHMENT C

In-Progress 24590-WTP-NCR-MGT-22-0490

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Add Comment

User	Date	Comment
Skiffington, Mark	3/13/2023 11:26 AM	reference 24590-HLW-FIR-CON-22-00005

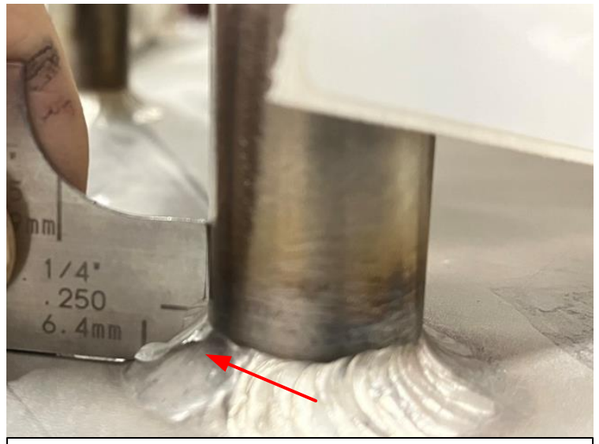
Save Comments

Routing Slip

Participants	Completed	Status	Result	Comments
Validating Authority Validates NCR	**12/16/2022 6:59 PM**			
Skiffington, Mark	3/13/2023	Completed	NCR is Valid	
Originator Notified of Valid NCR	**3/13/2023 2:26 PM**			
Janysek, Roy	3/13/2023	Notified		
RQO Notified for Hold Tags	**3/13/2023 2:26 PM**			
Padilla, Richard	3/13/2023	Notified		
Disposition Approval Authority Assigns Responsible Individual	**3/13/2023 2:26 PM**			
Skiffington, Mark	3/13/2023	Completed	Assign Responsible Individual	
Responsible Individual Creates Conditional Releases and Dispositions	**3/13/2023 2:26 PM**			
Padilla, Richard	-	*Active*		

ATTACHMENT C

WM-36 W-18, Undersized weld Throat & arc strike



WM-36 W-19, Undersized weld throat

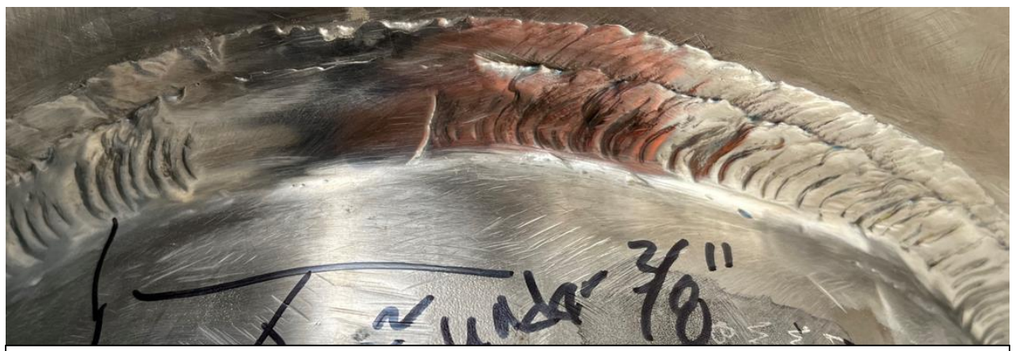
adjacent to WM-36 W-15, Arc Strikes

WM-36 W-13, Undersized weld ~ 1-1/2" long section

WM-34 W-6, 7 & 8 undersized at end, 3/8" is not achievable

WM-32 W-2, Insufficient throat for ~ 1-1/2" segment at 8 Oclock

WM-32 W-1, Insufficient throat at 1-3 & 4-5 O'clock



WM-31 W-5,Weld undersized @ 11:30- 2 and 4-5 Oclock

WM-35 W-30 – NO PHOTO TAKEN
Fillet weld undersized by ~1/16" for 6" long segment at 6 Oclock

WM-30 W-1 – NO PHOTO TAKEN
~20" undersized by ~ 1/16"

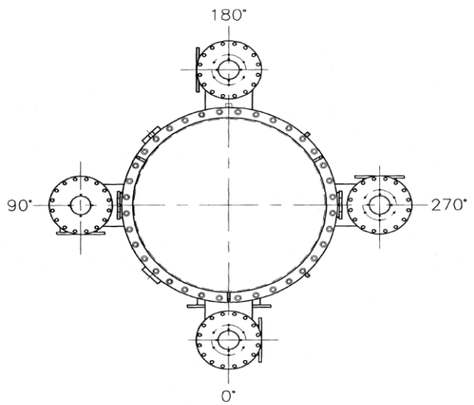
24590-WTP-NCR-MGT-22-0490
Attachment 3
1 of 1
Photos of rejects

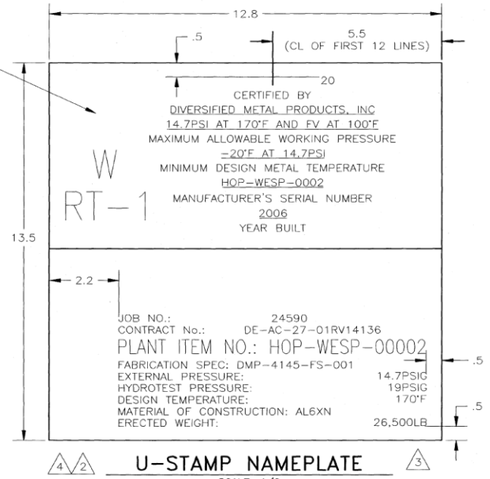
24590-HLW-FIR-CON-22-00005
Attachment 3
Rejected Weld Photo's - Sheet 1 of 1
HOP-WESP-00002

24590-HLW-FIR-CON-22-00005

Page _____ of _____

ATTACHMENT C



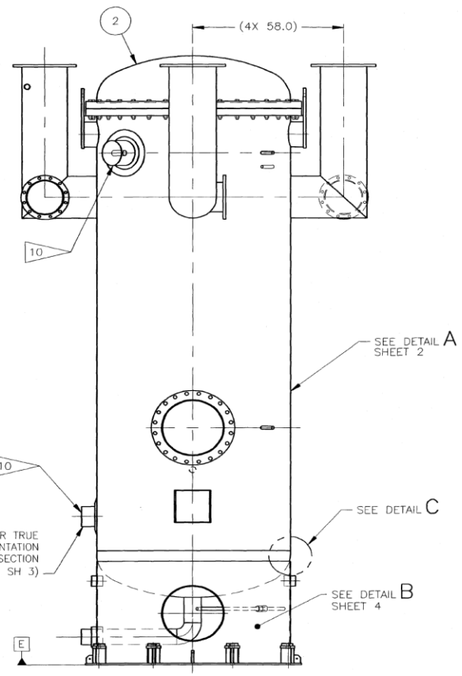


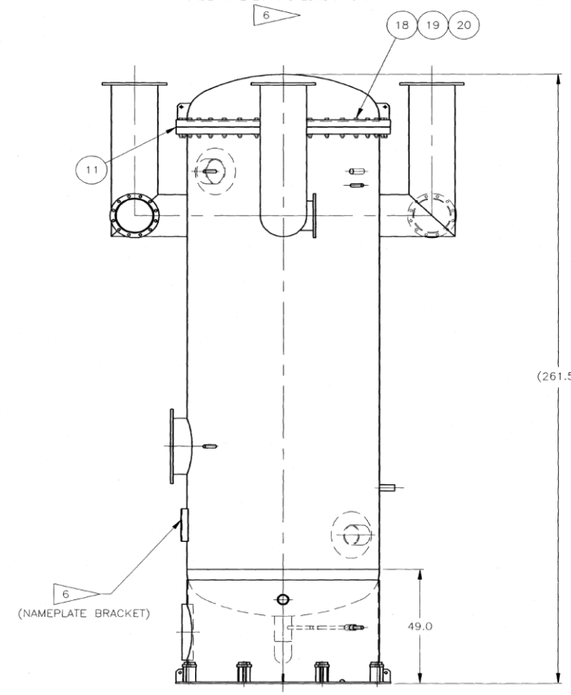
4 THIS AREA RESERVED FOR THE "U" STAMP CODE SYMBOL. THE CODE SYMBOL SHALL BE APPLIED AFTER ALL CODE REQUIREMENTS HAVE BEEN MET.

4 2 U-STAMP NAMEPLATE 3

SCALE: 1/2

LOCATE ON BRACKET CENTERED UNDER THE 24" INSPECTION PORT

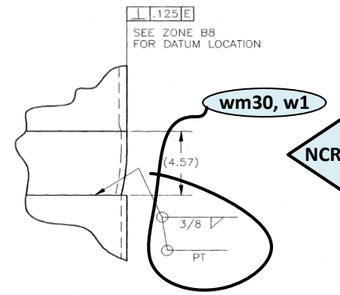




1 VESSEL SUBASSEMBLY

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

VESSEL TO BE CONSTRUCTED IN STRICT ACCORDANCE WITH 2001 EDITION, 2002 ADDENDA OF THE ASME CODE SECTION VIII DIVISION 1 FOR PRESSURE VESSELS AND IS TO BE SO STAMPED. INSPECTION BY HSB GLOBAL STANDARDS				
4	DESIGN	MAX A WORKING	MAX A N & C	HYDRO TEST
PRESSURE PSIG @	14.7/FV	16	125	19
TEMPERATURE °F	170	170	AMBIENT	AMBIENT
LIMITED BY	NA	NA	NA	NA
WIND PRESS. LBS/SQ FT	NA	CORROSION ALLOW INCHES		.04
SEISMIC COEFFICIENT	NA	RADIOGRAPHIC EXAMINATION		RT-1
WEIGHT FULL W/ WATER LBS	65,000	POST WELD HEAT TREATMENT @ 1100 °F		NA
OPERATING WEIGHT LBS	26,500			



DETAIL C

SCALE: 1/4

NCR-22-0490

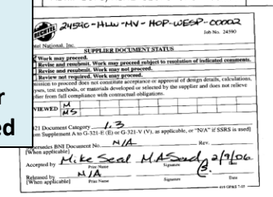
GENERAL NOTES:

1. FABRICATION AND WELDING SHALL BE IN ACCORDANCE WITH THIS DRAWING AND SPECIFICATION DMP-4145-FS-001.
2. ABBREVIATIONS ARE IN ACCORDANCE WITH ANSI Y1.1.
3. REMOVE ALL BURRS AND BREAK ALL SHARP EDGES.
4. ATTACH DRAIN LINE AND LEVEL TRANSMITTER LINE AFTER THE SKIRT IS WELDED TO THE VESSEL TO ENSURE PROPER FIT UP WITH NOZZLE OUTLETS THROUGH SKIRT.
5. OVERSIZE THICKNESS OF PLATES FOR FINISH MACHINING OF HEAD, VESSEL FLANGES AND REINFORCEMENT PADS IF REQD.
6. U-STAMP NAMEPLATE SHALL BE IN ACCORDANCE WITH ASME PRESSURE VESSEL STANDARDS. WELD NAMEPLATE TO NAMEPLATE BRACKET WITH CONTINUOUS FILLET AFTER FINAL TESTING.
7. THE LOCATION OF THE SHELL DIRECTLY UNDER THE LIFTING LUGS WILL BE ULTRASONICALLY EXAMINED OVER 100% OF THE AREA EXTENDING OUT 3 INCHES BEYOND THE PIPE WELDMENT.
8. TUBES (ITEMS 32, 33, 34, & 35) SHALL BE FABRICATED FROM 3/8" THK PLATE WITH FULL PENETRATION SEAM WELDS. SEAM WELDS SHALL BE 100% RADIOGRAPHED. SEAM LOCATIONS OPTIONAL.
9. VESSEL HEADS ARE 2:1 ELLIPSOIDAL WITH A 75.00 OD X 3/8 WALL THICKNESS. (ITEM 7) SHALL HAVE A 1.5 INCH STRAIGHT FLANGE AND SHALL BE WELD PREPPED, (ITEM 6) SHALL HAVE A 3.3 INCH STRAIGHT FLANGE AND SHALL NOT BE WELD PREPPED.
10. PREP NOZZLES N4 & N13 FOR A 37 1/2° BEVEL WELD.
11. PRIOR TO WELDING, ULTRASONIC EXAMINATION OF THE VESSEL BOUNDARY IS REQUIRED IN THE VICINITY WHERE COMPONENTS ARE ATTACHED BY FULL OR PARTIAL PENETRATION WELD.
12. ITEM 31 MAY BE FABRICATED FROM 3/8 THK PLATE (ITEM 37) WITH FULL PENETRATION SEAM WELD. SEAM WELD REQUIRES PENETRANT EXAMINATION. SEAM LOCATION OPTIONAL.
13. THE SPIRAL WOUND GASKET (ITEM 11) SHALL BE A RWI, OUTER RING 78 1/2" OD X 77 1/4" ID, INNER RING 76" OD X 75" ID. INNER RING, OUTER RING, AND WINDING MATERIAL SHALL BE AL6XN UNS N08367. FILLER MATERIAL SHALL BE GRAFOIL.
14. POST WELD HEAT TREAT AS REQD AT A LATER DATE.
15. ON NOZZLE N5 DUE TO SIZE AND SPACE RESTRAINTS RADIOGRAPHIC TESTING FOR THE WELD MAY NOT BE ACCURATELY COMPLETED. ULTRASONIC TESTING OF THE WELD IS AN ACCEPTABLE SUBSTITUTE IF NECESSARY.

PARTS LIST/MATERIAL LIST

QTY -020	QTY -010	PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION	MATERIAL/REFERENCE	SHEET	ITEM NO
	X	-010	VESSEL SUBASSEMBLY		1	1
X	1	-020	VESSEL HEAD WELDMENT		5	2
						3
						4
						5
1			TOP VESSEL HEAD	ASTM B688/ASME SB688 UNS N08367		6
	1		BOTTOM VESSEL HEAD	ASTM B688/ASME SB688 UNS N08367		7
						8
						9
						10
	1		SPIRAL WOUND GASKET	GARLOCK		11
						12
						13
						14
						15
						16
						17
	36		BOLT, HEX HD, 1 1/2-6 UNC-2A X 8" LONG	ASTM A193 GR B8		18
	36		HEX NUT, 1 1/2-6 UNC-2B	ASTM A194 GR 8F		19
	72		PLAIN WASHER, 1 1/2 (SERIES AND TYPE OPTIONAL)	18-8 SST		20
						21
						22
	1		ELBOW, 90° 6" SR, SCHED 40, BUTT WELD	ASTM B366/ASME SB366 UNS N08367		23
	AR		PIPE, 1" SCHED 40	ASTM B675/ASME SB675 UNS N08367		24
	AR		PIPE, 2" SCHED 40	ASTM B675/ASME SB675 UNS N08367		25
	AR		PIPE, 2" SCHED 40	ASTM A312/ASME SA312 GR TP 304L		26
	AR		PIPE, 4" SCHED 40	ASTM A312/ASME SA312 GR TP 304L		27
	AR		PIPE, 6" SCHED 40	ASTM B675/ASME SB675 UNS N08367		28
	AR		PIPE, 8" SCHED 40	ASTM B675/ASME SB675 UNS N08367		29
	AR		PIPE, 8" SCHED 40	ASTM A312/ASME SA312 GR TP 304L		30
	AR		PIPE, 24" SCHED 40S	ASTM A312/ASME SA312 GR TP 304L		31
	AR		TUBE, 10.75 OD X 10.00 ID	ASTM B688/ASME SB688 UNS N08367		32
	AR		TUBE, 12.75 OD X 12.00 ID	ASTM B688/ASME SB688 UNS N08367		33
	AR		TUBE, 18.00 OD X 17.25 ID	ASTM B688/ASME SB688 UNS N08367		34
	AR		TUBE, 24.00 OD X 23.25 ID	ASTM B688/ASME SB688 UNS N08367		35
	AR		PLATE, 1/4 THK	ASTM B688/ASME SB688 UNS N08367		36
	AR		PLATE, 3/8 THK	ASTM A240/ASME SA240 TYPE 304L		37
	AR		PLATE, 1/2 THK	ASTM B688/ASME SB688 UNS N08367		38
	AR		PLATE, 1/2 THK	ASTM A240/ASME SA240 TYPE 304L		39
	AR		PLATE, 1 1/4 THK	ASTM B688/ASME SB688 UNS N08367		40
	AR		PLATE, 1" THK	ASTM B688/ASME SB688 UNS N08367		41
	AR		PLATE, 1" THK	ASTM A240/ASME SA240 TYPE 304L		42
	AR		PLATE, 5/8 THK	ASTM A240/ASME SA240 TYPE 304L		43
	AR		PLATE, 1 1/2 THK	ASTM B688/ASME SB688 UNS N08367		44
AR	AR		PLATE, 3 THK	ASTM B688/ASME SB688 UNS N08367		45
AR	AR		PLATE, 3/8 THK	ASTM B688/ASME SB688 UNS N08367		46
	AR		PLATE, 2 THK	ASTM B688/ASME SB688 UNS N08367		47
				ASTM B675/ASME SB675 UNS N08367		48

24590-WTP-NCR-MGT-22-0490
Attachment 2,
1 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected



24590-HLW-FIR-CON-22-00005
Attachment 2
Weld Map – Sheet 1 of 9

From 24590-QL-POA-MKE0-00001-09-04

24590-HLW-FIR-CON-22-00005

Page _____ of _____

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT USED ON: DMP 4145-M-401	

WO	REV NO.	DESCRIPTION
4	4	INCORPORATED DCN-083 CHANGE U-STAMP NAMEPLATE AND VESSEL DATA TABLE
3	3	INCORPORATED DCN-081 CHANGE U-STAMP NAMEPLATE
2	2	INCORPORATED DCN-020 INCORPORATED DCN-072 CHANGE U-STAMP NAMEPLATE
	1	INCORPORATED DCN-003, -004 & -0
	0	RELEASED FOR CONSTRUCTION

REVISION

FILE NAME: M-402_01_REV 4.DWG

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ±.1 .XX ±.06 .XXX ±.030
ANGULAR ±1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

PO 24590-QL-POA-MKE0-00001

PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC

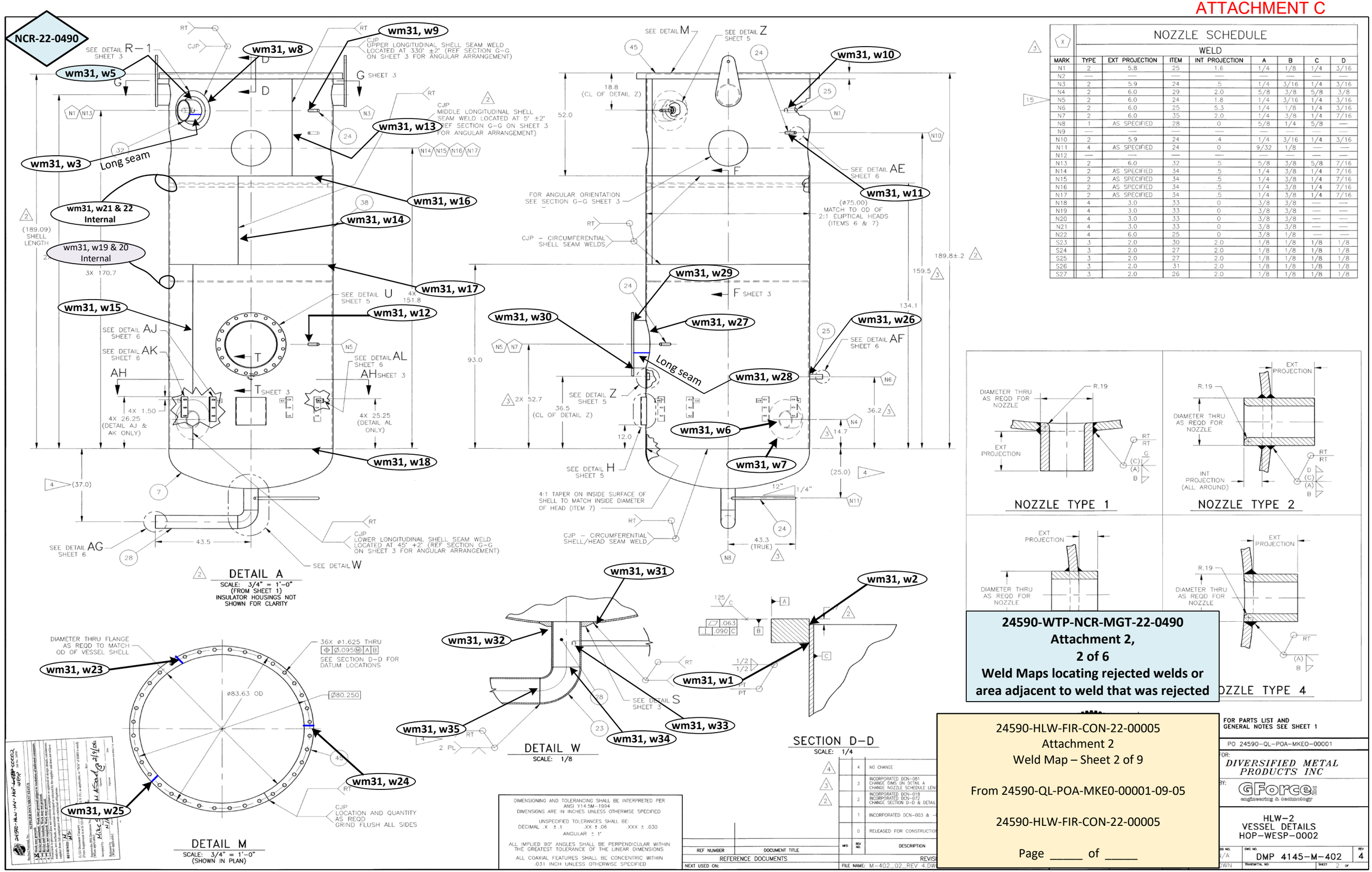
PREPARED BY: GForce engineering & technology

HLW-2
VESSEL SUBASSEMBLY
HOP-WESP-0002

DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-402	4
DWG SCALE: SHOWN	TRANSMITTAL NO.	SHEET 1 OF 6	

ATTACHMENT C

NCR-22-0490



MARK	TYPE	EXT PROJECTION	ITEM	INT PROJECTION	A	B	C	D
				WELD				
N1	2	5.8	25	1.6	1/4	1/8	1/4	3/16
N2	—	—	—	—	—	—	—	—
N3	2	5.9	24	.5	1/4	3/16	1/4	3/16
N4	2	6.0	29	2.0	5/8	3/8	5/8	3/8
N5	2	6.0	24	1.8	1/4	3/16	1/4	3/16
N6	2	6.0	25	5.3	1/4	1/8	1/4	3/16
N7	2	6.0	35	2.0	1/4	3/8	1/4	7/16
N8	1	AS SPECIFIED	28	0	5/8	1/4	5/8	—
N9	—	—	—	—	—	—	—	—
N10	2	5.9	24	.4	1/4	3/16	1/4	3/16
N11	4	AS SPECIFIED	24	0	9/32	1/8	—	—
N12	—	—	—	—	—	—	—	—
N13	2	6.0	32	.5	5/8	3/8	5/8	7/16
N14	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N15	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N16	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N17	2	AS SPECIFIED	34	.5	1/4	3/8	1/4	7/16
N18	4	3.0	33	0	3/8	3/8	—	—
N19	4	3.0	33	0	3/8	3/8	—	—
N20	4	3.0	33	0	3/8	3/8	—	—
N21	4	3.0	33	0	3/8	3/8	—	—
N22	4	6.0	25	0	3/8	1/8	—	—
S23	3	2.0	30	2.0	1/8	1/8	1/8	1/8
S24	3	2.0	27	2.0	1/8	1/8	1/8	1/8
S25	3	2.0	27	2.0	1/8	1/8	1/8	1/8
S26	3	2.0	31	2.0	1/8	1/8	1/8	1/8
S27	3	2.0	26	2.0	1/8	1/8	1/8	1/8

NOZZLE SCHEDULE

24590-WTP-NCR-MGT-22-0490
Attachment 2,
2 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

24590-HLW-FIR-CON-22-00005
Attachment 2
Weld Map – Sheet 2 of 9

From 24590-QL-POA-MKE0-00001-09-05

24590-HLW-FIR-CON-22-00005

Page _____ of _____

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M–1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ±.1 .XX ±.05 .XXX ±.030
ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REFERENCE DOCUMENTS
REF NUMBER | DOCUMENT TITLE
NEXT USED ON:

REV NO	MFD	DESCRIPTION
4		NO CHANGE
3		INCORPORATED DCN–081 CHANGE DIMS ON DETAIL A CHANGE NOZZLE SCHEDULE LEN
2		INCORPORATED DCN–018 INCORPORATED DCN–072 CHANGE SECTION D–D & DETAIL
1		INCORPORATED DCN–003 & –
0		RELEASED FOR CONSTRUCTION

FILE NAME: M–402_02_REV 4.DW

FOR PARTS LIST AND GENERAL NOTES SEE SHEET 1

PO 24590–QL–POA–MKE0–00001

FOR: DIVERSIFIED METAL PRODUCTS INC

BY: GForce engineering & technology

HLW–2
VESSEL DETAILS
HOP–WESP–0002

DWG NO. DMP 4145–M–402 REV 4
SHEET 2 OF

ATTACHMENT C

wm31, w30
wm31, w29
wm32, w6
wm32, w8
wm32, w5
wm32, w7
wm32, w3
wm32, w4
wm32, w2
NCR-22-0490
wm32, w1
NCR-22-0490
wm32, w9
wm32, w10
wm32, w13
wm32, w14
wm32, w15
wm32, w20
wm32, w19
wm32, w20
wm32, w20
wm32, w16
wm32, w17
wm32, w18
wm31, w6
wm31, w5
wm31, w7
wm51, w2
wm51, w3
wm51, w1
wm51, w4
wm51, w8
wm51, w7
wm51, w6
wm31, w21 & 22 Internal
wm31, w19 & 20 Internal

SECTION T-T
SCALE: 1/4 (FROM SHEET 2)

DETAIL P
SCALE: 3/4" = 1'-0"

DETAIL R-1
SCALE: 1/8 (FROM SHEET 2)

DETAIL R-2
SCALE: 1/8

SECTION G-G
SCALE: 3/4" = 1'-0" (FROM SHEET 2)

DETAIL V
SCALE: 1/8 (2 REQD) ROTATED 90° CW

DETAIL Q
SCALE: 3/4" = 1'-0" (SHOWN IN PLAN)

SECTION F-F
SCALE: 1/4 (FROM SHEET 2)

SECTION N-N
SCALE: 1/8

SECTION AH-AH
SCALE: 1"=1'-0"

24590-WTP-NCR-MGT-22-0490
Attachment 2,
3 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

24590-HLW-FIR-CON-22-00005
Attachment 2
Weld Map – Sheet 3 of 9

From 24590-QL-MKE0-00001-09-06

24590-HLW-FIR-CON-22-00005

Page _____ of _____

FOR PARTS LIST AND GENERAL NOTES SEE SHEET 1

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
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UNSPECIFIED TOLERANCES SHALL BE: DECIMAL .X ± .1 .XX ± .06 .XXX ± .030 ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	

NEXT USED ON:

MFG REV NO.	DESCRIPTION
4	NO CHANGE
3	NO CHANGE
2	INCORPORATE DCN-072 CHANGE SECTION G-G & SECTION N-N ADD SECTION AH-AH
1	INCORPORATED DCN-003 & -004

REVISION

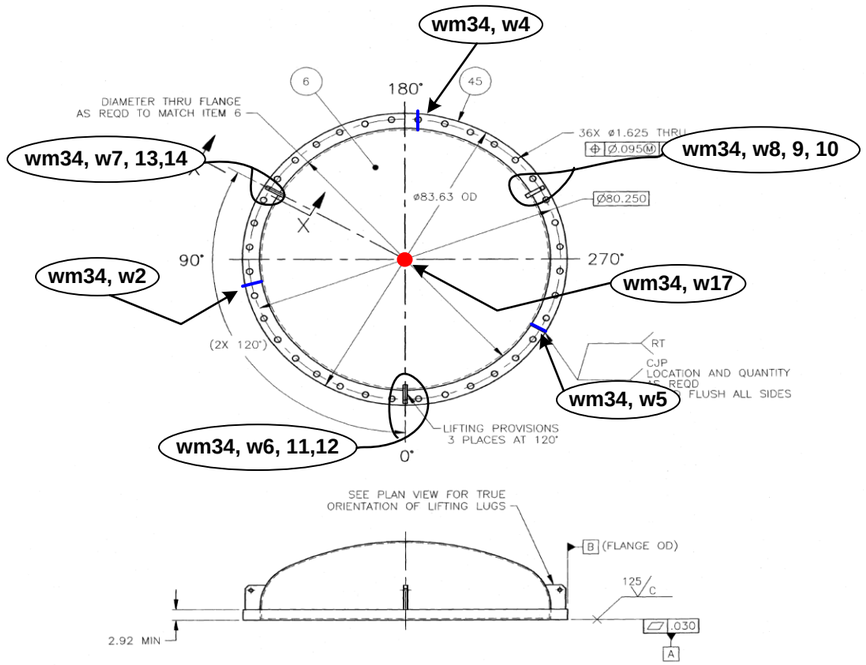
FILE NAME: M-402_03_REV 4.DWG

PO 24590-QL-POA-MKE0-00001
PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC
PREPARED BY: GFORCE engineering & technology

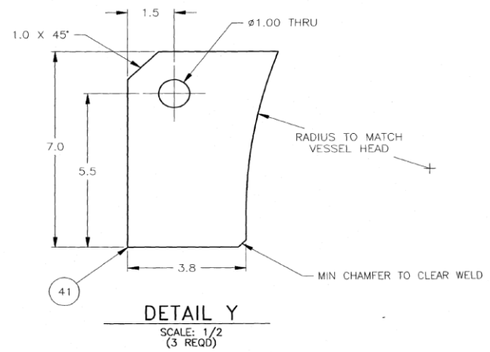
HLW-2
VESSEL DETAILS
HOP-WESP-0002

DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-402	4
DWG SCALE: SHOWN		TRANSMITTAL NO.	SHEET 3 OF

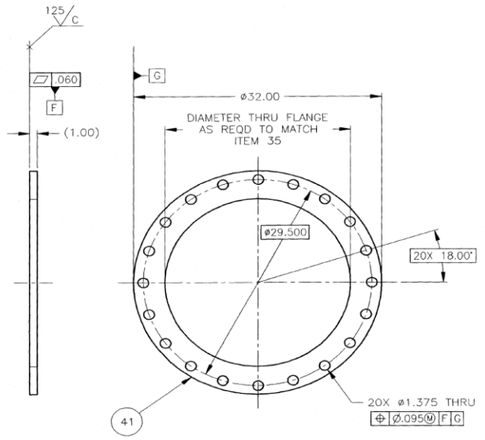
ATTACHMENT C



2 VESSEL HEAD WELDMENT
SCALE: 3/4" = 1'-0"

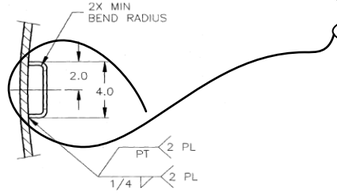


DETAIL Y
SCALE: 1/2
(3 REQD)

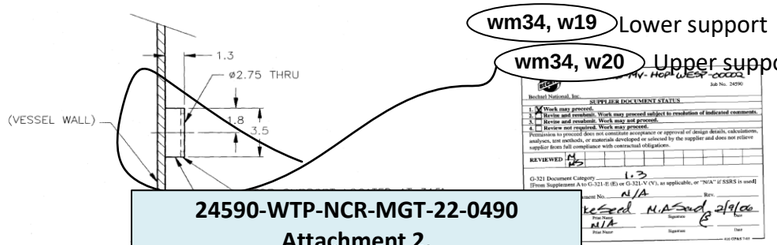


DETAIL U
SCALE: 1/8
(FROM SHEET 2)

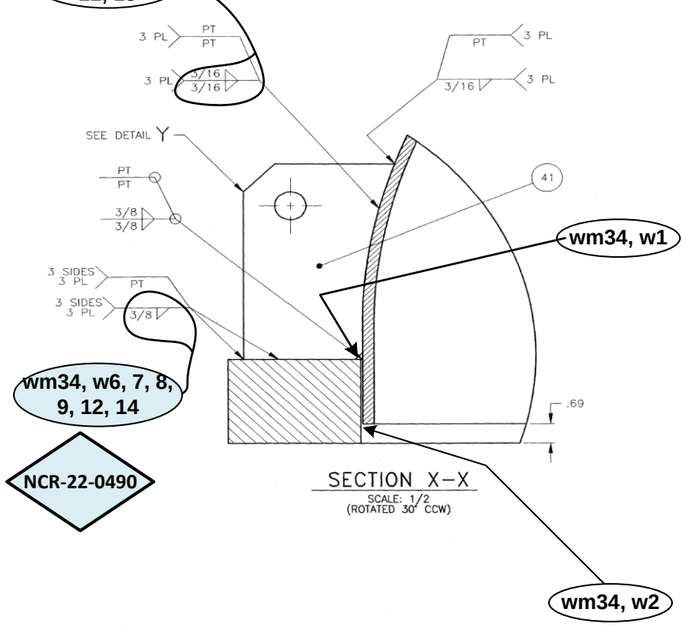
wm34, w18 Lower support
wm34, w21 Upper support



wm34, w19 Lower support
wm34, w20 Upper support

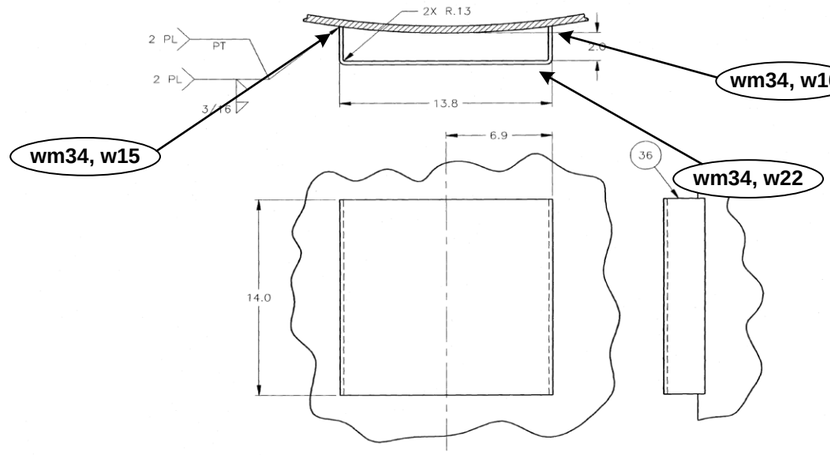


wm34, w10, 11, 13
wm34, w1
wm34, w6, 7, 8, 9, 12, 14
NCR-22-0490
wm34, w2



SECTION X–X
SCALE: 1/2
(ROTATED 30° CCW)

wm34, w16
wm34, w15
wm34, w22



DETAIL H
SCALE: 1/4
(FROM SHEET 2)

24590-WTP-NCR-MGT-22-0490
Attachment 2,
4 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

FOR PARTS LIST AND GENERAL NOTES SEE SHEET 1

24590-HLW-FIR-CON-22-00005
Attachment 2
Weld Map – Sheet 5 of 9

From 24590-QL-MKE0-00001-09-08

24590-HLW-FIR-CON-22-00005

Page _____ of _____

4	4	NO CHANGE
3	3	NO CHANGE
2	2	NO CHANGE
	1	INCORPORATED DCN-003 & -006
	0	RELEASED FOR CONSTRUCTION
WD	REV NO	DESCRIPTION

REVISION

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
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DECIMAL .X ±.1 .XX ± .06 .XXX ± .030
ANGULAR ± 1°
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER | DOCUMENT TITLE
REFERENCE DOCUMENTS
NEXT USED ON:

FILE NAME: M-402_05_REV 4.DWG

PO 24590-QL-POA-MKEO-00001
PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC
PREPARED BY: GForce engineering & technology

HLW-2
VESSEL DETAILS
HOP-WESP-0002

DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-402	4

DWG SCALE: SHOWN | TRANSMITTAL NO. | SHEET 5 OF

ATTACHMENT C

NCR-22-0490

wm35, w5 N14 @ 0º
wm35, w6 N15 @ 270º
wm35, w7 N16 @ 180º
wm35, w8 N17 @ 90º

wm35, w9 N14 @ 0º
wm35, w10 N15 @ 270º
wm35, w11 N16 @ 180º
wm35, w12 N17 @ 90º

wm35, w1 N14 @ 0º
wm35, w2 N15 @ 270º
wm35, w3 N16 @ 180º
wm35, w4 N17 @ 90º

wm35, w20 N14 @ 0º
wm35, w19 N15 @ 270º
wm35, w18 N16 @ 180º
m35, w17 N17 @ 90º

wm35, w13 N14 @ 0º
wm35, w14 N15 @ 270º
wm35, w15 N16 @ 180º
wm35, w16 N17 @ 90º

wm35, w21 N18 @ 0º
wm35, w22 N19 @ 270º
wm35, w23 N20 @ 180º
m35, w24 N21 @ 90º

wm35, w34 N18 @ 0º
wm35, w35 N19 @ 270º
wm35, w36 N20 @ 180º
m35, w37 N21 @ 90º

wm35, w26 N18 @ 0º
wm35, w28 N19 @ 270º
wm35, w30 N20 @ 180º
m35, w32 N21 @ 90º

wm35, w25 N18 @ 0º
wm35, w27 N19 @ 270º
wm35, w29 N20 @ 180º
m35, w31 N21 @ 90º

Long seam
Mitered Girth seam
Long seam
Long seam

DETAIL E-1
SCALE: 1/8
(FROM SHEET 3)
(3 PLACES)

DETAIL E-2
SCALE: 1/8
(FROM SHEET 3)
(1 PLACE)

DETAIL AC
SCALE: 1/4

DETAIL AD
SCALE: 1/8
ROTATED 90° CW

DETAIL AE
SCALE: FULL
(FROM SHEET 2)
(APPLIES TO NOZZLE N3, N5, N10 & N11)

DETAIL AF
SCALE: FULL
(FROM SHEET 2)
(APPLIES TO NOZZLE N1, N6 & N22)

DETAIL AJ 2
SCALE: 1/4
(FROM SHEET 2)
(1 AS SHOWN & 1 WITH BEVELED END OPPOSITE HAND)

DETAIL AK 2
SCALE: 1/4
(FROM SHEET 2)
(1 AS SHOWN & 1 WITH BEVELED END OPPOSITE HAND)

DETAIL AL 2
SCALE: 1/4
(FROM SHEET 2)
(4 REQD)

DIMENSIONING AND TOLERANCING SHALL BE INTERPRETED PER ANSI Y14.5M-1994
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
UNSPECIFIED TOLERANCES SHALL BE:
DECIMAL .X ±.1 .XX ±.06 .XXX ±.030
ANGULAR ±1
ALL IMPLIED 90° ANGLES SHALL BE PERPENDICULAR WITHIN THE GREATEST TOLERANCE OF THE LINEAR DIMENSIONS
ALL COAXIAL FEATURES SHALL BE CONCENTRIC WITHIN .031 INCH UNLESS OTHERWISE SPECIFIED

REF NUMBER	DOCUMENT TITLE
REFERENCE DOCUMENTS	
NEXT USED ON:	

WTD	REV NO.	DESCRIPTION
	4	NO CHANGE
	3	INCORPORATED DCN-081 DELETE PARALLELISM REQUIREMENT
	2	INCORPORATE DCN-072 ADD DETAIL AJ, DETAIL AK & DETAIL AL
	1	INCORPORATED DCN-003 & -004
	0	RELEASED FOR CONSTRUCTION

REVISION
FILE NAME: M-402_06_REV 4.DWG

24590-WTP-NCR-MGT-22-0490
Attachment 2,
5 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

24590-HLW-FIR-CON-22-00005
Attachment 2
Weld Map – Sheet 6 of 9

From 24590-QL-MKE0-00001-09-09

24590-HLW-FIR-CON-22-00005

Page _____ of _____

PO 24590-QL-POA-MKE0-00001
PREPARED FOR: DIVERSIFIED METAL PRODUCTS INC
PREPARED BY: GForce engineering & technology

HLW-2
VESSEL DETAILS
HOP-WESP-0002

DWG SIZE	BLDG NO.	DWG NO.	REV
F	N/A	DMP 4145-M-402	4

DWG SCALE: AS SHOWN | TRANSMITTAL NO: | SHEET 6 OF

ATTACHMENT C

wm27, w12 N17

wm27, w11 N17

wm27, w13 N17

NCR-22-0490

wm36, w15 N14

wm36, w17 N15

wm36, w19 N16

NCR-22-0490

NCR-22-0490

wm36, w14 N14

wm36, w16 N15

wm36, w18 N16

NCR-22-0490

PARTS LIST/MATERIAL LIST

QTY -030	QTY -020	QTY -010	PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION	MATERIAL/REFERENCE	SHEET	ITEM NO.
		X	-010	INSULATOR SPOOL – ELECTRICAL WELDMENT		1	1
	X		-020	INSULATOR SPOOL – WELDMENT		1	2
X			-030	18" BLIND FLANGE		2	3
							4
							5
							6
							7
		2		PIPE FLANGE, SLIP-ON, 1" CLASS 150 FL FACE	ASTM A182/ASME SA182 GR TP 304L		8
	1			PIPE FLANGE, SLIP-ON, 2" CLASS 150 FL FACE	ASTM B462/ASME SB462 UNS N08367		9
		AR		PIPE, 1" SCHED 40S	ASTM A312/ASME SA312 GR TP 304L		10
	AR			PIPE, 2" STD WALL (.154 THK)	ASTM B675/ASME SB675 UNS N08367		11
				PIPE, 12" SCHED 40S	ASTM A312/ASME SA312 GR TP 304L		12
				PIPE, 18" SCHED 40S	ASTM A312/ASME SA312 GR TP 304L		13
				PLATE, 1" THK	ASTM A240/ASME SA240 TYPE 304L		14
				PLATE, 1" THK	ASTM B688/ASME SB688 UNS N08367		15
	AR			PLATE, 1/2 THK	ASTM B688/ASME SB688 UNS N08367		16
5	1			TUBE, 18.00 OD X 17.25 ID X 24.00 LONG	ASTM B688/ASME SB688 UNS N08367		17
	AR			BAR STOCK, ø7/8	ASTM A479/ASME SA479 TYPE 304L		18
AR				BAR STOCK, ø1-1/8	ASTM A479/ASME SA479 TYPE 304L		19

SECTION E–E
SCALE: 1/8

wm36, w5 N32

wm36, w7 N31

wm36, w25 N30

wm36, w23 N29

wm36, w21 N28

wm36, w29 N14

wm36, w30 N15

wm36, w31 N16

wm36, w2 N17

wm36, w10 N17

wm36, w1 N17

wm36, w3 N17

wm36, w4 N17

wm36, w9 N17

Wm36, w?
Long Seam,
Not on map. Likely seamed pipe

Long Seam

wm36, w38 N14

wm36, w39 N15

wm36, w26 N14

wm36, w27 N15

wm36, w6 N32

wm36, w8 N31

wm36, w24 N30

wm36, w22 N29

wm36, w20 N28

1 INSULATOR SPOOL – ELECTRICAL WELDMENT
SCALE: 1/8

2 INSULATOR SPOOL – WELDMENT
SCALE: 1/8

wm36, w32 N14

wm36, w34 N15

wm36, w36 N16

wm36, w33 N14

wm36, w35 N15

wm36, w37 N16

wm37, w2 N17

wm37, w1 N17

3 18" BLIND FLANGE
SCALE: 1/8

DETAIL D
SCALE: 1/4
(FROM SHEET 1)

SECTION C–C
SCALE: 1/2

GENERAL NOTES:

24590-WTP-NCR-MGT-22-0490
Attachment 2,
6 of 6
Weld Maps locating rejected welds or area adjacent to weld that was rejected

24590-HLW-FIR-CON-22-00005
Attachment 2
Weld Map – Sheet 7 of 9

From 24590-QL-MKE0-00001-09-10 & 11

24590-HLW-FIR-CON-22-00005

Page _____ of _____

PO 24590-QL-POA-MKE0-00001-09-10

DIVERSIFIED METAL PRODUCTS INC

GFORCE engineering & technology

HLW-2
WELDMENTS & DETAILS
HOP-WESP-0002

BLDG NO. N/A | DWG NO. DMP 4145-M-403 | REV 1 | SHEET 1 OF 2

ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0236

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Add Notes

ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0236

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Add Notes

kdasher@bechtel.us	1	Diversified Metal Products Inc

Contract Number / Purchase Order	Quality Level	Custody Currently With
24590-QL-POA-MKE0-00001	Q	Construction

ASME Code Stamped Component or Assembly	Suspect/Counterfeit?	Commissioning Breakdown Structure
Yes	No	HLW/PTF

Nonconformance Description

This NCR aims to consolidate the currently open issues with the HLW Wet Electrostatic Precipitators (WESPs) into one Nonconformance. This NCR has been created in accordance with Section 6.10 and Attachment 5 of24590-HLW-GPP-RACN-FE-7104, HLW Nonconformance Reporting and Control. The HLW HOP WESP scope of the NCRs and CRs listed below are either superseded or closed by this NCR.

Note: This NCR only partially closes/supersedes all except Letter E and J

B) CA) CR 2013-00761:HLW-HOP Procurement Related Issues.

Action 7: Obtain documented determination from Electrical AHJ for removal of the UL requirements for cables rated over 35kV.

Action 33: Provide closure response for 8 RVP items listed in CCN 261879 indicated in the documents section titled, CR13-00761 #3 mech carryover items.pdf.

Condition Adverse to Quality:
RVP HOP-13-005 – The following Specifications and Drawings are outdated in MR 24590-QL-MRA-MKE0-00001 Rev 6 with no justification recorded within the MR or REM Report for the MR. See RVP for more information and full list of documents.

RVP HOP-13-023 – PARS Expediting Report for24590-QL-POA-MKE0-00001, run on 12-17-2012, identified 4 issues with vendor submittals such as not receiving any submittals for some G-321E categories or incomplete submittals. See RVP for more information and full list of documents.

RVP HOP-13-032 – Vendor Submittal24590-QL-POA-MKE0-00001-27-00001 Rev A was issued as document Category 8.0 –Analysis and Design Report, which is inline with Form 15EX, but should also have been issued as document Category 34.0 since it addresses the requirements referenced in form G-321V Category 34.0 – Factory Acceptance Test (FAT) Report, of the MR.

RVP HOP-13-033 – Vendor Submittal24590-QL-POA-MKE0-00001-14-01 Rev B is assigned to incorrect Document Category1.2 in PATS Report for 24590-QL-POA-MKE0-00001, which indicates it is incorrectly logged in as Category 1.2 in InfoWorks since the PARS report is generated from InfoWorks. The correct Document Category for this vendor Submittal is Category 1.2 per Forms 15EX and Form G-321E of the MR.

Affected Items: HOP-WESP-00001

Original CR and its attachments can be found in Attachment Folder “CR 2013-00761”.

B) CR 2014-00036: Issues identified against HLW VesselsHOP-WESP-00001 and HOP-WESP-00002 during HLW Black Cell and Hard-to-Reach Vessel Assessment, Documented in Report 24590-HLW-ES-ENG-13-001 Rev.0

Action3: Revise vendor calculations on HOP-WESP-00001 and 00002 to address many issues.

Condition Adverse to Quality:

Vessel weight is inconsistent across multiple documents. Code Calculations did not address nozzle neck analysis according to given specification. Disagreement of weld type between a calculation and drawing. Incorrect nozzle loads used in vendor nozzle neck analysis. Calculation is not in alignment with NQA-1requirements and WTP Calculation requirements. WESP “top hats” require analysis for ASME pressure boundary including weld sizing justification, flat plate(head) thickness checking and bolt sizing. Fatigue assessment required.

Affected Items: HOP-WESP-00001

Original CR can be found in Attachment Folder “CR 2014-0036”.

C) CR 2018-00116: Equipment Penetrating Fire Barriers a Shielded Hatch Requirement Not Met [RVP]-HLW Split Actions 24, 25, 29 & 32from PIER 10-00129

Action4: Fire Barriers in the HLW Facility

ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0236

Press F5 To refresh
Responsible Individual Creates Conditional Releases and Dispositions

Attach ... View Full PDF

New Interim Disposition New Disposition

Add Notes

Condition Adverse to Quality: Fatigue analysis not completed or unsatisfactory for HLW components listed in Attachment A of 24590-WTP-PL-ENG-07-0005 Rev.3 and issue associated documentation (for example, calculation(s) addressing fatigue assessment).

Affected Items: HOP-WESP-00001

Original CR and its attachments can be found in Attachment Folder “CR 2020-00485”.

E) NCR-CON-13-0157: Vendor Submittals for Vessel Not Reviewed By Independent Group

Description: The vendor submittals reviewed in this CDR (NCR) deal with seismic analysis of equipment. These reports were required to be reviewed by an independent group such as Equipment Seismic Qualification (ESQ) group or C/S/A engineering group in accordance with DOE standard 1020. However, this requirement was not followed and the reports were given approval Code Level 1. Therefore, a PIER was generated(24590-WTP-CRPT-QA-08-0406-B, “Inadequate Review of the Supplier Seismic Calc”). The PIER required that the ESQ group review these reports and prepare comments on Comment Resolution Forms (CRFs) and issue CDRs (NCRs) for resolving the comments. These forms are attached listing the deficiencies in the report.These forms also provide suggestions for resolution.

Additional Information: It is required that after the final disposition of this CDR (NCR), the document be sent to ESQ group for concurrence. ESQ group personnel dealing with CRPT08-0406 are located in the San Francisco office and they report to ESQ – Project Engineer located in the Richland office. The deficiencies are reported on the attached CRF’s EQ Log 3842.

Nonconformance: Seismic Analysis was not reviewed by independent organization.

Recommended Disposition: Engineering to resolve the subject documentation deficiencies.

Affected Items: HOP-WESP-00001

Original NCR and its attachments can be found in Attachment Folder “NCR-CON-13-0157”.

F) NCR-CON-13-0188: Vendor Submittals for Vessel Not Reviewed By Independent Group

Description: The vendor submittals reviewed in this CDR (NCR) deal with seismic analysis of equipment. These reports were required to be reviewed by an independent group such as Equipment Seismic Qualification (ESQ) group or C/S/A engineering group in accordance with DOE standard 1020. However, this requirement was not followed and the reports were given approval Code Level 1. Therefore a PIER was generated(24590-WTP-CRPT-QA-08-0406-B, “Inadequate Review of the Supplier Seismic Calc”). The PIER required that the ESQ group review these reports and prepare comments on Comment Resolution Forms (CRFs) and issue CDRs (NCRs) for resolving the comments. These forms are attached listing the deficiencies in the report. These forms also provide suggestions for resolution.

Additional Information: It is required that after the final disposition of this CDR (NCR), the document be sent to ESQ group for concurrence. ESQ group personnel dealing with CRPT08-0406 are located in the San Francisco office and they report to ESQ – Project Engineer located in the Richland office. The deficiencies are reported on the attached CRF’s Log 3841, CRF’s Log 3841A and CRF Log 3842.

Nonconformance: Seismic Analysis was not reviewed by independent organization.

Recommended Disposition: Engineering to resolve the subject documentation deficiencies.

Affected Items: HOP-WESP-00001

Original NCR and its attachments can be found in Attachment Folder “NCR-CON-13-0188”.

G) NCR-CON-14-0018: HLW Wet Electrostatic Precipitator Internals Not Procured Under NQA-1Description: HLW Wet Electrostatic Precipitators (WESP) contain internals such as electrodes, collector tube bundles, and insulators as well as the power supplies that were procured as commercial items per the MR 24590-QL-MRA-MKE0-00001. These items are required to perform an air permit function which requires these items to be procured under an NQA-1 program – which did not occur. These items must be dedicated or shown to be able to meet their air permit function as is.

Additional Information: reference 24590-WTP-CRPT-QA-07-336, Action 17 this NCR is to track the resolution of the Non-conformance of the HLW items separately from the LAW and partially superseded 24590-WTP-NCR-CON-08-0119.

Nonconformance: Items not procured under NQA-1 as they should have due to air permit.

Recommended Disposition: Design Engineering to evaluate a provide final disposition, This NCR is similar to 24590-WTP-NCR-CON-08-0119, Reference notes and work already completed in order to resolve this NCR.

Affected Items: 24590-HLW-EK-LVE-PSUP-30004,HOP-WESP-00001, HOP-WESP-00001-SUB0010

Original NCR and its attachments can be found in Attachment Folder “NCR-CON-14-0018”.

ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0236

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Responsible Individual Creates Conditional Releases and Dispositions

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New Interim Disposition New Disposition

Add Notes

Nonconformance: WESPs were incorrectly designed to SC-III instead of SC-I.

Recommended Disposition: Route to Engineering for evaluation and disposition.

Affected Items: HOP-WESP-00001

Original NCR can be found in Attachment Folder “NCR-CON-14-0022”.

I) NCR-MGT-19-0796: HLW Corroded and Rusted Electrodes forHOP-WESP-00001 and HOP-WESP-00002

Description: Found 182 out of the 184 electrodes corroded and/or rusted during a storage surveillance, see attached pictures.

Nonconformance: Corrosion found on most electrodes.

Affected Items: HOP-WESP-00001-SUB0010

Original NCR and its attachments can be found in Attachment Folder “NCR-MGT-19-0796”.

J) NCR-MGT-20-0086: HLW – Secondary doc Review Issues forHOP-WESP-00001 (NCR-CON-13-0045)

Description: This NCR supersedes 24590-WTP-NCR-CON-13-0045 for dispositions # 000, 110, 348, 396, 592, 752, and 838 for HLW scope ONLY. Disposition # 836 for LAW impacting is closed. Migration from CAIS to NCD.

A review of the quality verification documentation (QVD) package for the subject vessel was performed (Reference: 24590-WTP-PIER-MGT-11-0836-C,24590-WTP-GPG-PSQ-5002, and MRR-0017737 Rev 0.

(Note: 24590-WTP-GPG-PSQ-5002 was cancelled on 9/16/2014;current procedure is 24590-WTP-GPP-RAPS-SQ-1043, REVIEW OF QUALITY VERIFICATIONDOCUMENTATION, Revision 1 effective date 9/23/2019.)

1) The purpose of the review was to determine conformance of the QVD with the purchase order and specified requirements. It was found that the QVD submittal did not conform to all requirements as detailed below.

2) The review addressed 100 percent of the documentation required to be submitted under the G-321-V Form for activities including welding, nondestructive examinations (NDE), hydrostatic testing, positive materials identification (PMI), and material certifications and application as shown on the drawings. Related scope included record requirements such as legibility, SQR stamp, G-321-V form completion, PO revision, and correct DCN category.

3) The unsatisfactory and indeterminate findings are detailed in a combined PDF attachment to this NCR consisting of the following individual documents:

4) Review Result Summary for HOP-WESP-000015) Review Checklist for HOP-WESP-000016) See Notes below for details on how findings are identified and traceable to the QVD records.

Additional Information:
Note 1: Findings are identified by Document Category Number (DCN), description, and review checklist item number(s).Further detail may be found on the review checklist (CL) prepared during the review to tabulate and correlate the data.

Note 2: The HOP-WESP-00001 document package was paginated consecutively within the DCN category. References to these page numbers on the CL provide traceability to the relevant data.

Nonconformance: QVD submittal did not conform to all requirements.

Affected items: HOP-WESP-00001, Sub items see “Attachment1 (1)” from the Attachment Folder below.

Original NCR and its attachments can be found in Attachment Folder “NCR-MGT-20-0086”.

K) NCR-MGT-20-0100: HLW – Vendor UT weld exams have indeterminate quality due to questionable procedure, HLW HOP vessels (NCR-CON-15-0035)

Description: This NCR supersedes 24590-WTP-NCR-CON-15-0035 for HLW ONLY. Disposition # 673 for LAW is complete. Migration from CAIS to NCD. Diversified Metal Fab Ultrasonic Testing (UT) Examination Procedure 24590-QL-POA-MKE0-00001-03-05, Rev. 00A, was submitted to BNI on, or about, March 24 2003. This procedure was reviewed by the Responsible Engineer (RE) and an NDE Level III, and designated Code 2, with comments by the NDE Level III indicating that the procedure required demonstration and the addition of the acceptance criteria to the procedure. On, or about, November 17, 2003DMP submitted UT Examination Procedure Rev 00B to BNI with only one of the two original comments satisfied. This submittal was code 1 by the RE without all of the appropriate requirements being added into this revision. This leaves High Nickel material welds which were examined with the above submittal (N5) indeterminate.

ATTACHMENT C

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New Interim Disposition New Disposition

Add Notes

Description: This NCR supersedes 24590-WTP-NCR-CON-14-0040 for the HLW & MHF facility only. Disposition #376 for LAW has been completed. Migration from CAIS to NCD. These seismic related vendor submittals were required to be reviewed by an independent group such as Equipment Seismic Qualification (ESQ) group, or CSA engineering, in accordance with DOE standard 1020. However, this requirement was not followed and the reports were given approval with code level 1. A PIER was thus generated (24590-WTP-CRPT-QA-08-0406-B, "Inadequate Review of the Supplier Seismic Calc"). The PIER requires that the ESQ group review these reports, prepare comments on Comment Resolution Forms (CRFs), and issue CDRs/NCRs for resolving the comments. Until these reports are reviewed & the comments resolved, itis indeterminate whether this equipment can withstand the required seismicload.

Additional Information: The ESQ group personnel dealing with CRPT 08-0406 are located in the San Francisco office and they report to the EQ Project engineer located in the Richlandoffice.

Nonconformance: Vendor Seismic Analysis not reviewed by independent group as required.

Disposition # 00004: This disposition partially supersedes disposition #002. Forward to engineering to evaluate HOP-WESP-00001 and HOP-WESP-00002Affected Items: HOP-WESP-00001Original NCR and its attachments can be found in Attachment Folder “NCR-MGT-20-0110”.

M) NCR-MGT-23-0129: HLW – HOP-WESP-00001 & HOP-WESP-00002 RT film deficiencies

Description: RT film is not compliant with ASME Section V, Article 2 per 24590-HLW-FIR-CON-16-00124and the discussion in the main CR description of CR 2017-01393. Some of the issues relate to required film density and the use/visibility of the image quality indicator (penetrometer).

Disposition: Route to Engineering for Disposition.

Affected Items: HOP-WESP-00001Original NCR can be found in Attachment Folder “NCR-MGT-23-0129”.

Additional Information

NCRs MGT-22-0489 and MGT-22-0490
also pertain to the WESPs, however, work and/or dispositions have been
completed so they have not been included in this compilation. CR 2016-01856
Action 2 is tied to these two NCRs and as such is not included in this
compilation for the same reasons.

ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0236

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New Interim Disposition New Disposition

Add Notes

		EQUIPMENT PENETRATING FIRE BARIERS	
24590-WTP-3PS-MVB2-T0001	004	ENGINEERING SPECIFICATION FOR WELDING OF PRESSURE VESSELS, HEAT EXCHANGERS AND BOILERS	FOR LETTER J, REVISION FROM NCR-CON-13-0045, REV 001 FOR LETTER J
24590-WTP-3PS-MV00-T0002	001	ENGINEERING SPECIFICATION FOR SEISMIC QUALIFICATION CRITERIA FOR PRESSURE VESSELS	FOR LETTERS E, F
24590-WTP-3PS-MKE0-T0001	005	ENGINEERING SPECIFICATION FOR WET ELECTROSTATIC PRECIPITATORS	FOR LETTER B, REV 004 FOR LETTER F
24590-WTP-3PS-FB01-T0001	007	ENGINEERING SPECIFICATION FOR STRUCTURAL DESIGN LOADS FOR SEISMIC CATEGORY III AND IV EQUIPMENT AND TANKS	FOR LETTER I, rEV 001 FOR LETTERS E, G
24590-WTP-3PS-EVR2-T0001	004	ENGINEERING SPECIFICATION FOR WET ELECTROSTATIC PRECIPITATOR (WESP) POWER SUPPLY	FOR LETTER I
24590-QL-POA-MKE0-00001-18-00002	00A	DATA SHEET - APPENDIX D - HLW - VENDOR DATA SHEET PRELIMINARY	FOR LETTER B
24590-QL-POA-MKE0-00001-09-14	00F	DRAWING - HLW-1 VESSEL SUBASSEMBLY HOP-WESP-0001	FOR LETTER B, K, SEE NOTE 15 ON DRAWING
24590-QL-POA-MKE0-00001-07-10	00D	CALCULATIONS - HLW-1 WESP PRESSURE VESSEL SKIRT DESIGN CALCULATIONS, DMP-4145-CALC-022	FOR LETTER B, L, LOG 3841A (FOR ESQ USE)
24590-QL-POA-MKE0-00001-07-08	00A	CALCULATIONS - HLW-1 WESP ANALYSIS OF LIFTING TRUNNIONS, DMP-4145-CALC-023	FOR LETTER B
24590-QL-POA-MKE0-00001-07-07	00C	CALCULATIONS - HLW-1 WESP PRESSURE VESSEL DESIGN	FOR LETTER L, LOG 3841A (FOR ESQ USE)
24590-HLW-FIR-CON-16-00124	NA	HOP-WESP-00001 AND 00002	FOR LETTER M

Applicable Items

Item Number	Parent ID	Item Description	Item Location	Item Quantity
24590-HLW-EK-LVE-PSUP-30004	LVE-PSUP-30004	HLW WET ELECTROSTATIC PRECIPITATOR, MELTER 1, POWER SUPPLY	JOBSITE	
HOP-WESP-00001	HOP-WESP-00001	HLW MELTER 1 OFFGAS WET ELECTROSTATIC PRECIPITATOR (WESP)	JOBSITE	1
HOP-WESP-00001-SUB0010	HOP-WESP-00001	ELECTRODES FOR HLW-1	JOBSITE	91

Condition Reports Associated with this NCR

2013-00761, 2014-00036, 2018-00116, 2020-00485

Validator	Validation Date
Andrews, Paul	11/12/2024

Validate and Screen

Step 1: Is the NCR valid?

Yes

NCR Title

HLW - HOP-WESP-00001 Open Issues

ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0236

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Supplier

Step 4: Stop Work?

No

Occurrence Reporting

No

Is this NCR related to an electrical item?

Yes

Step 5. Please check each WTP Area that is affected by this NCR.

HLW

Step 6. Select the Disposition Approval Authority to notify.

Skiffington, Mark

Step 7. Select the RQO to notify.

Andrews, Paul×

Condition Reports

Condition Reports Associated with this NCR

Are there any Condition Reports associated with this CR? If applicable, identify any Condition Reports associated to this NCR in the Condition Report section below.

If there are no associated Condition Reports, please enter N/A.

Condition Reports Associated to this NCR

Condition Report Number	
2013-00761	✖ Remove
2014-00036	✖ Remove
2018-00116	✖ Remove
2020-00485	✖ Remove

Add CR Number

Standing/Shift Order Numbers

Enter a Standing/Shift Order Number:

If not applicable please enter N/A.

N/A

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In Progress 24590-WTP-NCR-MGT-24-0236

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All Tags Removed or Accounted For?
False

Conditional Releases

Interim Dispositions

Dispositions

Disposition #001 - View Status: In Progress NOT Ready for Implementation

Recommended Disposition Type	Marked for Final	Submitted Date	Submitted By	Process Status
Other	No	12/19/2024 5:57 PM	Homberger, Brian	Active

Process Task
Engineer Submits Final Disposition, Final Disposition

Is this a superseded Disposition?
☐ Check this box to hide this Disposition until closure

Currently Active Users
Welsch, Brandon

VA Concurrence Date	DAA Approval Date	Work Orders/Work Requests	Recommended Disposition
-	-	Engineering to provide final disposition.	

Final Disposition Type	Submitted Date	Submitted By
	-	

Final Disposition

Disposition #002 - View Status: In Progress NOT Ready for Implementation

Recommended Disposition Type	Marked for Final	Submitted Date	Submitted By	Process Status
Other	No	2/18/2025 7:18 PM	Anarwala, Farhan	Active

Process Task
Approve Disposition, Disposition Approval Authority Approves Disposition

Is this a superseded Disposition?
☐ Check this box to hide this Disposition until closure

Currently Active Users
Walling, Joe, George, Ronald, Andrews, Paul, Mccann, Adam, Benner, Michael, Deguire, Matt, Opet, Paul, Thompson, David, Rehwalt, Andrew, Nazzaro, Tony, Cowan, Chris, Lemoine, Jason, Bhatt, Ajay, Kump, Greg, Bentley, Tom, Hartsfield, Gregg, Rogers, Rich, Skiffington, Mark

VA Concurrence Date	DAA Approval Date	Work Orders/Work Requests	Recommended Disposition
-	-	HOP-WESP-0001 is being refabricated, hence, the current one is not needed. NCR is being Superseded.	

Final Disposition Type	Submitted Date	Submitted By
	-	

Final Disposition

ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0236

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New Interim Disposition New Disposition

Add Notes

Skiffington, Mark, Andrews, Paul, Mccann, Adam, Bentley, Tom, Walling, Joe, George, Ronald, Kump, Greg, Hartsfield, Gregg, Benner, Michael, Opet, Paul, Bhatt, Ajay, Cowan, Chris, Rogers, Rich, Rehwalt, Andrew, Lemoine, Jason, Thompson, David, Deguire, Matt, Nazzaro, Tony

VA Concurrence Date	DAA Approval Date	Work Orders/Work Requests	Recommended Disposition
-	-	Reject HOP-WESP-00001 per project procedures. HOP-WESP-00001 is being refabricated. Supersedes all open recommended and final dispositions #001 and #002.	

Final Disposition Type	Submitted Date	Submitted By
	-	

Final Disposition

Attachments

ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0236

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Add Notes

(CR 2020-00485) CR+20-00485+Change+Actionee+and+Action+Reviewer.pdf	View Download History	11/11/2024 2:17 PM Dasher, Kyle
(NCR-CON-13-0157) CRF3842.pdf	View Download History	11/11/2024 2:17 PM Dasher, Kyle
(NCR-CON-13-0188) CRF3841.pdf	View Download History	11/11/2024 2:17 PM Dasher, Kyle
(NCR-CON-13-0188) CRF3841A.pdf	View Download History	11/11/2024 2:17 PM Dasher, Kyle
(NCR-CON-13-0188) CRF3842.pdf	View Download History	11/11/2024 2:17 PM Dasher, Kyle
(NCR-CON-14-0018) 0913_001.pdf	View Download History	11/11/2024 2:17 PM Dasher, Kyle
(NCR-CON-14-0018) 24590-LAW-FIR-CON-12-00054 Pages 1 to 2.pdf	View Download History	11/11/2024 2:17 PM Dasher, Kyle
(NCR-CON-14-0018) CCN 247827 Duane Ripplinger Email.pdf	View Download History	11/11/2024 2:17 PM Dasher, Kyle
(NCR-CON-14-0018) FW_ IGBT Driver Boards.pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-CON-14-0018) NCR 08-0119 Interim Disposition Table 1-13-11.pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-CON-14-0018) NCR 08-0119 Interim Disposition Table Updated 5 11 12 (2).pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-MGT-19-0796) 20190801_102750.pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-MGT-19-0796) 20190801_102809.pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-MGT-19-0796) 20190912_151411.pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-MGT-19-0796) 20190912_151414.pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-MGT-19-0796) 20190912_152613.pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-MGT-20-0086) Copy of Attachment 1 (1).pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-MGT-20-0100) 24590-WTP-NCR-CON-15-0035_HLD-05050_05364.pdf	View Download History	11/11/2024 2:25 PM Dasher, Kyle
(NCR-MGT-20-0100) Attachment 1.pdf	View Download History	11/11/2024 2:27 PM Dasher, Kyle
(NCR-MGT-20-0100) NCR-CON-15-0035.pdf	View Download History	11/11/2024 2:27 PM Dasher, Kyle
(NCR-MGT-20-0110) NCR-CON-14-0040 attachments.pdf	View Download History	11/11/2024 2:27 PM Dasher, Kyle
24590-WTP-NCR-CON-13-0157 Complete.pdf	View Download History	11/11/2024 2:27 PM Dasher, Kyle
24590-WTP-NCR-CON-13-0188 Complete.pdf	View Download History	11/11/2024 2:27 PM Dasher, Kyle

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CR 2018-00116 Complete.pdf	View Download History	11/11/2024 2:27 PM Dasher, Kyle
CR 2020-00485 Complete.pdf	View Download History	11/11/2024 2:28 PM Dasher, Kyle
NCR-MGT-19-0796 Complete.pdf	View Download History	11/11/2024 2:28 PM Dasher, Kyle
NCR-MGT-20-0086 Complete.pdf	View Download History	11/11/2024 2:28 PM Dasher, Kyle
NCR-MGT-20-0100 Complete.pdf	View Download History	11/11/2024 2:28 PM Dasher, Kyle
NCR-MGT-20-0110 Complete.pdf	View Download History	11/11/2024 2:28 PM Dasher, Kyle
NCR-MGT-23-0129 Complete.pdf	View Download History	11/11/2024 2:28 PM Dasher, Kyle

Attach ...

Comments

Use this section to add comments to this NCR

Add Comment

Save Comments

Routing Slip

Participants	Completed	Status	Result	Comments
Notify initiator of NCR submittal	**11/11/2024 4:44 PM**			
Dasher, Kyle	11/11/2024	Notified		
Validating Authority Validates NCR	**11/11/2024 4:44 PM**			
Andrews, Paul	11/12/2024	Completed	NCR is Valid	
Originator Notified of Valid NCR	**11/12/2024 12:40 PM**			
Dasher, Kyle	11/12/2024	Notified		
RQO Notified for Hold Tags	**11/12/2024 12:40 PM**			
Andrews, Paul	11/12/2024	Notified		
Disposition Approval Authority Assigns Responsible Individual	**11/12/2024 12:40 PM**			
Cowan, Chris	12/3/2024	Completed	Assign Responsible Individual	
Responsible Individual Creates Conditional Releases and Dispositions	**12/3/2024 6:27 PM**			
Homberger, Brian	-	*Active*		

ATTACHMENT C

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ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0237

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You are no longer logged in. Please login and retry the form.

24590-WTP-NCR-MGT-24-0237

NCR Header

ATTACHMENT C

In Progress 24590-WTP-NCR-MGT-24-0237

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Responsible Individual Creates Conditional Releases and Dispositions

11/11/2024 4:43 PM	Engineering - Mechanical Systems	Dasher, Kyle

Email	NCR Priority	Supplier/SubContractor
kdasher@bechtel.us	1	Diversified Metal Products, Inc

Contract Number / Purchase Order	Quality Level	Custody Currently With
24590-QL-POA-MKE0-00001	Q	Construction

ASME Code Stamped Component or Assembly	Suspect/Counterfeit?	Commissioning Breakdown Structure
Yes	No	HLW/PTF

Nonconformance Description

This NCR aims to consolidate the currently open issues with the HLW Wet Electrostatic Precipitators (WESPs) into one Nonconformance. This NCR has been created in accordance with Section 6.10 and Attachment 5 of 24590-HLW-GPP-RACN-FE-7104, HLW Nonconformance Reporting and Control. The HLW HOP-WESP-00002 scope of the NCRs and CRs listed below are either superseded or closed by this NCR.
Note: This NCR only partially closes all except Letter E.

CR 2013-00761: HLW-HOP Procurement Related Issues.
Action 7: Obtain documented determination from Electrical AHJ for removal of the UL requirements for cables rated over 35kV.
Action 33: Provide closure response for 8 RVP items listed in CCN 261879 indicated in the documents section titled, CR13-00761 #3 mech carryover items.pdf.

Condition Adverse to Quality:
RVP HOP-13-005 – The following Specifications and Drawings
are outdated in MR 24590-QL-MRA-MKE0-00001 Rev 6 with no justification recorded within the MR or REM Report for the MR. See RVP for more information and full list of documents.

RVP HOP-13-023 – PARS Expediting Report for 24590-QL-POA-MKE0-00001, run on 12-17-2012, identified 4 issues with vendor submittals such as not receiving any submittals for some G-321E categories or incomplete submittals. See RVP for more information and full list of documents.

RVP HOP-13-032 – Vendor Submittal 24590-QL-POA-MKE0-00001-27-00001 Rev A was issued as document Category 8.0 – Analysis and Design Report, which is inline with Form 15EX, but should also have been issued as document Category 34.0 since it addresses the requirements referenced in form G-321V Category 34.0 – Factory Acceptance Test (FAT) Report, of the MR.

RVP HOP-13-033 – Vendor Submittal 24590-QL-POA-MKE0-00001-14-01 Rev B is assigned to incorrect Document Category 1.2 in PATS Report for 24590-QL-POA-MKE0-00001, which indicates it is incorrectly logged in as Category 1.2 in InfoWorks since the PARS report is generated from InfoWorks. The correct Document Category for this vendor Submittal is Category 1.2 per Forms 15EX and Form G-321E of the MR.
Affected Items: HOP WESP-00002

Original CR and its attachments can be found in Attachment Folder “CR 2013-00761”.

B) CR 2014-00036: Issues identified against HLW Vessels HOP-WESP-00001 and HOP-WESP-00002 during HLW Black Cell and Hard-to-Reach Vessel Assessment, Documented in Report 24590-HLW-ES-ENG-13-001 Rev.0
Action 3: Revise vendor calculations on HOP-WESP-00001 and 00002 to address many issues.
Condition Adverse to Quality:
Vessel weight is inconsistent across multiple documents. Code Calculations did not address nozzle neck analysis according to given specification. Disagreement of weld type between a calculation and drawing. Incorrect nozzle loads used in vendor nozzle neck analysis. Calculation is not in alignment with NQA-1 requirements and WTP Calculation requirements. WESP “top hats” require analysis for ASME pressure boundary including weld sizing justification, flat plate (head) thickness checking and bolt sizing. Fatigue assessment required.
Affected Items: HOP-WESP-00002

Original CR can be found in Attachment Folder “CR 2014-0036”.

C) CR 2018-00116: Equipment Penetrating Fire Barriers a Shielded Hatch Requirement Not Met [RVP]-HLW Split Actions 24, 25, 29 & 32 from PIER 10-00129
Action 4: Fire Barriers in the HLW Facility
Condition adverse to quality:
Based on the results of Action 18 of PIER 10-0129, complete the calculations or engineering analyses for the items identified in the HLW facility as needing further calculations or engineering analyses in CCN 183772.
Affected Items: HOP-WESP-00002

Original CR can be found in Attachment Folder “CR 2018-00116”.

D) CR 2020-00485: Split Action 2 from CR 14-1103 info HLW CR
Action 1: Complete fatigue assessment for applicable HLW components.
Condition Adverse to Quality:
Fatigue analysis not completed or unsatisfactory for HLW components listed in Attachment A of 24590-WTP-PL-ENG-07-0005 Rev.3 and issue

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by an independent group such as Equipment Seismic Qualification (ESQ) group or C/S/A engineering group in accordance with DOE standard 1020. However, this requirement was not followed, and the reports were given approval Code Level 1. Therefore, a PIER was generated (24590-WTP-CRPT-QA-08-0406-B, “Inadequate Review of the Supplier Seismic Calc”). The PIER required that the ESQ group review these reports and prepare comments on Comment Resolution Forms (CRFs) and issue CDRs (NCRs) for resolving the comments. These forms are attached listing the deficiencies in the report. These forms also provide suggestions for resolution.

Additional Information: It is required that after the final disposition of this CDR (NCR), the document be sent to ESQ group for concurrence. ESQ group personnel dealing with CRPT 08-0406 are located in the San Francisco office and they report to ESQ – Project Engineer located in the Richland office. The deficiencies are reported on the attached CRF’s log 3841 and 3841A.

Nonconformance: Seismic Analysis was not reviewed by independent organization.
Recommended Disposition: Engineering to resolve the subject documentation deficiencies.
Affected Items: HOP-WESP-00002

Original NCR and its attachments can be found in Attachment Folder “NCR-CON-13-0156”. NEED TO CREATE

F) NCR-CON-13-0188: Vendor Submittals for Vessel Not Reviewed By Independent Group
Description: The vendor submittals reviewed in this CDR (NCR) deal with seismic analysis of equipment. These reports were required to be reviewed by an independent group such as Equipment Seismic Qualification (ESQ) group or C/S/A engineering group in accordance with DOE standard 1020. However, this requirement was not followed, and the reports were given approval Code Level 1. Therefore, a PIER was generated (24590-WTP-CRPT-QA-08-0406-B, “Inadequate Review of the Supplier Seismic Calc”). The PIER required that the ESQ group review these reports and prepare comments on Comment Resolution Forms (CRFs) and issue CDRs (NCRs) for resolving the comments. These forms are attached listing the deficiencies in the report.
These forms also provide suggestions for resolution.

Additional Information: It is required that after the final disposition of this CDR (NCR), the document be sent to ESQ group for concurrence. ESQ group personnel dealing with CRPT 08-0406 are located in the San Francisco office and they report to ESQ – Project Engineer located in the Richland office. The deficiencies are reported on the attached CRF’s Log 3841, CRF’s Log 3841A and CRF Log 3842.

Nonconformance: Seismic Analysis was not reviewed by independent organization.
Recommended Disposition: Engineering to resolve the subject documentation deficiencies.
Affected Items: HOP-WESP-00002

Original NCR and its attachments can be found in Attachment Folder “NCR-CON-13-0188”.

G) NCR-CON-14-0018: HLW Wet Electrostatic Precipitator Internals Not Procured Under NQA-1
Description: HLW Wet Electrostatic Precipitators (WESP) contain internals such as electrodes, collector tube bundles, and insulators as well as the power supplies that were procured as commercial items per the MR 24590-QL-MRA-MKE0-00001. These items are required to perform an air permit function which requires these items to be procured under an NQA-1 program – which did not occur. These items must be dedicated or shown to be able to meet their air permit function as is.

Additional Information: reference 24590-WTP-CRPT-QA-07-336, Action 17 this NCR is to track the resolution of the Non-conformance of the HLW items separately from the LAW and partially superseded 24590-WTP-NCR-CON-08-0119.
Nonconformance: Items not procured under NQA-1 as they should have due to air permit.

Recommended Disposition:
Design Engineering to evaluate a provide final disposition, This NCR is similar to 24590-WTP-NCR-CON-08-0119, Reference notes and work already completed in order to resolve this NCR.
Affected Items: 24590-HLW-EK-LVE-PSUP-30007, HOP-WESP-00002, HOP-WESP-00002-SUB0005

Original NCR and its attachments can be found in Attachment Folder “NCR-CON-14-0018”.

H) NCR-CON-14-0022: Vessels Not Designed To SC-1 Criteria
Description: Basis for Design (BOD) Section 16 requires that equipment located in Hard to Reach (HTR) areas shall be designed to SC-1 criteria. HOP-WESP-00001 and 00002 were designed to SC-III criteria. Validation that these vessels meet SC-1 criteria is required.
Additional Information: Wet Electrostatic Precipitators HOP-WESP-00001 and 00002 were designed to seismic category SC-III criteria in accordance with the requirements at the time of delivery per 24590-QL-MRA-MKE0-00001. The WESP units are located in a Hard to Reach (HTR) area which requires analysis to the SC-I criteria per the Basis of Design section 16. The latest seismic criteria (SC-I) was revised after the WESP units were delivered. Appropriate ISRS curves must be supplied, and vessel analyzed for acceptance to the SC-I seismic criteria. Vessels are delivered and the PO has been closed out. This NCR satisfies action 16 of 24590-WTP-PIER-MGT-10-1278-B.

Nonconformance: WESPs were incorrectly designed to SC-III instead of SC-I.
Recommended Disposition: Route to Engineering for evaluation and disposition.
Affected Items: HOP-WESP-00002

Original NCR can be found in Attachment Folder “NCR-CON-14-0022”.

I) NCR-MGT-19-0796: HLW Corroded and Rusted Electrodes for HOP-WESP-00001 and HOP-WESP-00002
Description: Found 182 out of the 184 electrodes corroded and/or rusted during a storage surveillance, see attached pictures.
Nonconformance: Corrosion found on most electrodes.
Affected Items: HOP-WESP-00002-SUB0005

Original NCR and its attachments can be found in Attachment Folder “NCR-MGT-19-0796”.

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Responsible Individual Creates Conditional Releases and Dispositions

or about, November 17, 2003, DMP submitted UT Examination Procedure Rev 00B to BNI with only one of the two original comments satisfied. This submittal was code 1 by the RE without all of the appropriate requirements being added into this revision. This leaves High Nickel material welds which were examined with the above submittal (N5)
indeterminate.
Additional Information: This NCR is generated as a result of PIER 24590-WTP-PIER-MGT-14-1311-C.
Affected Items: HOP-WESP-00002, See attachments “24590-WTP-NCR-CON-15-0035_HLD-05050_05364.pdf” and “Attachment 1” from the Attachment Folder below.

Original NCR and its attachments can be found in Attachment Folder “NCR-MGT-20-0100”.

K) NCR-MGT-20-0110: HLW – Vendor Submittals For Equipment Not Reviewed By Independent Group (NCR-CON-14-0040)
Description: This NCR supersedes 24590-WTP-NCR-CON-14-0040 for the HLW & MHF facility only. Disposition #376 for LAW has been completed. Migration from CAIS to NCD.

These seismic related vendor submittals were required to be reviewed by an independent group such as Equipment Seismic Qualification (ESQ) group, or CSA engineering, in accordance with DOE standard 1020. However, this requirement was not followed and the reports were given approval with code level 1. A PIER was thus generated (24590-WTP-CRPT-QA-08-0406-B, "Inadequate Review of the Supplier Seismic Calc"). The PIER requires that the ESQ group review these reports, prepare comments on Comment Resolution Forms (CRFs), and issue CDRs/NCRs for resolving the comments. Until these reports are reviewed & the comments resolved, it is indeterminate whether this equipment can withstand the required seismic load.

Additional Information: The ESQ group personnel dealing with CRPT 08-0406 are located in the San Francisco office and they report to the EQ Project engineer located in the Richland office.

Nonconformance: Vendor Seismic Analysis not reviewed by independent group as required.
Disposition # 00004: This disposition partially supersedes disposition #002. Forward to engineering to evaluate HOP-WESP-00001 and HOP-WESP-00002
Affected Items: HOP-WESP-00002

Original NCR and its attachments can be found in Attachment Folder “NCR-MGT-20-0110”.

L) NCR-MGT-23-0129: HLW – HOP-WESP-00001 & HOP-WESP-00002 RT film deficiencies
Description: RT film is not compliant with ASME Section V, Article 2 per 24590-HLW-FIR-CON-16-00124 and the discussion in the main CR description of CR 2017-01393. Some of the issues relate to required film density and the use/visibility of the image
quality indicator (penetrometer).
Disposition: Route to Engineering for Disposition.
Affected Items: HOP-WESP-00002

Original NCR can be found in Attachment Folder “NCR-MGT-23-0129”.

Additional Information

NCRs MGT-22-0489 and MGT-22-0490 also pertain to the WESPs, however, work and/or dispositions have been completed so they have not been included in this compilation. CR 2016-01856 Action 2 is tied to these two NCRs and as such is not included in this
compilation for the same reasons.

Drawing/Specification References:

Document Number	Rev	Document Title	Sections	Comments

Applicable Items

Item Number	Parent ID	Item Description	Item Location	Item Quantity

Condition Reports Associated with this NCR

2013-00761, 2014-00036, 2018-00116, 2020-00485

Validator	Validation Date
Andrews, Paul	11/12/2024

Validate and Screen

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Step 2: Are hold tags required?

Yes

Comments for Hold Tags

BPS Holds to be used for items not on site.

Step 3: Select the NCR Category

Supplier

Step 4: Stop Work?

No

Occurrence Reporting

No

Is this NCR related to an electrical item?

Yes

Step 5. Please check each WTP Area that is affected by this NCR.

HLW

Step 6. Select the Disposition Approval Authority to notify.

Skiffington, Mark

Step 7. Select the RQO to notify.

Andrews, Paul

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Condition Reports

Condition Reports Associated with this NCR

Are there any Condition Reports associated with this CR? If applicable, identify any Condition Reports associated to this NCR in the Condition Report section below.

If there are no associated Condition Reports, please enter N/A.

Condition Reports Associated to this NCR

Condition Report Number
2013-00761
2014-00036
2018-00116
2020-00485

Standing/Shift Order Numbers

Enter a Work Order/Work Request Number:

If not applicable please enter N/A.

N/A

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Related Processes

Conditional Releases

Interim Dispositions

Dispositions

Attachments

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(NCR-CON-13-0156) CRF3841A.pdf	View Download	11/11/2024 3:51 PM Dasher, Kyle
(NCR-CON-13-0188) CRF3841.pdf	View Download	11/11/2024 3:51 PM Dasher, Kyle
(NCR-CON-13-0188) CRF3841A.pdf	View Download	11/11/2024 3:51 PM Dasher, Kyle
(NCR-CON-13-0188) CRF3842.pdf	View Download	11/11/2024 3:51 PM Dasher, Kyle
(NCR-CON-14-0018) 24590-LAW-FIR-CON-12-00054 Pages 1 to 2.pdf	View Download	11/11/2024 3:51 PM Dasher, Kyle
(NCR-CON-14-0018) CCN 247827 Duane Ripplinger Email.pdf	View Download	11/11/2024 3:51 PM Dasher, Kyle
(NCR-CON-14-0018) FW_ IGBT Driver Boards.pdf	View Download	11/11/2024 3:51 PM Dasher, Kyle
(NCR-CON-14-0018) NCR 08-0119 Interim Disposition Table 1-13-11.pdf	View Download	11/11/2024 3:51 PM Dasher, Kyle
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24590-WTP-NCR-CON-14-0018 Complete.pdf	View Download	11/11/2024 3:56 PM Dasher, Kyle
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CR 2020-00485 Complete.pdf	View Download	11/11/2024 3:56 PM Dasher, Kyle
CR+20-00485+Change+Actionee+and+Action+Reviewer.pdf	View Download	11/11/2024 3:56 PM Dasher, Kyle
CR13-00761+#3+mech+carryover+items.pdf	View Download	11/11/2024 3:56 PM Dasher, Kyle
NCR-MGT-19-0796 Complete.pdf	View Download	11/11/2024 3:56 PM Dasher, Kyle
NCR-MGT-20-0110 Complete.pdf	View Download	11/11/2024 3:56 PM Dasher, Kyle
NCR-MGT-23-0129 Complete.pdf	View Download	11/11/2024 3:56 PM Dasher, Kyle

Comments

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Routing Slip

Participants	Completed	Status	Result	Comments
Notify initiator of NCR submittal	**11/11/2024 4:45 PM**			
Dasher, Kyle	11/11/2024	Notified		
Validating Authority Validates NCR	**11/11/2024 4:45 PM**			
Andrews, Paul	11/12/2024	Completed	NCR is Valid	
Originator Notified of Valid NCR	**11/12/2024 12:42 PM**			
Dasher, Kyle	11/12/2024	Notified		
RQO Notified for Hold Tags	**11/12/2024 12:42 PM**			
Andrews, Paul	11/12/2024	Notified		
Disposition Approval Authority Assigns Responsible Individual	**11/12/2024 12:42 PM**			
Cowan, Chris	12/3/2024	Completed	Assign Responsible Individual	
Responsible Individual Creates Conditional Releases and Dispositions	**12/3/2024 6:28 PM**			
Homberger, Brian	-	*Active*		

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