



**GENERAL NOTES :-**

- 1] ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
- 2] ALL BOLT HOLES SHALL STRADDLE THE PRINCIPAL CENTRE LINE.
- 3] ALL SHARP CORNERS SHALL BE ROUNDED OFF TO MINIMUM RADIUS.
- 4] IF BACK CHIPPING IS NOT POSSIBLE THEN ROOT RUN SHALL BE DONE BY TIG. ALL ACCESSIBLE WELDS TO BE BACK CHIPPED & WELDED FROM OTHER SIDE.
- 5] STANDOUTS FOR NOZZLES WELDED ON SHELL & CHANNEL SHALL BE MEASURED FROM THE CENTRE LINE OF THE EXCHANGER.
- 6] ALL INTERNAL WELDS IN THE SHELL SHALL BE GROUND FLUSH IN ORDER TO INSERT AND REMOVE TUBE BUNDLE. ALSO ALL INTERNAL WELDS SHALL BE GROUND FLUSH TO THE EXTENT OF FACILITATING DRAINING OF COMPLETE EQUIPMENT. ALL OTHER WELD MAY BE LEFT IN THE DESCALED CONDITION ONLY.
- 7] ALL WELDS SHALL BE D.P. CHECKED OR MAGNETIC PARTICLE (MT) TESTED AFTER BACK CHIPPING.
- 8] ALL FORGINGS SHALL BE ULTRASONICALLY EXAMINED AS PER ASME Sec. II, SA-388. ACCEPTANCE STANDARD SHALL BE IN ACCORDANCE WITH PARA 3.3.4 OF ASME Sec. VIII Div. 2 CODE. SCANNING SHALL BE 100%.
- 9] ALL FORGINGS SHALL BE IN NORMALISED AND TEMPERED CONDITION.
- 10] INSIDE EDGES OF TUBE HOLES IN TUBESHEET SHALL BE FREE OF BURRS TO PREVENT CUTTING OF THE TUBES.
- 11] ALL FABRICATION, INSPECTION & TESTING REQUIREMENT SHALL BE AS PER PR & APPROVED CAP. PROJECT SPECIFICATION & ASME. CODE
- 12] SUPPORT PLATE & BAFFLE PLATE DISTANCES ARE GIVEN FROM CENTER TO CENTER.
- 13] HEMI SPHERICAL HEAD SHALL BE IN SINGLE PIECE CONSTRUCTION  
HEMISPHERICAL HEADS SHALL BE SUBJECTED TO DYE PENETRANT TEST (BOTH INSIDE & OUTSIDE) AFTER HEAT TREATMENT.
- 14] APPROVAL ON WPS AND PQR SHALL BE OBTAINED PRIOR TO FABRICATION.
- 15] ALL GASKET SHALL BE MADE IN SINGLE PIECE CONSTRUCTION.  $\Delta$
- 16] ALL SPIRAL WOUND GASKET FOR SHELL SIDE SHALL BE 6.35 MM THK AISI 321 WITH GRAFOIL FILLER AND 4.5 THK AISI 321 OUTER RING.
- 17] 'T' DENOTES MATCH MARK FOR ASSEMBLY AND SHALL BE PUNCHED ON ALL MATING PARTS.
- 18] ALL MATERIALS SHALL BE SUPPLIED WITH MILL TEST CERTIFICATE DULY CERTIFIED BY TPI. REFER PARA 2.1.2 OF 6-15-0001 REV.3.
- 19] DELETED.  $\Delta$
- 20] THE HEAT EXCHANGER SHALL BE PROVIDED WITH PRESSURE GAUGE TO MONITOR N<sup>2</sup> PRESSURE (0.25 Kg/cm<sup>2</sup>) AND 1/2" NON RETURN VALVE AS PER 6-15-0001 REV.3. PARA 9.1.
- 21] EQPT. SHALL BE DRIED & THOROUGHLY CLEANED BOTH INSIDE AND OUTSIDE AND ALL WATER, DIRT, SAND, WELD METAL, SPATTER, WELD ELECTRODES, STUB & FOREIGN MATERIALS SHALL BE REMOVED.
- 22] FOR CONSTRUCTIONAL DETAILS AND NOMENCLATURES REFER EIL STANDARDS.  
EIL PR NO. 6879-211-EE-MR-6020 REV.B EIL THERMAL DATASHEET 6879-211-05-45-DS-001 REV.2, GENERAL SPEC. 6-15-0001 REV.3, 6-15-0003 REV.2, 6-15-0006 REV.3, 6-15-0021 REV.3, 6-15-91 REV.1, 6-12-0018 REV.2, 6-81-0001 REV.0 & 6-81-009 REV.1  
7-15-0001 REV.2, 7-15-0002 REV.2, 7-15-0005 REV.2, 7-15-0007 TO 0009 REV.-2,  
7-15-0016 REV.2, 7-15-0017 REV.2, 7-15-0018 REV.2, 7-15-0019 REV.2, 7-76-0101 REV.3.
- 23] ALL OF THE REMOVABLE PARTS SHALL BE STAMPED WITH THE ITEM NUMBER.
- 24] a) PAINTING (SHOP PRIMER) OF EXCHANGERS SHALL BE AS FOLLOWS. :-  
THE EXTERNAL SURFACE SHALL BE PREPARED FOR PAINTING BY BLAST CLEANING TO NEAR WHITE FINISH AS PER SSPC-SP-10 [SA 2 1/2 SWEDISH STANDARD (SIS-05-5900)]. SHOP PRIMER SHALL BE ORGANIC ZINC SILICATE COATING 65-75 MICRONS DFT.  
c) GASKET CONTACT SURFACES SHALL BE PROTECTED WITH RUST PREVENTIVE COMPOUND.

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*Reviewed*

- 25] SPARE PARTS :- MANDATORY SPARES  
STUD BOLTS/NUTS :- (ONE SET OF EACH SIZE OF NOZZLE WITH BLIND FLG.)  
GASKET :- 400% (EACH NOZZLE WITH BLIND FLG. & GIRTH JOINTS)  
GASKET RETAINER :- 100% (DIAPHRAGMS)  
PUSH RODS :- 100%  
SPARE PARTS :- COMMISSIONING SPARES  
GASKET :- 200% (EACH NOZZLE WITH BLIND FLG. & GIRTH JOINTS)  
CORROSION ALLOWANCE

SHELL, SHELL COVER	6mm
CHANNEL	3mm
TUBE SHEET	9mm

- 26] ANCHOR BOLT MATERIAL HAVE BEEN DESIGNED CONSIDERING A SHEAR STRESS OF 865 Kg/cm<sup>2</sup> (SCOPE OF SUPPLY BY OTHERS)
- 27] ALL BOLTING AND THREADS ON THE BARREL SHALL BE LUBRICATED WITH HIGH TEMPERATURE THREAD LUBRICANT VIZ. NI-GRAPHITE COMPOUND TO PREVENT SEIZURE. REQUIREMENTS OF ALL PR SPECIFICATION DOCUMENTS SHALL BE COMPLIED WITH UNLESS OTHERWISE AGREED BETWEEN EIL & TEMA.
- 30] CHANNEL BARREL THREADS AND LOCK RING THREADS SHALL BE 100% DP EXAMINED.
- 31] THE MINIMUM TUBE WALL THICKNESS AT THE BEND PORTION AS PER TEMA CLAUSE RCB-2.31.
- 32] THE DIFFERENTIAL DESIGN PRESSURE FOR EXCHANGER = 27.5 Kg/cm<sup>2</sup>g.  
PERMITTED EXTERNAL HYDROTEST PRESSURE FOR TUBES 35.75 Kg/cm<sup>2</sup>g AT NEW CONDITION & 35.75 Kg/cm<sup>2</sup>g AT OLD CONDITION.
- 33] HYDRO TEST SHALL BE CARRIED OUT AS FOLLOWS :-  
A) PRIOR TO ASSEMBLY OF CHANNEL COVER. FROM SHELL SIDE AT A PRESSURE OF 35.75 Kg/cm<sup>2</sup>g.  
B) AFTER COMPLETE ASSEMBLY. FROM TUBE SIDE AT A PRESSURE OF 35.75 Kg/cm<sup>2</sup>g  
C) SIMULTANEOUSLY FROM SHELL SIDE & TUBE SIDE AT A PRESSURE INDICATED IN DESIGN DATA.

- 34] SHELL SIDE AND TUBE SIDE WILL BE SUBJECTED TO STEAMING OUT AT 0.5 Kg/cm<sup>2</sup>g & 190°C
- 35] a) WNRTZ NOZZLE FLANGES GASKET FINISH SHALL BE 63-125 AARH.  
b) WNRF NOZZLE FLANGES GASKET FINISH SHALL BE 125-250 AARH.
- 36] GASKET FACE TO BE MACHINED AFTER FINAL HEAT TREATMENT.
- 37] NO WELDING OR HEATING IS PERMITTED AFTER PWHT OPERATION.
- 38] STACKED EXCHANGERS (211-E-1E & 211-E-1F) SHALL BE HYDROTESTED IN STACKED CONDITION. ALL FABRICATION TOLERANCES SHOULD BE AS PER TIL-MFG-WI-26 REV.0 PAGE 1 TO 10. UNLESS OTHERWISE SPECIFIED.
- 40] ALL MATERIAL AND FABRICATION REQUIREMENTS SPECIFIED IN AXEN'S SPECIFICATION IN 42.1 SHALL BE COMPLIED WITH. THIS INCLUDES REQUIREMENTS SPECIFIED FOR CLAD MATERIALS, WELDING CONSUMABLES AND WELDING ETC.
- 41] ALL CARBON STEEL MATERIALS ON SHELL SIDE SHALL MEET REQUIREMENTS SPECIFIED IN AXENS SPECIFICATION IN 42.0. SHELL SIDE CARBON STEEL MATERIALS SHALL ALSO COMPLY WITH WET H2S RESISTANT MATERIAL REQUIREMENTS AS PER AXENS SPECIFICATION IN 43.0

- 42] TORQUE TABLE (MAX. ALLOWABLE TORQUE)

ITEM No.	kgf.m	lbf.ft.
504	54.54	394.5
505	72.306	523
506	51.331	371.3

- 43] IMPACT TEST SHALL BE CARRIED OUT FOR PART NO. 101, 102, 205 & 206 AT -29 °C.  
PART NO. 115, 116, 201, 202, 203, 204, 211, 212, 213, 214 & 219 AT -18 °C.

AS BUILT DRAWING 300  
W.O. No. 1 07-386  
EQPT. NO. 1 211-E-1E



SCALE	REV	SRT
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DWG NO. SDB/E/071203		

P.No.	DESCRIPTION	SIZE	MATERIAL SPECIFIED.	QTY	REMARK
302	SPACER	0021.4x2.65THKxL.G. AS PER TIA	IS 1239	AS PER TIA	
301	'U' TUBES	0025x3.0THK(Min.)xL.G. AS PER TIA	SA213 T11	647	
219	FORGE NECK FOR TIA & TZA	OD406.4xID363.52x485L.G.	SA182 F11 CL-2	2	
218	PULLING EYE BOLT	M-36 AS PER DETAIL	SA 105	4	
217	PLUG FOR PULLING EYE BOLT	M-36 AS PER DETAIL	SA387 Gr.11 CL-2	4	
216	SEAL RING FOR TZA	64THK AS PER DETAIL	SA336 F11 CL-2	1	
215	ADDED STEEL (PROPRIETARY)	-	-	1	
214	INNER COMPRESSION RING	OD139.4xID133.0x35THK	SA336 F11 CL-2	1	
213	OUTER COMPRESSION RING	OD157.4xID151.6x39.8THK	SA336 F11 CL-2	1	
212	INTERNAL FLANGE	OD152.6xID133.6x179THK	SA336 F11 CL-2	1	
211	SPLIT RING	OD155.2xID150.4x38THK	SA336 F11 CL-2	1	
210	COMPANION NOZZ. FLG. FOR TIA	400DNxSCH.80x600#WNRF	SA182 F11 CL-2	2	
209	NOZZLE FLANGE FOR TIA & TZA	400DNxSCH.80x600#WNRF	SA182 F11 CL-2	2	
208	COMPANION NOZZ. FLG. FOR SZA	350DNxSCH.100x900#WNRTL	SA 105	1	
207	NOZZLE FLANGE FOR STA & S2A	350DNxSCH.100x900#WNRTL	SA 105	2	
206	FORGE NECK FOR SZA	OD493.5xID308x481L.G.	SA266 Gr.2	1	(ID 317.5) Δ
205	FORGE NECK FOR SIA	OD493.5xID308x481L.G.	SA266 Gr.2	1	(ID 317.5) Δ
204	CHANNEL COVER	Ø1520.5xID1616THK	SA336 F11 CL-2	1	
203	THREADED LOCK RING	OD1612.21xID1468x289.81THK	SA336 F11 CL-2	1	
202	CHANNEL BARREL	AS PER DETAIL	SA336 F11 CL-2	1	
201	TUBE SHEET	OD1515x166THK	SA336 F11 CL-2	1	

P.No.	DESCRIPTION	SIZE	MATERIAL SPECIFIED.	QTY	REMARK
136	GUSSET FOR INNER CYLINDER	60x60x16THK.	SA387 Gr.11 CL-2	20	
135	WARNING PLATE BRACKET	8THK AS PER DETAIL	SA516 Gr.60	1	
134	NAME PLATE BRACKET	8THK AS PER DETAIL	SA516 Gr.60	1	
133	PL. FOR LIFTING DEVICE	30THK ASPER DETAIL (32THK) Δ	SA516 Gr.70	1	
132	PL. FOR LIFTING DEVICE	30THK ASPER DETAIL (32THK) Δ	SA516 Gr.70	1	
131	EARTHING CLEAT	100x75x10THK	SA516 Gr.60	2	
130	RIB PL. FOR FIXED SADD SUPP.	563x155x20THK	SA516 Gr.60	4	
129	RIB PL. FOR FIXED SADD SUPP.	773x155x20THK	SA516 Gr.60	4	
128	WEB PL. FOR FIXED SADD SUPP.	1860x956x20THK	SA516 Gr.60	1	
127	WEAR PL. FOR FIXED SADD SUPP.	1894° x350x20THK	SA516 Gr.60	1	
126	BASE PL. FOR FIXED SADD SUPP.	1890x350x30THK (32THK) Δ	SA516 Gr.60	1	
125	RIB PL. FOR SLIDING SADD SUPP.	435x155x20THK	SA387 Gr.11 CL-2	4	
124	RIB PL. FOR SLIDING SADD SUPP.	692x155x20THK	SA387 Gr.11 CL-2	4	
123	WEB PL. FOR SLIDING SADD SUPP.	2060x890x20THK	SA387 Gr.11 CL-2	1	
122	WEAR PL. FOR SLIDING SADD SUPP.	2171° x350x20THK	SA387 Gr.11 CL-2	1	
121	BASE PL. FOR SLIDING SADD SUPP.	2090x350x30THK Δ	SA387 Gr.11 CL-2	1	
120	GASKET RETAINER	Ø1557x20THK	SA240 Gr.321	1+1	
119	INTERNAL SLEEVE	4279° x87THKx26THK Δ	SA387 Gr.11 CL-2	1	
118	RETAINING RING FOR TZA	OD437.7xID413.7x3THK	SA240 Gr.321	1	
117	PARTITION COVER PLATE	24THK AS PER DETAIL Δ	SA387 Gr.11 CL-2	1	
116	END PALTE	OD1515x16THK	SA387 Gr.11 CL-2	1	
115	PLATE FOR INTERNAL CYLINDER	4684° x791x24THK (21THK) Δ	SA387 Gr.11 CL-2	1	
114	PASS PARTITION PLATE	1467x791x28THK Δ	SA387 Gr.11 CL-2	1	
113	SEALING STRIP	5809x60Wx8THK	SA516 Gr.60	2	
112	SEALING STRIP	3666x150Wx8THK	SA516 Gr.60	2	
111	SEALING STRIP	4166x150Wx8THK	SA516 Gr.60	2	
110	SLIDING STRIP	5809x70Wx20THK	SA516 Gr.60	2	
109	SUPPORT PLATE 'C'	16THK AS PER DETAIL	SA516 Gr.60	1	
108	PARTIAL SUPPORT PLATE 'S'	16THK AS PER DETAIL	SA516 Gr.60	1	
107	PARTIAL SUPPORT PLATE 'S'	16THK AS PER DETAIL	SA516 Gr.60	1	
106	BAFFLE PLATE 'D'	16THK AS PER DETAIL	SA516 Gr.60	1	
105	BAFFLE PLATE 'B'	16THK AS PER DETAIL	SA516 Gr.60	5	
104	BAFFLE PLATE 'A1'	16THK AS PER DETAIL	SA516 Gr.60	1	
103	BAFFLE PLATE 'A'	16THK AS PER DETAIL	SA516 Gr.60	4	
102	HEMI HEAD DISHED END	45THK Norm.	SA516 Gr.60	1	
101	MAIN SHELL	4869° x585x475THK	SA516 Gr.60	1	

**PLATES**

**BILL OF MATERIALS**

**301**

AS BUILT  
 TEMA INDIA LTD  
 43/11/2010

Reviewed  
 Kumar  
 08/01/2010  
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Reviewers India Ltd.  
 SURESH KUMAR  
 INSPECTION AUTHORITY  
 (EIL 172)

W.O. No. : 07-386  
 EQPT. NO. : 211-E-1E

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SCALE NTS 3  
 REV 3  
 SHT 3 of 17  
 DWG NO SDB/E/071203

P.No.	DESCRIPTION	SIZE	MATERIAL SPECIFIED.	QTY	REMARK
<b>MISCELLANEOUS</b>					
610	ASME NAME PLATE	175x120x2THK	SAI 304	1	
609	WARNING PLATE	155x155x2THK	SAI 304	1	
608	NAME PLATE	150x136x2THK	SAI 304	1	
607	HANDLE FOR PARTITION COVER	ø16x350LG.	SA387 Gr.11 CL-2	2	
606	SEAL ROD	ø25x4116LG.	IS 2062	46	
605	PUSH ROD	ø25x118LG.	SA193 Gr.B16	7676	
604	PUSH ROD	ø22x275LG.	SA193 Gr.B16	92+92	
603	PUSH ROD	ø25x146LG.	SA453 Gr.660B	80+80	
602	IMPINGEMENT ROD	ø25x666LG.	IS 2062	27	
601	TIE ROD	ø12x5837LG.	IS 2062	22	
<b>PASTENERS</b>					
510	STUD-2NUTS FOR TIA COMP. FLG.	1½" UNBx290 LG.	SA193 Gr.B16/SA194 Gr.16	20+4	Δ
509	STUD-2NUTS FOR SZA COMP. FLG.	1½" UNBx315 LG.	SA193 Gr.B7/SA194 Gr.2H	20+4	Δ
508	HEX. HD. BOLT FOR LIFTING DEVICE	M-24x68LG.	SA193 Gr.B7	4	
507	HEX. SOCKET SET SCREW	M-10x25 LG.	SA193 Gr.BBT CL.2	3	
506	HEX. HD. BOLT (SET SCREW)	1½" UNBx89 LG.	SA453 Gr 660B	80	
505	HEX. HD. BOLT (SET SCREW)	1" UNCx82 LG.	SA193 Gr B16	92	
504	HEX. HD. BOLT (SET SCREW)	1½" UNBx89 LG.	SA193 Gr. B16	76	
503	NUTS FOR TIE RODS	M-12 STD.	SA194 Gr. 8T	44	
502	STUD WITH NUT, 1-FLAT WASHER & 1-LOCK WASHER	M-12x60LG.	SA193 Gr.BBT CL.2+	52	
501	HEX. HD.SCREW WITH LOCKNUT	M-10x45 LG.	SA194 Gr.8T	28	
<b>GASKETS</b>					
407	GASKET FOR TIA COMP. FLG.	400DNx600#x4.5THK	SAI 304 SPWD	1+4+2	
406	GASKET FOR SZA COMP. FLG.	350DNx900# ASME RING No.82	SOFT IRON	1+4+2	HARDNESS 90BHN Max. (OCTAGONAL RING)
405	PACKING SEAL FOR T2A	12.75Qx3000LG.	FIBER GLASS UIP-329	1+4+2	
404	GASKET FOR PARTITION PLATE	3THK (AS PER DETAIL)	NON ASBESTOS WITH ARAMIDE FIBRE	1+4+2	
403	RING GASKET	OD1558xID1538x3THK	SA240 Gr.321	1+4+2	
402	GASKET	OD1515xID1468.8x1.6THK	SA240 Gr.321	1+4+2	(D1484.8) Δ
401	GASKET	OD1507xID1481x6.35THK	SAI 321 SPWD	1+4+2	SEE NOTE-16

**BILL OF MATERIALS**

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*Reviewed*  
*From*  
*28/10/2010*  
*AB*

302

Δ "AS BUILT DRAWING"

W.O. No. : 07-386  
EQPT. NO. : 211-E-1E

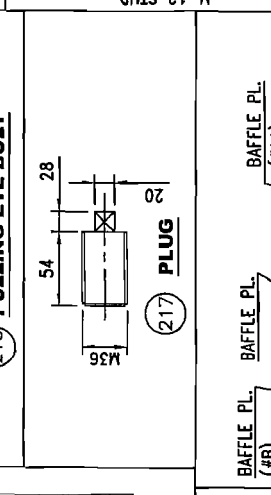
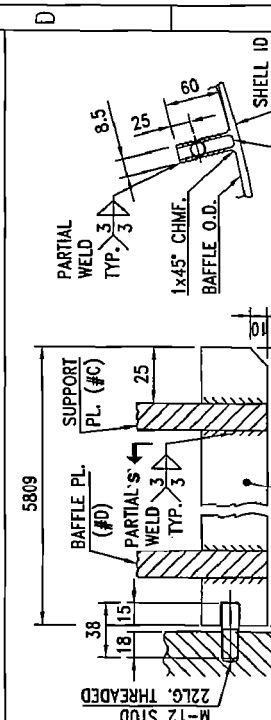
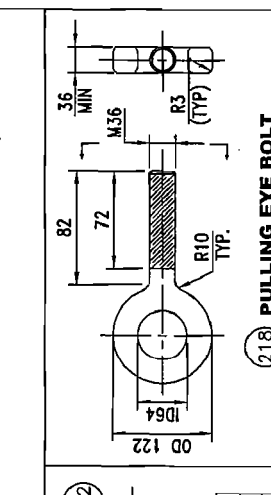
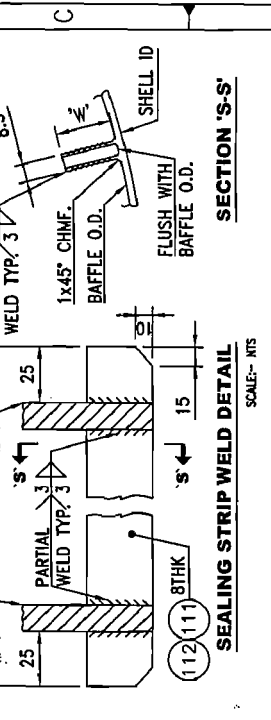
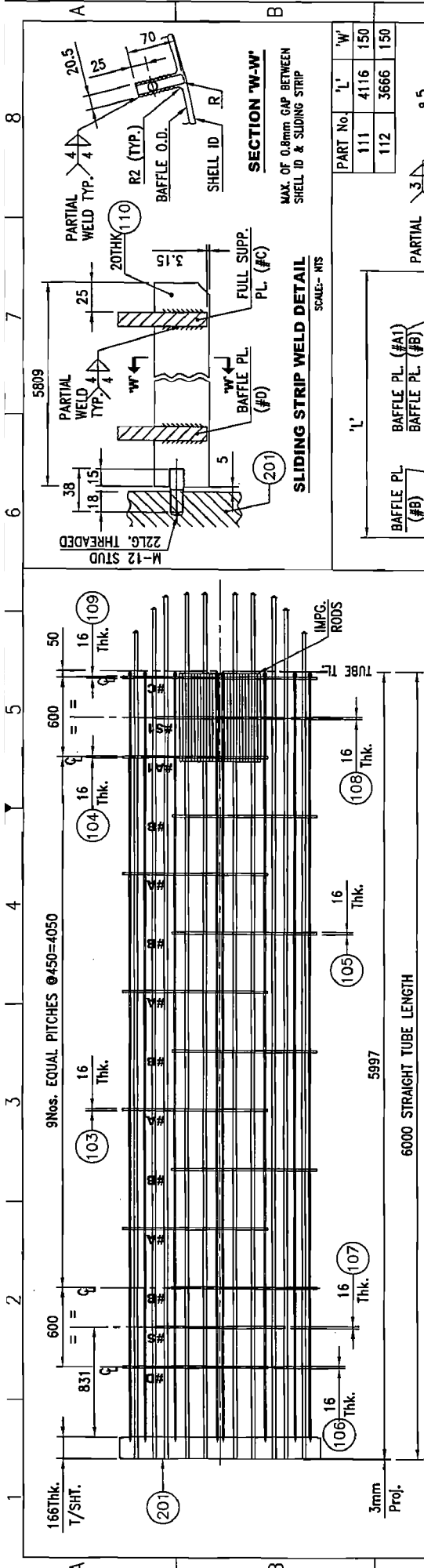
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SCALE	REV	SHT
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DWG NO SDB/E/071203		







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INSPECTOR AUTHORITY

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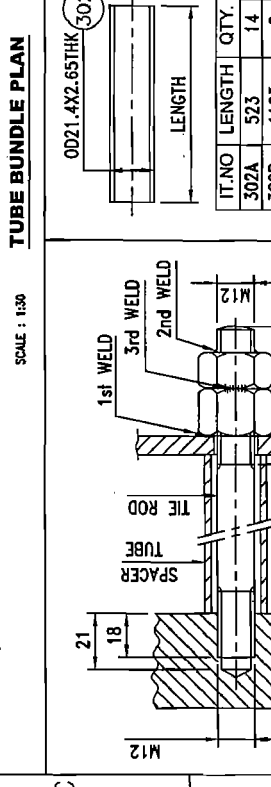
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REV 3

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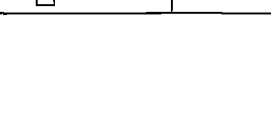
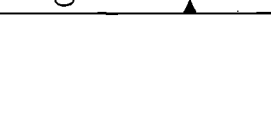
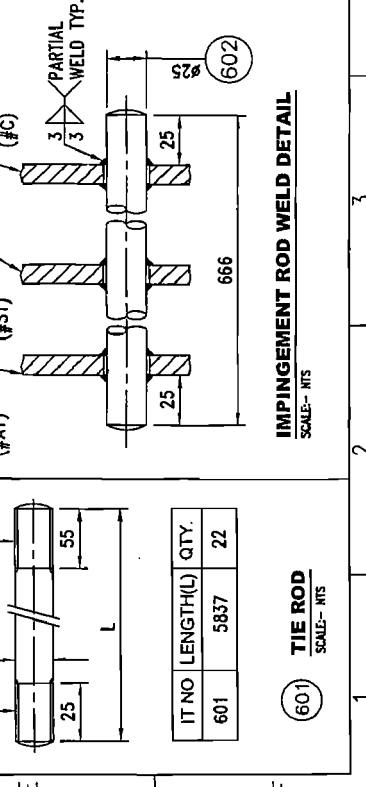
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8



IT. NO	LENGTH	QTY.
302A	523	14
302B	1123	8
302C	284	24
302D	434	126
302E	884	32
302F	584	16
302G	1034	8

SPACER TUBE SCALE: NTS



IT NO	LENGTH(L)	QTY.
601	5837	22

TIE ROD SCALE: NTS

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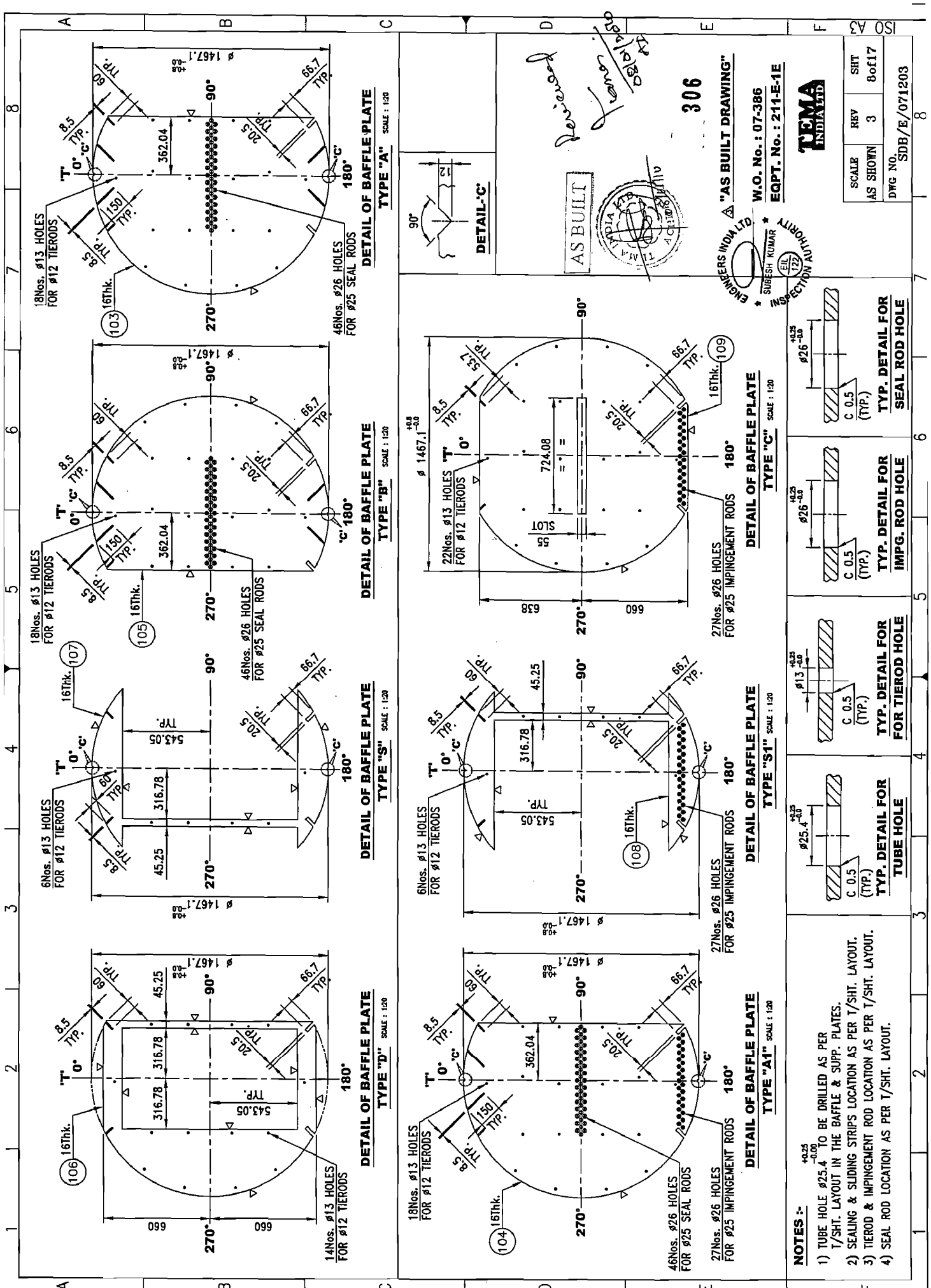
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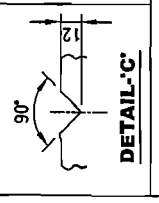
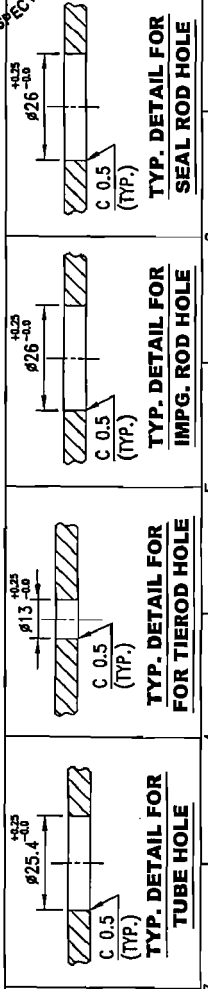
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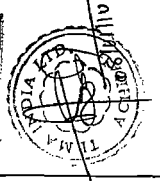


**NOTES :-**

- 1) TUBE HOLE  $\phi 25.4$  TO BE DRILLED AS PER T/SHT. LAYOUT IN THE BAFFLE & SUPP. PLATES.
- 2) SEALING & SLIDING STRIPS LOCATION AS PER T/SHT. LAYOUT.
- 3) TIEROD & IMPINGEMENT ROD LOCATION AS PER T/SHT. LAYOUT.
- 4) SEAL ROD LOCATION AS PER T/SHT. LAYOUT.



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*Revised*  
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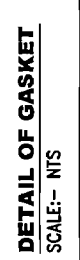
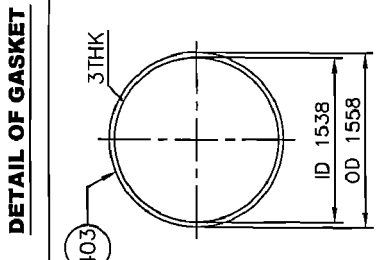
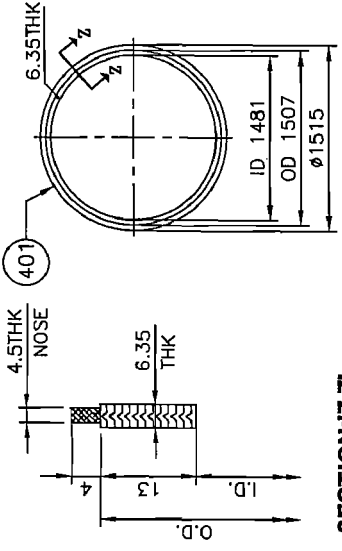
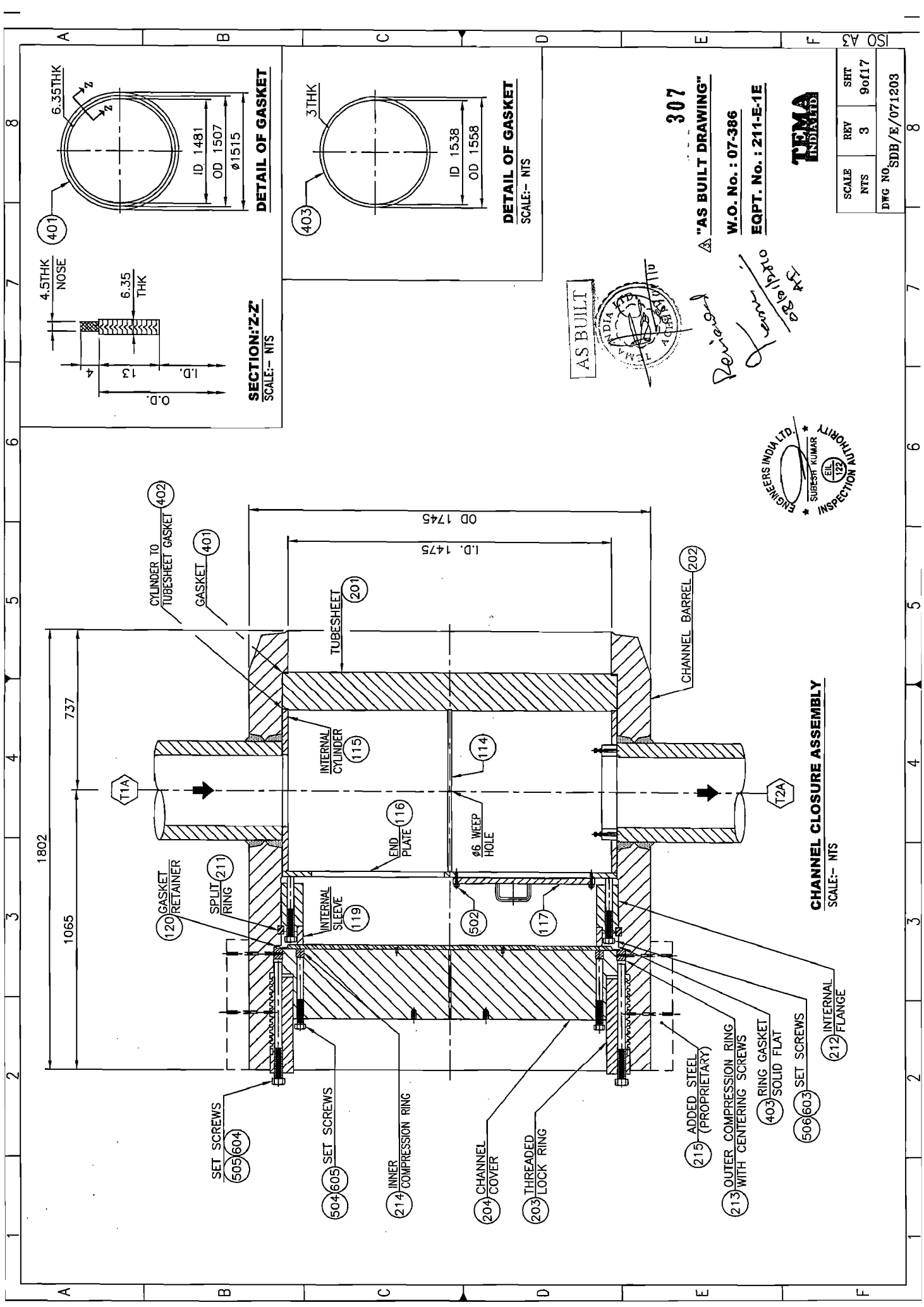
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SCALE	REV	SHT
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AS BUILT



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 23/11/2017

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SCALE	REF	SHT
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CHANNEL CLOSURE ASSEMBLY  
 SCALE:- NTS

INTERNAL FLANGE

- 215 ADDED STEEL (PROPRIETARY)
- 213 OUTER COMPRESSION RING WITH CENTERING SCREWS
- 403 RING GASKET SOLID FLAT
- 506/603 SET SCREWS
- 212 INTERNAL FLANGE

- 504/604 SET SCREWS
- 504/605 SET SCREWS
- 214 INNER COMPRESSION RING
- 204 CHANNEL COVER
- 203 THREADED LOCK RING

CYLINDER TO TUBESHEET GASKET 402

GASKET 401

TUBESHEET 201

CHANNEL BARREL 202

INTERNAL CYLINDER 115

END PLATE 116

φ6 WEEP HOLE 114

GASKET RETAINER 120

SPLIT RING 211

INTERNAL SLEEVE 119

502

117

T2A

T1A

1802

1065

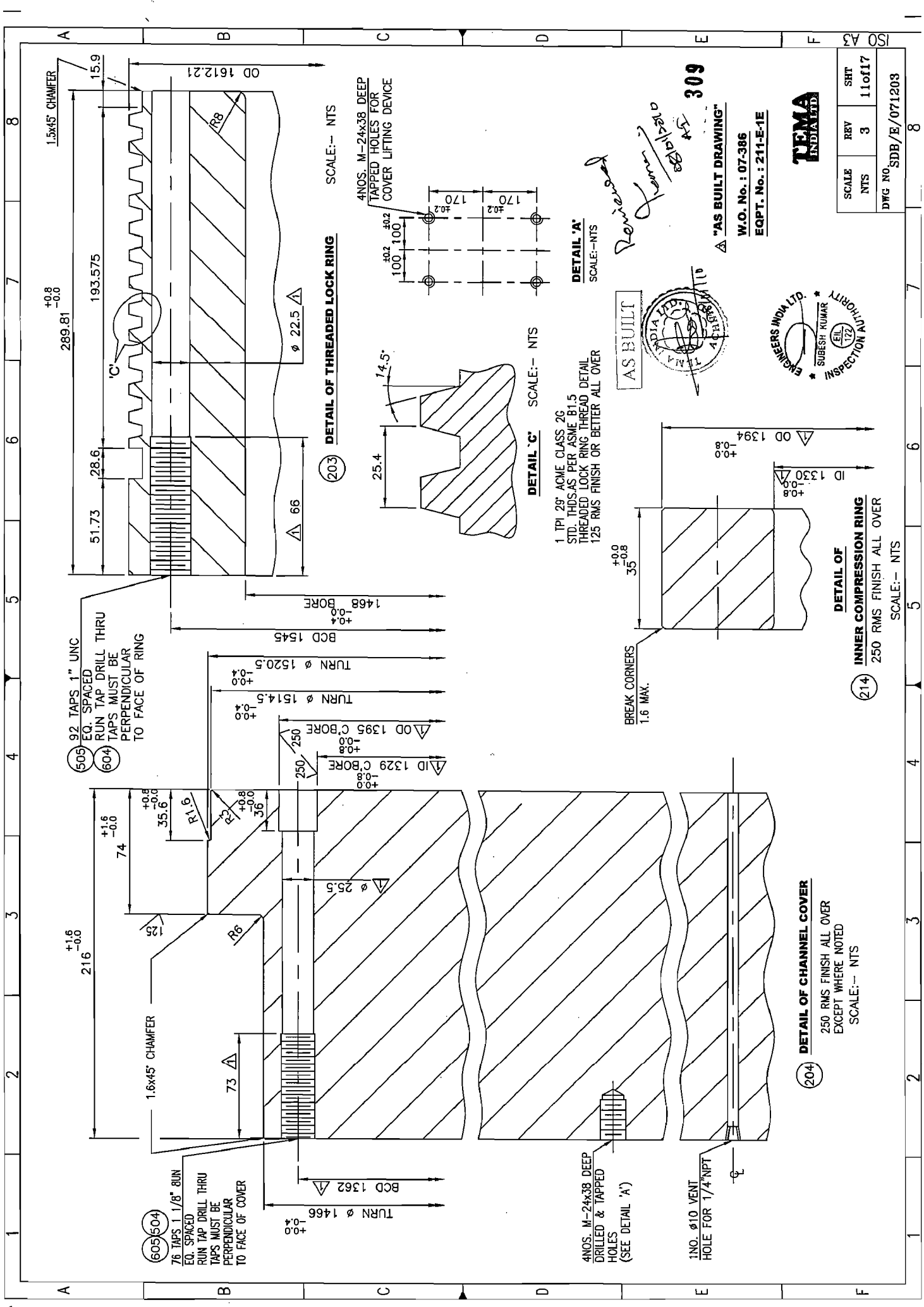
737

ID. 1475

OD 1745

A 1 2 3 4 5 6 7 8



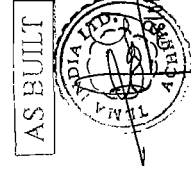


SCALE	REV	SHT
NTS	3	11 of 17

DWG NO SDB/E/071203

**TEMA**  
INDIA LTD.

"AS BUILT DRAWING"  
W.O. No. : 07-386  
EQPT. No. : 214-E-1E



*Revised*  
309

**204** **DETAIL OF CHANNEL COVER**  
250 RMS FINISH ALL OVER EXCEPT WHERE NOTED  
SCALE: - NTS

**214** **DETAIL OF INNER COMPRESSION RING**  
250 RMS FINISH ALL OVER  
SCALE: - NTS

**203** **DETAIL OF THREADED LOCK RING**  
SCALE: - NTS

**DETAIL 'A'**  
SCALE: - NTS

**DETAIL 'C'** SCALE: - NTS

1 IPI 29° ACME CLASS 2G  
STD. THDS AS PER ASME B1.5  
THREADED LOCK RING THREAD DETAIL  
125 RMS FINISH OR BETTER ALL OVER

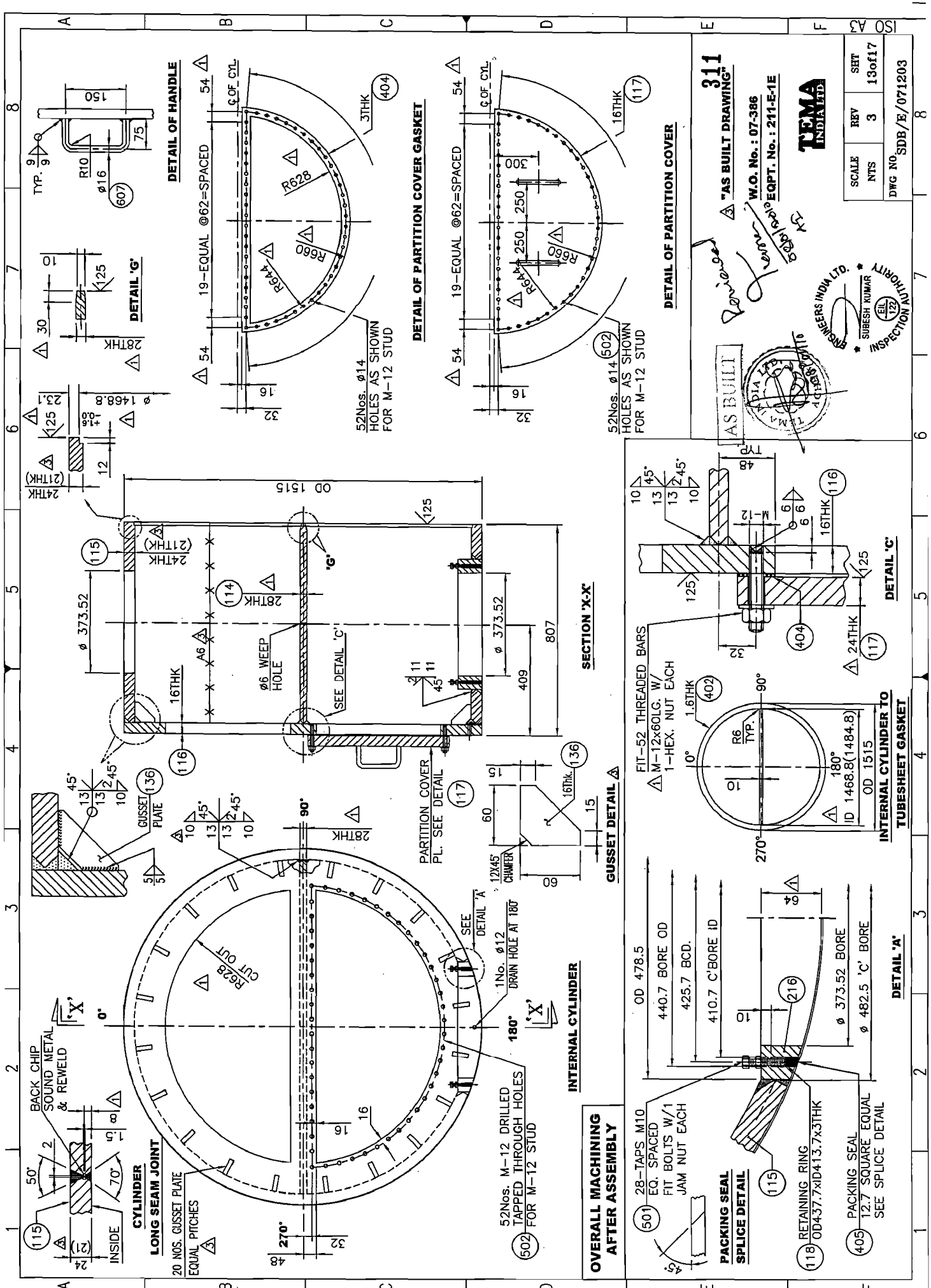
**505** 92 TAPS 1" UNC  
EQ. SPACED  
RUN TAP DRILL THRU  
TAPS MUST BE  
PERPENDICULAR  
TO FACE OF RING

**605** 76 TAPS 1 1/8" 8UN  
EQ. SPACED  
RUN TAP DRILL THRU  
TAPS MUST BE  
PERPENDICULAR  
TO FACE OF COVER

4 NOS. M-24x38 DEEP  
DRILLED & TAPPED  
HOLES  
(SEE DETAIL 'A')

1 NO. 10 VENT  
HOLE FOR 1/4" NPT





**OVERALL MACHINING AFTER ASSEMBLY**

- (501) 28-TAPS M10 EQ. SPACED FIT BOLTS W/1 JAM NUT EACH

**PACKING SEAL SPLICE DETAIL**

- (118) RETAINING RING OD437.7xID413.7x3THK
- (405) PACKING SEAL 12.7 SQUARE EQUAL SEE SPLICE DETAIL

**INTERNAL CYLINDER**

- OD 478.5
- 440.7 BORE OD
- 425.7 BCD.
- 410.7 C'BORE ID
- φ 373.52 BORE
- φ 482.5 'C' BORE

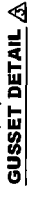
**INTERNAL CYLINDER TO TUBESHEET GASKET**

- FIT-52 THREADED BARS
- M-12x60LG. W/ 1-HEX. NUT EACH
- 1.6THK (402)
- OD 1515
- ID 1484.8 (1484.8)

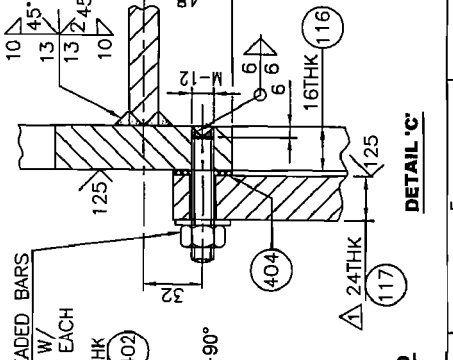
**SECTION 'X-X'**



**GUSSET DETAIL**



**DETAIL 'C'**



**AS BUILT**



**311**

W.O. No. : 07-386

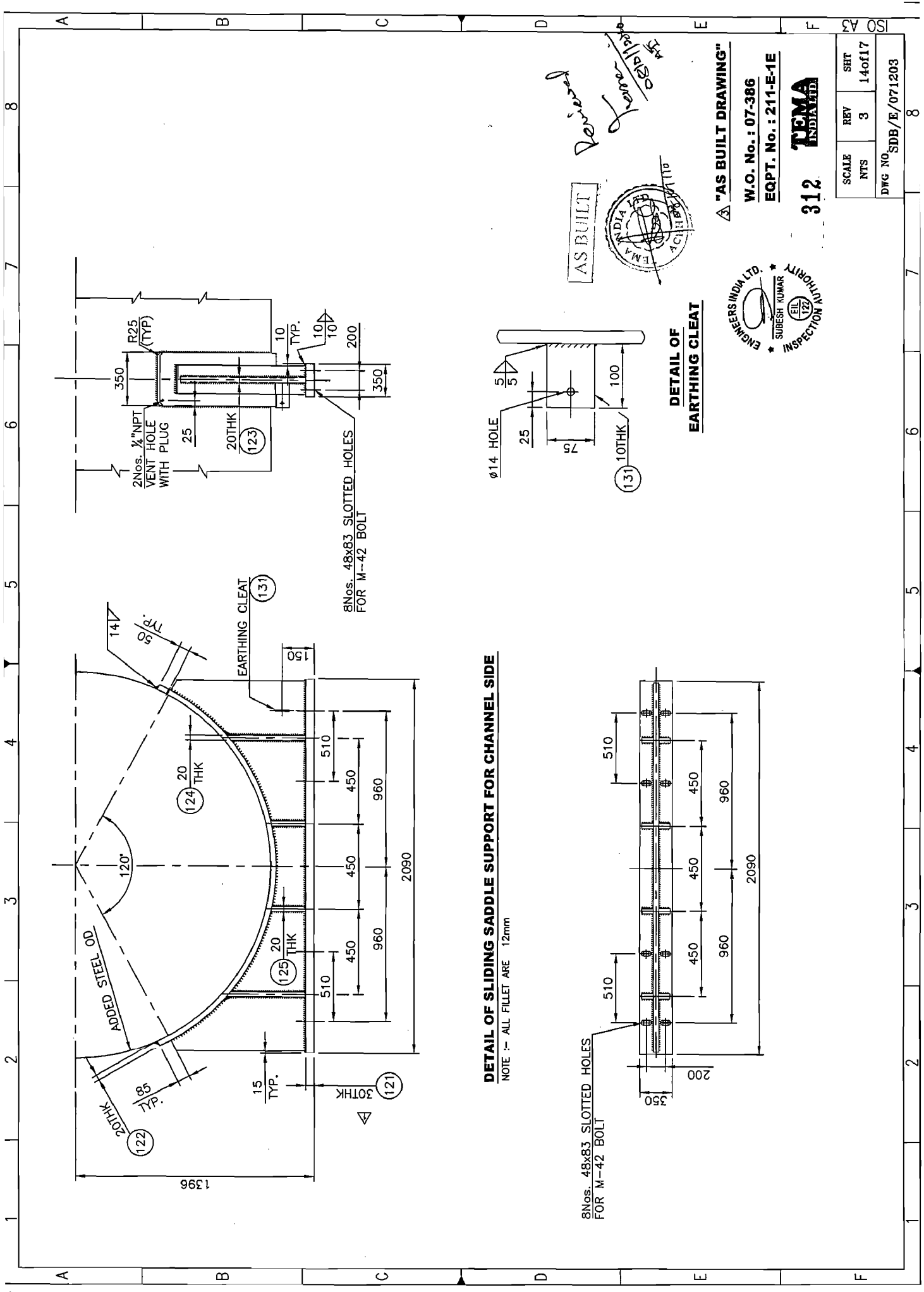
EQPT. No. : 211-E-1E



SCALE	REV	SHT
NTS	3	13 of 17
DWG No. SDB/E/071203		

INSPECTION  
SUBRESH KUMAR  
BROOKERS INDIA LTD.

*Reviewed*  
*Subresh Kumar*  
30/10/2015



**DETAIL OF SLIDING SADDLE SUPPORT FOR CHANNEL SIDE**

NOTE :- ALL FILLET ARE 12mm

SCALE	REV	SHT
NTS	3	14 of 17
DWG NO. SDB/E/071203		







