TVA 64 (08-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

CEB '83 0512 008

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (3)

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K

DATE : MAY 12 1983

SUBJECT: WATTS BAR NUCLEAR PLANT UNIT 1 - PROGRAM FOR NRC-OIE BULLETIN 79-14 PHASE 2 INSPECTIONS

CEB has overall responsibility to implement the subject inspections at WBN. EN DES-SEP 82-25 is being written to control this activity, and onsite inspections will occur between July 5 and 16, 1983.

CEB will provide an independent inspection team of 4 to 6 persons not involved in the NRC-OIE Bulletin 79-14 phase 1 inspections currently in progress. In addition, a small onsite CEB and WBP engineer team will be provided. WBN CONST is requested by CEB to support this effort by providing the following services, facilities, and equipment during the above time period:

1. Field engineers to guide the team in locating the piping in the plant.
2. Measuring devices, flashlights, ladders, lighting, scaffolding, etc., as required to perform the inspections.
3. Onsite office space for approximately 12 people.
4. Onsite space for training (approximately 200 feet square).
5. Inspection package for each of the randomly selected problems.

All inspection packages must contain the following documents:

1. Prints (2) of the math model isometric drawing for rigorously analyzed piping.
2. Prints (2) of the applicable mechanical drawing for alternately supported piping.
3. Prints of the mechanical (physical) drawings which show the actual routing of the piping in the building.
4. Prints of the manufacturers' drawings of all valves inspected and/or special components within the piping system.

DEOI

8302033129.10

G. Wadewitz

WATTS BAR NUCLEAR PLANT UNIT 1 - PROGRAM FOR NRC-OIE BULLETIN 79-14 PHASE 2 INSPECTIONS

5. Copies of the inspection/recording forms.

6. Prints of pipe support design drawings as required to perform inspections.

Original Signed By
J.C. Standifer

J. C. Standifer

ROB:JDH:DCG
cc: R. O. Barnett, W9D224 C-K (2)
C. Bonine, E7B24 C-K
MEDS, W5B63 C-K
R. M. Pierce, 104 ESTA-K
M. N. Sprouse, W11A9 C-K

NOT
SWP-GB
PLEASE FORWARD

Principally Prepared By: J. D. Hansen, Extension 3702

TVA 84 (08-3-83)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (3)

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 704 GB-K

DATE :

SUBJECT: WATTS BAR NUCLEAR PLANT UNIT 1 - PROGRAM FOR NCR-OIE BULLETIN 79-14 PHASE 2 INSPECTIONS

Reference: Your memorandum from J. C. Standifer dated May 12, 1983 (CEB 830512 008)

The 79-14 phase 2 inspections will occur between August 1 and 13, 1983 instead of between July 5 and 13, 1983 as specified in the referenced memorandum.

CEB has overall responsibility to implement the subject inspections at WBN. EN DES-SEP 82-25 is being written to control this activity, and onsite inspections will occur between July 5 and 16, 1983.

CEB will provide an independent inspection team of 4 to 6 persons not involved in the NCR-OIE Bulletin 79-14 phase 1 inspections currently in progress. In addition, a small onsite CEB and WBP engineer team will be provided. WBN CONST is requested by CEB to support this effort by providing the following services, facilities, and equipment during the above time period:

1. Field engineers to guide the team in locating the piping in the plant.

2. Measuring devices, flashlights, ladders, lighting, scaffolding, etc., as required to perform the inspections.

3. Onsite office space for approximately 12 people.

4. Onsite space for training (approximately 200 feet square).

5. Inspection package for each of the randomly selected problems.

All inspection packages must contain the following documents:

1. Prints (2) of the math model isometric drawing for rigorously analyzed piping.

2. Prints (2) of the applicable mechanical drawing for alternately supported piping.

3. Prints of the mechanical (physical) drawings which show the actual routing of the piping in the building.

4. Prints of the manufacturers' drawings of all valves inspected and/or special components within the piping system.

G. Wadewitz

WATTS BAR NUCLEAR PLANT UNIT 1 - PROGRAM FOR NRC-OIE BULLETIN 79-14 PHASE 2 INSPECTIONS

5. Copies of the inspection/recording forms.

6. Prints of pipe support design drawings as required to perform inspections.

J. C. Standiter

ROB:JDH:DCG
cc: R. O. Barnett, W9D224 C-K (2)
C. Bonine, E7B24 C-K
MEDS, W5B63 C-K
R. M. Pierce, 104 ESTA-K
M. N. Sprouse, w11A9 C-K

Principally Prepared By: J. D. Hansen, Extension 3702

083175.03

TVA 84 (08-9-83)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

CEB '83 0802 002

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (3)

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K

DATE : AUG 2 1983

SUBJECT: WATTS BAR NUCLEAR PLANT UNIT 1 - PROGRAM FOR NCR-OIE BULLETIN 79-14 PHASE II INSPECTIONS

Reference: My memorandum to you dated May 12, 1983 (CEB 830512 008)

The 79-14 Phase II inspections will occur between August 16 and 31, 1983. CONST is responsible for preparing the inspection packages. A package must be prepared for each of the following analysis isometrics: 47W400-216, 47W401-208, 47W406-203, 47W427-200, 47W435-217, 47W437-201, 47W450-217, 47W454-242, and 47W465-206.

Original Signed By
J C. Standifer
J. C. Standifer

cc JDW WGK SKS

ROB:SKS:DCG

ROB

cc: R. O. Barnett, W9D224 C-K (2)
C. Bonine, E7B24 C-K
MEDS, W5B63 C-K
R. M. Pierce, 104 ESTA-K
M. N. Sprouse, W11A9 C-K

Principally Prepared By: S. K. Sherfey, Extension 4318

083180.04

TVA 64 (05-3-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

CEB 830902 004

TO : Those listed

FROM : M. N. Sprouse, Manager of Engineering Design, W11A9 C-K

DATE : SEP 2 1983

SUBJECT: EN DES SPECIAL ENGINEERING PROCEDURE (SEP) DISTRIBUTION - DIVISION LEVEL - TRANSMITTAL MEMO NO. EN DES-SEP 82-25 R0

The following new EN DES-SEP is attached for your information and filing:

Item	Title	Affects
EN DES-SEP 82-25 R0	Program for NRC-OIE Bulletin 79-14 Phase II Inspections at Watts Bar Nuclear Plant Unit 1	CEB WBP

Also attached is a revised page of the EN DES-SEP Index.

Original Signed By
E. R. ARMSTRONG

M. N. Sprouse

R. O. Barnett, W9D224 C-K (2) _____
E. G. Beasley, W12B21 C-K (1) _____
ESB Procedures Control Section, S70 C-K (1) _____
R. M. Pierce, 104 ESTA-K (1) _____
J. C. Standifer, 204 GB-K (7) _____

ROB:SKS:BSH
Attachments
cc: MEDS, W5B63 C-K

--- ----- ----- ----- — FOLD HERE TO RETURN --- ----- ----- ----- ---

NOTE TO THE ABOVE LISTED:

1. For address changes to the above distribution please notify S. K. Sherfey at 4318.

2. To provide evidence of receipt of this transmittal, please initial and date the duplicate copy of this page in the space provided after your name and return the copy as follows:

RETURN TO:

R. R. DeVault, W9A2 C-K

TVA 64 (05-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

CEB 830921 019

TO : Those listed

FROM : M. N. Sprouse, Manager of Engineering Design, W11A9 C-K

DATE : SEP 21 1983

SUBJECT: EN DES SPECIAL ENGINEERING PROCEDURE (SEP) DISTRIBUTION - DIVISION LEVEL - TRANSMITTAL MEMO NO. EN DES-SEP 82-25 R1

The following revised EN DES-SEP is attached for your information and filing:

Item	Title	Affects
EN DES-SEP 82-25	Program for NRC-OIE Bulletin 79-14 Phase II Inspections at Watts Bar Nuclear Plant Unit 1	CEB WBP

For a description of the changes to the revised SEP please refer to the revision log. Section supervision should review and discuss applicable changes with their employees.

Also attached is a revised page of the EN DES-SEP Index.

M. N. Sprouse

R. O. Barnett, W9D224 C-K (2) _____
E. C. Beasley, W12A21 C-K (1) _____
ESB Procedures Control Section, S70 C-K (1) _____
J. C. Standifer, 204 GB-K (7) _____

CIVIL ENGINEERING BRANCH
OCT 4 1983

IN			OUT		
N	Date	Time		Date	Time
			ROB		
			JWG		
			TCC		
			WAE		
			RJH		
			ROH		
			TWR		

BOR: SIS: CM
Sacramento
MEDS, W5B63 C-K

--- FOLD HERE TO RETURN ---

NOTE TO THE ABOVE LISTED:

1. For address changes to the above distribution please notify S. K. Sherfey at 4318.

2. To provide evidence of receipt of this transmittal, please initial and date the duplicate copy of this page in the space provided after your name and return the copy as follows:

RETURN TO:
R. K. Devault, W9A2 C-K

013257.03

TVA 84 (08-9-83)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

CEB '831101 900

DATE

TO : R. O. Barnett, Chief, Civil Engineering Support Branch, W9D224 C-K

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K

DATE : 10/25/83

SUBJECT: TRANSMITTAL OF PIPING ANALYSIS ~~OR PIPE RUPTURE~~ INFORMATION FOR PROB No: VARIOUS FILE (WBN 66D) - /_/ QUALITY INFORMATION, /_/ STANDALONE QUALITY INFORMATION, /X/ NOT QUALITY RELATED, ECN 3100 OR DCR _____.

Attached is the /X/ piping analysis/ /_/ pipe rupture information for the VARIOUS system /X/ as requested by your SEP 82-35-25 or /_/ provided without request.

This information is: (check one)
/_/ A copy of controlled information.
/_/ Advanced information that will be added to controlled documents.
/X/ Other 79-14 PKG ~~NO~~. FOR PHASE II.

The information transmitted herein will be incorporated into: (check one)
/X/ Piping Analysis /X/ Piping Isometric /_/ Pipe Rupture Report
/_/ Calculations

R. G. Pratt
for J. C. Standifer

Attachments: (check one)
/_/ TVA Drawing No.
/_/ Vendor Drawing No.
/_/ Sketch
* /_/ Piping Disp. VALVE /X/
/_/ Analysis Information Form
/_/ Pipe Rupture Information
/X/ Other 79-14 PKG. PHASE II SGS ATTACHED

T. V. Bloom
Preparer

N/A
Independent Reviewer

To: J. C. Standifer, Project Manager, Watts Bar Design Projects, 204 GB-K
From: R. O. Barnett, Chief, Civil Engineering Support Branch, W9D224 C-K
Date: NOV 01 1983
Subject: TRANSMITTAL OF PIPING ANALYSIS/PIPE RUPTURE INFORMATION FOR _____

We acknowledge receipt of the above information. This information is: (check one)
/X/ Satisfactory as received
/_/ Insufficient
/_/ Other _____

WE EXPECT TO RETURN TO YOU BY NOV 1.

R. O. Barnett

to ODN & C. KESNER

cc: MEDS, W5B63 C-K

To: J. Hansen / D. Wilson
FM: RG Pratt

Subject: Phase II 79-14 Inspection Packages.

WBP has Reviewed the 79-14 Phase II packages as stated per SEP 82-25 R1.

Packages Reviewed are listed below:

IT01-0600200-06-04
IT03-47W401-208
IT03-47W427-200 *
IT62-47W406-203
IT63-47W435-217
IT67-47W450-217 *
IT68-47W465-206
IT70-47W464-242
IT72-47W437-201

We are returning said packages for CEB's finial review as per SEP 82-25 R1.

WBP Request that CEB makes copies of the finial resolutions of the discrepancies and forward them to R.G. Pratt, for distribution within WBP. A copy of the finial discrepancy is req'd for Dwg. Rev.

* There are two discrepancies that req'd reinspection, IT67-47W450-217/04H & IT03-47W427-200/01P, A Memo is forth Comming from Bob McKay.

TVA 84 (08-9-83)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : J. C. Standifer, Project Manager, Watts Bar Design Project , 204 GB-K

FROM : R. O. Barnett, Chief, Civil Engineering Support Branch, W9D224 C-K

DATE : NOV 14 1983

SUBJECT: WATTS BAR NUCLEAR PLANT UNIT(S) 1 - TRANSMITTAL OF PIPING ANALYSIS/~~PIPE RUPTURE~~ INFORMATION ASSOCIATED WITH SEP 82-25 - ☐ QUALITY INFORMATION, ☐ STANDALONE QUALITY INFORMATION, ☒ NOT QUALITY RELATED, SYSTEM VARIOUS, ECN/~~DCR~~ 4376

Attached are ☐ preliminary piping analysis results, ☐ final piping analysis results, ☐ pipe rupture information, ☐ request for information, ☒ other 7914 PHASE II INSPECTION & EVALUATION RESULTS, for CEB analysis No. _____, isometric No. _____. This work was associated with ECN 4376, other SEP 82-25. The attached information is to be used for ☒ support design, ☐ protective device design, ☐ information only, ☒ documentation change (your design is not affected). Any questions concerning this information should be addressed to S.K. SHERFEY W9C173 C-K at extension 4318. Additional comments _____

Prepared by S.K. Sherfey JDH

Independent Review Alan D. Edwards

for R. O. Barnett William J Kagay WJK

ROB:

Attachment(s): 9 INSPECTION PACKAGES

TO : R. O. Barnett, Chief, Civil Engineering Support Branch, W9D224 C-K

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project , 204 GB-K

DATE :

SUBJECT: WATTS BAR NUCLEAR PLANT UNIT(S) _____ TRANSMITTAL OF PIPING ANALYSIS/PIPE RUPTURE INFORMATION ASSOCIATED WITH _____

We acknowledge receipt of the above information. This information is: (check one)

☐ Satisfactory as received
☐ Insufficient
☐ Other _____

Prepared by _____

_____
J. C. Standifer

JCS:
Attachment(s)
cc: MEDS, W5B63 C-K w/Attachment(s): _____

GH2.R2

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

79-14 PHASE II INSPECTION FORMS

DATA PACKAGE COVER SHEET Revision _____

WATTS BAR NUCLEAR PLANT UNIT 1

Package No.: _____

1. The attached package contains _____ data sheet(s) 1
   _____ data sheet(s) 2
   _____ data sheet(s) 3
   _____ data sheet(s) 4
   _____ data sheet(s) 5
   _____ data sheet(s) 6

2. No additional supports exist on piping other than those specified by the analysis isometric.

   Remarks:

_____ _____
Inspector No. 1 Date

_____ _____
Inspector No. 2 Date

3. Reviewed by: _____ _____
   EN DES Site Representative Date

79-14 PHASE II DATA SHEET 1 Revision _____

PIPE SUPPORT* CHECKLIST Page ___ of ___

WATTS BAR NUCLEAR PLANT UNIT 1

Package No.: _____

1. Pipe Support Drawing No. _____

2. Is support installed per support drawing(s)? (Yes or No) _____

   If no, indicate deviations on the support drawing and list them below.

   NOTE: See Attachment 2, section 2.0, for items to be checked and instructions.

3. Is there load carrying attachment(s) welded to pipe? (Yes or No) _____

   If yes, does the weld(s) conform to support drawing(s)? (Yes or No) ____

_____ _____
Inspector No. 1 Date

_____ _____
Inspector No. 2 Date

_____
EN DES Site Representative Comments:

_____ _____
EN DES Site Representative Date

*For springs use Data Sheet 5.

79-14 PHASE II DATA SHEET 2 Revision _____

VALVE CHECKLIST Page ___ of ___

WATTS BAR NUCLEAR PLANT UNIT 1

Package No.: _____

1. Valve Tag No. _____
   TVA Valve Mark No. _____
   Valve Size and Type (e.g., 4" BW Globe) _____
   Valve Drawing No. _____
   Valve Manufacturer and Model No. _____

   Note: See Attachment 2, section 3.0, for instructions.

2. Is valve location correct? (Yes or No) _____
   (If no, show location on drawing)

3. If the valve has an extended operator, is the orientation of the operator correct? (Yes or No) _____
   (If no, indicate orientation on drawing.)

4. Operator Manufacturer and Model No. _____

_____ _____
Inspector No. 1 Date

_____ _____
Inspector No. 2 Date

EN DES Site Representative Comments:

_____ _____
EN DES Site Representative Date

79-14 PHASE II DATA SHEET 3 Revision _____

ISOMETRIC CHECKLIST Page ___ of ___

WATTS BAR NUCLEAR PLANT UNIT 1

Package No.: _____

1. Does the general configuration of the piping system, including support location, match the isometric? (Yes or No) _____

2. List deviations below and submit marked drawings. See Attachment 2, section 4.0, for instructions.

_____ _____
Inspector No. 1 Date

_____ _____
Inspector No. 2 Date

EN DES Site Representative Comments:

_____ _____
EN DES Site Representative Date

79-14 PHASE II DATA SHEET 4 Revision ____

PENETRATION CLEARANCE CHECKLIST Page ___ of ___

WATTS BAR NUCLEAR PLANT UNIT 1

Package No.: _____

1. Does the pipe have proper clearance through all penetrations (see Attachment 2, section 5.0, for instructions)? (Yes or No): _____
   If no, indicate interferences below and mark them on the isometric.
   Initial and date beside each penetration of the design drawing as it is checked.

_____ _____
Inspector No. 1 Date

_____ _____
Inspector No. 2 Date

_____
EN DES Site Representative Comments:

_____ _____
EN DES Site Representative Date

79-14 PHASE II DATA SHEET 5 Revision ____

SPRING HANGER CHECKLIST Page ___ of ___

WATTS BAR NUCLEAR PLANT UNIT 1

Package No.: _____

Hanger Dwg. No.: _____

Note: See Attachment 2, section 6.0, for instructions.

1. Vendor _____
2. Size and Type of Canister _____
3. Travel Limits (inches) _____
4. Load Setting and Condition (lb) _____
   (i.e., hot or cold, full or empty)
5. Dynamic Travel Limit (inches) _____

_____ _____
Inspector No. 1 Date

_____ _____
Inspector No. 2 Date

_____
EN DES Site Representative Comments:

_____ _____
EN DES Site Representative Date

EN DES-SEP 82-25

79-14 PHASE II DATA SHEET 6 Revision _____

GENERAL CLEARANCE CHECKLIST Page ___ of ___

WATTS BAR NUCLEAR PLANT UNIT 1

Package No.: _____

Identify interferences below per Attachment 2, section 5.0.

INTERFERENCE IS _____ IN THE _____ DIRECTION FROM PIPE TO _____
_____ , LOCATION: _____

INTERFERENCE IS _____ IN THE _____ DIRECTION FROM PIPE TO _____
_____ , LOCATION: _____

INTERFERENCE IS _____ IN THE _____ DIRECTION FROM PIPE TO _____
_____ , LOCATION: _____

INTERFERENCE IS _____ IN THE _____ DIRECTION FROM PIPE TO _____
_____ , LOCATION: _____

INTERFERENCE IS _____ IN THE _____ DIRECTION FROM PIPE TO _____
_____ , LOCATION: _____

INTERFERENCE IS _____ IN THE _____ DIRECTION FROM PIPE TO _____
_____ , LOCATION: _____

INTERFERENCE IS _____ IN THE _____ DIRECTION FROM PIPE TO _____
_____ , LOCATION: _____

_____ _____
Inspector No. 1 Date

_____ _____
Inspector No. 2 Date

_____ _____
EN DES Site Representative Date

033131.25

79-14 PHASE II
DEVIATION EVALUATION FORM
WATTS BAR NUCLEAR PLANT UNIT 1

Revision ____
Page ___ of ___

Package No.: _____ Inspection Drawing:(1) See Package No.

(2) Deviation No.	(3) Phase I Discrepancy No.	(4) Acceptance Criteria	(5) Phase II Discrepancy No.	(6) Comments

NOTES:

(1) This is an analysis isometric drawing number.

(2) All deviations are to be listed consecutively.

(3) If this deviation was previously assigned a Phase I discrepancy number, identify the number and do not address columns (4) and (5).

(4) If this deviation is acceptable per existing acceptance criteria, identify the acceptance criteria and page number and do not address column (5).

(5) If this deviation was not assigned a Phase I discrepancy number or is not acceptable per existing acceptance crieria, then this deviation must be assigned a Phase II discrepancy number per EN DES-SEP 82-25, Attachment 4, page 4.

(6) Any related comments of interest should be recorded.

Prepared by _____ _____
CONST/EN DES Date

Reviewed by _____ _____
EN DES Date

EN DES-SEP 82-25

79-14 PHASE II
DEVIATION EVALUATION FORM
WATTS BAR NUCLEAR PLANT UNIT 1

Revision ____
Page ___ of ___

Package No.: _____ Inspection Drawing: (1) See Package No.

(2) Deviation No.	(3) Phase I Discrepancy No.	(4) Acceptance Criteria	(5) Phase II Discrepancy No.	(6) Comments

Prepared by _____ CONST/EN DES _____ Date

Reviewed by _____ EN DES _____ Date

Note: See first deviation evaluation form for notes. 033131.25

EN DES-SEP 82-25

79-14 PHASE II
DISCREPANCY EVALUATION FORM
WATTS BAR NUCLEAR PLANT UNIT 1

Revision _____
Page ___ of ___

Discrepancy No.: _____

Support No.: _____

Description of Discrepancy: _____

_____

_____

Significant: _____ Nonsignificant: _____

Definite potential for loss of pressure boundary: _____

Basis for judgment: _____

_____

_____

Resolution: _____

_____

_____

_____

_____ Preparer	_____ Date	_____ Checker	_____ Date
		_____ Supervisor	_____ Date
_____ Concurrer	_____ Date	_____ Reviewer	_____ Date
		_____ Supervisor	_____ Date

033131.25

WATTS BAR UNIT 1 1ST PHASE INSPECTION

SHT. 1 of 1

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
ITO1-0600200-06-04/01C	10C	POTENTIAL INTERFERENCE BETWEEN PIPE SPRT. HARDWARE AND MISC. STL.	CEB
ITO1-0600200-06-04/02C	12C	PIPE IN CONTACT WITH PIPE SPRT. (SPR. CAN ROD).	CEB
ITO1-0600200-06-04/03C	20C	PIPE IN CONTACT WITH STRUCT. STL. MEMBER.	CEB
ITO1-0600200-06-04/01P	41P	PIPE SPRT. LOCATION - OUT OF TOLERANCE	CEB & WBP
ITO1-0600200-06-04/02P	45P	FLOW INDICATOR CONN. LOCATION DOES NOT AGREE WITH ANAL. ISOMETRIC.	CEB
ITO1-0600200-06-04/03P	46P	INSULATION THKNESS. DOES NOT INCREASE W/ PIPE SIZE INCREASE. SAME THKNESS REQ'D.	CEB & WBP
ITO1-0600200-06-04/04P	48P	PIPE SPRT LOCATION - OUT OF TOLERANCE.	CEB & WBP

WATTS BAR UNIT 1 - 1ST PHASE INSPECTION

SHT. 2 of 11

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
1TO1-0600200-06-04/01H	09H	SPRING CAN SETTING (COLD LOAD) INCORRECT.	WBP
1TO1-0600200-06-04/02H	10H	PIPE SPRT. ATTACHM'TS DEVIATE FROM DESIGN DWG.	WBP
1TO1-0600200-06-04/03H	12H	PIPE SPRT. ATTACHM'TS DEVIATE FROM DESIGN DWG.	WBP
1TO1 0600200-06-04/04H	15H	PIPE SPRT. ATTACHM'TS DEVIATE FROM DESIGN DWG.	WBP
1TO1-0600200-06-04/05H	19H	PIPE SPRT. ATTACHM'T DEVIATES FROM DESIGN DWG.	WBP
1TO1-0600200-06-04/06H	23H	SPRING CAN SETTING (COLD LOAD) INCORRECT.	WBP
1TO1-0600200-06-04/07H	24H	EXIST. STR. STL. MEMB. AND ELEV. REFERENCE INCORRECT ON DES'N. DWG.	WBP

WATTS BAR UNIT 1 - 1ST PHASE IE INSPECTION

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
1T01-0600200-06-04/08H	25H	PIPE SPRT. DWG. DEVIATES FROM AS-INSTALLED CONFIGURATION.	WBP
1T01-0600200-06-04/09H	27H	PIPE SPRT. STIFFENER POSITION DEVIATES FROM DES'N. DWG.	WBP
1T01-0600200-06-04/10H	36H	PIPE SPRT. DWG. DET. DOES NOT AGREE W/ AS-INSTALLED CONFIGURATION.	WBP
1T01-0600200-06-04/11H	38H	PIPE SPRT. SNUBBER ID TAG MISSING.	WBP
1T01-0600200-06-04/12H	40H	PIPE SPRT. ATTACHMENT DIMS. DEVIATE FROM DES'N. DWG.	WBP
1T01-0600200-06-04/13H	52H	PIPE SPRT. CLAMP GAPS DEVIATE FROM DES'N DWG.	WBP
1T01-0600200-06-04/14H	53H	PIPE SPRT. DIMS. DEVIATE FROM AS-INSTALLED CONFIGURATION.	WBP

WATTS BAR UNIT 1 47W406 PHASE II INSPECTION

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
IT62-47W406-203/01P	P5	INSTALLED PIPE LENGTH DOES NOT AGREE W/ ANALYSIS ISOMETRIC.	CEB & WBP
IT62-47W406-203/02V	V7	VALVE ORIENTATION DOES NOT AGREE W/ ANALYSIS ISOMETRIC.	CEB & WBP
IT62-47W406-203/03V	V8	VALVE ORIENTATION DOES NOT AGREE W/ ANALYSIS ISOMETRIC.	CEB & WBP
IT62-47W406-203/04C	C10	POTENTIAL INTERFERENCE BETWEEN PIPE AND DUCT SUPPORT.	CEB
IT62-47W406-203/01H	01H	PIPE SPRT. INSTALLED CONFIGURATION DIMS. DO NOT AGREE W/ DESIGN DRAWINGS.	WBP
IT62-47W406-203/02H	02H	PIPE SPRT. INSTALLED CONFIGURATION DOES NOT AGREE W/ DESIGN DRAWINGS.	WBP
IT62-47W406-203/03H	09H	PIPE SPRT. LOCATION - OUT OF TOLERANCE.	CEB & WBP

WATTS BAR UNIT 1 1ST PHASE I INSPECTION

SHT. 5 of 11

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
1T62-47W406-203/04H	15H	PIPE SPRT. LOCATION - OUT OF TOLERANCE.	CEB & WBP
1T62-47W406-203/05H	18H	PIPE SPRT. LOCATION - OUT OF TOLERANCE.	CEB & WBP
1T62 47W406-203/06H	19H	PIPE SPRT LOCATION - OUT OF TOLERANCE	CEB & WBP
1T62 47W406-203/07H	20H	PIPE SPRT LOCATION - OUT OF TOLERANCE	CEB & WBP
1T03-47W427-200/01P	9P	PIPE LENGTH (INSTALLED) DOES NOT AGREE W/ ANALYSIS ISOMETRIC	CEB & WBP

WATTS BAR UNIT 1 9TH PHASE INSPECTION

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
1TT2-47W437-201/01V	1V	VALVE OPERATOR (INSTALLED) IS NOT SHOWN ON ANALYSIS ISOMETRIC.	CEB
1TT2-47W437-201/02V	2V	VALVE OPERATOR (INSTALLED) IS NOT SHOWN ON ANALYSIS ISOMETRIC.	CEB
1TT2-47W437-201/03V	3V	VALVE OPERATOR. (INSTALLED) IS NOT SHOWN ON ANALYSIS ISOMETRIC.	CEB
1TT2-47W437-201/04V	4V	VALVE LOCATION NOT TIED DOWN.	CEB & WBP
1TT2-47W437-201/05V	5V	VALVE OPERATOR (INSTALLED) IS NOT SHOWN ON ANALYSIS ISOMETRIC.	CEB
1TT2-47W437-201/01H	2H	PIPE SPRT BOLT TO BOLT SPACING (INSTALLED) DOES NOT AGREE W/ DESIGN DWG.	WBP
1TT2-47W437 201/02H	11H	PIPE SPRT INSTALLED CONFIGURATION DOES NOT AGREE W/ DESIGN DWG.	WBP

WATER BAR UNIT 1 1ST PHASE INSPECTION

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
IT72-47W437-201/03H	12H	PIPE SPRT. INSTALLED CONFIGURATION DOES NOT AGREE W/ DESIGN DWG.	WBP
IT67-47W450-217/01V	8V	VALVE OPERATOR ORIENTATION (INSTALLED) DOES NOT AGREE W/ ANALYSIS ISOMETRIC.	CEB & WBP
IT67-47W450-217/02V	9V	VALVE OPERATOR ORIENTATION (INSTALLED) DOES NOT AGREE W/ ANALYSIS ISOMETRIC.	CEB & WBP
IT67-47W450-217/01H	19H	PIPE SPRT. ATTACHMENT IS NOT IN ACCORDANCE W/ DESIGN DRAWING.	WBP
IT67-47W450-217/02H	33H	PIPE SPRT. GAPS ARE NOT IN ACCORDANCE W/ DESIGN DWG.	CEB & WBP
IT67-47W450-217/03H	37H	PIPE SPRT. GAPS ARE NOT IN ACCORDANCE W/ DESIGN DWG.	CEB & WBP

WATTS BAR UNIT 1 -1- PHASE II INSPECTION

SHT. 3 of 11

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
IT67-47W450-217/04H	42H	PIPE SPRT. INSTALLED CONFIGURATION DOES NOT AGREE W/ DESIGN DRAWING.	WBP
IT70-47W464-242/01P	P1	PIPE LENGTH (INSTALLED) DOES NOT AGREE W/ ANALYSIS ISOMETRIC.	CEB & WBP
IT70-47W464-242/01H	08H	PIPE SUPPORT DESIGN DRAWING ERROR.	WBP
IT70-47W464-242/02H	49H	PIPE SPRT. (INSTALLED) DIMENSION DOES NOT AGREE W/ DESIGN DRAWING.	WBP
IT68-47W465-206/01C	1C	PIPE IN CONTACT W/ PIPE SPRT.	CEB

WATTS BAR UNIT 1 94-4 PHASE II INSPECTION

SHT. 9 of 11

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
IT68-47W465-206/02C	2C	POTENTIAL INTERFERENCE W/ REACTOR COOLANT PUMP HOUSING.	CEB
IT68-47W465-206/03C	14C	POTENTIAL INTERFERENCE W/ VALVE FLEX-HOSE	CEB
IT68-47W465-206/04P	52P	INSTALLED PIPE ELEVATION DOES NOT AGREE W/ ANALYSIS ISOMETRIC.	CEB & WBP
IT68-47W465-206/05C	17C	POTENTIAL INTERFERENCE W/ PIPE.	CEB
IT68-47W465-206/06C	24C	PIPE IN CONTACT W/ CONDUIT	CEB
IT68-47W465-206/07C	26C	POTENTIAL INTERFERENCE W/ CONDUIT.	CEB
IT68-47W465-206/08C	37C	CONTACT W/ PIPE SUPPORT COMPONENT.	CEB

WATTS BAR UNIT 1 1ST PHASE I&E INSPECTION

SHT. 109

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
1T68-47W465-206/09C	38C	POTENTIAL INTERFERENCE W/ CONDUIT.	CEB
1T68-47W465-206/10C	40C	POTENTIAL INTERFERENCE W/ CONCRETE WALL.	CEB
1T68-47W465-206/11C	41C	VALVE OPERATOR IS IN CONTACT W/ CONDUIT.	CEB
1T68-47W465-206/12C	42C	VALVE OPERATOR HAS A POTENTIAL INTERFERENCE W/ PIPE.	CEB
1T68-47W465-206/01H	2H	PIPE SPRT LOCATION IS NOT IN ACCORDANCE W/ ANALYSIS ISO.	CEB & WBP
1T68-47W465-206/02H	7H	INSTALLED PIPE SPRT MEMB. DOES NOT AGREE W/ DESIGN DWG.	WBP
1T68-47W465-206/03H	22H	PIPE SPRT. ATTACHMT DIMENSIONS DO NOT AGREE W/ DESIGN DWG.	WBP

WATTS BAR UNIT 1 PHASE II INSPECTION

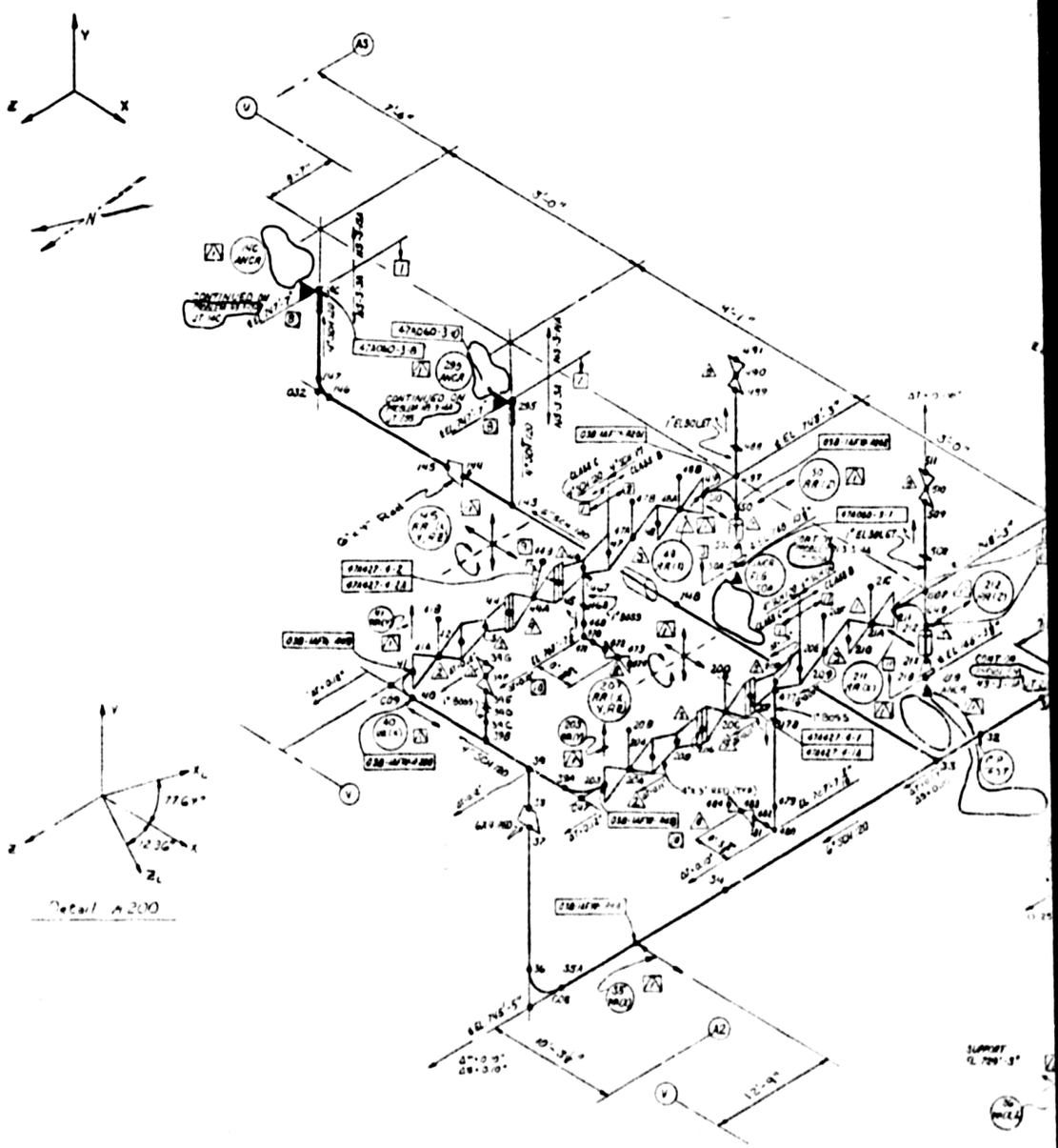
SHT. 11 of 11

DISCREPANCY No.	DEVIATION No.	DISCREPANCY DESCRIPTION	RESOLUTION
IT68-47W465-206/04H	40H	PIPE SPRT. CONFIGURATION (INSTALLED) DOES NOT AGREE W/ DESIGN DRAWING.	WJBP
IT68-47W465-206/05H	41H	PIPE SPRT. INSTALLED LOCATION DOES NOT AGREE W/ AHALYSIS ISOMETRIC.	CEB & WJBP

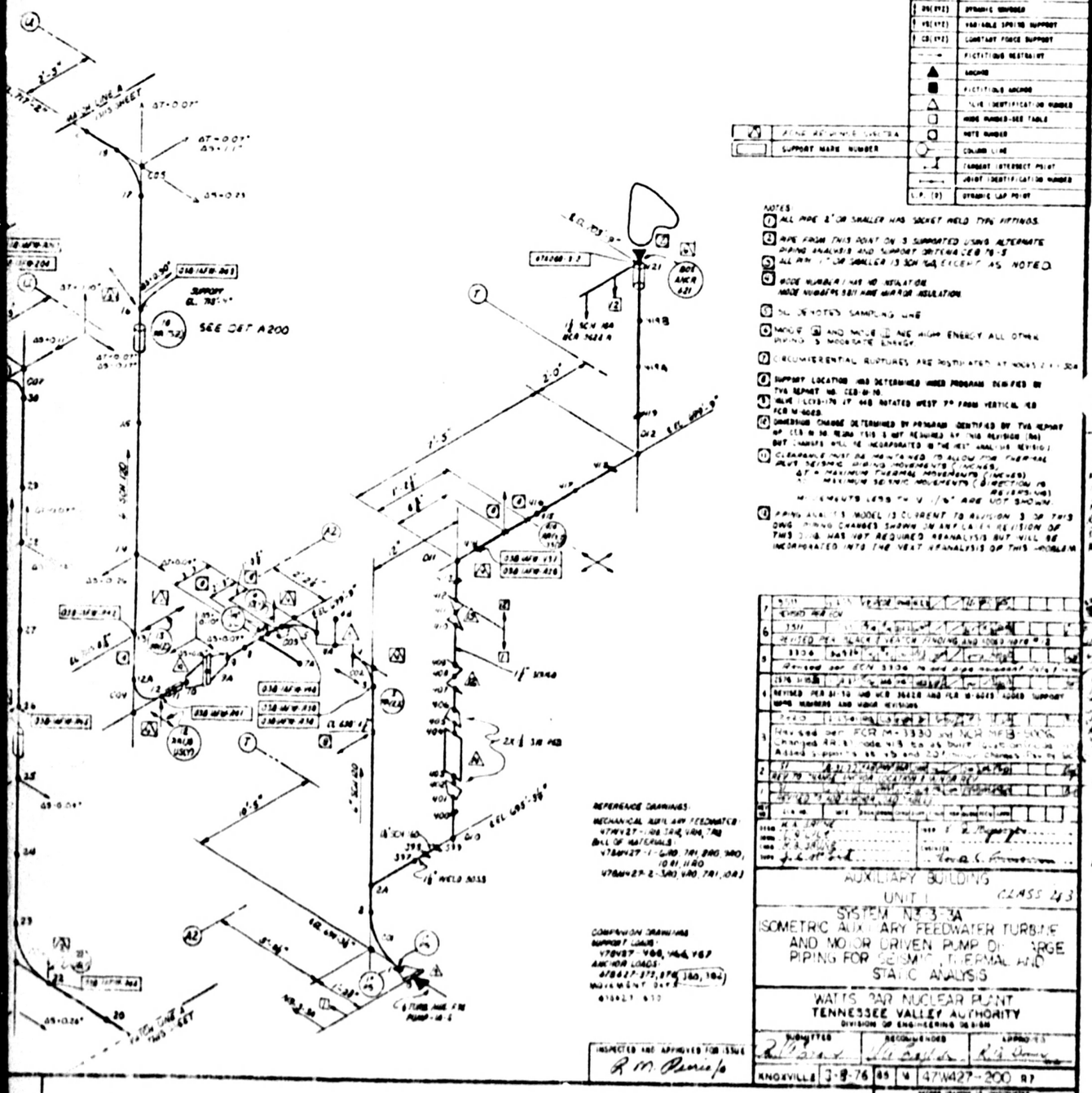
17900 RT

1 2 3 4 5 6

A B C D E F G



DESIGN CONDITIONS | OPERATING CONDITIONS



SYMBOL	DEFINITION
	RESTRAINT DESIGNATION
RIGID(XYZ)	RIGID RESTRAINT
VS(XYZ)	UNIDIRECTIONAL SUPPORT
DS(XYZ)	DYNAMIC SNUBBER
VS(XYZ)	VARIABLE SPRING SUPPORT
CS(XYZ)	CONSTANT FORCE SUPPORT
	FICTITIOUS RESTRAINT
	ANCHOR
	FICTITIOUS ANCHOR
	VALVE IDENTIFICATION NUMBER
	HIDE NUMBER-SEE TABLE
	NOTE NUMBER
	COLORED LINE
	TARGET (REFERENCE POINT
	JOINT IDENTIFICATION NUMBER
L.P. (D)	DYNAMIC LAP POINT

ZONE REFERENCE LINE(S)
SUPPORT MARK NUMBER

NOTES:
1. ALL PIPE 2" OR SMALLER HAS SOCKET WELD TYPE FITTINGS.
2. PIPE FROM THIS POINT ON IS SUPPORTED USING ALTERNATE PIPING ANALYSIS AND SUPPORT CRITERIA CEB 78-5
3. ALL PIPE 1" OR SMALLER IS SCH 160 EXCEPT AS NOTED.
4. HIDE NUMBER HAS NO INSULATION
HIDE NUMBERS SUFFIXED WITH MIRROR INSULATION
5. SEE 26"-N10-1 SAMPLING LINE
6. NOZZLE [3] AND NOZZLE [4] ARE HIGH ENERGY ALL OTHER PIPING IS MODERATE ENERGY
7. CIRCUMFERENTIAL RUPTURES ARE POSTULATED AT WELDS 2 & 3
8. SUPPORT LOCATION WAS DETERMINED USING PROGRAM IDENTIFIED BY TVA REPORT NO. CEB-81-10
9. VALVE (CV3-376 LP 448 ROTATED WEST 7° FROM VERTICAL PER M-6083.
10. DIMENSION CHANGE DETERMINED BY PROGRAM IDENTIFIED BY TVA REPORT NO. CEB 81-10 REVIEW THIS IS NOT REQUIRED AT THIS REVISION (No) BUT CHANGES WILL BE INCORPORATED IN THE NEXT ANALYSIS REVISION)
11. CLEARANCE MUST BE MAINTAINED TO ALLOW FOR THERMAL AND/OR SEISMIC PIPING MOVEMENTS (INCHES)
AT = MAXIMUM THERMAL MOVEMENTS (INCHES)
AS = MAXIMUM SEISMIC MOVEMENTS (3 DIRECTION 90 PERCENTILE)
MOVEMENTS LESS THAN 1/16" ARE NOT SHOWN.
12. PIPING ANALYSIS MODEL IS CURRENT TO REVISION 3 OF THIS DRAWING. DRAWING CHANGES SHOWN ON ANY LATER REVISION OF THIS DRAWING HAS NOT REQUIRED REANALYSIS BUT WILL BE INCORPORATED INTO THE NEXT REANALYSIS OF THIS PROBLEM

REVISIONS			
7	5/11		
6	3/11		
5	3/30		
4	2/16	REVISED PER SI-10 AND NCR 3642B AND PER M-6083 ADDED SUPPORT HANGER NUMBERS AND VALVE REVISIONS	
3	7/15	Revised per FCR M-3330 and NCR 3685 Changed RR to Rigids V18 to as built configuration Added 3 points as V5 and 237	
2	11		
1	10		

AUXILIARY BUILDING
UNIT 1 CLASS 2&3
SYSTEM NO. 3-3A
ISOMETRIC AUXILIARY FEEDWATER TURBINE AND MOTOR DRIVEN PUMP DISCHARGE PIPING FOR SEISMIC, THERMAL AND STATIC ANALYSIS

WATTS BAR NUCLEAR PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED

KNOXVILLE	3-8-76	88	M	47W427-200 R7

8501160408-01

VALVE FLANGE DATA TABLE

VALVE NO.	PIPE MARK NO.	TYPE	SIZE & RATING	VALVE CLASS	VALVE MATERIAL	END CONN.	VALVE BODY SPEC.	FLANGE CLASS	PIPE SPEC.	ASTM MATERIAL SPECIFICATION NUMBER
1SA	47W401-3	GLOBE VLV	4" 900 #	6A3			1A03			WALWORTH A-2196 W3
2SA	47W401-14	GATE VLV	4" 900 #	190		600	1B02		2520	WALWORTH A-2819 W18

FLUID HEAD ANCHOR ON AUX BLDG EL 731'-0"

VALVE ROOM

THERMAL WELL

8" SCH 80

2" DRAIN

4" WET LAYUP

1" DRAIN

1-034-205

1-034-204

1-034-209

1-034-203

1-034-202

1-034-201

SHIELD WALL

CRANE WALL

24" SCH 40

QUARD PIPE

PENETRATION ASSEMBLY X-12A

ANC FOR AT STEEL CONT VESSEL

EL 724'-3"

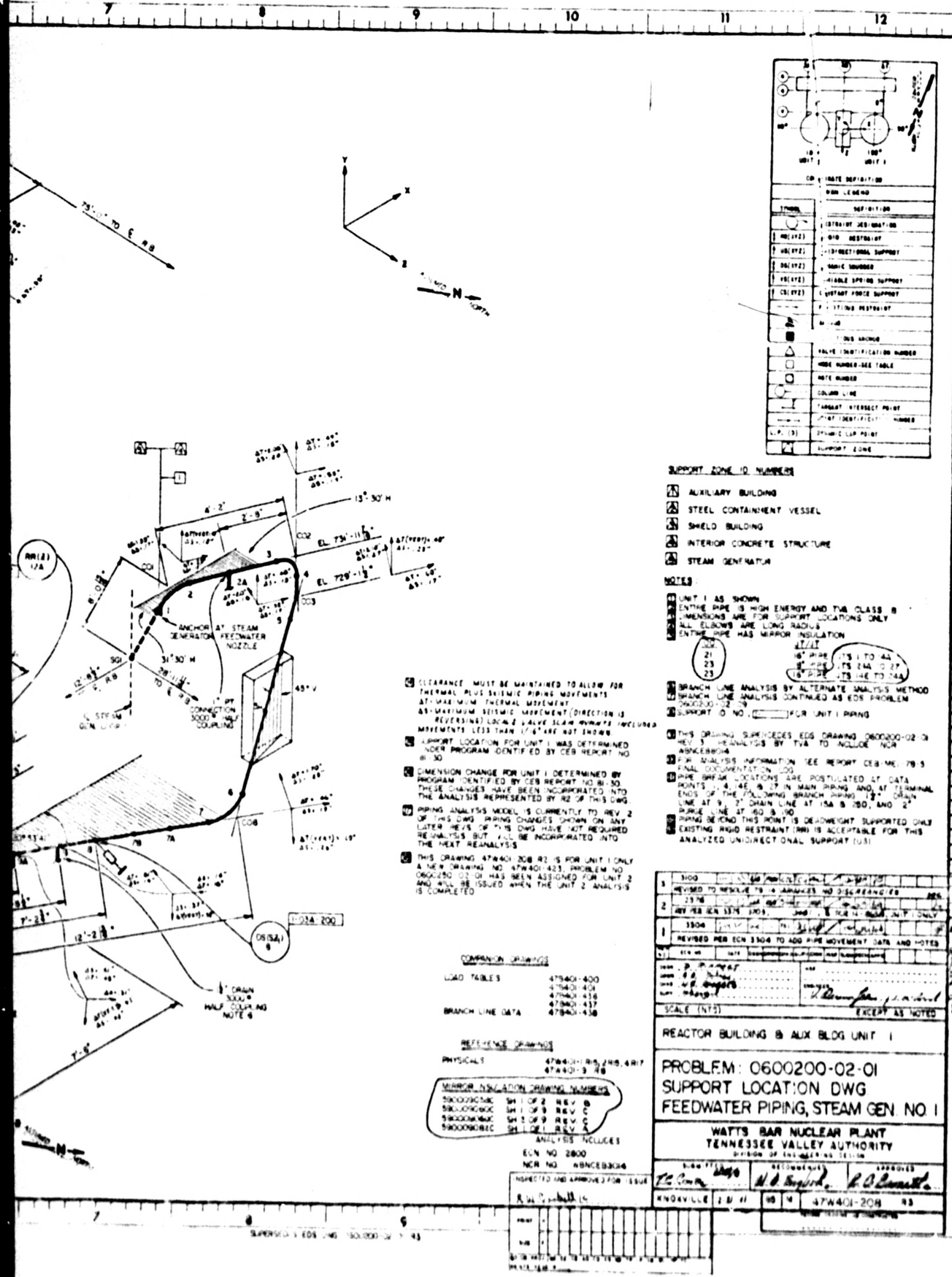
THERMAL WELL

PLANT AZIMUTH

REACT. BLDG.

SKEWED COORDINATES DATA POINT 6, PLAN VIEW

SKEWED COORDINATES DATA POINT 12, PLAN VIEW



850 NGO 408-02

1	2	3	4	5	6

DESIGN MODES

1	1	[illegible]	50	200	25400	15000	5700	27.5
2	1	[illegible]	2485	650	25400	15000	15000	27.9

OPERATING CONDITIONS

1														
2	70	4.6	47.7											
3	559	7.0	45.9											

1			
2			
3			
4			

α = S THE COEFFICIENT OF THERMAL EXPANSION (IN/IN/°F) (10⁻⁶)

** VALUE BASED ON DESIGN TEMPERATURE

*** MODULUS OF ELASTICITY (PSI x 10⁶)

PER X-50A

DETAIL E

DETAIL F

DETAIL G

DETAIL H

DETAIL A

DETAIL Q

DETAIL K

DETAIL L

DETAIL M

DETAIL N

DETAIL P

DETAIL S

DETAIL T

SEE DETAIL U

SEE DETAIL F

SEE DETAIL E

SEE DETAIL K

SEE DETAIL L

GRANE VALV SLEEVE MARK 276

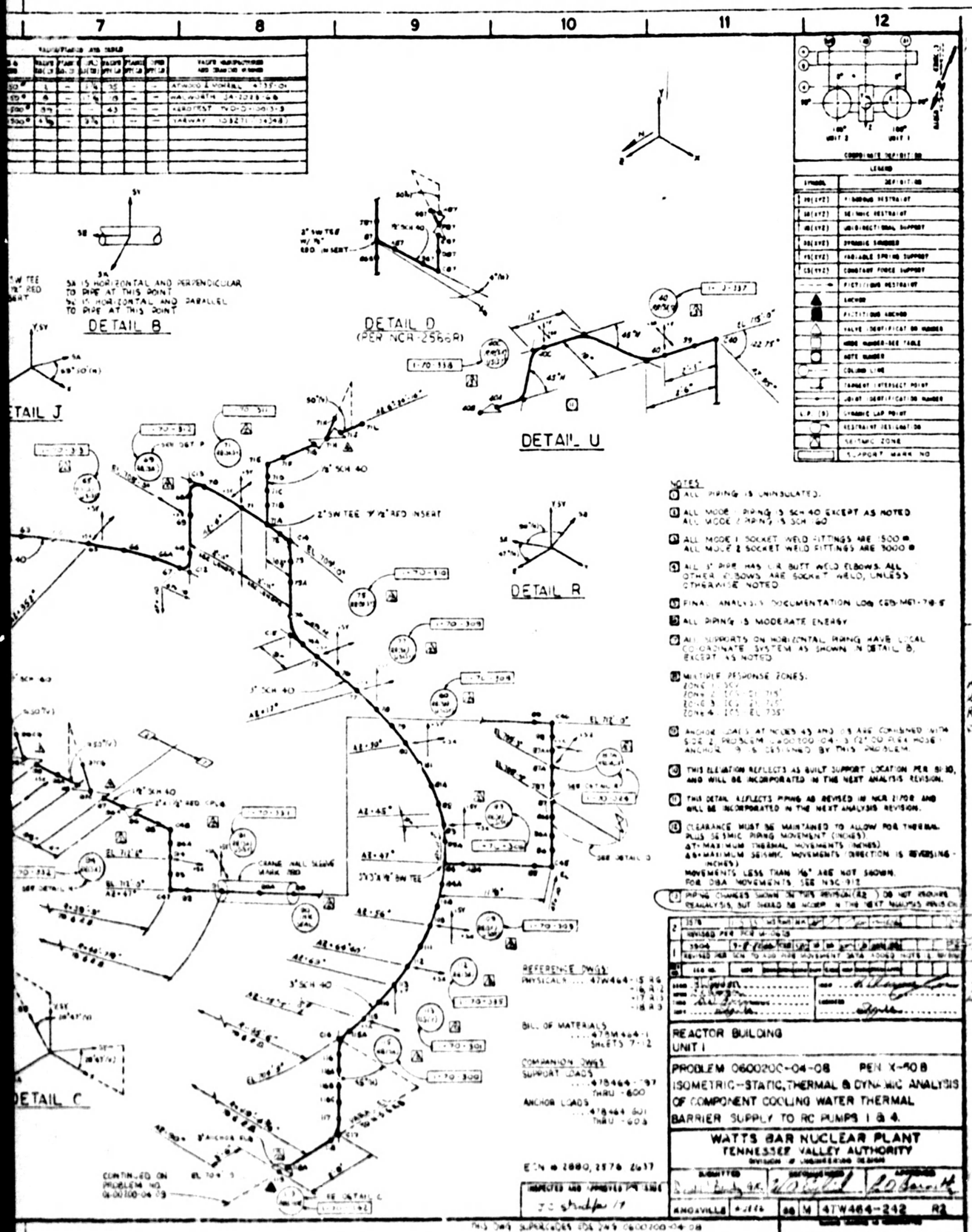
REACTOR BLDG

EL 70'-10"

EL 71'-0"

EL 72'-10"

3" SCH 40



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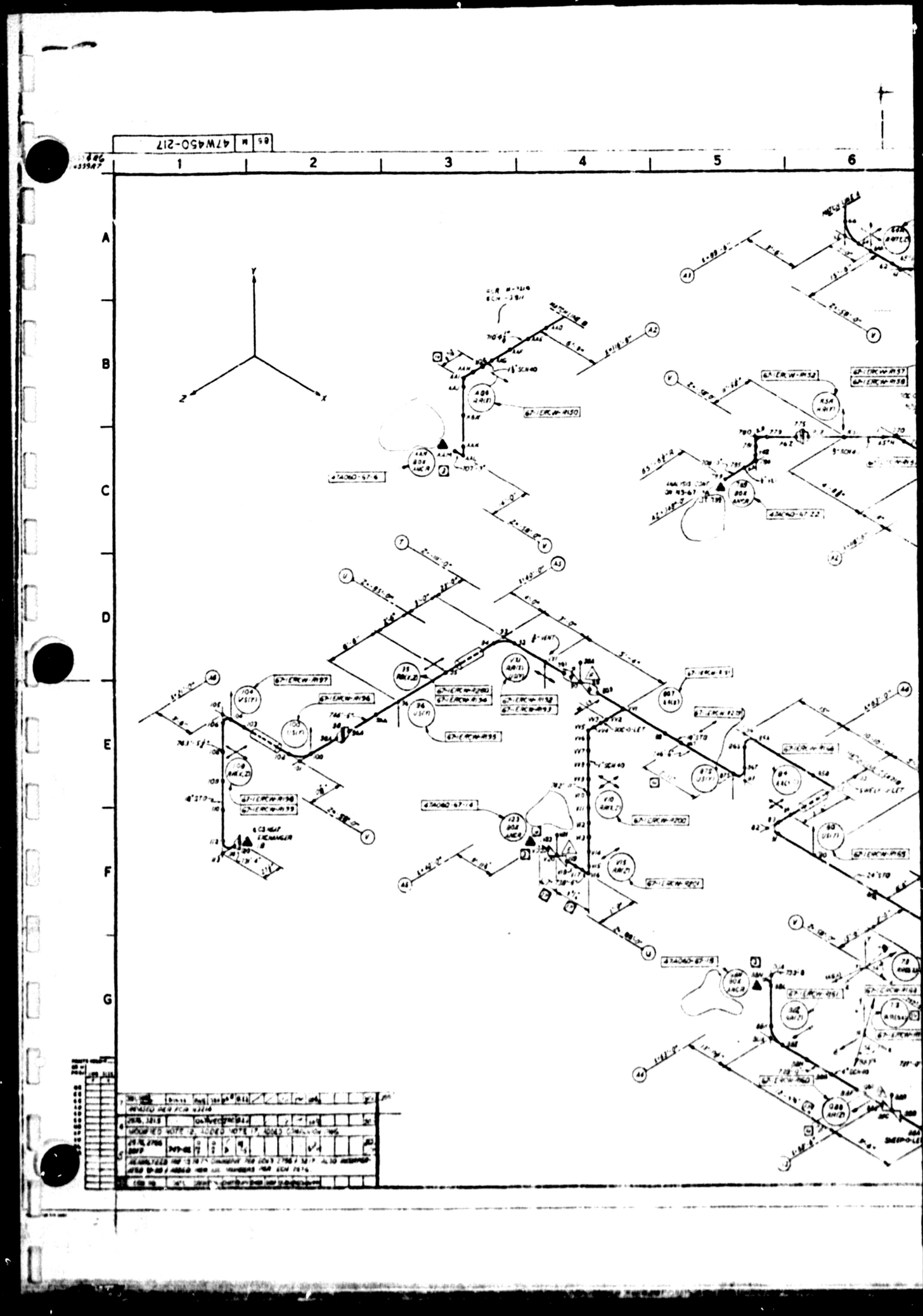
47W450-217
1
2
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D
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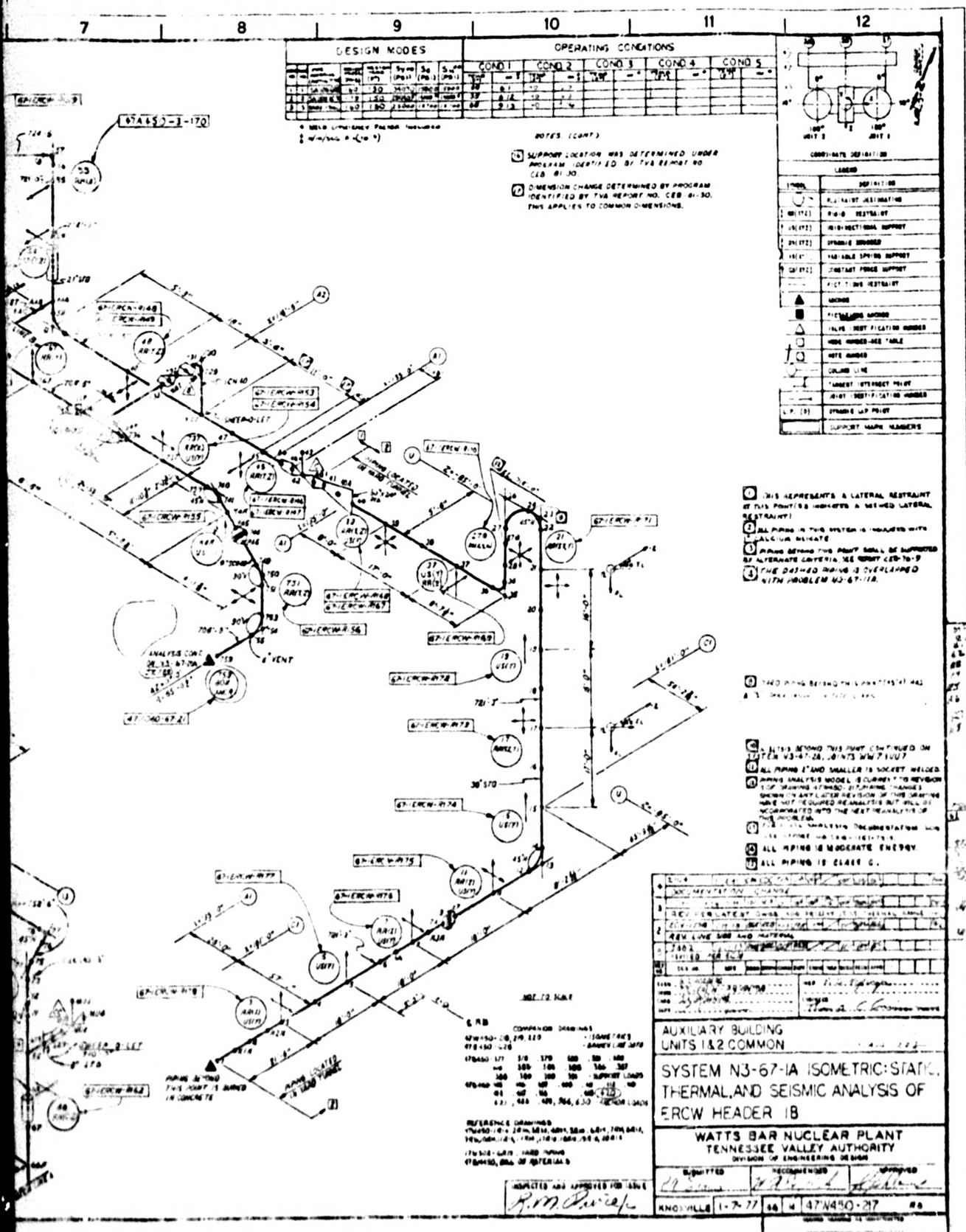
G



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47W400-216 R 08

1 2 3 4 5 6

A B C D E F G

DESIGN MODES

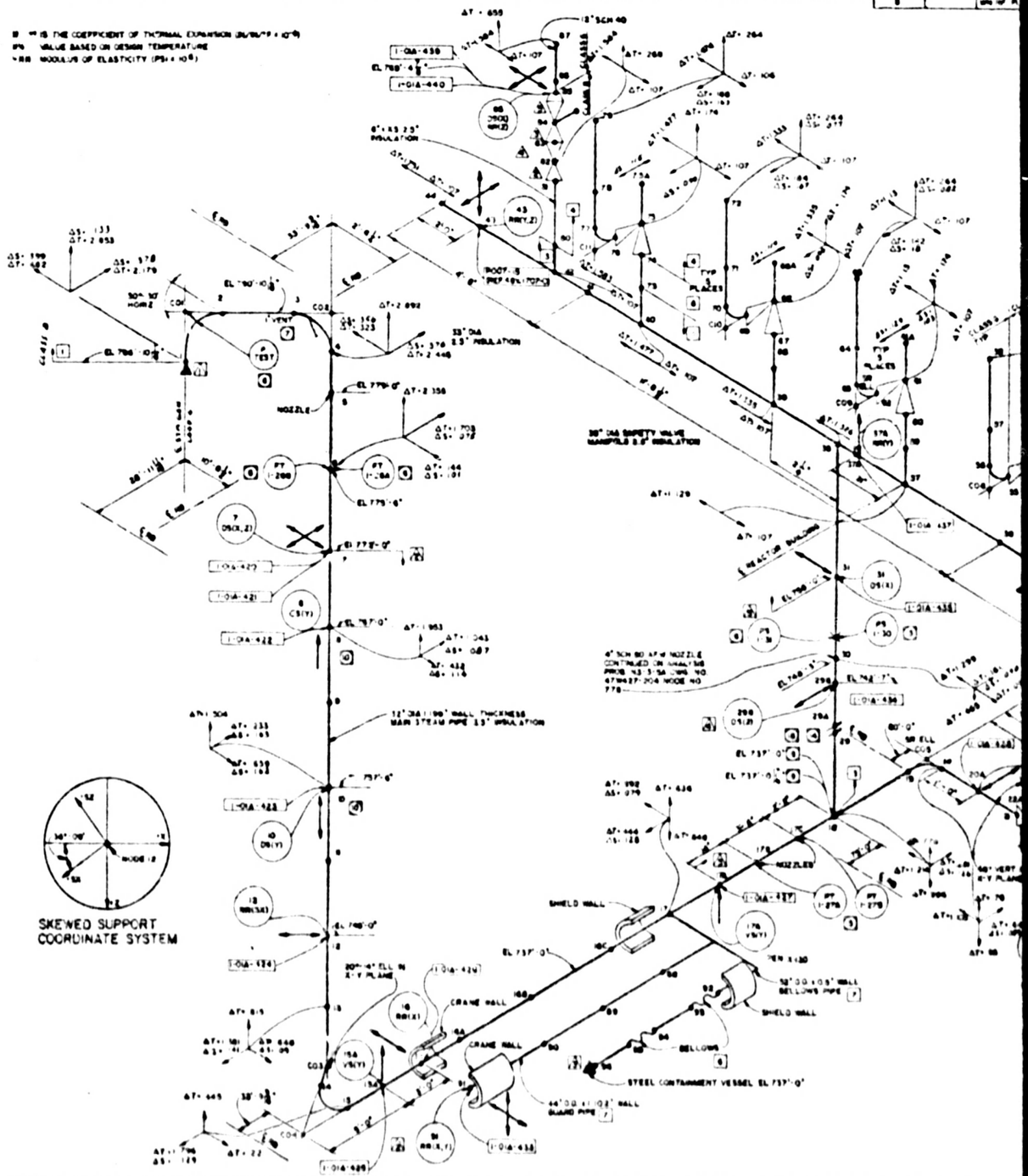
MODE NO.	PART NO.	PIPE MATERIAL (ASTM TYPE)	DESIGN PRESS. (PSIG)	DESIGN TEMP. (DEG F)	S_h (PSI)	S_a (PSI)	S_y (PSI)	E_{COLD}
1A	1	SA-333-GR.6	1185	600	20100	17500	17500	27.9
1B	2	SA-333-GR.6	1185	600	20100	17500	17500	27.9
1C	3	SA-333-GR.6	1185	600	20100	17500	17500	27.9
2	4	SA-106-B	100	650	13650	15000	15000	27.9
4D	5	SA-333-GR.6	1185	600	20100	17500	17500	27.9
5	6	SA-376-TP304	15	250	23750	16800	17200	28.3
6	7	SA-333-GR.6	15	440	20100	17500	17500	27.9
5	8	SA-106	1185	600	20100	17500	17500	27.9

OPERATING CONDITIONS

MODE NO.	NOR AT SCH			RV & PV OPR			I SOLN ALV & SD			COLD SHUTDOWN			VALVE NO. & TAG NO.	TYPE NAME PLT.	TYPE
	T (°F)	P	E_{HOT}	T (°F)	P	E_{HOT}	T (°F)	P	E_{HOT}	T (°F)	P	E_{HOT}			
1A	557	7135	26.0	579	7184	25.847	579	7184	25.847	70	—	27.9	1	PCV-1-20	Y-GLOBE
1B	557	7135	26.0	579	7184	25.847	70	—	27.9	70	—	27.9	2	47W400-1	GATE
1C	3	—	27.9	579	7184	25.847	579	7184	25.847	70	—	27.9	3	PCV-1-55	WELDED
2	4	—	27.9	579	7184	25.847	579	7184	25.847	70	—	27.9	4		WELDED PIPE
4D	5	—	27.9	579	7184	25.847	579	7184	25.847	80 TO 70	0 TO 1	27.9	5		WELDED PIPE
5	6	0 TO 1	28.07	120	0 TO 1	28.07	120	0 TO 1	28.07	70	—	28.3	6		LG STY
6	7	6.178	27.92	120	6.178	27.92	120	6.178	27.92	70	—	27.9	7	47W400-2	GATE
5	8	—	27.9	579	7184	25.847	579	7184	25.847	70	—	27.9	8	47W400-2	WELDED PIPE

B = ** IS THE COEFFICIENT OF THERMAL EXPANSION (IN/IN/°F x 10⁻⁶)
P% VALUE BASED ON DESIGN TEMPERATURE
*EE MODULUS OF ELASTICITY (PSI x 10⁶)

SKEWED SUPPORT COORDINATE SYSTEM



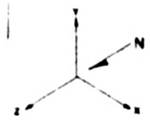
7 | 8 | 9 | 10 | 11 | 12

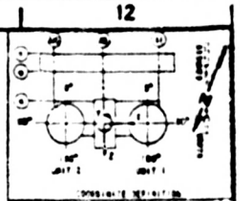
VALVE/FLANGE DATA TABLE

SIZE & RATING	VALVE WT (LB)	FLANGE WT (LB)	VALVE WT (LB)	FLANGE WT (LB)	VALVE WT (LB)	FLANGE WT (LB)	VALVE MANUFACTURER AND DRAWING NUMBER
32-1500	75	NA	40	270	NA	NA	ATWOOD & MORRILL DWG NO. 1662H-D-H
8-900	20	NA	NA	37	NA	NA	WALWORTH LO DWG NO. SA-2084-4A
6418-900	15	NA	8	2000	NA	NA	COPES-VULCAN DWG NO. E-174288
6-900	NA	8	NA	NA	110	NA	
3-900	NA	8	NA	NA	525	NA	
6-600	NA	2	NA	NA	236	NA	GRAVO CORP DWG NO. E-2878-9008
6181-1500	26	NA	23	4990	NA	NA	CONSOLIDATED DWG NO. 3NC-1040
10-300	NA	4	NA	NA	91	NA	

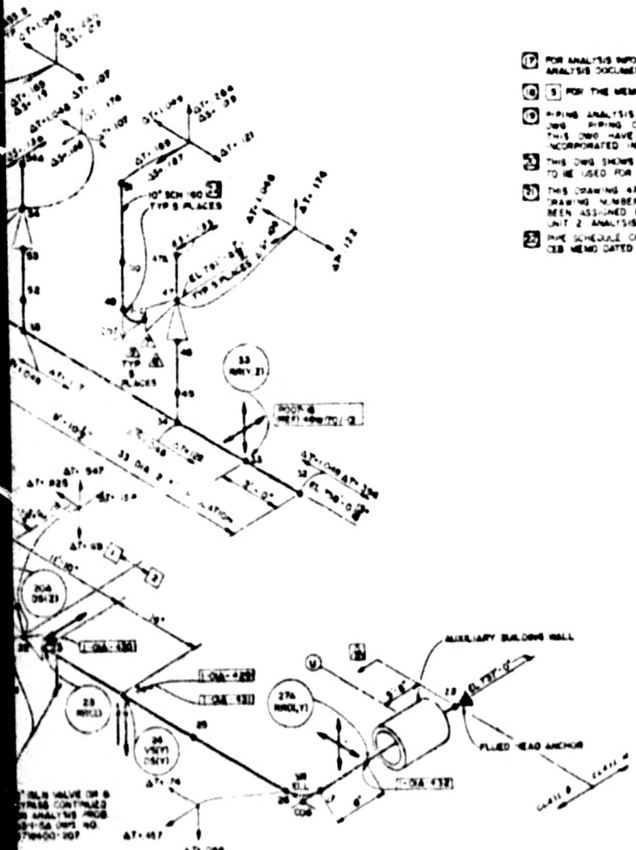
SUPPORT ZONE I.D. NUMBERS

- STEAM GENERATOR
- INTERIOR CONCRETE STRUCTURE
- STEEL CONTAINMENT VESSEL
- SHIELD BUILDING
- AUXILIARY BUILDING





SYMBOL	DESCRIPTION
	ANCHOR
	GUIDE
	VARIABLE SPRING SUPPORT
	CONSTANT FORCE SUPPORT
	RIGID STRUT
	SNUBBER
	HANGER
	LIMIT STOP



(7) FOR ANALYSIS INFORMATION SEE CEB REPORT CEB-MEI-78-5 FINAL ANALYSIS DOCUMENTATION LOG

(8) 5 FOR THE MEMBER BETWEEN NODES 29 AND 294

(9) PIPING ANALYSIS MODEL IS CURRENT TO REVISION 0 OF THIS DWG. PIPING CHANGES SHOWN ON ANY LATER REVISION OF THIS DWG HAVE NOT REQUIRED REANALYSIS AND WILL BE INCORPORATED INTO THE NEXT REANALYSIS OF THIS PROBLEM

(10) THIS DWG SHOWS THE ANALYSIS SUPPORT LOCATION AND IS NOT TO BE USED FOR SUPPORT FABRICATION OR INSTALLATION

(11) THIS DRAWING 47W400-218 RO IC FOR UNIT 1 ONLY. A NEW DRAWING NUMBER 47W400-223 AND 0600250-06-04 WAS HAS BEEN ASSIGNED FOR UNIT 2 AND WILL BE ISSUED WHEN THE UNIT 2 ANALYSIS IS COMPLETED

(12) PIPE SCHEDULE CHANGE NEEDED FOR STRESS QUALIFICATION PER CEB MEMO DATED DEC 2, 1982 MEDS ADD'NO CEB 82202 011

NOTES:

(A) ALL ELBOWS LR UNLESS OTHERWISE NOTED.

(B) ENTIRE PIPE IS INSULATED AS SHOWN (MIRROR INSULATION)

(C) ENT AS PIPE IS HIGH ENERGY

(D) RUPTURE LOCATION HAS BEEN DEFINED PER THE GUIDELINES OF DESIGN CRITERIA WB-DC-20-13-30 AND IS MODIFIED BY TVA LETTER WBN-50-300 AND JOB. THE STRESSES AT RUPTURE LOCATIONS AT JOINT 7 AND JOINT 76 DURING THE RUPTURE SATISFY THE CRITERIA AND ARE DEEMED TO MEET MINIMUM RUPTURE LOCATION CRITERIA

(E) BRANCH CONNECTION ANALYZED IN ACCORDANCE WITH TVA LETTER WBN-50-3 DATED NOV 4, 1975. SUPPORT TO BE PROVIDED BY TVA.

(F) BRANCH CONNECTION TO BE SUPPORTED IN ACCORDANCE WITH ALTERNATE ANALYSIS CRITERIA.

(G) RUPTURE STRESSES ALLOWABLE RUPTURE STRESS 37500 PSI

JOINT	MEMBER	RUPTURE STRESS	STREAM LOCATION TYPE
		PSI	
	COR	23728	TERMINAL
	5	31378	INTERMEDIATE
76	5A	30508	INTERMEDIATE
28	76	4347	TERMINAL

(H) ERECTED TEE CENTERLINE ELEVATION BEFORE COLD PULLING.

(I) ERECTED TEE CENTERLINE ELEVATION AFTER COLD PULLING.

(J) SUPPORTS AT JOINTS 8 & 10 ARE LUG ATTACHMENTS

(K) BELLOWS WELDED TO SCH 40 PIPE COLD PULL

(L) 1.4 COLD PULL GAP APPROX COLD PULL FORCE = 2875 LBS. SUPPORTS SHOULD BE ADJUSTED TO CARRY PIPE DEADWEIGHT DURING COLD PULL OPERATION

(M) SUPPORT LOCATIONS WERE DETERMINED UNDER PROGRAM IDENTIFIED BY TVA REPORT NO CEB 81-43

(N) CLEARANCE MUST BE MAINTAINED TO ALLOW FOR THERMAL PLUS SEISMIC PIPING MOVEMENTS AT MAXIMUM THERMAL MOVEMENTS (INCLUDES COLD SPRING MOVEMENTS) PLUS MAXIMUM SEISMIC MOVEMENTS WITH RESPECT TO A REFERENCE AND INCLUDES STEAM HAMMER, RELIEF VALVE THRUST, LOSS PRESSURE LOAD ON BELLOWS, AND RELIEF LOCA MOVEMENTS) MOVEMENTS LESS THAN .06" ARE NOT SHOWN.

COMP DWGS: 478400-408, 478400-409, 478400-410, 478400-421

REF DWGS: 47W400-216, -217, 446 478410-1 R5, 47W332-207, 47W600-1 R13

RO ISSUED FOR ECN 3481

INSPECTED AND APPROVED FOR ISSUE

AUXILIARY BUILDING
UNIT 1

SYSTEM 0600200-06-04 ISO.- 32" Φ MAIN STEAM LINE FROM GEN (LOOP 4) TO AUX BLDG ANCR

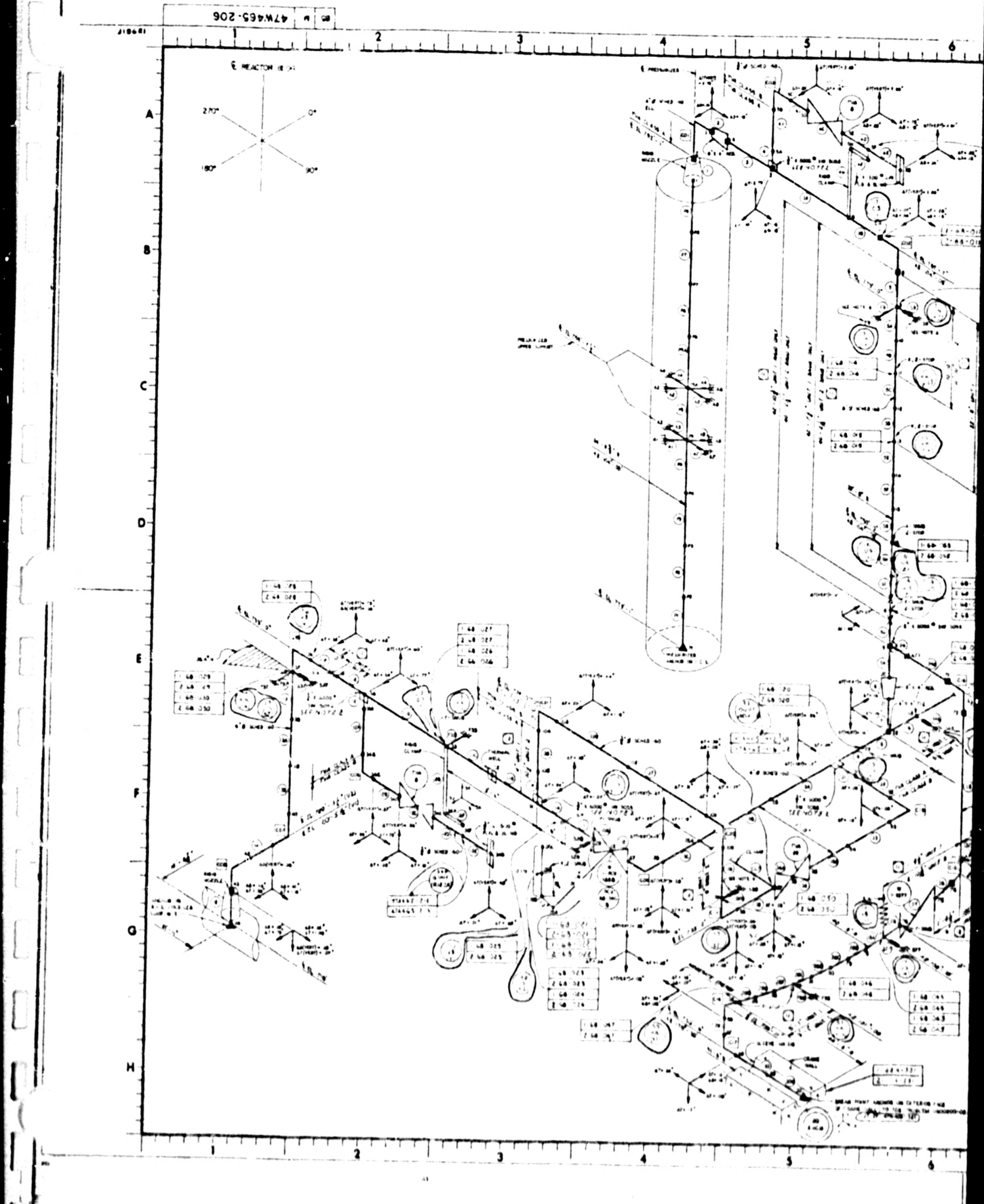
WATTS BAR NUCLEAR PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

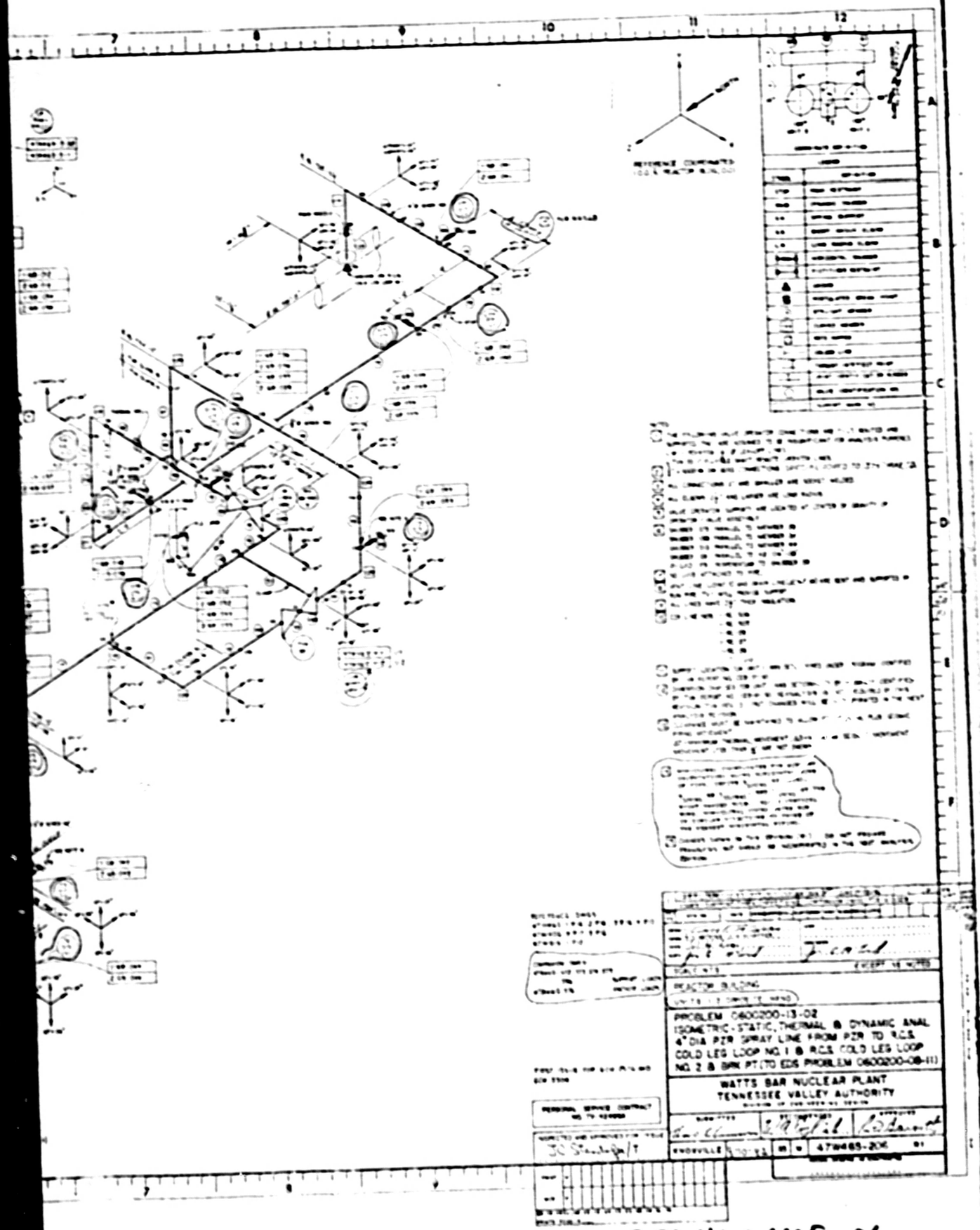
SUBMITTED	RECOMMENDED	APPROVED

KNOXVILLE | 47W400-218 | RO

THIS DRAWING SUPERSEDES LOS DRAWING NUMBER 0600200-06-04, 7963

8501160 408-05


47W465-206
REACTOR
270°
0°
180°
90°



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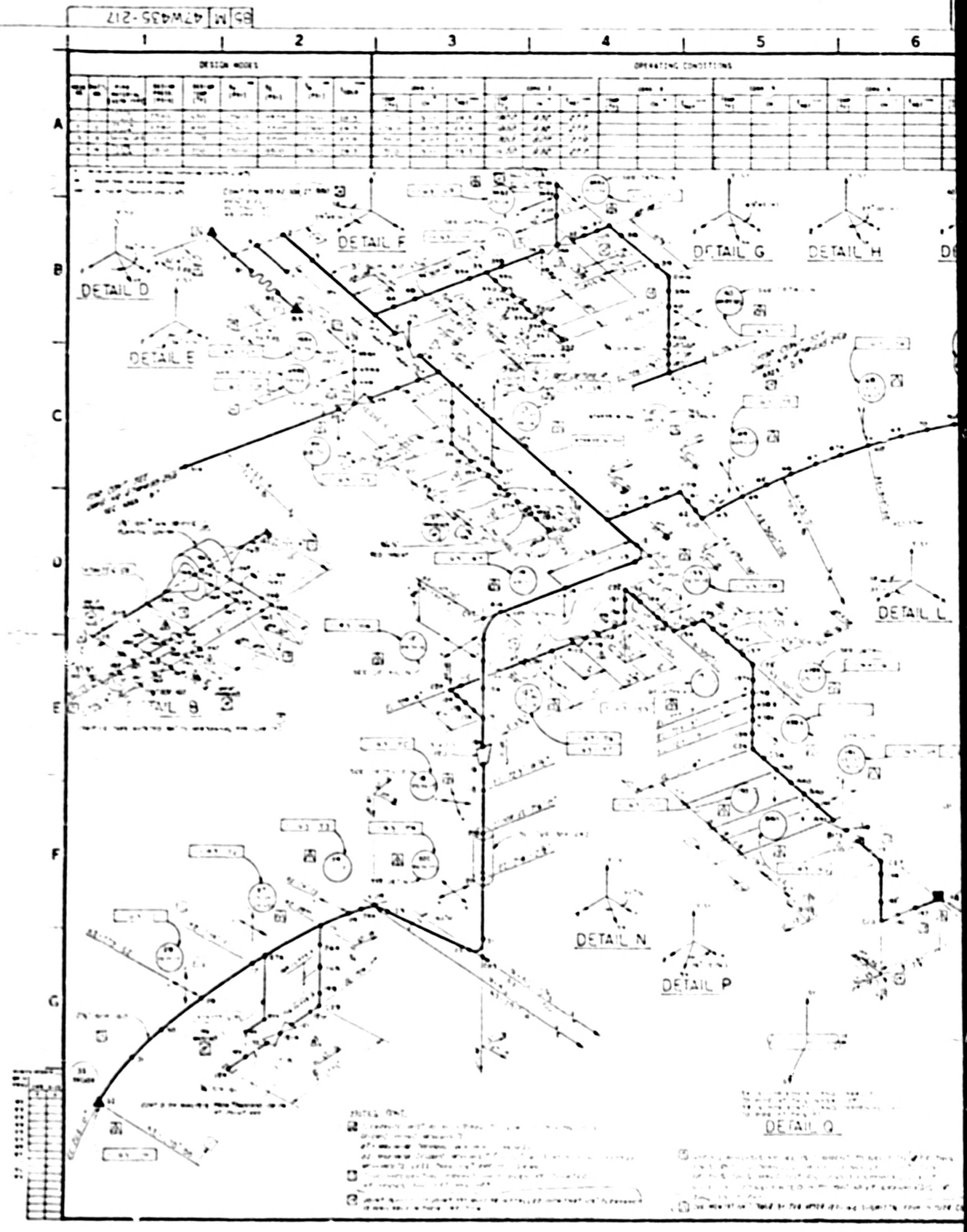
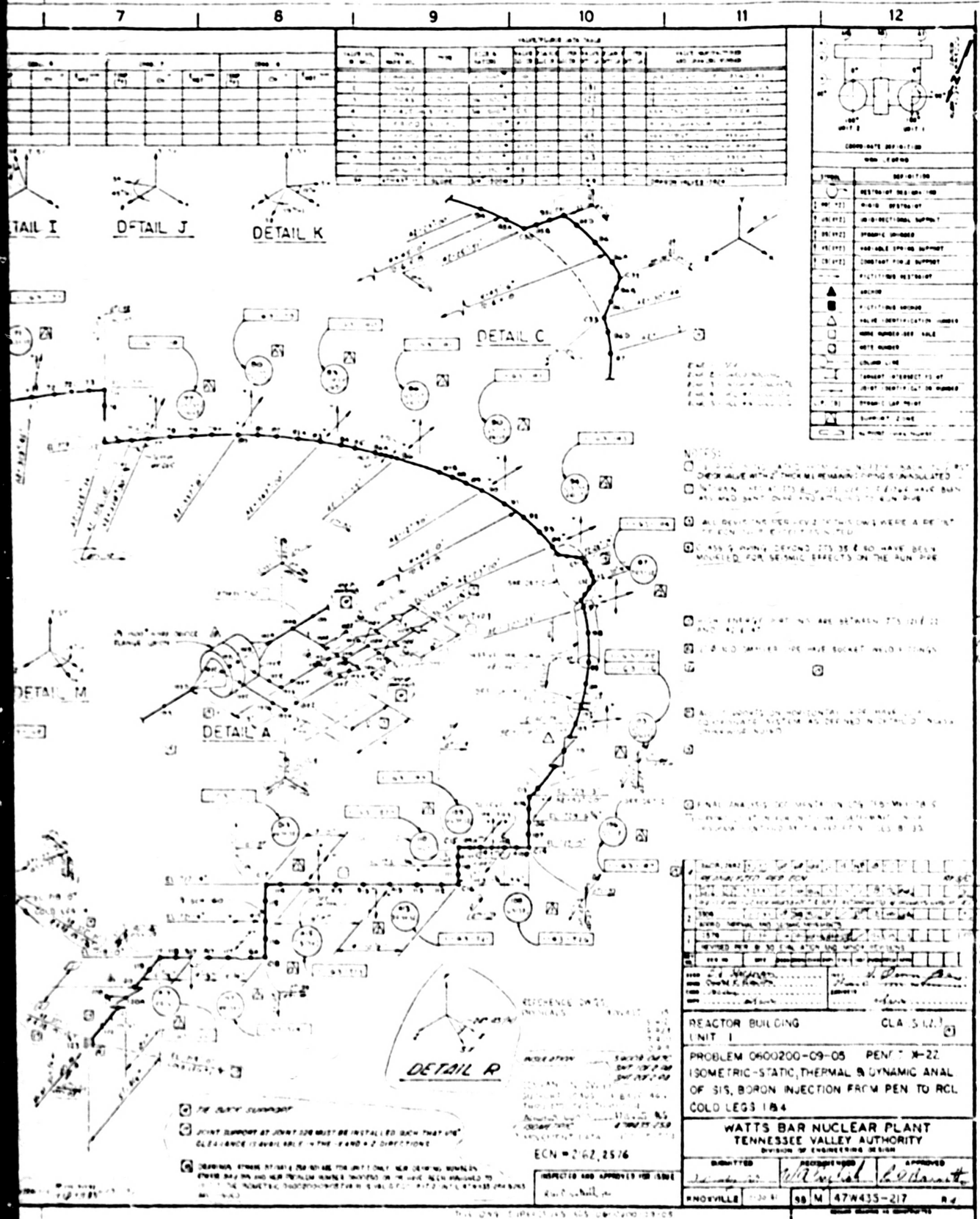

DESIGN MODES
OPERATING CONDITIONS
DETAIL D
DETAIL E
DETAIL F
DETAIL G
DETAIL H
DETAIL L
DETAIL N
DETAIL P
DETAIL Q



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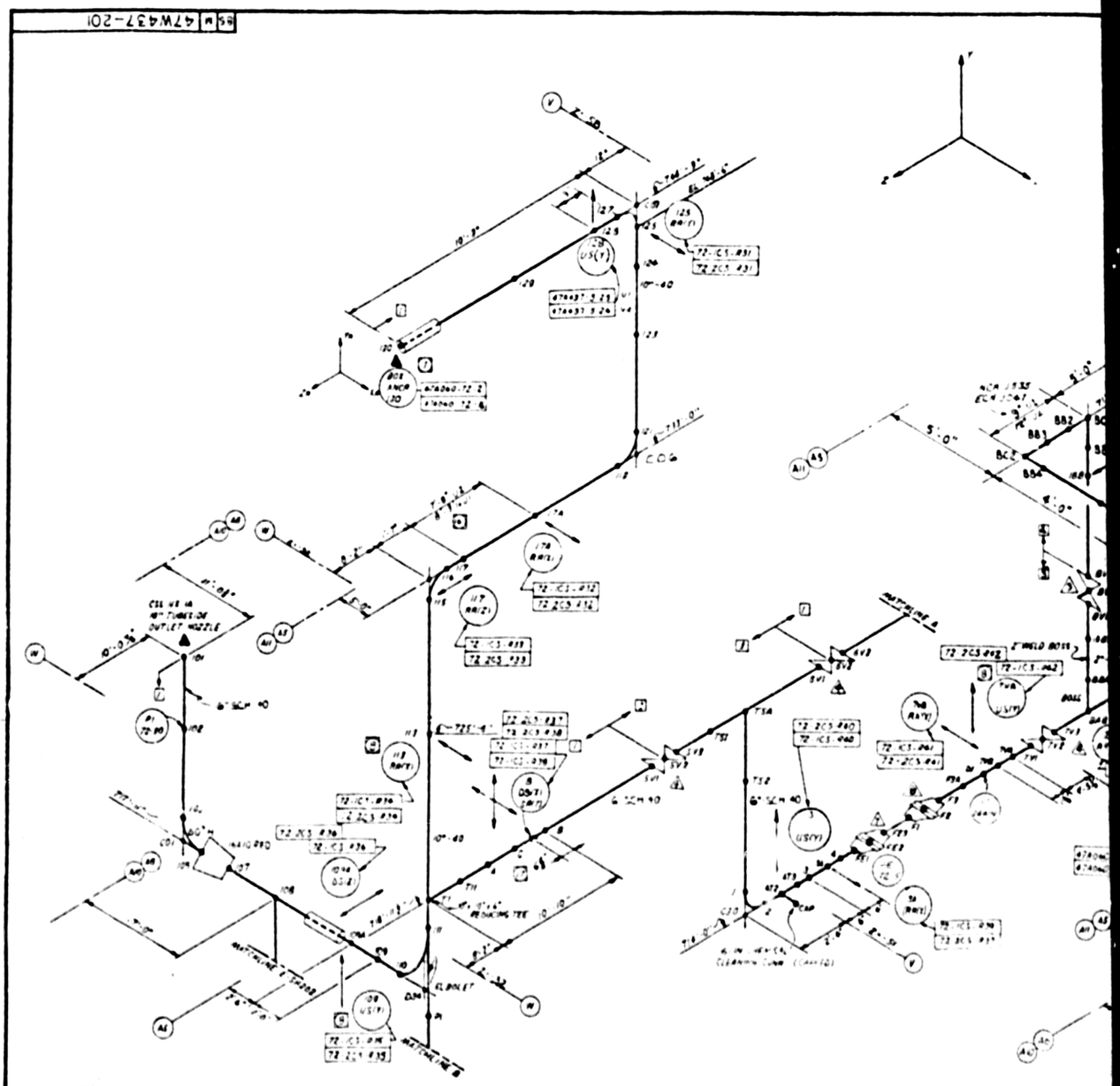


(NOTES CONT.)

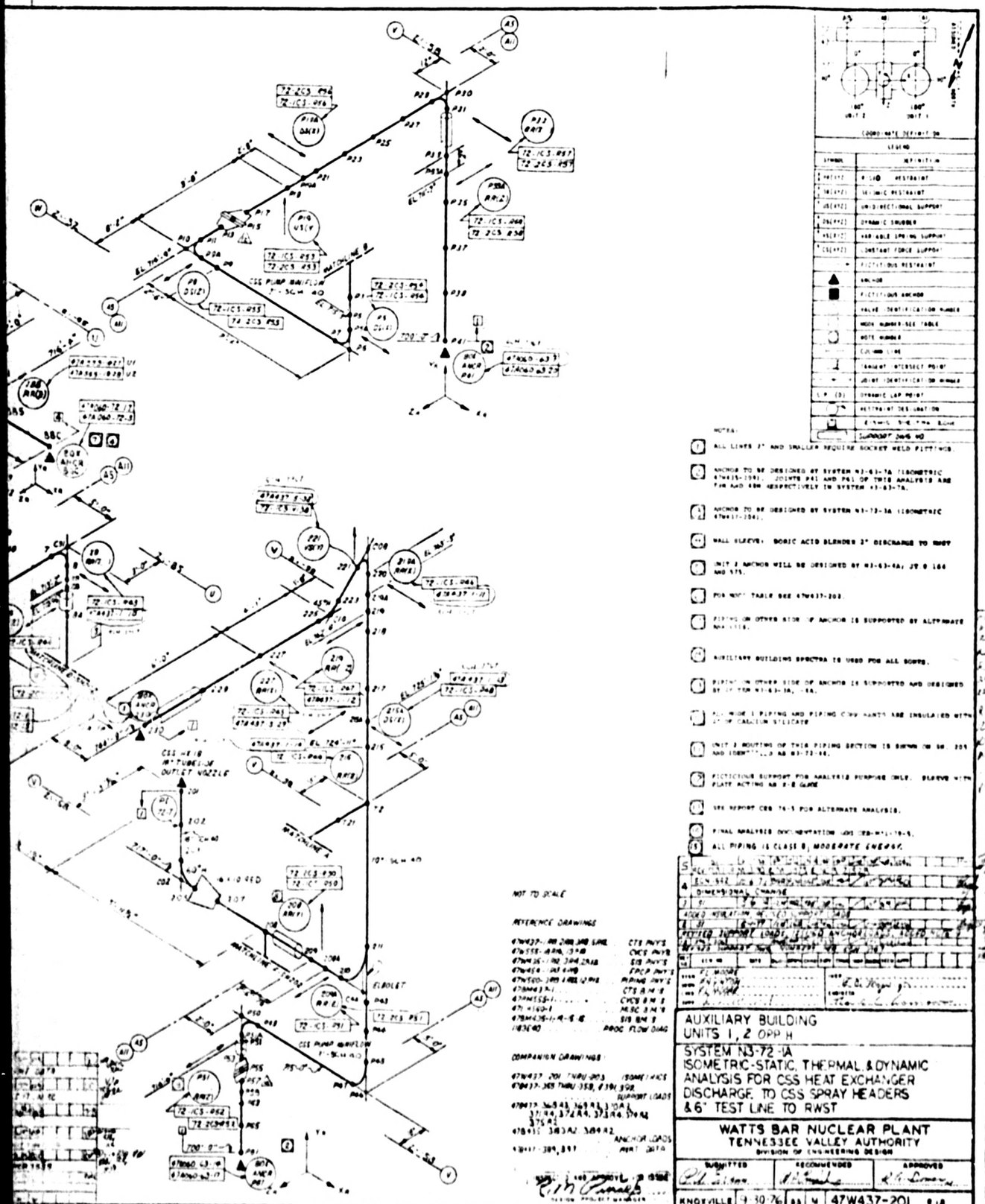
[5] SUPPORT LOCATION WAS DETERMINED UNDER PROGRAM IDENTIFIED BY TVA REPORT NO CEB 81 05.

[7] PIPING ANALYSIS MODEL IS CURRENT TO REVISION 7 OF THIS DWG. PIPING CHANGES SHOWN ON ANY LATER REVISION OF THIS DWG. ARE NOT REQUIRED REANALYSIS BUT WILL BE INCORPORATED INTO THE NEXT REANALYSIS OF THIS PROBLEM.

[8] THESE INSTRUMENT LINES HAVE PIPING INSTALLED BUT ARE CAPPED TO BE DISCONNECTED FROM ANALYSIS AS THEY EVALUATION & CALCULATION ARE MADE

UNITS: IS AS SHOWN
UNITS: IS CROSSOTTE WAND EXCEPT AS NOTED.

11	12/13	REVISED
10	2/14/	REVISED COMPANION DWG. 47W437-297
9	2/14/	REVISED TVA 7 REVS. ADDED
8	1/14	REVISED PER SI
7	2/13/	REVISED PER SI
6	12/12	REVISED PER SI
5	12/12	REVISED PER SI
4	12/12	REVISED PER SI
3	12/12	REVISED PER SI
2	12/12	REVISED PER SI
1	12/12	REVISED PER SI
NO.	DATE	REVISION



AUXILIARY BUILDING
UNITS 1, 2 OPP H

SYSTEM N3-72-1A
ISOMETRIC-STATIC, THERMAL & DYNAMIC ANALYSIS FOR CSS HEAT EXCHANGER DISCHARGE TO CSS SPRAY HEADERS & 6" TEST LINE TO RWST

WATTS BAR NUCLEAR PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED

KNOXVILLE	9-30-76	88	N	47W437-201	R18

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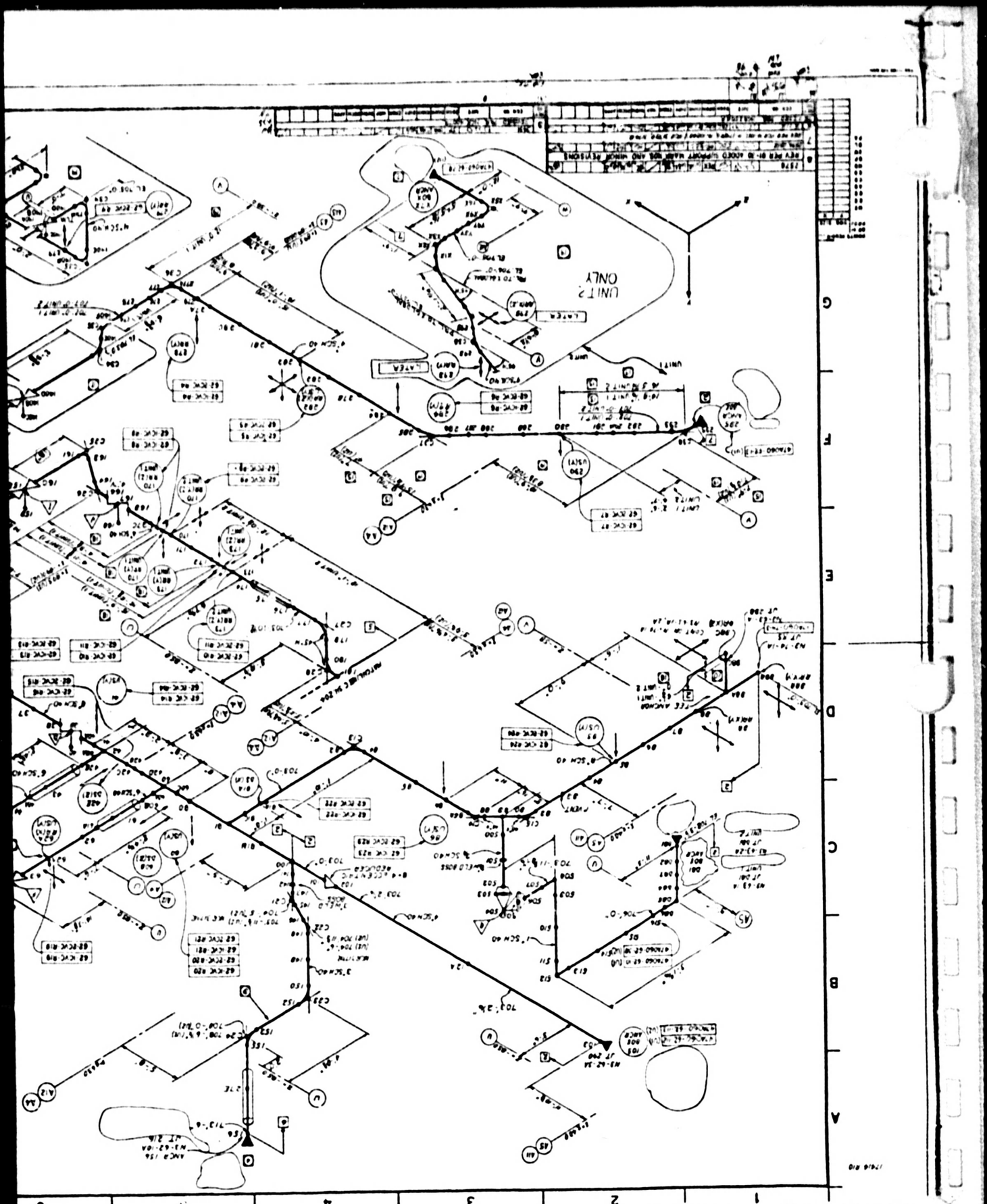
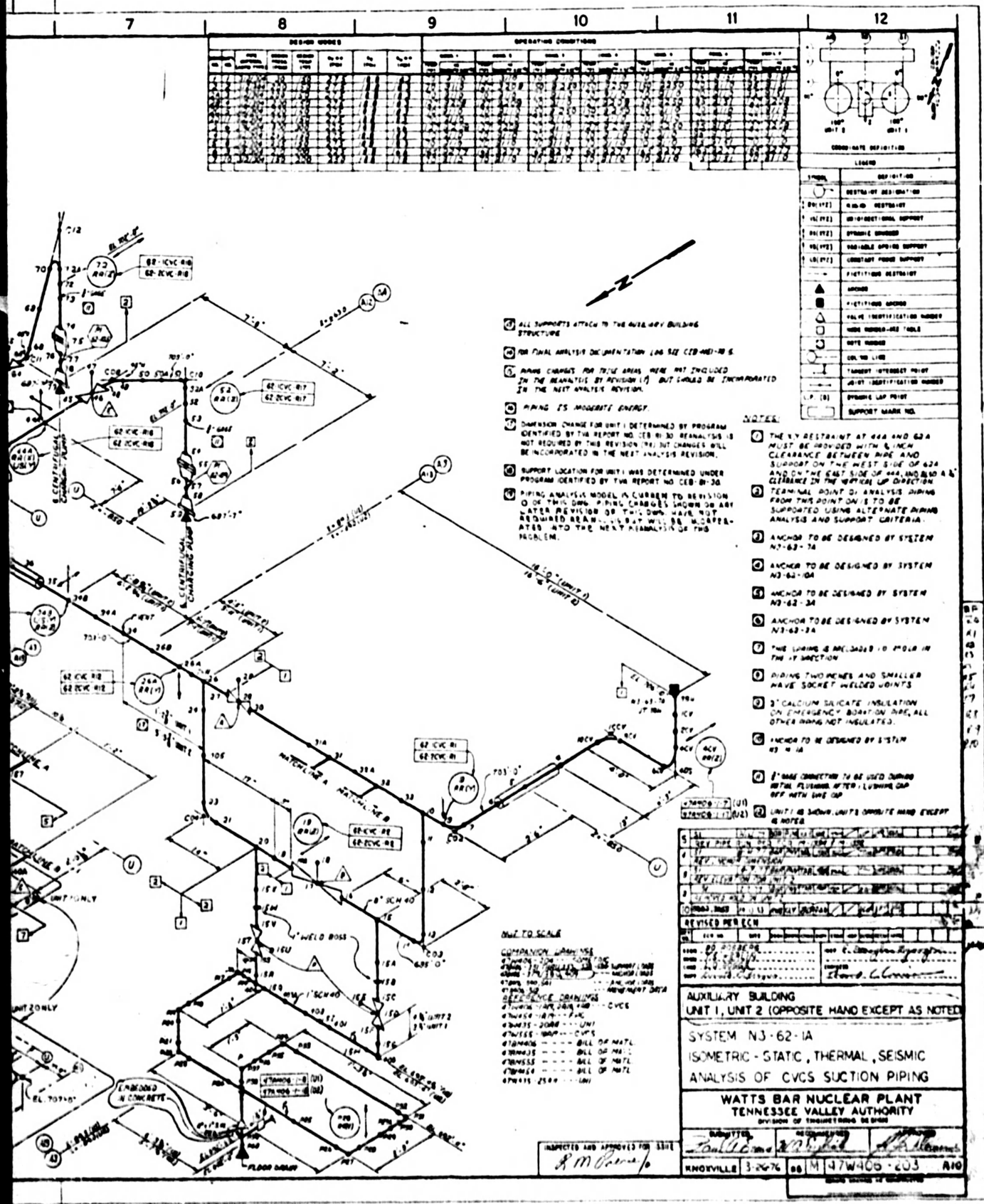

UNIT 2 ONLY
UNIT 1
6
5
4
3
2
1
G
F
E
D
C
B
A



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