SCALING RULES

M-65

SIZE E

1½" THICK REINFORCING PAD 30" IN DIAMETER. DO NOT PENETRATE PAD WITH STANCHION

FLOW

VENT

1" R. 18" SQUARE

1/4"

16"O.D. SCH. 160

1/2"

2'-5 9/16"

5'-1"

36" MAIN STEAM 60° ELBOW

DETAIL 5 M-65

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

(TWO REQUIRED)

DIMENSION a-b MUST BE LESS THAN 1/16" TO INSURE PERPENDICULARITY.

2" THICK REINFORCING PAD 30" IN DIAMETER. DO NOT PENETRATE PAD WITH STANCHION. SEE DRAWING VEN-MKII-SH. 2765(3) FOR DETAIL OF STANCHION WELD 13

EL. 611'-10½"

MILLED SURFACE 125 MICRO INCHES rms.

8" SCH. 160 STANCHION

3/16"

RADIUS ALL LOWER EDGES

2" SHIM

EL. 616'-5"

EL. 616'-5"

R. 20" SQ.

SHIM TO ZERO CLEARANCE

STRUCTURAL SUPPORT

36" MAIN STEAM 90° ELBOW

DETAIL 6 M-65

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

(TWO REQUIRED)

8"

7/8" FILLET WELD (CONTINUOUS)

36" MAIN STEAM LINE

½"

2½"

CAP

30°

PIPE

SHOP WELD

CAP TO BAR WELD PREPARATION

3"x3" BAR STOCK ROLLED ONTO PIPE (MILD CARBON STEEL)

FIELD TO FURNISH 42" EXTRA STRONG PIPE CAP TO BE FIELD WELDED TO BAR STOCK & CAP DRILLED AT CENTER WITH HOLE TO MATCH I.D. OF 8" SCH. 40 PIPE. FOR ATTACHMENT OF 8" ALKALINE FLUSH LINE BY FIELD.

ATTACHMENT FOR TEMPORARY FLUSHING CONN. (TWO REQUIRED)

DETAIL 4 M-65

NOT TO SCALE

FORGING ASTM A-350 GRADE LF-2 EXCEPT THAT IMPACT SPECIMENS SHALL BE CHARPY V-NOTCH AND SHALL MEET REQUIREMENTS OF Pgh. N-1211 (a) OF SECTION III OF ASME CODE AT A TEST TEMPERATURE OF 0°F.

MOMENT FT-KIP

2500

2000

1000

100 200 300 400 500 600 550

SHEAR-KIP

THE FOLLOWING LOADS (AT PIPE ℄) MUST BE TRANSFERED FROM PIPE TO CONTAINMENT WALL

LOAD CASE #1 - AXIAL LOAD 500KIPS.

LOAD CASE #2 - COMBINED BENDING AND SHEAR.

LOAD CASE #3 - CONE MUST ACT AS A PENETRATION SEAL AND WITHSTAND 55PSIG

ALL LOAD COMBINATIONS WITHIN THE SHADED AREA MUST BE ACCOMODATED FOR LOAD CASE # 2

DESIGN LOADS FOR PENETRATION ANCHOR CONES FOR 36" MN STM

EL. 681'-5" (TYPICAL)

EL. 676'-11" (TYPICAL)

EB-1-36"

SX

5'

℄ STM. GEN. E-50 B

EB-1-36"

SX

5'

℄ STM. GEN. E-50 A

EB-1-36"

EB-1-36"

THIS SECTION FURNISHED WITH FLOW ELEMENT

12"

3'-0"

FE 0704

EL. 636'-11¼"

MAIN STEAM FAILURE RESTRAINT PIPE ATTACHMENT. SEE DET. 7 M-65

EL. 633'-0"

FE 0702

EL. 623'-6"

EL. 617'-10½

90° ELLS TO BE 1.25" MIN. WALL

8" WOL STEAM DUMPS (TYP.)

SHOP WELD & STRESS RELIEVE

℄ EB-1-36"

45°

R. 1½" x 2" BY OTHERS

FOR PENETRATION SEE DETAIL 7 C-137

FOR WELD END PREPARATION SEE DWG. 5935-M-240 SHT. 1 & FOR WELD END TRANSITIONS SEE DWG. 5935-M-243 SHT. 1 (TYP.)

R. BY OTHERS

NOTES:

1. CONE FORGING I.D. TO MATCH I.D. OF MAIN STEAM PIPE.
2. TWO MAIN STEAM CONES ARE REQUIRED.
3. FOR DETAILS AND DIMENSIONAL DATA OF CONE FORGINGS, SEE DWGS. M-77

PENETRATIONS 2 & 3

DETAIL 1 M-65

NOT TO SCALE

℄ CONTAINMENT

32'-0"

CONTAINMENT

℄ REACTOR

32'-0"

37'-5¾"

3/4 VENT

STEAM GENERATOR E-50B

12"

SAMPLE CONN. SEE DWG M-244 SHT 2 OF 2 (TAP END FAR SIDE)

SX 0718

EB-1-36"

FOR FLUSHING ATTACHMENT SEE DETAIL 4 M-65

30"(TYP.)

30°

90°

44'-10 9/16"

FOR COMBINATION FAILURE RESTRAINT & SUPPORT ON 90° ELL (BOTTOM) SEE DETAIL 6 M-65

STEAM GENERATOR E-50A

3/4 VENT

37'-5¾"

88'-0"

15°

5'-6"

5'-6"

PENETRATIONS 2 & 3 1 (TYP.) DET.

FLOW NOZZLE TAPS

SX 0719 SAMPLE CONN SEE DWG. M-244 SHT 2 OF 2 (TAP END FAR SIDE)

EB-1-36"

90°

37'-5¾"

FOR FLUSHING ATTACHMENT SEE DETAIL 4 M-65

CONTAINMENT WALL

4.4'-8⅞"

42'-1 11/16"

4'-8" 2'-0" 18" 55 PIPE 18" 7'-6"

4'-0" 1'-5" PIPE 18" 7'-6"

24'-1⅛"

A

4"W.O.L.

CV 0501

VALVE ENDS MACHINED I.D. 28.283

D

D

8" WELDOLET STEAM DUMPS TYP.

36"X30" RED. (TYP.)

CV 0510

47'-4 13/16"

FOR FAILURE RESTRAINT ON 60° ELL SEE DETAIL 5 M-65

BOTH PIPES 1.25" MIN. WALL UP TO AND INCLUDING FIRST 90° ELLS. INSIDE CONTAINMENT

96'-0"

67'-0"

2'-3⅛"

7'-0"

5'-6"

5'-0"

2'-6"

EB-1-36"

12"W.O.L. TO REHEATERS

EB-1-36"

J

M

PLAN

SCALE 1/8"=1'-0"

SECTION D-D

SCALE: ½"=1'-0"

RELIEF VALVE NOZZLES 6"-1500# RAISED FACE WN. FLANGE. (TYP. - 12)

18⅜"

2'-5⅝" TO R.F.

45° ELL (SCH. 80) (TYP.)

6" WELDOLET.

℄ EB-1-36"

SEE DETAIL 3 FOR REINF. PAD.

22⅛"

SECTION C-C

SCALE 1/8"=1'-0"

SHOP WELD

1½"

1½"

30° XS CAP

2"

PIPE

CAP TO BAR WELD PREPARATION

30" EXTRA STRONG PIPE CAP TO BE FINISHED WELDED TO BAR STOCK BY BECHTEL FIELD.

2"x2" BAR STOCK (MILD CARBON STL.) ROLLED ONTO PIPE. COPE TO CLEAR DRIP POCKET AS NECESSARY.

5/8" CONTINUOUS FILLET WELD

CAP

℄ EB-1-26"

6" WELDOLET

2"

ST 1"

EB-1-6"

1" DRAIN

CAP WELDED ON IN FIELD AFTER ALKALINE CLEANING

6" DRIP POCKET DETAIL 2 –

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

CONC. RED. 26"X24"

MAIN STEAM STOP & CONTROL VALVES W

¾" VENTS

℄ EL. 629'-6"

SHAFT EL. 628'-6"

EL. 625'-0"

EB-1-36"

12" WELDOLET TO REHEATERS

EL. 617'-10½"

10" WELDOLET TO REHEATERS

EL. 614'-2⅝"

EB-1-26"

45° ELLS

DETAIL 2 –

6" DRIP POCKET (TYP.)

EL. 590'-0"

20 19 18 15 14

ELEVATION

4'-6

5/8

EL.: SEE SEC. 'C-C'

36" MAIN STEAM

1/2"

MAIN STEAM FAILURE RESTRAINT PIPE ATTACHMENT (4 REQUIRED)

1" R. 18"x20"

1" R. 14½"x18"

1" R. 10½"x16"

36" MAIN STEAM

3" INSULATION

10½"

14½"

18"

SECTION B-B

SCALE 1/8"=1'-0"

MOISTURE SEPARATOR & REHEATER E-9B & E-9A

3/4" VENTS

TURB. GEN.

ROOF

4" WELDOLET AUX. F.W. PUMP

EB-1-36"

12" W.O.L. TO REHEATERS

EL. 617'-10½"

EB-1-26"

EB-1-26"

ECC. RED. 36"x 26"

EB-1-26"

EB-1-26"

EL. 629'-6"

EL. 625'-0"

EL. 617'-5½"

EL. 614'-2⅝"

10" WELDOLET TO REHEATERS

DETAIL 2 –

6" DRIP POCKET

CONDENSER E-10

EL. 590'-0"

M

J

B

B

NORTH

15°

PLAN

DETAIL 7 M-65

SCALE: 1:1-0

RELIEF VALVE & BRANCH @ 45° TO HORIZONTAL

B'-8 11/16"

C'-5.761

6" (SCH. 80)

6" WELDOLET (SCH 160)

PIPE SHOP TO DETERMINE THE OPTIMUM REINF. PAD CUT-OUT FROM WELDOLET DIMS FOR MAX. WELD STRENGTH

62½°

FULL STRENGTH WELD

66°

57°±

18" PAD. RAD.

36" O.D. X 1¼" WALL M.S. PIPE

ADJ. PAD @ 90° & 18° SPACING

HEADER CROSS SECTION

SECTION A-A

SCALE 1/8"=1'-0"

NOTES:

1. ALL WELDS TO BE FULLY SHOP STRESS RELIEVED
2. IF ADVANTAGEOUS, A SPLIT PAD MAY BE USED WITH THE JOINT WELD PARALLEL TO THE ℄ HEADER
3. TWENTY-FOUR (24) REINF. PADS ARE REQUIRED.

10"+2x4"+18"

8 11/16"+2x5/8"=10"±I.D.

5/16" FOR 60°±

1/2" THICK REINF. PAD.

36" O.D. X 1¼" WALL M.S. PIPE

'A' DIM.+ ROOT GAP = 2"

4 1/8"±

FOR 60°±

60°

HEADER LONG. SECTION

AS NOTED ABOVE, THE PIPE SHOP IS TO DETERMINE THIS CUT-OUT PROFILE - SUGGEST AN ELLIPTICAL CUT-OUT FOR WELDOLET WELD PASS SEQUENCE SIMILAR TO THAT SHOWN ON BONNEY FORGE CAT. W-68 PAGE 70. CIRCLE SHOWN HERE FROM ABOVE DIM.'S 10"+8⅝" FOR 9¼" MEAN DIA.

REINF. PAD DETAIL

SCALE 1"=1'-0"

9" R.

36" HDR.

1/8" THICK ASTM A 212 B

1/16" WEEP HOLE 2 REQ'D.

VIEW OF REINF. PAD DEVELOPED (FLATTENED-OUT)

No.	DATE	REVISIONS	BY	CHK'D	DFTG SUPVR.	ENG'R	PROJ. ENG'R.	CHIEF ENG'R.
13	1-17 97	ADD STANCHION WELD NOTE TO DETAIL 6 PER FCR 96-240 AND DCR 96-1060				MDS	DAP	
12	7/24/91	REV'D MAIN STM PIPE ELEV. PER FC 911 & 950 91 603 (PDB)	O'D	HD	DMB			
11	8-10 94	REV. PER ENG. REVIEW & CPCo	JCD	TDV			LHP	
10	9/23/14	ISSUED "AS-BUILT"	RS	AW	RS	AW	MWH	
9	2/6/13	REVISED DETAIL 1. REDRAWN SECT. D-D @ OTHER SHOT.	SP	MP	MP		SP	
8	11/15/00	ADDED WELD NOTES, 4 PT-0510. REVISED FE NOS & DIM. ON DET. 5 DELETED PS-0704 & PS-0501	RN	MP	MP		EK	
7	7/29/98	REVISED & ADDED NOTES, REV. DIM. CORRECTED STEAM GENERATOR NUMBERS. REMOVED HOLD FROM DETAIL 2. DELETED 42 DIM.	JC	MP	MP		MP	ER
6	7/19/68	REVISED: DETAILS 1 & 2. ADDED: DETAILS 4, 5, 6 & 7 & NOTES.	JC	MP	MP			ER
5	6/1/68	ADDED REINFORCING PAD TO RV. NOZZLES CORRECTED DIM. ON STM. DUMP & RV. NOZZLE.	HFP	MP			MWH	ER
4	2/19/68	REVISED WELDOLET DIM'S REVISED PIPE ELEVATIONS RELOCATED SAMPLE CONN. & 8" STEAM DUMP NOZZLES. REMOVED HOLD ON R.V. NOZZLES.	JC	MP	MP		MWH	ER
3	1/15/68	REMOVED HOLD ON ISO. VALVES REVISED LOCATION 12" W.O.L. REVISED MIN. PIPE WALL THK. THRU CONTAINMENT PENETRAN.	G. A. S.	MP	MP		MWH	ER
2	11/2/67	ADDED: F.E. 0702 & 0704 PIPE SECT. P.S. 0501, 0704, FIELD NOTE AT DET. #2: REVISED GX LOCATION; SIZE DUMP VALVE NOZZLES; LOCATION 12" W.O.L.; HEAVY WALL PIPE @ R.V. NOZZ.	G. A. S.	MP	MP		MWH	ER
1	11/16/67	ADDED MIN. WALL THICKNESS @ R.V. NOZ.	HFP	MP	MP		MWH	ER
0	7/1/67	ISSUED FOR CONSTRUCTION	G. A. S.	HFP	MP		MWH	ER

SCALE AS NOTED | DESIGNED F. DOWSETT | DRAWN S.A. SILVAGNI

BECHTEL COMPANY

PALISADES PLANT
CONSUMERS POWER COMPANY

PIPING DRAWING
MAIN STEAM SYSTEM

BECHTEL	JOB No.	DRAWING No.	REV.
	5935	M-65	13

D-13

34 x 44