PROGRAM SECTION
FOR
ASME SECTION XI, DIVISION 1

INSERVICE INSPECTION PROGRAM

APPLICABLE SITES

Specific Sites: ANO-1 ☐ ANO-2 ☐ GGNS ☐ IPEC ☐ JAF ☐ PLP☐ PNPS ☐ RBS ☐ VY ☐ W3 ☒ HQN ☐

Safety Related: ☒ Yes

☐ No

REVIEW AND CONCURRENCE SHEET

Program Section Title: **"ASME Section XI, Division 1 Inservice Inspection Program"**

Prepared By: _____ Date: 5/21/08

Checked By: _____ Date: 5/21/08

ANII: See ANII Letter in Doc. Review Package Date: 5/21/2008
Reviewed By (or NA)

Concurred: _____ Date: 5/21/08
Responsible Supervisor

REVISION STATUS SHEET

REVISION SUMMARY

REVISION	ISSUE DATE	DESCRIPTION
0		Initial Revision Issued For Use

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1.0 INTRODUCTION AND BACKGROUND

1.1 Introduction

Implementation of an Inservice Inspection Program in accordance with the requirements of ASME Section XI, Division 1, is mandated by the United States Code of Federal Regulations, Title 10, Part 50, Section 55a (10CFR50.55a).

This Program Section contains the details of the ASME Section XI, Division 1, Inservice Inspection (ISI) Program for the Waterford 3 Steam Electric Station (WF3).

WF3 is currently in the third 120-month Inservice Inspection Interval. The coordination of refueling outages and periods within the current Inservice Inspection intervals for WF3 is shown in Figure 2.5-4.

The scope of this Program Section includes the inspection of Class 1, 2, and 3 pressure retaining components and their supports. This Program Section also includes augmented inservice examinations that require NDE inspections and are maintained and implemented by the ISI Program. Other augmented examinations are maintained and implemented in independent programs due to their complexity, subject matter, or because the examinations are not related to the ISI Program.

Changes to the contents of this Program Section shall be performed in accordance with Nuclear Management Manual Procedure DC-174.

This inservice inspection plan is controlled by 10CFR50.55a. The original and any changes that meet 10CFR50.55a do not require a Process Applicability Determination.

This Program Section does not include System Pressure Testing of Class 1, 2, and 3 pressure retaining components. These requirements are contained in CEP-PT-001.

This Program Section does not include the requirements for the examination and testing of ASME Class CC and MC components and component supports. These requirements are contained in Program Section CEP-CISI-104.

The requirements for the repair and replacement of Class 1, 2, and 3 pressure retaining components and supports and ASME Class CC and MC components and component supports are contained in Program Section CEP-R&R-001.

Snubbers (pin-to-pin portion) will be examined and tested in accordance with plant Snubber Program. Snubber support hardware such as lugs, bolting, pins and clamps between the snubber pins and component (or the snubber pin and the building structure) will be examined in accordance with Section XI, Subsection IWF, per this Program Section.

1.2 Background

Waterford 3 Steam Electric Station (WF3)

The Waterford 3 Steam Electric Station nuclear steam supply system is a Combustion Engineering two loop Pressurized Water Reactor design. Entergy obtained a Construction Permit to build WF3 on November 14, 1974. After satisfactory plant construction and pre-operational testing was completed, a full power operating license, NPF-38, was granted on March 16, 1985. WF3 subsequently commenced commercial operation on September 24, 1985. The NRC Docket Number assigned to WF3 is 050-00382.

The initial 120-month ISI Program commenced with commercial operation on September 24, 1985. However, by authorization from the Director of the Office of Nuclear Regulation (Reference GNRI 96-00244) the first 120-month interval was extended until June 30, 1997. The second 120-month interval began on July 1, 1997 and continued through June 30, 2007, but was extended 11 months to May 31, 2008, as allowed by ASME Section XI, IWA-2430(d)(1).

2.0 BASIS FOR INSERVICE INSPECTION PROGRAM PLAN

The following text provides a listing and overview of the documents (Code of Federal Regulations, ASME Boiler and Pressure Vessel Codes, and Entergy documents) that form the basis of the ISI Program Plan. Specific implementation of the requirements in these documents is included in Section 3 of this Program Plan.

2.1 Code of Federal Regulations Requirements

Code of Federal Regulations Final Rules that affect the ISI Program Update for WF3 include the 10CFR50.55a Final Rule published September 29, 2005 (70FR188). 70FR188 incorporated by reference ASME Section XI, 2001 Edition with 2003 Addenda in paragraph (b)(2). 70FR188 also removed the mandatory modification in 10CFR50.55a(b)(2)(xxi)(C) and was effective October 31, 2005. Twenty-seven (27) limitations and modifications are included in 10CFR50.55a(b)(2) and are numbered (i) to (xxvii). In addition, one (1) limitation and modification is included in 10CFR50.55a(b)(3)(v) and in 10CFR50.55a(g)(4)(iii). Each of these limitations and modifications was reviewed by Entergy personnel and implemented as discussed in Section 3.1.1.

2.1.1 Plant Classification

Per 10CFR50.55a(g)(4), the specific components required to be included in an ISI Program per ASME Section XI are those components and component supports which are classified as ASME Code Class 1, 2, and 3. ASME Code Class is also discussed in IWA-1320, “Classifications”.

Components subject to Section XI requirements are shown on the Inservice Inspection Boundary Drawings discussed in Section 3.6. Pursuant to 10CFR50.55a, the inservice inspection requirements of ASME Section XI have been assigned to these components within the constraints of existing plant design.

In order to avoid confusion between ASME Code Class for design (typically ASME Section III) and ASME Code Class for inservice inspection (ASME Section XI), Entergy is utilizing ISI Class 1, 2, and 3 terminology for the application of ASME Section XI inservice inspection requirements.

Components considered to be optionally classified as ASME Code Class may be excluded from the Section XI ISI Program per IWA-1320(e).

Determination of the ASME Code Class (or equivalent to ASME Code Class for components not designed in accordance with ASME Section III requirements) for WF3 was performed as follows:

> The ASME Code Class of components was established in accordance with the safety classification criteria of ANSI N18.2, "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants", 1973, and ANSI N18.2a, "Revision and Addendum to Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants", 1975 as discussed in FSAR Section 3.2.2.

2.1.2 ASME Section XI Code of Record

In accordance with 10CFR50.55a(g), Entergy is required to update the ASME Section XI (the Code) ISI Program for WF3 once every ten years. The updated ISI Program is required to comply with the latest edition and addenda of the Code incorporated by reference in 10CFR50.55a one year prior to the start of the interval per 10CFR50.55a(g)(4)(ii).

The interval dates for WF3 are discussed in Section 1.2 of this document. Accordingly, based on “lock in” dates of May 31, 2007, the 2001 Edition with the 2003 Addenda of ASME Section XI is the version of Section XI that Entergy must meet for the current intervals at these plants.

Note that based on 10CFR50.55a(b)(2) requirements, the 1989 Edition of Section XI is being implemented for IWB-1220; the 1995 Edition with 1997 Addenda of Section XI is being implemented for IWA-2240; the 1998 Edition with 2000 Addenda of Section XI is being implemented for Examination Category B-D, Item Nos. B3.120 and B3.140; and the 2001 Edition of Section XI is being implemented for Appendix VIII and supplements to Appendix VIII and Article I-3000. See Section 3.1.1 for further details.

2.1.3 ASME Section XI Code Cases

Per 10CFR50.55a(g), ASME Code Cases that have been determined to be suitable for use in ISI Program Plans by the NRC are listed in Regulatory Guide 1.147 "Inservice Inspection Code Case Acceptability-ASME Section XI, Division 1". The use of Code Cases (other than those listed in Regulatory Guide 1.147) may be authorized by the Director of the Office of Nuclear Reactor Regulation upon request pursuant to 10CFR50.55a(a)(3). The ASME Section XI Code Cases incorporated into the ISI Program Plan are controlled per Section 3.1.2.

2.1.4 Requests For Relief and Requests For Alternatives

In cases where Entergy has determined that ASME Section XI requirements are impractical to implement or has determined that an alternative inspection approach to that specified in ASME Section XI is applicable, a 10CFR50.55a Request has been prepared and submitted to the NRC in accordance with 10CFR50.55a(a)(3)(i), 10CFR50.55a(a)(3)(ii) or 10CFR50.55a(g)(5), as applicable.

In cases where Entergy proposes alternatives to the ASME Section XI requirements that would provide an acceptable level of quality and safety, a Request for Alternative, as allowed by 10CFR50.55a(a)(3)(i) will be submitted to the NRC.

In cases where Entergy proposes alternatives to ASME Section XI when compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, a Request for Alternative as allowed by 10CFR50.55a(a)(3)(ii), will be submitted to the NRC.

Per 10CFR50.55a paragraph (a)(3) Requests for Alternatives "…may be used when authorized by the Director of the Office of Nuclear Reactor Regulation."

In cases where the ASME Section XI requirements for inservice inspection are considered impractical, Entergy will notify the NRC and submit information to support the determination, as required by 10CFR50.55a(g)(5)(iii). The submittal of this information will be referred to as a Request for Relief.

Per 10CFR50.55a paragraph (g)(6)(i), the Director of the Office of Nuclear Reactor Regulation will evaluate Requests for Relief per Paragraph (g)(5) and "…may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility".

Requests for Relief and Requests for Alternatives for the current interval at each plant are included in Section 3.4.

2.2 Augmented ISI Requirements

Augmented inservice inspection programs include examinations and tests that are in addition to those required by ASME Section XI.

2.2.1 Augmented Examination Types

Augmented inspection requirements fall into two broad groups or types:

- Examinations on components that are not normally subject to ISI per ASME Section XI (e.g., Reactor Coolant Pump Flywheel examination).
- Supplemental examination requirements for components that are already subject to examination in accordance with ASME Section XI, but for which a non-ASME Section XI requirement such as examination volume, frequency, selection criteria or test method is mandated, recommended or desired.

Augmented inspection requirements may be in response to regulatory requirements, recommendations or requirements from Industry groups, or Entergy internal commitments.

2.3 Risk-Informed ISI Program Plan

2.3.1 WF3 has submitted a request for alternative to use the Risk-Informed ISI (RI-ISI) very similar to that contained in ASME Code Case N-716. Otherwise known as the Risk-Informed / Safety-Based ISI Process. The request and any NRC correspondence is contained in Section 3.4.

2.3.2 RISK-INFORMED / SAFETY-BASED ISI PROCESS

The process used to develop the RIS_B Program conformed to the methodology described in Code Case N-716 and consisted of the following steps:

- Safety Significance Determination
- Failure Potential Assessment
- Element and NDE Selection
- Risk Impact Assessment

- Implementation Program
- Feedback Loop

2.3.3 Safety Significance Determination

The systems assessed in the RIS_B Program are provided in Table 3.1 of each plants template submittal. The piping and instrumentation diagrams and additional plant information including the existing plant ISI Program were used to define the piping system boundaries.

Per Code Case N-716 requirements, piping welds are assigned safety-significance categories, which are used to determine the treatment requirements. High safety-significant (HSS) welds are determined in accordance with the requirements below. Low safety-significant (LSS) welds include all other Class 2, 3, or Non-Class welds.

(1) Class 1 portions of the reactor coolant pressure boundary (RCPB), except as provided in 10 CFR 50.55a(c)(2)(i) and (c)(2)(ii);

(2) Applicable portions of the shutdown cooling pressure boundary function. That is, Class 1 and 2 welds of systems or portions of systems needed to utilize the normal shutdown cooling flow path either:

(a) As part of the RCPB from the reactor pressure vessel (RPV) to the second isolation valve (i.e., farthest from the RPV) capable of remote closure or to the containment penetration, whichever encompasses the larger number of welds; or

(b) Other systems or portions of systems from the RPV to the second isolation valve (i.e., farthest from the RPV) capable of remote closure or to the containment penetration, whichever encompasses the larger number of welds;

(3) That portion of the Class 2 feedwater system [> 4 inch nominal pipe size (NPS)] of pressurized water reactors (PWRs) from the steam generator to the outer containment isolation valve;

(4) Piping within the break exclusion region (> NPS 4) for high-energy piping systems as defined by the Owner. This may include Class 3 or Non-Class piping; and

(5) Any piping segment whose contribution to Core Damage Frequency (CDF) is greater than 1E-06 (or 1E-07 for Large Early Event Frequency (LERF)) based upon a plant-specific PSA of pressure boundary failures (e.g., pipe whip, jet impingement, spray, inventory losses). This may include Class 3 or Non-Class piping.

2.3.4 Failure Potential Assessment

Failure potential estimates were generated utilizing industry failure history, plant-specific failure history, and other relevant information. These failure estimates were determined using the guidance provided in EPRI TR-112657 (i.e., the EPRI RI-ISI methodology), with the exception of the deviation discussed below.

As described in section 2.3.3 above, CC N-716 augments the generic HSS welds with a search for plant-specific HSS welds based on the flooding analysis. The flooding analysis identifies areas that may be sensitive to floods (i.e., potential HSS areas) and then evaluates the failure potential of piping segments in areas that are sensitive to flooding. The failure frequencies used in the Entergy flooding studies were not based on Entergy plant specific data as there had not been significant flooding experience at Entergy. As such, failure frequencies were obtained from various industry reports as defined in each plants template submittal.

A deviation to the EPRI RI-ISI methodology has been implemented in the failure potential assessment for each site. Table 3-16 of EPRI TR-112657 contains criteria for assessing the potential for thermal stratification, cycling, and striping (TASCS). These additional considerations for determining the potential for thermal fatigue as a result of the effects of TASCS provide an allowance for considering cycle severity. The above criteria have previously been submitted by EPRI to the NRC for generic approval [letters dated February 28, 2001 and March 28, 2001, from P.J. O'Regan (EPRI) to Dr. B. Sheron (USNRC), *Extension of Risk-Informed Inservice Inspection Methodology*]. The methodology used in the Entergy RIS_B applications for assessing TASCS potential conforms to these updated criteria. Final materials reliability program (MRP) guidance on the subject of TASCS will be incorporated into the RIS_B applications, if warranted.

2.3.5 Element and NDE Selection

Code Case N-716 provides criteria for identifying the number and location of required examinations. Ten percent of the HSS welds shall be selected for examination as follows:

(1) Examinations shall be prorated equally among systems to the extent practical, and each system shall individually meet the following requirements:

(a) A minimum of 25% of the population identified as susceptible to each degradation mechanism and degradation mechanism combination shall be selected.

(b) If the examinations selected above exceed 10% of the total number of HSS welds, the examinations may be reduced by prorating among each degradation mechanism and degradation mechanism combination, to the extent practical, such that at least 10% of the HSS population is inspected.

(c) If the examinations selected above are not at least 10% of the HSS weld population, additional welds shall be selected so that the total number selected for examination is at least 10%.

(2) At least 10% of the RCPB welds shall be selected.

(3) For the RCPB, at least two-thirds of the examinations shall be located between the first isolation valve (i.e., isolation valve closest to the RPV) and the RPV.

(4) A minimum of 10% of the welds in that portion of the RCPB that lies outside containment (e.g., portions of the main feedwater system in BWRs) shall be selected.

(5) A minimum of 10% of the welds within the break exclusion region (BER) shall be selected.

In contrast to a number of RI-ISI Program applications where the percentage of Class 1 piping locations selected for examination has fallen substantially below 10%, Code Case N-716 mandates that 10% be chosen. Section 4 of EPRI TR-112657 was used as guidance in determining the examination requirements for these locations.

2.3.6 Additional Examinations

The RIS_B Program in all cases will determine through an engineering evaluation the root cause of any unacceptable flaw or relevant condition found during examination. The evaluation will include the applicable service conditions and degradation mechanisms to establish that the element(s) will still perform their intended safety function during subsequent operation. Elements not meeting this requirement will be repaired or replaced.

The evaluation will include whether other elements in the segment or additional segments are subject to the same root cause conditions. Additional examinations will be performed on those elements with the same root cause conditions or degradation mechanisms. The additional examinations will include HSS elements up to a number equivalent to the number of elements required to be inspected during the current outage. If unacceptable flaws or relevant conditions are again found similar to the initial problem, the remaining elements identified as susceptible will be examined during the current outage. No additional examinations need be performed if there are no additional elements identified as being susceptible to the same root cause conditions.

2.3.7 Risk Impact Assessment

The RIS_B Program has been conducted in accordance with Regulatory Guide 1.174 and the requirements of Code Case N-716, and the risk from implementation of this program is expected to remain neutral or decrease when compared to that estimated from current requirements.

This evaluation categorized segments as high safety significant or low safety significant in accordance with Code Case N-716, and then determined what inspection changes are proposed for each system. The changes include changing the number and location of inspections and in many cases improving the effectiveness of the inspection to account for the findings of the RIS_B degradation mechanism assessment. For example, examinations of locations subject to thermal fatigue will be conducted on an expanded volume and will be focused to enhance the probability of detection (POD) during the inspection process.

2.3.8 Quantitative Analysis

Code Case N-716 has adopted the EPRI TR-112657 process for risk impact analyses whereby limits are imposed to ensure that the change in risk of implementing the RIS_B Program meets the requirements of Regulatory Guides 1.174 and 1.178. The EPRI criterion requires that the cumulative change in CDF and LERF be less than 1E-07 and 1E-08 per year per system, respectively.

Entergy has conducted a risk impact analysis per the requirements of Section 5 of Code Case N-716 that is consistent with the “Simplified Risk Quantification Method” described in Section 3.7 of EPRI TR-112657. The analysis estimates the net change in risk due to the positive and negative influences of adding and removing locations from the inspection program.

The conditional core damage probability (CCDP) and conditional large early release probability (CLERP) values used to assess risk impact were estimated based on pipe break location. Based on these estimated

values, a corresponding consequence rank was assigned per the requirements of EPRI TR-112657 and upper bound threshold values were used as provided below. Consistent with the EPRI risk-informed methodology, the upper bound for all break locations that fall within the high consequence rank range was based on the highest CCDP value obtained (i.e., Large LOCA for W3).

The likelihood of pressure boundary failure (PBF) is determined by the presence of different degradation mechanisms and the rank is based on the relative failure probability. The basic likelihood of PBF for a piping location with no degradation mechanism present is given as x_o and is expected to have a value less than 1E-08. Piping locations identified as medium failure potential have a likelihood of $20x_o$. These PBF likelihoods are consistent with References 9 and 14 of EPRI TR-112657. In addition, the analysis was performed both with and without taking credit for enhanced inspection effectiveness due to an increased POD from application of the RIS_B approach.

Table 3.4-1 of each template submittal presents a summary of the RIS_B Program versus 1992 ASME Section XI Code Edition program requirements on a “per system” basis. The presence of FAC was adjusted for in the quantitative analysis by excluding its impact on the failure potential rank. The exclusion of the impact of FAC on the failure potential rank and therefore in the determination of the change in risk is performed, because FAC is a damage mechanism managed by a separate, independent plant augmented inspection program. The RIS_B Program credits and relies upon this plant augmented inspection program to manage this damage mechanism. The plant FAC Program will continue to determine where and when examinations shall be performed. Hence, since the number of FAC examination locations remains the same “before” and “after” and no delta exist, there is no need to include the impact of FAC in the performance of the risk impact analysis.

2.3.9 IMPLEMENTATION AND MONITORING PROGRAM

Upon approval of the RIS_B Program, procedures that comply with the guidelines described in EPRI TR-112657 will be prepared to implement and monitor the program. The applicable aspects of the ASME Code not affected by this change will be retained, such as inspection methods, acceptance guidelines, pressure testing, corrective measures, documentation requirements, and quality control requirements. Existing ASME Section XI program implementing procedures will be retained and modified to address the RIS_B process, as appropriate.

The monitoring and corrective action program will contain the following elements:

A. Identify

B. Characterize

C. (1) Evaluate, determine the cause and extent of the condition identified
(2) Evaluate, develop a corrective action plan or plans

D. Decide

E. Implement

F. Monitor

G. Trend

The RIS_B Program is a living program requiring feedback of new relevant information to ensure the appropriate identification of HSS piping locations. As a minimum, this review will be conducted on an ASME period basis. In addition, significant changes may require more frequent adjustment as directed by NRC Bulletin or Generic Letter requirements, or by industry and plant-specific feedback.

2.4 Methods of Examination and Personnel Qualification

The three types of examination methods employed for Inservice Inspection are visual, surface and volumetric. Each of these types describes a general technique which, in some cases, permits a selection of different methods within that type. The methods allow the Owner to select the most effective examination methodology based on factors such as component accessibility, radiation levels and component material of construction.

Administration and control of Section XI examinations and personnel qualification requirements are included in CEP-NDE-100, “Administration and Control of ENS NDE”

2.5 Inspection Intervals and Inspection Scheduling

2.5.1 Inspection Intervals

Per IWA-2430 of ASME Section XI, the inservice examinations required by IWB, IWC, and IWD, and the examinations and tests of IWF shall be completed during each of the inspection intervals for the service lifetime of the power unit. Because the Code of Federal Regulations, 10CFR50.55a(g)(4)(ii) specifies 120 month inspection intervals for inservice inspections, Inspection Program B must be employed.

Per IWA-2430(d), for components inspected under Program B, each of the inspection intervals may be extended or decreased by as much as one year. Adjustments shall not cause successive intervals to be altered by more than one year from the original pattern of intervals.

Inspection Interval timeline for WF3 is shown in Figure 2.5-1 Note that the Interval end date is pulled back to shorten the interval, as allowed by IWA-2430(d). This is being done to regain the allowable one year extension for future intervals.

Augmented examinations will align with the ASME Section XI interval unless stated otherwise in the document that governs the specific criteria for the examinations.

Examinations shall be scheduled and performed in accordance with this section and the applicable document that governs each augmented examination. Details of the augmented examinations are addressed in Appendix B.

There may be instances when augmented examinations and ASME Section XI examinations coincide for the same component. Examinations should be performed concurrently to optimize examination resources to the extent practical

2.5.2 Inspection Schedule

Per IWB-2410, inservice examinations of Class 1 components may be performed during plant outages such as refueling shutdowns or maintenance shutdowns. Per IWC-2410, IWD-2410, and IWF-2410, inservice examinations of Class 2, Class 3 and Class 1, 2, and 3 component supports, respectively may be performed during either system operation or plant outages.

Table 2.5-1 provides the minimum and maximum percentages of examinations required to be completed by each inspection period. this information. The following examinations listed in IWB-2412(a)(1) to (5), are not required to meet the criteria in Table 2.5-1.

(1) Examination Categories B-N-1, B-P, and B-Q

(2) Examinations partially deferred to the end of the inspection interval, as allowed by Examination Categories B-A, B-D, B-F.

(3) Examinations deferred to the end of the inspection interval, as allowed by Examination Categories B-A, B-L-1, B-M-1, B-N-2, B-N-3, and B-O.

(4) Examinations deferred until disassembly of a component for maintenance, repair/replacement activity, or volumetric examination as allowed by Examination Categories B-G-1, B-G-2, B-L-2, and B-M-2,

(5) Welded attachments examined as a result of component support deformation under Examination Category B-K.

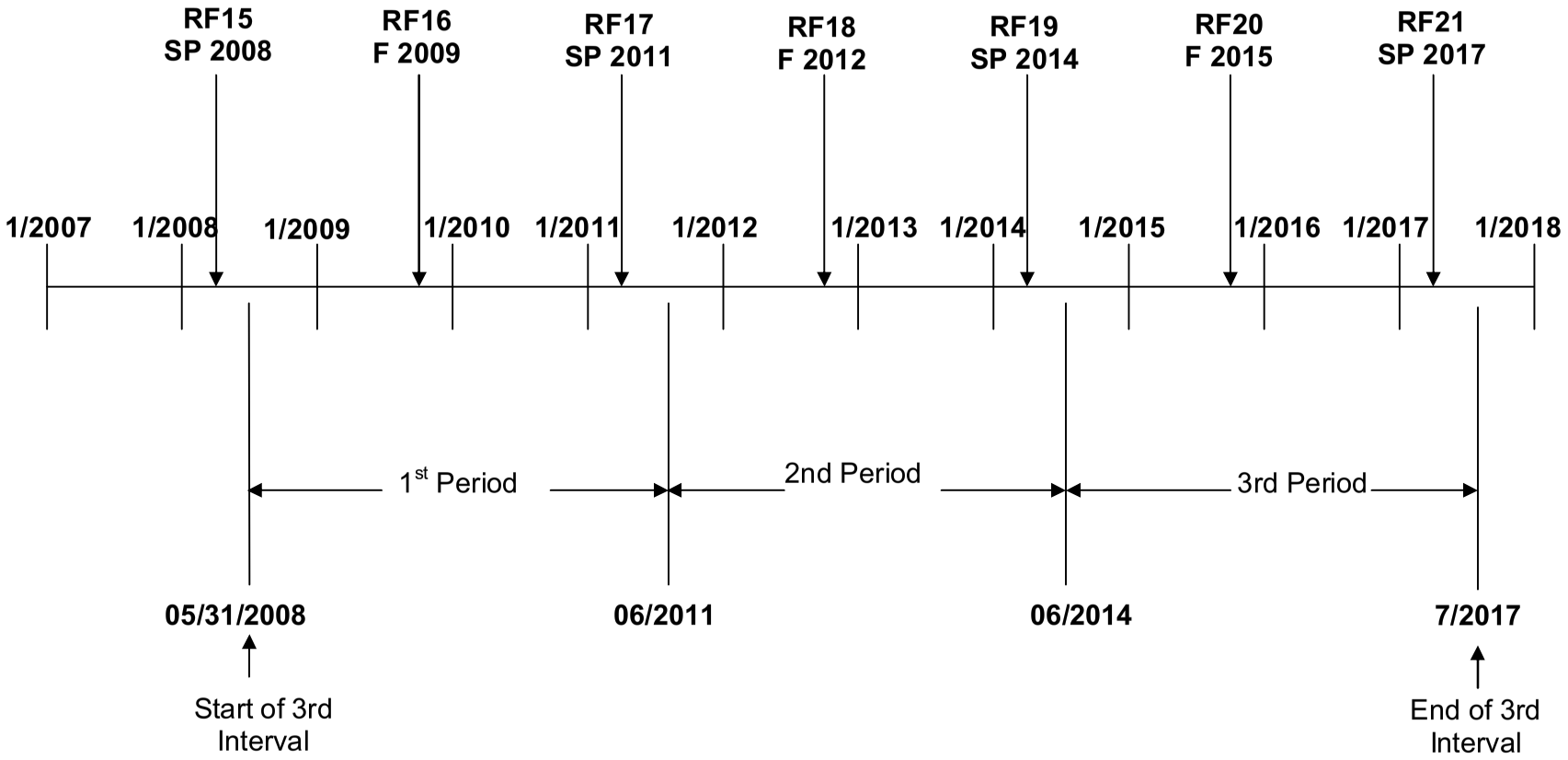
In the event that an Examination Category includes less than three components or items, the components or items may be examined in any two periods; or if in any one period if there is only one item or component in lieu of the requirements of Table 2.5-1.

TABLE 2.5-1
W3 COMPONENT/COMPONENT SUPPORT SCHEDULING

INSPECTION INTERVAL	INSPECTION PERIOD (CALENDAR YEARS OF PLANT SERVICE WITHIN THE INTERVAL)	MINIMUM EXAMINATIONS COMPLETED, %	MAXIMUM EXAMINATIONS COMPLETED, %
3rd	3	16	50
3rd	4	50[1]	75
3rd	3	100	100

[1] If the first period completion percentage for any examination category exceeds 34%, at least 16% of the required examinations shall be performed in the second period.

Figure 2.5-1: WF3 3rd Interval Schedule



2.6 Component and Component Support Selection Criteria

Class 1, 2, and 3 components and component supports were selected for examination per the requirements of the 2001 Edition with the 2003 Addenda of Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1, respectively. IWB-2420(a), IWC-2420(a), IWD-2420(a) and IWF-2420(a), state that the sequence of component and component support examinations established during the first interval shall be repeated during the successive intervals to the extent practical. Entergy is also adopting the alternative criteria of Code Case N-624, which states that the sequence of examinations may be modified provided the percentage of requirements of Tables IWB-2412-1, IWC-2412-1, IWD-2412-1 and IWF-2410-2 are met. This alternative criterion allows the sequence of examinations established during the first interval to be modified by factors such as scaffolding erection, radiological concerns, insulation removal or other considerations.

2.6.1 Selection of ISI Class 1 Pumps for Internal Surface Exams

The VT-3 examination of ISI Class 1 pump casing internal surfaces in accordance with Table IWB-2500-1, Examination Category B-L-2 is subject to the following criteria per Notes (1) and (2) of that table:

> (1) Examinations are limited to at least one pump in each group of pumps performing similar functions in the system, e.g. recirculating coolant pumps.
>
> (2) Examination is required only when the pump is disassembled for maintenance, repair or volumetric examination. Examination of the internal pressure boundary shall include the internal pressure retaining surfaces made accessible for examination by disassembly. If a partial examination is performed and a subsequent disassembly of that pump allows a more extensive examination, an examination shall be performed during the subsequent disassembly. A complete examination of one pump in each group is required only once during the interval.

ISI Class 1 pumps subject to examination at WF3 are identified in the ScheduleWorks® Module of IDDEAL Software.

2.6.2 Selection of ISI Class 1 Valves for Internal Surface Exams

The VT-3 examination of ISI Class 1 valve internal surfaces in accordance with Table IWB-2500-1, Examination Category B-M-2 is subject to the following criteria per Notes (2) and (3) of that table:

> (2) Examination is required only when the valve is disassembled for maintenance, repair or volumetric examination. Examination of the internal pressure boundary shall include the internal pressure retaining surfaces made accessible for examination by disassembly. If a partial examination is performed and a subsequent disassembly of that pump allows a more extensive examination, an examination shall be performed

during the subsequent disassembly. A complete examination of one valve in each group is required only once during the interval.

(3) Examinations are limited to at least one valve within each group of valves that are the same size, constructional design, (such as globe, gate, or check valves), and manufacturing method, and that perform similar functions in the system (such as containment isolation and system overpressure protection).

ISI Class 1 valves subject to examination at WF3 are identified in ScheduleWorks® Module of IDDEAL Software.

2.6.3 Selection of ISI Class 1 Valves for Bolting Examinations

The VT-1 examination of ISI Class 1 valve bolting, 2 in. and less in diameter is performed in accordance with Table IWB-2500-1, Examination Category B-G-2, including Note 2:

(2) For vessels, pumps, or valves, examination of bolting is required only when the component is examined undr Examination Category B-B, B-L-2, or B-M-2. Examination of bolted connection is required only once during the interval.

ISI Class 1 valves subject to bolting examination at WF3 are identified in ScheduleWorks® Module of IDDEAL Software. Note that examination of each valve in a “Unique” group of valves is required a maximum of once during the inspection interval.

2.6.4 Selection of ISI Class 1 Valves for Body Weld Examinations

The volumetric examination of ISI Class 1 valve body welds is performed in accordance with Table IWB-2500-1, Examination Category B-M-1, Notes (3) and (4):

(3) Examinations are limited to at least one valve within each group, of valves that are the same size, constructional design, (such as globe, gate, or check valves), and manufacturing method, and that perform similar functions in the system (such as containment isolation and system overpressure protection).

(4) Includes essentially 100% of weld length.

ISI Class 1 valves subject to body weld examination at WF3 are identified in ScheduleWorks® Module of IDDEAL Software.

2.7 Examination Evaluation Criteria

Evaluation of reportable indications detected during the inservice inspection of components and component supports will be performed in accordance with Article IWA-3000 of ASME Section XI, 2001 Edition with 2003 Addenda. Specific evaluation requirements for Class 1, 2, and 3 components are included

in IWB-3000, IWC-3000, and IWD-3000, respectively. Specific evaluation requirements for Class 1, 2, and 3 component supports are included in IWF-3000. Indications detected may be evaluated by other nondestructive methods, where practical, to assist in the determination of flaw characteristics (e.g. size, shape, location, orientation, etc.) before final disposition is made.

Evaluation of reportable indications detected during the augmented examination of components and component supports will be performed in accordance with this section and the applicable document that governs each augmented examination.

2.7.1 Successive Inspections

Successive Inspections on Class 1 components will be performed in accordance with IWB-2420 which includes the following criteria in IWB-2420(b), (c) and (e):

> (b) If a component is accepted for continued service in accordance with IWB-3132.3 or IWB-3142.4, the areas containing flaws or relevant conditions shall be reexamined during the next three inspection periods listed in the schedule of the inspection program of IWB-2400. Alternatively, acoustic emission may be used to monitor growth of existing flaws in accordance with IWA-2234.
>
> (c) If the reexaminations required by IWB-2420(b) reveal that the flaws or relevant conditions remain essentially unchanged for three successive inspection periods, the component examination schedule may revert to the original schedule of successive inspections.
>
> (e) If welded attachments are examined as a result of identified component support deformation, and the results of these examinations exceed the acceptance standards of Table IWB-3410-1, successive examinations shall be performed, if determined necessary, based on an evaluation by Entergy.

Successive Inspections on Class 2 components will be performed in accordance with IWC-2420 which includes the following criteria in IWC-2420(b), (c) and (d):

> (b) If a component is accepted for continued service in accordance with IWC-3122.3 or IWC-3132.3, the areas containing flaws or relevant conditions shall be reexamined during the next inspection period listed in the schedule of the inspection program of IWC-2400. Alternatively, acoustic emission may be used to monitor growth of existing flaws in accordance with IWA-2234.
>
> (c) If the reexaminations required by IWC-2420(b) reveal that the flaws or relevant conditions remain essentially unchanged for

the next inspection period, the component examination schedule may revert to the original schedule of successive inspections.

(d) If welded attachments are examined as a result of identified component support deformation, and the results of these examinations exceed the acceptance standards of Table IWC-3410-1, successive examinations shall be performed, if determined necessary, based on an evaluation by Entergy.

As an alternative for ISI Class 1 and ISI Class 2 vessels with subsurface flaws, the criteria of Code Case N-526 may be used.

Successive Inspections on Class 3 components will be performed in accordance with IWD-2420 which includes the following criteria in IWD-2420(b), (c) and (d):

(b) If components are accepted for continued service by evaluation in accordance with IWD-3000, the areas containing flaws or relevant conditions shall be reexamined during the next inspection period listed in the schedule of the inspection program of IWD-2400.

(c) If the reexaminations required by IWD-2420(b) reveal that the flaws or relevant conditions remain essentially unchanged for the next inspection period, the component examination schedule may revert to the original schedule of successive inspections.

(d) If welded attachments are examined as a result of identified component support deformation, and the results of these examinations exceed the acceptance standards of IWD-3000, successive examinations shall be performed, if determined necessary, based on an evaluation by Entergy.

Successive Inspections on Class 1, 2 and 3 component supports will be performed in accordance with IWF-2420 which includes the following criteria in IWF-2420(b) and (c):

(b) When a component support is accepted for continued service in accordance with IWF-3112.2 or IWF-3122.2, the component support shall be reexamined during the next inspection period listed in the schedules of the inspection programs of IWF-2410

(c) When the examinations required by IWF-2420(b) do not require additional corrective measures during the next period, the inspection schedule may revert to the requirements of IWF-2420(a).

Successive Inspections on Augmented examinations will be performed in accordance with its' Augmented Program requirements document.

Plant specific successive inspections are identified in the IDDEAL® database Scheduleworks® module for each plant and are discussed in Section 3.5.1.

2.7.2 Additional Examinations

Additional examinations of Examination Category R-A welds shall be determined in accordance with 2.7.2.5. The additional examinations will include HSS elements up to a number equivalent to the number of elements required to be inspected during the current outage. If unacceptable flaws or relevant conditions are again found similar to the initial problem, the remaining elements identified as susceptible will be examined during the current outage.

All other examinations shall be determined in accordance with 2.7.2.5 or 2.7.2.1, 2.7.2.2, 2.7.2.3, 2.7.2.4 as applicable. Additional examinations for augmented components and component supports will be performed in accordance the applicable document that governs each augmented examination.

2.7.2.1 Additional examinations on Class 1 components will be performed in accordance with IWB-2430 which includes the following criteria in IWB-2430(a), (b) and (c):

(a) Examinations performed in accordance with Table IWB-2500-1, except for Examination Category B-P, that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1 shall be extended to include additional examinations during the current outage. The additional examinations shall include an additional number of welds, areas, or parts[1] included in the inspection item[2] equal to the number of welds, areas, or parts included in the inspection item that were scheduled to be performed during the present inspection period. The additional examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require inclusion of piping systems other than the one containing the flaws or relevant conditions.

(b) If additional examinations required by IWB-2430(a) reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1, the examinations shall be further extended to include additional examinations during the current outage. These additional examinations shall include the remaining number of welds, areas, or parts of similar material and service subject to the same type of flaws or relevant conditions.

(c) For the inspection period following the period in which the examinations of IWB-2430(a) or (b) were completed, the

examinations shall be performed as originally scheduled in accordance with IWB-2400

[1] Welds, areas or parts are those described or intended in a particular inspection item of Table IWB-2500-1.

[2] An inspection item, as listed in Table IWB-2500-1, may comprise a number of welds, areas, or parts of a component required to be examined in accordance with the inspection plan and schedule (IWA-2420).

2.7.2.2 Additional examinations on Class 2 components will be performed in accordance with IWC-2430 which includes the following criteria in IWC-2430(a), (b) and (c):

(a) Examinations performed in accordance with Table IWC-2500-1, except for Examination Category C-H, that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWC-3410-1 shall be extended to include additional examinations during the current outage. The additional examinations shall include an additional number of welds, areas, or parts[1] included in the inspection item[2] equal to 20% of the number of welds, areas, or parts included in the inspection item that were scheduled to be performed during the interval. The additional examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require inclusion of piping systems other than the one containing the flaws or relevant conditions.

(b) If additional examinations required by IWC-2430(a) reveal flaws or relevant conditions exceeding the acceptance standards of Table IWC-3410-1, the examinations shall be further extended to include additional examinations during the current outage. These additional examinations shall include the remaining number of welds, areas, or parts of similar material and service subject to the same type of flaws or relevant conditions.

(c) For the inspection period following the period in which the examinations of IWC-2430(a) or (b) were completed, the examinations shall be performed as originally scheduled in accordance with IWC-2400

[1] Welds, areas or parts are those described or intended in a particular inspection item of Table IWC-2500-1.

[2] An inspection item, as listed in Table IWC-2500-1, may comprise a number of welds, areas, or parts of a component

required to be examined in accordance with the inspection plan and schedule (IWA-2420).

2.7.2.3 Additional examinations on Class 3 components will be performed in accordance with IWD-2430 which includes the following criteria in IWD-2430(a), (b) and (c):

(a) Examinations performed in accordance with Table IWD-2500-1, except for Examination Category D-B, that reveal flaws or relevant conditions exceeding the acceptance standards of IWD-3000 shall be extended to include additional examinations during the current outage. The additional examinations shall include an additional number of welds, areas, or parts[1] included in the inspection item[2] equal to 20% of the number of welds, areas, or parts included in the inspection item that were scheduled to be performed during the interval. The additional examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require inclusion of piping systems other than the one containing the flaws or relevant conditions.

(b) If additional examinations required by IWD-2430(a) reveal flaws or relevant conditions exceeding the acceptance standards of IWD-3000, the examinations shall be further extended to include additional examinations during the current outage. The extent of the additional examinations shall be determined by Entergy based upon an engineering evaluation of the root cause of the flaws or relevant conditions. Entergy's corrective actions shall be documented in accordance with IWA-6000.

(c) For the inspection period following the period in which the examinations of IWD-2430(a) or (b) were completed, the examinations shall be performed as originally scheduled in accordance with IWD-2400

[1] Welds, areas or parts are those described or intended in a particular inspection item of Table IWD-2500-1.

[2] An inspection item, as listed in Table IWD-2500-1, may comprise a number of welds, areas, or parts of a component required to be examined in accordance with the inspection plan and schedule (IWA-2420).

2.7.2.4 Additional examinations on Class 1, 2 and 3 component supports will be performed in accordance with IWF-2430 which includes the following criteria in IWF-2430(a), (b), (c) and (d):

(a) Component support examinations performed in accordance with Table IWF-2500-1 that reveal flaws or relevant conditions exceeding the acceptance standards of IWF-3400 shall be extended to include the component supports immediately adjacent to those component supports for which corrective action is required. The additional examinations shall be extended to include additional supports within the system, equal in number and of the same type and function as those scheduled for examination during the inspection period.

(b) When the additional examinations required by IWF-2430(a) reveal flaws or relevant conditions exceeding the acceptance standards of IWF-3400, the examinations shall be further extended to include additional examinations during the current outage. These additional examinations shall include the remaining component supports within the system of the same type and function.

(c) When the additional examinations required by IWF-2430(b) reveal flaws or relevant conditions exceeding the acceptance standards of IWF-3400, the examinations shall be extended to include all nonexempt supports potentially subject to the same failure modes that required corrective actions in accordance with IWF-2430(a) and (b). Also, these additional examinations shall include nonexempt component supports in other systems when the support failures requiring corrective actions indicate non-system-related support failure modes.

(d) When the additional examinations required by IWF-2430(c) reveal flaws or relevant conditions exceeding the acceptance standards of IWF-3400, Entergy shall examine those exempt component supports that could be affected by the same observed failure modes and could affect nonexempt components.

2.7.2.5 The following criteria of Code Case N-586-1 may be applied for the performance of additional examinations on Class 1, 2 or 3 components or component supports.

(a) An engineering evaluation shall be performed. Topics to be addressed in the engineering evaluation shall include:

1) A determination of the root cause of the flaws or relevant conditions.

2) An evaluation of applicable service conditions and degradation mechanisms to establish the affected welds,

areas, or supports will perform their intended safety functions during subsequent operation.

3) A determination of which additional welds, areas, or supports could be subject to the same root cause conditions and degradation mechanisms. This may require the inclusion of piping systems other than the one containing the orginial flaws or relevant conditions.

(b) Additional examinations shall be performed on those welds, areas, or supports subject to the same root cause conditions and degradation mechanisms. No additional examinations are required if the engineering evaluation concludes that either:

1) there are no additional welds, areas, or supports subject to the same root cause conditions, or

2) no degradation mechanism exists.

(c) Any required additional examinations shall be performed during the current outage.

(d) The engineering evaluation shall be retained in accordance with IWA-6000.

Plant specific additional examinations are identified in the IDDEAL® database Scheduleworks® module for each plant and are discussed in Section 3.6.

2.8 Records and Reports

The preparation and retention of records and reports detailing ISI plans and schedules, examinations, tests, replacements, and repairs will be in accordance with Article IWA-6000 of ASME Section XI, 2001 Edition with 2003 Addenda as modified by the alternative requirements of Code Case N-532-4. Form OAR-1 will be prepared, maintained, and submitted in accordance with Program Section CEP-R&R-001.

3.0 INSERVICE INSPECTION PROGRAM PLAN DESCRIPTION

This Inservice Inspection Program Section consists of those examination requirements in ASME Section XI, Subsections IWA, IWB, IWC, IWD, IWF and Mandatory Appendices.

The following text includes a detailed description of the ASME Section XI ISI Program Plan in Section 3.1 which provides a comprehensive summary of the bases for the ISI Program Plan. Sections 3.2, 3.3 and 3.4 include supporting details for Later Editions and Addenda of ASME Section XI, ASME Section XI Code Cases, and Requests For Relief and

Requests For Alternatives from ASME Section XI requirements. Sections 3.5 through 3.13 provide additional information that describe and support this ISI Program Plan.

3.1 ASME Section XI Requirements

Based on ASME Section XI Code of Record "lock-in" date of May 31, 2007 for WF3 and the 10CFR50.55a requirements in effect at that time, this ISI Program Plan was developed in accordance with the requirements of the 2001 Edition with 2003 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Subsections IWA, IWB, IWC, IWD, IWF, Mandatory Appendices, and Inspection Program B of IWA-2432, except as follows:

3.1.1 Code of Federal Regulations Modifications and Limitations

The following mandatory and optional Code of Federal Regulations Limitations and Modifications are included in 10CFR50.55a as of September 29, 2005. Only those 10CFR50.55a Limitations and Modifications applicable to the 2001 Edition with 2003 Addenda of Section XI nondestructive examination requirements for Class 1, 2, and 3 components and component supports are listed. 10CFR50.55a Limitations and Modifications applicable to System Pressure Testing, Containment Inservice Inspection and Repair/Replacement Activities are addressed in Program Sections CEP-PT-001, CEP-CISI-104 and CEP-R&R-001, respectively. Note that mandatory modification 10CFR50.55a(b)(2)(xxi)(C) was removed by the Final Rule dated September 29, 2005 (70FR188), effective on October 31, 2005. These Limitations and Modifications were reviewed for inclusion in the ISI Program Plan and dispositioned as follows:

3.1.1.1 Entergy will not implement the option in 10CFR50.55a(b)(2)(i), to utilize ASME Section XI, 1974 Edition with Addenda through Summer 1975 and ASME Section XI, 1977 Edition with Addenda through Summer 1978.

3.1.1.2 Entergy will not utilize the option in 10CFR50.55a(b)(2)(ii), to examine Class 1 piping per ASME Section XI, 1974 Edition with the Summer 1975 Addenda.

3.1.1.3 As allowed by 10CFR50.55a(b)(2)(iii), steam generator tubing at WF3 will be examined in accordance with plant Technical Specifications in lieu of Article IWB-2000.

3.1.1.4 Entergy will not utilize the option in 10CFR50.55a(b)(2)(iv), to examine Class 2 piping per ASME Section XI, 1974 Edition with the Summer 1975 Addenda and the 1983 Edition through the Summer 1983 Addenda.

3.1.1.5 As required by 10CFR50.55a(b)(2)(x), Entergy will apply the station 10CFR50 Appendix B Quality Assurance Program to Section XI activities.

3.1.1.6 As required by 10CFR50.55a(b)(2)(xi), Entergy will apply the rules in IWB-1220, "Components Exempt from Examination," of Section XI, 1989 Edition in lieu of the IWB-1220 requirements in Section XI, 2001 Edition with 2003 Addenda.

3.1.1.7 As allowed by 10CFR50.55a(b)(2)(xiv), Entergy may use the annual practice requirements in VII-4240 of Section XI Appendix VII in place of the 8 hours of annual hands-on training (when deemed appropriate) as discussed in 10CFR50.55a(b)(2)(xiv). When utilizing this option, the annual practice requirements will be performed on material or welds that contain cracks, or by analyzing prerecorded data from material or welds that contain cracks. All training will be completed no earlier than 6 months prior to performing ultrasonic examinations.

3.1.1.8 Entergy will implement the Appendix VIII specimen set and qualification provisions in paragraphs (b)(2)(xv)(A) to (b)(2)(xv)(M) in accordance with 10CFR50.55a(b)(2)(xv) with the understanding that the alternative requirements of Code Case N-695 will be utilized in lieu of those in Appendix VIII, Supplement 10, and the alternative requirements of Code Case N-696 will be utilized in lieu of those in Appendix VIII, Supplements 2, 3 and 10 for examinations performed from the inside diameter. Entergy views the requirements in 10CFR50.55a(b)(2)(xv) to be mandatory.

3.1.1.9 As required by 10CFR50.55a(b)(2)(xvi)(A) and 10CFR50.55a(b)(2)(xvi)(B), Entergy examinations performed from one side of a ferritic vessel weld and examinations performed from one side of a ferritic or stainless steel pipe will be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations.

3.1.1.10 As required by 10CFR50.55a(b)(2)(xviii)(A), Level I and II nondestructive examination personnel at Entergy will be recertified on a 3-year interval in lieu of the 5-year interval specified in IWA-2314(a) and IWA-2314(b) of the 2001 Edition with 2003.

3.1.1.11 As required by 10CFR50.55a(b)(2)(xviii)(B), paragraph IWA-2316 of the 2001 Edition with 2003 Addenda will only be used to qualify personnel that observe for leakage during system leakage and hydrostatic tests conducted in accordance with IWA-5211(a) and (b).

3.1.1.12 As required by 10CFR50.55a(b)(2)(xviii)(C), when qualifying visual examination personnel for VT-3 visual examinations under paragraph IWA-2317 of the 2001 Edition with 2003, the proficiency of the training must be demonstrated by administering an initial qualification examination and administering subsequent examinations on a 3-year interval.

3.1.1.13 As required by 10CFR50.55a(b)(2)(xix), Entergy will apply the rules in IWA-2240, "Alternative Examinations," of Section XI, 1997 Addenda in lieu of the IWA-2240 requirements in Section XI, 2001 Edition with 2003 Addenda for the substitution of alternative examination methods.

3.1.1.14 As required by 10CFR50.55a(b)(2)(xxi)(A), the provisions of Table IWB-2500-1, Examination Category B-D, Full Penetration Welded Nozzles in Vessels, Items Nos. B3.120 and B3.140 of Inspection Program B in the 1998 Edition will be applied by Entergy. As allowed by 10CFR50.55a(b)(2)(xxi)(A), a visual examination with enhanced magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the allowable flaw length criteria in Table IWB-3512-1, 1998 Edition with 2000 Addenda may be performed in place of an ultrasonic examination.

3.1.1.15 The requirements of 10CFR50.55a(b)(2)(xxi)(B) for Table IWB-2500-1, Examination Category B-G-2, Item B7.80, Pressure Retaining CRD Housing Bolting does not apply.

3.1.1.16 Entergy will not implement the provision in IWA-2200, “Surface Examination” that allows the use of an ultrasonic examination method. The use of this provision is prohibited by 10CFR50.55a(b)(2)(xxii).

3.1.1.17 Entergy will not implement Appendix VIII and the supplements to Appendix VIII and Article I-3000 in the 2002 Addenda and the 2003 Addenda of the 2001 Edition. The use of these requirements is prohibited by 10CFR50.55a(b)(2)(xxiv).

3.1.1.18 Entergy will not implement the option in 10CFR50.55a(g)(4)(iii) to perform surface examinations on High Pressure Safety Injection System welds specified in Table IWB-2500-1, Examination Category B-J, Item Numbers B9.20, B9.21, and B9.22. Examination of these welds is being addressed in accordance with the Risk-Informed ISI Program application.

3.1.2 ASME Section XI Code Cases

ASME Section XI Code Cases incorporated into the ISI Program Plan applicable to nondestructive examination requirements for Class 1, 2, and 3 components and component supports are listed in Table 3.3-1. A detailed explanation of ASME Section XI Code Case implementation is included in Section 3.3. Code Cases applicable to System Pressure Testing, Containment Inservice Inspection and Repair/Replacement Activities are addressed in Program Sections CEP-PT-001, CEP-CISI-104 and CEP-R&R-001, respectively.

3.1.3 Requests For Relief and Requests For Alternatives

Modifications to ASME Section XI requirements applicable to nondestructive examination requirements for Class 1, 2, and 3 components and component supports incorporated into the ISI Program Plan by way of a Request for Alternative or a Request for Relief submitted to the NRC in accordance with 10CFR50.55a(a)(3) or 10CFR50.55a(g)(5), respectively, are listed in Table 3.4-1. A detailed explanation of Requests For Relief and Requests For Alternatives implementation is included Section 3.4. Requests For Relief and Requests For Alternatives applicable to System Pressure Testing, Containment Inservice Inspection and Repair/Replacement Activities are addressed in Program Sections CEP-PT-001, CEP-CISI-104 and CEP-R&R-001, respectively.

3.2 Later Editions and Addenda of ASME Section XI

The use of later Editions and/or Addenda of ASME Section XI is permitted with specific NRC approval. On July 28, 2004, the NRC published Regulatory Issue Summary (RIS) 2004-12, "Clarification on Use of Later Editions and Addenda to the ASME OM Code and Section XI". This RIS requires Entergy to submit later editions and addenda to the staff via a request for approval.

Additionally, as the NRC determines appropriate through changes to 10CFR50.55a, they sometimes mandate the use of later portions of ASME Section XI. This program sub-section identifies those later Editions and/or Addenda that have been included into the ISI Program Plan based on NRC approval in 10CFR50.55a. The use of later Editions and Addenda of ASME Section XI will be reflected in sub-section 3.1 when incorporated into this ISI Program Plan.

3.3 ASME Section XI Code Cases Incorporated Into The ISI Program

Alternatives to ASME Section XI requirements that are provided in Code Cases may be incorporated into the ISI Program as described below.

The use of Code Cases is in accordance with 10CFR50.55a. ASME Code Cases that have been determined to be suitable for use in ISI Program Plans by the NRC are listed in Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability-ASME Section XI, Division 1". Table 3.3-1 lists the ASME Section XI Code Cases which have been incorporated into the ISI Program Plan. Code Cases that are "Acceptable" or "Conditionally Acceptable" in Regulatory Guide 1.147 are shown with the revision number of Regulatory Guide 1.147 that first approved it. If conditions are stipulated for a Code Case in Regulatory Guide 1.147, Entergy will meet these conditions when applying the Code Case.

Code Cases not endorsed in the current revision of Regulatory Guide 1.147 are shown with a Request for Alternative number. A corresponding Request For Alternative has been prepared to employ the Code Case (see Table 3.4-1 for

status of the Request for Alternative). The use of Code Cases (other than those listed in Regulatory Guide 1.147) may be authorized by the Director of the Office of Nuclear Reactor Regulation upon request pursuant to 10CFR50.55a(a)(3) via acceptance of the associated Request for Alternative.

Note that only Codes Cases applicable to nondestructive examination requirements for Class 1, 2, and 3 components and component supports are addressed in Table 3.3-1. Code Cases applicable to System Pressure Testing, Containment Inservice Inspection and Repair/Replacement Activities are addressed in Program Sections CEP-PT-001, CEP-CISI-104 and CEP-R&R-001, respectively.

At the time this ISI Program Plan was originally issued, Revision 15 of Regulatory Guide 1.147 was the latest version of the Regulatory Guide that was available for use.

TABLE 3.3-1
CODE CASES INCORPORATED INTO THE ISI PROGRAM

Code Case	Title/ Regulatory Guide 1.147 Conditions For Use	RG 1.147 Revision/ Request for Alternative
N-460	Alternative Examination Coverage for Class 1 and Class 2 Welds	14
N-526	Alternative Requirements for Successive Inspections of Class 1 and 2 Vessels	14
N-532-4	Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission	15
N-545	Alternative Requirements for Conduct of Performance Demonstration Detection Test of Reactor Vessel	14
N-552	Alternative Methods - Qualification for Nozzle Inside Radius Section from the Outside Surface **Conditions of Regulatory Guide 1.147:** To achieve consistency with the 10CFR50.55a rule change published September 22, 1999 (64 FR 51370), incorporating Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," to Section XI, add the following to the specimen requirements: "At least 50 percent of the flaws in the demonstration test set must be cracks and the maximum misorientation must be demonstrated with cracks. Flaws in nozzles with bore diameters equal to or less than 4 inches may be notches." Add to the detection criteria, "The number of false calls must not exceed three.	14
N-586-1	Alternative Additional Examination Requirements for Class 1, 2, and 3 Piping, Components, and Supports	15
N-593	Alternative Examination Requirements for Steam Generator Nozzle to Vessel Welds **Conditions of Regulatory Guide 1.147:** Essentially 100 percent (not less than 90 percent) of the examination volume A-B-C-D-E-F-G-H must be inspected.	14
N-613-1	Ultrasonic Examination of Full Penetration Nozzles in Vessels, Examination Category B-D, Item No's. B3.10 and B3.90, Reactor Vessel-to-Nozzle Welds, Fig. IWB-2500-7(a), (b), and (c)	14
N-624	Successive Inspections	14

Code Case	Title/ Regulatory Guide 1.147 Conditions For Use	RG 1.147 Revision/ Request for Alternative
N-639	Alternative Calibration Block Material **Conditions of Regulatory Guide 1.147:** Chemical ranges of the calibration block may vary from the materials specification if: (1) it is within the chemical range of the component to be inspected and (2) the phase and grain shape are maintained in the same ranges produced by the thermal process required by the material specification.	14
N-648-1	Alternative Requirements for Inner Radius Examination of Class 1 Reactor Vessel Nozzles **Conditions of Regulatory Guide 1.147:** In place of a UT examination, licensees may perform a visual examination with enhanced magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the allowable flaw length criteria of Table IWB-3512-1 with limiting assumptions on the flaw aspect ratio. The provisions of Table IWB-2500-1, Examination Category B-D, continue to apply except that, in place of examination volumes, the surfaces to be examined are the external surfaces shown in the figures applicable to this table.	14
N-664	Performance Demonstration Requirements for Examination of Unclad Reactor Pressure Vessel Welds, Excluding Flange Welds	14
N-685	Lighting Requirements for Surface Examination	15
N-686	Alternative Requirements for Visual Examinations, VT-1, VT-2, and VT-3	15
N-695	Qualification Requirements for Dissimilar Metal Piping Welds	14
N-696	Qualification Requirements for Appendix VIII Piping Examinations Conducted From the Inside Surface	15
N-697	Pressurized Water Reactor (PWR) Examination and Alternative Examination Requirements for Pressure Retaining Welds in Control Rod Drive and Instrument Nozzle Housings	15
N-700	Alternative Rules for Selection of Classes 1, 2, and 3 Vessel Welded Attachments for Examination	15
N-716	Alternative Piping Classification and Examination Requirements **Conditions of Regulatory Guide 1.147:** Pending - Not Currently Addressed in Regulatory Guide 1.147	W3-ISI-005
N-747	Reactor Vessel Head-to-Flange Weld Examinations **Conditions of Regulatory Guide 1.147:** Not Currently Addressed in Regulatory Guide 1.147	CEP-ISI-11

Code Case	Title/ Regulatory Guide 1.147 Conditions For Use	RG 1.147 Revision/ Request for Alternative
N-753	Vision Tests **Conditions of Regulatory Guide 1.147:** Pending - Not Currently Addressed in Regulatory Guide 1.147	CEP-ISI-12

3.4 Requests For Relief and Requests For Alternatives from ASME Section XI Requirements

Table 3.4-1 contains an index of Requests For Alternatives and Requests For Relief written in accordance with 10CFR50.55a (a)(3) and (g)(5), as discussed in Section 2.1.4. The applicable Entergy submittal and NRC SER correspondence numbers are also included in Table 3.4-1 for each Request For Alternatives and Request For Relief.

Note that only Requests for Alternatives or Requests for Relief applicable to nondestructive examination requirements for Class 1, 2, and 3 components and component supports are addressed in Table 3.4-1. Requests for Alternatives or Requests for Relief applicable to System Pressure Testing, Containment Inservice Inspection and Repair/Replacement Activities are addressed in Program Sections CEP-PT-001, CEP-CISI-104 and CEP-R&R-001, respectively.

In the event that the entire examination volume or surface (as defined in the ASME Code) cannot be examined due to interference by another component or part geometry, then, in accordance with Code Case N-460, a reduction in examination volume or area is acceptable if the reduction is *less than* 10%. In the event that the reduction in examination volume or area is 10% or greater, a Request For Relief will be submitted. NRC Information Notice 98-42 provides additional guidance that all ASME Section XI examinations should meet the examination coverage criteria established in Code Case N-460. Therefore, the guidance included in NRC Information Notice 98-42 will be followed by Entergy when determining whether to prepare a Relief Request or apply the criteria of Code Case N-460 for examinations where less than 100% coverage of a Section XI examination is obtained.

TABLE 3.4-1
REQUESTS FOR RELIEF AND REQUESTS FOR ALTERNATIVES
FROM ASME SECTION XI REQUIREMENTS

Request Number	Request Description	Entergy Correspondence NRC SER Correspondence
CEP-ISI-11	Request to Utilize The Alternative Requirements of Code Case N-747; Reactor Vessel Head-to-Flange Weld Examinations	CNRO2008-00016 Pending
CEP-ISI-12	Request to Utilize The Alternative Requirements of Code Case N-753; Vision Tests	CNRO2008-00016 Pending
W3-ISI-005	Request to Utilize The Alternative Requirements of Code Case N-716; Alternative Piping Classification and Examination Requirements	W3F12007-0046 W3F12008-0013 W3F12008-0023 IN080070

3.5 Augmented Examinations Plans

Augmented examinations are considered in one of the following three categories: augmented examinations for external commitments, Owner elected examinations for internal commitments and license renewal examinations for aging management commitments. These three types of examinations are described in Sections 3.5.1, 3.5.2 and 3.5.3 of below. In addition, each section includes a table which lists the applicable augmented program. Details on the various examinations and frequencies are provided in Appendix B

3.5.1 Augmented Examinations

This type of augmented examination is conducted to meet a commitment made to a source outside the utility. Typically these are commitments made to the NRC in response to regulatory documents such as Generic Letters, Bulletins and NUREGs. The augmented examinations for external commitments covered in this program are listed in Table 3.5-1.

3.5.2 Owner Elected Examinations

This type of augmented examination is conducted to meet a commitment made internally at the plant. These typically involve examinations resulting from Condition Reports or similar documents that identify conditions in the plant that warrant monitoring, but are outside the scope of ASME Section XI. The Owner elected examinations for internal commitments are listed in Table 3.5-2.

3.5.3 License Renewal Examinations

This type of augmented examination is conducted to ensure the integrity of components during the license extension period. These typically involve components or criteria that are beyond those of ASME Section XI, but in some cases may supplement existing Code or regulatory requirements. The license renewal examinations for aging management commitments are listed in Table 3.5-3.

TABLE 3.5-1
AUGMENTED EXAMINATIONS FOR EXTERNAL COMMITMENTS

SOURCE DOCUMENT	TITLE/DESCRIPTION
NUREG-0800, Section 3.6.2, EPRI TR1006937	Risk Informed Break Exclusion Region
NRC Regulatory Guide 1.14	Reactor Coolant Pump Flywheel Integrity
NRC Regulatory Guide 1.65	Materials and Inspections for Reactor Vessel Closure Studs

TABLE 3.5-2
OWNER ELECTED EXAMINATIONS FOR INTERNAL COMMITMENTS

SOURCE DOCUMENT	TITLE/DESCRIPTION
None	None

TABLE 3.5-3
LICENSE RENEWAL EXAMINATIONS FOR AGING MANAGEMENT COMMITMENTS

SOURCE DOCUMENT	TITLE/DESCRIPTION
None	None

3.6 Successive Inspections and Additional Examinations

Successive Inspections required to be performed in accordance with IWB-2420, IWC-2420, IWD-2420 and IWF-2420 are identified in the IDDEAL® database Scheduleworks® module by an "h" (scheduled successive inspection) or an "H" (completed successive inspection).

Additional Examinations required to be performed in accordance with IWB-2430, IWC-2430, IWD-2430 and IWF-2430 are identified in the IDDEAL® database Scheduleworks® module by an "e" (scheduled additional examination) or an "E" (completed additional examination).

3.7 Systems and Components Subject To Examination

The systems and components included in the Inservice Inspection Program are identified in the W3 ISI Boundary Diagrams. A listing of these ISI Boundary Diagrams is included on drawing P-100 Sheet 1. These systems and components are referred to as "ISI Class 1", "ISI Class 2" or "ISI Class 3" and are subject to the requirements of ASME Section XI, Subsections IWB, IWC, and IWD, respectively.

Typically, systems and components at WF3 which is designed in accordance with ASME Section III, Class 1, 2, and 3 requirements are included in the Inservice Inspection Program. Some of these systems and components are excluded or exempted from Section XI requirements because they are optionally upgraded to Code Class as discussed in IWA-1320(e) or because they do not perform the functions listed in IWD-1210(a) to (f). For a full explanation of the implementation of Section XI requirements (including exemptions and exclusions) see the Piping Line Coding Legends and Exemption and Exclusion Flag Legends on drawing P-100 Sheet 1.

3.8 Nonexempt ASME Class Components and Component Supports

The ISI Class 1, 2, and 3 components which are not exempt from examination per ASME Section XI, IWB-1220, IWC-1220, IWD-1220, and IWF-1230 are identified on the ISI Boundary Diagrams in accordance with the Pipe Line Codings on drawing P-100 Sheet 1. Nonexempt components are not included within flags corresponding to Section XI exemptions listed in the plant Exemption and Exclusion Flag Legend.

3.9 Exempt ASME Class Components and Component Supports

The ISI Class 1, 2, and 3 components which are exempt from examination are those which meet the criteria of ASME Section XI, IWB-1220, IWC-1220, and IWD-1220. Component supports which meet the criteria of IWF-1230 are also exempt from examination. Exempt components are identified on the ISI Boundary Diagrams in accordance with the Exemption and Exclusion Flag Legends on

drawing P-100 Sheet 1. Exempt component supports are supports of components which are exempt from examination per WB-1220, IWC-1220, and IWD-1220.

ASME Section XI, IWC-1222(b) presents separate exemption criteria for Class 2 auxiliary feedwater systems in pressurized water reactor plants. For Waterford 3, there is a conflict with the nomenclature for this piping regarding the application of IWC-1222(b) requirements.

At WF3, there are two systems that support this function, one designated as Auxiliary Feedwater (AFW) and the other designated as Emergency Feedwater (EFW). Waterford Design Basis Document W3-DBD-20, "Main Feedwater", indicates that the AFW system is non-safety related and Waterford Design Basis Document W3-DBD "Emergency Feedwater" indicates that the EFW is safety related.

Because only the safety related portions of the auxiliary feedwater systems (i.e., Emergency Feedwater have been classified as ISI Class 2, the components in these systems will be subject to the exemption criteria of ASME Section XI, IWC-1222 and subsequent examination criteria of Table IWC-2500-1. The non-safety related components performing the auxiliary feedwater function at WF3 (i.e., AFW system) are not classified for ASME Section XI inservice inspections and are not subject to the requirements of IWC-1222.

3.10 ISI Isometrics and ISI Equipment Drawings

ISI Isometrics and ISI Equipment Drawings were developed to identify the ISI Class 1, 2, and 3 components (welds, bolting, etc.) and component supports which are subject to examination per ASME Section XI. The ISI Isometrics and ISI Equipment Drawings were developed to support the ISI Program and are not to be used for design information. ISI Isometrics and ISI Equipment Drawings are available for each site as follows:

> An index of isometrics and equipment drawings is included in Appendix A. The WF3 ISI Drawings are included in Appendix C.

3.11 Calibration Standards

Calibration standards are used to calibrate ultrasonic examination equipment. These standards were used during preservice examinations and during the previous ISI intervals, and are maintained at WF3. Calibration standards are listed in the IDDEAL® database.

Calibration block thickness is the same nominal thickness as the material being examined. Any calibration block thickness that is within $\pm$ 25% of the material being examined may be considered to be the same nominal thickness.

Alternative calibration blocks may be used if the referencing procedure allows the use of such blocks.

Additions or changes to the calibration blocks listed in the IDDEAL® database shall be requested with the use of a Program Database Change Notice (PDCN) in accordance with Program Section CEP-COS-0110.

3.12 IDDEAL® ISI Database

The IDDEAL® database and associated software are electronic tools utilized at WF3 to manage the data and documents comprising the ISI Program Plan.

Scheduling and component information is controlled by the Scheduleworks® module of the IDDEAL® database. The IDDEAL® database is controlled in accordance with CEP-COS-0110.

The IDDEAL® database is a master component inspection item list that acts as the focal point to access individual items and information scheduled for work. Individual information for specific scheduled components pertaining to unique item specifications, reference drawings, procedures, inspection records and individual examination requirements is integrated within the program. Inspection item planning and scheduling is accessed for organizing and tracking inspection scopes with the ability to create/view inspection work packages and track results on specific NDE method inspection data forms.

3.13 Incomplete or Missing Examinations

Resolution and tracking of incomplete or missed examinations shall be in accordance with the PCN/CR process as described below:

3.13.1 PCN Requirements

A PCN to the program shall be developed in a timely manner. The PCN should contain the following:

a) The affected component.

b) The examination requirement that has not been, or will not be, met.

c) The reason for incomplete or missed examination.

d) Alternate examinations performed or recommended, (i.e. best effort vs. VT-1, etc.) to include reasons why this is acceptable.

e) For partial examinations, the extent of coverage the component received or will receive using approved methods.

3.13.2 Request for Relief

If a Request for Relief is required for an incomplete or missing examination, the following steps shall be completed:

a) The site should develop and submit the necessary documentation to the NRC.

b) If the Request for Relief is approved by the NRC, the approval should be incorporated into the program plan by a PCN.

c) If the Request for Relief is disapproved, the site should initiate a CR.

3.13.3 Missed Examinations Which Cannot Be Made Up

If it is discovered that a required examination has been missed and cannot be performed before the end of the inspection period in accordance with the Program Plan, a CR should be initiated.

NOTE
The period includes any extensions made within the ASME Section XI and 10CFR50.55a provisions. The end of the period does not occur until any applicable extensions are completed.

APPENDIX A
ISI DRAWING INDEX

Class 1 ISI Drawings (Continued)	
DRAWING #	**DRAWING TITLE**
WTR-1-1100 Sht 1	Reactor Vessel
WTR-1-1100 Sht 2	Reactor Vessel
WTR-1-1200	Reactor Vessel Internals
WTR-1-1300	Reactor Vessel Closure Head
WTR-1-1400	Reactor Vessel Studs, Nuts, and Washers
WTR-1-2100	Pressurizer
WTR-1-3100	Steam Generator #1 – Primary
WTR-1-3200	Steam Generator #1 – Primary
WTR-1-4100	Reactor Coolant Piping Loop 1A & Hot Leg
WTR-1-4101	Reactor Coolant Piping Loop 1B
WTR-1-4102	Shutdown Cooling from Loop 1
WTR-1-4103	Safety Injection to Loop 1A
WTR-1-4104	Safety Injection to Loop 1B
WTR-1-4105	HPSI Line to Loop 1 Hot Leg
WTR-1-4106	Hot Leg Drain
WTR-1-4107	Cold Leg Drain – Loop 1A
WTR-1-4108	Charging Line to Loop 1A
WTR-1-4109	Cold Leg Drain – Loop 1B
WTR-1-4200	Reactor Coolant Piping – Loop 2A & Hot Leg
WTR-1-4201	Reactor Coolant Piping – Loop 2B
WTR-1-4202	Shutdown Cooling from Loop 2
WTR-1-4203	Safety Injection to Loop 2A
WTR-1-4204	Safety Injection to Loop 2B
WTR-1-4205	HPSI Line to Loop 2 Hot Leg
WTR-1-4206	Cold Leg Drain – Loop 2A
WTR-1-4207	Letdown Line from Loop 2B
WTR-1-4208	Charging Line to Loop 2A
WTR-1-4500	Pressurizer Surge
WTR-1-4501	Pressurizer Safety Valve Piping
WTR-1-4502	Combined Pressurizer Spray
WTR-1-4503	Pressurizer Spray from Loop 1A
WTR-1-4504	Pressurizer Spray from Loop 1B
WTR-1-4505	Pressurizer Auxiliary Spray
WTR-1-4506	Pressurizer Auxiliary Spray
WTR-1-5100	Reactor Coolant Pump 1A
WTR-1-5200	Reactor Coolant Pump 1B
WTR-1-5300	Reactor Coolant Pump 2A
WTR-1-5400	Reactor Coolant Pump 2B

Class 2 ISI Drawings	
DRAWING #	**DRAWING TITLE**
WTR-2-1100	Shutdown Cooling Heat Exchanger A
WTR-2-1200	Shutdown Cooling Heat Exchanger B
WTR-2-3100	Steam Generator #1 – Secondary
WTR-2-3200	Steam Generator #2 – Secondary
WTR-2-4100	Main Steam Header A – Inside Containment
WTR-2-4101	Main Steam Header A – Outside Containment
WTR-2-4102	Main & Emergency Feed Header A
WTR-2-4103	Containment Spray & Safety Injection Suction Header A
WTR-2-4104	Low Pressure Safety Injection Pump A Suction
WTR-2-4105	Shutdown Cooling from Loop 2 – Outside Containment
WTR-2-4106	Shutdown Cooling from Loop 2 – Inside Containment
WTR-2-4107	High Pressure Safety Injection Pump A Suction
WTR-2-4108	Containment Spray Pump A Suction
WTR-2-4109	LPSI Pump A & CS Pump A Discharge to SDC HX A
WTR-2-4110	Shutdown Cooling Heat Exchanger A Discharge
WTR-2-4111	Safety Injection to Loop 2A
WTR-2-4112	Combine Safety Injection to Loop 2
WTR-2-4113	Safety Injection to Loop 2B
WTR-2-4114	Safety Injection from SI Tank 1A
WTR-2-4115	Safety Injection from SI Tank 1B
WTR-2-4116	High Pressure Safety Injection Pump A Discharge
WTR-2-4118	Containment Spray A Discharge Piping
WTR-2-4119	Containment Spray A Discharge Piping
WTR-2-4120	Containment Spray A Discharge Piping
WTR-2-4121	HPSI A Hot Leg Injection
WTR-2-4122	HPSI A & B to Reactor Coolant System Loop 2A
WTR-2-4123	HPSI to Reactor Coolant System Loop 2A
WTR-2-4124	HPSI A & B to Reactor Coolant System Loop 1A
WTR-2-4125	HPSI A & A/B Recirc.
WTR-2-4200	Main Steam Header B – Inside Containment
WTR-2-4201	Main Steam Header B – Outside Containment
WTR-2-4202	Main & Emergency Feed Header B
WTR-2-4203	Containment Spray & Safety Injection Suction Header B
WTR-2-4204	Low Pressure Safety Injection Pump B Suction
WTR-2-4205	Shutdown Cooling from Loop 1
WTR-2-4206	Shutdown Cooling from Loop 1
WTR-2-4207	High Pressure Safety Injection Pump B Suction
WTR-2-4208	Containment Spray Pump B Suction
WTR-2-4209	LPSI Pump B & CS Pump B Discharge to SDC HX B
WTR-2-4210	Shutdown Cooling Heat Exchanger B Discharge
WTR-2-4211	Safety Injection To Loop 1A
WTR-2-4212	Safety Injection To Loop 1B

Class 2 ISI Drawings	
DRAWING #	**DRAWING TITLE**
WTR-2-4213	High Pressure Safety Injection Pump A/B Suction
WTR-2-4214	Safety Injection from SI Tank 2A
WTR-2-4215	Safety Injection from SI Tank 2A
WTR-2-4216	High Pressure Safety Injection Pump B Discharge
WTR-2-4217	High Pressure Safety Injection Pump A/B Discharge
WTR-2-4218	Containment Spray B Discharge
WTR-2-4219	Containment Spray B Discharge
WTR-2-4220	Containment Spray B Discharge
WTR-2-4221	HPSI B Hot Leg Injection
WTR-2-4222	HPSI A & B to RCS Loop 2B
WTR-2-4223	HPSI A & B to RCS Loop 2B
WTR-2-4224	HPSI B & A/B Recirc. to RWSP
WTR-2-4225	HPSI to Reactor Coolant Loop 1B
WTR-2-4226	HPSI Pump A/B Recir
WTR-2-5100	Containment Spray Pump A
WTR-2-5200	Containment Spray Pump B
WTR-2-5300	High Pressure Safety Injection Pump A
WTR-2-5400	High Pressure Safety Injection Pump B
WTR-2-5500	High Pressure Safety Injection Pump A/B
WTR-2-5600	Low Pressure Safety Injection Pump A
WTR-2-5700	Low Pressure Safety Injection Pump B

REVISION STATUS SHEET

REVISION	PAGE NO.
0	All

I. AUGMENTED EXAMINATIONS FOR EXTERNAL COMMITMENTS

RI-BER: Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants - Determination of Rupture Locations and Dynamic Effects Associated with the Postulated Rupture of Piping (Examination of High Energy Line Break Piping)

Source Document: NUREG-0800, Section 3.6.2

Commitment No.: P-4845

Associated Document: Engineering Reports WF3-ME-07-00001, WF3-SA-07-00001 and WF3-SA-07-00002

Purpose: The purpose of this augmented program is to perform examinations on piping subject to High Energy Line Break (HELB) analysis criteria. Those examinations previously performed on HELB piping per NUREG-0800, Section 3.6.2 will be maintained and performed under the risk-informed break exclusion region (RI-BER) application during the current interval.

During previous intervals, examinations were required on 100% of the subject welds per NUREG-0800, Section 3.6.2, Branch Technical Position MEB 3-1, Paragraph B.1.b(7).

Scope: For Main Steam and Feedwater piping, all of the circumferential and longitudinal welds from both Steam Generators to the first rigid restraint past the outer containment isolation valve.

For Moderate Energy Safety Injection piping, the augmented ISI requirements will be imposed on the two 14-inch shutdown cooling lines and the four 8-inch LPSI lines penetrating containment.

This was defined by Revisions 0-2 of the first interval ISI Plan. The lines were identified by line number and the welds were identified as requiring augmented examination. This was approved in NRC SER dated January 29, 1987. On May 11, 2001, the NRC completed an inspection at Waterford Steam Electric Station, Unit 3.The design basis for the high energy line break exclusion area on the main steam and main feedwater systems as documented in the FSAR and the NRC's SER of July 1981 was reviewed. The purpose of the review was to determine whether the design bases of the systems were met by the installed and tested configurations. Inspection Report IR-2001-03 (ILN 01-0097, dated 6/01/01) documented that no findings of significance were identified.

Method: Ultrasonic examinations will be performed per the RI-BER application, except as restricted by part geometry or access. .

Industry Code or Standards: ASME Code Section XI, 2001 Edition through 2003 Addenda

Frequency: Ultrasonic examinations will be performed once per 10 year interval per the RI-BER application.

Acceptance Criteria or Standard: Flaws detected during examination shall be evaluated by comparing the examination results to the acceptance standards established in ASME Section XI, IWB-3514.

Regulatory Basis: The examination criteria of NUREG-0800, Section 3.6.2 are superseded by the RI-BER application.

RG 1.14 RCP FLYWHEEL: Reactor Coolant Pump Flywheel Integrity

Source Document: NRC Regulatory Guide 1.14

Commitment No.: P-9944

Associated Document: Technical Specification 6.5.7

Purpose: The reactor coolant pump (RCP) motor flywheels are examined due to a concern about high-energy missiles inside containment that could potentially damage and cause the simultaneous failure of multiple trains of multiple safety-related systems.

Scope: The scope includes the examination of all four RCP flywheels.

Method: Surface and volumetric examinations of all four RCP flywheels shall be conducted in accordance with WF3 Technical Specification 6.5.7. These examinations are to be performed to the extent possible through the access ports in the motor housings without disassembly of the motors.

Industry Code or Standards: ASME Code Section XI, 2001 Edition through 2003 Addenda.

Frequency: All 4 RCP flywheels shall be inspected once every ISI 10-Year Interval.

Acceptance Criteria or Standard: Any flaws detected during examination shall be forwarded to Entergy Engineering for resolution.

Regulatory Basis: The regulatory basis for this augmented examination program is NRC Regulatory Guide 1.14.

RG 1.65 RX VESSEL STUDS: Materials and Inspections for Reactor Vessel Closure Studs

Source Document: NRC Regulatory Guide 1.65

Commitment No.: P-10801

Associated Document: ASME Section III, Articles NB-2545 and NB-2546; ASME Section XI, Examination Category B-G-1, Code Item No. B6.20

Purpose: The purpose of Regulatory Guide 1.65 is to establish criteria for material properties, fabrication inspections and inservice inspections for reactor vessel closure studs. The original material properties and fabrication inspection requirements were met prior to plant start-up.

Regulatory Guide 1.65 also calls for surface examinations to be performed on the studs when removed in accordance with paragraphs NB-2545 or NB-2546 of ASME Section III. The criteria of ASME Section XI, 2001 Edition through 2003 Addenda meet or exceed the inservice examination requirements of Regulatory Guide 1.65. However, WF3 is committed to Regulatory Guide 1.65 in FSAR Section 14.2.7.12 and as long as this reference exists, the commitment to perform surface examinations on the RPV studs when removed will continue.

Scope: The scope for the surface examination is the reactor vessel closure studs. Regulatory Guide 1.65, paragraph C.4.b says to select a “representative sample” of RPV studs each inservice inspection for examination.

Method: A surface examination shall be performed on removed studs in accordance with ASME Section III, NB-2545 (magnetic particle examination) or NB-2546 (liquid penetrant examination).

Industry Code or Standards: ASME Code Section III, 2001 Edition through 2003 Addenda.

Frequency: The reactor vessel closure studs shall be examined once every ten year interval.

Acceptance Criteria or Standard: Flaws detected during examination shall be evaluated by comparing the examination results to the acceptance standards established in ASME Section III, NB-2545.3 for magnetic particle examinations or NB-2546.3 for liquid penetrant examinations.

Regulatory Basis: The regulatory basis for these examinations is Regulatory Guide 1.65.

RG1.150: Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations

Source Document: NRC Regulatory Guide 1.150

Commitment No.: P-14460

Associated Document: ASME Section XI Code Case N-747

Purpose: Ultrasonic examinations on the Reactor Pressure Vessel (RPV) shall be conducted in accordance with U.S. Nuclear Regulatory Commission Regulatory Guide 1.150, Rev. 1, "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations". ASME Section XI, Appendix VIII, as implemented by Performance Demonstration Initiative (PDI), satisfies the objectives of this Regulatory Guide. RPV Supplements 4, 5, 6, and 7 are being implemented in lieu of Regulatory Guide 1.150. However, Regulatory Guide 1.150 is applicable for the Flange-to-Head and Flange-to-Shell weld since an ASME Section XI Appendix VIII qualified procedure is not applied. (Note that Entergy has submitted a Request for Alternative to adopt ASME Section XI Code Case N-747. If this Request for Alternative is approved by the NRC, volumetric examinations would no longer be required on the Flange-to-Head weld, in which case Regulatory Guide 1.150 would no longer be applicable for this weld.)

The application of the Regulatory Guide and Appendix VIII produce a more thorough examination of the RPV welds utilizing more qualified personnel, thereby providing additional assurance of structural integrity of the RPV under all operational situations and accident scenarios.

Scope: The reactor vessel Flange-to-Head weld and Flange-to-Shell weld. (Note that if the Request for Alternative described above is approved, the scope will only include the Flange-to-Shell weld.)

Method: The subject welds shall be ultrasonically examined in accordance with the criteria established in Regulatory Guide 1.150.

Industry Code or Standards: ASME Code Section XI, 2001 Edition through 2003 Addenda.

Frequency: The subject welds shall be examined once every ten year interval.

Acceptance Criteria or Standard: Flaws detected during examination shall be evaluated by comparing the examination results to the acceptance standards established in Regulatory Guide 1.150 and ASME Section XI, IWB-3510.

Regulatory Basis: RG 1.150 has been withdrawn the commitment needs to be closed.
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II. OWNER ELECTED EXAMINATIONS FOR INTERNAL COMMITMENTS

There are no Owner Elected examination commitments for WF3 at this time.

III. LICENSE RENEWAL EXAMINATIONS FOR AGING MANAGEMENT COMMITMENTS

There are no License Renewal examination commitments for WF3 at this time.

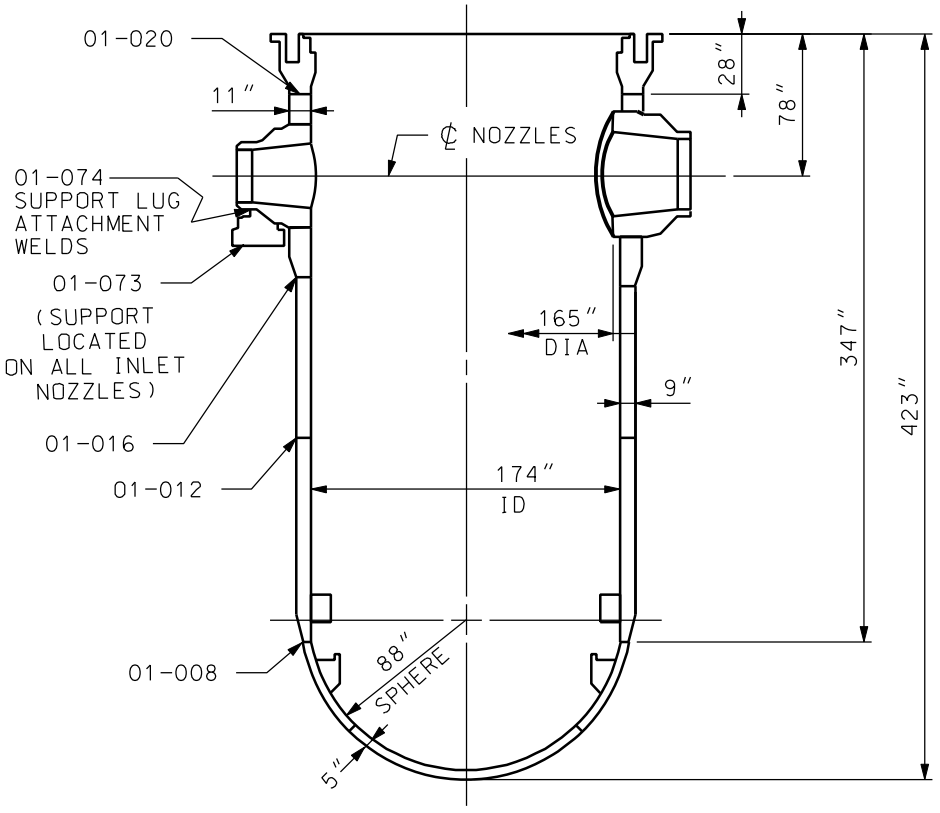
APPENDIX C
ISI DRAWINGS

REVISION STATUS SHEET

REVISION	PAGE NO.
0	All

REACTOR VESSEL

REACTOR VESSEL



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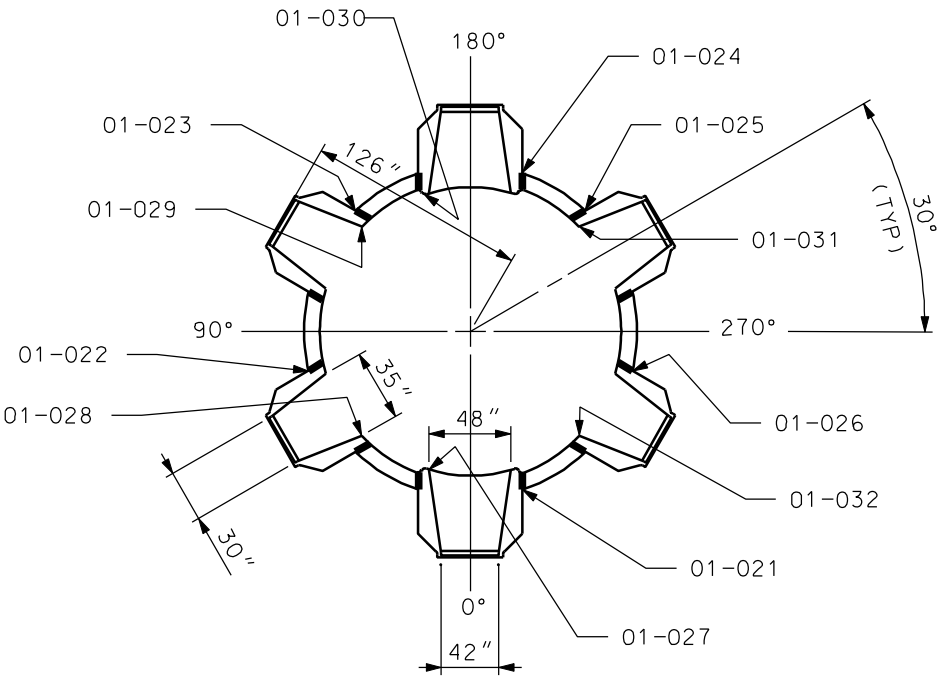
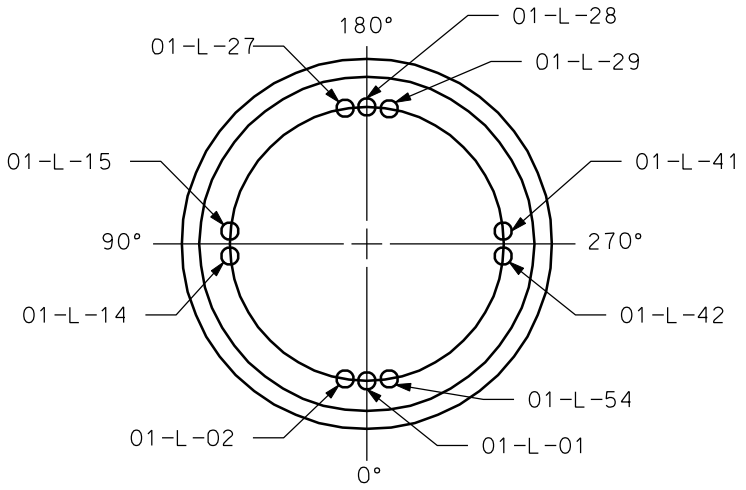
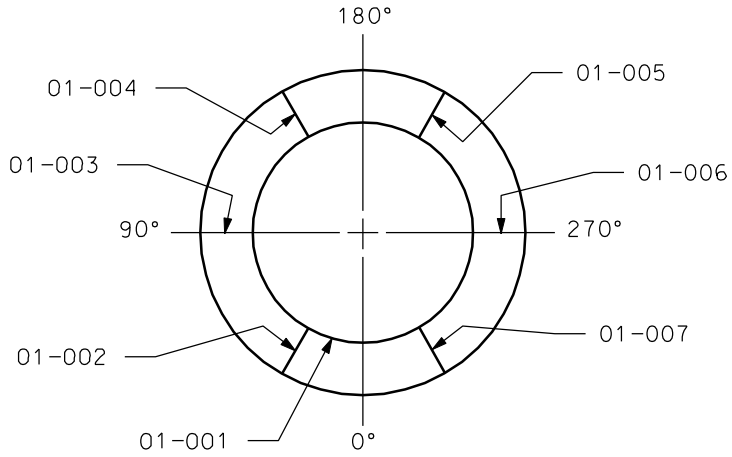


REACTOR VESSEL

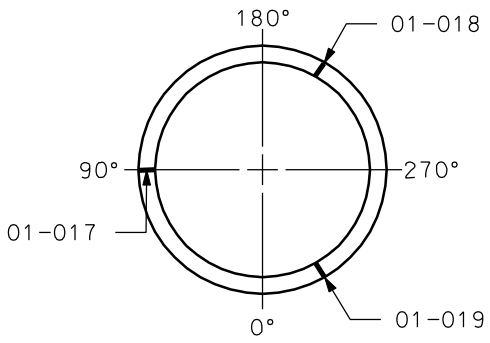
REACTOR VESSEL FLANGE LIGAMENTS



BOTTOM HEAD



UPPER SHELL SEGMENTS



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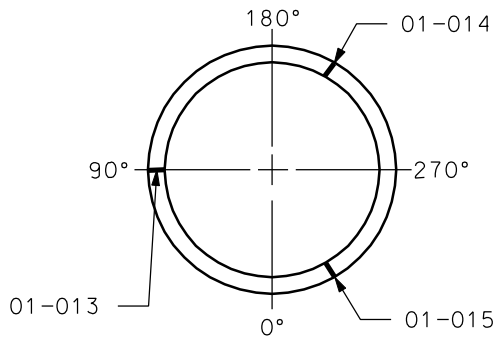
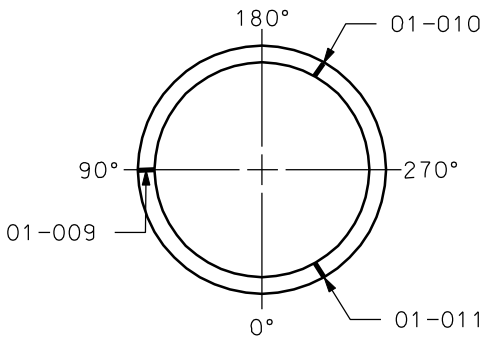


LOWER SHELL SEGMENTS

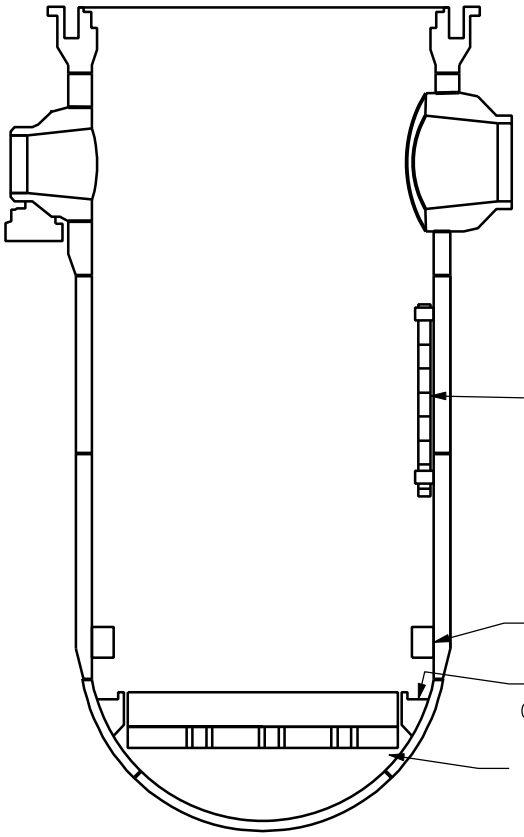


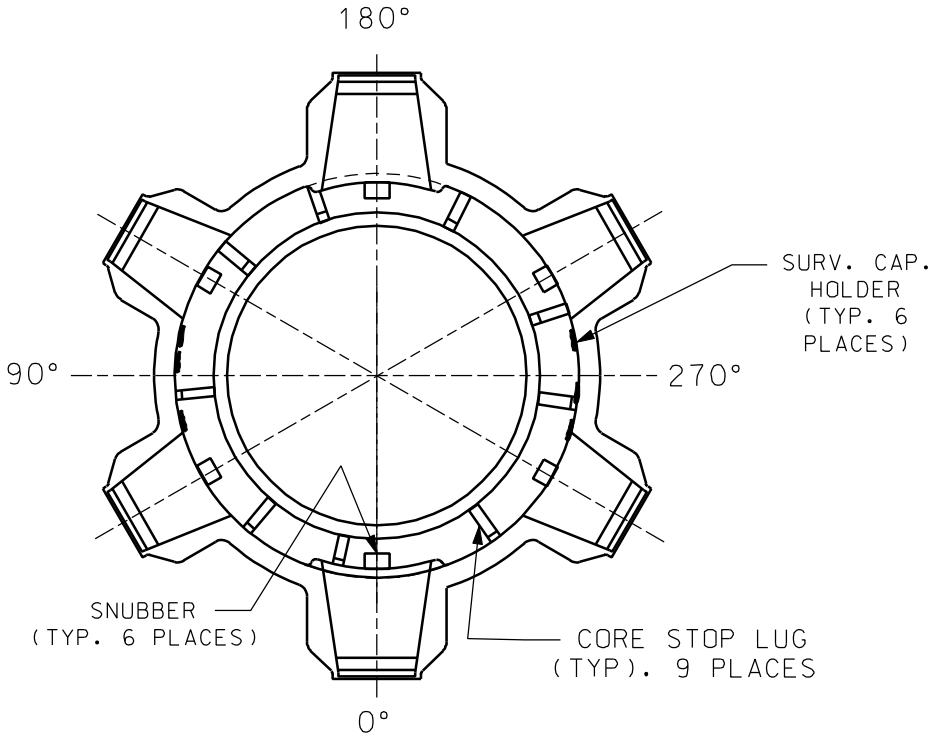
FILENAME: WTR-1-1100 SH2.dwg

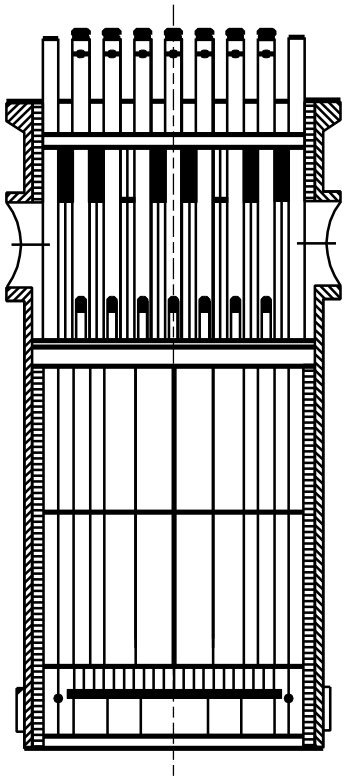
REACTOR VESSEL INTERNALS

01-054
ACCESSIBLE AREA OF INTERIOR OF REACTOR VESSEL WITH FUEL AND CORE SUPPORT BARREL IN PLACE.

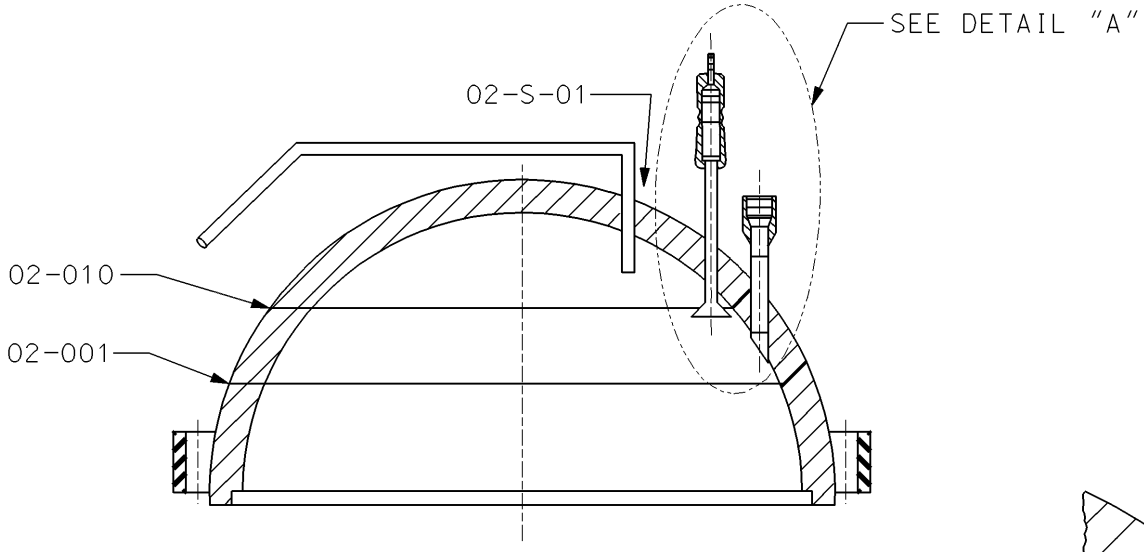
01-055
ACCESSIBLE AREA OF CORE SUPPORT BARREL AND INTERIOR OF REACTOR VESSEL WITH FUEL AND CORE SUPPORT BARREL REMOVED.

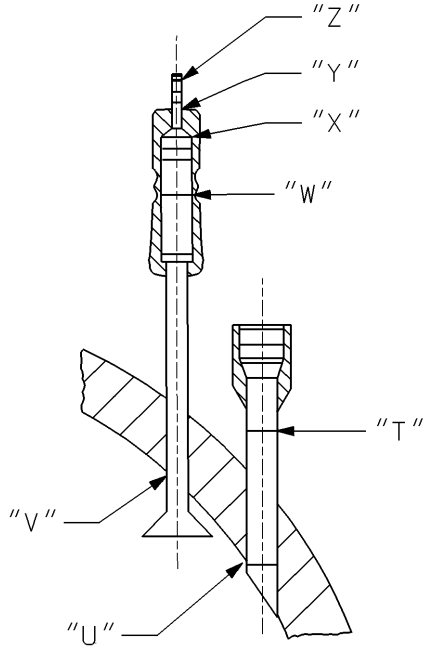




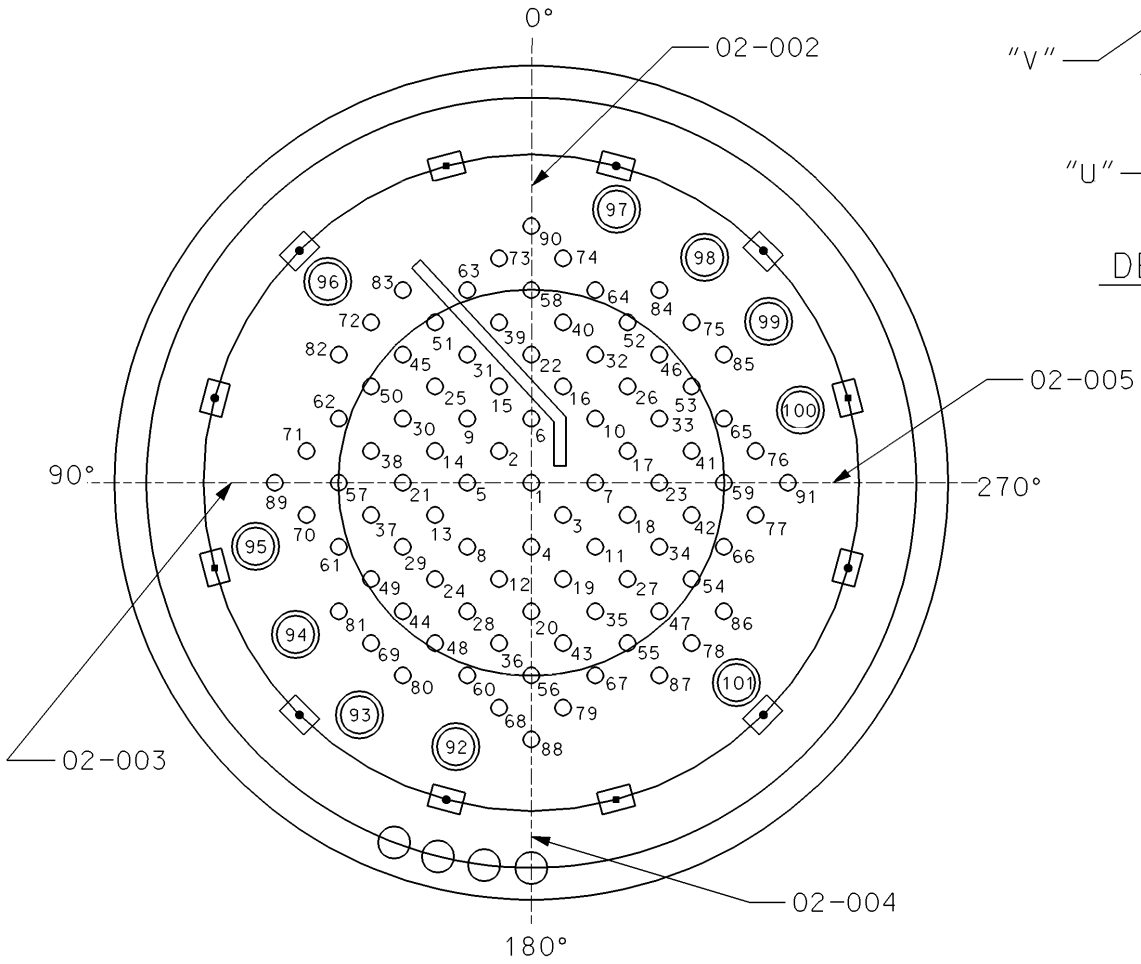


REACTOR VESSEL CLOSURE HEAD





DETAIL A



CEDM WELD DESIGNATIONS

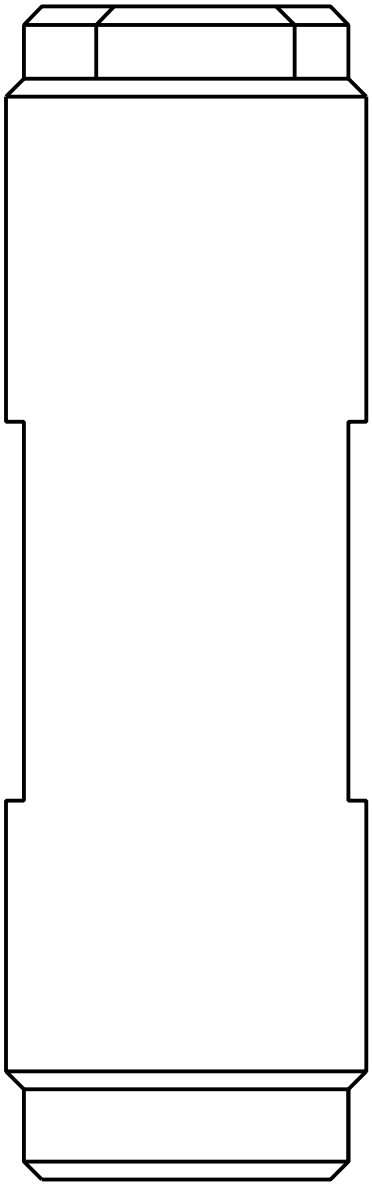
02-V-01 THROUGH 02-V-91
02-W-60 THROUGH 02-W-91 PERIPHERAL
02-X-60 THROUGH 02-X-91 PERIPHERAL
02-Y-60 THROUGH 02-V-91 PERIPHERAL
02-Z-60 THROUGH 02-Z-91 PERIPHERAL

INSTRUMENT WELD DESIGNATIONS

02-T-92 THROUGH 01-T-101
02-U-92 THROUGH 02-U-101

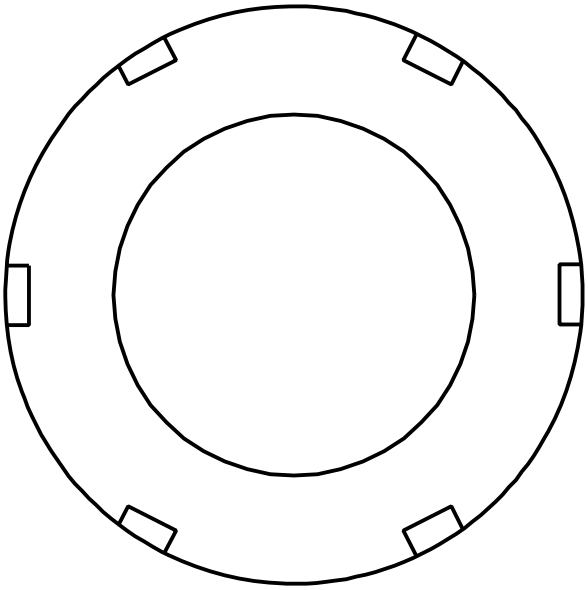
R.V. STUDS, NUTS AND WASHERS

STUD



01-S-01
THRU
01-S-54

NUT



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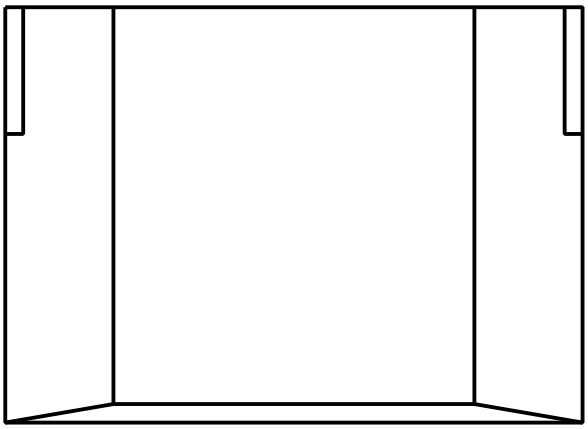
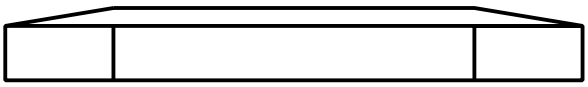
THRU
01-N-54



WASHER



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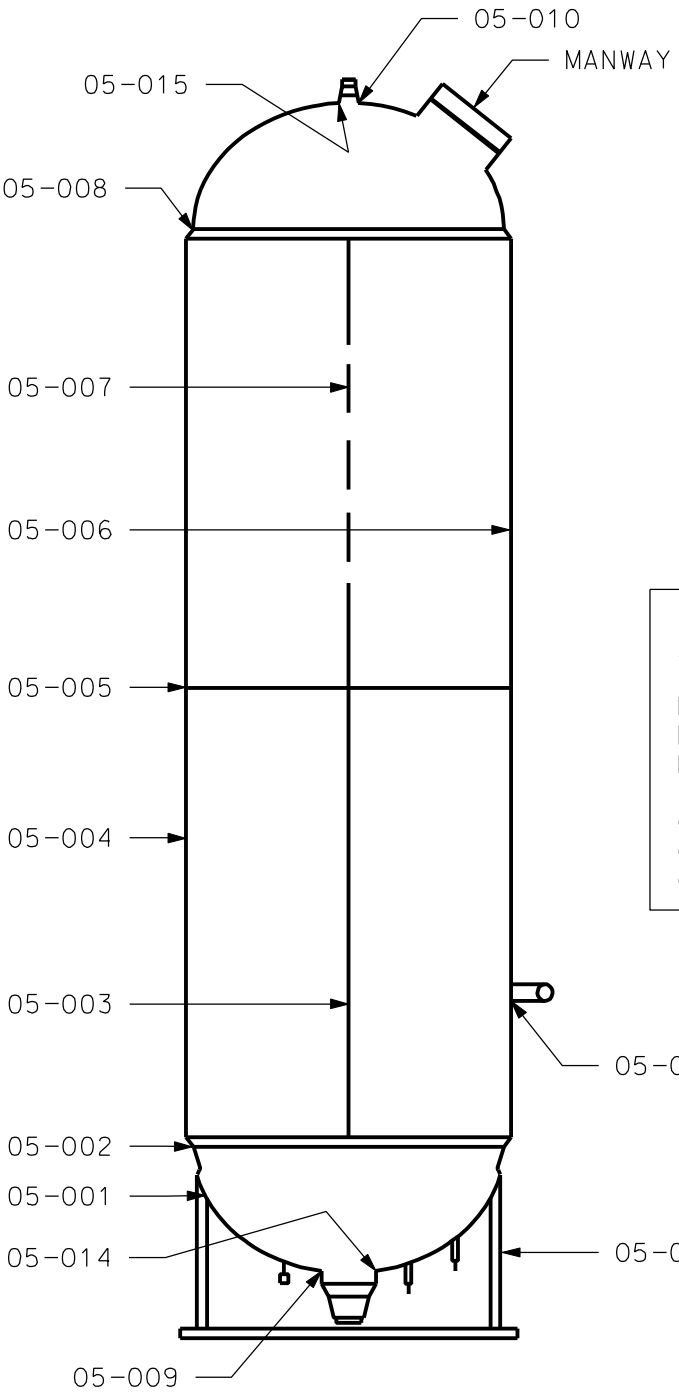
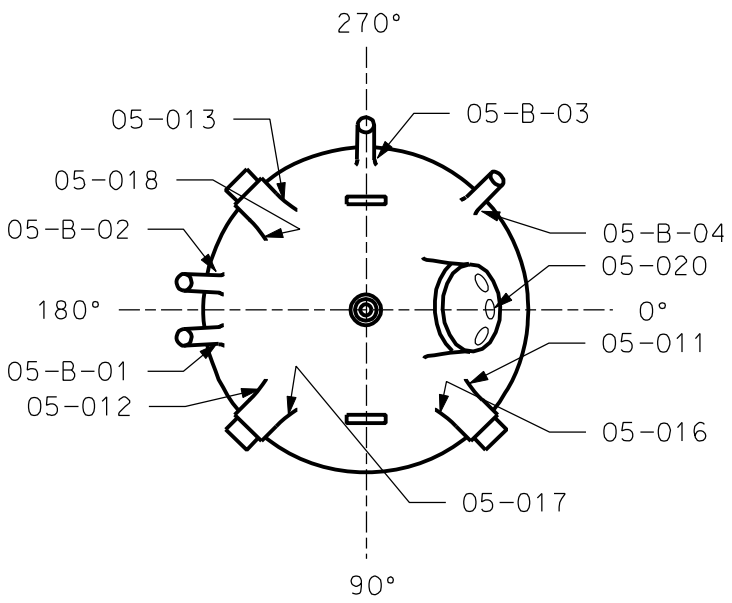
THRU
01-W-54

PRESSURIZER



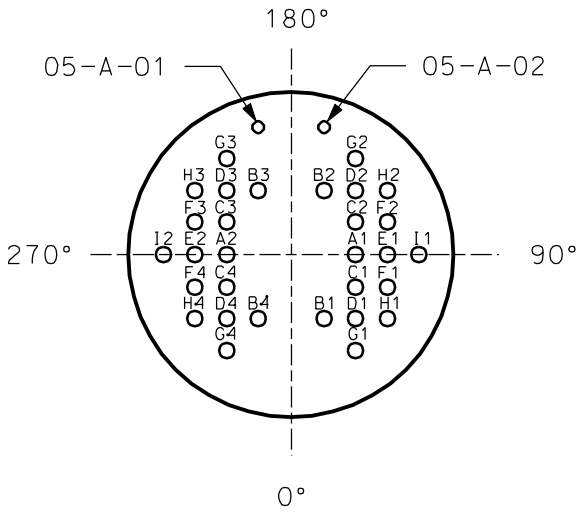
TOP HEAD



HEATER CONNECTION WELD DESIGNATIONS

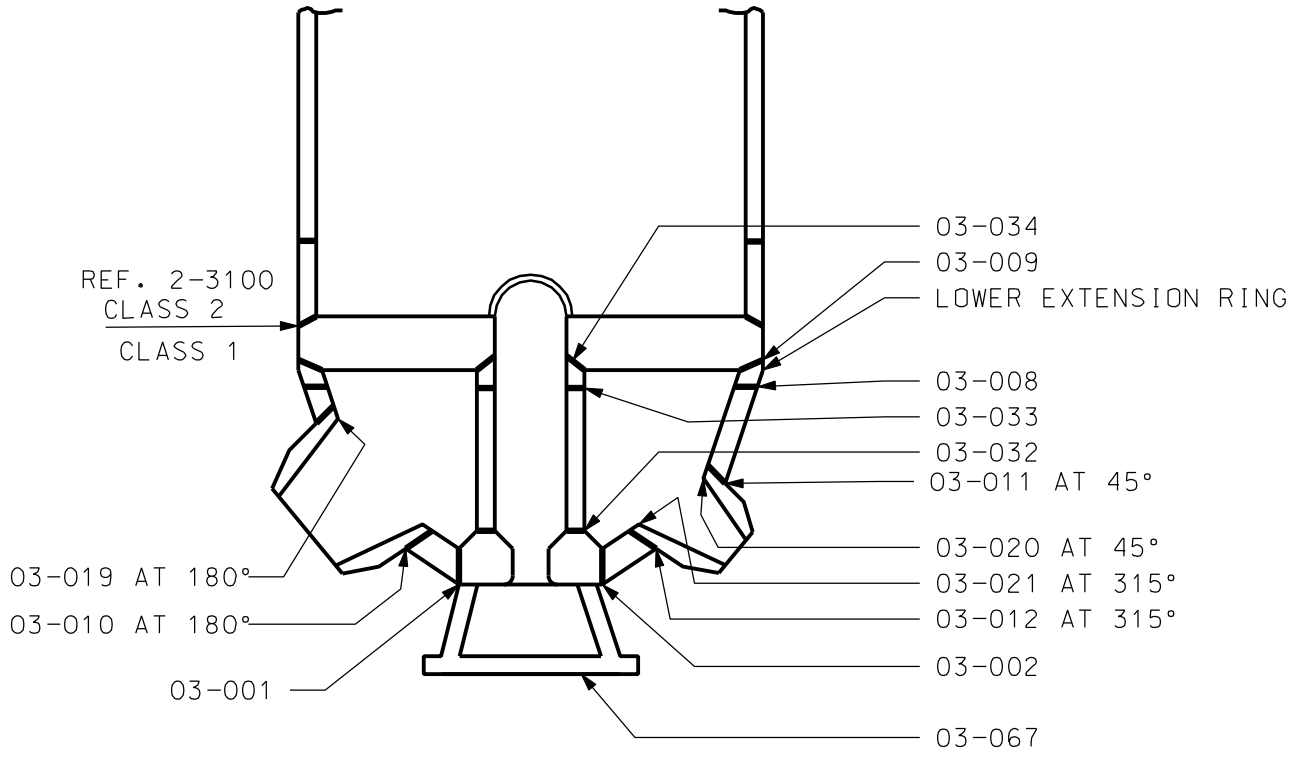
A1	05-H-01	D1	05-H-11	G1	05-H-21
A2	05-H-02	D2	05-H-12	G2	05-H-22
B1	05-H-03	D3	05-H-13	G3	05-H-23
B2	05-H-04	D4	05-H-14	G4	05-H-24
B3	05-H-05	E1	05-H-15	H1	05-H-25
B4	05-H-06	E2	05-H-16	H2	05-H-26
C1	05-H-07	F1	05-H-17	H3	05-H-27
C2	05-H-08	F2	05-H-18	H4	05-H-28
C3	05-H-09	F3	05-H-19	I1	05-H-29
C4	05-H-10	F4	05-H-20	I2	05-H-30

BOTTOM HEAD

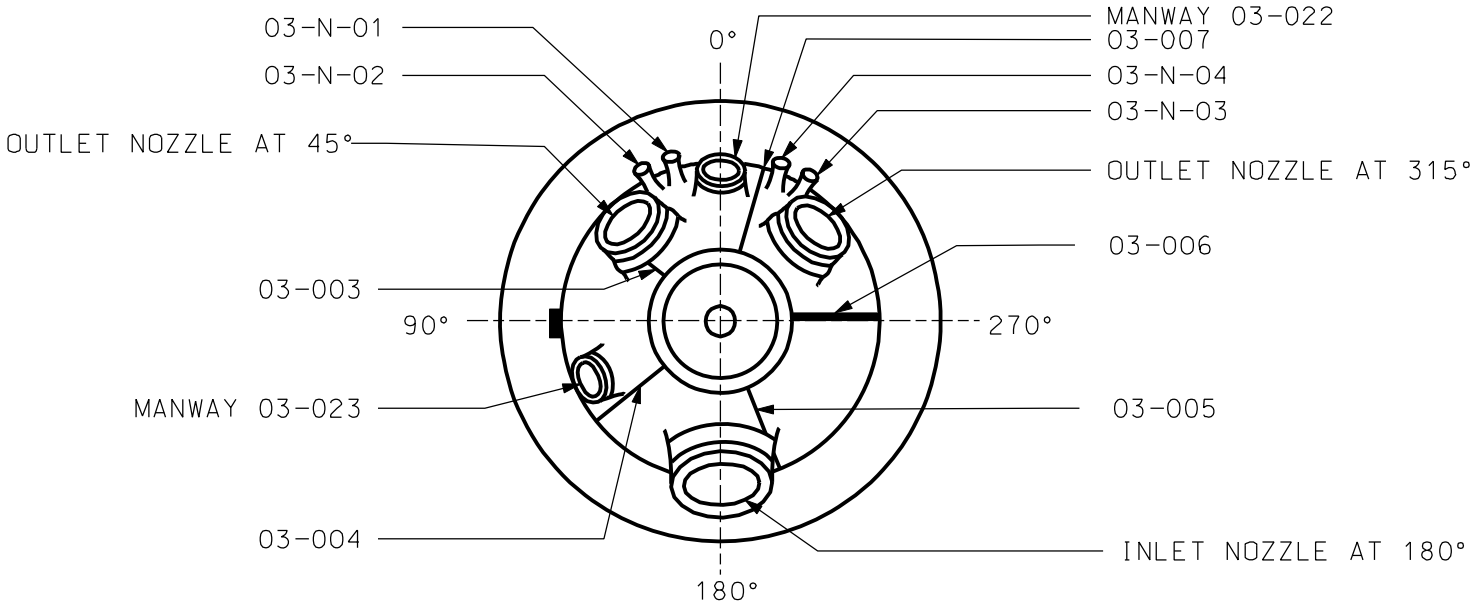


WTR-1-3100

STEAM GENERATOR 1
PRIMARY



INDENT. (LOWER EXTENSION RING)
03-013 EXTENSION RING SEGMENT TO SEGMENT AT 0° AXIS
03-014 EXTENSION RING SEGMENT TO SEGMENT AT 90° AXIS
03-015 EXTENSION RING SEGMENT TO SEGMENT AT 180° AXIS
03-016 EXTENSION RING SEGMENT TO SEGMENT AT 270° AXIS



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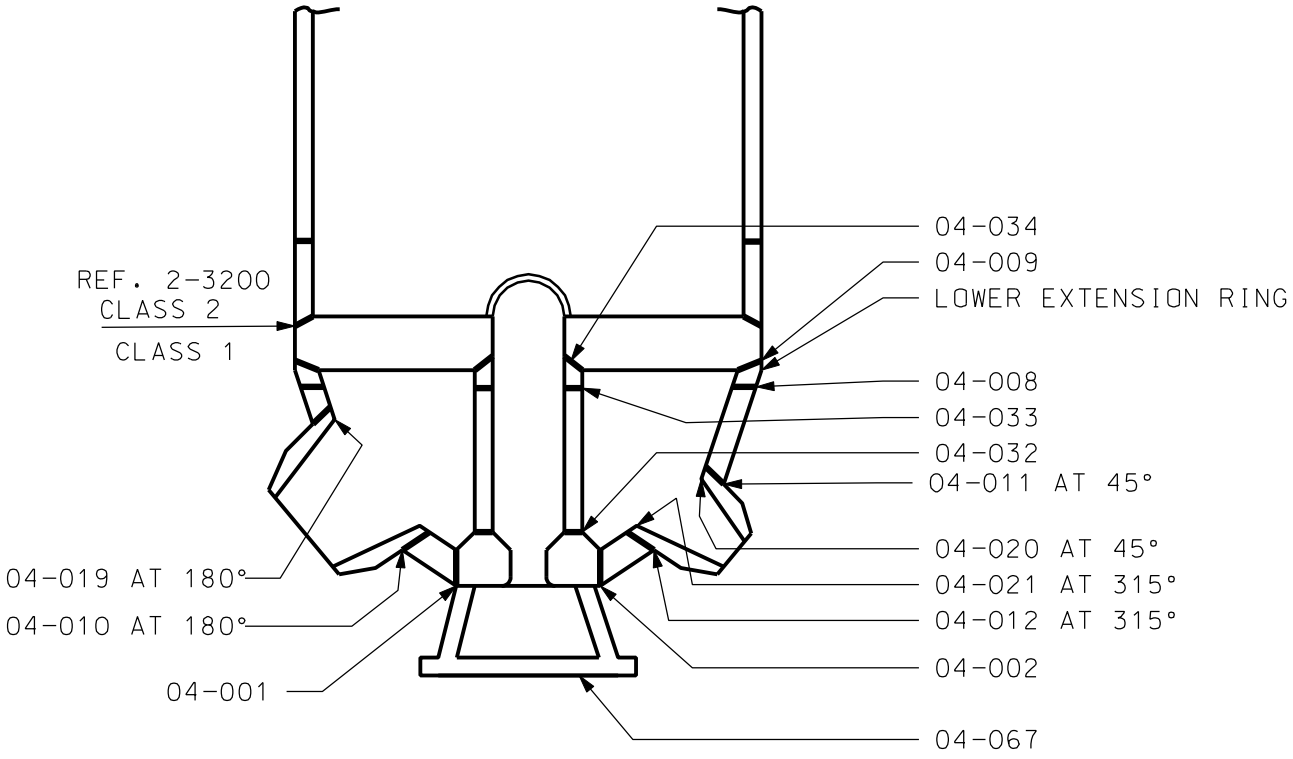
STEAM GENERATOR 2
PRIMARY



INDENT. (LOWER EXTENSION RING)
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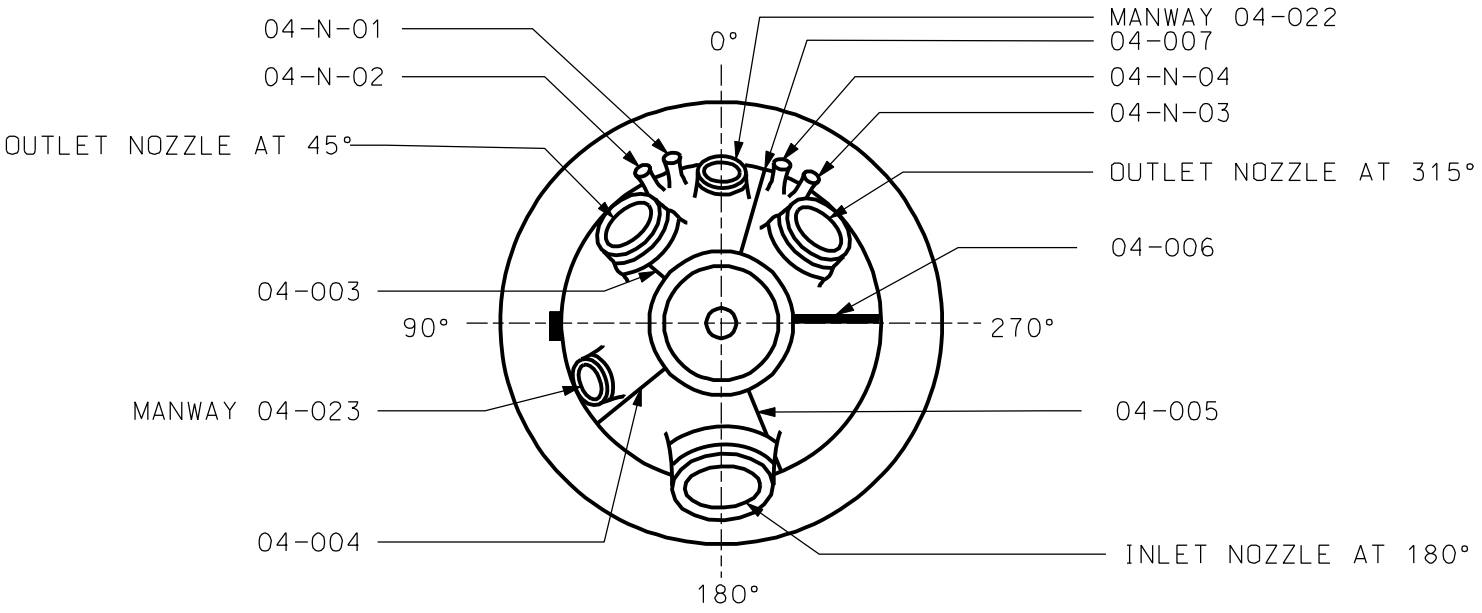
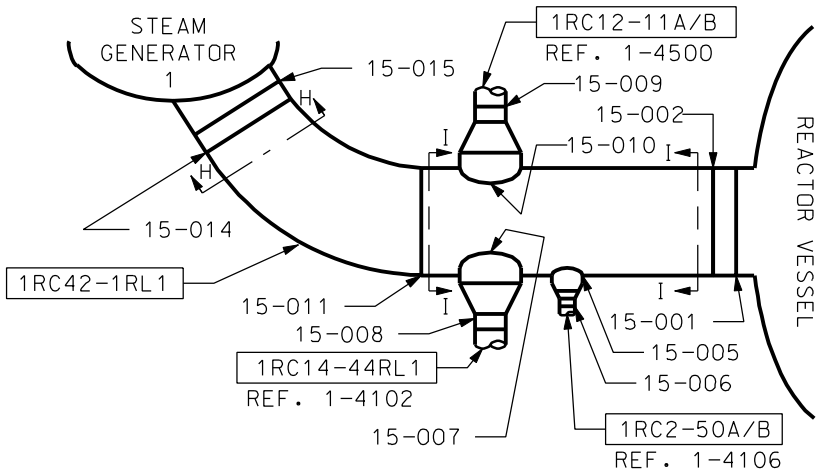
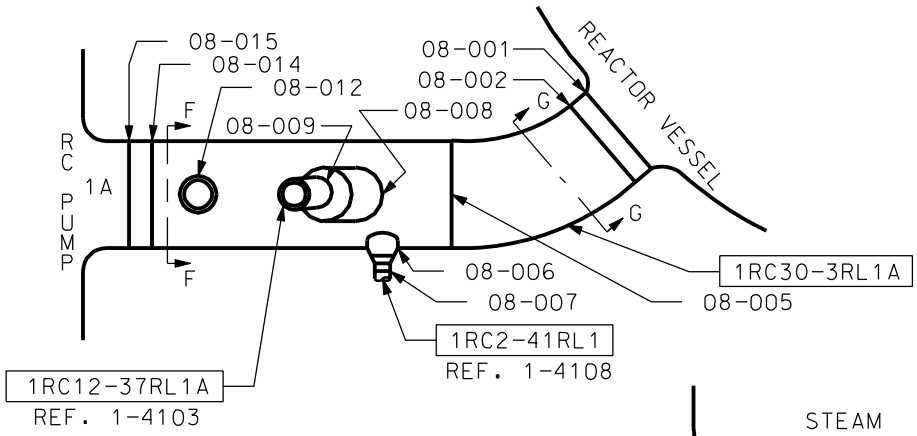
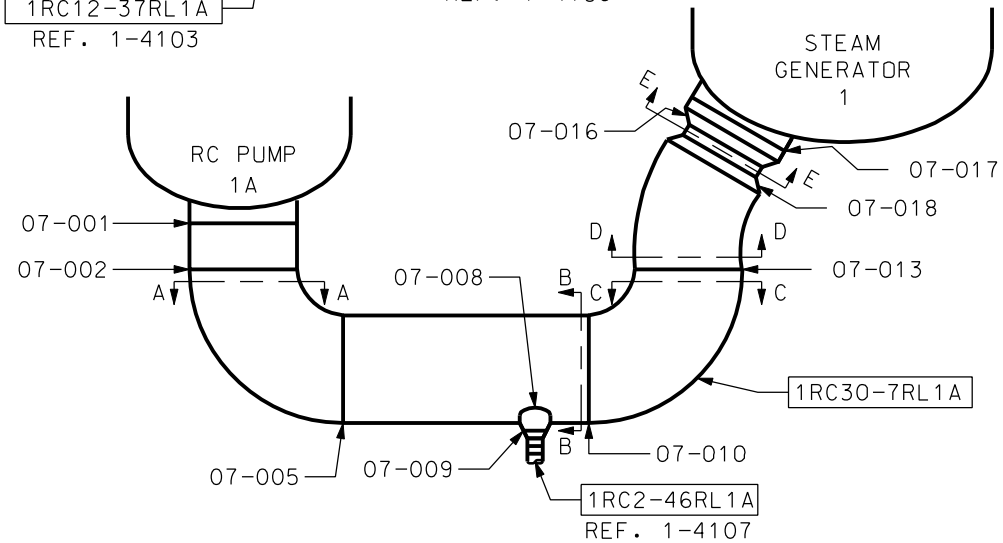
04-014 EXTENSION RING SEGMENT TO SEGMENT AT 90° AXIS
04-015 EXTENSION RING SEGMENT TO SEGMENT AT 180° AXIS
04-016 EXTENSION RING SEGMENT TO SEGMENT AT 270° AXIS



REACTOR COOLANT PIPING-LOOP 1A & HOTLEG







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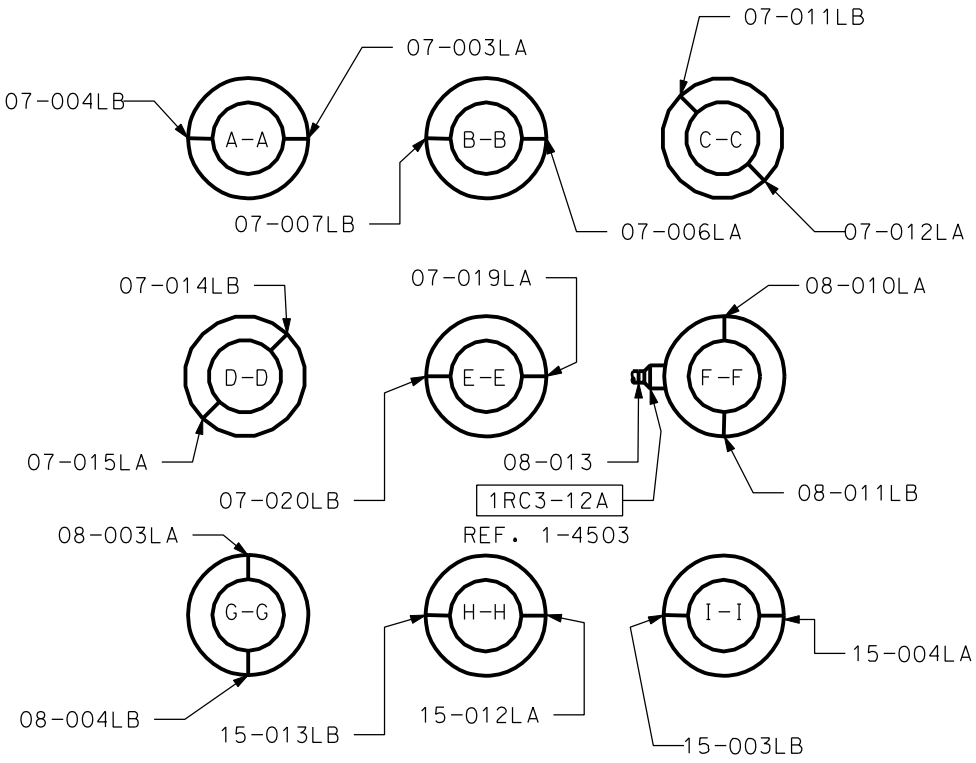
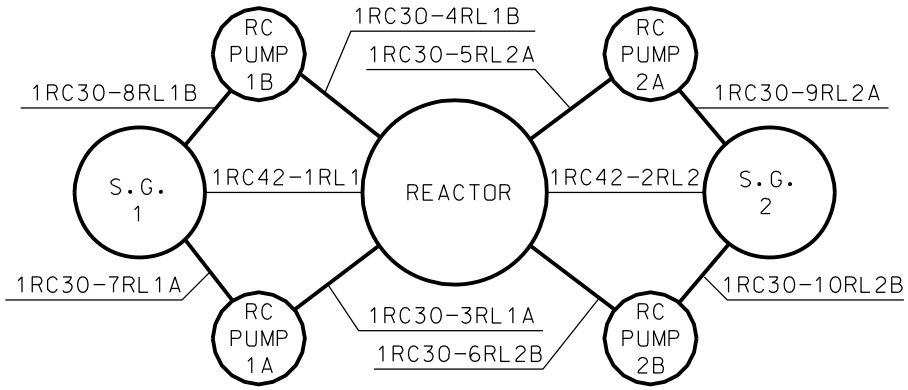
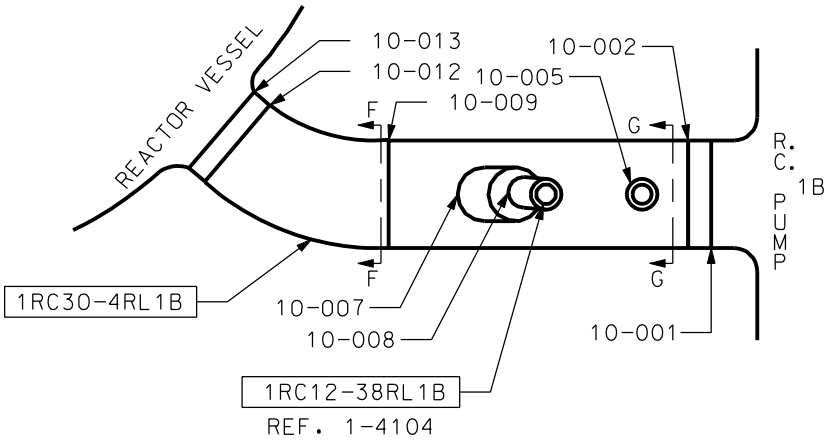




REACTOR COOLANT PIPING - LOOP 1B



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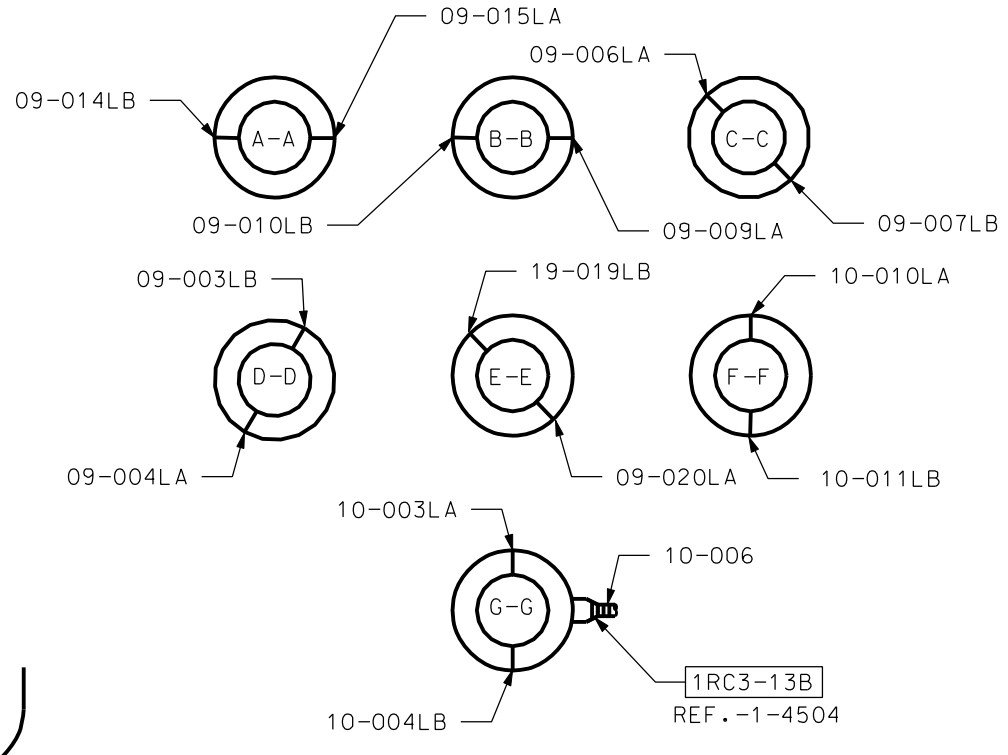
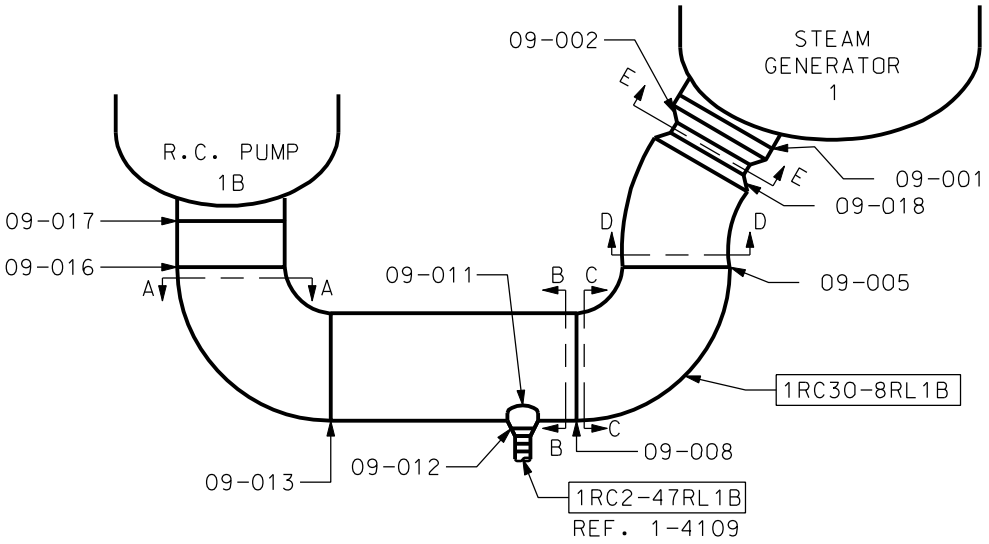
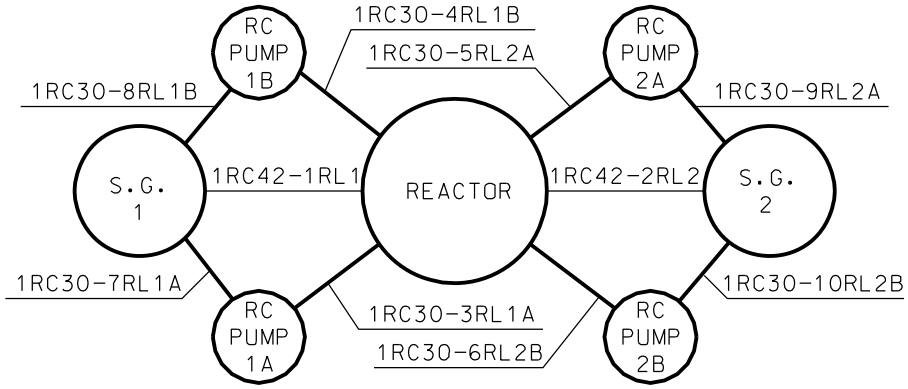
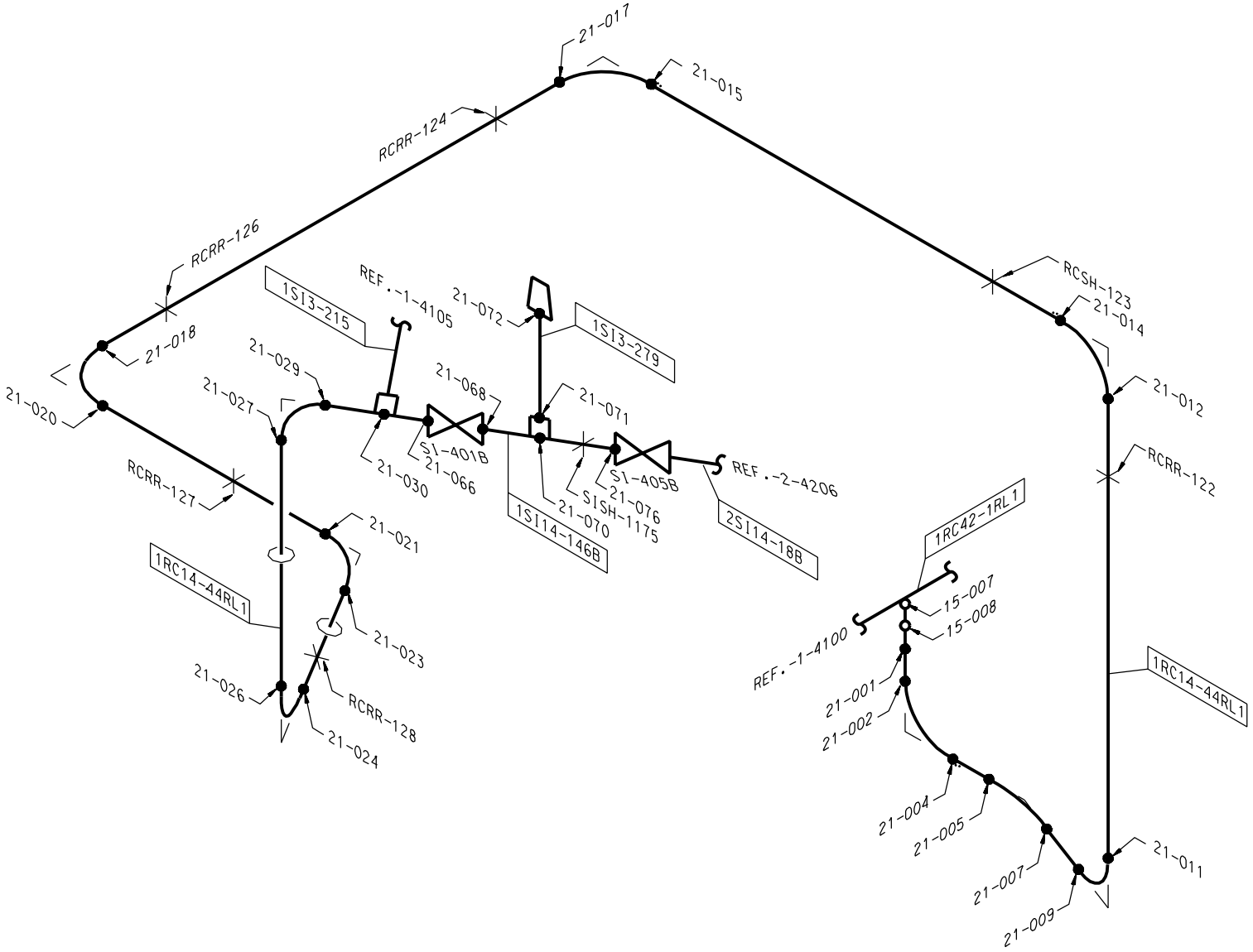






SHUTDOWN COOLING FROM LOOP 1, CLASS 1



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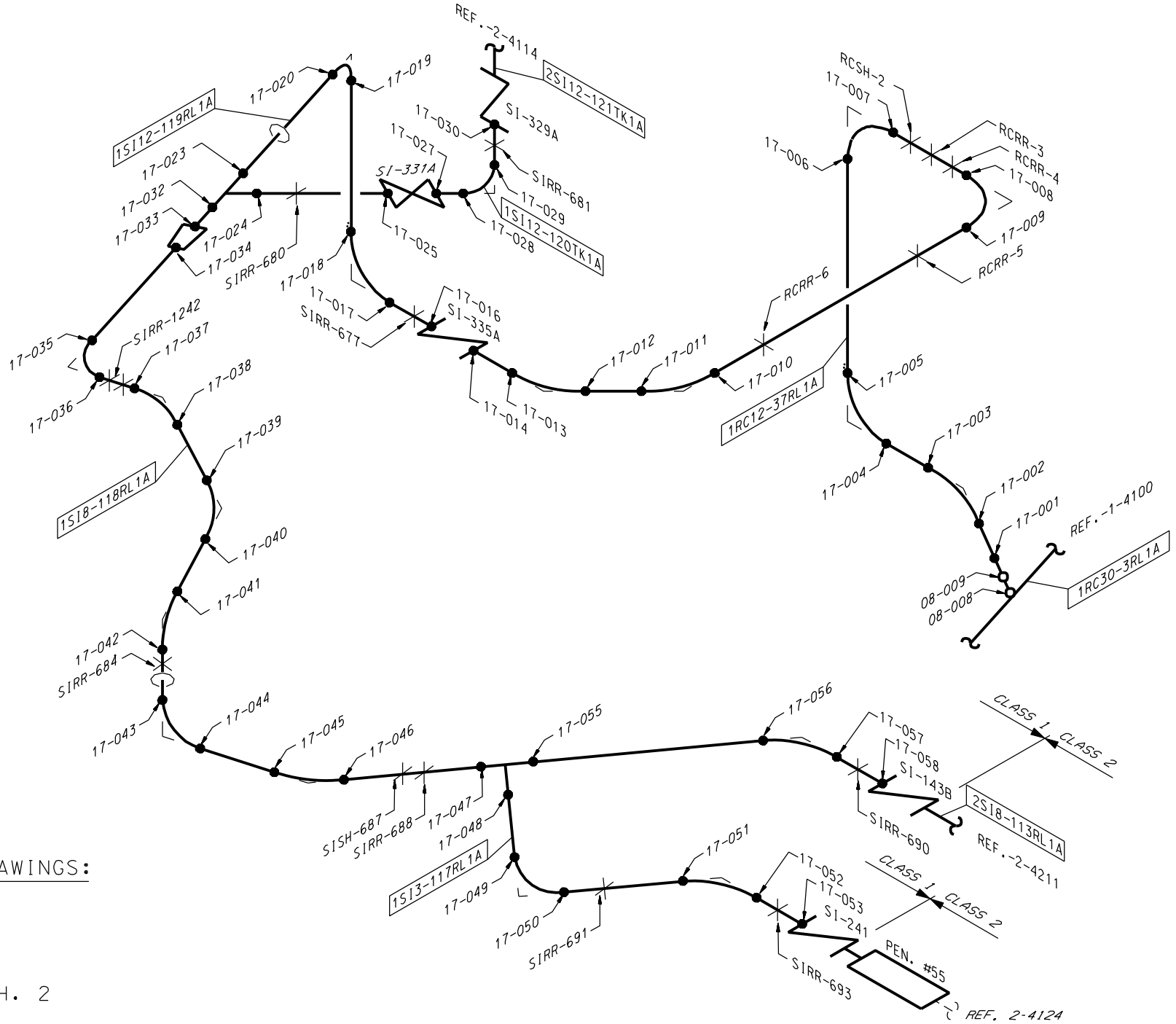
8469-15
8469-29
G-167 SH. 2
G-172

SAFETY INJECTION TO LOOP 1A, CLASS 1



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8469-12
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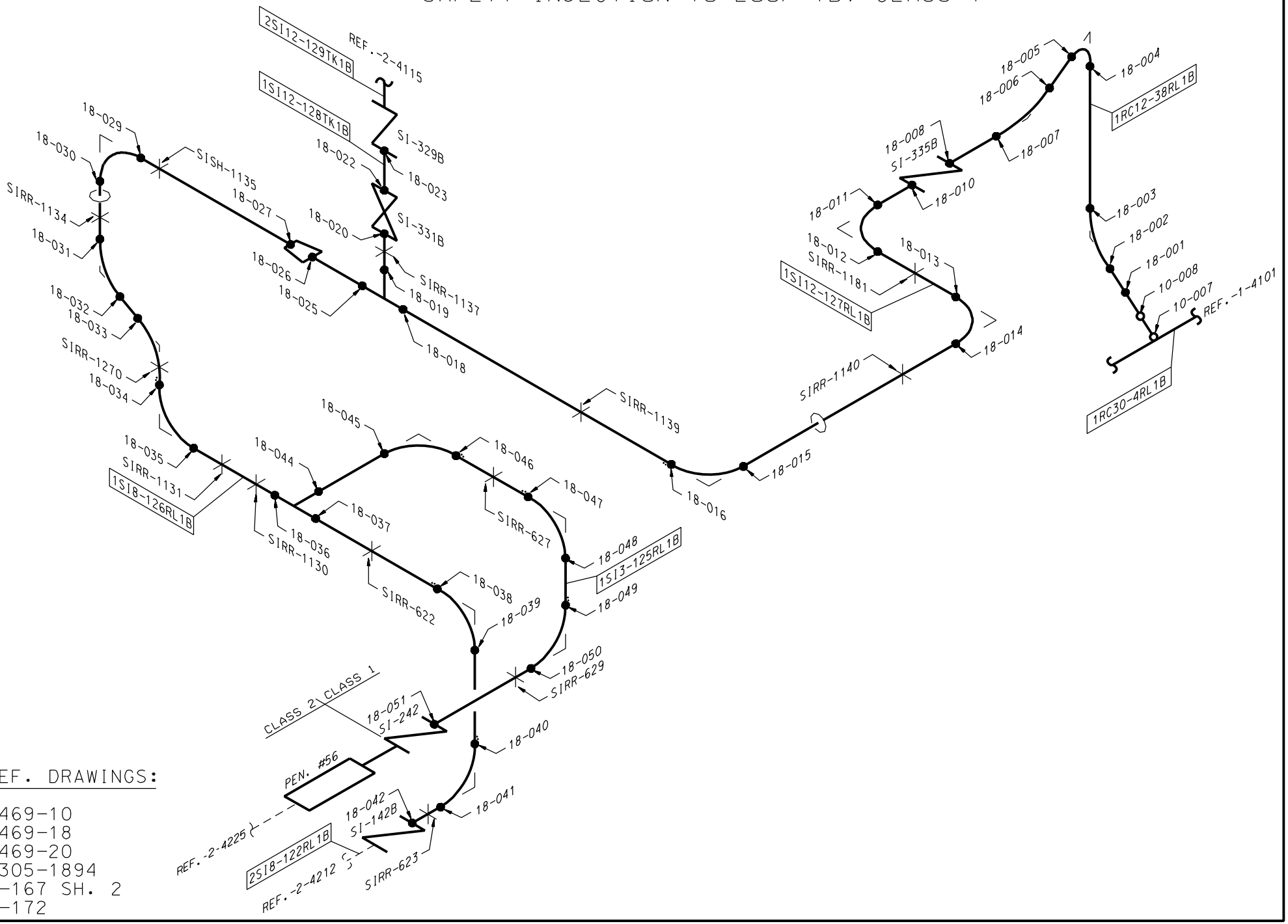
8469-24
8469-25
G-167 SH. 2
G-172

SAFETY INJECTION TO LOOP 1B, CLASS 1



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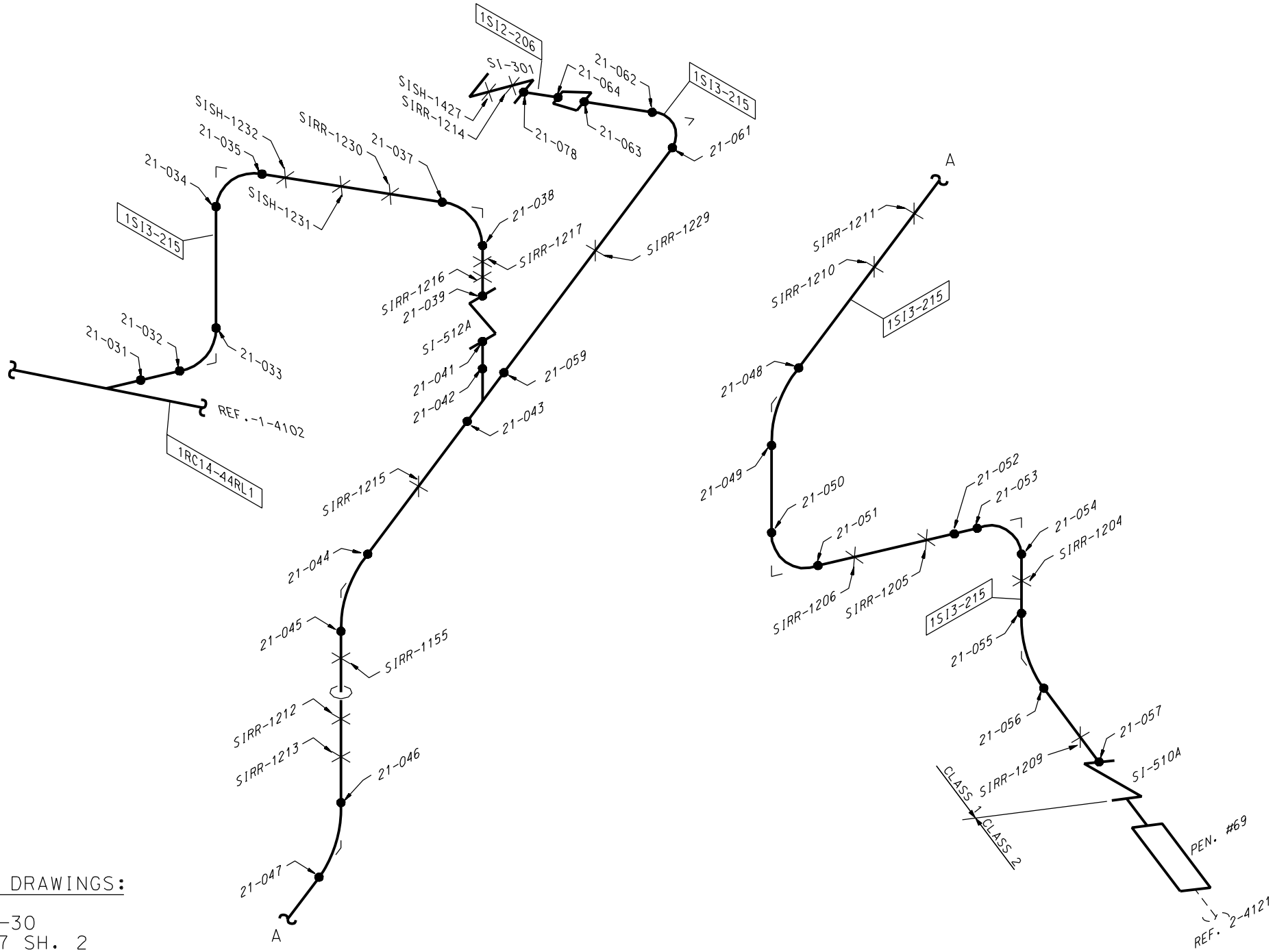
G-167 SH. 2
G-172

H.P.S.I. LINE TO LOOP 1 HOT LEG, CLASS 1



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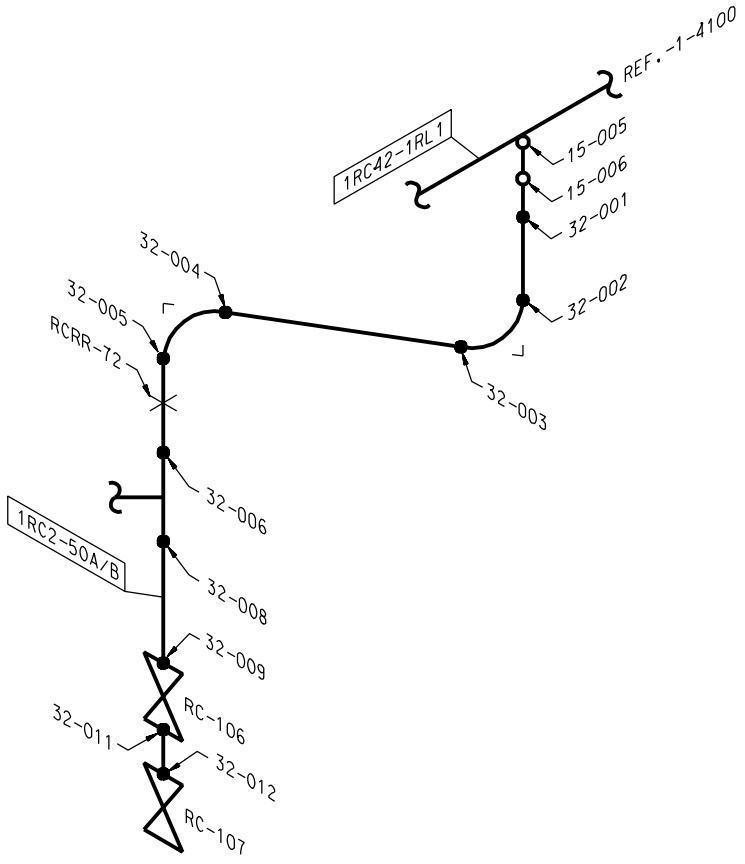
8469-30
G-167 SH. 2

HOT LEG DRAIN - LOOP 1



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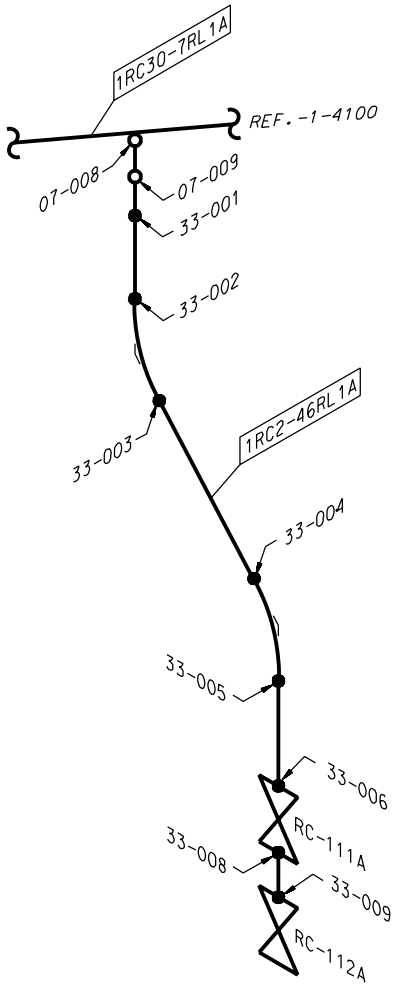
E-3029-LW3-RC-19
G-172

COLD LEG DRAIN - LOOP 1A



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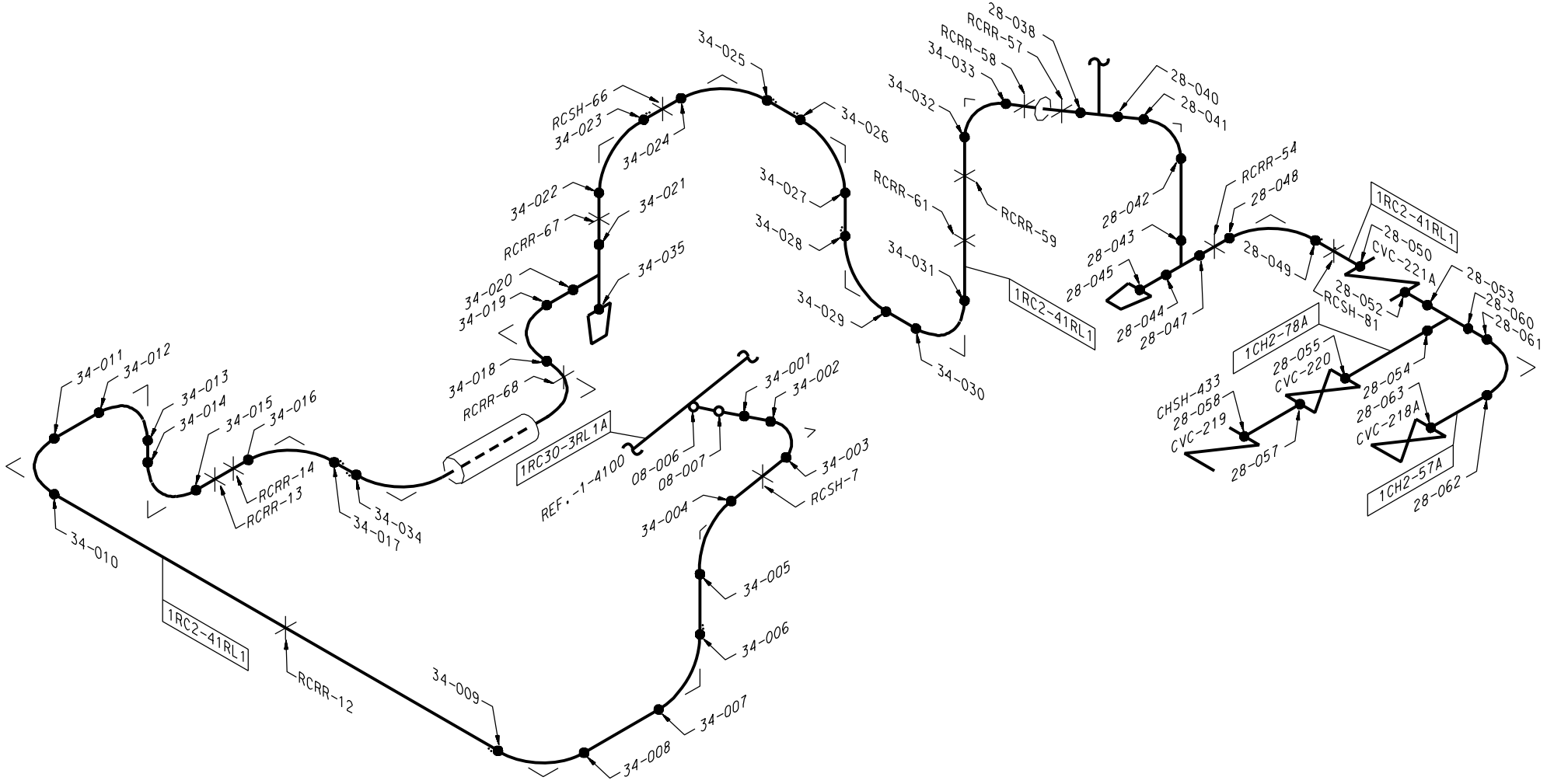
E-3029-LW3-RC-15
G-172

WTR-1-4108

CHARGING LINE TO LOOP 1A



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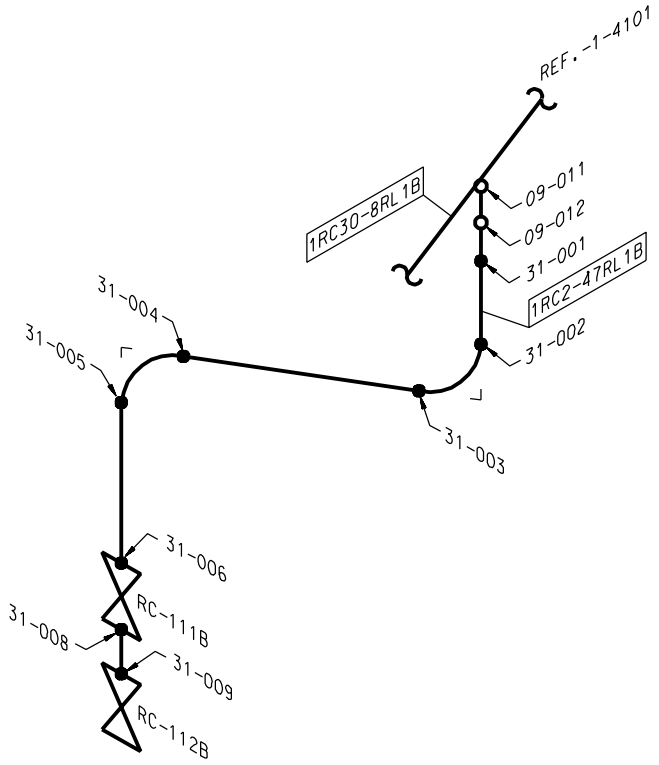
E-3029-LW3-RC-17
G-168 SH. 1
G-172

FILENAME: WTR-1-4108.dgn

COLD LEG DRAIN - LOOP 1B



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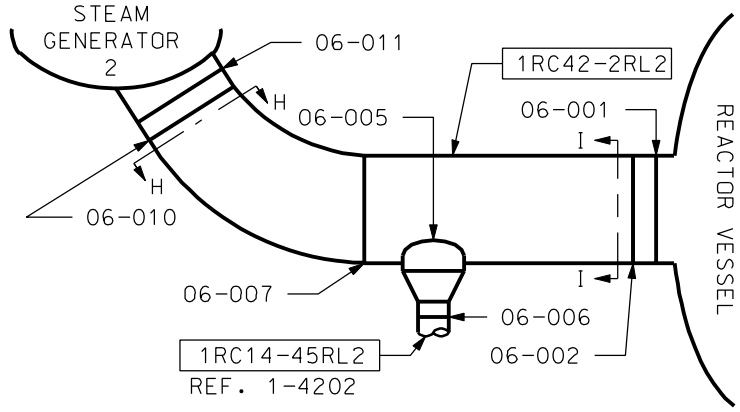
REACTOR COOLANT PIPING-LOOP 2A & HOTLEG



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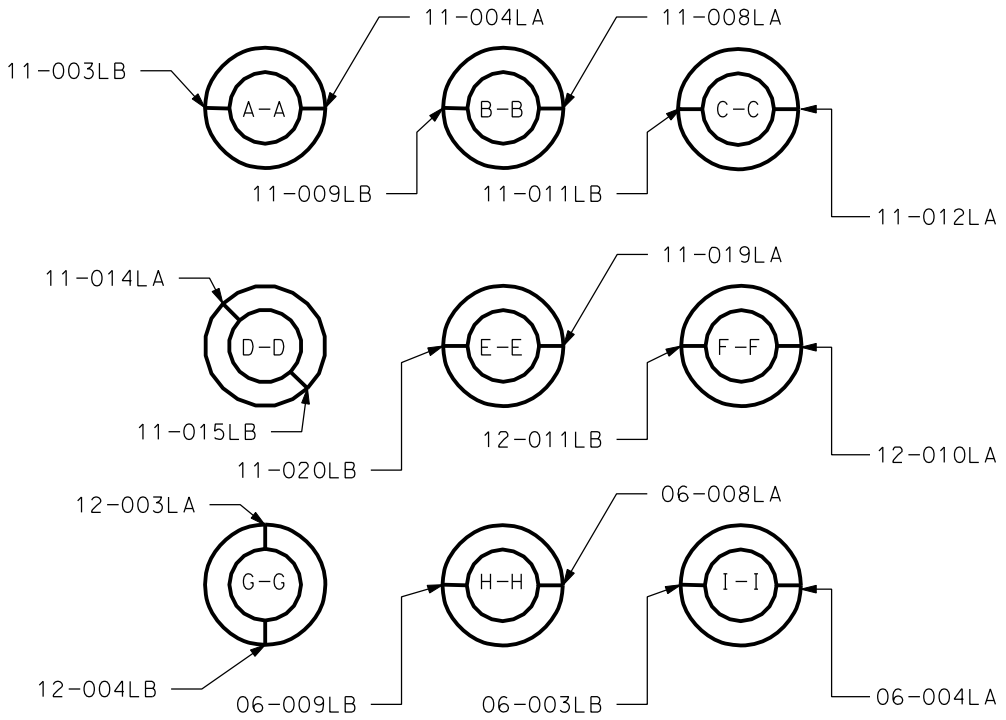
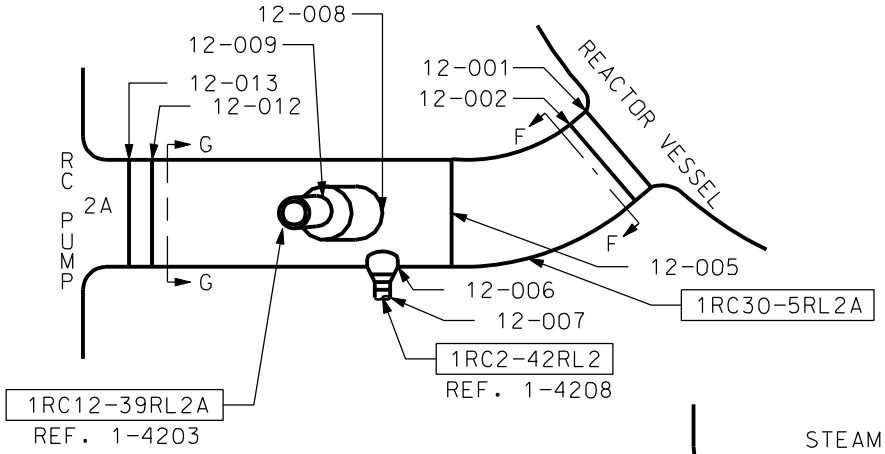
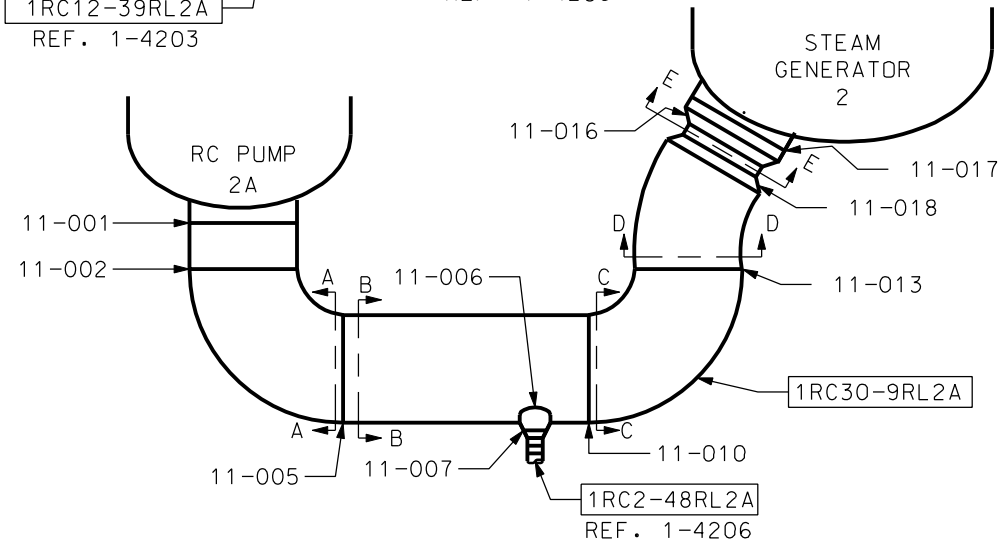
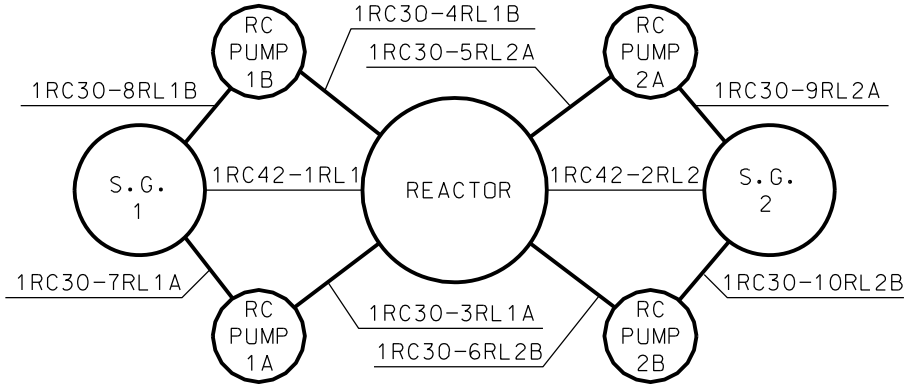
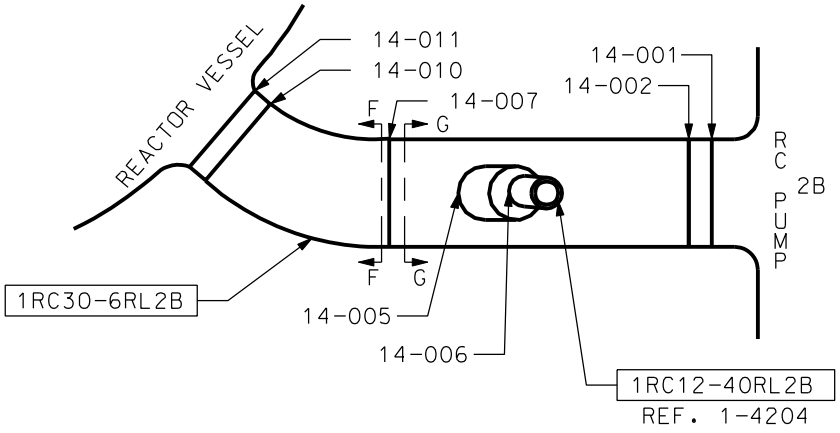


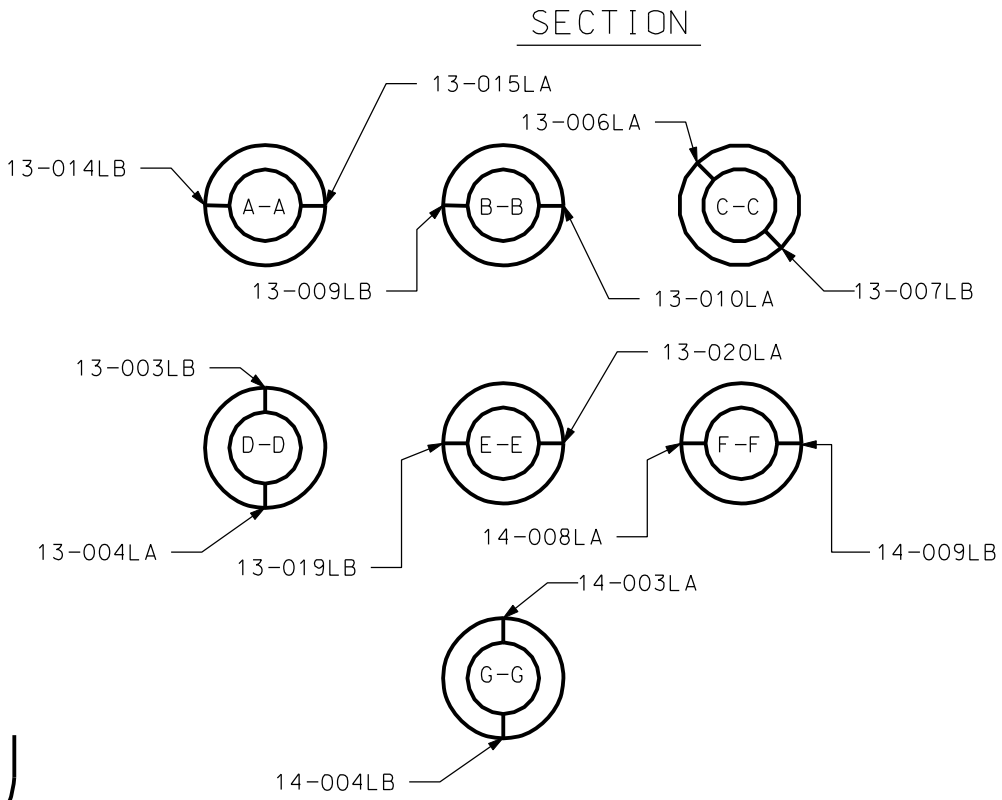


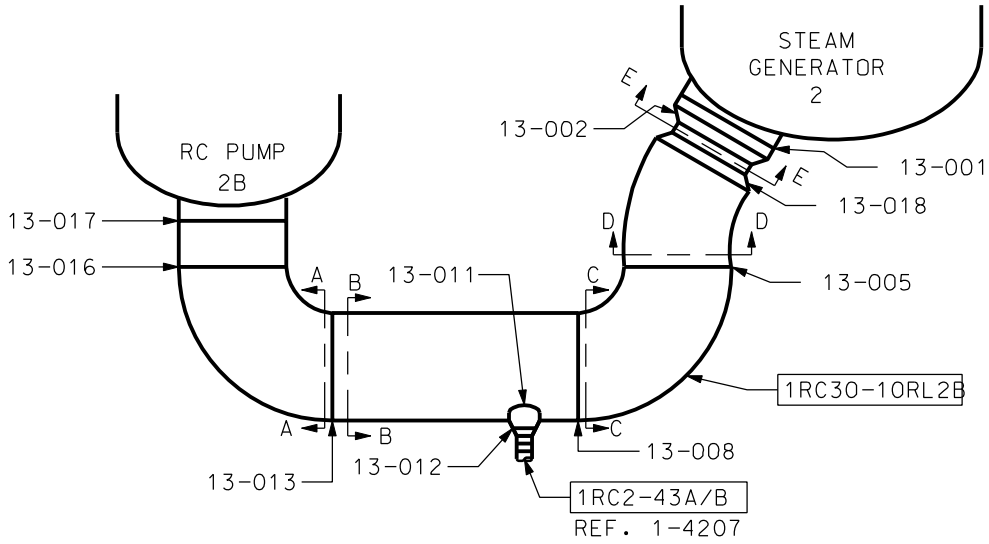


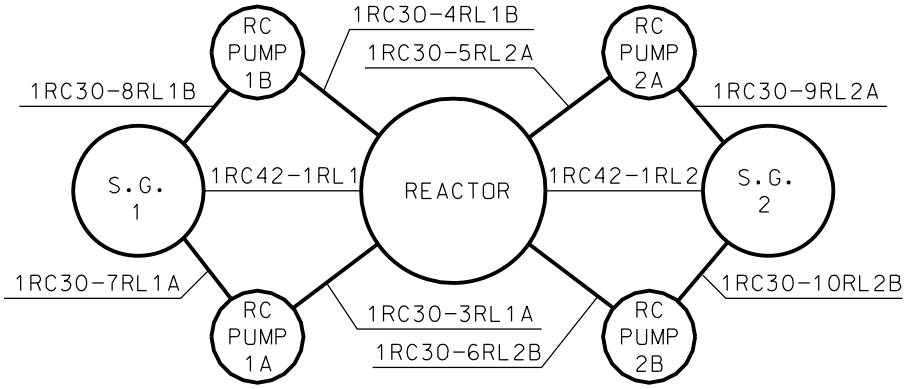


REACTOR COOLANT PIPING-LOOP 2B & HOTLEG

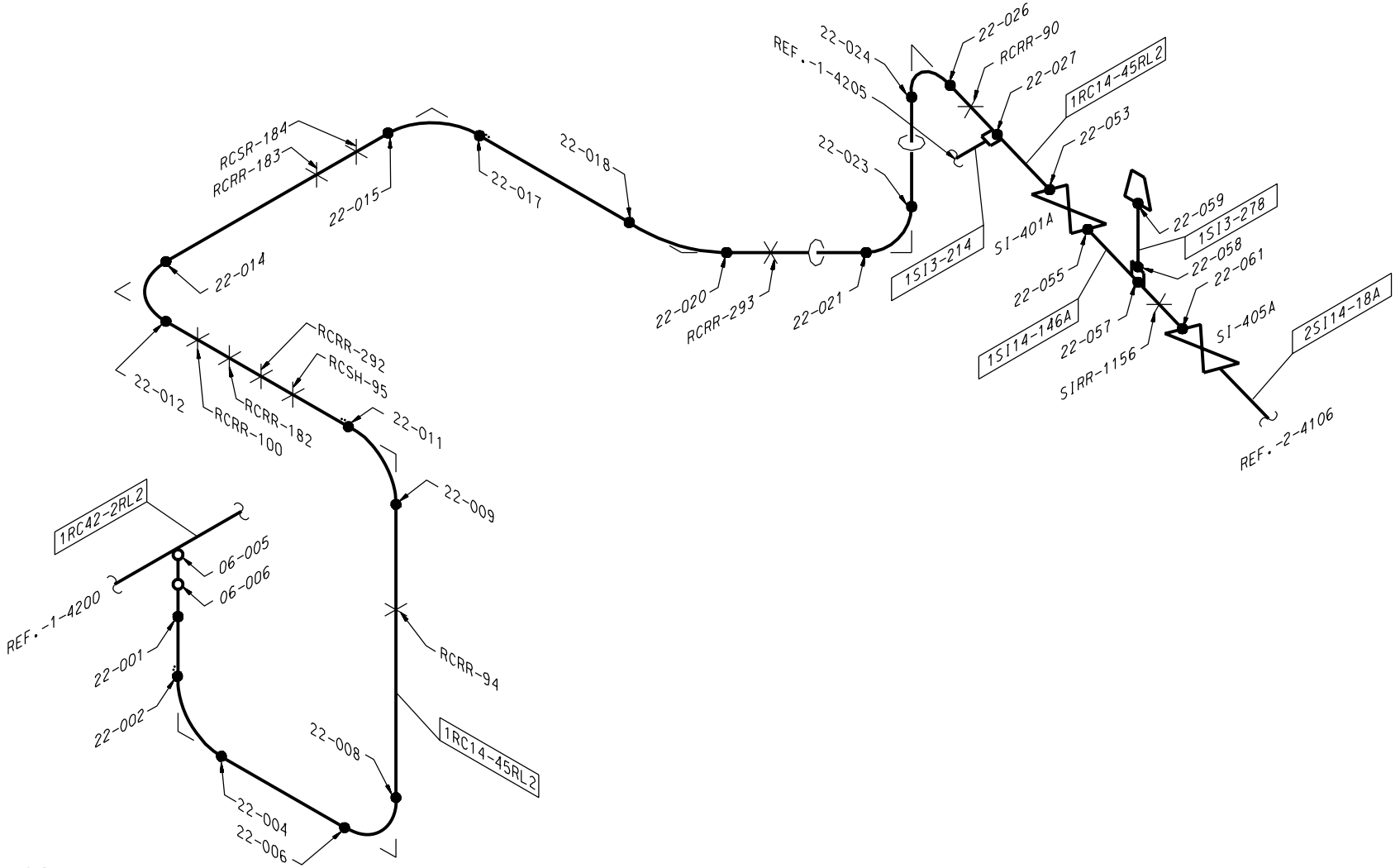








SHUTDOWN COOLING FROM LOOP 2, CLASS 1



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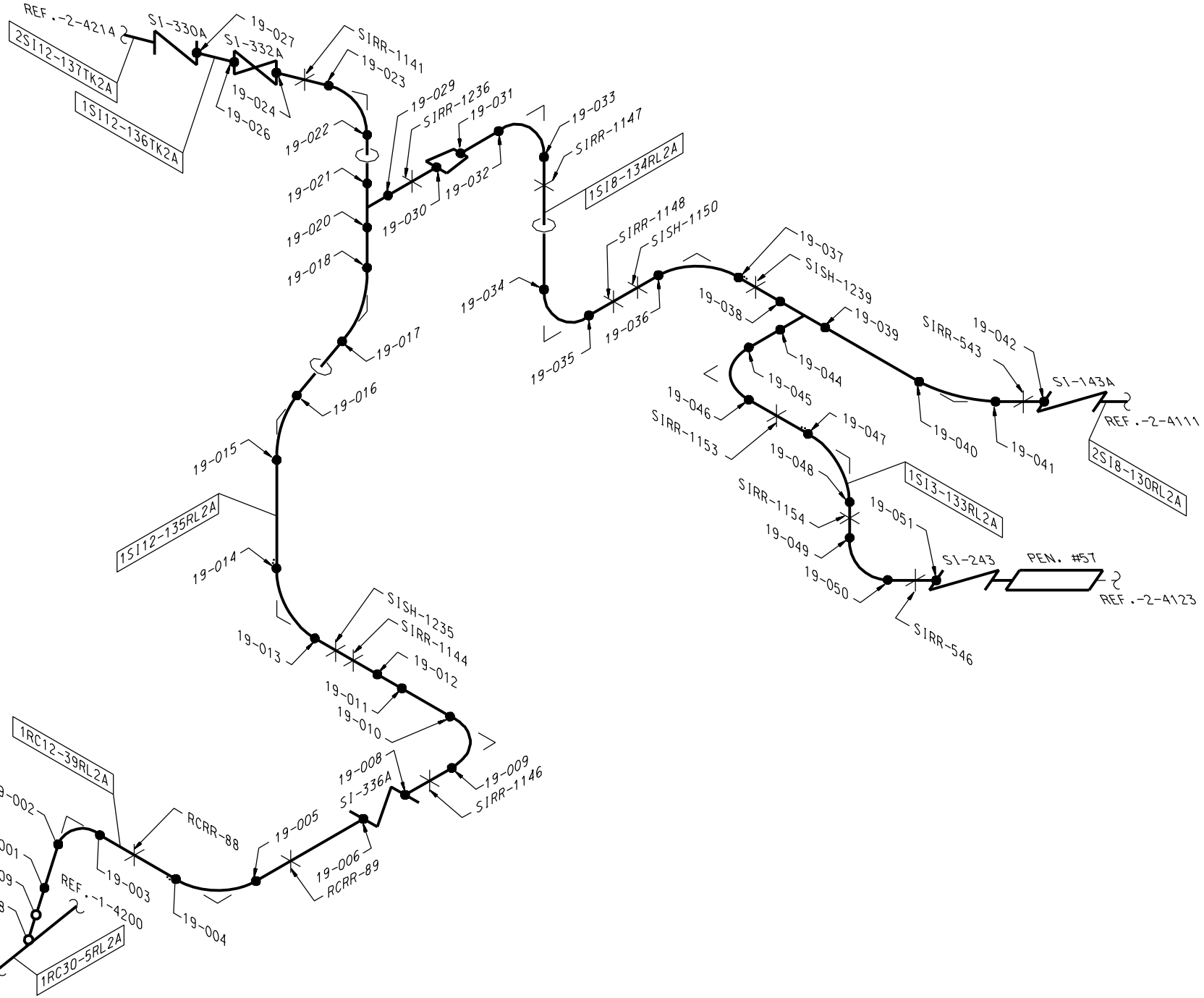
8469-26
G-167 SH. 2
G-172

SAFETY INJECTION TO LOOP 2A, CLASS 1



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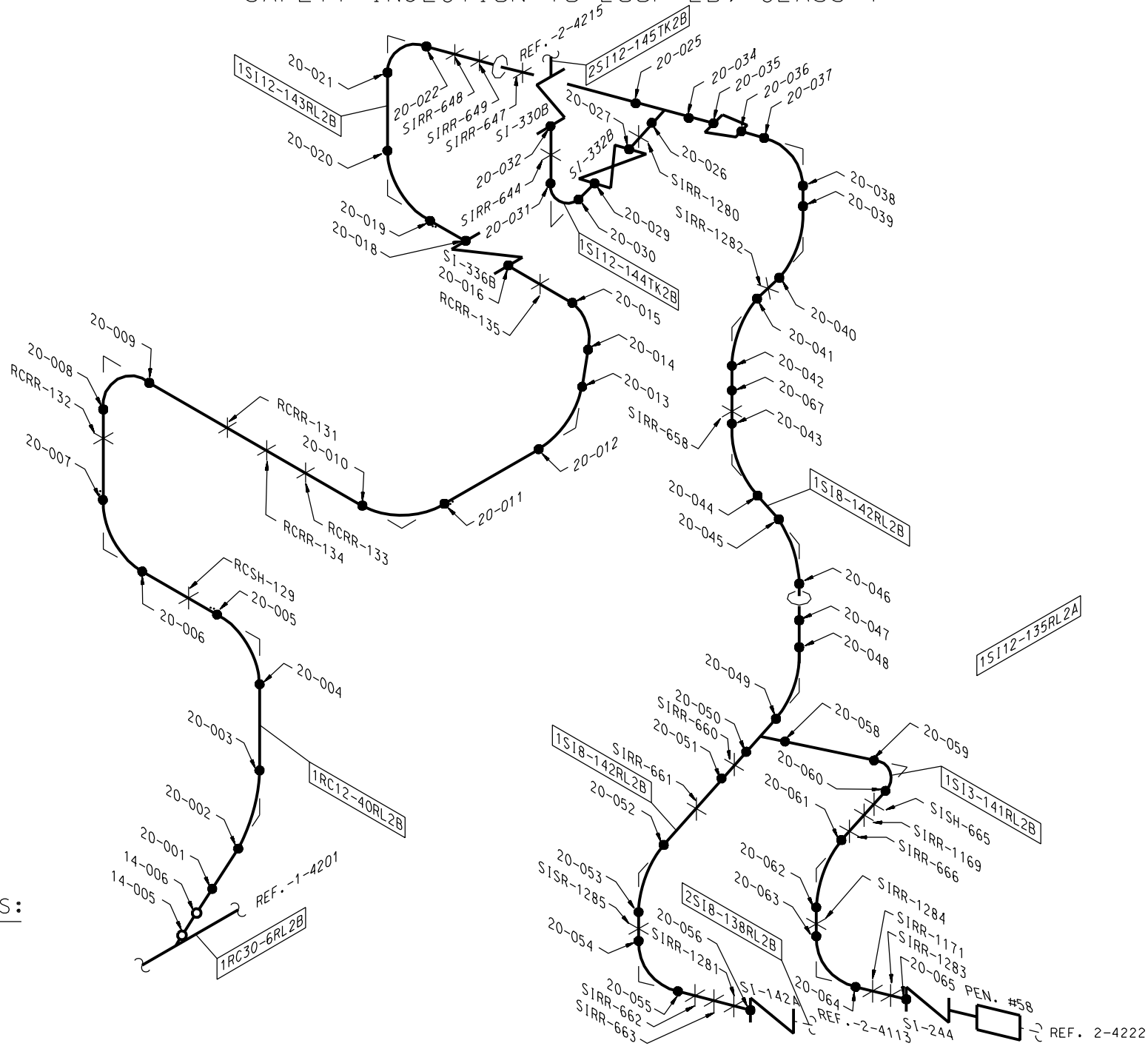
G-167 SH. 2
G-172

SAFETY INJECTION TO LOOP 2B, CLASS 1



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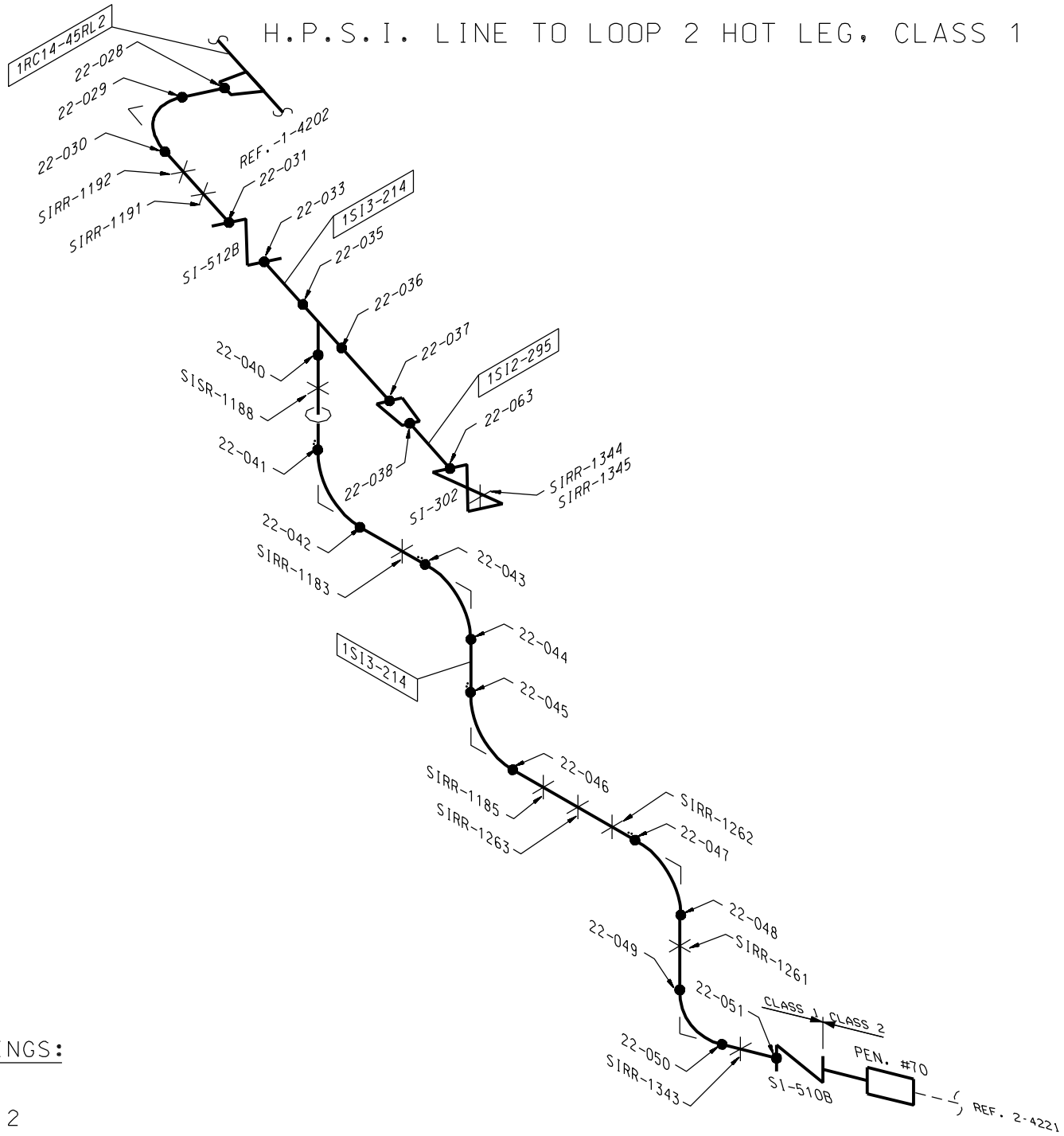
G-167 SH. 2
G-172

H.P.S.I. LINE TO LOOP 2 HOT LEG, CLASS 1



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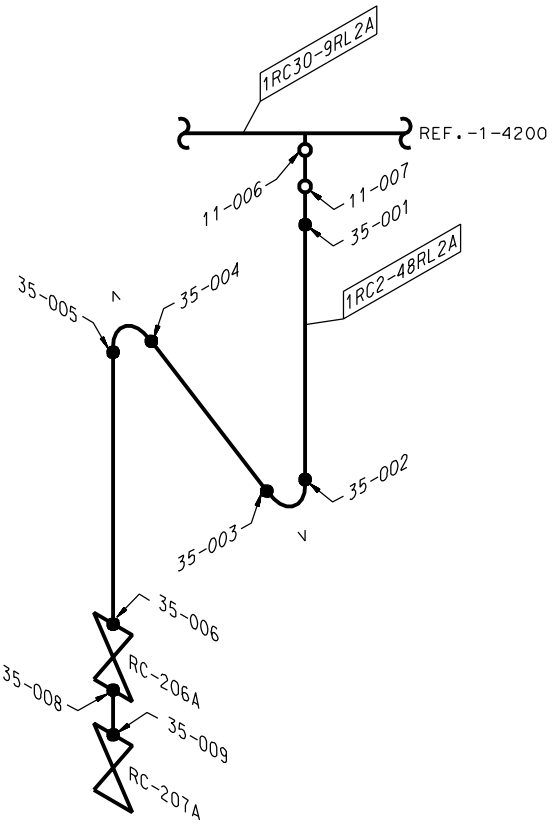
8469-16
G-167 SH. 2

COLD LEG DRAIN - LOOP 2A



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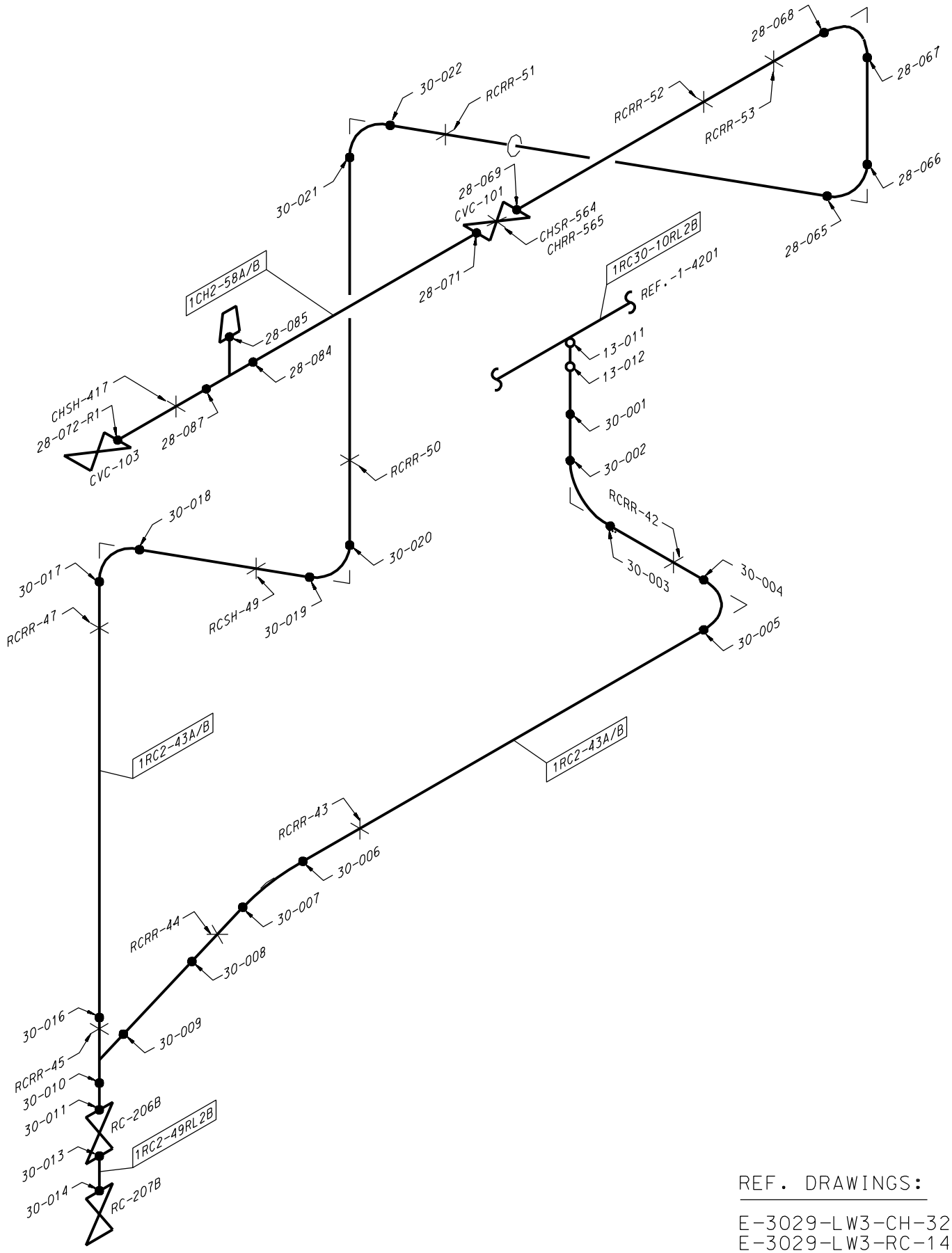
E-3029-LW3-RC-15
G-172

WTR-1-4207

LETDOWN LINE FROM LOOP 2B



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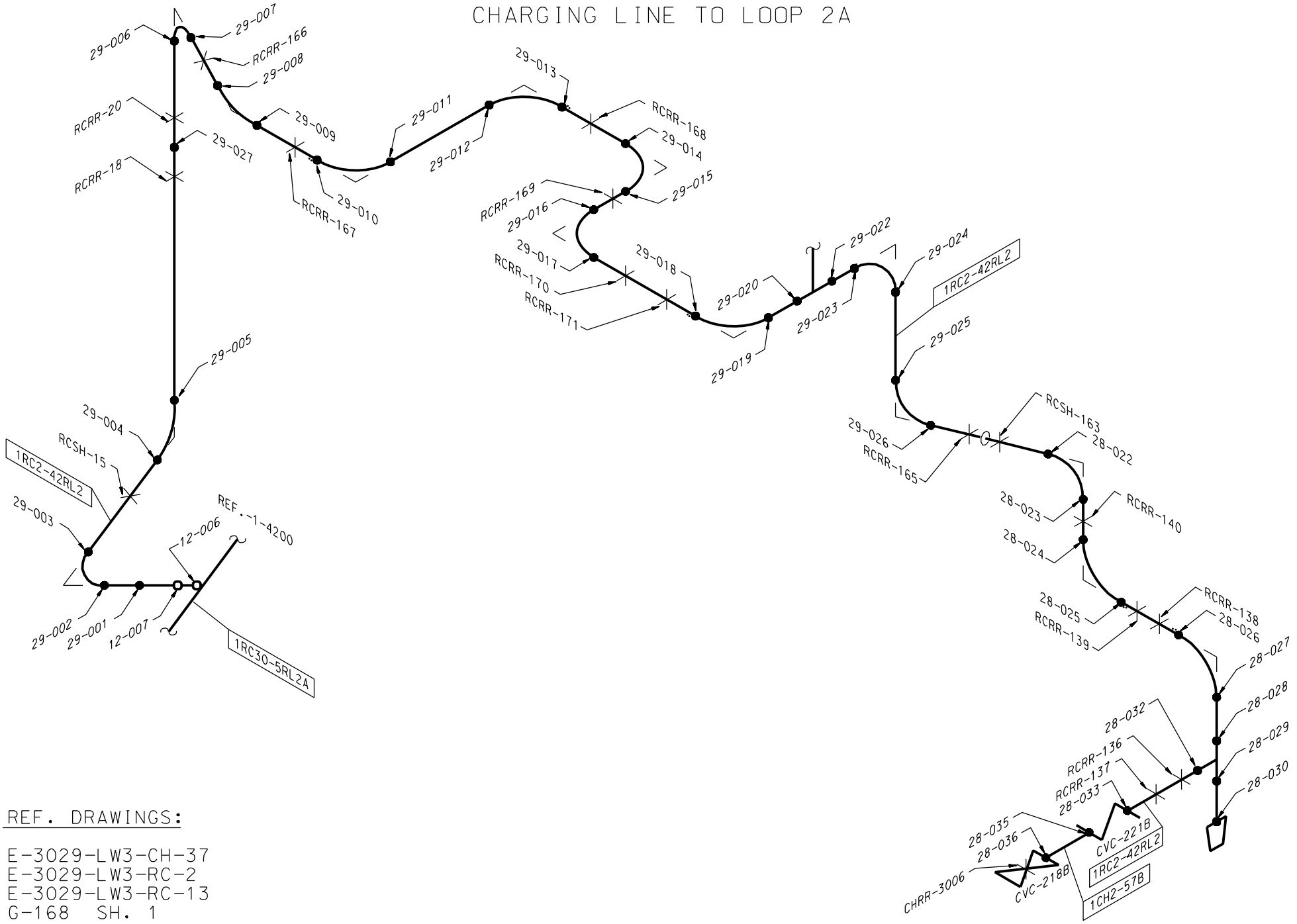
E-3029-LW3-CH-32
E-3029-LW3-RC-14
G-168 SH. 1
G-172

FILENAME: WTR-1-4207.dgn

CHARGING LINE TO LOOP 2A



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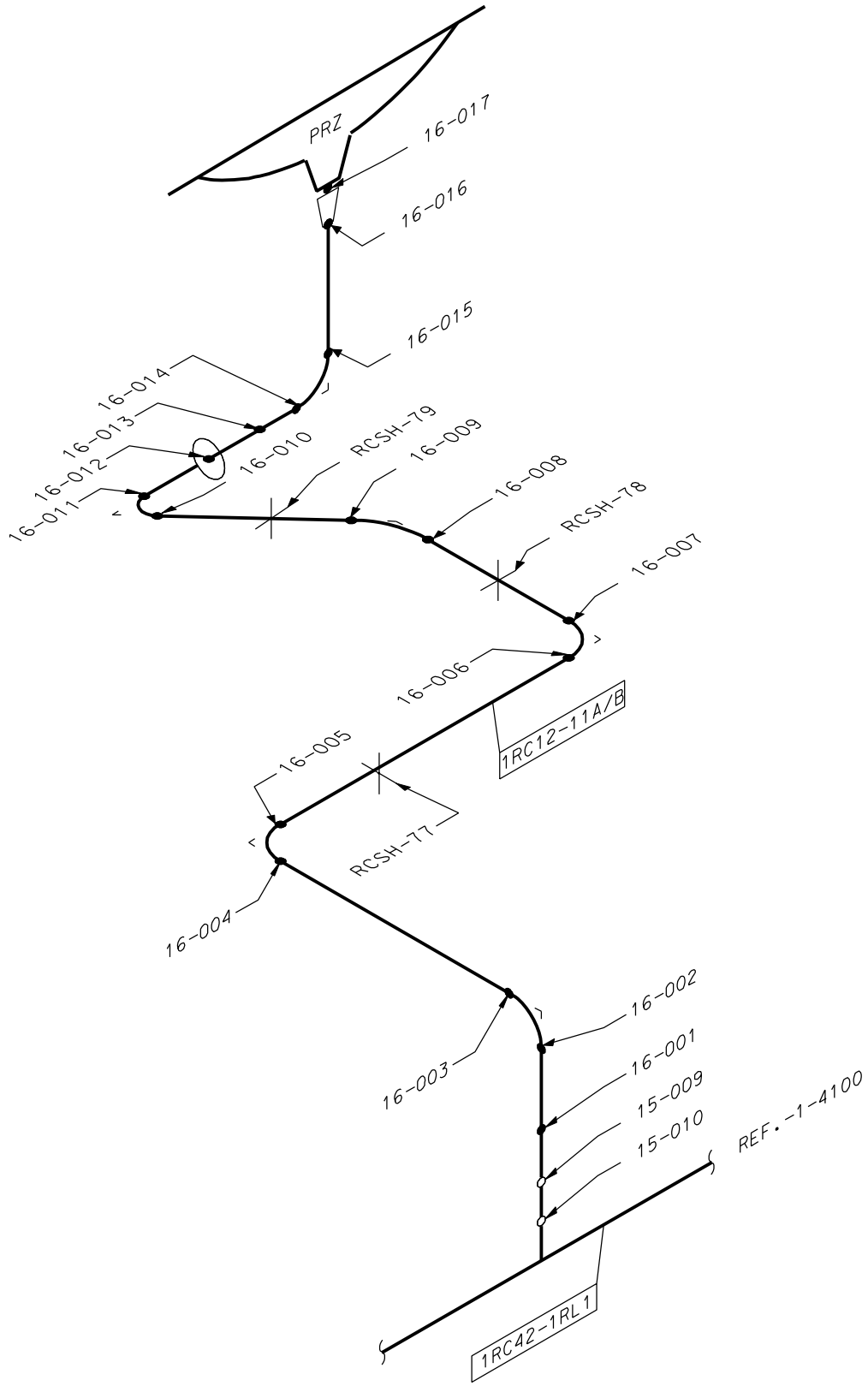
E-3029-LW3-RC-2
E-3029-LW3-RC-13
G-168 SH. 1
G-172

PRESSURIZER SURGE



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V9.4-1002-1
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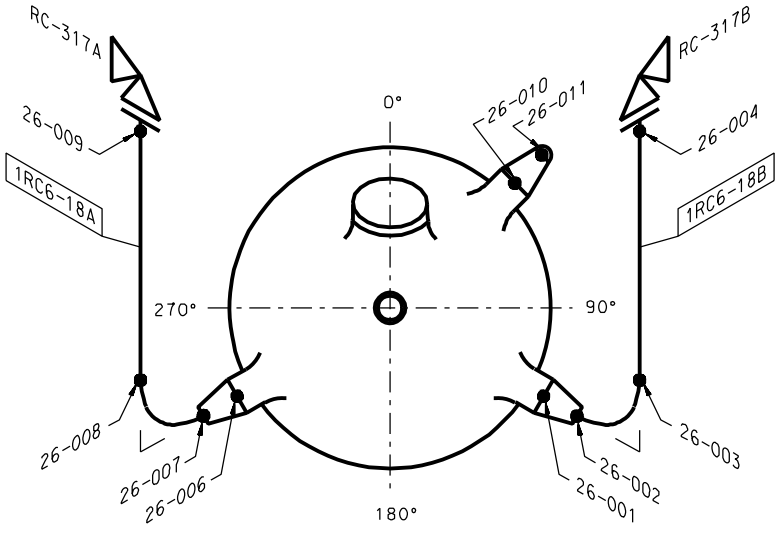
FILENAME: WTR-1-4500.dgn

PRESSURIZER SAFETY VALVE PIPING



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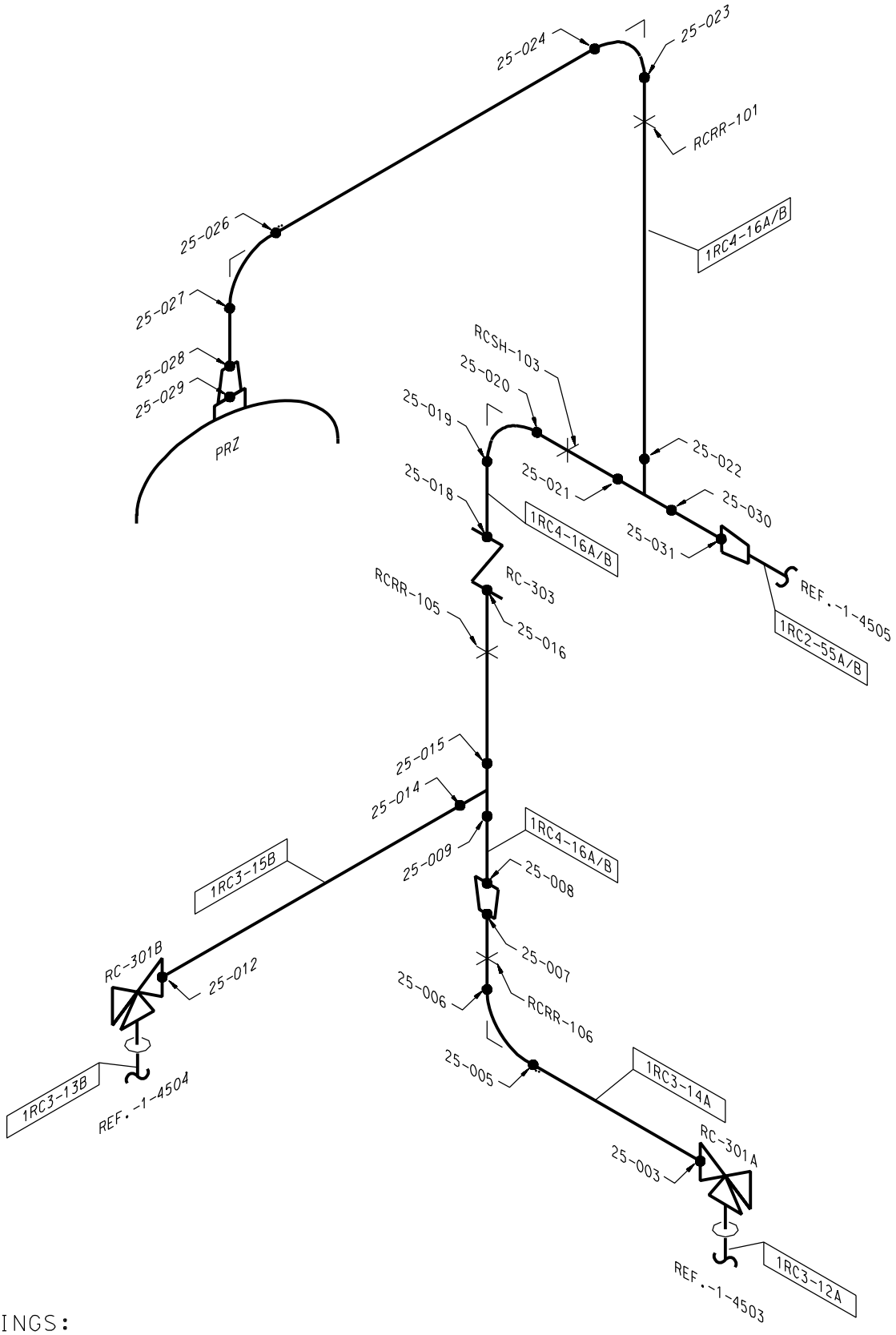
G-172

COMBINED PRESSURIZER SPRAY



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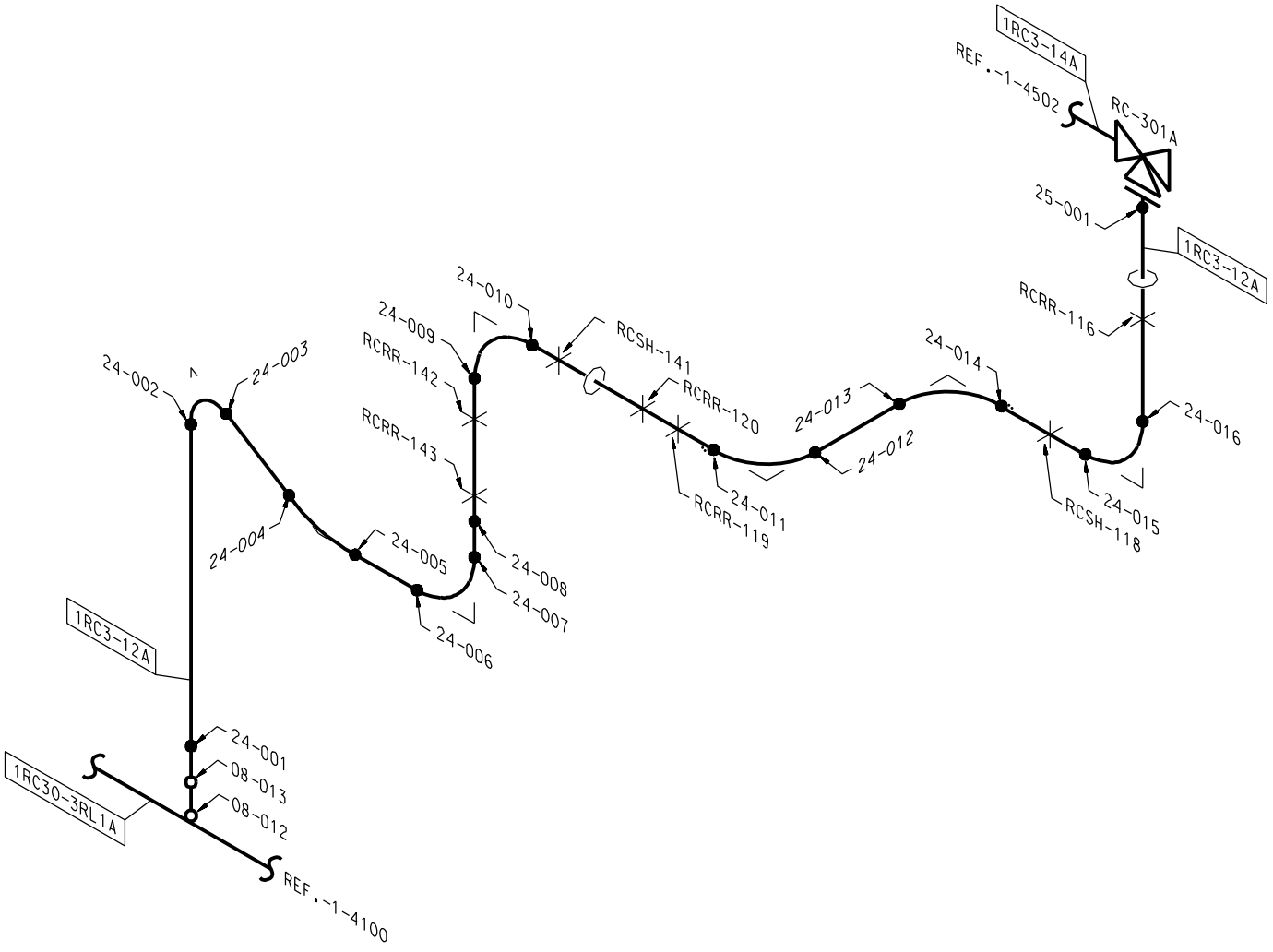
G-172

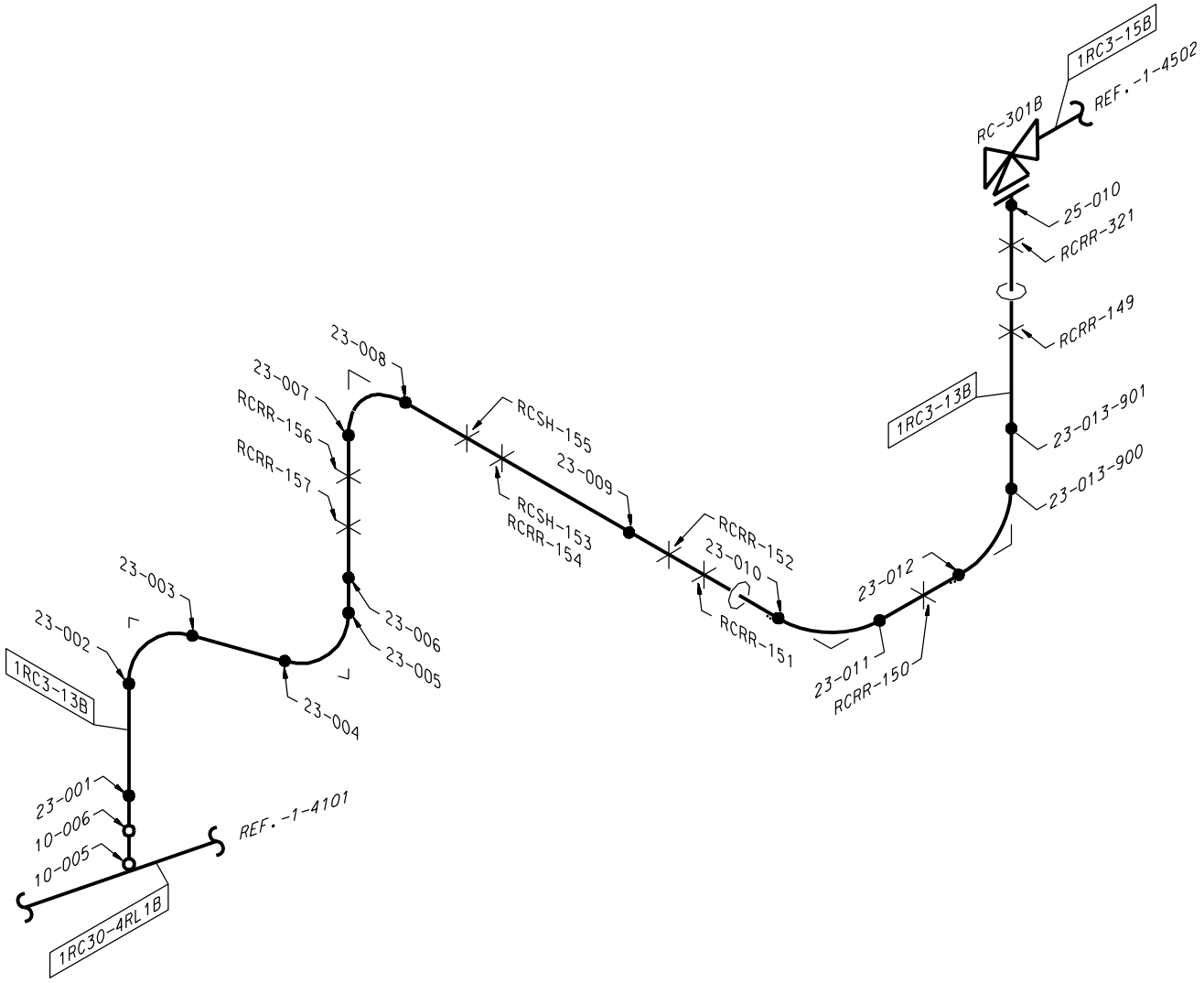
PRESSURIZER SPRAY FROM LOOP 1A



REF. DRAWINGS:

8469-727
G-172

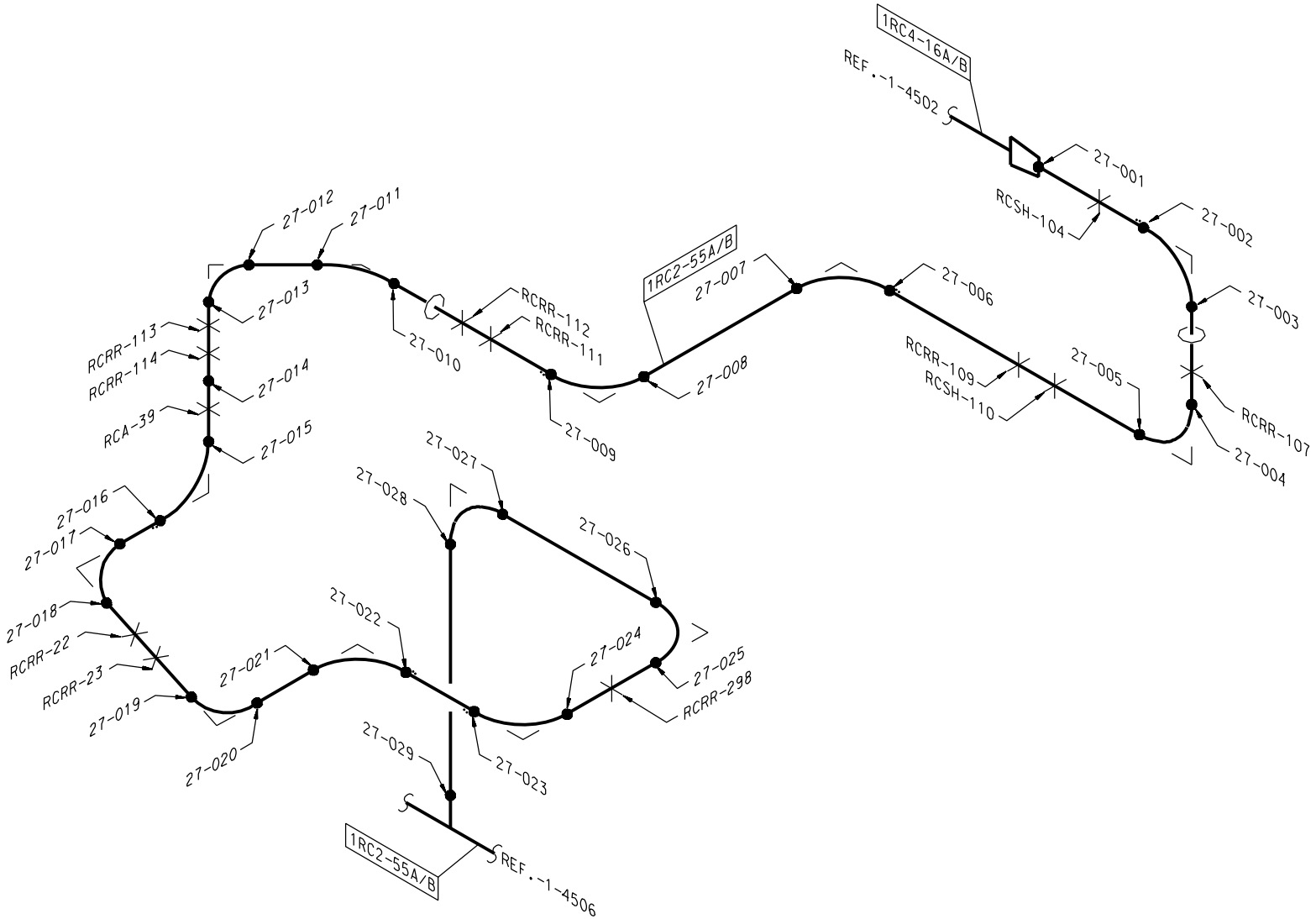
PRESSURIZER SPRAY FROM LOOP 1B



REF. DRAWINGS:

8469-725
G-172

PRESSURIZER AUXILIARY SPRAY

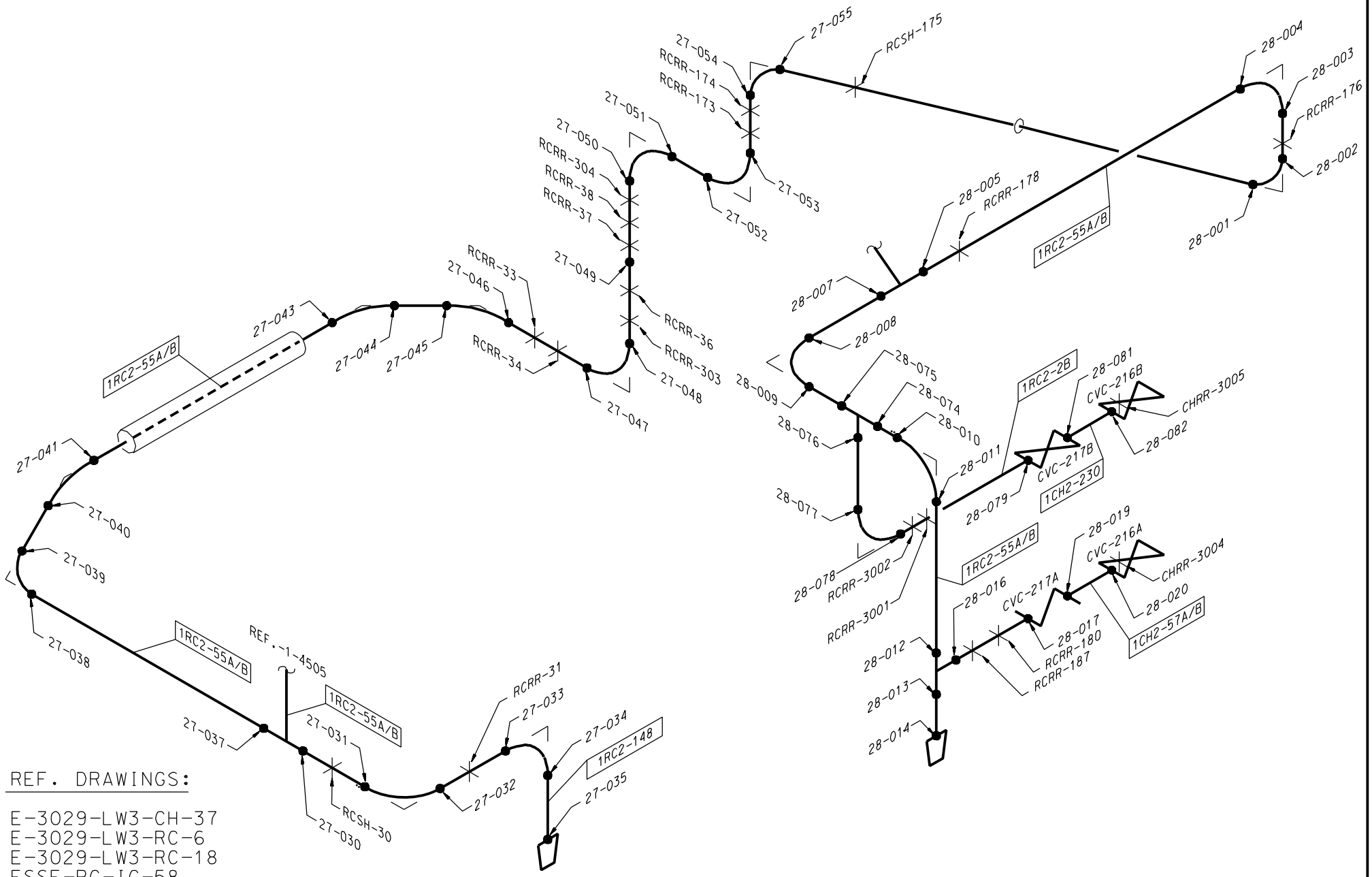


REF. DRAWINGS:

E-3029-LW3-RC-18
G-172

WTR-1-4506

PRESSURIZER AUXILIARY SPRAY

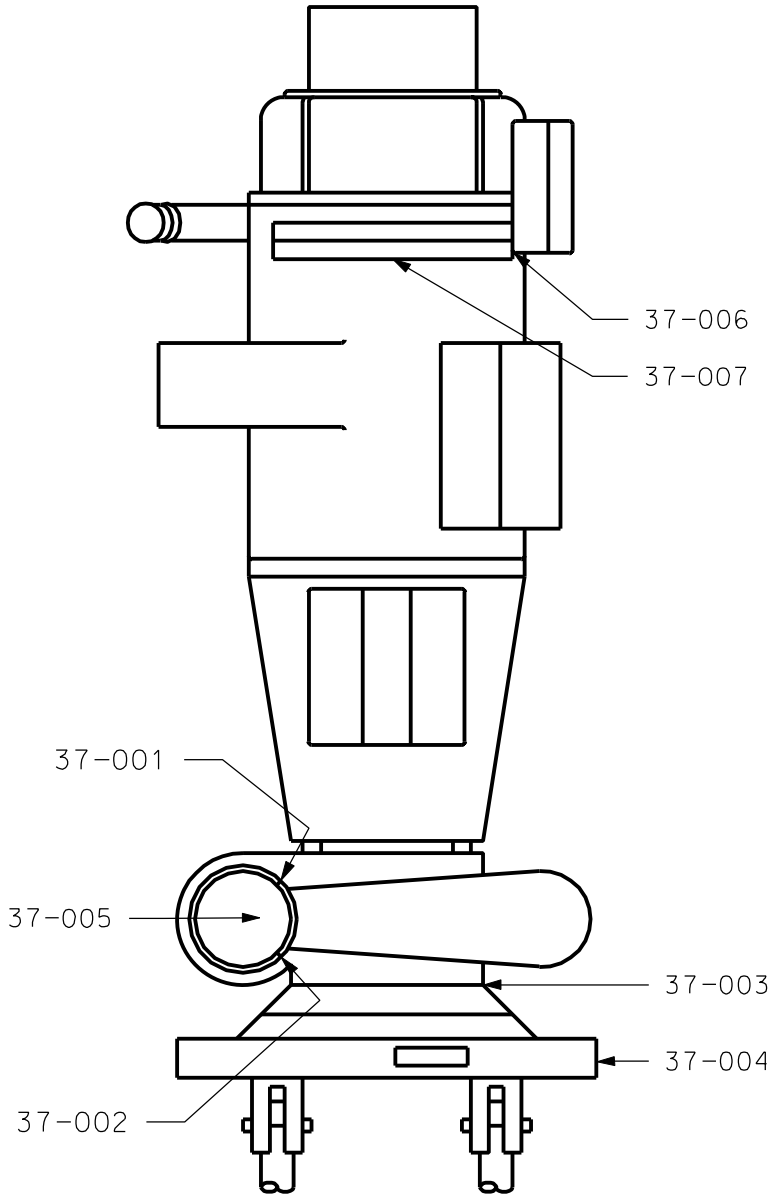


REF. DRAWINGS:

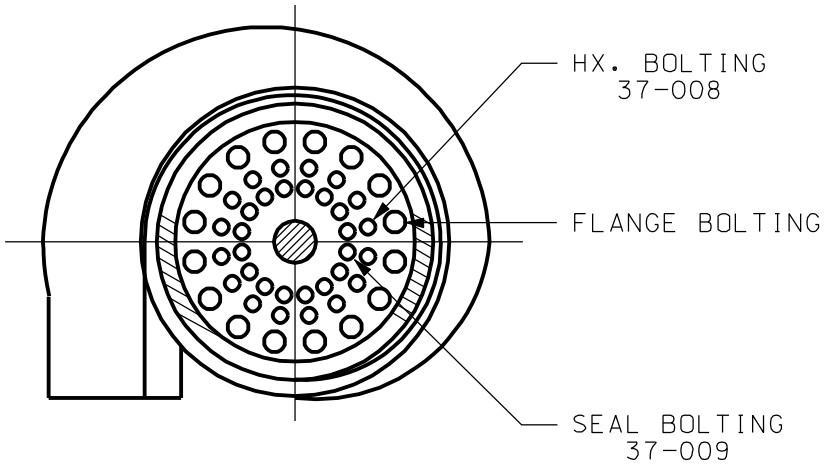
E-3029-LW3-CH-37
E-3029-LW3-RC-6
E-3029-LW3-RC-18
ESSE-RC-IC-58
G-168 SH. 1
G-172

FILENAME: WTR-1-4506.dgn

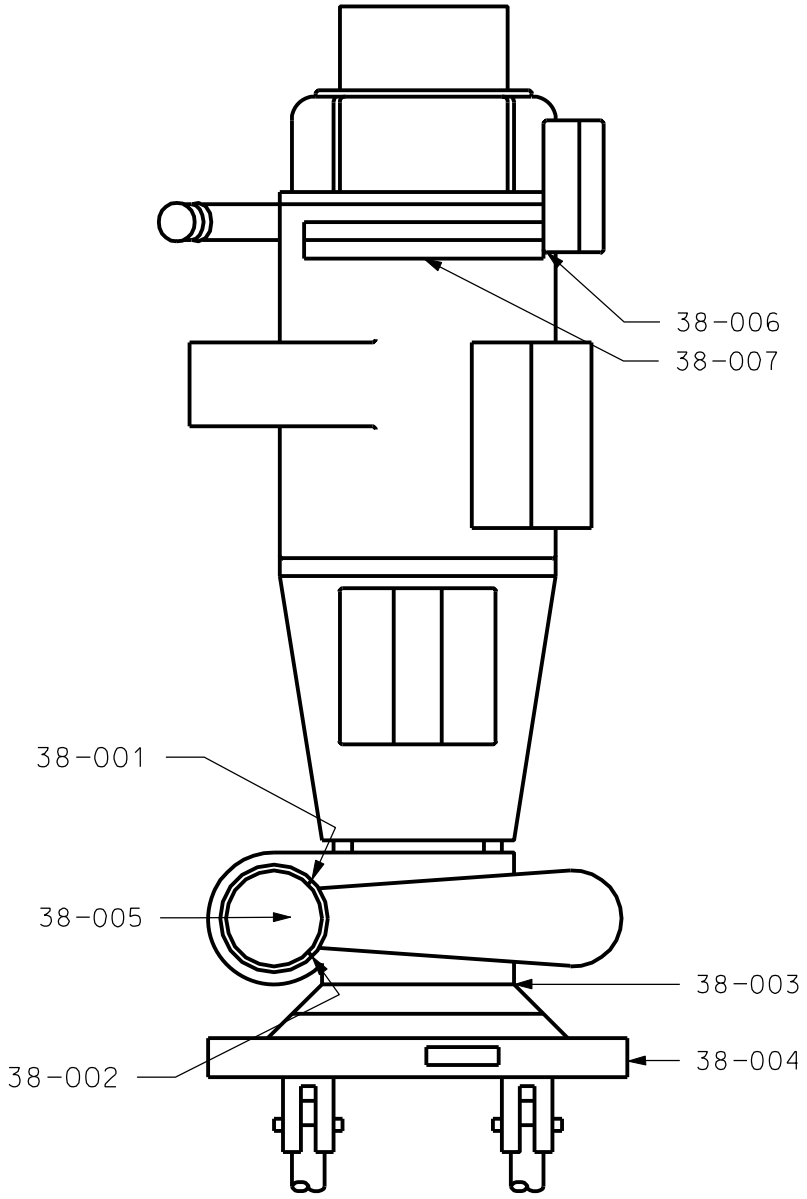
REACTOR COOLANT PUMP 1A



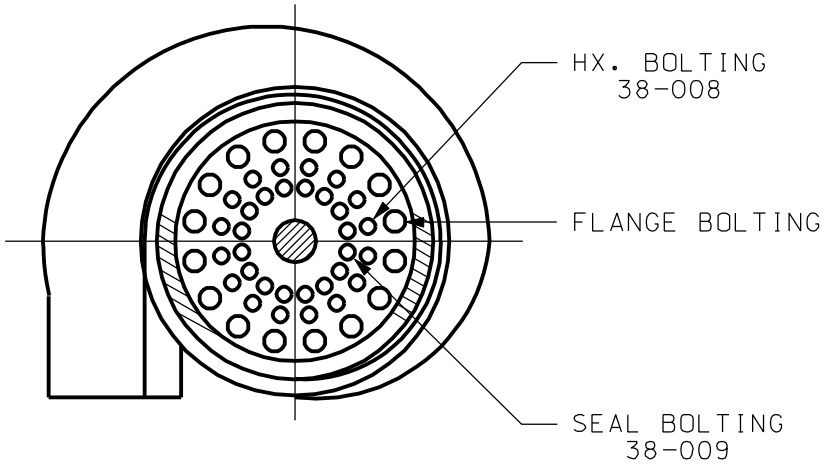
FLANGE STUDS	NUTS	LIGAMENTS
37-S-01	37-N-01	37-L-01
37-S-02	37-N-02	37-L-02
37-S-03	37-N-03	37-L-03
37-S-04	37-N-04	37-L-04
37-S-05	37-N-05	37-L-05
37-S-06	37-N-06	37-L-06
37-S-07	37-N-07	37-L-07
37-S-08	37-N-08	37-L-08
37-S-09	37-N-09	37-L-09
37-S-10	37-N-10	37-L-10
37-S-11	37-N-11	37-L-11
37-S-12	37-N-12	37-L-12
37-S-13	37-N-13	37-L-13
37-S-14	37-N-14	37-L-14
37-S-15	37-N-15	37-L-15
37-S-16	37-N-16	37-L-16



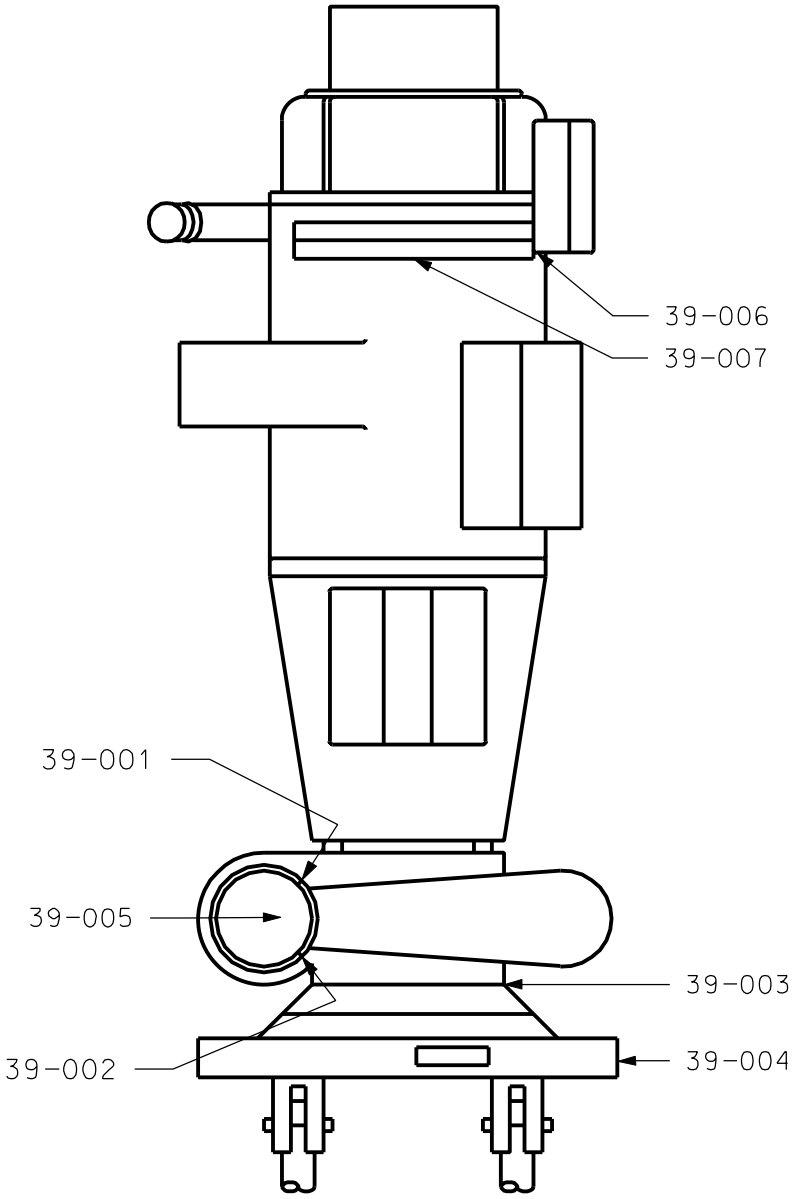
REACTOR COOLANT PUMP 1B



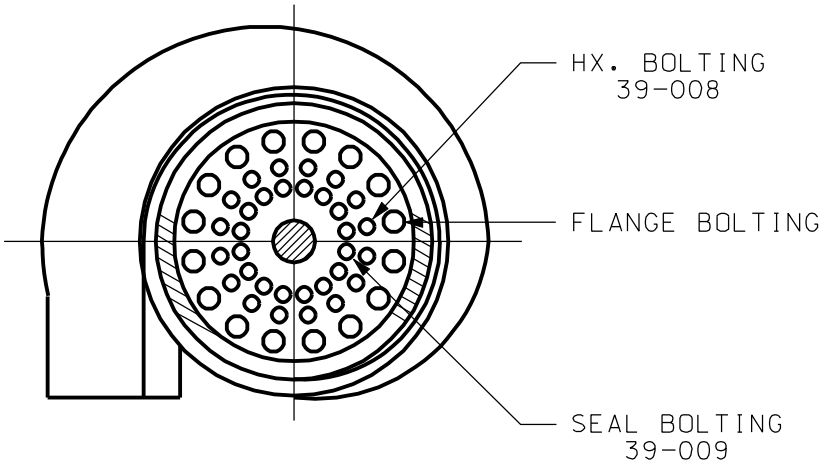
FLANGE STUDS	NUTS	LIGAMENTS
38-S-01	38-N-01	38-L-01
38-S-02	38-N-02	38-L-02
38-S-03	38-N-03	38-L-03
38-S-04	38-N-04	38-L-04
38-S-05	38-N-05	38-L-05
38-S-06	38-N-06	38-L-06
38-S-07	38-N-07	38-L-07
38-S-08	38-N-08	38-L-08
38-S-09	38-N-09	38-L-09
38-S-10	38-N-10	38-L-10
38-S-11	38-N-11	38-L-11
38-S-12	38-N-12	38-L-12
38-S-13	38-N-13	38-L-13
38-S-14	38-N-14	38-L-14
38-S-15	38-N-15	38-L-15
38-S-16	38-N-16	38-L-16



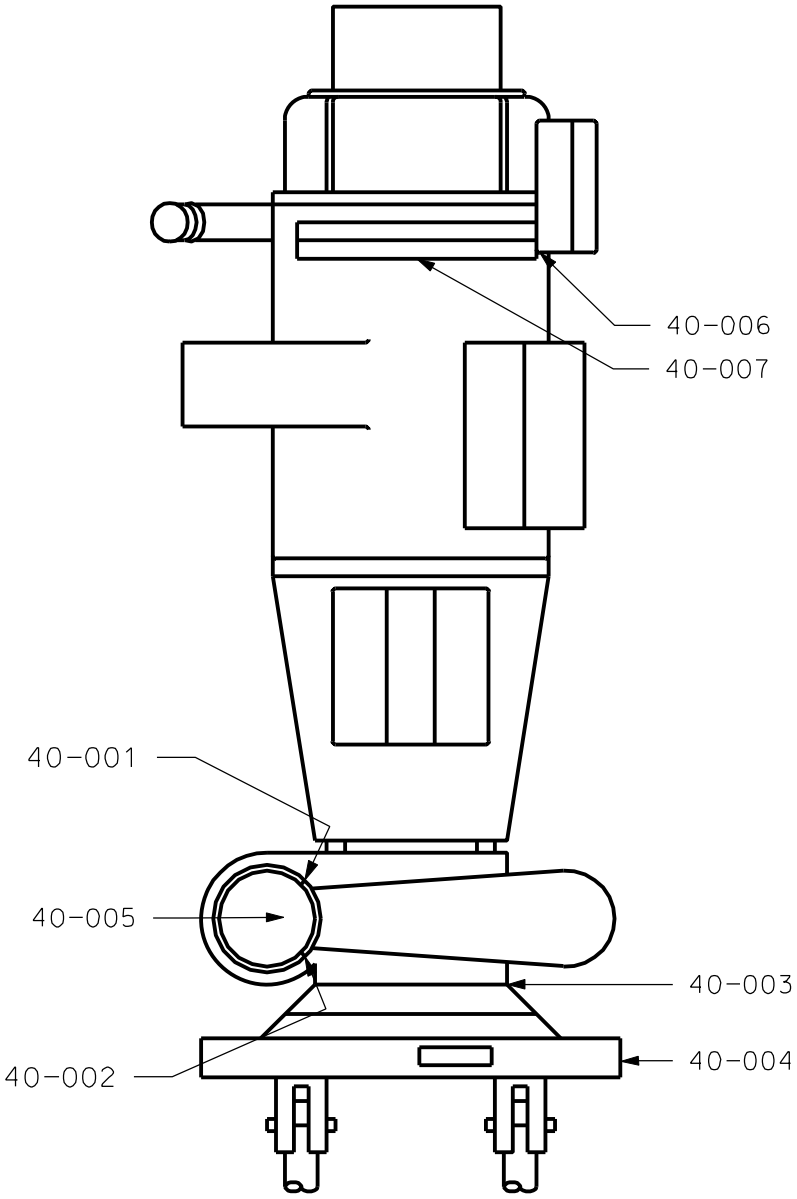
REACTOR COOLANT PUMP 2A



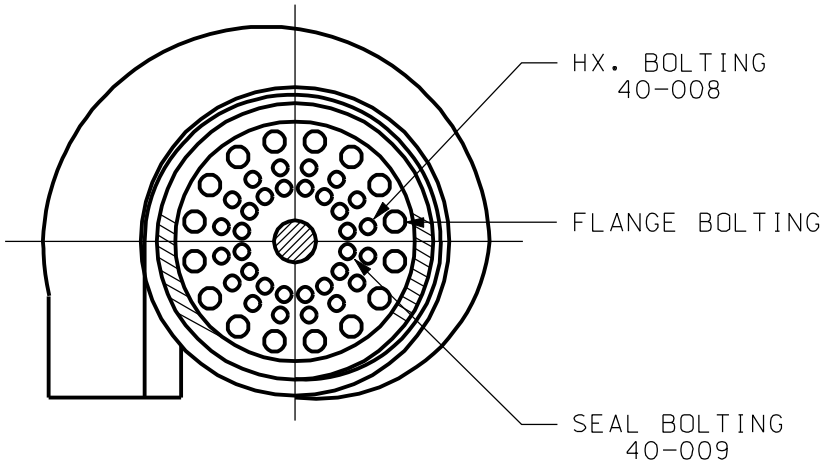
FLANGE STUDS	NUTS	LIGAMENTS
39-S-01	39-N-01	39-L-01
39-S-02	39-N-02	39-L-02
39-S-03	39-N-03	39-L-03
39-S-04	39-N-04	39-L-04
39-S-05	39-N-05	39-L-05
39-S-06	39-N-06	39-L-06
39-S-07	39-N-07	39-L-07
39-S-08	39-N-08	39-L-08
39-S-09	39-N-09	39-L-09
39-S-10	39-N-10	39-L-10
39-S-11	39-N-11	39-L-11
39-S-12	39-N-12	39-L-12
39-S-13	39-N-13	39-L-13
39-S-14	39-N-14	39-L-14
39-S-15	39-N-15	39-L-15
39-S-16	39-N-16	39-L-16



REACTOR COOLANT PUMP 2B

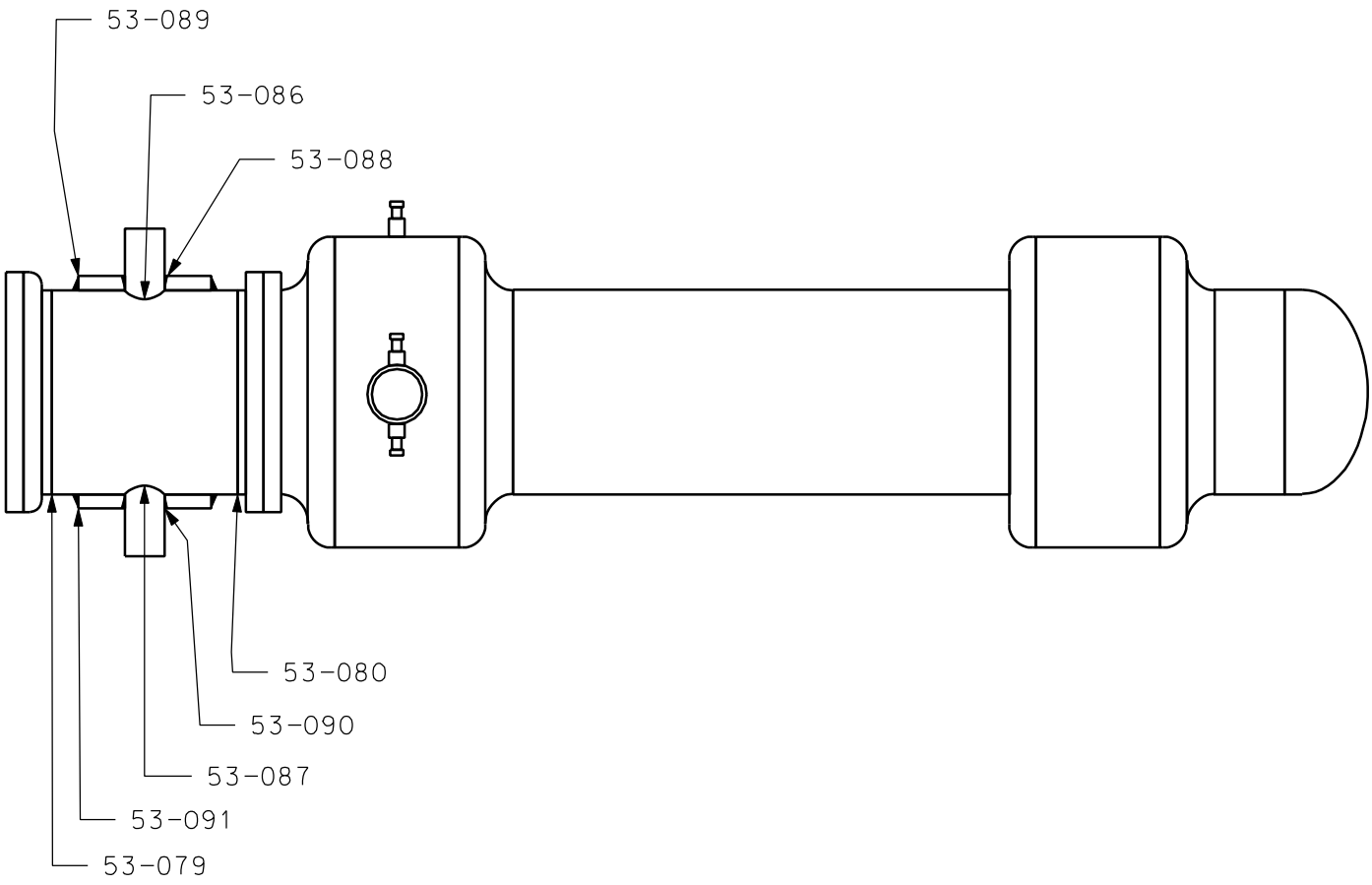


FLANGE STUDS	NUTS	LIGAMENTS
40-S-01	40-N-01	40-L-01
40-S-02	40-N-02	40-L-02
40-S-03	40-N-03	40-L-03
40-S-04	40-N-04	40-L-04
40-S-05	40-N-05	40-L-05
40-S-06	40-N-06	40-L-06
40-S-07	40-N-07	40-L-07
40-S-08	40-N-08	40-L-08
40-S-09	40-N-09	40-L-09
40-S-10	40-N-10	40-L-10
40-S-11	40-N-11	40-L-11
40-S-12	40-N-12	40-L-12
40-S-13	40-N-13	40-L-13
40-S-14	40-N-14	40-L-14
40-S-15	40-N-15	40-L-15
40-S-16	40-N-16	40-L-16



WTR-2-1100

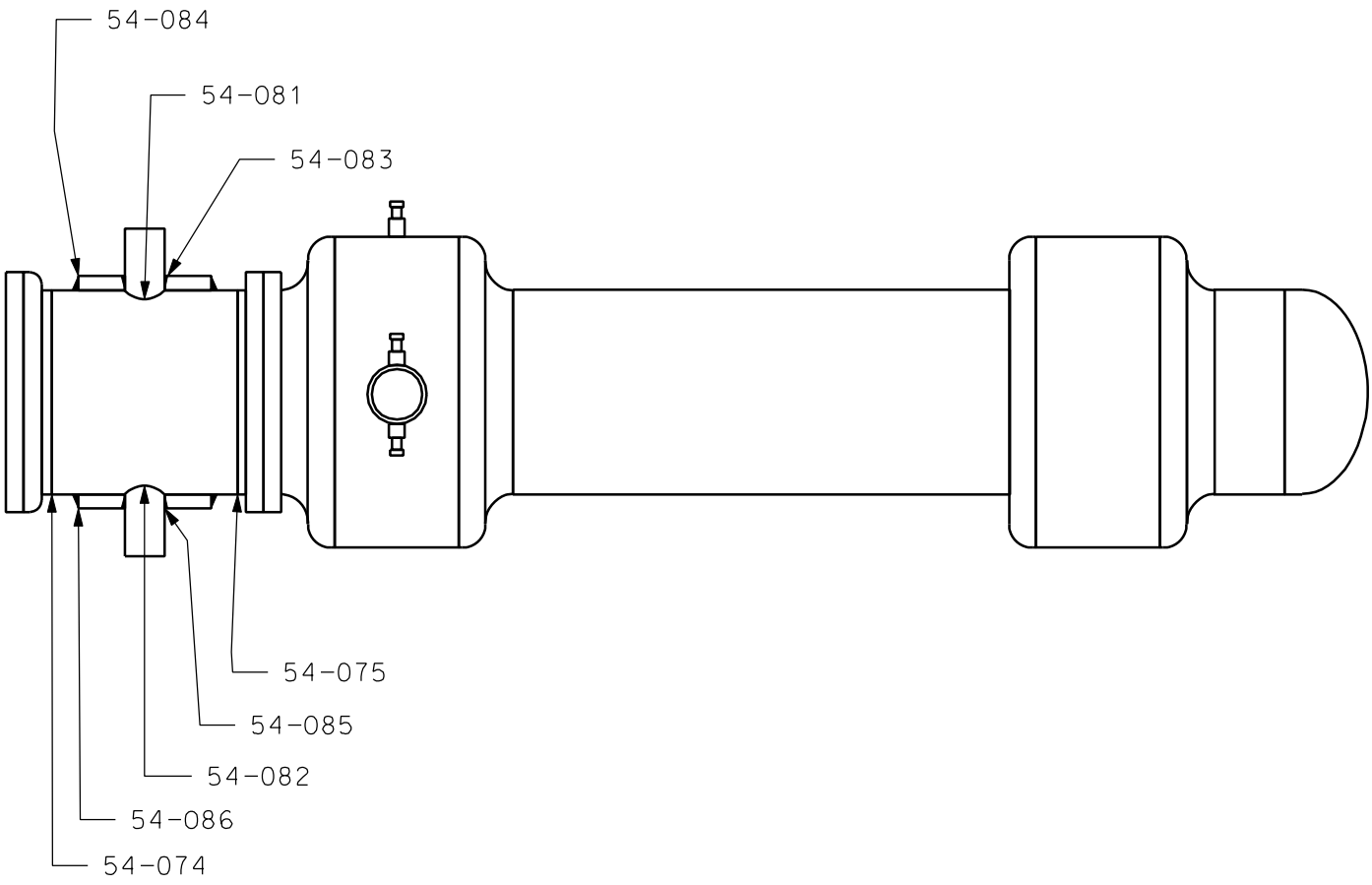
SHUTDOWN COOLING HEAT EXCHANGER A



FILENAME: WTR-2-1100.dgn

WTR-2-1200

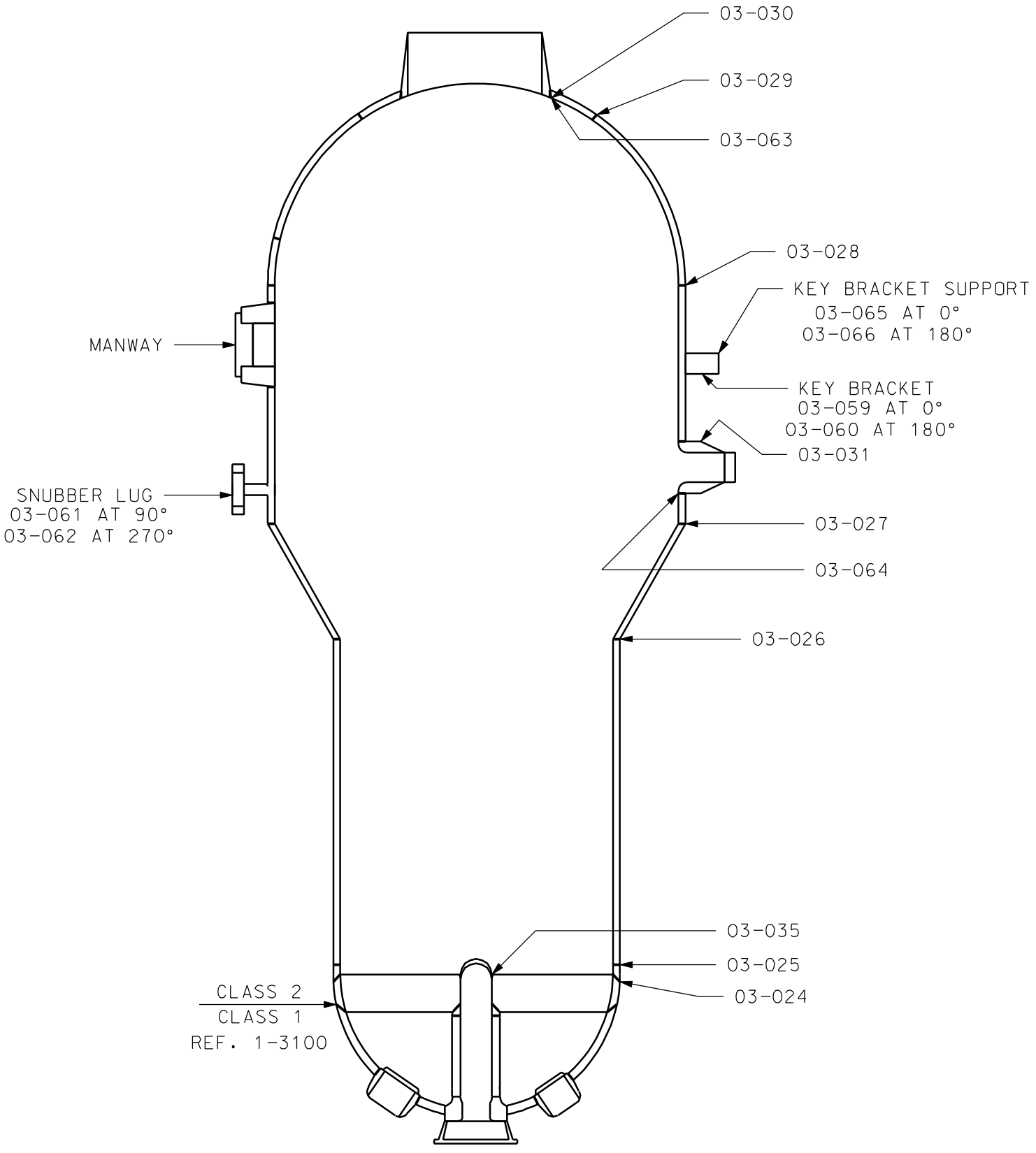
SHUTDOWN COOLING HEAT EXCHANGER B



FILENAME: WTR-2-1200.dgn

WTR-2-3100

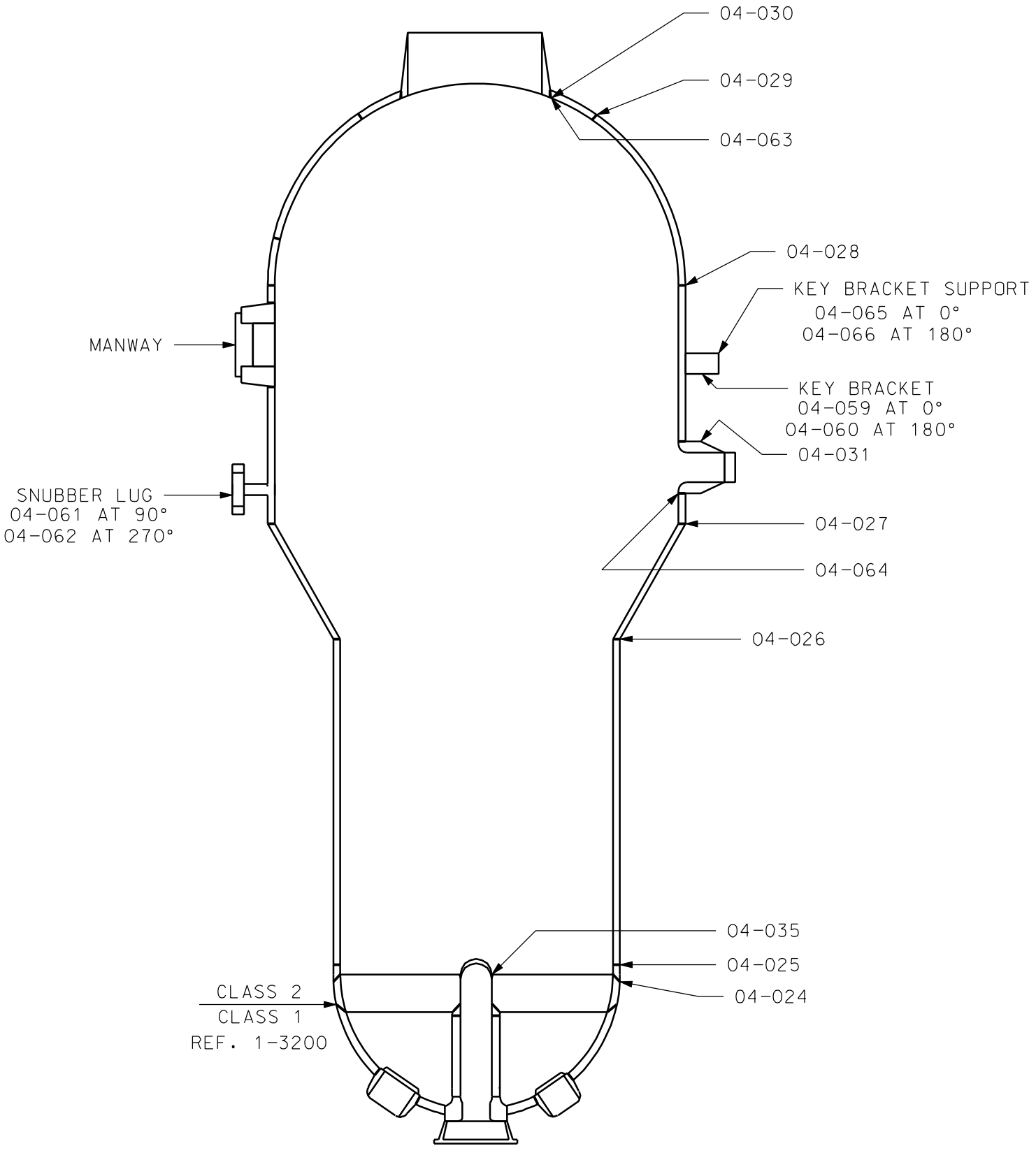
STEAM GENERATOR 1
SECONDARY SIDE



FILENAME: WTR-2-3100.dgn

WTR-2-3200

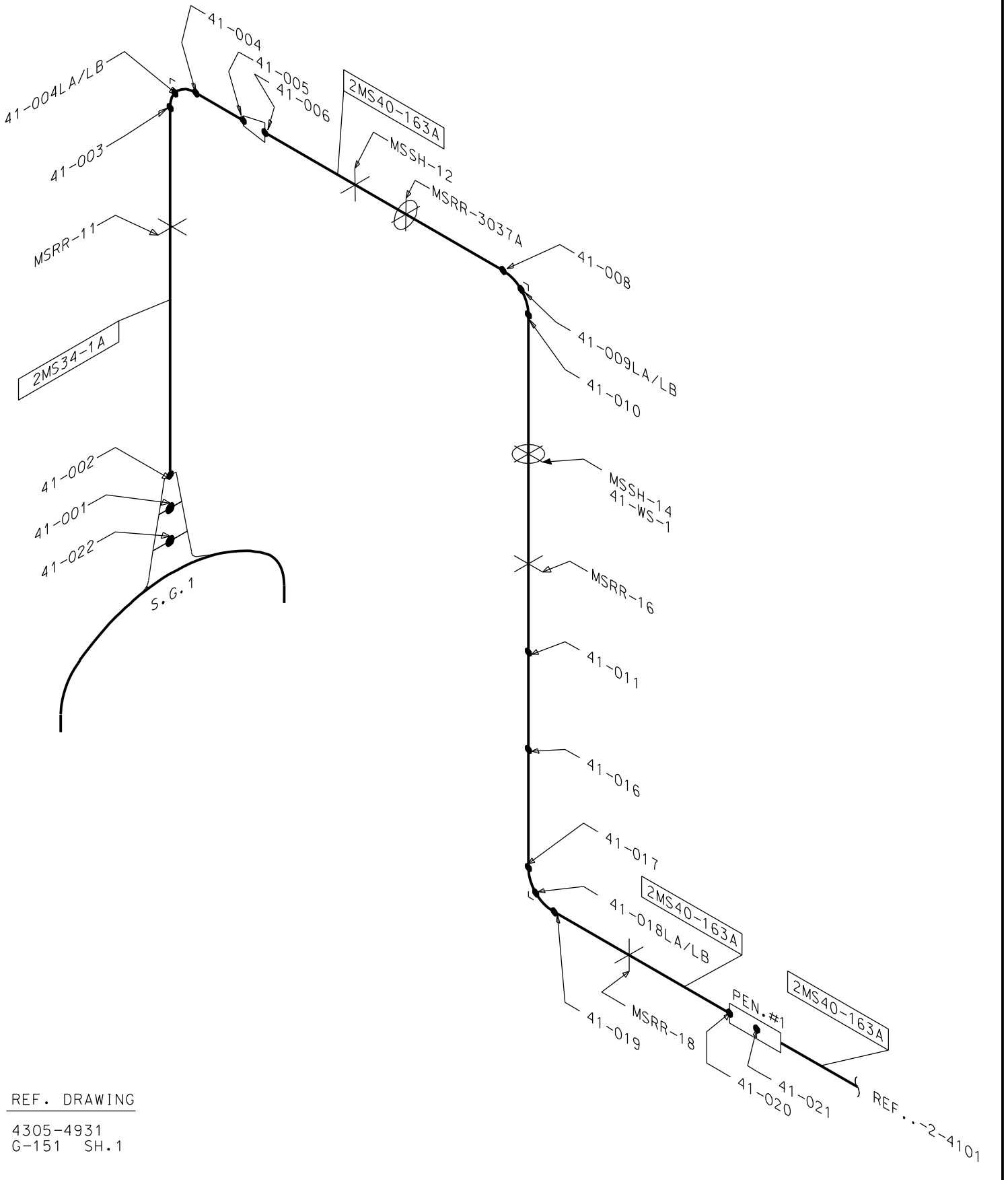
STEAM GENERATOR 2
SECONDARY SIDE



FILENAME: WTR-2-3200.dgn

WTR-2-4100

MAIN STEAM HEADER A-
INSIDE CONTAINMENT

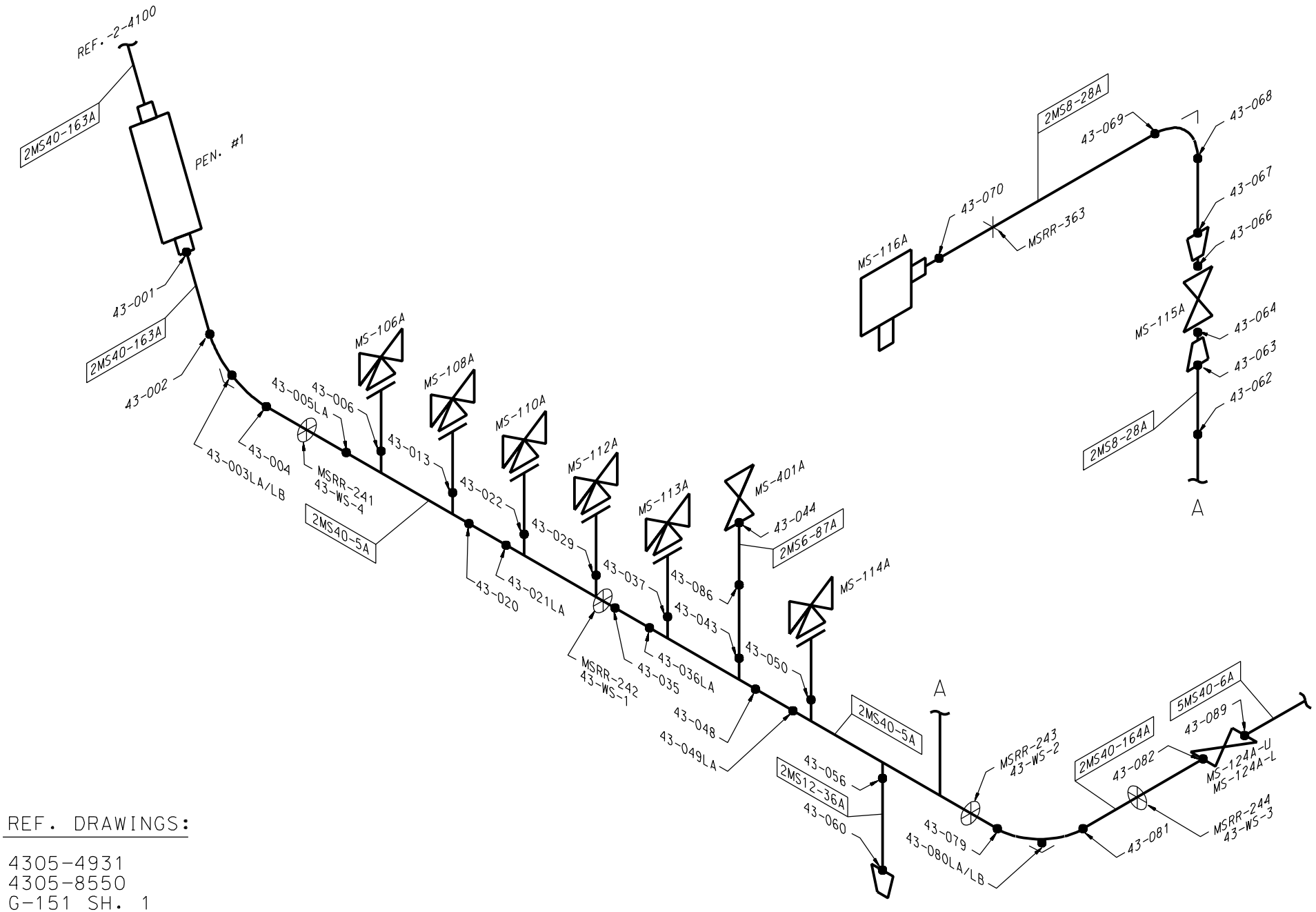


REF. DRAWING

4305-4931
G-151 SH.1

FILENAME: WTR-2-4100.dgn

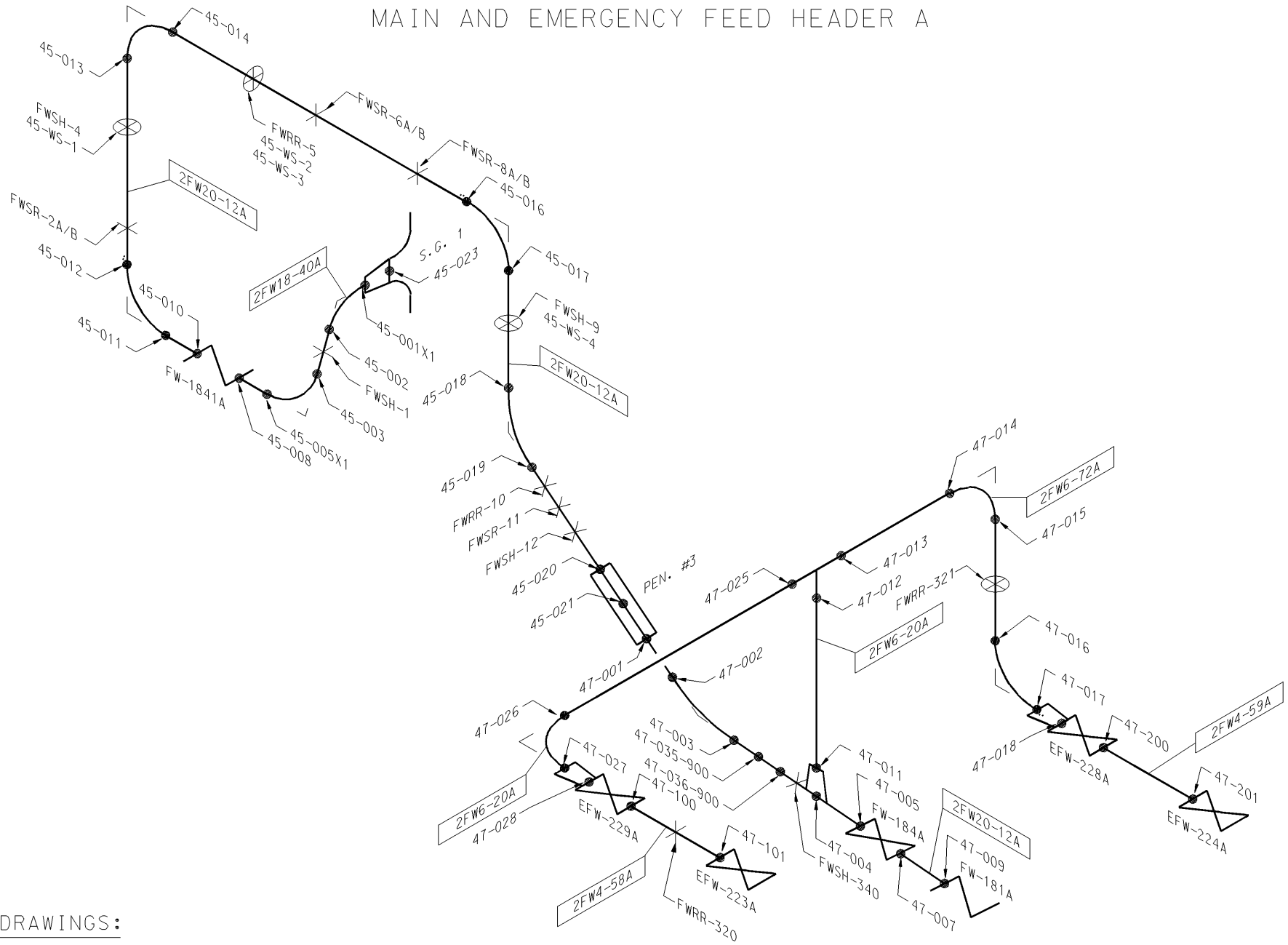
MAIN STEAM HEADER A - OUTSIDE CONTAINMENT



REF. DRAWINGS:

4305-4931
4305-8550
G-151 SH. 1

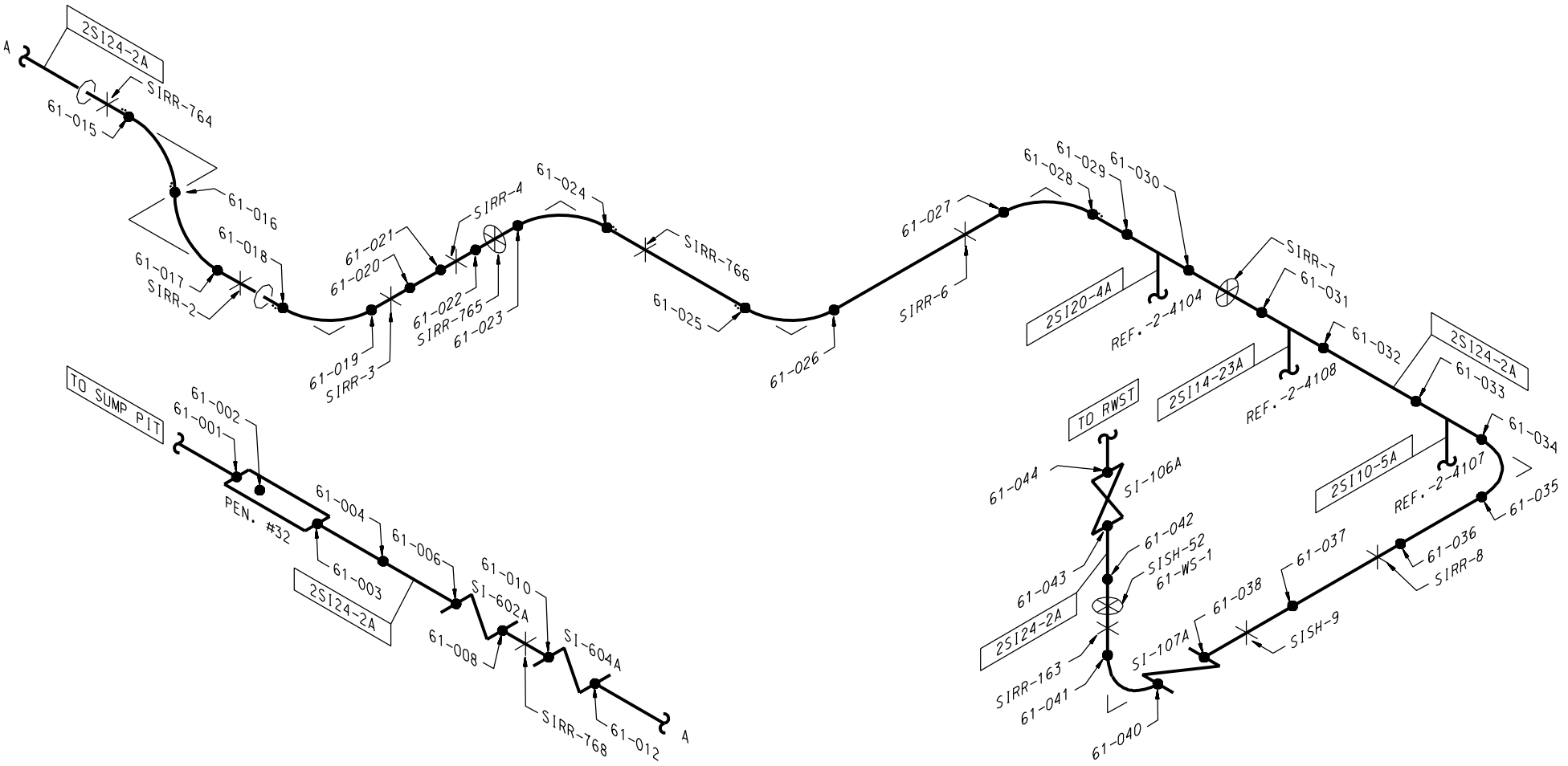
MAIN AND EMERGENCY FEED HEADER A



REF. DRAWINGS:

4305-3255
4305-6597
G-153 SH. 4

CONTAINMENT SPRAY AND SAFETY INJECTION SUCTION HEADER A

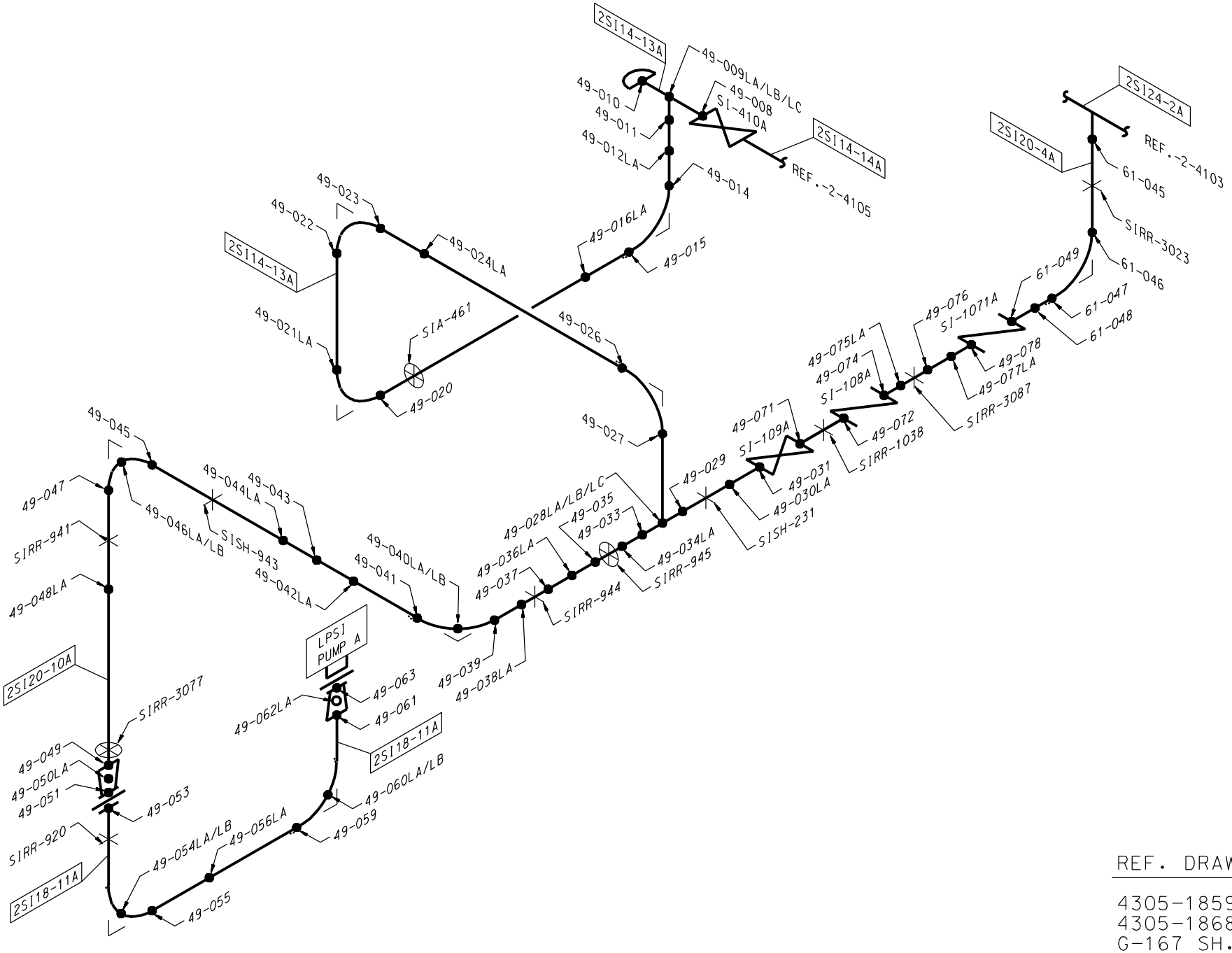


REF. DRAWINGS:

4305-1884
4305-1889
G-167 SH. 1 ,3

WTR-2-4104

LOW PRESSURE SAFETY INJECTION PUMP A SUCTION

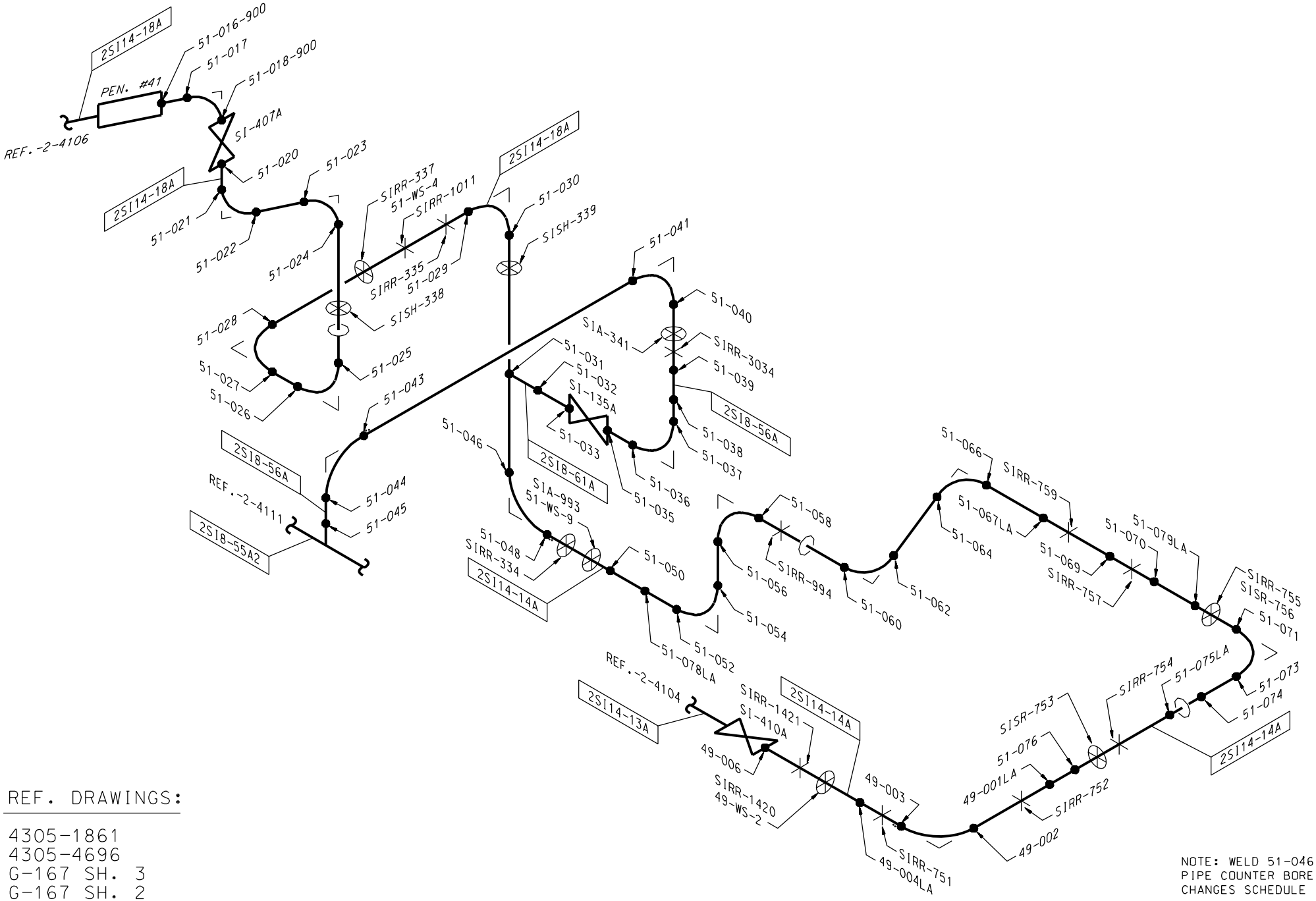


REF. DRAWINGS:

4305-1859
4305-1868
G-167 SH. 3

FILENAME: WTR-2-4104.dgn

SHUTDOWN COOLING FROM LOOP 2, CLASS 2 - OUTSIDE CONTAINMENT

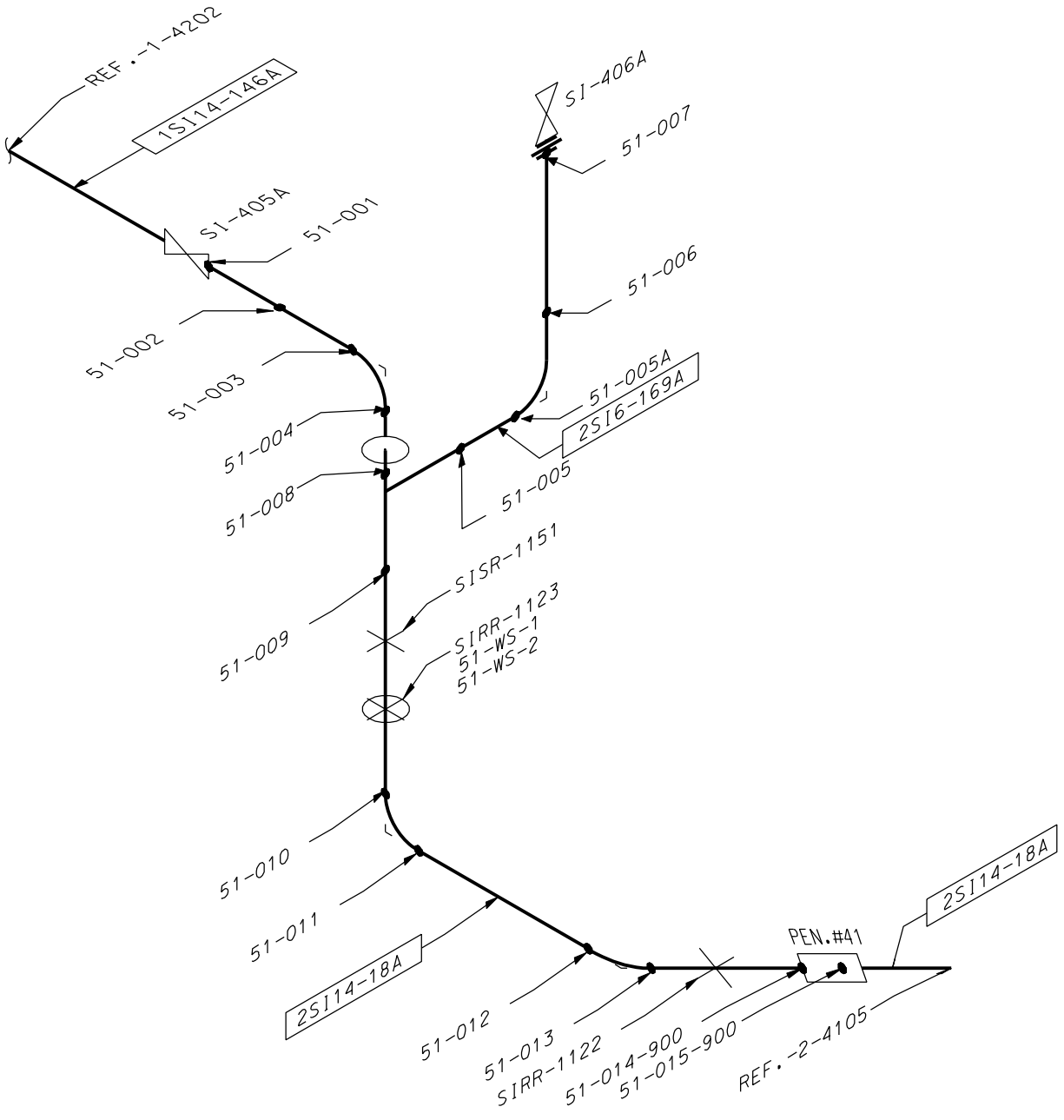


REF. DRAWINGS:

4305-1861
4305-4696
G-167 SH. 3
G-167 SH. 2

NOTE: WELD 51-046
PIPE COUNTER BORE
CHANGES SCHEDULE

SHUTDOWN COOLING FROM LOOP 2, CLASS 2-INSIDE CONTAINMENT

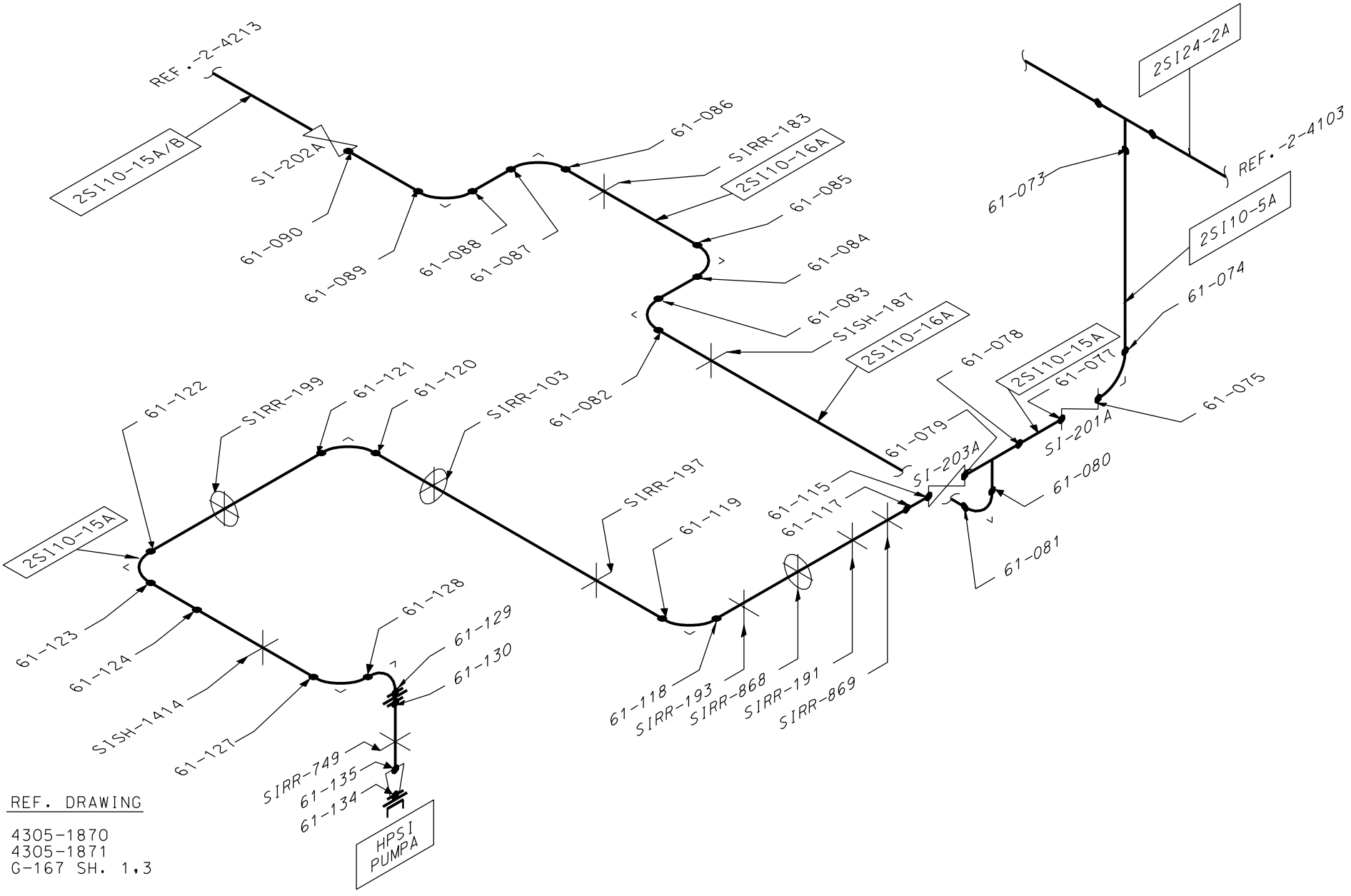


REF. DRAWING

8469-26
G-167 SH.2

NOTE: WELD 51-002 PIPE COUNTER BORE CHANGES SCHEDULE

HIGH PRESSURE SAFETY INJECTION PUMP A SUCTION



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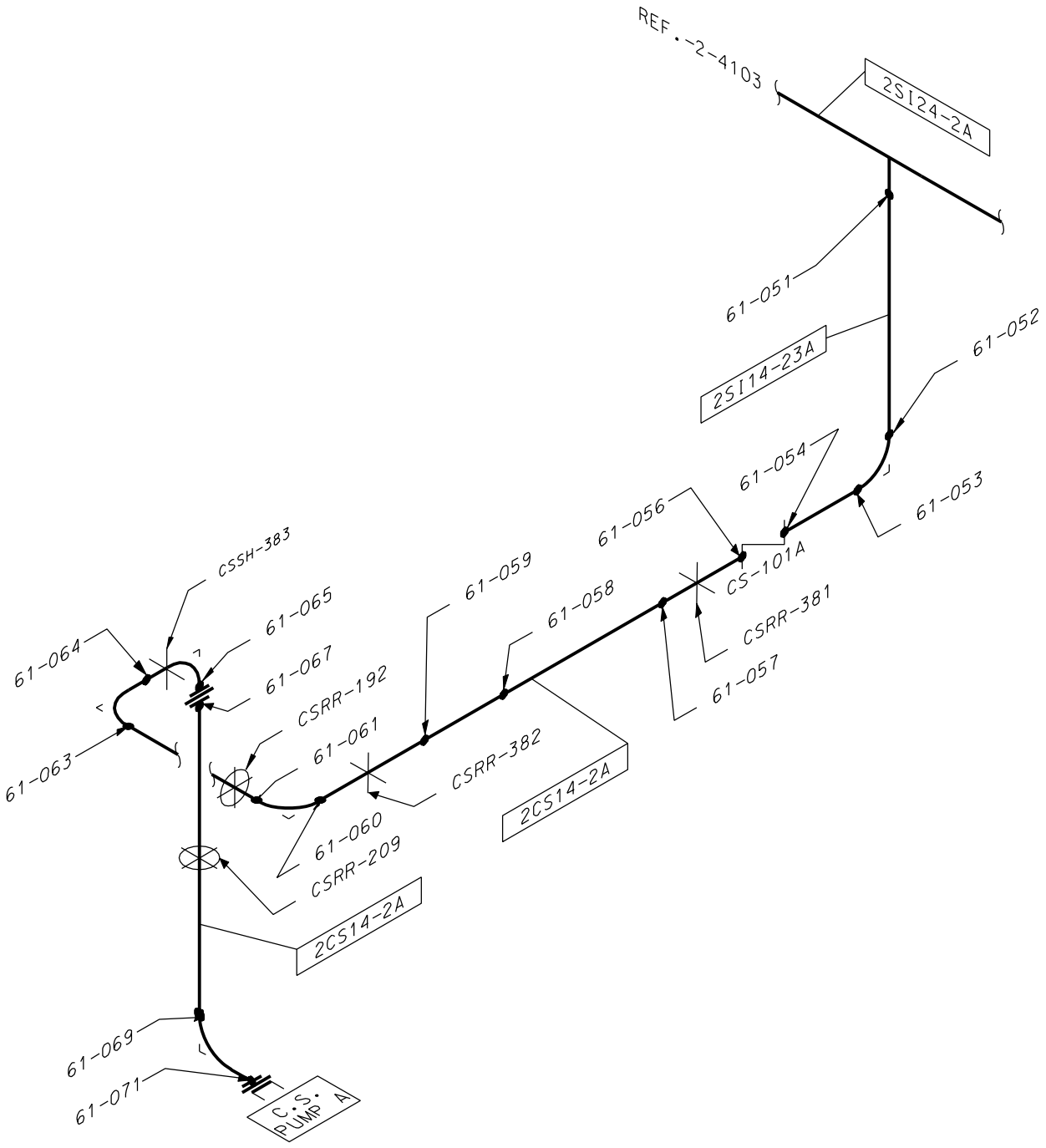
4305-1870
4305-1871
G-167 SH. 1,3

CONTAINMENT SPRAY PUMP A SUCTION

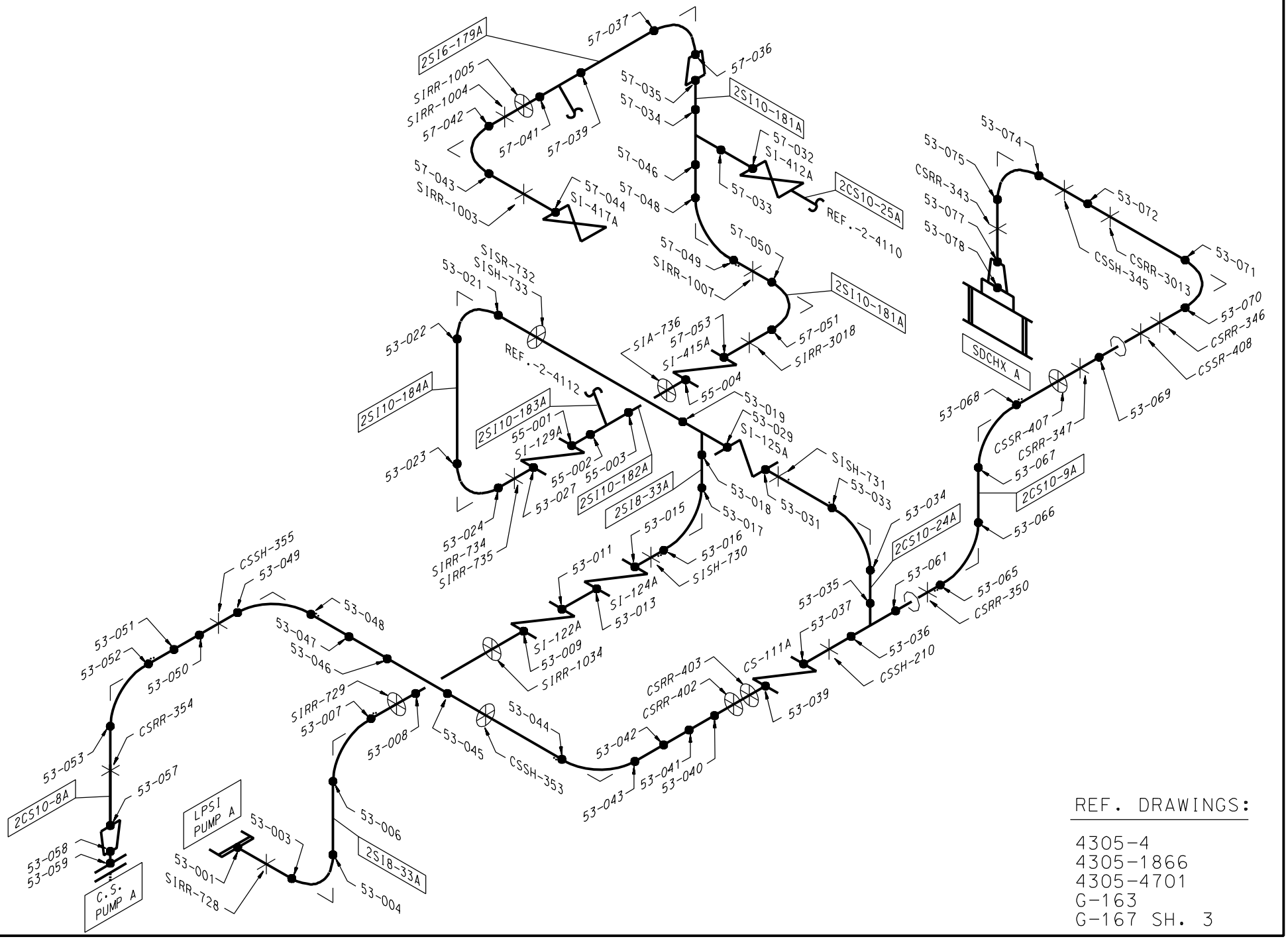


REF. DRAWING

4305-6
4305-1884
G-163
G-167 SH.3

WTR-2-4109

LPSI PUMP A AND CS PUMP A DISCHARGE TO SDCHX A



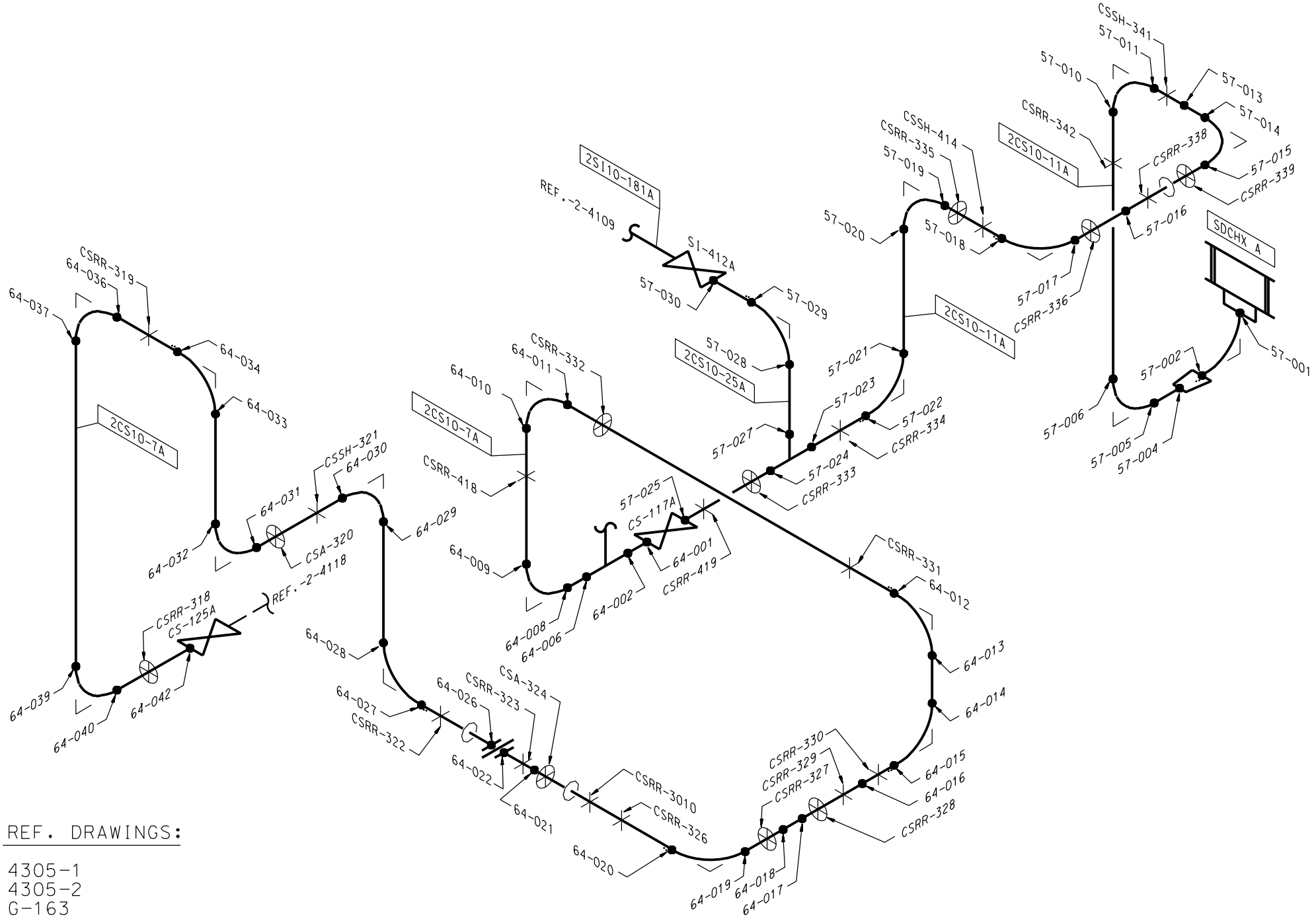
REF. DRAWINGS:

4305-4
4305-1866
4305-4701
G-163
G-167 SH. 3

FILENAME: WTR-2-4109.dgn

WTR-2-4110

SDCHX A DISCHARGE

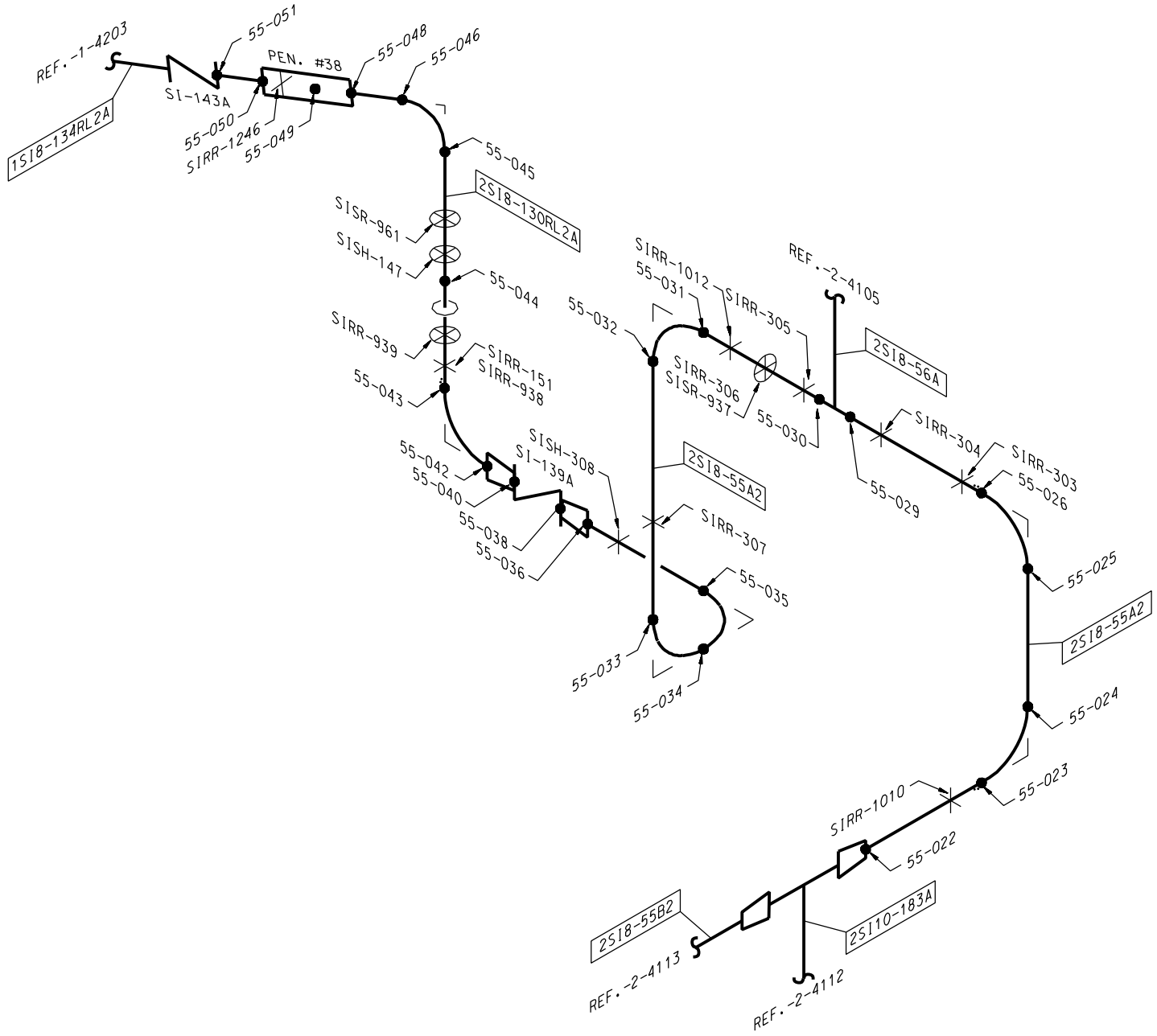


REF. DRAWINGS:

4305-1
4305-2
G-163

FILENAME: WTR-2-4110.dgn

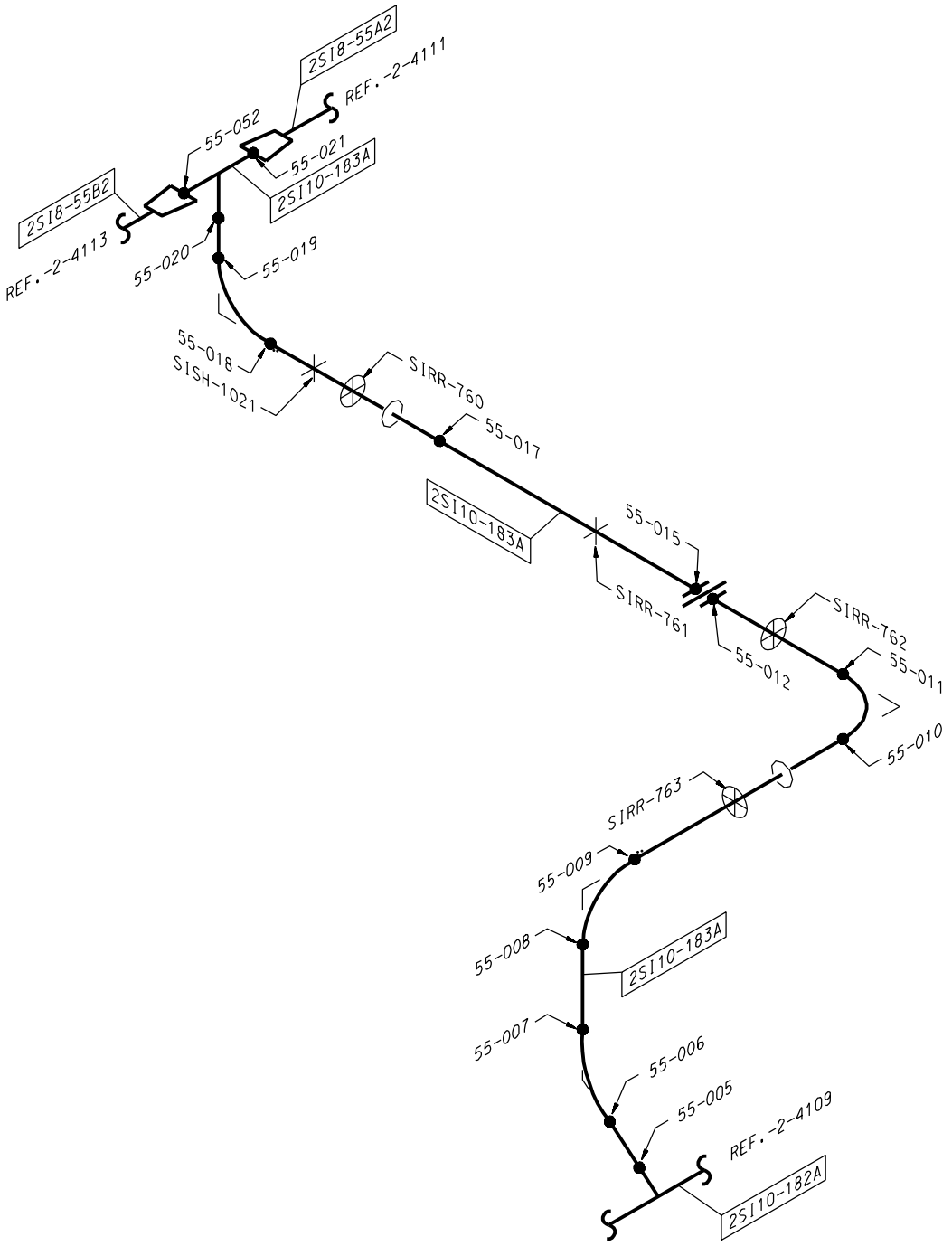
SAFETY INJECTION TO LOOP 2A, CLASS 2



REF. DRAWINGS:

8469-28
4305-1862
G-167 SH. 3
G-167 SH. 2

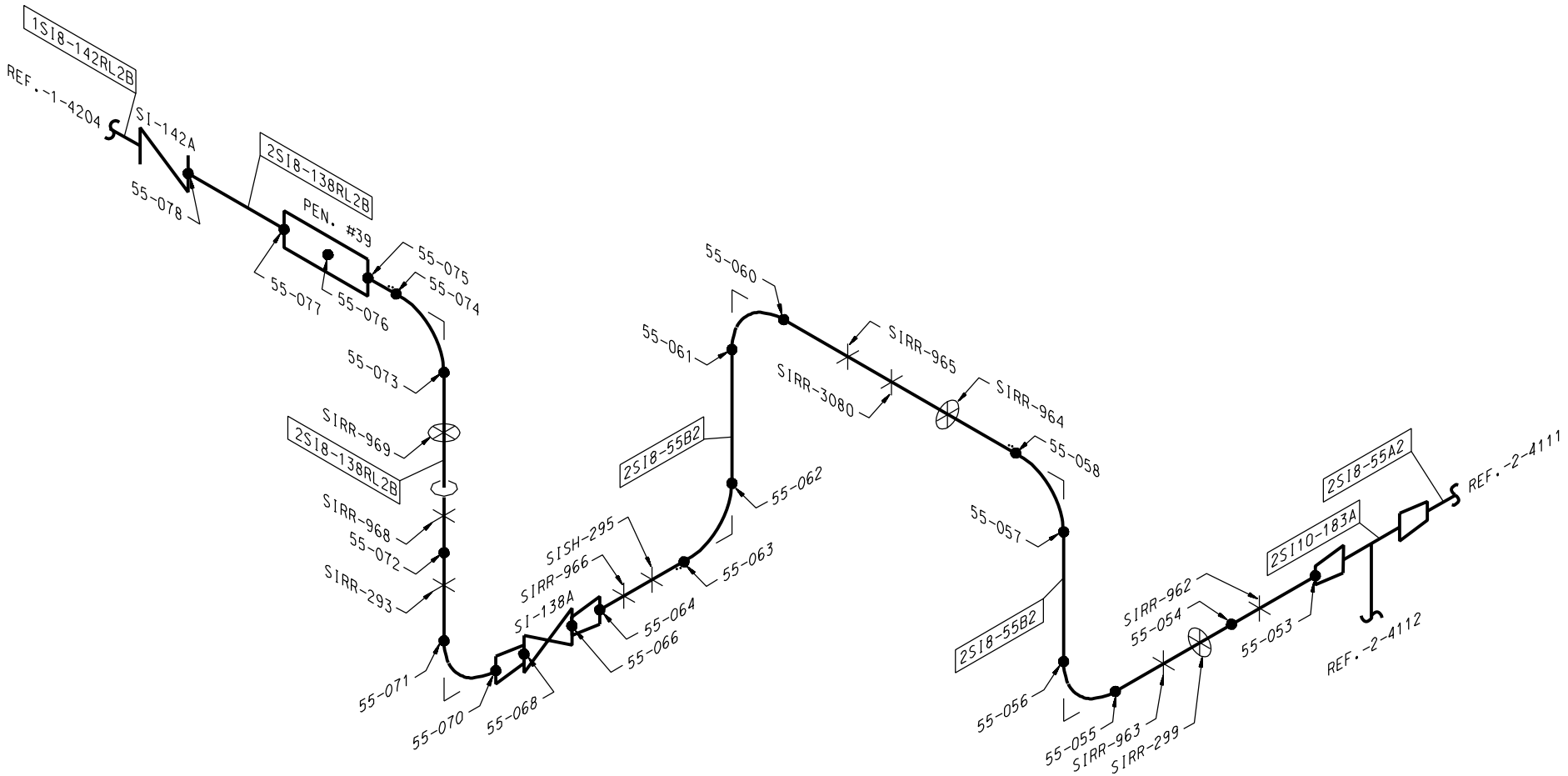
COMBINED SAFETY INJECTION TO LOOP 2, CLASS 2



REF. DRAWINGS:

4305-1862
4305-4699
G-167 SH. 3

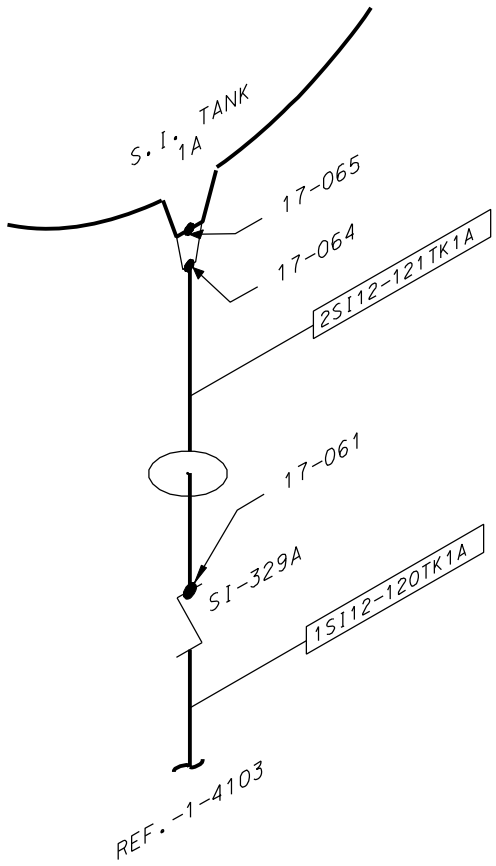
SAFETY INJECTION TO LOOP 2B, CLASS 2



REF. DRAWINGS:

8469-22
4305-1892
G-167 SH. 3
G-167 SH. 2

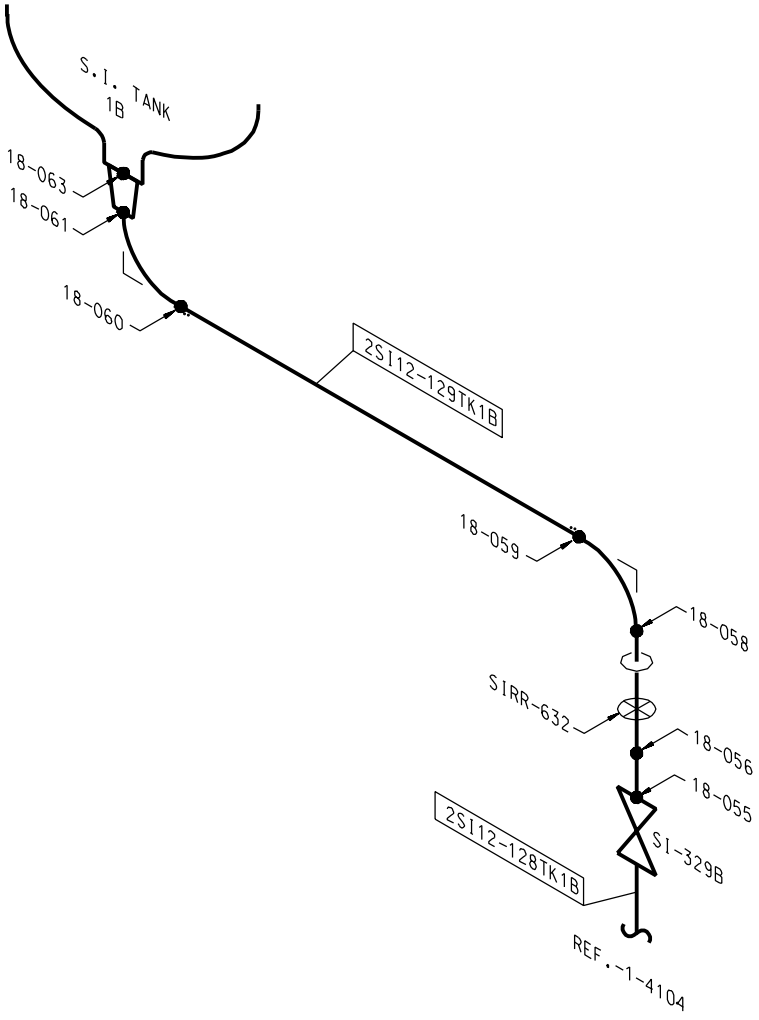
SAFETY INJECTION FROM SI TANK 1A, CLASS 2



REF. DRAWING

8469-24
G-167 SH. 4

SAFETY INJECTION FROM SI TANK 1B, CLASS 2

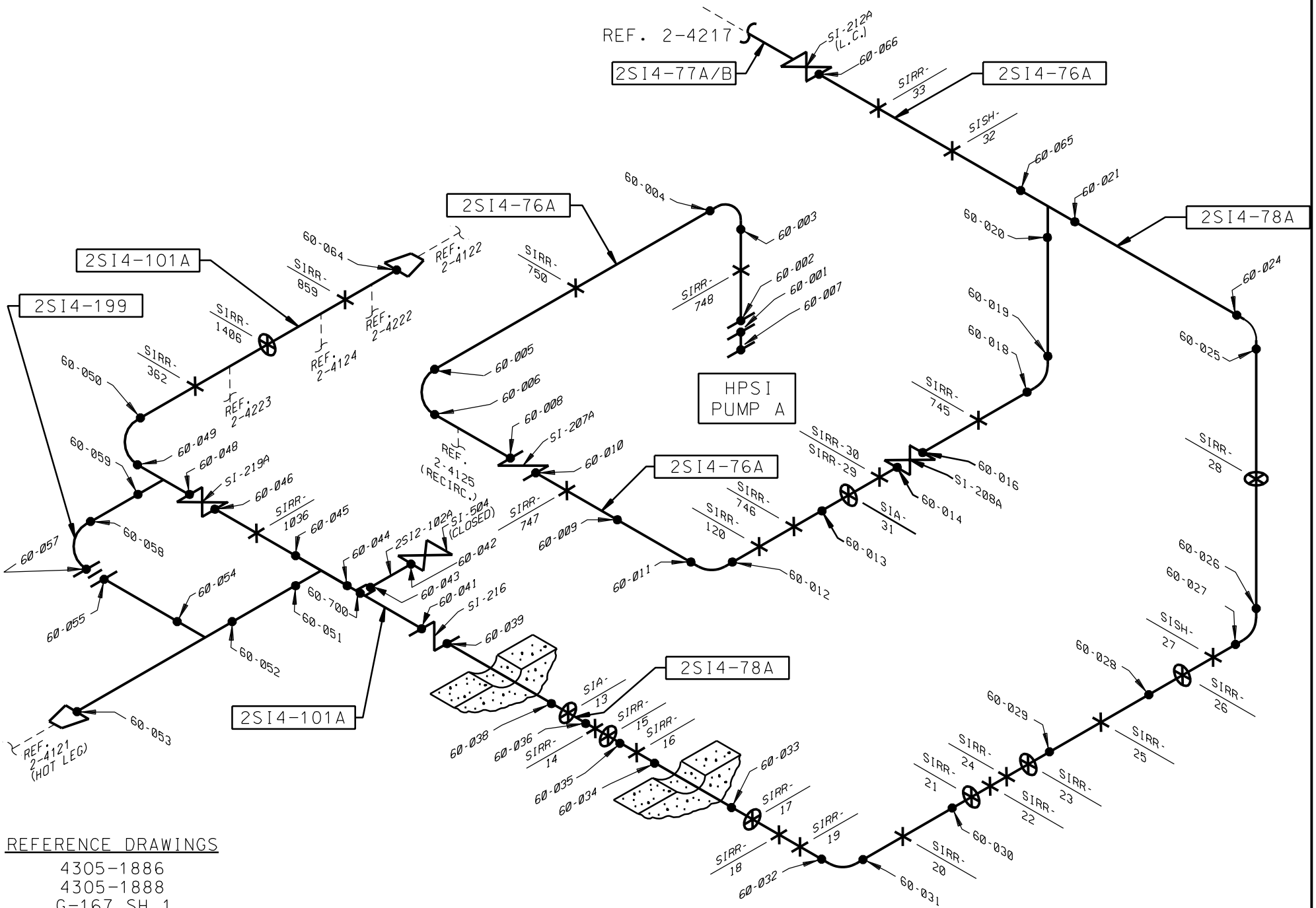


REF. DRAWINGS:

8469-20
G-167 SH. 4

WTR-2-4116

HIGH PRESSURE SAFETY INJECTION PUMP A DISCHARGE



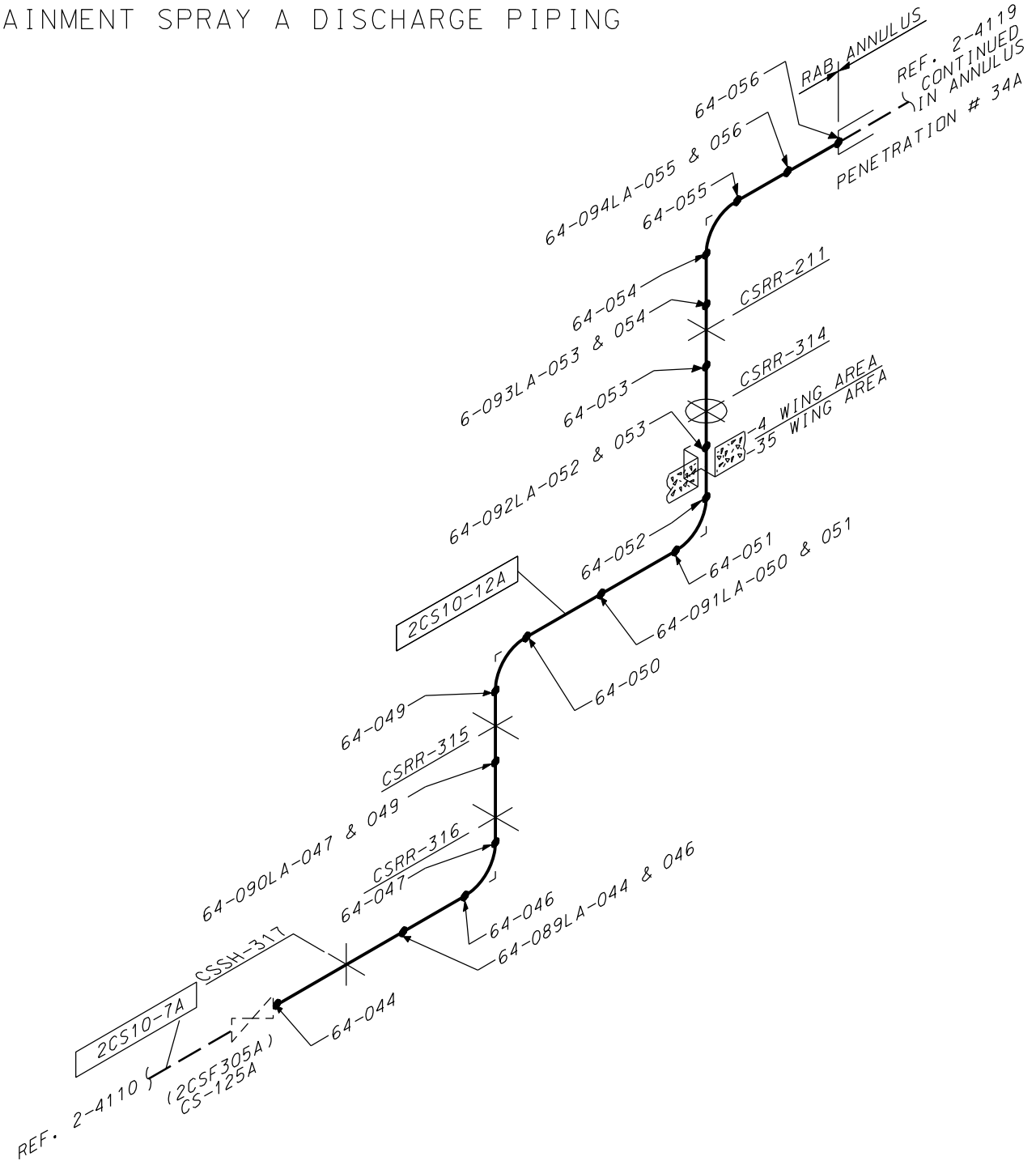
REFERENCE DRAWINGS

4305-1886
4305-1888
G-167 SH.1

FILENAME: WTR-2-4116.dgn

WTR-2-4118

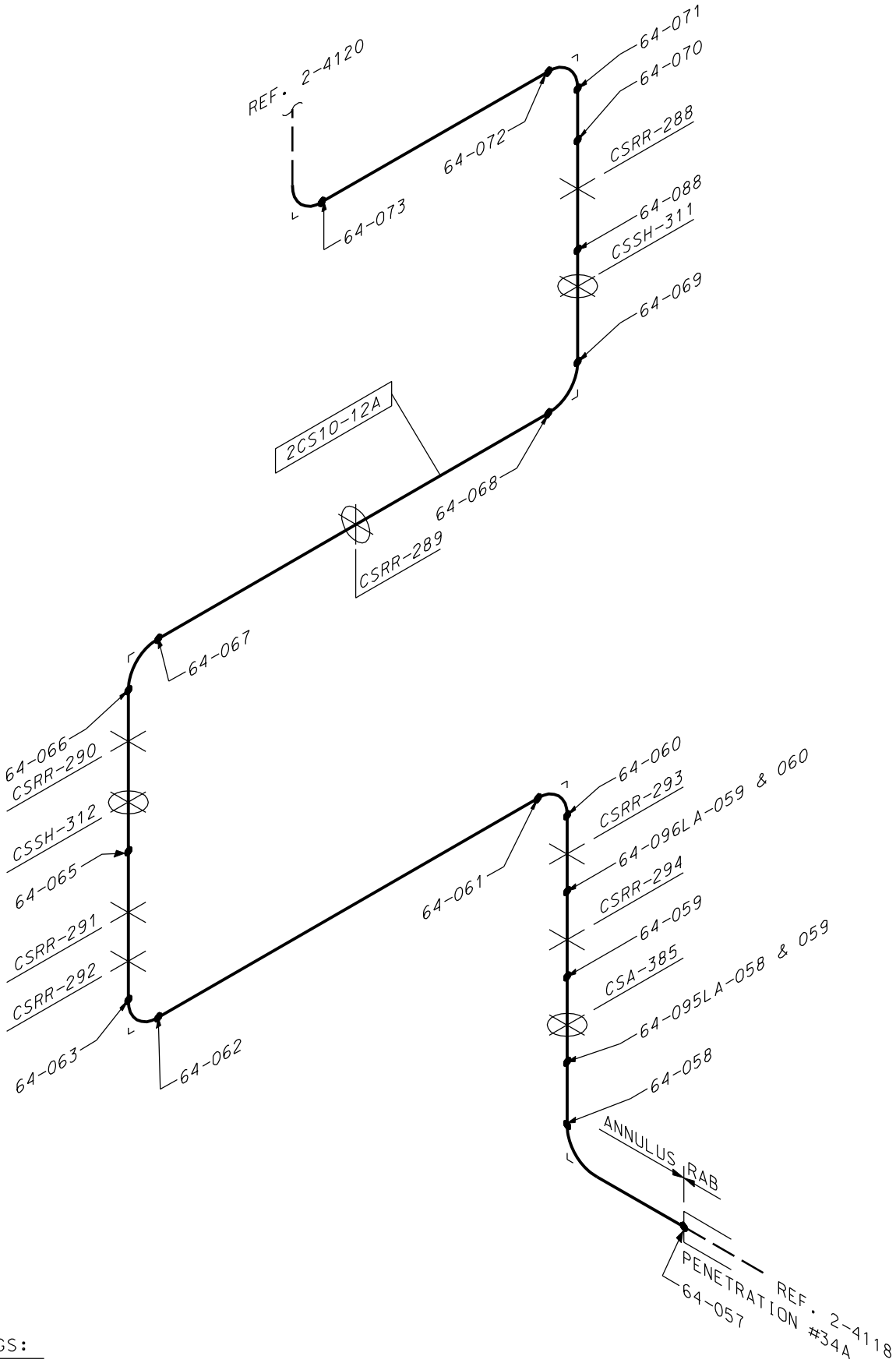
CONTAINMENT SPRAY A DISCHARGE PIPING



REF. DRAWING
4305-2
G-163

FILENAME: WTR-2-4118.dgn

CONTAINMENT SPRAY A DISCHARGE PIPING

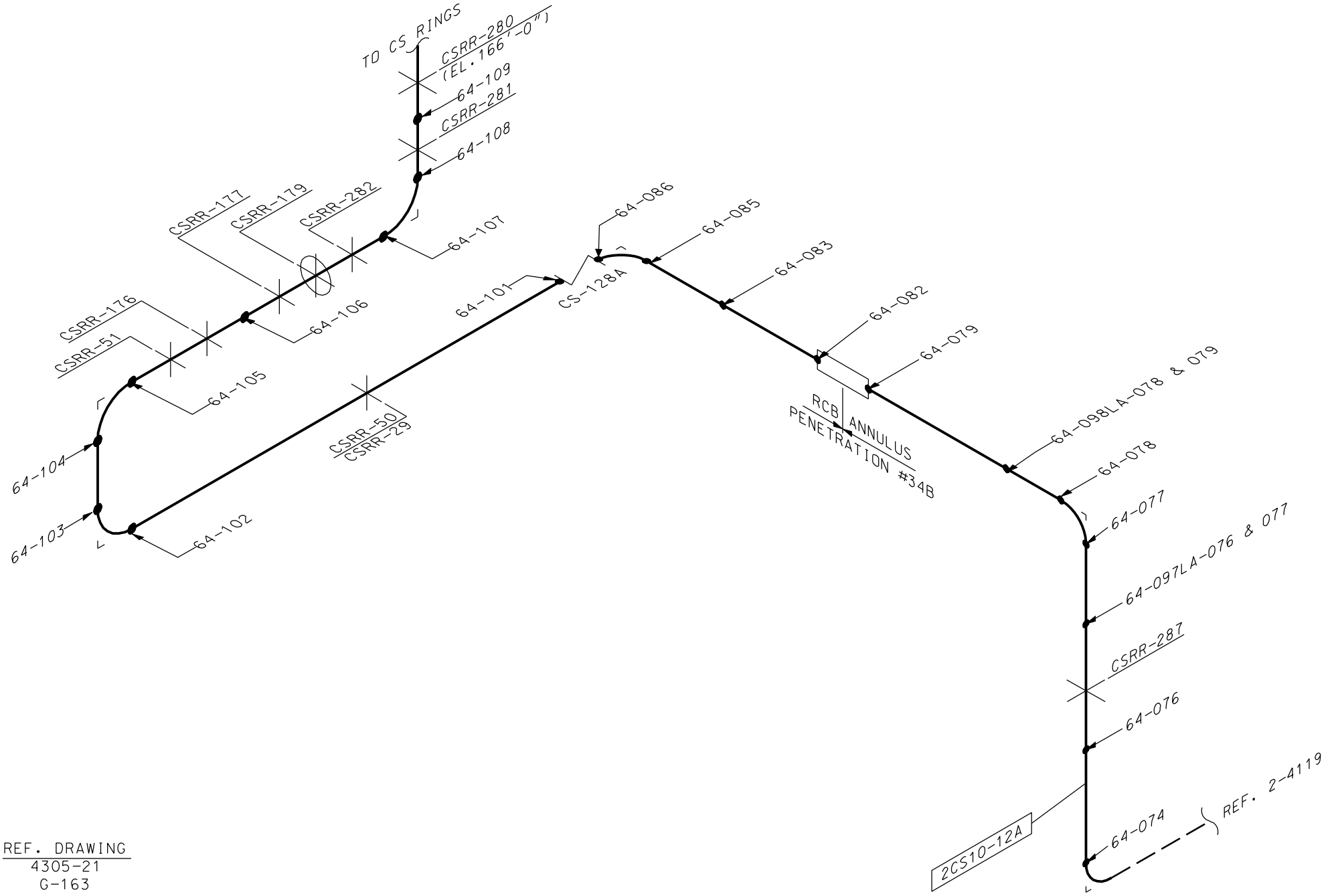


REF. DRAWINGS:

4305-21
G-163

WTR-2-4120

CONTAINMENT SPRAY A DISCHARGE PIPING

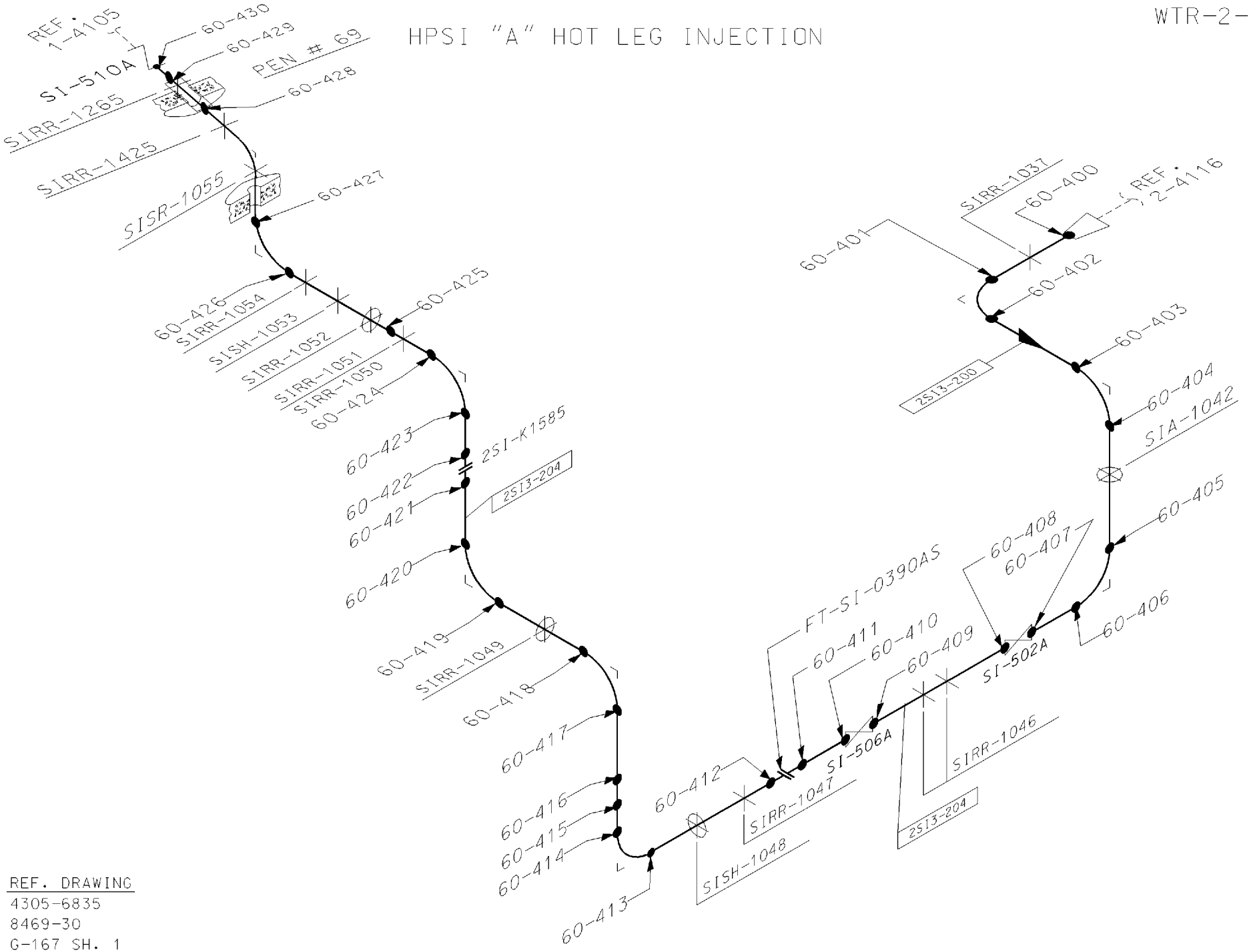


REF. DRAWING
4305-21
G-163

FILENAME: WTR-2-4120.dgn

WTR-2-4121

HPSI "A" HOT LEG INJECTION

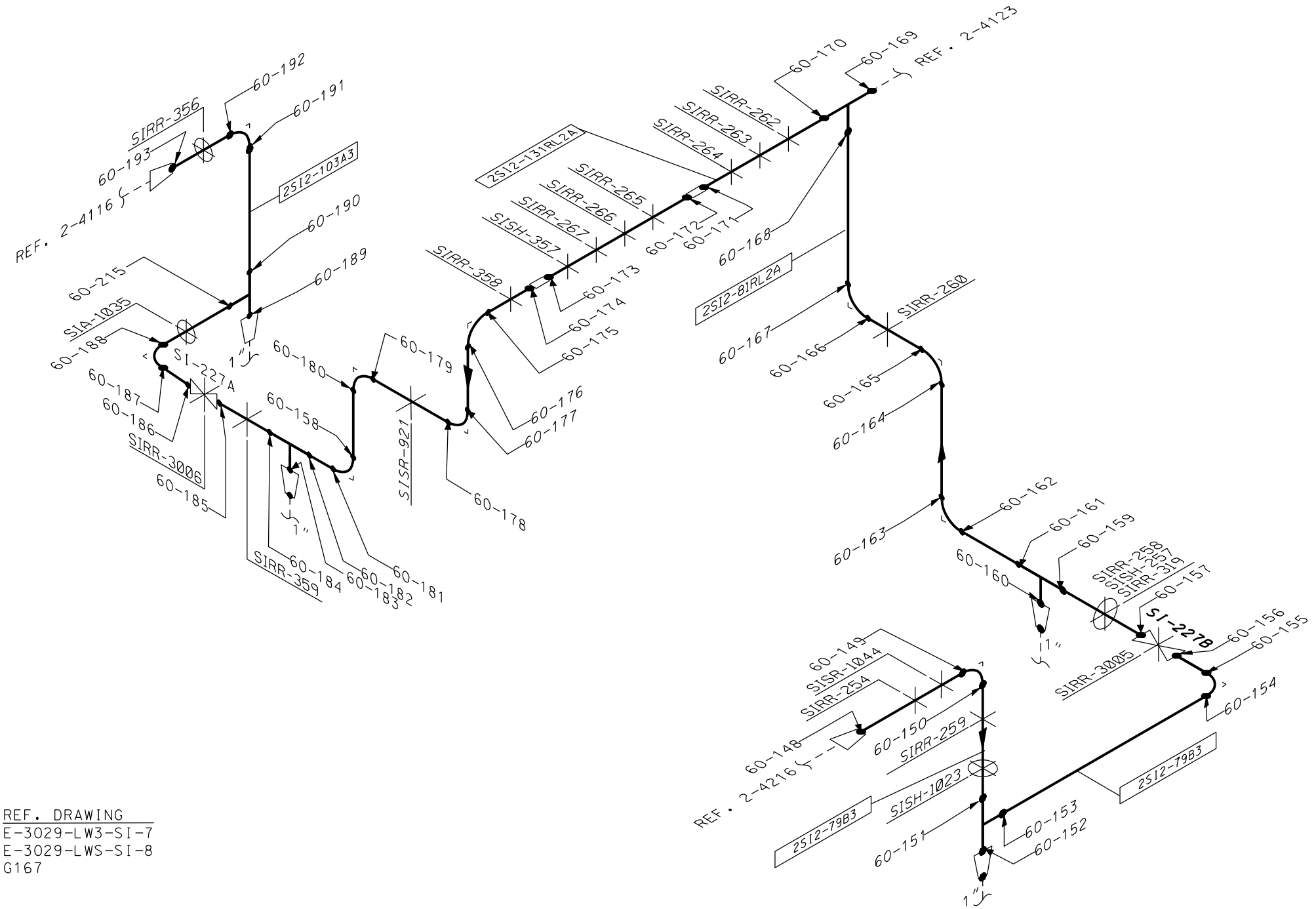


REF. DRAWING
4305-6835
8469-30
G-167 SH. 1

FILENAME: WTR-2-4121.dgn

HPSI "A" AND "B" TO RCS LOOP 2A (COLD LEG)

WTR-2-4122

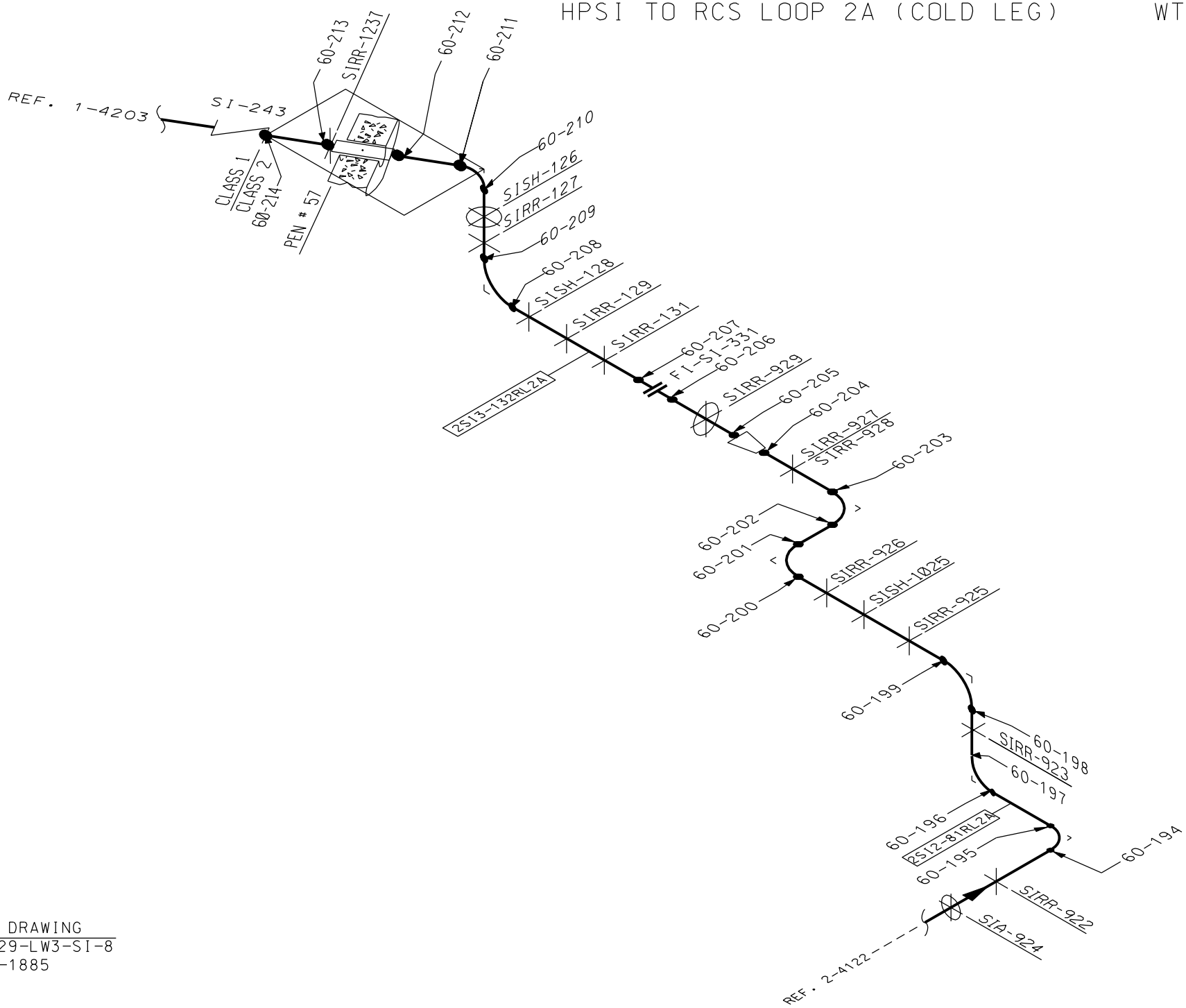


REF. DRAWING
E-3029-LW3-SI-7
E-3029-LWS-SI-8
G167

FILENAME: WTR-2-4122.dgn

HPSI TO RCS LOOP 2A (COLD LEG)

WTR-2-4123

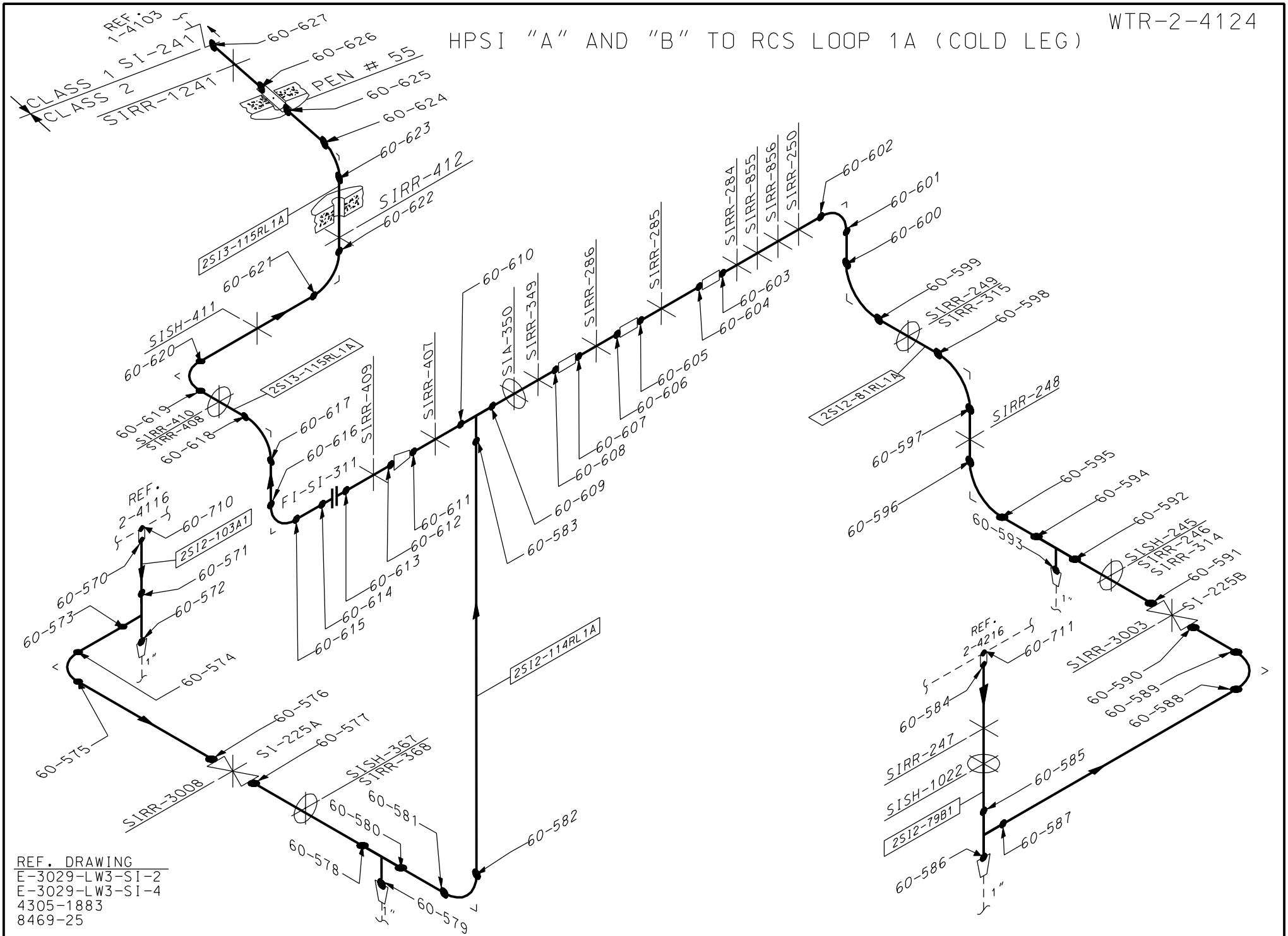


REF. DRAWING
E-3029-LW3-SI-8
4305-1885

FILENAME: WTR-2-4123.dgn

WTR-2-4124

HPSI "A" AND "B" TO RCS LOOP 1A (COLD LEG)

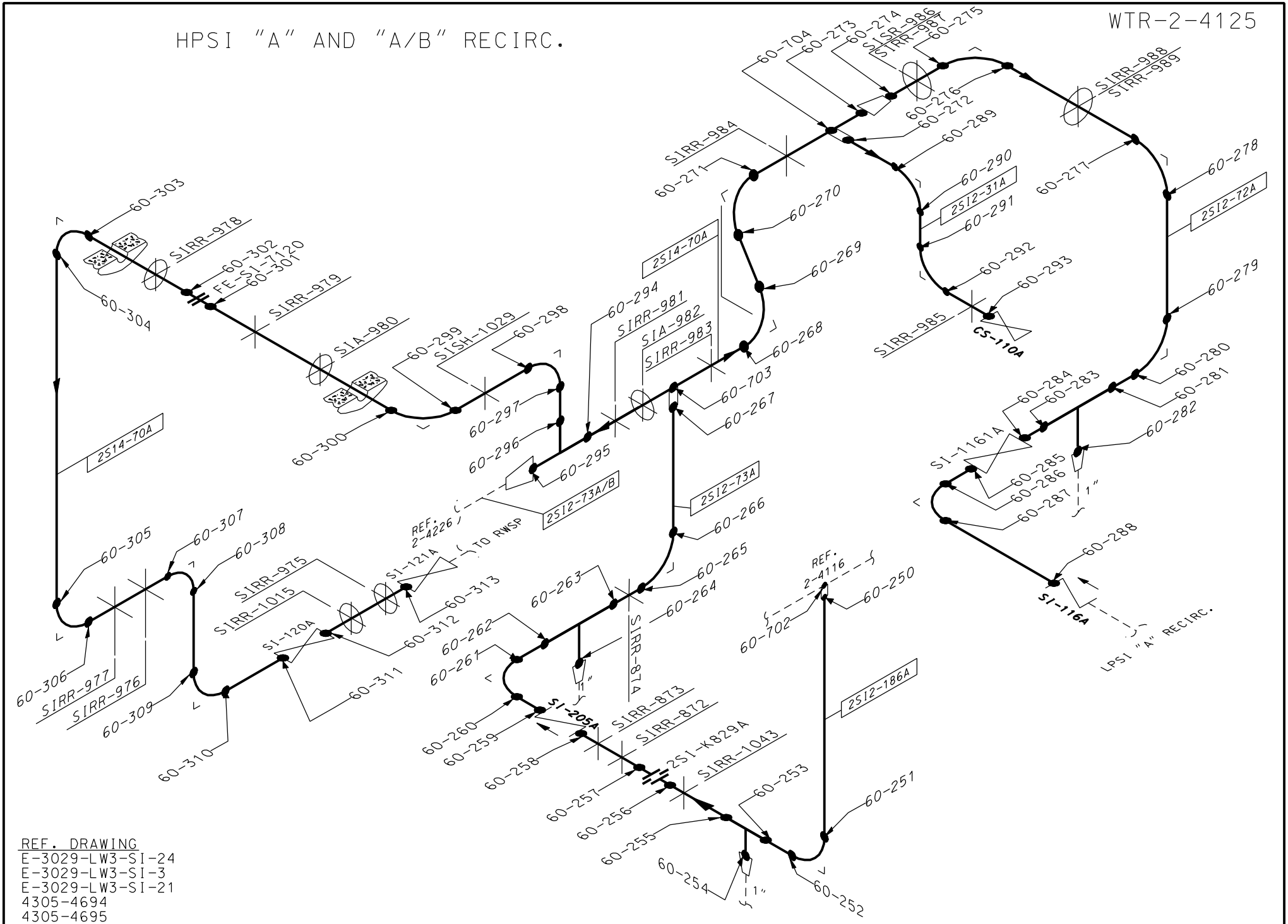


REF. DRAWING
E-3029-LW3-SI-2
E-3029-LW3-SI-4
4305-1883
8469-25

FILENAME: WTR-2-4124.dgn

WTR-2-4125

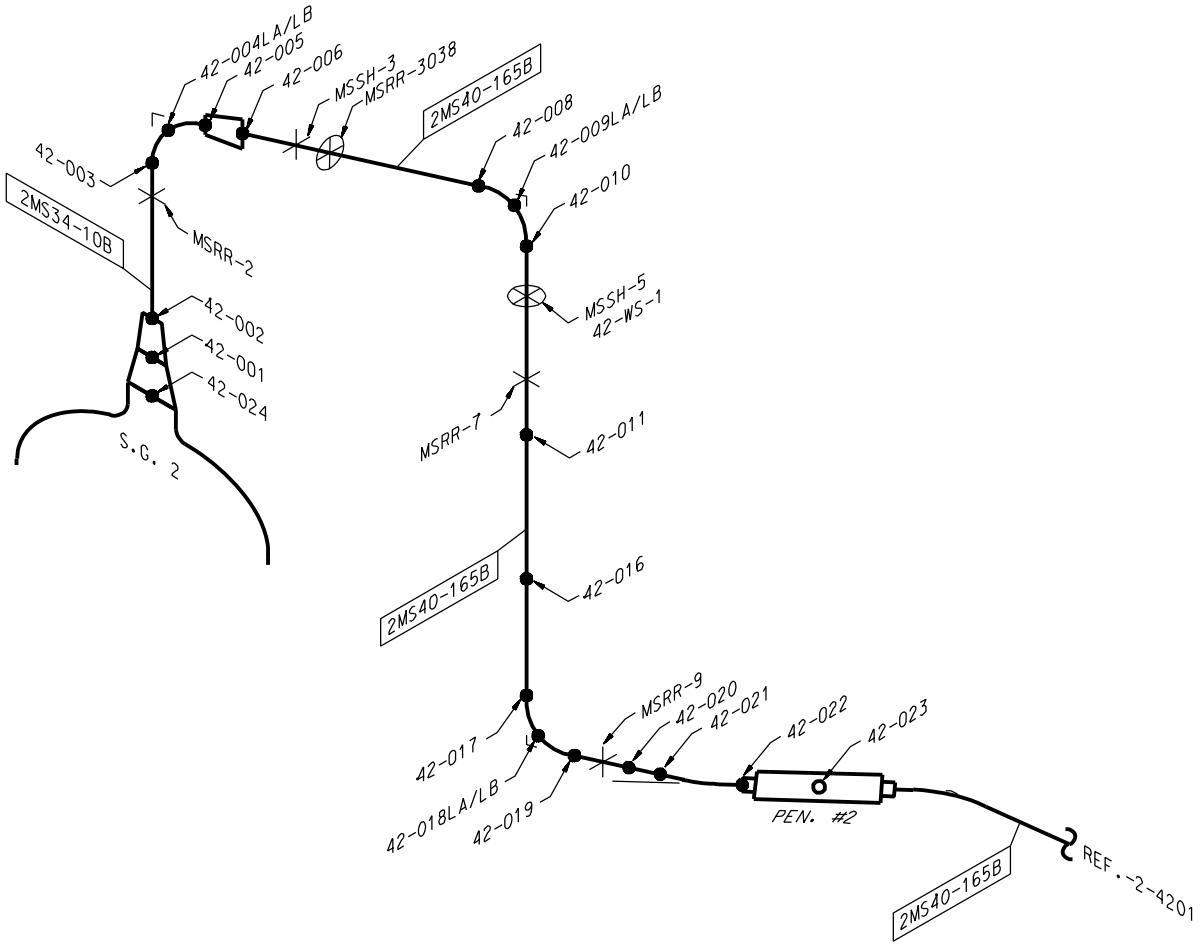
HPSI "A" AND "A/B" RECIRC.



REF. DRAWING
E-3029-LW3-SI-24
E-3029-LW3-SI-3
E-3029-LW3-SI-21
4305-4694
4305-4695
G-167 SH.3

FILENAME: WTR-2-4125.dgn

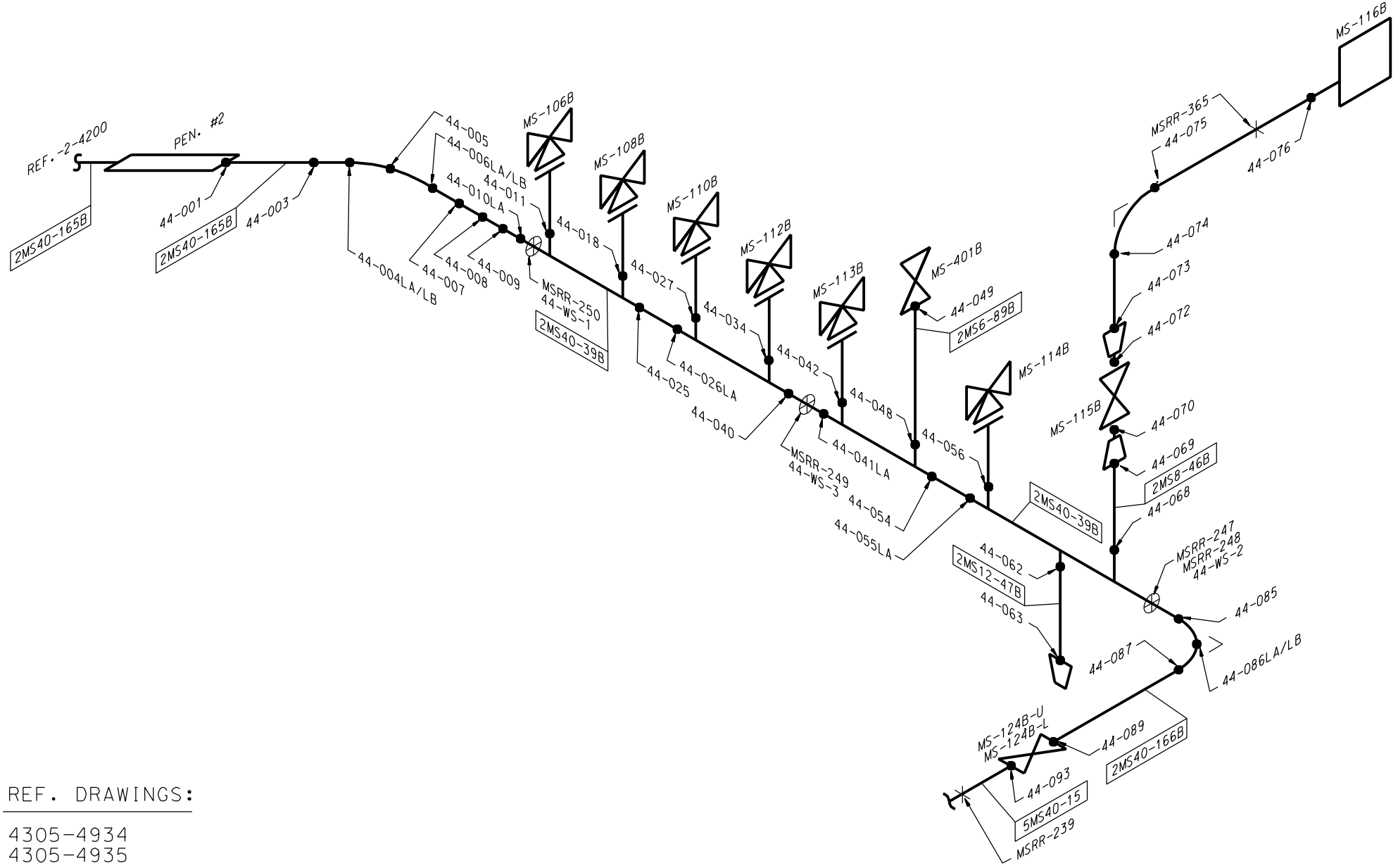
MAIN STEAM HEADER B - INSIDE CONTAINMENT



REF. DRAWINGS:

4305-4934
G-151 SH. 1

MAIN STEAM HEADER B - OUTSIDE CONTAINMENT

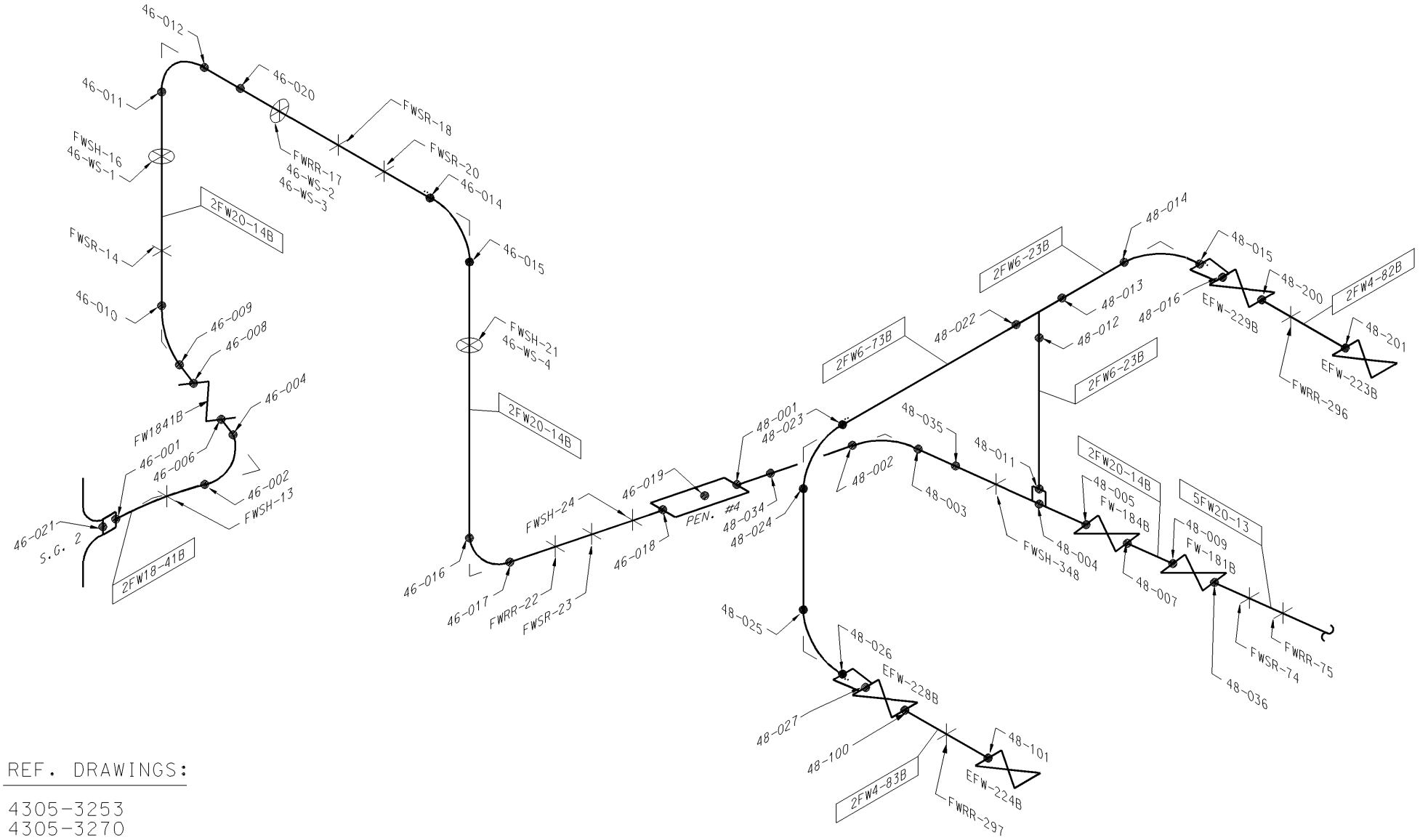


REF. DRAWINGS:

4305-4934
4305-4935
4305-8551
G-151 SH. 1

WTR-2-4202

MAIN AND EMERGENCY FEED HEADER B

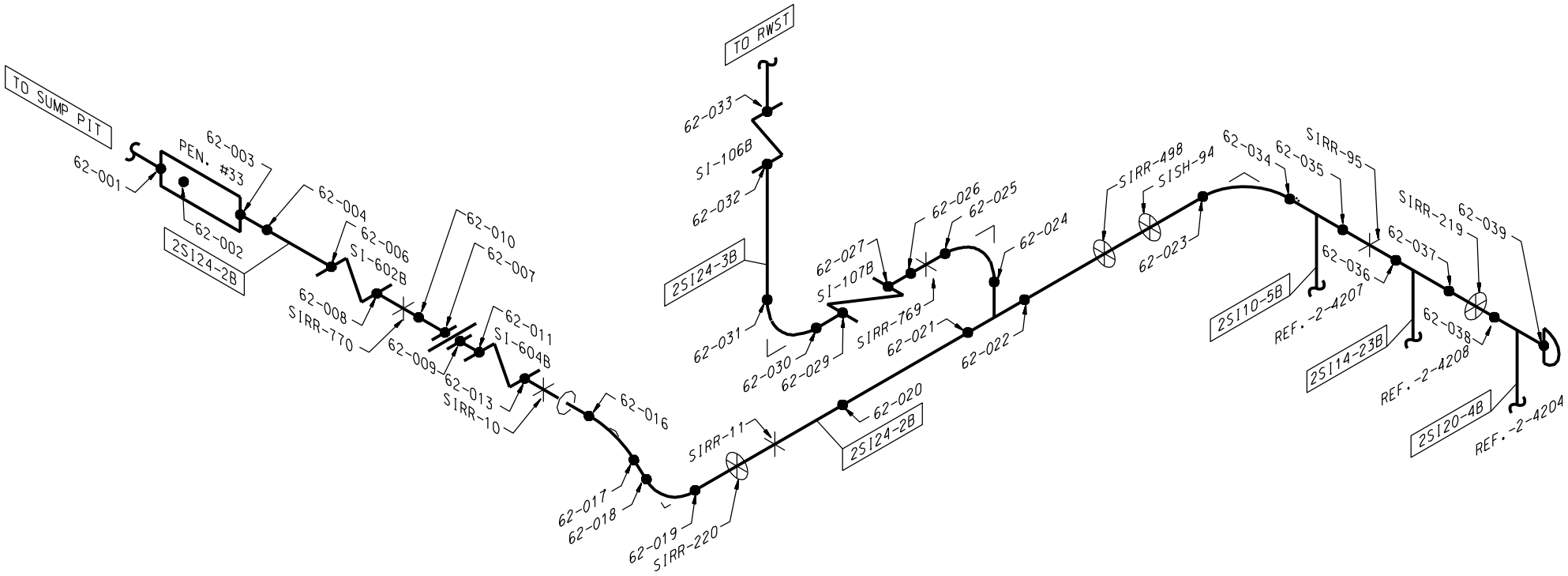


REF. DRAWINGS:

4305-3253
4305-3270
4305-6598
G-153 SH. 4

FILENAME: WTR-2-4202.dgn

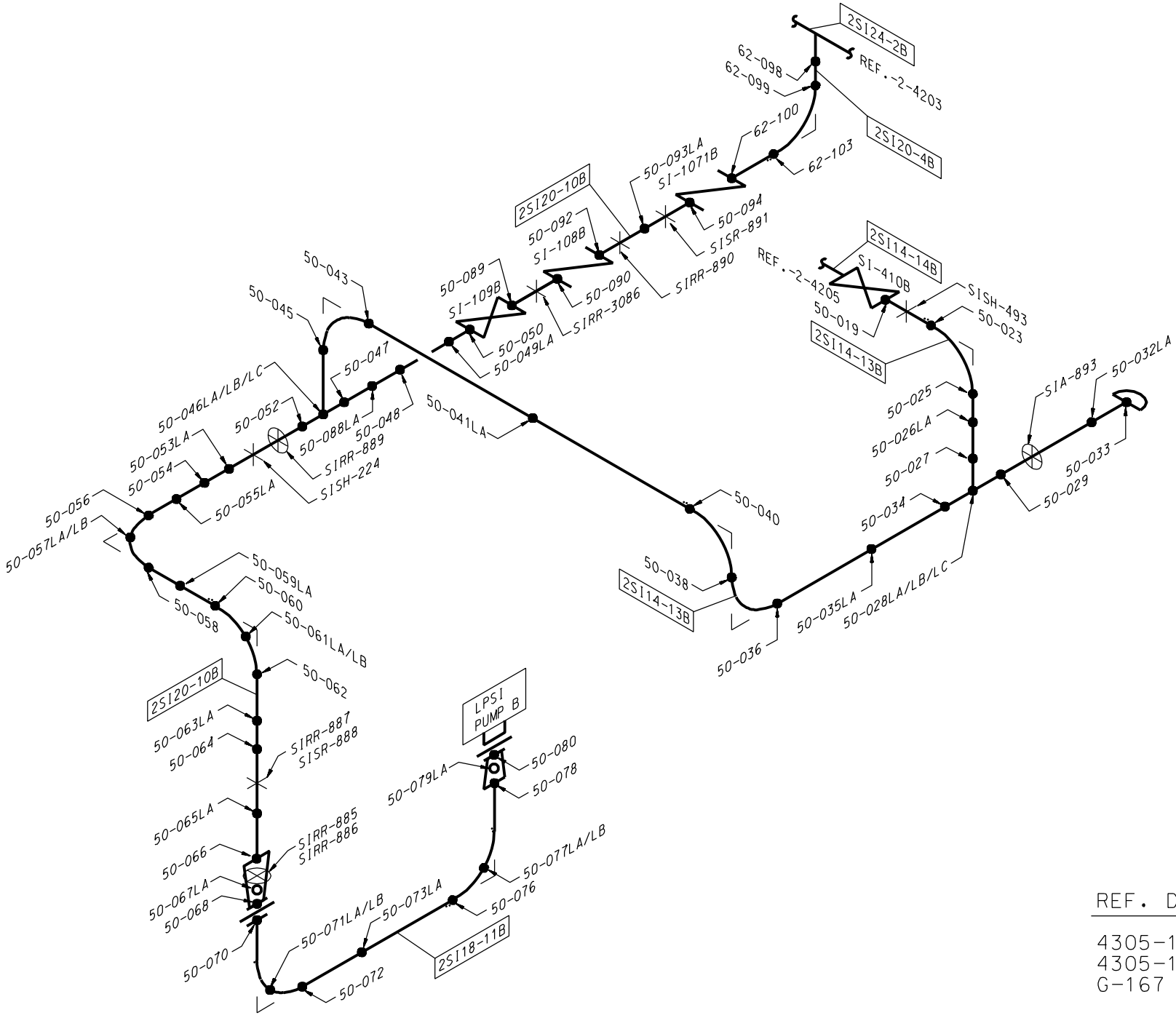
CONTAINMENT SPRAY AND SAFETY INJECTION SUCTION HEADER B



REF. DRAWINGS:

4305-1879
G-167 SH. 1 ,3

LOW PRESSURE SAFETY INJECTION PUMP B SUCTION

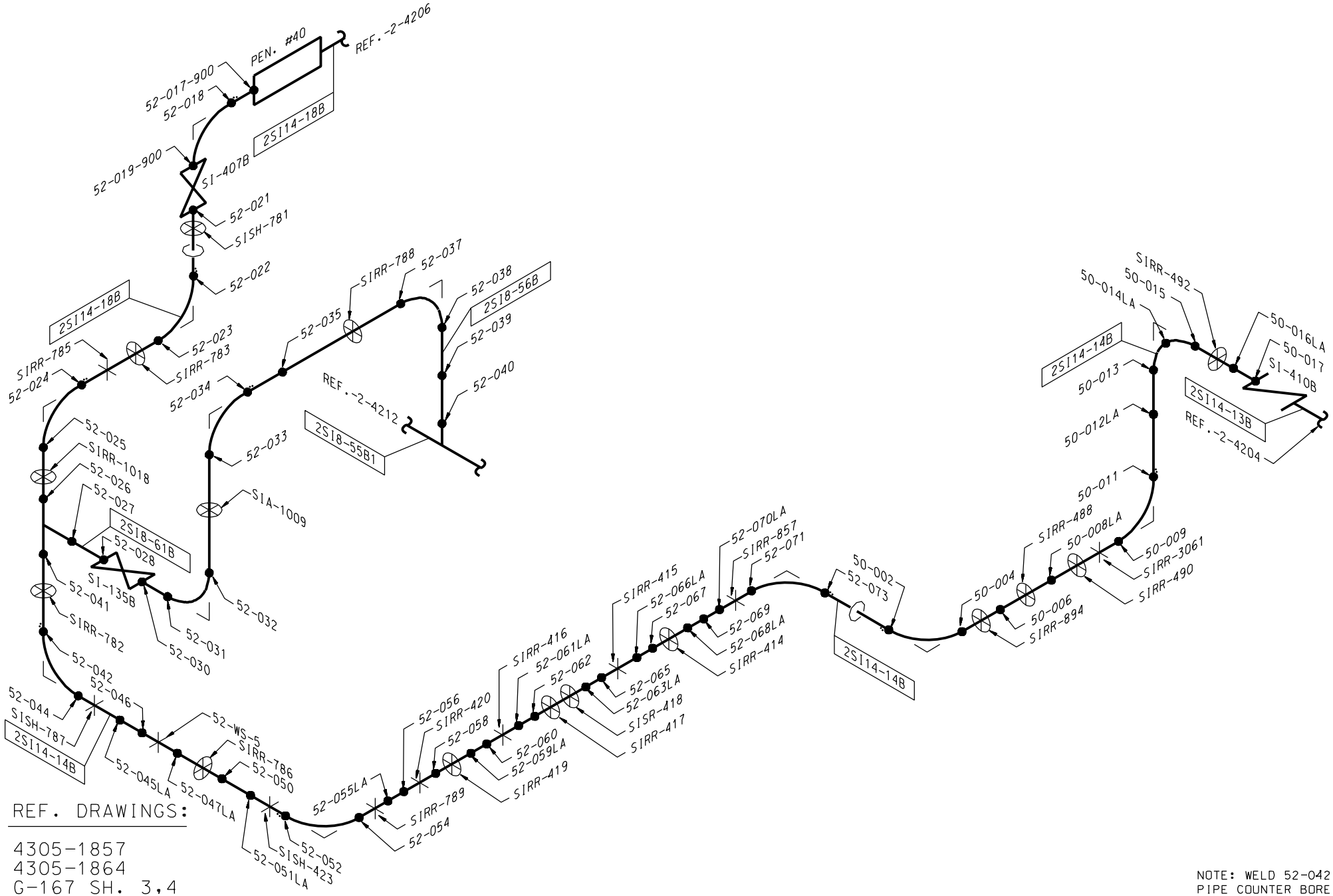


REF. DRAWINGS:

4305-1864
4305-1869
G-167 SH. 3

FILENAME: WTR-2-4204.dgn

SHUTDOWN COOLING FROM LOOP 1, CLASS 2 - OUTSIDE CONTAINMENT



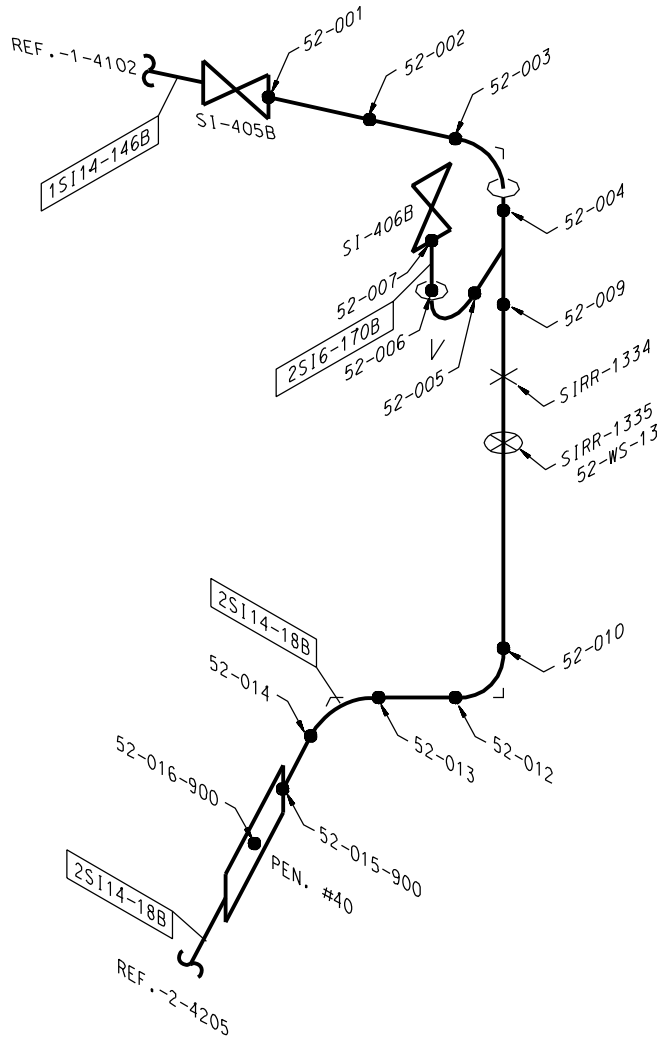
REF. DRAWINGS:

4305-1857
4305-1864
G-167 SH. 3,4
G-167 SH. 2

NOTE: WELD 52-042 PIPE COUNTER BORE CHANGES SCHEDULE

FILENAME: WTR-2-4205.dgn

SHUTDOWN COOLING FROM LOOP 1, CLASS 2 - INSIDE CONTAINMENT



REF. DRAWINGS:

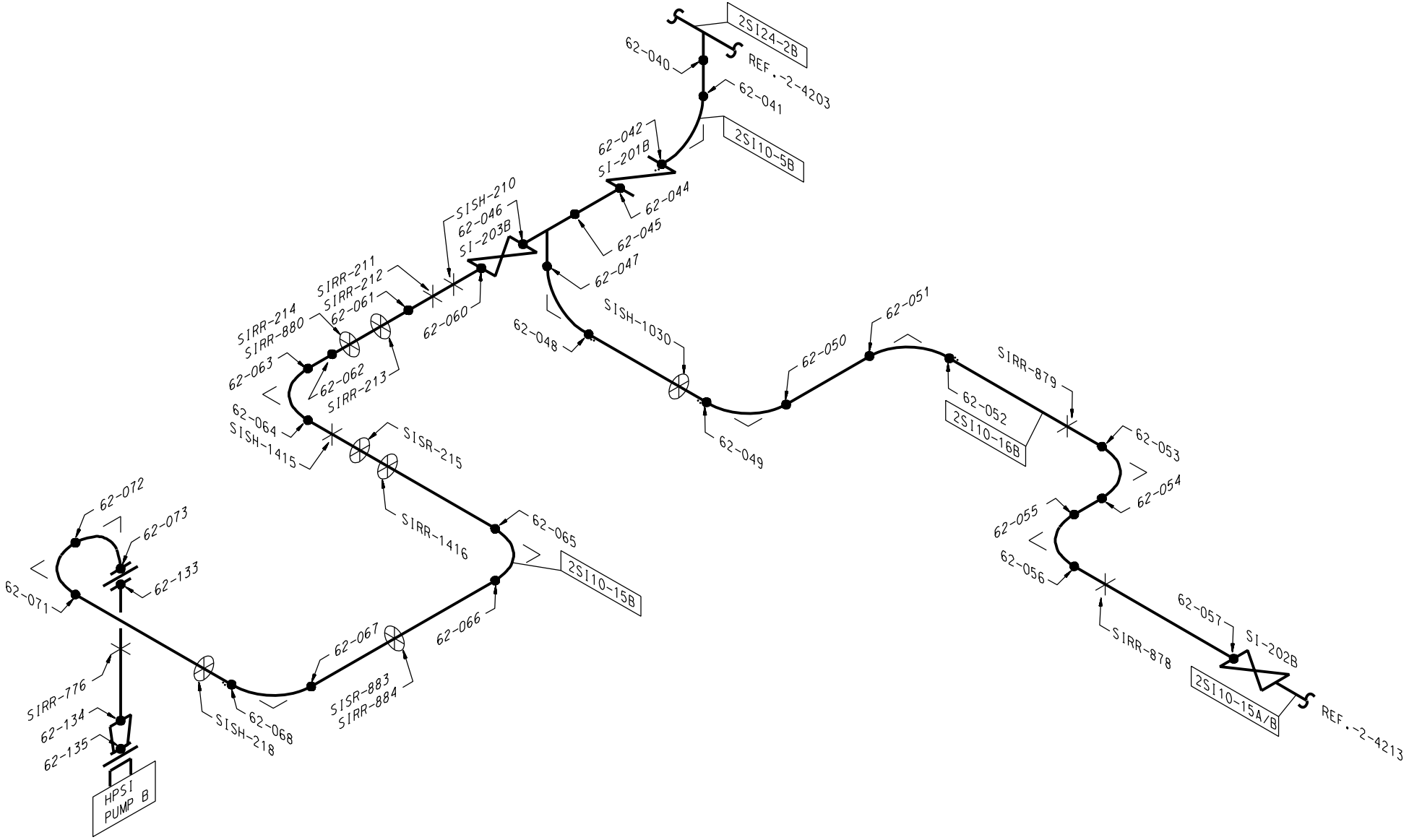
8469-29
G-167 SH. 2

NOTE: WELD 52-002 PIPE COUNTER BORE CHANGES SCHEDULE

FILENAME: WTR-2-4206.dgn

WTR-2-4207

HIGH PRESSURE SAFETY INJECTION PUMP B SUCTION

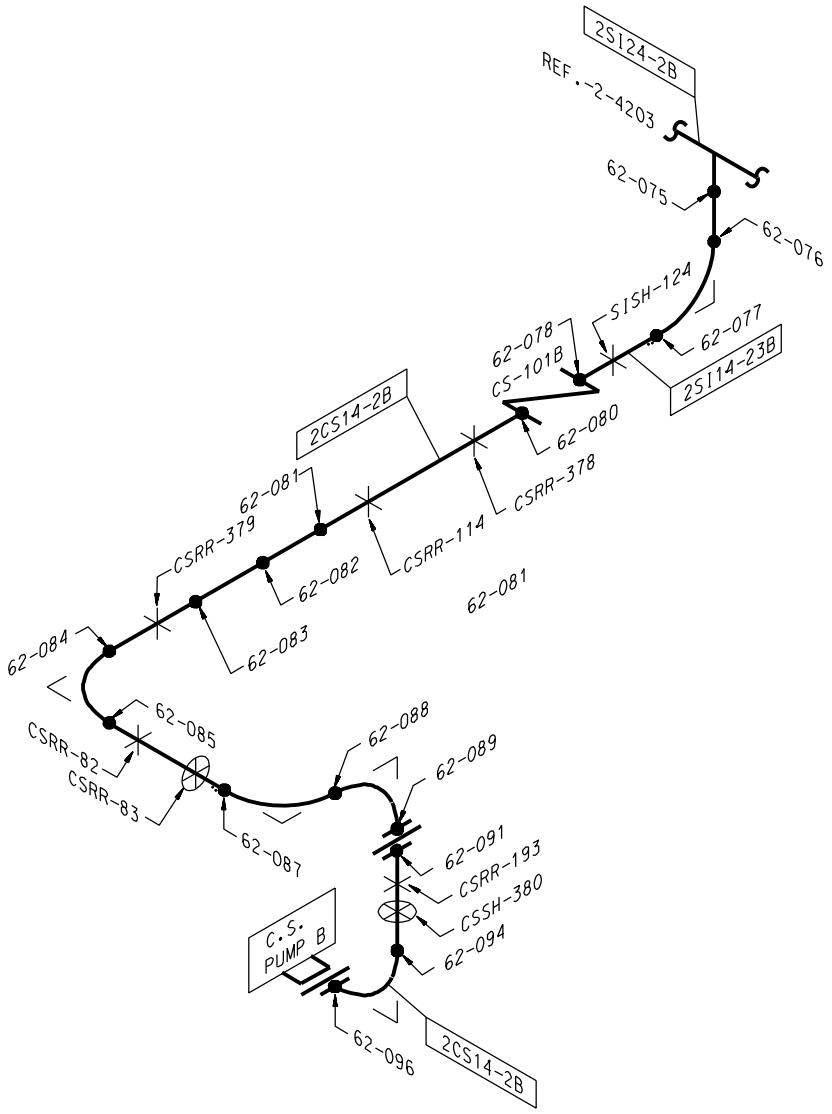


REF. DRAWINGS:

4305-1860
4305-1863
G-167 SH. 1

FILENAME: WTR-2-4207.dgn

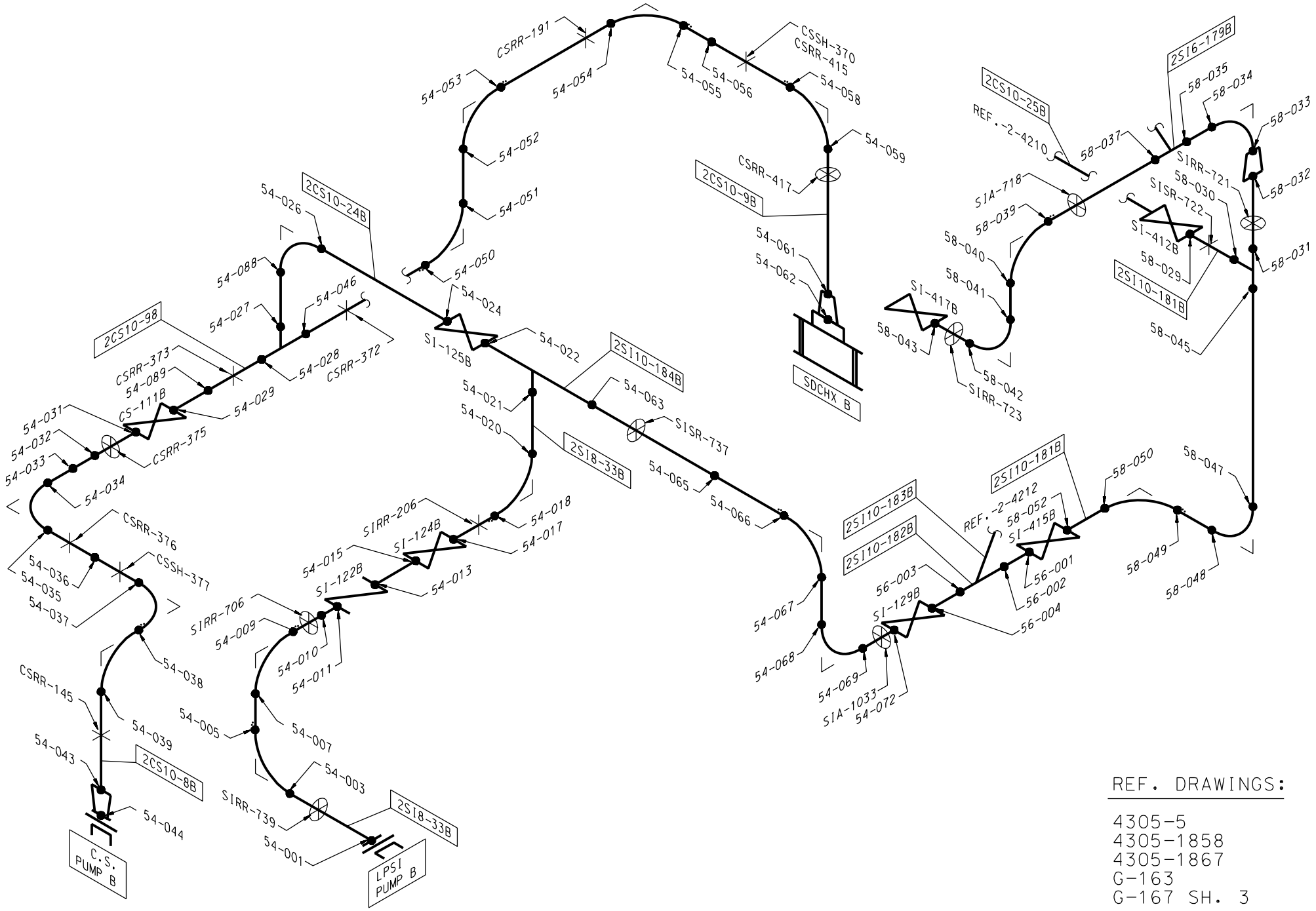
CONTAINMENT SPRAY PUMP B SUCTION



REF. DRAWINGS:

4305-6
4305-1879
G-163
G-167 SH. 1

LPSI PUMP B AND CS PUMP B DISCHARGE TO SDCHX B



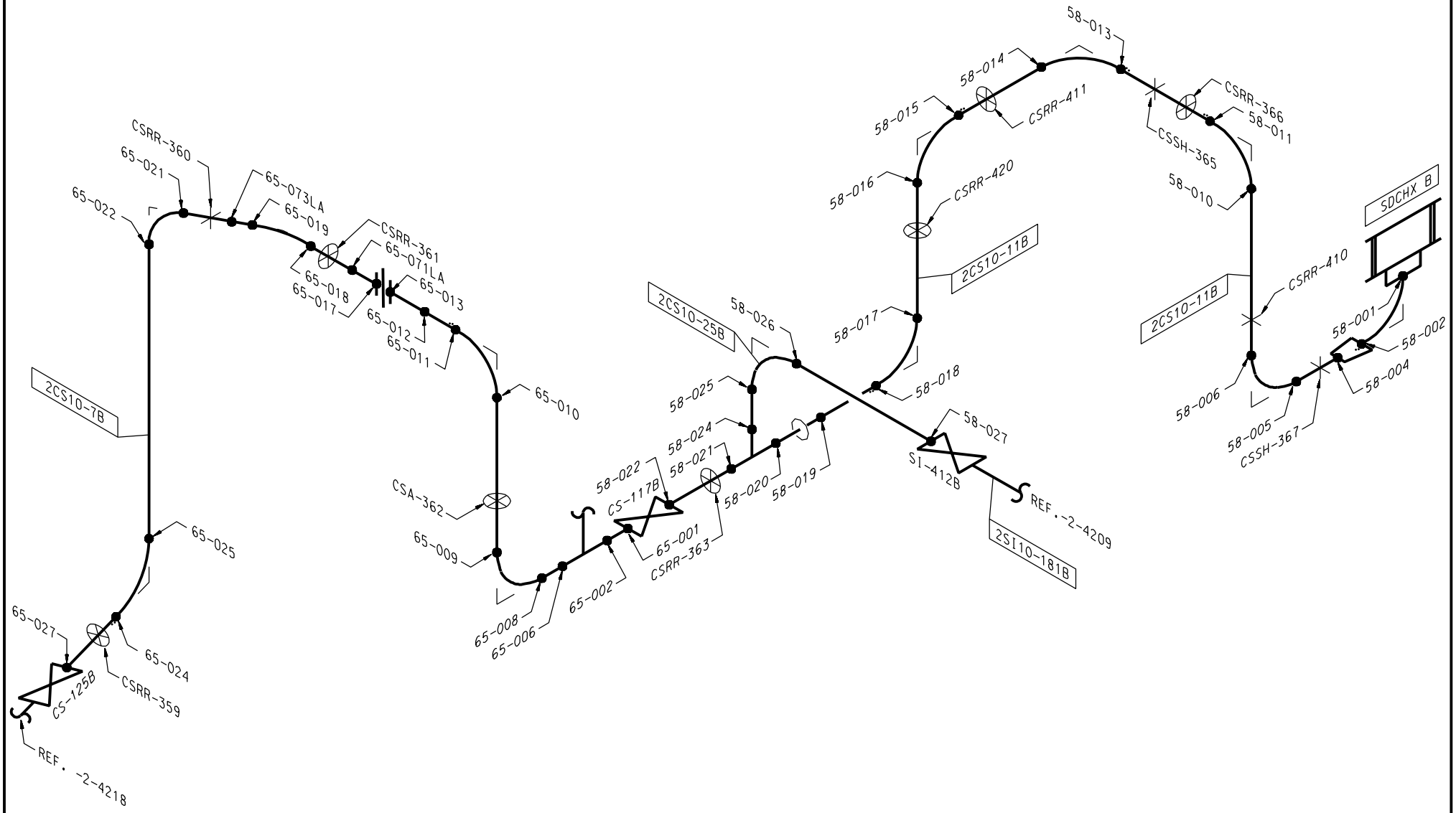
REF. DRAWINGS:

4305-5
4305-1858
4305-1867
G-163
G-167 SH. 3

FILENAME: WTR-2-4209.dgn

WTR-2-4210

SDCHX B DISCHARGE

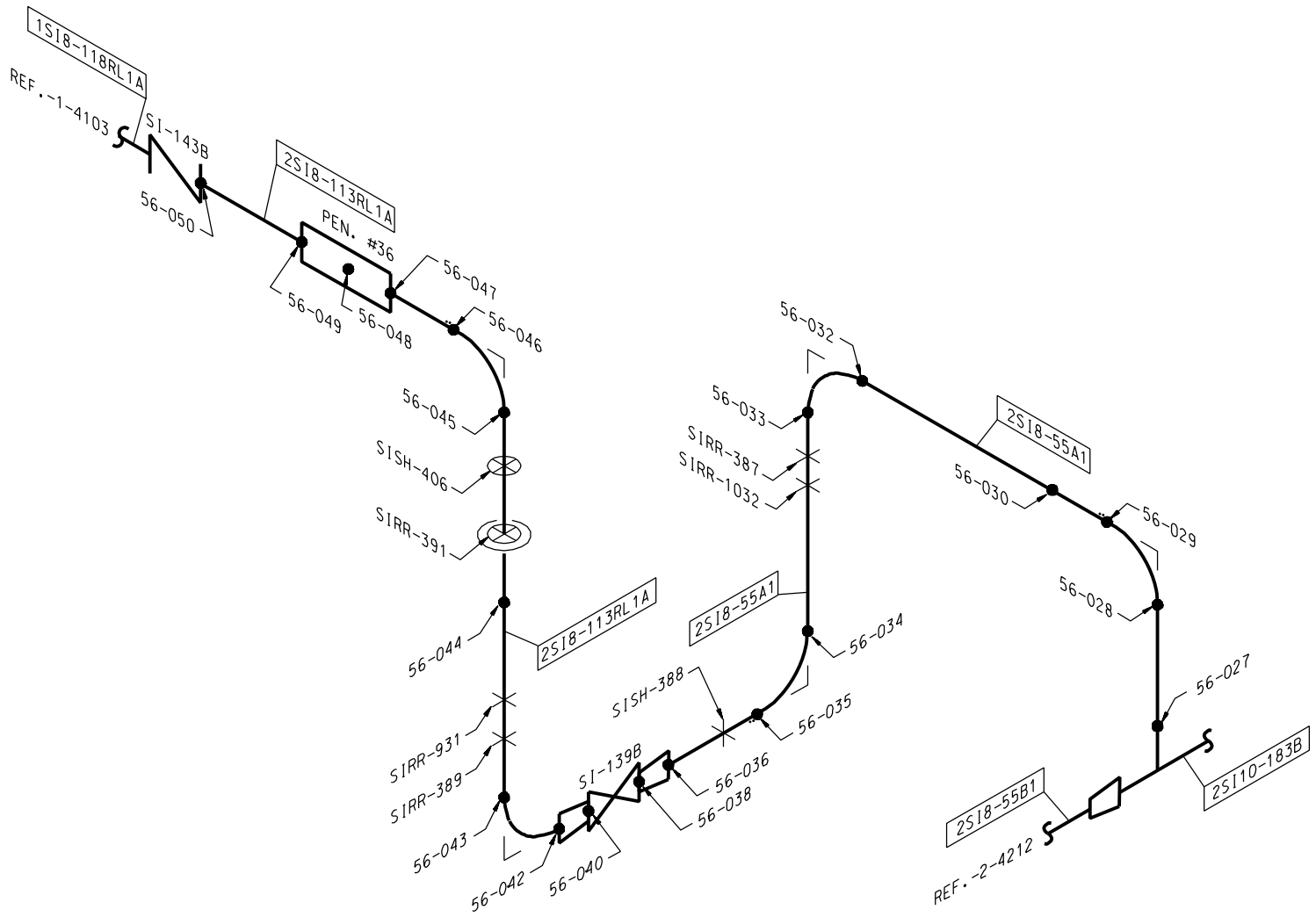


REF. DRAWINGS:

4305-3
G-200 SH2

FILENAME: WTR-2-4210.dgn

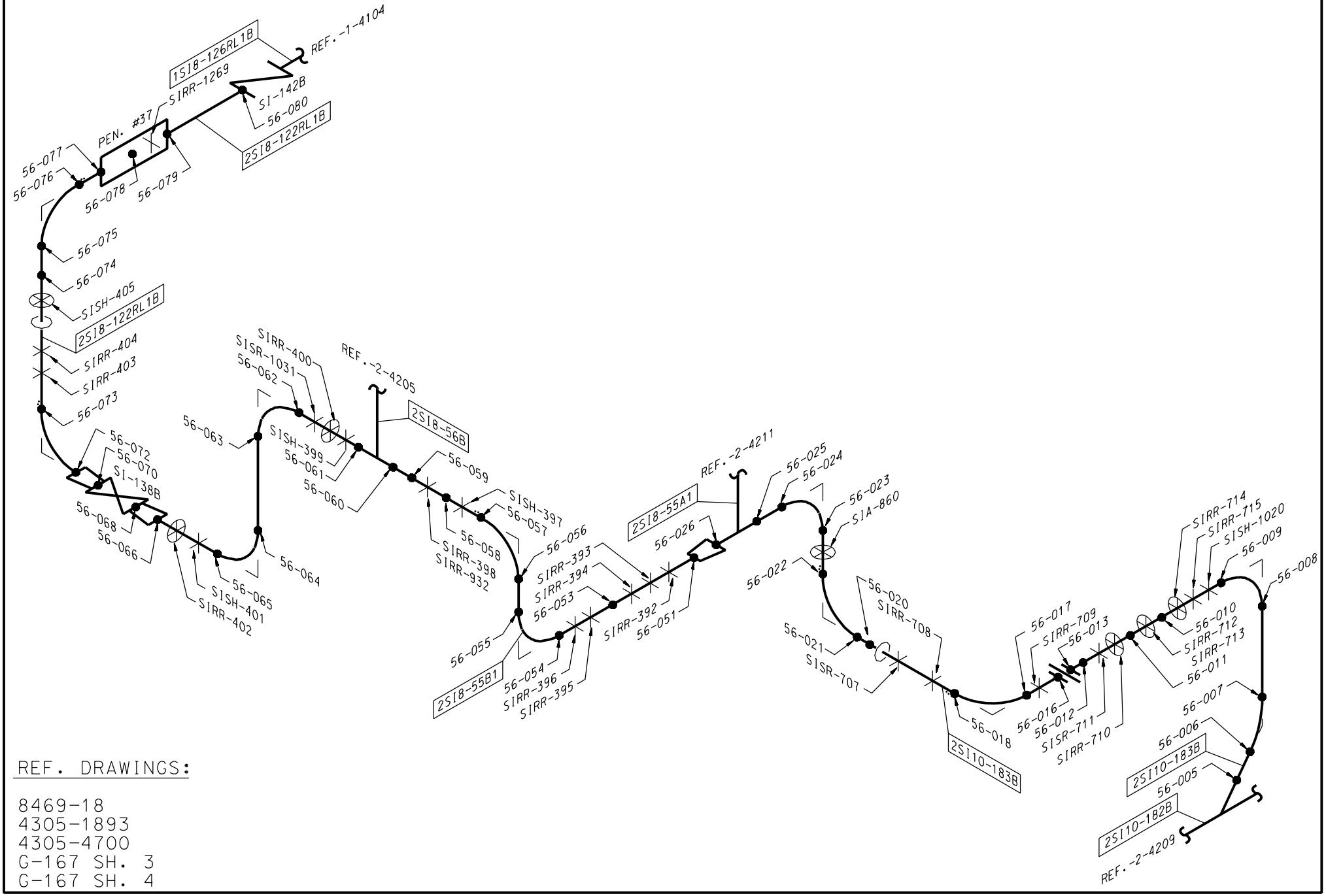
SAFETY INJECTION TO LOOP 1A, CLASS 2



REF. DRAWINGS:

8469-19
4305-1865
G-167 SH. 3
G-167 SH. 4

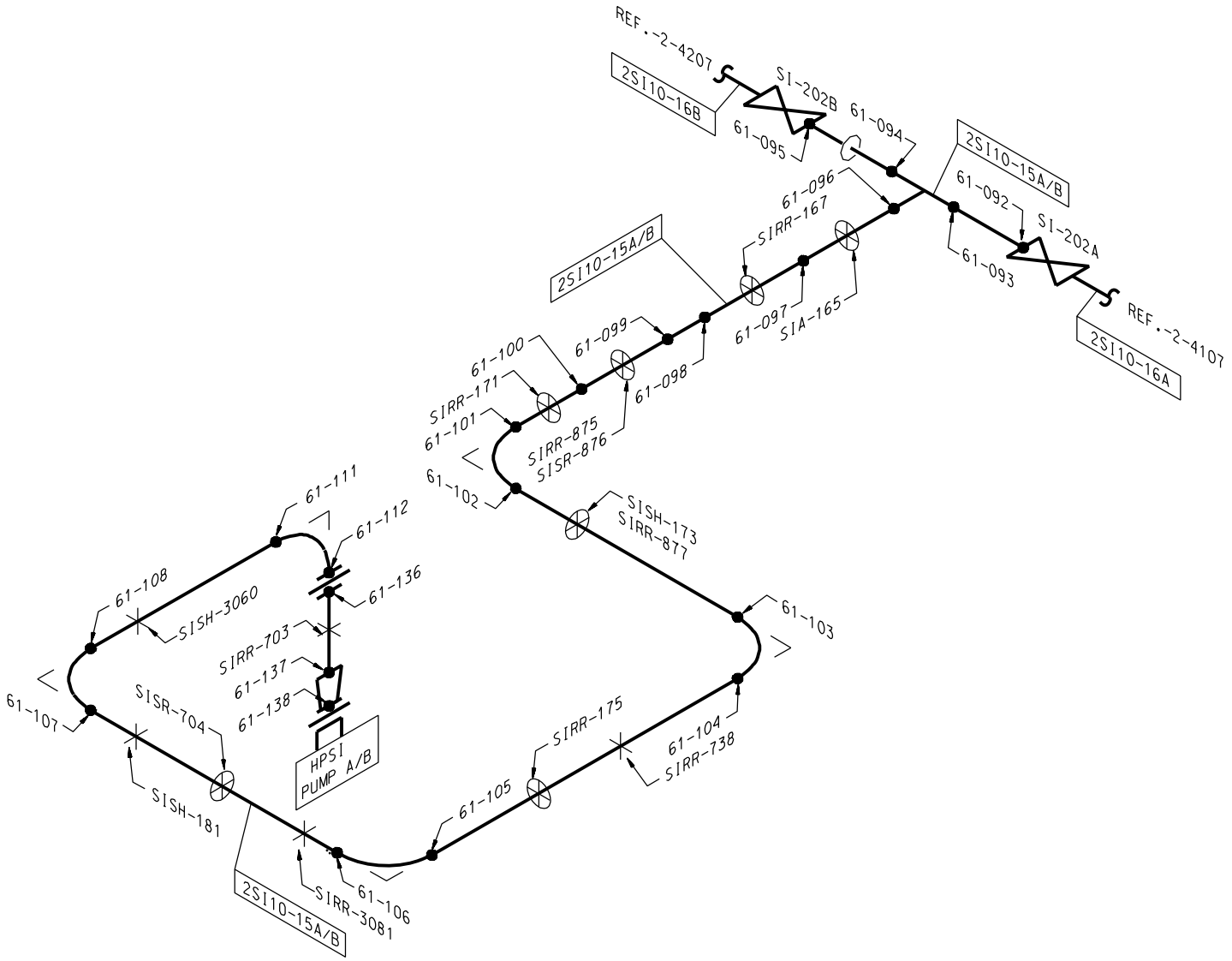
SAFETY INJECTION TO LOOP 1B, CLASS 2



REF. DRAWINGS:

8469-18
4305-1893
4305-4700
G-167 SH. 3
G-167 SH. 4

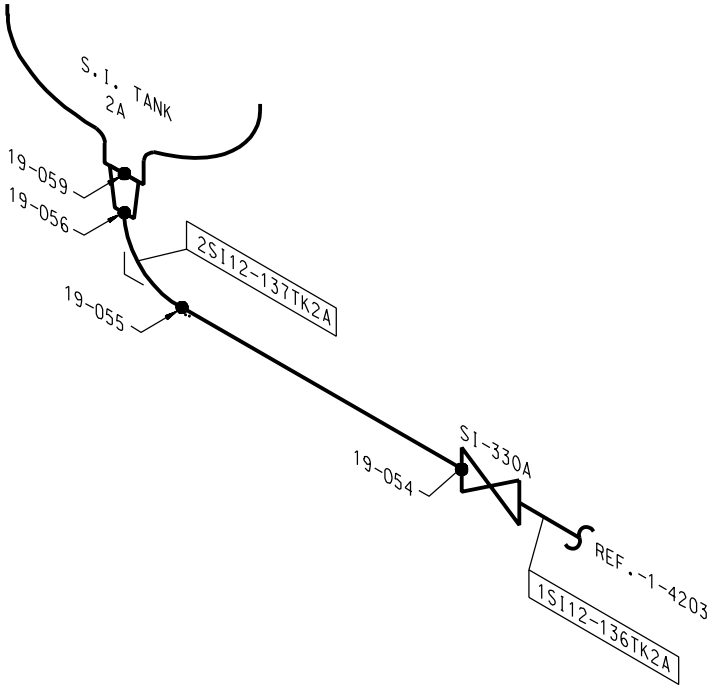
HIGH PRESSURE SAFETY INJECTION PUMP A/B SUCTION



REF. DRAWINGS:

4305-1871
4305-1890
G-167 SH. 1

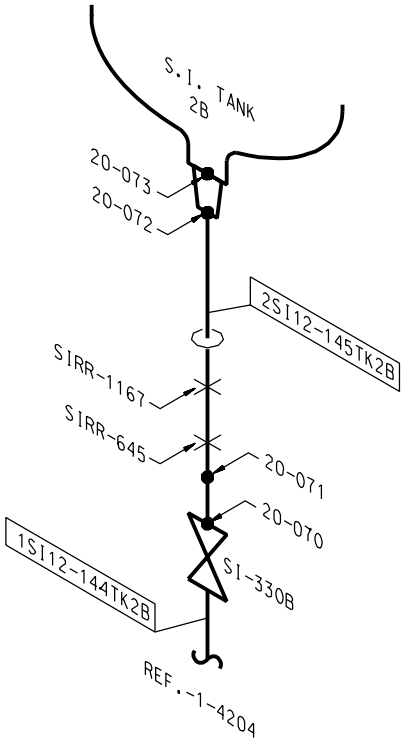
SAFETY INJECTION FROM SI TANK 2A, CLASS 2



REF. DRAWINGS:

8469-28
G-167 SH. 2

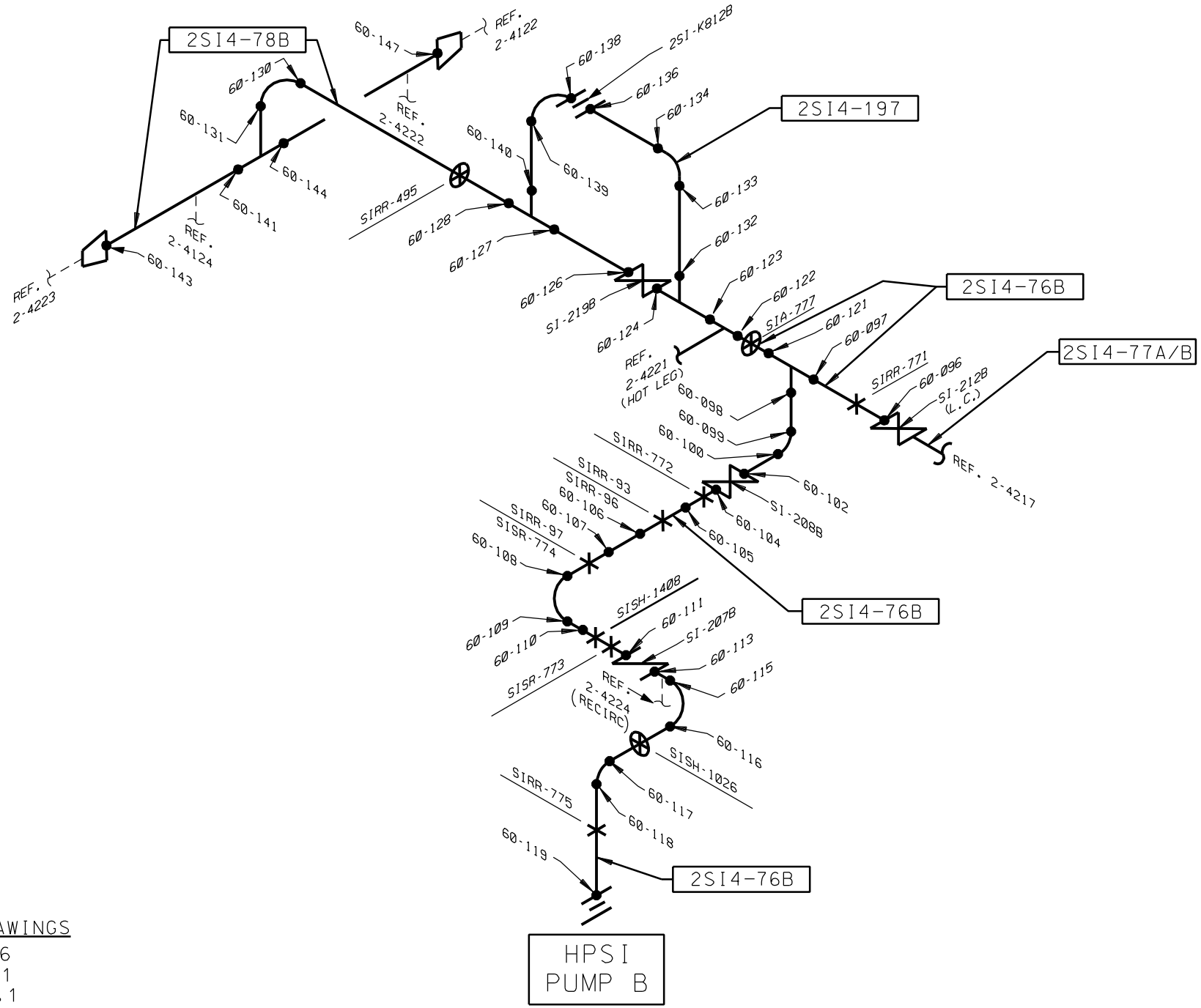
SAFETY INJECTION FROM SI TANK 2B, CLASS 2



REF. DRAWINGS:

8469-22
G-167 SH. 2

HIGH PRESSURE SAFETY INJECTION PUMP B DISCHARGE

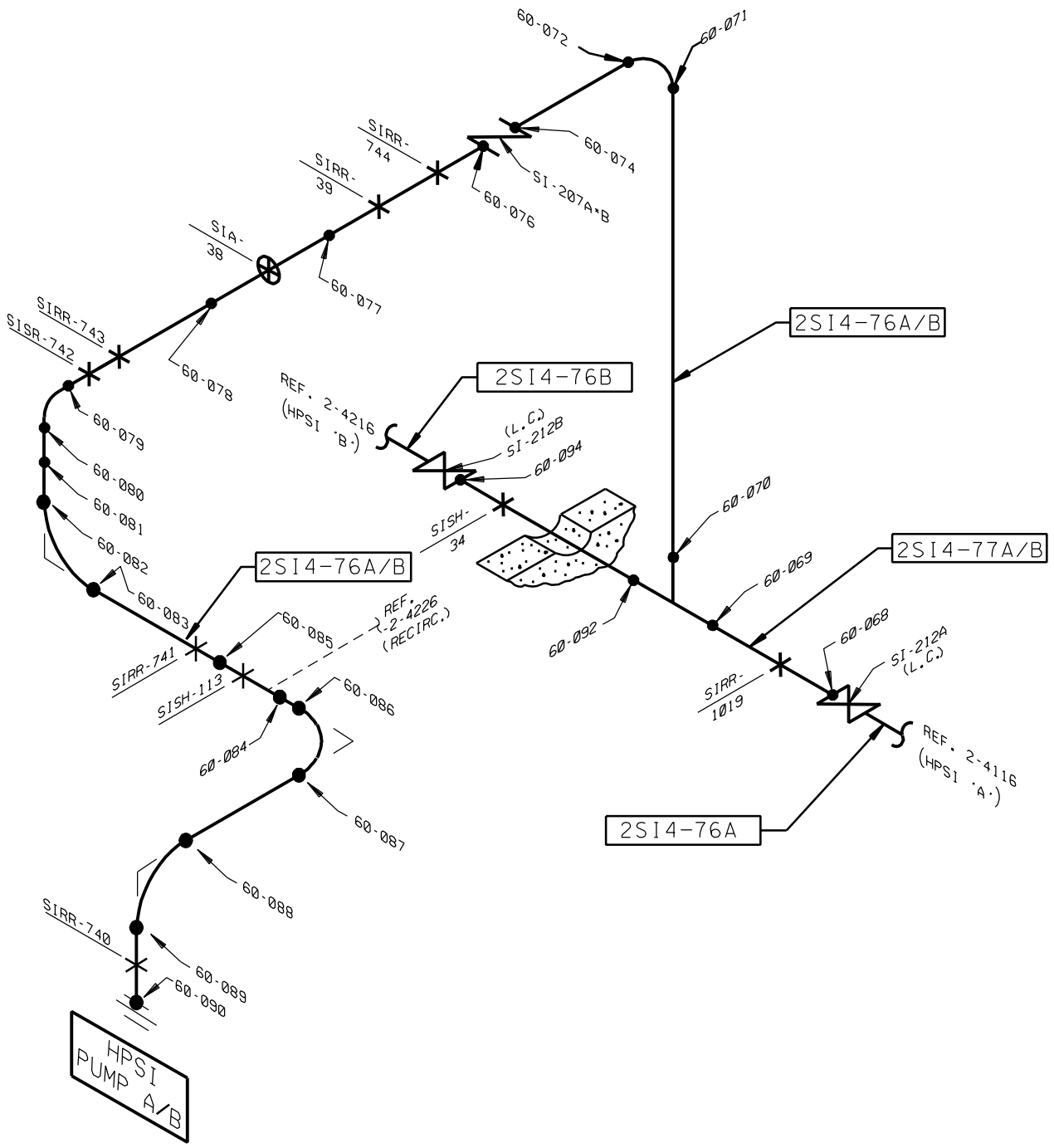


REFERENCE DRAWINGS

4305-1856
4305-1881
G-167 SH.1

WTR-2-4217

HIGH PRESSURE SAFETY INJECTION PUMP A/B DISCHARGE



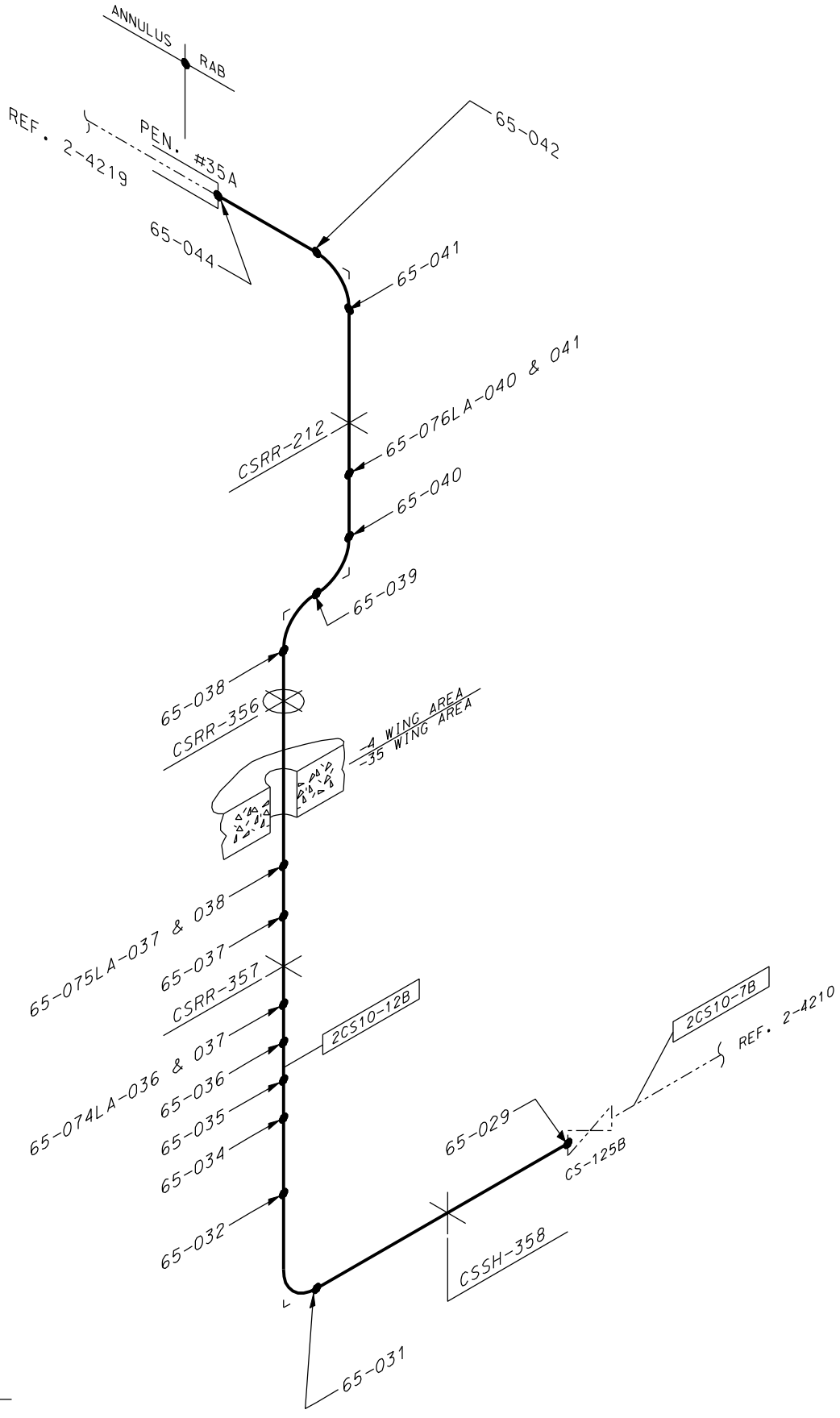
REFERENCE DRAWINGS

4305-1891

G-167 SH.1

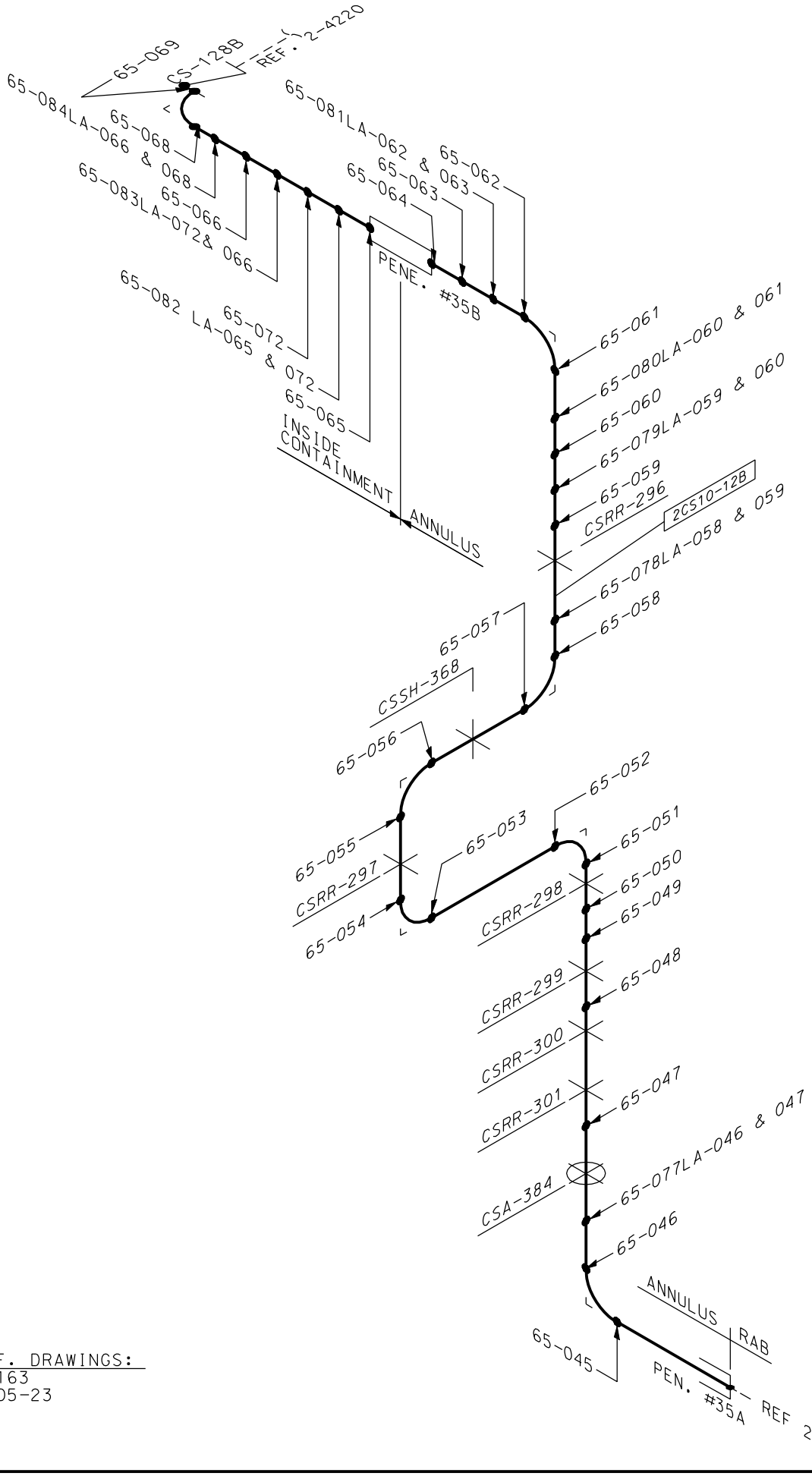
FILENAME: WTR-2-4217.dgn

CONTAINMENT SPRAY B DISCHARGE PIPING



REF. DRAWINGS:
G-163
4305-3

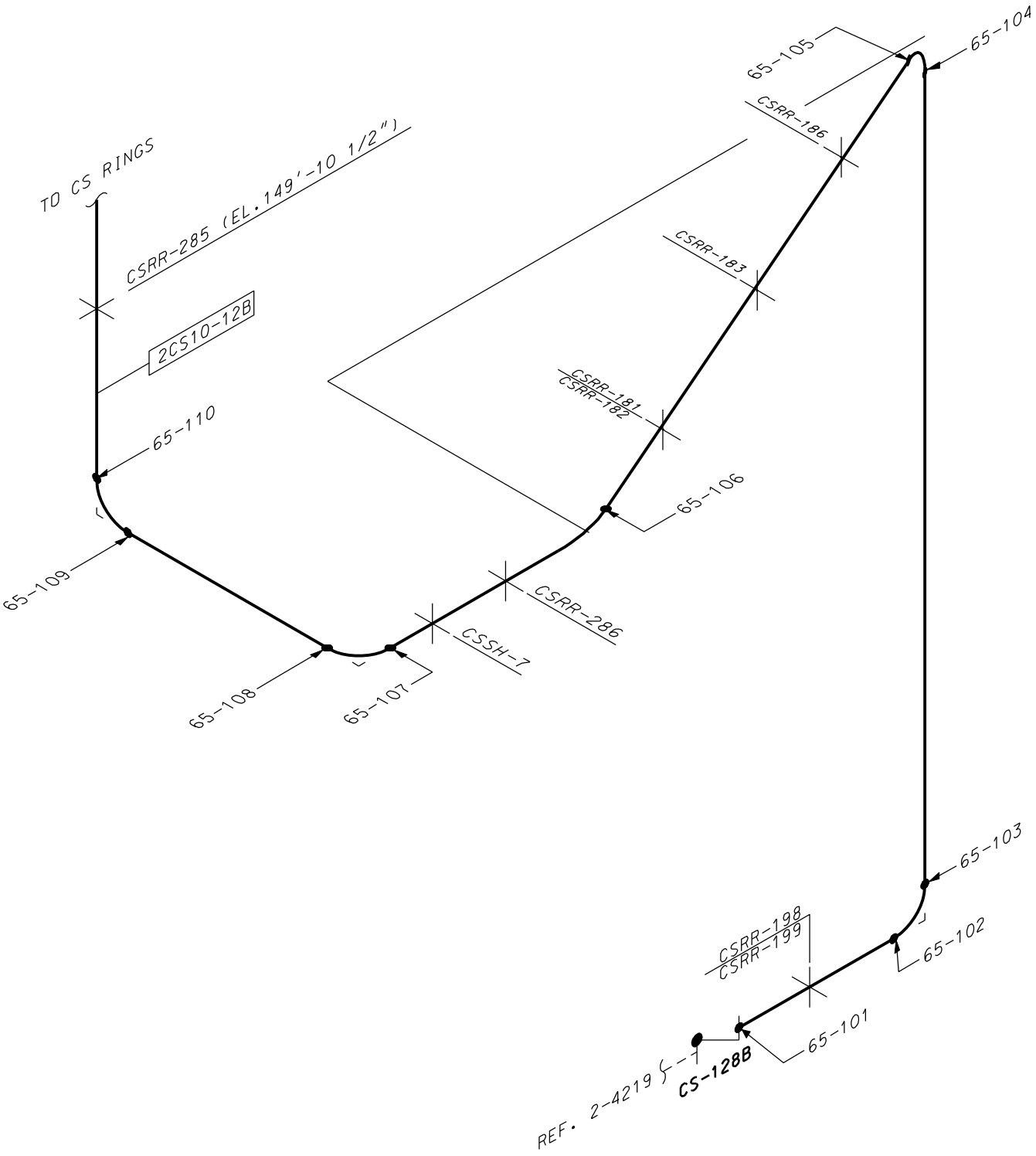
CONTAINMENT SPRAY B DISCHARGE PIPING



REF. DRAWINGS:
G-163
4305-23

WTR-2-4220

CONTAINMENT SPRAY B DISCHARGE PIPING



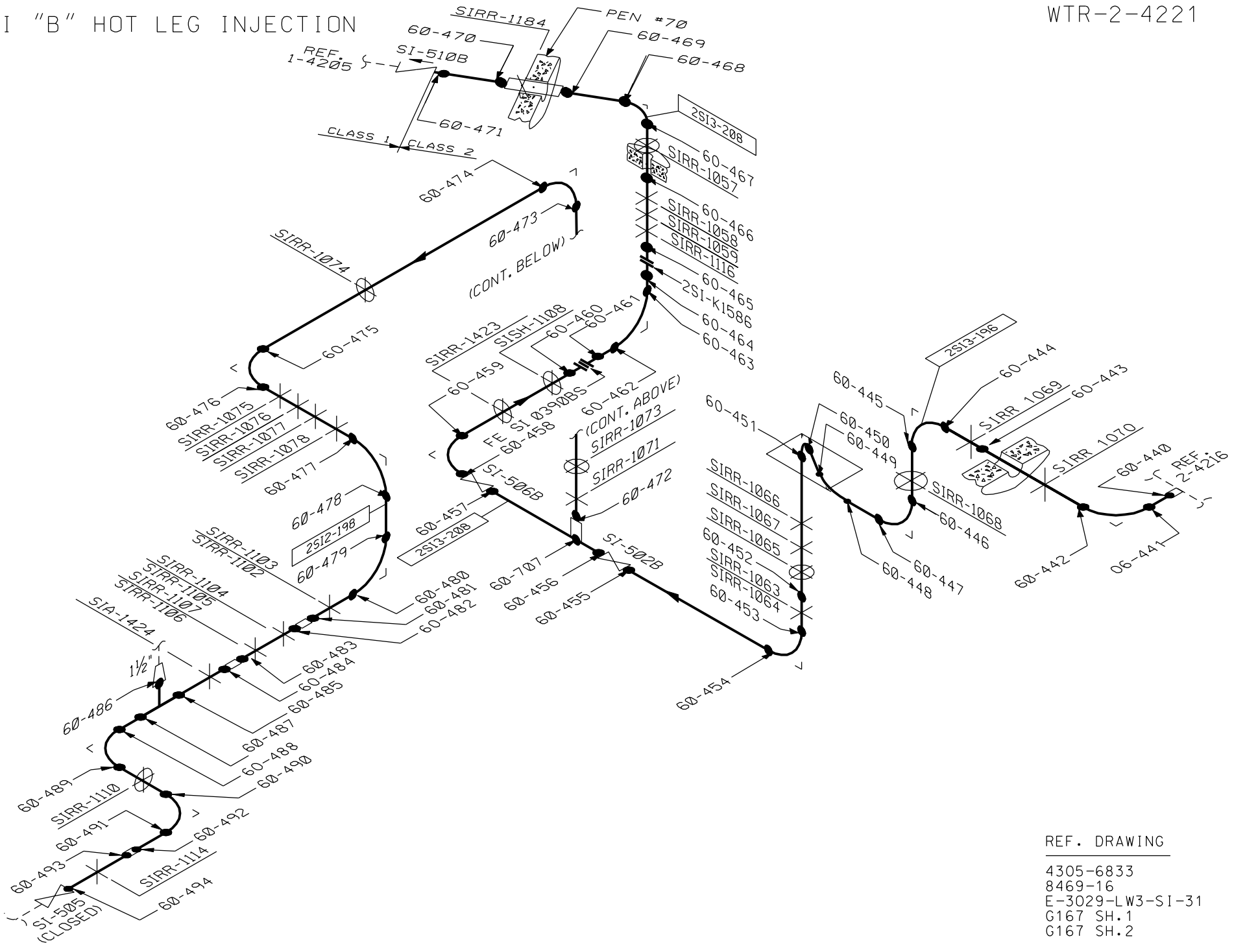
REF. DRAWINGS:
G-163
4305-23
4305-24

ALL INSIDE CONTAINMENT

FILENAME: WTR-2-4220A.dgn

HPSI "B" HOT LEG INJECTION

WTR-2-4221



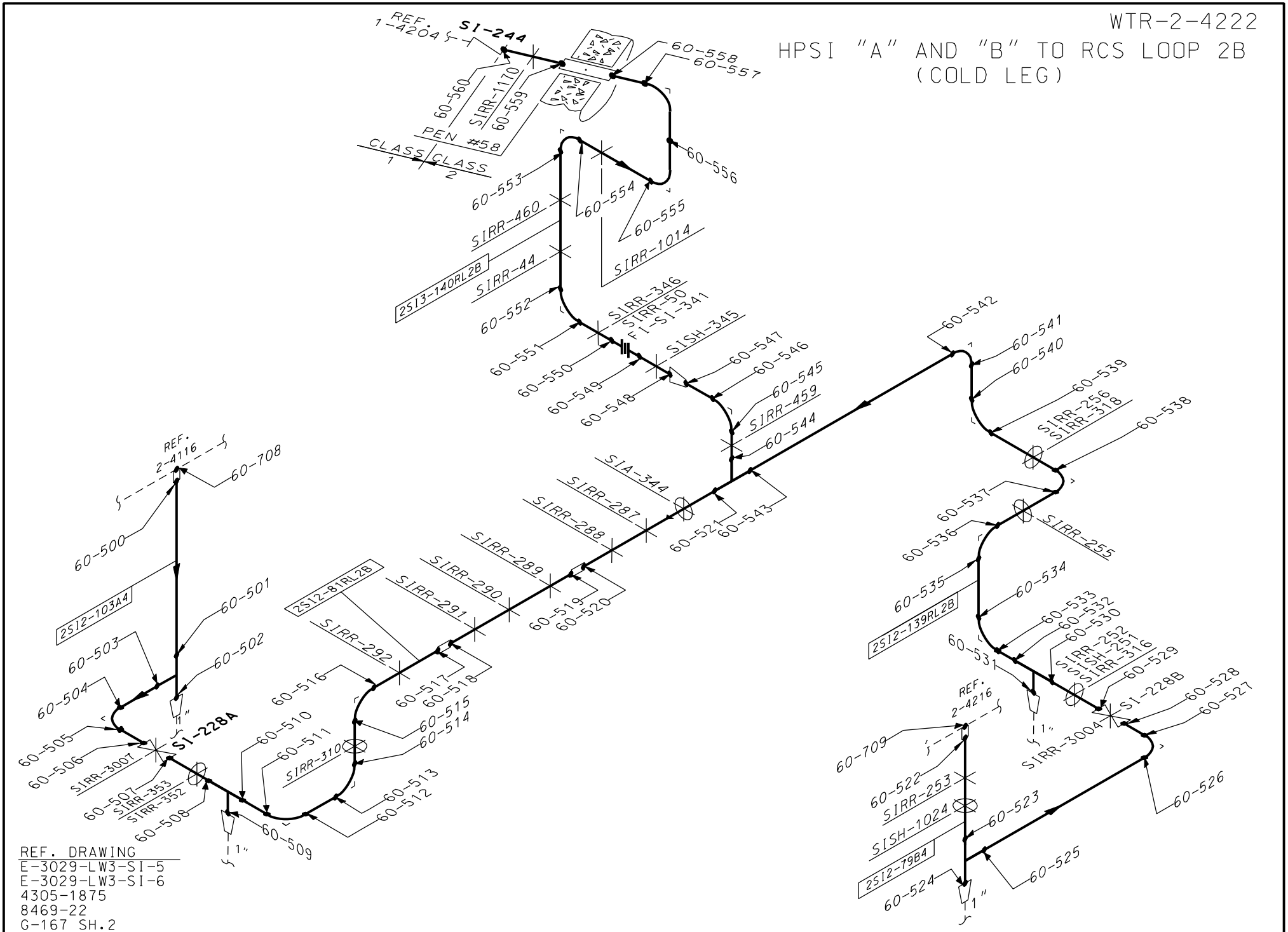
REF. DRAWING

4305-6833
8469-16
E-3029-LW3-SI-31
G167 SH.1
G167 SH.2

FILENAME: WTR-2-4221.dgn

WTR-2-4222

HPSI "A" AND "B" TO RCS LOOP 2B (COLD LEG)

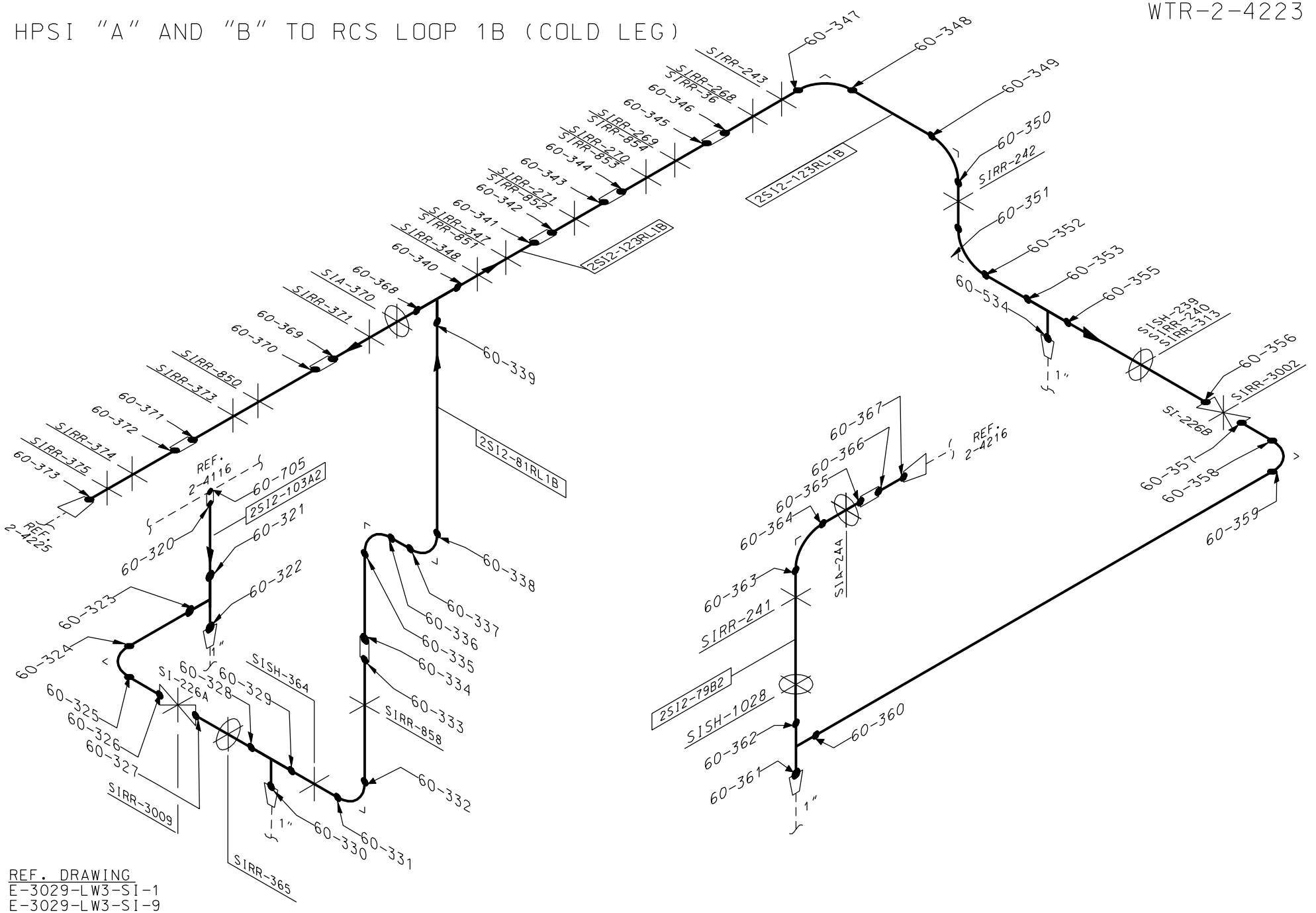


REF. DRAWING
E-3029-LW3-SI-5
E-3029-LW3-SI-6
4305-1875
8469-22
G-167 SH.2

FILENAME: WTR-2-4222.dgn

WTR-2-4223

HPSI "A" AND "B" TO RCS LOOP 1B (COLD LEG)

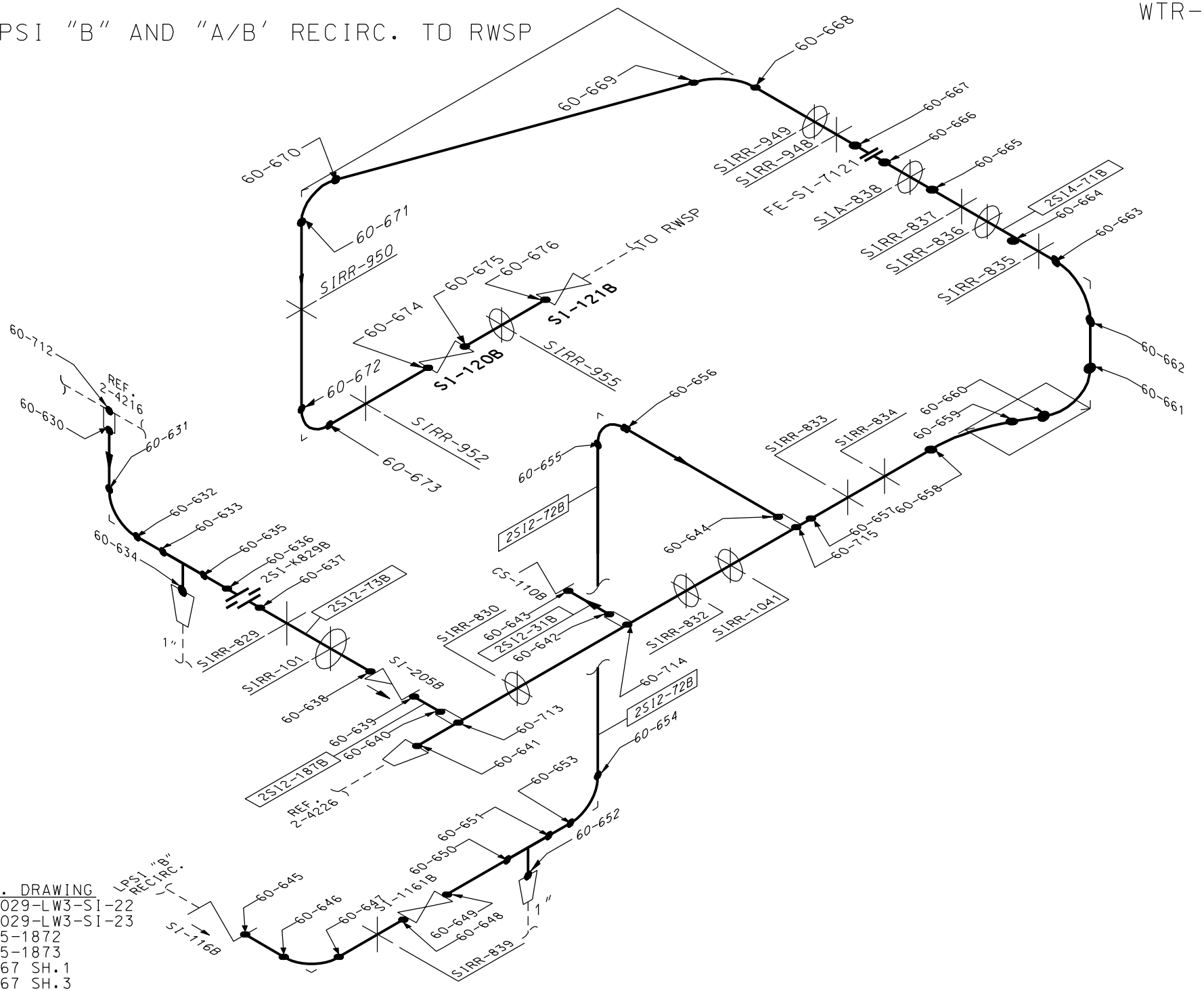


REF. DRAWING
E-3029-LW3-SI-1
E-3029-LW3-SI-9
G-167 SH.4
4305-6755

FILENAME: WTR-2-4223.dgn

WTR-2-4224

HPSI "B" AND "A/B' RECIRC. TO RWSP

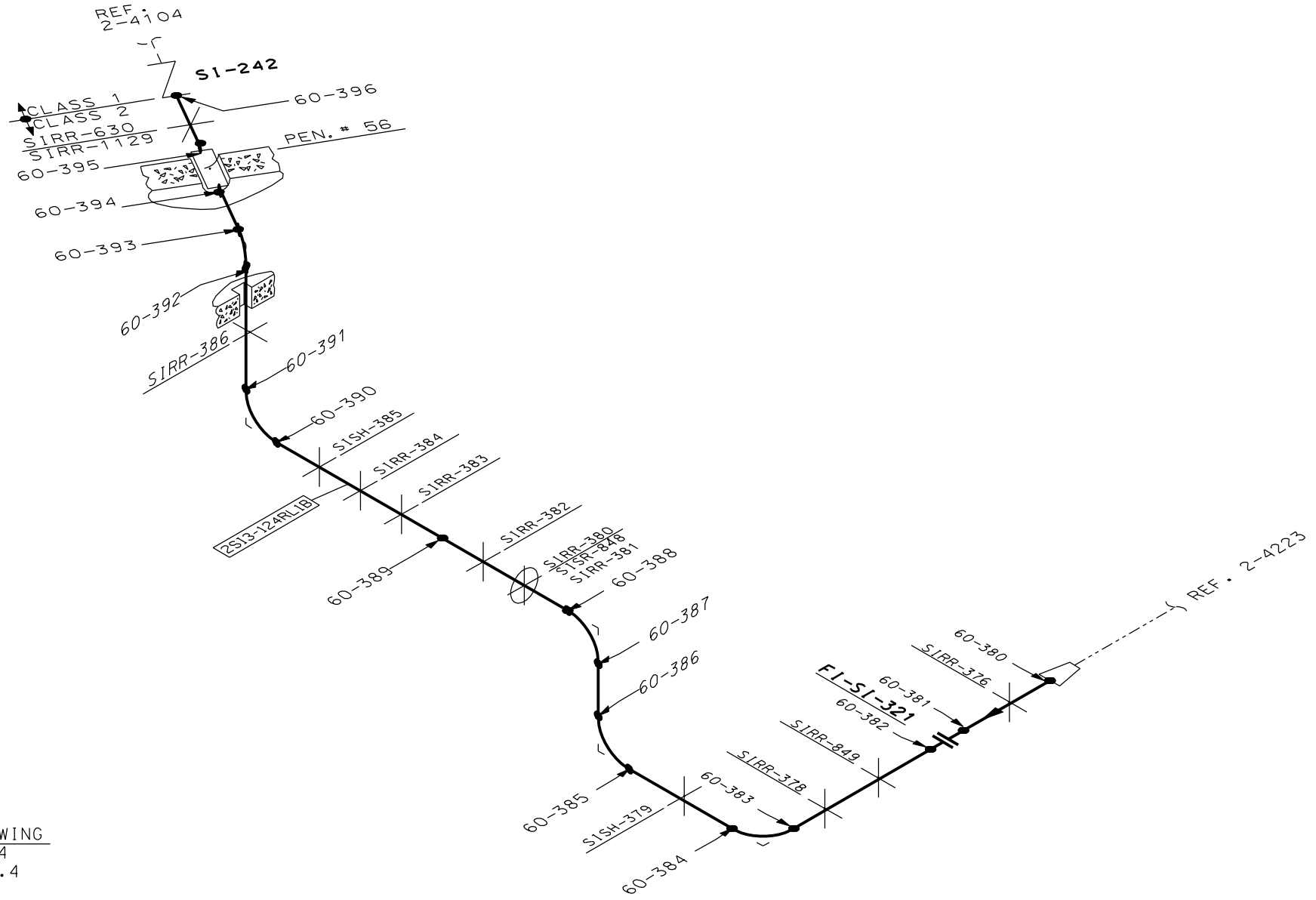


REF. DRAWING
E-3029-LW3-SI-22
E-3029-LW3-SI-23
4305-1872
4305-1873
G-167 SH.1
G-167 SH.3

FILENAME: WTR-2-4224.dgn

HPSI TO RCS LOOP 1B (COLD LEG)

WTR-2-4225

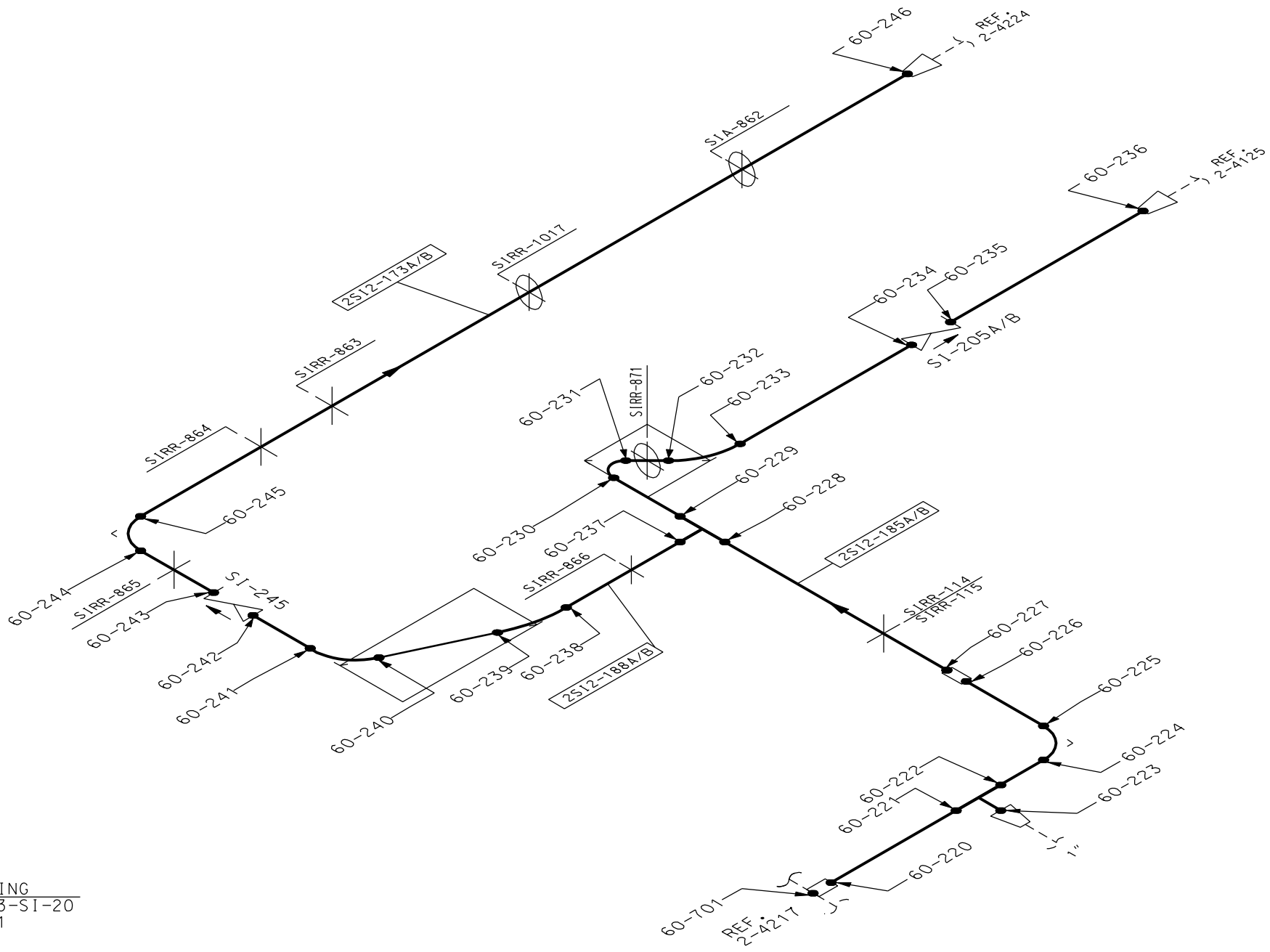


REF. DRAWING
4305-1894
G-167 SH.4

FILENAME: WTR-2-4225.dgn

WTR-2-4226

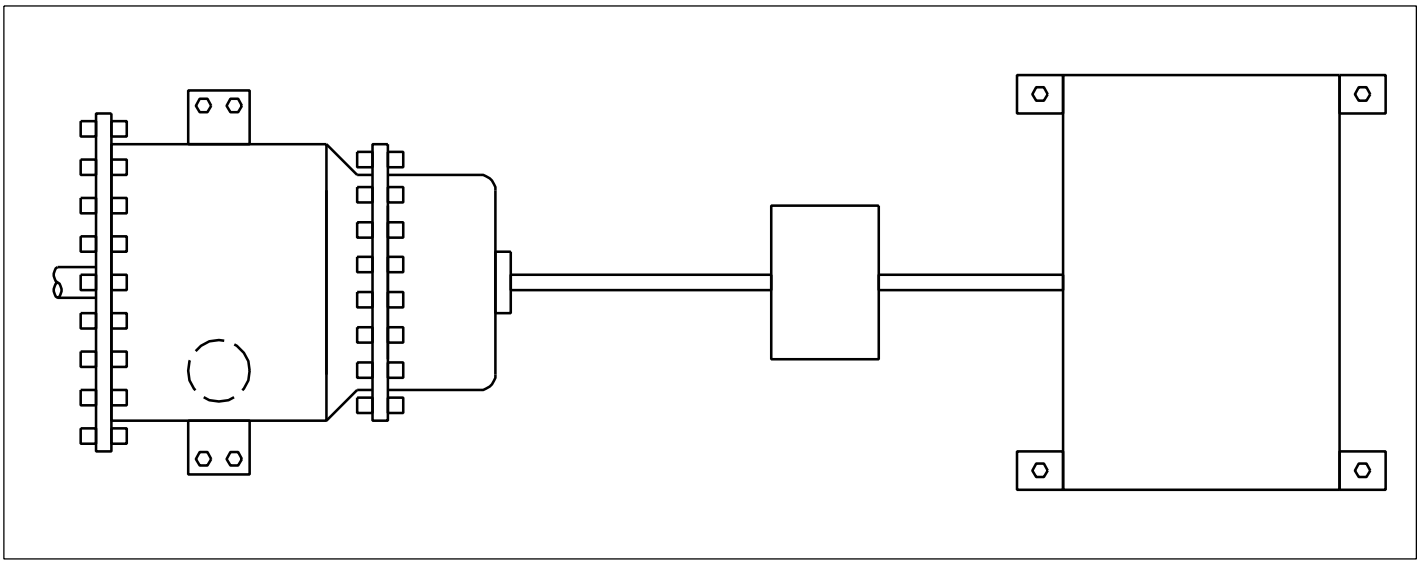
HPSI PUMP A/B RECIRC



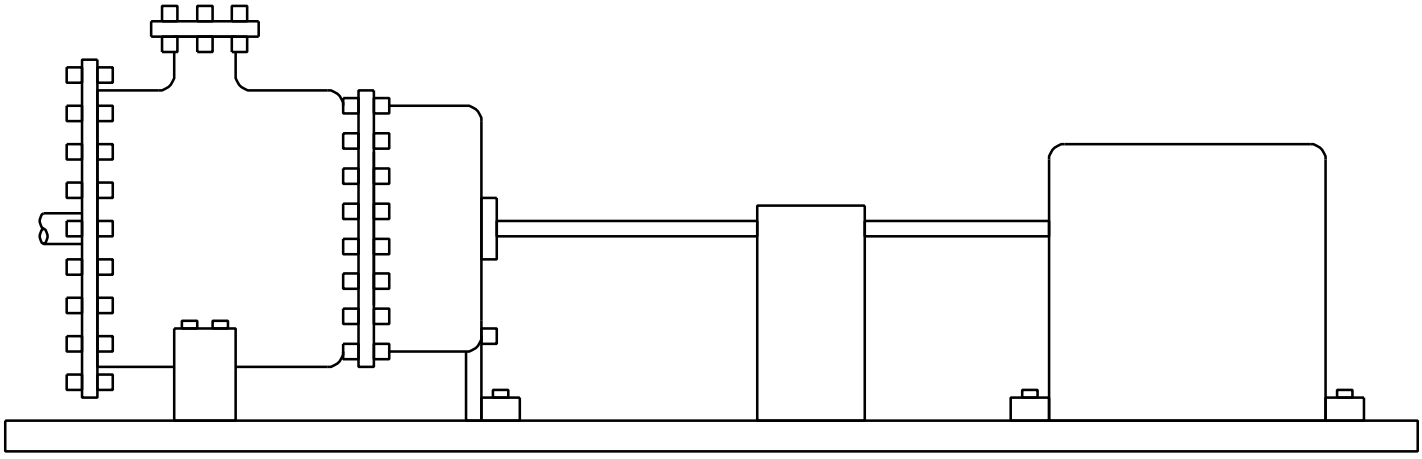
REF. DRAWING
E-3029-LW3-SI-20
G167 SH. 1

FILENAME: WTR-2-4226.dgn

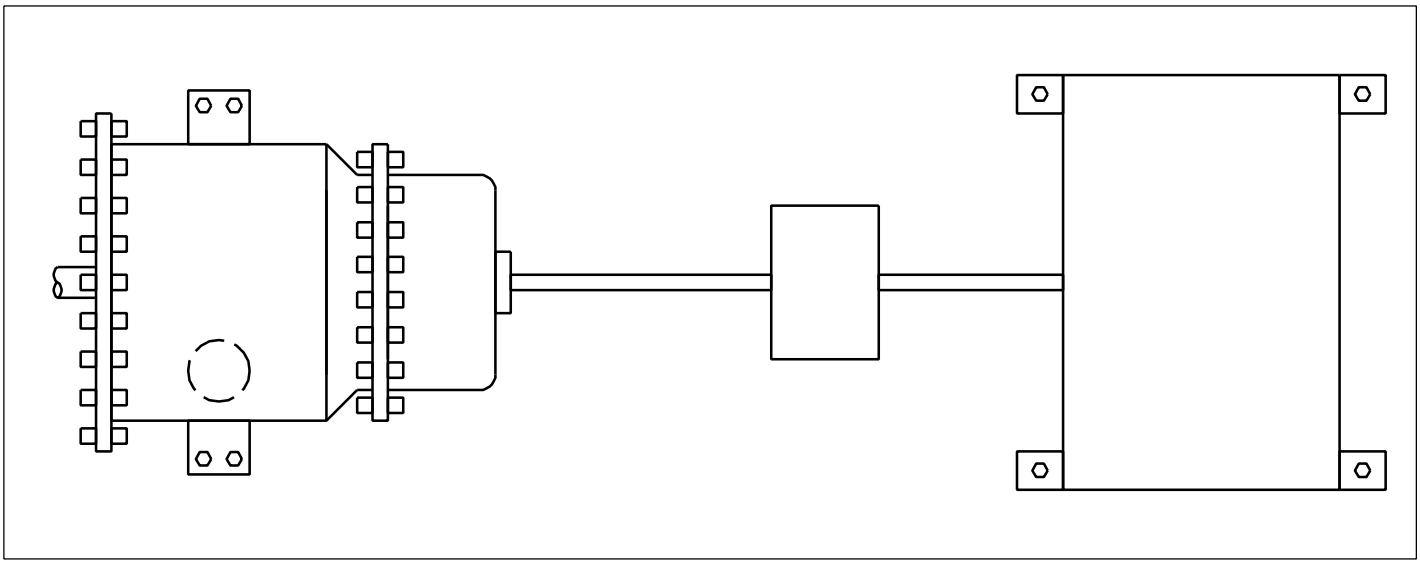
CONTAINMENT SPRAY PUMP A



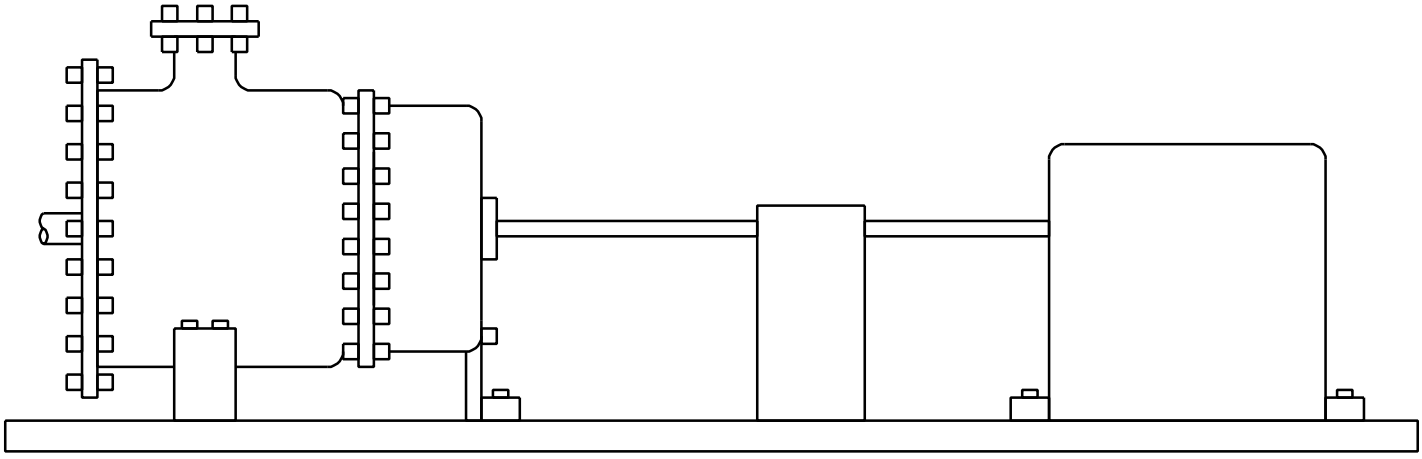
SUPPORT 61-131



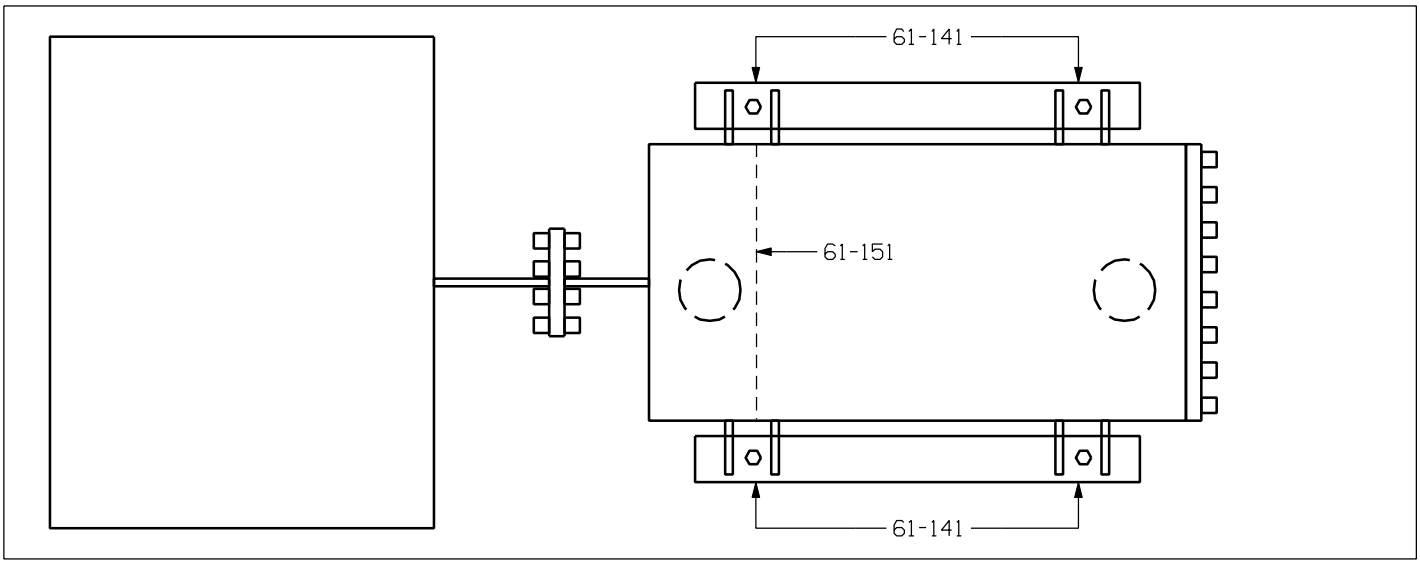
CONTAINMENT SPRAY PUMP B



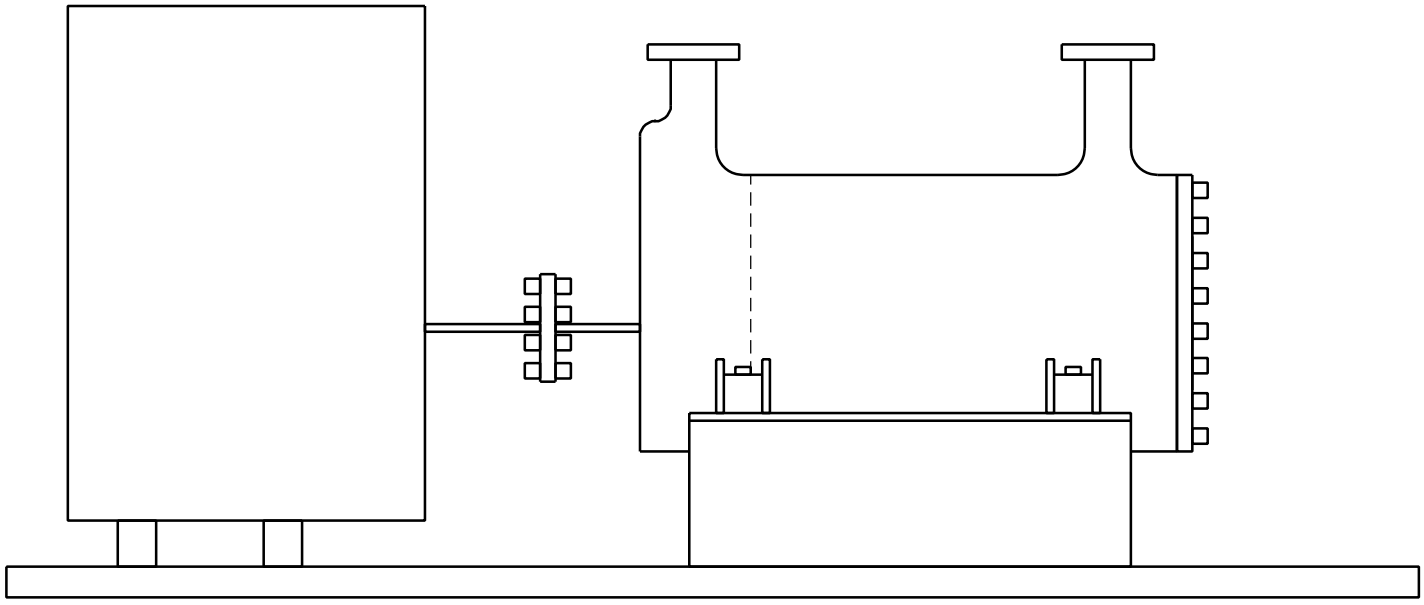
SUPPORT 62-104



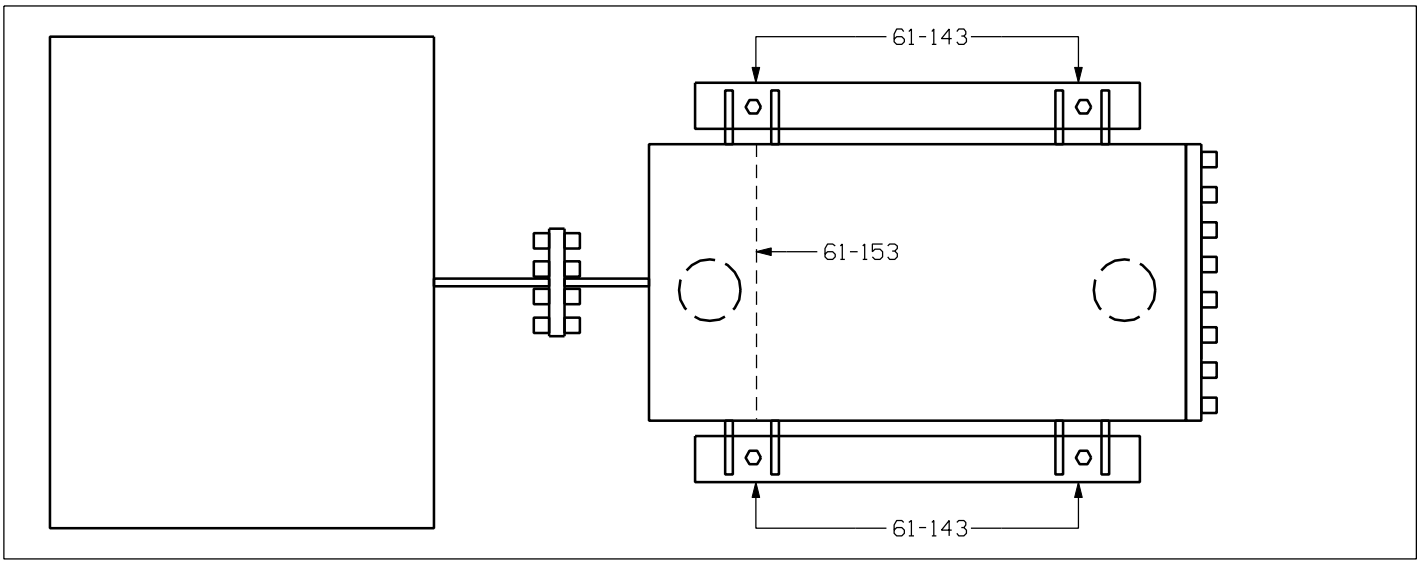
HIGH PRESSURE SAFETY INJECTION PUMP A



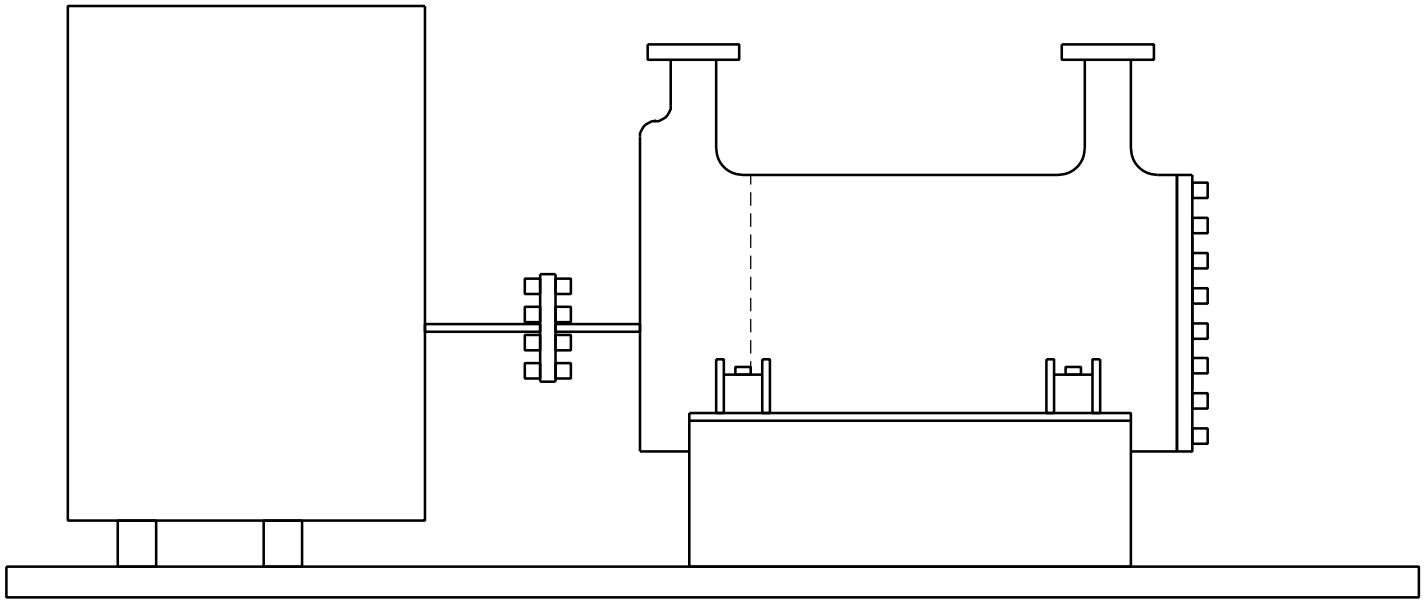
SUPPORT 61-132
WELDED LUGS (FEET) 61-141
CASING WELD 61-151



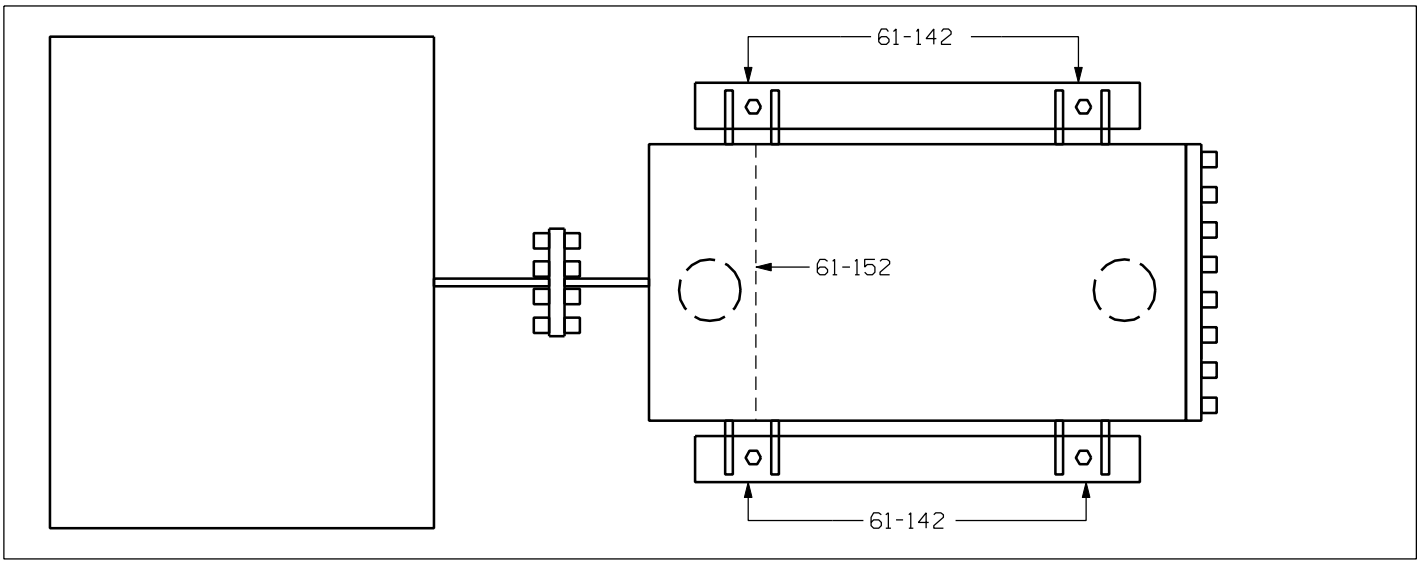
HIGH PRESSURE SAFETY INJECTION PUMP B



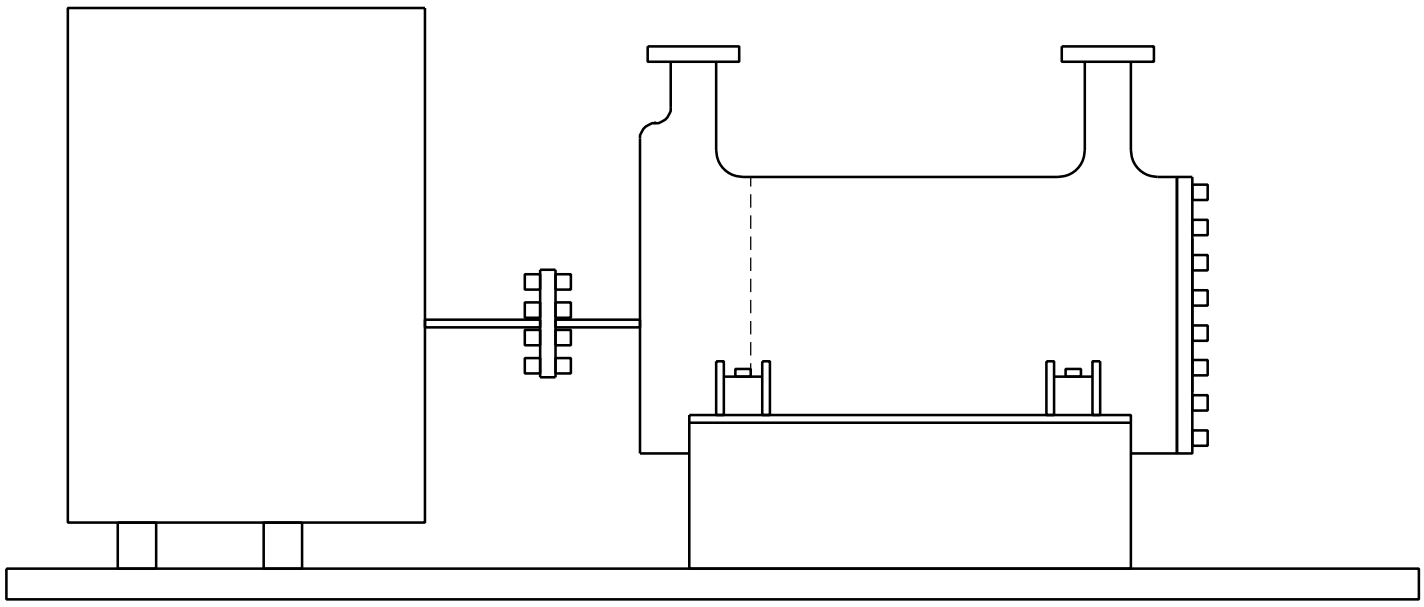
SUPPORT 62-105
WELDED LUGS (FEET) 61-143
CASING WELD 61-153



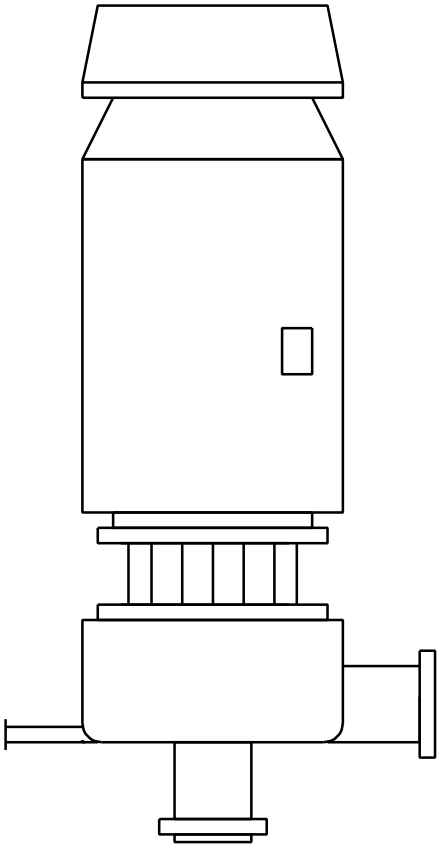
HIGH PRESSURE SAFETY INJECTION PUMP A/B



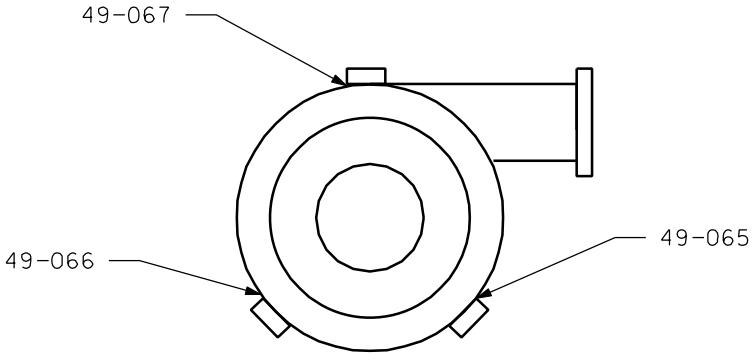
SUPPORT 61-133
WELDED LUGS (FEET) 61-142
CASING WELD 61-152



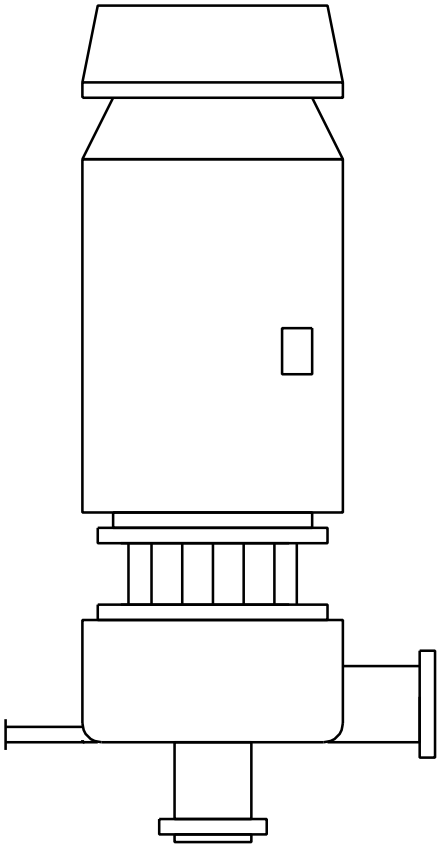
LOW PRESSURE SAFETY INJECTION PUMP A



SUPPORT 49-080



LOW PRESSURE SAFETY INJECTION PUMP B



SUPPORT 50-096