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GNRO-2008/00057

July 31, 2008

U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Attention: Document Control Desk

Subject: Inservice Inspection (ISI) Program Third 10-Year Interval, Revision 0

Grand Gulf Nuclear Station, Unit 1  
Docket No. 50-416  
License No. NPF-29

Dear Sir or Madam:

In accordance with the ASME Boiler and Pressure Vessel Code, Section XI, paragraph IWA-1400 (c), Entergy Operation, Inc. (Entergy) is enclosing an approved copy of the Grand Gulf (GGNS) Inservice Inspection (ISI) Program for the Third 10-Year Interval. Entergy is providing the ISI Program Third 10-Year Interval for information only. Entergy is not requesting NRC approval of the program.

Pursuant to 10 CFR 50.55a(b)(3)(v), Entergy is also providing notification of the intent to use the ASME OM Code, 2001 Edition through 2003 Addenda, subsection ISTD in place of the requirements for snubbers in ASME Section XI, 2001 Edition through 2003 Addenda, IWF-5200(a) and (b) and IWF-5300(a) and (b). Appropriate changes to the GGNS Technical Requirements Manual (TRM) will be completed prior to implementation. Code Case OMN-13 is approved by the NRC in NRC Regulatory Guide 1.192 (June 2003) and will be utilized in the snubber program this interval.

This letter contains one new commitment as described in Attachment 1.

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Should you have any question regarding this plan, please contact Roy C. James at (601) 437-6660.

Sincerely,



MJL/RCJ/amm

Attachment: 1. List of Regulatory Commitments  
2. Inservice Inspection (ISI) Program Third 10-Year Interval, Revision 0

cc: NRC Senior Resident Inspector  
Grand Gulf Nuclear Station  
Port Gibson, MS 39150

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### List of Regulatory Commitments

This table identifies actions discussed in this letter for which Entergy commits to perform. Any other actions discussed in this submittal are described for the NRC's information and are **not** commitments.

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
Revise the GGNS TRM relevant to the use of ASME Section XI, Subsection ISTD	<b>X</b>		September 10, 2008

**ATTACHMENT 2**

**to**

**GNRO-2008/0057**

**Inservice Inspection (ISI) Program Third 10-Year Interval, Revision 0**

Program Section No: CEP-CISI-102

Revision No.: 0

Page No.: 1 of 41

**PROGRAM SECTION  
FOR  
ASME SECTION XI, DIVISION 1  
GGNS CONTAINMENT INSERVICE INSPECTION PROGRAM**

**APPLICABLE SITES**

All Sites:

Specific Sites: ANO  GGNS  IPEC  JAF  PLP  PNPS  RBS  VY  W3  HQN

Safety Related:  Yes

No

SECTION 0:  
COVER AND  
ADMINISTRATIVE INFO

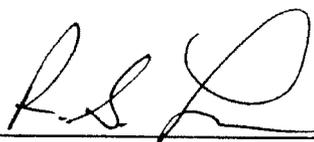
Program Section No: CEP-CISI-102  
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**REVIEW AND CONCURRENCE SHEET**

Program Section Title: "ASME Section XI, Division 1 Containment Inservice Inspection Program", Revision 0

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Prepared By: Steven G. Brown  Date: 4-7-2008

Checked By: R. S. Lewis  Date: 5/13/08

ANII: St. Brown  
For Ben R. Russell per Telecon dated Date: 5/14/08  
Reviewed By (or NA) 4-8-08

Site Review Roy James per Telecon dated 4-10-08

Concurred: R. S. Lewis  Date: 5/14/08  
Responsible Supervisor

SECTION 0:  
COVER AND  
ADMINISTRATIVE INFO

Program Section No: CEP-CISI-102  
Revision No.: 0  
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**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**

This Program Section contains the details of the ASME Section XI, Division 1, Containment Inservice Inspection (CISI) Program for Grand Gulf Nuclear Station (GGNS). Implementation of a Containment 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 is applicable to the third 120-month Containment Inservice Inspection Interval. The ASME Section XI Code of Record for the CISI Program during the third interval is the 2001 Edition with the 2003 Addenda. The Containment Inservice Inspection Interval designation is based on the Inservice Inspection Interval.

The scope of this Program Section includes the examination and testing of ASME Class CC and MC components and their integral attachments. The requirements for the repair and replacement of ASME Class CC and MC components and component supports are included in Program Section CEP-R&R-001.

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

Scheduling and component information for this CISI Program is controlled by the Scheduleworks® module of the IDDEAL® databases. The IDDEAL® database is controlled in accordance with CEP-COS-100.

This Containment Inservice Inspection plan is controlled by 10CFR50.55a. As a result, in accordance with EN-LI-100 Revision 6 Paragraph 5.2[4](d), a Process Applicability Determination is not required for the initial issue.

### **1.2 Background**

The Grand Gulf Nuclear Station containment system is a Mark III pressure suppression containment system consisting of a drywell, vapor suppression pool and a primary containment structure. The cylindrical, reinforced concrete primary containment structure forms the containment pressure boundary and encloses the suppression pool and the drywell. The inspections associated with this program are limited to the primary containment structure and its appurtenances. Inspections of the drywell are outside the scope of this program plan.

The initial Containment ISI Program commenced on June 2, 1997 and continued through June 1, 2007. The interval was extended until May 31, 2008, as permitted under IWA-2430(d). The initial Containment ISI Program Plan was included in Program Section No. CEP-CII-005. A detailed scoping for IWE components and IWL components was included in Appendices A and B of CEP-CII-005, respectively.

The requirements of IWL-2410(b) did not apply to GGNS during the initial Containment ISI Interval because more than 5 years had passed since the Structural Integrity Test (SIT) was completed on January 2, 1982, (see MAEC 85/0355).

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INTRODUCTION AND  
BACKGROUND

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The Code of Record for the initial interval was the 1992 Edition with the 1992 Addenda of ASME Section XI, as modified by 10CFR50.55a. Those portions of the program affected by Relief Request CEP-IWE/IWL-001 were developed in accordance with the 1998 Edition with 2000 Addenda of ASME Section XI.

## **2.0 BASIS FOR CONTAINMENT INSERVICE INSPECTION PROGRAM PLAN**

Section 2 provides a listing and overview of the documents that form the basis of the Containment ISI Program Plan.

### **2.1 Code of Federal Regulations Requirements**

The Code of Federal Regulations Final Rule that affects the ISI Program Update for GGNS is 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) and was effective November 1, 2004.

#### **2.1.1 Scope of the Containment ISI Program**

The scope of the Containment ISI Program shall include class MC and Class CC components to include those items required under 10CFR50.55a(g)(4)(v) to be treated as either class MC or class CC.

10CFR50.55a(g)(4)(v) requires:

- (A) Metal containment pressure retaining components and their integral attachments must meet the inservice inspection, repair, and replacement requirements applicable to components which are classified as ASME Code Class MC;
- (B) Metallic shell and penetration liners which are pressure retaining components and their integral attachments in concrete containments must meet the inservice inspection, repair, and replacement requirements applicable to components which are classified as ASME Code Class MC; and
- (C) Concrete containment pressure retaining components and their integral attachments, and the post-tensioning systems of concrete containments must meet the inservice inspection, repair, and replacement requirements applicable to components which are classified as ASME Code Class CC

In accordance with IWA-1320 and IWE-1100, Class MC pressure retaining components and their integral attachments and metallic shell and penetration liners of Class CC pressure retaining components and their integral attachments are subject to the requirements of Subsection IWE.

In accordance with IWA-1320 and IWL-1100, Class CC reinforced concrete and post-tensioning systems of concrete containments are subject to the requirements of Subsection IWL.

#### **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) Containment ISI Program once every ten years. The updated Containment 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 prior interval dates for GGNS were June 2, 1997 through May 30, 2008 [2<sup>nd</sup> Interval].

Based on "lock in" date 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.

### **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 Containment ISI Program Plan are listed in section 3.3. At the time this Containment ISI Program Plan was originally issued, Revision 15 of Regulatory Guide 1.147 was the latest revision.

### **2.1.4 Requests For Relief and Requests For Alternatives**

In cases where the ASME Section XI requirements for inservice inspection are considered impractical, requests for relief may be submitted in accordance with 10CFR50.55a(g)(5)(iii).

In cases where alternatives to the ASME Section XI requirements exist that would provide an acceptable level of quality and safety, a Request for Alternative may be submitted to the NRC in accordance with 10CFR50.55a(a)(3)(i).

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

Per 10CFR50.55a paragraphs (a)(3) and (g)(6)(i), the Director of the Office of Nuclear Reactor Regulation will evaluate Requests for Relief and Requests for Alternatives 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 Non-Destructive Examination Methods and Requirements

Administration and control of Section XI examination NDE requirements are included in CEP-NDE-100, "Administration and Control of ENS NDE".

### 2.2.1 General Requirements-Subsection IWE and IWL Examinations

The examinations conducted under the Containment Inservice Inspection Program are performed to meet the requirements of ASME Section XI Subsections IWE and IWL as modified by 10CFR50.55a. The following modifications apply to the 2001 edition through 2003 addenda.

In accordance with 10CFR50.55a(b)(2)(viii), *Examination of concrete containments*, Licensees applying Subsection IWL, 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, shall apply paragraphs (b)(2)(viii)(E) through (b)(2)(viii)(G) of this section.

In accordance with 10CFR50.55a(b)(2)(vii) (E) for Class CC applications, the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas. For each inaccessible area identified, the licensee shall provide the following in the ISI Summary Report required by IWA-6000:

- (1) A description of the type and estimated extent of degradation, and the conditions that led to the degradation;
- (2) An evaluation of each area, and the result of the evaluation, and;
- (3) A description of necessary corrective actions.

In accordance with 10CFR50.55a(b)(2)(vii)(F) Personnel that examine containment concrete surfaces and tendon hardware, wires, or strands must meet the qualification provisions in IWA-2300. The "owner-defined" personnel qualification provisions in IWL-2310(d) are not approved for use. An alternative to the requirements of 10CFR50.55a(b)(2)(vii)(F) is included in Code Case N-739. Entergy has requested the use of these alternative requirements in Request for Alternative CEP-CISI-001.

10CFR50.55a(b)(2)(vii)(G) applies to Corrosion protection material used in post tensioning systems. This requirement is not applicable to GGNS because the containment design does not use a post tensioning system.

In accordance with 10CFR50.55a(b)(2)(ix), *Examination of metal containments and the liners of concrete containment*, Licensees applying Subsection IWE, 1998 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, shall satisfy the requirements of paragraphs (b)(2)(ix)(A), (b)(2)(ix)(B), and (b)(2)(ix)(F) through (b)(2)(ix)(I) of this section.

In accordance with 10CFR50.55a(b)(2)(ix)(A) For Class MC applications, the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas. For each inaccessible area identified, the licensee shall provide the following in the ISI Summary Report as required by IWA-6000:

- (1) A description of the type and estimated extent of degradation, and the conditions that led to the degradation;
- (2) An evaluation of each area, and the result of the evaluation, and;
- (3) A description of necessary corrective actions.

In accordance with 10CFR50.55a(b)(2)(ix)(B) When performing remotely the visual examinations required by Subsection IWE, the maximum direct examination distance specified in Table IWA-2210-1 may be extended and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.

In accordance with 10CFR50.55a(b)(2)(ix)(F), VT-1 and VT-3 examinations must be conducted in accordance with IWA-2200. Personnel conducting examinations in accordance with the VT-1 or VT-3 examination method shall be qualified in accordance with IWA-2300. The "owner-defined" personnel qualification provisions in IWE-2330(a) for personnel that conduct VT-1 and VT-3 examinations are not approved for use.

In accordance with 10CFR50.55a(b)(2)(ix)(G), the VT-3 examination method must be used to conduct the examinations in Items E1.12 and E1.20 of Table IWE-2500-1, and the VT-1 examination method must be used to conduct the examination in Item E4.11 of Table IWE-2500-1. An examination of the pressure-retaining bolted connections in Item E1.11 of Table IWE-2500-1 using the VT-3 examination method must be conducted once each interval. The "owner-defined" visual examination provisions in IWE-2310(a) are not approved for use for VT-1 and VT-3 examinations.

In accordance with 10CFR50.55a(b)(2)(ix)(H) Containment bolted connections that are disassembled during the scheduled performance of the examinations in Item E1.11 of Table IWE-2500-1 must be examined using the VT-3 examination method. Flaws or degradation identified during the performance of a VT-3 examination must be examined in accordance with the VT-1 examination method. The criteria in the material specification or IWB-3517.1 must be used to evaluate containment bolting flaws or degradation. As an alternative to performing VT-3 examinations of containment bolted connections that are disassembled during the scheduled performance of Item E1.11, VT-3

examinations of containment bolted connections may be conducted whenever containment bolted connections are disassembled for any reason.

In accordance with 10CFR50.55a(b)(2)(ix)(I) The ultrasonic examination acceptance standard specified in IWE-3511.3 for Class MC pressure-retaining components must also be applied to metallic liners of Class CC pressure-retaining components.

## **2.2.2 General Visual Examinations**

### **2.2.2.1 General Visual Examinations for Subsection IWE**

General Visual Examinations for Subsection IWE shall be performed in accordance with Program Section CEP-CII-003 "General Visual Examinations of Class MC Components". The requirements of IWA-2210 are not applicable to Subsection IWE General Visual examinations.

### **2.2.2.2 General Visual Examinations for Subsection IWL**

General Visual Examinations for Subsection IWL shall be performed in accordance with Program Section CEP-CII-004, "General and Detailed Visual Examinations of Concrete Containments". The requirements of IWA-2210 are not applicable to Subsection IWL visual examinations.

## **2.2.3 Detailed Visual Examinations for Subsection IWL**

Detailed Visual Examinations for Subsection IWL shall be performed in accordance with Program Section CEP-CII-004 "General and Detailed Visual Examinations of Concrete Containments". The requirements of IWA-2210 are not applicable to Subsection IWL visual examinations.

## **2.2.4 VT-1 and VT-3 Visual Examinations**

### **2.2.4.1 VT-1 Visual Examinations for Subsection IWE**

VT-1 Visual Examinations for Subsection IWE shall be performed in accordance with Program Section CEP-NDE-0901 "VT-1 Examination".

In accordance with 10CFR50.55a(b)(2)(ix)(G), the VT-1 examination method must be used to conduct the examination in Item E4.11 of Table IWE-2500-1. The "owner-defined" visual examination provisions in IWE-2310(a) are not approved for use for VT-1 examinations.

### **2.2.4.2 VT-3 Visual Examinations for Subsection IWE**

VT-3 Visual Examinations for Subsection IWE shall be performed in accordance with Program Section CEP-NDE-0903 "VT-3 Examination".

In accordance with 10CFR50.55a(b)(2)(ix)(G) the VT-3 examination method must be used to conduct the examinations in Items E1.12 and E1.20 of Table IWE-2500-1. An examination of the pressure-retaining bolted connections in Item E1.11 of Table IWE-2500-1 using the VT-3

examination method must be conducted once each interval. The "owner-defined" visual examination provisions in IWE-2310(a) are not approved for use for VT-3 examinations.

#### **2.2.4.3 Remote VT-1 and VT-3 Visual Examinations**

When access or other conditions prevent direct examination, remote visual examination can be substituted for direct examination provided that the requirements of IWA-2210(c) are met. IWA-2210(c) requires that the selected test characters of IWA-2210(b) can be resolved as a part of the remote examination procedure demonstration. Remote visual examination aids include but are not limited to mirrors, telescopes, periscopes, borescopes, fiberoptics, and Closed Circuit Television (CCTV) systems with or without permanent recording capabilities.

Per 10CFR5.55a(b)(2)(ix)(B), when performing remotely the visual examinations required by Subsection IWE, the maximum direct examination distance specified in Table IWA-2210-1 may be extended and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.

### **2.2.5 Volumetric Examinations**

#### **2.2.5.1 Method**

Volumetric examinations to determine wall thinning shall use an ultrasonic thickness measurement method specified in ASME Section V, T-544.

#### **2.2.5.2 Grid Requirements**

One foot square grids shall be used for the ultrasonic thickness measurement unless smaller grids are specified by the Responsible Individual. The location of the minimum wall thickness shall be recorded and/or marked such that periodic reexamination of the location can be performed.

#### **2.2.5.3 Acceptance Standards for Volumetric Examinations**

In accordance with 10CFR50.55a(b)(2)(ix)(I), the ultrasonic examination acceptance standard specified in IWE-3511.3 for Class MC pressure-retaining components must also be applied to metallic liners of Class CC pressure-retaining components.

### **2.2.6 Alternative Examinations**

In accordance with IWE-2500(a) and IWA-2240, alternative examination methods may be used provided the ANII is satisfied that the results are demonstrated to be equivalent or superior to the results of the method specified by Subsection IWE. The 1997 addenda of IWA 2240 must be used in accordance with 10CFR50.55a(b)(2)(xix) which states:

10CFR50.55a(b)(2)(xix) *Substitution of alternative methods.* The provisions for the substitution of alternative examination methods, a combination of methods, or newly developed techniques in the 1997 Addenda of IWA-2240 must be applied. The provisions in IWA-2240, 1998 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, are not approved for use. The provisions in IWA-4520(c), 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, allowing the substitution of alternative examination methods, a combination of methods, or newly developed techniques for the methods specified in the Construction Code are not approved for use.

Approved alternative examinations shall be documented by incorporation into this program section by a Program Change Notice (PCN).

### **2.3 Personnel Qualification Requirements**

Administration and control of Subsection IWE and Subsection IWL personnel qualification requirements are included in CEP-NDE-100, "Administration and Control of ENS NDE".

#### **2.3.1 Personnel Qualification Requirements-Subsection IWE**

Personnel Qualification for Subsection IWE General Visual examinations will be in accordance with IWE-2330. Personnel Qualification for Subsection IWE VT-1 and VT-3 examinations will be in accordance with IWA-2300, as required by 10CFR50.55a(b)(2)(ix)(F).

#### **2.3.2 Personnel Qualification Requirements-Subsection IWL**

Per 10CFR50.55a(b)(2)(viii)(F), personnel that examine containment concrete surfaces and tendon hardware, wires, or strands must meet the qualification provisions in IWA-2300. The "owner-defined" personnel qualification provisions in IWL-2310(d) are not approved for use.

As an alternative to the 10CFR50.55a(b)(2)(viii)(F) requirements stated above, Entergy will implement Personnel Qualification for Subsection IWL visual examinations in accordance with Code Case N-739. Because the requirements included in this Code Case have not been approved for use in Regulatory Guide

1.147, Entergy has submitted a Request For Alternatives from ASME Section XI Requirements, CEP-CISI-001. The provisions of 10CFR50.55a(b)(2)(viii)(F) shall be used until the alternative is approved for use by the NRC.

## **2.4 Inspection Intervals and Inspection Scheduling**

### **2.4.1 Inspection Intervals-Subsection IWE**

Per IWA-2430 of ASME Section XI, the inservice examinations required by Subsection IWE shall be completed during each of the inspection intervals for the service lifetime of the power unit. The inspections shall be performed in accordance with Inspection Program B of IWA-2432.

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.

Per IWA-2430(e), in addition to the interval adjustment allowed per IWA-2430(d), for power units that are out of service continuously for 6 months or more, the inspection interval during which the outage occurred may be extended for a period equivalent to the outage and the original pattern of intervals extended accordingly for successive intervals.

### **2.4.2 Inspection Schedule-Subsection IWE**

Per IWA-2420, inspection plans shall be prepared for the first inservice interval and subsequent inspection intervals. Per IWA-2420(b), an implementation schedule for performance of examinations and tests shall be prepared for each inspection plan.

Subarticle IWE-2400 includes the requirements for the scheduling of examination and tests for Class MC components and Metallic Liners of Class CC components.

Specific scheduling criteria are included in IWE-2412 for plants which are employing Inspection Program B. This paragraph references Table IWE-2412-1, which includes minimum and maximum percentages of examinations required to be completed by each inspection period. Table 2.4-1 summarizes this information. Figure 2.4-1 provides interval, period and approximate outage dates.

Per IWE-2412(a), the following examinations listed in Table IWE-2500-1 as deferrable to the end of the inspection interval are not required to meet the criteria in Table IWE-2412-1:

- a) Category E-A, Item No E1.12 - Wetted Surface of Submerged Areas
- b) Category E-A, Item No E1.20 - BWR Vent System Accessible Surface Areas

<b>TABLE 2.4-1 IWE COMPONENT SCHEDULING</b>			
<b>INSPECTION INTERVAL</b>	<b>INSPECTION PERIOD (CALENDAR YEARS OF PLANT SERVICE WITHIN THE INTERVAL)</b>	<b>MINIMUM EXAMINATIONS COMPLETED, %</b>	<b>MAXIMUM EXAMINATIONS COMPLETED, %</b>
3 <sup>rd</sup>	3	16	50
3 <sup>rd</sup>	7	50 <sup>1</sup>	75
3 <sup>rd</sup>	10	100	100

<sup>1</sup> 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.

### 2.4.3 Inspection Periods-Subsection IWL

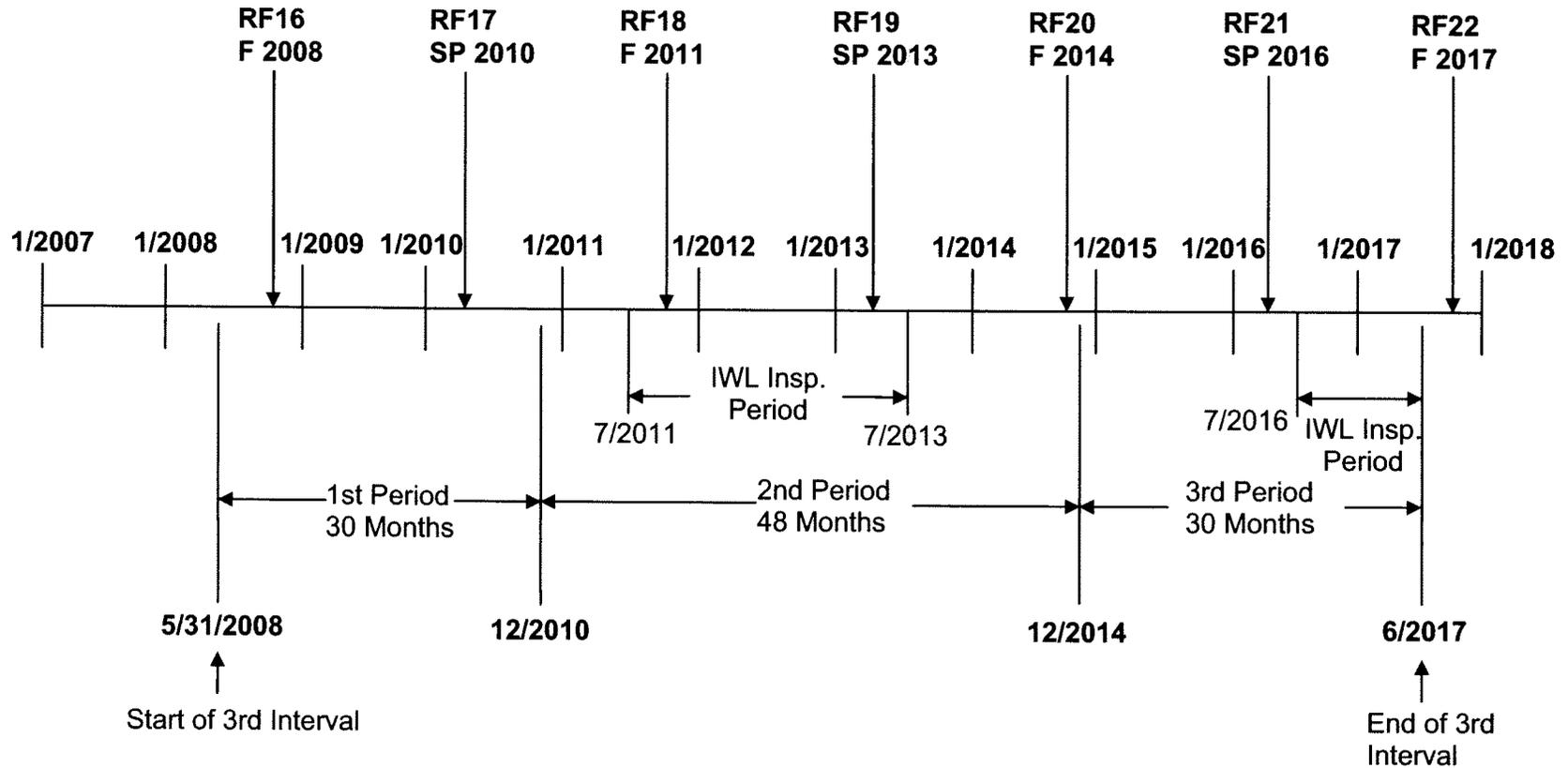
Subarticle IWL-2400 includes the requirements for the scheduling of examination and tests for Class CC Concrete components. Table 2.4-2 summarizes the Subsection IWL Examination periods for GGNS.

Concrete examinations shall be conducted every 5 years (a period) as described in IWL-2410(a) and (c). For the purposes of this program section, an IWL inspection period shall be defined as the window of time allowed by IWL-2410 for the completion of one set of IWL examinations.

Concrete surface areas affected by repair/replacement activities shall be examined in accordance with IWL-2410(d).

<b>TABLE 2.4-2 Projected IWL Examination Periods</b>		
<b>Period</b>	<b>Start Date</b>	<b>End Date</b>
30 year	1/2/2011	1/2/2013
35 Year	1/2/2017	1/2/2022
40 Year	1/2/2022	1/2/2027
45 Year	1/2/2027	1/2/2032
50 Year	1/2/2032	1/2/2037
55 Year	1/2/2037	1/2/2042
60 Year	1/2/2042	1/2/2047

Figure 2.4-1: 3<sup>rd</sup> Interval Schedule



## 2.5 Component Selection Criteria

### 2.5.1 Subsection IWE Component Selection Criteria

Class MC components are selected for examination per the requirements of the 2001 Edition with the 2003 Addenda of Section XI, Table IWE-2412-1. IWE-2420(a) states 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 will select and examine a majority of the Class MC components and component supports in accordance with this criteria. However, Entergy has adopted Code Case N-624 as approved in Regulatory Guide 1.147, which states that the sequence of examinations may be modified provided the percentage of requirements of Table IWE-2412-1 are met. Code Case N-624 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.

The Containment Inspection Engineer selects examinations for a given interval and for a given period in accordance with the requirements of 10CFR50.55a and ASME Section XI.

Examination selections are documented in the IDDEAL® database. The implementing organization determines the appropriate schedule for completion of the examinations within a given period.

#### 2.5.1.1 Examination Category E-A Selection

In accordance with Table IWE-2500-1, Examination Category E-A, Item E1.11, a General Visual examination of the accessible surface areas shall be conducted from BOTH the inside and outside surfaces, as accessible, each period. While the majority of the GGNS containment liner is inaccessible from the outside due to the design of the containment, outer surface areas that are accessible will be included in the examinations. The General Visual examination includes all accessible interior and exterior surfaces of Class MC components, parts and appurtenances, and metallic and shell penetration liners of Class CC components as discussed in Table IWE-2500-1, Note (1)(a), (b) and (c).

Table IWE-2500-1 Examination Category E-A, Item E1.11 Note (1)(d) covers pressure retaining bolted connections including bolts, studs, nuts, bushings, washers, threads in based material and flange ligaments between fastener holes. A General Visual examination of 100% of these components and parts, as accessible, shall be performed once each period.

In order to facilitate record keeping of bolted examinations, the bolted connections are be designated as Category E-A, Item Number E1.11b examinations in the IDDEAL® database.

In accordance with 10CFR50.55a(b)(2)(ix)(H) Containment bolted connections that are disassembled during the scheduled performance of the examinations in Item E1.11 of Table IWE-2500-1 must be examined using the VT-3 examination method. Flaws or degradation identified during the performance of a VT-3 examination must be examined in accordance with the VT-1 examination method. The criteria in the material specification or IWB-3517.1 must be used to evaluate containment bolting flaws or degradation. As an alternative to performing VT-3 examinations of containment bolted connections that are disassembled during the scheduled performance of Item E1.11, VT-3 examinations of containment bolted connections may be conducted whenever containment bolted connections are disassembled for any reason.

Table IWE-2500-1 Examination Category E-A, Item E1.11 Note (3) covers moisture barriers. The design of GGNS does not include moisture barriers. As a result no moisture barrier examinations are required. Table IWE-2500-1 Examination Category E-A, Item E1.12 refers to wetted surfaces of submerged areas. A VT-3 Visual examination of the submerged surfaces is required once each interval. 10CFR50.55a(b)(2)(ix)(G) requires that the VT-3 examination method be used instead of the General Visual method specified in IWE.

Table IWE-2500-1, Examination Category E-A, Item E1.20 refers to the vent systems of BWR Mark I containments and is not applicable to GGNS.

#### **2.5.1.2 Examination Category E-C Selection**

Category E-C examinations are addressed in section 3.6.4 of this document.

In accordance with IWE-2500 (b)(1), Category E-C, Item No. E4.11 surfaces, surfaces that are accessible for visual examination, shall be examined visually. In lieu of the detailed visual method specified in IWE, the VT-1 Method shall be used in accordance 10CFR50.55a(b)(2)(ix)(G).

Category E-C, Item No. E4.12 surfaces, surfaces that are not accessible for visual examination, shall be examined for wall thinning using an ultrasonic thickness measurement technique.

## **2.5.2 Subsection IWL Component Selection Criteria**

Class CC components were selected for examination per the requirements of the 2001 Edition with the 2003 Addenda of Section XI, IWL-2410, IWL-2420 and Table IWL-2500-1. The IDDEAL® database presents the selection of IWL surface areas for examination. Because the containment designs at RBS and WF3 do not include accessible concrete surfaces which are credited for containment, category CC examinations do not apply to RBS and WF3.

### **2.5.2.1 Examination Category L-A Selection**

In accordance with Table IWL-2500-1, Examination Category L-A Item L1.11, a General Visual examination of the accessible concrete surface areas shall be conducted once every five years.

In accordance with Table IWL-2500-1, Examination Category L-A, Item L1.12, a Detailed Visual examination of the suspect concrete surface areas shall be conducted once every five years.

### **2.5.2.2 Examination Category L-B Selection**

Once each IWL inspection period, the components of the unbonded Post-Tensioning System are examined in accordance with Table IWL-2500-1 Category L-B as modified by 10CFR50.55a. Since the containment structure at GGNS does not have a post-tensioning system; Category L-B examinations do not apply to GGNS.

## **2.6 Examination Evaluation Criteria**

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

Per 10CFR50.55a(b)(2)(ix)(I), the ultrasonic examination acceptance standard specified in IWE-3511.3 for Class MC pressure-retaining components must also be applied to metallic liners of Class CC pressure-retaining components.

Evaluation of the examinations and tests required by Subsection IWL will be performed in accordance with Article IWL-3000 of ASME Section XI, 2001 Edition with 2003 Addenda.

### **2.6.1 Acceptance Reviews**

Unlike Subsections IWB, IWC and IWD; Subsections IWE and IWL do not provide detailed acceptance standards for many of the required examinations. Instead, IWE-3500 specifies that the owner shall define the acceptance criteria

for many of the examinations, while IWL-3211 relies on the RE to determine the acceptance standards based on plant design and guidance provided in IWL-2510.

With the exception of wall thickness criteria mentioned in IWE-3122.3 and IWE-3511.3, no numerical acceptance standards are provided for Class MC components by IWE. Similarly, with the exception of values provided for post-tensioning systems in IWL-3220, numerical acceptance standards are not provided for Class CC components by IWL.

In lieu of detailed acceptance criteria, IWE and IWL rely on the expertise and engineering judgment of the RE to detect conditions which could affect the leak tightness or structural integrity of the containment or prevent an inspected component from performing its intended function to protect containment integrity. Entergy will ensure that this standard is met by having the RE conduct acceptance reviews of examination results. The requirement to conduct an acceptance review does not prohibit the RE from personally performing the examination. The acceptance review criteria are as follows.

### **2.6.2 Screening Criteria**

The RE may designate screening criteria for a particular examination method and/or a particular component. Screening criteria provide the examiner with RE guidance on indications that are not relevant to the acceptance review. Unless specified within the screening criteria, indications that are less severe than the screening criteria are not required to be reported on the examination record and do not require RE acceptance review.

### **2.6.3 Conduct of Acceptance Reviews for Class MC Components**

#### **2.6.3.1 RE Review**

The RE reviews the examination data for:

- a) Conditions which could affect the leak tightness or structural integrity of the containment or prevent an inspected component from performing its intended function to protect containment integrity;
- b) Conditions which would violate the design basis of the containment;
- c) Conditions in accessible areas which could indicate the presence of or result in degradation of inaccessible areas.

#### **2.6.3.2 RE Evaluation**

If the RE determines the leak tightness or structural integrity of containment could be compromised by the indicated condition **or** that a non-structural component (such as a seal, gasket, or moisture barrier) may not carry out its intended containment function, then:

- a) The item is not acceptable for continued service without further evaluation.
- b) The RE (or designee) shall prepare a condition report. As a minimum the corrective actions shall include an evaluation of:
  - 1) The acceptability of the item for continued service;
  - 2) The nature and extent of any required repairs or replacements;
  - 3) Whether additional component examinations are required.

#### **2.6.3.3 RE Input To OAR-1**

The RE (or designee) shall provide inputs to the OAR-1 for each flaw or area of degradation in accordance with the rules outlined in section 2.8 of this Program Section.

#### **2.6.3.4 RE Examination Category E-C Determination**

For surface areas, if the flaw or area of degradation fails to meet the acceptance criteria of IWE-3000, then the RE shall add the item to the Examination Category E-C Component List in the IDDEAL® Database through a PDCN.

#### **2.6.3.5 Degradation in Inaccessible Areas**

If the RE determines the examination reveals conditions which could indicate the presence of or result in degradation of inaccessible areas then:

- a) The RE (or designee) shall prepare a CR to evaluate the acceptability of the inaccessible area in question.
- b) The RE (or designee) shall provide inputs to the OAR-1 for each inaccessible area identified above to include:
  - 1) A description of the type and estimated extent of degradation and the conditions that led to the degradation;
  - 2) An evaluation of each area, and the results of the evaluation, and;
  - 3) A description of necessary corrective actions.
- c) If the RE (or designee) determines the examination reveals surface areas likely to experience accelerated degradation as described in IWE-1241 then the RE shall add the item to the Examination Category E-C Component List through a PDCN.

## **2.6.4 Conduct of Acceptance Reviews for Concrete Surfaces**

### **2.6.2.2.1 RE Review**

The RE reviews the examination data for:

- a) Conditions which could affect the leak tightness or structural integrity of the concrete containment;
- b) Conditions which would violate the design basis of the containment;
- c) Conditions in accessible areas which could indicate the presence of or result in degradation of inaccessible areas.

### **2.6.2.2.2 RE Evaluation**

If the RE determines that the item can not be accepted by examination in accordance with IWL-3211, then:

- a) The item is not acceptable for continued service without further evaluation.
- b) The RE (or designee) shall prepare a condition report. As a minimum the corrective actions shall include completion of the Engineering Evaluation report required by IWL-3300. This report documents:

- 1) The cause of the condition which does not meet the acceptance standards;
- 2) The acceptability of the concrete containment without repair of the item;
- 3) Whether or not repair or replacement is required and, if required, the extent, method, and completion date for the repair or replacement;
- 4) Extent, nature, and frequency of additional examinations.

c) If the RE determines the examination reveals conditions which could indicate the presence of or result in degradation of inaccessible areas, then:

- 1) The RE (or designee) shall prepare a CR to evaluate the acceptability of the inaccessible area in question.
- 2) The RE (or designee) shall provide inputs to the OAR-1 for each inaccessible area identified above to include:
  - i) A description of the type and estimated extent of degradation, and the conditions that led to the degradation;
  - i) An evaluation of each area, and the results of the evaluation, and;
  - iii) A description of necessary corrective actions.

### **2.6.3 Successive Inspections**

Successive Inspections will be performed in accordance with IWE-2420 when a Class MC component is accepted for continued service per IWE-3122.3. These Class MC components will be examined in accordance with Table IWE-2500-1, Category E-C, see section 3.6.4

Successive Inspections are not performed on Class CC concrete components.

Plant specific successive inspections are included in the IDDEAL<sup>®</sup> database Scheduleworks<sup>®</sup> module for each plant.

## **2.7 Repair/Replacement Activities**

Repair/Replacement activities will be performed in accordance with Article IWA-4000 of ASME Section XI, 2001 Edition with 2003 Addenda and are implemented by Entergy Program Section CEP-R&R-001, "ASME Section XI Repair/Replacement Program".

### **2.7.1 10CFR50.55a Requirements**

10CFR50.55a(b)(2)(viii)(G), applies to corrosion protection material used in post tensioning systems. Since the GGNS design does not incorporate a post tensioning system, this requirement does not apply to GGNS.

## **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 IWA-6000 as modified by the alternative requirements of Code Case N-532-4. Accordingly, the following alternate documentation requirements will be implemented:

### **2.8.1 Form OAR-1 "Owners Activity Report"**

Form OAR-1 is to include ASME Activities performed during the outage and the previous operating cycle. Code Case N-532-4 requires completion of the OAR-1 within 90 calendar days after completion of each refueling outage. Form OAR-1 will be prepared, maintained, and submitted in accordance with Program Section CEP-R&R-001, "ASME Section XI Repair/Replacement Program".

### **2.8.2 Form NIS-2A "Repair/Replacement Certification Record"**

Form NIS-2A documents Repair/Replacement activities performed during the outage and the previous operating cycle. Form NIS-2A will be prepared and maintained in accordance with Program Section CEP-R&R-001, "ASME Section XI Repair/Replacement Program".

### **2.8.3 10CFR50.55a Requirements**

Per 10 CFR 50.55a(b)(2)(viii)(E), for Class CC applications, the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in

accessible areas that could indicate the presence of or result in degradation to such inaccessible areas. For each inaccessible area identified, the licensee shall provide the following in the ISI Summary Report required by IWA-6000:

- 1) A description of the type and estimated extent of degradation, and the conditions that led to the degradation;
- 2) An evaluation of each area, and the result of the evaluation, and;
- 3) A description of necessary corrective actions.

Per 10CFR50.55a (b)(2)(ix)(A), for Class MC applications, the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas. For each inaccessible area identified, the licensee shall provide the following in the ISI Summary Report as required by IWA-6000:

- 1) A description of the type and estimated extent of degradation, and the conditions that led to the degradation;
- 2) An evaluation of each area, and the result of the evaluation, and;
- 3) A description of necessary corrective actions.

In lieu of including the above stated information in the ISI Summary Report required by IWA-6000, requirements, Entergy will include this information on Form OAR-1 (or an attachment to the OAR-1) submitted in accordance with Code Case N-532-4.

#### **2.8.4 Responsible Engineers Report To The Owner**

IWL-2320(f) states that the RE is responsible for "submittal of a report to the owner documenting results of examinations and repairs". Entergy will perform the following to satisfy this requirement:

- a) When the RE is an employee of Entergy, documents generated as a result of this program are maintained in accordance with Entergy document control requirements.
- b) When RE services are contracted, the RE shall submit a report to Entergy at the completion of the contract, or completion of the IWL examination period, whichever occurs first. The report shall include the following:
  - 1) Any documentation, or inputs to documentation, required by the CII program (to include examinations and repairs performed in accordance with CEP-CII-001 as well as examinations conducted in accordance with this program section) for work performed by, or under the direction of, the contracted RE. Documentation may be provided either in whole or by reference to documents within the Entergy document control system.
  - 2) Additional information on the conduct of the work as deemed necessary by Site RPE.

## **2.9 IWE and IWL Terminology**

Subsection IWE uses the terms “augmented examination”, “successive inspections”, and “supplemental examination” in very specific manners. Since the use of these terms within Subsection IWE is not necessarily consistent with the common use within the ISI community, definition of these terms is required.

### **2.9.1 Augmented Examination**

Subsection IWE uses the term “augmented examination” to refer specifically to Examination Category E-C examinations. The term “augmented examination” has been used extensively within the ISI community to refer to examinations performed under the ISI program, but not required by the ASME Code. However, for the purposes of this program section, “augmented examination” shall mean an examination required to be performed as a Category E-C examination.

The areas requiring examination under Table IWE-2500-1, Examination Category E-C are identified in accordance with IWE-1241, IWE-2420, and IWE-3122.3 (b). See section 3.6.4 for specific implementation of these requirements.

### **2.9.2 Successive Inspections**

The term “successive inspections” is used in IWE-2420 to refer to all future inspections. Within the ISI community, “successive inspections” is generally used to denote examinations conducted to follow up on flaws noted in previous inspections and are similar to the IWE usage of “Augmented Examination”.

The provisions of IWE-2420 include requirements for repeating the established sequence of component inspections and requirements for augmented examination of surface areas accepted by engineering evaluation.

### **2.9.3 Supplemental Examinations**

The term “supplemental examinations” refers to those examinations specified in IWE-3200.

#### **2.9.4 Supplementary Examinations**

The term “supplementary examination” is used in this program section to refer to examinations which are not directly mandated by Code. This term is similar to the common use of the term “augmented examination” within the ISI community. Supplementary examinations can include, but are not limited to, the following:

- (a) Examinations required by the Containment Inspection Engineer to determine the acceptability of a previously discovered indication.
- (b) Examinations required by the regulator which do not correspond to an existing category of examination within the Code.

### **3.0 CONTAINMENT INSERVICE INSPECTION PROGRAM PLAN DESCRIPTION**

#### **3.1 ASME Section XI Requirements**

This Containment 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, IWE, IWL, and Inspection Program B of IWA-2432, except as follows:

##### **3.1.1 Code of Federal Regulations Modifications and Limitations**

The 10CFR50.55a Limitations and Modifications applicable to the 2001 Edition with 2003 Addenda of Section XI nondestructive examination requirements for Class MC and Class CC components are implemented as follows:

- a) 10CFR50.55a(b)(2)(viii)(E) through (G) are applicable to the 2001 Edition with 2003 Addenda of IWL. Details on implementation of these requirements can be found in sections 2.3, 2.7, and 2.8 of this program section.
- b) 10CFR50.55a(b)(2)(ix)(A), (B), and (F) through (I) are applicable to the 2001 Edition with 2003 Addenda of IWE. Details on implementation of these requirements can be found in sections 2.2, 2.3, 2.5, 2.8, and 3.6 of this program section.
- c) As required by 10CFR50.55a(b)(2)(x), Entergy will apply the station 10CFR50 Appendix B Quality Assurance Program to Section XI activities.
- d) Implementation of 10CFR50.55a(b)(2)(xix) is addressed in section 2.2 of this program section.

##### **3.1.2 ASME Section XI Code Cases**

ASME Section XI Code Cases incorporated into the Containment ISI Program Plan 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, Inservice Inspection and Repair/Replacement Activities are addressed in the Program Sections applicable to those programs.

##### **3.1.3 Requests For Relief and Requests For Alternatives**

Modifications to ASME Section XI incorporated into the Containment 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 Repair/Replacement Activities are addressed in the Program Sections applicable to those programs.

### **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 subsection 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 section 3.1 when incorporated into this Containment ISI Program Plan.

### **3.3 ASME Section XI Code Cases Incorporated Into the Containment ISI Program Plan**

Note that only Codes Cases applicable to examination and testing requirements for the CISI program are contained Table 3.3-1. Code Cases applicable to System Pressure Testing, Inservice Inspection and Repair/Replacement Activities are addressed in the Program Sections applicable to those programs.

At the time this Containment ISI Program Plan was originally issued, Revision 15 of Regulatory Guide 1.147 was the latest revision.

#### **3.3.1 Adoption of Code Cases**

Code Cases adopted for use in the Containment ISI Program will be listed in Table 3.3-1. In all cases, the use and adoption of Code Cases will be in accordance with 10 CFR 50.55a. As permitted by ASME Section XI with the additional provisions of Regulatory Guide 1.147, ASME Section XI Code Cases may be adopted and used as described below.

#### **3.3.2 Adoption of Code Cases Listed for Generic Use in Regulatory Guide 1.147**

Code Cases that are listed for generic use in the latest revision of Regulatory Guide 1.147 may be included into the CII program provided any additional provisions specified in the Regulatory Guide are also incorporated. The RE shall coordinate with licensing personnel to ensure that NRC notification requirements are met when Code Cases approved in the Regulatory Guide are adopted.

#### **3.3.3 Adoption of Code Cases Not Listed in Regulatory Guide 1.147**

Adoption of Code Cases that have been approved by the Board of Nuclear Codes and Standards, but that have not been listed for generic use in Regulatory Guide 1.147, may be requested in the form of a "Request for Alternative" in accordance with 10 CFR 50.55a(a)(3). Once approved, these Requests for Alternatives will be available for use until such time that the Code Cases are adopted into Regulatory Guide 1.147, at which time compliance with the provisions contained in the

regulatory Guide is required. Code Cases being incorporated by Entergy via Request for Alternatives are identified in Table 3.3-1 and addressed in section 3.4

#### **3.3.4 Use of Annulled Code Cases**

As permitted by Regulatory Guide 1.147 (D) (3), Code Cases that have been adopted for use in the current interval that are subsequently annulled by ASME, may be used for the remainder of the interval.

#### **3.3.5 Code Case Revisions**

As permitted by Regulatory Guide 1.147 (D) (2), activities performed to a specific revision of an approved Code Case need not be changed because a subsequent revision of the Code Case is listed as the approved version in the Regulatory Guide.

SECTION 3:  
CONTAINMENT INSERVICE INSPECTION PROGRAM  
PLAN DESCRIPTION

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**TABLE 3.3-1  
CODE CASES INCORPORATED INTO THE CISI PROGRAM**

<b>Code Case</b>	<b>Title/ Regulatory Guide 1.147 Conditions For Use</b>	<b>RG 1.147 Revision/ Request for Alternative</b>
N-532-4	Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission	15
N-624	Successive Inspections	14
N-686	Alternative Requirements for Visual Examinations, VT-1, VT-2, and VT-3	15
N-739	Pending - Alternative Qualification Requirements for Personnel Performing Class CC Concrete and Post-tensioning System Visual Examinations	CEP-CISI-001
N-753	Pending - Vision Tests  <b>Conditions of Regulatory Guide 1.147:</b> Pending - Not Currently Addressed in Regulatory Guide 1.147	CEP-ISI-012

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

Table 3.4-1 identifies Requests for Alternative and Requests for Relief that have been approved by the NRC under the provisions of 10 CFR 50.55a(a)(3) and 10 CFR 50.55a(g)(6).

Regulatory Information Summary 2004-12 requires the licensee to submit a request to use later editions and addenda of code than the code incorporated in the 10 year update of the program even when the later edition and addenda have been approved by the NRC in 10CFR50.55a. These requests shall be documented in this section.

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 of the CISI program are addressed in Table 3.4-1. Requests for Alternatives or Requests for Relief applicable to System Pressure Testing, Inservice Inspection and Repair/Replacement Activities are addressed in the Program Sections applicable to those programs.

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

Relief Request No.	Request Description	Entergy Correspondence
		NRC SER Correspondence
CEP-CISI-001	Pending - Request to Utilize The Alternative Requirements of Code Case N-739; Alternative Qualification Requirements for Personnel Performing Class CC Concrete and Post-tensioning System Visual Examinations	CNRO 2008-00016
CEP-ISI-012	Pending - Request to Utilize The Alternative Requirements of Code Case N-753; Vision Tests	CNRO 2008-00016

*\*For CEP- ISI-012 - One relief request to be submitted and tracked using an ISI number for both the ISI and CISI programs*

### 3.5 Registered Professional Engineer or Other Responsible Individual

Subsection IWL is unique among ASME Section XI subsections due to the Code requirements for the use of a Registered Professional Engineer (RPE). Entergy fulfills this requirement by designating a Responsible Engineer (RE) for containment inspections. The duties of the RE include, but are not limited to, the following:

- a) Preparation and approval of General Visual Examination and Detailed Visual Examination procedures.
- b) Providing screening criteria for the relevancy of indications noted in CISI examinations.
- c) Performing an acceptance review of CISI examination results to determine if the examination results are "acceptable by examination" in accordance with IWE-3122.1 or IWL-3111, as appropriate. (This duty will normally reside with a designated on-site RE from the engineering group retaining design authority for the containment.)
- d) Specifying supplementary examinations as necessary to support the acceptance review.
- e) Specifying and recommending corrective action for items that are not acceptable by examination.
- f) Review of engineering evaluations for items accepted in accordance with IWE-3122.4 and IWL-3112. (This duty will normally reside jointly with a designated on-site RE from the engineering group retaining design authority for the containment and with the RE responsible for maintaining this program plan.)
- g) Approval of training requirements for General Visual Examination and Detailed Visual Examination personnel.
- h) Maintenance of the Containment Inservice Inspection Program Plan.
- i) Duties specified in IWL-2320 for Concrete examinations.
- j) The supervisor or manager responsible for a particular CISI program area in accordance with EN-DC-120 shall designate Responsible Engineers (REs) to fulfill the duties of the RE within their area of responsibility subject to the following:
  - 1) Personnel fulfilling the role of RE for IWL examinations or other functions pertaining to IWL shall be registered as a Professional Engineer with the State of Mississippi.
  - 2) Personnel fulfilling the role of RE solely for IWE examinations or other functions pertaining solely to components subject to examination under the provisions of IWE are not required to be a Registered Professional Engineer.

### **3.6 Subsection IWE Requirements**

#### **3.6.1 IWE Program Boundary**

The IWE program boundary, covering inservice inspection and repair and replacement, is defined in accordance with IWE-1100 as Class MC pressure retaining components and their integral attachments.

10CFR50.55a(g)(4)(v) expands this boundary to include "metallic shell and penetration liners which are pressure retaining components and their integral attachments in concrete containments" whether or not they are designated as "Code items." Items such as vessel coatings, moisture barriers and attachment welds are also covered to the degree that they can influence the ability of the containment to retain pressure through either promoting or inhibiting degradation of the pressure retaining components.

#### **3.6.2 IWE Exemptions**

IWE-1220 specifically exempts several areas and items from the examination requirements of IWE as follows:

- Vessels, parts, and appurtenances outside the boundaries of the containment system as defined in the Design Specifications in accordance with IWE-1220(a);
- Embedded or inaccessible portions of containment vessels, parts, and appurtenances that met the requirements of the original Construction Code in accordance with IWE-1220(b);
- Portions of containment vessels, parts, and appurtenances that become embedded or inaccessible as a result of vessel repair/replacement activities if the conditions of IWE-1232(a) and (b) and IWE-5220 are met, in accordance with IWE-1220(c). Repair and replacement of components exempted from examination per IWE-1220(c) must meet ASME Section XI requirements. Repair and replacement requirements are addressed in Program Section CEP-R&R-001.
- Piping, pumps and valves that are part of the containment system, or which penetrate or are attached to the containment vessel are specifically exempted from the examination requirements of IWE in accordance with IWE-1220(d).

### 3.6.3 IWE Containment Surfaces – Examination Category E-A

Accessible containment surfaces, pressure-retaining bolted connections and moisture barriers shall be examined in accordance with Table IWE-2500-1 Examination Category E-A. The accessible surface areas and pressure-retaining bolted connections are identified in the Containment ISI drawings in Appendices A and B. Identifiers for these IWE components are included in the IDDEAL® databases for each plant.

Note that Category E-A, Item E1.20 refers to the vent systems of BWR Mark 1 containments and is not applicable to GGNS.

#### 3.6.3.1 10CFR50.55a Limitations and Modifications

The requirements of Table IWE-2500-1 Examination Category E-A, are modified by 10CFR50.55a as follows:

- Per 10CFR50.55a(b)(2)(ix)(B), when performing remotely the visual examinations required by Subsection IWE, the maximum direct examination distance specified in Table IWA-2210-1 may be extended and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.
- Per 10CFR50.55a(b)(2)(ix)(G), the VT-3 examination method must be used to conduct the examinations in Items E1.12 and E1.20 of Table IWE-2500-1. An examination of the pressure-retaining bolted connections in Item E1.11 of Table IWE-2500-1 using the VT-3 examination method must be conducted once each interval. The "owner-defined" visual examination provisions in IWE-2310(a) are not approved for use for VT-3 examinations.
- Per 10CFR50.55a(b)(2)(ix)(H), containment bolted connections that are disassembled during scheduled performance of the examinations in Item E1.11 of Table IWE-2500-1 must be examined using the VT-3 examination method. Flaws or degradation identified during the performance of a VT-3 examination must be examined in accordance with the VT-1 examination method. The criteria in the material specification or IWB-3517.1 must be used to evaluate containment bolting flaws or degradation. VT-3 examinations of containment bolted connections may be conducted whenever containment bolted connections are disassembled for any reason as an alternative to performing VT-3 examinations of containment bolted connections that are disassembled during the scheduled performance of Item E1.11.

### **3.6.3.2 Moisture Barrier Examinations**

The GGNS containment design does not incorporate moisture barriers.

### **3.6.3.3 Acceptance Criteria**

Acceptance of general and detailed visual examinations is accomplished by an acceptance review by the RE in accordance with section 2.6 of this Program Section.

### **3.6.4 IWE Augmented Examination of Containment Surface Areas – Examination Category E-C**

Containment surface areas likely to experience accelerated degradation and aging per IWE-1240 require examination in accordance with IWE-2500(b) and Table IWE-2500-1, Examination Category E-C. In accordance with IWE-2420(b), examinations accepted by evaluation per IWE-3000 shall be examined under Category E-C in the next inspection period. These areas shall be listed in the Iddel ® database as Category E-C Item Number E4.11 and/or E4.12 as follows.

- For surfaces accessible for visual examination, the requirements of Examination Category E-C, Item No. E4.11, as modified by 10CFR50.55a(b)(2)(ix)(G), shall be implemented. Where access allows, the VT-1 examination shall be performed from both sides of the surface.
- For surfaces where the side requiring augmented examination is not accessible for visual examination, ultrasonic thickness measurements shall be performed in accordance with Examination Category E-C, Item No. E4.12, and in accordance with IWE-2520(b)(3) and IWE-2520(b)(4).

The examination(s) must be performed once per period until the areas examined remain essentially unchanged for the next inspection period. In accordance with Table IWE-2500-1, Examination Category E-C, Note 2 and IWE-2420(c), if the areas examined remain essentially unchanged, they no longer require Examination Category E-C examination.

#### **3.6.4.1 10CFR50.55a Limitations and Modifications**

The requirements of Table IWE-2500-1 Examination Category E-C, are modified by 10CFR50.55a as follows:

- Per 10CFR50.55a(b)(2)(ix)(G), the VT-1 examination method must be used to conduct the examination in Item E4.11 of Table IWE-2500-1.

The "owner-defined" visual examination provisions in IWE-2310(a) are not approved for use for VT-1 examinations.

- Per 10CFR50.55a(b)(2)(ix)(I), the ultrasonic examination acceptance standard specified in IWE-3511.3 for Class MC pressure-retaining components must be applied to metallic liners of Class CC pressure-retaining components.

#### **3.6.4.2 Identification of IWE Augmented Examination of Containment Surface Areas – Examination Category E-C**

Whenever a plant has an area(s) requiring examination under Category E-C, the area shall be identified in the IDDEAL® database. Not all plants will have areas requiring Category E-C examination.

#### **3.6.4.3 Tracking of Augmented Examination Areas**

IWE requires augmented examination of surface areas likely to experience accelerated degradation and aging as described in IWE-1241, or surface areas accepted by evaluation as specified in IWE-2420.

When it is determined that a given surface area requires augmented examination, the area shall be added to the IDDEAL database. Areas added to the augmented examination table due to the provisions of IWE-2420(b) may be removed from the IDDEAL database when the provisions of IWE-2420(c) have been met.

Augmented examination areas added to the IDDEAL® database table due to the provisions of IWE-1241(a) or (b) may be removed from the IDDEAL® database only after determination that the area is no longer likely to experience accelerated degradation or aging as described in IWE-1241 (a) or (b) as applicable.

Removal of areas from the IDDEAL database shall be documented as required by CEP-COS-100.

#### **3.6.4.4 Acceptance Criteria**

Acceptance for augmented areas is accomplished by an acceptance review by the RE in accordance with section 2.6 of this Program Section.

### **3.7 Subsection IWL Requirements**

#### **3.7.1 IWL Program Boundary**

The IWL program boundary, covering inservice inspection and repair and replacement, is defined in accordance with IWL-1100 as the reinforced concrete and post-tensioning systems of Class CC components.

10CFR50.55a(g)(4)(v) expands this boundary to include "concrete containment pressure retaining components and their integral attachments, and the post-tensioning systems of concrete containments" whether or not they are designated as "Code items".

A listing of the drawings developed to depict the IWL program boundary is found in Appendix B. For the purposes of the CII Program Plan, all items within the IWL Program Boundary are considered "Class CC" regardless of the construction or design code applicable to the component.

### **3.7.2 IWL Exclusions**

IWL-1100(b) specifically excludes the following from the requirements of Subsection IWL:

- Steel portions not backed by concrete
- Shell metallic liners
- Penetration liners extending the containment liner through the surrounding shell concrete.

### **3.7.3 IWL Exemptions**

IWL-1220 specifically exempts the following from IWL examinations-

- Tendon end anchorages that are inaccessible, subject to the requirements of IWL-2521.1
- Portions of the concrete surface that are covered by the liner foundation material, or backfill, or are otherwise obstructed by adjacent structures, components, parts or appurtenances.

### **3.7.4 IWL Containment Surfaces - Examination Category L-A**

Accessible concrete containment surfaces shall be examined in accordance with Table IWL-2500-1 Examination Category L-A. The accessible surface areas for GGNS are identified in the Containment ISI drawings included in Appendix B.

In accordance with Table IWL-2500-1 Examination Category L-A, Item No. L1.11, a General Visual examination of concrete surfaces will be performed once per inspection period.

In accordance with Table IWL-2500-1 Examination Category L-A, Item No. L1.12, a Detailed Visual examination of suspect concrete surfaces will be performed once per inspection period.

Identifiers for these IWL components are included in the IDDEAL® databases.

### **3.7.5 IWL Unbonded Post-Tensioning System - Examination Category L-B**

The GGNS design does not include an unbonded Post-Tensioning System therefore the requirements of Table IWL 2500-1 Category L-B are not applicable to this program.

### **3.8 IDDEAL® ISI Database**

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

Scheduling and component information is controlled by the Scheduleworks® module of the IDDEAL® database in the file Sched\_GGNS\_IWE.mdb. 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.

### **3.9 Incomplete or Missing Examinations**

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

#### **3.9.1 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.

#### **3.9.2 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.

### **3.9.3 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**

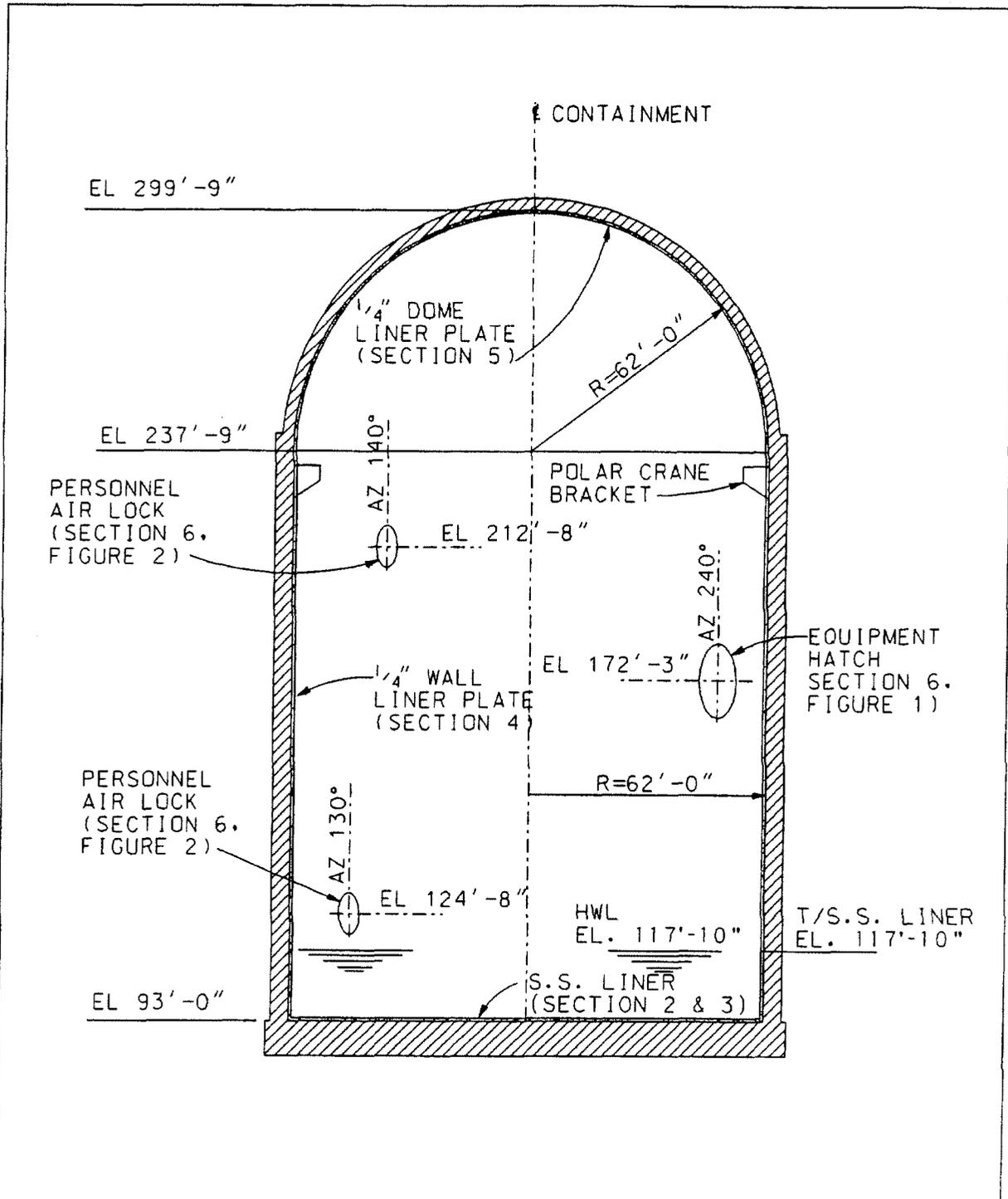
The period includes any extensions made within the ASME Section XI and 10CFR50.55a provisions. The end of the period does not occur until any applicable extensions are completed.

**APPENDIX A**  
**CISI Drawings for IWE Inspections**

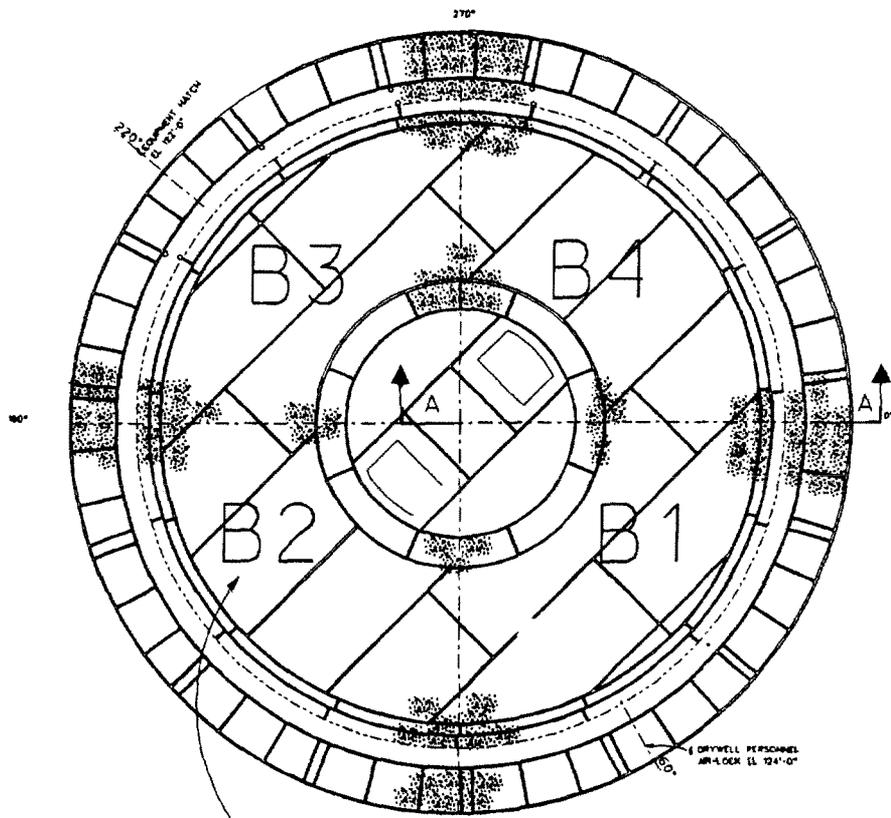
<b>Drawing No. and Title</b>
01-1 – Overall Containment Pressure Vessel Schedule
02-1 – Containment Base Liner Plate Schedule – Drywell Area
02-2 – Containment Base Liner Plate Plan Details and Sections
02-3 – Containment Base Liner Plate Plan Details and Sections
B1 – Containment Base Liner – Segment B1
B2 – Containment Base Liner – Segment B2
B3 – Containment Base Liner – Segment B3
B4 – Containment Base Liner – Segment B4
03-1 – Containment Base Liner Plate Schedule – Suppression Pool Area
03-2 – Containment Base Liner Plate Plan Details and Sections
03-3 – Containment Base Liner Plate Plan Details and Sections
S1 – Containment Base Liner – Segment S1
S2 – Containment Base Liner – Segment S2
S3 – Containment Base Liner – Segment S3
S4 – Containment Base Liner – Segment S4
04-1 – Containment Wall Liner Drawing Schedule
93-1 – Liner Segment 0° to 45° at Elevation 93'-0 1/4"
93-2 – Liner Segment 45° to 90° at Elevation 93'-0 1/4"
93-3 – Liner Segment 90° to 135° at Elevation 93'-0 1/4"
93-4 – Liner Segment 135° to 180° at Elevation 93'-0 1/4"
93-5 – Liner Segment 180° to 225° at Elevation 93'-0 1/4"
93-6 – Liner Segment 225° to 270° at Elevation 93'-0 1/4"
93-7 – Liner Segment 270° to 315° at Elevation 93'-0 1/4"
93-8 – Liner Segment 315° to 360° at Elevation 93'-0 1/4"
120-1 – Liner Segment 0° to 45° at Elevation 120'-10"
120-2 – Liner Segment 45° to 90° at Elevation 120'-10"
120-3 – Liner Segment 90° to 135° at Elevation 120'-10"
120-4 – Liner Segment 135° to 180° at Elevation 120'-10"
120-5 – Liner Segment 180° to 225° at Elevation 120'-10"
120-6 – Liner Segment 225° to 270° at Elevation 120'-10"
120-7 – Liner Segment 270° to 315° at Elevation 120'-10"
120-8 – Liner Segment 315° to 360° at Elevation 120'-10"

<b>Drawing No. and Title</b>
135-1 – Liner Segment 0° to 45° at Elevation 135'-4"
135-2 – Liner Segment 45° to 90° at Elevation 135'-4"
135-3 – Liner Segment 90° to 135° at Elevation 135'-4"
135-4 – Liner Segment 135° to 180° at Elevation 135'-4"
135-5 – Liner Segment 180° to 225° at Elevation 135'-4"
135-6 – Liner Segment 225° to 270° at Elevation 135'-4"
135-7 – Liner Segment 270° to 315° at Elevation 135'-4"
135-8 – Liner Segment 315° to 360° at Elevation 135'-4"
161-1 – Liner Segment 0° to 45° at Elevation 161'-10"
161-2 – Liner Segment 45° to 90° at Elevation 161'-10"
161-3 – Liner Segment 90° to 135° at Elevation 161'-10"
161-4 – Liner Segment 135° to 180° at Elevation 161'-10"
161-5 – Liner Segment 180° to 225° at Elevation 161'-10"
161-6 – Liner Segment 225° to 270° at Elevation 161'-10"
161-7 – Liner Segment 270° to 315° at Elevation 161'-10"
161-8 – Liner Segment 315° to 360° at Elevation 161'-10"
184-1 – Liner Segment 0° to 45° at Elevation 184'-6"
184-2 – Liner Segment 45° to 90° at Elevation 184'-6"
184-3 – Liner Segment 90° to 135° at Elevation 184'-6"
184-4 – Liner Segment 135° to 180° at Elevation 184'-6"
184-5 – Liner Segment 180° to 225° at Elevation 184'-6"
184-6 – Liner Segment 225° to 270° at Elevation 184'-6"
184-7 – Liner Segment 270° to 315° at Elevation 184'-6"
184-8 – Liner Segment 315° to 360° at Elevation 184'-6"
208-1 – Liner Segment 0° to 45° at Elevation 208'-10"
208-2 – Liner Segment 45° to 90° at Elevation 208'-10"
208-3 – Liner Segment 90° to 135° at Elevation 208'-10"
208-4 – Liner Segment 135° to 180° at Elevation 208'-10"
208-5 – Liner Segment 180° to 225° at Elevation 208'-10"
208-6 – Liner Segment 225° to 270° at Elevation 208'-10"
208-7 – Liner Segment 270° to 315° at Elevation 208'-10"
208-8 – Liner Segment 315° to 360° at Elevation 208'-10"
05-1 – Containment Dome Liner Schedule
D1 – Containment Dome Liner Segment 0° to 90°
D2 – Containment Dome Liner Segment 90° to 180°
D2 – Containment Dome Liner Segment 180° to 270°
D4 – Containment Dome Liner Segment 270° to 360°

<b>Drawing No. and Title</b>
1 – Equipment Hatch Page 1 of 2
1 – Equipment Hatch Page 2 of 2
2 – Personnel Airlock Page 1 of 9
2 – Personnel Airlock Page 2 of 9
2 – Personnel Airlock Page 3 of 9
2 – Personnel Airlock Page 4 of 9
2 – Personnel Airlock Page 5 of 9
2 – Personnel Airlock Page 6 of 9
2 – Personnel Airlock Page 7 of 9
2 – Personnel Airlock Page 8 of 9
2 – Personnel Airlock Page 9 of 9
3 – Fuel Transfer Tube Page 1 of 3
3 – Fuel Transfer Tube Page 2 of 3
3 – Fuel Transfer Tube Page 2 of 3
4 – Flued Head Penetrations with ISI Port
4A – Penetration with Flued Head inside CTMT
4B – Flued Head Penetrations without ISI Port
4C – Flued Head Penetrations without Guard Pipes
5 – Type A Electrical Penetration Assembly – Canister Type
5A – Type B&C Electrical Penetration Assembly – Module Type
5B – Type B&C Electrical Penetration Assembly – Module Type
5C – Grounding Rod Penetration
6 – Mechanical Penetration – Type SI
6A – Mechanical Penetration – Type SI
6B – Spare Penetration – Type SI
7 – Mechanical Penetration – Type SII
7A – Mechanical Penetration – Type SII
8 – Liner Embedment – Bracket Type 1
8A – Liner Embedment – Bracket Types 2, 9
8B – Liner Embedment – Bracket Types 3
8C – Liner Embedment – Bracket Types 4, 7, 11
8D – Liner Embedment – Bracket Type 6
8E – Liner Embedment – Bracket Types 8, 12
8F – Liner Embedment – Bracket Type 10
8G – Liner Embedment – Bracket Type 14
8H – Liner Embedment – Insert Types



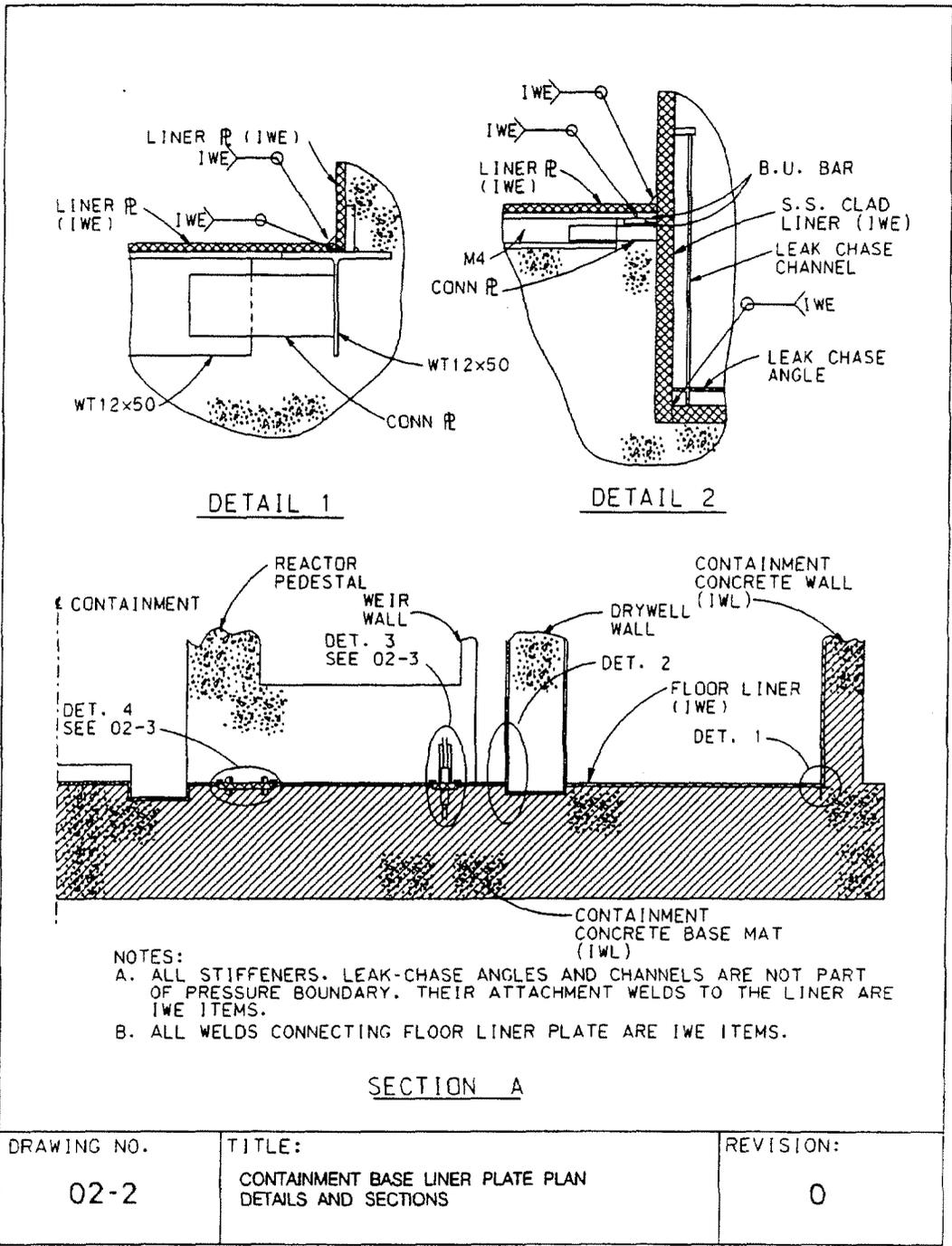
DRAWING NO.	TITLE:	REVISION:
01-1	OVERALL CONTAINMENT PRESSURE BOUNDARY SCHEDULE	0

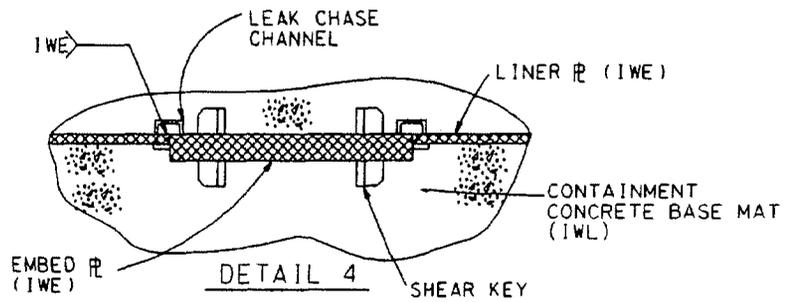
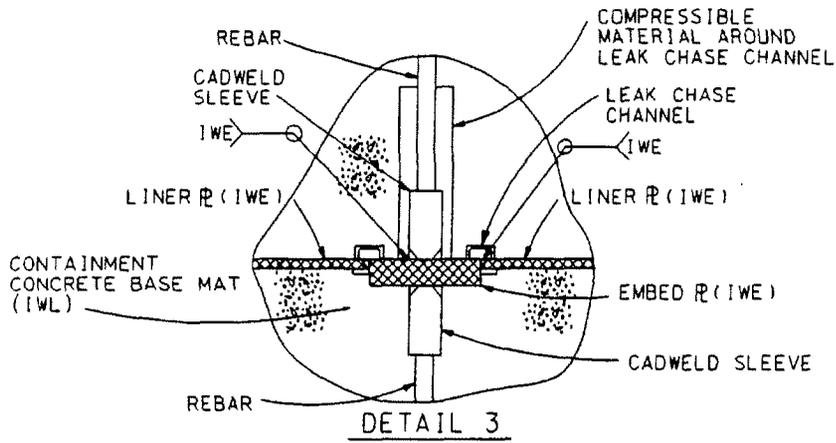


LINER SEGMENT DRAWING NO.

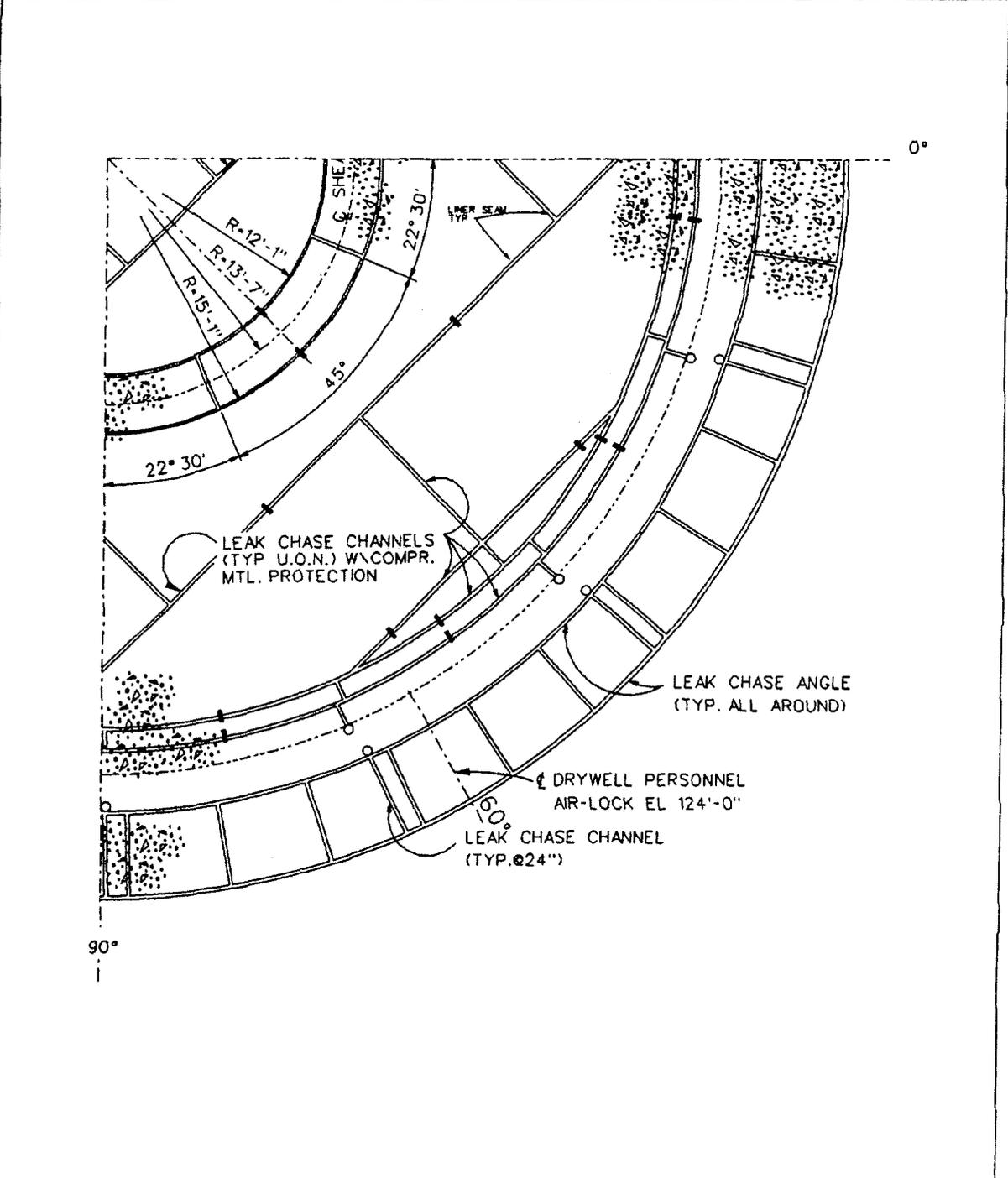
SEE DRAWING 02-2 FOR SECTION A DETAIL

DRAWING NO. 02-1	TITLE: CONTAINMENT BASE LINER PLATE SCHEDULE DRYWELL AREA	REVISION: 0
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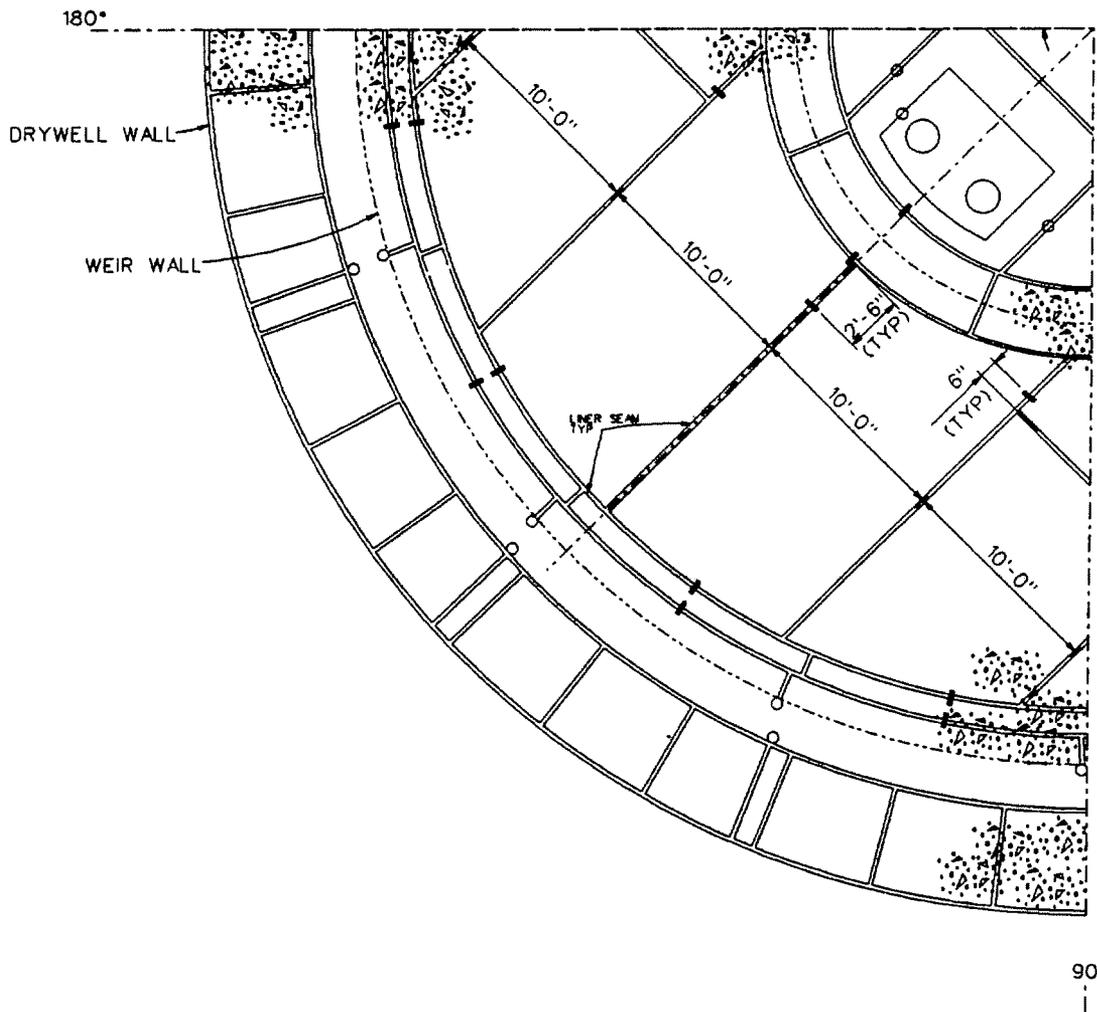




DRAWING NO. 02-3	TITLE: CONTAINMENT BASE LINER PLATE PLAN DETAILS AND SECTIONS	REVISION: 0
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DRAWING NO. <p style="text-align: center;">B1</p>	TITLE: <p style="text-align: center;">CONTAINMENT BASE LINER - SEGMENT B1</p>	REVISION: <p style="text-align: center;">0</p>
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DRAWING NO.

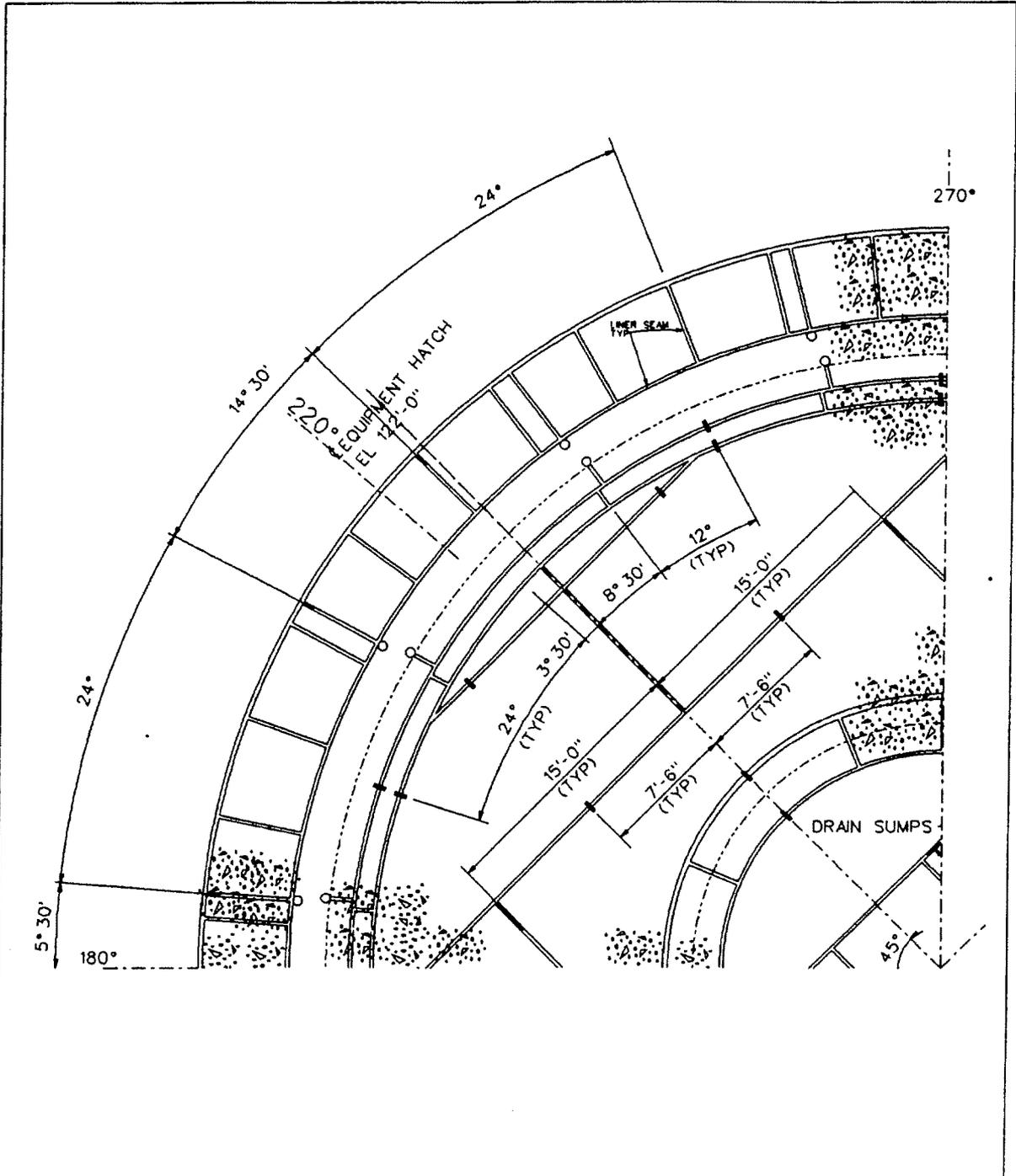
B2

TITLE:

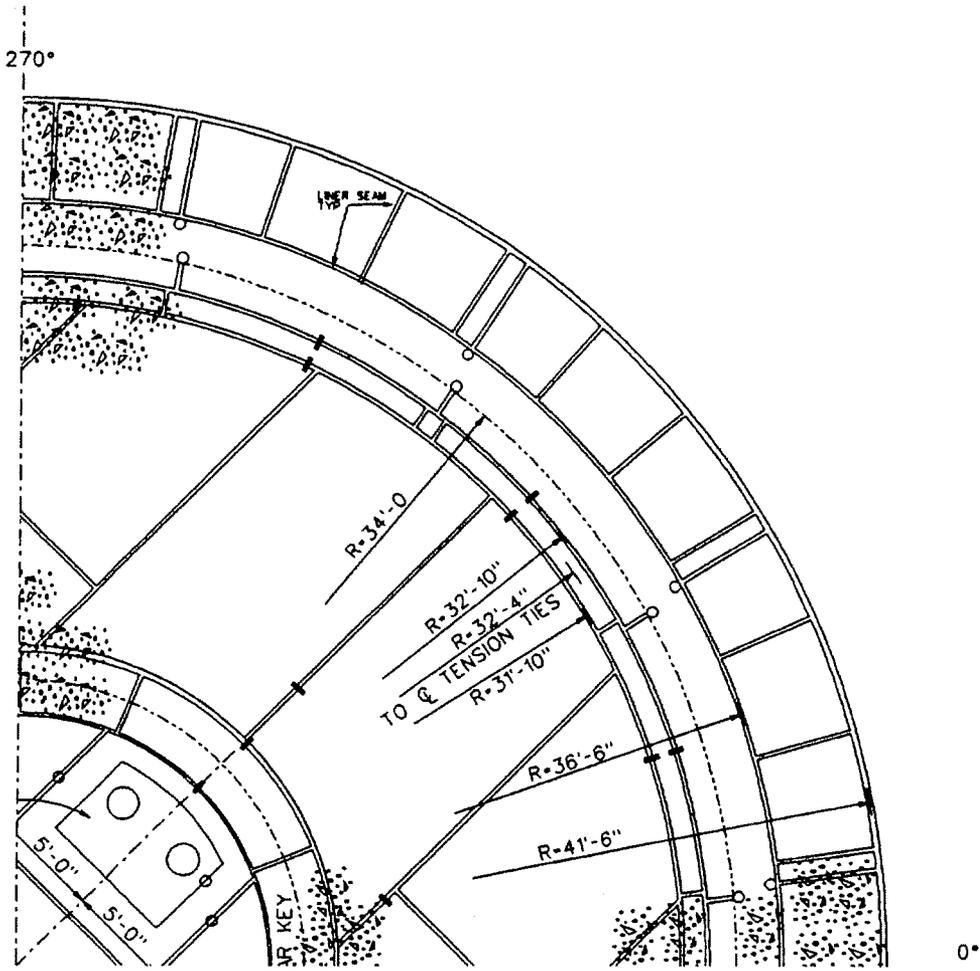
CONTAINMENT BASE LINER - SEGMENT B2

REVISION:

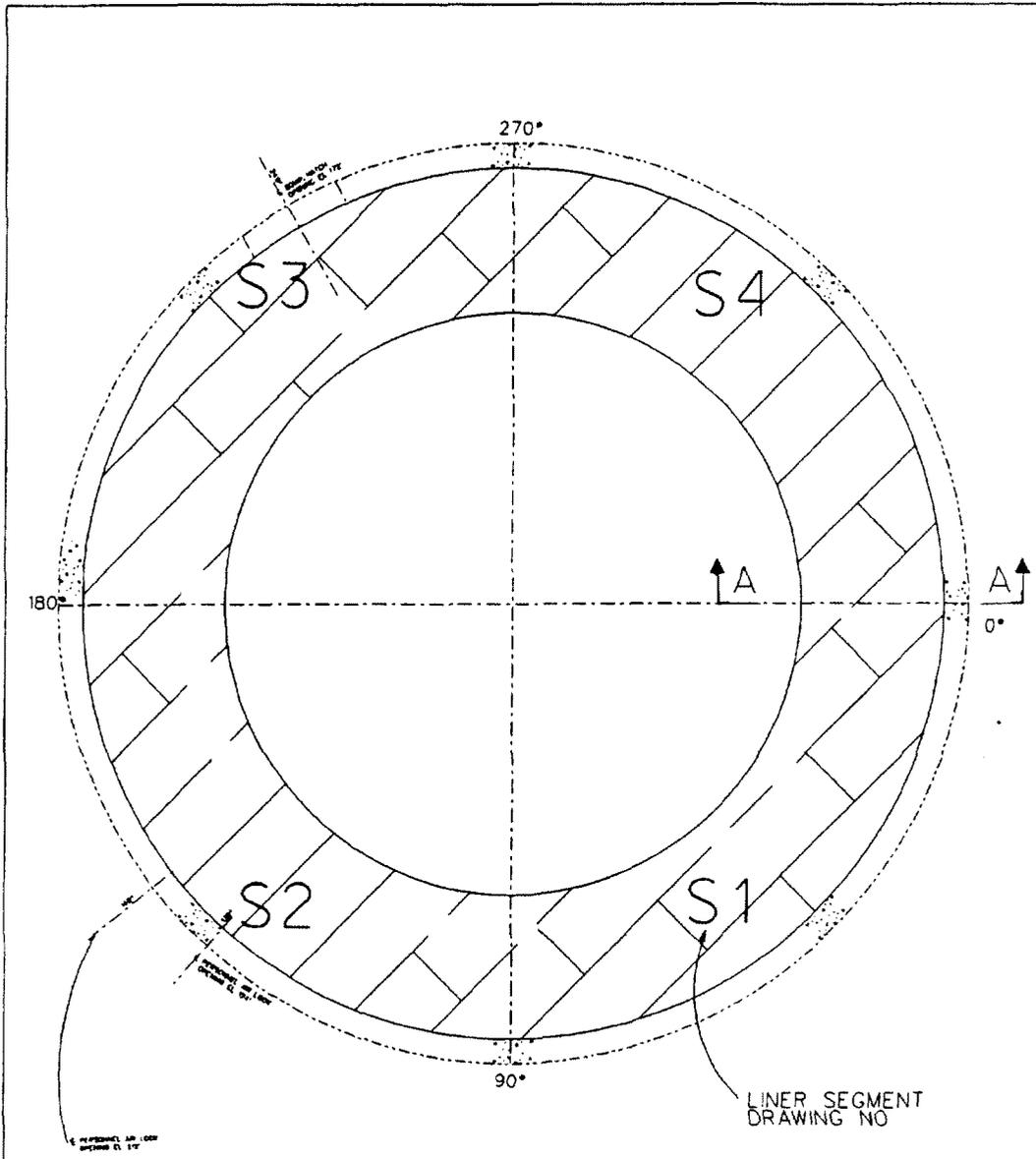
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DRAWING NO. <p style="text-align: center;">B3</p>	TITLE: <p style="text-align: center;">CONTAINMENT BASE LINER - SEGMENT B3</p>	REVISION: <p style="text-align: center;">0</p>
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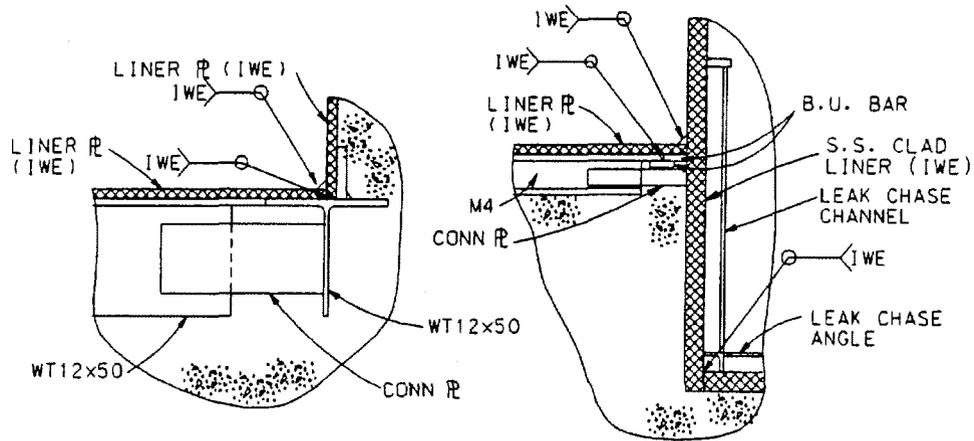


DRAWING NO.	TITLE:	REVISION:
B4	CONTAINMENT BASE LINER - SEGMENT B4	0



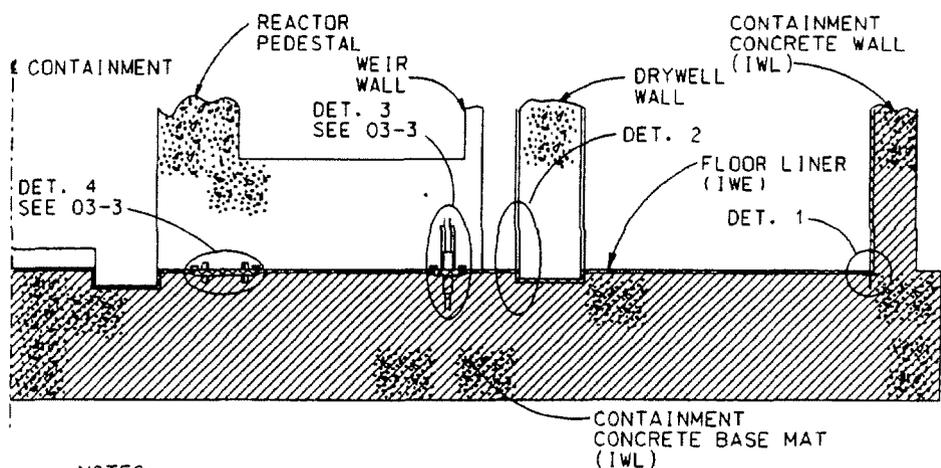
SEE DRAWING 03-2 FOR SECTION A DETAIL

DRAWING NO.	TITLE:	REVISION:
03-1	CONTAINMENT BASE LINER PLATE PLAN SCHEDULE - SUPPRESSION POOL AREA	0



DETAIL 1

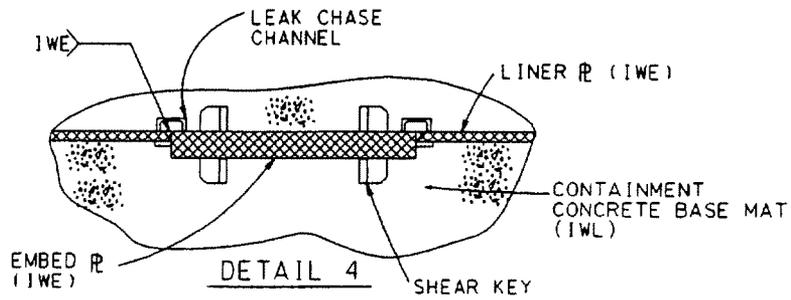
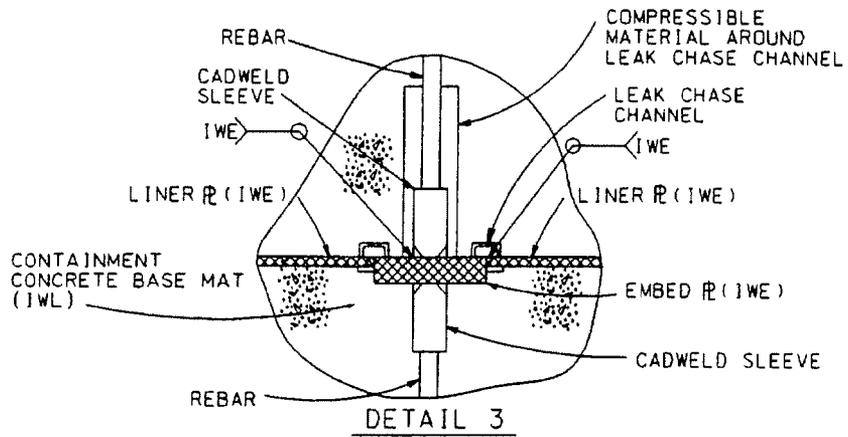
DETAIL 2



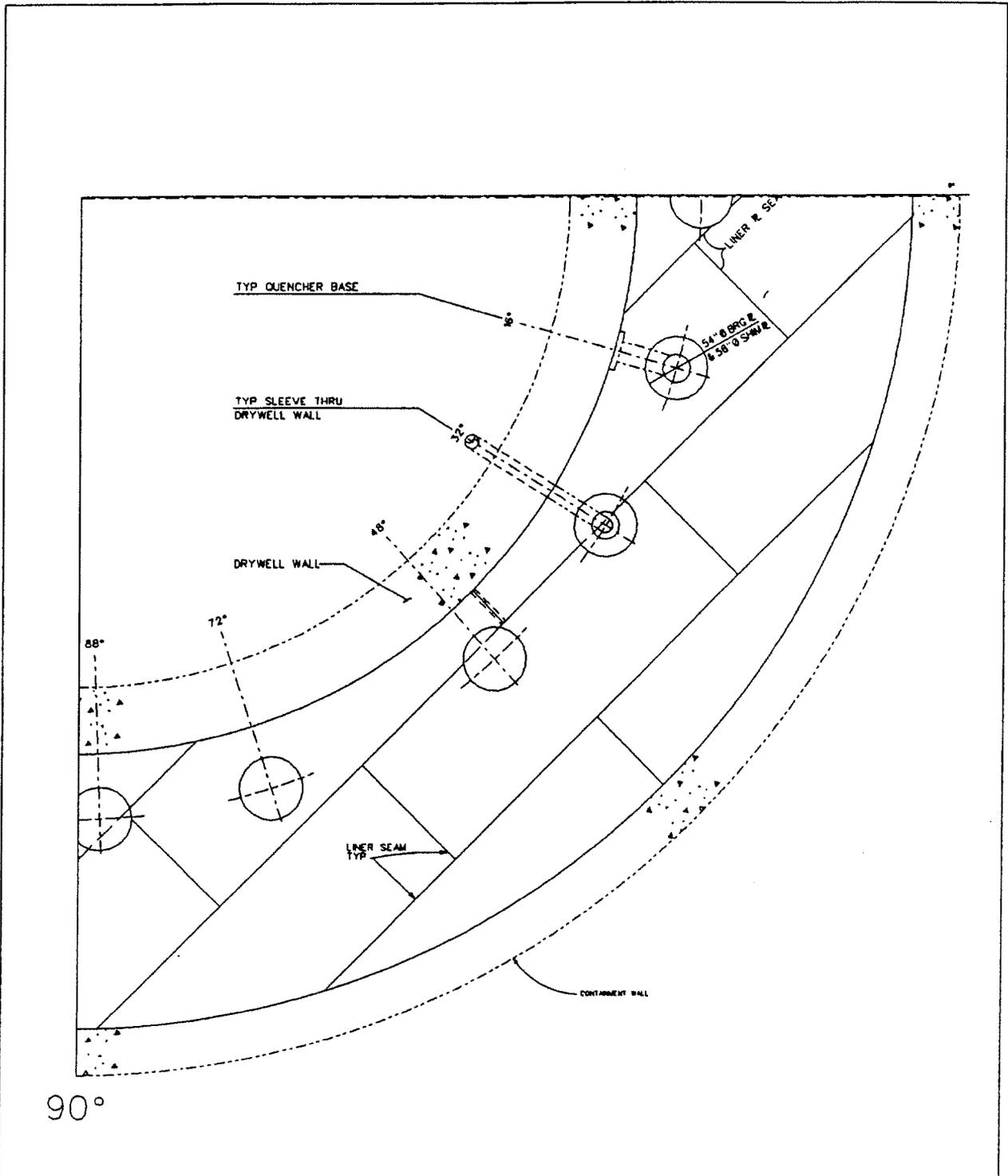
NOTES:  
 A. ALL STIFFENERS, LEAK-CHASE ANGLES AND CHANNELS ARE NOT PART OF PRESSURE BOUNDARY. THEIR ATTACHMENT WELDS TO THE LINER ARE IWE ITEMS.  
 B. ALL WELDS CONNECTING FLOOR LINER PLATE ARE IWE ITEMS.

SECTION A

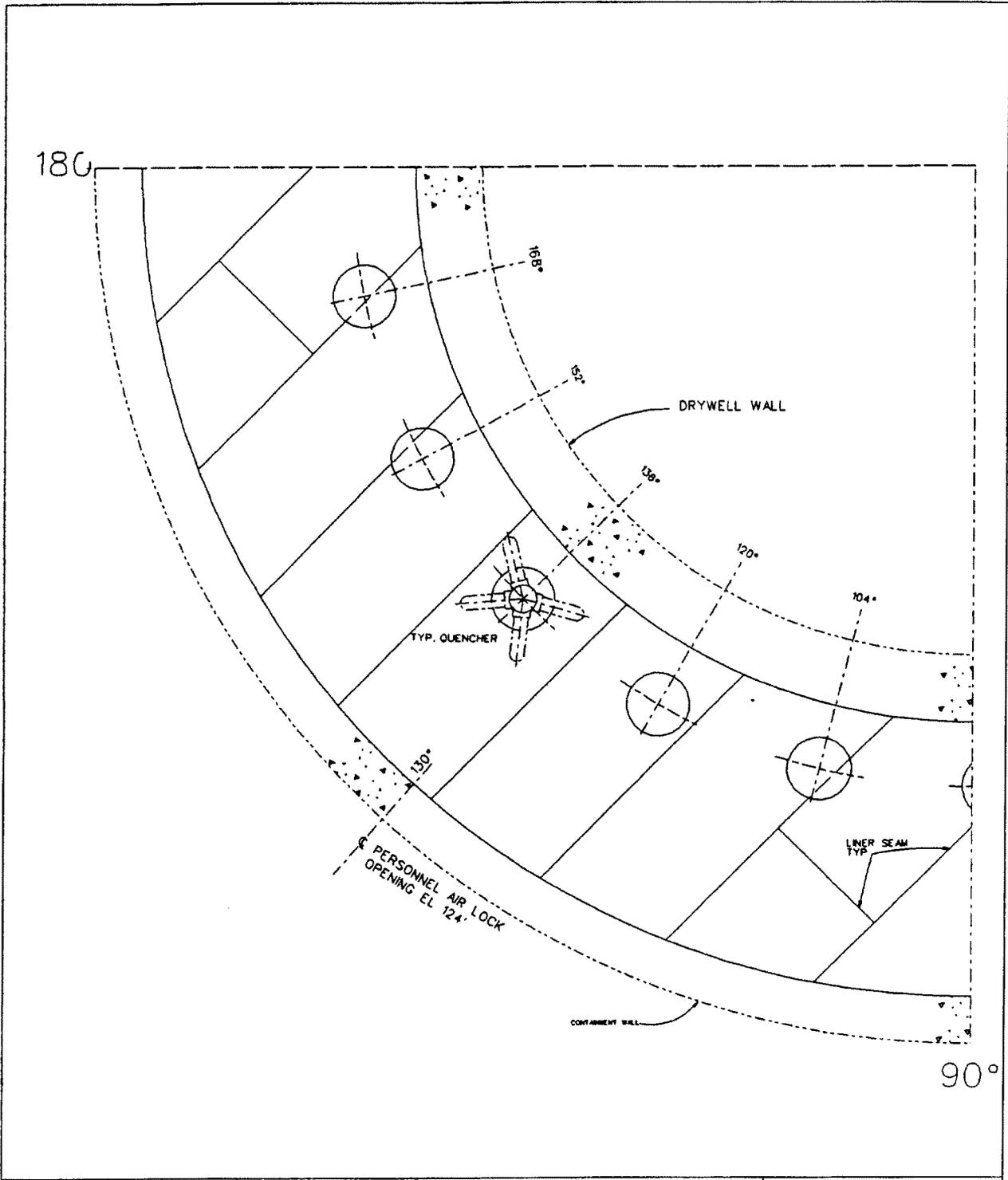
DRAWING NO.	TITLE:	REVISION:
03-2	CONTAINMENT BASE LINER PLATE PLAN DETAILS AND SECTIONS	0



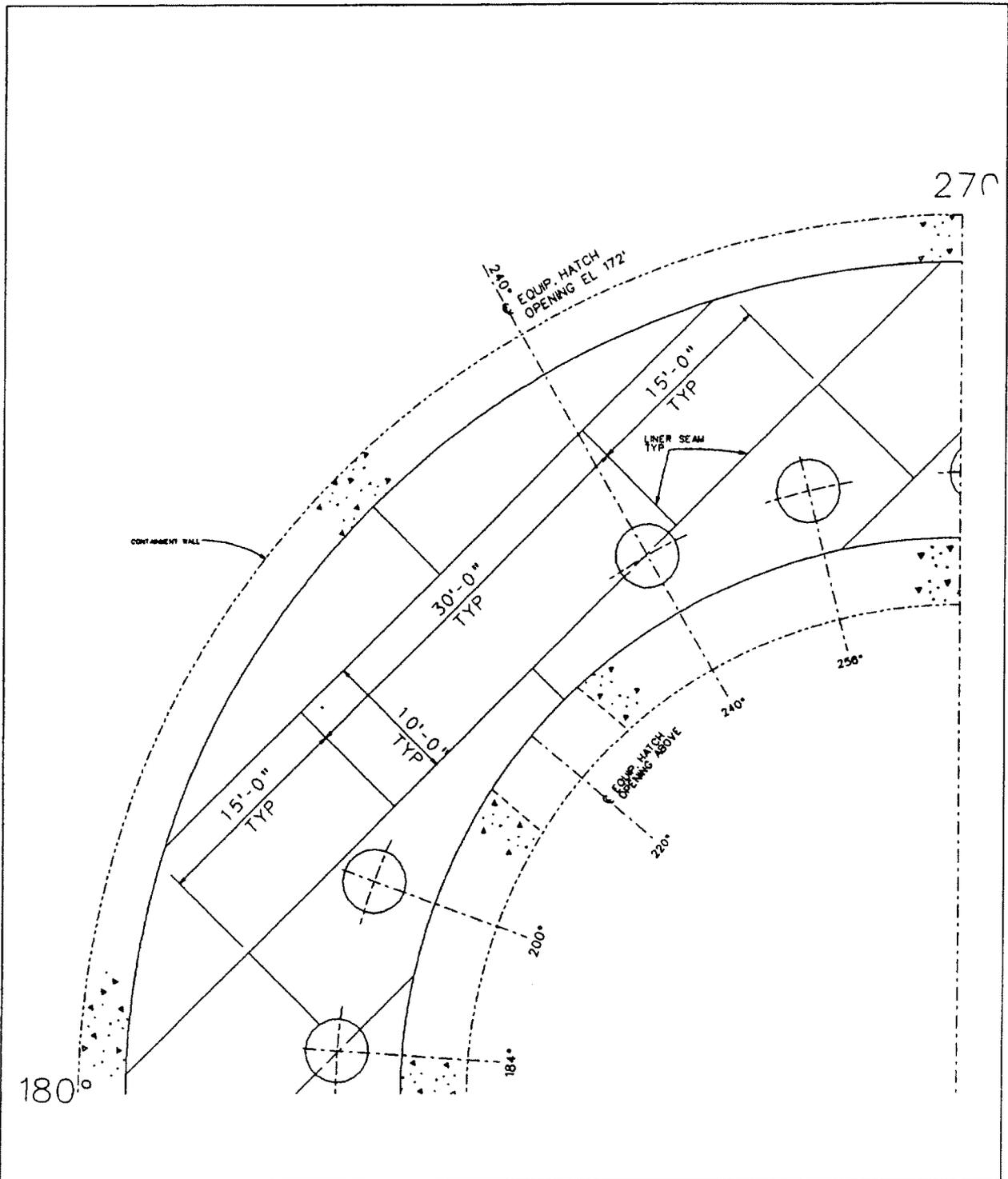
DRAWING NO. 03-3	TITLE: CONTAINMENT BASE LINER PLATE PLAN DETAILS AND SECTIONS	REVISION: 0
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DRAWING NO. <p style="text-align: center;">S1</p>	TITLE: <p style="text-align: center;">CONTAINMENT BASE LINER - SEGMENT S1</p>	REVISION: <p style="text-align: center;">0</p>
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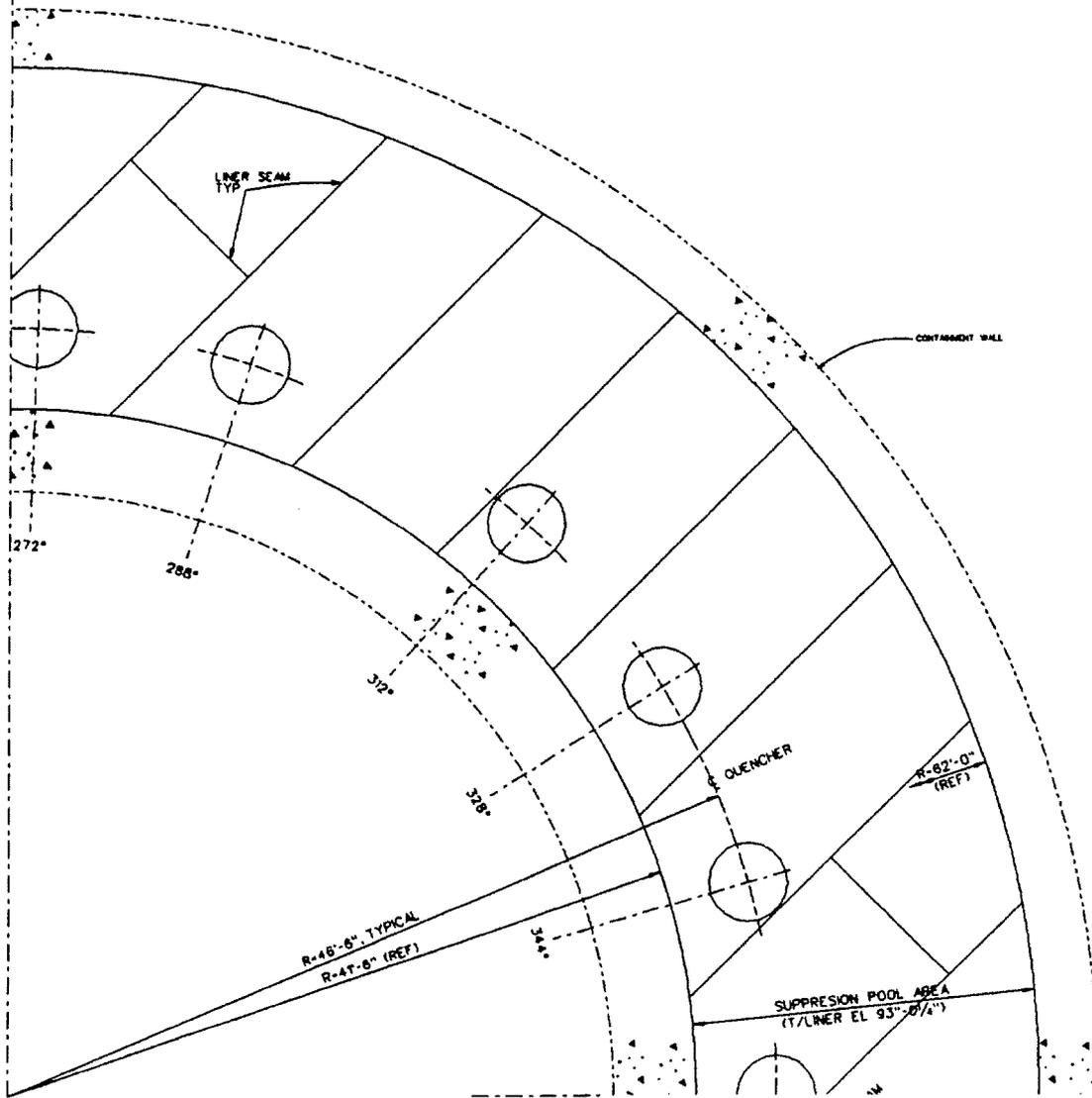


DRAWING NO. <p style="text-align: center;">S2</p>	TITLE: <p style="text-align: center;">CONTAINMENT BASE LINER - SEGMENT S2</p>	REVISION: <p style="text-align: center;">0</p>
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DRAWING NO. <p style="text-align: center;">S3</p>	TITLE: <p style="text-align: center;">CONTAINMENT BASE LINER - SEGMENT S3</p>	REVISION: <p style="text-align: center;">0</p>
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270°



DRAWING NO.

S4

TITLE:

CONTAINMENT BASE LINER - SEGMENT S4

REVISION:

0

	0°	45°	90°	135°	180°	225°	270°	315°	360°
TOP OF WALL LINER EL. 237'-10"									
TOP OF FLOOR EL. 208'-10"	208-1	208-2	208-3	208-4	208-5	208-6	208-7	208-8	
TOP OF FLOOR EL. 184'-6"	184-1	184-2	184-3	184-4	184-5	184-6	184-7	184-8	
TOP OF FLOOR EL. 161'-10"	161-1	161-2	161-3	161-4	161-5	161-6	161-7	161-8	
TOP OF FLOOR EL. 135'-4"	135-1	135-2	135-3	135-4	135-5	135-6	135-7	135-8	
TOP OF FLOOR EL. 120'-10"	120-1	120-2	120-3	120-4	120-5	120-6	120-7	120-8	
BOTT OF POOL EL. 93'-0 <sup>1</sup> / <sub>4</sub> "	93-1	93-2	93-3	93-4	93-5	93-6	93-7	93-8	

LINER SEGMENT DRAWING NO.

NOTES : 1. THE NUMBER IN EACH LINER SEGMENT REFERS TO THE SEGMENT DRAWING INCLUDED IN THIS SECTION.  
2. SEE SECTION 2 FOR DRYWELL FLOOR DETAILS.  
3. SEE SECTION 3 FOR CONTAINMENT (SUPPRESSION POOL) FLOOR DETAILS.  
4. SEE SECTION 5 FOR CONTAINMENT DOME DETAILS.

DRAWING NO. 04-1	TITLE: CONTAINMENT WALL LINER DRAWING SCHEDULE	REVISION: 0
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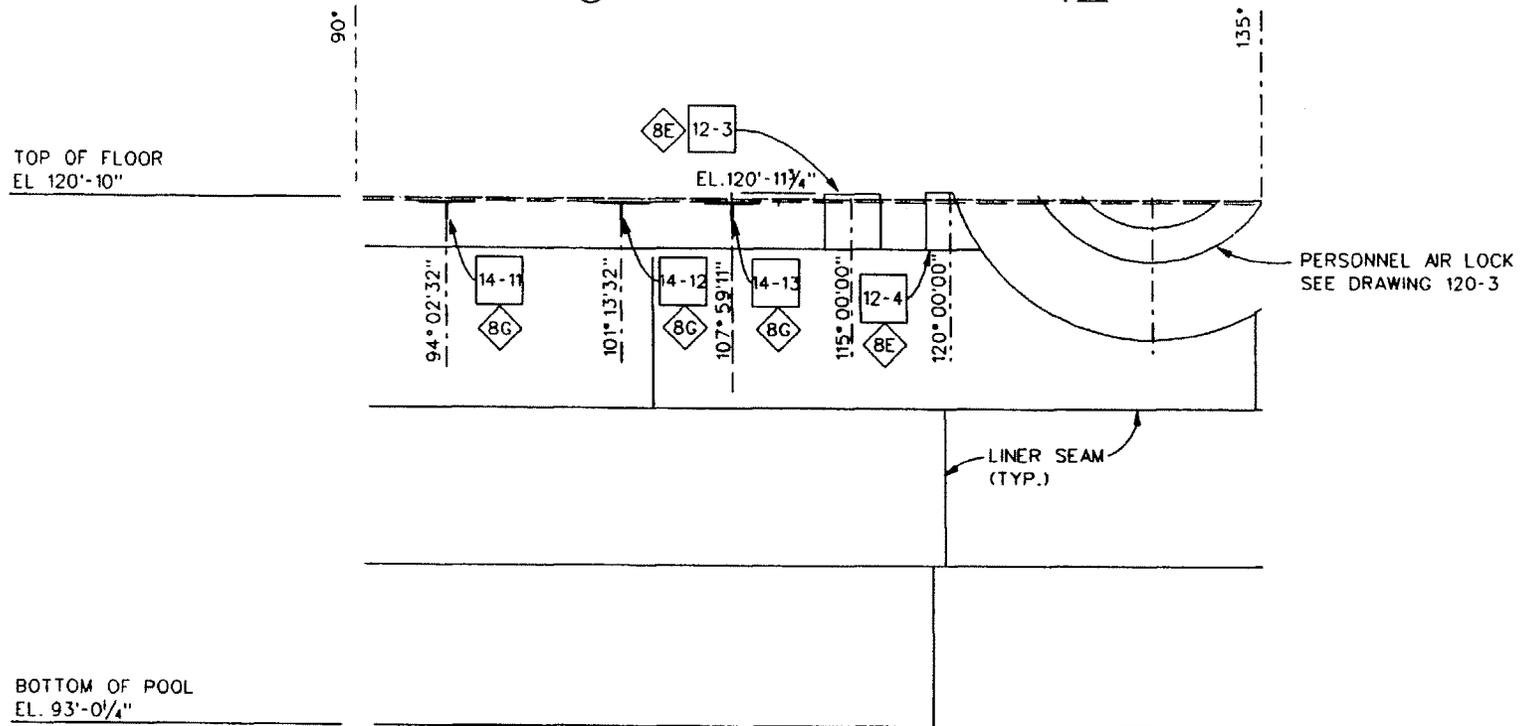


NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |   |                                    |  |                              |
|---|------------------------------------|--|------------------------------|
|  9E-4  | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2     | PENETRATION NUMBER                 |  -  | GRATING                      |
|  (7-6) | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.

93-3

TITLE:

LINER SEGMENT - 90° TO 135° AT ELEVATION 93'-0<sup>1</sup>/<sub>4</sub>"

REVISION:

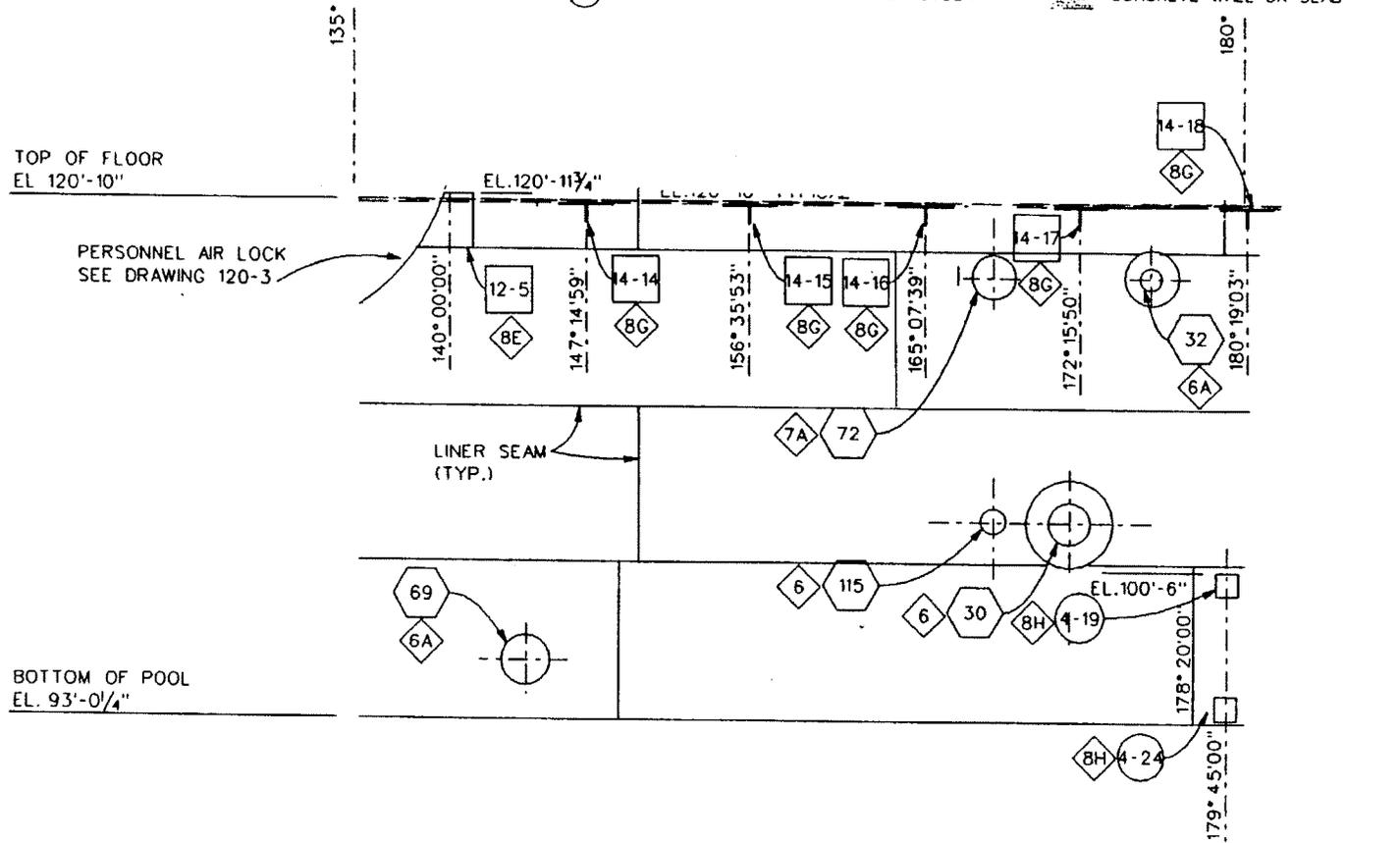
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |      |                                    |    |                              |
|------|------------------------------------|----|------------------------------|
| 9C-1 | BRACKET TYPE EMBEDDED PLATE NUMBER | 6A | IWE INSPECTION FIGURE NUMBER |
| 2    | PENETRATION NUMBER                 |    | GRATING                      |
| 7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |    | CONCRETE WALL OR SLAB        |



DRAWING NO.  
93-4

TITLE:  
LINER SEGMENT - 135° TO 180° AT ELEVATION 93'-0 1/4"

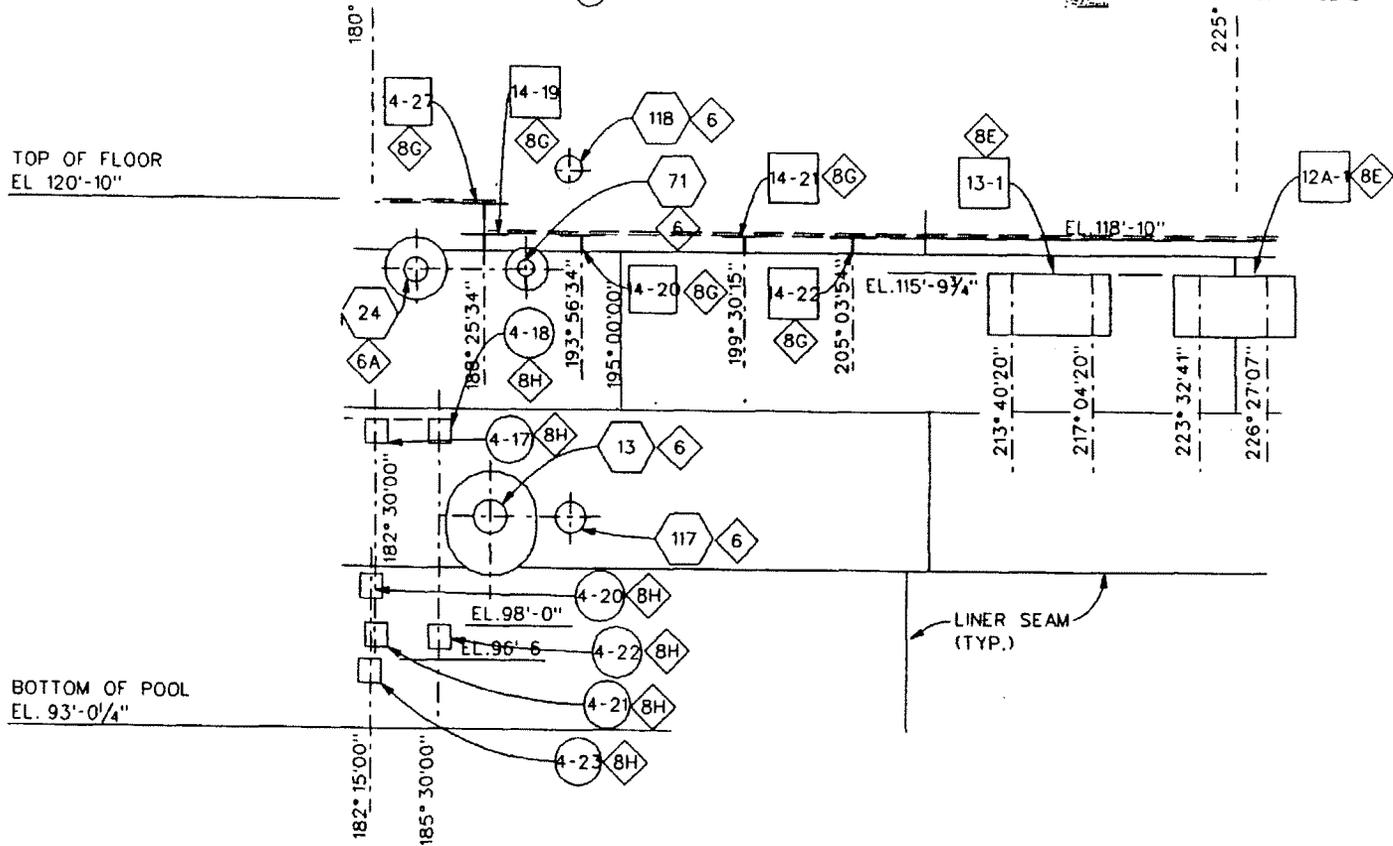
REVISION:  
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |   |                                    |  |                              |
|---|------------------------------------|--|------------------------------|
| <span style="border: 1px solid black; padding: 2px;">9E-1</span>                    | BRACKET TYPE EMBEDDED PLATE NUMBER | <span style="border: 1px solid black; padding: 2px;">6A</span> | IWE INSPECTION FIGURE NUMBER |
| <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">2</span>   | PENETRATION NUMBER                 |  | GRATING                      |
| <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">7-6</span> | INSERT TYPE EMBEDDED PLATE NUMBER  |  | CONCRETE WALL OR SLAB        |



DRAWING NO.  
93-5

TITLE:  
LINER SEGMENT - 180° TO 225° AT ELEVATION 93'-0 1/4"

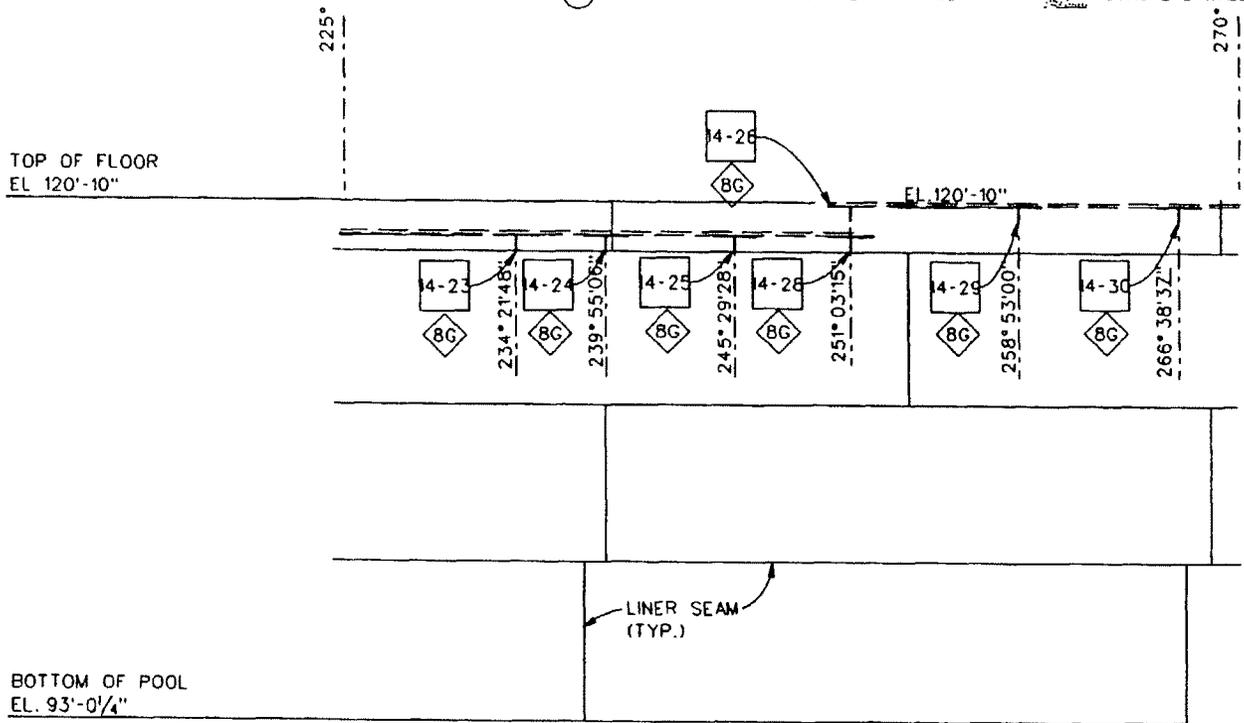
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9C-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  BA | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | GRATING                      |
|  7-B  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.  
93-6

TITLE:  
LINER SEGMENT - 225° TO 270° AT ELEVATION 93'-0 1/4"

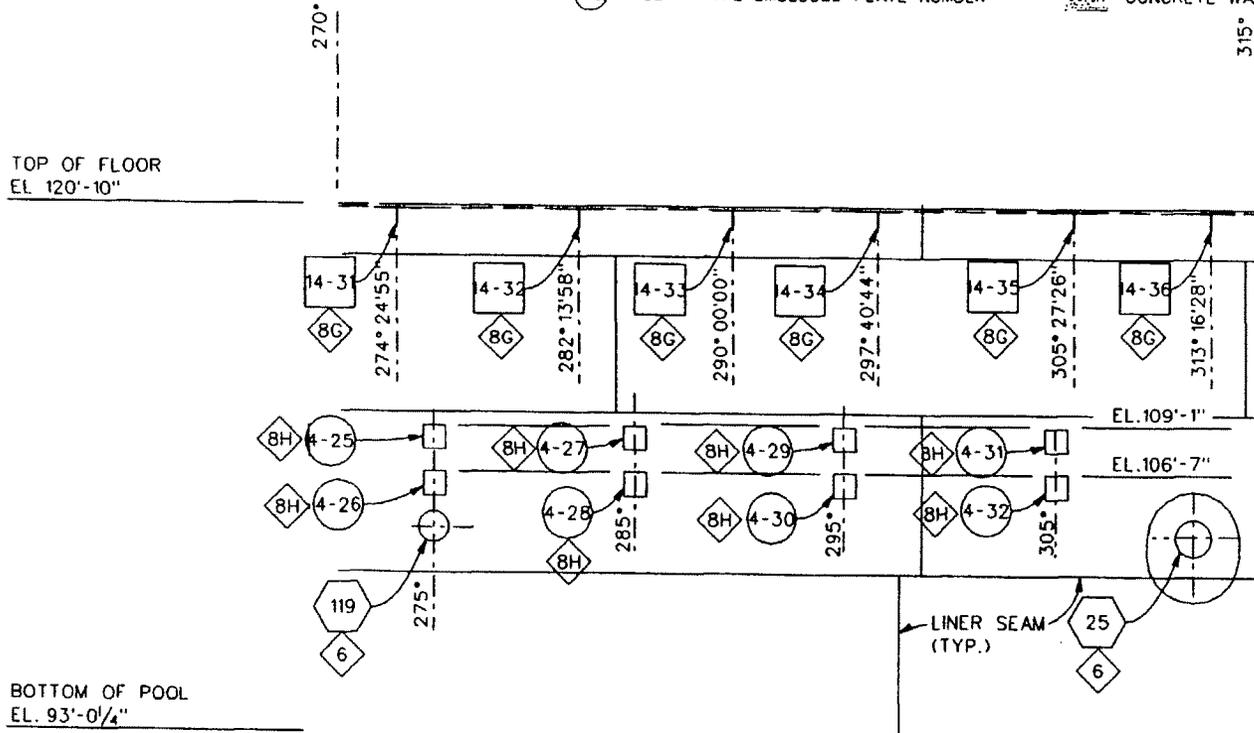
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | GRATING                      |
|  7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.

93-7

TITLE:

LINER SEGMENT - 270° TO 315° AT ELEVATION 93'-0 1/4"

REVISION:

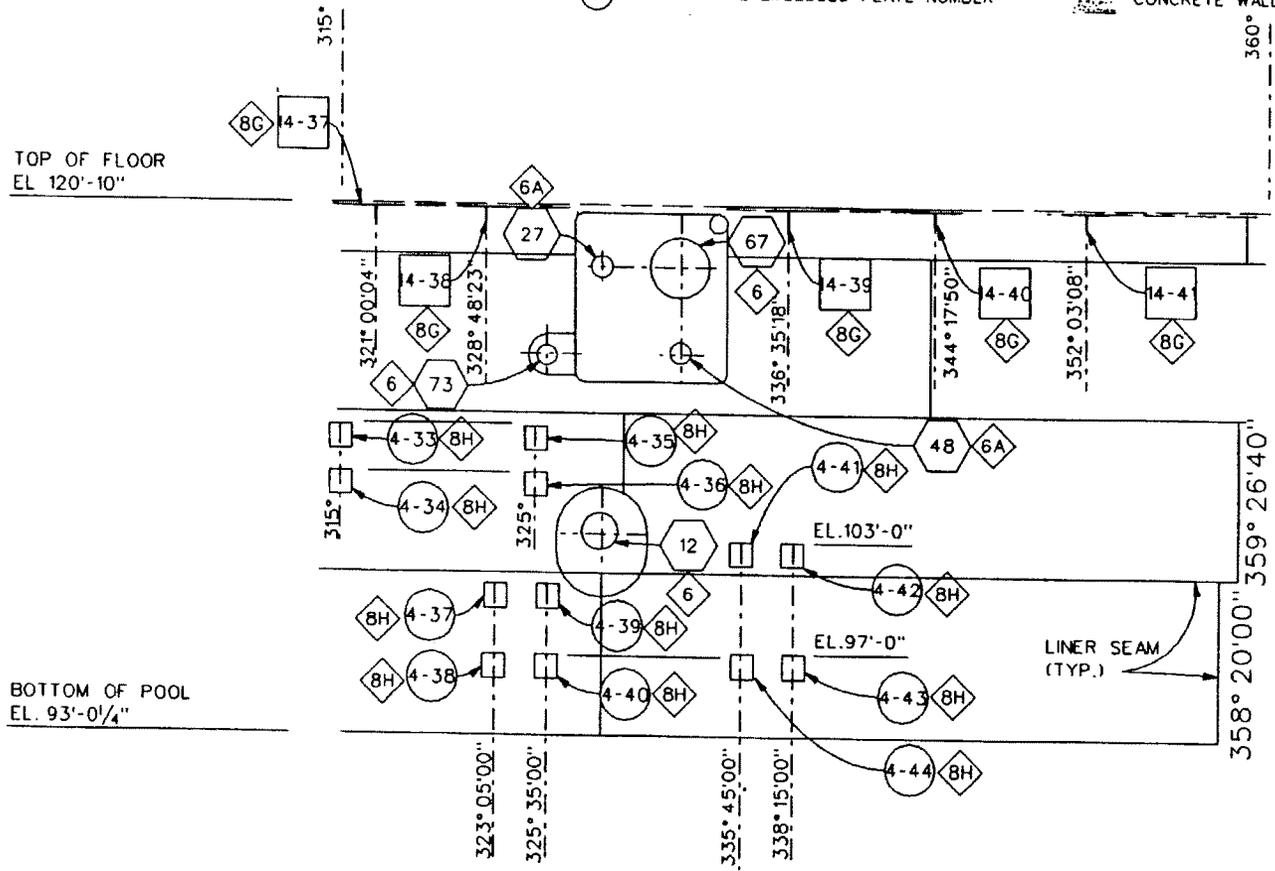
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  | BRACKET TYPE EMBEDDED PLATE NUMBER |  | IWE INSPECTION FIGURE NUMBER |
|  | PENETRATION NUMBER                 |  | GRATING                      |
|  | INSERT TYPE EMBEDDED PLATE NUMBER  |  | CONCRETE WALL OR SLAB        |



DRAWING NO.  
93-8

TITLE:  
LINER SEGMENT - 315° TO 360° AT ELEVATION 93'-0 1/4"

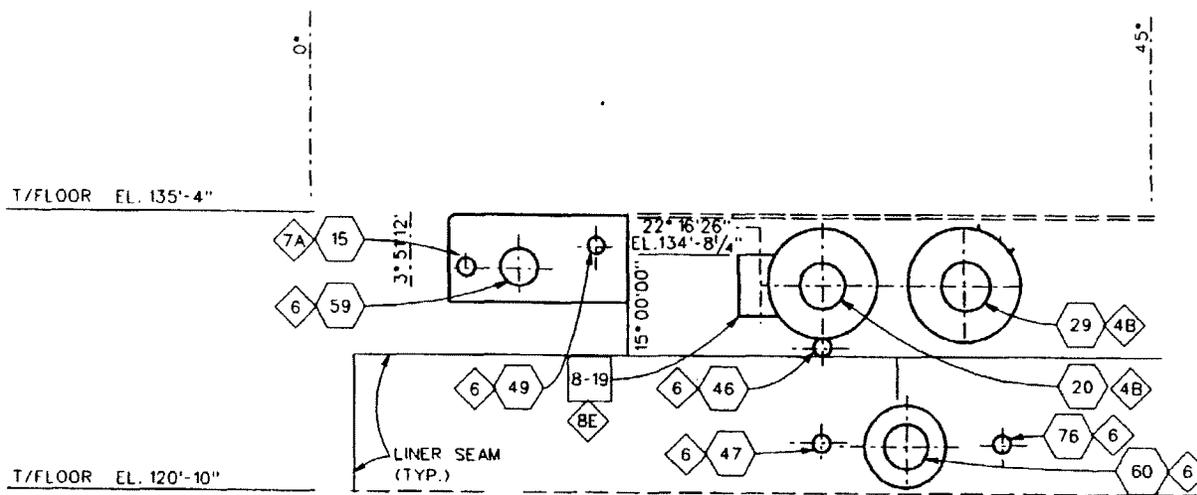
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |      |                                    |    |                              |
|------|------------------------------------|----|------------------------------|
| 9E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER | BA | IWE INSPECTION FIGURE NUMBER |
| 2    | PENETRATION NUMBER                 |    | GRATING                      |
| 7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |    | CONCRETE WALL OR SLAB        |



DRAWING NO.

120-1

TITLE:

LINER SEGMENT - 0° TO 45° AT ELEVATION 120'-10"

REVISION:

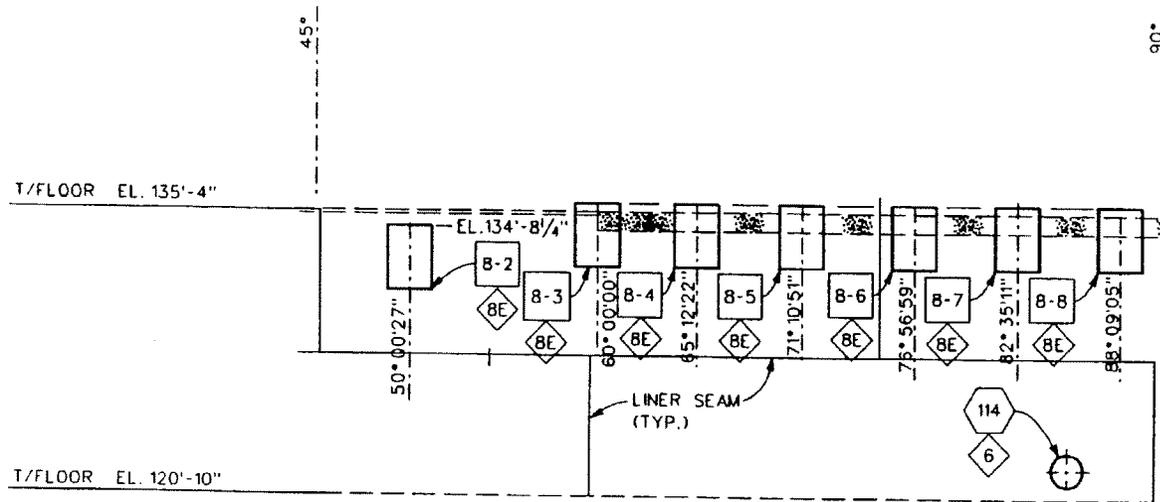
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9E-4 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |  =  | GRATING                      |
|  7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.  
120-2

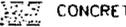
TITLE:  
LINER SEGMENT - 45° TO 90° AT ELEVATION 120'-10"

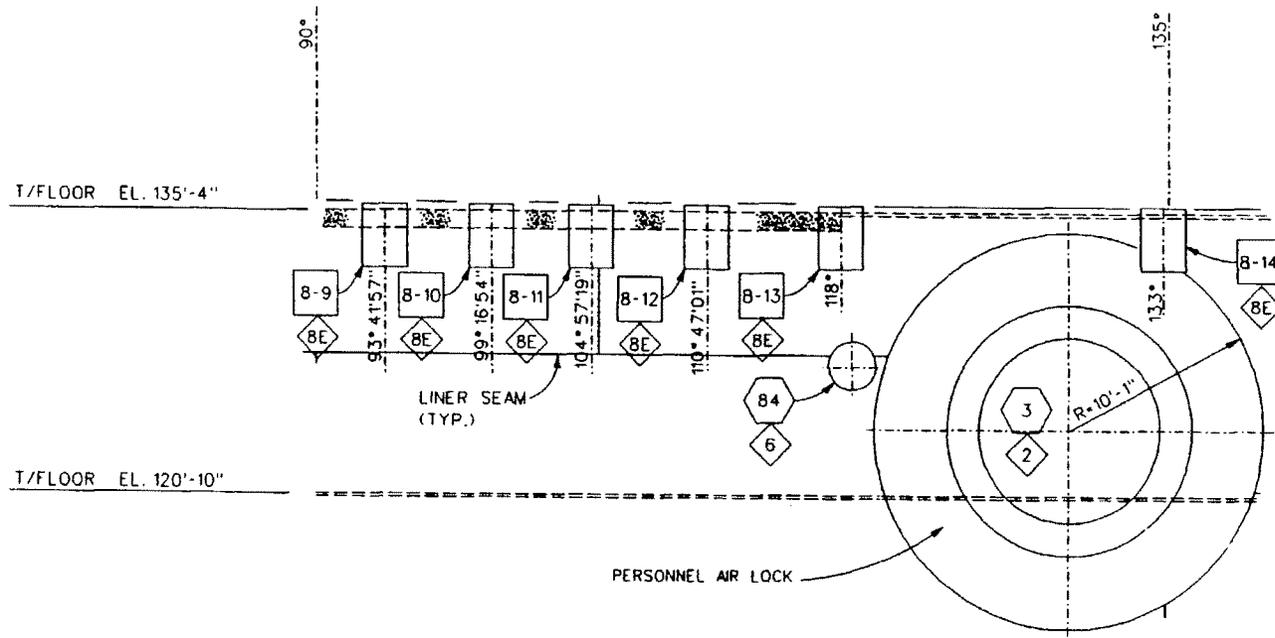
REVISION:  
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  8E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | GRATING                      |
|  7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.  
120-3

TITLE:  
LINER SEGMENT - 90° TO 135° AT ELEVATION 120'-10"

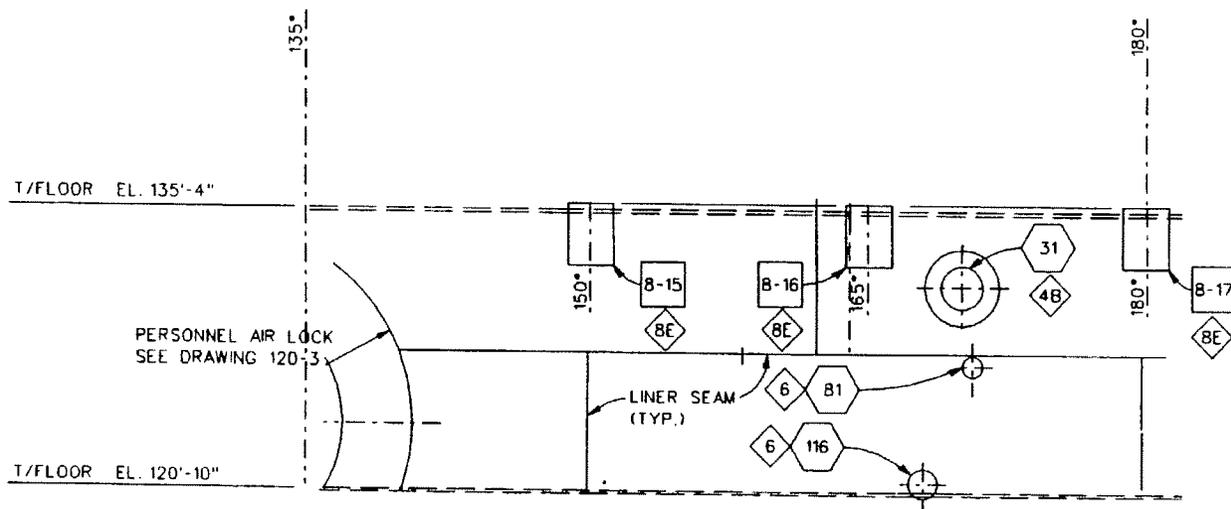
REVISION:  
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9C-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |  -  | GRATING                      |
|  7.6  | INSERT TYPE EMBEDDED PLATE NUMBER  |  -  | CONCRETE WALL OR SLAB        |



DRAWING NO.

120-4

TITLE:

LINER SEGMENT - 135° TO 180° AT ELEVATION 120'-10"

REVISION:

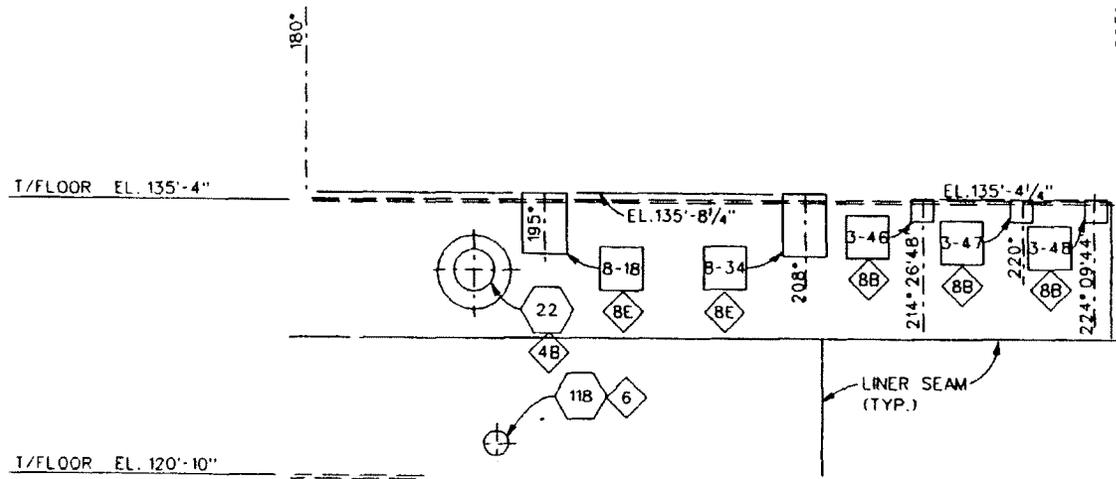
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | GRATING                      |
|  7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.  
120-5

TITLE:  
LINER SEGMENT - 180° TO 225° AT ELEVATION 120'-10"

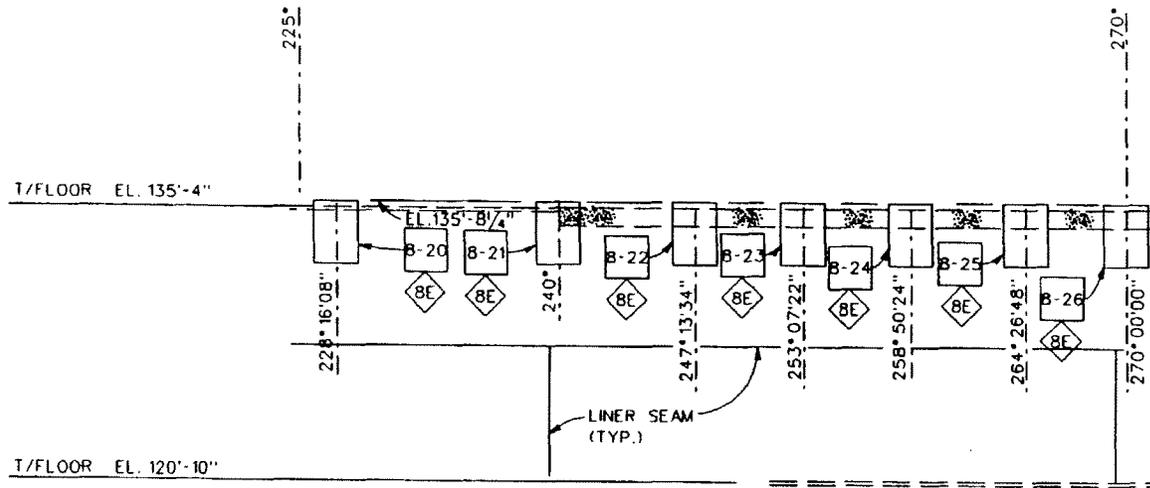
REVISION:  
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9E-9 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | GRATING                      |
|  7-8  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.  
120-6

TITLE:  
LINER SEGMENT - 225° TO 270° AT ELEVATION 120'-10"

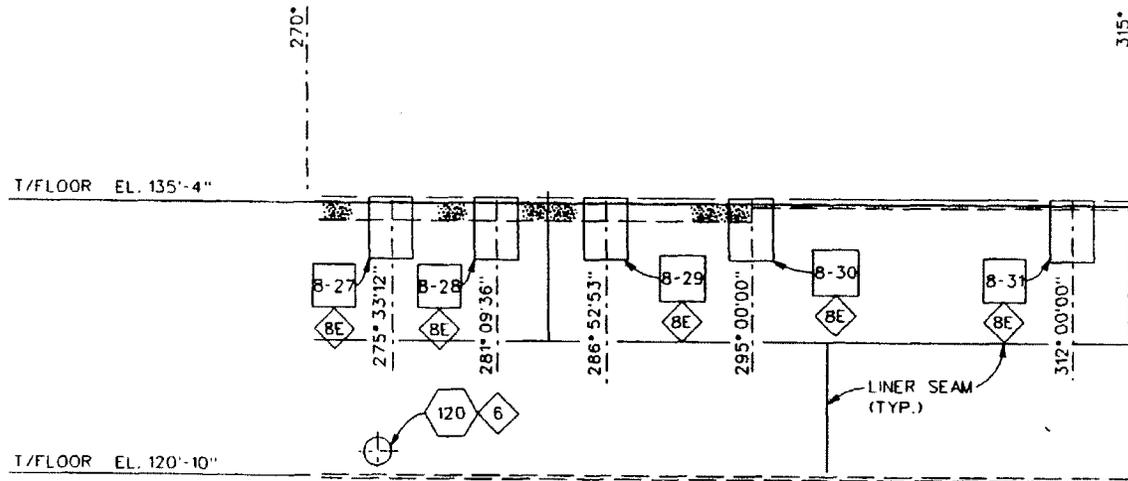
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.  
120-7

TITLE:  
LINER SEGMENT - 270° TO 315° AT ELEVATION 120'-10"

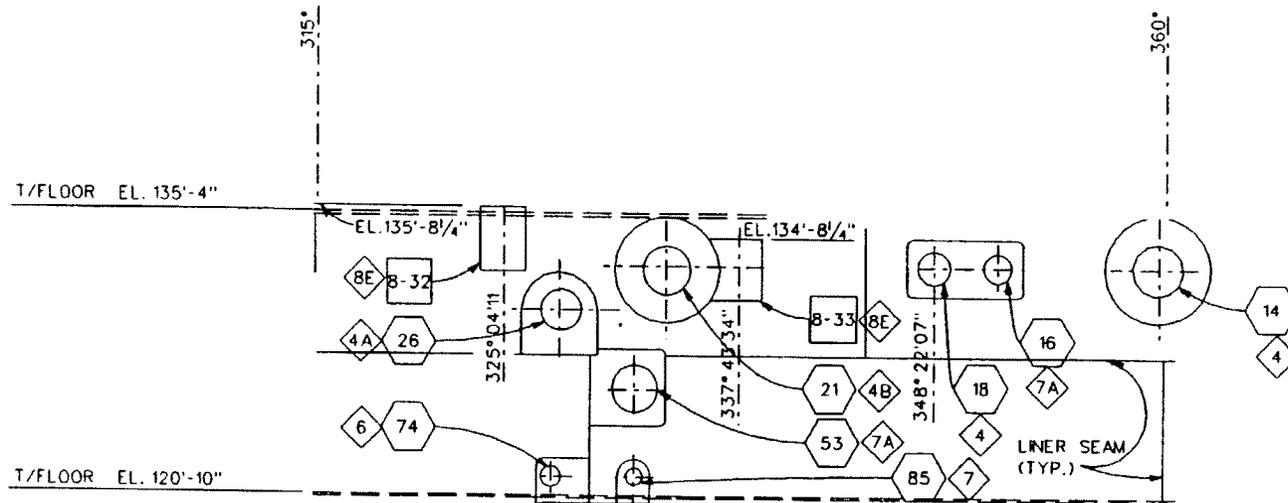
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |      |                                    |    |                              |
|------|------------------------------------|----|------------------------------|
| 8E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER | 8A | IWE INSPECTION FIGURE NUMBER |
| 2    | PENETRATION NUMBER                 |    | GRATING                      |
| 7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |    | CONCRETE WALL OR SLAB        |



DRAWING NO.  
120-8

TITLE:  
LINER SEGMENT - 315° TO 360° AT ELEVATION 120'-10"

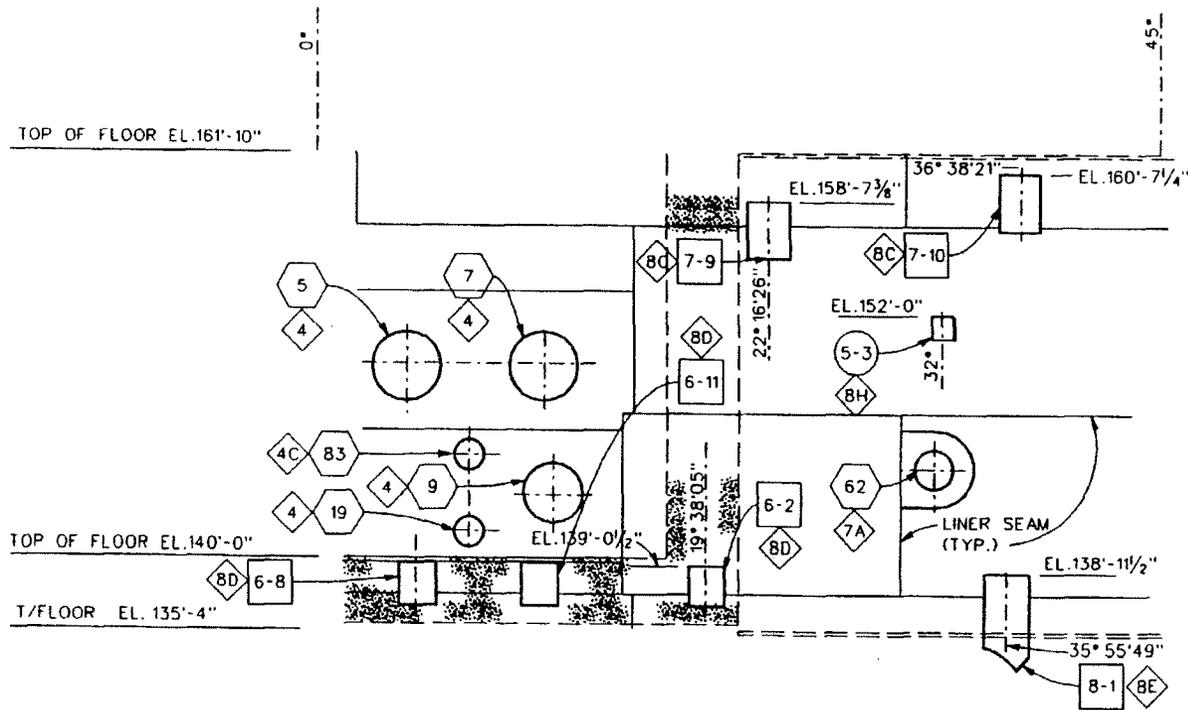
REVISION:  
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.

135-1

TITLE:

LINER SEGMENT - 0° TO 45° AT ELEVATION 135'-4"

REVISION:

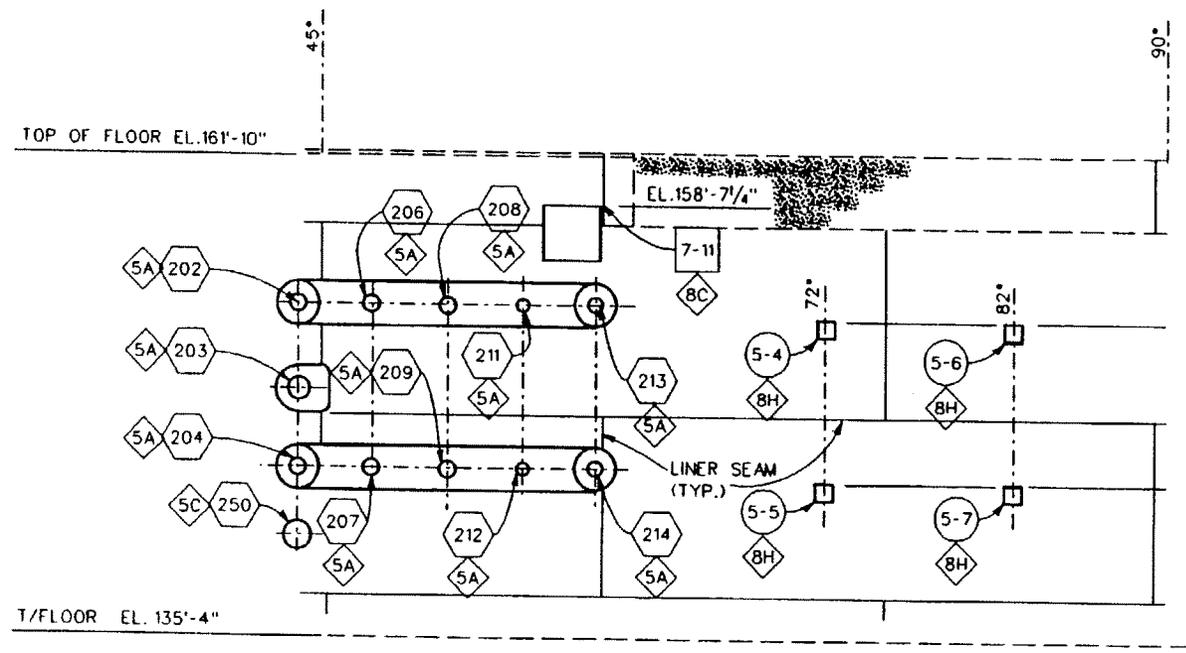
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  7C-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |  =  | GRATING                      |
|  7-A  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.  
135-2

TITLE:  
LINER SEGMENT - 45° TO 90° AT ELEVATION 135'-4"

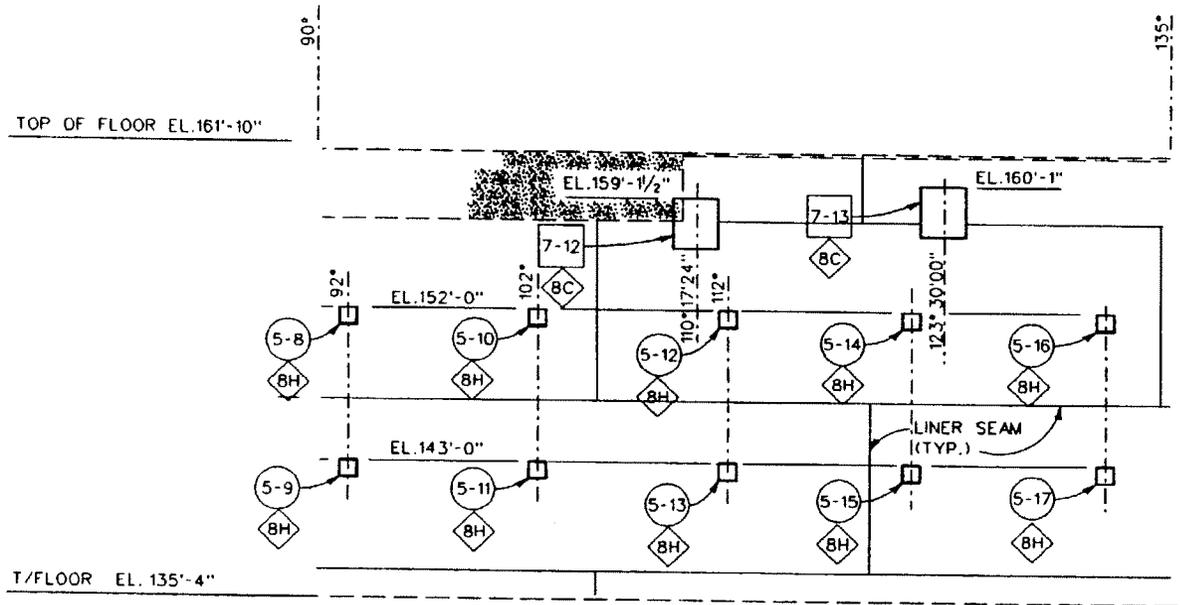
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |      |                                    |    |                              |
|------|------------------------------------|----|------------------------------|
| 9C-1 | BRACKET TYPE EMBEDDED PLATE NUMBER | 8A | IWE INSPECTION FIGURE NUMBER |
| 2    | PENETRATION NUMBER                 | =  | GRATING                      |
| 7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |    | CONCRETE WALL OR SLAB        |



DRAWING NO.

135-3

TITLE:

LINER SEGMENT - 90° TO 135° AT ELEVATION 135'-4"

REVISION:

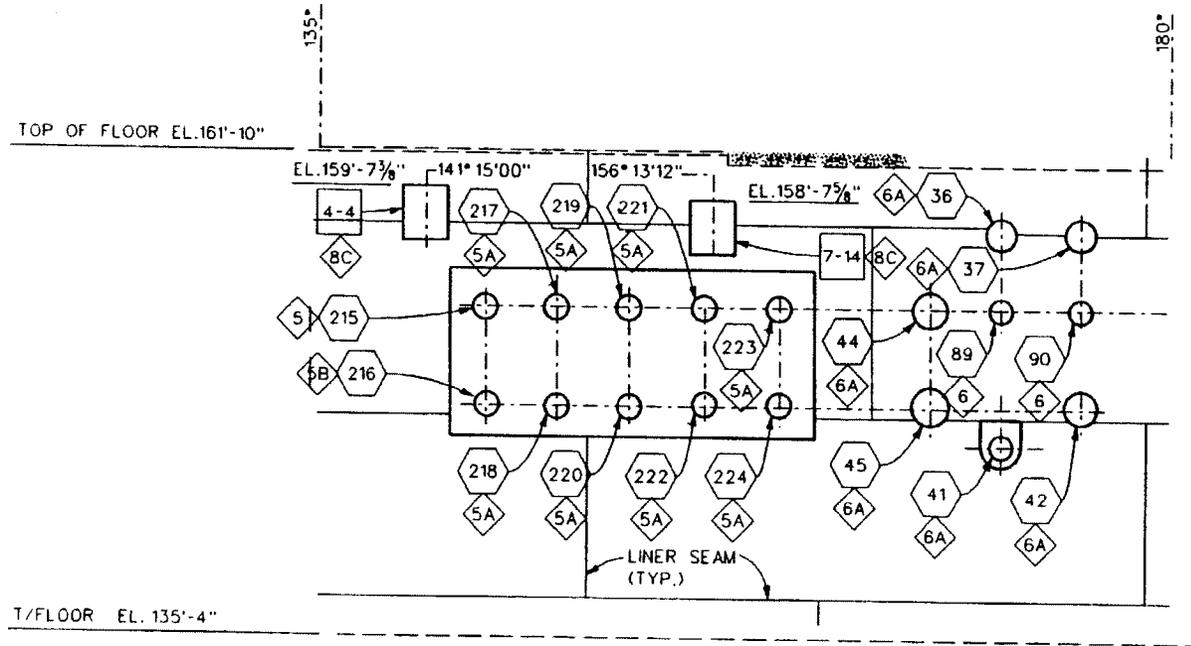
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.

135-4

TITLE:

LINER SEGMENT - 135° TO 180° AT ELEVATION 135'-4"

REVISION:

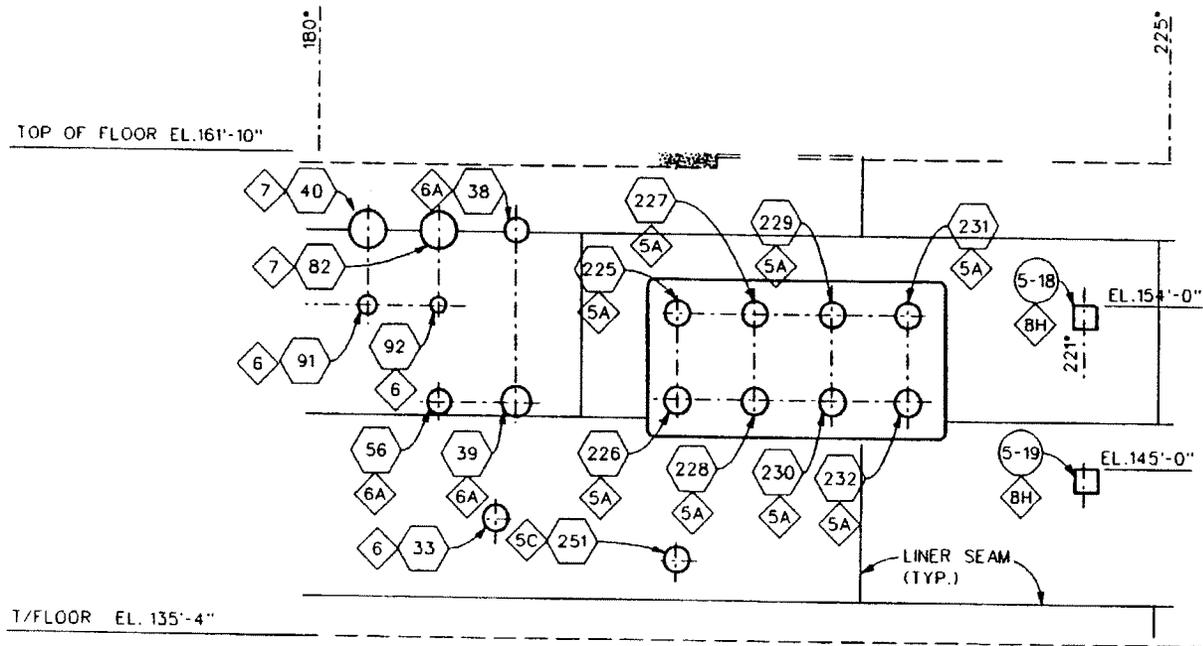
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NOTES:

1. ALL PENETRATIONS AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.

135-5

TITLE:

LINER SEGMENT - 180° TO 225° AT ELEVATION 135'-4"

REVISION:

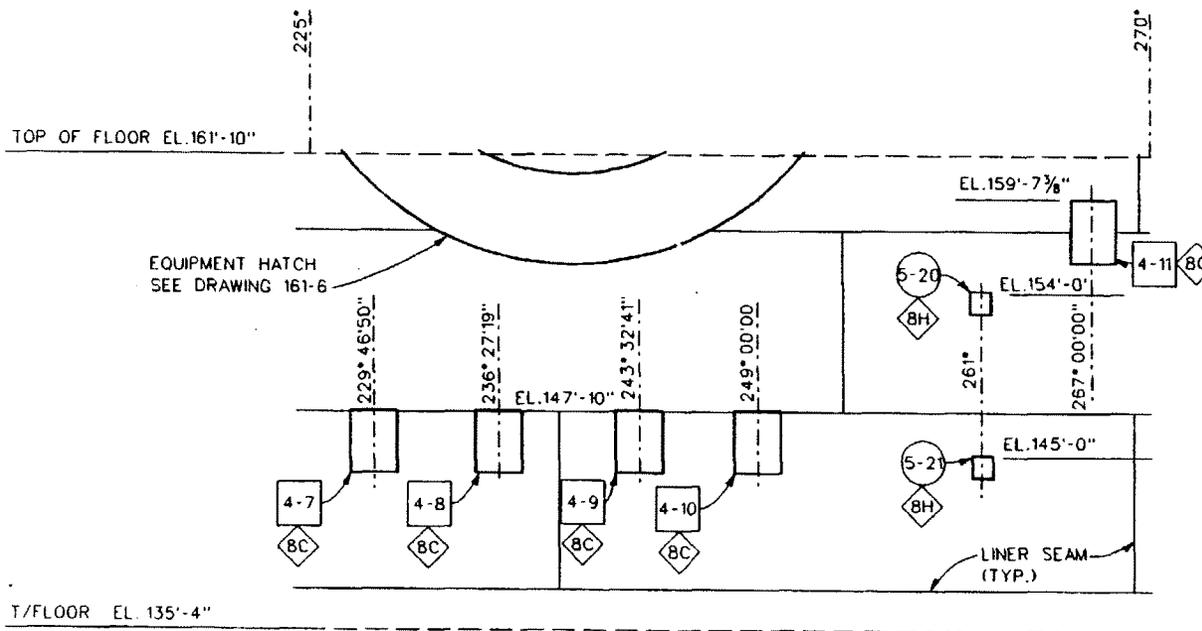
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.  
135-6

TITLE:  
LINER SEGMENT - 225° TO 270° AT ELEVATION 135'-4"

REVISION:  
0



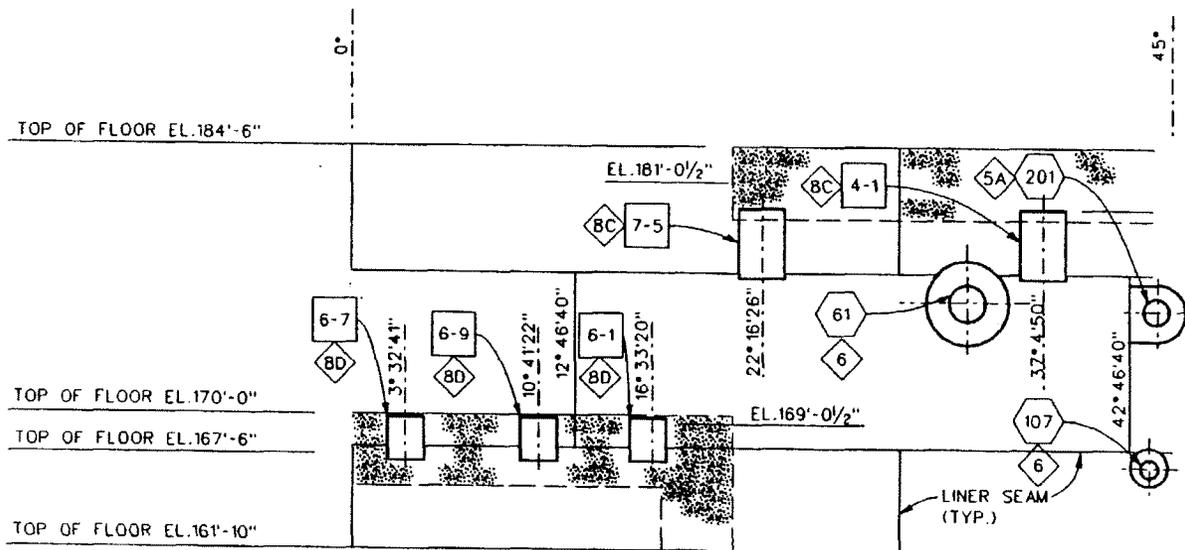


NOTES:

1. ALL PENETRATIONS AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |      |                                    |    |                              |
|------|------------------------------------|----|------------------------------|
| 6E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER | 5A | IWE INSPECTION FIGURE NUMBER |
| 2    | PENETRATION NUMBER                 |    | GRATING                      |
| 7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |    | CONCRETE WALL OR SLAB        |



DRAWING NO.  
161-1

TITLE:  
LINER SEGMENT - 0° TO 45° AT ELEVATION 161'-10"

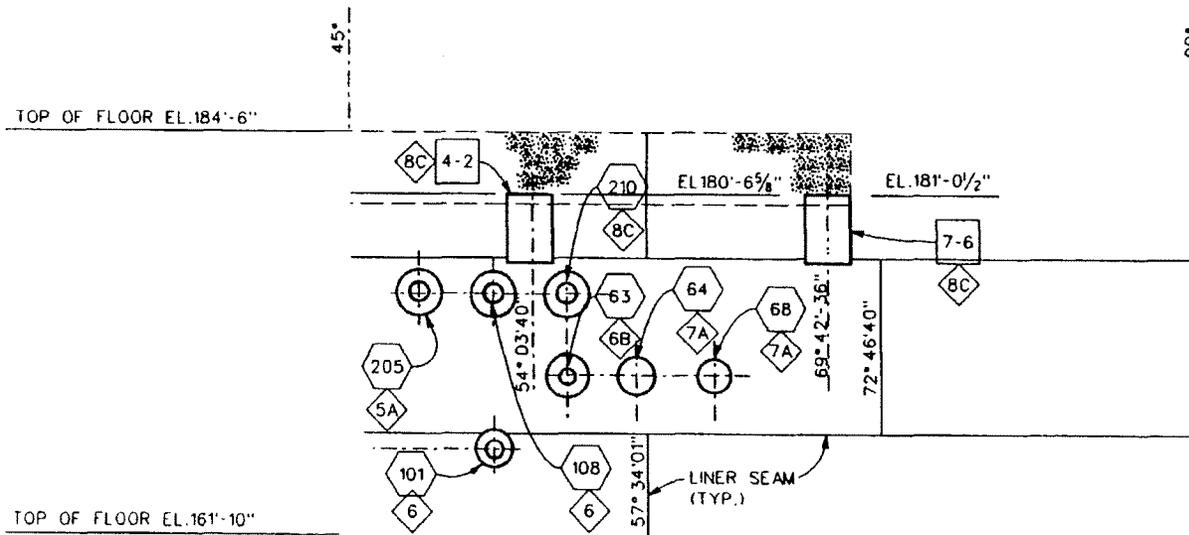
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  | BRACKET TYPE EMBEDDED PLATE NUMBER |  | IWE INSPECTION FIGURE NUMBER |
|  | PENETRATION NUMBER                 |  | GRATING                      |
|  | INSERT TYPE EMBEDDED PLATE NUMBER  |  | CONCRETE WALL OR SLAB        |



DRAWING NO.  
161-2

TITLE:  
LINER SEGMENT - 45° TO 90° AT ELEVATION 161'-10"

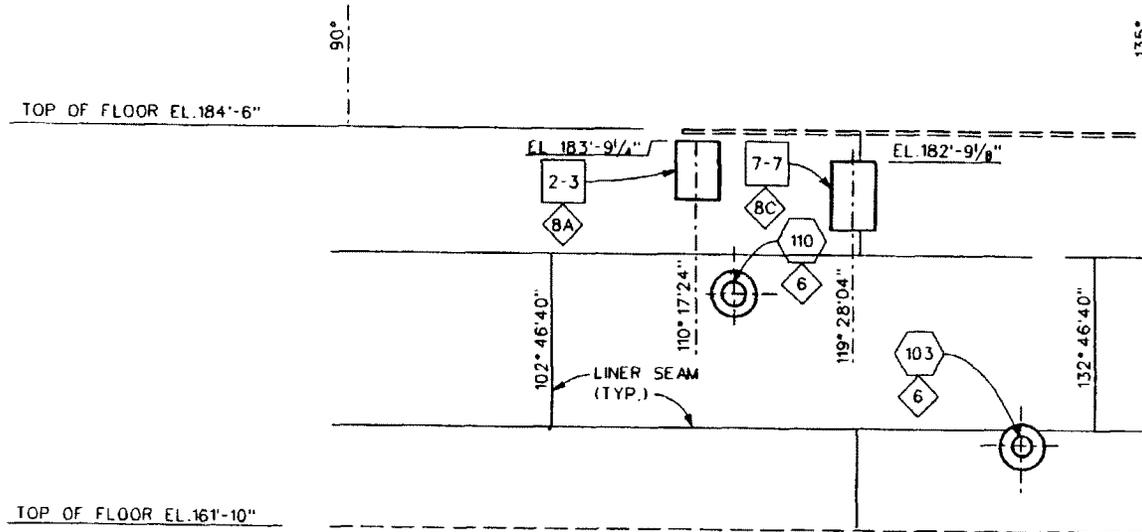
REVISION:  
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.  
161-3

TITLE:  
LINER SEGMENT - 90° TO 135° AT ELEVATION 161'-10"

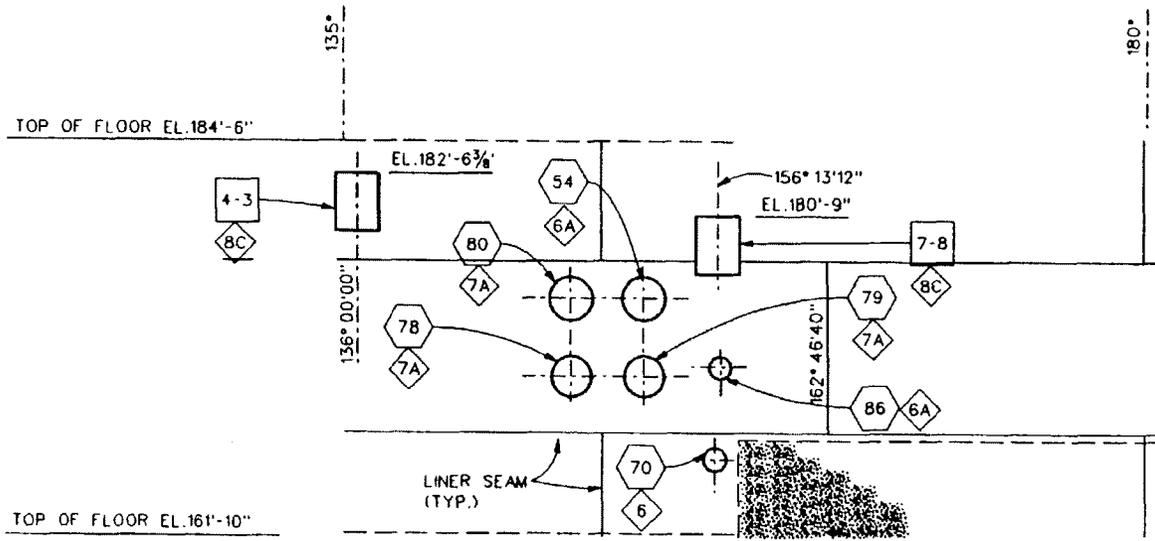
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.  
161-4

TITLE:  
LINER SEGMENT - 135° TO 180° AT ELEVATION 161'-10"

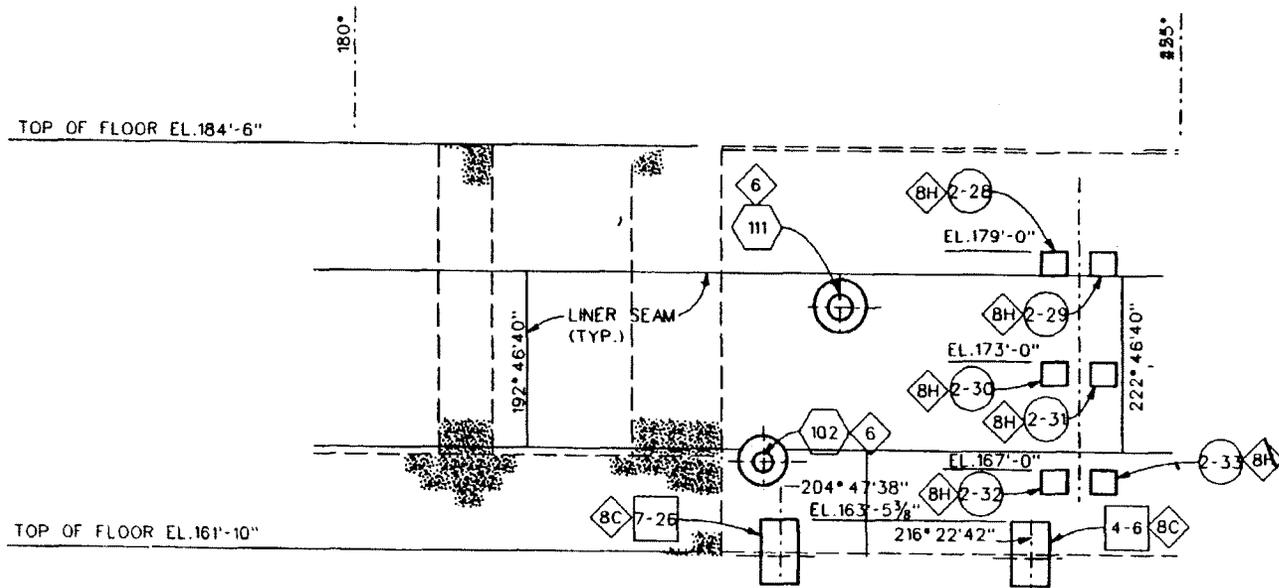
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  | BRACKET TYPE EMBEDDED PLATE NUMBER |  | IWE INSPECTION FIGURE NUMBER |
|  | PENETRATION NUMBER                 |  | GRATING                      |
|  | INSERT TYPE EMBEDDED PLATE NUMBER  |  | CONCRETE WALL OR SLAB        |



DRAWING NO.

161-5

TITLE:

LINER SEGMENT - 180° TO 225° AT ELEVATION 161'-10"

REVISION:

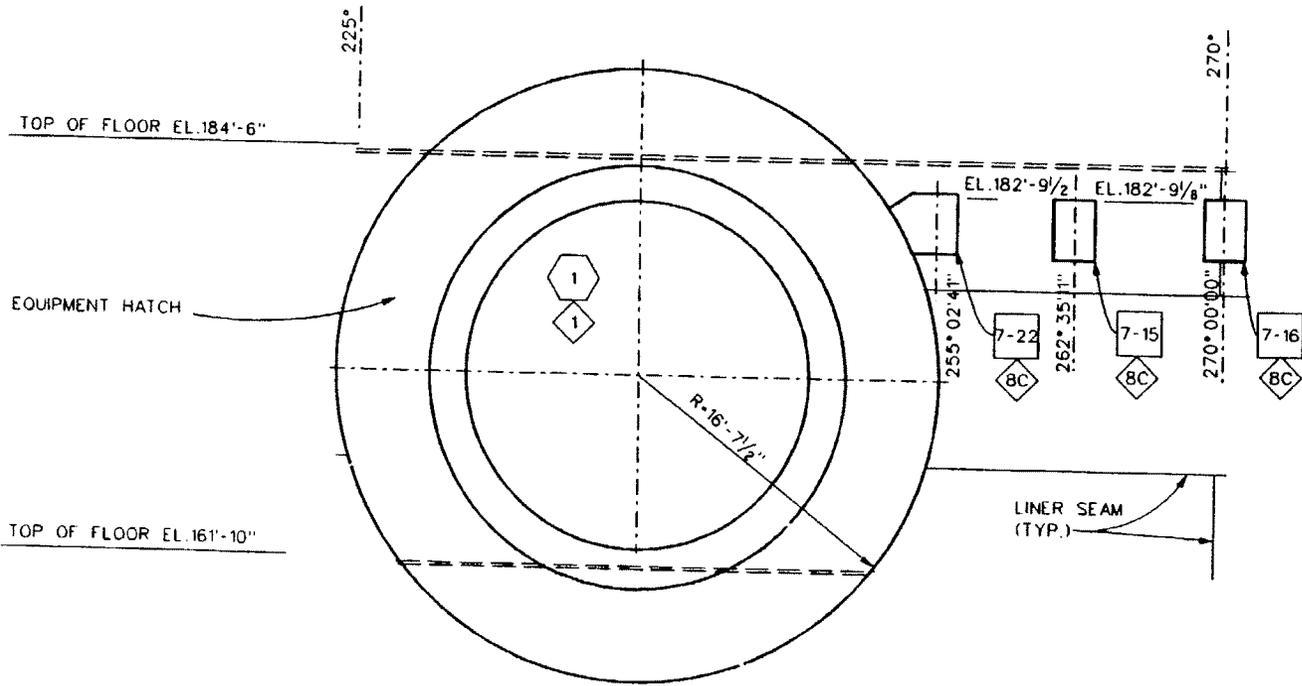
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |   |                              |
|--|------------------------------------|---|------------------------------|
|  9E-9 | BRACKET TYPE EMBEDDED PLATE NUMBER |  BA  | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |  - - | GRATING                      |
|  7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |      | CONCRETE WALL OR SLAB        |



DRAWING NO.

161-6

TITLE:

LINER SEGMENT - 225° TO 270° AT ELEVATION 161'-10"

REVISION:

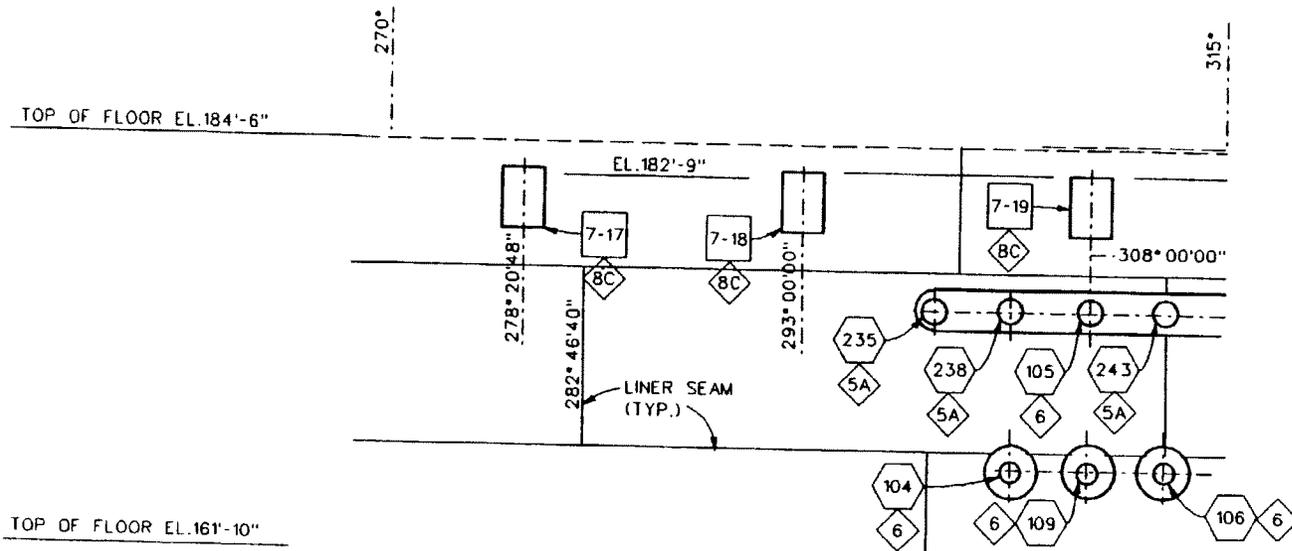
0

NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  7E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | GRATING                      |
|  7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.

161-7

TITLE:

LINER SEGMENT - 270° TO 315° AT ELEVATION 161'-10"

REVISION:

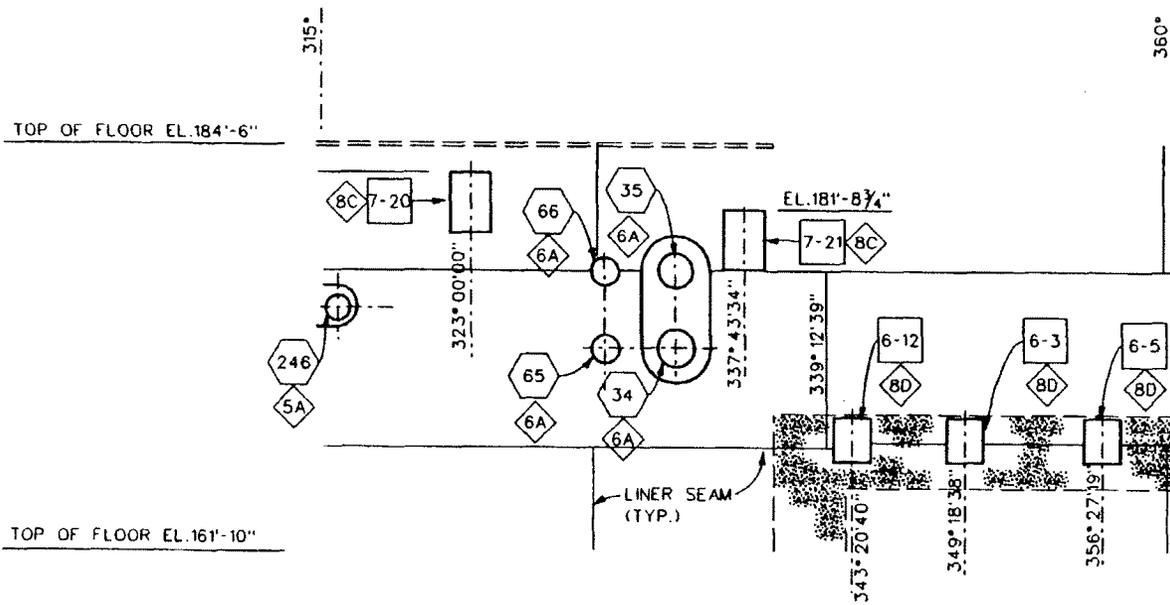
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.

161-8

TITLE:

LINER SEGMENT - 315° TO 360° AT ELEVATION 161'-10"

REVISION:

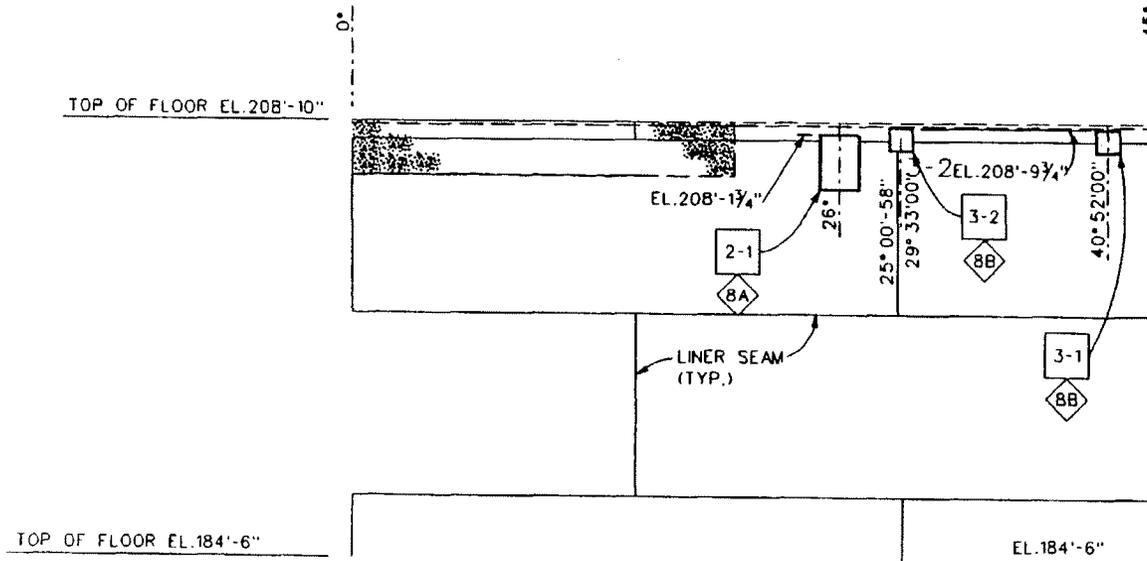
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  | BRACKET TYPE EMBEDDED PLATE NUMBER |  | IWE INSPECTION FIGURE NUMBER |
|  | PENETRATION NUMBER                 |  | GRATING                      |
|  | INSERT TYPE EMBEDDED PLATE NUMBER  |  | CONCRETE WALL OR SLAB        |



DRAWING NO.

184-1

TITLE:

LINER SEGMENT - 0° TO 45° AT ELEVATION 184'-6"

REVISION:

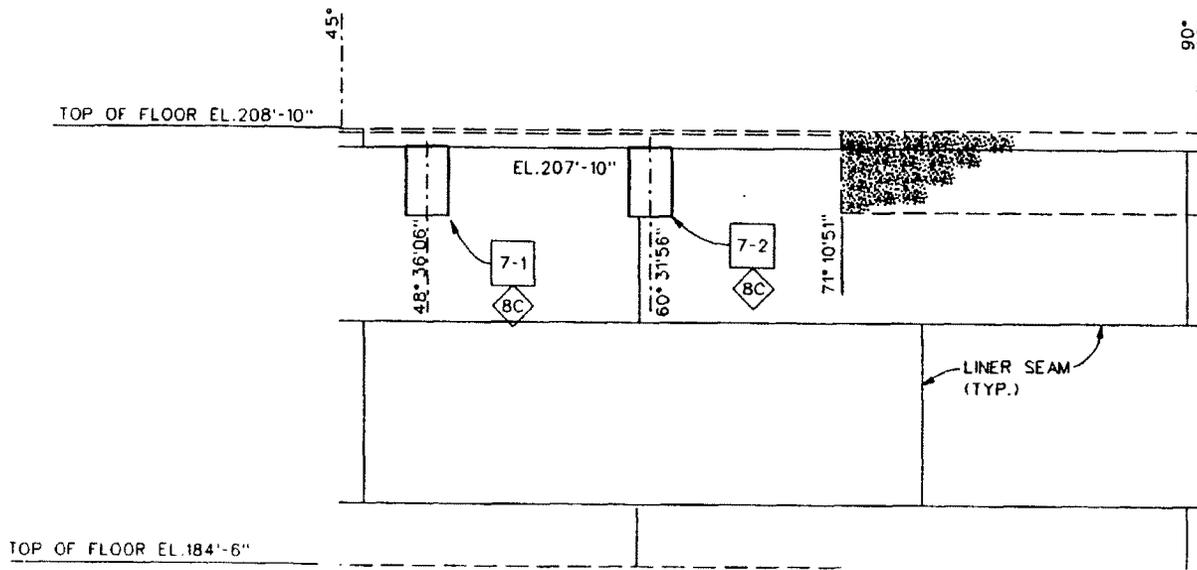
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.

184-2

TITLE:

LINER SEGMENT - 45° TO 90° AT ELEVATION 184'-6"

REVISION:

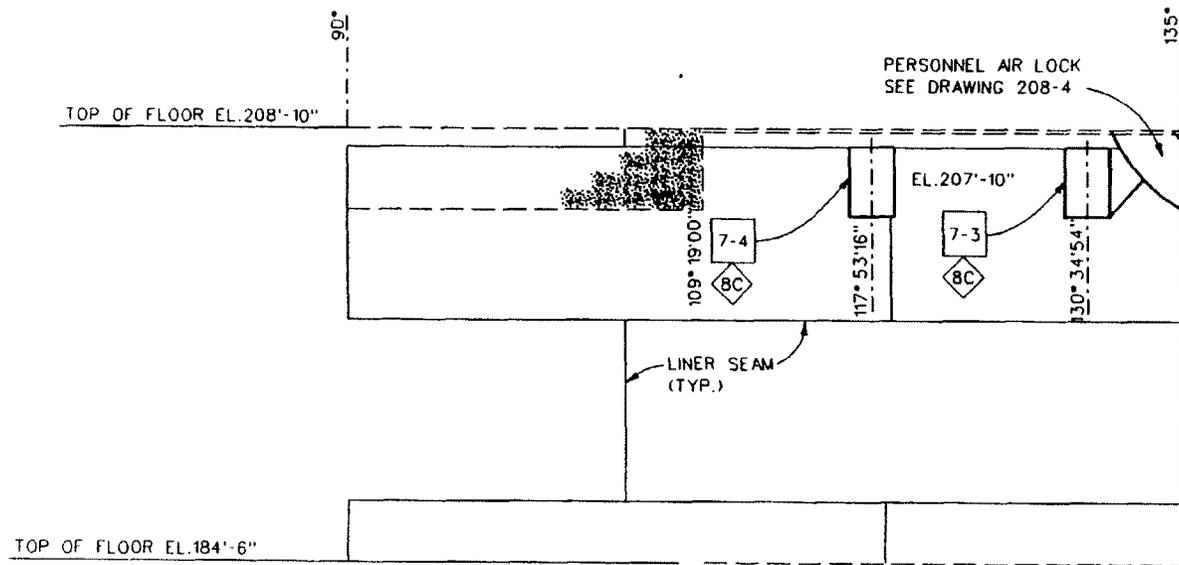
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9C-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | GRATING                      |
|  7-8  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.

184-3

TITLE:

LINER SEGMENT - 90° TO 135° AT ELEVATION 184'-6"

REVISION:

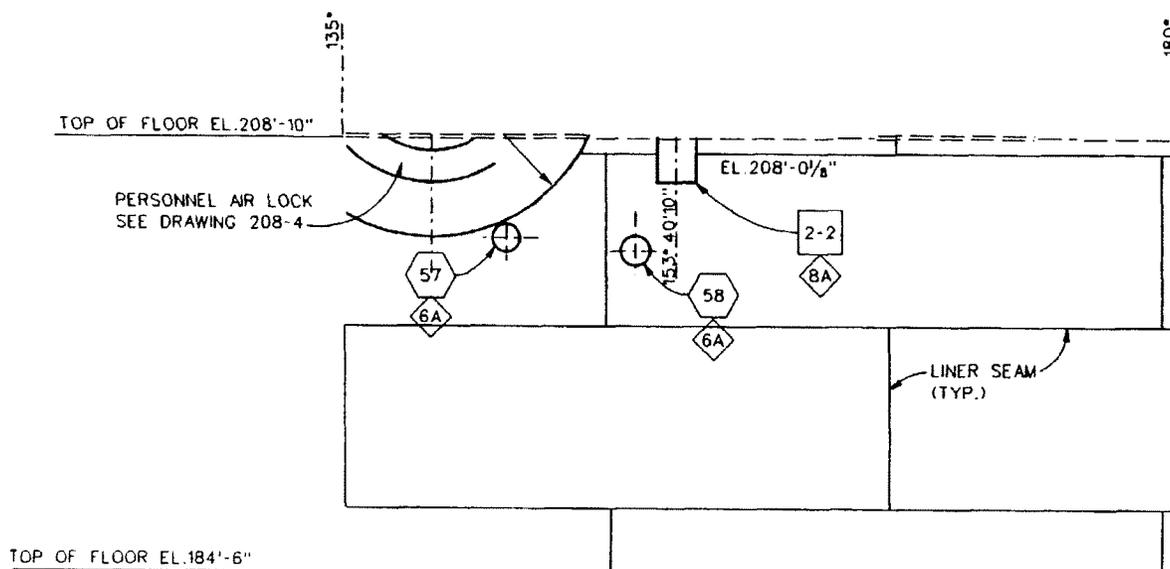
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.

184-4

TITLE:

LINER SEGMENT - 135° TO 180° AT ELEVATION 184'-6"

REVISION:

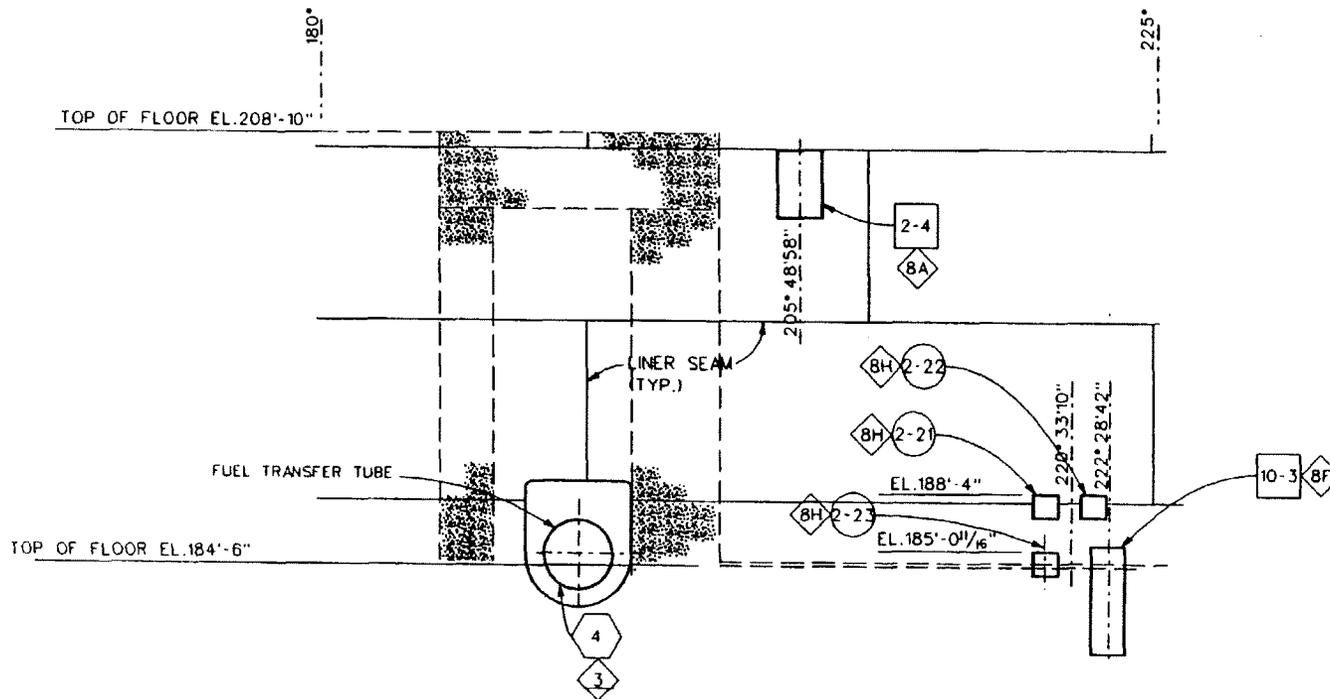
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9E-# | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | CRATING                      |
|  7-#  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.  
184-5

TITLE:  
LINER SEGMENT - 180° TO 225° AT ELEVATION 184'-6"

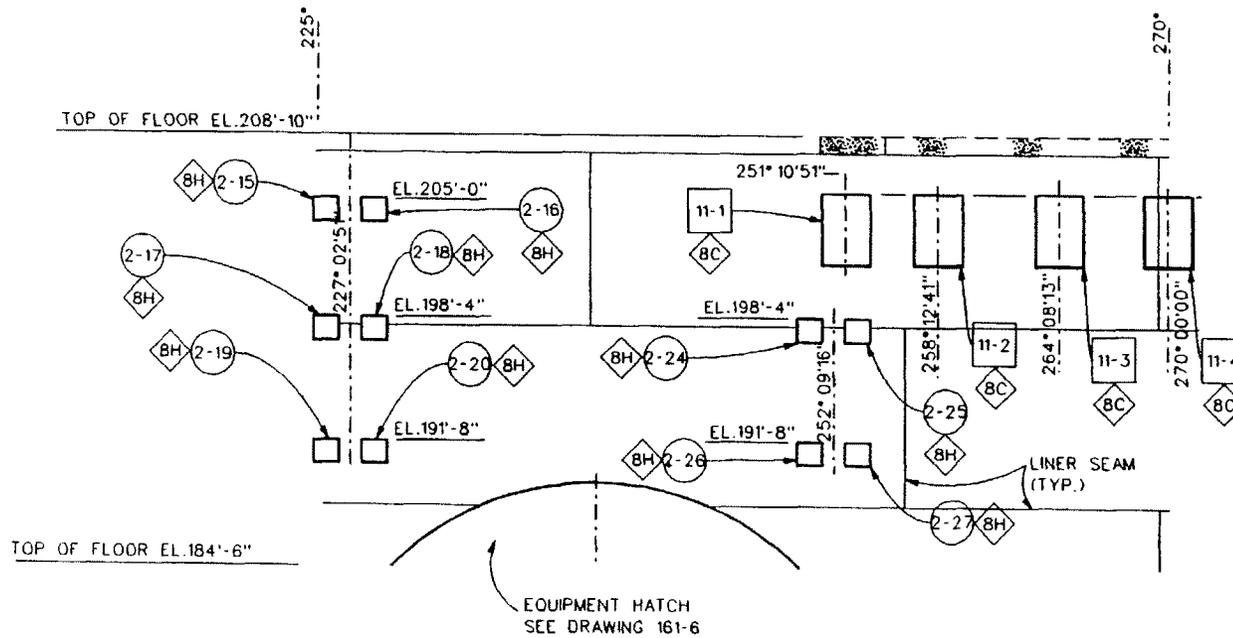
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

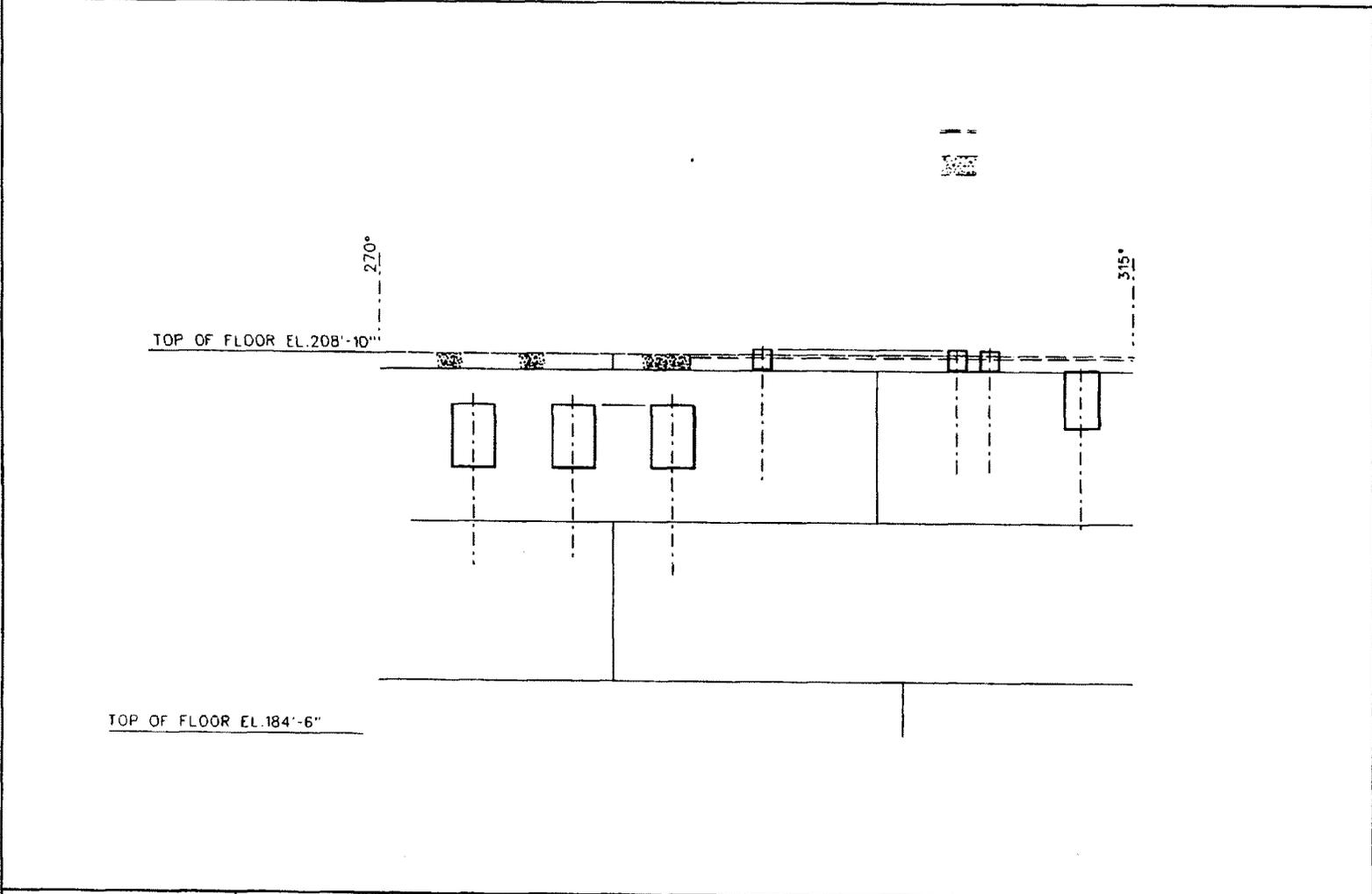
- |  |  |
|--|--|
|  BRACKET TYPE EMBEDDED PLATE NUMBER |  IWE INSPECTION FIGURE NUMBER |
|  PENETRATION NUMBER                 |  GRATING                      |
|  INSERT TYPE EMBEDDED PLATE NUMBER  |  CONCRETE WALL OR SLAB        |



DRAWING NO.  
184-6

TITLE:  
LINER SEGMENT - 225° TO 270° AT ELEVATION 184'-6"

REVISION:  
0



DRAWING NO.  
 184-7

TITLE:  
 LINER SEGMENT - 270° TO 315° AT ELEVATION 184'-6"

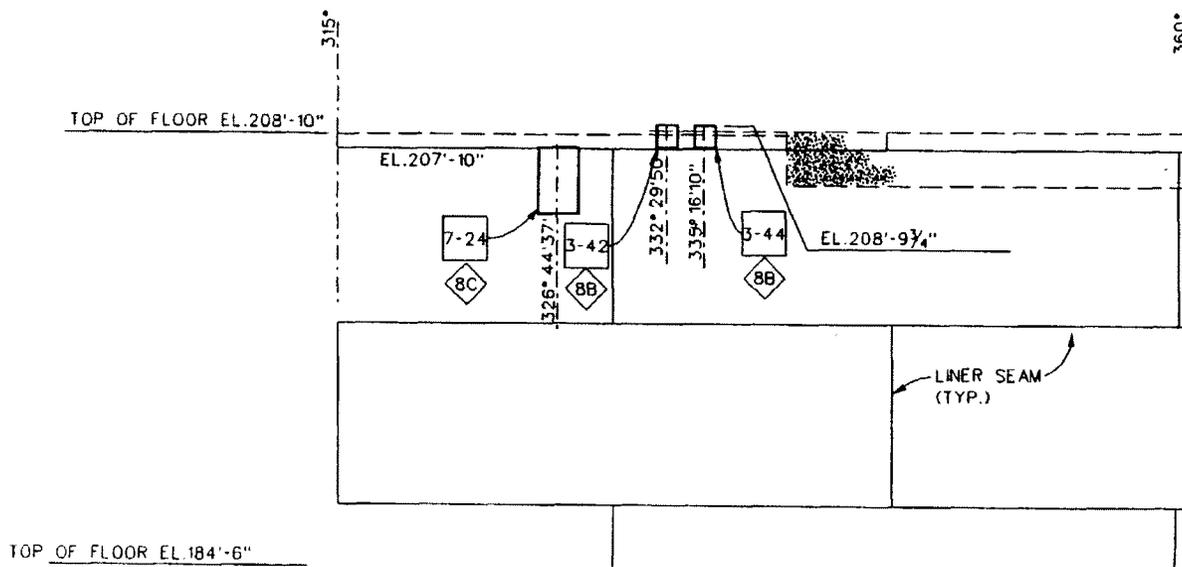
REVISION:  
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NOTES:

1. ALL PENETRATIONS AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |   |                                    |   |                              |
|---|------------------------------------|---|------------------------------|
|  | BRACKET TYPE EMBEDDED PLATE NUMBER |  | IWE INSPECTION FIGURE NUMBER |
|  | PENETRATION NUMBER                 |  | GRATING                      |
|  | INSERT TYPE EMBEDDED PLATE NUMBER  |  | CONCRETE WALL OR SLAB        |



DRAWING NO.

184-8

TITLE:

LINER SEGMENT - 315° TO 360° AT ELEVATION 184'-6"

REVISION:

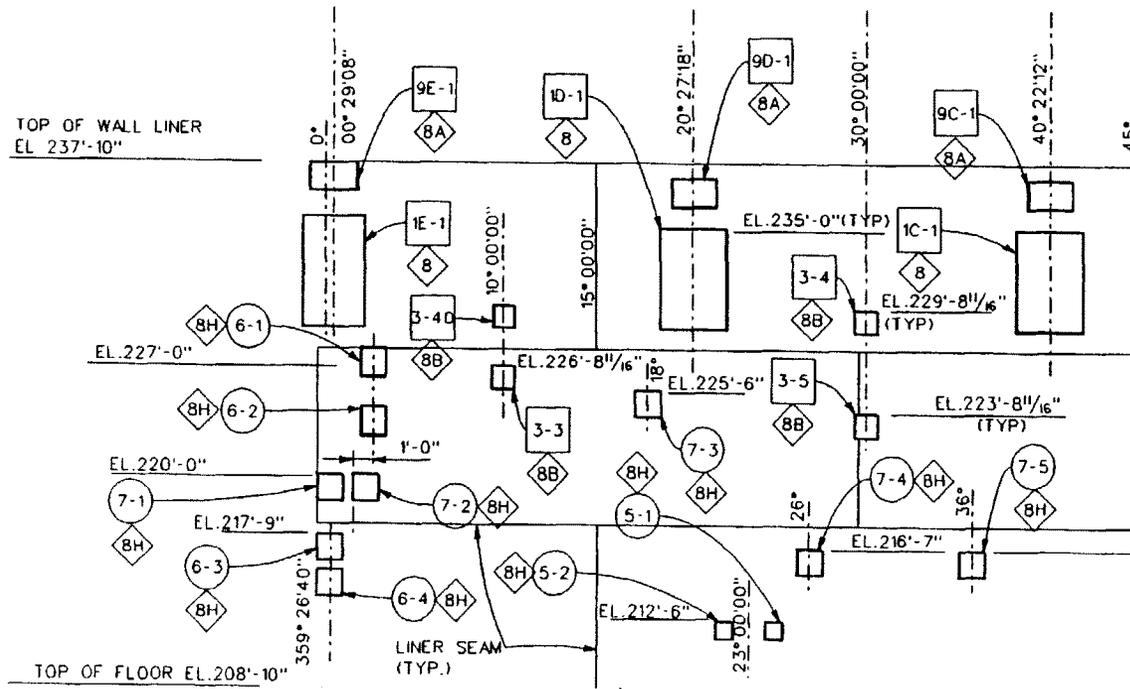
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |      |                                    |    |                              |
|------|------------------------------------|----|------------------------------|
| 9E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER | 8A | IWE INSPECTION FIGURE NUMBER |
| 2    | PENETRATION NUMBER                 |    | GRATING                      |
| 7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |    | CONCRETE WALL OR SLAB        |



DRAWING NO.  
208-1

TITLE:  
LINER SEGMENT - 0° TO 45° AT ELEVATION 208'-10"

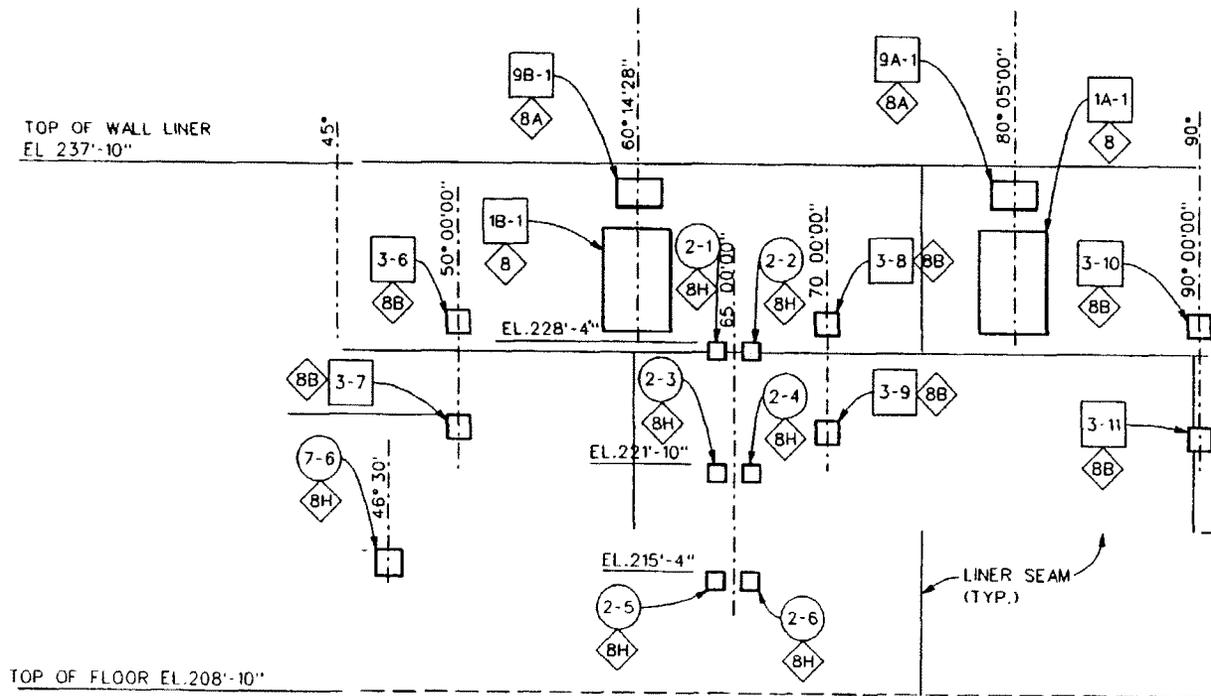
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9C-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | GRATING                      |
|  7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.

208-2

TITLE:

LINER SEGMENT - 45° TO 90° AT ELEVATION 208'-10"

REVISION:

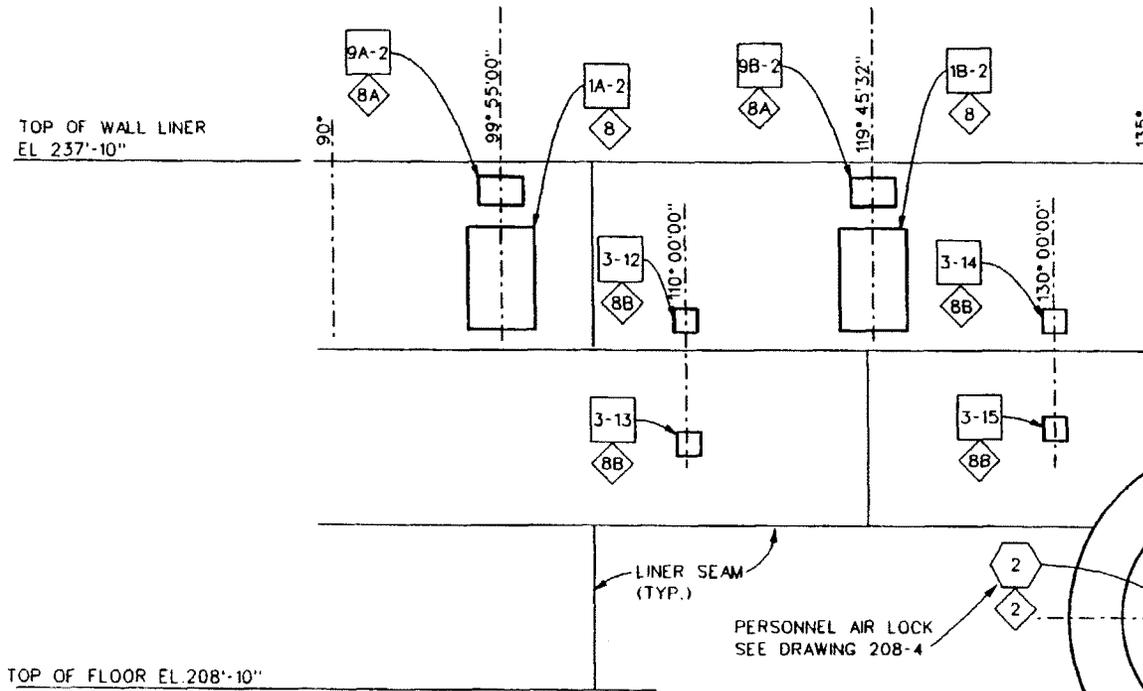
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  | BRACKET TYPE EMBEDDED PLATE NUMBER |  | IWE INSPECTION FIGURE NUMBER |
|  | PENETRATION NUMBER                 |  | GRATING                      |
|  | INSERT TYPE EMBEDDED PLATE NUMBER  |  | CONCRETE WALL OR SLAB        |



DRAWING NO.

208-3

TITLE:

LINER SEGMENT - 90° TO 135° AT ELEVATION 208'-10"

REVISION:

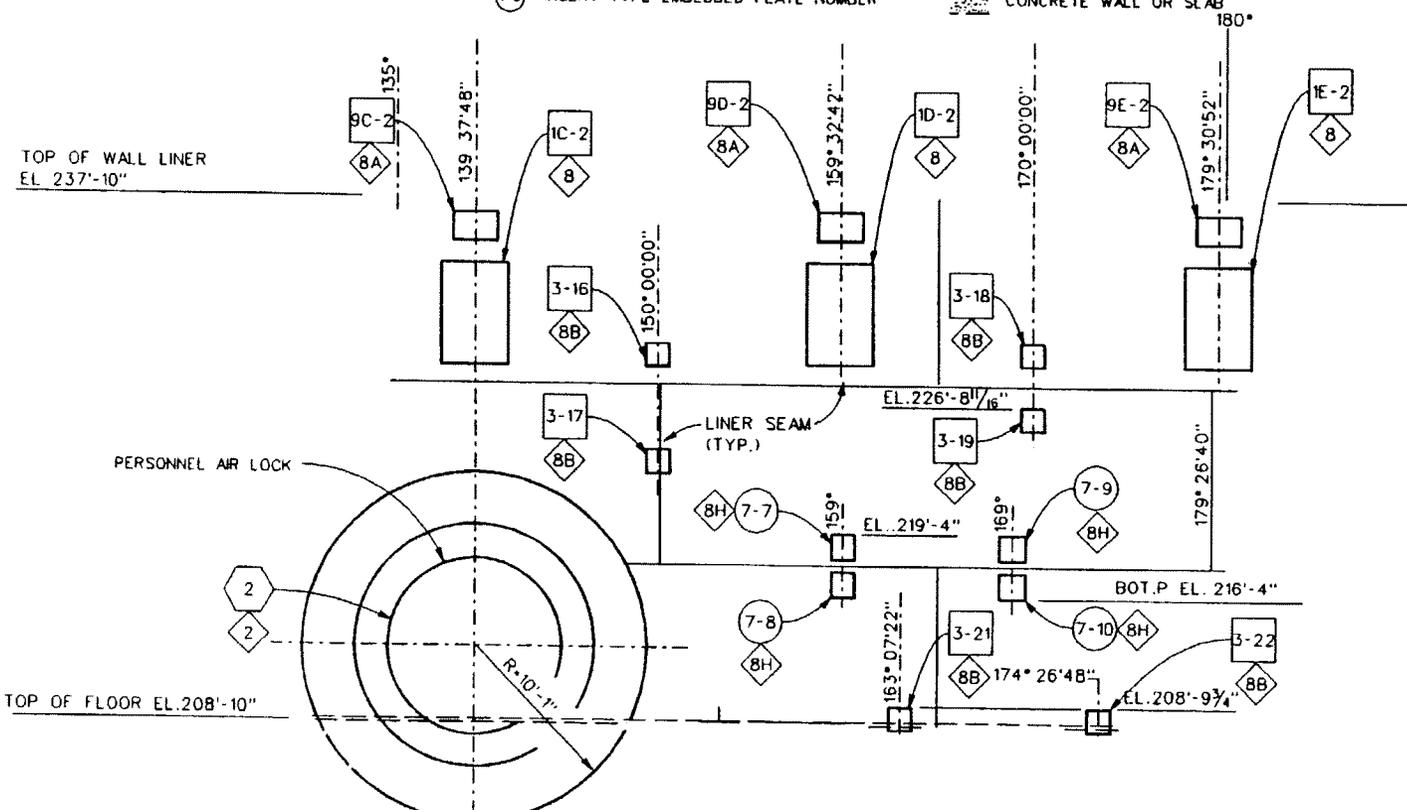
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |      |                                    |    |                              |
|------|------------------------------------|----|------------------------------|
| 9C-2 | BRACKET TYPE EMBEDDED PLATE NUMBER | 8A | IWE INSPECTION FIGURE NUMBER |
| 2    | PENETRATION NUMBER                 |    | GRATING                      |
| 7-8  | INSERT TYPE EMBEDDED PLATE NUMBER  |    | CONCRETE WALL OR SLAB        |



DRAWING NO.  
208-4

TITLE:  
LINER SEGMENT - 135° TO 180° AT ELEVATION 208'-10"

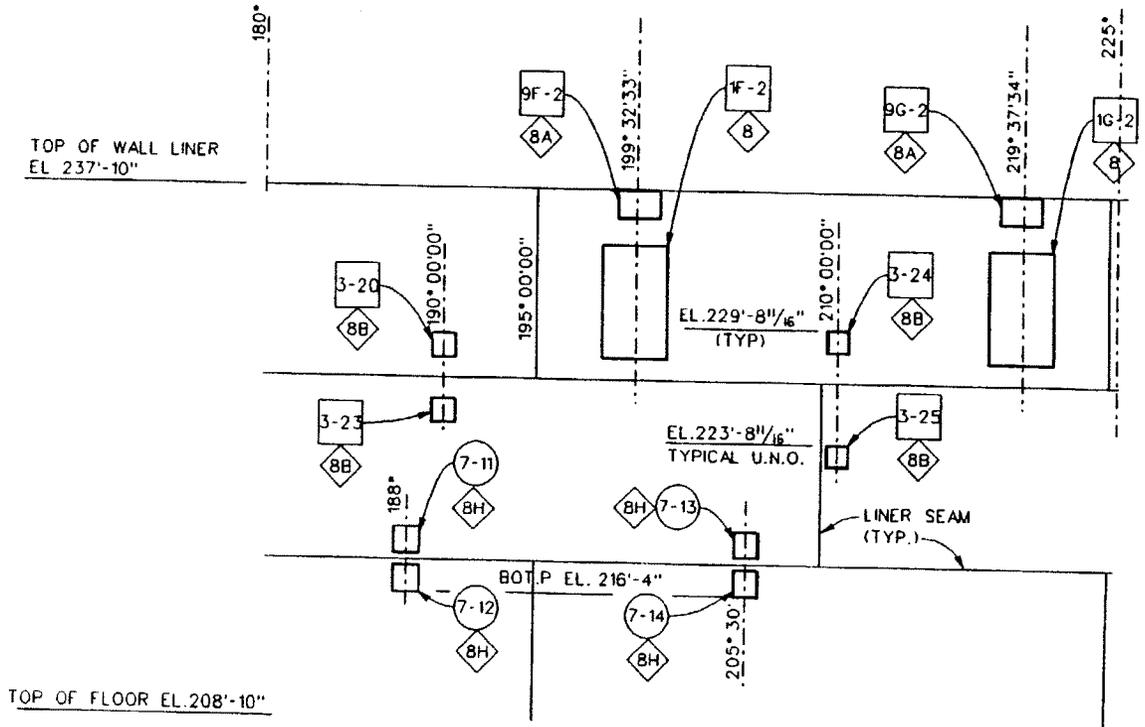
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- 9E-1 BRACKET TYPE EMBEDDED PLATE NUMBER
- 8A IWE INSPECTION FIGURE NUMBER
- 2 PENETRATION NUMBER
- GRATING
- 7-6 INSERT TYPE EMBEDDED PLATE NUMBER
- CONCRETE WALL OR SLAB



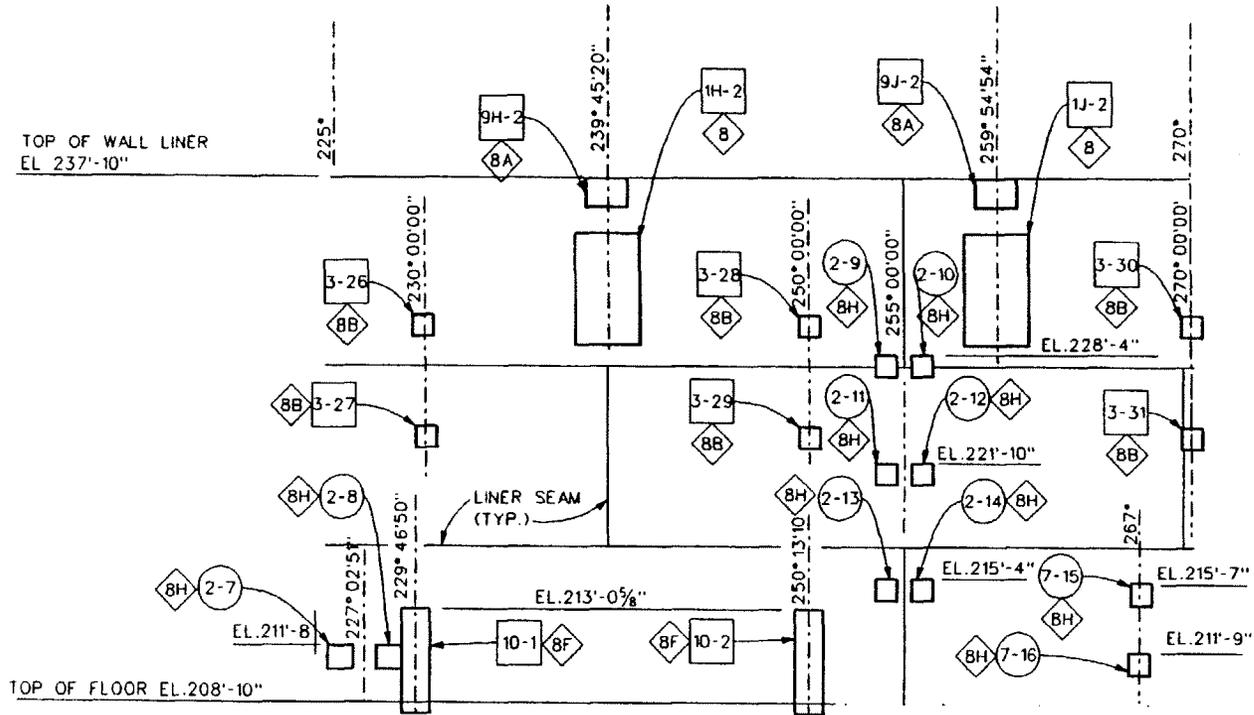
DRAWING NO. <b>208-5</b>	TITLE: <b>LINER SEGMENT - 180° TO 225° AT ELEVATION 208'-10"</b>	REVISION: <b>0</b>
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.  
 2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |      |                                    |    |                              |
|------|------------------------------------|----|------------------------------|
| 9E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER | 8A | IWE INSPECTION FIGURE NUMBER |
| 2    | PENETRATION NUMBER                 |    | GRATING                      |
| 7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |    | CONCRETE WALL OR SLAB        |



DRAWING NO.  
208-6

TITLE:  
LINER SEGMENT - 225° TO 270° AT ELEVATION 208'-10"

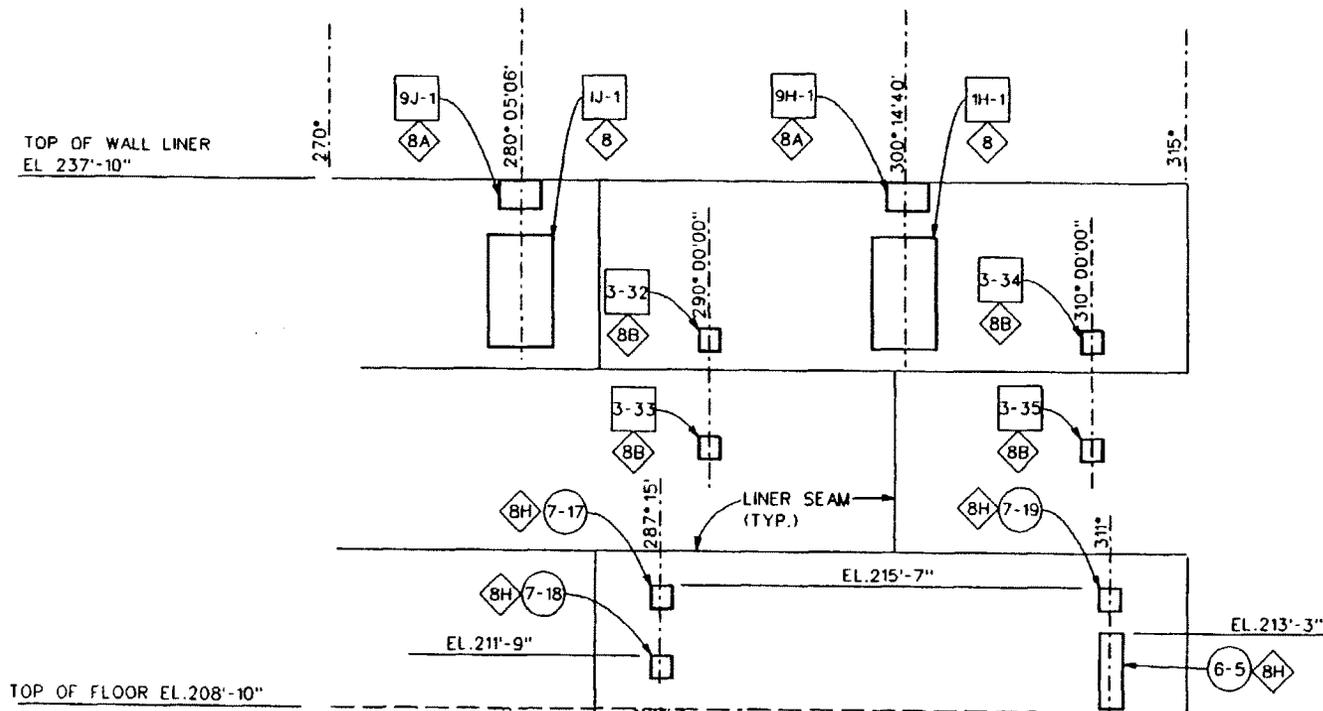
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- |  |                                    |  |                              |
|--|------------------------------------|--|------------------------------|
|  9C-1 | BRACKET TYPE EMBEDDED PLATE NUMBER |  8A | IWE INSPECTION FIGURE NUMBER |
|  2    | PENETRATION NUMBER                 |     | GRATING                      |
|  7-B  | INSERT TYPE EMBEDDED PLATE NUMBER  |     | CONCRETE WALL OR SLAB        |



DRAWING NO.  
208-7

TITLE:  
LINER SEGMENT - 270° TO 315° AT ELEVATION 208'-10"

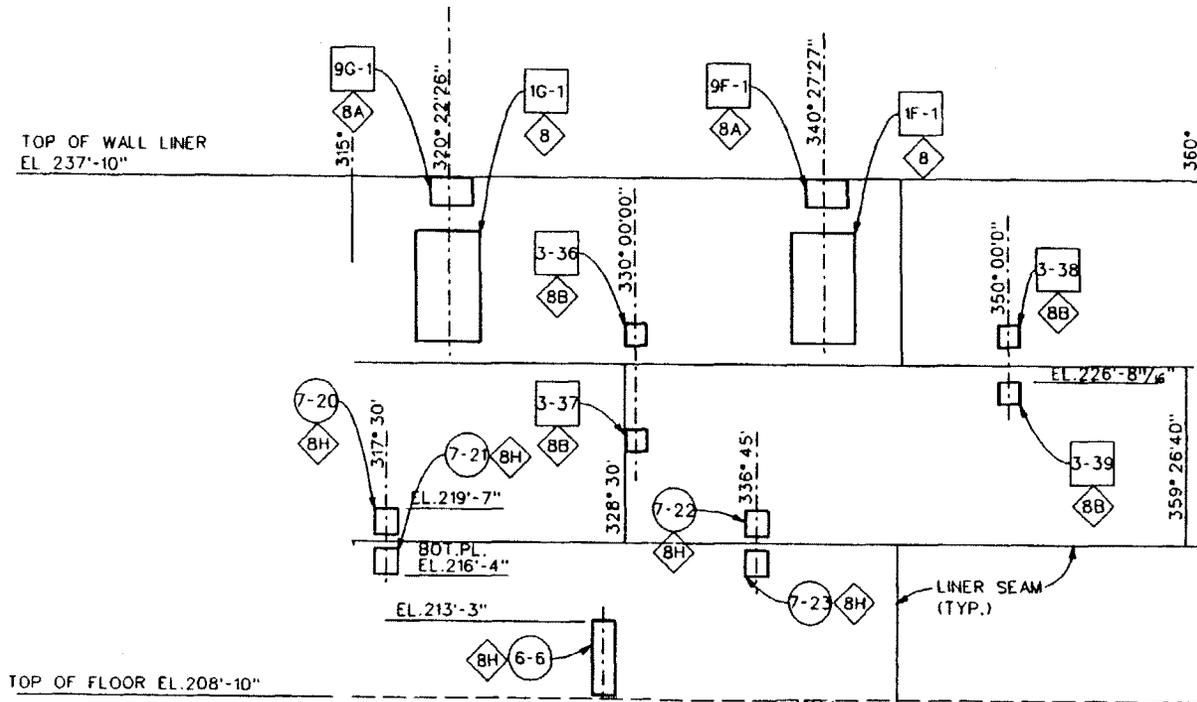
REVISION:  
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NOTES:

1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.
2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

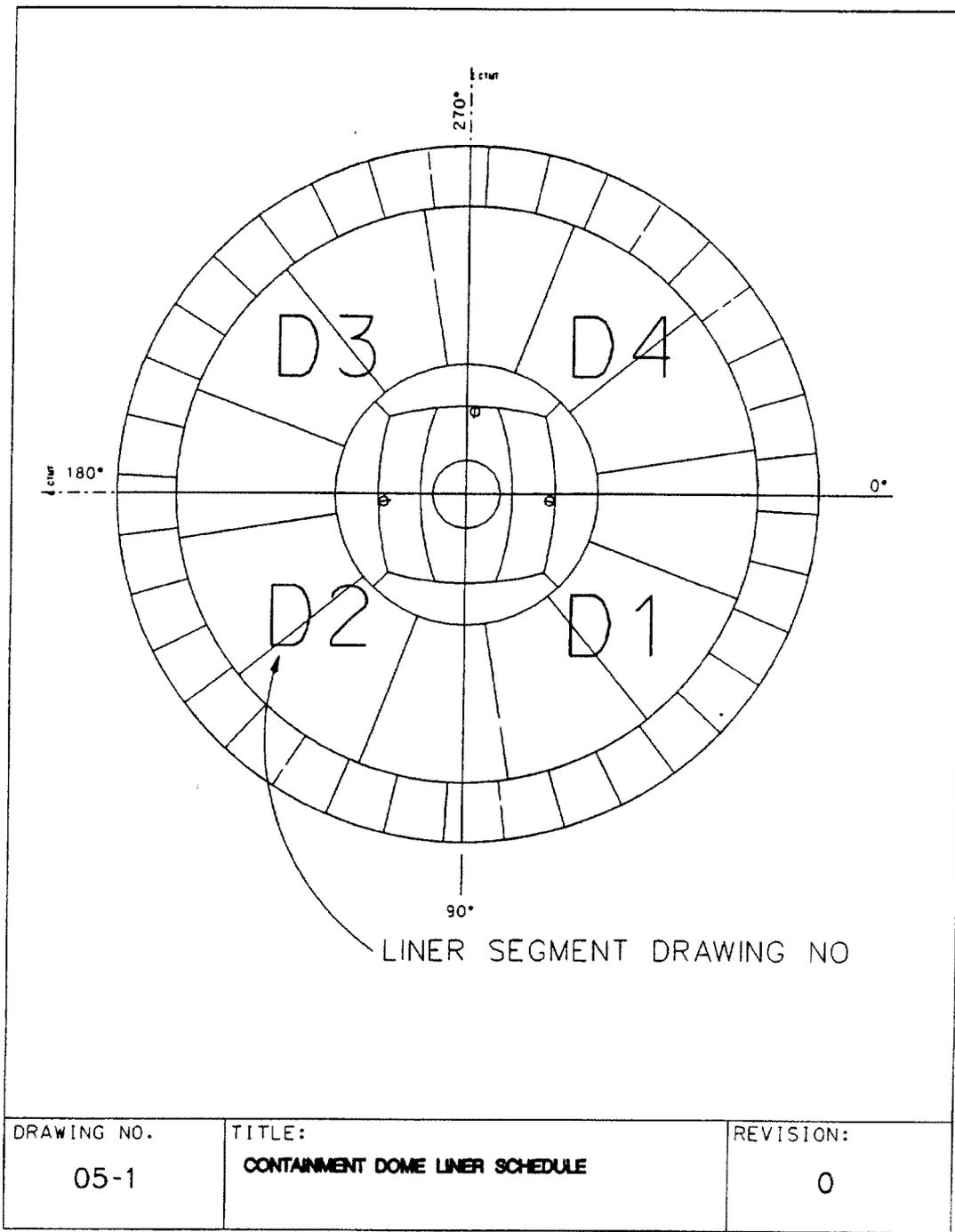
- |      |                                    |    |                              |
|------|------------------------------------|----|------------------------------|
| 9E-1 | BRACKET TYPE EMBEDDED PLATE NUMBER | 8A | IWE INSPECTION FIGURE NUMBER |
| 2    | PENETRATION NUMBER                 |    | GRATING                      |
| 7-6  | INSERT TYPE EMBEDDED PLATE NUMBER  |    | CONCRETE WALL OR SLAB        |



DRAWING NO.  
208-8

TITLE:  
LINER SEGMENT - 315° TO 360° AT ELEVATION 208'-10"

REVISION:  
0

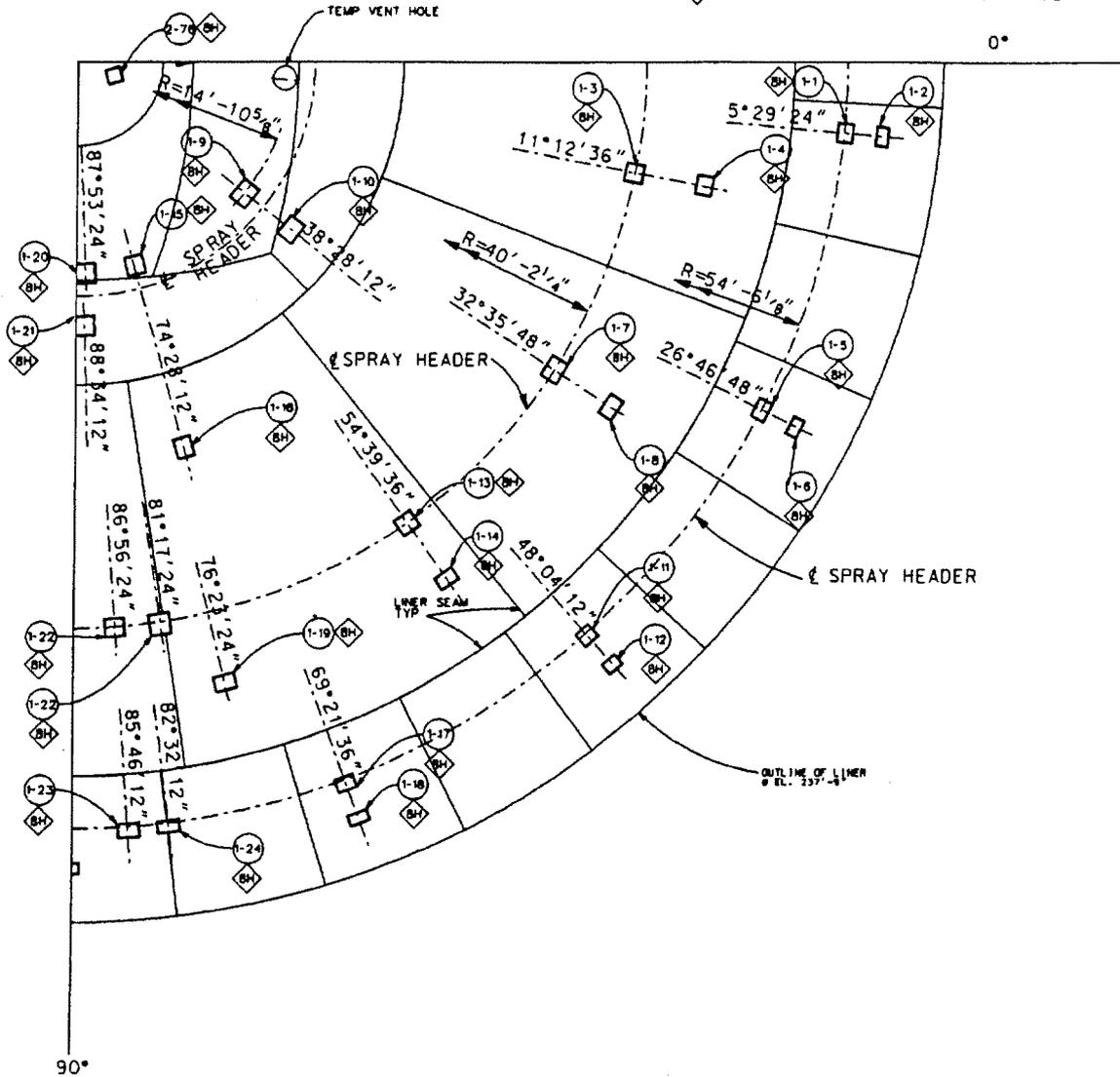


DRAWING NO. 05-1	TITLE: CONTAINMENT DOME LINER SCHEDULE	REVISION: 0
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NOTES:  
 1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.  
 2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- ⊙ IWE INSPECTION FIGURE NUMBER
- ⊠ IWE INSPECTION FIGURE NUMBER



DRAWING NO.

D1

TITLE:

CONTAINMENT DOME LINER  
 0° TO 90°

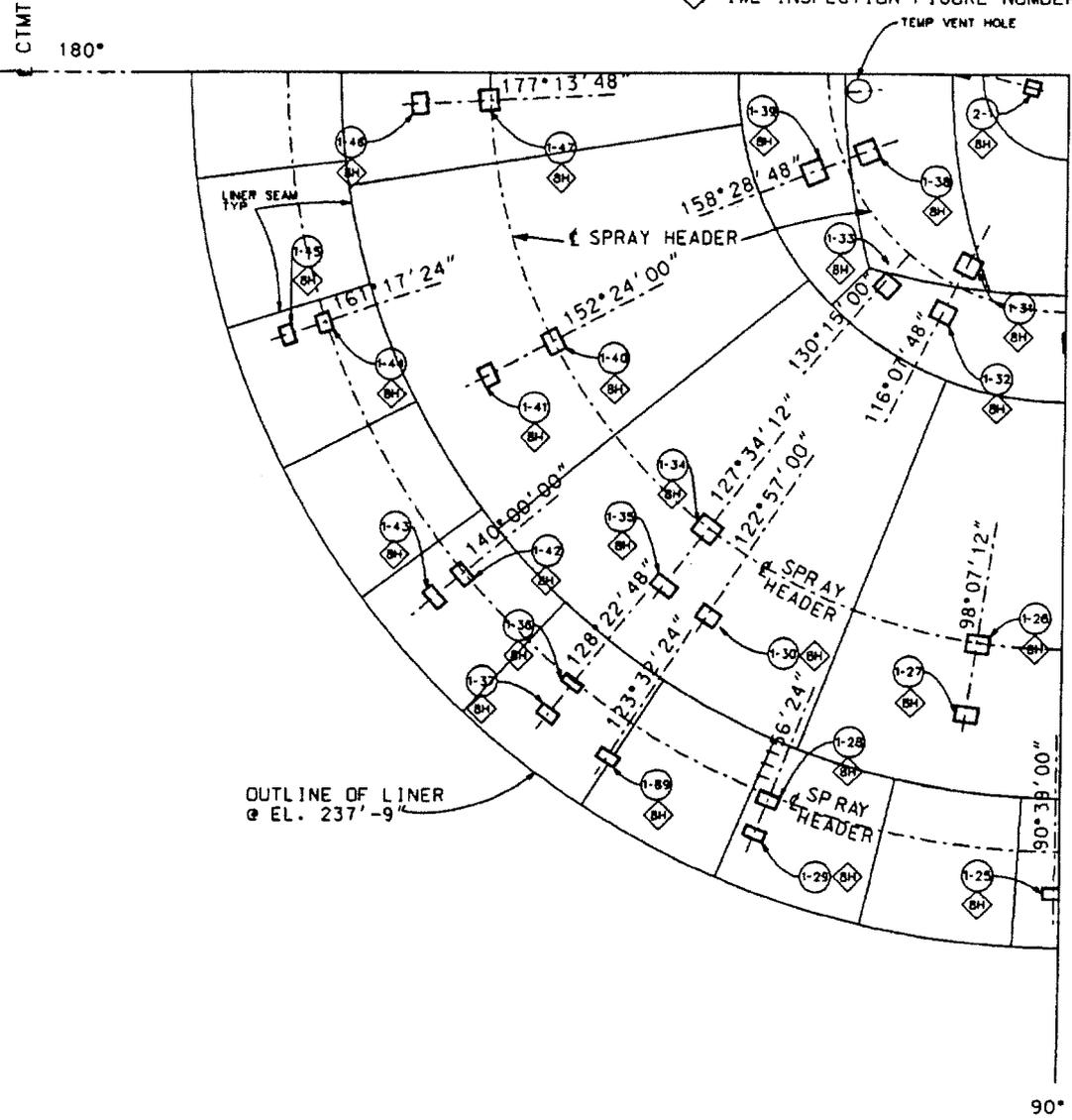
REVISION:

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- NOTES:  
 1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.  
 2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- ⊙ I-# INSERT TYPE EMBEDDED PLATE NUMBER
- ⊠ I#A IWE INSPECTION FIGURE NUMBER



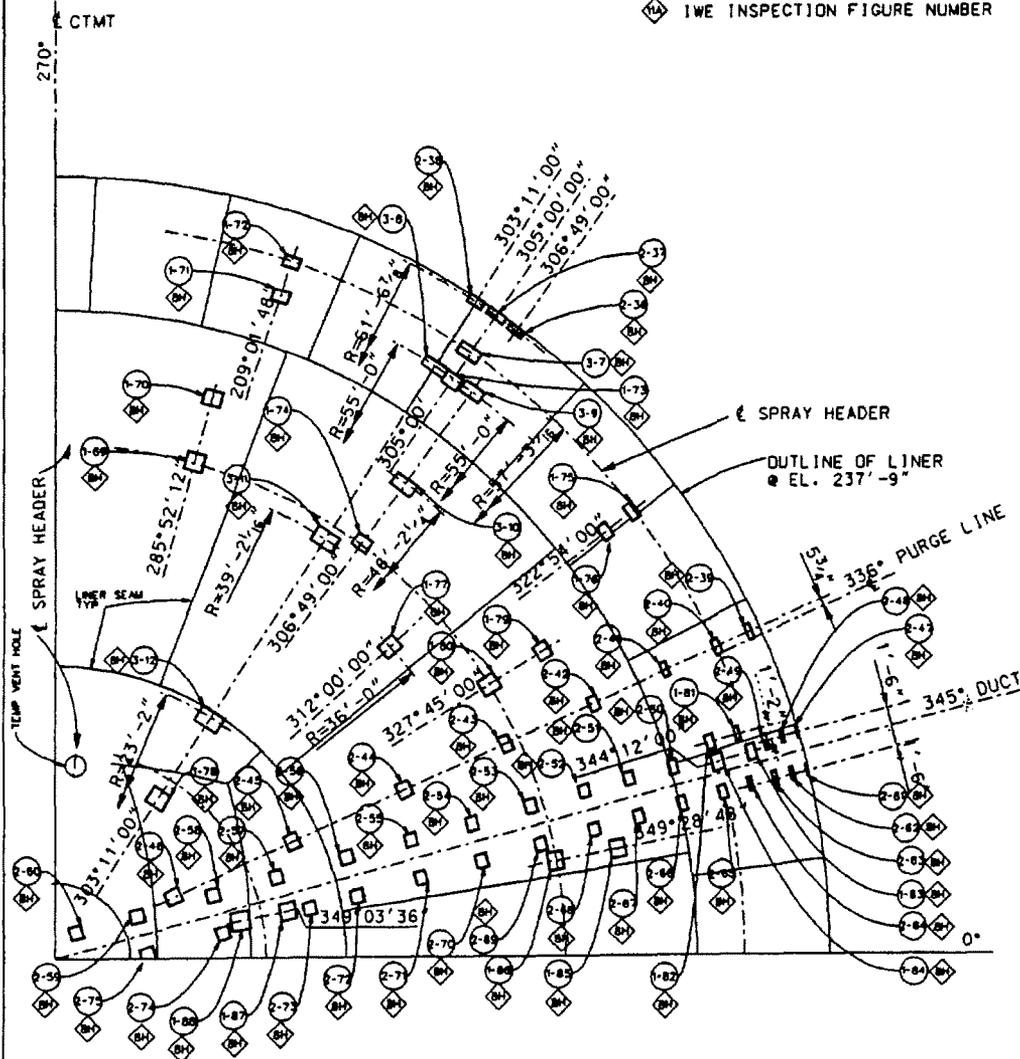
DRAWING NO.  D2	TITLE: CONTAINMENT DOME LINER 90° TO 180°	REVISION:  0
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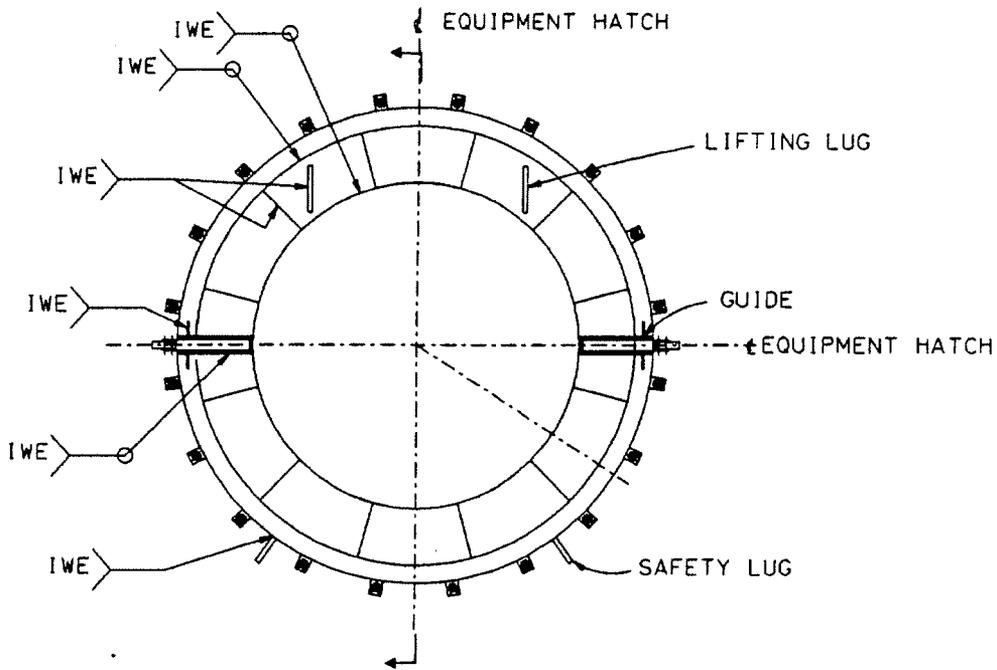
NOTES:  
 1. ALL PENETRATION AND EMBEDDED PLATES SHOWN ON THIS DRAWING INCLUDING LINER SURFACE & SEAMS ARE IWE ITEMS.  
 2. IWE INSPECTION FIGURES (AND INSPECTION ITEMS) NOTED PER PENETRATIONS AND EMBEDDED PLATES ARE INCLUDED IN SECTION 6.

LEGEND

- ⊙ IWE INSPECTION FIGURE NUMBER
- ⊠ INSERT TYPE EMBEDDED PLATE NUMBER



DRAWING NO.  <b>D4</b>	TITLE: <b>CONTAINMENT DOME LINER          270° TO 360°</b>	REVISION:  <b>0</b>
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EQUIPMENT HATCH DOOR ELEVATION  
SEE PAGE 2 FOR SECTION AND DETAIL.

FIGURE NO. 1 PAGE: 1 OF 2	TITLE: EQUIPMENT HATCH	REVISION: 0
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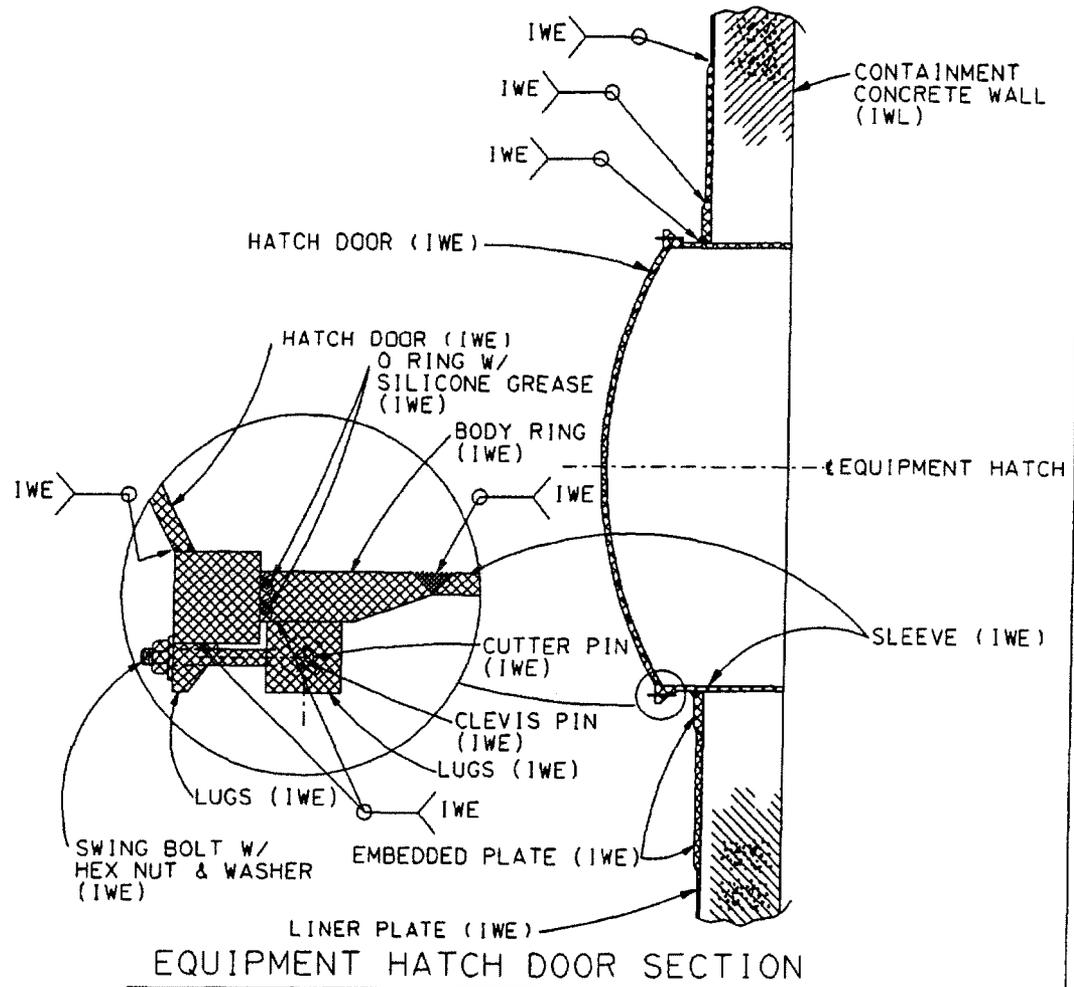


FIGURE NO. <p style="text-align: center;">1</p> PAGE: 2 OF 2	TITLE: EQUIPMENT HATCH	REVISION: <p style="text-align: center;">0</p>
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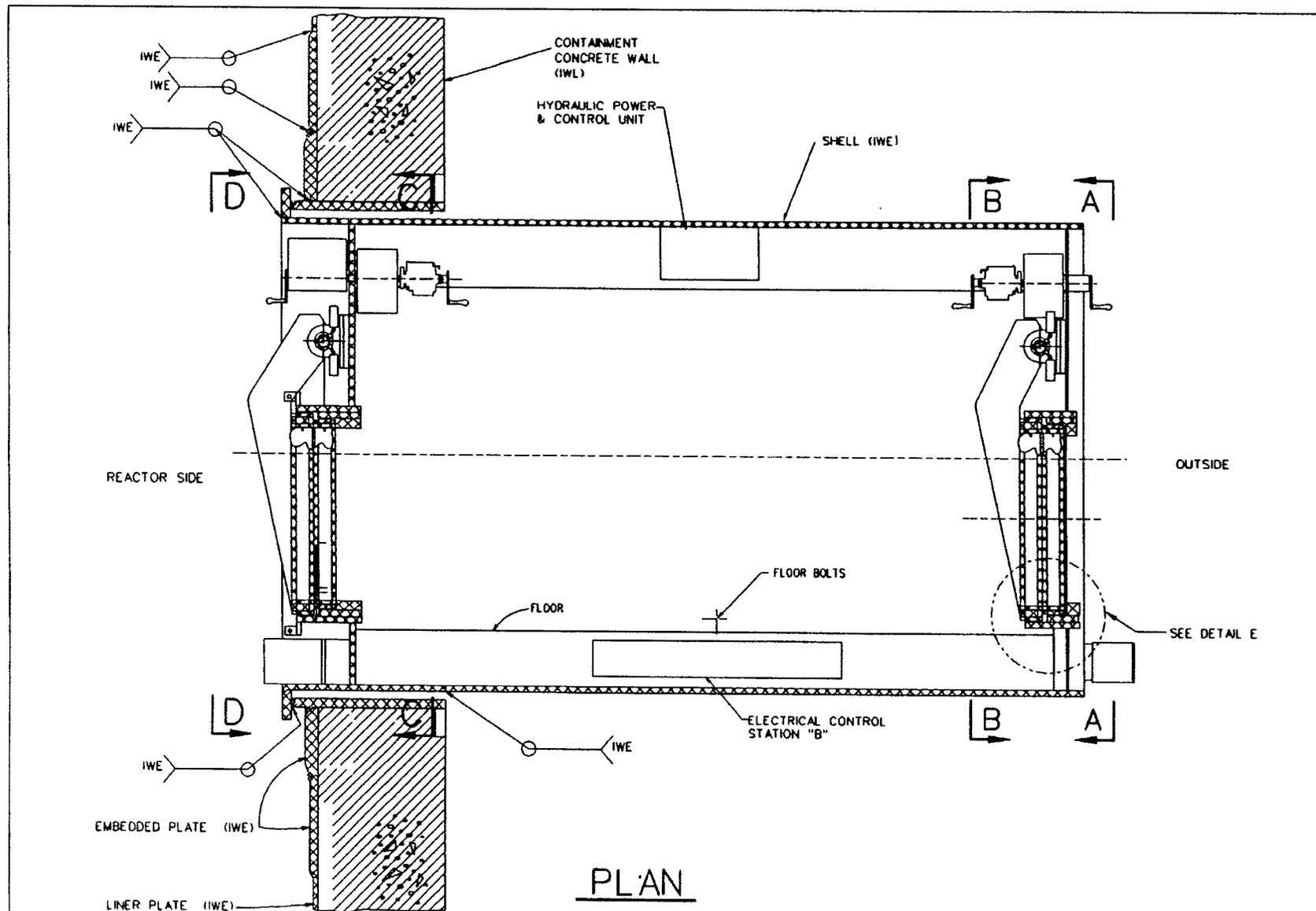


FIGURE NO.  
 2  
 PAGE: 1 OF 9

TITLE:  
 PERSONNEL AIR LOCK

REVISION:  
 0

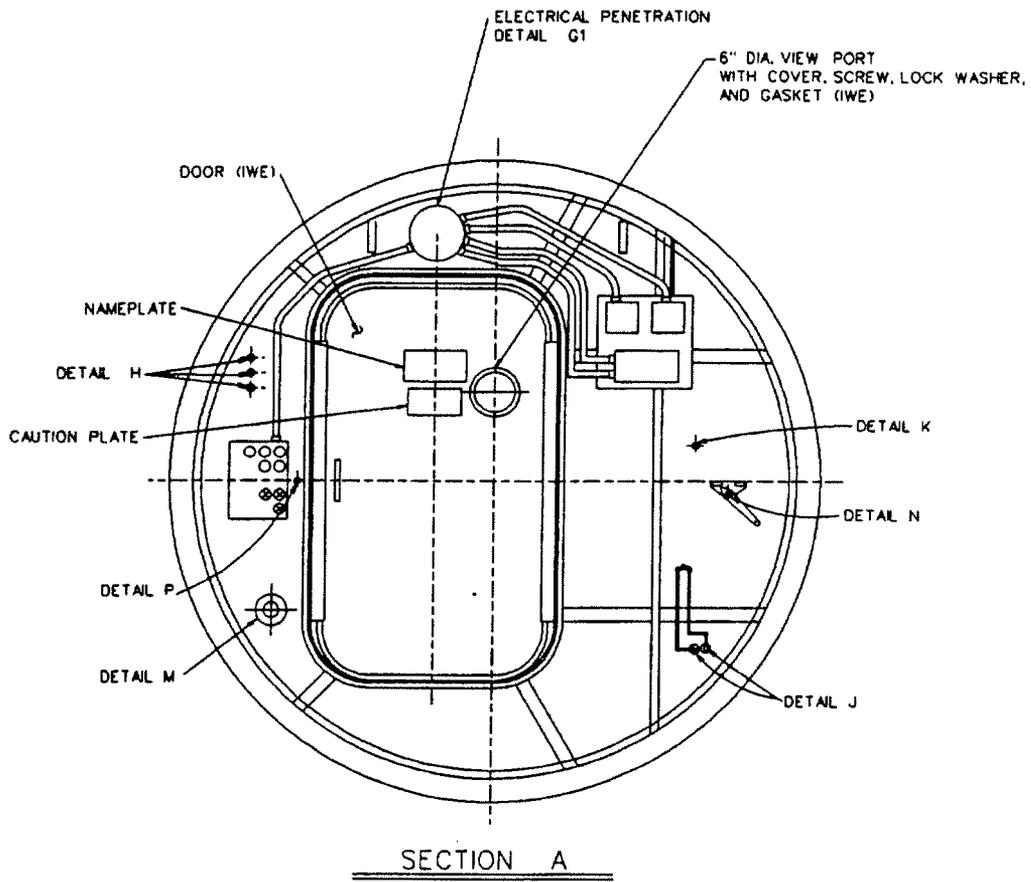
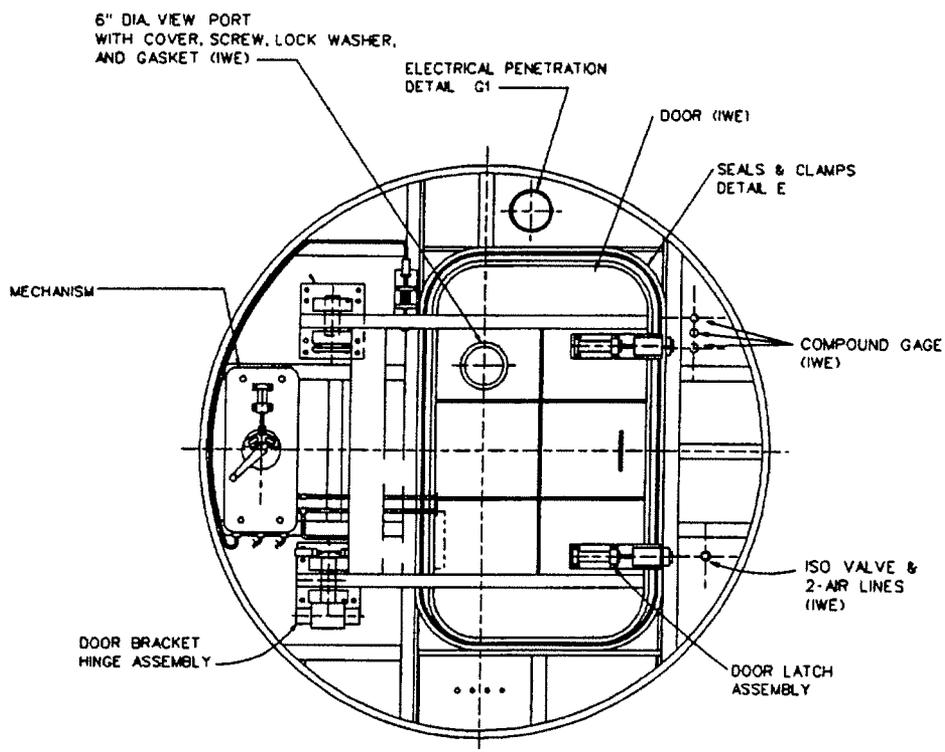
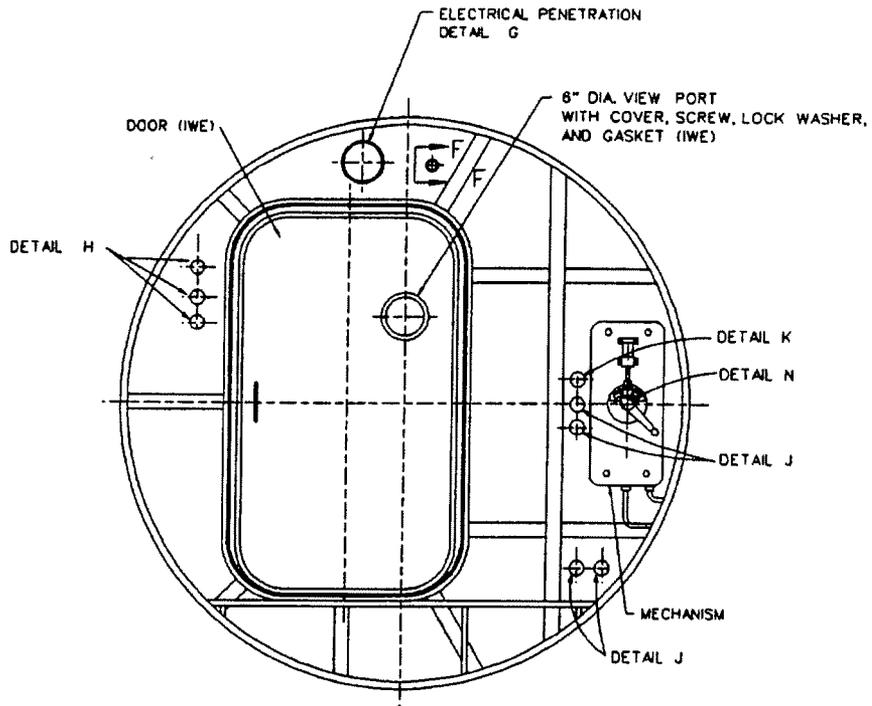


FIGURE NO. <p style="text-align: center;">2</p> PAGE: 2 OF 9	TITLE: <p style="text-align: center;">PERSONNEL AIR LOCK</p>	REVISION: <p style="text-align: center;">0</p>
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SECTION B

FIGURE NO. <p style="text-align: center;">2</p> PAGE: 3 OF 9	TITLE: <p style="text-align: center;">PERSONNEL AIR LOCK</p>	REVISION: <p style="text-align: center;">0</p>
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SECTION C

FIGURE NO.

2

PAGE: 4 OF 9

TITLE:

PERSONNEL AIR LOCK

REVISION:

0

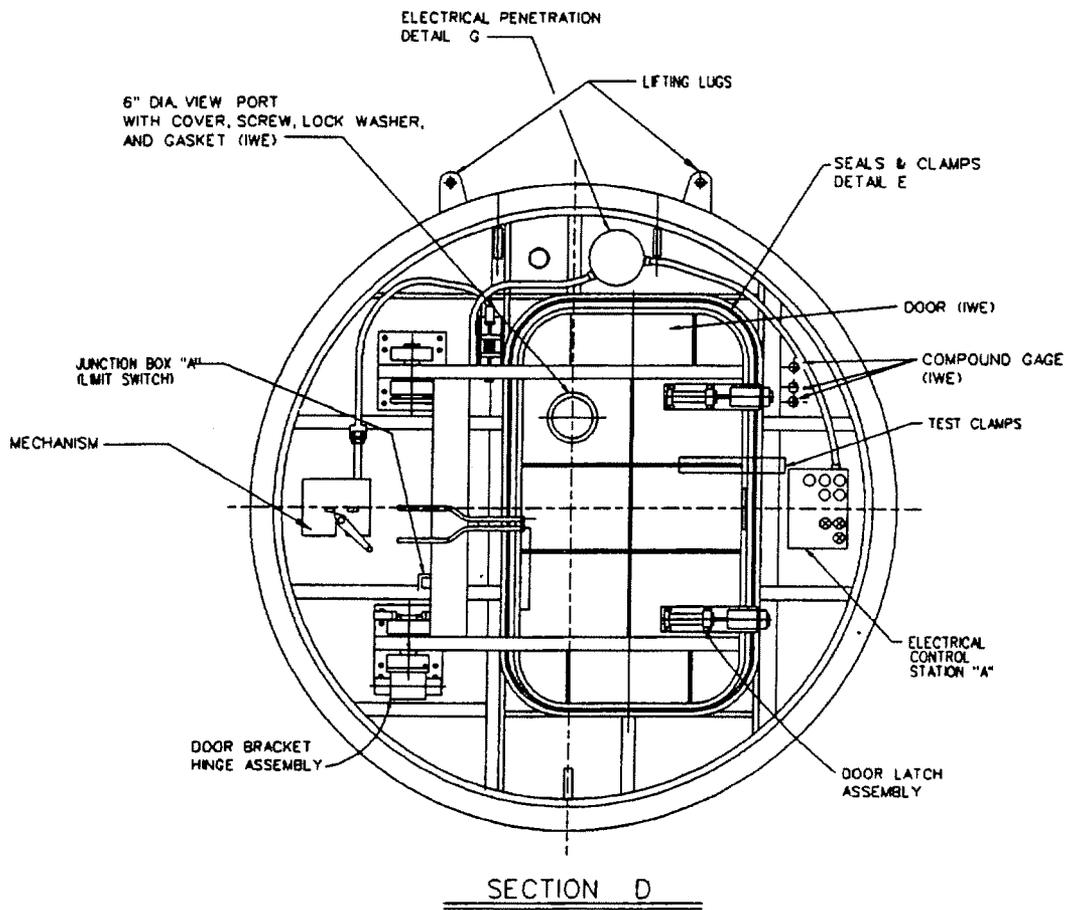


FIGURE NO.

2

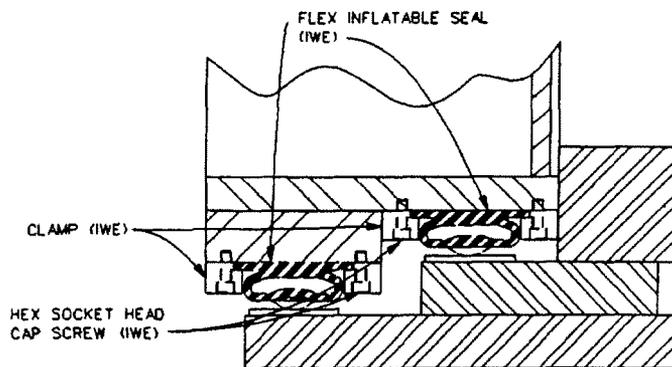
PAGE: 5 OF 9

TITLE:

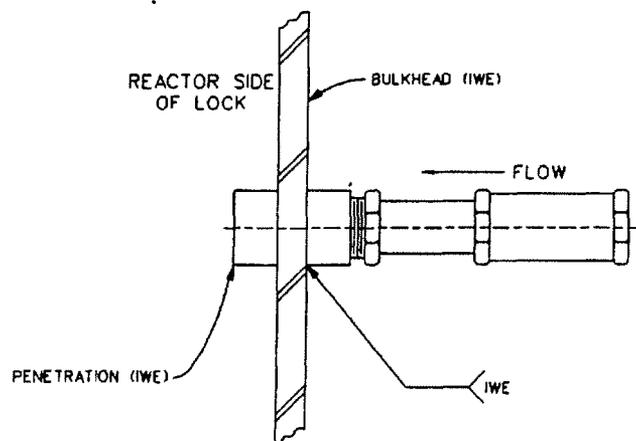
PERSONNEL AIR LOCK

REVISION:

0

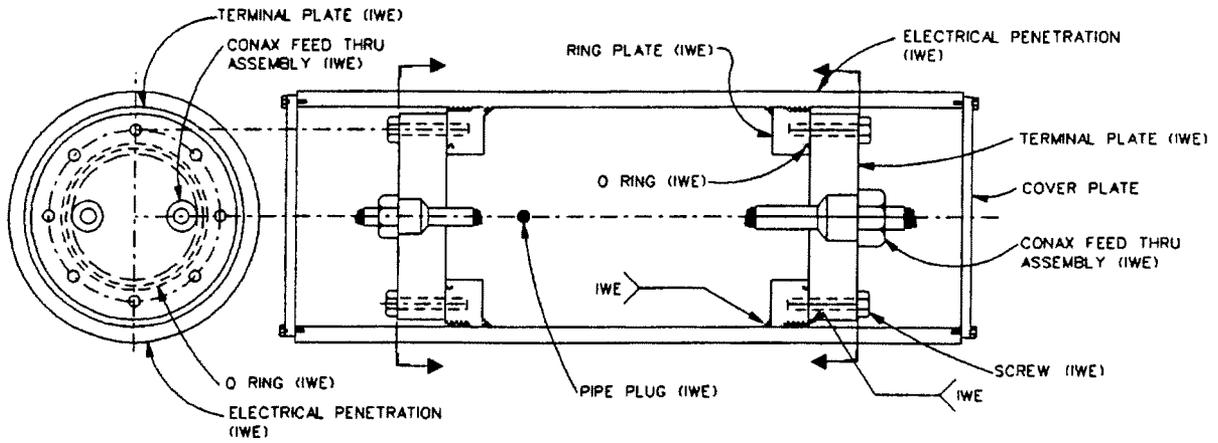


DETIAL E

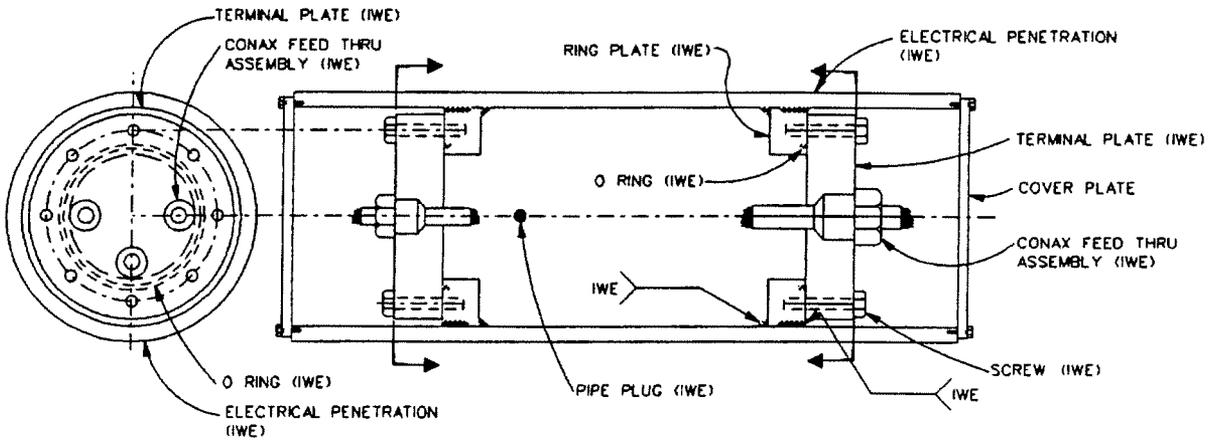


SECTION F

FIGURE NO. <p style="text-align: center;">2</p> PAGE: 6 OF 9	TITLE: <p style="text-align: center;">PERSONNEL AIR LOCK</p>	REVISION: <p style="text-align: center;">0</p>
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DETAIL G  
ELECTRICAL PENETRATION - REACTOR SIDE



DETAIL G1  
ELECTRICAL PENETRATION - OUTSIDE

FIGURE NO.  <p style="text-align: center;">2</p> PAGE: 7 OF 9	TITLE:  <p style="text-align: center;">PERSONNEL AIR LOCK</p>	REVISION:  <p style="text-align: center;">0</p>
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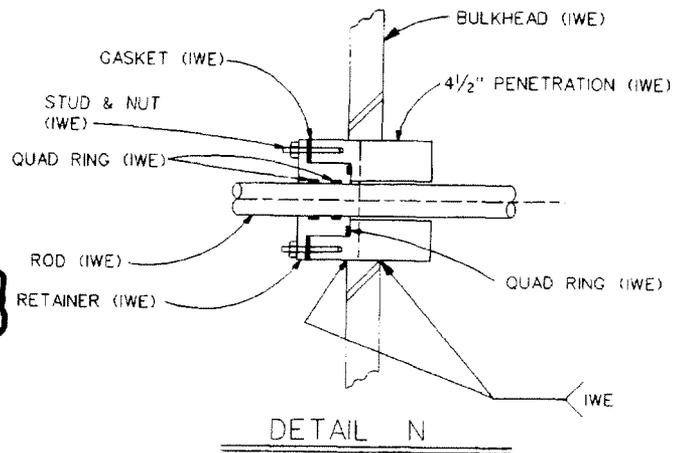
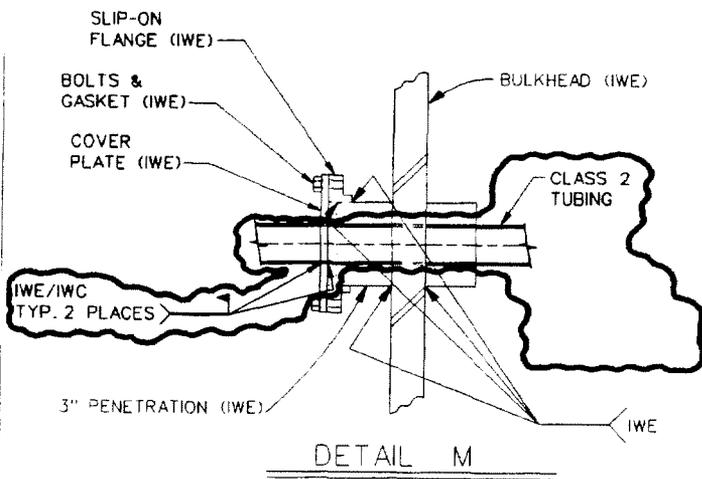
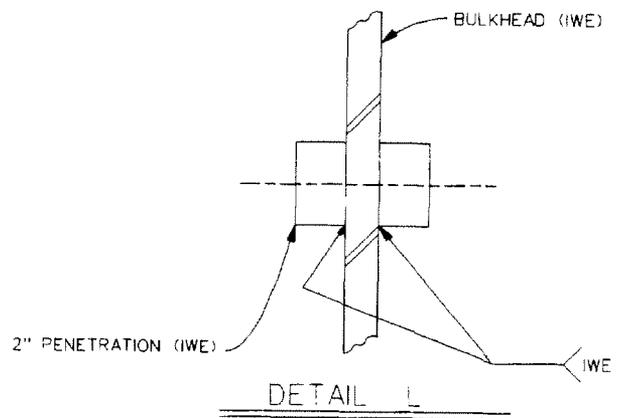
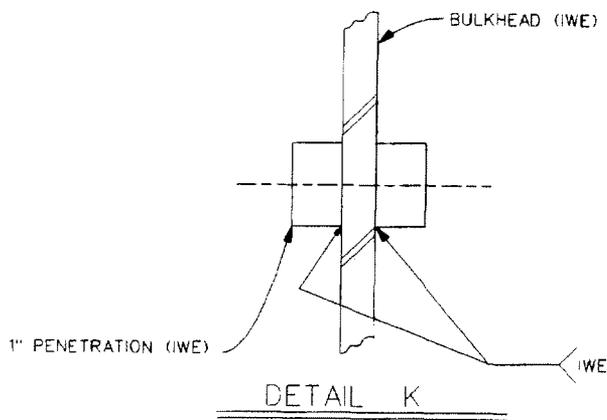
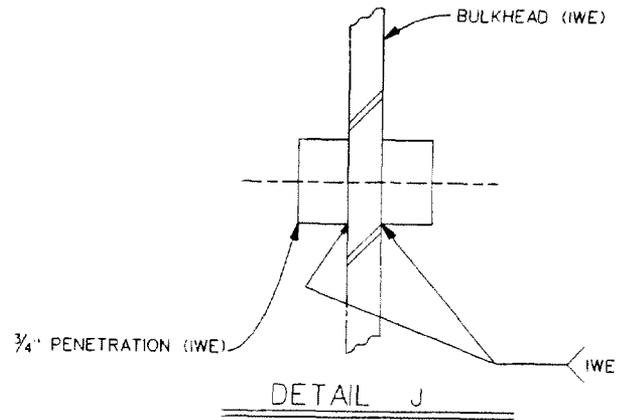
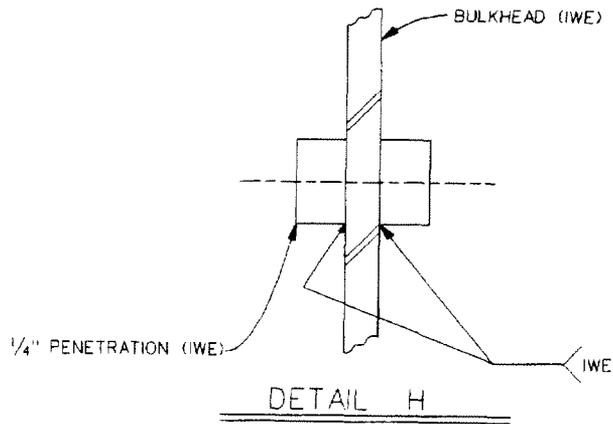


FIGURE NO.

2

TITLE:

PERSONNEL AIR LOCK

REVISION:

1

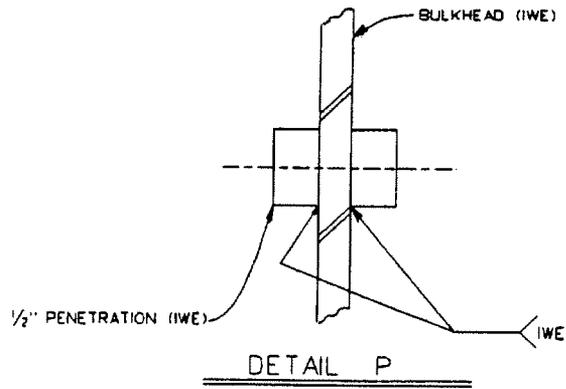


FIGURE NO.

**2**

PAGE: 9 OF 9

TITLE:

**PERSONNEL AIR LOCK**

REVISION:

**0**

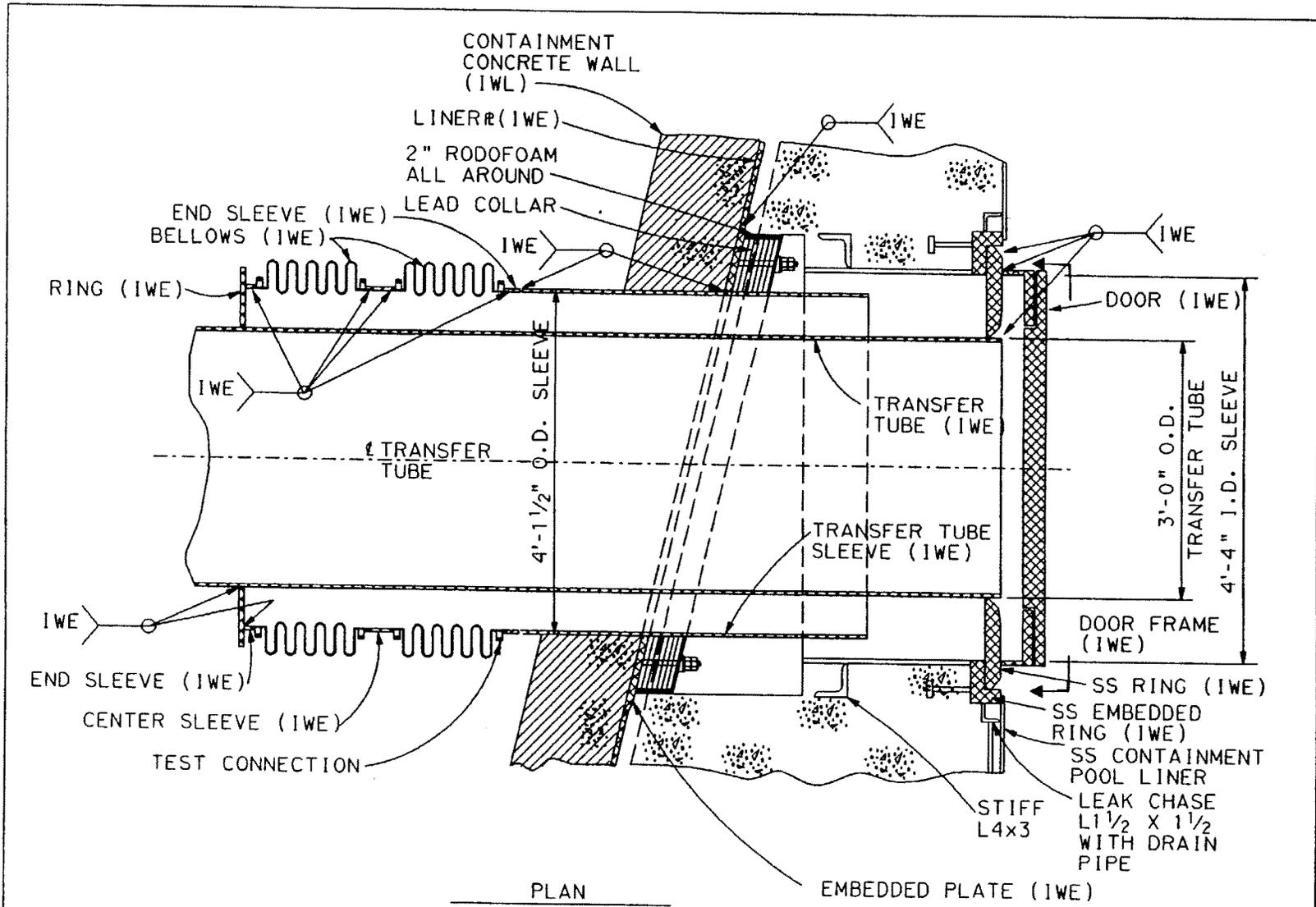


FIGURE NO. 3 PAGE: 1 OF 3	TITLE: FUEL TRANSFER TUBE	REVISION: 0
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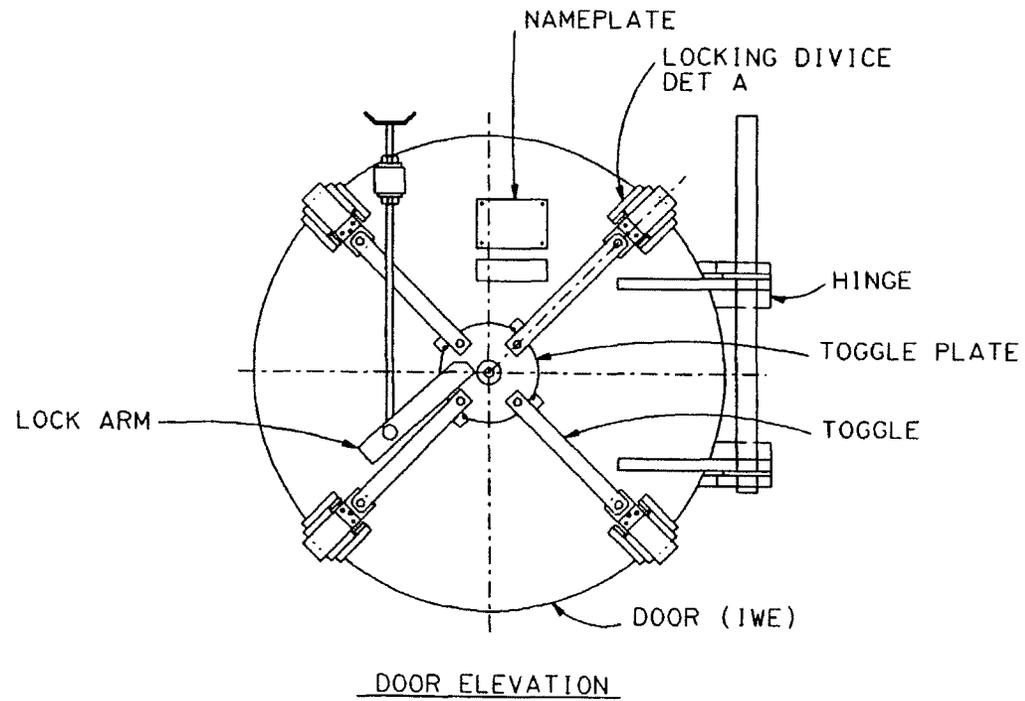


FIGURE NO.

3

PAGE: 2 OF 3

TITLE:

FUEL TRANSFER TUBE

REVISION:

0

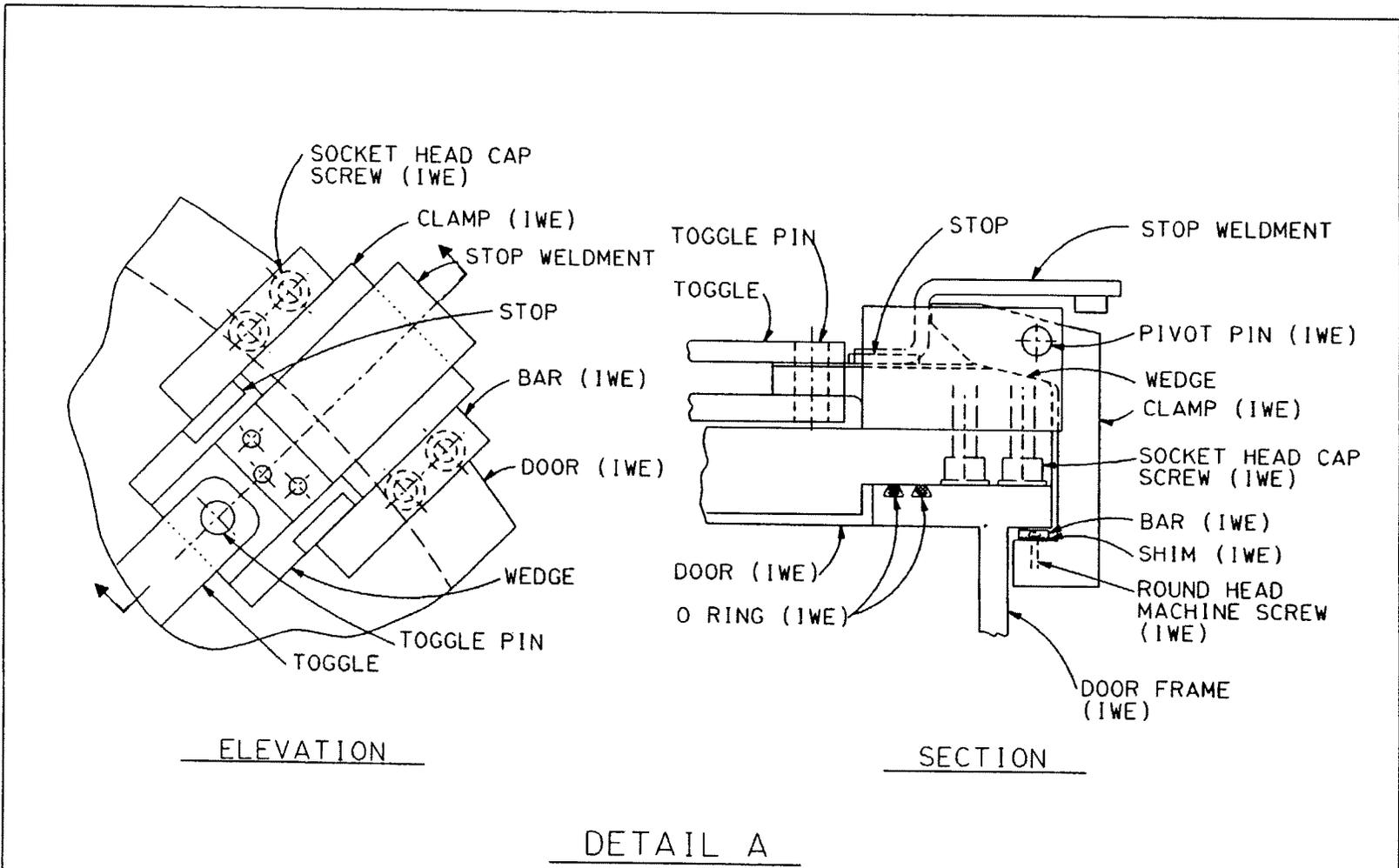


FIGURE NO.

3

PAGE: 3 OF 3

TITLE:

FUEL TRANSFER TUBE

REVISION:

0

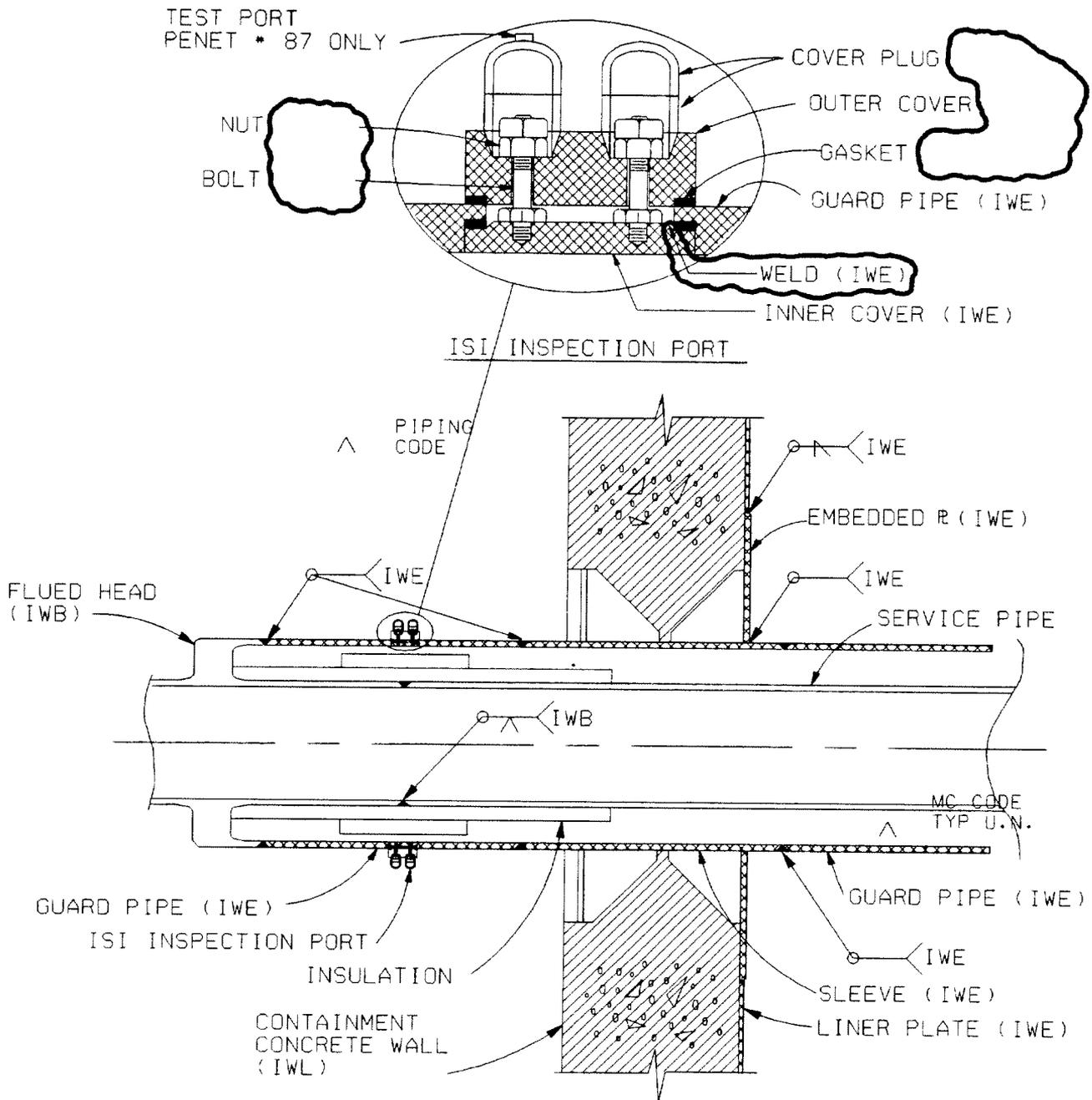


FIGURE NO.	TITLE:	REVISION:
4	FLUED HEAD PENETRATIONS WITH ISI PORT	1

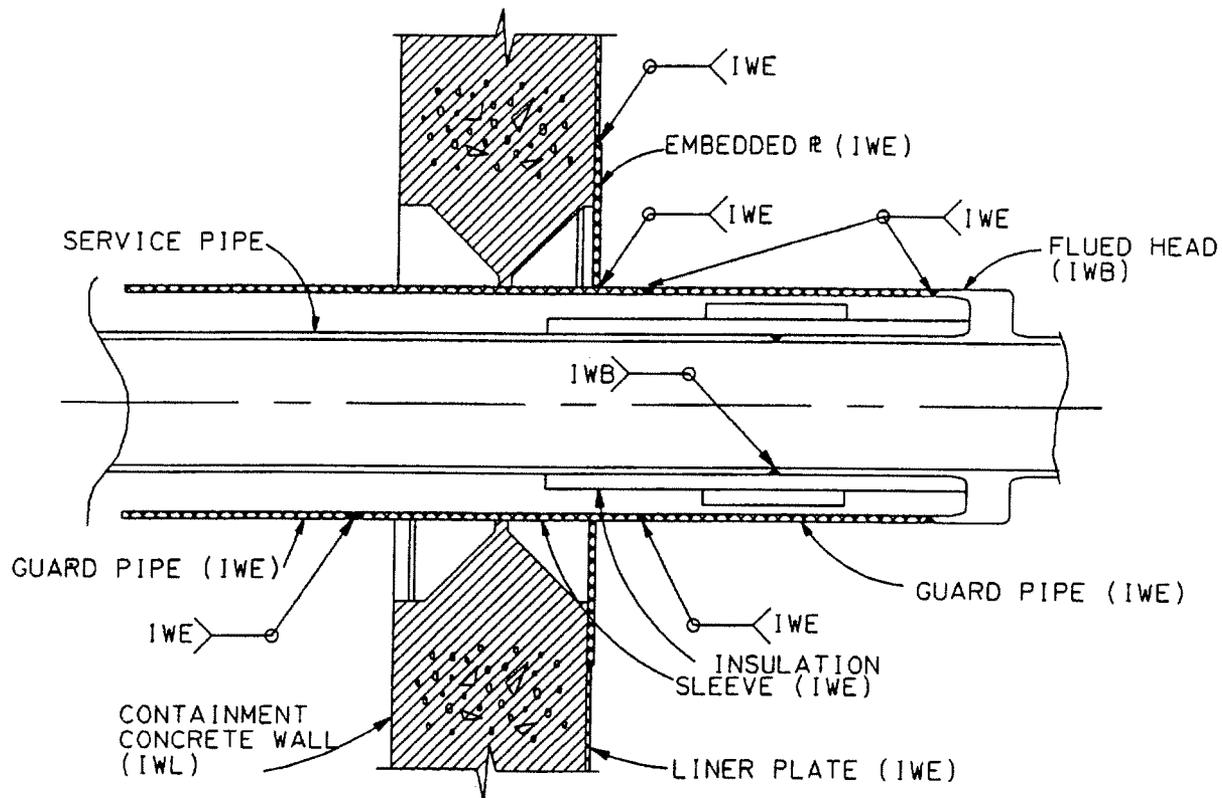


FIGURE NO. <p style="text-align: center;">4A</p>	TITLE: <p style="text-align: center;">PENETRATION WITH FLUED HEAD INSIDE CTMT</p>	REVISION: <p style="text-align: center;">0</p>
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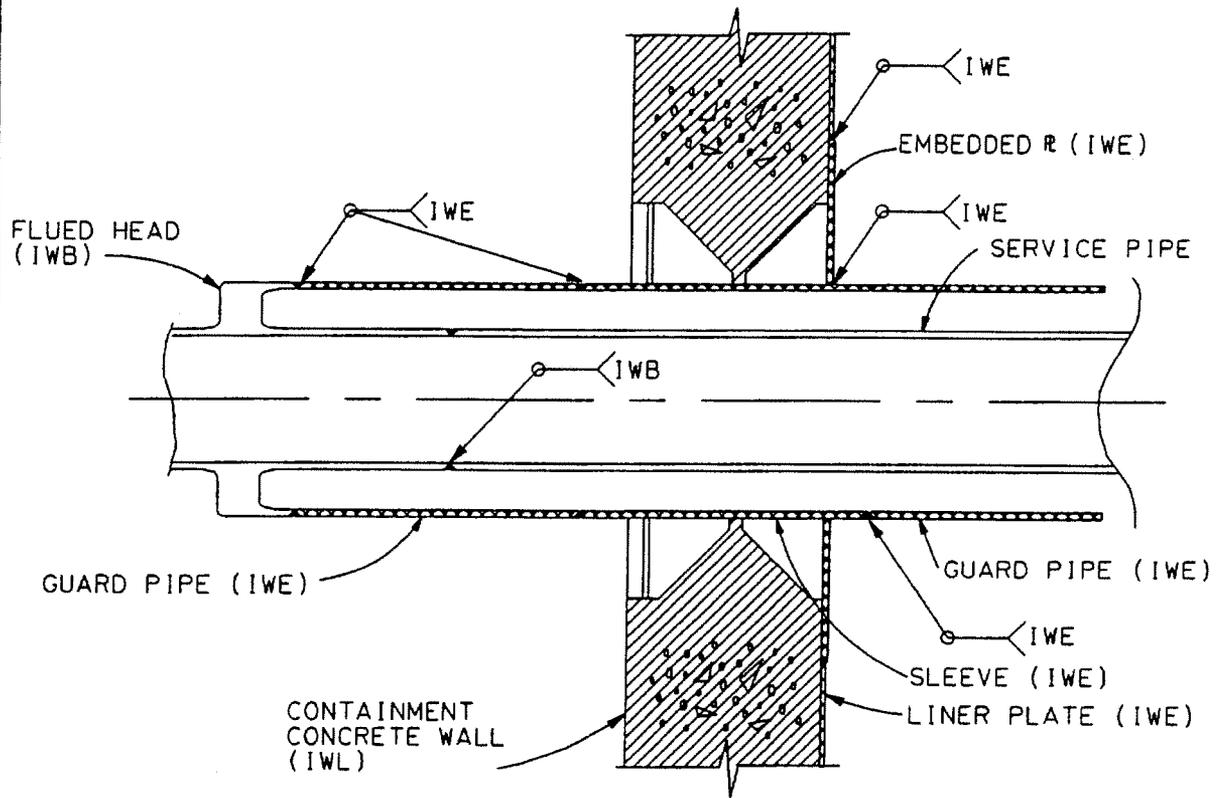


FIGURE NO. <p style="text-align: center;">4B</p>	TITLE: <p style="text-align: center;">FLUED HEAD PENETRATIONS WITHOUT ISI PORT</p>	REVISION: <p style="text-align: center;">0</p>
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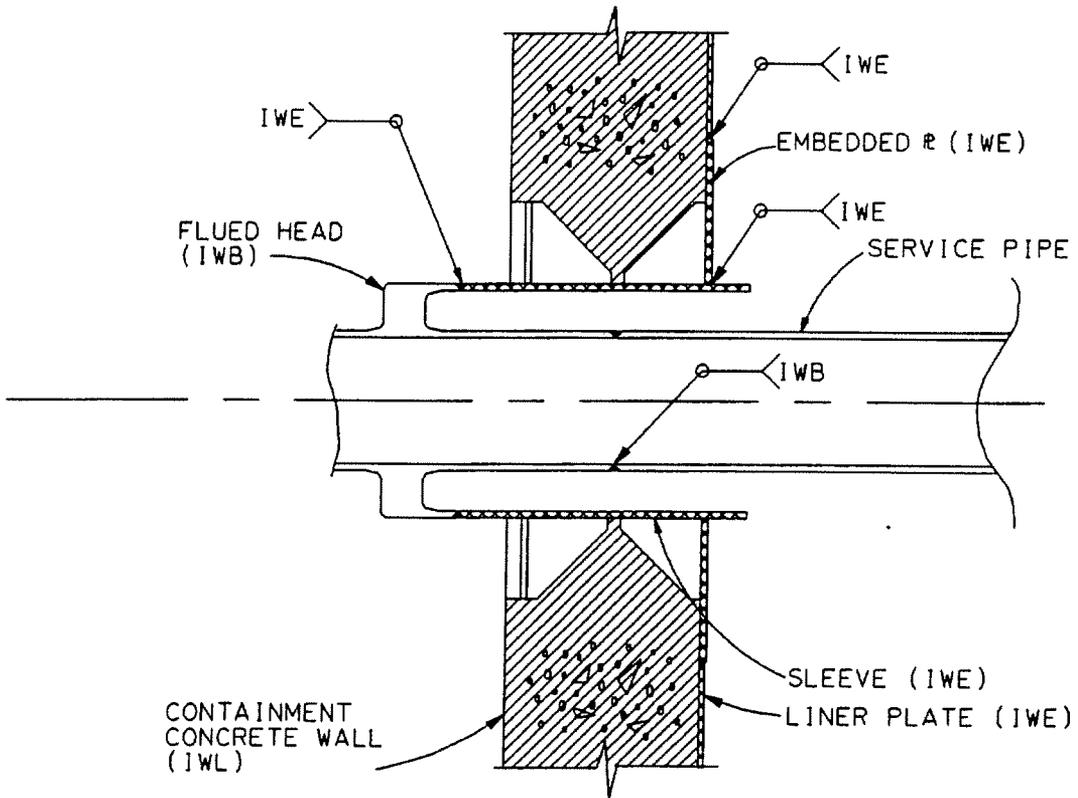


FIGURE NO. <p style="text-align: center;">4C</p>	TITLE: FLUED HEAD PENETRATIONS WITHOUT GUARD PIPES	REVISION: <p style="text-align: center;">0</p>
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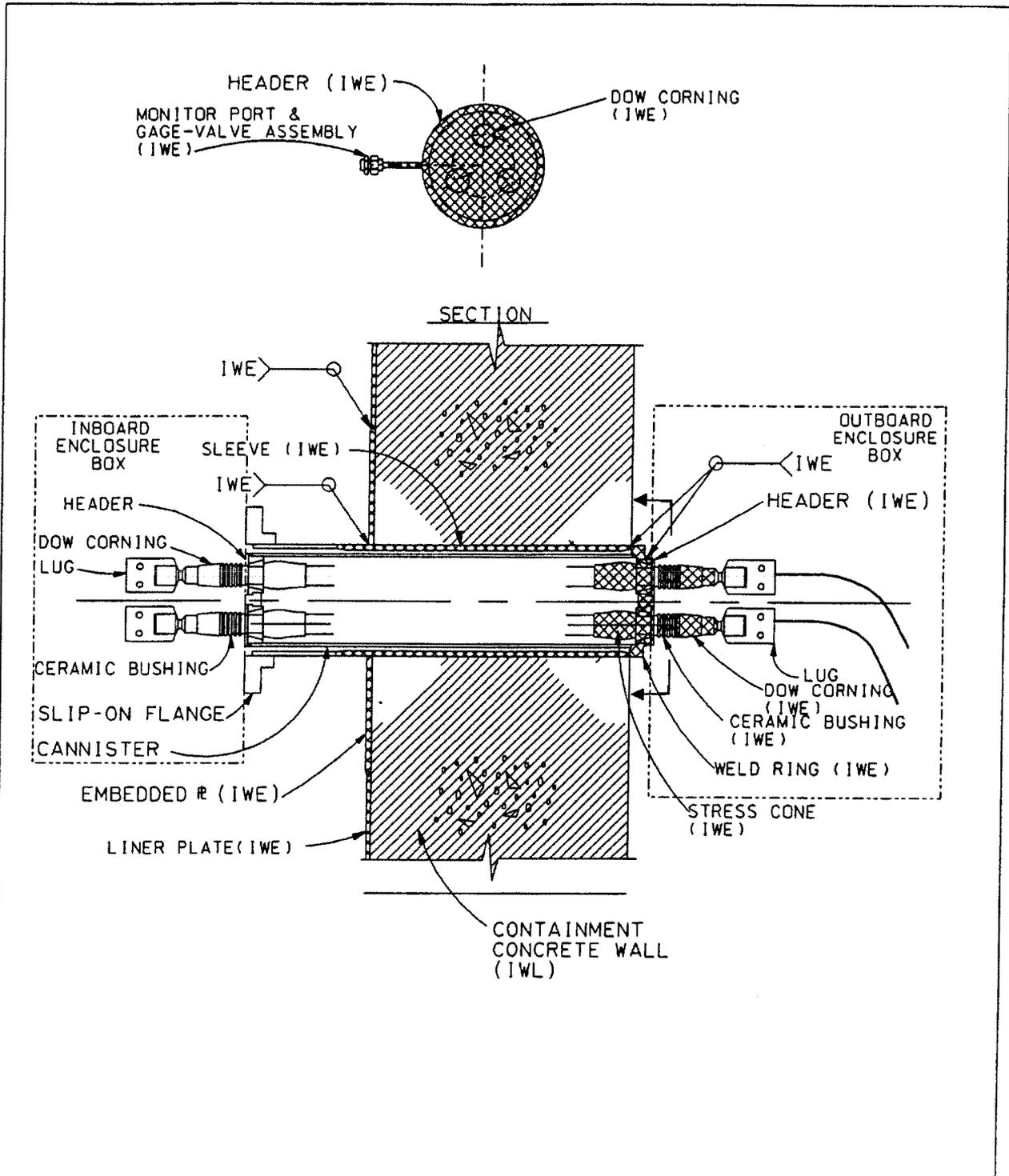


FIGURE NO. <p style="text-align: center;">5</p>	TITLE: TYPE A ELECTRICAL PENETRATION ASSEMBLY - CANNISTER TYPE	REVISION: <p style="text-align: center;">0</p>
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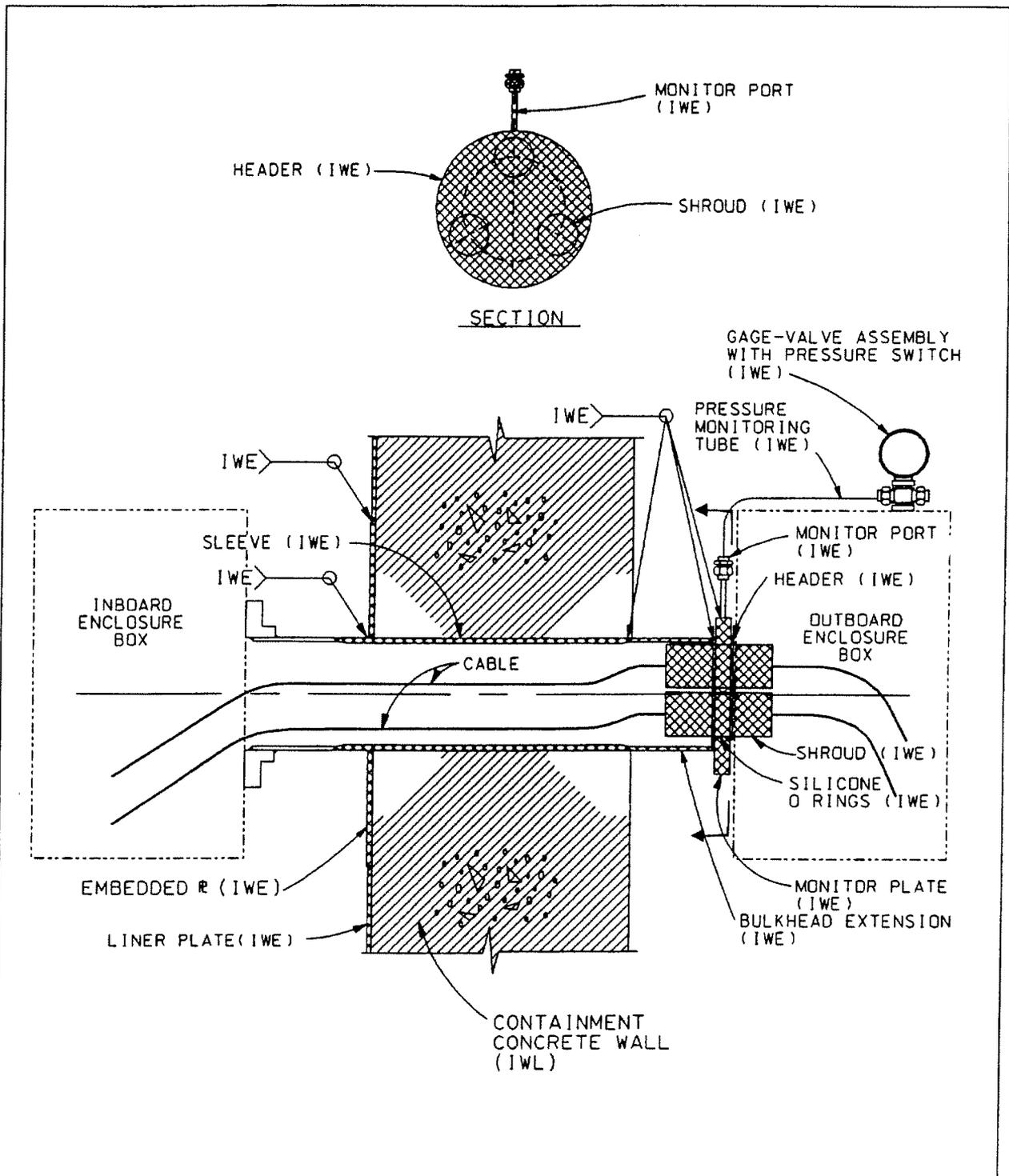


FIGURE NO. <p style="text-align: center;">5A</p>	TITLE: TYPE B & C ELECTRICAL PENETRATION ASSEMBLY - MODULE TYPE	REVISION: <p style="text-align: center;">0</p>
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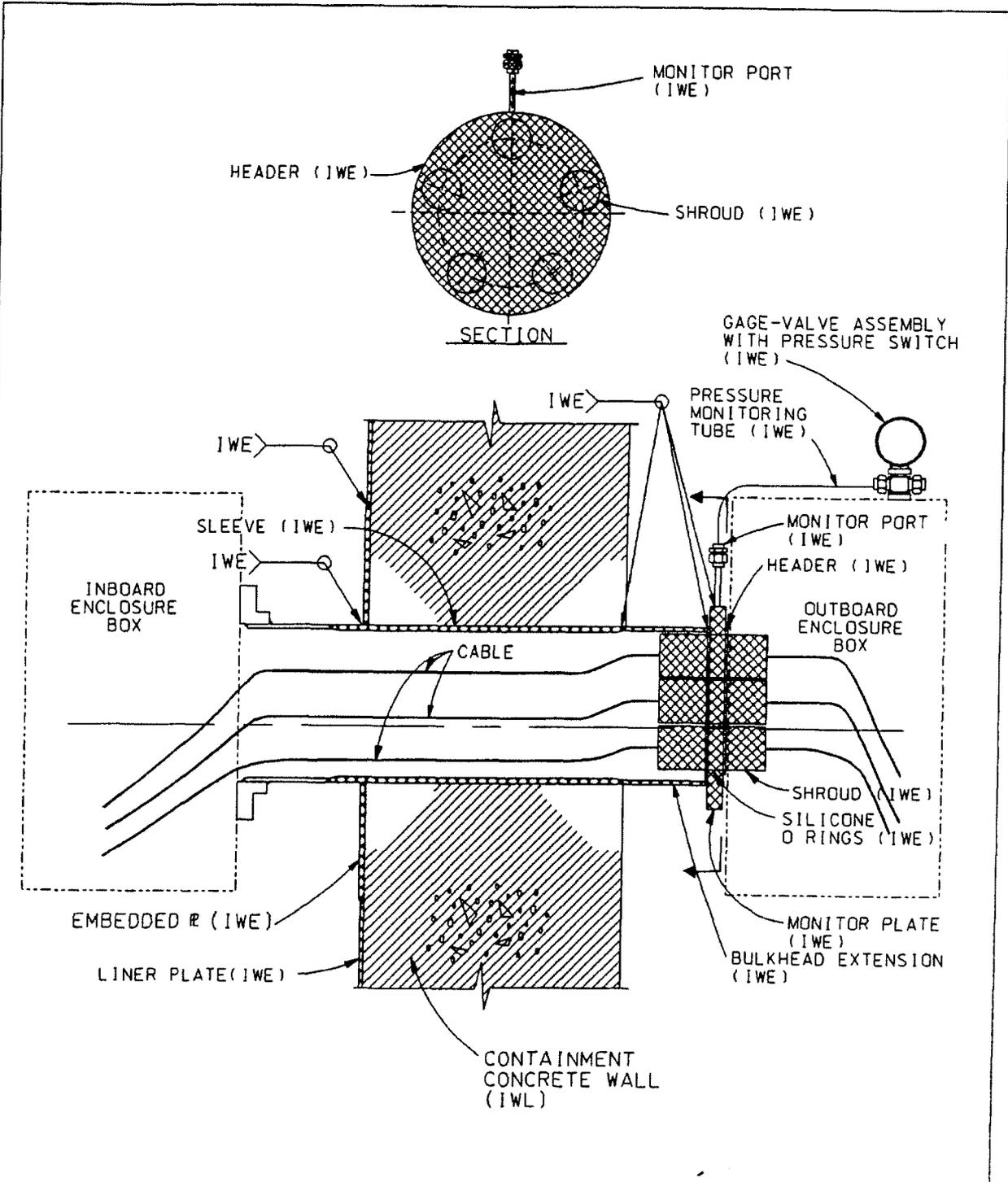


FIGURE NO.  <b>5B</b>	TITLE: TYPE B & C ELECTRICAL PENETRATION ASSEMBLY - MODULE TYPE	REVISION:  <b>0</b>
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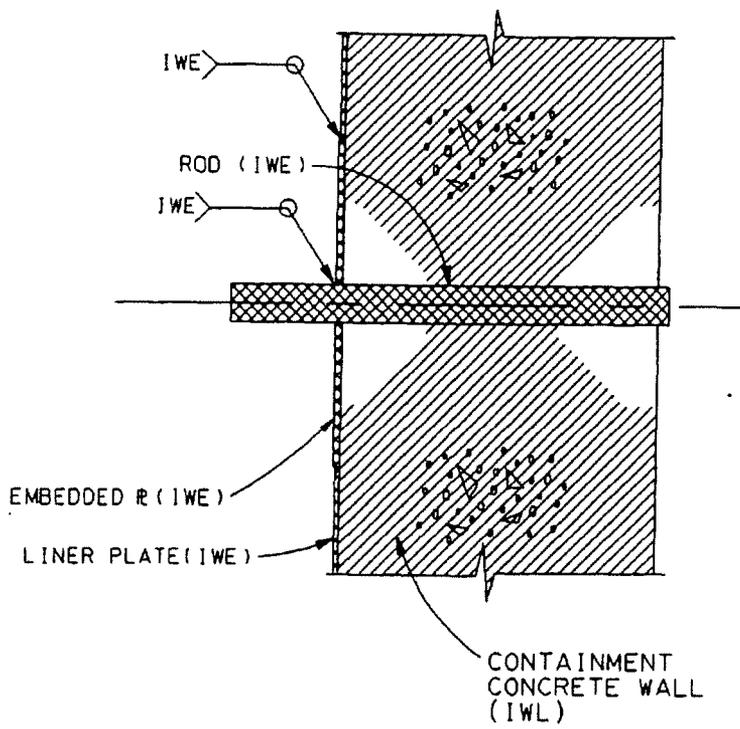


FIGURE NO.

5C

TITLE:

GROUNDING ROD PENETRATION

REVISION:

0

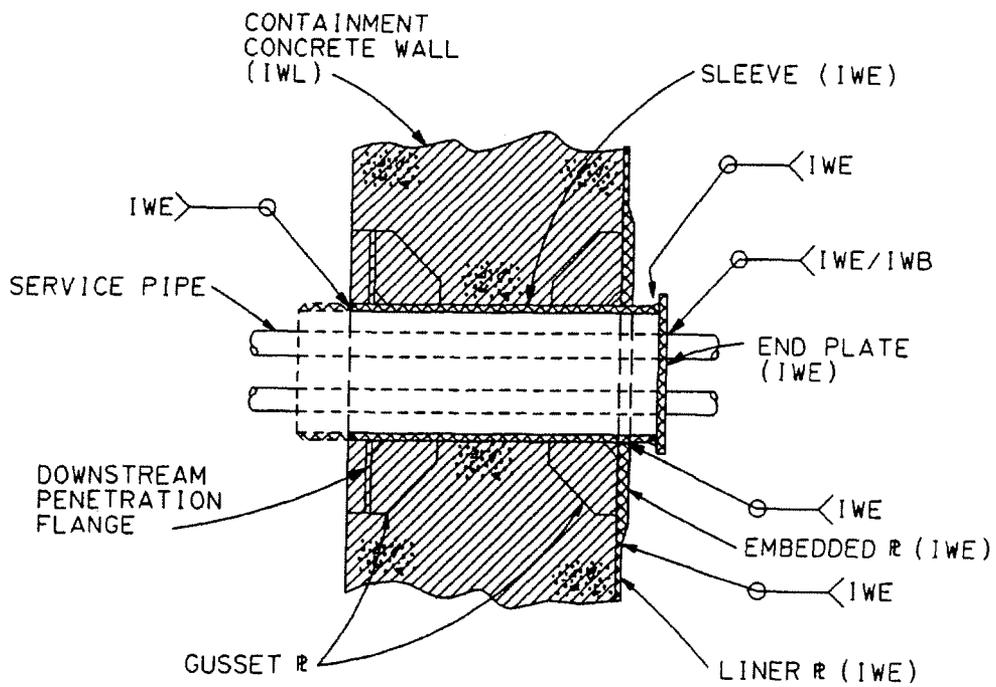


FIGURE NO.

6

TITLE:

MECHANICAL PENETRATION - TYPE SI

REVISION:

0

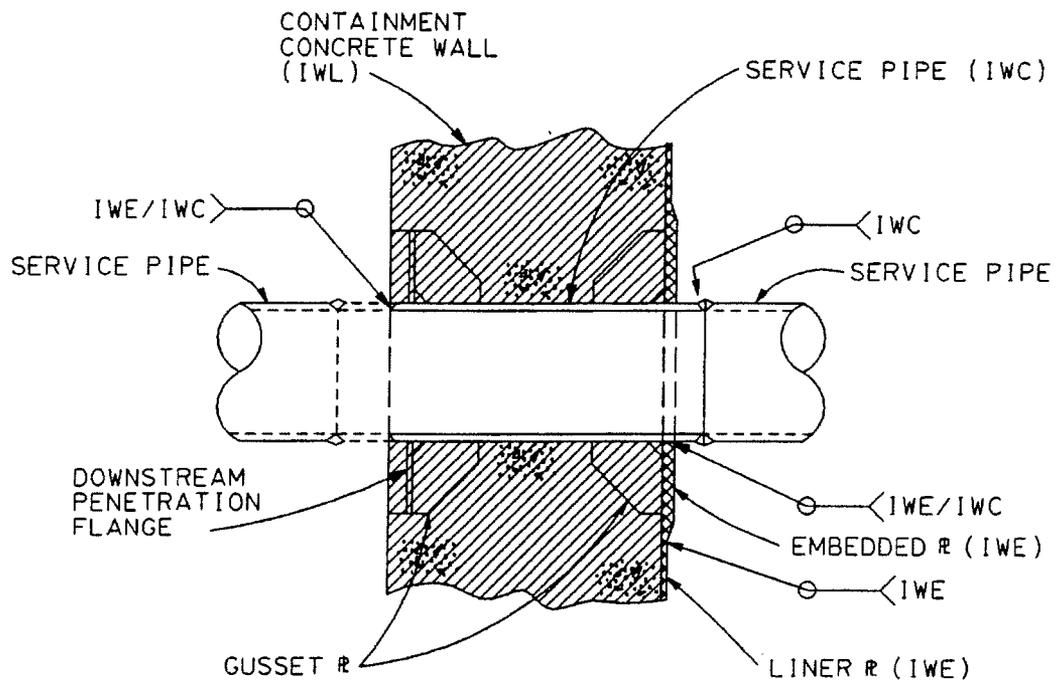


FIGURE NO. <p style="text-align: center;">6A</p>	TITLE: <p style="text-align: center;">MECHANICAL PENETRATION - TYPE SI</p>	REVISION: <p style="text-align: center;">0</p>
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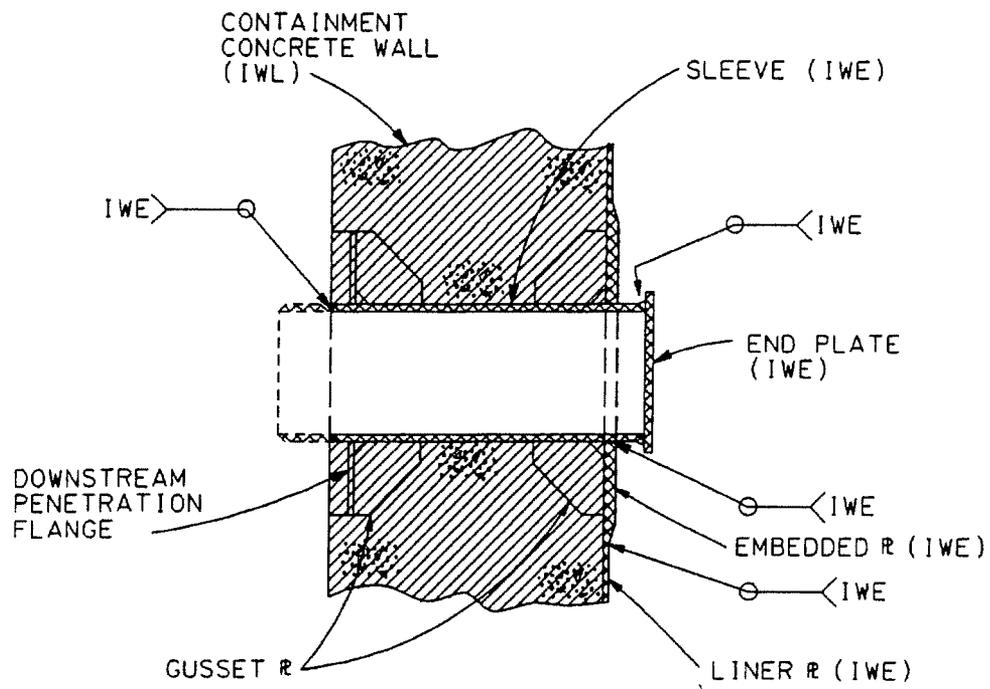


FIGURE NO.

6B

TITLE:

SPARE PENETRATION - TYPE SI

REVISION:

0

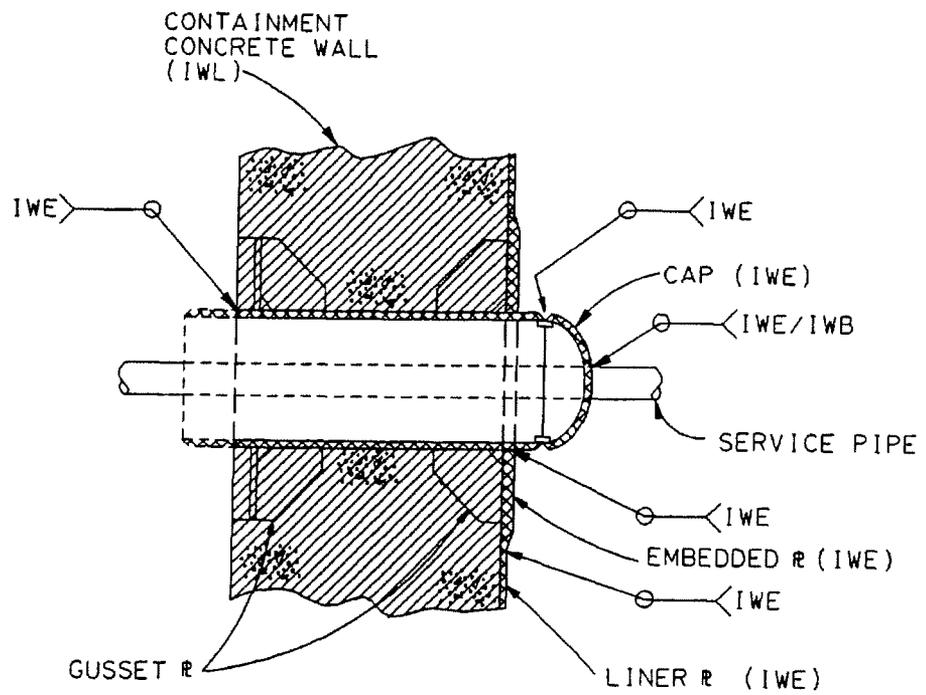


FIGURE NO.

7

TITLE:

MECHANICAL PENETRATION - TYPE SII

REVISION:

0

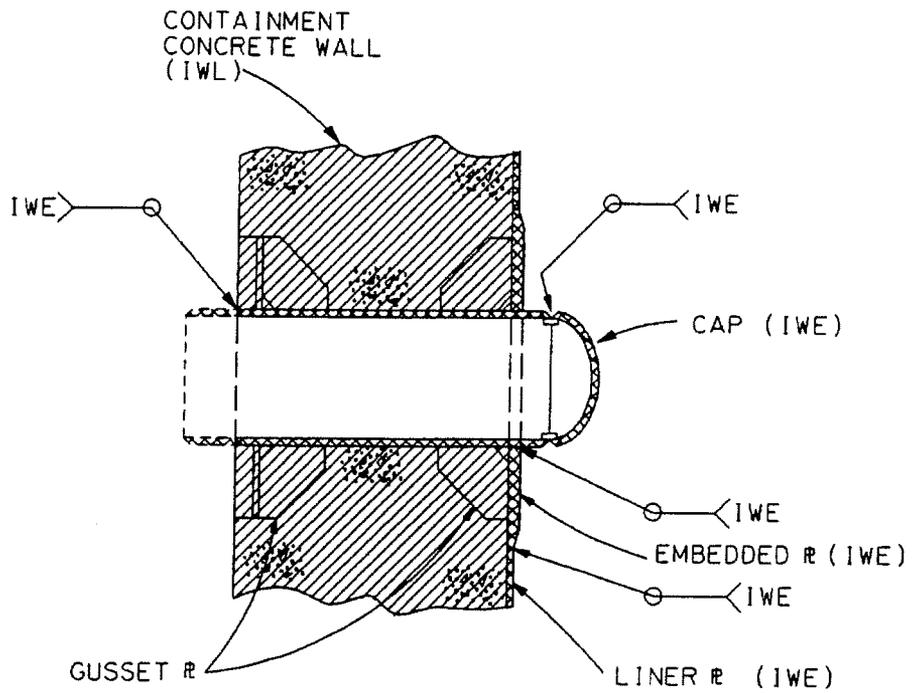


FIGURE NO. <p style="text-align: center;">7A</p>	TITLE: <p style="text-align: center;">SPARE PENETRATION - TYPE SII</p>	REVISION: <p style="text-align: center;">0</p>
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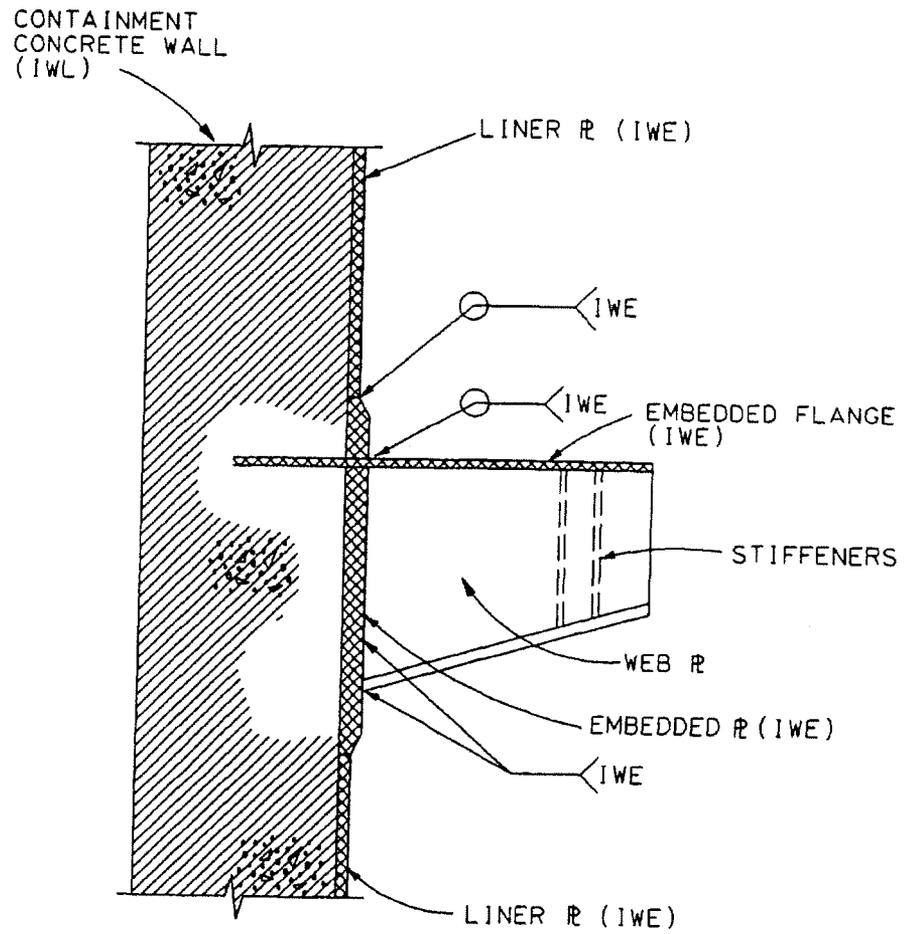


FIGURE NO. <p style="text-align: center;">8</p>	TITLE: LINER EMBEDMENT - BRACKET TYPE 1	REVISION: <p style="text-align: center;">0</p>
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CONTAINMENT  
CONCRETE WALL  
(IWL)

LINER R (IWE)

IWE

IWE

WEB R

EMBEDDED R (IWE)

LINER R (IWE)

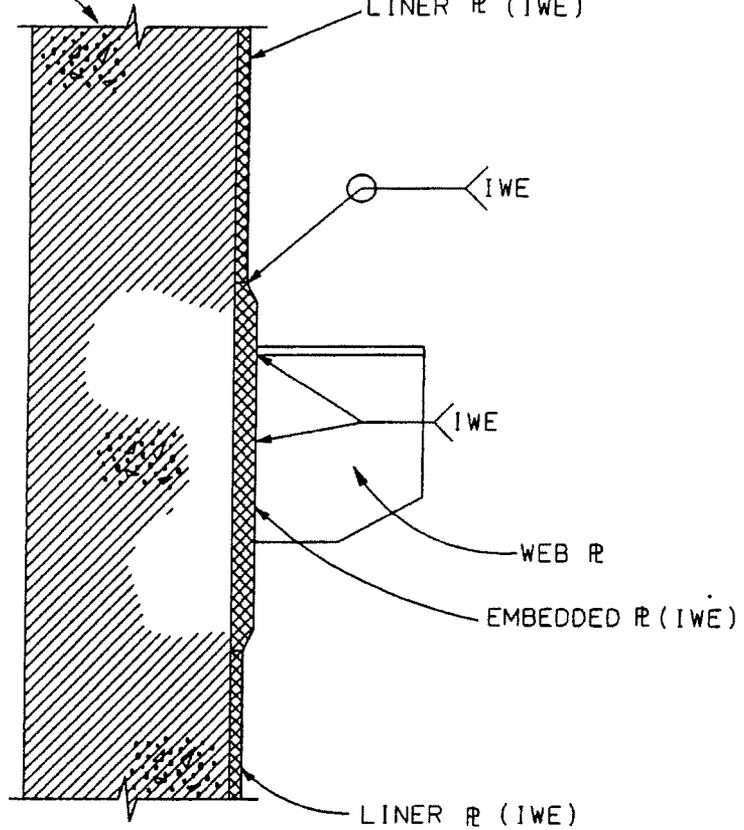


FIGURE NO.

8A

TITLE:

LINER EMBEDMENT - BRACKET TYPES 2,9

REVISION:

0

CONTAINMENT  
CONCRETE WALL  
(IWL)

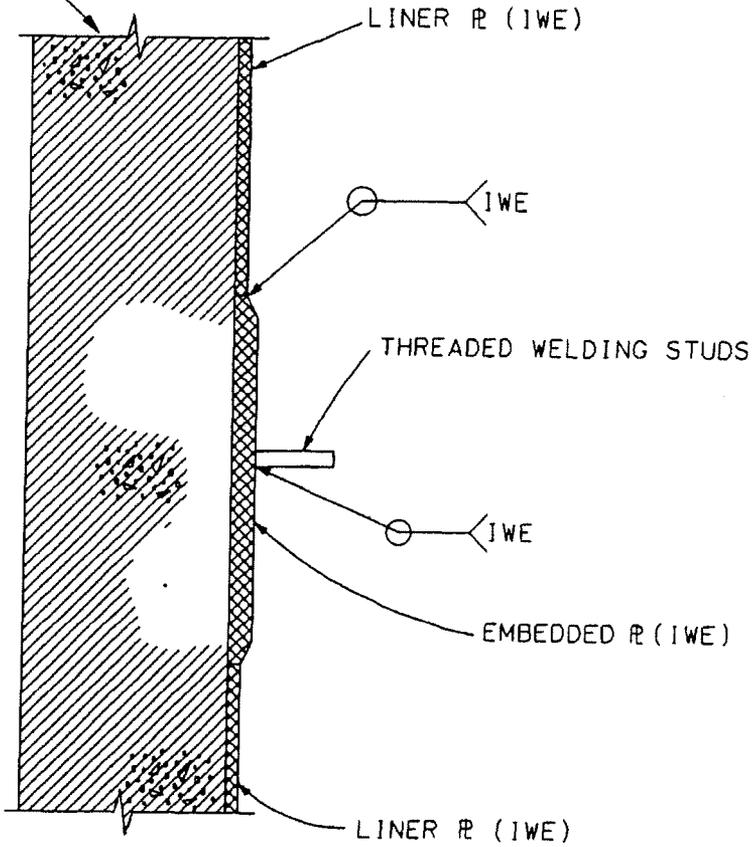


FIGURE NO.

8B

TITLE:

LINER EMBEDMENT - BRACKET TYPE 3

REVISION:

0

CONTAINMENT  
CONCRETE WALL  
(IWL)

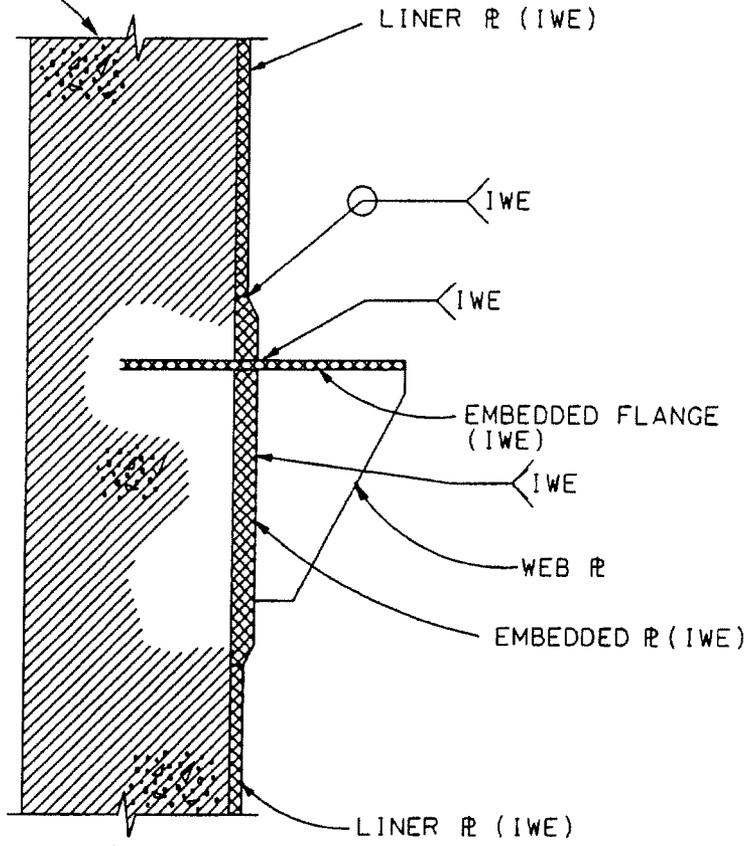


FIGURE NO.

8C

TITLE:

LINER EMBEDMENT - BRACKET TYPES 4, 7, 11

REVISION:

0

CONTAINMENT  
CONCRETE WALL  
(IWL)

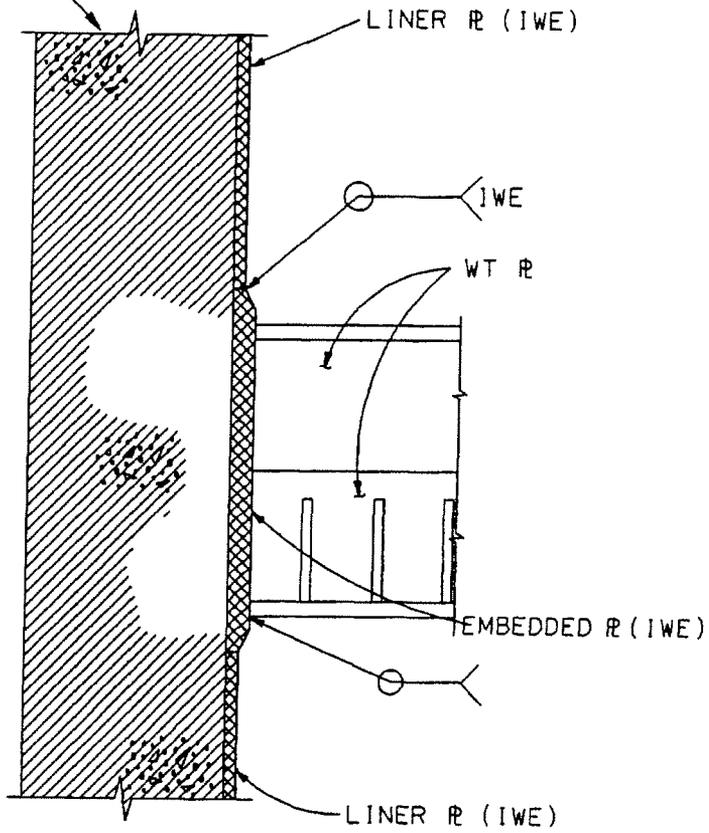


FIGURE NO.

8D

TITLE:

LINER EMBEDMENT - BRACKET TYPE 6

REVISION:

0

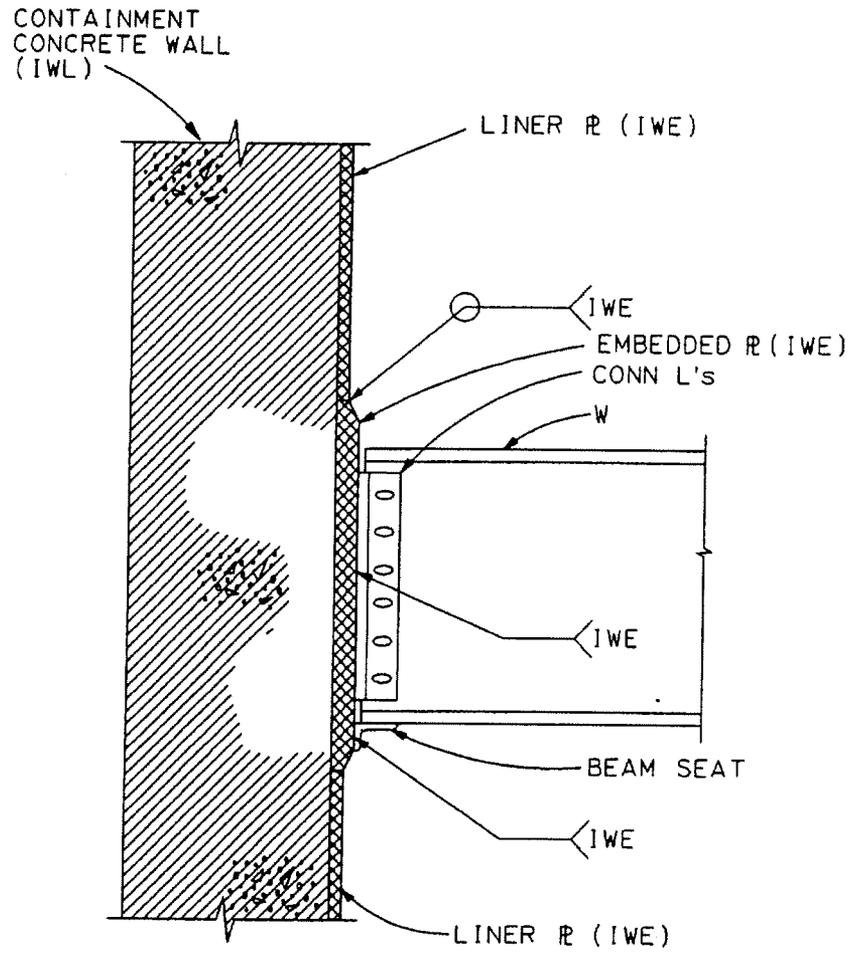


FIGURE NO.

8E

TITLE:

LINER EMBEDMENT - BRACKET TYPES 8, 12

REVISION:

0

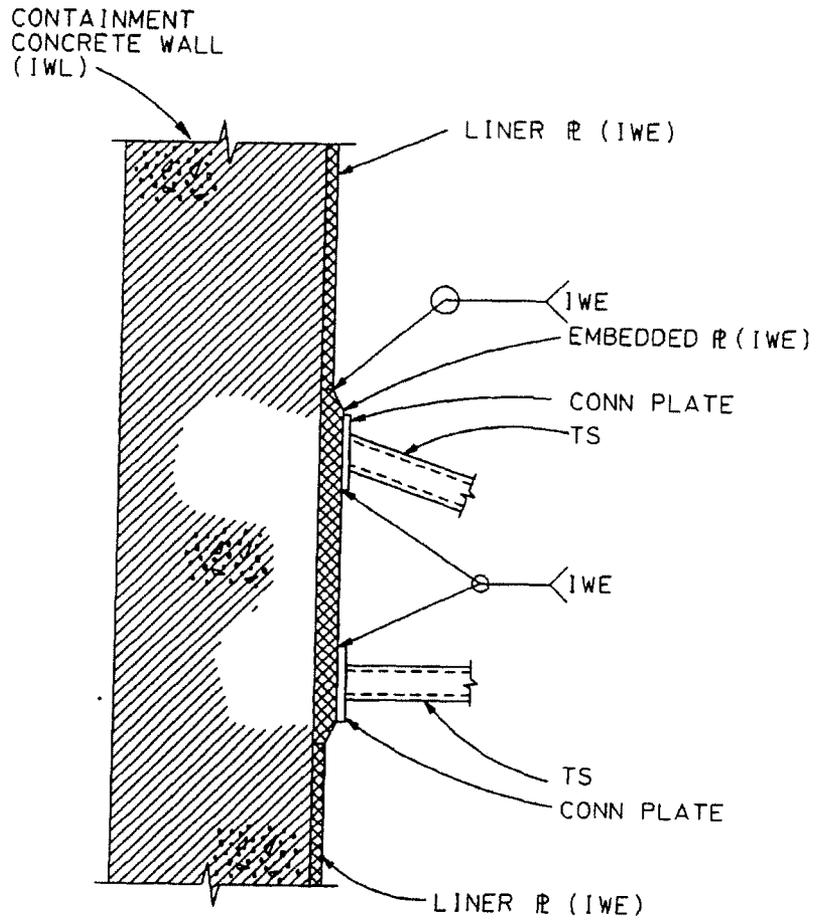


FIGURE NO.

8F

TITLE:

LINER EMBEDMENT - BRACKET TYPE 10

REVISION:

0

CONTAINMENT  
CONCRETE WALL  
(IWL)

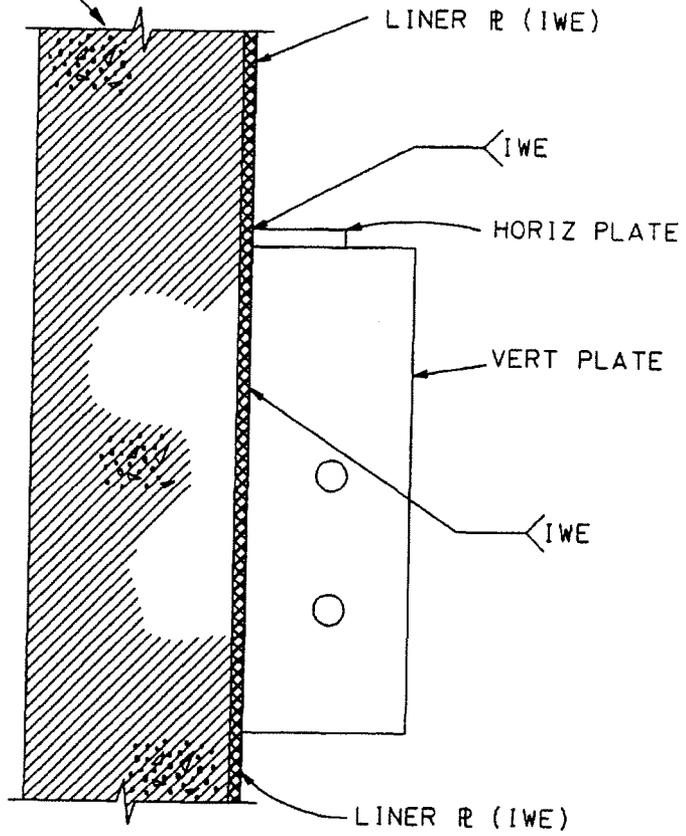


FIGURE NO.

8G

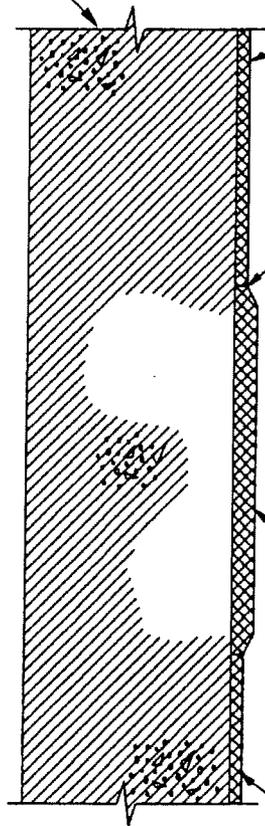
TITLE:

LINER EMBEDMENT - BRACKET TYPE 14

REVISION:

0

CONTAINMENT  
CONCRETE WALL  
(IWL)



LINER R (IWE)

IWE

EMBEDDED R (IWE)

LINER R (IWE)

ALL ATTACHMENT WELDS TO THE EMBEDDED PLATE ARE IWE.

FIGURE NO.

8H

TITLE:

LINER EMBEDMENT - INSERT TYPES

REVISION:

0

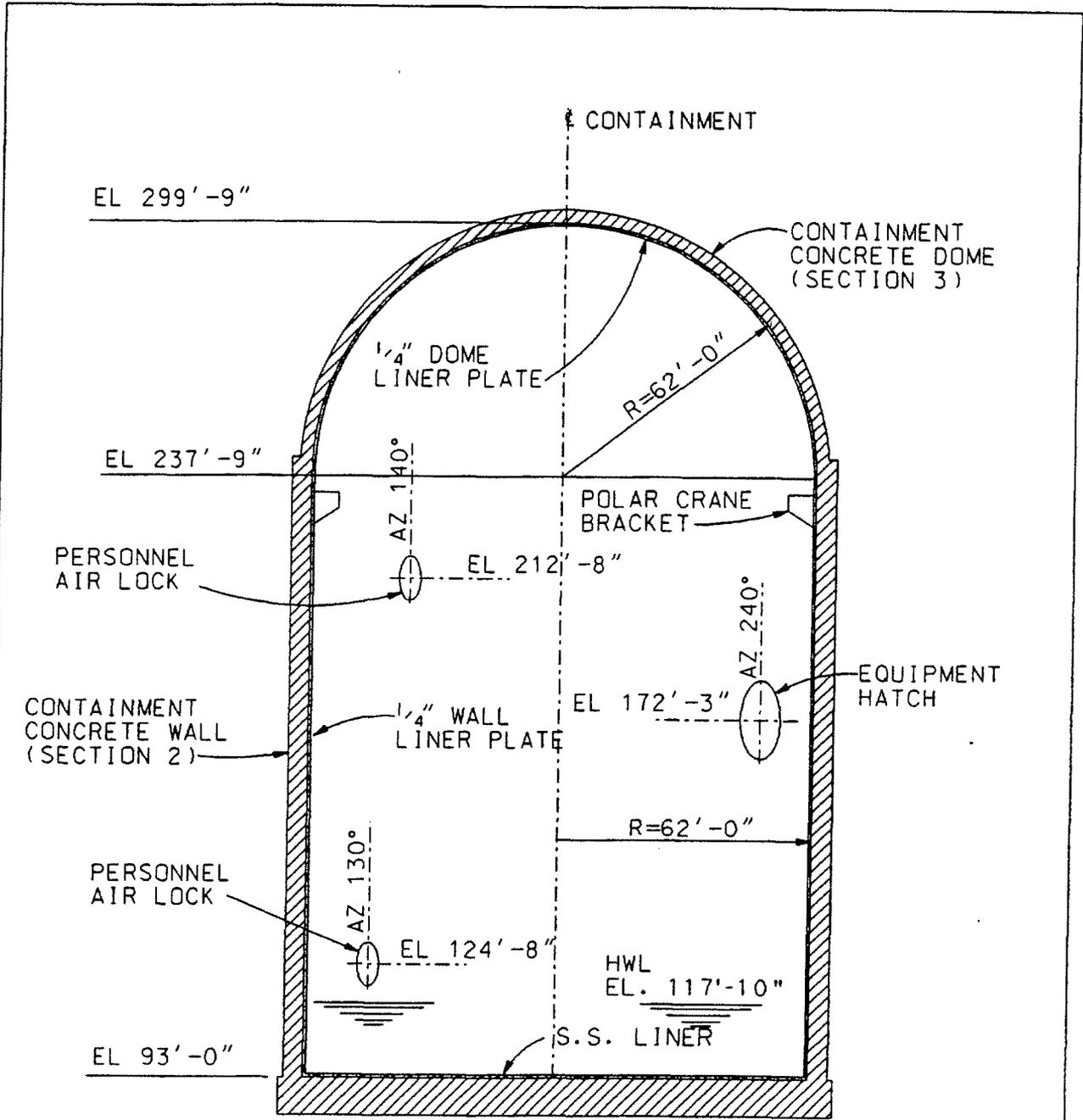
**APPENDIX B**  
**CISI Drawings for IWL Inspections**

**DRAWING LIST AND REVISION STATUS**

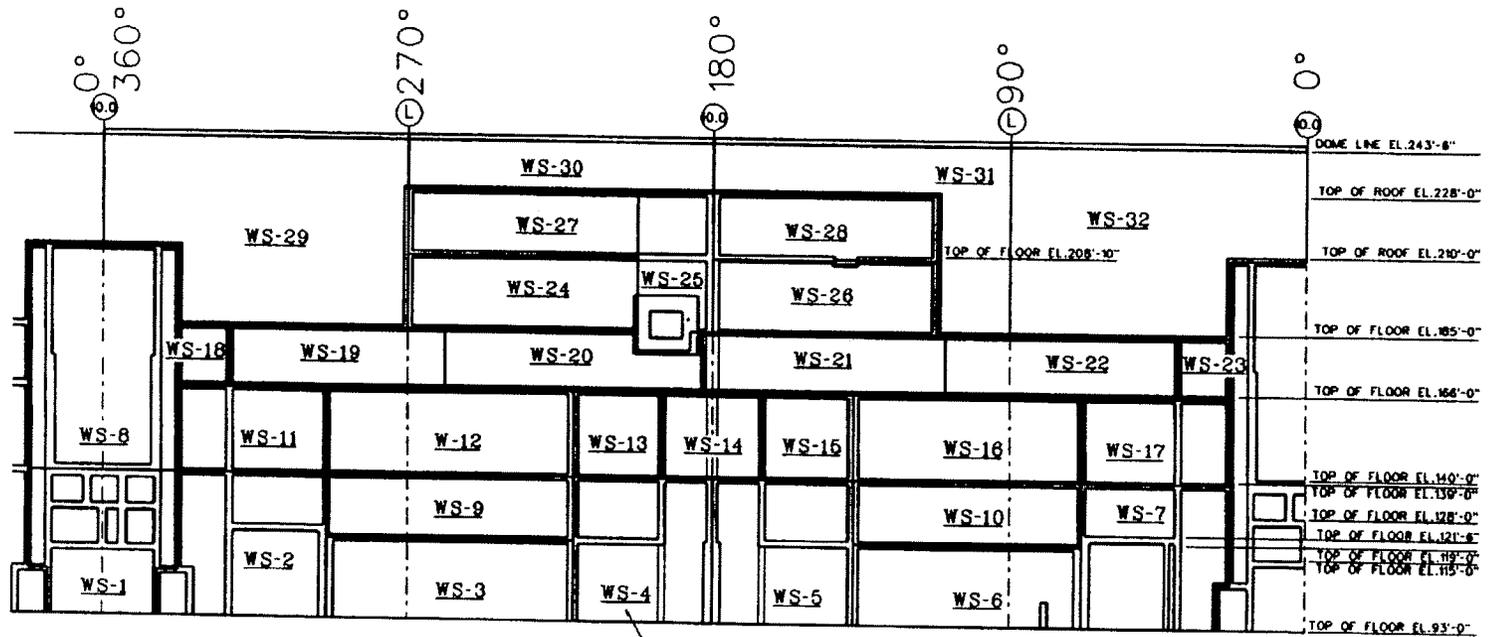
<b>Drawing No. and Title</b>
01-1 – Overall Containment Pressure Vessel Schedule
02-1 – Containment Concrete Wall Drawing Schedule
WS-1 – Containment Concrete Wall Segment WS-1
WS-2 – Containment Concrete Wall Segment WS-2
WS-3 – Containment Concrete Wall Segment WS-3
WS-4 – Containment Concrete Wall Segment WS-4
WS-5 – Containment Concrete Wall Segment WS-5
WS-6 – Containment Concrete Wall Segment WS-6
WS-7 – Containment Concrete Wall Segment WS-7
WS-8 – Containment Concrete Wall Segment WS-8
WS-9 – Containment Concrete Wall Segment WS-9
WS-10 – Containment Concrete Wall Segment WS-10
WS-11 – Containment Concrete Wall Segment WS-11
WS-12 – Containment Concrete Wall Segment WS-12
WS-13 – Containment Concrete Wall Segment WS-13
WS-14 – Containment Concrete Wall Segment WS-14
WS-15 – Containment Concrete Wall Segment WS-15
WS-16 – Containment Concrete Wall Segment WS-16
WS-17 – Containment Concrete Wall Segment WS-17
WS-18 – Containment Concrete Wall Segment WS-18
WS-19 – Containment Concrete Wall Segment WS-19
WS-20 – Containment Concrete Wall Segment WS-20
WS-21 – Containment Concrete Wall Segment WS-21
WS-22 – Containment Concrete Wall Segment WS-22
WS-23 – Containment Concrete Wall Segment WS-23
WS-24 – Containment Concrete Wall Segment WS-24
WS-25 – Containment Concrete Wall Segment WS-25
WS-26 – Containment Concrete Wall Segment WS-26
WS-27 – Containment Concrete Wall Segment WS-27
WS-28 – Containment Concrete Wall Segment WS-28
WS-29 – Containment Concrete Wall Segment WS-29
WS-30 – Containment Concrete Wall Segment WS-30
WS-31 – Containment Concrete Wall Segment WS-31
WS-32 – Containment Concrete Wall Segment WS-32

**DRAWING LIST AND REVISION STATUS**

<b>Drawing No. and Title</b>
03-1 – Containment Concrete Dome Drawing Schedule
DS-1 – Containment Concrete Dome Segment DS-1
DS-2 – Containment Concrete Dome Segment DS-2
DS-3 – Containment Concrete Dome Segment DS-3
DS-4 – Containment Concrete Dome Segment DS-4



DRAWING NO.	TITLE:	REVISION:
01-1	OVERALL CONTAINMENT PRESSURE BOUNDARY SCHEDULE	0

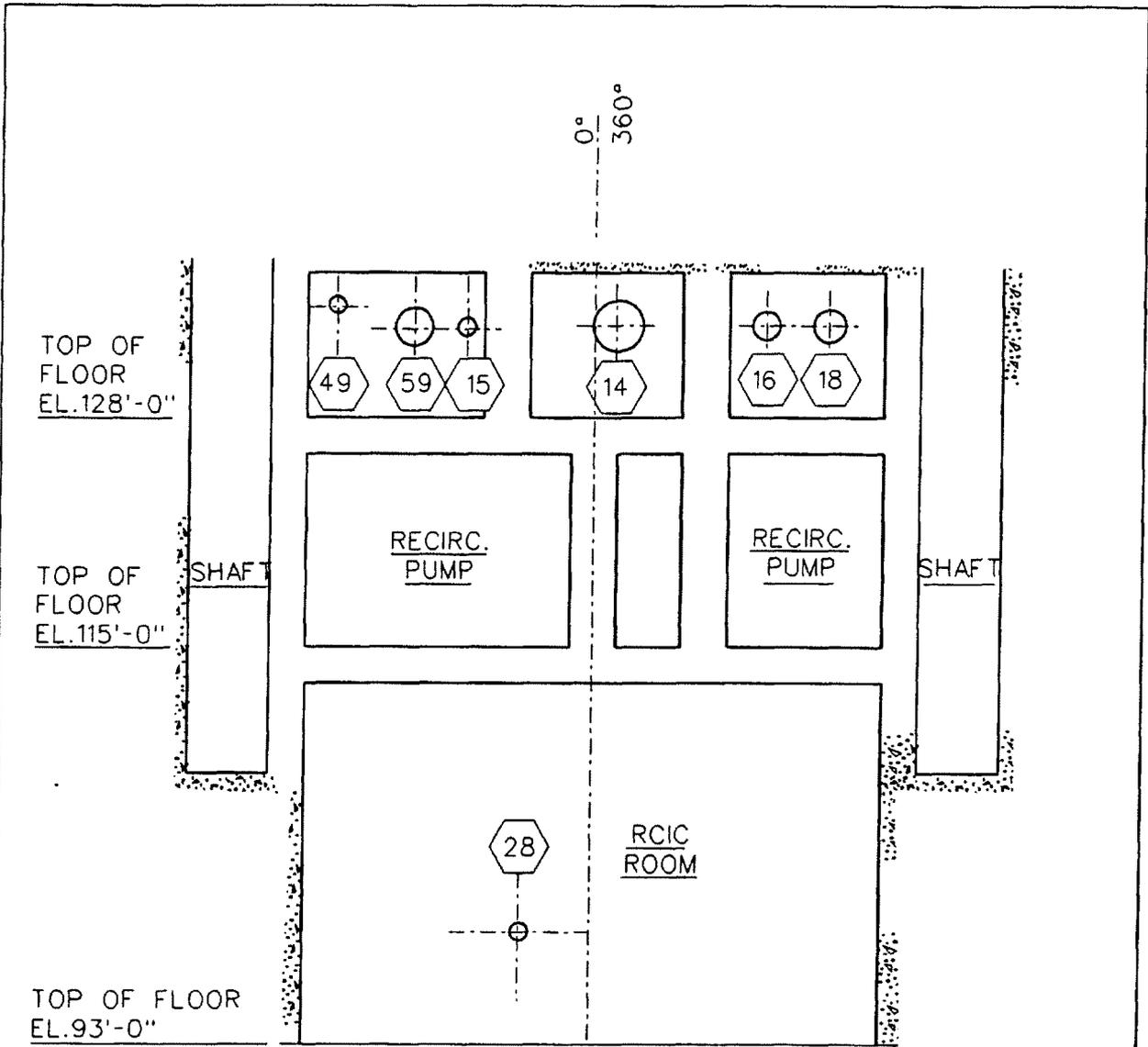


WALL SEGMENT DRAWING NO.

DRAWING NO.  
02-1

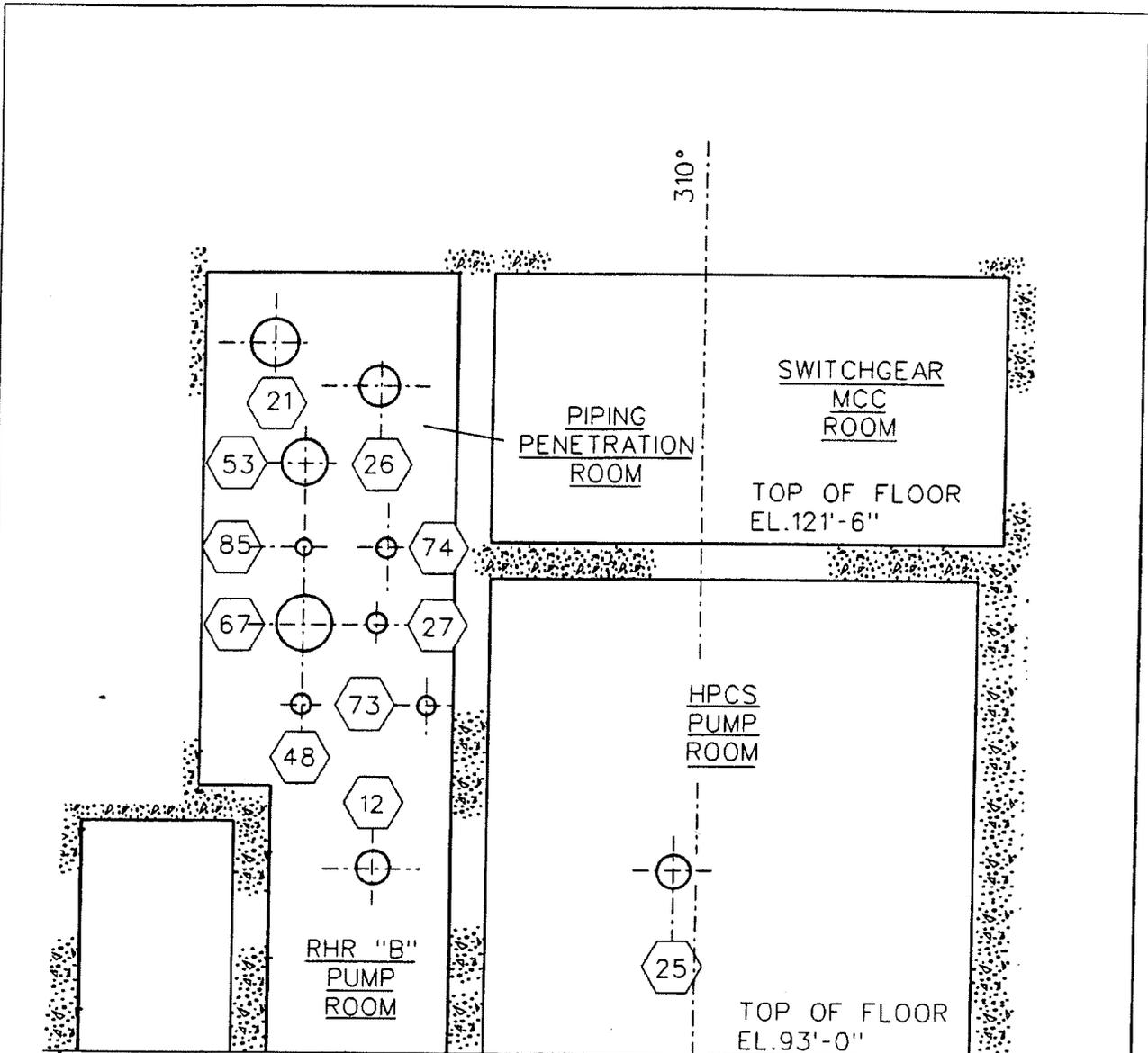
TITLE:  
CONTAINMENT CONCRETE WALL DRAWING SCHEDULE

REVISION:  
0



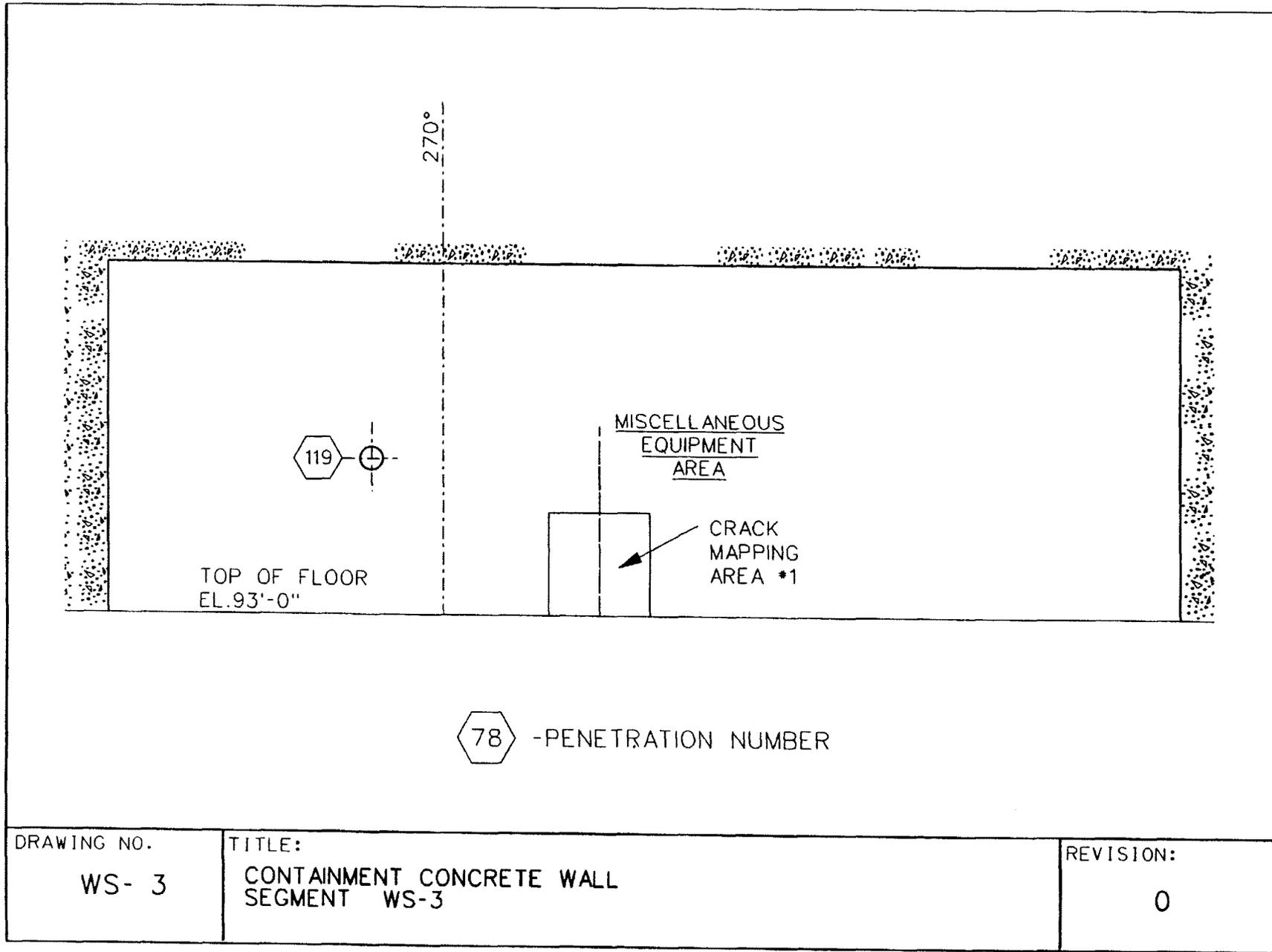
78 -PENETRATION NUMBER

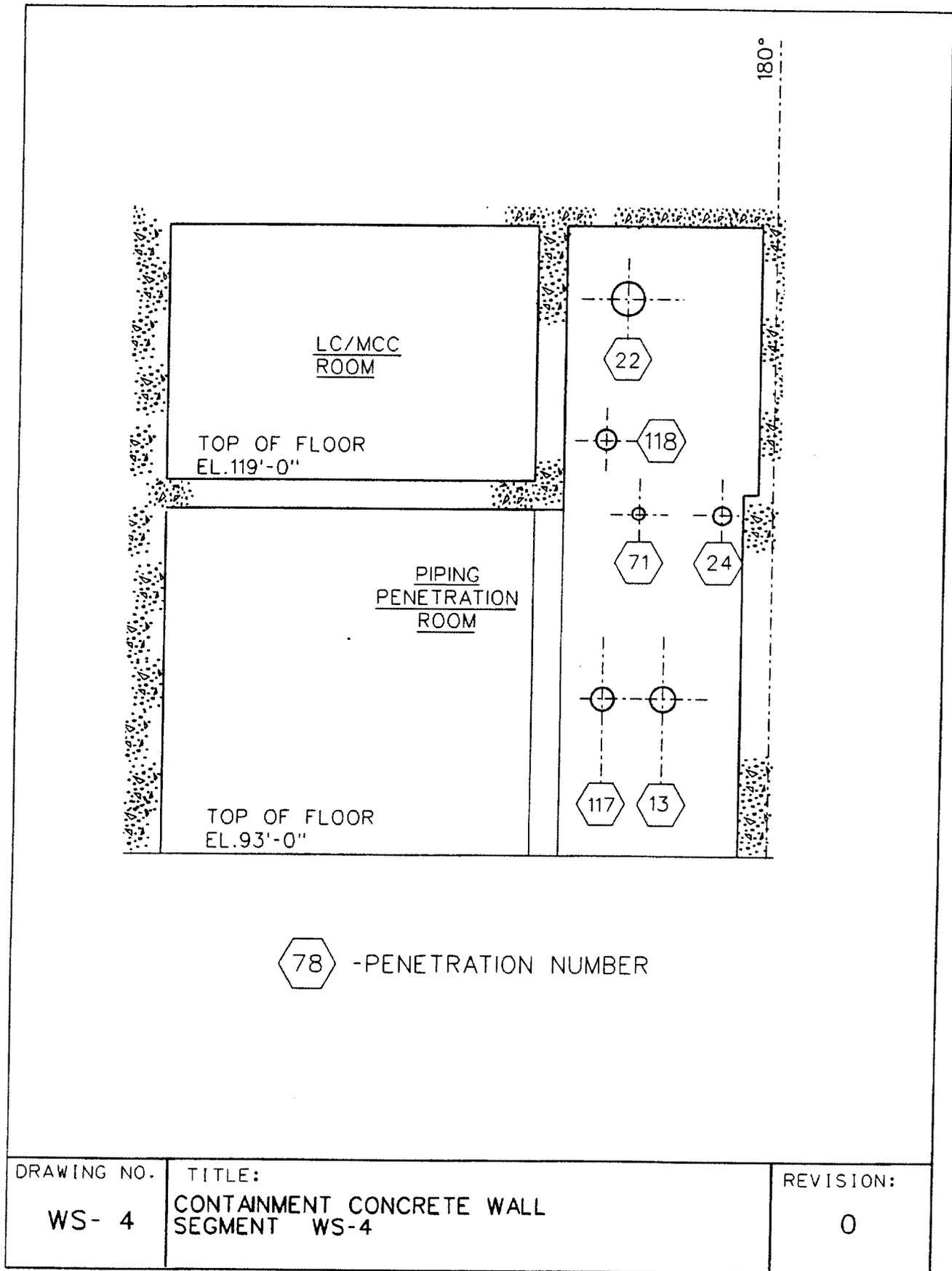
DRAWING NO. <b>WS- 1</b>	TITLE: <b>CONTAINMENT CONCRETE WALL          SEGMENT WS-1</b>	REVISION: <b>0</b>
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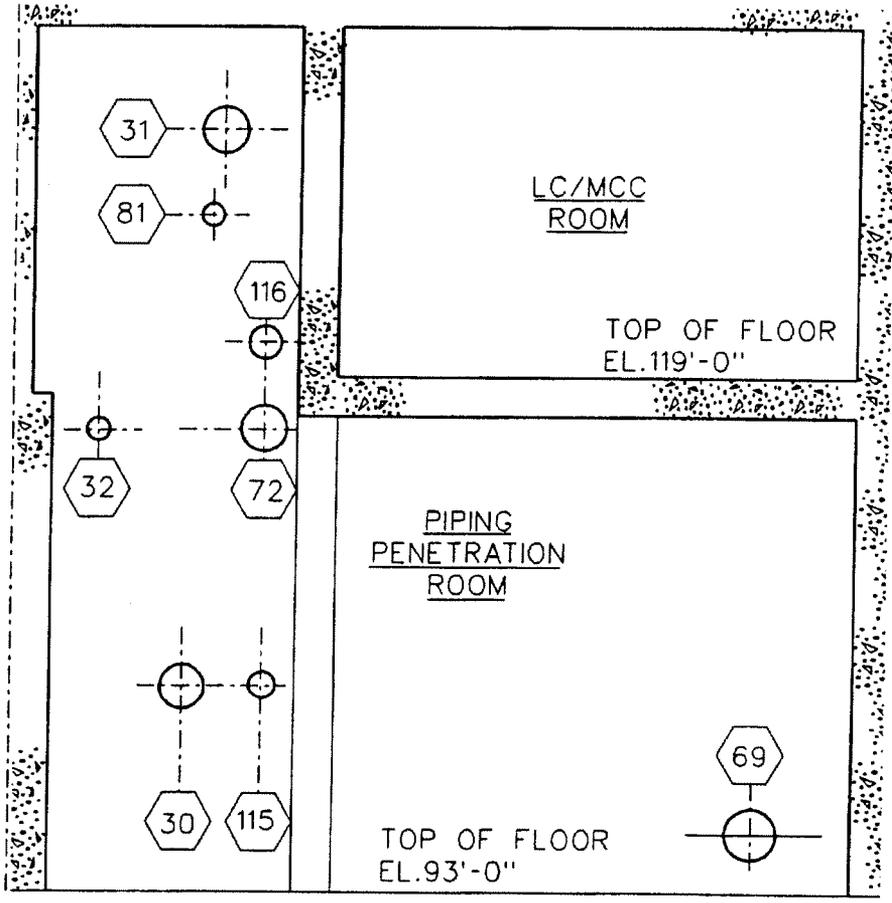
78 -PENETRATION NUMBER

DRAWING NO. <b>WS- 2</b>	TITLE: <b>CONTAINMENT CONCRETE WALL          SEGMENT WS-2</b>	REVISION: <b>0</b>
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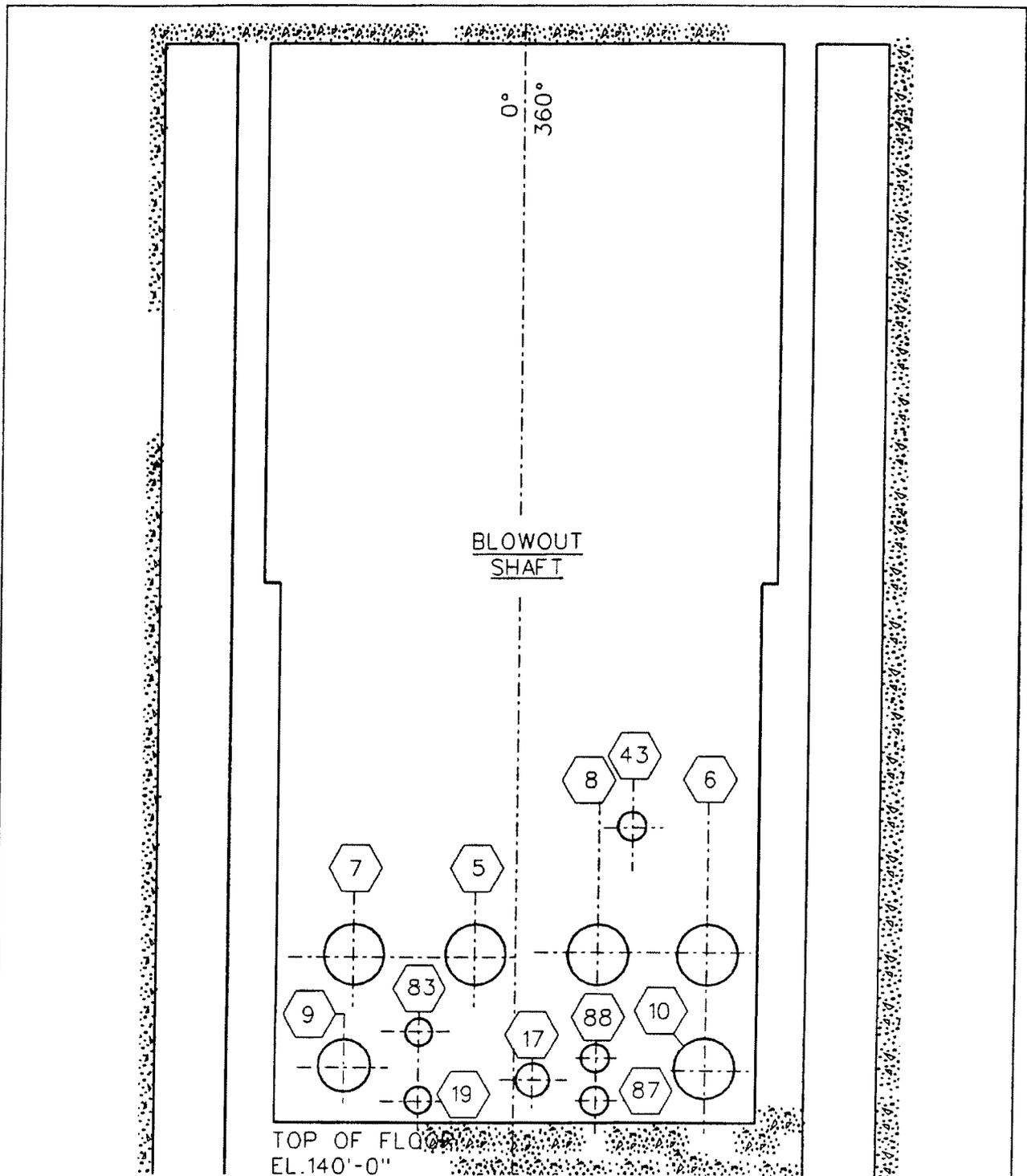




180°

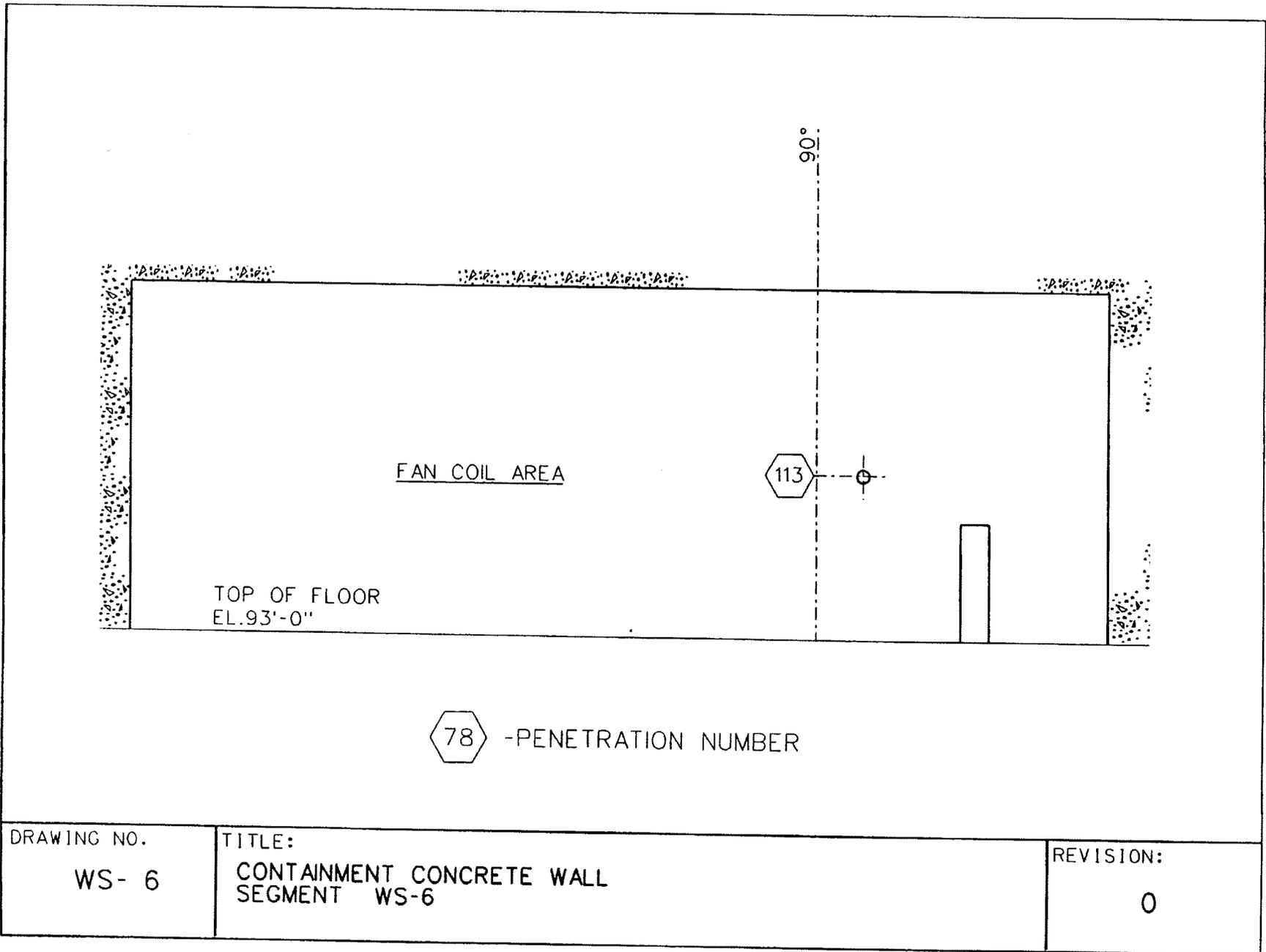


DRAWING NO. WS- 5	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-5	REVISION: 0
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 -PENETRATION NUMBER

DRAWING NO.  WS- 8	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-8	REVISION:  0
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TOP OF FLOOR  
EL. 93'-0"

FAN COIL AREA

113

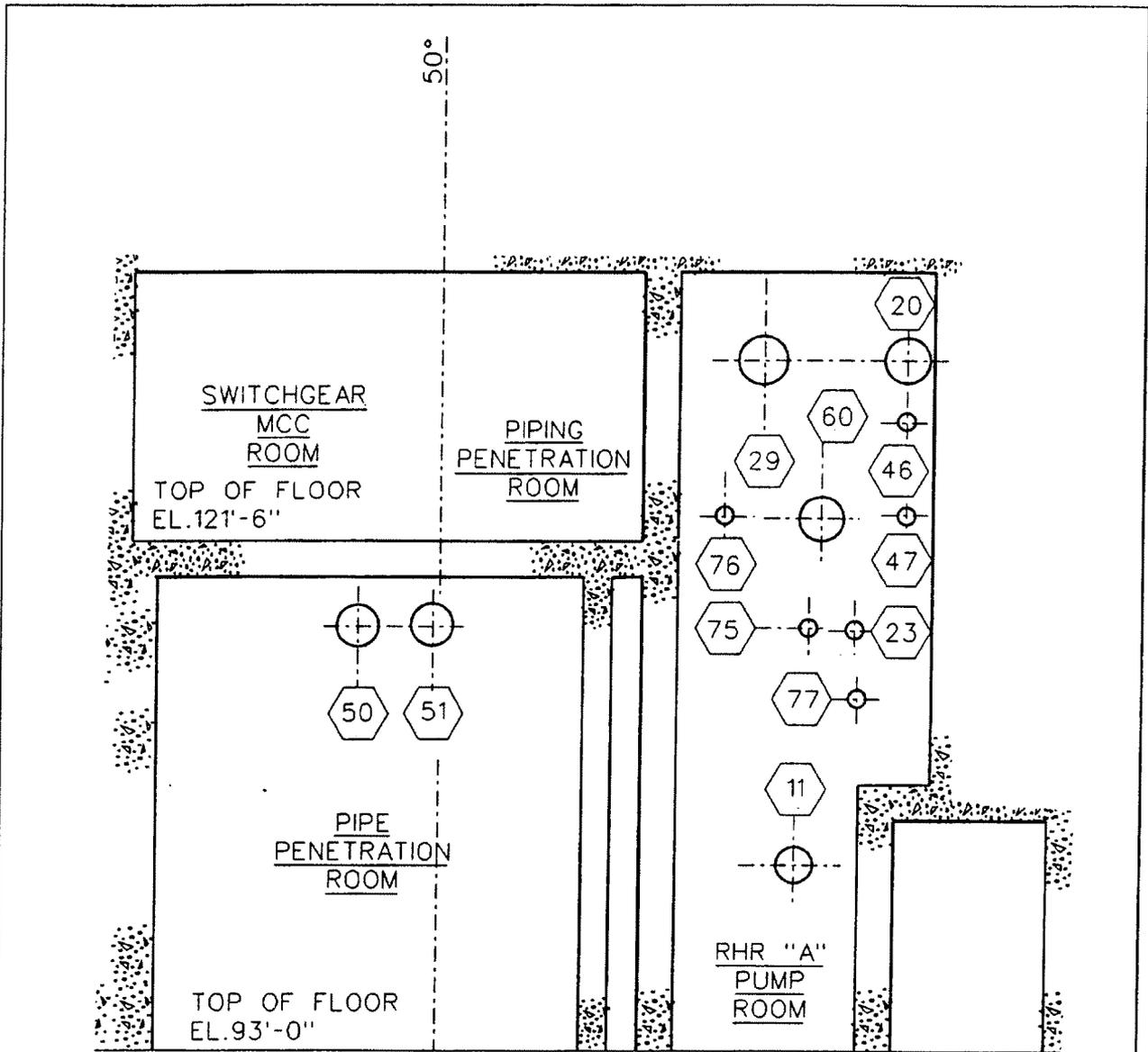
90°

78 -PENETRATION NUMBER

DRAWING NO.  
WS- 6

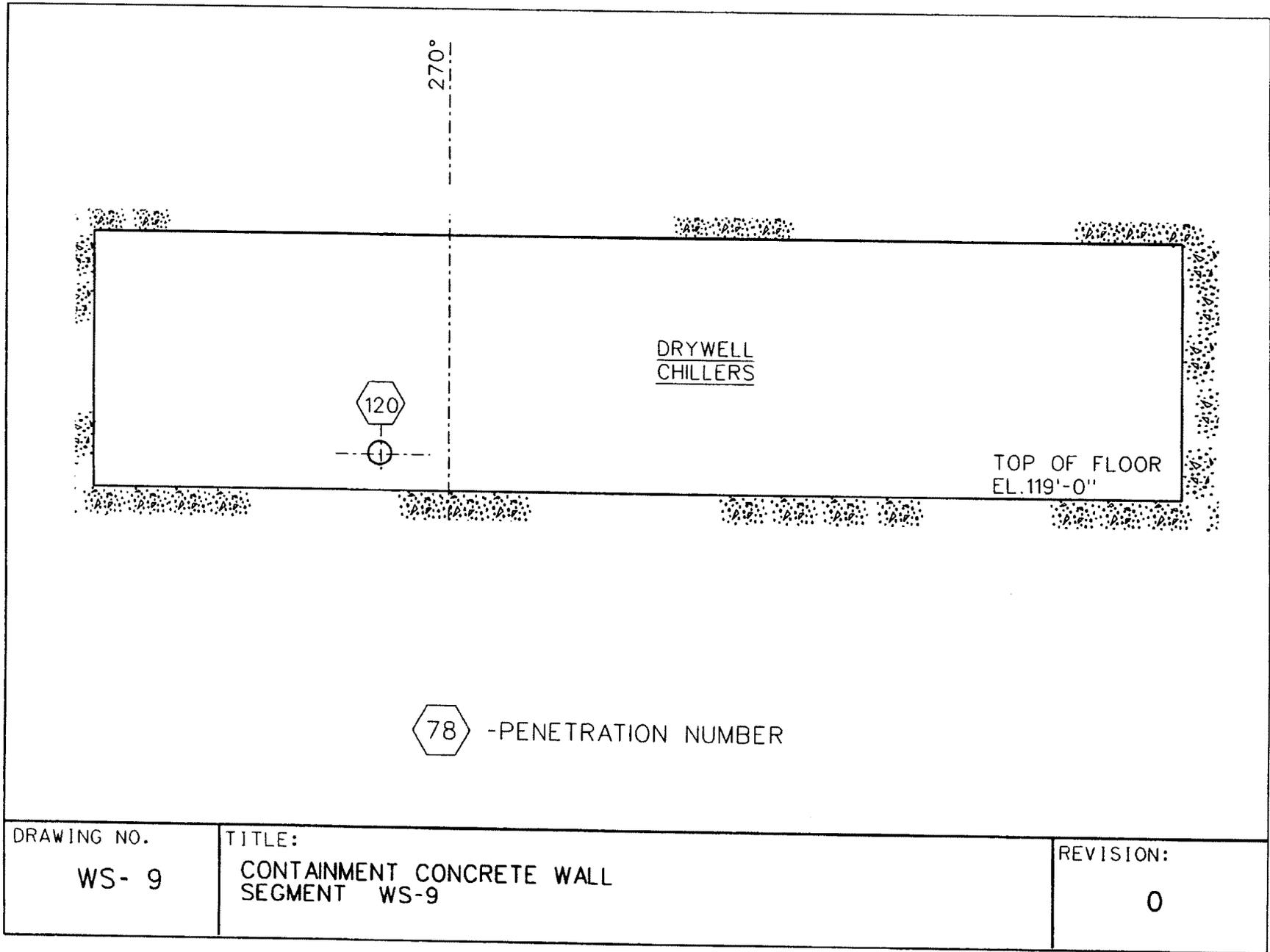
TITLE:  
CONTAINMENT CONCRETE WALL  
SEGMENT WS-6

REVISION:  
0



78 -PENETRATION NUMBER

DRAWING NO.  WS- 7	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-7	REVISION:  0
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DRAWING NO.

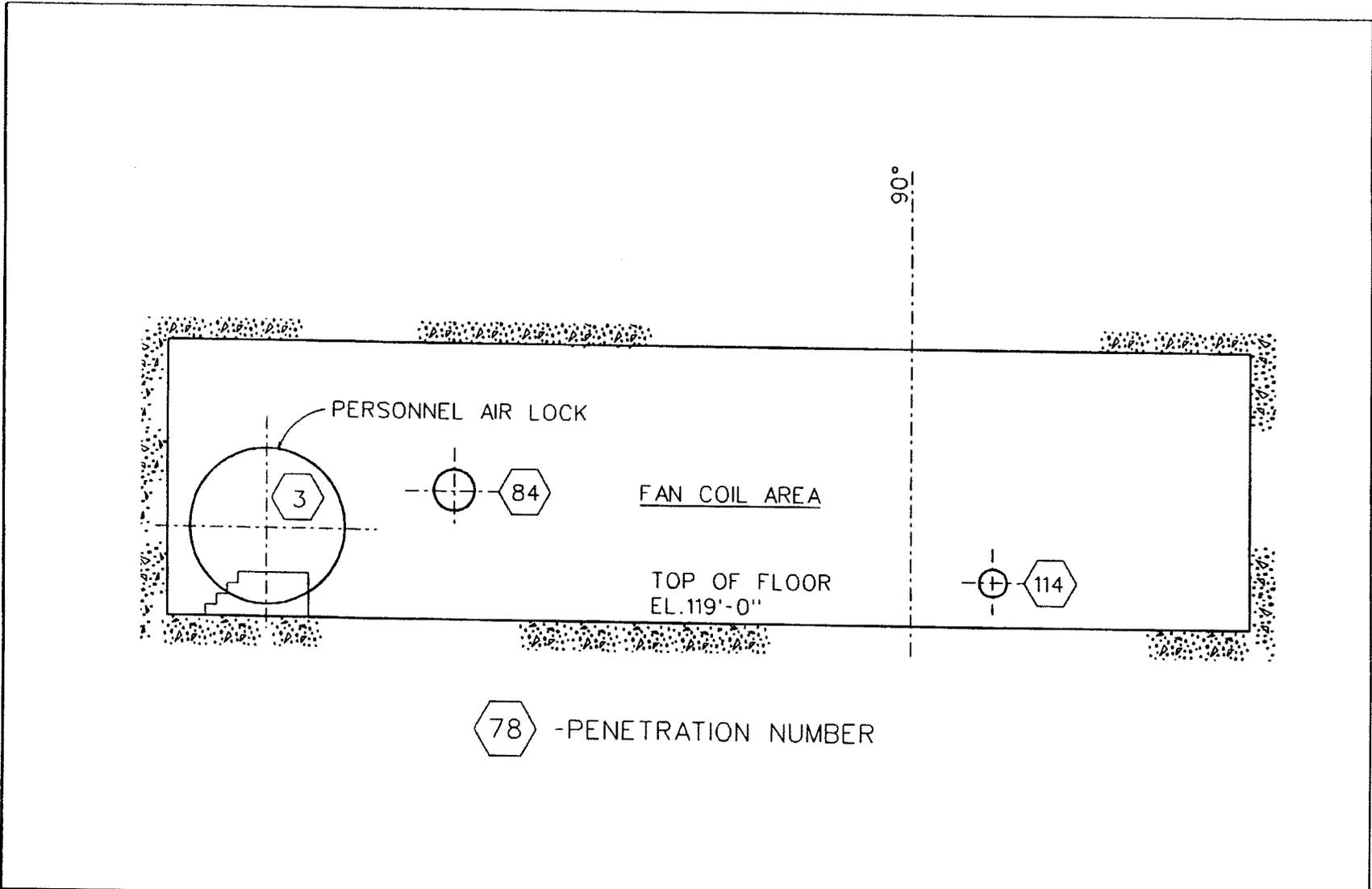
WS- 9

TITLE:

CONTAINMENT CONCRETE WALL  
SEGMENT WS-9

REVISION:

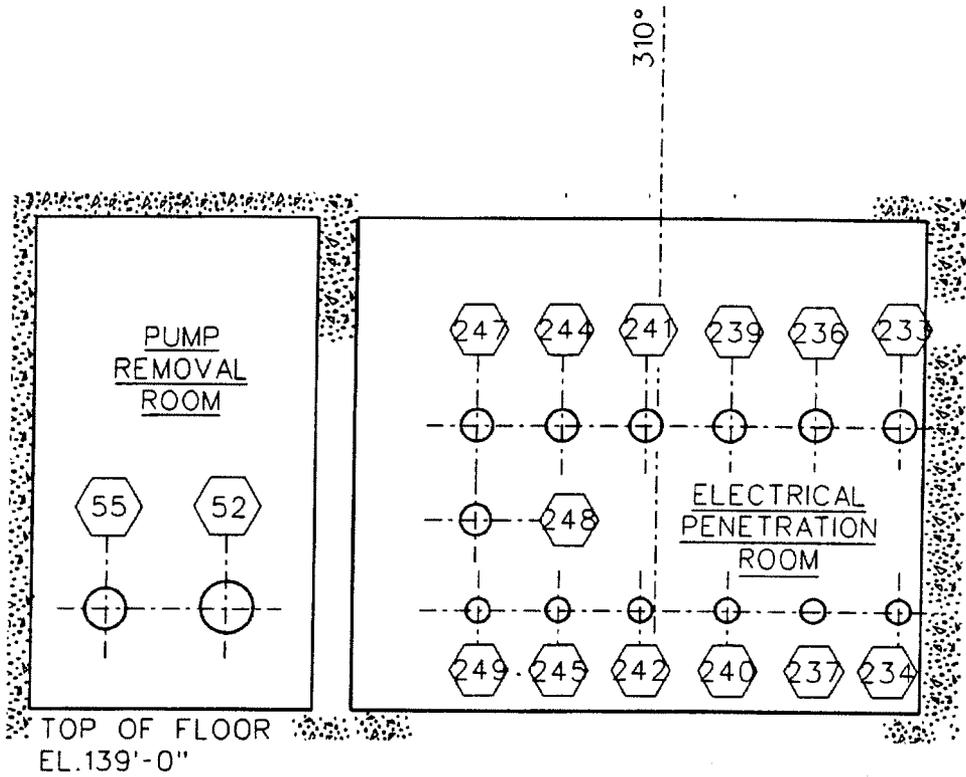
0



DRAWING NO.  
 WS-10

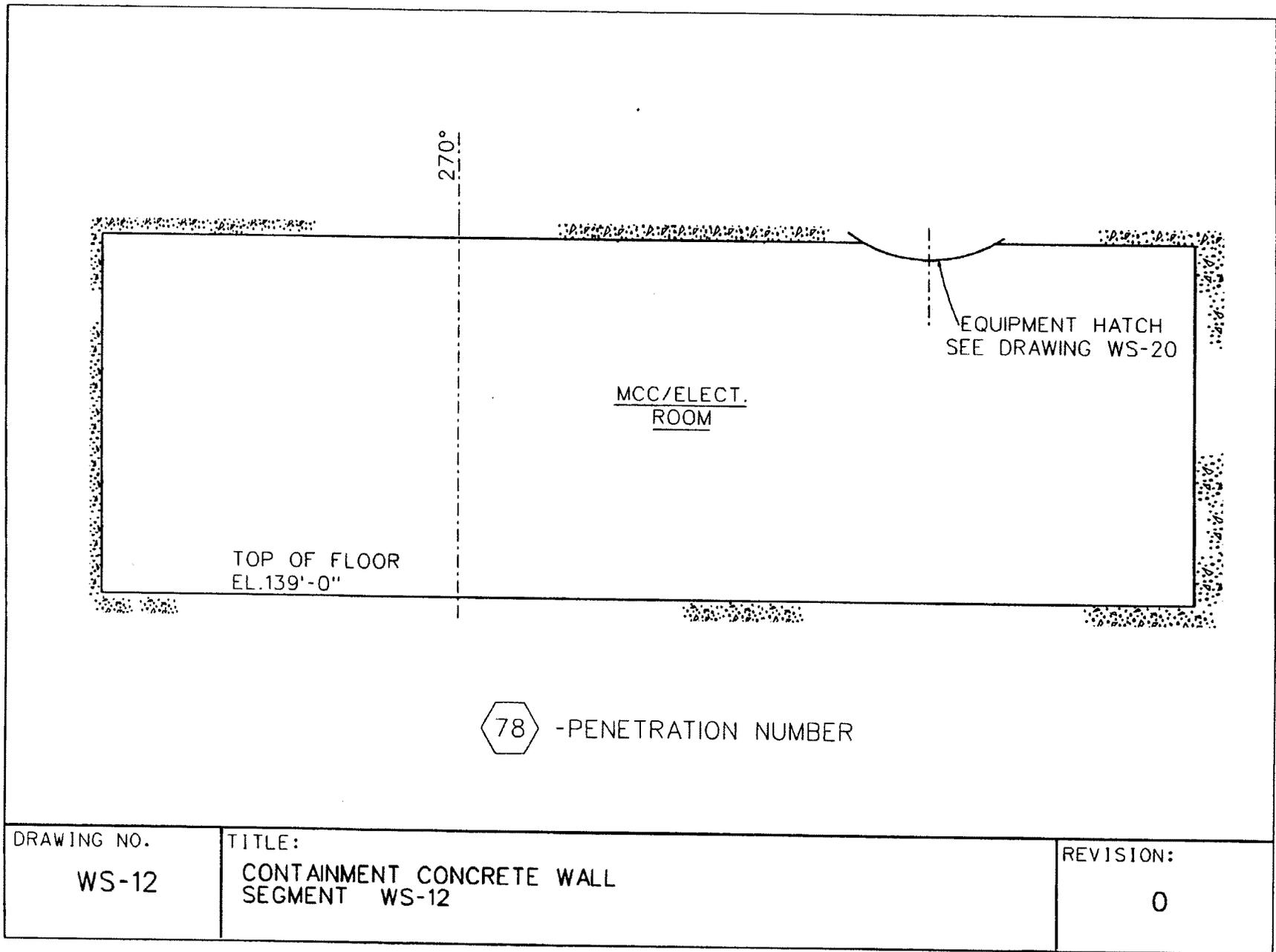
TITLE:  
 CONTAINMENT CONCRETE WALL  
 SEGMENT WS-10

REVISION:  
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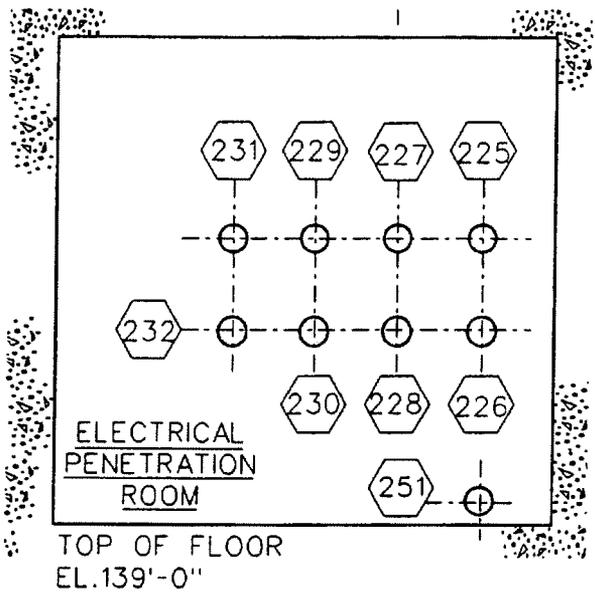


78
 -PENETRATION NUMBER

DRAWING NO.  <b>WS-11</b>	TITLE: <b>CONTAINMENT CONCRETE WALL SEGMENT WS-11</b>	REVISION:  <b>0</b>
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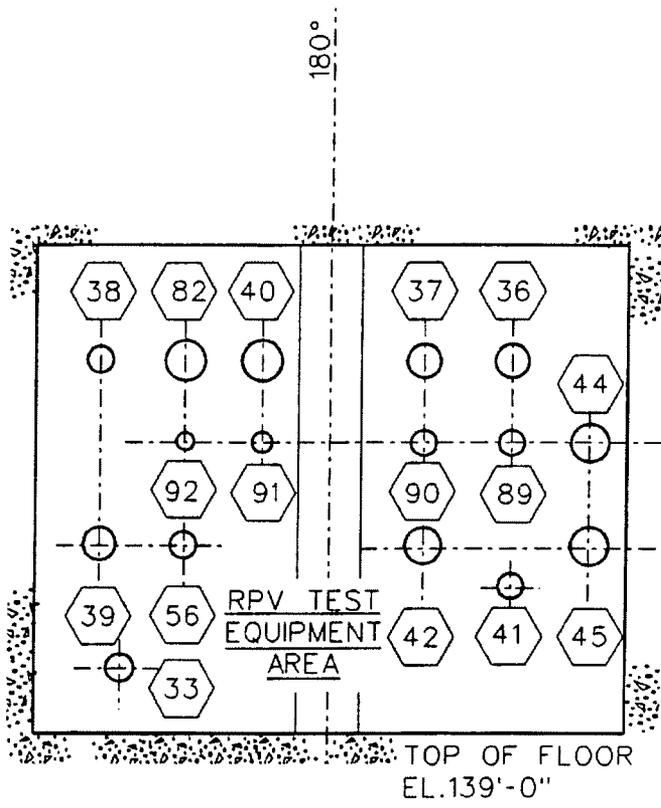


180°



78 -PENETRATION NUMBER

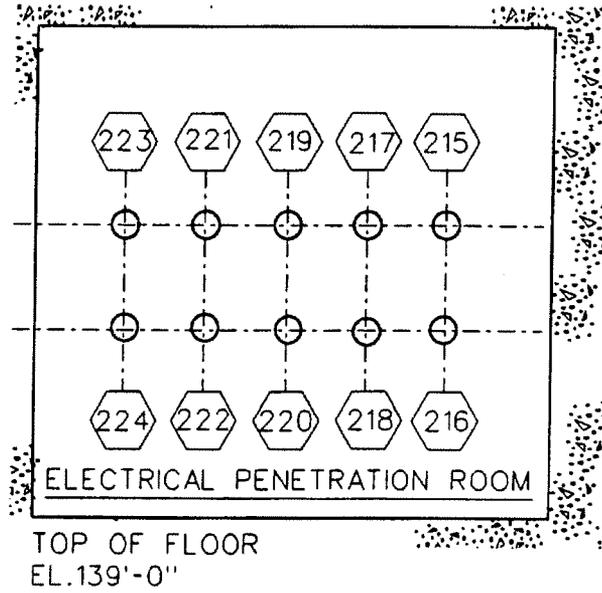
DRAWING NO. WS-13	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-13	REVISION: 0
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78
 -PENETRATION NUMBER

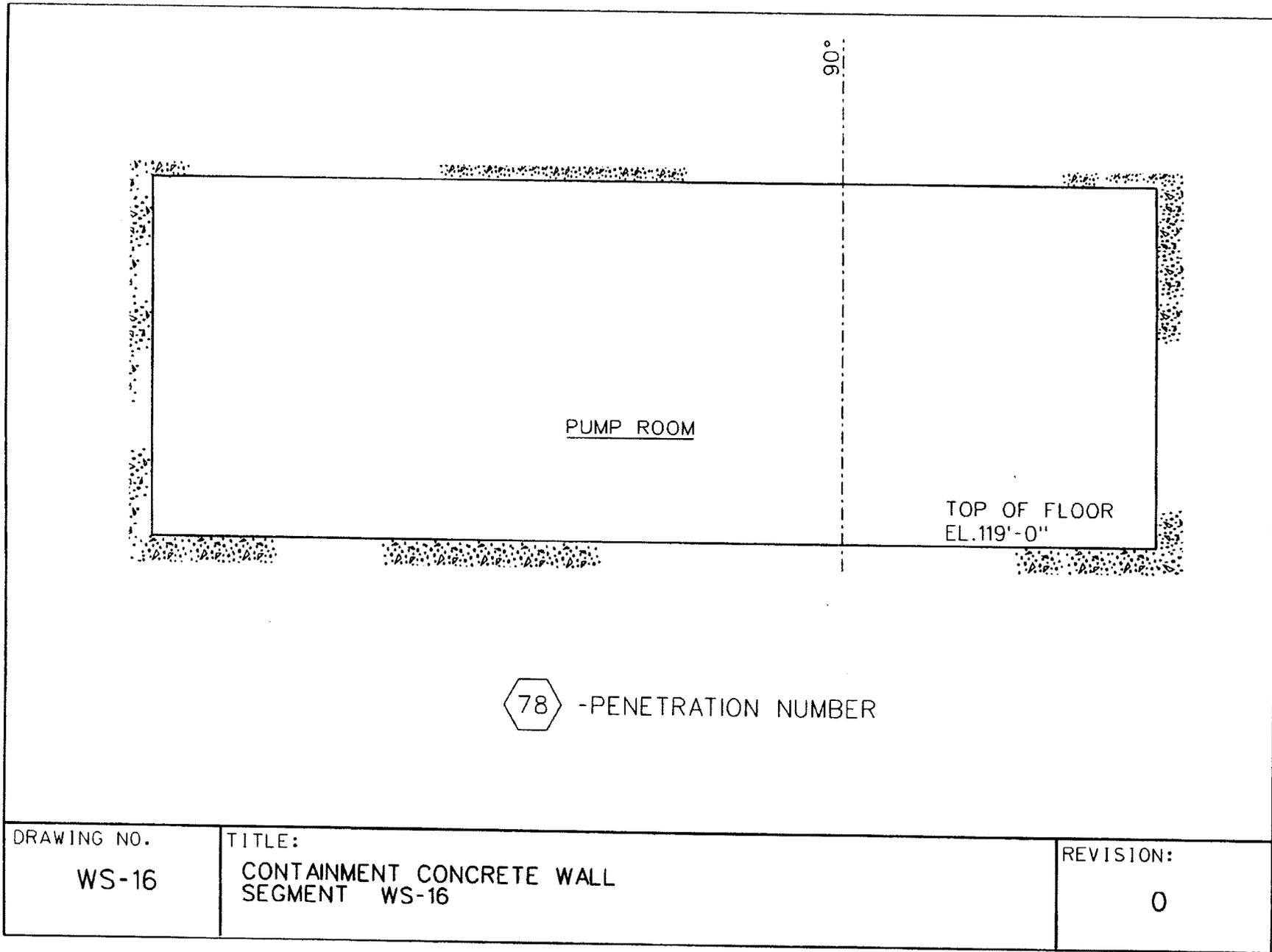
DRAWING NO.  WS-14	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-14	REVISION:  0
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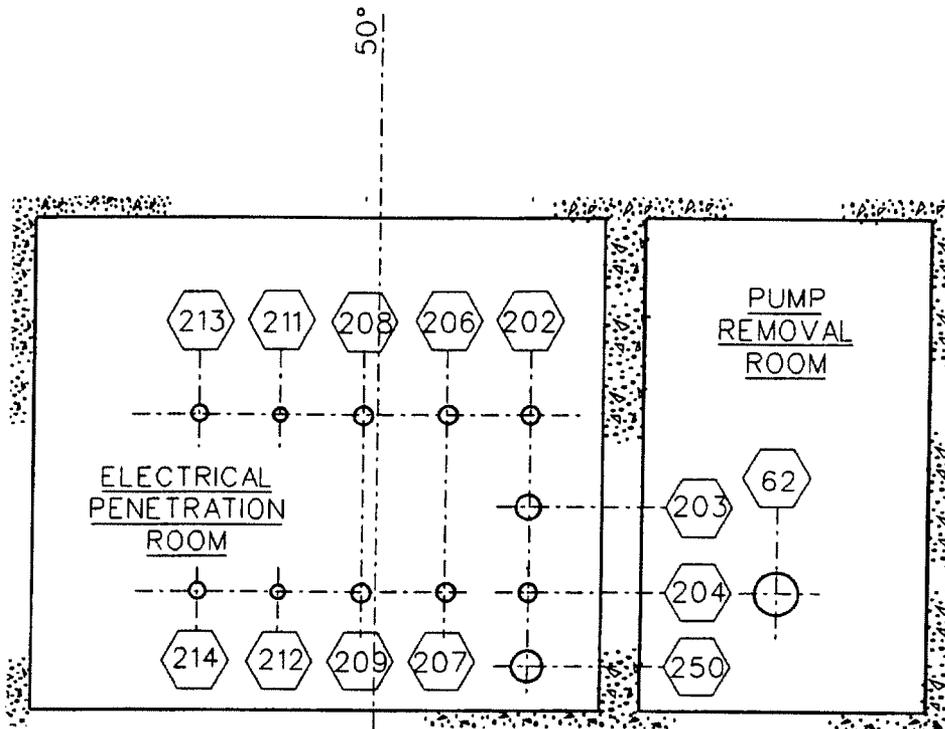
180°



78 -PENETRATION NUMBER

DRAWING NO. WS-15	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-15	REVISION: 0
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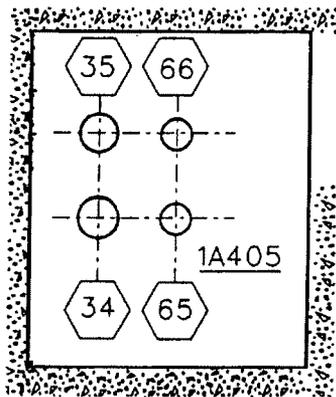




TOP OF FLOOR  
EL.139'-0"

78 -PENETRATION NUMBER

DRAWING NO.	TITLE:	REVISION:
WS-17	CONTAINMENT CONCRETE WALL SEGMENT WS-17	0



TOP OF FLOOR  
EL.166'-0"

310°

78 -PENETRATION NUMBER

DRAWING NO.

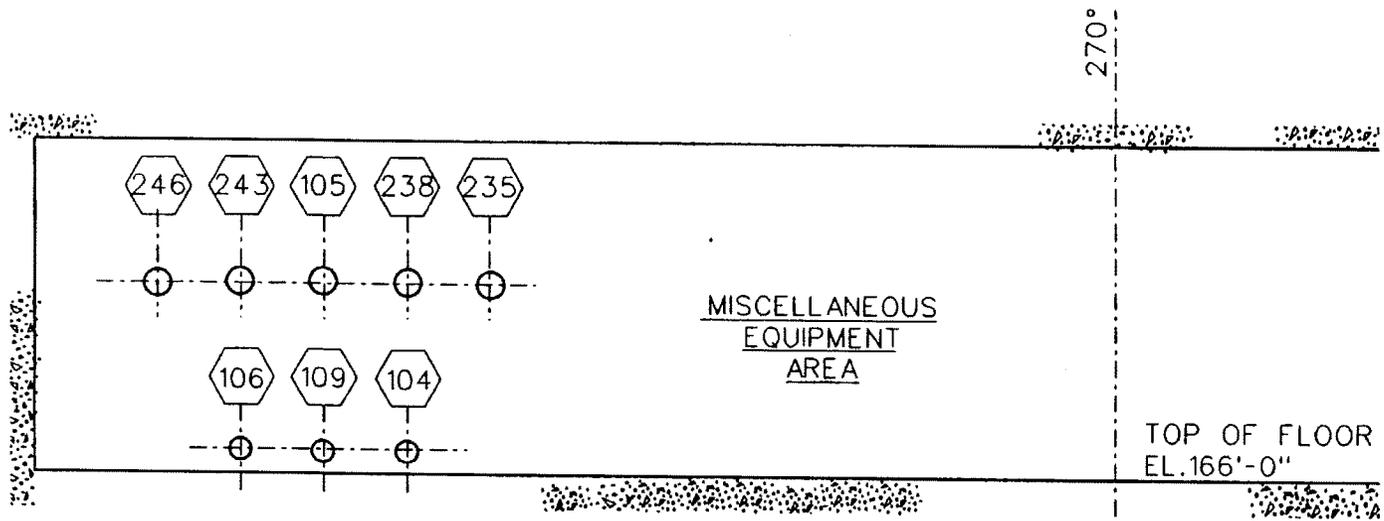
WS-18

TITLE:

CONTAINMENT CONCRETE WALL  
SEGMENT WS-18

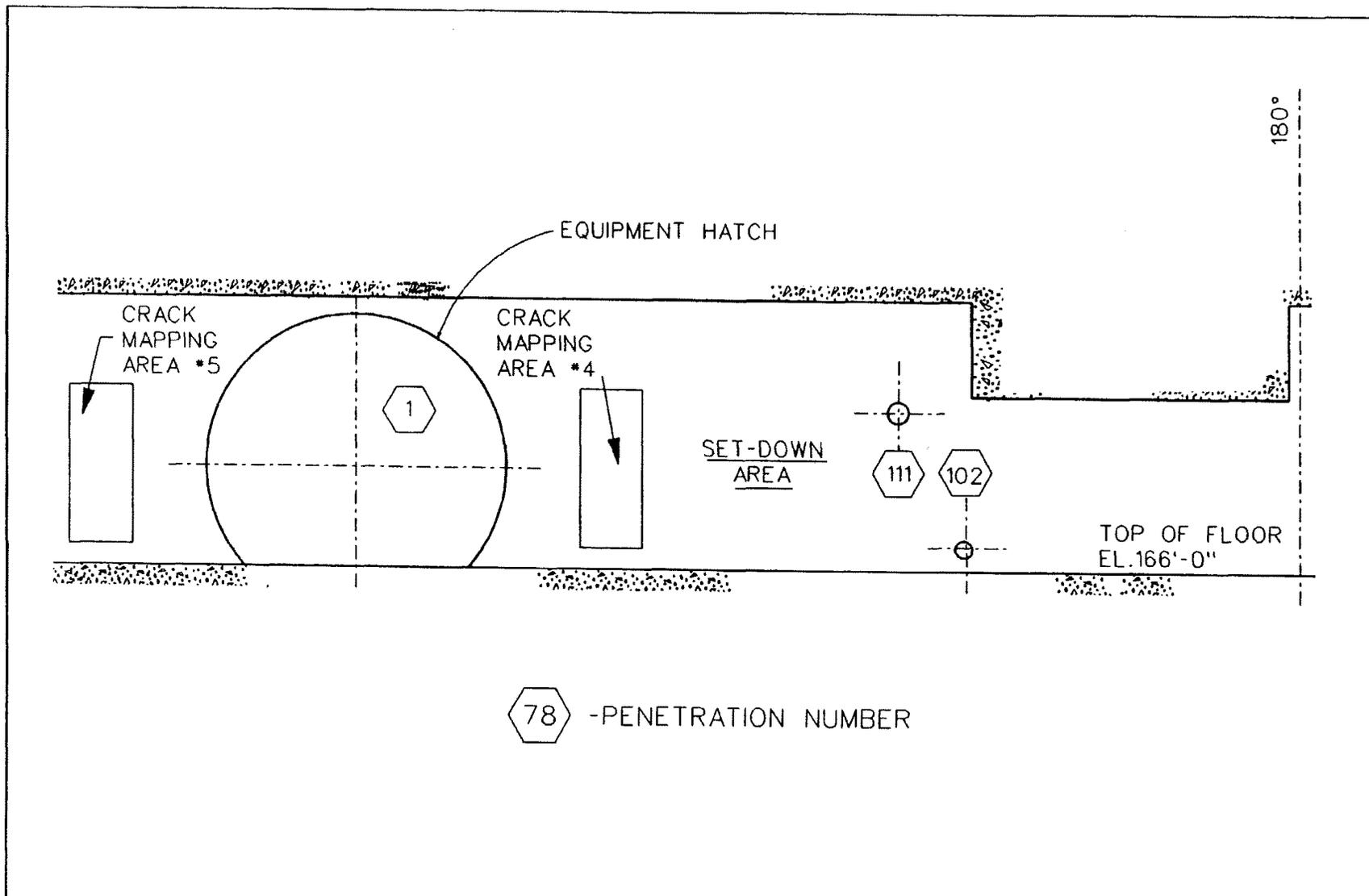
REVISION:

0




 -PENETRATION NUMBER

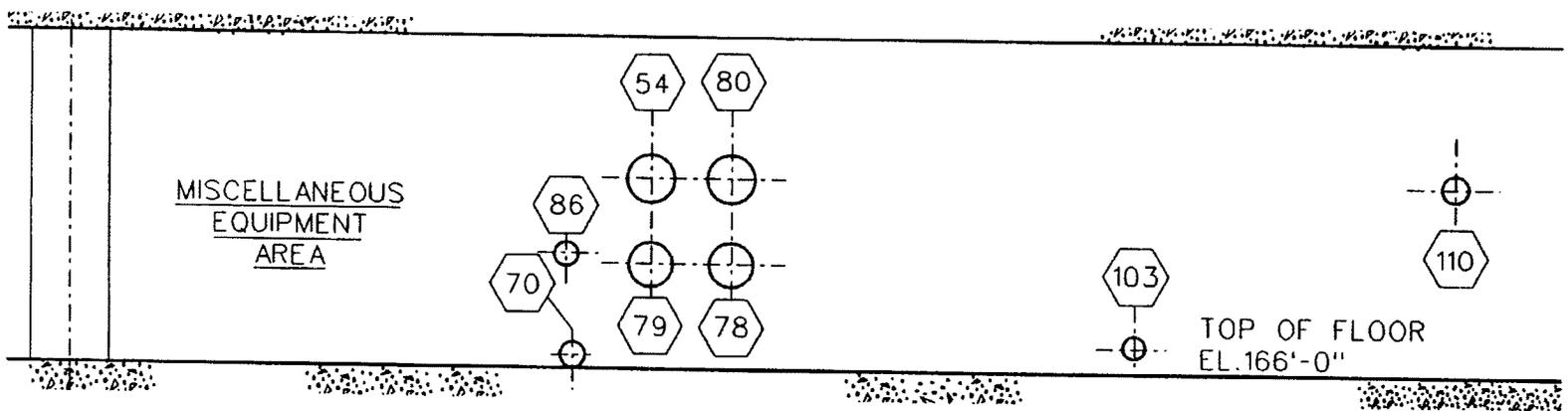
DRAWING NO. WS-19	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-19	REVISION: 0
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78 -PENETRATION NUMBER

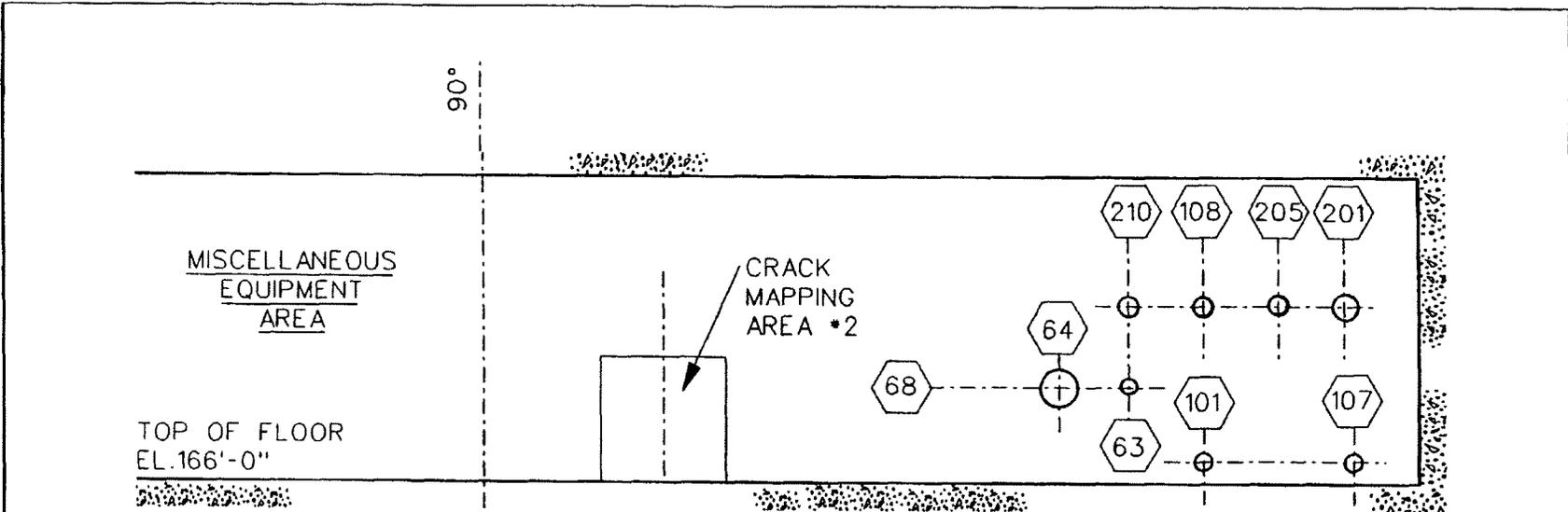
<p>DRAWING NO. WS-20</p>	<p>TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-20</p>	<p>REVISION: 0</p>
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180°



78 - PENETRATION NUMBER

DRAWING NO. WS-21	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-21	REVISION: 0
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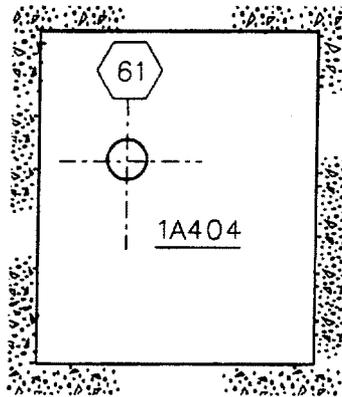


78 -PENETRATION NUMBER

DRAWING NO. WS-22	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-22	REVISION: 0
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50°

TOP OF FLOOR  
EL.166'-0"



78 -PENETRATION NUMBER

DRAWING NO.

WS-23

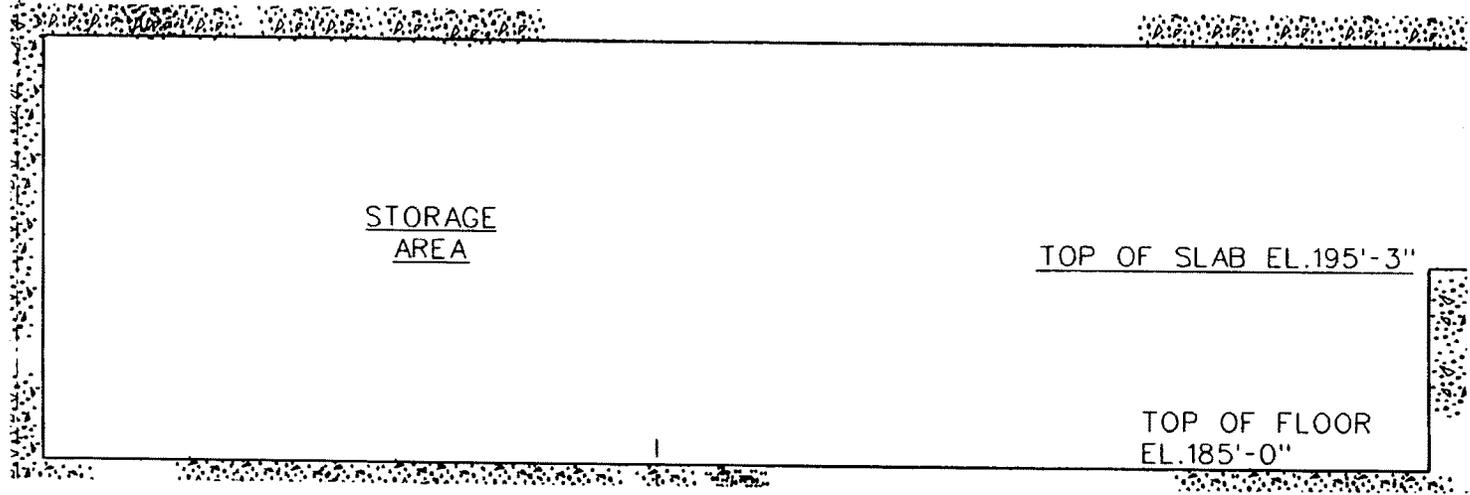
TITLE:

CONTAINMENT CONCRETE WALL  
SEGMENT WS-23

REVISION:

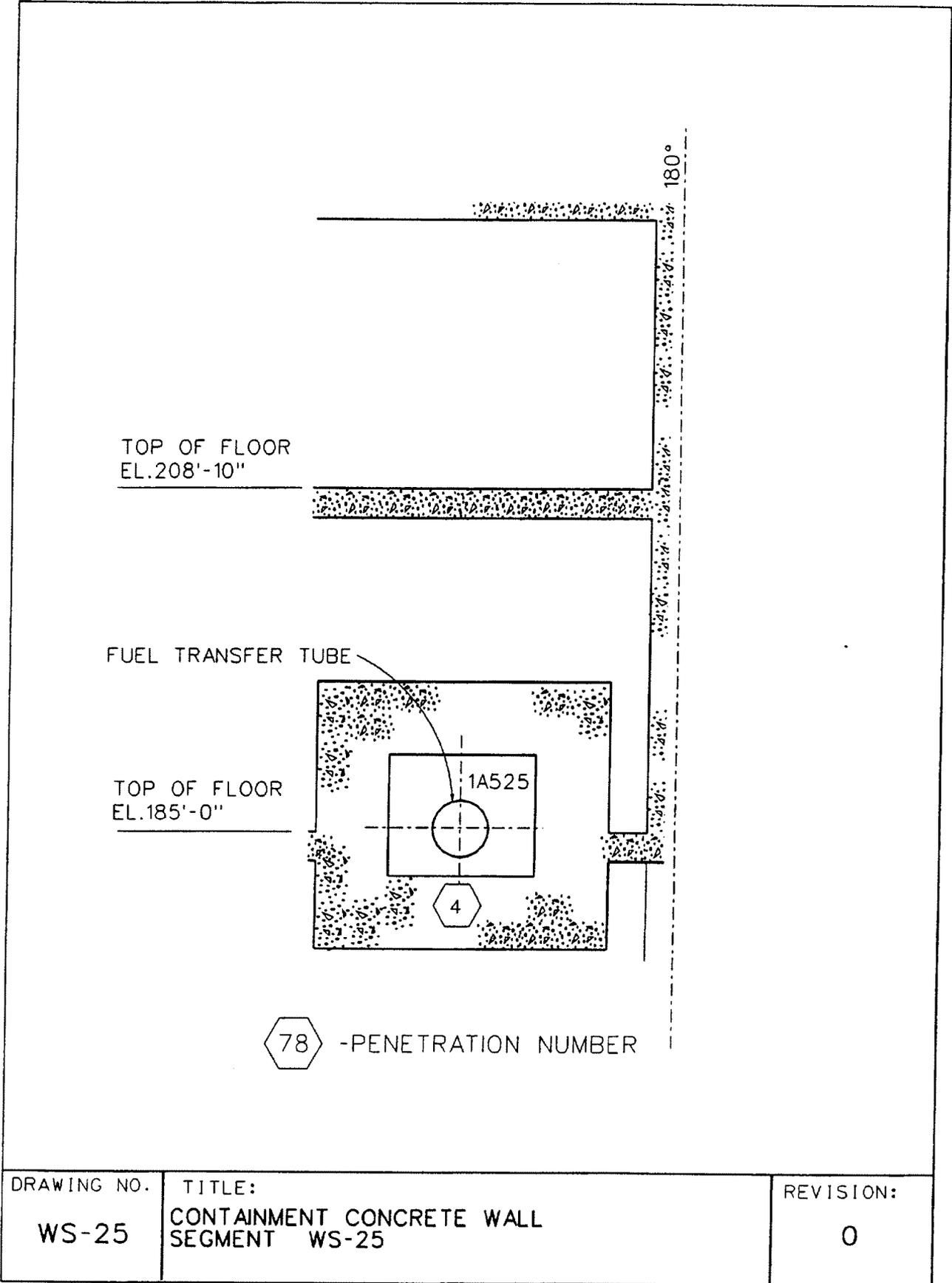
0

270°



78 -PENETRATION NUMBER

DRAWING NO. <b>WS-24</b>	TITLE: <b>CONTAINMENT CONCRETE WALL SEGMENT WS-24</b>	REVISION: <b>0</b>
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DRAWING NO.

WS-25

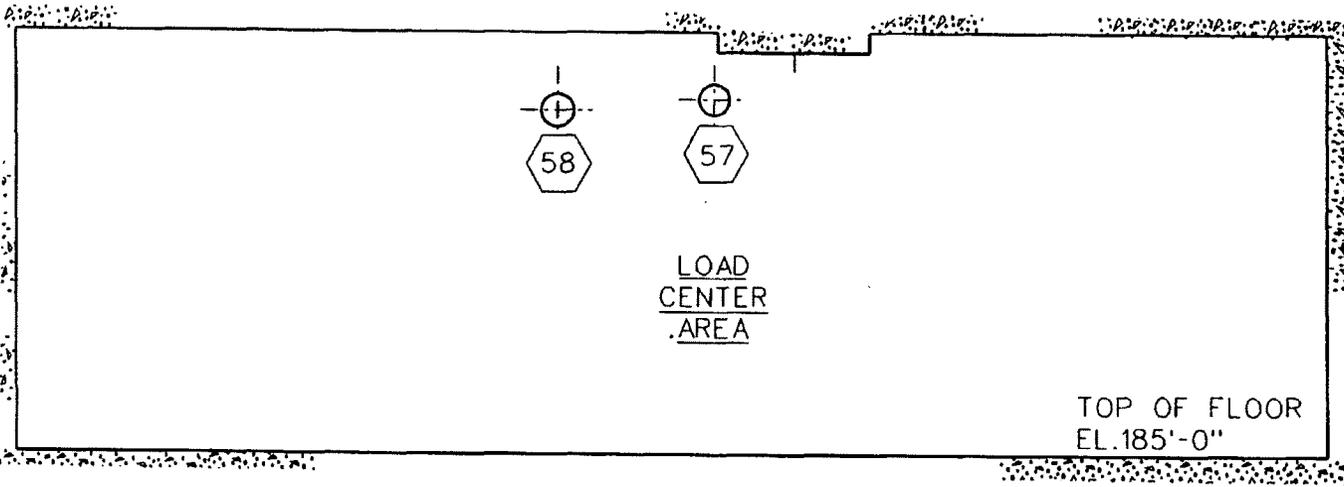
TITLE:

CONTAINMENT CONCRETE WALL  
SEGMENT WS-25

REVISION:

0

180°



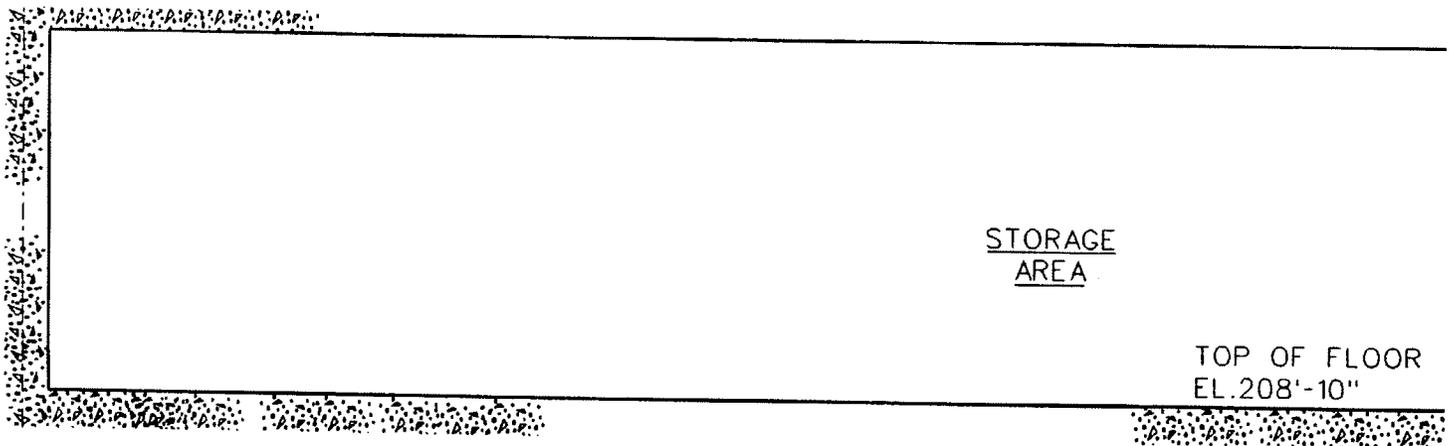
78 - PENETRATION NUMBER

DRAWING NO.  
WS-26

TITLE:  
CONTAINMENT CONCRETE WALL  
SEGMENT WS-26

REVISION:  
0

270°



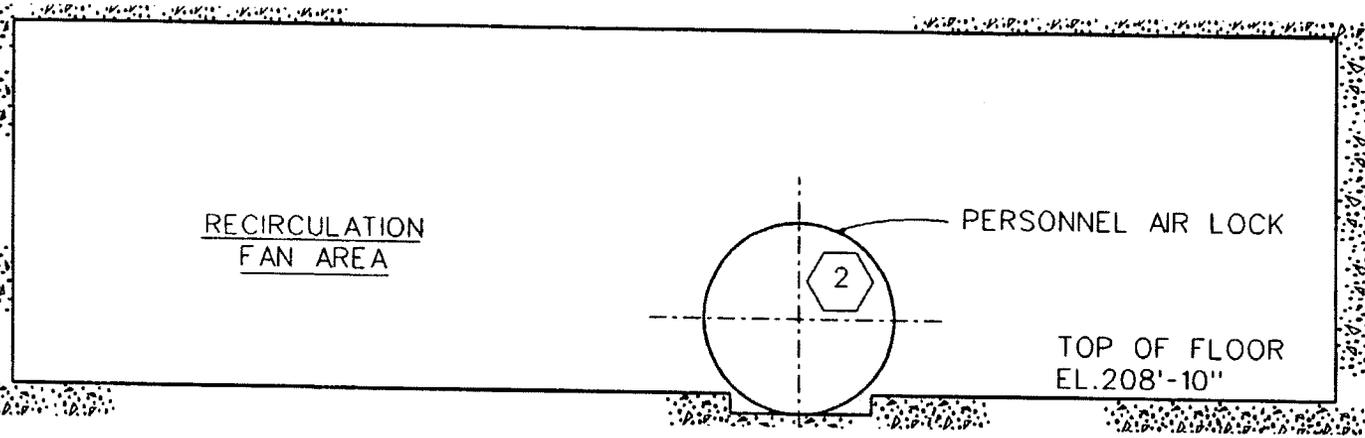
STORAGE  
AREA

TOP OF FLOOR  
EL. 208'-10"

78 -PENETRATION NUMBER

DRAWING NO. WS-27	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-27	REVISION: 0
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180°



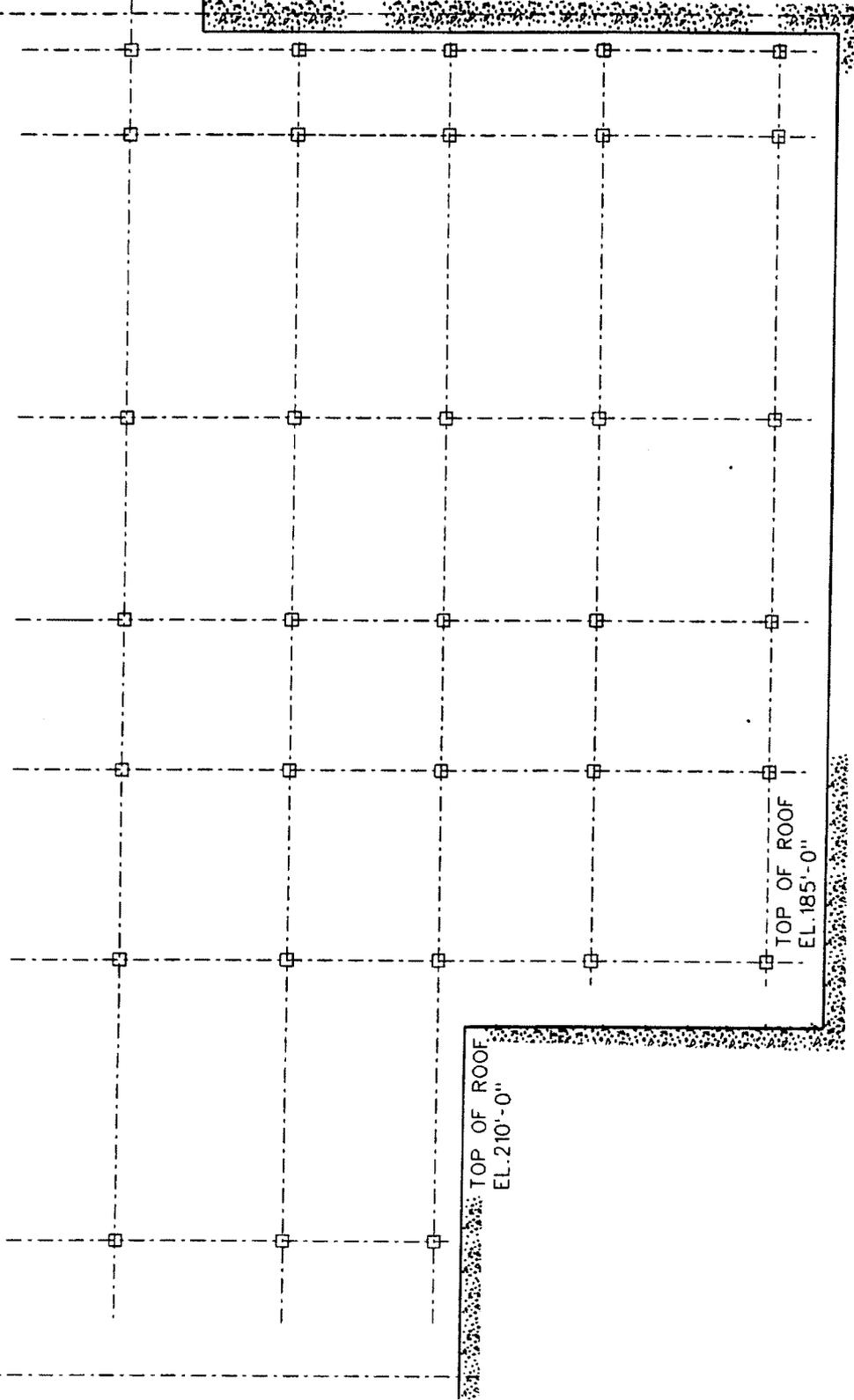
78 - PENETRATION NUMBER

DRAWING NO. WS-28	TITLE: CONTAINMENT CONCRETE WALL SEGMENT WS-28	REVISION: 0
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360°

DOMELINE  
EL.243'-6"

270°



DRAWING NO.

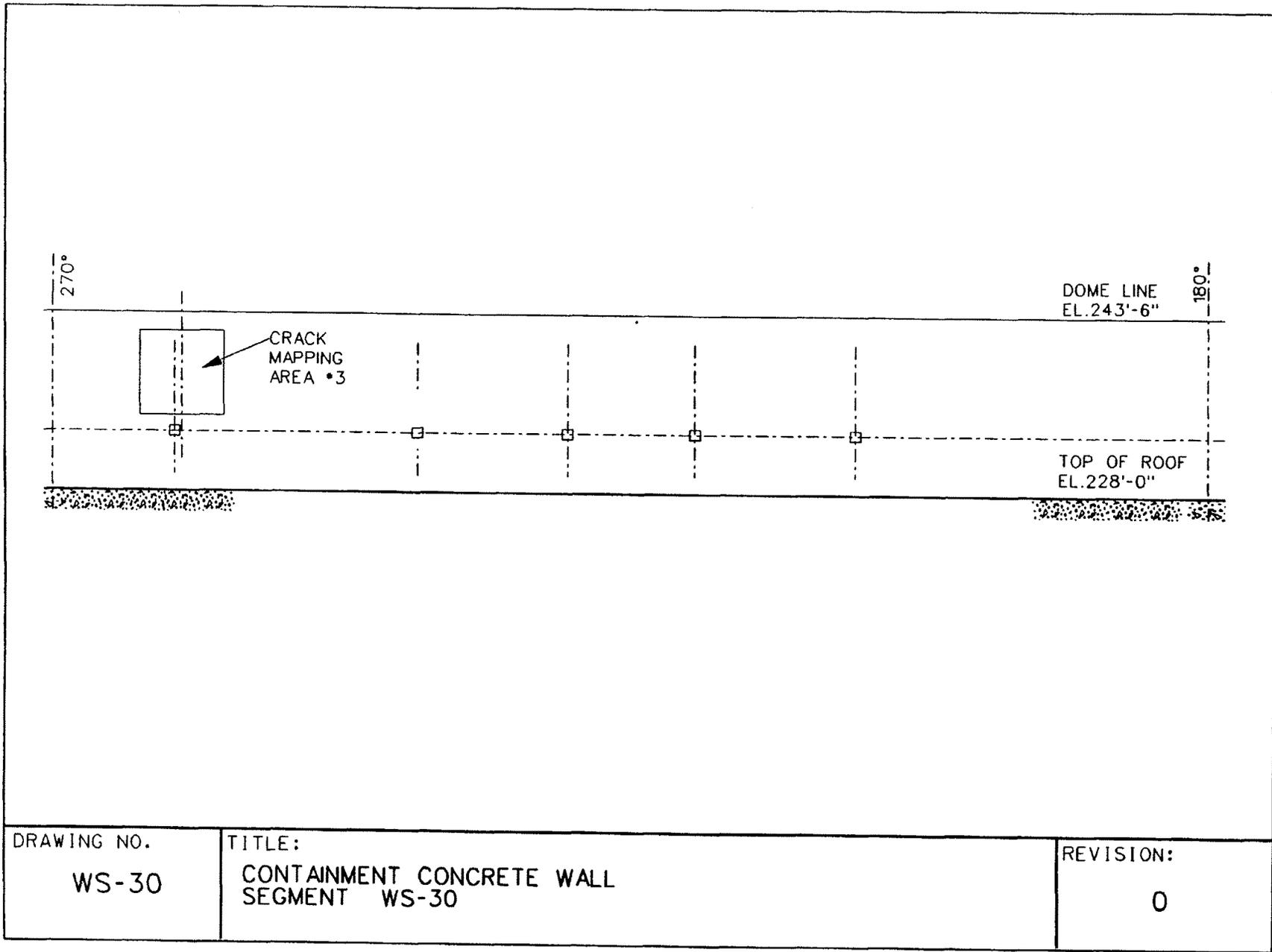
WS-29

TITLE:

CONTAINMENT CONCRETE WALL  
SEGMENT WS-29

REVISION:

0



DRAWING NO.

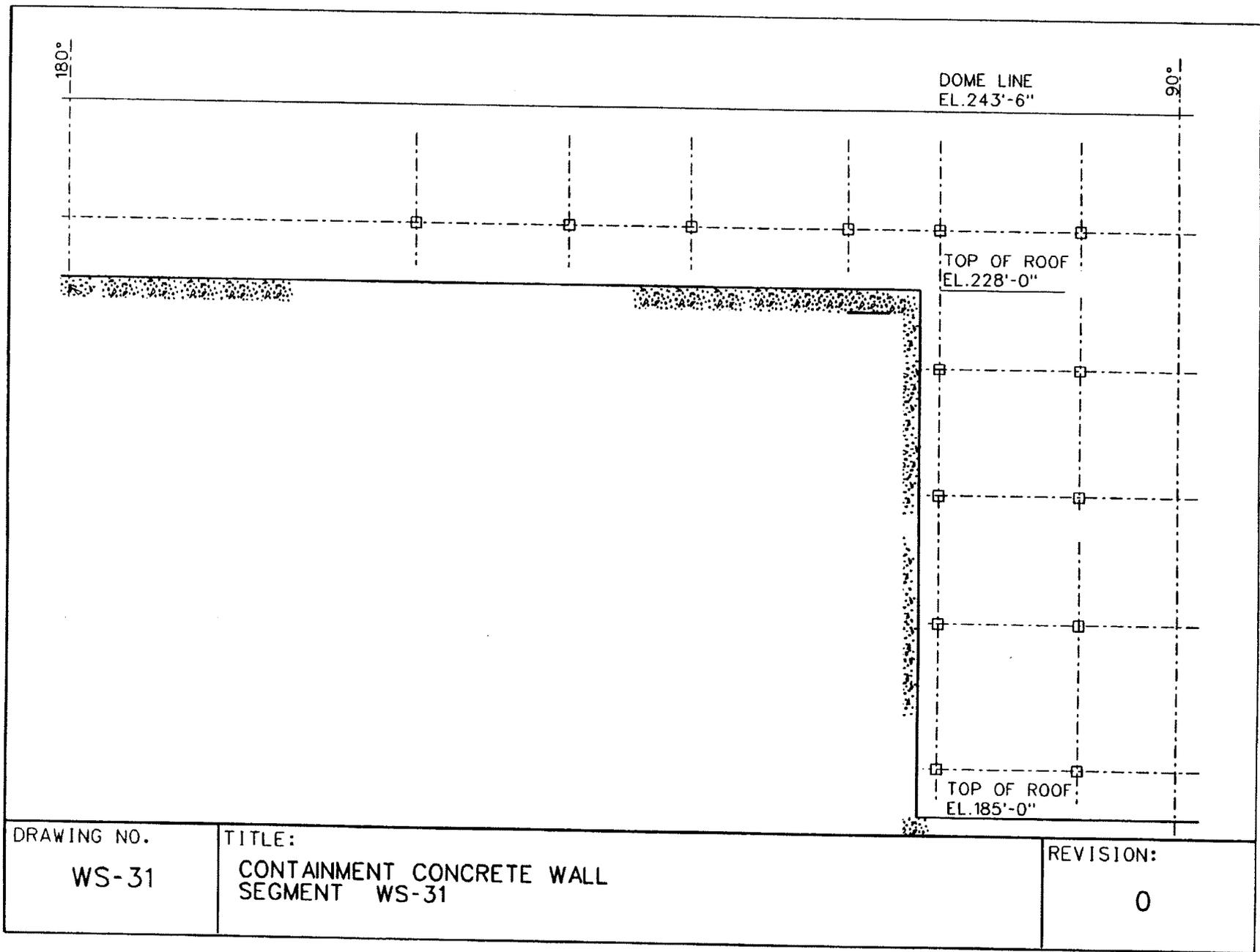
WS-30

TITLE:

CONTAINMENT CONCRETE WALL  
SEGMENT WS-30

REVISION:

0



DRAWING NO.

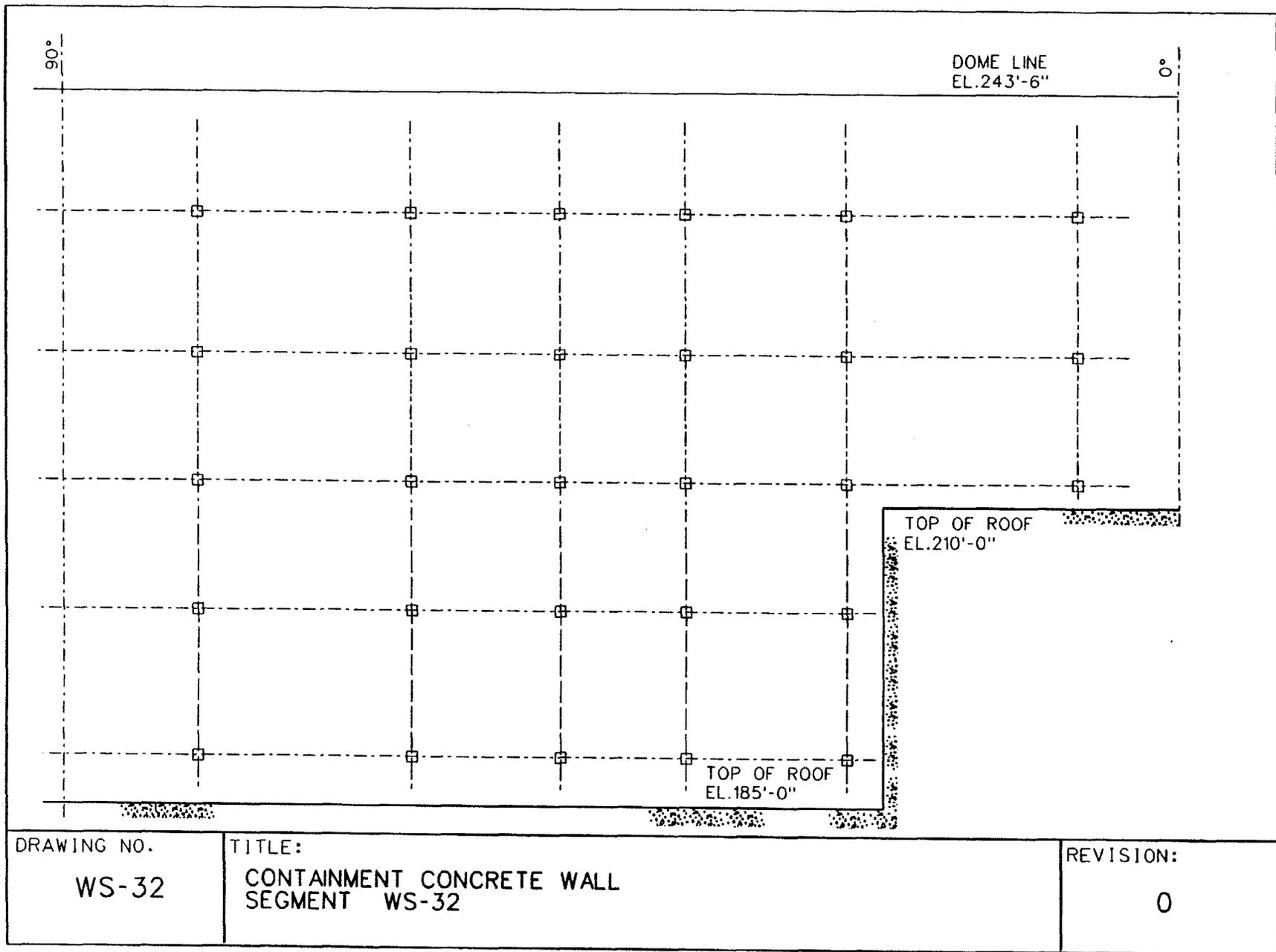
WS-31

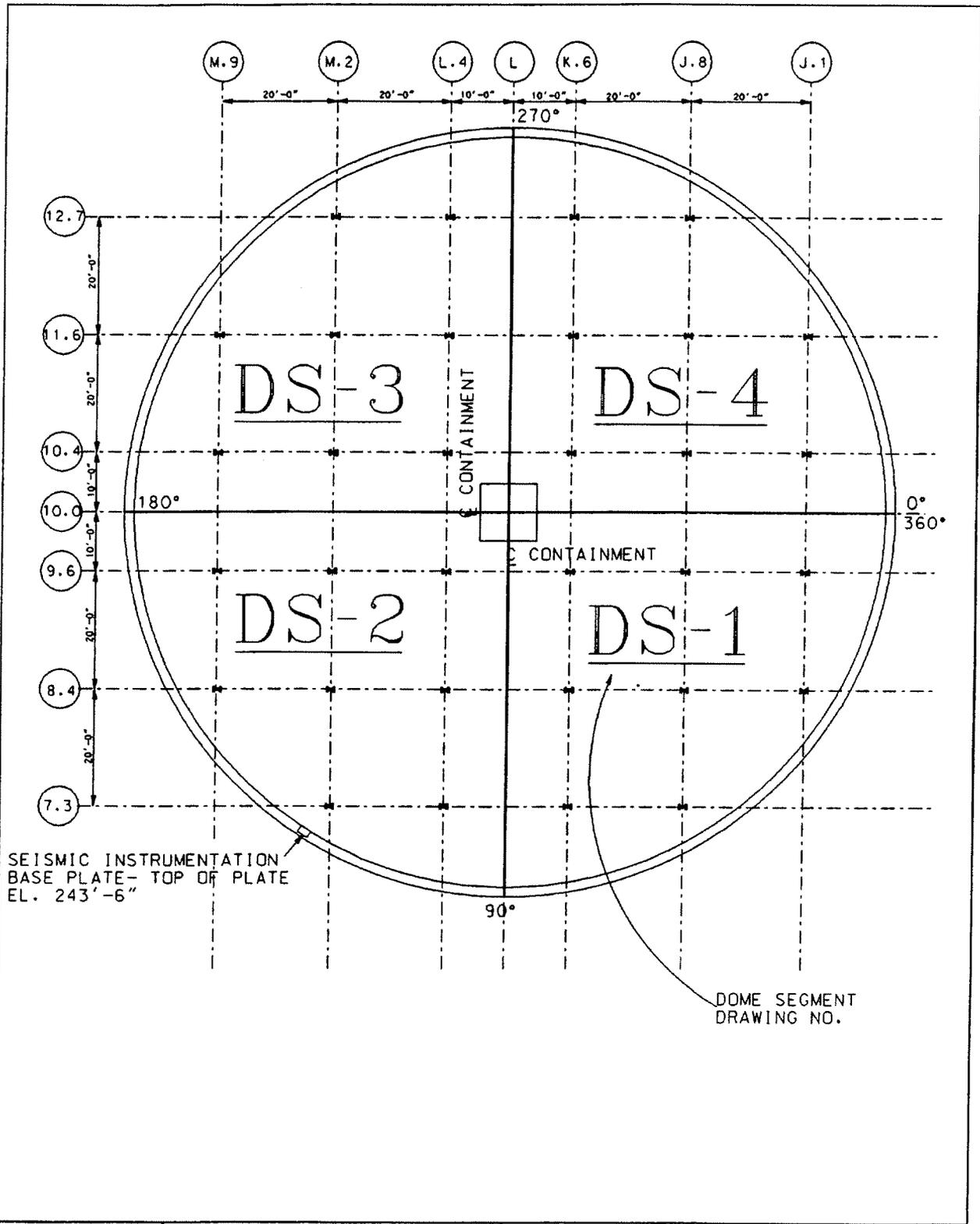
TITLE:

CONTAINMENT CONCRETE WALL  
SEGMENT WS-31

REVISION:

0

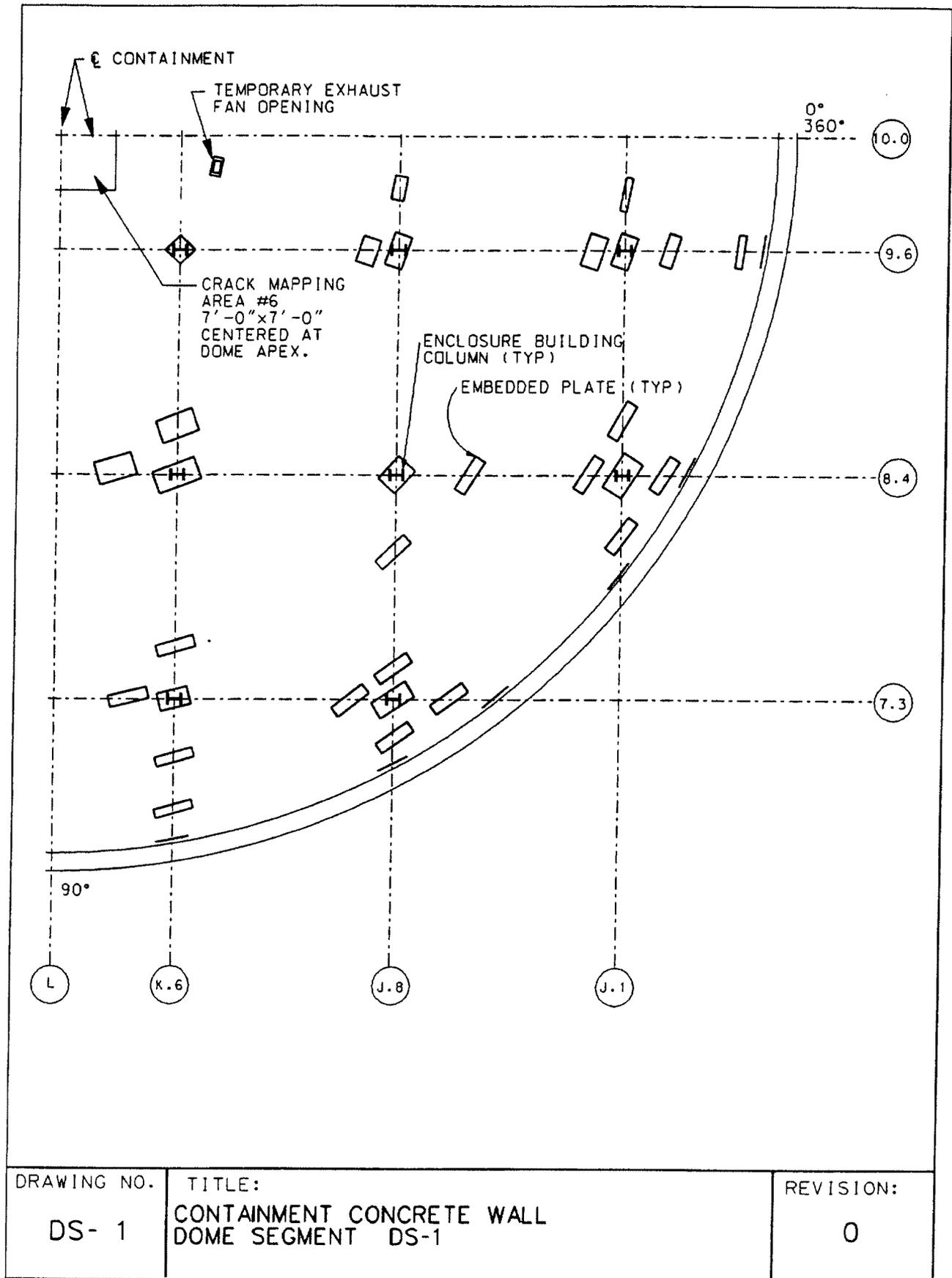




DRAWING NO.  
03-1

TITLE:  
CONTAINMENT CONCRETE WALL  
DOME DRAWING SCHEDULE

REVISION:  
0



DRAWING NO.

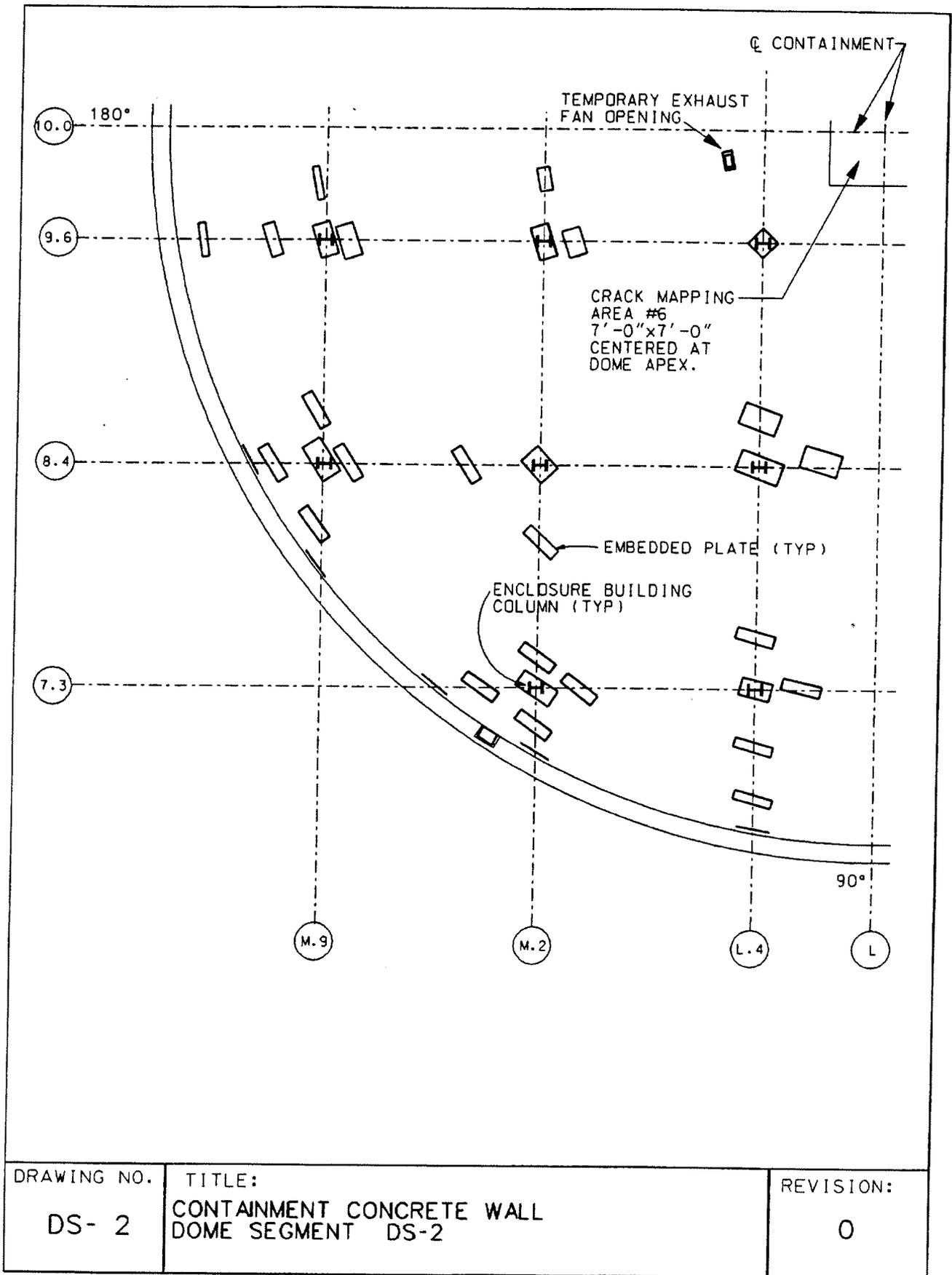
DS- 1

TITLE:

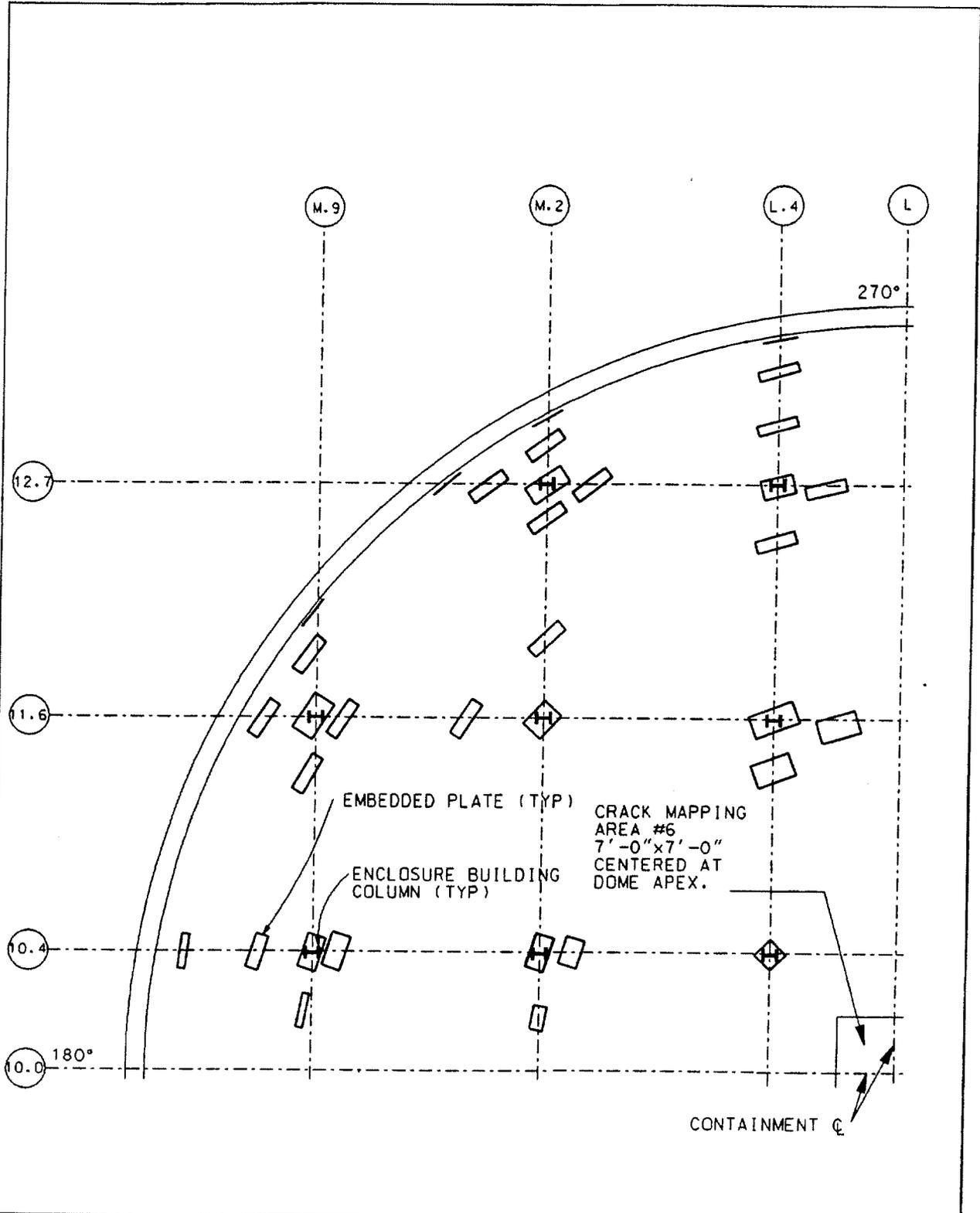
CONTAINMENT CONCRETE WALL  
DOME SEGMENT DS-1

REVISION:

0



DRAWING NO.	TITLE:	REVISION:
DS- 2	CONTAINMENT CONCRETE WALL DOME SEGMENT DS-2	0



DRAWING NO.

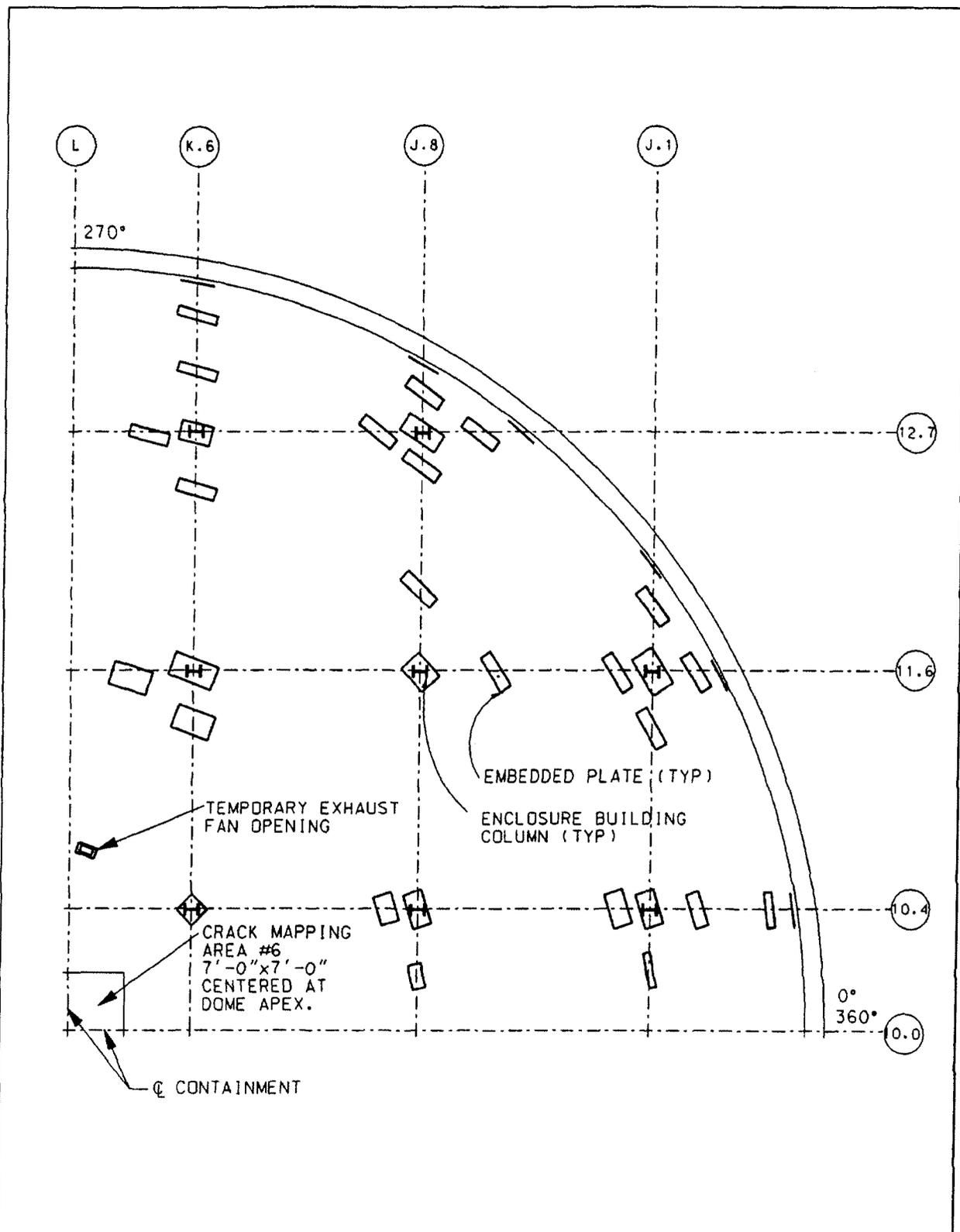
DS- 3

TITLE:

CONTAINMENT CONCRETE WALL  
DOME SEGMENT DS-3

REVISION:

0



DRAWING NO.	TITLE:	REVISION:
DS- 4	CONTAINMENT CONCRETE WALL DOME SEGMENT DS-4	0