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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM-02	TK-6270	D. Lemon	2012-02-15

PROJECT NAME: Murphy Oil Cadotte 1780-003

VENDOR NAME: Universal Industries

DOCUMENT NUMBER: ENG SKT 4781

VENDOR REVISION: 1

DOCUMENT DESCRIPTION: Heater Drawing

VENDOR TRANSMITTAL NUMBER: TR-23840PLF3

SKETCH No.: 4781

REV.: 1

DATE: JAN.23/2012

CUSTOMER: PEACE LAND FABRICATORS

ADD:

Murphy Oil

TANK TAG TK-6270
NOZZLE N6

Cadotte Pilot CSS



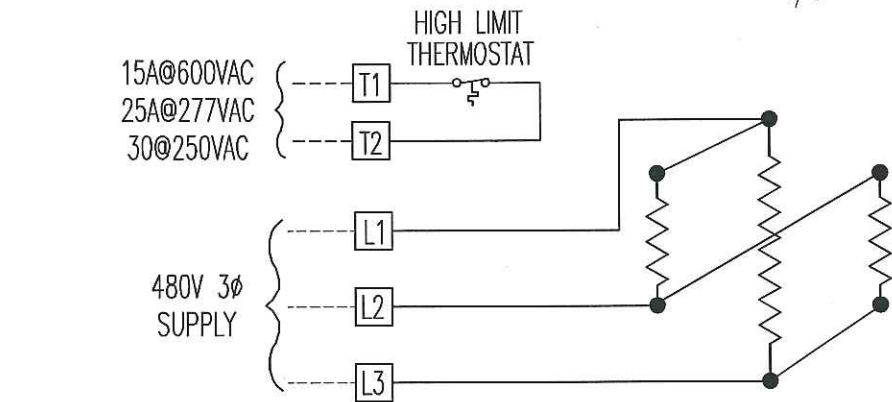
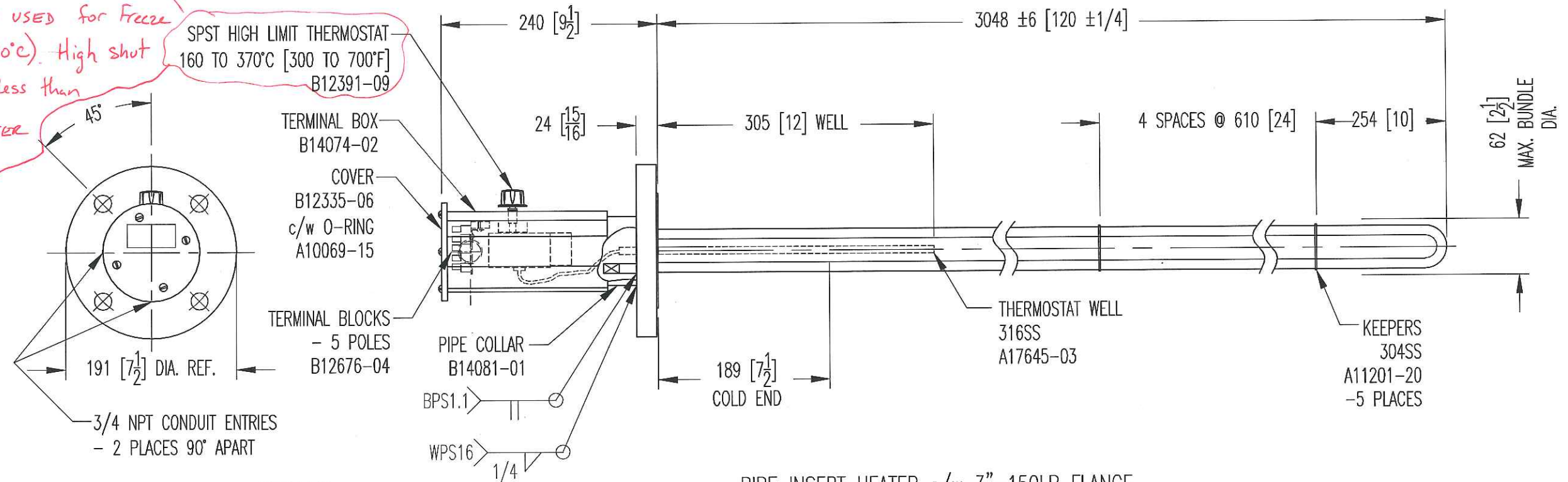
REV.: 1 | VOLTAGE WAS 500. | FEB. 6/2012 | N.S. M.K.

DRAWN BY: N.S. M.K.

FOR APPROVAL

FEB. 6/12

HEATER WILL BE USED FOR Freeze Protection (WATER @ 10°C). High shut off should be less than boiling point of WATER (~90°C)



WIRING DIAGRAM
----- WIRING BY OTHERS

PIPE INSERT HEATER c/w 3"-150LB FLANGE

NOTES:

- 1 ALL DIMENSIONS IN MILLIMETRES [INCHES IN BRACKETS].
- 2 PIPE INSERT HEATER ASSEMBLY IS CSA C/US APPROVED FOR TYPE 4, NEMA 4 MOISTURE RESISTANCE.
- 3 TERMINAL BOX TO BE BLACK ANODIZED.
- 4 PAINT FLANGE & PIPE COLLAR WITH BLACK ENAMEL.
- 5 3"-150LB COMPOSITE GASKET TO BE SUPPLIED LOOSE. *Flexitallic 316 SS*
- 6 INSTALL O-RING UNDER TERMINAL BOX COVER.
- 7 HEATER MEETS AREA CLASSIFICATION CLASS I, ZONE 2 Gr. IIA T2B

01	MXIT305F3120-001	480	3	5.73	6.3	1	3"-150LB R.F. BLIND	SA105 STEEL	INCOLOY 800	10.9 [4.30]	3	15 kg [33 lb]	T059247-1
ITEM NO.	CATALOG NO.	VOLTS	PH	KW	W/IN ²	NO. CIRC.	SIZE	MATERIAL	SHEATH	DIA.	QTY.	APPROX. WEIGHT	ORDER VERIFICATION NO.
							FLANGE			ELEMENT			

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-4020	D. Lemon	202-02-10

PROJECT NAME: 1780 - Murphy oil Cadotte ESS

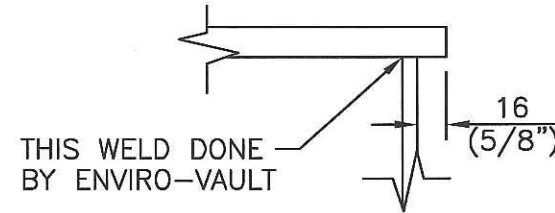
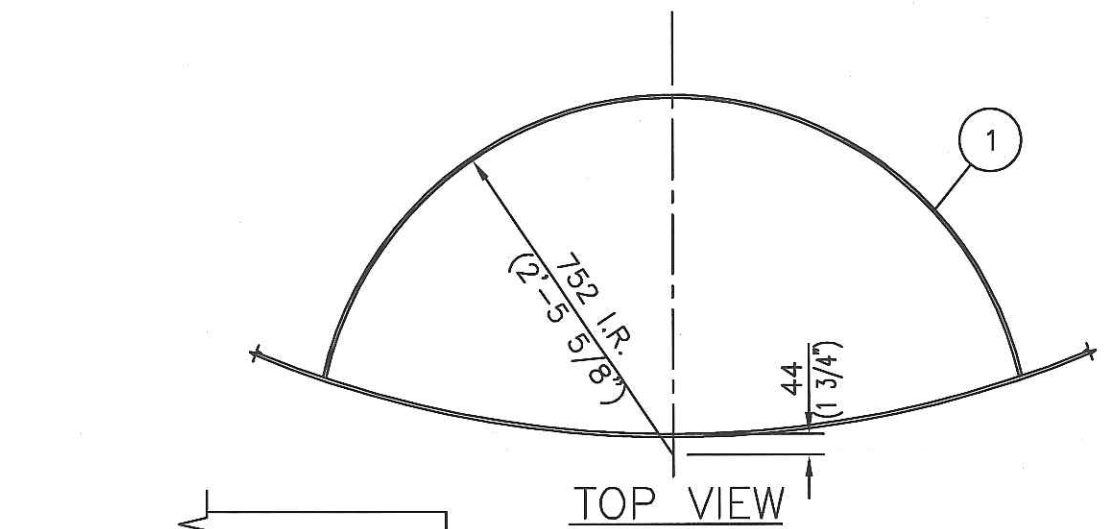
VENDOR NAME: Universal Ind.

DOCUMENT NUMBER: T-023839 - A105

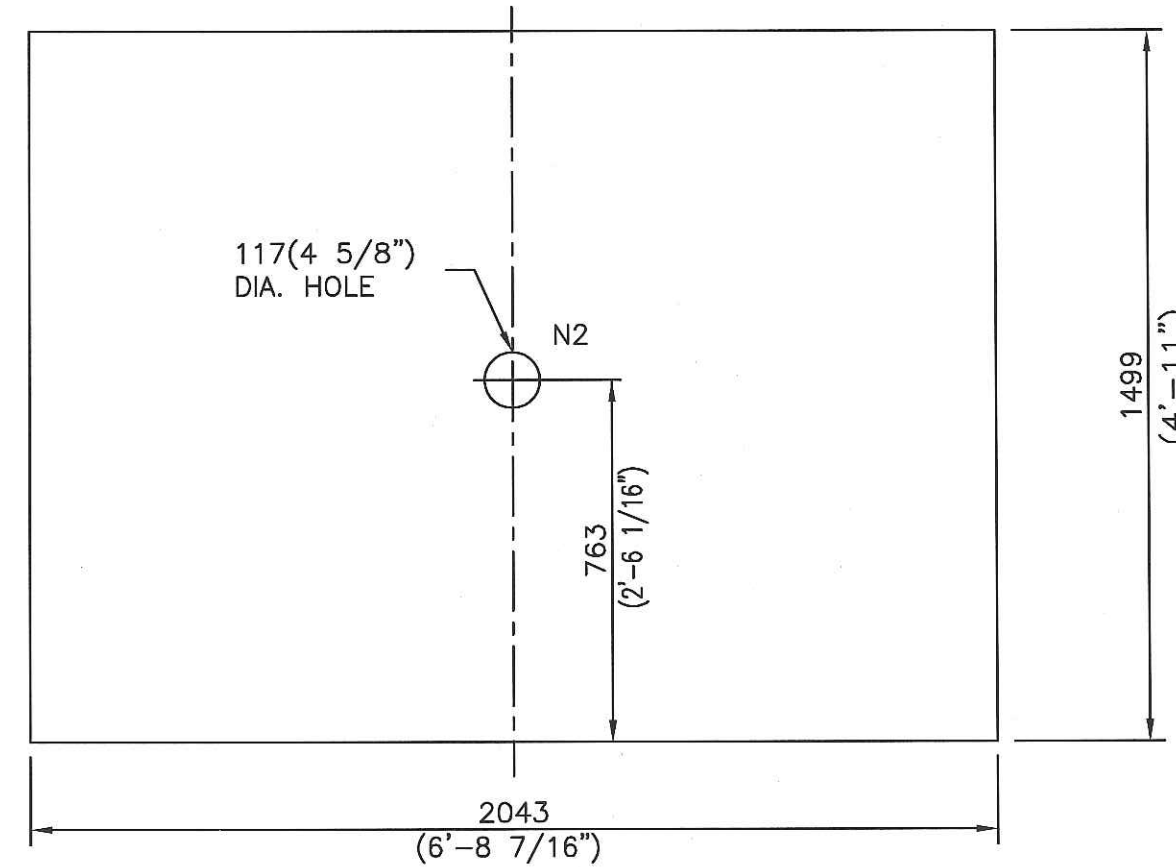
VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Pop Tank - 5x5' Enviro-vault -

VENDOR TRANSMITTAL NUMBER: TR-003-023839



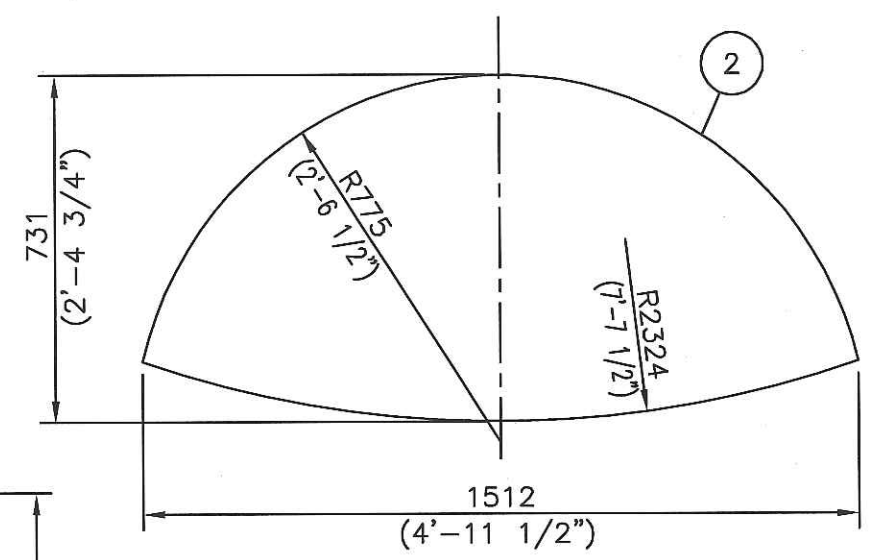
DETAIL "A"
SCALE N.T.S.



FRONT VIEW - FLAT LAYOUT

MK	QTY	DESCRIPTION	MAT'L	WT
1	1	PLATE 1/4" THK. x 4'-11" x 6'-8 7/16" LG.	G40.21-38W/44W	336
2	1	PLATE 1/2" THK. x 2'-4 3/4" x 4'-11 1/2" LG.	G40.21-44W	178

NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY. NO. REQ'D:1
 2. ROLL MK# 1 TO 752(2'-5 5/8") I.R. WEIGHT: 545 lbs.



ROOF DETAIL

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△				
△				
△	26/01/12	ISSUED FOR CONSTRUCTION	RR	

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CLIENT: MURPHY OIL COMPANY LTD.

DWG TITLE: POP TANK, TAG# TK-4020
 5'x5' ENVIRO-VAULT WALL/ROOF DETAILS

SCALE: 1:20	DWN BY: R. RANASINGHE	DWG NO.: T-023839-A105	SHT NO.: 1 OF 1	REV: △ 0
DATE (d/m/y): 10/01/12	CHKD: APPD:			



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-4020	D. Lemov	2012-02-10

PROJECT NAME: 1780 - Murphy oil Cadette CSS.

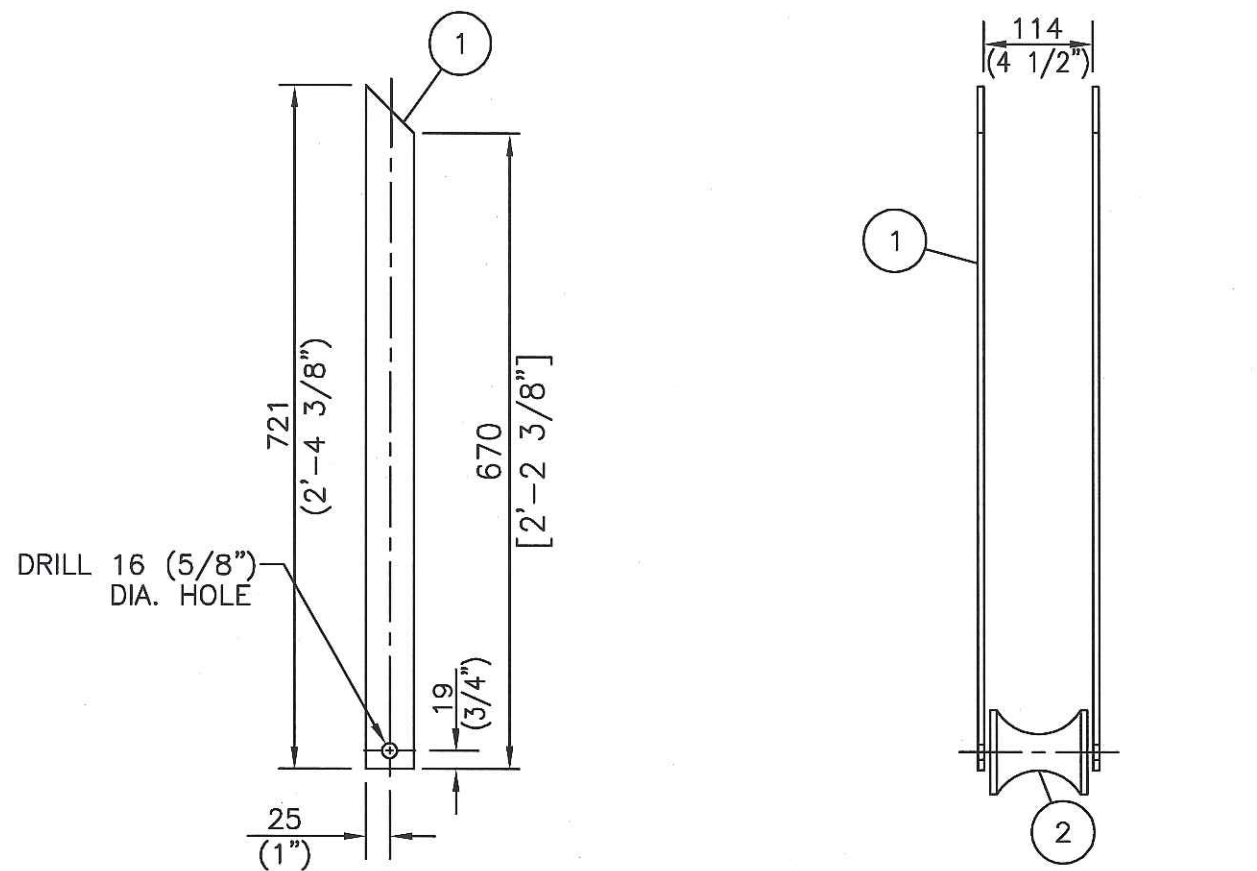
VENDOR NAME: Universal Ind.

DOCUMENT NUMBER: T-023839-A109

VENDOR REVISION: 0

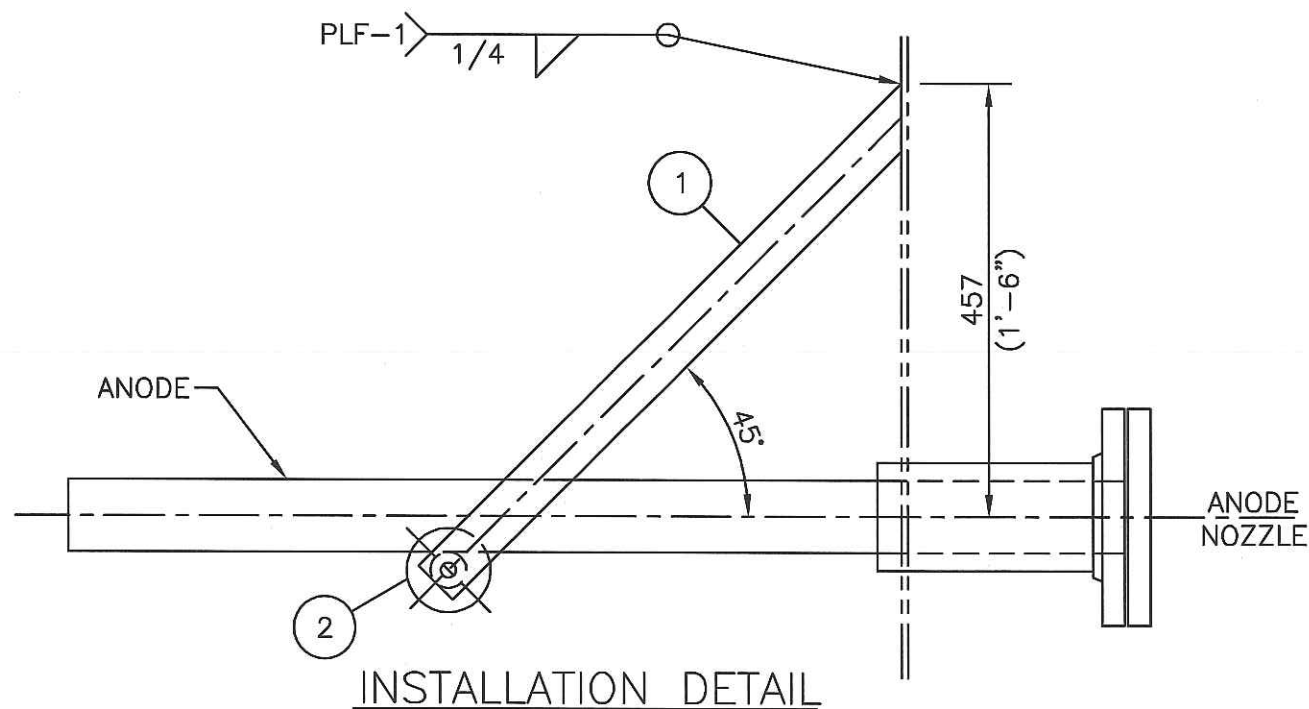
DOCUMENT DESCRIPTION: Pop Tank Anode Roller Support

VENDOR TRANSMITTAL NUMBER: TR-0203-023839



MK.#1 DETAIL

ROLLER ASSEMBLY



INSTALLATION DETAIL

MK	QTY	DESCRIPTION	MAT'L	WT
1	2	FLATBAR 1/4" x 2" x 2'-4 3/8" LG.	G40.21-44W	8
2	1	WOOD ROLLER ASS'Y	PRT-4190	2
3				
4				
5				

NOTES:
 1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.

NO. REQ'D: 4 TOTAL FOR JOB
 WEIGHT: 10 lbs. EACH

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△				
△				
△	26/01/12	ISSUED FOR CONSTRUCTION	RR	
REVISIONS				

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CLIENT	MURPHY OIL COMPANY LTD.
DWG TITLE	POP TANK, TAG# TK-4020 ANODE ROLLER SUPPORT

SCALE	1:10	DWN BY	R. RANASINGHE	DWG NO.	T-023839-A109	SHT NO.	1 OF 1	REV	△
DATE (d/m/y)	20/01/12	CHKD	APPD						0



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-4020	D. Lemov	2012-02-10

PROJECT NAME: 1780 - Murphy oil Cadotte CSS.

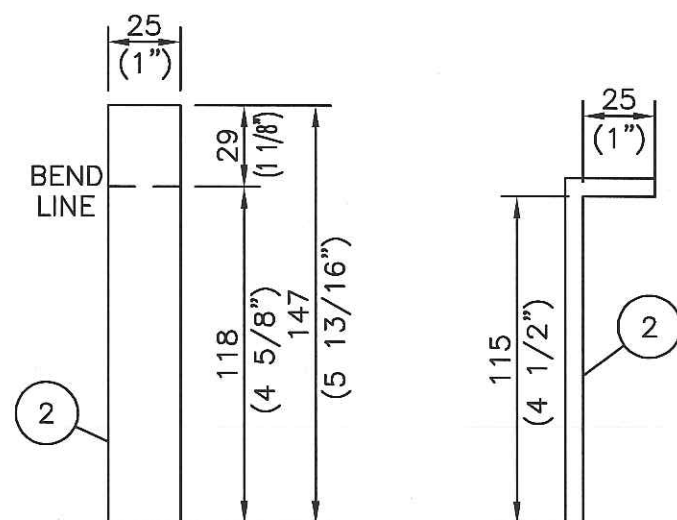
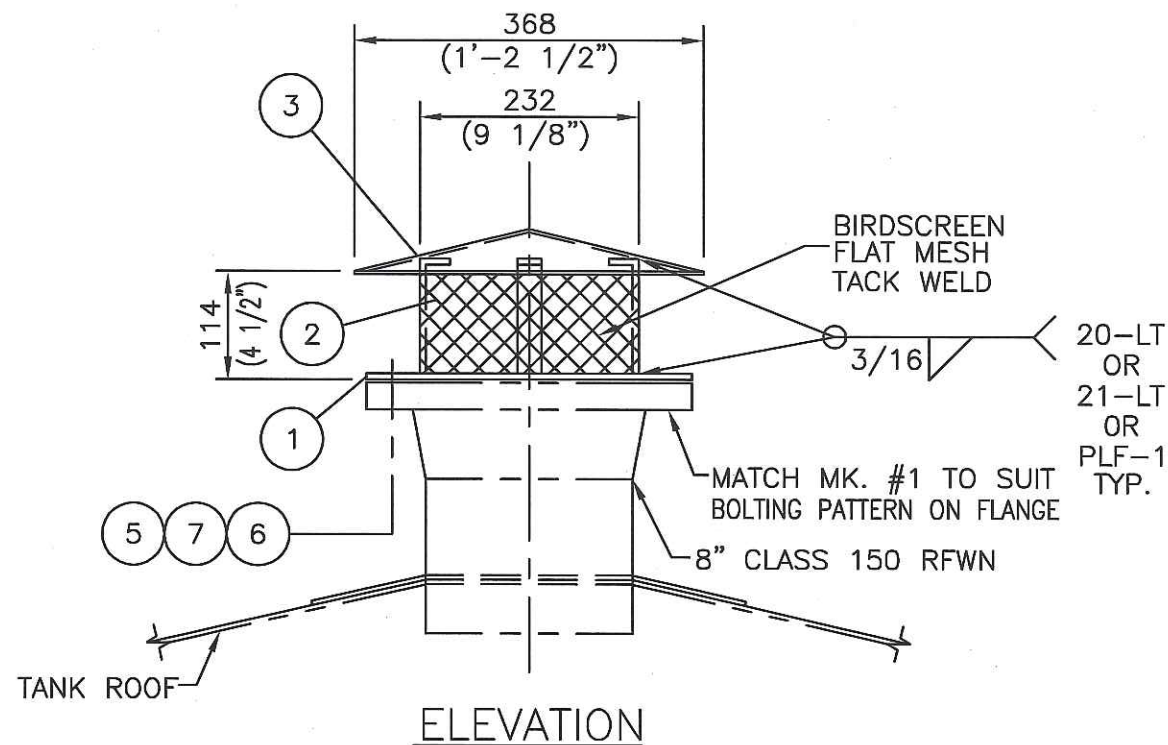
VENDOR NAME: Universal Ind.

DOCUMENT NUMBER: T-023839 -A110.

VENDOR REVISION: 0.

DOCUMENT DESCRIPTION: Pop Tank Mushroom Cap DT

VENDOR TRANSMITTAL NUMBER: TR-003-023839



MK #2 DETAIL
SCALE: N.T.S.
(4 REQ'D)

MK	QTY	DESCRIPTION	MAT'L	WT
1	1	PLATE 1/4" THK. x 8 5/8" I.D. x 1'-1 1/2" O.D.	G40.21-44W	6
2	4	FLATBAR 1/4" THK. x 1" x 5 13/16" LG.	G40.21-44W	2
3	1	PLATE 11ga. x 1'-2 7/8" FLAT DIA.	A-1011	12
4	AS REQ'D	FLAT EXPANDED METAL 4" x 2'-6" LG.(BIRDSCREEN)	G40.21-44W	1
5	1	GASKET 8" CLASS 150 x 1/8" THK.	GARLOC	1
6	8	BOLT 3/4" DIA. x 2 1/2" LG.	GR.5	4
7	8	HEX NUT 3/4" NOM.	GR.5	1
8				
9				
10				

NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETRES. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.

NO. REQ'D: 1
WEIGHT: 29 lbs.

NO	DATE (d/m/y)	REVISIONS	BY	APPD
0	26/01/12	ISSUED FOR CONSTRUCTION	RR	
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FABRICATING

CLIENT		MURPHY OIL COMPANY LTD.		
DWG TITLE		POP TANK, TAG# TK-4020 MUSHROOM CAP DETAILS		
SCALE	DWN BY	DWG NO.	SHT NO.	REV
1:20	R. RANASINGHE	T-023839-A110	1 of 1	0
DATE (d/m/y)	CHKD	APPD		
13/01/12				



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM 02	TK-4020	D. Lemon	2012-02-10

PROJECT NAME: 1780 - Murphy Oil Gdolla CSS

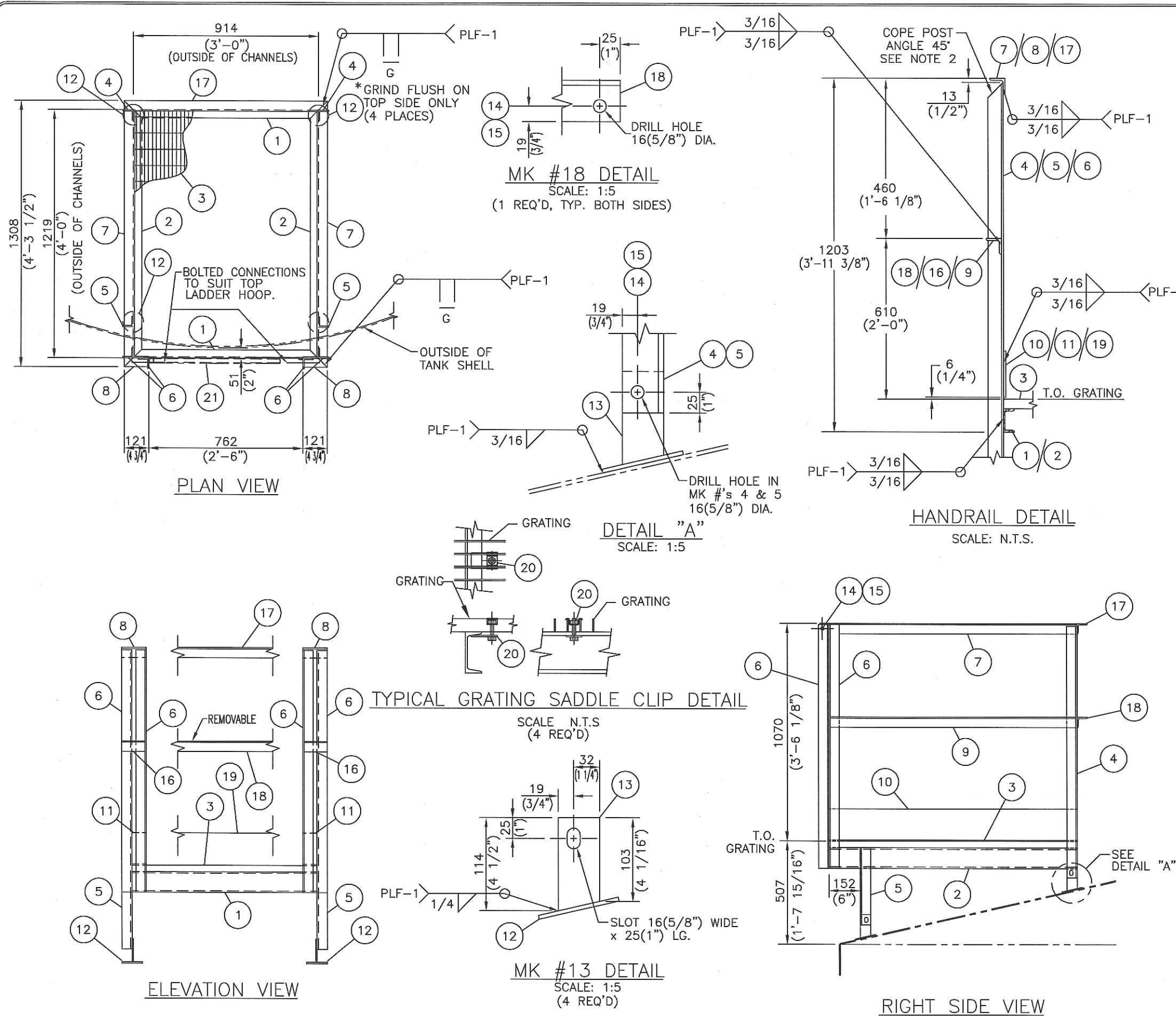
VENDOR NAME: UNIVERSAL INC.

DOCUMENT NUMBER: T-023839- B107

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Pop Tank 3'-0" x 4'-0" Roof Platform DT

VENDOR TRANSMITTAL NUMBER: TR 003- 023839.



MK	QTY	DESCRIPTION	MAT'L	WT
1	2	CHANNEL C4 x 5.4# x 3'-0" LG.	G40.21-44W	32
2	2	CHANNEL C4 x 5.4# x 4'-0" LG.	G40.21-44W	43
3	1	GRATING 3'-0" W x 4'-0" LG. TYPE 19-4 SERRATED GRATING 1 1/4" x 3/16" BARS	GALVANIZED G40.21-44W	107
4	2	ANGLE 2" x 2" x 1/4" x 4'-0 11/16" LG.	G40.21-44W	26
5	2	ANGLE 2" x 2" x 1/4" x 1'-2 15/16" LG.	G40.21-44W	8
6	4	ANGLE 2" x 2" x 1/4" x 3'-10 7/8" LG.	G40.21-44W	50
7	2	ANGLE 2" x 2" x 1/4" x 4'-3 1/2" LG.	G40.21-44W	27
8	2	ANGLE 2" x 2" x 1/4" x 4 3/4" LG.	G40.21-44W	3
9	2	ANGLE 2" x 2" x 1/4" x 3'-11 1/2" LG.	G40.21-44W	25
10	2	FLATBAR 3/16" x 6" x 3'-11 1/2" LG.	G40.21-44W	30
11	2	FLATBAR 3/16" x 6" x 3" LG.	G40.21-44W	1
12	4	REPAD PLATE 1/4" THK. x 4" DIA.	G40.21-44W	4
13	4	FLATBAR 1/4" THK. x 2" x 4 1/2" LG.	G40.21-44W	3
14	8	BOLT 1/2" DIA. x 1 1/2" LG.	Gr.5	2
15	8	HEX NUT 1/2" NOM.	Gr.5	1
16	2	ANGLE 2" x 2" x 1/4" x 4 3/4" LG.	G40.21-44W	3
17	1	ANGLE 2" x 2" x 1/4" x 3'-3 1/2" LG.	G40.21-44W	11
18	1	ANGLE 2" x 2" x 1/4" x 3'-4" LG.	G40.21-44W	11
19	1	FLATBAR 3/16" THK. x 6" x 3'-0" LG.	G40.21-44W	11
20	4	GRATING SADDLE CLIPS C/W HARDWARE, CLIP, BOTTOM PLATE	GALVANIZED C.S.	1
21	1	SAFETY GATE ("PS-DOORS")(SAFETY YELLOW)	PRT-4310	5

SUBTOTAL 404 x 1.06
 TOTAL 428 lbs
NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.
 2. MK. #'s 4, 5, & 8 SHALL BE MITRED 45° ONE END ONLY.
 3. MK. #'s 1, 2, 7, & 17 SHALL BE MITRED 45° BOTH ENDS.

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△				
△	26/01/12	ISSUED FOR CONSTRUCTION	RR	

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PEACELAND FABRICATING

CLIENT: MURPHY OIL COMPANY LTD.

DWG TITLE: POP TANK, TAG# TK-4020
 3'-0" x 4'-0" ROOF PLATFORM DETAIL

SCALE: 1:20	DWN BY: R. RANASINGHE	DWG NO.: T-023839-B107	SHT NO.: 1 of 1	REV: 0
DATE (d/m/y): 19/01/12	CHKD: APPD:			



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM 02	TK-4020	D. Lemov	2012-02-10

PROJECT NAME: 1780 - Murphy oil Adolte CSS

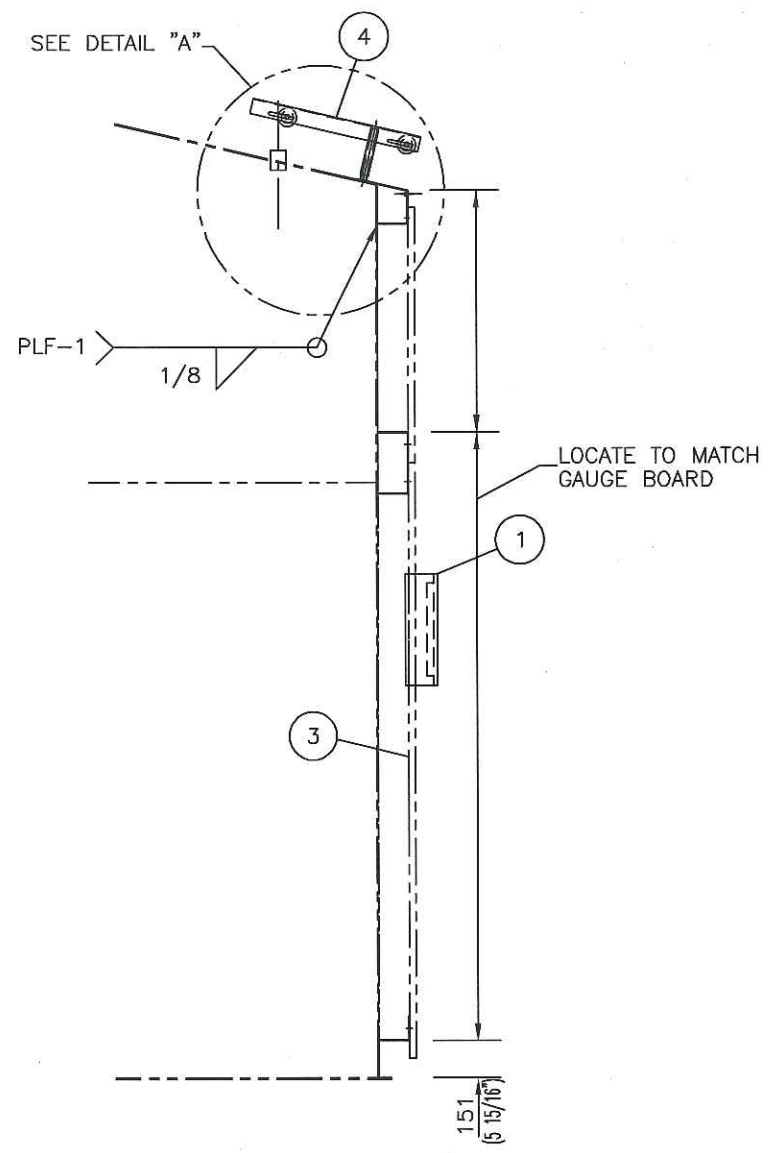
VENDOR NAME: Universal Ind.

DOCUMENT NUMBER: T-023839-B108 .

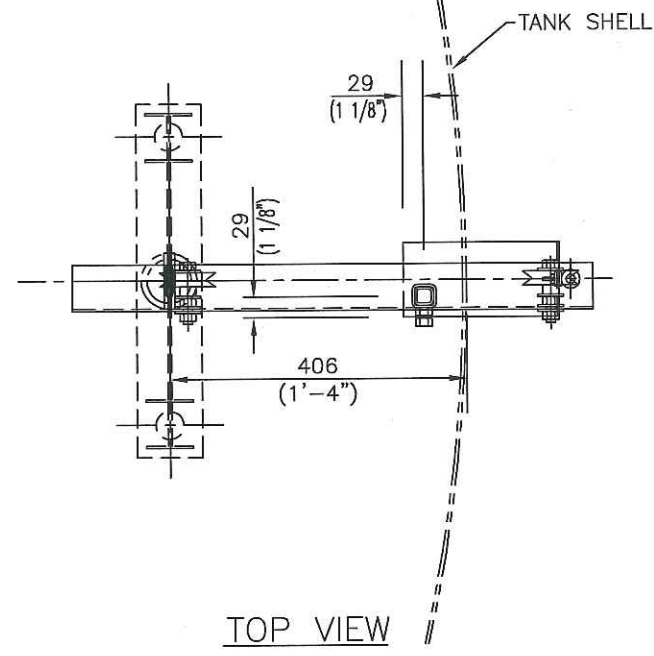
VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Pop Tank Level Indicator System -

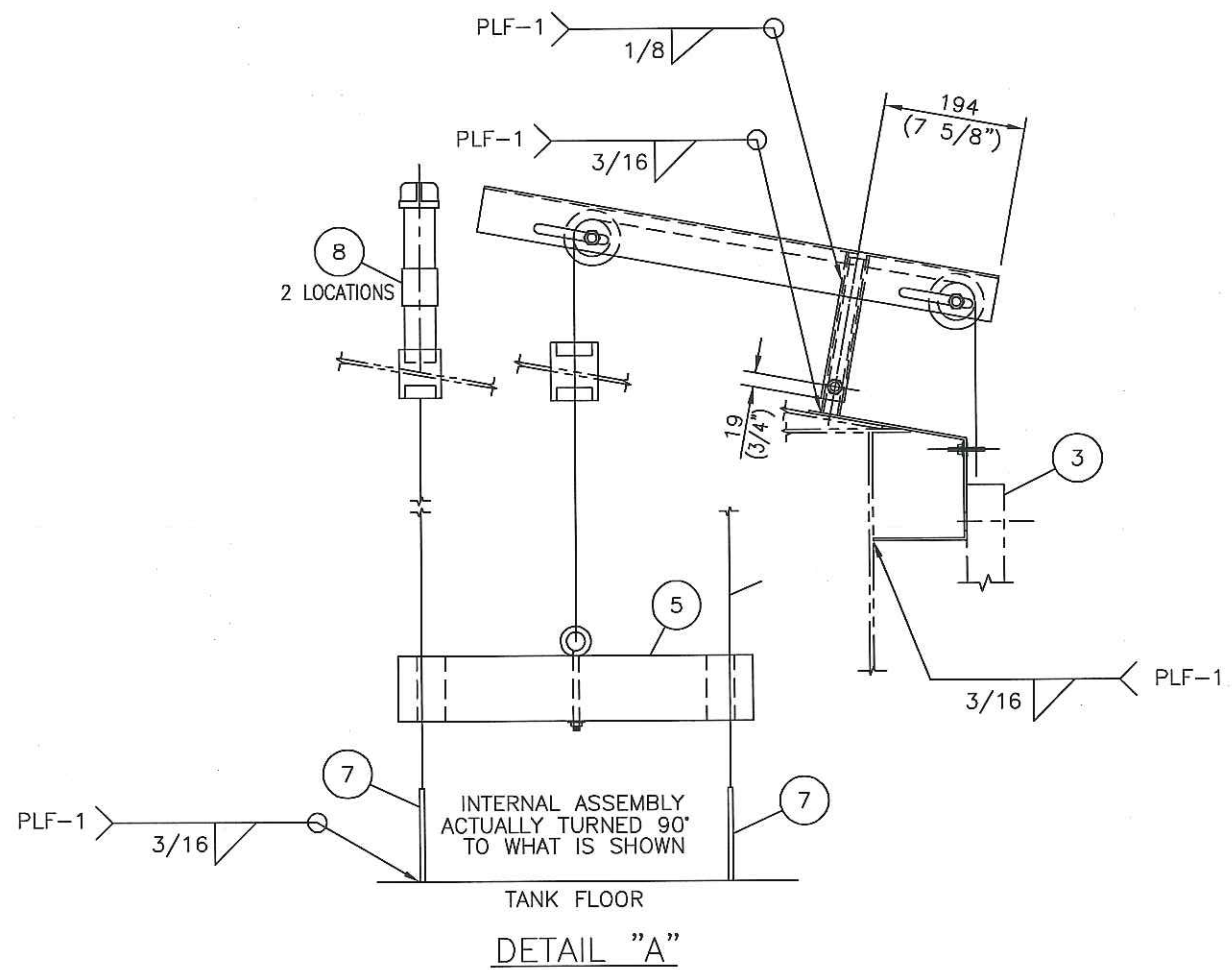
VENDOR TRANSMITTAL NUMBER: TR 003-023839



ELEVATION VIEW
SCALE 1:30



TOP VIEW



DETAIL "A"

MK	QTY	DESCRIPTION	MAT'L	WT
1	1	GAUGEBOARD BOX ASSEMBLY	PRT-1365	25
2		C/W INDICATOR, BOLTING, CABLES, CABLE CLAMPS, PULLEY ASS'Y & CLIPS		
3	1	GAUGE BOARD (12'-0" LONG)		22
4	1	PULLEY ARM ASSEMBLY	PRT-2613	20
5	1	PLASTIC FLOAT	PRT-1622	2
6				
7	2	FLOOR CLIPS (STOCK LADDER CLIPS)	PRT-4283	1
8	2	CABLE TIGHTENER ASSEMBLY	PRT-4166	26
9				
10				

NOTES:

1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.

NO. REQ'D: 1
WEIGHT: 102 lbs.

NO	DATE (d/m/y)	REVISIONS	BY	APPD
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CLIENT MURPHY OIL COMPANY LTD.				
DWG TITLE POP TANK, TAG# TK-4020 LEVEL INDICATOR SYSTEM FOR 12'-0" HIGH TANK				
SCALE 1:10	DWN BY R. RANASINGHE	DWG NO. T-023839-B108	SHT NO. 1 of 1	REV 0
DATE (d/m/y) 20/01/12	CHKD APPD			



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
JM 02	TK - 4020	D. Lemon	2012-02-10

PROJECT NAME: 1780 - Murphy oil Adotte CSS

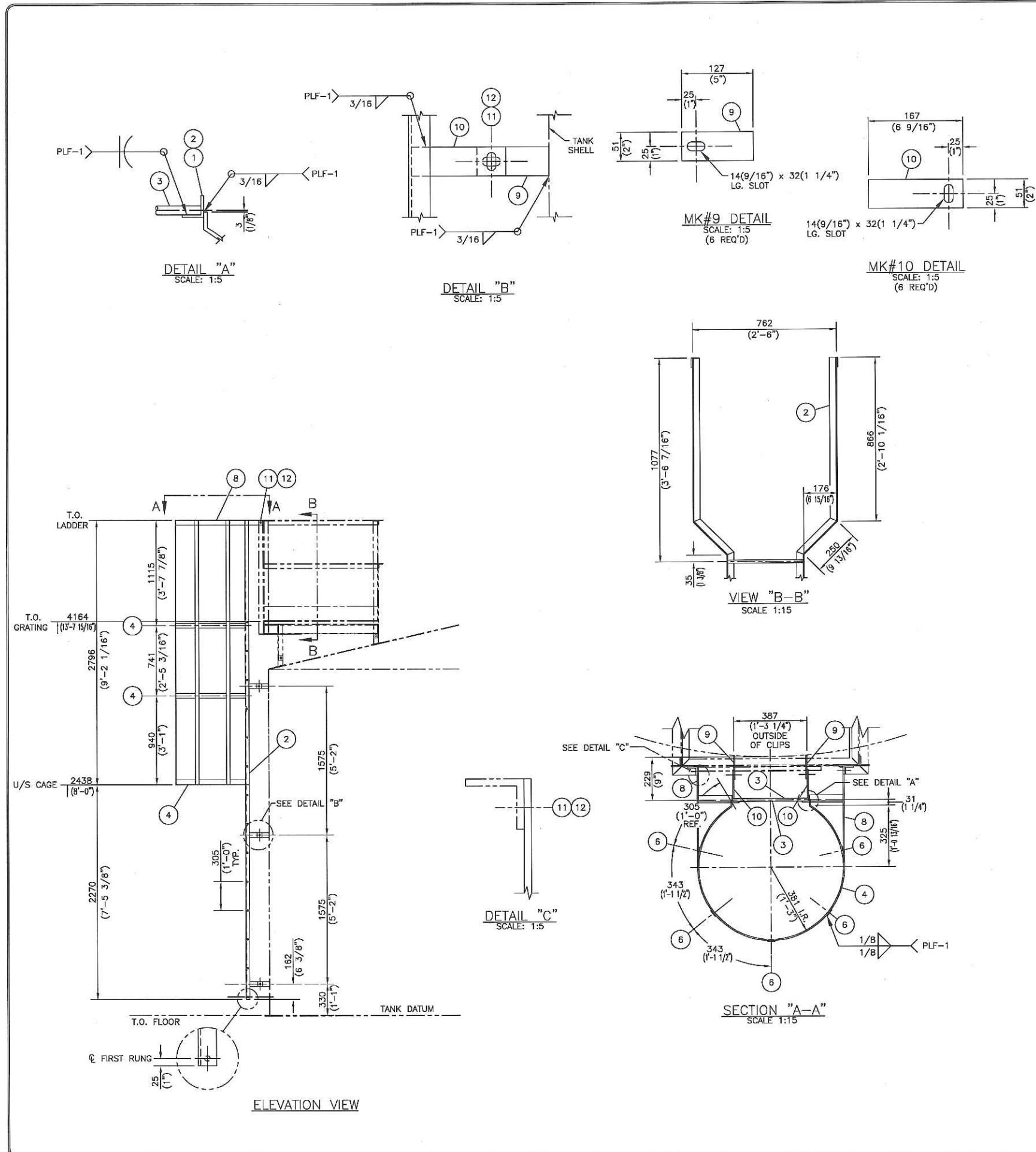
VENDOR NAME: Universal Ind.

DOCUMENT NUMBER: T-023839 - C104

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Pop Tank - Ladder Details

VENDOR TRANSMITTAL NUMBER: TR - 003 - 023839



MATERIAL LIST

MK	QTY	DESCRIPTION	MATERIAL	WT
1				
2	2	ANGLE 1 1/2" x 1 1/2" x 3/16" x 16'-10 3/8" LG.	G40.21-44W	61
3	14	ROD 5/8" DIA. x 1'-3 3/4" LG.	G40.21-44W	76
4	3	LADDER HOOP	PRT-4284	33
5				
6	5	FLATBAR 3/16" THK. x 1 1/2" x 9'-2 1/16" LG.	G40.21-44W	44
7				
8	1	FLATBAR 1/4" THK. x 2" x 7'-9 3/8" LG.	G40.21-44W	13
9	6	FLATBAR 1/4" THK. x 2" x 5" LG.	PRT-4283	4.5
10	6	FLATBAR 1/4" THK. x 2" x 6 9/16" LG.	G40.21-44W	6
11	8	BOLT 1/2" DIA. x 1 1/2" LG.	GR.5	1
12	8	HEX NUT 1/2" NOM.	GR.5	1
13				
14				
15				

SUBTOTAL x 1.06 TOTAL 239 253 lbs

NOTES:
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
2. GRIND ALL SHARP EDGES SMOOTH.
3. SEE G.A. SHT2 FOR FINISHING NOTES.

△			
△			
△			
△			
△	26/01/12	ISSUED FOR CONSTRUCTION	RR
NO	DATE (d/m/y)	REVISIONS	APPD
REVISIONS			

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CLIENT
MURPHY OIL COMPANY LTD.

DWG TITLE
POP TANK, TAG# TK-4020
LADDER DETAILS

SCALE 1:30	DWN BY R. RANASINGHE	DWG NO. T-023839-C104	SHEET NO. 1 OF 1	REV. NO. 0
DATE (d/m/y) 17/01/12	CHKD APPD			



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM-02	TK-4020	D. Lemar	2012-02-10

PROJECT NAME: 1780- Murphy oil Cadotte CSS.

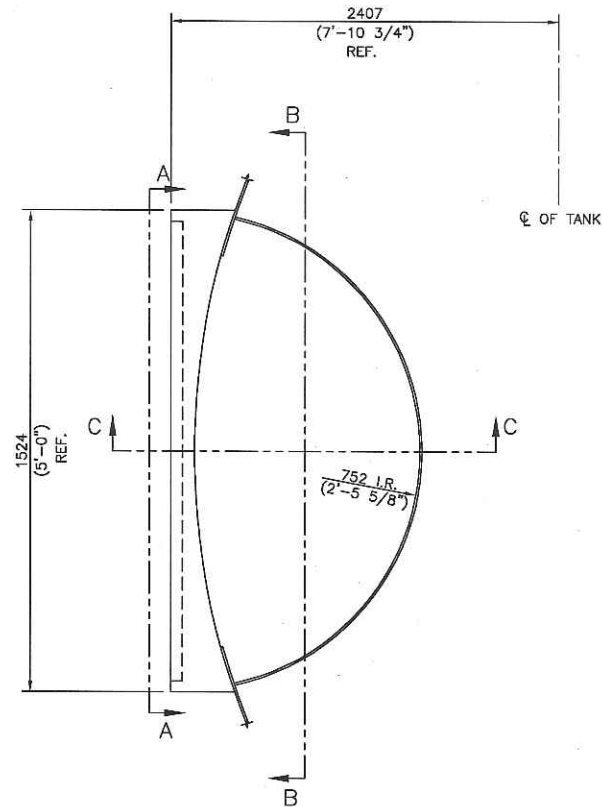
VENDOR NAME: Universal Ind.

DOCUMENT NUMBER: T-023839-C106.

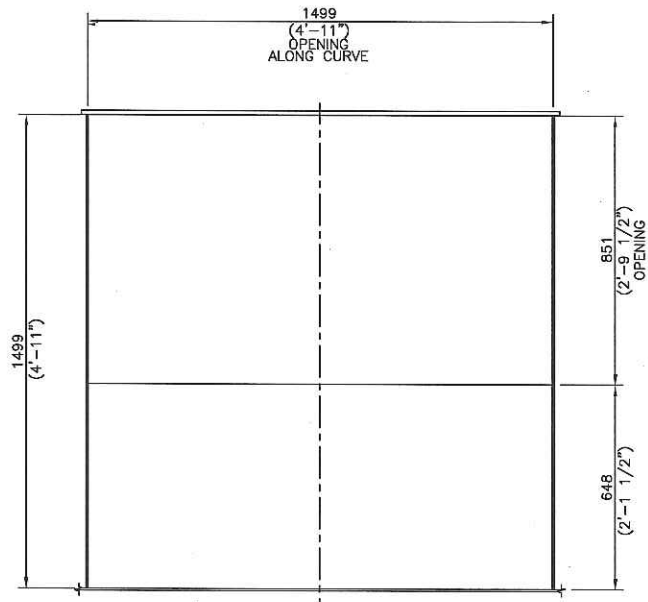
VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Pop Tanks - 5' Enviro-Vault Door Details

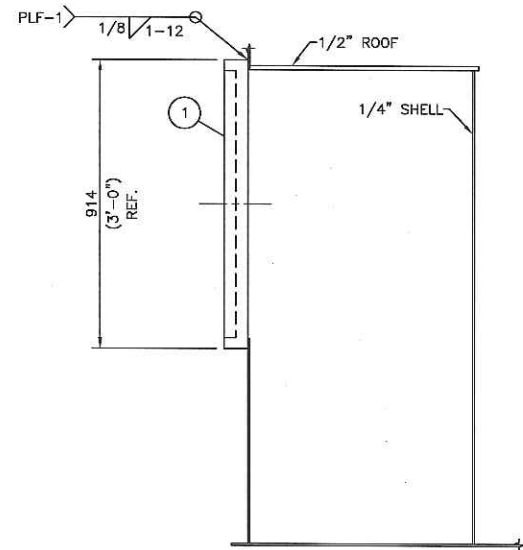
VENDOR TRANSMITTAL NUMBER: TR-003-023839



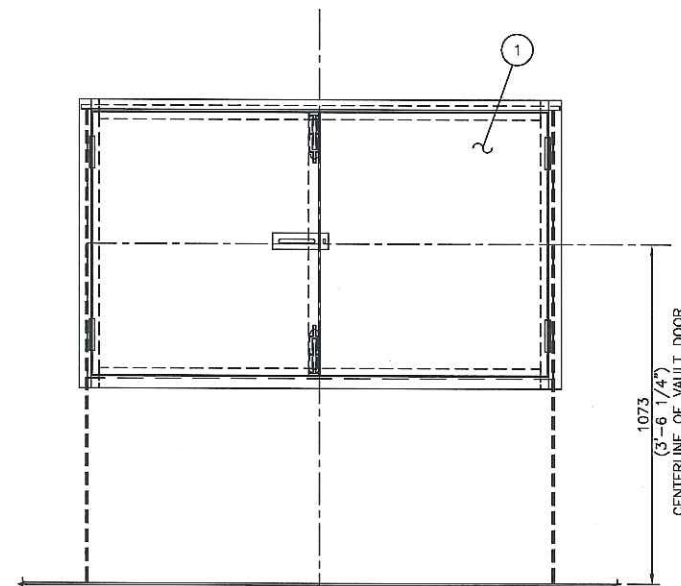
ENVIRO-VAULT PLAN VIEW



VIEW "B-B"



SECTION "C-C"



VIEW "A-A"

MATERIAL LIST

MK	QTY	DESCRIPTION	MATERIAL	WT
1	1	ENVIRO-VAULT DOOR FRAME	PRT-3019	73
2				
3				
4				
5				
6				
7				
8				
9				
10				

NOTES:
 1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY. TOTAL 77 lbs.

SUBTOTAL 73

x 1.06 TOTAL 77 lbs.

NO	DATE (d/m/y)	REVISIONS	APPD
20/01/12		ISSUED FOR CONSTRUCTION	RR

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CLIENT
 MURPHY OIL COMPANY LTD.

DWG TITLE
 POP TANK, TAG# TK-4020
 5' ENVIRO-VAULT DOOR DETAILS (C/W NECK)

SCALE 1:15	DWN BY R. RANASINGHE	DWG NO. T-023839-C106	SHEET NO. 1 OF 1	REV. NO. 0
DATE (d/m/y) 19/01/12	CHKD APPD			



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DG 02/03 DM01	TK-4020	D. Lamov	2012-02-15

PROJECT NAME: Murphy Oil Cadotte - 1780

VENDOR NAME: Universal Industries

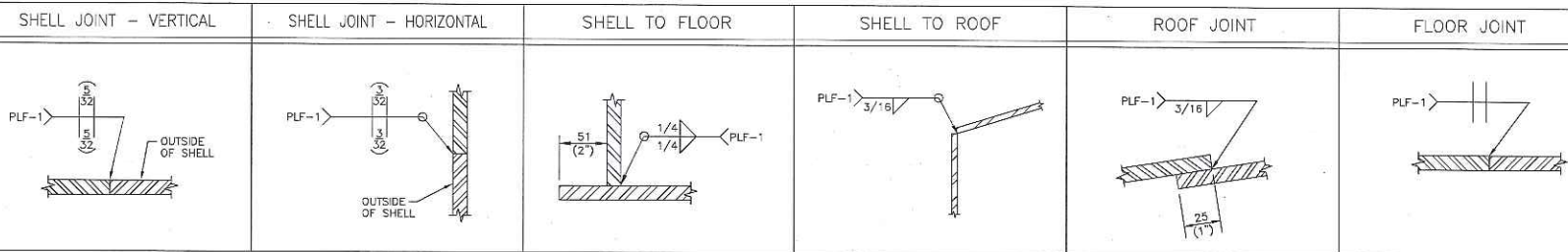
DOCUMENT NUMBER: T-023839-D101-1

VENDOR REVISION: 2

DOCUMENT DESCRIPTION: Pop Tank General Arrangement

VENDOR TRANSMITTAL NUMBER: 004-023839

STANDARD WELD DETAILS (N.T.S.)



NOZZLE SCHEDULE

MK	NO	SIZE	SCH	RATE	TYPE	PROJECTION INT.	EXT.	REPAD YES	NO	DESCRIPTION
N1	1	168 6"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		INLET
N2	1	114 4"	STD	CLASS 150	RFWN	152 6"	102 4"		✓	TRUCKOUT C/W INT. FLANGE & DOWNCOMER(N VAULT)
N4a	1	60 2"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		SPARE C/W BLIND
N4b	1	60 2"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		SPARE C/W BLIND
N5	1	114 4"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		SPARE C/W BLIND
N8	1	60 2"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		TC-4020
N10a	1	114 4"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		ANODE
N10b	1	114 4"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		ANODE
N10c	1	114 4"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		ANODE
N10d	1	114 4"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		ANODE
N15	1	219 8"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		VENT C/W CAP AND BIRDSCREEN
N16	1	219 8"	STD	-	FAB'D	25 1"	203 8"	✓		THIEF HATCH C/W ENARDO 330
N17	1	114 4"	STD	CLASS 150	RFWN	25 1"	203 8"	✓		SPARE C/W BLIND
C1	1	51 2"	-	3000#	HALF CPLG	-	FULL	✓		LSH-4020
C2	1	51 2"	-	3000#	FULL CPLG	HALF	HALF	✓		SPARE C/W PLUG (FUTURE LSSL)
C3	1	51 2"	-	3000#	FULL CPLG	HALF	HALF	✓		LG C/W 1 1/2" BUSHING
C4	2	32 1 1/4"	-	3000#	FULL CPLG	HALF	HALF	✓		LEVEL GAUGE FLOAT GUIDE WIRES
M1	1	610 x 614 2'-9" x 3'-0"	-	-	FAB'D	25 1"	102 4"	✓		MANWAY

MATERIAL LIST

MK	QTY	DESCRIPTION	MATERIAL	WT
1	1	FLOOR PLATE 1/4" THK. x 15'-7 1/2" DIA. (G40.21-38W)	PRT-2954	1945
2	1	ROOF PLATE 3/16" THK. x 15'-7 13/16" FLAT DIA.	G40.21-44W	1433
3	1	SHELL PLATE 1/4" THK. x 8'-0" x 47'-11 1/16" LG.	G40.21-44W	3904
4	1	SHELL PLATE 3/16" THK. x 4'-0" x 47'-11 1/2" LG.	G40.21-44W	1464
5	-	NOZZLE DETAILS	REF. DWG. T-023839-D102	525
6	1	SHELL MANWAY 2'-0" x 3'-0" C/W 1/4" COVER	PRT-5250	160
7	1	NAMEPLATE BRACKET C/W NAMEPLATE	PRT-1473	5
8	2	LIFTING LUG	PRT-2886	24
9	3	TANK ROOF SAFETY HARNESS LUG	PRT-2533	6
10	1	SKID DETAILS (L-SKID)	REF. DWG. T-023839-D103	3668
11	1	LADDER DETAILS	REF. DWG. T-023839-C104	253
12	1	ROOF PLATFORM (3'-0" x 4'-0") C/W SAFETY GATE	REF. DWG. T-023839-B107	428
13	3	GROUNDING LUG	PRT-4272	3
14	1	ENVIRO-VAULT 5'-0" x 5'-0" HIGH	T-023839-A105	545
15	1	UIC LEVEL INDICATOR ASSEMBLY C/W METRIC BOARD, PVC FLOAT, FLOAT WIRE, FLOOR CLIP & MISC. HARDWARE	REF. DWG. T-023839-B108	102
16	1	ENVIRO-VAULT DOOR DETAILS	REF. DWG. T-023839-C106	77
17	4	ANODE SUPPORT BRACKETS	REF. DWG. T-023839-A109	40
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30			INSULATION	800
			SUBTOTAL x 1.06	15382
			TOTAL	16305 lbs

NOTES:
1. SEE DWG. T-023839-D101 SHT 2

NO	DATE (d/m/y)	REVISIONS	BY	APPD
1	14/02/12	FIXED THE UNITS IN TOTAL	RR	
2	26/01/12	RELOCATED N4 _{a,b}	RR	JK
3	06/01/12	ISSUED FOR CONSTRUCTION	RR	JK
4	01/12/11	ISSUED FOR CUSTOMER APPROVAL	RR	JK

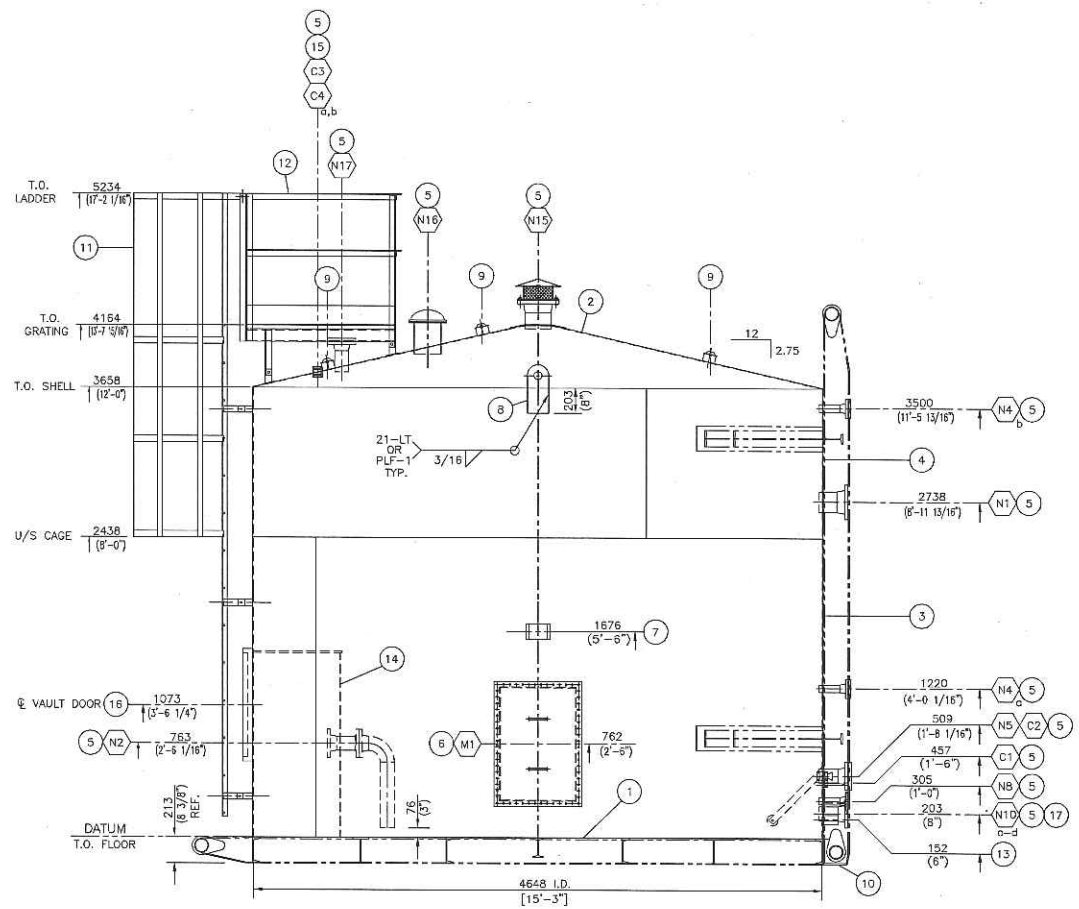
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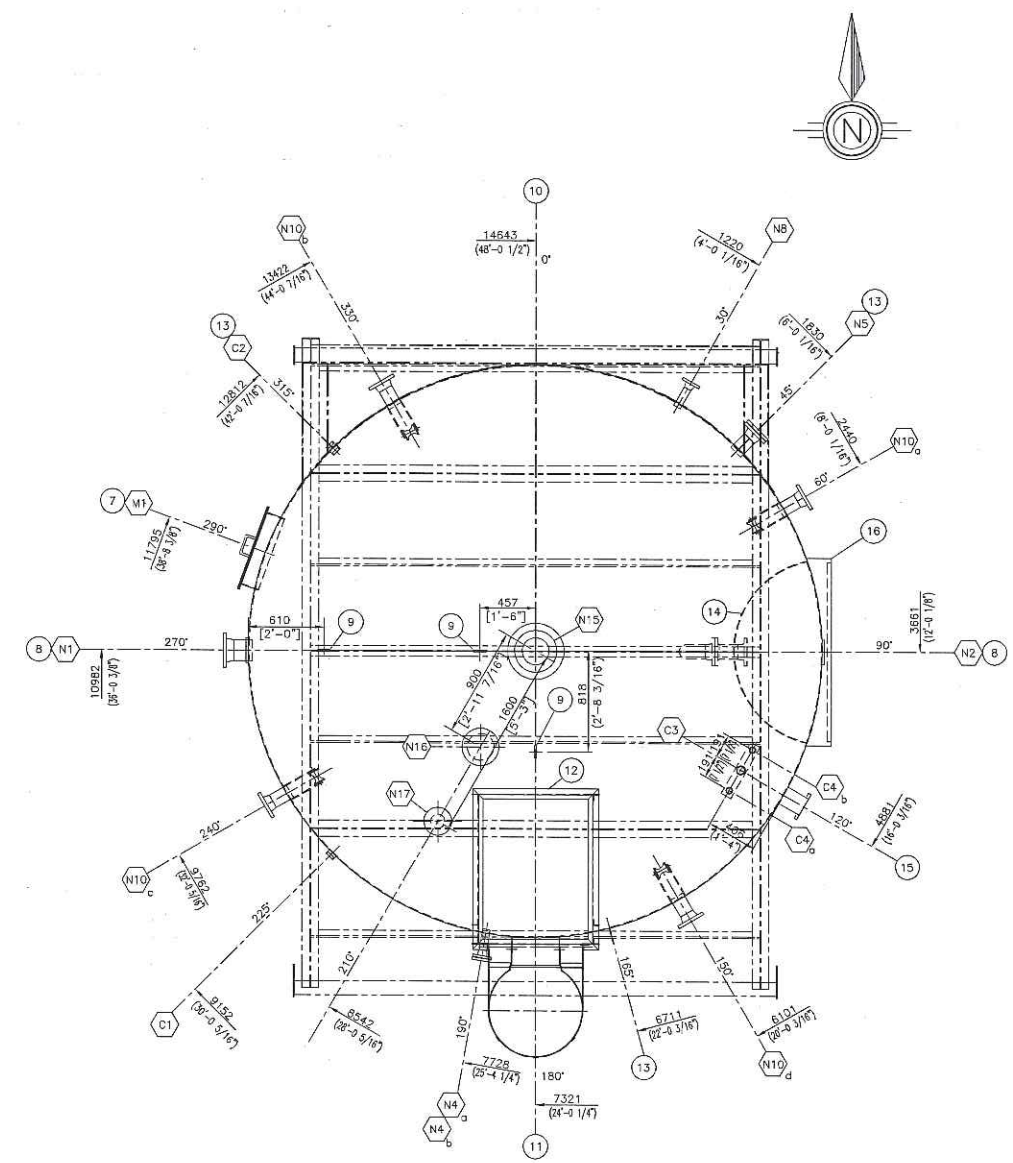
CLIENT: MURPHY OIL COMPANY LTD.
C/O VISTA PROJECTS LTD. (P.O.# 1780-003)
CADOTTE PILOT CSS PROJECT
P.O.# 54115097-202-1

DWG TITLE: POP TANK, TAG# TK-4020
GENERAL ARRANGEMENT

SIZE: 4648mm I.D. x 3658mm HIGH (15'-3" I.D. x 12'-0" HIGH)	VOLUME: 62 CU. METERS (390 BBL)
SCALE: 1:30	DWG NO. T-023839-D101
DATE (d/m/y): 06/01/12	SHEET NO. 1 OF 2
CHKD: R. RAMASINGHE	APPD: [Signature]



ELEVATION



ORIENTATION



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-4020	D. Lessor	2012-02-10

PROJECT NAME: 1780-Murphy oil cadotte

VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023839-0101-2

VENDOR REVISION: 1

DOCUMENT DESCRIPTION: POP Tank Design DATA & FAB NOTES

VENDOR TRANSMITTAL NUMBER: TR-003-023839

SURFACE PREPARATION & PAINTING REQUIREMENTS					
ITEM	BLAST	PRIMER	D.F.T.	FINISH	D.F.T.
INSULATED TANK EXTERIOR	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1
UNINSULATED TANK EXTERIOR	N/A	N/A	N/A	N/A	N/A
TANK INTERIOR	NONE	NONE	NONE	NONE	NONE
APPURTENANCES	N/A	N/A	N/A	N/A	N/A
PROTRUSIONS	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1
INTERNAL FLANGES	NONE	NONE	NONE	NONE	NONE
INTERNAL PIPING	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2
EXTERNAL LADDER	NOTE 3	NOTE 3	NOTE 3	NOTE 3	NOTE 3
PLATFORMS	NOTE 3	NOTE 3	NOTE 3	NOTE 3	NOTE 3

NOTES

- SANDBLAST TANK EXTERIOR TO SSPC-SP6 UTILIZING SIL 7. APPLY 4285 PRIMER AND 2 COATS OF RUSTOLEUM GREY TO COMPLETE.
- INTERNAL PIPING WILL BE UN-COATED (BARE C.S.).
- LADDERS & PLATFORMS TO BE BLASTED TO SSPC-SP6 & APPLY 4285 PRIMER AND 2 COATS OF RUSTOLEUM GREY TO COMPLETE.

DESCRIPTIONS: SSPC-SP6 - COMMERCIAL BLAST

INSULATION REQUIREMENTS				
ITEM	INSULATION TYPE	THK.	CLAD TYPE	THK.
SHELL	FIBERGLASS 32 Kg/m ³	50mm (2")	CORRUGATED ALUMINUM	0.020"
ROOF	FIBERGLASS 32 Kg/m ³	50mm (2")	CORRUGATED ALUMINUM	0.020"

NOTES:
TANK BOTTOM 1200 mm COURSE AND 600 mm AROUND ROOF PLATFORM SHALL BE INSULATED WITH HIGH DENSITY FIBERGLASS OF 96 Kg/m³ DENSITY

FIREPROOFING REQUIREMENTS		
ITEM	FIREPROOFING	THK.

NOTES: NONE

OTHER NOTES

HEAT TREATMENT	
	NONE

HYDROTEST REQUIREMENTS	
	N/A

MARKING AND PREPARATION FOR SHIPMENT

- ALL FLANGED OPENINGS SHALL BE PROTECTED WITH WOODEN OR STEEL BLINDS TO PREVENT THE ACCUMULATION OF DIRT AND OTHER DEBRIS DURING SHIPPING.
- PLASTIC SHIPPING PLUGS TO BE INSTALLED ON ALL COUPLINGS FOR THREAD PROTECTION.
- ALL REMOVABLE PIECES TO BE MARKED WITH EQUIPMENT TAG NUMBER.
- TANK MUST BE COMPLETELY CLEAN AND DRY BEFORE BEING SEALED FOR SHIPMENT. (NO HYDROCARBON FILM, MILL SCALE, HEAVY RUST, SLAG, DIRT & SPLATTER.)

PROCESS DATA	
ROOF:	G40.21-44W
ANNULAR:	N/A
SHELL:	G40.21-44W
FLOOR:	G40.21-44W
STRUCTURAL:	SA-36
PIPE:	NOZZLE THROUGH SHELL: SA-106-B ROOF NOZZLES: SA-106-B INTERNAL: SA-106-B
FLANGES:	NOZZLE THROUGH SHELL: SA-105 ROOF NOZZLES: SA-105 INTERNAL: SA-105
INTERNAL BOLTING:	SA-193-B7M STUDS: SA-194-2HM
COUPLINGS (SHELL/ROOF):	SA105/SA-105
FITTINGS:	SA-234-WPB
STUD BOLTS (EXTERNAL):	SA-193-B7M
HEX NUTS (EXTERNAL):	SA-194-2HM
GASKETS:	NOZZLES: FLEXITALLIC 316 S.S. MANWAYS: NEOPRENE

MATERIAL REQUIREMENTS

A. TESTING

VACUUM TESTING
-VACUUM TEST FLOOR SEAMS AS PER API-650, SECT. B.6.

HYDRO TESTING
-NOT REQ'D

AIR TESTING
-AIR TEST NOZZLE REPADS AS PER API-650
-AIR TEST TO 24 oz.

RADIOGRAPHY
-NOT REQ'D

B. VISUAL EXAMINATION

- EXAMINATION AND ACCEPTANCE CRITERIA AS PER API-650 SECTION B.5.
- 100% VISUAL EXAMINATION IS REQUIRED FOR ALL WELDING.

INSPECTION AND TESTING

NAMEPLATE DETAIL			
FABRICATED BY: PEACELAND FABRICATING LTD. HYTHE, ALBERTA			
APPENDIX	API-650 MOD.F	DESIGN PRESSURE	6.9 KPag (16 oz.) 0.2 KPag (0.5 oz.) VAC.
YEAR COMPLETED	2012	DESIGN TEMPERATURE	93°C (200°F)
NOMINAL DIAMETER	4648mm (15'-3")	PARTIAL STRESS RELIEF	N/A
NOMINAL HEIGHT	3658mm (12'-0")	JOB	WO-023839
NOMINAL CAPACITY	62m ³ (390 BBL)	SERIAL NO.	023839-01
FLOOR THICKNESS	6.35mm (0.25")	PURCHASER'S TANK NO.	TK-4020
ROOF THICKNESS	4.76mm (0.1875")		
SHELL COURSE 1	6.35mm (0.25")		
COURSE 2	4.76mm (0.1875")		
COURSE 3			

DESIGN DATA

DESIGN CODE: API-650, 11th EDITION, APP. F

DESIGN PRESSURE: 6.90 kPag (27.70 in.w.c.) (16 oz.)

DESIGN VACUUM: 0.215 kPa (0.50 oz.)

DESIGN TEMPERATURE: -13°C (8.6°F) TO 93°C (200°F)

OPERATING PRESS./TEMP.:

DESIGN SPECIFIC GRAVITY: 0.931

SEISMIC ZONE: NOT APPLICABLE

DESIGN WIND LOAD: 133 Km/HR (83.1 MPH)

DESIGN LIVE ROOF LOAD: 200 Kg/m² (41.0 psf)

CORROSION ALLOWANCE:

SHELL: NONE

FLOOR: NONE

ROOF: NONE

STRUCTURAL: NONE

MAXIMUM FILLING HEIGHT: 3658mm (12'-0")

FOUNDATION TYPE:

FABRICATION NOTES

- ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
- ALL NOZZLE PROJECTIONS ARE GIVEN ALONG NOZZLE CENTERLINES.
- ALL FLANGE RATINGS TO BE ASME B16.5-2009.
- DRILL 1/4" TELLTALE HOLE IN SHELL REINFORCING PADS AND WELD ON HALF COUPLING AND ADD NIPPLE TO EXTEND BEYOND INSULATION. (IF INSULATED)
- FLANGE AND BOLT HOLES TO STRADDLE PRINCIPAL CENTERLINES OF TANK.
- TAG ALL PIECES WITH TANK NO. TK-4020
- BOTTOM HALF OF THE TANK TO BE ELECTRIC HEAT TRACED.

DESIGN DATA					

NO	DATE (d/m/y)	REVISIONS	BY	APPD

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CLIENT
MURPHY OIL COMPANY LTD.
C/O VISTA PROJECTS LTD. (P.O.# 1780-003)
CADOTTE PILOT CSS PROJECT
P.O.# 54115097-202-1

DWG TITLE
POP TANK, TAG# TK-4020
DESIGN DATA & FABRICATION NOTES

SCALE	DWN BY	DWG NO.	SHEET NO.	REV. NO.
N.T.S.	R. RANASINGHE	T-023839-D101	2 of 2	
DATE (d/m/y)	CHKD	APPD		
06/01/12				



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
D102	TK-4020	D. Lemon	2012-02-15

PROJECT NAME: Murphy Oil Cadotte - 1780

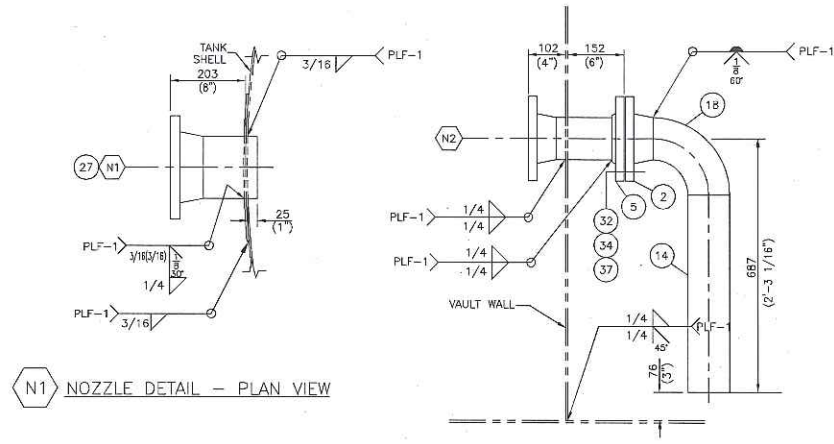
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023839-D102

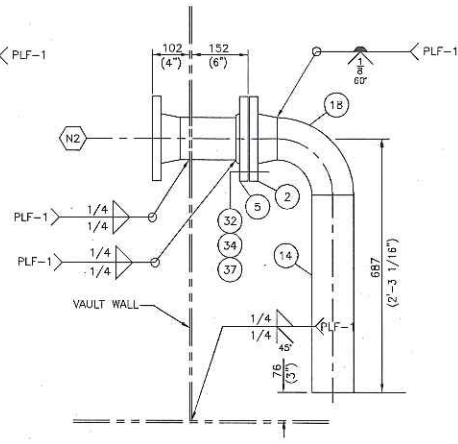
VENDOR REVISION: 1

DOCUMENT DESCRIPTION: Pop Tank Nozzle Details

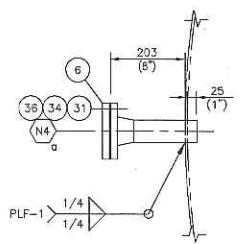
VENDOR TRANSMITTAL NUMBER: 004-023839



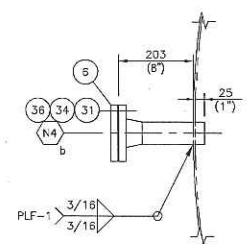
N1 NOZZLE DETAIL - PLAN VIEW



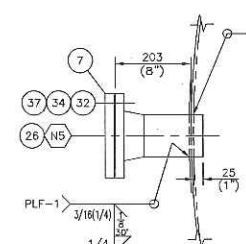
N2 NOZZLE DETAIL



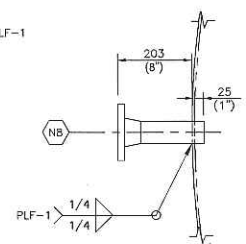
N4 NOZZLE DETAIL - PLAN VIEW



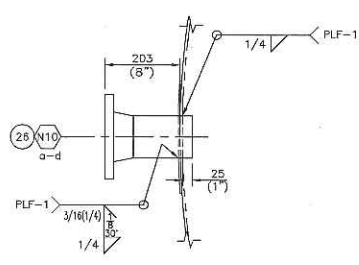
N4 NOZZLE DETAIL - PLAN VIEW



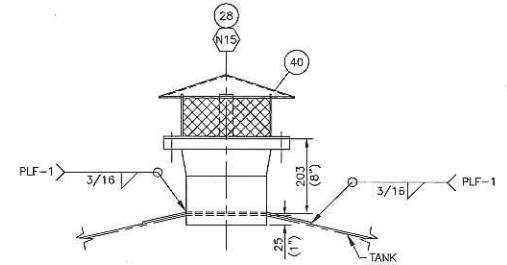
N5 NOZZLE DETAIL - PLAN VIEW



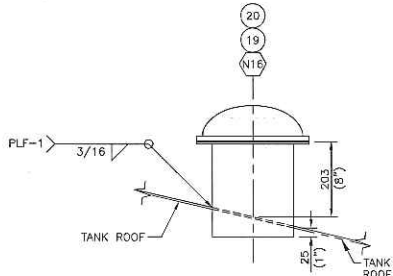
N8 NOZZLE DETAIL - PLAN VIEW



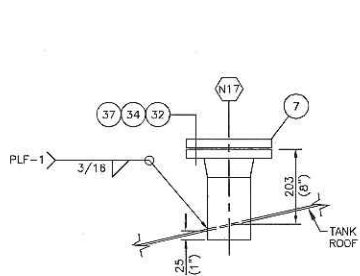
N10 NOZZLE DETAIL - PLAN VIEW



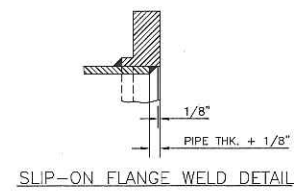
N15 NOZZLE DETAIL



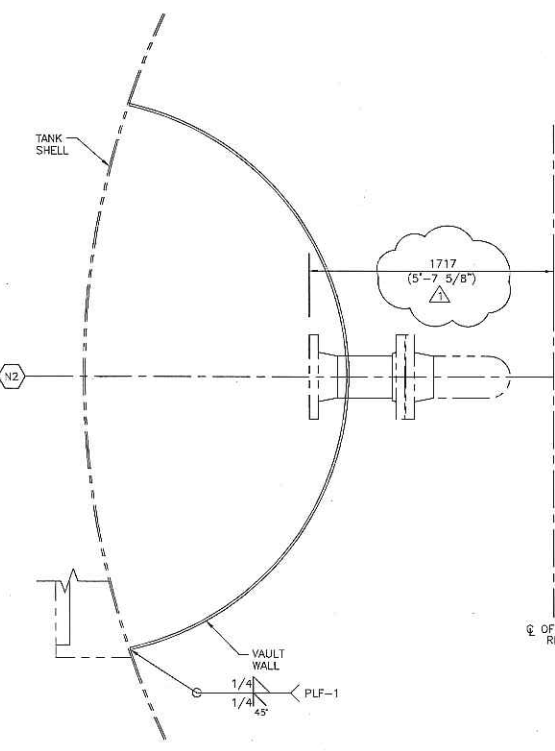
N16 NOZZLE DETAIL



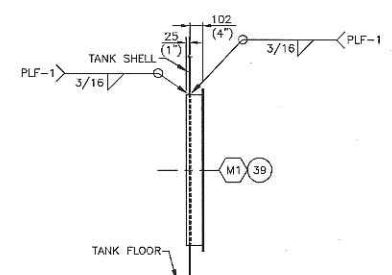
N17 NOZZLE DETAIL



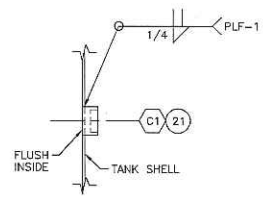
SLIP-ON FLANGE WELD DETAIL



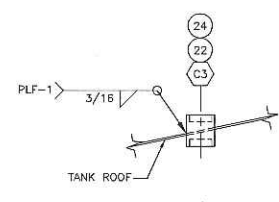
ENVIRO-VAULT PLAN VIEW



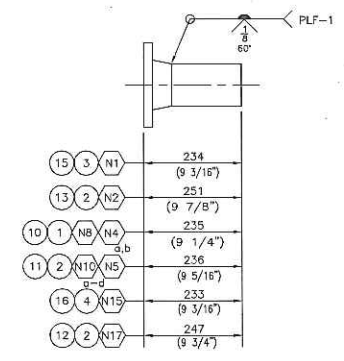
M1 MANWAY DETAIL
SCALE: NTS



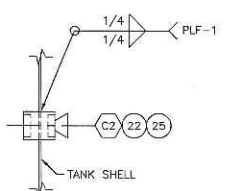
C1 COUPLING DETAIL



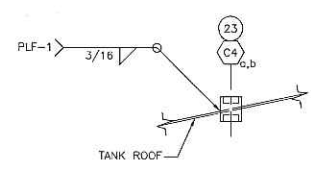
C3 COUPLING DETAIL



NOZZLE SPOOL DETAIL



C2 COUPLING DETAIL



C4 COUPLING DETAIL
a,b

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 ARE GIVEN ALONG NOZZLE CENTERLINES.
 3. ALL FLANGE RATINGS TO BE ASME B16.5-2003.
 4. FLANGE AND BOLT HOLES TO STRADDLE PRINCIPAL CENTERLINES OF TANK.
 5. TAG ALL PIECES WITH TANK NO. TK-4020.
 6. DRILL 6(1/4") TAILTAL HOLE IN SHELL REINFORCING PADS & WELD ON HALF COUPLING (MK#42) & INSTALL NIPPLE (MK#43) TO EXTEND BEYOND INSULATION.
 7. ROLL REPADS TO 2330(7'-7 3/4") I.R.

MATERIAL LIST				
MK	QTY	DESCRIPTION	MATERIAL	WT
1	3	FLANGE 2" CLASS 150 RFWN x SCH STD BORE	SA-105	18
2	8	FLANGE 4" CLASS 150 RFWN x SCH STD BORE	SA-105	120
3	1	FLANGE 6" CLASS 150 RFWN x SCH STD BORE	SA-105	24
4	1	FLANGE 8" CLASS 150 RFWN x SCH STD BORE	SA-105	39
5	1	FLANGE 4" CLASS 150 RFSO	SA-105	12
6	2	BLIND FLANGE 2" CLASS 150 RF	SA-105	5
7	2	BLIND FLANGE 4" CLASS 150 RF	SA-105	34
8				
9				
10	3	PIPE 2" SCH STD x 6 3/4" LG. SMLS BOE x POE	SA-106-B	6
11	5	PIPE 4" SCH STD x 6 5/16" LG. SMLS BOE x POE	SA-106-B	28
12	1	PIPE 4" SCH STD x 6 3/4" LG. SMLS BOE x POE	SA-106-B	6
13	1	PIPE 4" SCH STD x 6 7/8" LG. SMLS BOE x POE	SA-106-B	6
14	1	PIPE 4" SCH STD x 1'-9" LG. SMLS BOE x POE	SA-106-B	19
15	1	PIPE 8" SCH STD x 5 13/16" LG. SMLS BOE x POE	SA-106-B	9
16	1	PIPE 8" SCH STD x 5 3/16" LG. SMLS BOE x POE	SA-106-B	12
17				
18	1	ELBOW 4" SCH STD x 90° L.R.	SA-234-WPB	9
19	1	THIEF HATCH 8" ENARDO 330	-	25
20	1	THIEF HATCH NOZZLE 8"	PRT-2769	10
21	1	HALF CPLG 2" 3000# F.S. SCR'D	SA-105	2
22	2	FULL CPLG 2" 3000# F.S. SCR'D	SA-105	8
23	2	FULL CPLG 1 1/4" 3000# F.S. SCR'D	SA-105	3
24	1	BUSHING 2" x 1 1/2" 150#	M.L.	1
25	1	HEX PLUG 2" 3000# F.S.	SA-105	0.5
26	5	REPAD PLATE 3/16" THK. - 4" NOZZLE	PRT-4266	25
27	1	REPAD PLATE 3/16" THK. - 8" NOZZLE	PRT-4267	8
28	1	ROOF REPAD 3/16" x 8 7/8" I.D. x 1'-6" O.D.	G40.21-36W	12
29				
30				
31	8	STUD 5/8" DIA. x 3 1/4" LG.	SA-193-B7M	2
32	24	STUD 5/8" DIA. x 1 1/2" LG.	SA-193-B7M	6
33				
34	64	HEX NUT 5/8" NOM.	SA-194-2HM	7
35				
36	2	GASKET 2" CLASS 150 x 1/8" THK	FLEXITALLIC 316 S.S.	2
37	3	GASKET 4" CLASS 150 x 1/8" THK	FLEXITALLIC 316 S.S.	3
38				
39	1	SHELL MANWAY 2' x 3' C/W 1/4" COVER PLATE	SEE GA.	-
40	1	MUSHROOM CAP DETAILS - 8" NOZZLE	REF DWG. T-023839-A110	29
41				
42	7	HALF CPLG 1/4" 3000# F.S. SCR'D	SA-105	4
43	6	NIPPLE 1/4" SCH XS x 3" LG. SMLS TBE	SA-106-B	1
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
			SUBTOTAL	495
			x 1.06	
			TOTAL (lbs.)	525

NO	DATE (d/m/y)	REVISIONS	BY	APPD
1	13/02/12	ADDED DISTANCE FROM CENTRE OF TANK TO THE FLANGE OF N2	RR	
2	26/01/12	ISSUED FOR CONSTRUCTION	RR	JK

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PEACELAND FABRICATING

CLIENT: MURPHY OIL COMPANY LTD.
 C/O VISTA PROJECTS LTD. (P.O.# 1780-003)
 CADOTTE PILOT CSS PROJECT
 P.O.# 54115097-202-1

DWG TITLE: POP TANK, TAG# TK-4020
 NOZZLE DETAILS

SCALE: 1:10 DWN BY: R. RANASINGHE DWG NO.: T-023839-D102 SHEET NO.: 1 OF 1

DATE (d/m/y): 12/01/12 CHKD: APPD: 12/01/12



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
JMOZ	TK-4020	D. Lemao	2012-02-10

PROJECT NAME: 1780 - Murphy oil Cadotte CSS

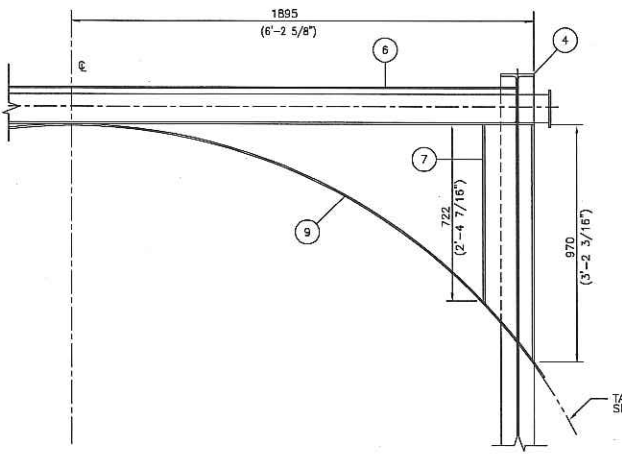
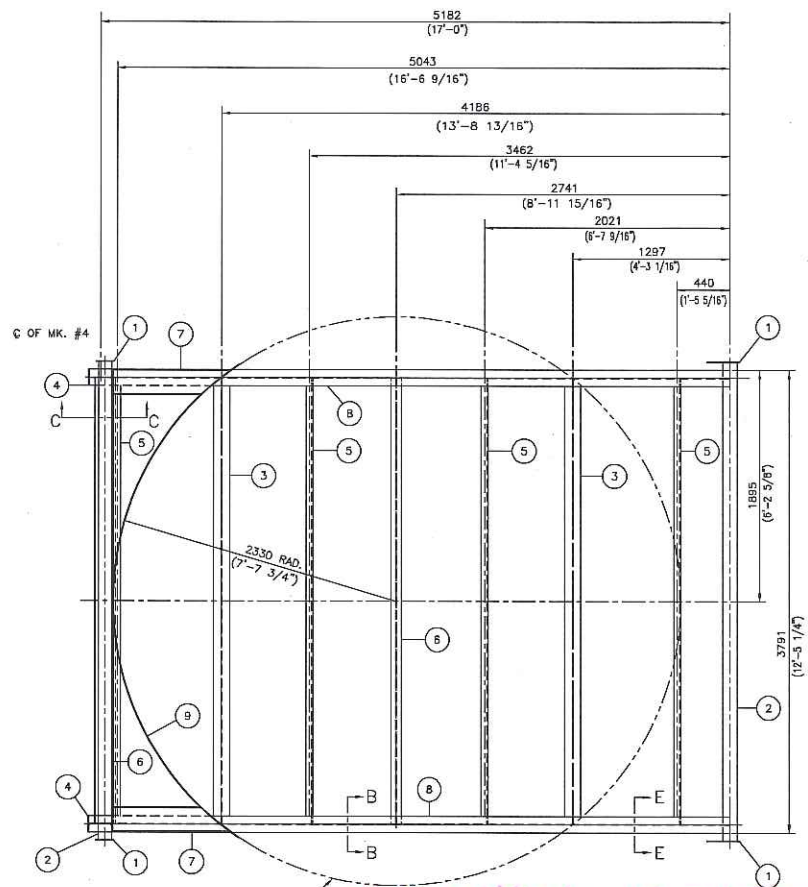
VENDOR NAME: Universal Ind.

DOCUMENT NUMBER: T-023839-0103

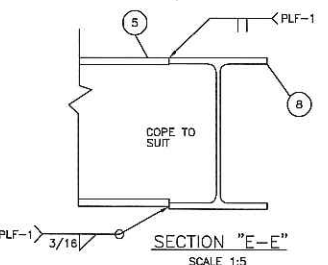
VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Pop Tank L-Skid Details

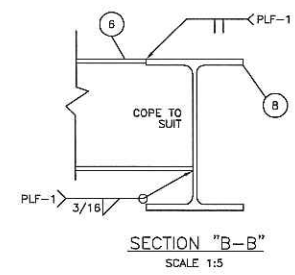
VENDOR TRANSMITTAL NUMBER: TR-003-023839



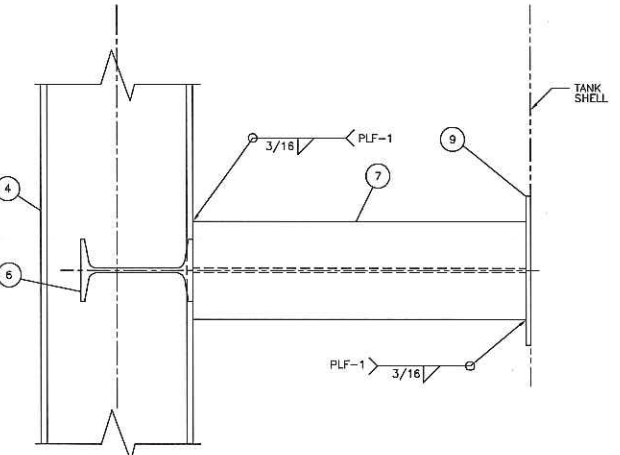
SECTION "A-A"
SCALE 1:15



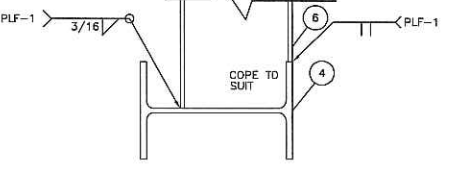
SECTION "E-E"
SCALE 1:5



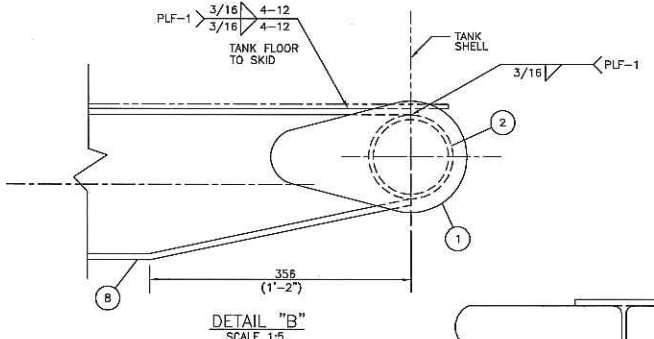
SECTION "B-B"
SCALE 1:5



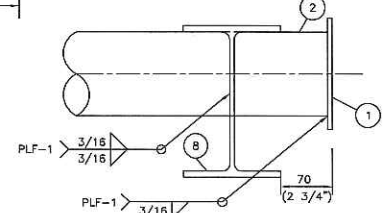
SECTION "C-C"
SCALE 1:5



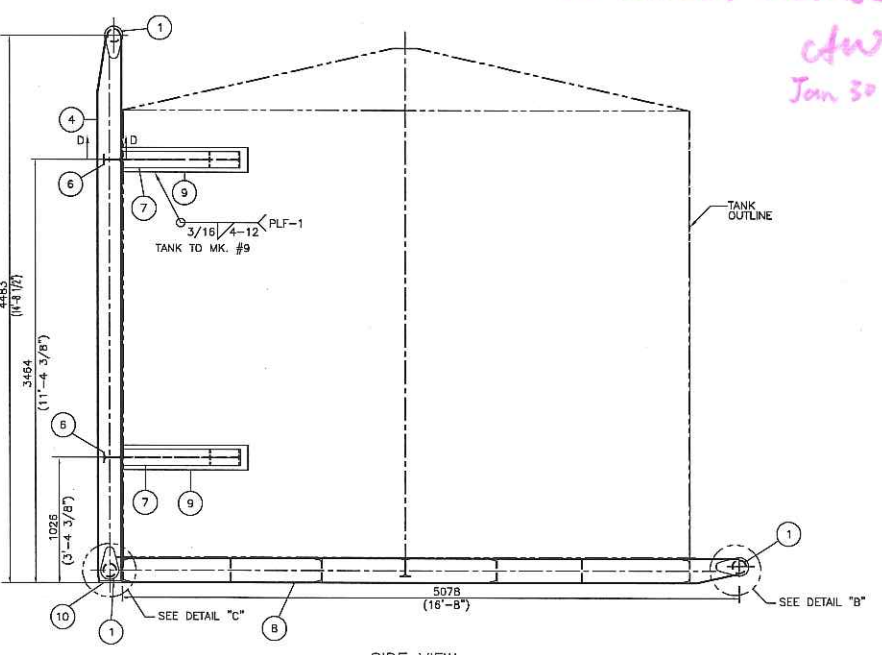
SECTION "D-D"
SCALE 1:5



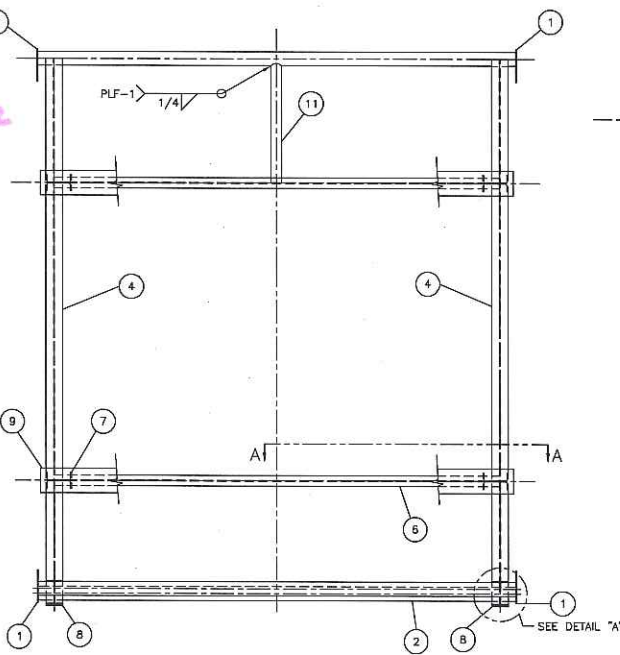
DETAIL "B"
SCALE 1:5



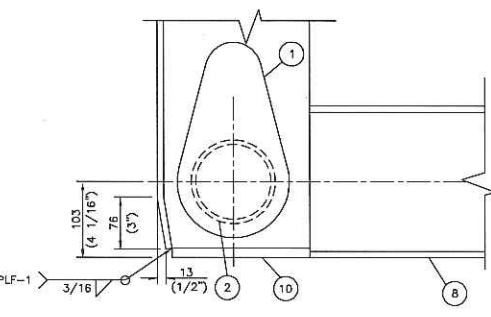
DETAIL "A"
SCALE 1:5



SIDE VIEW



FRONT VIEW



DETAIL "C"
SCALE 1:5

SKID LAYOUT IS DIFFERENT
WITH WHAT WE RECEIVED
BEFORE, PLEASE CONFIRM
THE PILE LAYOUT DETAIL

afw
Jan 30 2012

MATERIAL LIST

MK	QTY	DESCRIPTION	MATERIAL	WT
1	6	SKID EAR FOR 4" PIPE	PRT-5971	18
2	3	PIPE 4" SCH STD x 12'-10 1/4" LG. ERW PBE	SA-53-B	416
3	2	BEAM WB x 18# x 11'-11 3/4" LG.	G40.21-50W	431
4	2	BEAM WB x 18# x 14'-8" LG.	G40.21-50W	528
5	4	CHANNEL CB x 11.5# x 11'-11 3/4" LG.	G40.21-44W	551
6	3	BEAM S6 x 12.5# x 11'-11 3/4" LG.	G40.21-50W	449
7	4	BEAM WB x 18# x 3'-2 3/16" LG.	G40.21-50W	229
8	2	BEAM WB x 18# x 16'-8" LG.	G40.21-50W	600
9	2	FLATBAR 1/4" THK. x 8" x 15'-0" LG. ROLLED TO 7'-7 3/4" LG.	G40.21-44W	204
10	2	FLATBAR 1/2" x 5" x 7 3/8" LG.	G40.21-44W	10
11	1	PIPE 3" SCH STD x 3'-2 5/8" LG. ERW PBE	SA-53-B	24
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
			SUBTOTAL x 1.06	3460
			TOTAL	3668 lbs.

NOTE:
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS.
DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS
FOR SHOP REFERENCE ONLY.

NO	DATE (d/m/y)	REVISIONS	BY	APPD
1	26/01/12	ISSUED FOR CONSTRUCTION	RR	
REVISIONS				

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PEACELAND FABRICATING

CLIENT
MURPHY OIL COMPANY LTD.

DWG TITLE
POP TANK, TAG# TK-4020
L-SKID DETAILS

SCALE	DWN BY	R. RANASINGHE	DWG NO.	SHEET NO.	REV. NO.
1:30	CHKD	APPD	T-023839-D103	1 of 1	0



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-6270	D. Lemon	2012-02-10

PROJECT NAME: 1780-Murphy Oil Cadotte_____

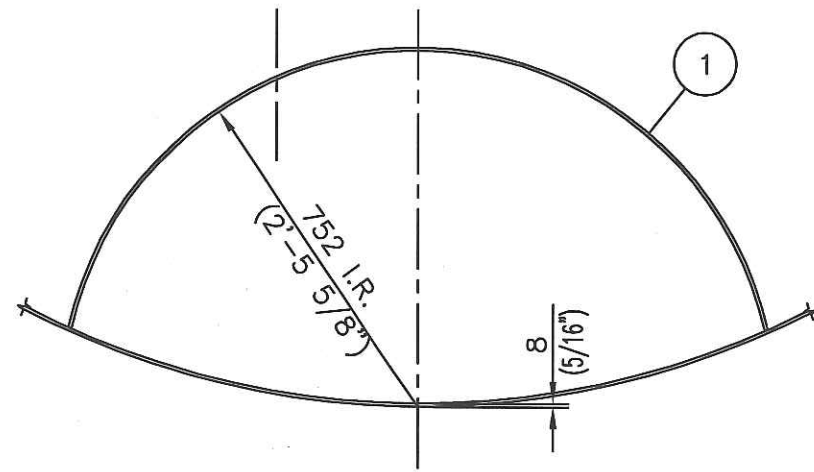
VENDOR NAME: _____ UNIVERSAL INDUSTRIES _____

DOCUMENT NUMBER: _____ T-023840-A105 _____

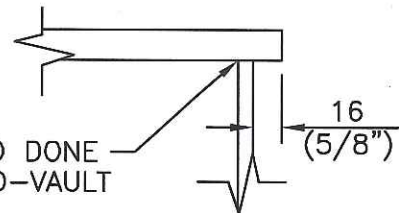
VENDOR REVISION: _____ 0 _____

DOCUMENT DESCRIPTION: Softener Waste Tank Enviro-Vault Wall/Roof

VENDOR TRANSMITTAL NUMBER: _____ TR004-023840 _____

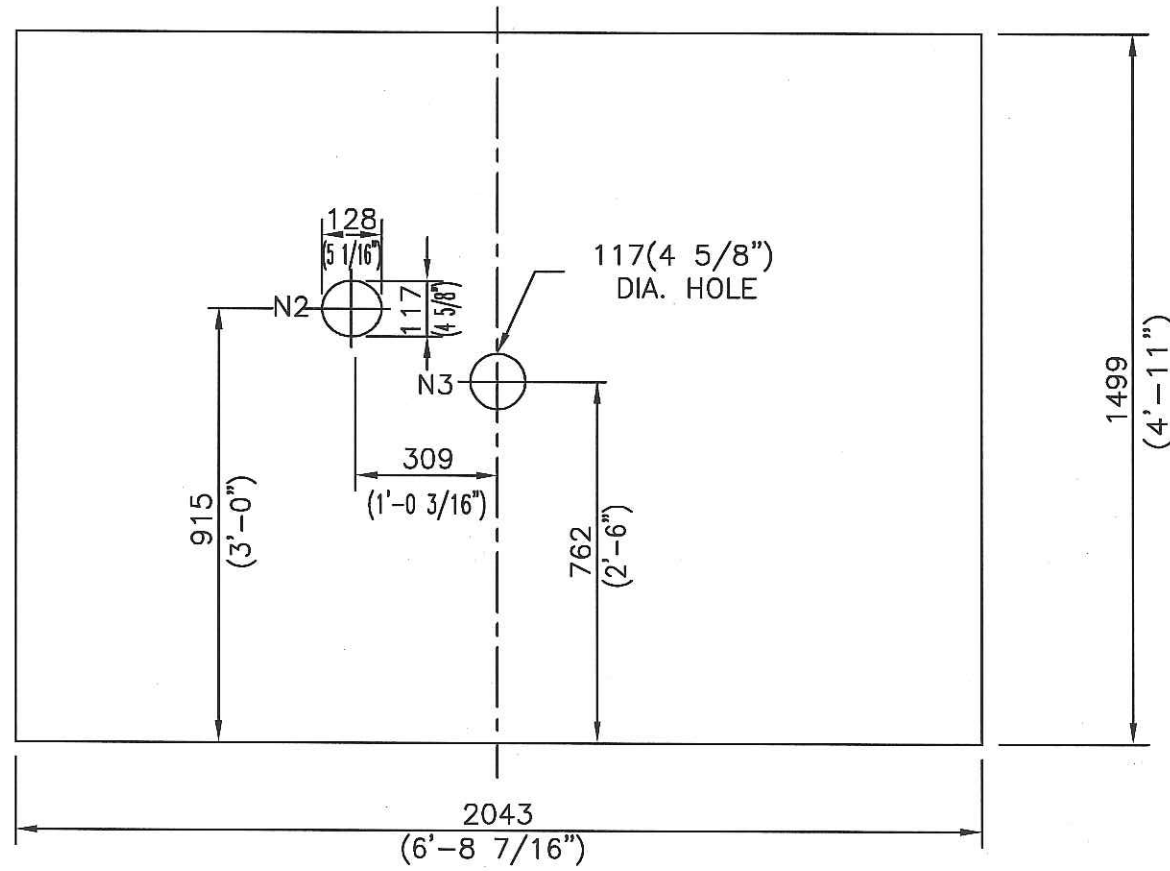


TOP VIEW



THIS WELD DONE BY ENVIRO-VAULT

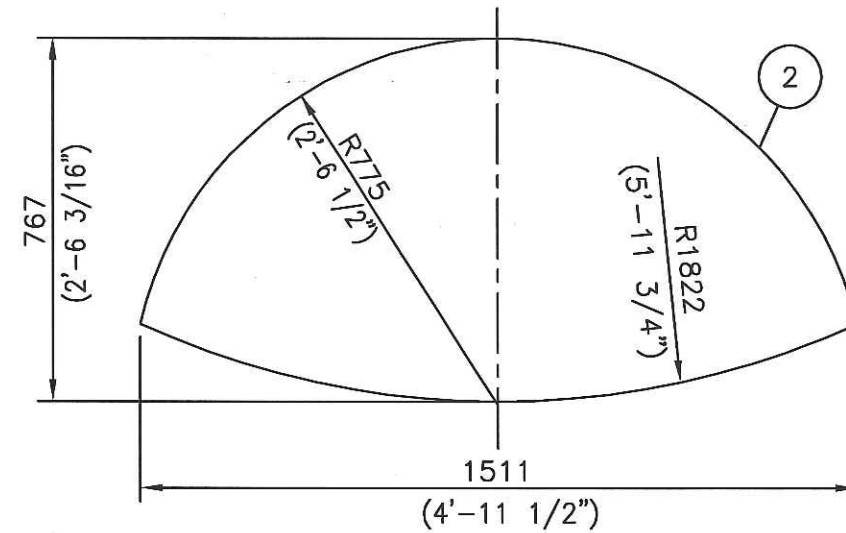
DETAIL "A"
SCALE N.T.S.



FRONT VIEW - FLAT LAYOUT

MK	QTY	DESCRIPTION	MAT'L	WT
1	1	PLATE 1/4" THK. x 4'-11" x 6'-8 7/16" LG.	G40.21-38W/44W	336
2	1	PLATE 1/2" THK. x 2'-6 3/16" x 4'-11 1/2" LG.	G40.21-44W	255

NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY. NO. REQ'D:1
 2. ROLL MK# 1 TO 752(2'-5 5/8") I.R. WEIGHT: 626 lbs.



ROOF DETAIL

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△				
△				
△	26/01/12	ISSUED FOR CONSTRUCTION	RR	

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CLIENT: MURPHY OIL COMPANY LTD.

DWG TITLE: SOFTENER WASTE TANK, TAG# TK-6270
 5'x5' ENVIRO-VAULT WALL/ROOF DETAILS

SCALE: 1:20	DWN BY: R. RANASINGHE	DWG NO.: T-023840-A105	SHT NO.: 1 OF 1	REV: 0
DATE (d/m/y): 10/01/12	CHKD: APPD:			



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM-02	TK-6270	D. Lenson	2012-02-10

PROJECT NAME: 1780-Murphy Oil Cadotte_____

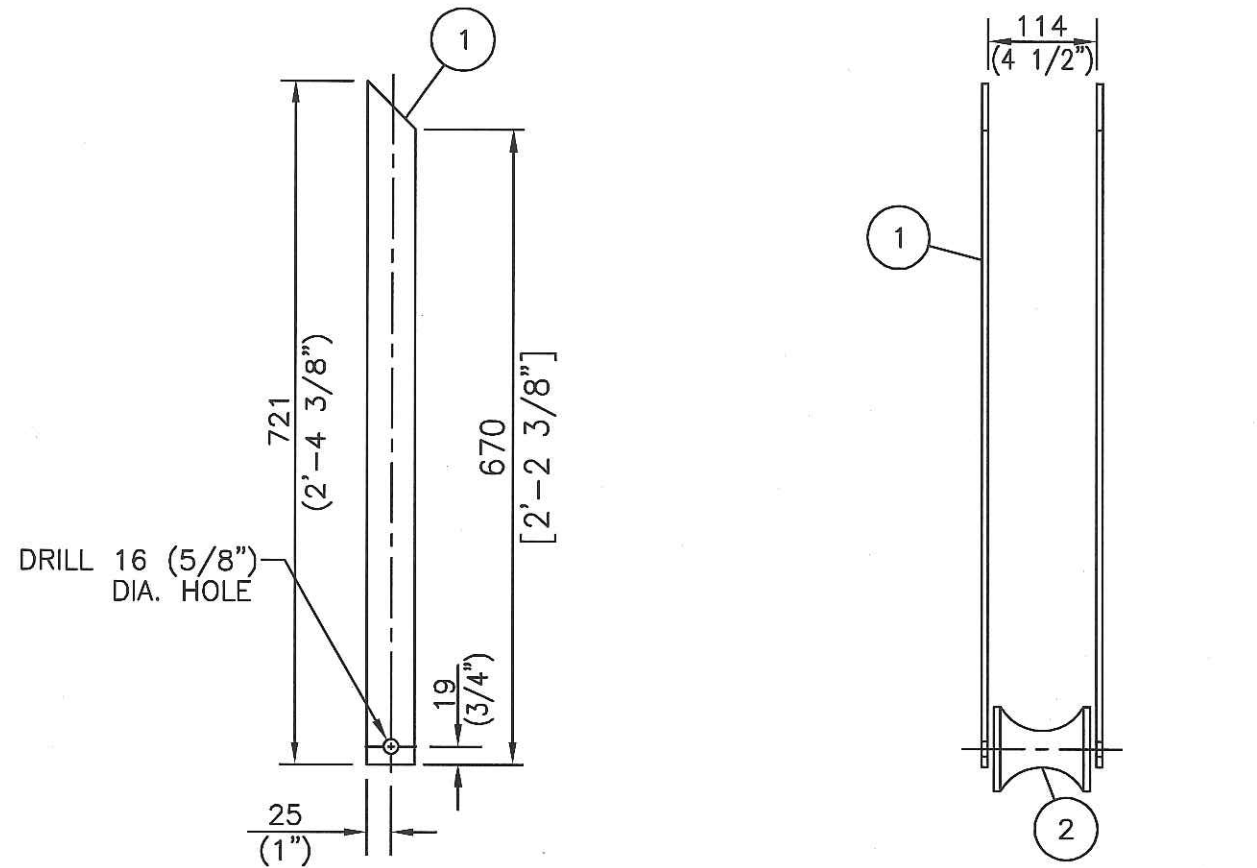
VENDOR NAME: _____ UNIVERSAL INDUSTRIES _____

DOCUMENT NUMBER: _____ T-023840-A109 _____

VENDOR REVISION: _____ 0 _____

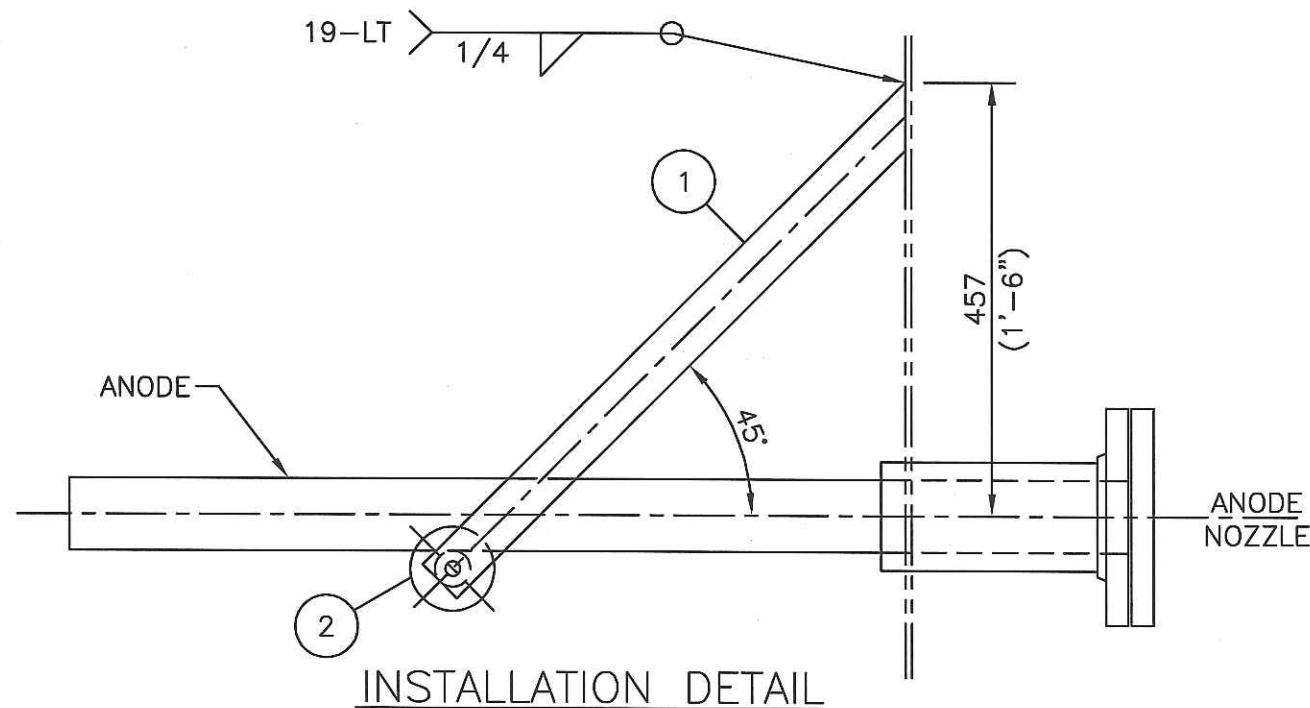
DOCUMENT DESCRIPTION: Softener Waste Tank Anode Roller Support

VENDOR TRANSMITTAL NUMBER: _____ TR004-023840 _____



MK.#1 DETAIL

ROLLER ASSEMBLY



INSTALLATION DETAIL

MK	QTY	DESCRIPTION	MAT'L	WT
1	2	FLATBAR 1/4" x 2" x 2'-4 3/8" LG.	SA479-316L S.S.	8
2	1	WOOD ROLLER ASS'Y	PRT-4190	2
3				
4				
5				

NOTES:
 1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.

NO. REQ'D: 4 TOTAL FOR JOB
 WEIGHT: 10 lbs. EACH

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△				
△				
△	26/01/12	ISSUED FOR CONSTRUCTION	RR	
REVISIONS				

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CLIENT: MURPHY OIL COMPANY LTD.

DWG TITLE: SOFTENER WASTE TANK, TAG# TK-6270
 ANODE ROLLER SUPPORT

SCALE: 1:10	DWN BY: R. RANASINGHE	DWG NO.: T-023840-A109	SHT NO.: 1 OF 1	REV: △ 0
DATE (d/m/y): 26/01/12	CHKD:	APPD:		



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-6276	D. Leman	2012-02-10

PROJECT NAME: 1780-Murphy Oil Cadotte_____

VENDOR NAME: _____ UNIVERSAL INDUSTRIES _____

DOCUMENT NUMBER: _____ T-023840-B107 _____

VENDOR REVISION: _____ 0 _____

DOCUMENT DESCRIPTION: Softener Waste Tank Roof Platform DT

VENDOR TRANSMITTAL NUMBER: _____ TR004-023840 _____



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM 02	TK-6270	D. Lemow	2012-02-10

PROJECT NAME: 1780-Murphy Oil Cadotte_____

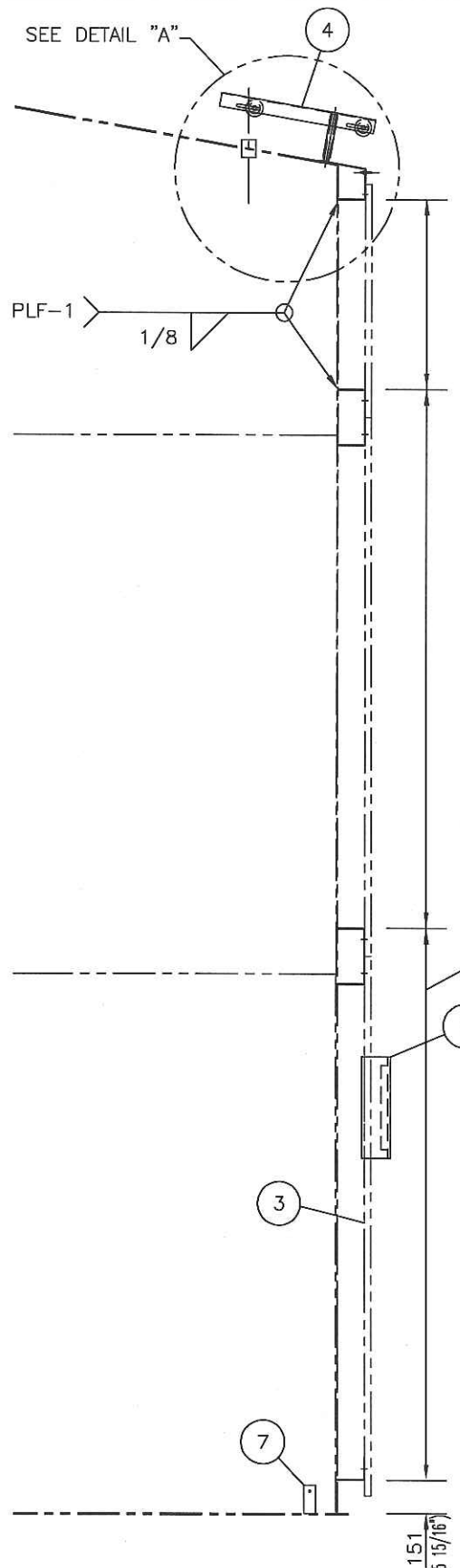
VENDOR NAME: _____ UNIVERSAL INDUSTRIES _____

DOCUMENT NUMBER: _____ T-023840-B108 _____

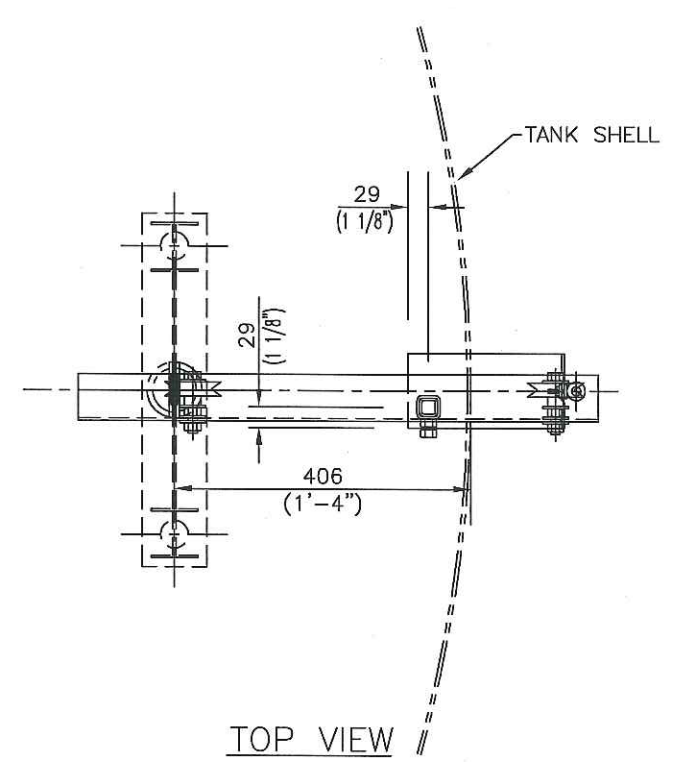
VENDOR REVISION: _____ 0 _____

DOCUMENT DESCRIPTION: Softener Waste Tank Level Indicator System

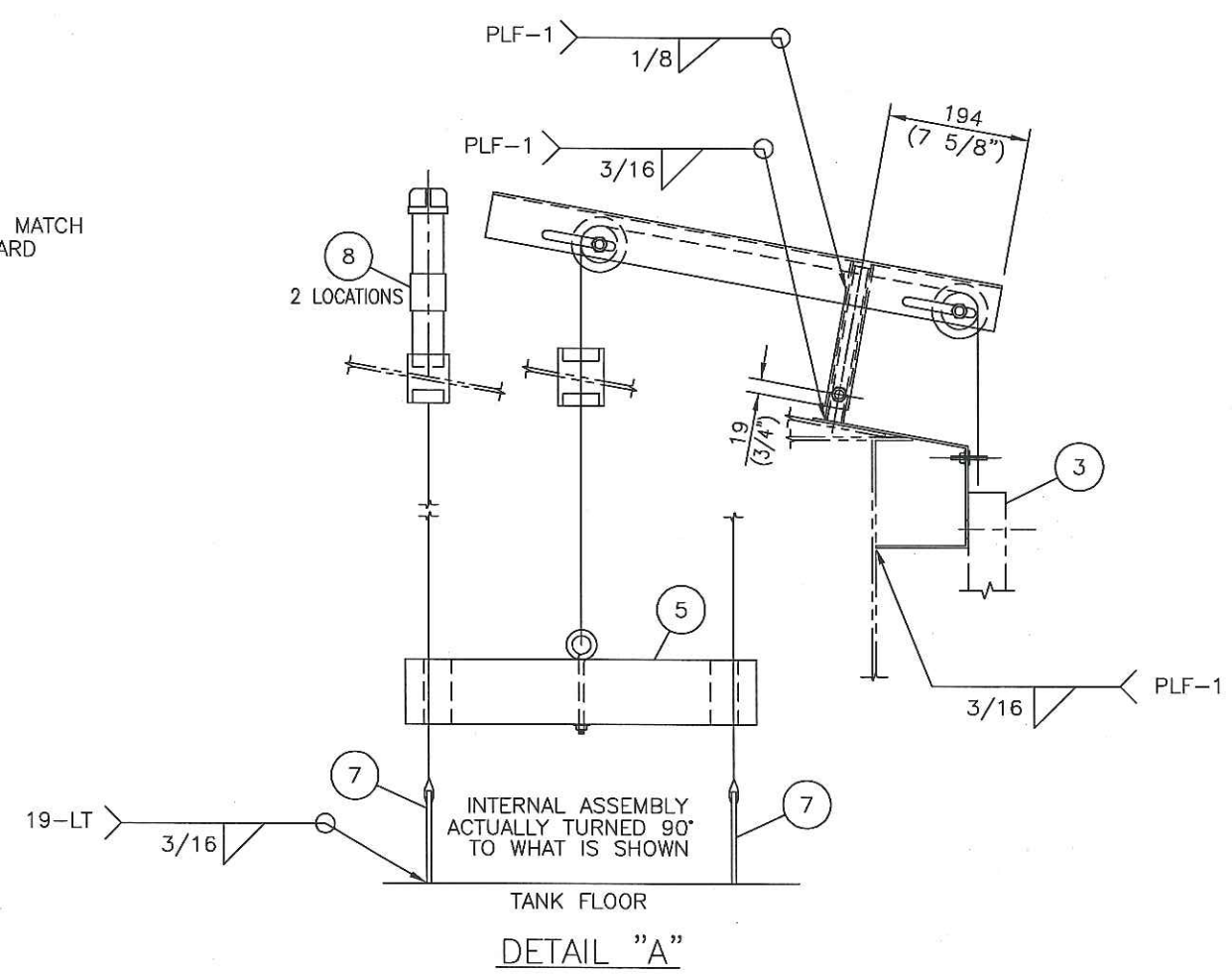
VENDOR TRANSMITTAL NUMBER: _____ TR004-023840 _____



ELEVATION VIEW
SCALE 1:30



TOP VIEW



DETAIL "A"

MK	QTY	DESCRIPTION	MAT'L	WT
1	1	GAUGEBOARD BOX ASSEMBLY	PRT-1365	25
2		C/W INDICATOR, BOLTING, CABLES, CABLE CLAMPS, PULLEY ASS'Y & CLIPS		
3	1	GAUGE BOARD (20'-0" LONG)	PRT-1501	36
4	1	PULLEY ARM ASSEMBLY	PRT-2613	20
5	1	PLASTIC FLOAT	PRT-1622	2
6				
7	2	FLOOR CLIPS 1/4" x 2" x 5" LG.	304 S.S.	1
8	2	CABLE TIGHTENER ASSEMBLY	PRT-4166	26
9				
10				

NOTES:
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.

NO. REQ'D: 1
WEIGHT: 117 lbs.

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△				
△				
△	26/01/12	ISSUED FOR CONSTRUCTION	RR	
REVISIONS				

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CLIENT MURPHY OIL COMPANY LTD.				
DWG TITLE SOFTENER WASTE TANK, TAG# TK-6270 LEVEL INDICATOR SYSTEM FOR 20'-0" HIGH TANK				
SCALE 1:10	DWN BY R. RANASINGHE	DWG NO. T-023840-B108	SHT NO. 1 of 1	REV △
DATE (d/m/y) 26/01/12	CHKD APPD			



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-6270	D. Lennon	2012-02-10

PROJECT NAME: 1780-Murphy Oil Cadotte_____

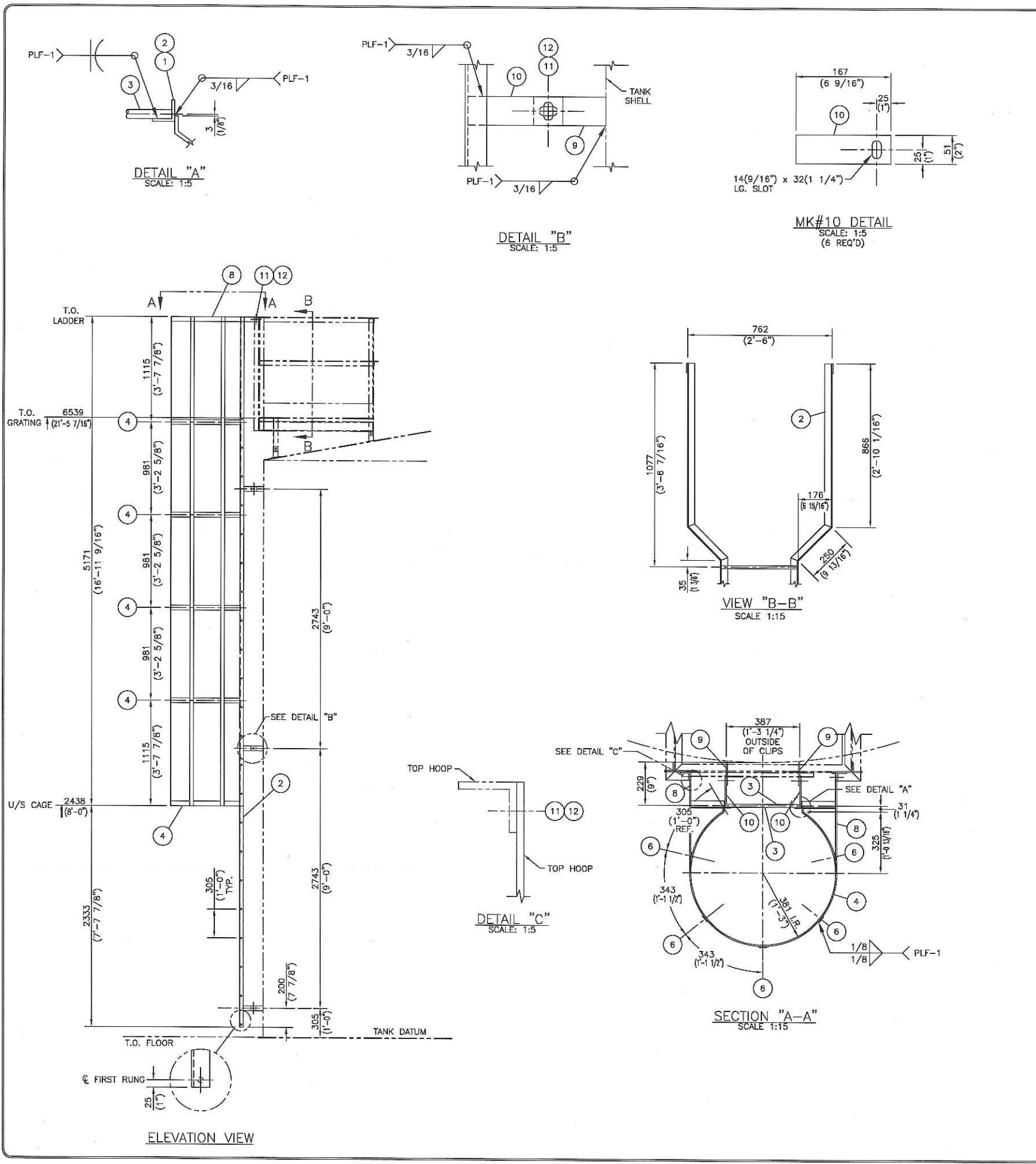
VENDOR NAME: _____ UNIVERSAL INDUSTRIES _____

DOCUMENT NUMBER: _____ T-023840-C104 _____

VENDOR REVISION: _____ 0 _____

DOCUMENT DESCRIPTION: Softener Waste Tank Ladder Details

VENDOR TRANSMITTAL NUMBER: _____ TR004-023840 _____



MATERIAL LIST					
MK	QTY	DESCRIPTION	MATERIAL	WT	
1					
2	2	ANGLE 1 1/2" x 1 1/2" x 3/16" x 24'-10 3/8" LG.	G40.21-44W	90	
3	22	ROD 5/8" DIA. x 1'-3 3/4" LG.	G40.21-44W	120	
4	5	LADDER HOOP	PRT-4284	55	
5					
6	5	FLATBAR 3/16" THK. x 1 1/2" x 16'-11 9/16" LG.	G40.21-44W	81	
7					
8	1	FLATBAR 1/4" THK. x 2" x 7'-9 3/8" LG.	G40.21-44W	13	
9	6	FLATBAR 1/4" THK. x 2" x 5" LG.	PRT-4283	4.5	
10	6	FLATBAR 1/4" THK. x 2" x 6 9/16" LG.	G40.21-44W	6	
11	8	BOLT 1/2" DIA. x 1 1/2" LG.	GR.5	1	
12	8	HEX NUT 1/2" NOM.	GR.5	1	
13					
14					
15					
				SUBTOTAL	371
				x 1.06	
				TOTAL	393 lbs

NOTES:
 1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
 2. GRIND ALL SHARP EDGES SMOOTH.
 3. SEE G.A. SHT2 FOR FINISHING NOTES.

NO	DATE (d/m/y)	ISSUED FOR CONSTRUCTION	RR
REVISIONS			
			APPD

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CLIENT
 MURPHY OIL COMPANY LTD.

DWG TITLE
 SOFTENER WASTE TANK, TAG# TK-6270
 LADDER DETAILS

SCALE 1:30	DWN BY R. RANASINGHE	DWG NO. T-023840-C104	SHEET NO. 1 OF 1	REV. NO. 0
DATE (d/m/y) 25/01/12	CHKD APPD			



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-6270	D. Lemov	2012-02-10

PROJECT NAME: 1780-Murphy Oil Cadotte_____

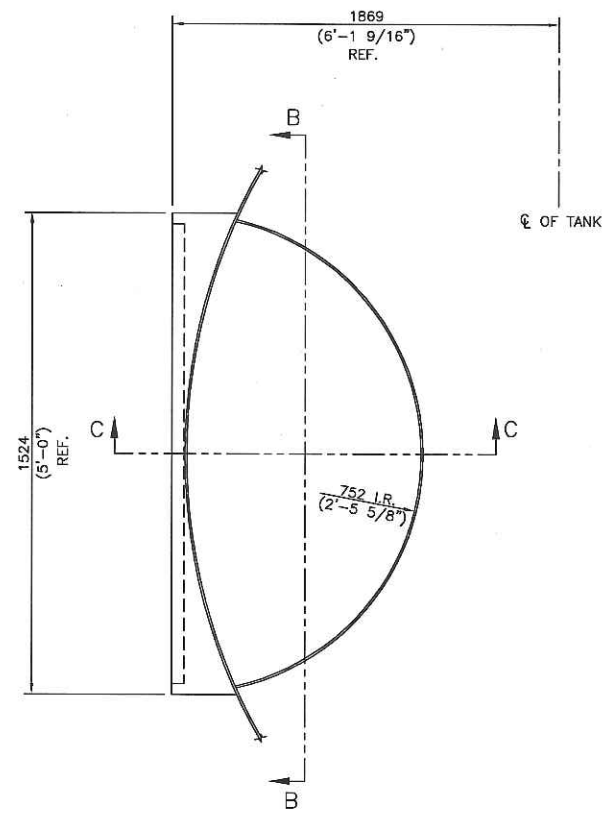
VENDOR NAME: _____ UNIVERSAL INDUSTRIES _____

DOCUMENT NUMBER: _____ T-023840-C106 _____

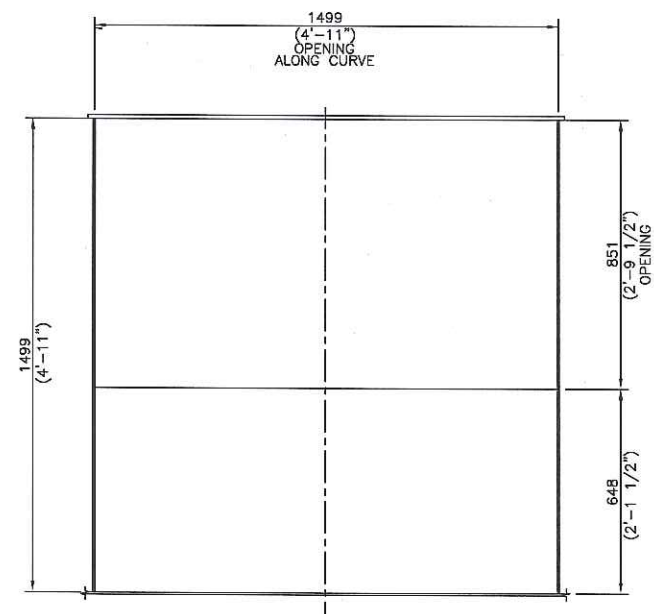
VENDOR REVISION: _____ 0 _____

DOCUMENT DESCRIPTION: Softener Waste Tank Enviro-Vault Door DT

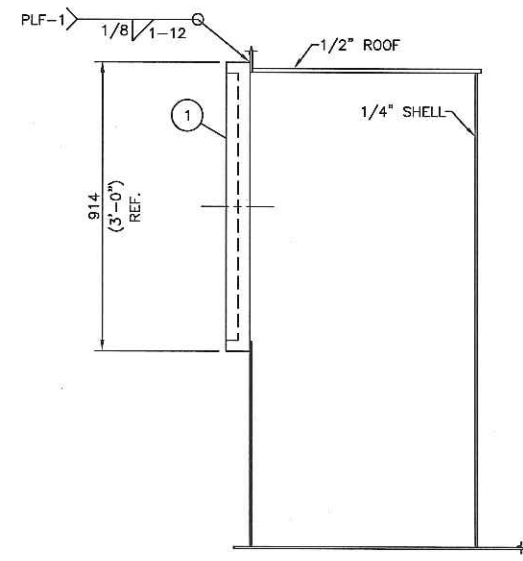
VENDOR TRANSMITTAL NUMBER: _____ TR004-023840 _____



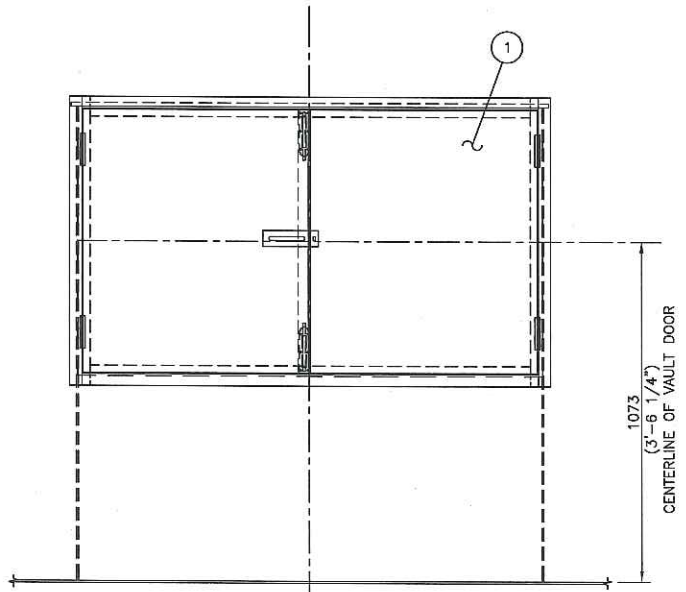
ENVIRO-VAULT PLAN VIEW



VIEW "B-B"



SECTION "C-C"



VIEW "A-A"

MATERIAL LIST

MK	QTY	DESCRIPTION	MATERIAL	WT
1	1	ENVIRO-VAULT DOOR FRAME	PRT-3019	73
2				
3				
4				
5				
6				
7				
8				
9				
10				

NOTES:
 1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.

SUBTOTAL 73
 x 1.06
 TOTAL 77 lbs.

NO	DATE (d/m/y)	REVISIONS	RR	APPD
26/01/12		ISSUED FOR CONSTRUCTION		

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CLIENT
 MURPHY OIL COMPANY LTD.

DWG TITLE
 SOFTENER WASTE TANK, TAG# TK-6270
 5' ENVIRO-VAULT DOOR DETAILS (C/W NECK)

SCALE 1:15	DWN BY R. RANASINGHE	DWG NO. T-023840-C106	SHEET NO. 1 of 1	REV. NO. 0
DATE (d/m/y) 25/01/12	CHKD APPD			



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DG 02/03 DM 01	TK-6270	D. Lemon	2012-02-15

PROJECT NAME: Murphy Oil Cadotte -1780

VENDOR NAME: Universal Industries

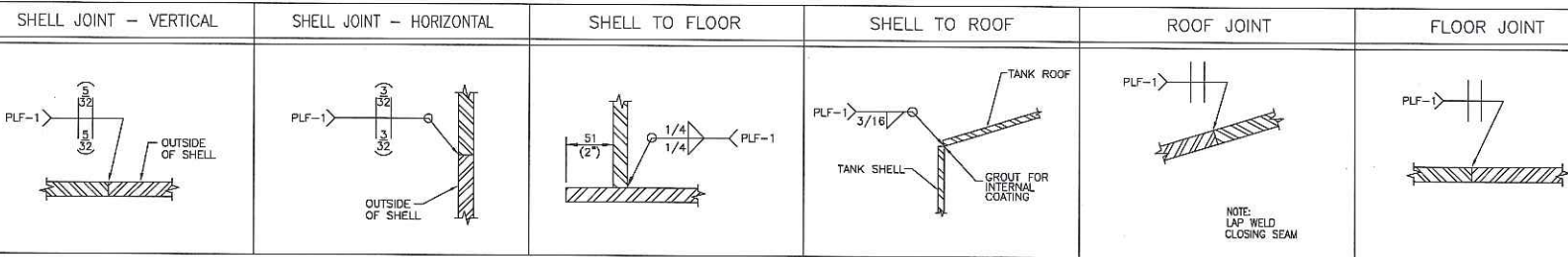
DOCUMENT NUMBER: T-023840-D101-1

VENDOR REVISION: 2

DOCUMENT DESCRIPTION: Softener Water Tank General Arrangement

VENDOR TRANSMITTAL NUMBER: 005-023840

STANDARD WELD DETAILS (N.T.S.)

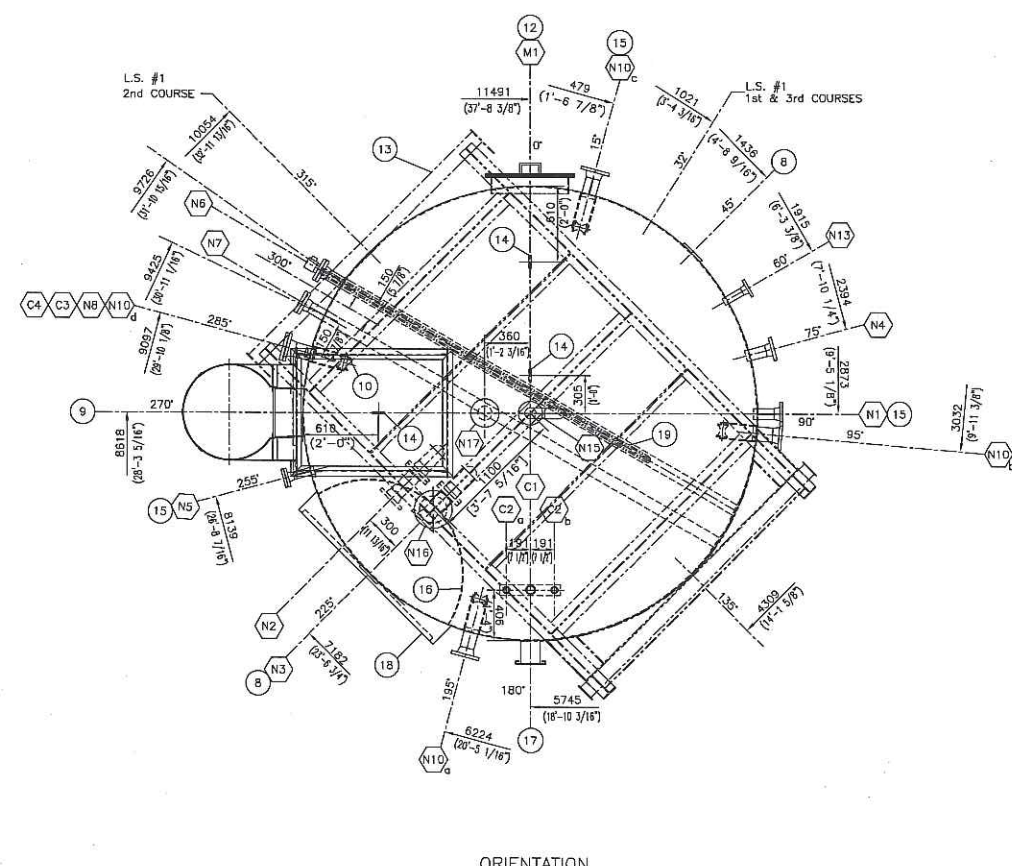
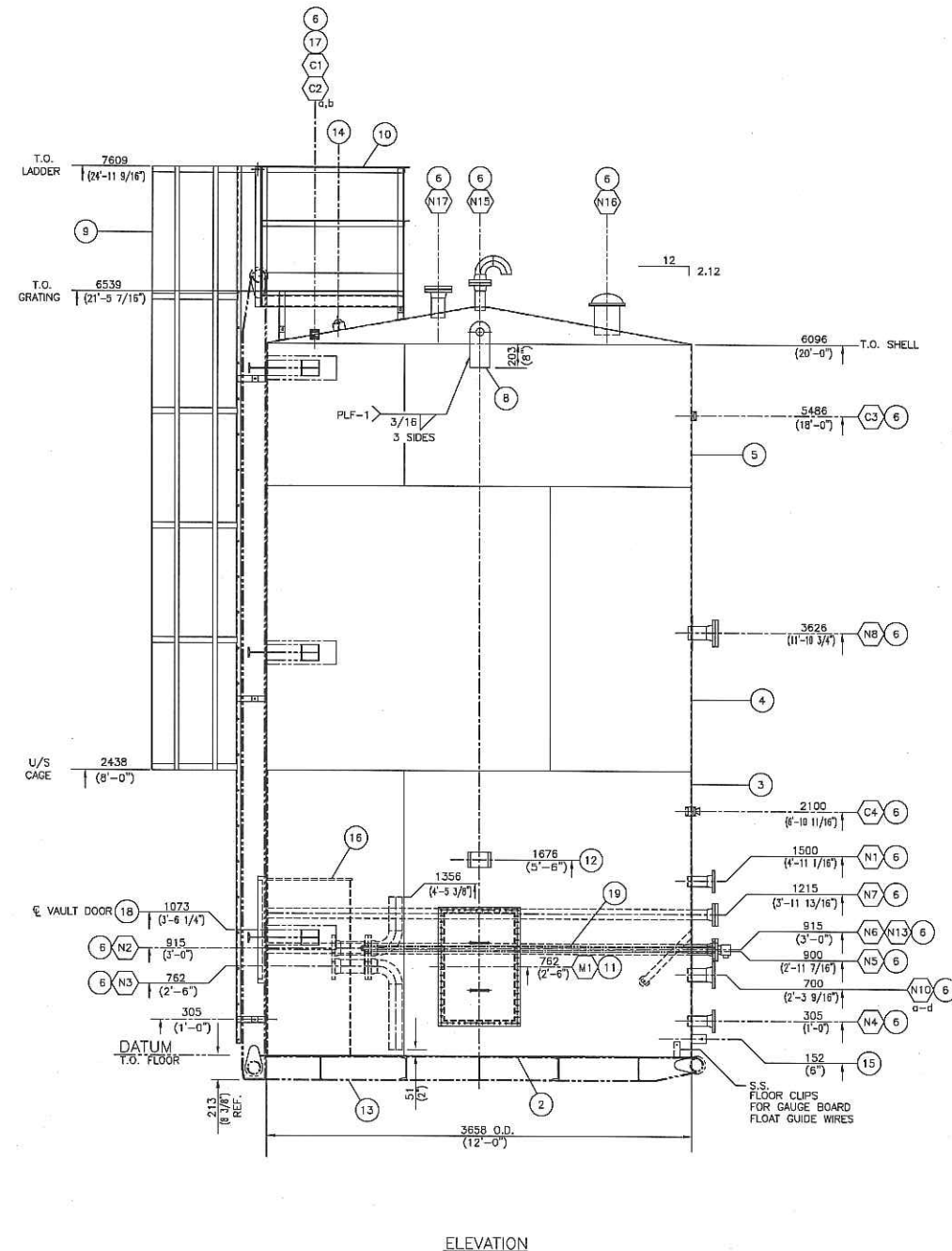


NOZZLE SCHEDULE

MK	NO	SIZE	SCH	RATE	TYPE	PROJECTION		REPAD		DESCRIPTION		
						INT.	EXT.	YES	NO			
N1	1	88	3"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	INLET
N2	1	114	4"	STD	CLASS 150	RFWN	152	6"	152	6"	✓	OUTLET C/W INTERNAL FLANGE & RISER (IN VAULT)
N3	1	114	4"	STD	CLASS 150	RFWN	152	6"	152	6"	✓	TO VAC TRUCK C/W DOWNCOMER (IN VAULT)
N4	1	88	3"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	LIT - 6270
N5	1	60	2"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	SPARE C/W BLIND
N6	1	88	3"	STD	CLASS 150	RFWN	AS SHOWN	203	8"	✓	HEATER	
N7	1	88	3"	STD	CLASS 150	RFWN	AS SHOWN	203	8"	✓	HEATER (SPARE) C/W BLIND	
N8	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	SPARE C/W BLIND
N10a	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	ANODE
N10b	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	ANODE
N10c	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	ANODE
N10d	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	ANODE
N13	1	60	2"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	TG - 6270
N15	1	88	3"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	VENT C/W GOOSENECK & BIRDSCREEN
N16	1	219	8"	STD	FAB'D	25	1"	203	8"	✓	THIEF HATCH C/W ENARDO 330	
N17	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	SPARE C/W BLIND
C1	1	51	2"	-	3000#	S.S. FULL CPLG	HALF	HALF	✓	LG FLOAT - 6270		
C2	2	32	1 1/4"	-	3000#	S.S. FULL CPLG	HALF	HALF	✓	LG FLOAT GUIDE WIRES		
C3	1	51	2"	-	3000#	S.S. FULL CPLG	FULL	✓	LSH-H - 6270			
C4	1	51	2"	-	3000#	S.S. FULL CPLG	HALF	HALF	✓	SPARE C/W PLUG		
M1	1	610 x 914	24 x 1 3/8"	-	FAB'D	25	1"	102	4"	✓	MANWAY	

MATERIAL LIST

MK	QTY.	DESCRIPTION	MATERIAL	WT
1	1	ROOF PLATE 3/16" THK. x 12'-1 7/8" FLAT DIA.	G40.21-44W	1205
2	1	FLOOR PLATE 1/4" THK. x 12'-4" DIA.	G40.21-44W	1218
3	1	SHELL PLATE 1/4" THK. x 8'-0" x 37'-7 5/8" LG.	G40.21-44W	3074
4	1	SHELL PLATE 3/16" THK. x 8'-0" x 37'-7 3/4" LG.	G40.21-44W	2306
5	1	SHELL PLATE 3/16" THK. x 4'-0" x 37'-7 3/4" LG.	G40.21-44W	1153
6	-	NOZZLE DETAILS	REF. DWG. T-023840-D102	817
7	-	-	-	-
8	2	LIFTING LUG	PRT-4273	60
9	1	LADDER DETAILS	REF. DWG. T-023840-C104	393
10	1	ROOF PLATFORM (3'-0" x 4'-0") C/W SAFETY GATE	REF. DWG. T-023840-B107	421
11	1	SHELL MANWAY 2'-0" x 3'-0" C/W 1/4" COVER	PRT-3250 PRT-3254	160
12	1	NAMEPLATE BRACKET C/W NAMEPLATE	PRT-1473 PRT-2898	5
13	1	SKID DETAILS (L-SKID)	REF. DWG. T-023840-D103	2956
14	3	TANK ROOF SAFETY HARNESS LUG	PRT-2533	6
15	3	GROUNDING LUG	PRT-4272	3
16	1	ENVIRO-VAULT 5'-0" x 5'-0" HIGH	REF. DWG. T-023840-A105	626
17	1	UIC LEVEL INDICATOR ASSEMBLY C/W METRIC BOARD, PVC FLOAT, FLOAT WIRE, FLOOR CLIPS & MISC. HARDWARE	REF. DWG. T-023840-B108	117
18	1	ENVIRO-VAULT DOOR DETAILS	REF. DWG. T-023840-C106	77
19	1	IMMERSION HEATER MODEL # MWL30P3 500W 3/4 5/73KW C/W XWL0483 REMOTE MOUNT THERMOSTAT, 3 INCOULY ELEMENTS, IMMERSED LENGTH 128 1/2"	REF. DWG. T-023840-A109	81
20	4	ANODE SUPPORT BRACKETS	REF. DWG. T-023840-A109	40
21	-	-	-	-
22	-	-	-	-
23	-	-	-	-
24	-	-	-	-
25	-	-	-	-
26	-	-	-	-
27	-	-	-	-
28	-	-	-	-
29	-	-	-	-
30	-	-	-	-
31	-	-	-	-
32	-	-	-	-
33	-	-	-	-
34	-	-	-	-
35	-	-	-	-
		INSULATION		500
		SUBTOTAL		15219
		TOTAL		16132 lbs.



NOTES:
1. SEE DWG. T-023840-D101 SH1 2

NO	DATE (d/m/y)	REVISIONS	BY	APPD
14/02/12		FIXED UNITS IN TOTAL AND ADDED DETAILS TO COUPLING C1	RR	RR
26/01/12		RELOCATED N1, N5, N8 AND CHANGED RISER(N2), DOWNCOMER(N3)	RR	JK
06/01/12		ISSUED FOR CONSTRUCTION	RR	JK
07/12/11		ISSUED FOR CUSTOMER APPROVAL	RR	JK

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CLIENT: MURPHY OIL COMPANY LTD.
C/O VISTA PROJECTS LTD. (P.O.# 1780-003)
CADOTTE PILOT CSS PROJECT
P.O.# 54115097-202-1

DWG TITLE: SOFTENER WASTE TANK, TAG# TK-6270
GENERAL ARRANGEMENT

SIZE: 3658mm O.D. x 6096mm HIGH (12'-0" O.D. x 20'-0" HIGH)	VOLUME: TANK 64 CUBIC METERS (400 Bbl)
SCALE: 1:30	DWN BY: R. RANASINGHE
DATE (d/m/y): 08/01/12	APPD: [Signature]
DWG NO.: T-023840-D101	SHEET NO.: 1 OF 2



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
JM02	TK-6270	D. Lemon	2012-02-10

PROJECT NAME: 1780-Murphy Oil Cadotte_____

VENDOR NAME: _____ UNIVERSAL INDUSTRIES _____

DOCUMENT NUMBER: _____ T-023840-D101-2 _____

VENDOR REVISION: _____ 1 _____

DOCUMENT DESCRIPTION: Softener Waste Tank Design Data

VENDOR TRANSMITTAL NUMBER: _____ TR004-023840 _____

SURFACE PREPARATION & PAINTING REQUIREMENTS					
ITEM	BLAST	PRIMER	D.F.T.	FINISH	D.F.T.
INSULATED TANK EXTERIOR	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1
UNINSULATED TANK EXTERIOR	N/A	N/A	N/A	N/A	N/A
TANK INTERIOR	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2
APPURTENANCES	N/A	N/A	N/A	N/A	N/A
PROTRUSIONS	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1
INTERNAL FLANGES	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2
INTERNAL PIPING	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2
EXTERNAL LADDER	NOTE 4	NOTE 4	NOTE 4	NOTE 4	NOTE 4
PLATFORMS	NOTE 4	NOTE 4	NOTE 4	NOTE 4	NOTE 4

NOTES

- SANDBLAST TANK EXTERIOR TO SSPC-SP6 UTILIZING SIL 7. APPLY TWO COATS OF RUSTOLEUM 4285 HEAT-RESISTANT TO COMPLETE (GREY).
- SANDBLAST COMPLETE FLOOR, SHELL AND ROOF TO SSPC-SP5 AND APPLY 12-14 MILS DFT DEVOE 253 UTILIZING A THREE PART SYSTEM. NOZZLES THROUGH THE SHELL & ROOF, INTERNAL & EXTERNAL FLANGE FACES WILL BE COATED AS PER STANDARD PRACTICE. FLANGE FACES ONLY 1 COAT OF PRODUCT.
- DELETED
- LADDERS & PLATFORMS TO BE BLASTED TO SSPC-SP6 & APPLY TWO COAT OF RUSTOLEUM 4285.

DESCRIPTIONS: SSPC-SP5 - WHITE METAL BLAST
SSPC-SP6 - COMMERCIAL BLAST

INSULATION REQUIREMENTS				
ITEM	INSULATION TYPE	THK.	FINISH	THK.
SHELL	FIBERGLASS 32 Kg/m ³	50mm (2")	CORRUGATED ALUMINUM CLADDING	0.020"
ROOF	FIBERGLASS 32 Kg/m ³	50mm (2")	CORRUGATED ALUMINUM CLADDING	0.020"

NOTES:

TANK BOTTOM 1200 mm COURSE AND 600 mm AROUND ROOF PLATFORM SHALL BE INSULATED WITH HIGH DENSITY FIBERGLASS OF 96 Kg/m³ DENSITY

FIREPROOFING REQUIREMENTS		
ITEM	FIREPROOFING	THK.

NOTES:NONE

OTHER NOTES

HEAT TREATMENT

NONE

HYDROTEST REQUIREMENTS

N/A

MARKING AND PREPARATION FOR SHIPMENT

- ALL FLANGED OPENINGS SHALL BE PROTECTED WITH WOODEN OR STEEL BLINDS TO PREVENT THE ACCUMULATION OF DIRT AND OTHER DEBRIS DURING SHIPPING.
- PLASTIC SHIPPING PLUGS TO BE INSTALLED ON ALL COUPLINGS FOR THREAD PROTECTION.
- ALL REMOVABLE PIECES TO BE MARKED WITH EQUIPMENT TAG NUMBER.
- TANK MUST BE COMPLETELY CLEAN AND DRY BEFORE BEING SEALED FOR SHIPMENT. (NO HYDROCARBON FILM, MILL SCALE, HEAVY RUST, SLAG, DIRT & SPLATTER.)

PROCESS DATA

MATERIAL REQUIREMENTS

ROOF: G40.21-44W COUPLINGS (IN SHELL): SA-182-F316L S.S.
 ANNULAR: N/A FITTINGS: SA-234-WPB
 SHELL: G40.21-44W STUD BOLTS: SA-193-B7 (EXTERNAL)
 FLOOR: G40.21-44W HEX NUTS: SA-194-2H (EXTERNAL)
 STRUCTURAL: SA-36 GASKETS:
 PIPE: NOZZLES: FLEXITALLIC 316 S.S.
 NOZZLE THROUGH SHELL: SA-106-B MANWAYS: NEOPRENE
 ROOF NOZZLES: SA-106-B
 INTERNALS: SA-106-B
 FLANGES:
 NOZZLE THROUGH SHELL: SA-105
 ROOF NOZZLES: SA-105
 INTERNALS: SA-105
 INTERNAL BOLTING: 304 S.S.
 STUDS: 304 S.S.

INSPECTION AND TESTING

A. TESTING
VACUUM TESTING
 -VACUUM TEST FLOOR SEAMS AS PER API-650, SECT. 8.6.
HYDRO TESTING
 -NOT REQ'D
AIR TESTING
 -AIR TEST NOZZLE REPADS AS PER API-650
 -AIR TEST TO 24 oz.
RADIOGRAPHY
 -NOT REQ'D

B. VISUAL EXAMINATION
 1. EXAMINATION AND ACCEPTANCE CRITERIA AS PER API-650 SECTION 8.5.
 2. 100% VISUAL EXAMINATION IS REQUIRED FOR ALL WELDING.

NAMEPLATE DETAIL

FABRICATED BY:
PEACELAND FABRICATING LTD.
HYTHE, ALBERTA

APPENDIX	API-12F MOD	DESIGN PRESSURE	6.9 KPa(16 oz.) 0.2 KPa(0.5 oz.) VAC.
YEAR COMPLETED	2012	DESIGN TEMPERATURE	93°C(200°F)
NOMINAL DIAMETER	3658mm(12'-0")	PARTIAL STRESS RELIEF	N/A
NOMINAL HEIGHT	6096mm(20'-0")	JOB	WO-023840
NOMINAL CAPACITY	64m ³ (400 BBL)	SERIAL NO.	023840-01
FLOOR THICKNESS	6.35mm(0.25")	PURCHASER'S TANK NO.	TK-6270
ROOF THICKNESS	4.76mm(0.1875")		
SHELL COURSE 1	6.35mm(0.25")		
COURSE 2	4.76mm(0.1875")		
COURSE 3	4.76mm(0.1875")		

DESIGN DATA

DESIGN CODE: API-12F MODIFIED
 DESIGN PRESSURE: 6.90 kPa(27.70" W.C.)
 DESIGN VACUUM: 0.215 kPa (0.50 oz.)
 DESIGN TEMPERATURE: -13°C (8.6°F) TO 93°C (200°F)
 OPERATING PRESS./TEMP. ATM. @ 15°C (59°F)
 DESIGN SPECIFIC GRAVITY: 1.0 @ 15°C (59°F)
 SEISMIC ZONE: NOT APPLICABLE
 DESIGN WIND LOAD: 133 Km/HR (83.1 MPH)
 DESIGN LIVE ROOF LOAD: 200 Kg/m² (41.0 psf)
 CORROSION ALLOWANCE:
 SHELL: NONE
 FLOOR: NONE
 ROOF: NONE
 STRUCTURAL: NONE
 MAXIMUM FILLING HEIGHT: 6096mm (20'-0")
 FOUNDATION TYPE: L-SKID

FABRICATION NOTES

- ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
- ALL NOZZLE PROJECTIONS ARE GIVEN ALONG NOZZLE CENTERLINES.
- ALL FLANGE RATINGS TO BE ASME B16.5-2009.
- DRILL 1/4" TELLTALE HOLE IN SHELL REINFORCING PADS AND WELD ON HALF COUPLING AND ADD NIPPLE TO EXTEND BEYOND INSULATION.
- FLANGE AND BOLT HOLES TO STRADDLE PRINCIPAL CENTERLINES OF TANK.
- TAG ALL PIECES WITH TANK NO. TK-6270
- INSIDE EDGES OF NOZZLE NECKS, INSPECTION OPENINGS AND MANWAYS SHALL BE ROUNDED TO A RADIUS OF 3(1/8") MIN. OR ONE HALF THE WALL THICKNESS IF THE PIPE WALL IS LESS THAN 6(1/4").

DESIGN DATA

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△	26/01/12	CHANGED INTERNAL PIPING NOTE AND DELETED NOTE 3	RR	
△	06/01/12	ISSUED FOR CONSTRUCTION	RR	JK
△	07/12/11	ISSUED FOR CUSTOMER APPROVAL	RR	JK

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PEACELAND FABRICATING

CLIENT: MURPHY OIL COMPANY LTD.
C/O VISTA PROJECTS LTD. (P.O.# 1780-003)
CADOTTE PILOT CSS PROJECT
P.O.# 54115097-202-1

DWG TITLE: SOFTENER WASTE TANK, TAG# TK-6270
DESIGN DATA & FABRICATION NOTES

SCALE: N.T.S.	DWN BY: R. RANASINGHE	DWG NO.: T-023840-D101	SHEET NO.: 2 OF 2	REV. NO.: 1
DATE (d/m/y): 06/01/12	CHKD: APPD:			



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-6270	D. Lemon	2012-02-15

PROJECT NAME: Murphy Oil Casket - 1780

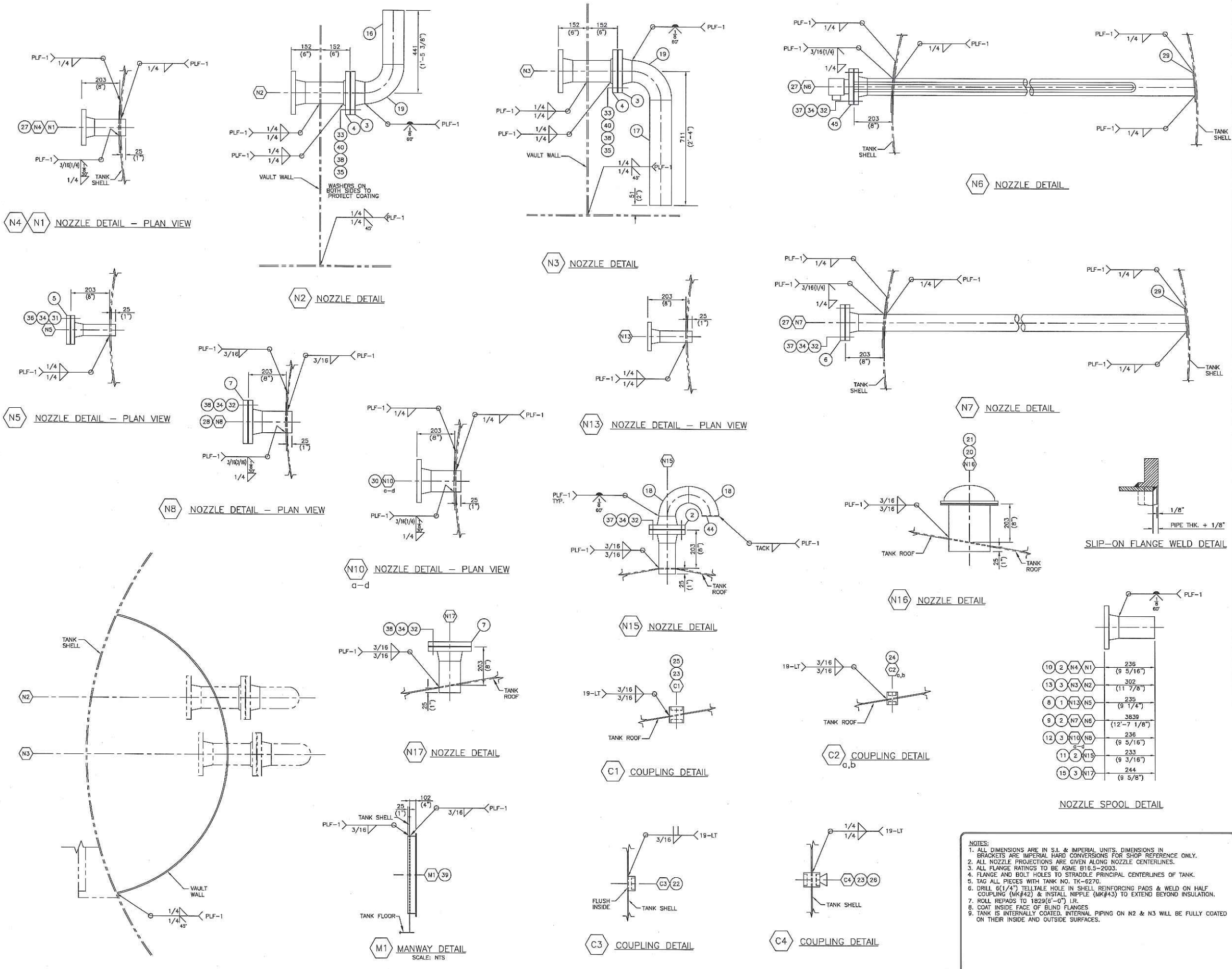
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023840-D102

VENDOR REVISION: 1

DOCUMENT DESCRIPTION: Softener Waste Tank Nozzle Details

VENDOR TRANSMITTAL NUMBER: 005-023840



MATERIAL LIST

MK	QTY	DESCRIPTION	MATERIAL	WT
1	2	FLANGE 2" CLASS 150 RFWN x SCH STD BORE	SA-105	12
2	6	FLANGE 3" CLASS 150 RFWN x SCH STD BORE	SA-105	69
3	10	FLANGE 4" CLASS 150 RFWN x SCH STD BORE	SA-105	160
4	2	FLANGE 4" CLASS 150 RFSO	SA-105	24
5	1	BLIND FLANGE 2" CLASS 150 RF	SA-105	5
6	1	BLIND FLANGE 3" CLASS 150 RF	SA-105	9
7	2	BLIND FLANGE 4" CLASS 150 RF	SA-105	34
8	2	PIPE 2" SCH STD x 6 3/4" LG. SMLS BOE x ROE	SA-106-B	4
9	2	PIPE 3" SCH STD x 12-4 3/8" LG. SMLS BOE x POE	SA-106-B	188
10	2	PIPE 3" SCH STD x 6 5/8" LG. SMLS BOE x ROE	SA-106-B	8
11	1	PIPE 3" SCH STD x 6 7/16" LG. SMLS BOE x POE	SA-106-B	4
12	5	PIPE 4" SCH STD x 6 3/8" LG. SMLS BOE x ROE	SA-106-B	29
13	2	PIPE 4" SCH STD x 8 7/8" LG. SMLS BOE x POE	SA-106-B	16
14				
15	1	PIPE 4" SCH STD x 6 5/8" LG. SMLS BOE x POE	SA-106-B	6
16	1	PIPE 4" SCH STD x 11 3/8" LG. SMLS BOE x POE	SA-106-B	10
17	1	PIPE 4" SCH STD x 1'-10" LG. SMLS BOE x POE	SA-106-B	20
18	2	ELBOW 3" SCH STD x 90° L.R.	SA-234-WPB	10
19	2	ELBOW 4" SCH STD x 90° L.R.	SA-234-WPB	18
20	1	THIEF HATCH 8" ENARDO J30 SET @ 15oz. PRESS. 0.5oz. VAC.	-	25
21	1	THIEF HATCH NOZZLE 8"	PRT-2769	10
22	1	HALF CPLG 2" 3000# SCR'D	SA182-F316L S.S.	2
23	2	FULL CPLG 2" 3000# SCR'D	SA182-F316L S.S.	8
24	2	FULL CPLG 1 1/4" 3000# SCR'D	SA182-F316L S.S.	3
25	1	BUSHING 2" x 1 1/2" 150#	M.I.	1
26	1	HEX PLUG 2" 3000# F.S.	SA-105	0.5
27	4	REPAD PLATE 1/4" THK. - 3" NOZZLE	PRT-1586	20
28	1	REPAD PLATE 3/16" THK. - 4" NOZZLE	PRT-4268	5
29	2	REPAD PLATE 1/4" THK. x 6" DIA.	G4021-44W	2
30	4	REPAD PLATE 1/4" THK. - 4" NOZZLE	PRT-1540	28
31	4	STUD 5/8" DIA. x 3 1/4" LG.	SA-193-B7	1
32	28	STUD 5/8" DIA. x 3 1/2" LG.	SA-193-B7	7
33	16	STUD 5/8" DIA. x 4 1/4" LG.	SA-193-B8 (304 S.S.)	5
34	88	HEX NUT 5/8" NOM.	SA-194-2H	10
35	32	WASHER 5/8" NOM. (FLAT)	S.S.	2
36	1	GASKET 2" CLASS 150 x 1/8" THK	FLEXITALLIC 316 S.S.	1
37	3	GASKET 3" CLASS 150 x 1/8" THK	FLEXITALLIC 316 S.S.	3
38	4	GASKET 4" CLASS 150 x 1/8" THK	FLEXITALLIC 316 S.S.	3
39	1	SHELL MANWAY 2' x 3' C/W 1/4" COVER PLATE	SEE G.A.	-
40	32	HEAVY HEX NUT 5/8" NOM	SA-194-B (304 S.S.)	3
41				
42	9	HALF CPLG 1/4" 3000# F.S. SCR'D	SA-105	4
43	9	NIPPLE 1/4" SCH XS x 3" LG. SMLS TBE	SA-106-B	1
44	1	EXPANDED METAL 1-10H x 3" DIA.	G4021-44W	1
45	1	IMMERSION HEATER (3')	SEE G.A.	-
46				
47				
48				
49				
50				
51				
52				
53				
54				
SUBTOTAL				771
x 1.06				
TOTAL (lbs.)				817

NO	DATE (d/m/y)	REVISIONS	BY	APPD
14/02/12		CHANGED MATERIAL DETAILS OF MK#29	RR	
26/01/12		ISSUED FOR CONSTRUCTION	RR	JK

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CLIENT: MURPHY OIL COMPANY LTD.
C/O VISTA PROJECTS LTD. (P.O.# 1780-003)
CADOTTE PILOT CSS PROJECT
P.O.# 54115097-202-1

DWG TITLE: SOFTENER WASTE TANK, TAG# TK-6270
NOZZLE DETAILS

SCALE: 1:10	DWN BY: R. FANASINGHE	DWG NO: T-023840-D102	SHEET NO: 1 of 1
DATE (d/m/y): 20/01/12	CHKD: APPD:		

- NOTES:**
- ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
 - ALL NOZZLE PROJECTIONS ARE GIVEN ALONG NOZZLE CENTERLINES.
 - ALL FLANGE RATINGS TO BE ASME B16.5-2003.
 - FLANGE AND BOLT HOLES TO STRADDLE PRINCIPAL CENTERLINES OF TANK.
 - TAG ALL PIECES WITH TANK NO. TK-6270.
 - DRILL 6(1/4") TELLTALE HOLE IN SHELL REINFORCING PADS & WELD ON HALF COUPLING (MK#42) & INSTALL NIPPLE (MK#43) TO EXTEND BEYOND INSULATION.
 - ROLL REPADS TO 1829(6-0") L.R.
 - COAT INSIDE FACE OF BLIND FLANGES.
 - TANK IS INTERNALLY COATED. INTERNAL PIPING ON N2 & N3 WILL BE FULLY COATED ON THEIR INSIDE AND OUTSIDE SURFACES.



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM-02	TK-6270	J. Lemow	2012-02-10

PROJECT NAME: 1780-Murphy Oil Cadotte_____

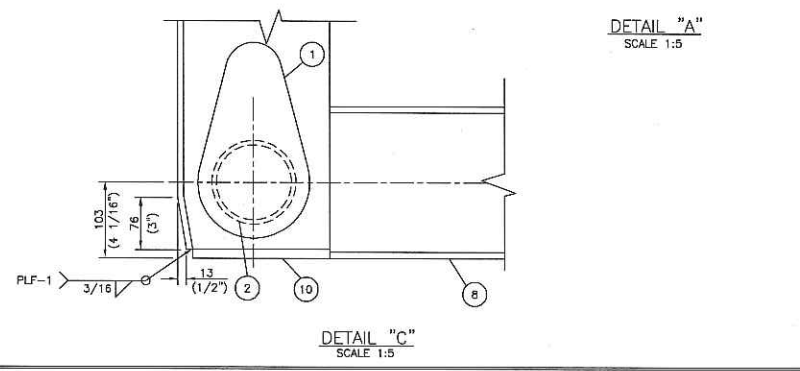
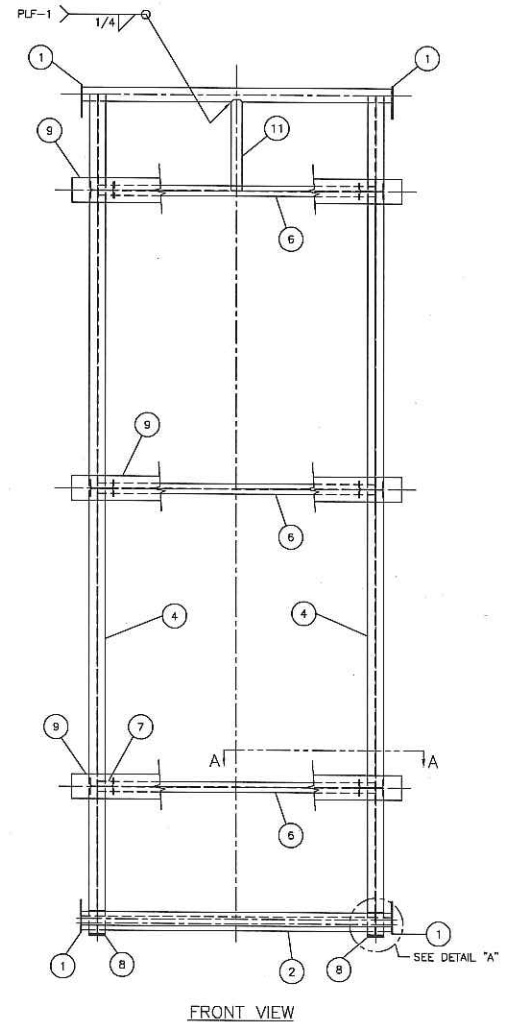
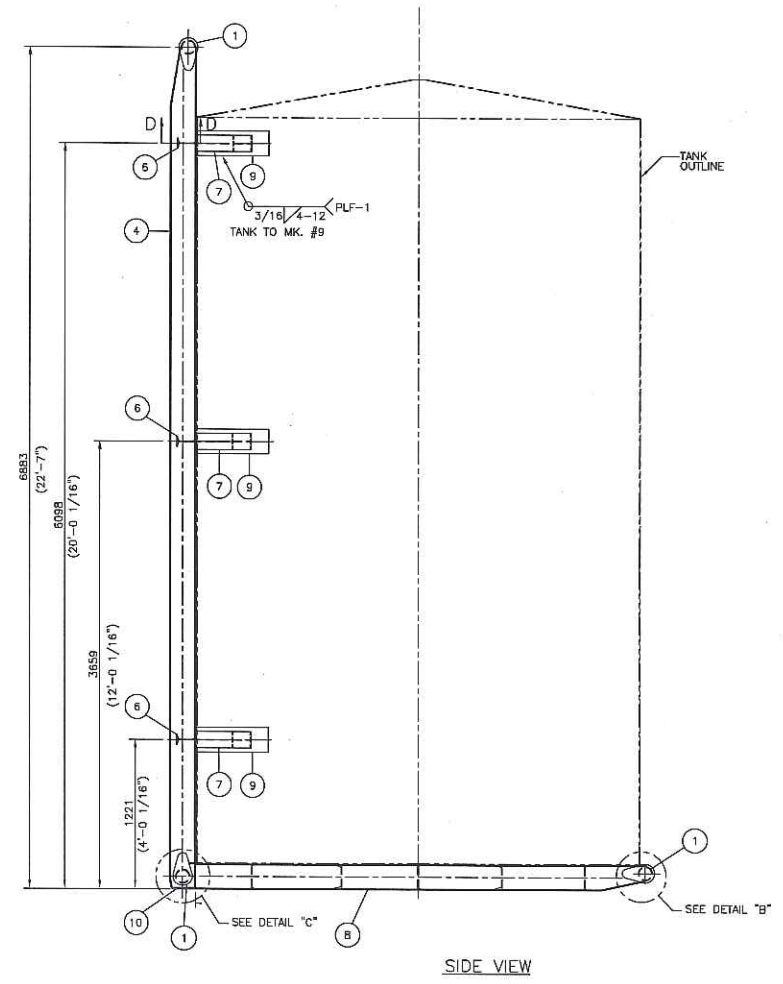
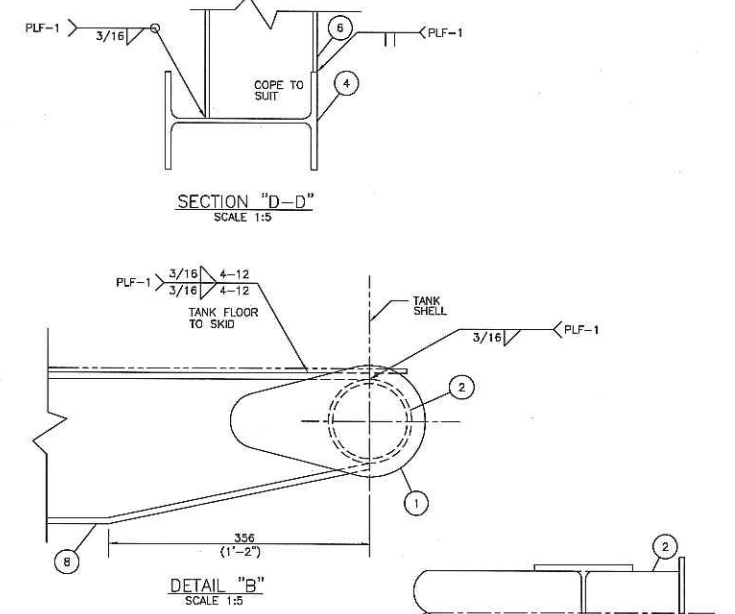
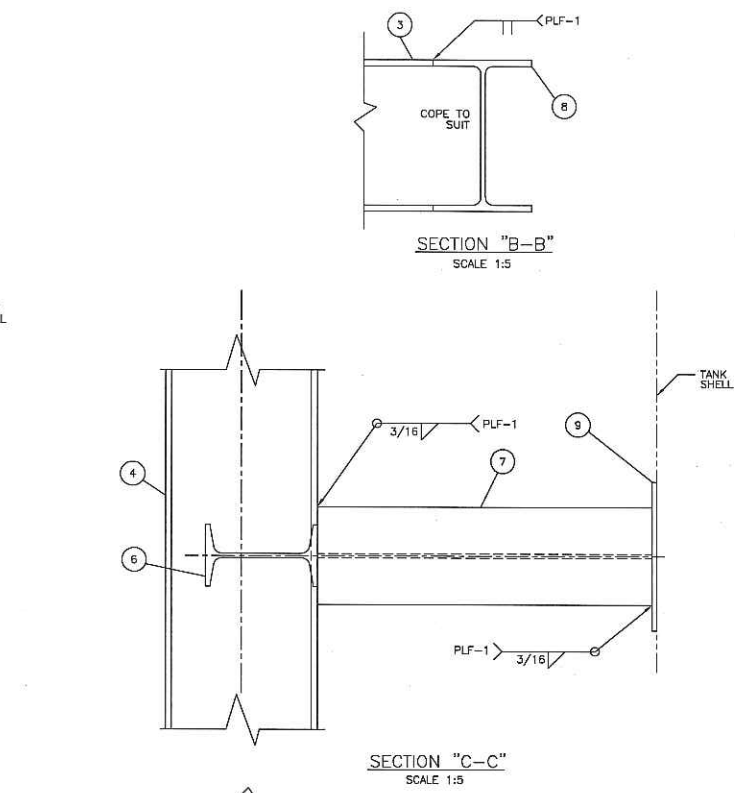
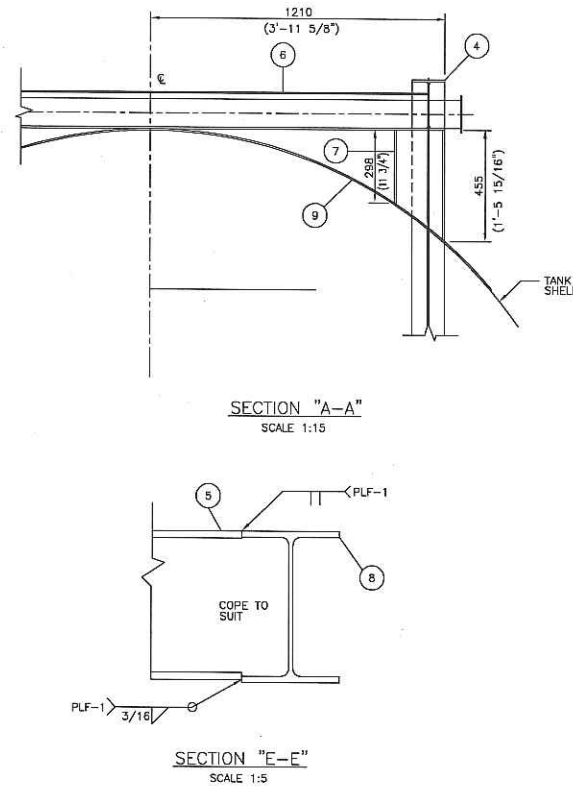
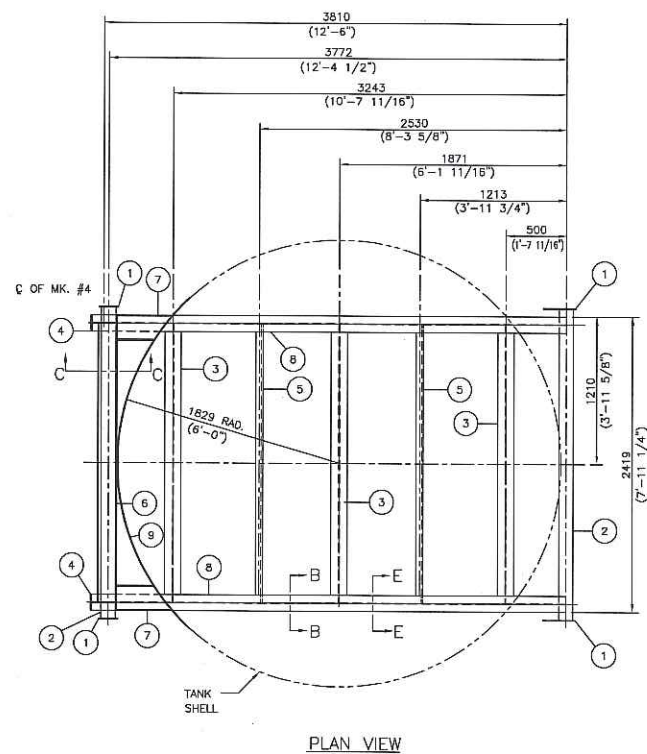
VENDOR NAME: _____ UNIVERSAL INDUSTRIES _____

DOCUMENT NUMBER: _____ T-023840-D103 _____

VENDOR REVISION: _____ 0 _____

DOCUMENT DESCRIPTION: Softener Waste Tank L-Skid Details

VENDOR TRANSMITTAL NUMBER: _____ TR004-023840 _____



MATERIAL LIST

MK	QTY	DESCRIPTION	MATERIAL	WT
1	6	SKID EAR FOR 4" PIPE	FRT-5971	18
2	3	PIPE 4" SCH STD x 8'-4 1/4" LG. ERW PBE	SA-53-B	271
3	3	BEAM WB x 18# x 7'-5 3/4" LG.	G40.21-50W	404
4	2	BEAM WB x 18# x 22'-6 1/2" LG.	G40.21-50W	812
5	2	CHANNEL CB x 11.5# x 7'-5 3/4" LG.	G40.21-44W	172
6	3	BEAM S6 x 12.5# x 7'-5 3/4" LG.	G40.21-50W	280
7	6	BEAM WB x 18# x 1'-5 15/16" LG.	G40.21-50W	161
8	2	BEAM WB x 18# x 12'-1 15/16" LG.	G40.21-50W	438
9	3	FLATBAR 1/4" THK. x 8" x 10'-0" LG. ROLLED TO 6'-0" I.R.	G40.21-44W	204
10	2	FLATBAR 1/2" x 5" x 7 3/8" LG.	G40.21-44W	10
11	1	PIPE 3" SCH STD x 2'-5 3/8" LG. ERW PBE	SA-53-B	19
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

SUBTOTAL 2789
TOTAL 2956 lbs.

NOTE:
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS.
DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHEEP REFERENCE ONLY.

NO	DATE (d/m/y)	REVISIONS	BY	APPD
26/01/12		ISSUED FOR CONSTRUCTION	RR	

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CLIENT
MURPHY OIL COMPANY LTD.
C/O VISTA PROJECTS LTD. (P.O.# 1780-003)
DWG TITLE
SOFTENER WASTE TANK, TAG# TK-6270
L-SKID DETAILS

SCALE	DWN BY	R. RANASINGHE	DWG NO.	SHEET NO.	REV. NO.
1:30			T-023840-D103	1 of 1	0



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
D-M02	TK-7060	D-Lomas	2012-02-16

PROJECT NAME: Murphy Oil Cadotte 1780-003

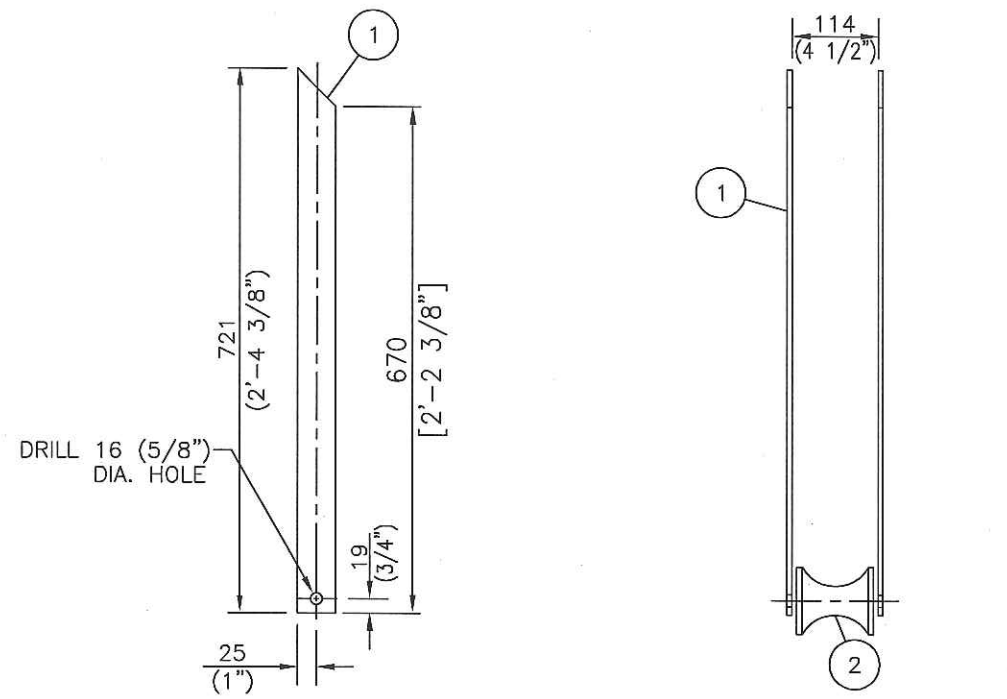
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-A109

VENDOR REVISION: 0

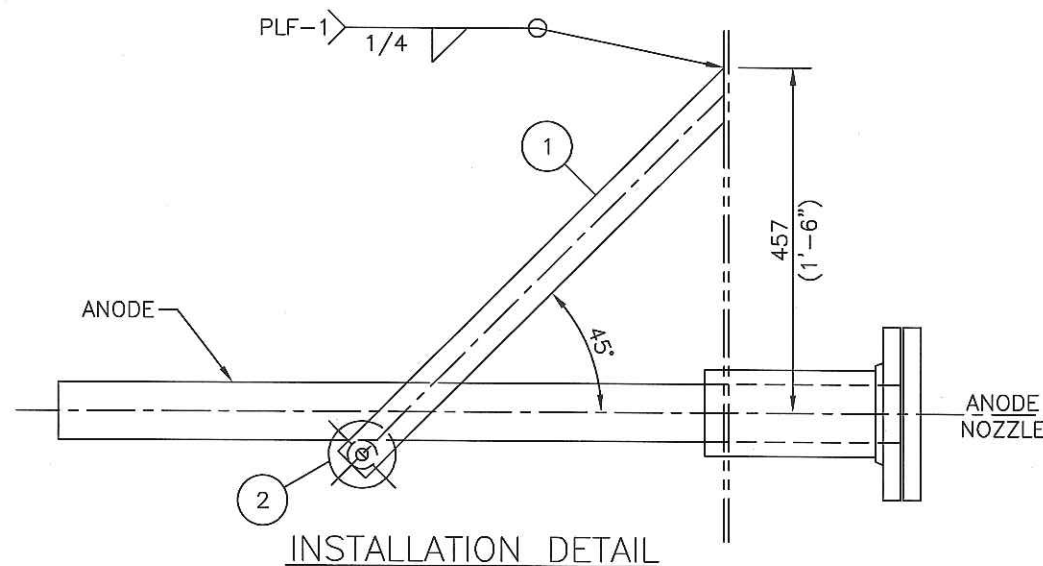
DOCUMENT DESCRIPTION: Anode Roller Support
Steam Vent Tank TK-7060

VENDOR TRANSMITTAL NUMBER: TR-003.023841



MK.#1 DETAIL

ROLLER ASSEMBLY



INSTALLATION DETAIL

MK	QTY	DESCRIPTION	MAT'L	WT
1	2	FLATBAR 1/4" x 2" x 2'-4 3/8" LG.	G40.21-44W	8
2	1	WOOD ROLLER ASS'Y	PRT-4190	2
3				
4				
5				

NOTES:
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.

NO. REQ'D: 4 TOTAL FOR JOB
WEIGHT: 10 lbs. EACH

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△				
△				
△	31/01/12	ISSUED FOR CONSTRUCTION	RR	
REVISIONS				

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CLIENT MURPHY OIL COMPANY LTD.

DWG TITLE STEAM VENT TANK, TAG# TK-7060
ANODE ROLLER SUPPORT

SCALE 1:10	DWN BY R. RANASINGHE	DWG NO. T-023841-A109	SHT NO. 1 of 1	REV 0
DATE (d/m/y) 27/01/12	CHKD	APPD		

\\DWG\WO-023841\109023841



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM 02	TK-7060	D. Lanza	2012-02-16

PROJECT NAME: Murphy Oil Cadotte 1780-003

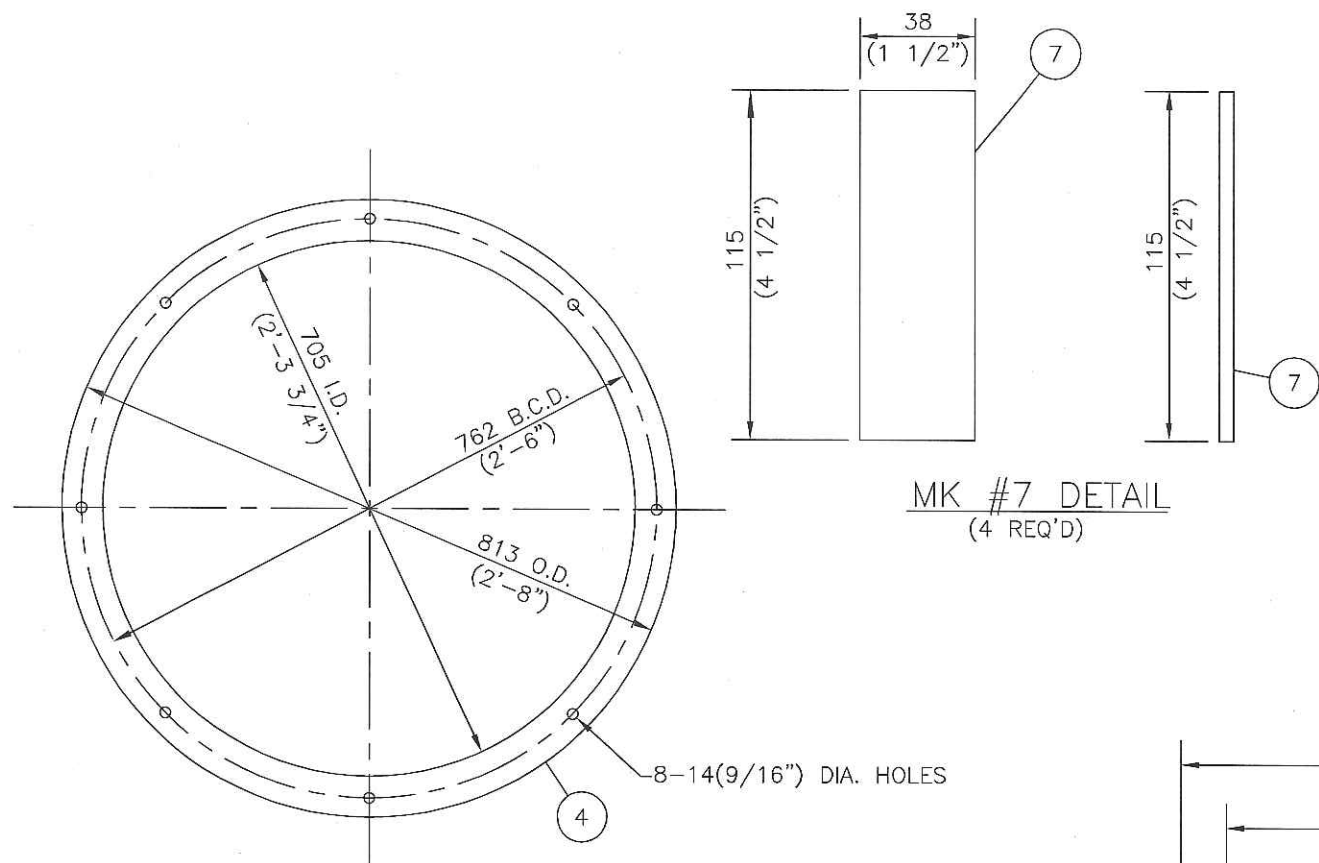
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-B110

VENDOR REVISION: 0

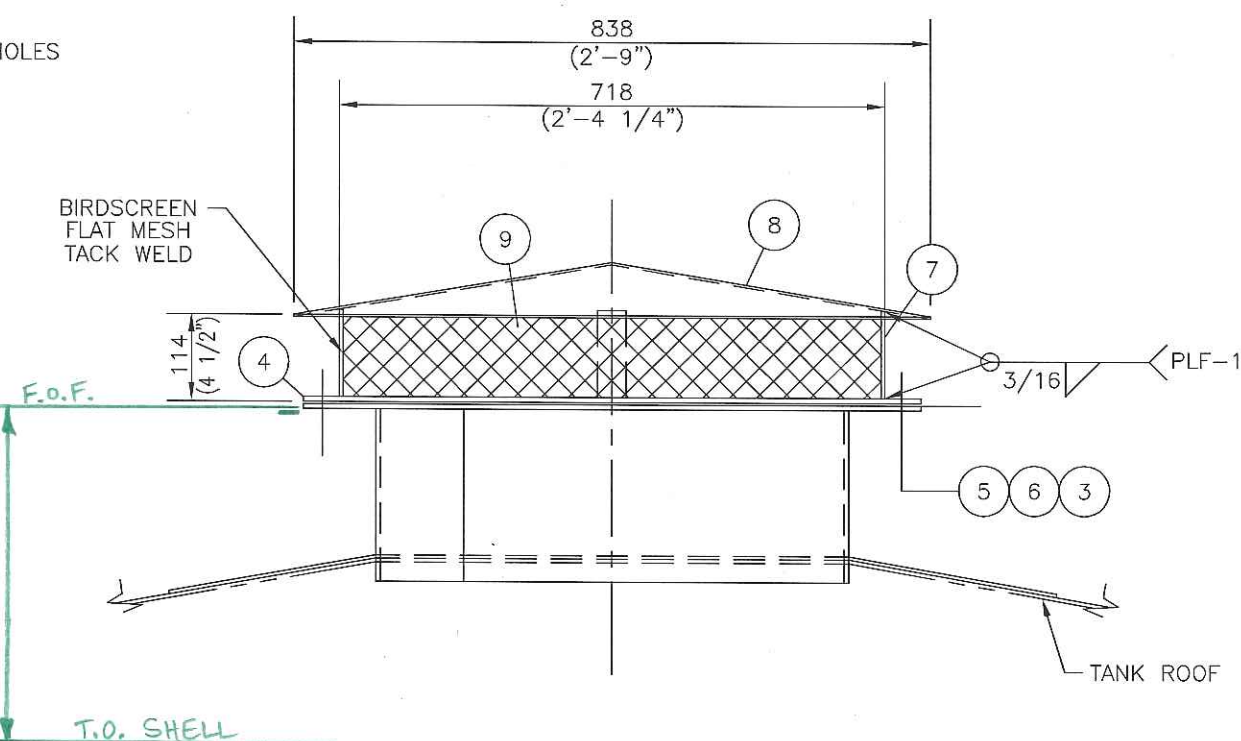
DOCUMENT DESCRIPTION: 24" Mushroom Cap Details
Steam Vent Tank TK-7060

VENDOR TRANSMITTAL NUMBER: TR-003-023841



MK #4 DETAIL
(1 REQ'D)

* MATCH DRILL MK.4 & MK.2



NOZZLE DETAIL

MK	QTY	DESCRIPTION	MAT'L	WT
1				
2				
3	1	GASKET 1/8" THK. x 2'-4 1/8" I.D. x 2'-8" O.D.	GARLOCK 3000	1
4	1	PLATE 1/4" THK. x 2'-3 3/4" I.D. x 2'-8" O.D.	G40.21-44W	26
5	8	BOLT 1/2" DIA. x 1 1/2" LG. C/W NUT	GR.5	1
6	8	HEX NUT 1/2" NOM.	GR.5	1
7	4	FLATBAR 3/16" THK. x 1 1/2" x 4 1/2" LG.	G40.21-44W	2
8	1	PLATE 11 ga. x 2'-10" DIA. PRESSED	A-1011	30
9	1	FLAT EXPANDED METAL 4" x 7'-5" LG.(BIRDSCREEN)	G40.21-44W	1
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

* QTY'S ARE FOR ONE NOZZLE-1 REQ'D SUBTOTAL 62
x 1.06
TOTAL 66 lbs.

NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETRES. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.

NO. REQ'D: 1
WEIGHT: 66 lbs. each

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△				
△				
△	31/01/12	ISSUED FOR CONSTRUCTION	RR	
REVISIONS				

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CLIENT MURPHY OIL COMPANY LTD.				
DWG TITLE STEAM VENT TANK, TAG# TK-7060 24" MUSHROOM CAP DETAILS				
SCALE 1:10	DWN BY R. RANASINGHE	DWG NO. T-023841-B110	SHT NO. 1 of 1	REV △
DATE (d/m/y) 31/01/12	CHKD APPD			



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-7060	D. Lemar	2012-02-16

PROJECT NAME: Murphy Oil Cadotte 1780-003

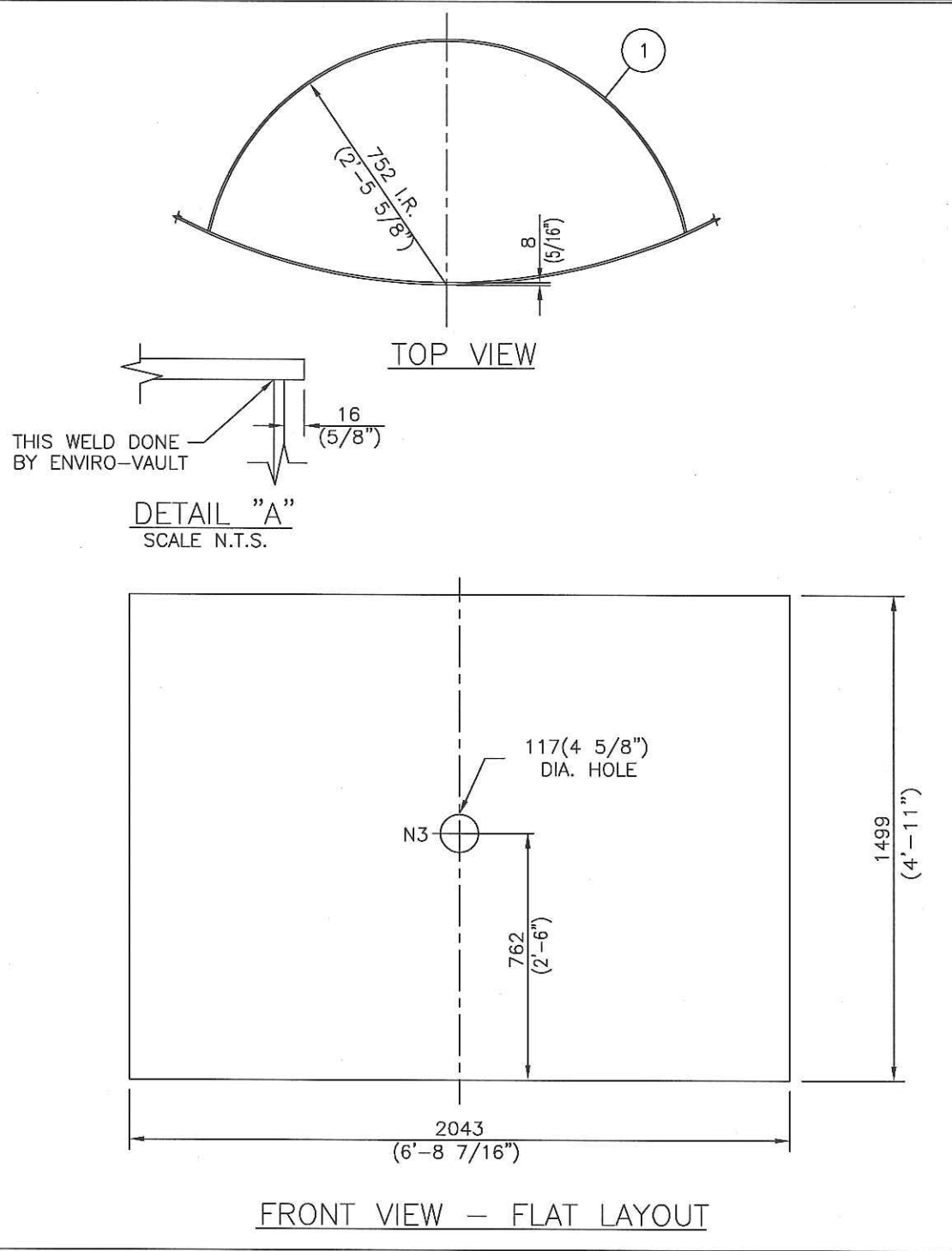
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-A105

VENDOR REVISION: 0

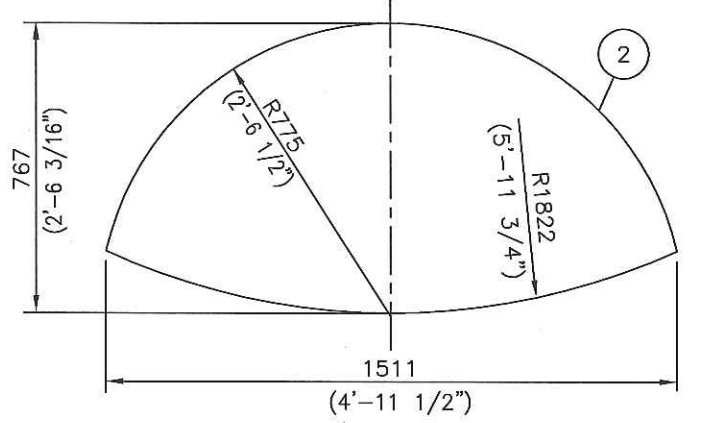
DOCUMENT DESCRIPTION: 5x5 Enviro - Vault Wall/Roof Details
Steam Vent Tank TK. 7060

VENDOR TRANSMITTAL NUMBER: TR-003-023841



MK	QTY	DESCRIPTION	MAT'L	WT
1	1	PLATE 1/4" THK. x 4'-11" x 6'-8 7/16" LG.	G40.21-38W/44W	336
2	1	PLATE 1/2" THK. x 2'-6 3/16" x 4'-11 1/2" LG.	G40.21-44W	255

NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY. NO. REQ'D:1
 2. ROLL MK# 1 TO 752(2'-5 5/8") I.R. WEIGHT: 626 lbs.



ROOF DETAIL

NO	DATE (d/m/y)	REVISIONS	BY	APPD
31/01/12		ISSUED FOR CONSTRUCTION	RR	

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CLIENT: MURPHY OIL COMPANY LTD.

DWG TITLE: STEAM VENT TANK, TAG# TK-7060
 5'x5' ENVIRO-VAULT WALL/ROOF DETAILS

SCALE: 1:20	DWN BY: R. RANASINGHE	DWG NO.:	SHT NO.:	REV:
DATE (d/m/y): 10/01/12	CHKD: APPD:	T-023841-A105	1 OF 1	0

\\DWG\WO-023841\105023841



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DC02	TK-7066	D. Lemmon	2012-02-16

PROJECT NAME: Murphy Oil Cadotte 1780-003

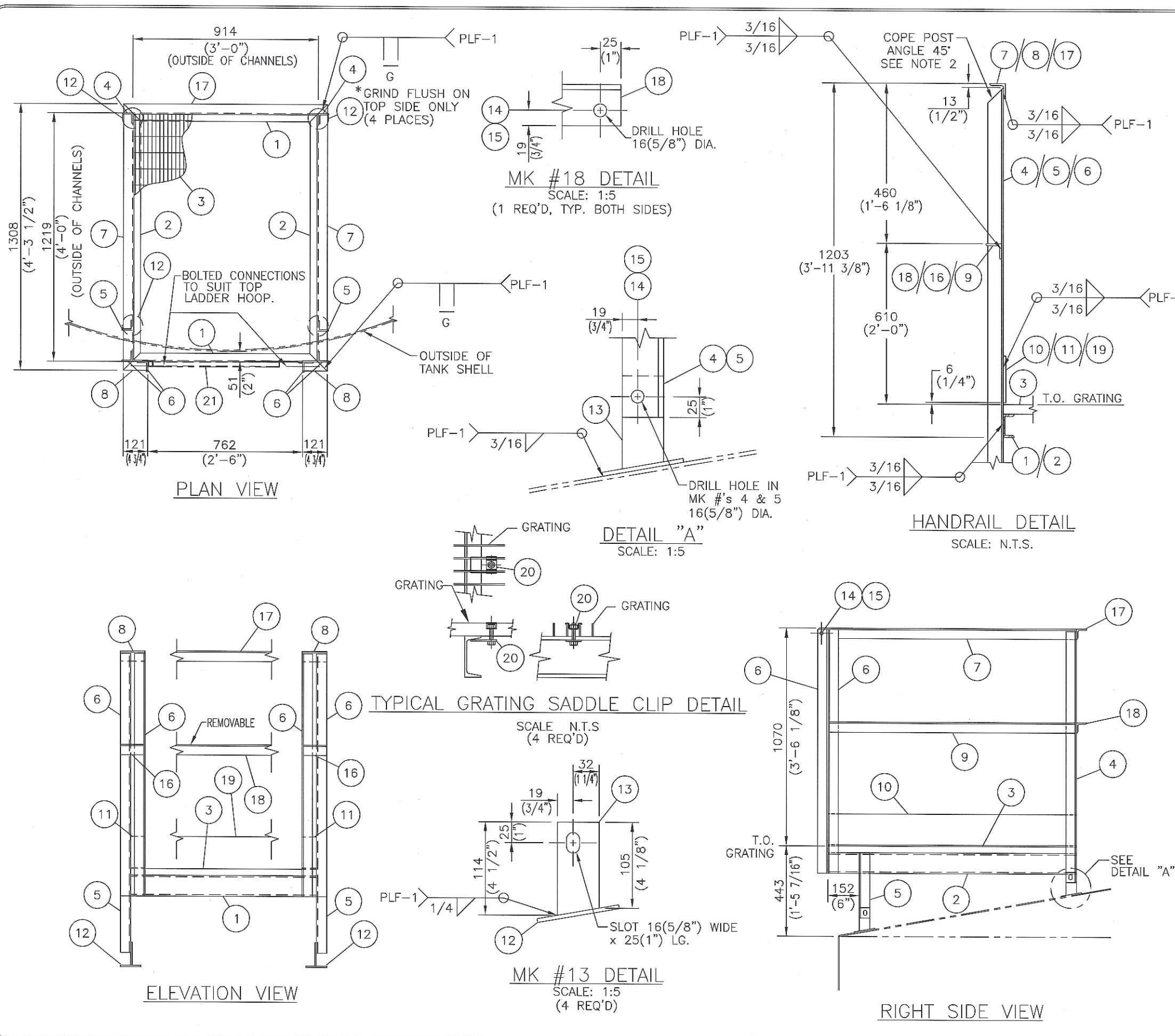
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-B107

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: 3-0" x 4-0" Roof Platform Detail
Steam Vent Tank TK-7060

VENDOR TRANSMITTAL NUMBER: TR-003-023841



MK	QTY	DESCRIPTION	MAT'L	WT
1	2	CHANNEL C4 x 5.4# x 3'-0" LG.	G40.21-44W	32
2	2	CHANNEL C4 x 5.4# x 4'-0" LG.	G40.21-44W	43
3	1	GRATING 3'-0" W x 4'-0" LG. TYPE 19-4 SERRATED GRATING 1 1/4" x 3/16" BARS	GALVANIZED G40.21-44W	107
4	2	ANGLE 2" x 2" x 1/4" x 4'-0 1/2" LG.	G40.21-44W	26
5	2	ANGLE 2" x 2" x 1/4" x 1'- 5/8" LG.	G40.21-44W	1
6	4	ANGLE 2" x 2" x 1/4" x 3'-10 7/8" LG.	G40.21-44W	50
7	2	ANGLE 2" x 2" x 1/4" x 4'-3 1/2" LG.	G40.21-44W	27
8	2	ANGLE 2" x 2" x 1/4" x 4 3/4" LG.	G40.21-44W	3
9	2	ANGLE 2" x 2" x 1/4" x 3'-11 1/2" LG.	G40.21-44W	25
10	2	FLATBAR 3/16" x 6" x 3'-11 1/2" LG.	G40.21-44W	30
11	2	FLATBAR 3/16" x 6" x 3" LG.	G40.21-44W	1
12	4	REPAD PLATE 1/4" THK. x 4" DIA.	G40.21-44W	4
13	4	FLATBAR 1/4" THK. x 2" x 4 1/2" LG.	G40.21-44W	3
14	8	BOLT 1/2" DIA. x 1 1/2" LG.	Gr.5	2
15	8	HEX NUT 1/2" NOM.	Gr.5	1
16	2	ANGLE 2" x 2" x 1/4" x 4 3/4" LG.	G40.21-44W	3
17	1	ANGLE 2" x 2" x 1/4" x 3'-3 1/2" LG.	G40.21-44W	11
18	1	ANGLE 2" x 2" x 1/4" x 3'-4" LG.	G40.21-44W	11
19	1	FLATBAR 3/16" THK. x 6" x 3'-0" LG.	G40.21-44W	11
20	4	GRATING SADDLE CLIPS C/W HARDWARE, CLIP, BOTTOM PLATE	GALVANIZED C.S.	1
21	1	SAFETY GATE ("PS-DOORS")(SAFETY YELLOW)	PRT-4310	5

SUBTOTAL 397
x 1.06
TOTAL 421 lbs

- NOTES:
- ALL DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.
 - MK. #'s 4, 5, & 8 SHALL BE MITRED 45° ONE END ONLY.
 - MK. #'s 1, 2, 7, & 17 SHALL BE MITRED 45° BOTH ENDS.

NO	DATE (d/m/y)	REVISIONS	BY	APPD
31/01/12		ISSUED FOR CONSTRUCTION	RR	

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CLIENT MURPHY OIL COMPANY LTD.

DWG TITLE STEAM VENT TANK, TAG# TK-7060
3'-0" x 4'-0" ROOF PLATFORM DETAIL

SCALE	DWN BY	DWG NO.	SHT NO.	REV
1:20	R. RANASINGHE	T-023841-B107	1 OF 1	0

CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM-02	TK-7060	D. Patil	2012-02-21

PROJECT NAME: Murphy Oil Cadotte-1780-003

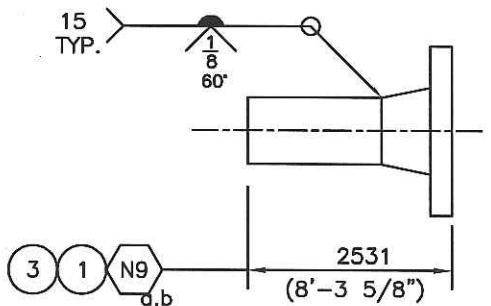
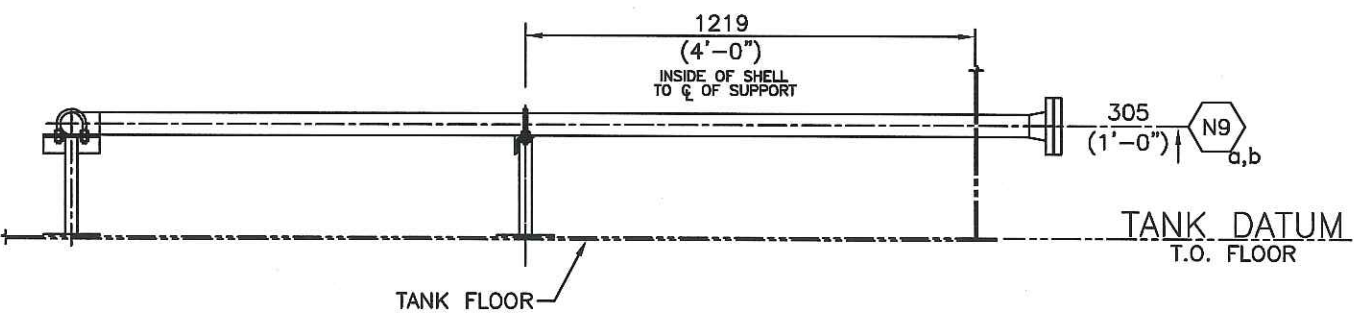
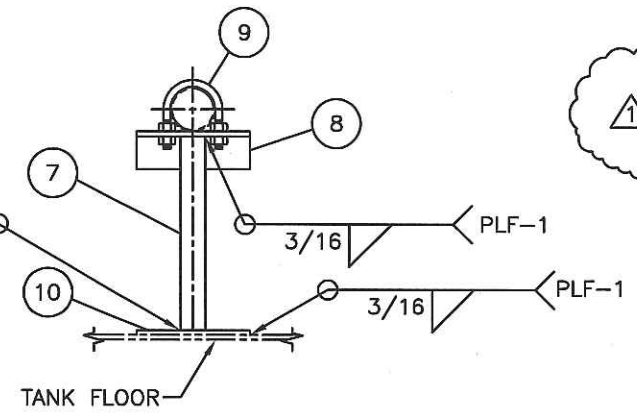
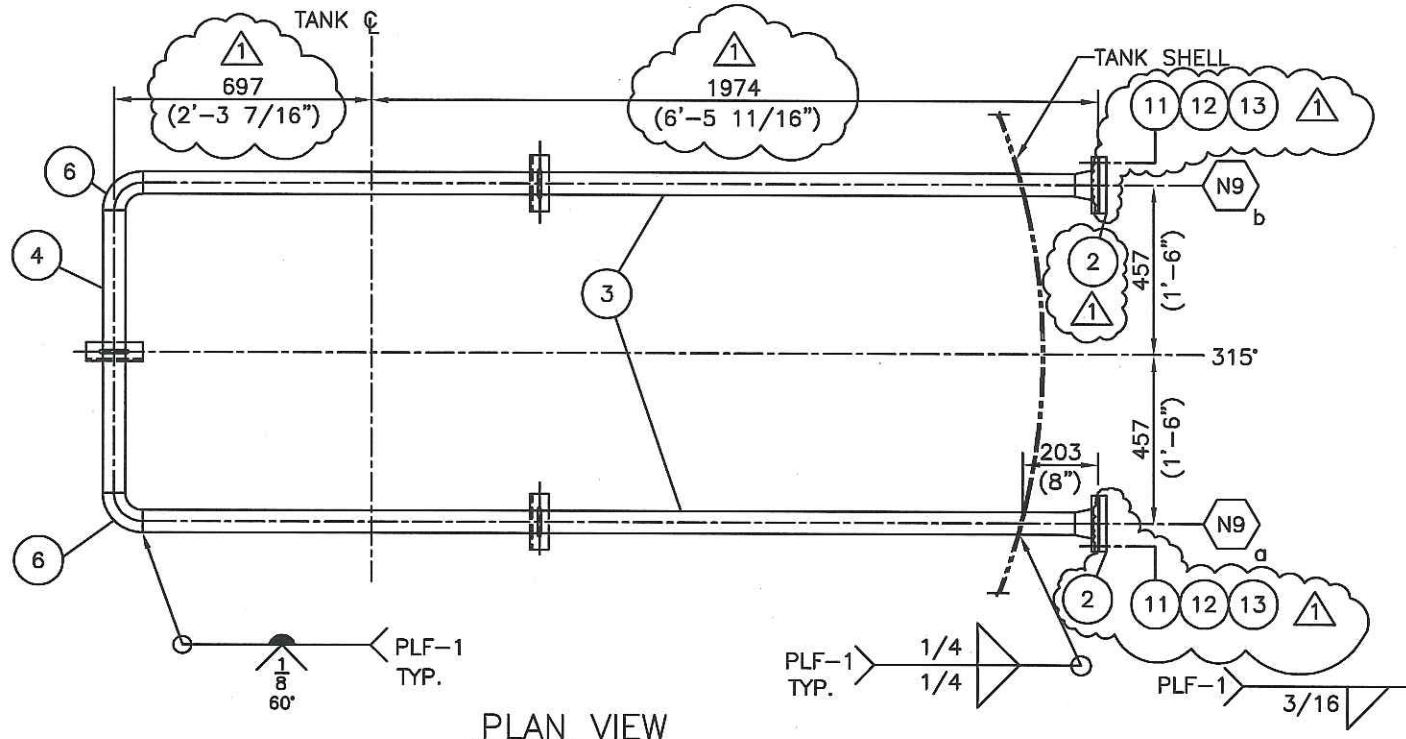
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-B108

VENDOR REVISION: 1

DOCUMENT DESCRIPTION: Steam Vent Tank Steam Heat Coil Details

VENDOR TRANSMITTAL NUMBER: 004-023841



MK	QTY	DESCRIPTION	MAT'L	WT
1	2	FLANGE 2" CLASS 150 RFWN x SCH STD BORE	SA-105	12
2	2	BLIND FLANGE 2" CLASS 150 RF	SA-105	10
3	2	PIPE 2" SCH STD x 8'-3 5/8" LG. SMLS BOE x POE	SA-106-B	61
4	1	PIPE 2" SCH STD x 2'-6" LG. SMLS BOE x POE	SA-106-B	9
5				
6	2	ELBOW 2" SCH STD x 90° L.R.	SA-234-WPB	3
7	3	PIPE 1" SCH STD x 10 5/16" LG.	SA-106-B	6
8	3	ANGLE 2" x 2" x 1/4" THK. x 6" LG.	G40.21-44W	11
9	3	U-BOLT 3/8" x 2" NPS C/W HEX NUTS	C.S.	3
10	3	REPAD PLATE 1/4" THK. x 6" DIA.	G40.21-38W	3
11	8	STUD 5/8" DIA. x 3 1/4" LG.	SA-193-B7	2
12	16	HEX NUT 5/8" NOM.	SA-194-2H	2
13	2	GASKET 2" CLASS 150 x 1/8" THK.	FLEXITALLIC 316 S.S.	2
14				
15				
16				
17				

△ SUBTOTAL: 124
x 1.06
TOTAL: 131 lbs.

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. LEAVE GAP AT TOP OF U-BOLT FOR PIPE THERMAL EXPANSION.
6. SEE EDS-6153 FOR REGISTERED DESIGN.

NO	DATE (d/m/y)	REVISIONS	BY	APPD
△				
△	17/02/12	CHANGED MK#7 & PIPE COIL DATA	RR	
△	31/01/12	ISSUED FOR CONSTRUCTION	RR	JK

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CLIENT MURPHY OIL COMPANY LTD.			
DWG TITLE STEAM VENT TANK, TAG# TK-7060 STEAM HEAT COIL DETAILS			
SCALE 1:20	DWN BY R. RANASINGHE	DWG NO. T-023841-B108	SHT NO. REV 1 OF 1
DATE (d/m/y) 30/01/12	CHKD APPD		△

PIPE COIL DATA

DESIGN CODE: ASME B31.3 - 2008 EDITION
 DESIGN PRESSURE: 1380 KPag (200 psig)
 DESIGN TEMPERATURE: -29°C (-20°F) / 200°C (392°F)
 OPERATING PRESSURE: 345 KPag (50 psig)
 OPERATING TEMPERATURE: 148°C (298°F)
 SERVICE: STEAM
 HYDROTEST PRESSURE: 2069 KPag (300 psig) @ 10°C (50°F)
 CORROSION ALLOWANCE: NONE
 RADIOGRAPHY: 5% ALL BUTTWELDS
 CRN NO.: OH09070.2
 SERIAL NO.: 023841-02
 VOLUME: 0.0117 m³ (0.413 ft³)
 PWHT: NONE
 PIPE COIL LENGTH: 5771mm (18'-11 3/16")
 HEATING SURFACE AREA: 1.09 m² (11.77 ft²)
 DESIGN DUTY:



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DC 02	TK-7060	D. Lomas	2012-02-16

PROJECT NAME: Murphy Oil Cadotte 1780-003

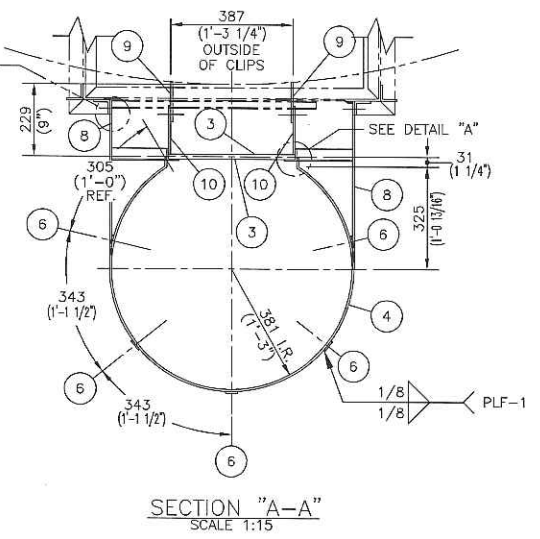
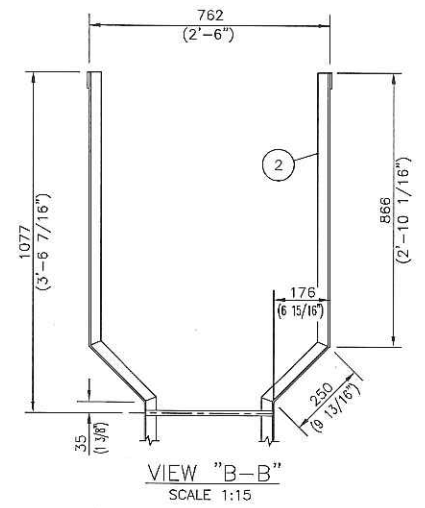
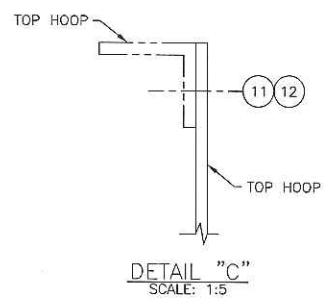
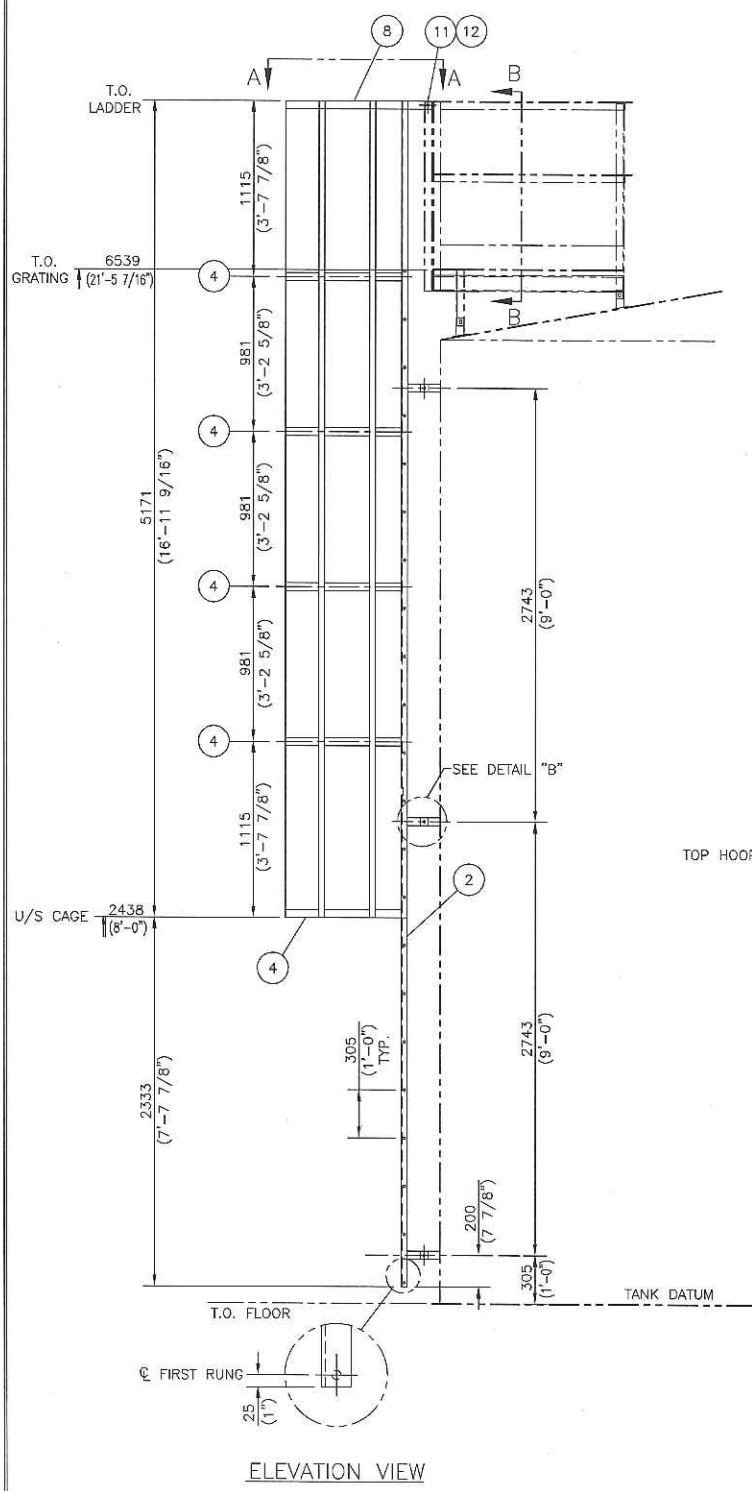
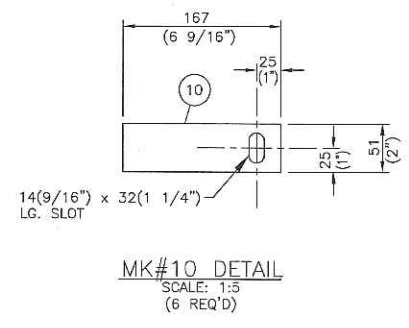
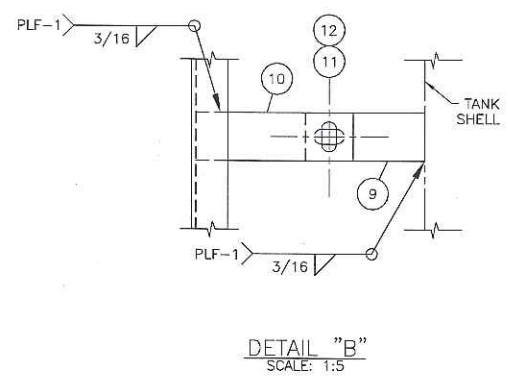
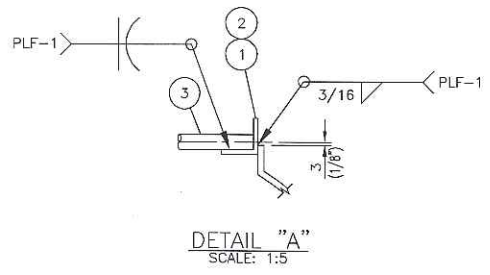
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-C104

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Ladder Details Steam Vent Tank TK-7060

VENDOR TRANSMITTAL NUMBER: TR-003-023841



MATERIAL LIST

MK	QTY	DESCRIPTION	MATERIAL	WT
1				
2	2	ANGLE 1 1/2" x 1 1/2" x 3/16" x 24'-10 3/8" LG.	G40.21-44W	90
3	22	ROD 5/8" DIA. x 1'-3 3/4" LG.	G40.21-44W	120
4	5	LADDER HOOP	PRT-4284	55
5				
6	5	FLATBAR 3/16" THK. x 1 1/2" x 16'-11 9/16" LG.	G40.21-44W	81
7				
8	1	FLATBAR 1/4" THK. x 2" x 7'-9 3/8" LG.	G40.21-44W	13
9	6	FLATBAR 1/4" THK. x 2" x 5" LG.	PRT-4283	4.5
10	6	FLATBAR 1/4" THK. x 2" x 6 9/16" LG.	G40.21-44W	6
11	8	BOLT 1/2" DIA. x 1 1/2" LG.	GR.5	1
12	8	HEX NUT 1/2" NOM.	GR.5	1
13				
14				
15				

SUBTOTAL 371
x 1.06
TOTAL 393 lbs

NOTES:
1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
2. GRIND ALL SHARP EDGES SMOOTH.
3. SEE G.A. SHT2 FOR FINISHING NOTES.

NO	DATE (d/m/y)	REVISIONS	APPD
1	31/01/12	ISSUED FOR CONSTRUCTION	RR
REVISIONS			

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CLIENT
MURPHY OIL COMPANY LTD.

DWG TITLE
STEAM VENT TANK, TAC# TK-7060
LADDER DETAILS

SCALE	DWN BY	DWG NO.	SHEET NO.	REV. NO.
1:30	R. RANASINGHE	T-023841-C104	1 OF 1	
DATE (d/m/y)	CHKD	APPD		
27/01/12				



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM02	TK-7060	D. Lemon	2012-02-16

PROJECT NAME: Murphy Oil Cadotte 1780-003

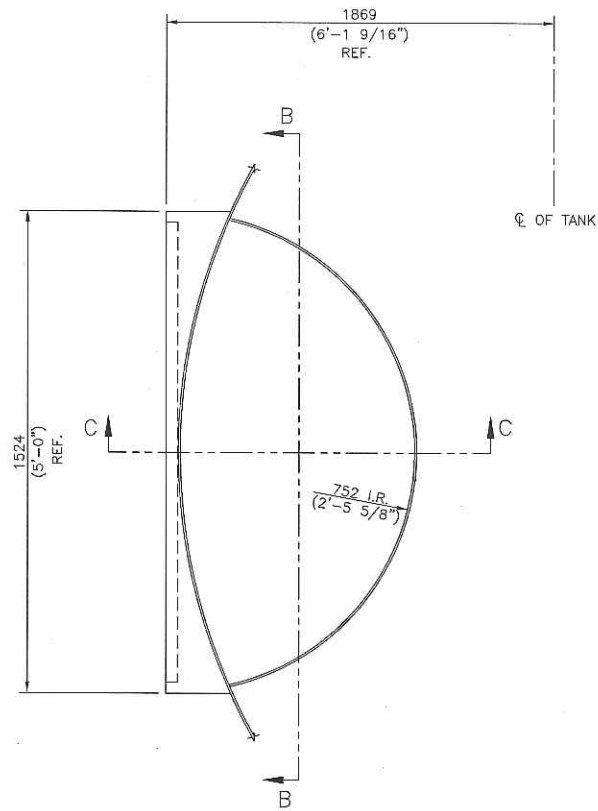
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-C106

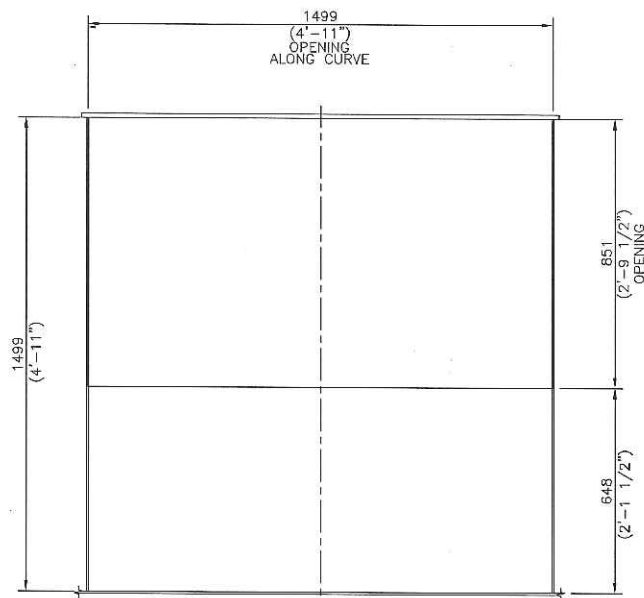
VENDOR REVISION: 0

DOCUMENT DESCRIPTION: 5" Enviro-Vault Door Detail (C/W Neck)
Steam Vent Tank TK-7060

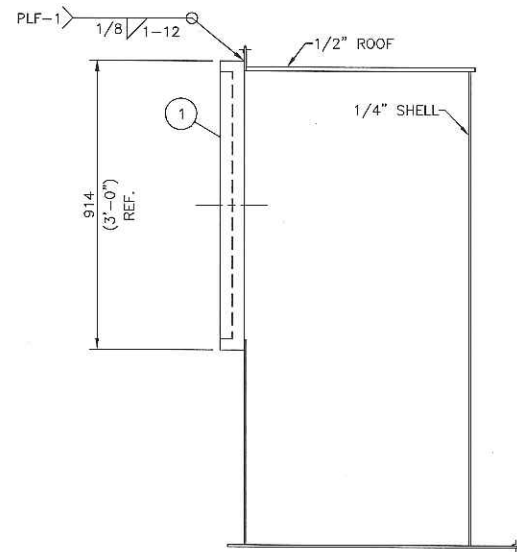
VENDOR TRANSMITTAL NUMBER: TR-003-023841



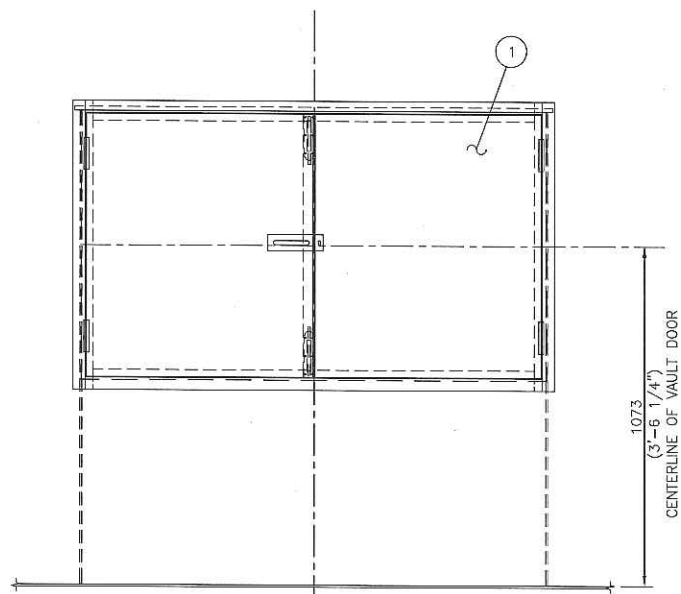
ENVIRO-VAULT PLAN VIEW



VIEW "B-B"



SECTION "C-C"



VIEW "A-A"

MATERIAL LIST

MK	QTY	DESCRIPTION	MATERIAL	WT
1	1	ENVIRO-VAULT DOOR FRAME	PRT-3019	73
2				
3				
4				
5				
6				
7				
8				
9				
10				

NOTES:
 1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY. TOTAL 77 lbs.

NO	DATE (d/m/y)	REVISIONS	APPD
△			
△			
△			
△			
△	31/01/12	ISSUED FOR CONSTRUCTION	RR

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CLIENT
 MURPHY OIL COMPANY LTD.

DWG TITLE
 STEAM VENT TANK, TAG# TK-7060
 5' ENVIRO-VAULT DOOR DETAILS (C/W NECK)

SCALE 1:15	DWN BY R. RANASINGHE	DWG NO. T-023841-C106	SHEET NO. 1 OF 1	REV. NO. 0
DATE (d/m/y) 31/01/12	CHKD APPD			

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DG102/03 Dm01	TK-7060	D. Patil	2012-02-21

PROJECT NAME: Murphy Oil Cadotte - 1780-003

VENDOR NAME: Universal Industries

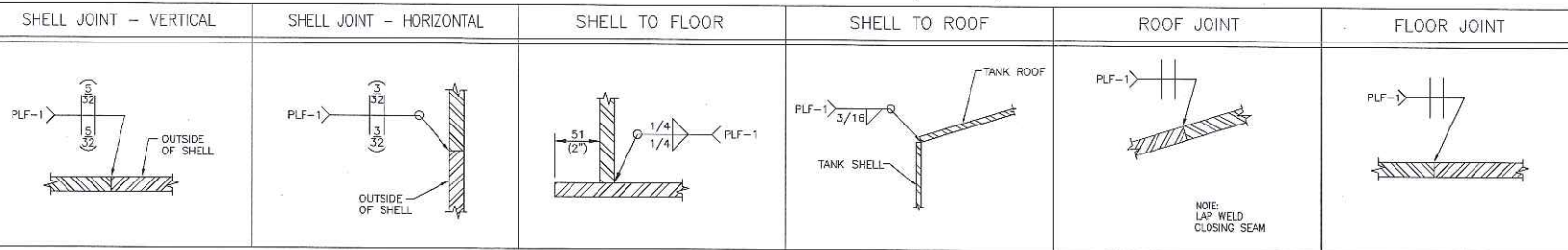
DOCUMENT NUMBER: T-023841-D101-1

VENDOR REVISION: 2

DOCUMENT DESCRIPTION: Steam Vent Tank General Arrangement

VENDOR TRANSMITTAL NUMBER: 004-023841

STANDARD WELD DETAILS (N.T.S.)

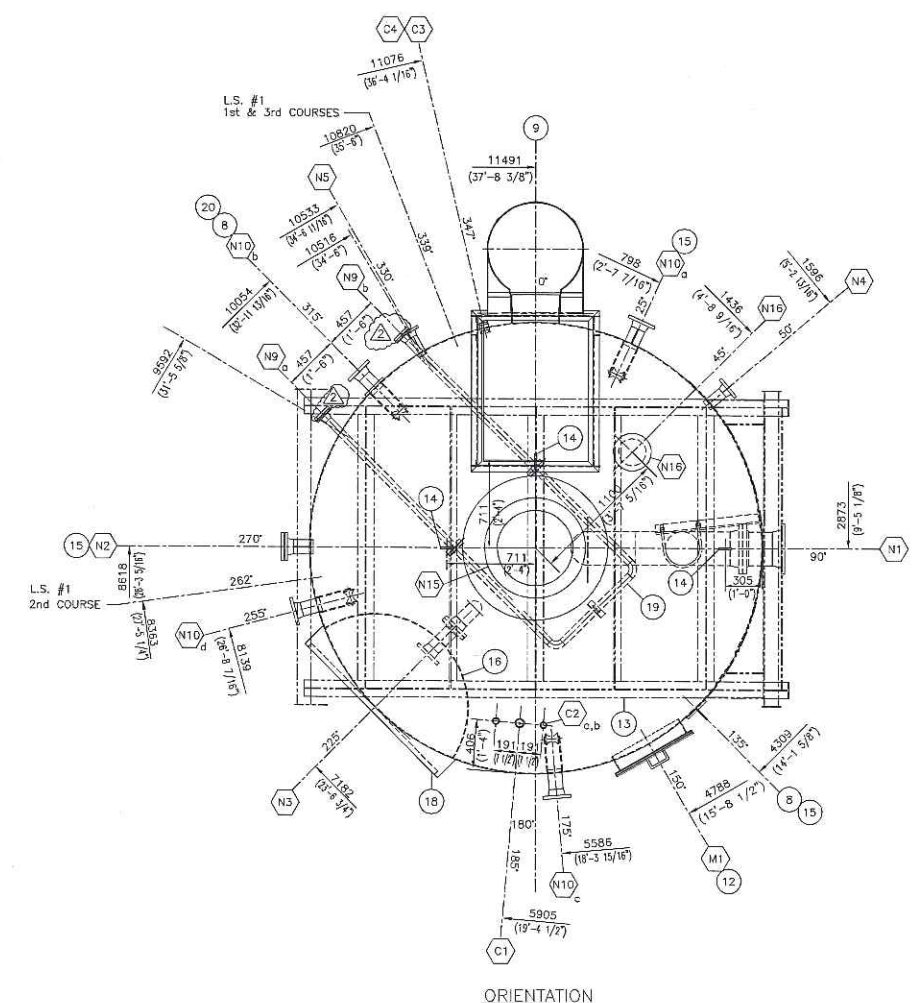
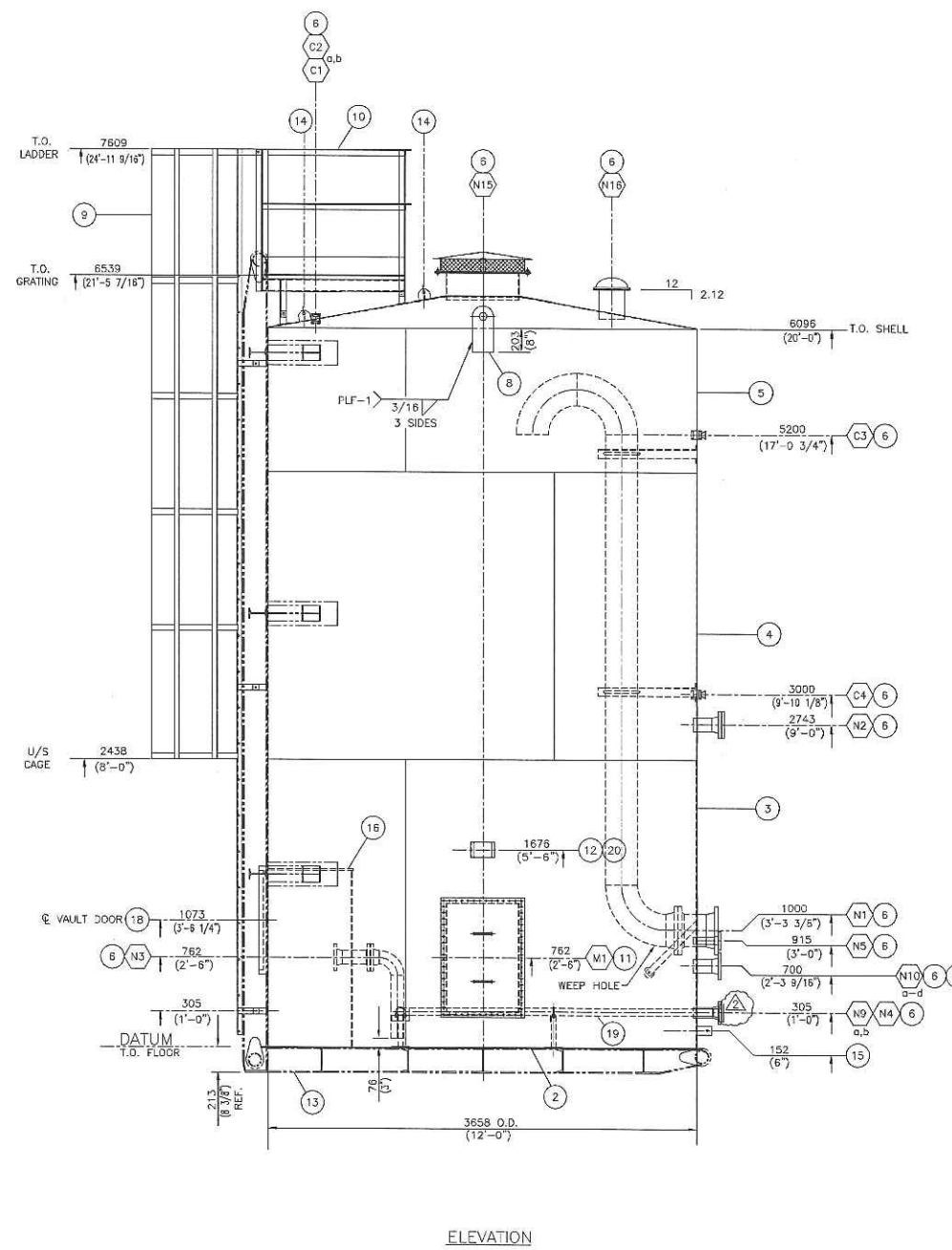


NOZZLE SCHEDULE

MK	NO	SIZE	SCH	RATE	TYPE	PROJECTION		REPAD		DESCRIPTION		
						INT.	EXT.	YES	NO			
N1	1	273	10"	STD	CLASS 150	RFWN	152	178	7"	✓	INLET C/W INT. FLANGE, PIPE RISER & 180° BEND	
N2	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	SPARE C/W BLIND
N3	1	114	4"	STD	CLASS 150	RFWN	152	6"	152	6"	✓	TO VAC TRUCK C/W DOWNCOMER (IN VAULT)
N4	1	89	3"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	LT - 7060
N5	1	60	2"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	TG - 7060
N9a	1	60	2"	STD	CLASS 150	RFWN	AS SHOWN	203	4"	✓	HEAT COIL C/W BLIND	
N9b	1	60	2"	STD	CLASS 150	RFWN	AS SHOWN	203	8"	✓	HEAT COIL C/W BLIND	
N10a	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	ANODE
N10b	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	ANODE
N10c	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	ANODE
N10d	1	114	4"	STD	CLASS 150	RFWN	25	1"	203	8"	✓	ANODE
N15	1	610	24"	1/4"	-	FAB'D	25	1"	203	8"	✓	VENT C/W RAIN CAP & BIRDSCREEN
N16	1	219	8"	STD	-	FAB'D	25	1"	203	8"	✓	THIEF HATCH C/W ENARDO 330
C1	1	51	2"	-	3000#	FULL CPLG	HALF	HALF	✓	C/W PLUG FOR FUTURE LG CONNECTIONS		
C2	2	32	1 1/4"	-	3000#	FULL CPLG	HALF	HALF	✓	C/W PLUG FOR FUTURE LG CONNECTIONS		
C3	1	51	2"	-	3000#	FULL CPLG	HALF	HALF	✓	SPARE C/W PLUG		
C4	1	51	2"	-	3000#	FULL CPLG	HALF	HALF	✓	SPARE C/W PLUG		
M1	1	810 x 914	2'-0" x 1'-11"	-	-	FAB'D	25	1"	102	4"	✓	MANWAY

MATERIAL LIST

MK	QTY.	DESCRIPTION	MATERIAL	WT
1	1	ROOF PLATE 3/16" THK. x 12'-1 7/8" FLAT DIA.	G40.21-44W	889
2	1	FLOOR PLATE 1/4" THK. x 12'-4" DIA.	G40.21-44W	1219
3	1	SHELL PLATE 1/4" THK. x 8'-0" x 37'-7 5/8" LG.	G40.21-44W	3074
4	1	SHELL PLATE 3/16" THK. x 8'-0" x 37'-7 3/4" LG.	G40.21-44W	2306
5	1	SHELL PLATE 3/16" THK. x 4'-0" x 37'-7 3/4" LG.	G40.21-44W	1153
6	-	NOZZLE DETAILS	REF. DWG. T-023841-D102	1625
7	-	-	-	-
8	2	LIFTING LUG	PRT-4273	60
9	1	LADDER DETAILS	REF. DWG. T-023841-D104	393
10	1	ROOF PLATFORM (3'-0" x 4'-0") C/W SAFETY GATE	REF. DWG. T-023841-C107	421
11	1	SHELL MANWAY 2'-0" x 3'-0" C/W 1/4" COVER	PRT-5250 PRT-5254 PRT-1473	160
12	1	NAMEPLATE BRACKET C/W NAMEPLATE	PRT-2896	5
13	1	SKID DETAILS (L-SKID)	REF. DWG. T-023841-D103	2956
14	3	TANK ROOF SAFETY HARNESS LUG	PRT-2533	6
15	3	GROUNDING LUG	PRT-4272	3
16	1	ENVIRO-VAULT 5'-0" x 5'-0" HIGH	REF. DWG. T-023841-A105	826
17	4	ANODE SUPPORT BRACKETS	REF. DWG. T-023841-A109	40
18	1	ENVIRO-VAULT DOOR DETAILS	REF. DWG. T-023841-C106	77
19	1	HEAT COIL (STEAM)	REF. DWG. T-023841-B108	124
20	1	HEAT COIL NAMEPLATE BRACKET C/W NAMEPLATE	PRT-2896	5
21	-	-	-	-
22	-	-	-	-
23	-	-	-	-
24	-	-	-	-
25	-	-	-	-
26	-	-	-	-
27	-	-	-	-
28	-	-	-	-
29	-	-	-	-
30	-	-	-	-
31	-	-	-	-
32	-	-	-	-
33	-	-	-	-
34	-	-	-	-
35	-	INSULATION	-	500
SUBTOTAL x 1.08				15642
TOTAL				16581 lbs



NOTES:
1. SEE DWG. T-023841-D101 SHT 2

NO	DATE (d/m/y)	REVISIONS	BY	APPD
17/02/12		CHANGED NOZZLE DESCRIPTIONS IN N9a, N9b & TOTAL OF WT.	RR	
31/01/12		RELOCATED N10, C3, C4, C1, C2, & N4 AND CHANGED SIZE OF C1	RR	JK
09/01/12		ISSUED FOR CONSTRUCTION	RR	JK
08/12/11		ISSUED FOR CUSTOMER APPROVAL	RR	JK

PEACELAND FABRICATING

MURPHY OIL COMPANY LTD.
C/O VISTA PROJECTS LTD. (P.O.# 1780-003)
CADOTTE PILOT CSS PROJECT
P.O.# 54115097-202-1

STEAM VENT TANK, TAG# TK-7060
GENERAL ARRANGEMENT

SIZE: 3658mm O.D. x 6096mm HIGH (12'-0" O.D. x 20'-0" HIGH) VOLUME: TANK 64 CUBIC METERS (400 Bbl)

SCALE: 1:30 DWN BY: R. RANASINGHE DWG. NO.: T-023841-D101 SHEET NO.: 1 of 2

DATE (d/m/y): 26/01/12 CHD: APPD

CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM01 DG01	TK-7060	D. Lemon	2012-01-16

PROJECT NAME: Murphy Oil Cadotte

VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-D101-2

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Steam Vent Tank Design Detail Fabrication Nuts,

VENDOR TRANSMITTAL NUMBER: _____

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DM-02	TK-7000	D. Patil	2012-02-21

PROJECT NAME: Murphy Oil Cadotte - 1780-003

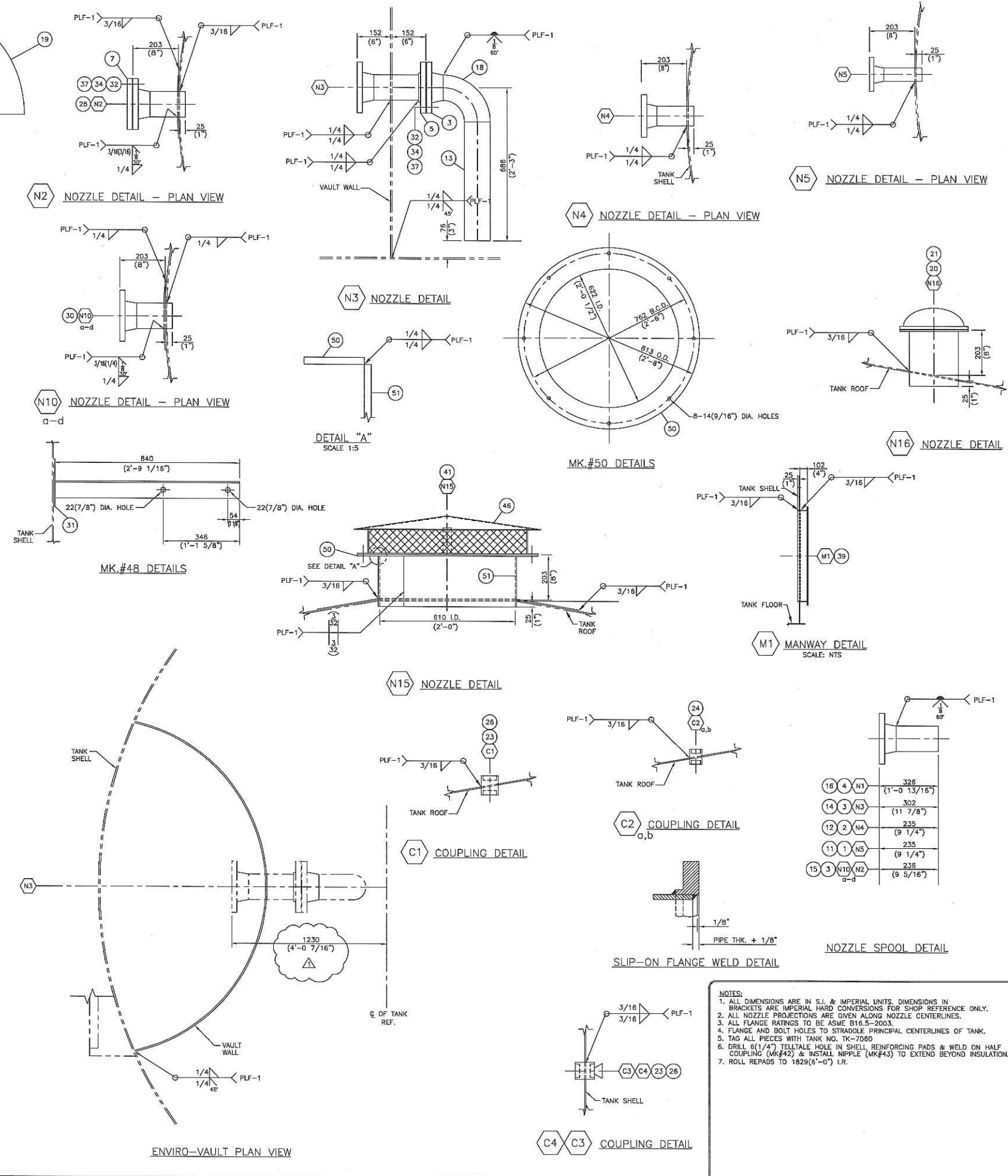
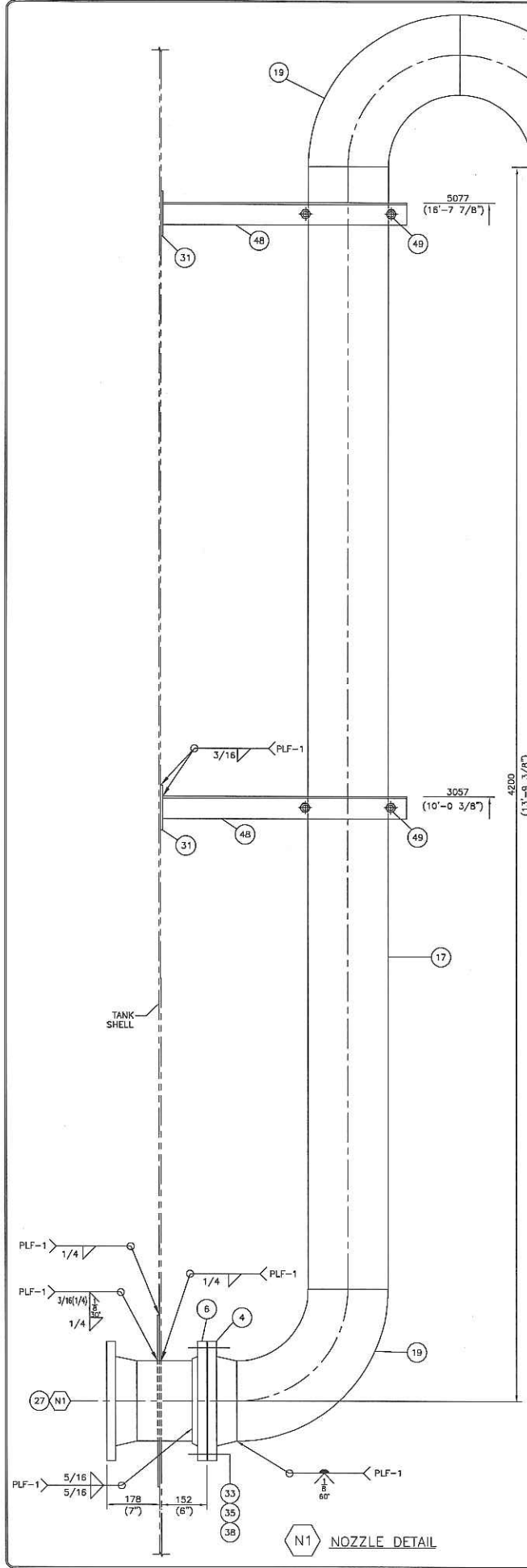
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-D102

VENDOR REVISION: 1

DOCUMENT DESCRIPTION: Steam Vent Tank Nozzle Details

VENDOR TRANSMITTAL NUMBER: 004-023841



MATERIAL LIST				
MK	QTY	DESCRIPTION	MATERIAL	WT
1	1	FLANGE 2" CLASS 150 RFWN x SCH STD BORE	SA-105	6
2	1	FLANGE 3" CLASS 150 RFWN x SCH STD BORE	SA-105	12
3	7	FLANGE 4" CLASS 150 RFWN x SCH STD BORE	SA-105	112
4	2	FLANGE 10" CLASS 150 RFWN x SCH STD BORE	SA-105	110
5	1	FLANGE 4" CLASS 150 RFSO	SA-105	12
6	1	FLANGE 10" CLASS 150 RFSO	SA-105	37
7	1	BLIND FLANGE 4" CLASS 150 RF	SA-105	17
8				
9				
10				
11	1	PIPE 2" SCH STD x 6 3/4" LG. SMLS BOE x POE	SA-105-B	2
12	1	PIPE 3" SCH STD x 6 9/16" LG. SMLS BOE x POE	SA-105-B	4
13	1	PIPE 4" SCH STD x 1'-9" LG. SMLS BOE x POE	SA-105-B	19
14	1	PIPE 4" SCH STD x 8 7/8" LG. SMLS BOE x POE	SA-105-B	8
15	5	PIPE 4" SCH STD x 8 5/16" LG. SMLS BOE x POE	SA-105-B	28
16	1	PIPE 10" SCH STD x 8 13/16" LG. SMLS BOE x POE	SA-105-B	30
17	1	PIPE 10" SCH STD x 12'-6 3/8" LG. SMLS BBE	SA-105-B	508
18	1	ELBOW 4" SCH STD x 90° L.R.	SA-234-WPB	9
19	3	ELBOW 10" SCH STD x 90° L.R.	SA-234-WPB	264
20	1	THEF HATCH 8" ENARDO 330 SET @ 15oz. PRESS. 0.5oz. VAC.	-	25
21	1	THEF HATCH NOZZLE 8"	PRT-2789	10
22				
23	3	FULL CPLG 2" 3000# F.S. SCR'D	SA-105	12
24	2	FULL CPLG 1 1/4" 3000# F.S. SCR'D	SA-105	3
25				
26	3	HEX PLUG 2" 3000# F.S.	SA-105	1
27	1	REPAD PLATE 1/4" THK. - 10" NOZZLE	PRT-1489	23
28	1	REPAD PLATE 3/16" THK. - 4" NOZZLE	PRT-4266	5
29				
30	4	REPAD PLATE 1/4" THK. - 4" NOZZLE	PRT-1540	28
31	2	REPAD PLATE 1/4" THK. x 8" DIA.	G40.21-38W (F.G.P.)	4
32	16	STUD 5/8" DIA. x 3 1/2" LG.	SA-193-B7	4
33	12	STUD 7/8" DIA. x 4 1/2" LG.	SA-193-B7	8
34	32	HEX NUT 5/8" NOM.	SA-194-2H	4
35	24	HEX NUT 7/8" NOM.	SA-194-2H	7
36				
37	2	GASKET 4" CLASS 150 x 1/8" THK	FLEXITALLIC 318 S.S.	2
38	1	GASKET 10" CLASS 150 x 1/8" THK	FLEXITALLIC 318 S.S.	2
39	1	SHELL MANWAY 2' x 3' C/W 1/4" COVER PLATE	SEE G.A.	-
40				
41	1	ROOF REPAD 3/16" x 2'-0 5/8" I.D. x 3'-10" O.D.	G40.21-38W	12
42	7	HALF CPLG 1/4" 3000# F.S. SCR'D	SA-105	4
43	6	NIPPLE 1/4" SCH XS x 3" LG. SMLS TBE	SA-105-B	1
44				
45				
46	1	MUSHROOM CAP DETAILS - 24" NOZZLE	REF. DWG. T-023841-B110	66
47				
48	2	ANGLE 3" x 3" x 1/4" x 2'-9 1/16" LG.	G40.21-44W	27
49	2	U-BOLT 3/4" x 10" NPS C/W NUTS	C.S.	2
50	1	PLATE 1/4" THK. x 2'-8" DIA.	G40.21-38W	57
51	1	PLATE 1/4" THK. x 8 15/16" x 6'-4 3/16" LG.	G40.21-38W	48
52				
53				
54				
			SUBTOTAL x 1.08	1533
			TOTAL (lbs.)	1625

NO	DATE (d/m/y)	REVISIONS	BY	APPD
17/02/12		ADDED DISTANCE FROM CENTRE OF TANK TO THE FLANGE OF N3	RR	
31/01/12		ISSUED FOR CONSTRUCTION	RR	RR

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PEACELAND FABRICATING

CLIENT: MURPHY OIL COMPANY LTD.
C/O VISTA PROJECTS LTD. (P.O.# 1780-003)
CADOTTE PILOT CSS PROJECT
P.O.# 54115097-202-1

DWG TITLE: STEAM VENT TANK, TAG# TK-7060
NOZZLE DETAILS

SCALE: 1:10	DWN BY: R. RANASINGHE	DWG NO: T-023841-D102	SHEET NO: 1 of 1	REV. NO: 1
DATE (d/m/y): 26/01/12	CHKD: APPD:			

- NOTES:
- ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
 - ALL NOZZLE PROJECTIONS ARE GIVEN ALONG NOZZLE CENTERLINES.
 - ALL FLANGE RATINGS TO BE ASME B16.5-2003.
 - FLANGE AND BOLT HOLES TO STRADDLE PRINCIPAL CENTERLINES OF TANK.
 - TAG ALL PIECES WITH TANK NO. TK-7060
 - DRILL (6 1/4") TELLTALE HOLE IN SHELL REINFORCING PADS & WELD ON HALF COUPLING (MK#42) & INSTALL NIPPLE (MK#43) TO EXTEND BEYOND INSULATION.
 - ROLL REPADS TO 1829(6'-0") L.R.



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
5002	TK-7060	D. Lemson	202-02-16

PROJECT NAME: Murphy Oil Cadotte 1780-003

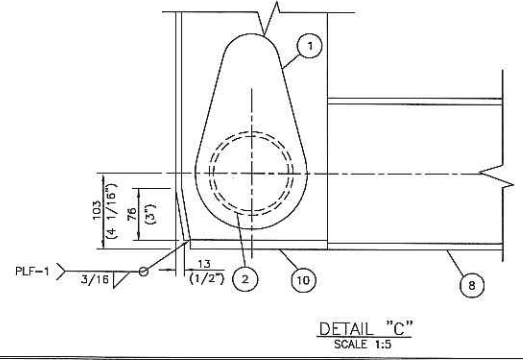
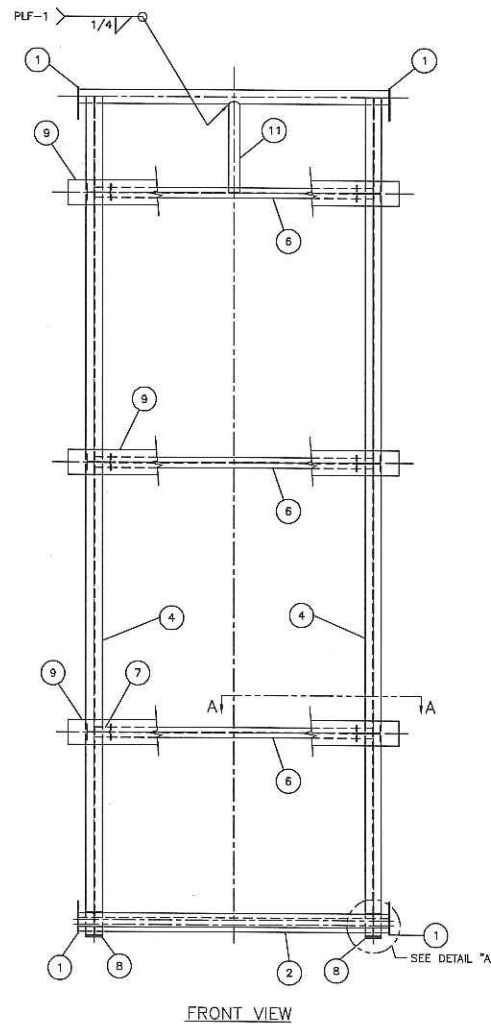
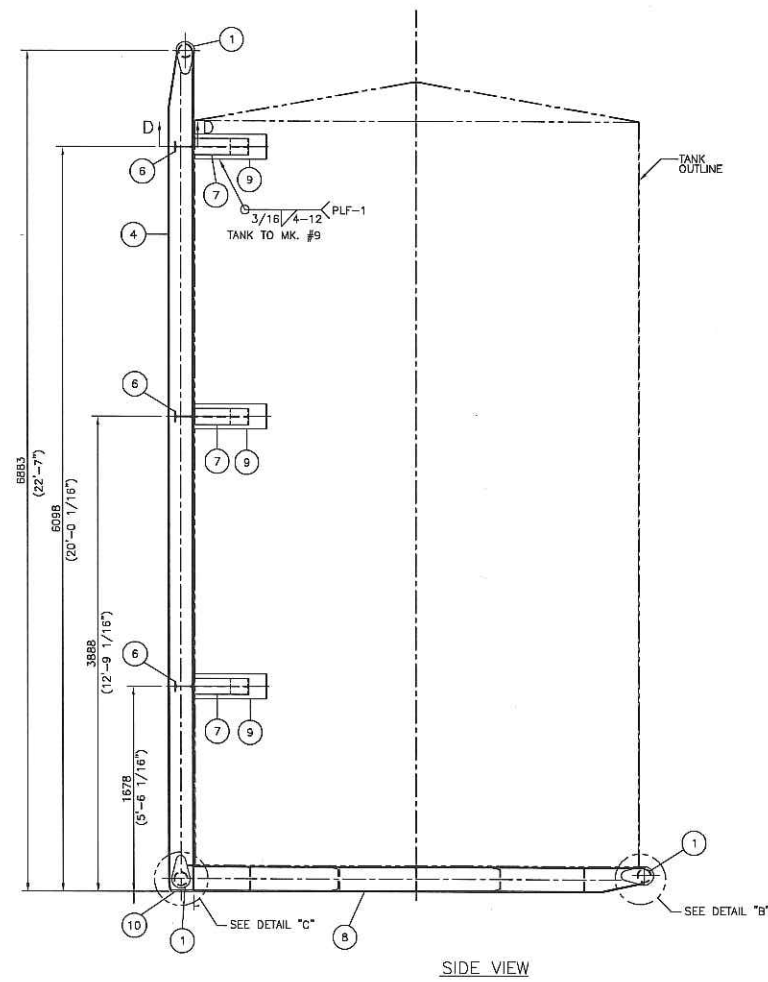
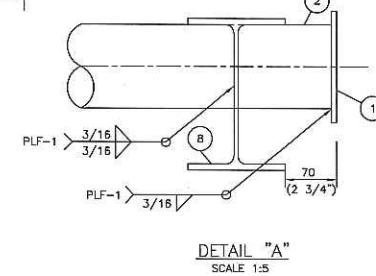
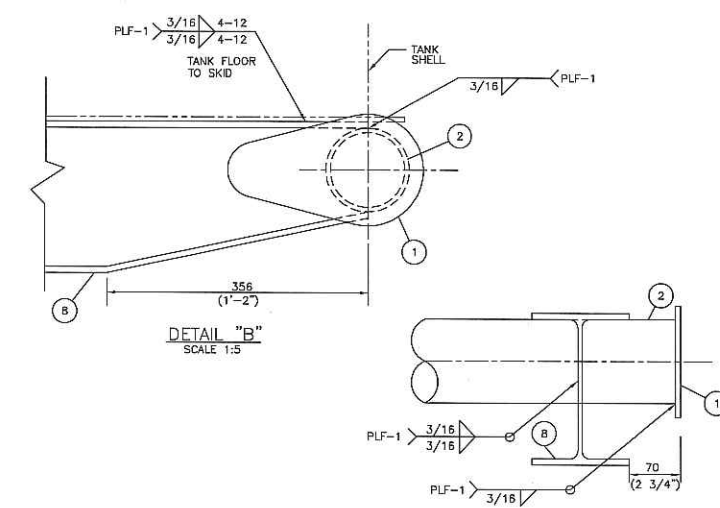
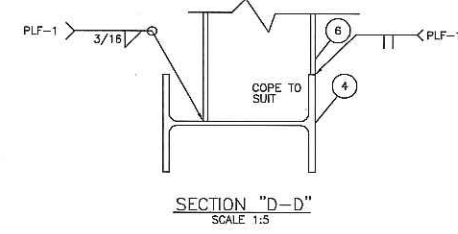
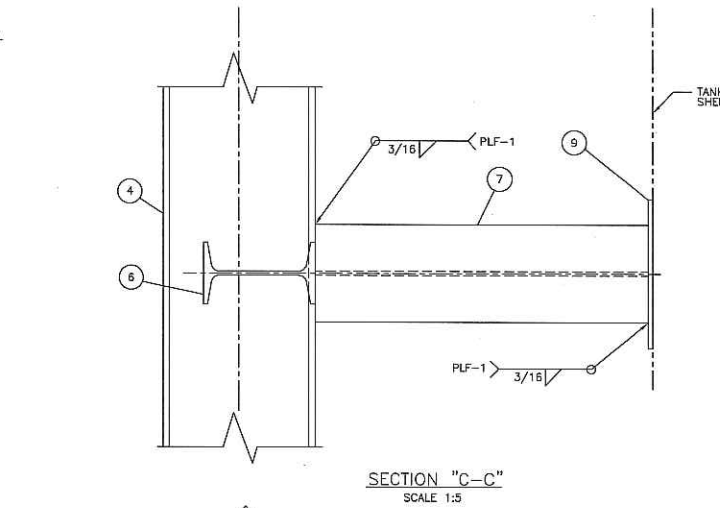
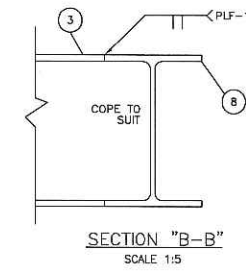
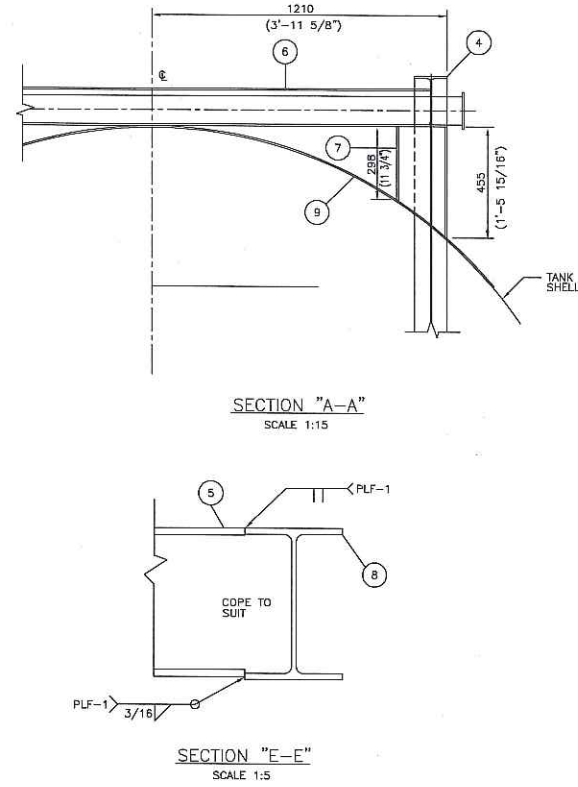
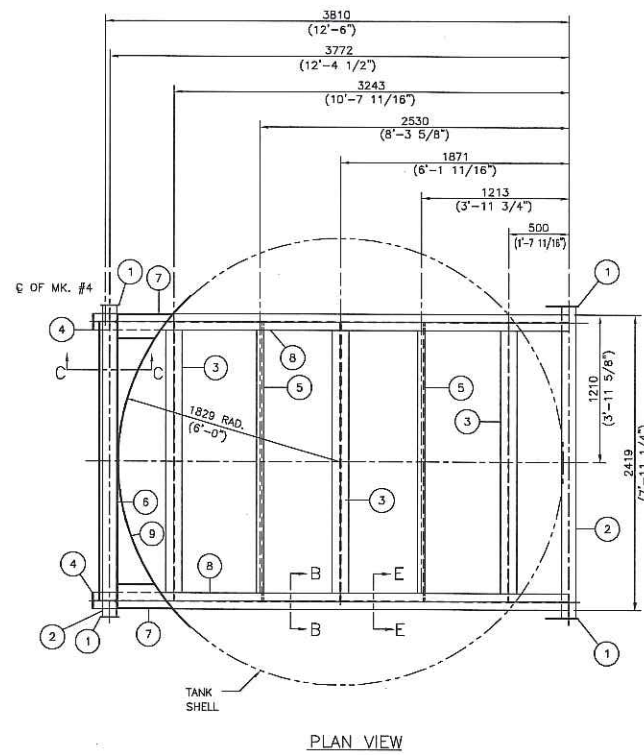
VENDOR NAME: Universal Industries

DOCUMENT NUMBER: T-023841-D103

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: L-Skid Details
Steam Vent Tank TK-7060

VENDOR TRANSMITTAL NUMBER: TR-003-023841



MATERIAL LIST				
MK	QTY	DESCRIPTION	MATERIAL	WT
1	6	SKID EAR FOR 4" PIPE	PRT-5971	18
2	3	PIPE 4" SCH STD x 8'-4 1/4" LG. ERW PBE	SA-53-B	271
3	3	BEAM WB x 18# x 7'-5 3/4" LG.	G40.21-50W	404
4	2	BEAM WB x 18# x 22'-6 1/2" LG.	G40.21-50W	812
5	2	CHANNEL CB x 11.5# x 7'-5 3/4" LG.	G40.21-44W	172
6	3	BEAM S6 x 12.5# x 7'-5 3/4" LG.	G40.21-50W	280
7	6	BEAM WB x 18# x 1'-5 15/16" LG.	G40.21-50W	161
8	2	BEAM WB x 18# x 12'-1 15/16" LG.	G40.21-50W	438
9	3	FLATBAR 1/4" THK. x 8" x 10'-0" LG. ROLLED TO 6"-0" I.R.	G40.21-44W	204
10	2	FLATBAR 1/2" x 5" x 7 3/8" LG.	G40.21-44W	10
11	1	PIPE 3" SCH STD x 2'-5 3/8" LG. ERW PBE	SA-53-B	19
12				
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30				

NOTE: 1. ALL DIMENSIONS ARE IN S.I. & IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.

SUBTOTAL x 1.05 TOTAL 2789 2956 lbs.

NO	DATE (d/m/y)	REVISIONS	BY	APPD
31	01/12	ISSUED FOR CONSTRUCTION	RR	

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DWG TITLE: STEAM VENT TANK, TAG# TK-7060 L-SKID DETAILS

SCALE	DWN BY	DWG NO.	SHEET NO.	REV. NO.
1:30	R. RANASINGHE		1 OF 1	
DATE (d/m/y)	CHKD	APPD	T-023841-D103	
27/01/12				