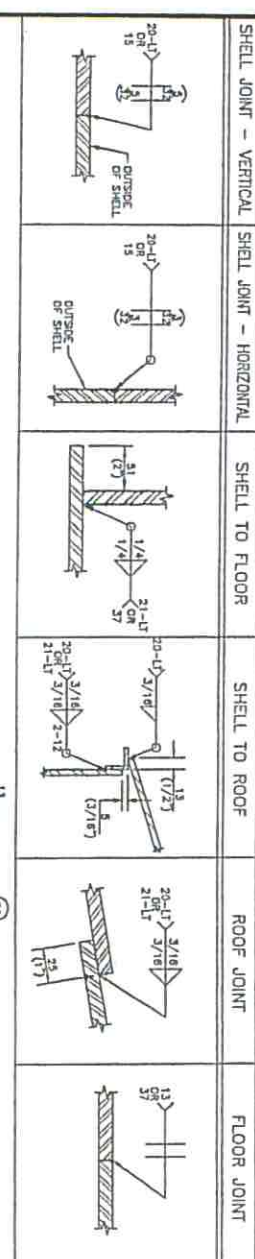
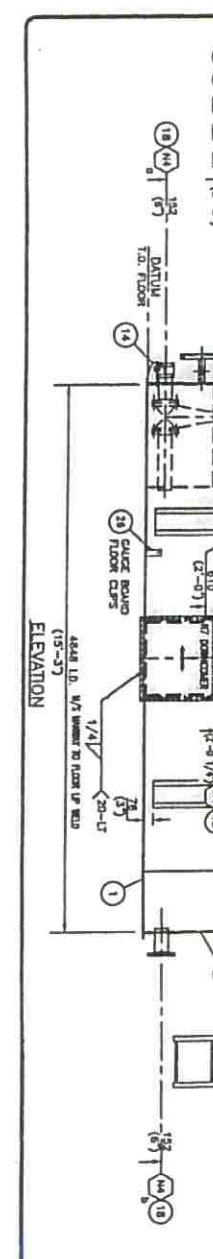
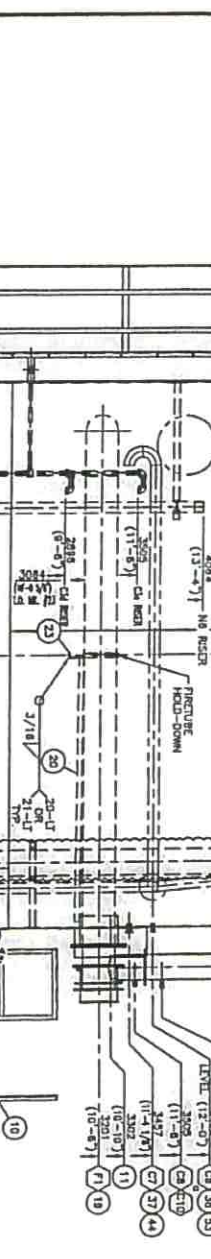
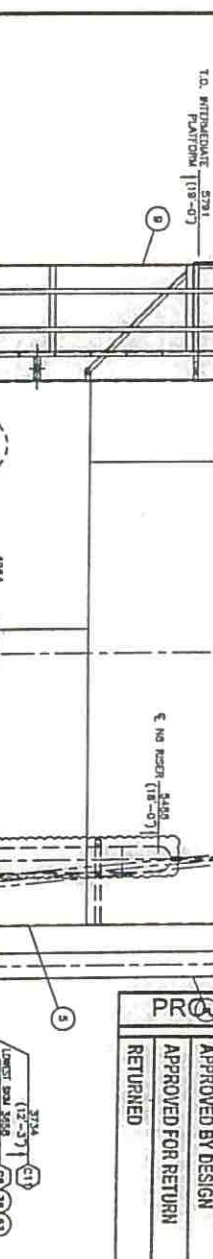
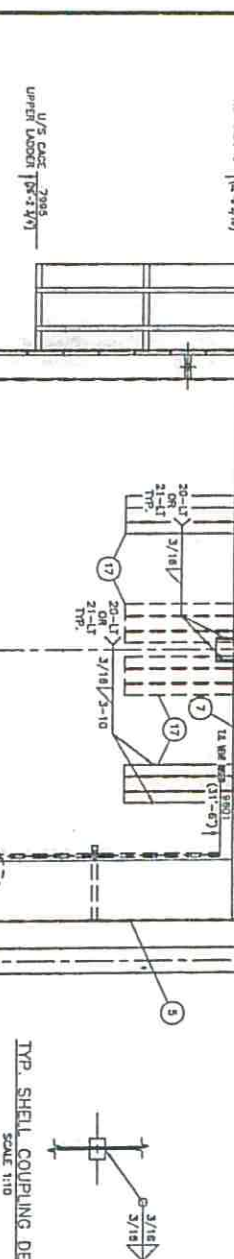
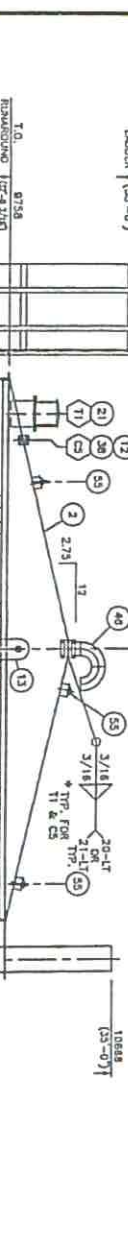


STANDARD WELD DETAILS (N.T.S.)



NOZZLE SCHEDULE	DESCRIPTION	PROTECTION	REPAIR	YES	NO
MK 1	DR. INLET C/W RISER	INT. EXT.	YES	NO	
MK 2	TANK LEVEL	INT. EXT.	YES	NO	
MK 3	DRAIN C/W DATE WAVE (IN WALT)	INT. EXT.	YES	NO	
MK 4	STINGER	INT. EXT.	YES	NO	
MK 5	WATER OUTLET C/W BALL WAVE BY OTHER & REST (IN WALT)	INT. EXT.	YES	NO	
MK 6	WATER OUTLET C/W BALL WAVE BY OTHER & REST (IN WALT)	INT. EXT.	YES	NO	
MK 7	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 8	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 9	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 10	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 11	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 12	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 13	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 14	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 15	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 16	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 17	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 18	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 19	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 20	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 21	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 22	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 23	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 24	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 25	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 26	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 27	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 28	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 29	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 30	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 31	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 32	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 33	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 34	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 35	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 36	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 37	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 38	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 39	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 40	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 41	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 42	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 43	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 44	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 45	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 46	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 47	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 48	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 49	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 50	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 51	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 52	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 53	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 54	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	
MK 55	WATER OUTLET C/W INTERVAL DOWNCOMER (IN WALT)	INT. EXT.	YES	NO	

MATERIAL LIST	DESCRIPTION	MATERIAL	WT
1	FLOOR PLATE (N.W.) 1/4" THK. x 15'-7" W. (6x21-3/4)	PRF-245	19.6
2	ROOF PLATE (N.W.) 3/16" THK. x 15'-8" W. (6x21-3/4)	PRF-245	14.2
3	SHELL PLATE 1/4" THK. x 8'-0" x 47'-11" (11/16" LC)	CA-21-24W	20.9
4	SHELL PLATE 3/16" THK. x 8'-0" x 47'-11" (1/2" LC)	CA-21-24W	89.8
5	ROUNDING ANGLE 2" x 2" x 3/16" x 45°-4 3/8" LC	CA-21-24W	11.8
6	STUCK 5" THIN WALT (NO DRAIN)	PRF-100	-
7	UPPER & LOWER LACERS	PRF-100	40.4
8	BURGER CONTROL BOX (2'-0" HIGH x 2'-4" LC x 8" DEPT)	ALUMINUM	-
9	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	230
10	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
11	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
12	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
13	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
14	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
15	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
16	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
17	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
18	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
19	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
20	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
21	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
22	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
23	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
24	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
25	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
26	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
27	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
28	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
29	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
30	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
31	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
32	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
33	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
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35	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
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37	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
38	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
39	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
40	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
41	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
42	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
43	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
44	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
45	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
46	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
47	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
48	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
49	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
50	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
51	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
52	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
53	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
54	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-
55	SHILL OVER WALT C/W INTERVAL DOWNCOMER (IN WALT)	PRF-100	-

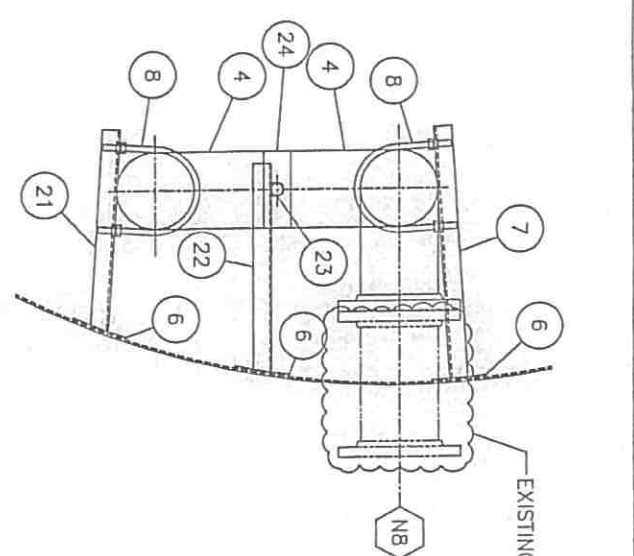
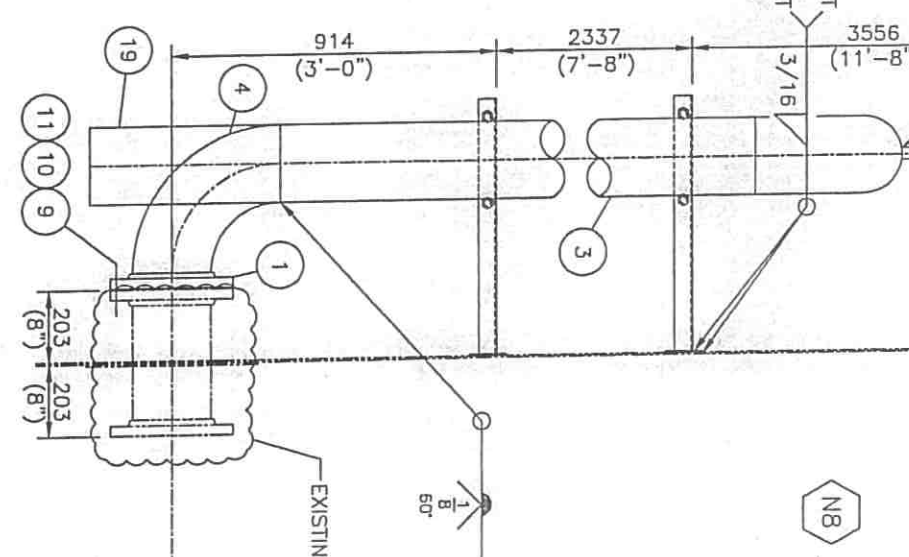
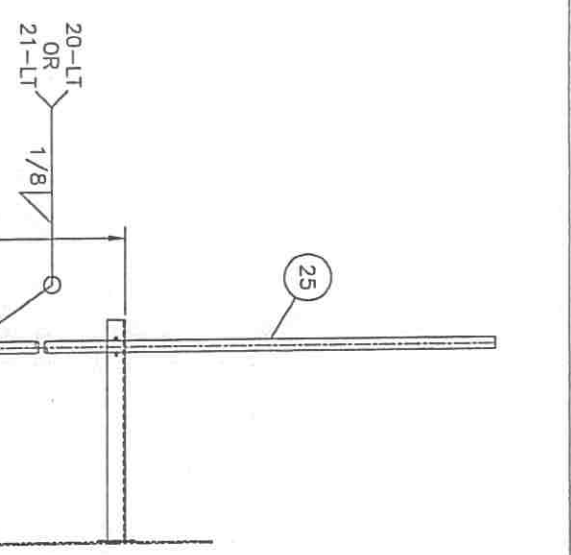
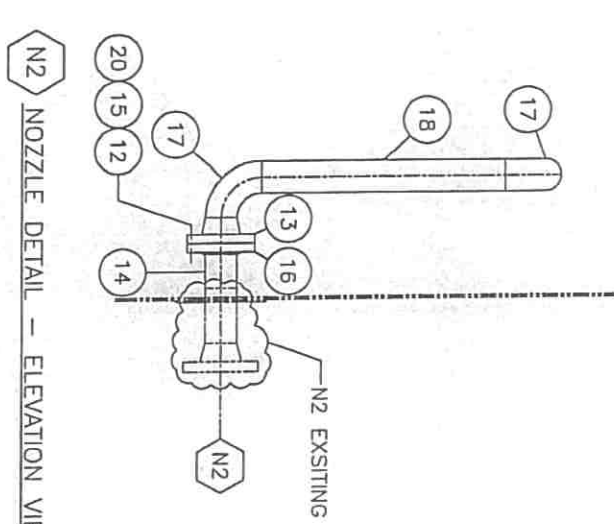
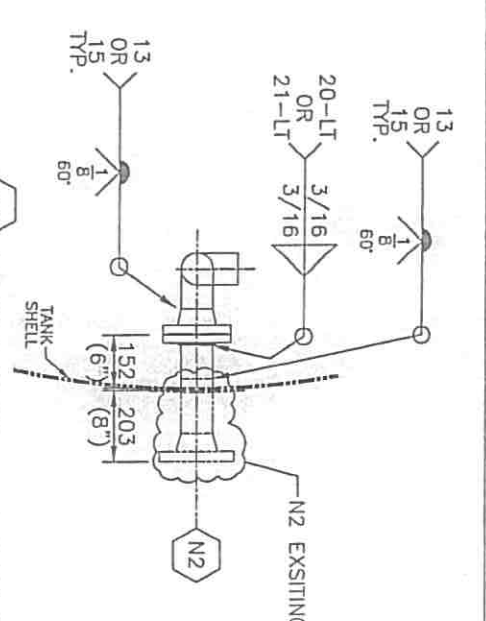


PROJ # 2636
 INTERNAL APPROVAL DRAWING CHECK
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 DESIGN LEAD. [Signature]
 RECEIVED [Signature]
 APPROVED FOR DESIGN USE [Signature]
 APPROVED BY DESIGN [Signature]
 RETURNED [Signature]

VENDOR ACTION
 - RE-USE THIS DRAWING AS PER COMMENTS.
 - RE-SUBMIT DRAWING FOR APPROVAL.
 - APPROVED AS NOTED PROCEED WITH CONSTRUCTION RE-SUBMIT REVISED DRAWING.
 - APPROVED FOR CONSTRUCTION.
 SIGNED: _____
 DATE: _____

NOTES:
 1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
 2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 3. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.
 4. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.
 5. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.
 6. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.
 7. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.
 8. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.
 9. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.
 10. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.
 11. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.

NO	DATE	REVISIONS	BY	APPD
1	22/11/11	ISSUED FOR CONSTRUCTION	TZ	
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MK. #24 DETAIL

PROJ # 2656

INTERNAL APPROVAL DRAWING CHECK

PROJ ENG: [] APPROVAL INITIALS: [] DATE: []

DESIGN LEAD: [] ENG | DES | DC | (initials)

RECEIVED []

APPROVED FOR DESIGN USE []

APPROVED BY DESIGN []

APPROVED FOR RETURN []

N8 RETURNED []

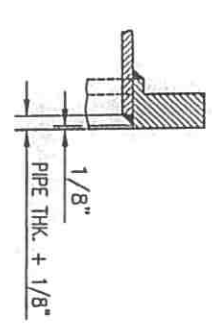
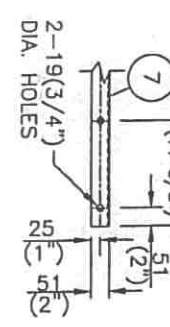
MK	QTY	DESCRIPTION	MAT'L	WT
1	1	FLANGE 8" CLASS 150 RFSSO	SA-105	28
2				
3	1	PIPE 8" SCH L.W. x 10'-3" LG. ERW	SA-53-B	147
4	3	ELBOW 8" SCH STD x 90° L.R.	SA-234-WPB	150
5				
6	5	REPAD PLATE 1/4" THK x 6" DIA.	G40-21-44W	5
7	2	ANGLE 2" x 2" x 1/4" x 2'-4 5/8" LG.	G40-21-44W	15
8	4	U-BOLT 5/8" x 8" NPS C/W NUTS	C.S.	4
9	8	STUD 3/4" DIA. x 4 1/4" LG.	SA-193-B7	3
10	16	HEX NUT 3/4" NOM.	SA-194-2H	1
11	1	GASKET 8" CLASS 150 RF x 1/8" THK.	GARLOC 3000	1
12	4	STUD 5/8" DIA. x 3 1/2" LG.	SA-193-B7	1
13	1	FLANGE 3" CLASS 150 RFWN x SCH STD BORE	SA-105	12
14	1	PIPE 3" SCH STD x 4 11/16" LG. SMLS BOE x PDE	SA-106-B	3
15	8	HEX NUT 5/8" NOM.	SA-194-2H	1
16	1	FLANGE 3" CLASS 150 RFSSO	SA-105	9
17	2	ELBOW 3" SCH STD x 90° L.R.	SA-234-WPB	10
18	1	PIPE 3" SCH STD x 2'-3" LG. SMLS BBE	SA-106-B	17
19	1	PIPE 8" SCH L.W. x 12'-0" LG. ERW	SA-53-B	172
20	1	GASKET 3" CLASS 150 RF x 1/8" THK.	GARLOC 3000	1
21	2	ANGLE 2" x 2" x 1/4" x 1'-10 11/16" LG.	G40-21-44W	12
22	1	ANGLE 2" x 2" x 1/4" x 1'-11 7/16" LG.	G40-21-44W	6
23	1	U-BOLT 1/4" x 1" NPS C/W NUTS	C.S.	1

WEIGHT: 663 lbs. EACH
NO. REO'D: 1

REVISIONS

NO	DATE (d/m/y)	REVISIONS	BY	APPD
1	25/11/11	ISSUED FOR CONSTRUCTION	TZ	
2				

- NOTES:
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
 2. ALL NOZZLE PROJECTIONS GIVEN ARE ALONG THE NOZZLE Q.
 3. ALL FLANGE RATINGS TO BE ASME B16.5 - 2003.
 4. FLANGE AND BOLT HOLES TO STRADDLE PRINCIPAL C/S OF TANK.



VENDOR ACTION

- REVISE THIS DRAWING AS PER COMMENTS. RE-SUBMIT DRAWING FOR APPROVAL
- APPROVED AS NOTED PROCEED WITH CONSTRUCTION RE-SUBMIT REVISED DRAWING
- APPROVED FOR CONSTRUCTION

NO	QTY	DESCRIPTION	MAT'L	WT
24	1	PIPE 8" SCH L.W. x 3" LG. ERW BBE	SA-53-B	4
25	1	PIPE 1" SCH STD x 13'-1 3/4" LG. SMLS PBE	SA-106-B	22

CLIENT: HUSKY OIL OPERATIONS LTD.
16-11 SALT WATER INJECTION FACILITY

DWG TITLE: 1000 BBL PRODUCTION TANK, T-901
NEW NOZZLE DETAILS

SCALE: 1:20

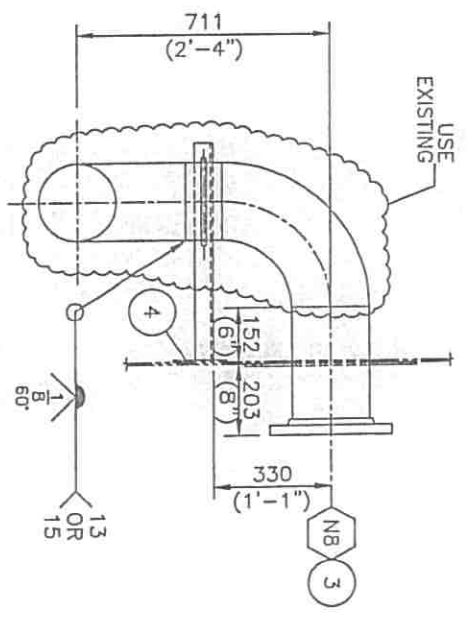
DATE (d/m/y): 22/11/11

CHKD: [] APPD: []

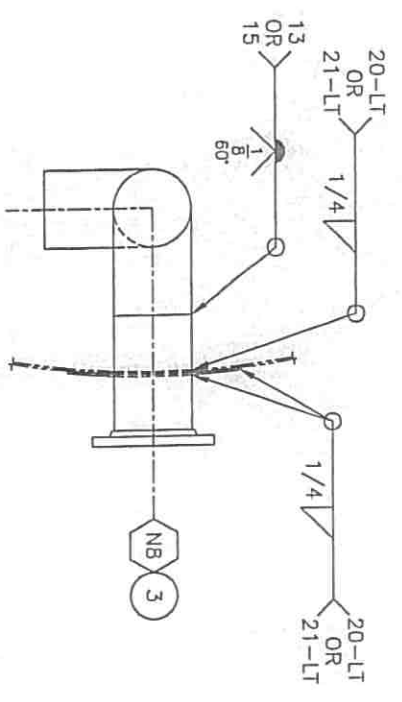
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DWG NO.: []

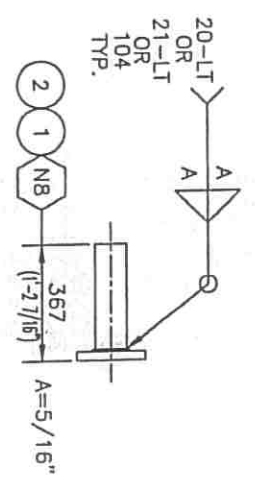
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NB NOZZLE DETAIL



NB NOZZLE DETAIL - PLAN VIEW



NOZZLE SPOOL DETAIL

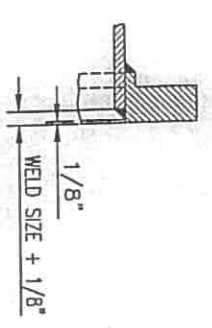
PROJ # 2656

RECEIVED	APPROVAL INITIALS	DATE
APPROVED FOR DESIGN USE	ENG DES. D.C.	(INITIALED)
APPROVED BY DESIGN		
APPROVED FOR RETURN		
RETURNED		

VENDOR ACTION

D - REVISE THIS DRAWING AS PER COMMENTS.
 RE-SUBMIT DRAWING FOR APPROVAL
 Q - APPROVED AS NOTED PROCEED WITH CONSTRUCTION RE-SUBMIT REVISED DRAWING
 Q-A - APPROVED FOR CONSTRUCTION

SIGN _____ PROJECT ENGINEER ON _____ DATE _____



SLIP-ON FLANGE WELD DETAIL

MK	QTY	DESCRIPTION	MAT'L	WT
1	1	FLANGE 8" CLASS 150 RF50	SA-105	28
2	1	PIPE 8" SCH STD x 1'-2" LG. SMLS POE x BOE	SA-106-B	33
3	1	REPAD PLATE 1/4" THK. - 8" SHELL NOZZLE	PRT-1465	16
4	1	REPAD PLATE 1/4" THK. x 6" DIA.	G40-21-38W	2
5	1	HALF COUPLING 1/4" 3000# F.S. SCR'D	SA-105	1
6				
7				
8				
9				
10				

*QTY'S ARE FOR ONE TANK - 4 REQ'D
 WEIGHT: 84 lbs. EACH

- NOTES:
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
 2. ALL NOZZLE PROJECTIONS GIVEN ARE ALONG THE NOZZLE C.
 3. ALL FLANGE RATINGS TO BE ASME B16.5 - 2003.
 4. FLANGE AND BOLT HOLES TO STRADDLE PRINCIPAL C'S OF TANK.
 5. DRILL 6(1/4") TELLTALE HOLE IN SHELL REINFORCING PAD (MK.#3) & WELD ON HALF COUPLING (MK.#5).

REVISIONS

NO	DATE (d/m/y)	ISSUED FOR CONSTRUCTION	BY	APPD
1	25/11/11	ISSUED FOR CONSTRUCTION	TZ	

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CLIENT: IEN HULLCO

DWG TITLE: 1000 BBL SALES TANK, T-902/903/905/906
 NEW NOZZLE DETAILS

SCALE: 1:20
 DATE (d/m/y): 23/11/11
 DWN BY: CHKU
 IDWG NO.:
 SHT NO.: 1 OF 1
 REV: 0