

TANKMAN PHONE: 403-271-4525 (CALGARY)

**TANKMAN**  
A DIVISION OF ETT CHEMICALS INC.

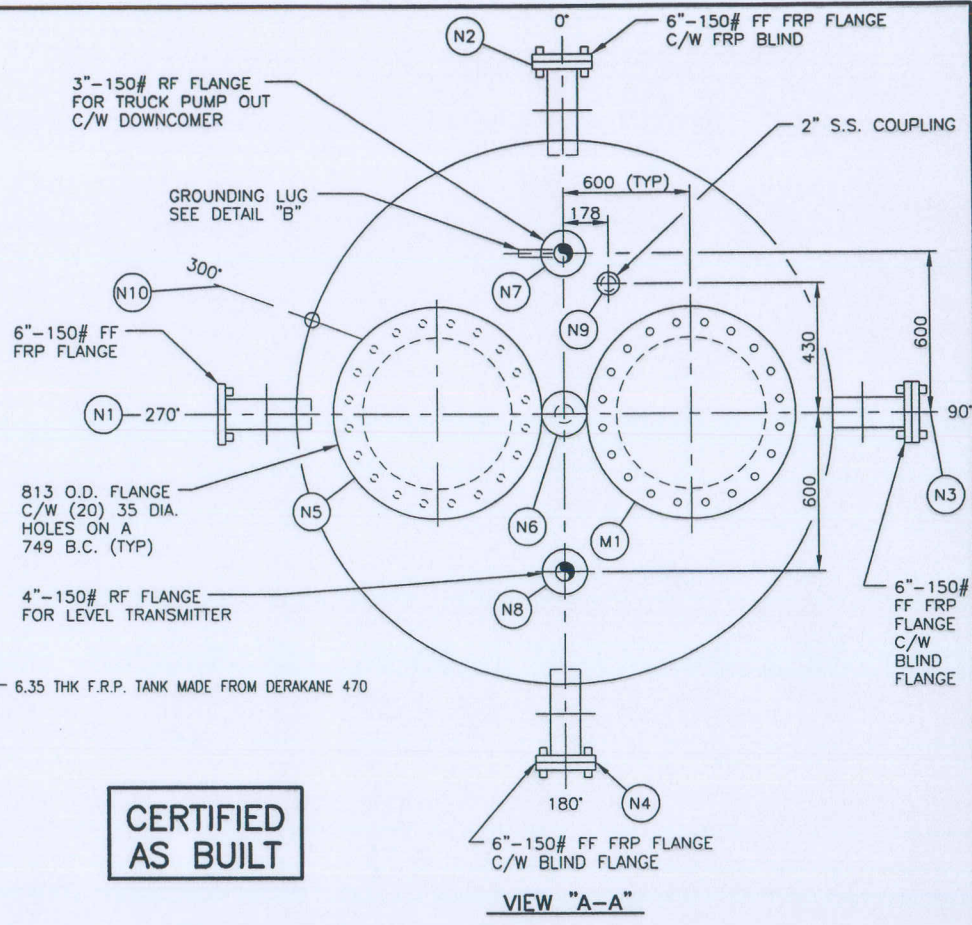
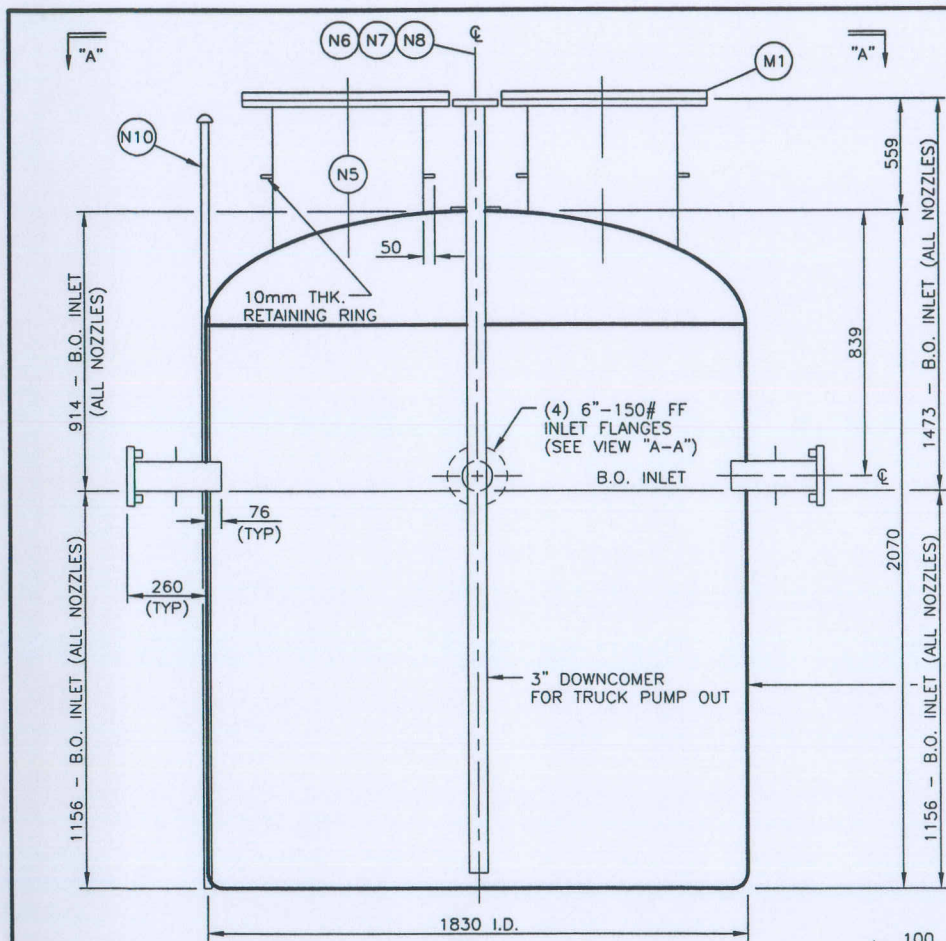
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<b>OUTLINE DRAWING</b>		
CUSTOMER: ENCANVA FCCL OIL LTD. C/O DPH FOCUS CORPORATION CONSULTING ENGINEERS		
PO #: FCSR-DPH-4017B, JOB #: 9971		
PLANT: FOSTER CREEK SULPHUR RECOVERY		
AMINE/AGE BUILDING FLOOR DRAIN TANK TAG #: T-5780		
SCALE: N.T.S.	DWG. NO.: 08-1074-01	REV: 3

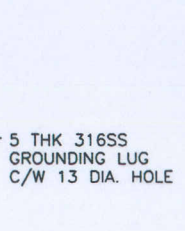
SPECIFIED LATERAL LIVE LOAD 50 kN/m<sup>2</sup>      \*\* CONCRETE DIMENSIONS ARE ONLY APPROXIMATE USE INLET INVERT TO SET THE TANKS

F.R.P. TANK





**CERTIFIED  
AS BUILT**



NOZZLE/CONNECTION SCHEDULE & BILL OF MATERIAL				
MK	TYPE	SIZE/RATING	DESCRIPTION	MAT'L
N1	F.F.	6"-150#	FLOOR DRAIN INLET	FRP
N2	F.F.	6"-150#	SPARE C/W BLIND	FRP
N3/N4	F.F.	6"-150#	SPARE C/W BLIND	FRP
N5	F.F.	24" *	PUMP OPENING C/W BLIND	FRP
N6	R.F.	8"-150#	FREE VENT C/W BIRDSCREEN	316 S.S.
N7	R.F.	3"-150#	TRUCK PUMP-OUT C/W DOWNCOMER	316 S.S.
N8	R.F.	4"-150#	LEVEL TRANSMITTER	316 S.S.
N9	CPLG	2"	LEAK DETECTION	FRP
N10	PIPE	2"	DIPSTICK C/W CAP	FRP
M1	F.F.	24"-150#	MANWAY C/W COVER	FRP

NOTE: TANK TO BE TESTED FULL OF WATER TO TOP OF MANHOLE AT ATMOSPHERIC PRESSURE

\* 24" FABRICATED FLANGE TO MATCH 150# BOLT PATTERN

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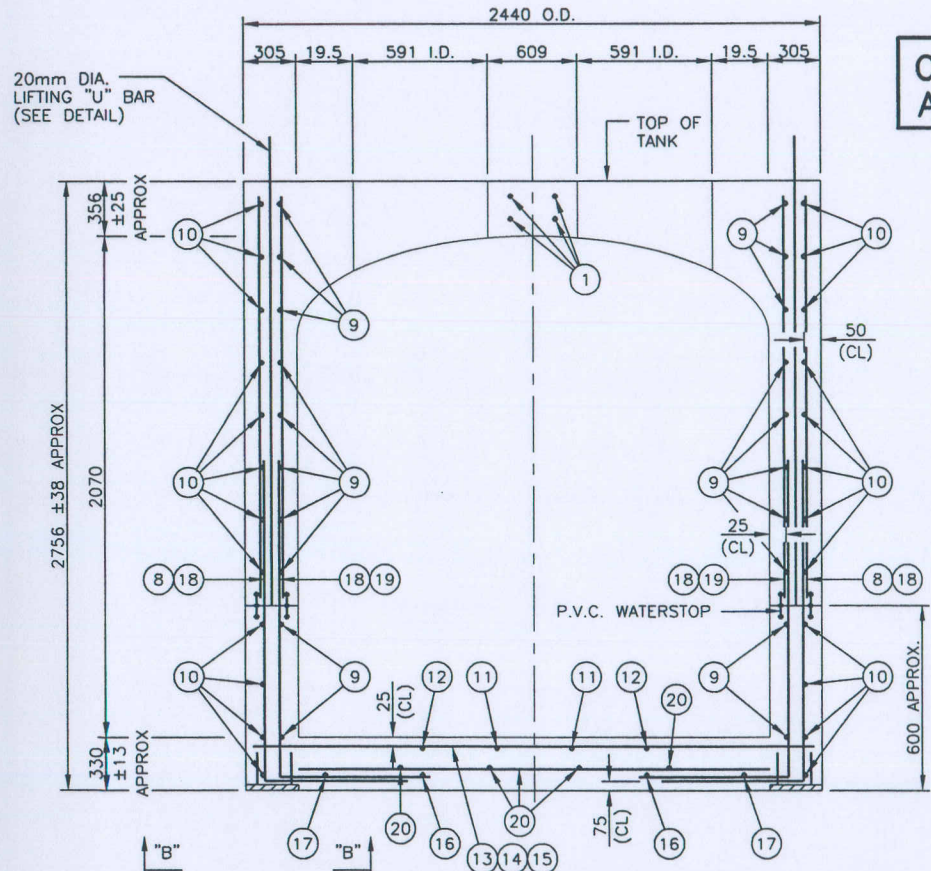
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PLANT: FOSTER CREEK SULPHUR RECOVERY  
**AMINE/AGE BUILDING FLOOR DRAIN TANK**  
TAG #: T-5780

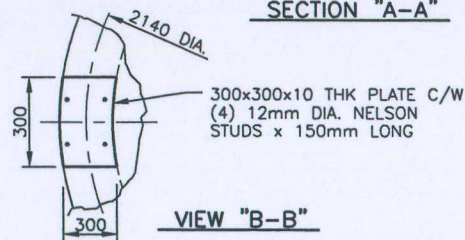
SCALE: N.T.S.      DWG. NO.: 08-1074-F2      REV: 2



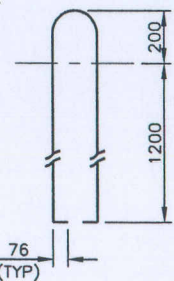
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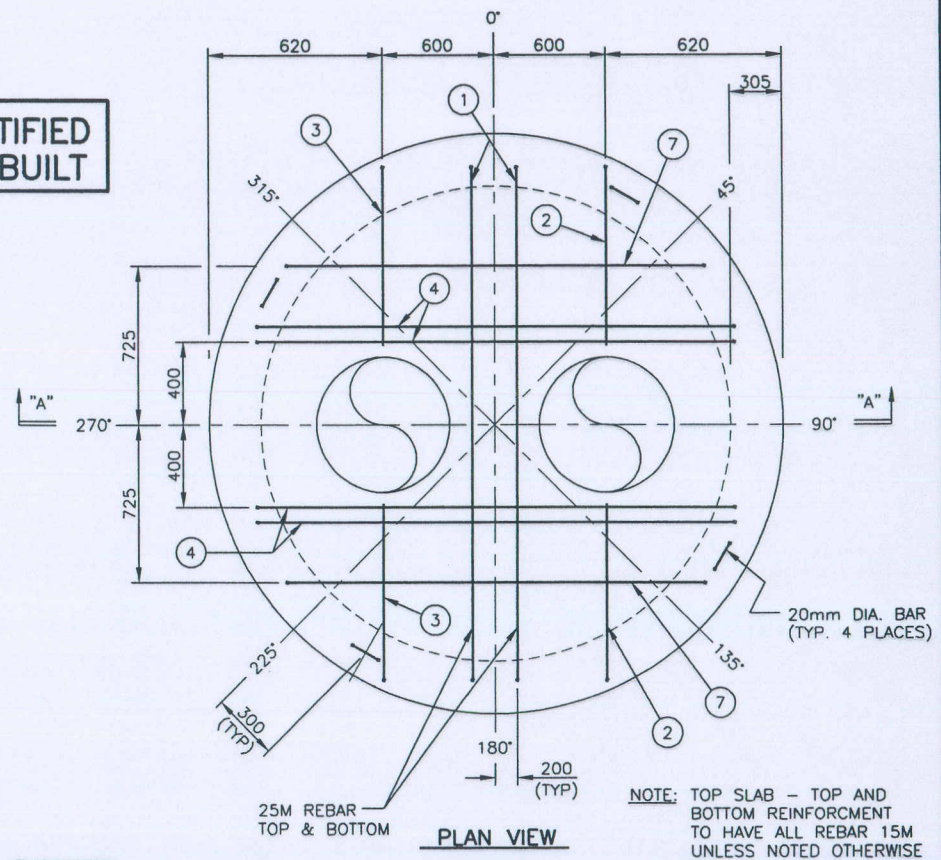
**SECTION "A-A"**



**VIEW "B-B"**



**LIFTING "U" BARS**



**PLAN VIEW**

NOTE: TOP SLAB - TOP AND BOTTOM REINFORCEMENT TO HAVE ALL REBAR 15M UNLESS NOTED OTHERWISE

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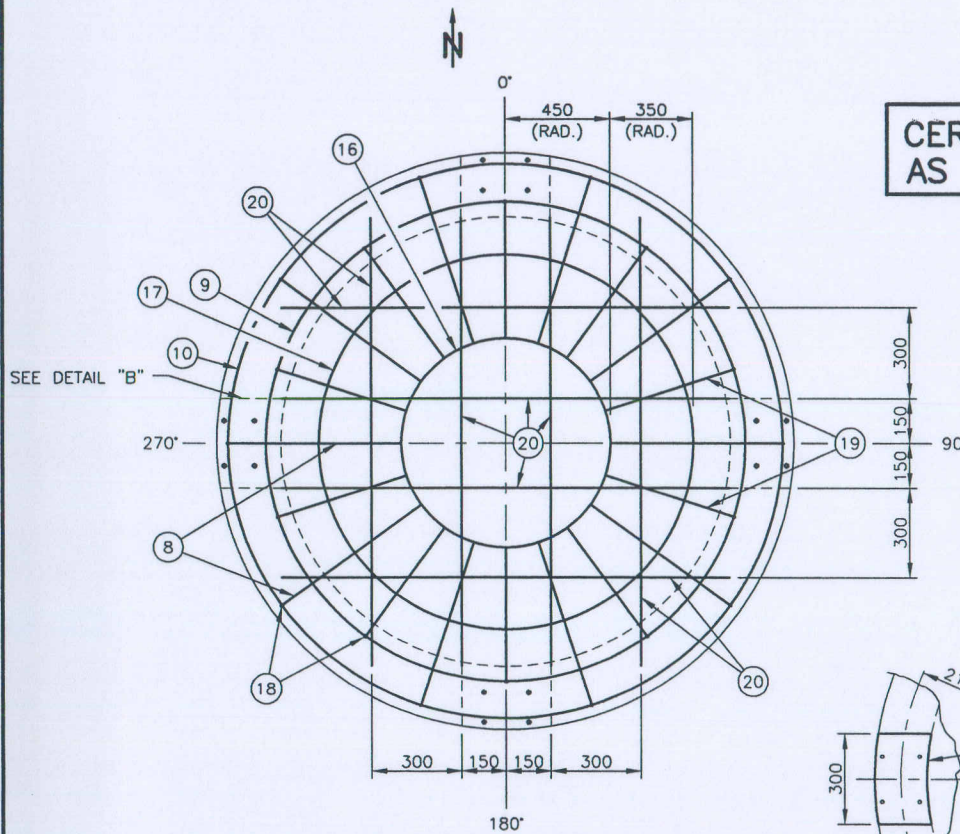


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<b>REBAR REINFORCEMENT PLAN &amp; SECTION "A-A"</b>		
CUSTOMER: ENCANVA FCCL OIL LTD. C/O DPH FOCUS CORPORATION CONSULTING ENGINEERS		
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PLANT: FOSTER CREEK SULPHUR RECOVERY		
AMINE/AGE BUILDING FLOOR DRAIN TANK TAG #: T-5780		
SCALE: N.T.S.	DWG. NO.: 08-1074-R3	REV: 3

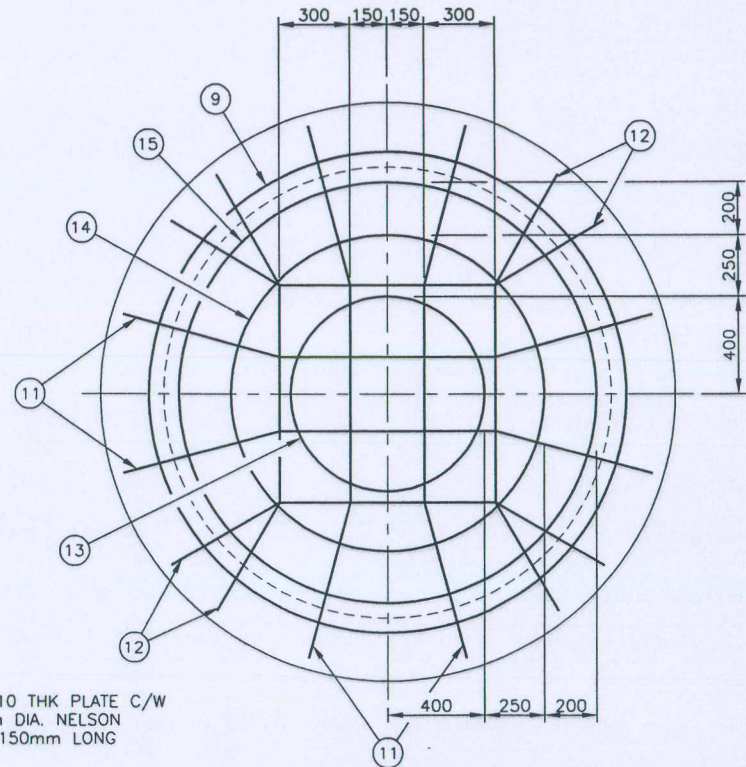


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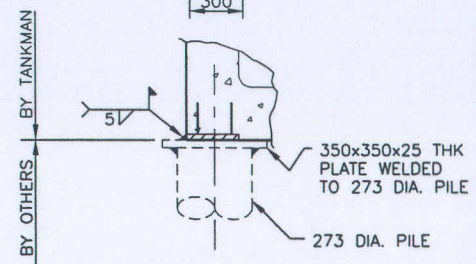
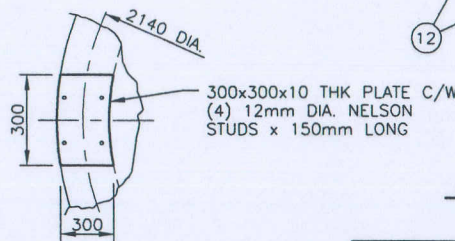


SEE DETAIL "B"

**BOTTOM SLAB - BOTTOM REINFORCEMENT**  
ALL BARS 15M



**BOTTOM SLAB - TOP REINFORCEMENT**  
ALL BARS 15M



**DETAIL "B"**

BY TANKMAN  
BY OTHERS

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






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**REBAR REINFORCEMENT  
BOTTOM SLAB**

CUSTOMER: ENCANVA FCCL OIL LTD.  
C/O DPH FOCUS CORPORATION CONSULTING ENGINEERS  
PO #: FCSR-DPH-4017B, JOB #: 9971  
PLANT: FOSTER CREEK SULPHUR RECOVERY  
AMINE/AGE BUILDING FLOOR DRAIN TANK  
TAG #: T-5780

SCALE: N.T.S.	DWG. NO.: 08-1074-R4	REV: 2
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NO.	SHAPE	BAR	WEIGHT	LENGTH	# OF BARS	TOTAL LENGTH(mm)	TOTAL WEIGHT(kg)
1	500   2000   500	25M	3.93	3000	4	12000	47.2
2	600   500	15M	1.57	1100	4	4400	6.9
3	500   700	15M	1.57	1200	4	4800	7.5
4	500   1700   500	15M	1.57	2700	4	10800	17
5	500   1300	15M	1.57	1800	4	7200	11.3
6	500   2100   500	15M	1.57	3100	4	12400	19.5
7	500   1600   500	15M	1.57	2600	2	5200	8.1
8	1250   750	15M	1.57	2000	10	18000	28.3
9		15M	1.57	6725	10	67250	105.6
10		15M	1.57	7800	12	93600	147
11	700   900   700	15M	1.57	2300	4	9200	14.4
12	550   900   550	15M	1.57	2000	4	8000	12.6
13		15M	1.57	3100	1	3100	4.9
14		15M	1.57	4680	1	4680	7.4
15		15M	1.57	5940	1	5940	9.3
16		15M	1.57	3420	1	3420	5.4
17		15M	1.57	5600	1	5600	8.9
18	2030	15M	1.57	2030	20	40600	63.8
19	1250   500	15M	1.57	1750	10	17500	27.5
20	1830	15M	1.57	1830	8	14640	23.0

GENERAL NOTES:

- 1) ALL CONCRETE WORK SHALL CONFORM TO REQUIREMENTS OF CSA STANDARD A23.1-94. ALL CONCRETE SHALL BE 30 MPa AT 28 DAYS.
- 2) CONCRETE TESTING SHALL BE DONE IN ACCORDANCE WITH CSA STANDARD A23.2-94 BY AN INDEPENDENT MATERIAL CONSULTANT WITH THE REPORT SUBMITTED TO THE STRUCTURAL ENGINEER.
- 3) ALL CONCRETE SHALL BE NORMAL WEIGHT STONE WITH THE UNIT WEIGHT OF 24 kN/m<sup>3</sup> (150 PCF). ALL CEMENT SHALL BE NORMAL PORTLAND CEMENT TYPE 50 SULPHATE RESISTANT CEMENT CONFORMING TO CSA-A5-98.
- 4) NO CALCIUM CHLORIDE IN ANY FORM IS PERMITTED IN CONCRETE MIX. DO NOT USE ADMIXTURES WITHOUT WRITTEN PERMISSION OF THE STRUCTURAL ENGINEER.
- 5) CLEAN FORMS FROM DEBRIS AND OTHER FOREIGN MATERIALS PRIOR TO CASTING CONCRETE. USE MECHANICAL VIBRATORS TO COMPACT CONCRETE THROUGHOUT.
- 6) REINFORCING STEEL MUST BE INSPECTED BY ENGINEER PRIOR TO CASTING OF CONCRETE.
- 7) DO NOT REMOVE FORMS BEFORE CONCRETE REACHES 10 MPa.
- 8) ALL REINFORCING SHALL BE DEFORMED BARS CONFORMING TO CSA G30.18 GRADE 400.
- 9) FOR SMALL OPENINGS DUE TO PIPES, SEE PIPE DRAWINGS.
- 10) CONTAINER IS DESIGNED FOR 12 kN/m<sup>2</sup> LIVE LOAD AT TOP AND 50 kN/m<sup>2</sup> LATERAL PRESSURE. BACK FILLING OF CONTAINER SHALL BE DONE SIMULTANEOUSLY FROM ALL AROUND THE CONTAINER. TOP OF CONTAINER SHALL BE AT GRADE LEVEL.

TOTAL WEIGHT OF REBAR = 576 kg

THIS TANK WILL BE SUBJECT TO FREEZE/THAW CYCLES IF LOCATED OUTSIDE THE BUILDING. AIR ENTRAINMENT SHALL BE 4% TO 7%.

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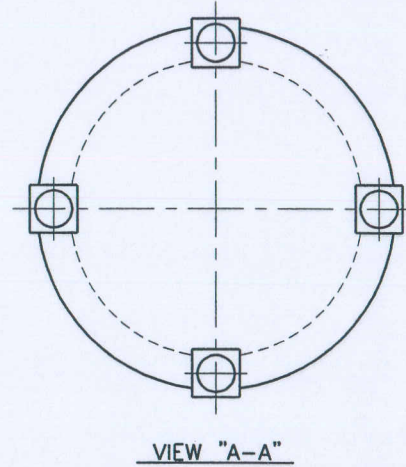
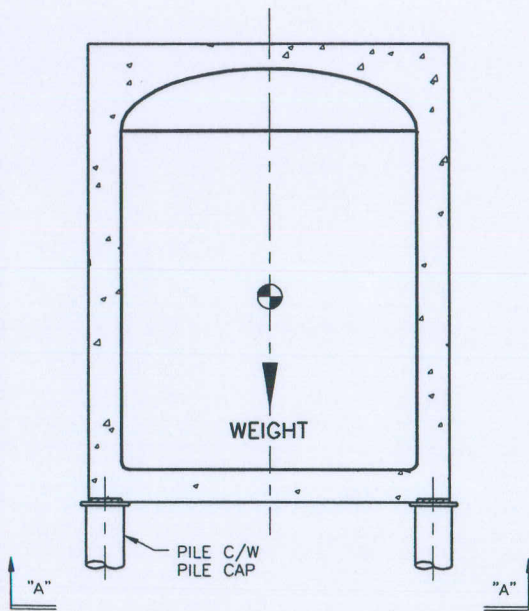
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REBAR MATERIAL LIST  
& GENERAL NOTES

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PLANT: FOSTER CREEK SULPHUR RECOVERY  
AMINE/AGE BUILDING FLOOR DRAIN TANK  
TAG #: T-5780

SCALE: N.T.S.	DWG. NO.: 08-1074-R5	REV: 2
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CERTIFIED  
AS BUILT

**NOTE:** THE TANK WEIGHT IS 25 METRIC  
TONS SUPPORTED ON FOUR (4)  
PILES C/W PILE CAPS

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SUPPORTS OR FOUNDATION  
LOAD DIAGRAM

CUSTOMER: ENCANVA FCCL OIL LTD.  
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PO #: FCSR-DPH-4017B, JOB #: 9971

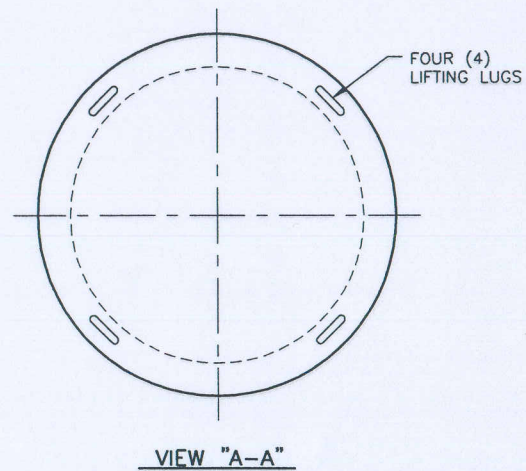
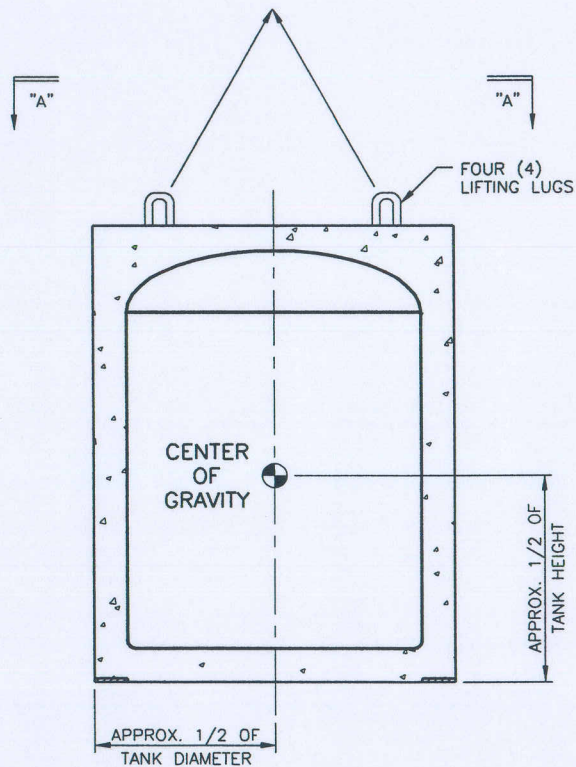
PLANT: FOSTER CREEK SULPHUR RECOVERY

AMINE/AGE BUILDING FLOOR DRAIN TANK  
TAG #: T-5780

SCALE:  
N.T.S.

DWG. NO.:  
08-1074-A8

REV:  
0



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LIFTING DIAGRAM/INSTRUCTIONS  
CENTRE OF GRAVITY OF EACH LIFT

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C/O DPH FOCUS CORPORATION CONSULTING ENGINEERS

PO #: FCSR-DPH-4017B, JOB #: 9971

PLANT: FOSTER CREEK SULPHUR RECOVERY

AMINE/AGE BUILDING FLOOR DRAIN TANK  
TAG #: T-5780

SCALE:  
N.T.S.

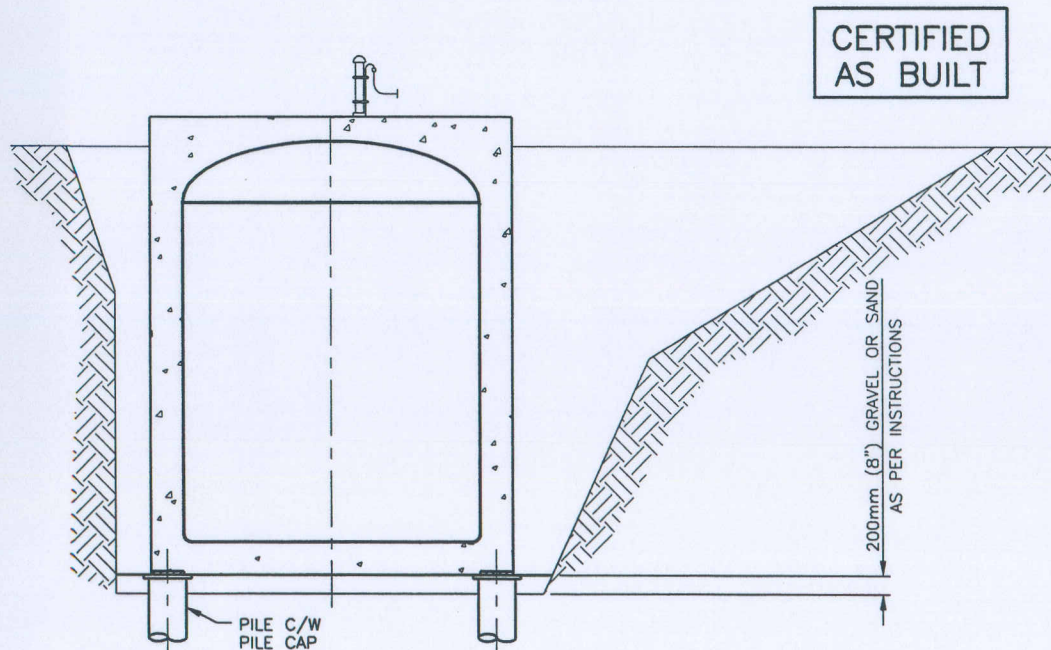
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08-1074-A10

REV:  
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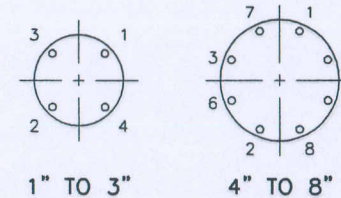


## DOUBLE WALL/DOUBLE COMPOSITE TANK INSTALLATION PROCEDURES

1. ALWAYS FOLLOW OCCUPATIONAL HEALTH AND SAFETY STATUTES AND REGULATIONS.
2. CONTAINER IS DESIGNED FOR 12 kN/m<sup>2</sup> LIVE LOAD AT TOP AND 50 kN/m<sup>2</sup> LATERAL PRESSURE. BACK FILLING OF CONTAINER SHALL BE DONE SIMULTANEOUSLY FROM ALL AROUND THE CONTAINER. TOP OF CONTAINER SHALL BE AT GRADE LEVEL.
3. **DRY HOLE INSTALLATION:** TANK SHALL BE PLACED ON 200mm (8") SAND OR GRAVEL.
4. **WET HOLE INSTALLATION:** TANK SHALL BE PLACED ON 200mm (8") OF GRAVEL OR CRUSHED ROCK.
5. **TANK ON PILES INSTALLATION:** FOLLOW CONSULTANTS INSTRUCTIONS.
6. BEFORE LOWERING THE TANK INTO THE EXCAVATION, CHECK FOR ANY OBVIOUS DAMAGE TO CONCRETE AND F.R.P. (FIBER REINFORCED PLASTIC) PARTS. DAMAGED TANKS SHALL NOT BE INSTALLED. CONSULT WITH TANKMAN ENGINEER - JOHN S. JOCHMANN, P.Eng. BY CALLING (403) 271-4525 (office) OR (403) 888-6905 (cellular).
7.
  - a) CONNECT THE TANK INLET(S) TO THE PROCESS PIPING.
  - b) CONNECT MONITORING TUBING.
  - c) TIGHTEN BOLTS TO PREVENT INFILTRATION AND EXFILTRATION.
  - d) INSTALL PIPE BOLLARDS BEFORE BACKFILLING.
  - e) BACKFILLING OF THE LEVELLED TANK SHALL BE DONE SIMULTANEOUSLY ALL AROUND THE TANK BODY.
8. FAILURE TO FOLLOW THESE INSTRUCTIONS WILL INVALIDATE THE WARRANTY.



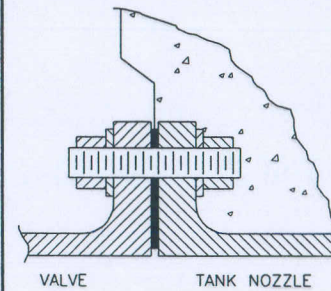
## BOLT TORQUING SEQUENCE



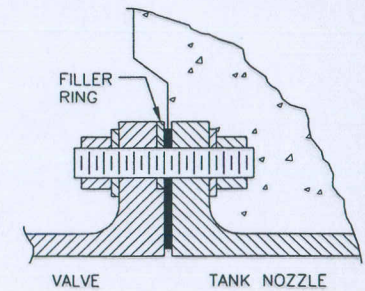
### RECOMMENDED BOLT TORQUES FOR HAND LAY-UP FLANGES

PIPE SIZE	BOLT DIA.	TORQUE FT/LB
2"	5/8"	20 FT/LB
3"	5/8"	20 FT/LB
4"	5/8"	20 FT/LB
6"	3/4"	25 FT/LB
8"	3/4"	25 FT/LB

GENERAL NOTE:  
1) ALWAYS USE THE THREAD LUBRICANT APPROPRIATE FOR THE MATERIAL



FLAT-FACE VALVE FLANGE TO  
FLAT-FACE RTP NOZZLE FLANGE  
AND FULL-FACE GASKET



RAISED-FACE VALVE FLANGE TO  
FLAT-FACE RTP NOZZLE FLANGE WITH  
FILLER RING AND FULL-FACE GASKET

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### INSTALLATION PROCEDURES

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PLANT: FOSTER CREEK SULPHUR RECOVERY

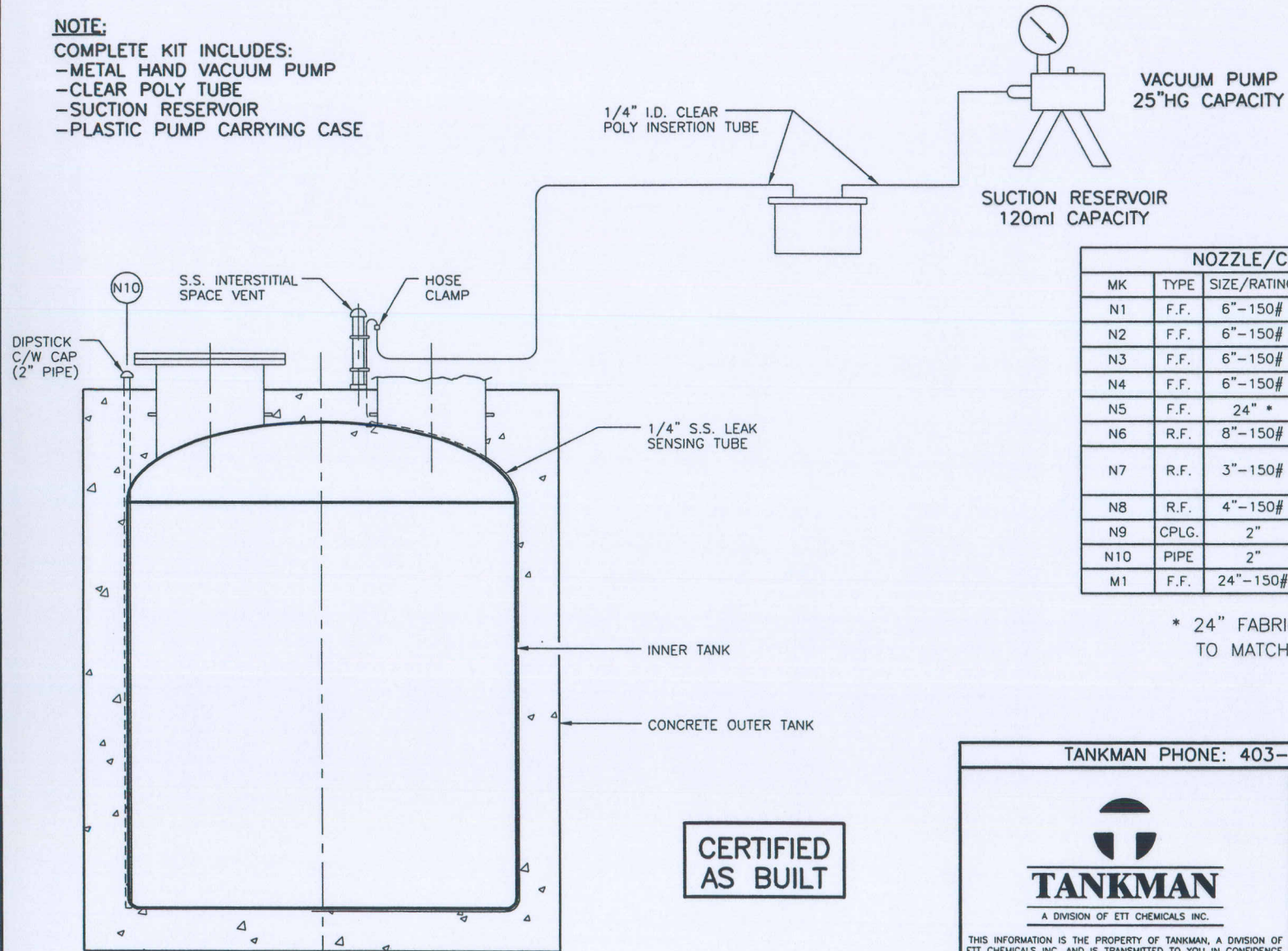
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TAG #: T-5780

SCALE: N.T.S.	DWG. NO.: 08-1074-IP	REV: 0
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**NOTE:**

- COMPLETE KIT INCLUDES:**  
 -METAL HAND VACUUM PUMP  
 -CLEAR POLY TUBE  
 -SUCTION RESERVOIR  
 -PLASTIC PUMP CARRYING CASE



NOZZLE/CONNECTION SCHEDULE				
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N4	F.F.	6"-150#	SPARE C/W BLIND	FRP
N5	F.F.	24" *	PUMP OPENING C/W BLIND	FRP
N6	R.F.	8"-150#	FREE VENT C/W BIRDSCREEN	316S.S.
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N8	R.F.	4"-150#	LEVEL TRANSMITTER	316S.S.
N9	CPLG.	2"	LEAK DETECTION	FRP
N10	PIPE	2"	DIPSTICK C/W CAP	FRP
M1	F.F.	24"-150#	MANWAY C/W COVER	FRP

\* 24" FABRICATED FLANGE TO MATCH 150# BOLT PATTERN

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