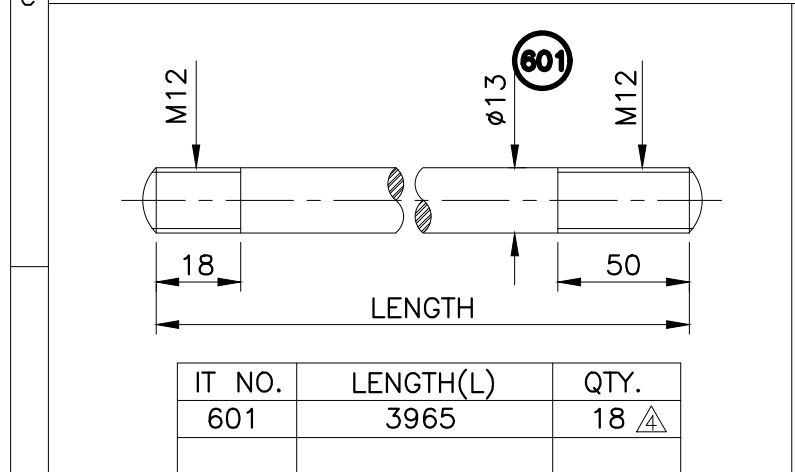


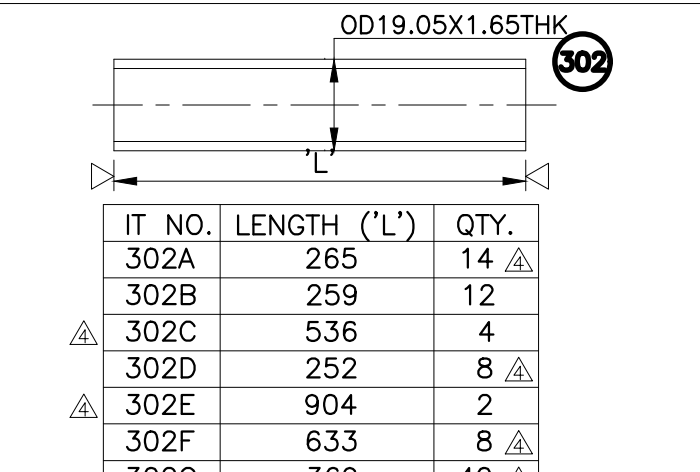
DETAIL OF TUBE BUNDLE SCALE:-1:29.5



IT NO.	LENGTH(L)	QTY.
601	3965	18

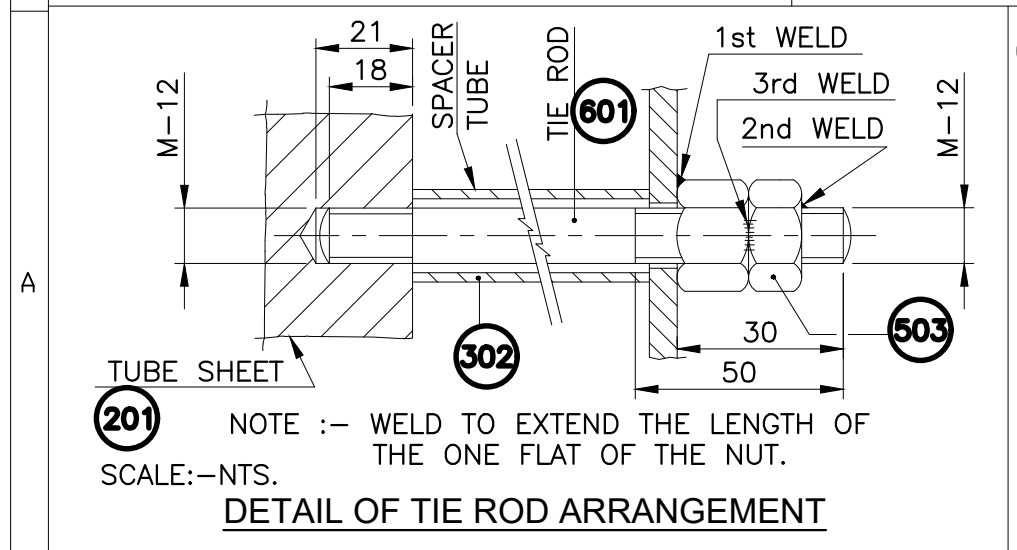
DETAIL OF TIE ROD SCALE:-NTS.

DRAWING CERTIFIED BY  
*Harry R. Bishop* 02/17/03  
 HARRY R. BISHOP  
 CHIEF DESIGN ENGINEER



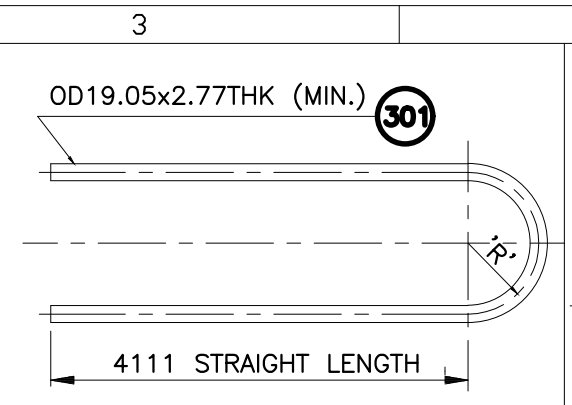
IT NO.	LENGTH ('L')	QTY.
302A	265	14
302B	259	12
302C	536	4
302D	252	8
302E	904	2
302F	633	8
302G	369	40
302H	750	24
302 I	338	8
302J	238	12
302K	719	8
302L	969	2
302M	207	14
302N	457	4

DETAIL OF SPACER TUBE SCALE:-NTS.



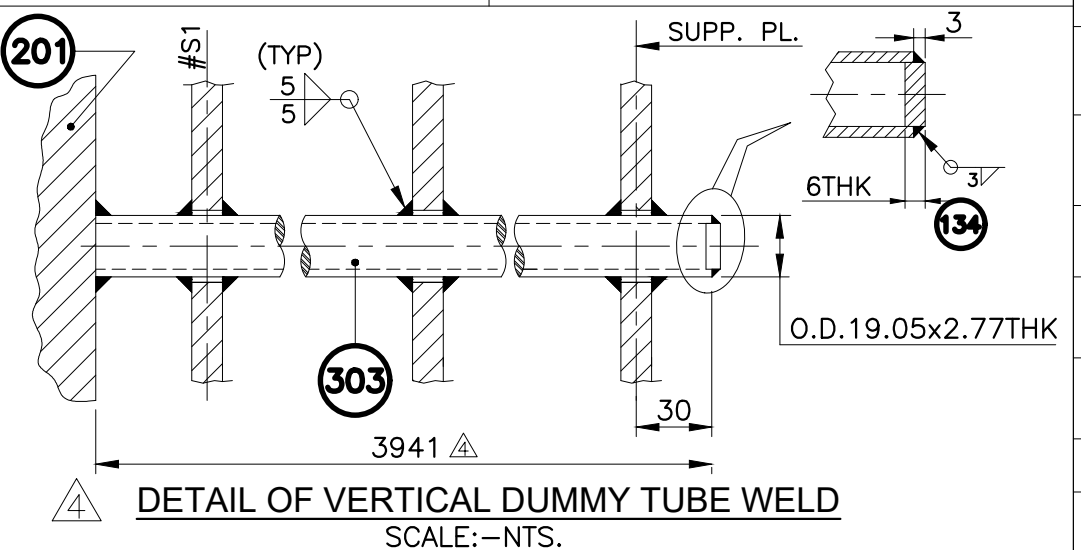
NOTE :- WELD TO EXTEND THE LENGTH OF THE ONE FLAT OF THE NUT.

DETAIL OF TIE ROD ARRANGEMENT SCALE:-NTS.

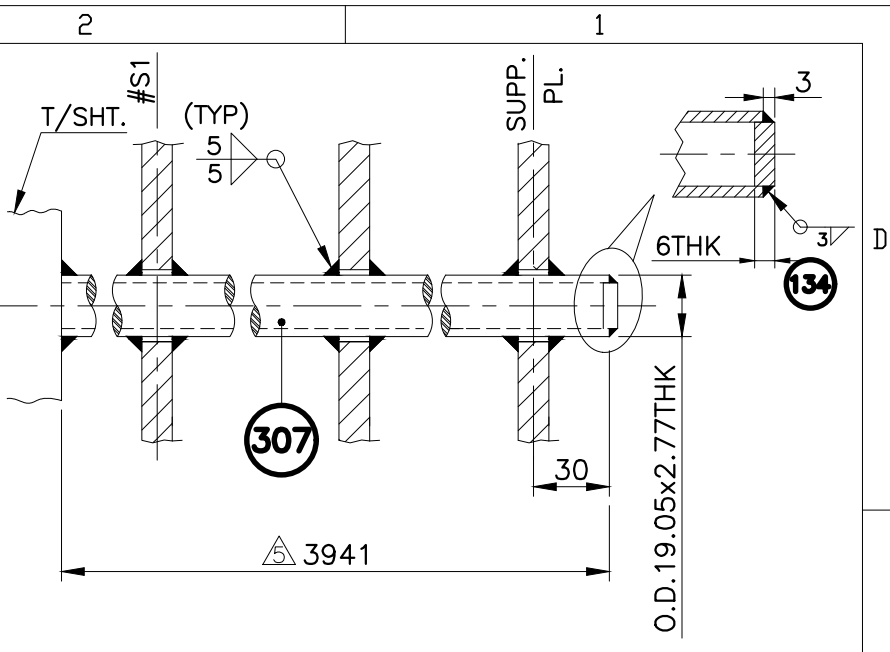


ROW NO.	NO. REQ'D.	RAD. 'R'	'U' TUBE STRAIGHT LENGTH
1	18	R1 = 35.92	8334.84
2	17	R2 = 53.88	8391.26
3	18	R3 = 71.84	8447.69
4	17	R4 = 89.80	8504.11
5	18	R5 = 107.76	8560.53
6	17	R6 = 125.72	8616.96
7	18	R7 = 143.68	8673.38
8	17	R8 = 161.64	8729.80
9	15	R9 = 179.60	8786.23
10	17	R10 = 197.56	8842.65
11	18	R11 = 215.52	8899.07
12	18	R12 = 233.48	8955.49
13	18	R13 = 251.44	9011.92
14	18	R14 = 269.40	9068.34
15	17	R15 = 287.36	9124.76
16	17	R16 = 305.32	9181.19
17	14	R17 = 323.28	9237.61
18	16	R18 = 341.24	9294.03
19	14	R19 = 359.20	9350.46
20	12	R20 = 377.16	9406.88
21	11	R21 = 395.13	9463.33
22	8	R22 = 413.09	9519.76
23	5	R23 = 431.05	9576.18
24	1	R24 = 449.01	9632.61

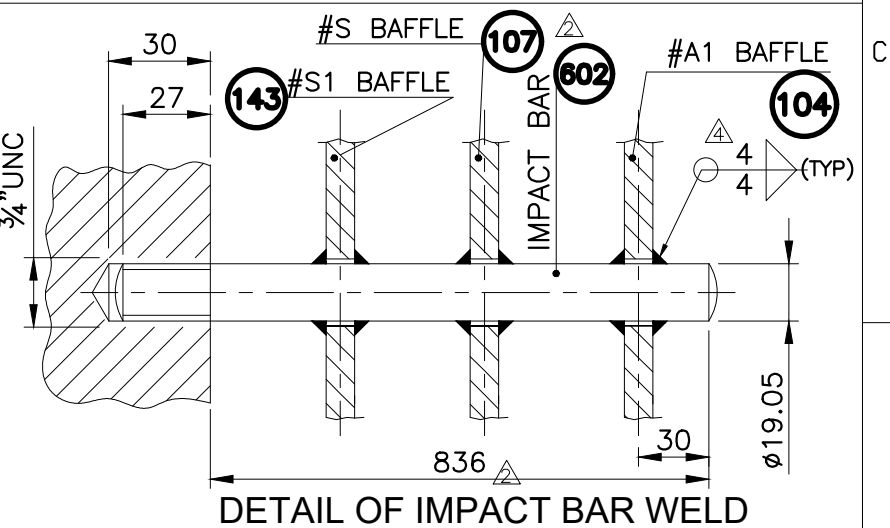
DETAIL OF 'U' TUBE SCALE:-NTS.



DETAIL OF VERTICAL DUMMY TUBE WELD SCALE:-NTS.



DETAIL OF HORIZONTAL DUMMY TUBE WELD SCALE:-NTS.



DETAIL OF IMPACT BAR WELD SCALE:-NTS.

"AS BUILT DWG"

REV.	DATE	DESCRIPTION	DRWN	CHKD	APPD
6	02/17/03	AS BUILT DIMENSIONS ARE SHOWN IN BKT (-) & OTHER REVISED AS MKD. THUS	DMF	WB	HRB
5	10/10/02	DWG IS REVISED AS MKD. THUS	DMF	WB	HRB

PROJECT NAME : CPCL REFINERY- III PROJECT

MANUFACTURER : TEMA INDIA LTD  
 Factory: Achhad Village, Dist. Thane, & Kherdi, Silvassa Gram: COOUDHESL, Mumbai 68.

ENGINEERING : Struthers STRUTHERS INDUSTRIES, INC. GULFPORT, MISSISSIPPI

CONSULTANT : ENGINEERS INDIA LIMITED

CLIENT : CHENNAI PETROLEUM CORPORATION LIMITED

TITLE : DETAIL OF TUBE BUNDLE FOR REACTOR EFFLUENT/ RECYCLE GAS EQPT. NO. 207-E7

JOB NO.	SII	3-02-04-41206E	P/O No.	1027/PO/2138/4814
SCALE	AS SHOWN	DWG. No. or Doc No.	VP-1027-E7-02520	SHT. NO. 5 OF 19

Rev.	3	4	5	6