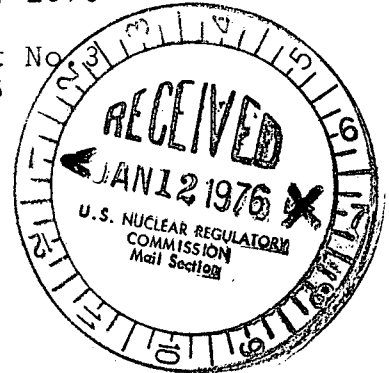


William J. Cahill, Jr.
Vice President

Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N Y 10003
Telephone (212) 460-3819

January 9, 1976

Re Indian Point Unit No.
Docket No. 50-286



Mr. R. C. DeYoung
Assistant Director for
Light Water Reactor , Group 1
Division of Reactor Licensing
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. DeYoung

In Item 3C(i) of Enclosure 2 of our November 12, 1975 letter, it was reported that the motor operator on certain remote operated valves inside containment which would be submerged in a post-LOCA condition would be relocated. A conceptual sketch of the valve operator relocation was presented as Figure 1 in that letter. A specific mechanical design based on this concept has been developed for each relocated valve operator. Twenty copies of the final mechanical design sketches are attached.

The preliminary electrical design schematics which were transmitted in the November 12, 1975 letter have since been revised. Twenty copies of the final electrical design schematics are now attached.

A listing of the finalized mechanical and electrical design drawings transmitted herewith is presented in Attachment A.

Details of the calculation of the water level inside

258

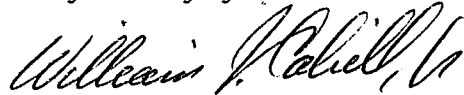
8111180666 760109
PDR ADOCK 05000286
PDR

Mr. R. C. DeYoung - 2 -

January 9, 1976

containment during the post-LOCA condition are presented in Attachment B.

Very truly yours



mrh

William J. Cahill, Jr.
Vice President

Copy to John P. O'Reilly, Director
Office of Inspection & Enforcement
Region 1
U.S. Nuclear Regulatory Commission
King of Prussia, Penn. 19406

Sworn to before me this
9th day of January, 1976



Notary Public

ANGELA ROBERTI

Notary Public, State of New York

No. 03-8593813

Qualified in Bronx County

Commission Expires March 30, 1976

ATTACHMENT A

Electrical Schematics

500B971 Sheet 112 Rev. 14
 117 Rev. 13
 155 Rev. 3

113E303 Sheet 4 Rev. 18

Mechanical Design Sketches

a) SIS Valve Operator Support

856B
856E
856H
856C (2 sheets)
856G & J (3 sheets)

b) SIS Valve Operator Rod Assembly (7 sheets)

ATTACHMENT B

The water level within the IP-3 containment as a consequence of the postulated LOCA has been determined in two parts. Part I considers available water sources that could potentially spill from broken RCS piping during the post LOCA injection phase; this spilled fluid is calculated to be 427,484 gallons as discussed below. The second part determines a water level above containment floor elevation 46'-0" for various amounts of spilled water as well as the change in water volume per inch of depth at any elevation inside containment.

For the 427,484 gallons determined in Part I, the water level reaches elevation 50' -1 1/2" (i.e. 4'-1 1/2" water depth above floor elevation 46'-0"). At this elevation approximately 6,750 gallons of water would be required to raise the containment water level an additional one inch. The relocated valve motor operators have been raised such that the bottom of the lowest valve operator is at elevation 52'-0 7/8", approximately 23 inches above the calculated water level (elevation 50' -1 1/2").

I. Water Sources:

- a. Refueling Water Storage Tank (RWST) 353,900 gallons
- b. Spray Additive Tank 5,100
- c. Accumulators (4)
 Tank 815 ft³
 Piping 37ft³
 852ft³ x 7.48 gals/ft³ x 4 25,490
- d. Reactor Coolant System (RCS)
 Total RCS Inventory = 504,640 lbs.
 including Pressurizer (62% Full)
 Pressurizer Surge Line
 Piping (4 loops)
 Pumps (4)
 SG Primary (4)
 Reactor Vessel (Full)
- Less Water Remaining in Reactor Vessel
 (3000 ft³@50lbs/ft³) = 150,000 lbs
- Amount of RCS Spilled (0.12 gals/lbs x 354,640 lbs) 42,994
-
- Maximum Amount of Water on Containment Floor
 at end of changeover to Recirculation Phase 427,484 gallons

DISCUSSION: (a) The 353,900 gallons listed for the RWST is maximum available water from this tank when filled to overflowing.

(b) The 5100 gallons listed for the Spray Additive Tank represents the full tank condition. For conservative estimates of water sources to containment, this tank is assumed to have been emptied by the spray system eductors during operation of the containment spray pumps.

(c) The 25,490 gallons listed for the four (4) accumulators represents maximum water when operating within Technical Specification limits. All four of these tanks are assumed to have delivered their contents to the R.C.S. during the LOCA. The inventory of these four tanks is delivered to the R.V. for core recovery during the injection phase.

DISCUSSION (Continued)

(d) The 42,994 gallons listed as RCS spillage to the containment floor assumes conditions in the RCS in accordance with the Indian Point 3 ECCS Appendix K analysis, that is, 100% power with pressurizer 62% full and total RCS inventory of 504,640 pounds. For the purpose of calculating RCS spillage to the containment floor, the Reactor Vessel is assumed to remain filled to the bottom of the Reactor Vessel nozzle. This assumption is in agreement with ECCS performance evaluated by the Appendix K analysis using the NRC approved Westinghouse ECCS evaluation model. As part of this ECCS evaluation model, core recovery and reflood is accomplished during the post-LOCA injection phase thus assuring that the Reactor Vessel is filled.

II. Containment Water Levels

<u>Water Level</u>	<u>Water Volume</u>
Elev. 48'-0"	247,921 gal.
48'-1"	254,871
48'-2"	261,822
48'-3"	268,772
48'-4"	275,723
48'-5"	282,673
48'-6"	289,623
48'-7"	296,952
48'-8"	304,280
48'-9"	311,609
48'-10"	318,938
48'-11"	326,267
49'-0"	333,596
49'-1"	340,725
49'-2"	347,854
49'-3"	354,983
49'-4"	362,112
49'-5"	369,241
49'-6"	376,370
49'-7"	383,499
49'-8"	390,249
49'-9"	396,999
49'-10"	403,749
49'-11"	410,499
50'-0"	417,249
50'-1"	423,999
50'-2"	430,749
50'-3"	437,499
50'-4"	444,249
50'-5"	450,999
50'-6"	457,749

In calculating these water volumes, the following was considered:

- a) Crane wall and openings
- b) Refueling canal
- c) Refueling canal concrete beginning at Elevation 49'-8"
- d) Wall of Recirculation sump
- e) Recirculation Pump sump
- f) Containment sump
- g) Trenches
- h) Reactor shield and reactor
- i) other concrete structures
- j) Accumulator tanks beginning at Elevation 49'-1"
- k) Reactor Cavity

(DISCIPLINE)

NAME OF COMPANY INDIAN PT UNIT 3SUBJECT SIS VALVE OPERATOR SUPPORT 356-BISO F-50103
LINE 56

CALC. SET NO.

PRELIM.

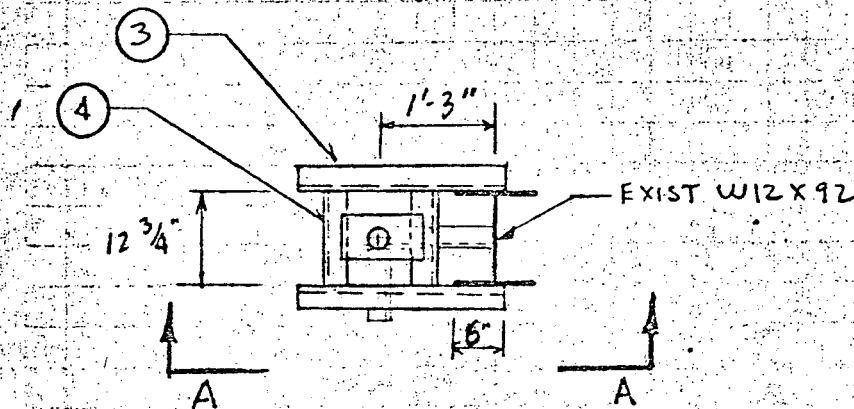
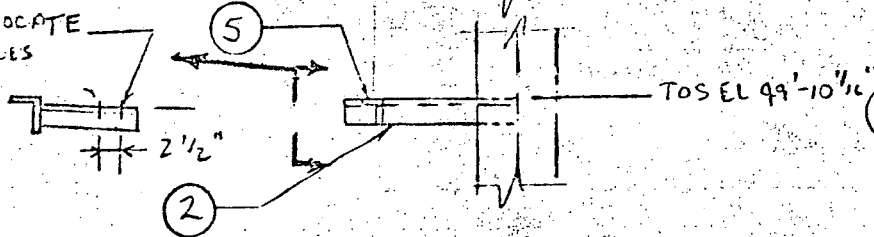
FINAL

VOID

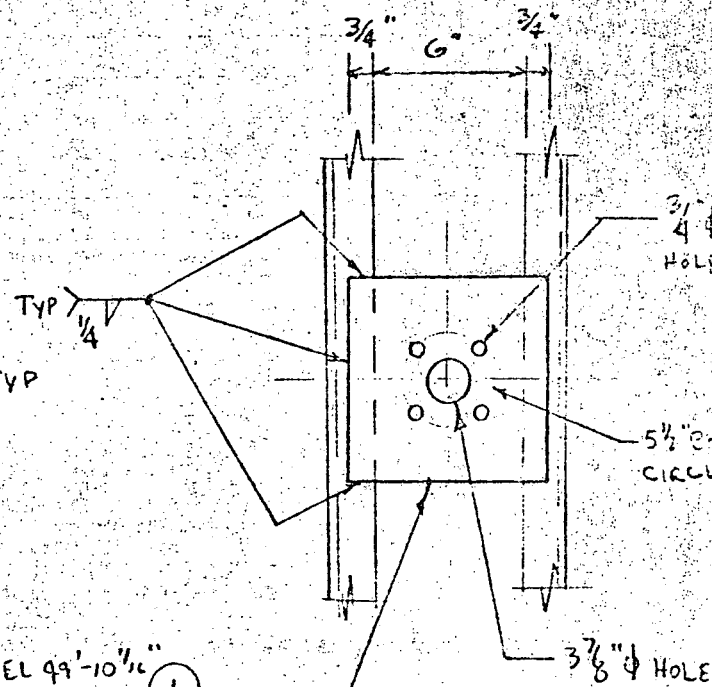
SHEET 7 OF 1

J.O. 9321.108

R _E	COMP. BY	CHK'D BY
0	JTW DATE 11-21-75	MPM DATE 11-21-75
1	MPM DATE 12-4-75	RTM DATE 12-4-75

PLAN
TOS EL 54'-3"FIELD TO LOCATE
2-3/4" ϕ HOLES

SECT A-A

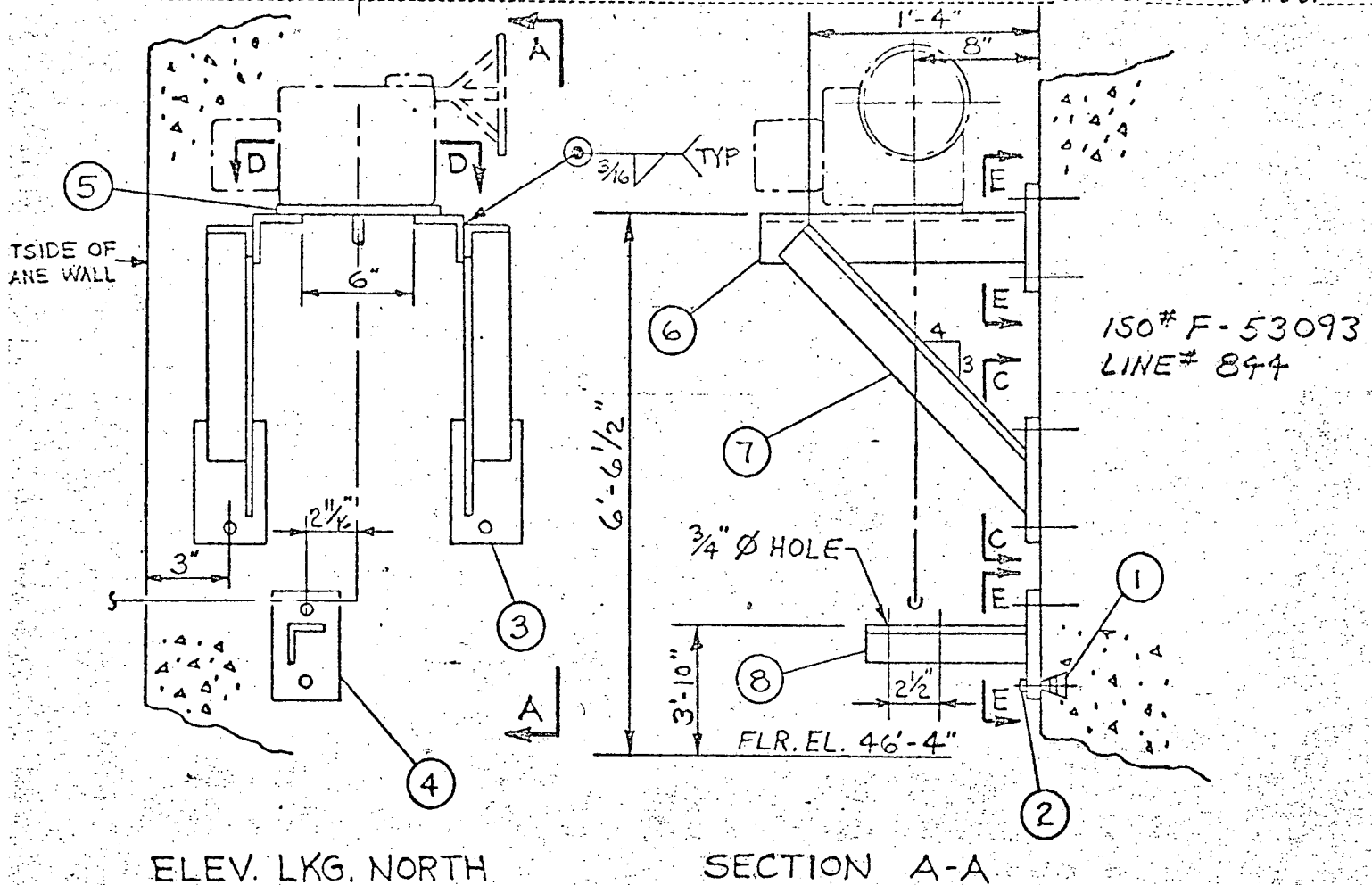


SECT D-D

ITEM	NO. REQD.	DESCRIPTION
1	1	R 7/8" x 7 1/2" x 0'-7 1/2" LG
2	1	L 4 x 4 x 1/4" x 1'-6" LG
3	2	L 4 x 4 x 1/4" x 2'-0" LG
4	2	L 2 x 2 x 1/4" x 1'-0 3/4" LG
5	1	L 2 x 2 x 1/4" x 1'-0" LG

NAME OF COMPANY CON. ED. - INDIAN PT. (WEDCO) UNIT 3

SUBJECT SIS VALVE OPERATOR SUPPORT 856-H

J. O. NO. 9321.081/08SHEET NO. 1 OF 1DATE 11-21-75COMP. BY TPJ C'K'D BY MPM

NOTES:

1. FOR SECTIONS C-C, D-D & E-E SEE SUPPORT 856-B SHEET 1 OF 2
2. FOR VALVE OPERATOR ROD ASSEMBLY SEE SHT. 5 OF 7

ITEM	NO REQ'D	DESCRIPTION
1	10	1/2" DIA. CONCRETE FASTENER
2	10	1/2" DIA. MACHINE BOLT
3	2	Ø 3/8" THK. X 4" X 0'-7 1/2" LG.
4	3	Ø 3/8" THK. X 4" X 0'-6" LG.
5	1	Ø 7/8" THK. X 7 1/2" X 0'-7 1/2" LG.
6	2	L 2"x2"x 1/4" X 1'-5 5/8" LG.
7	2	L 2"x2"x 1/4" X 1'-9 1/2" LG.
8	1	L 2"x2"x 1/4" X 0'-11" LG.

DISCIPLINE)



NAME OF COMPANY CON. ED-INDIAN PT. (WEDCO) UNIT 3

SUBJECT S.I.S. VALVE OPERATOR SUPPORT 856-G

ISO# F-50313
LINE# 16

CALC. SET NO.

RELIM.

FINAL

VOID

SHEET 1 OF 2

J.O. 9321.284/122

REV

COMP. BY

CHK'D BY

0

MPM

JPW

DATE

11-21-75

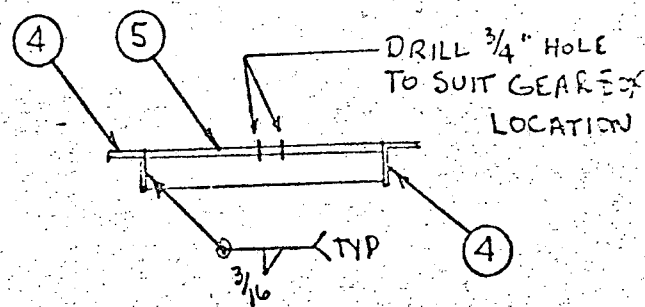
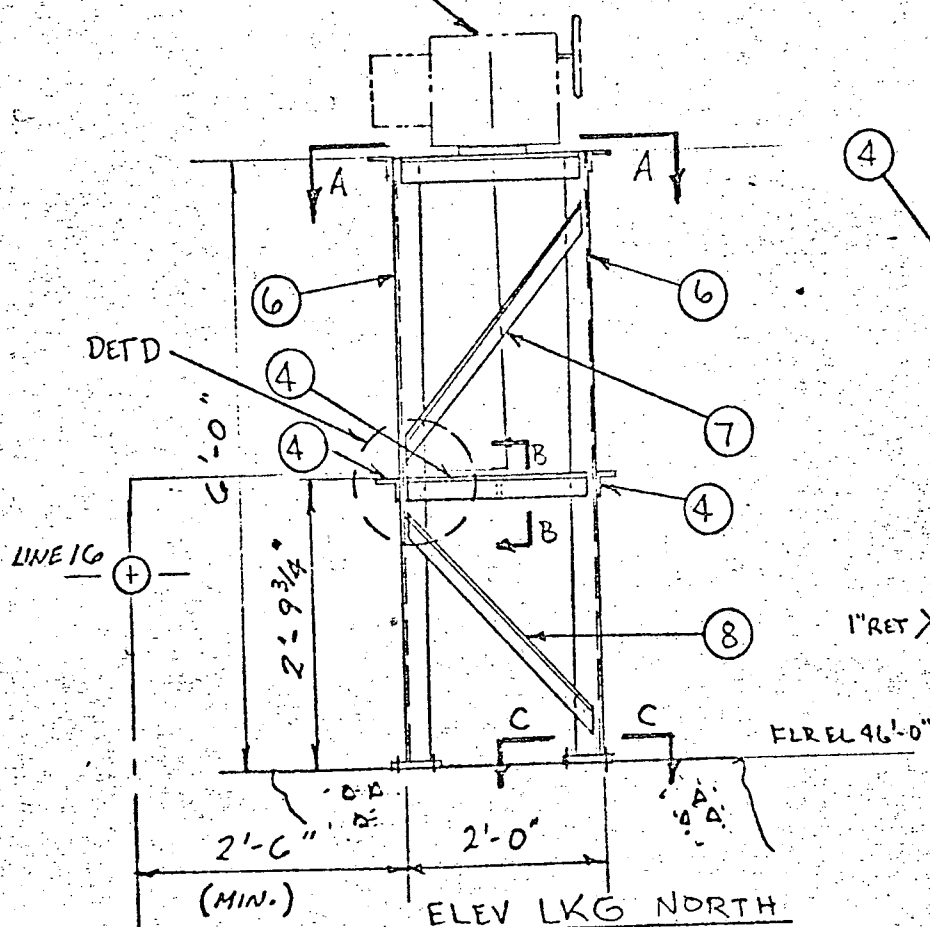
DATE

11-21-75

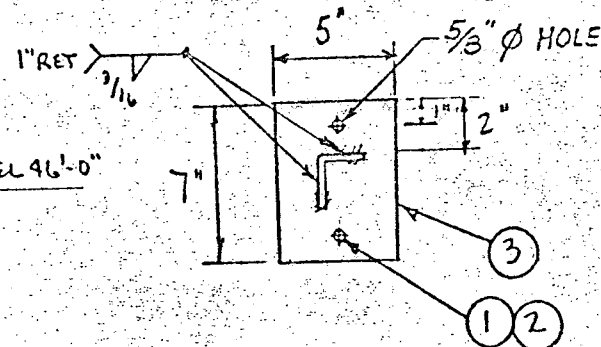
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DATE

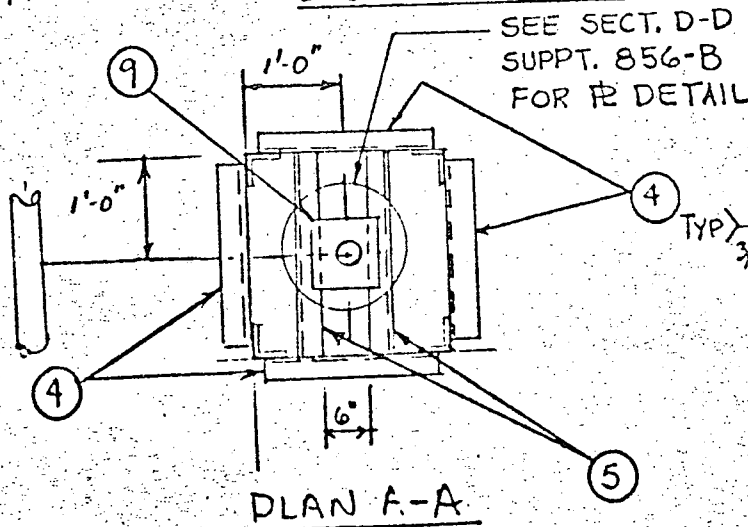
VALVE 856-C



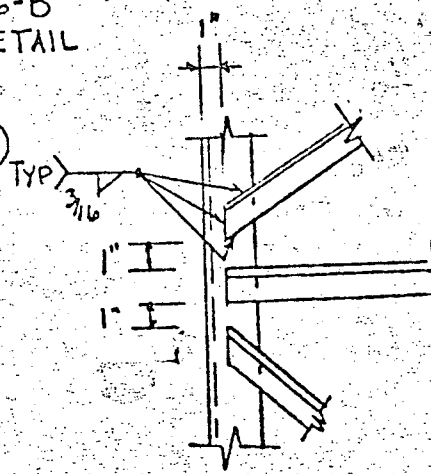
SECTION B-B



SECTION C-C



PLAN A-A



DET D

TYPICAL CONNECTION

(DISCIPLINE)



CALC. SET NO.

RELIM.

FINAL

VOID

SHEET 2 OF 2

J.O. 9321.08+100

REV. COMP. BY CHK'D BY

0

MAM

JPL

DATE

DATE

11-21-75

11-21-75

DATE

DATE

NAME OF COMPANY CON. ED - INDIAN PT. (WEDCO) UNIT/Y 3

SUBJECT SIS VALVE OPERATOR SUPPORT 856-C

ISO# F-50313

LINE# 16

ITEM	NO. REQ'D	DESCRIPTION
1	8	1/2" DIA CONCRETE FASTENER
2	8	1/2" DIA MACHINE BOLT.
3	4	PL 3/8 x 5" x 0'-7" LG.
4	8	L2 x 2 x 1/4 x 1'-10" LG
5	3	L2 x 2 x 1/4 x 2'-0" LG
6	4	L3 x 3 x 1/4 x 6'-0" LG
7	4	L2 x 2 x 1/4 x 3'-8" LG
8	4	L2 x 2 x 1/4 x 3'-6" LG
9	1	PL 7/8 x 7 1/2 x 0'-7 1/2" LG

NOTE: FOR VALVE OPERATOR ROD ASSEMBLY
SEE SHT. 2 OF 7

(CIPLINE)



CALC. SET NO.		
PRELIM.		
FINAL		
VOID		
SHEET 1 OF 3		
J.O. 9321. 0-8-103		
REV	COMP. BY	CHECK'D BY
0	MAPM DATE 11-21-75	CPM DATE 11-21-75
	DATE	DATE

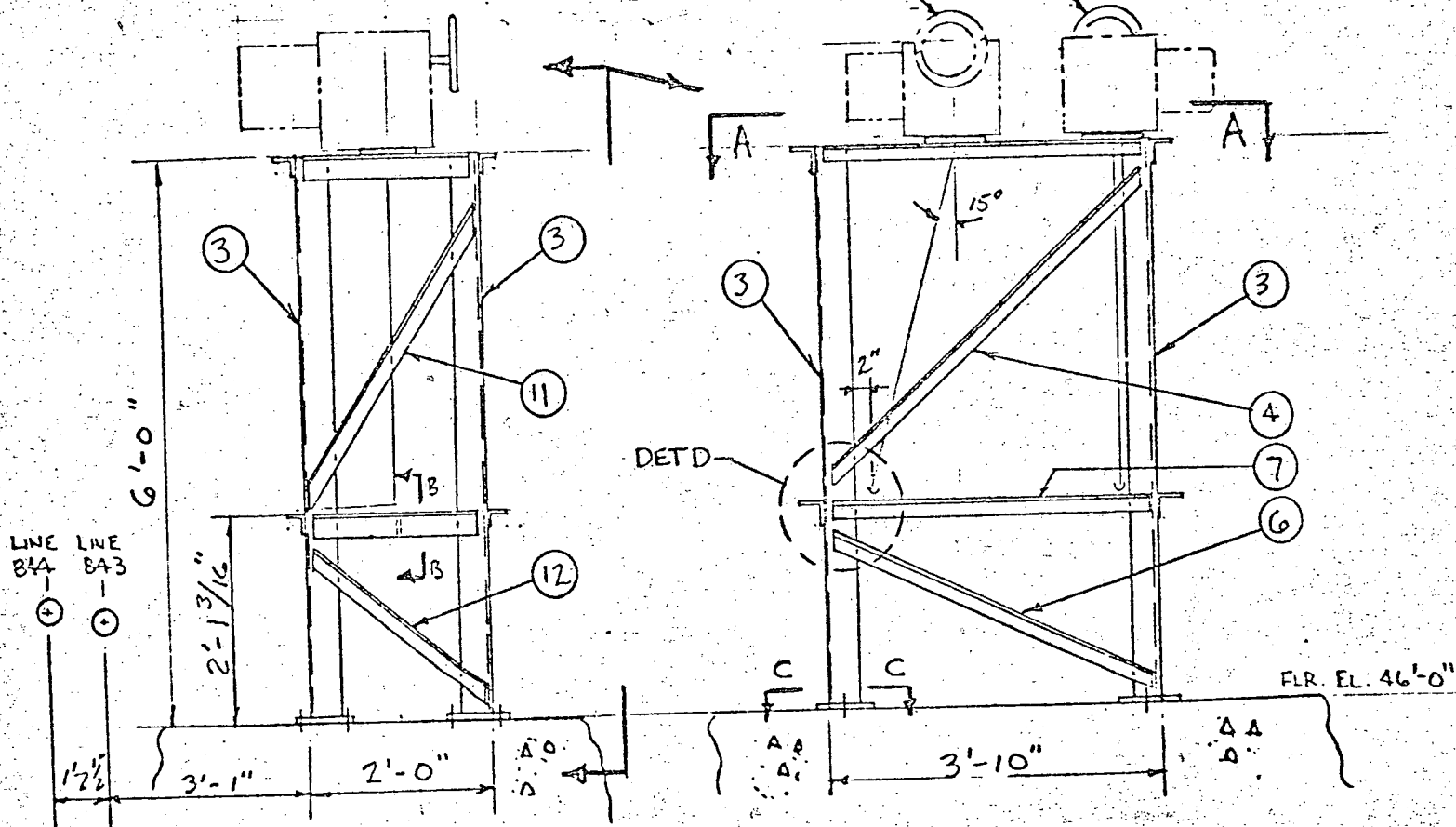
NAME OF COMPANY CON. ED. - INDIAN PT. (WEDCO) UNIT 18.3

SUBJECT SIS VALVE OPERATOR Support S. 856-G & 856-J

LINE # 843 150# F-53123
LINE # 845 150# F-53103

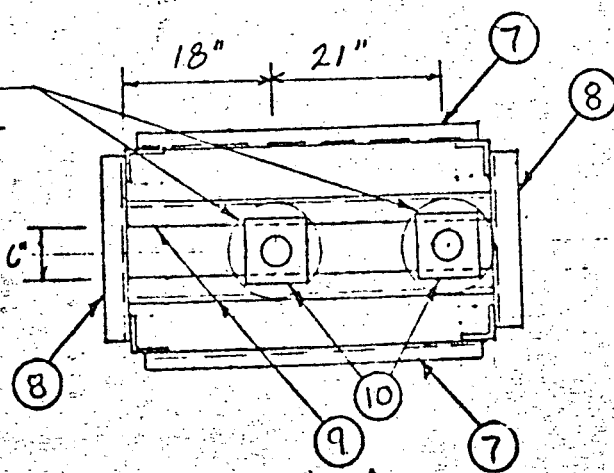
VALVE 856-J

VALVE 856-G

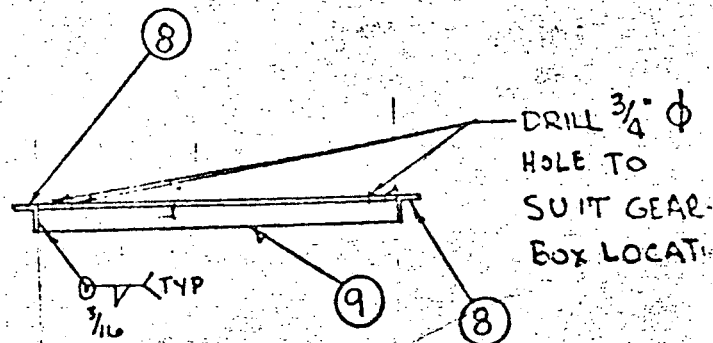


ELEV LKG NORTH EAST

SEE SECT. D-D
SUPPT. 856-B
FOR R DETAIL



DIAG. A-A



SECT B-B

(CIPLINE)

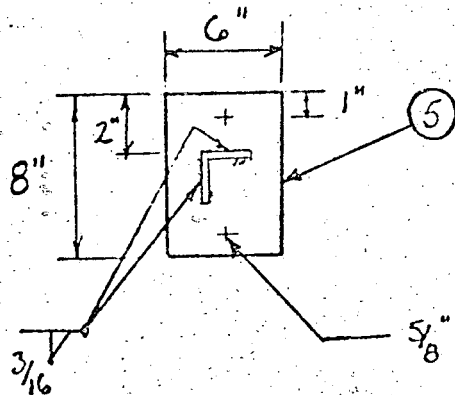


NAME OF COMPANY CON. ED. - INDIAN PT (WEDCO) UNIT 3

SUBJECT SIS VALVE OPERATOR SUPPORTS A56-G4856-J

LINE #843 150# F-53123

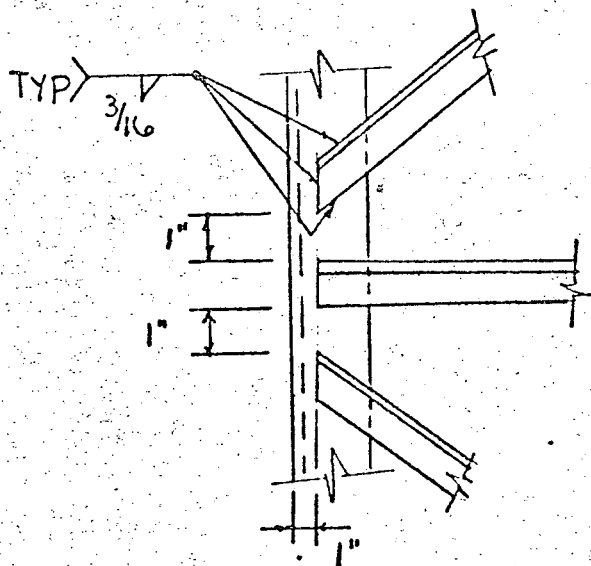
LINE #845 150# F-53103



$\frac{5}{8}$ " ϕ HOLE FOR $\frac{1}{2}$ " ϕ CONCRETE FAST. (1) (2)

DET C-C

TYPICAL 4-PLACES



DET D

TYPICAL CONNECTION

CALC. SET NO.

ELIM.		
FINAL		
VOID		
SHEET 2 OF 3		
J.O. 9321-081/08		
REV	COMP. BY	CHK'D BY
0.	YAPIN DATE 11-21-75	(FEL) DATE 11-21-75
	DATE	DATE

DISCIPLINE



CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 3 OF 3

J.O. 9321.034/02

R_E COMP. BY CHK'D BY

0	MDM	JPW
	DATE 11-21-75	DATE 11-21-75

DATE

DATE

NAME OF COMPANY CON. ED. - INDIAN PT. (WEDCO) UNIT 3SUBJECT SIS VALVE OPERATOR SUPPORTS 851-G-856-J

LINE # 843 ISO # F-53123

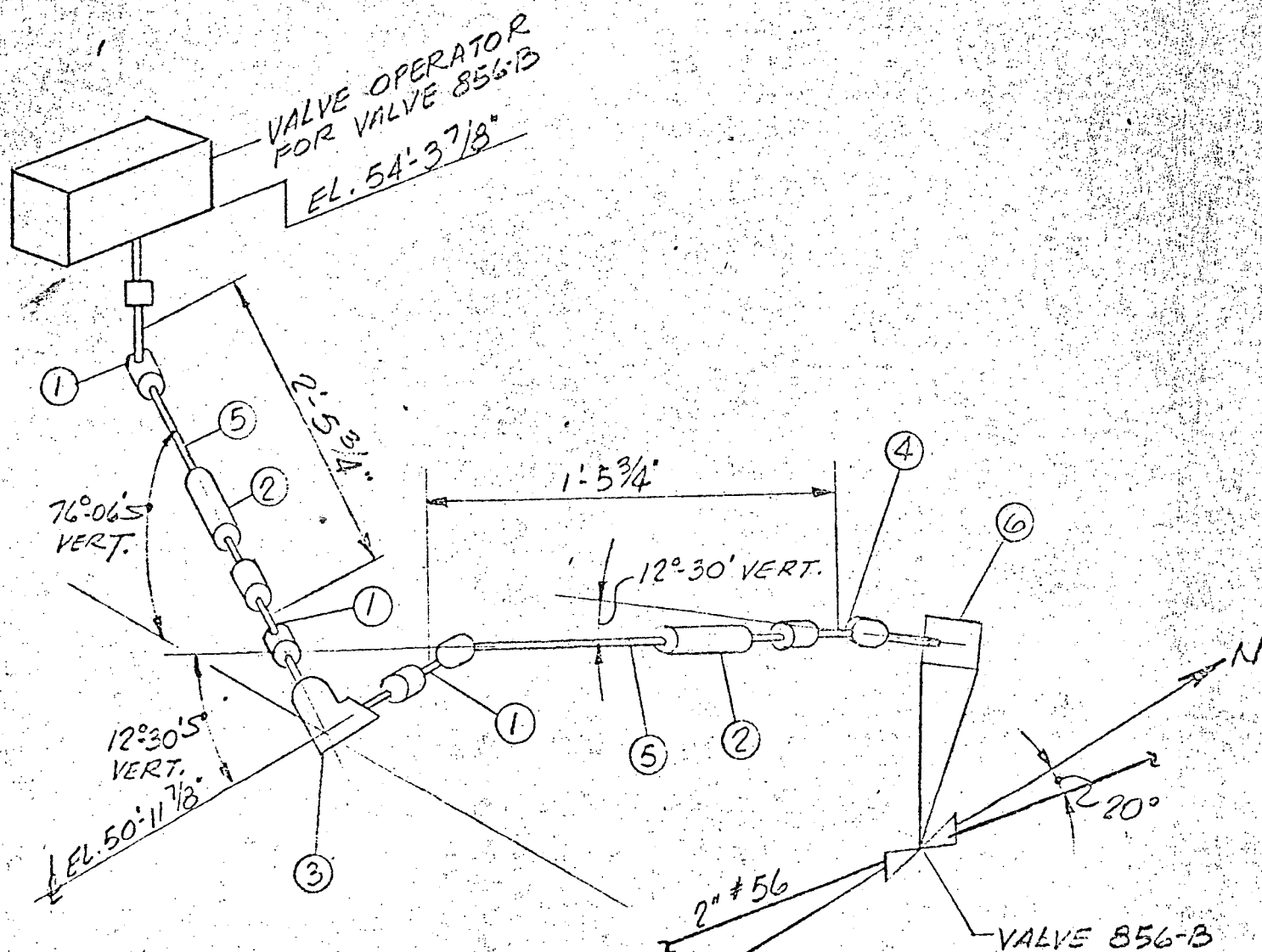
LINE # 845 ISO # F-53103

ITEM	NO. REQ'D.	DESCRIPTION
1	8	1/2" DIA. CONCRETE FASTENER.
2	8	1/2" DIA. MACHINE BOLT
3	4	L 4 x 4 x 1/4 x 6'-0" LG.
4	2	L 2 x 2 x 1/4 x 4'-9 1/2" LG.
5	4	R 1/2 x 6" x 0'-8" LG.
6	2	L 2 x 2 x 1/4 x 3'-10 1/2" LG.
7	4	L 2 x 2 x 1/4 x 3'-6" LG.
8	4	L 3 x 3 x 1/4 x 1'-10" LG.
9	3	L 3 x 3 x 1/4 x 3'-6" LG.
10	2	R 7/8 x 7 1/2 x 0'-7 1/2" LG.
11	2	L 2 x 2 x 1/4 x 3'-8" LG.
12	2	L 2 x 2 x 1/4 x 2'-7 1/4" LG.

NOTE: FOR VALVE OPERATOR ROD ASSEMBLY
SEE SHTS. 4 OF 7 & 6 OF 7

J.O. NO. 9321-108NAME OF COMPANY CON. ED. - INDIAN PT. (WEDCO) UNIT-3SHEET NO. 1 OF 7DATE 11-21-75SUBJECT SIS VALVE OPERATOR ROD ASSEMBLY - VALVE # 856-B COMP. BY JPW CK'D BY MPM

REV	COMP. BY	CHK'D BY
1	<u>RJM</u> DATE <u>12-4-75</u>	<u>MPM</u> DATE <u>12-4-75</u>



LINE No 56
ISO # F-50103

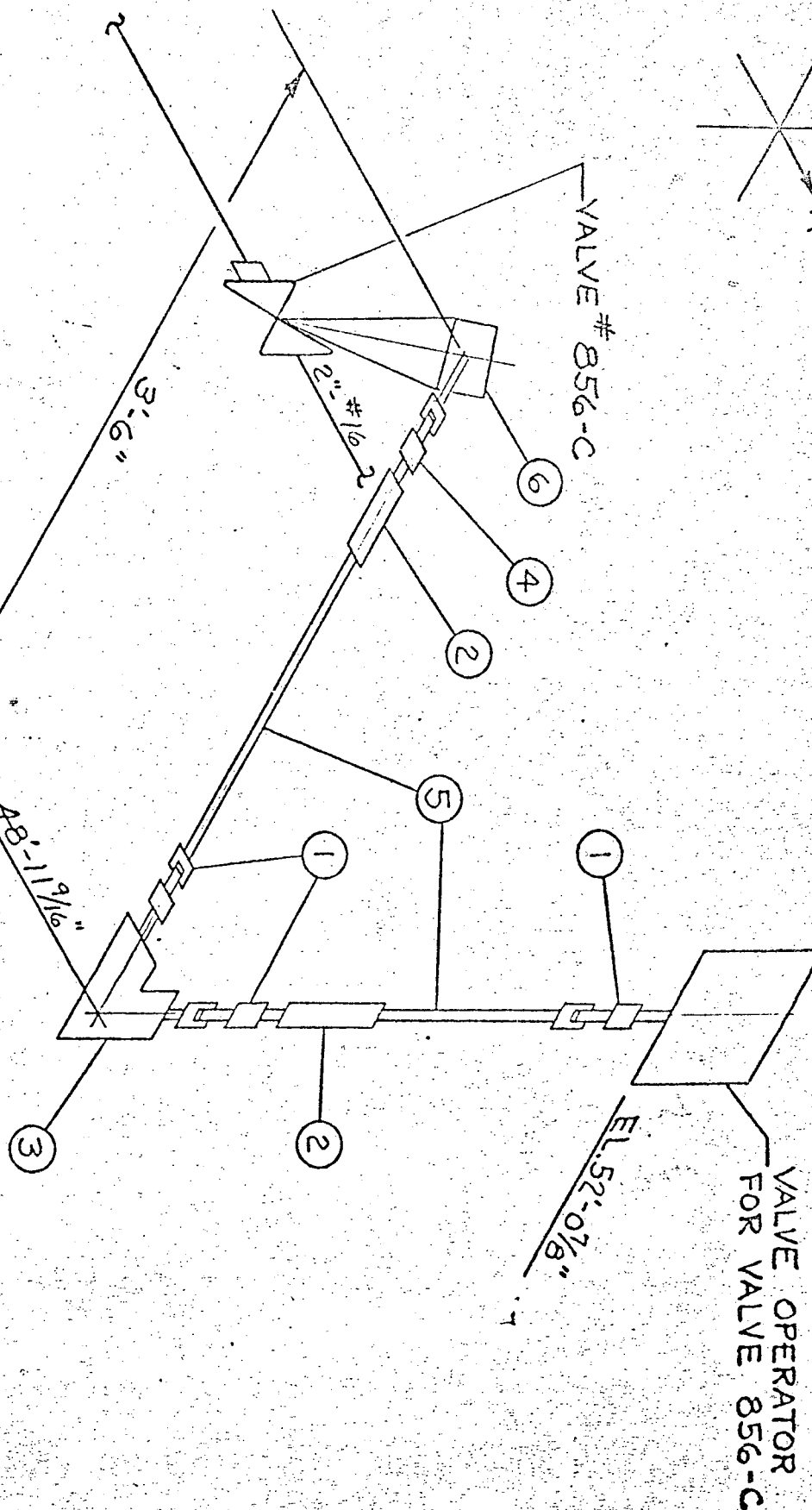
NOTES:

1. FOR SUPPT. STL. SEE SUPPT. 856-B
2. MATERIAL FOR VALVE OPERATOR ROD ASSEMBLY LISTED ON SHT. 7 OF 7.


United engineers & constructors inc.
NAME OF COMPANY CON. ED. - INDIAN PT. (WEDCO) UNIT 3J. O. NO. 9321, 081 ¹⁰⁹SHEET NO. 2 OF 7DATE 11-21-75SUBJECT SIS VALVE OPERATOR ROD ASSEMBLY - VALVE #856-CCOMP. BY JPW C'K'D BY MPM

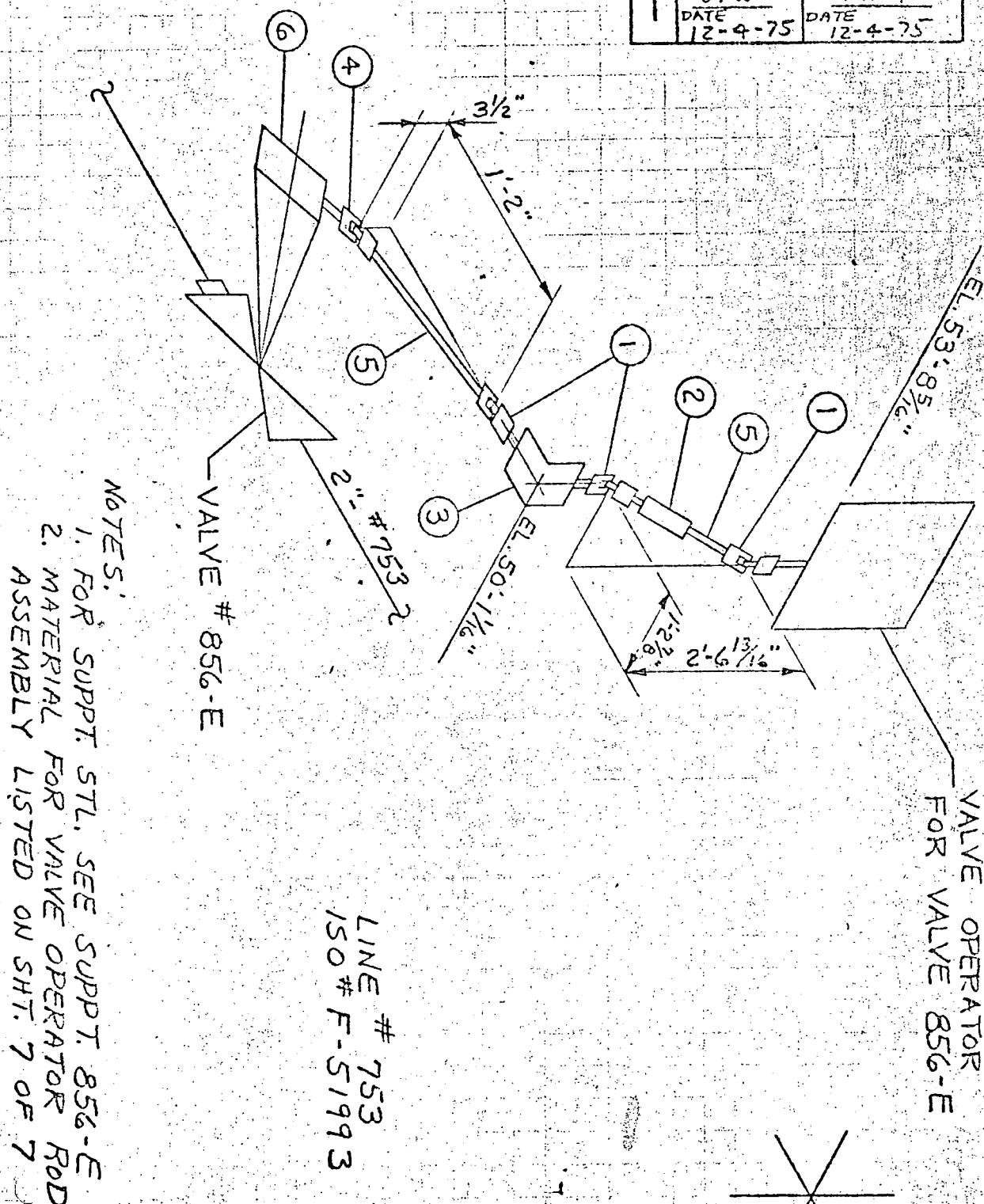
NOTES:

1. FOR SUPPT. STL. SEE SUPPT. 856-C
2. MATERIAL FOR VALVE OPERATOR ROD ASSEMBLY LISTED ON SHIT. 7 OF 7



NAME OF COMPANY CON. ED. - INDIAN PT. (WEDCO) UNIT 3I. O. NO. 9321.108SHEET NO. 3 OF 7DATE 11-21-75SUBJECT SIS VALVE OPERATOR ROD ASSEMBLY-VALVE #856-ECOMP. BY JPW C.K'D BY MPM

REV	COMP. BY	CHK'D BY
1	JPW DATE 12-4-75	MPM DATE 12-4-75



NAME OF COMPANY COIL ED. - INDIAN PT. (WEDCO) UNIT 3

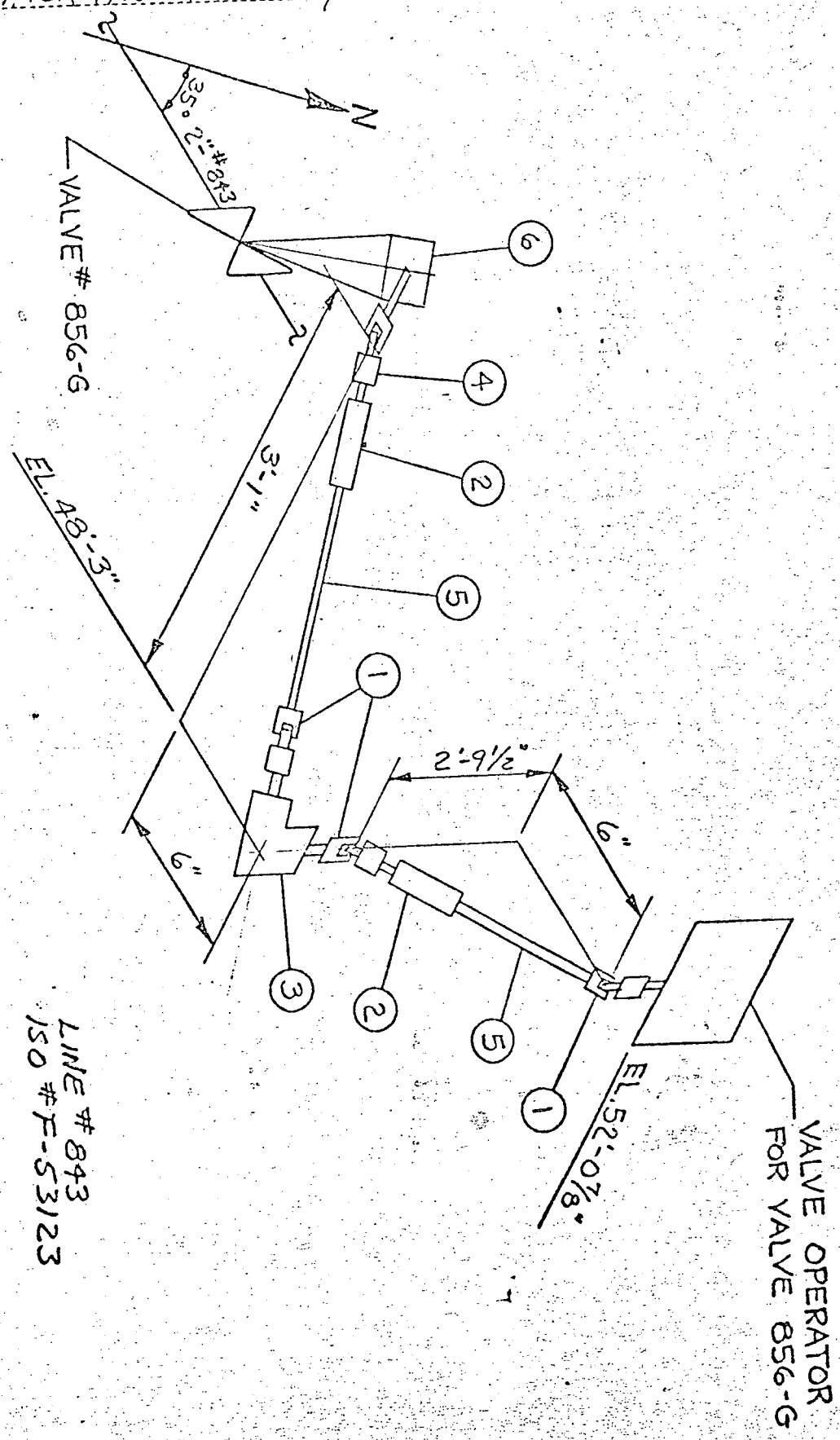
SHEET NO. 4 OF 7

SUBJECT SIS VALVE OPERATOR ROD ASSEMBLY - VALVE #856-G

DATE 11-21-75

COMP. BY TPW C.K'D BY K.P.M.

NOTES:
1. FOR SUPPT. STL. SEE SUPPT. 856-G & 856-J
2. MATERIAL FOR VALVE OPERATOR ROD ASSEMBLY LISTED ON SH. 7 OF 7



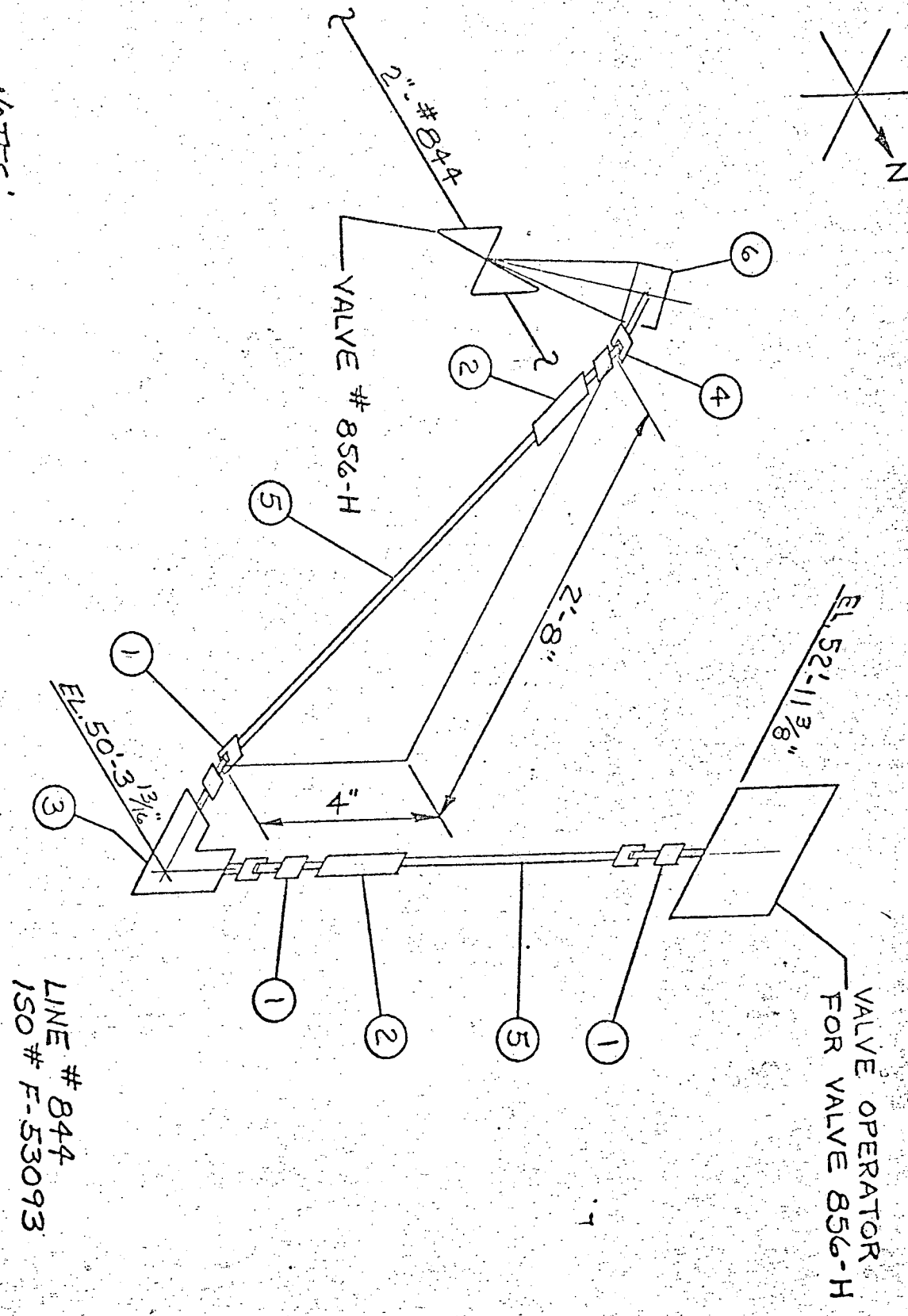
NAME OF COMPANY: CON. ED. - INDIAN PT. (WEDCO) UNIT 3

SHEET NO. 5 OF 7

SUBJECT: SIS VALVE OPERATOR ROD ASSEMBLY - VALVE #856-H

DATE: 11-21-75
COMP. BY: JPW. C.K'D BY: MPM

NOTES:
1. FOR SUPPT. STL. SEE SUPPT. 856-H
2. MATERIAL FOR VALVE OPERATOR ROD
ASSEMBLY LISTED ON SHT. 7



LINE # 844
ISO # F-53093

NAME OF COMPANY CON. ED. - INDIAN PT. (WEDCO) UNIT 3D. O. NO. 9321, 081 ¹⁰³SHEET NO. 7 OF 7DATE 11-21-75SUBJECT SIS VALVE OPERATOR ROD ASSEMBLY - BILL OF MATERIALCOMP. BY JPW C.K'D BY MPM

ITEM	Nº REQ'D	DESCRIPTION
1	18	UNIVERSAL JOINT - STOW #10683-200 (BORED FOR 1 1/4" ROD - BOTH ENDS)
2	12	SLIP JOINT - STOW #10808-SJM-20
3	6	90° GEAR BOX - STOW #12160 MN BRONZE HOUSING
4	6	UNIVERSAL JOINT - STOW #10683-200 (BORE FOR 1 1/4" ROD ONE END & BORED FOR 1" ROD ON THE OTHER END - 1" END HAS 1/4" x 1/8" KEYWAY)
5	40'	1 1/4" DIAMETER ROD
6	6	MANUAL VALVE OPERATOR (TYPE B-0)
7	AS REQ'D	ROLL PIN

NOTE: ITEM 7 SIZED & FURNISHED BY STOW.
STOW TO RECOMMEND WHERE SHOP OR
FIELD DRILLING IS ADVANTAGEOUS

		VALVE NO. (MCC LOC)	FUNCTION	FIG. /SH.	SW /SH.	OPER MODE	** INTERLOCKS OR AUTO CONT. CONTACT	REF. DWG. & REMARKS
		856E 36A-8RH	HIGH HEAD INJECTION LINE STOP VALVE ECN-70058	20/155 *125A	C/10	%FAI		SW/LGTS SB2F RELAY SCR MON. LTS. SB2F PNL 332C ANN. SH.16 SEE NOTE 1
14	ECN-30713 12-30 D. PETROCELLI 12/31/75 12-31-75	856F 36B-8RH	HIGH HEAD INJECTION LINE STOP VALVE	20/155 *125A	C/10	%FAI	ECN-70177	SW/LGTS SB2F RELAY SCR MON. LTS. SB2F PNL 332C ANN. SH.16 SEE NOTE 1
13	ECN-30268 W.C.D. 3-5-74 3-6-74	851A 36A-4RD	HIGH HEAD SIS PUMP N°2 STOP VALVE	14/138 *138A	C/10	%FAI	SEE SH.138	SW. SB2F PNL IND. LTS. SB2F PNL MON. LTS. SB2F PNL 332C ANN. SH.16 SEE NOTE 1
12	ECN-9793 W.C.D. 7-5-73 7-23-73	851B 36B-4RD	HIGH HEAD SIS PUMP N°2 STOP VALVE	15/139 *138A	C/10	%FAI	SEE SH.139	SW. SB2F PNL IND. LTS. SB2F PNL MON. LTS. SB2F PNL 332C ANN. SH.16 SEE NOTE 1
10	ECN-8182 J.G. 1/11/72 1-12-72	856A 36A-2RH	HIGH HEAD INJECTION LINE STOP VALVE ECN-70058	20/155 *125A	C/10	%FAI		SW/LGTS SB2F RELAY SCR MON. LT. SB2F 332C ANN. SH.16 SEE NOTE 1
9	ECN-8051 J.G. 9-15-71 9-21-71	856B 36B-2RH	HIGH HEAD INJECTION LINE STOP VALVE ECN-70128	21/152 *125A	C/10	%FAI	SEE SH.155	SW. SB2F PNL IND. LTS. SB2F PNL MON. LT. SB2F 332C ANN. SH.16 SEE NOTE 1
8	ECN-7665 J.G. 6-16-71 6-23-71	856C 36A-2RM	HIGH HEAD INJECTION LINE STOP VALVE ECN-70058	20/155 *125A	C/10	%FAI	ECN-70177	SW/LGTS SB2F RELAY SCR MON. LT. SB2F 332C ANN. SH.16 SEE NOTE 1
7	ECN-6887 W. MEARS 12/2/70 1-1-71	856D 36B-2RM	HIGH HEAD INJECTION LINE STOP VALVE	20/155 *125A	C/10	%FAI		SW/LGTS SB2F RELAY SCR MON. LT. SB2F 332C ANN. SH.16 SEE NOTE 1
6	ECN-6051 J. SHEPHERD 11-12 12-4-70	866A 36A-4FH	SPRAY PUMP DISCHARGE STOP VALVE	12/136 *127A	C/10	%FAI	866A-C2 43/RS1 866A-C3 52B/CS1 866A-C 866A-02 SI-IX 866A-0	SW. SB2F PNL IND. LTS. SB2F PNL MON. LT. SB2F 332C ANN. SH.16 SEE NOTE 1
5	ECN-6811 G. R. 10-27-70 10-27-70							
4	ECN-6325 CHANGES BACKCIRCU 6-10-70 PARKER 6-11-70							
3	ECN-5911 GERBER 3-15-70 3-15-70							
2	ECN 5522 R.W. KEMERER 12/14/69 12/14/69							
1								
SUB	s.o. INT-385							

Westinghouse Electric Corporation
INDIAN POINT STATION UNIT NO.3
ELEM. WIRING DIA. VALVE TABLE - MOV
R.W. KEMERER 12/14/69
500B971
SHEET - 112
PITTSBURGH, PA. U.S.A.

OPER. MODE
O: NORMALLY OPERATED OPEN
C: NORMALLY OPERATED CLOSED
X: NORMALLY OPERATED OPEN & CLOSED
FC: FAILED CLOSED
FO: FAILED OPEN
FAI: FAILED AS IS

NOTE:
1. SWITCH LEGEND PLATE TO
BE ENGRAVED "CLOSE-OPEN"
2. * REFERS TO CABLE SCHEM
9321-LL-31263 SH.

VALVE (MCC LOC)		FUNCTION	FIG SH	SW SH	OPER MODE	** INTERLOCKS OR AUTO CONT. CONTACT	REF DWG. & REMARKS
13	ECN-30713 12-31 D. PETROCELLI 75 W.C.D. 3-5-74 W.C.D. 3-6-74 W.C.D. 3-6-74	842 36A-7FM MIN FLOW ISOLATION VALVE	8/32	C/10	O/FAI	ON 1R E5 43/RS-5 F5 18-842-C	SW & LGTS SBIF PNL MON LGTS SBIF 330C ANN SH.16 330C R' LT. SH.14
	ECN-30407 P. HEARN 7-30-74 W.C.D. 3-5-74 W.C.D. 3-6-74 W.C.D. 3-6-74	843 36B-7FM MIN FLOW ISOLATION VALVE	8/32	C/10	O/FAI	ON 2A E11 43/RS-5 O11 28-843-C	SW & LGTS SBIF PNL MON LGTS SBIF 330C ANN SH.16 330C R' LT. SH.14
	ECN-30268 W.C.D. 3-5-74 W.C.D. 3-6-74 W.C.D. 3-6-74 W.C.D. 3-6-74	743 36A-7RM RESIDUAL HEAT REMOVAL LOOP OUTLET VALVE	8/32	C/10	O/FAI	ON 1T C1 43/RS-5 O1 1A-743-C	SW & LGTS SNF PN MON LGTS SBIF 330C ANN SH.16 330C R' LT. SH.14
	ECN-9793 W.C.D. 3-5-73 W.C.D. 3-6-73 W.C.D. 3-6-73 W.C.D. 3-6-73	1870 36B-7RM RESIDUAL HEAT REMOVAL LOOP OUTLET VALVE	8/32	C/10	O/FAI	ON 2M E7 43/RS-5 F7 2N-1870-C	SW & LGTS SNF PN MON LGTS SBIF 330C ANN SH.16 330C R' LT. SH.14
8	ECN-9750 W.C.D. 3-5-73 W.C.D. 3-6-73 W.C.D. 3-6-73 W.C.D. 3-6-73	747 36A-6RM RESIDUAL HEAT LOOP DISCHARGE STOP VALVE	8/32	C/10	O/FAI	ON 3 SI SAI 747-C	SW - SGF PNL IND. LGTS - SGF 330C ANN SH.16 MON. LGT. - SBIF 330C R' LT. SH.14
8	ECN-9557 CHANGES ARE CIRCLED P. HEARN 10-25-72 W.C.D. 3-5-72 W.C.D. 3-6-72 W.C.D. 3-6-72	899B 36B-6RM RESIDUAL HEAT LOOP DISCHARGE STOP VALVE	8/32	C/10	O/FAI	ON 4 SI SAI 899B-C	SW - SGF PNL IND. LGTS - SGF 330C ANN SH.16 MON. LGT. - SBIF 330C R' LT. SH.14
3	ECN-7161 W.C.D. 3-5-71 W.C.D. 3-6-71 W.C.D. 3-6-71 W.C.D. 3-6-71	856G 36A-4FM HIGH HEAD INJECTION LINE STOP VALVE ECN-70128	20/152	C/10	O/FAI	ECN-70088 SEE SH.155	SW - SB2F PNL IND. LGTS - SB2F PNL MON. LT. SB2F 330C ANN SH.16 SEE NOTE 1
4	ECN-6811 W.C.D. 3-5-70 W.C.D. 3-6-70 W.C.D. 3-6-70 W.C.D. 3-6-70	856H 36B-4FM HIGH HEAD INJECTION LINE STOP VALVE ECN-70177	20/155	C/10	O/FAI		SW/LGTS SB2F RELAY SBIR MON. LT. SB2F PNL 856H-VX ANN SH.160 SEE NOTE 1
4	ECN-6825 W.C.D. 3-5-70 W.C.D. 3-6-70 W.C.D. 3-6-70 W.C.D. 3-6-70	856J 36B-8FM HIGH HEAD INJECTION LINE STOP VALVE ECN-70177	20/155	C/10	O/FAI		SW/LGTS SB2F RELAY SBIR MON. LT. SB2F PNL 856J-VX ANN SH.160 SEE NOTE 1
4	ECN-6825 W.C.D. 3-5-70 W.C.D. 3-6-70 W.C.D. 3-6-70 W.C.D. 3-6-70	856K 36A-8FM HIGH HEAD INJECTION LINE STOP VALVE ECN-70177	20/155	C/10	O/FAI		SW/LGTS SB2F RELAY SCR MON. LT. SB2F PNL 856K-VX ANN SH.160 SEE NOTE 1

OPER. MODE

O = NORMALLY OPERATED OPEN
C = NORMALLY OPERATED CLOSED
X = NORMALLY OPERATED OPEN & CLOSE
FC = FAILED CLOSED
FO = FAILED OPEN
FAI = FAILED AS IS

NOTE 1. SWITCH LEGEND PLATE
TO BE ENGRAVED 'CLOSE-OPEN'

2. REFERS TO CABLE
SCHEM. 9321-LL-
31263 SH.

ECN-70058

