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|---|----------|---|--|--|-------------|
| Rev No. B | Form No. |  | BHARAT HEAVY ELECTRICALS LIMITED RC PURAM, HYDERABAD - 32 PROJECT ENGINEERING - MECHANICAL | | PEMC- 04562 |
| COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company. | | | <p style="text-align: center;">PRE-FABRICATED PIPING – PACKAGE # 2</p> <div style="border: 1px solid black; padding: 20px; margin: 20px auto; width: 80%;"> <p>CUSTOMER : RIL</p> <p>PROJECT : 3 X 93.1 MW STG –DMD -DAHEZ</p> </div> | | |
| | | | | | |
| Refer to record of revisions : | | | | | |

ANNEXURE-A

ANNEXURE-A

TECHNICAL SPECIFICATION

| SL.NO | DESCRIPTION | DOCUMENT NUMBER |
|-------|--|---------------------|
| 1 | Technical specification for Standard Engineering specification for shop fabricated piping as per ASME B 31.1 | 3SS-PS02-00002 |
| 2 | Engineering design standard for field weld end preparation and transition detail | 3DS-P72G-M0004 |
| 3 | Engineering design standard for branch connection details | 3DS-P72G-00006 |
| 4 | Engineering design standard for thermo well fabrication and installation details | 3DS-P72G-00009 |
| 5 | Technical Specification for painting and coatings | 10080-1-SS-PP-014_2 |

ANNEXURE-B

RIL DMD 3 X 90.3 MW STG

LIST OF NON IBR PIPING ISOMETRICS - PRELIMINARY

| SL NO | ISOMETRIC DESCRIPTION | ISO DRG NO | REV | SHTS | APPLICABLE UNIT | REMARKS |
|--|---|----------------|-----|------|-----------------|--|
| A COMMON PIPING | | | | | | |
| 1 | 0-SPRAY WATER PIPING TO BSS DS | 1-381-01-05990 | 00P | 3 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 2 | 0-CCW EXPN TANK TO CCW SUCTION HEADER | 1-381-01-05991 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 3 | 0-CCW EXPN TANK OVERFLOW & DRAIN | 1-381-01-05992 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 4 | 0-CCW PUMP SUCTION PIPING | 1-381-01-05993 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 5 | 0-CCW PUMP DISCHARGE PIPING | 1-381-01-05994 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 6 | 0-CCW SUPPLY PIPING TO PHEs | 1-381-01-05995 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 7 | 0-CCW RETURN PIPING FROM PHEs | 1-381-01-05996 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 8 | 0-CCW SUPPLY PIPING TO IAPA PACKG | 1-381-01-05997 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 9 | 0-CCW RETURN PIPING FROM IAPA PACKG | 1-381-01-05998 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 10 | 0-CCW SUPPLY HEADER PIPING | 1-381-01-05999 | 00P | 2 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 11 | 0-CCW RETURN HEADER PIPING | 1-381-01-06000 | 00P | 2 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 12 | 0-IAPA FROM COMPRESSORS TO SURGE AIR RECEIVER | 1-381-01-06001 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 13 | 0-IA FROM SURGE AIR RECEIVER TO DRYERS | 1-381-01-06002 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 14 | 0-IA FROM DRYERS TO DRY AIR RECEIVERS | 1-381-01-06003 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 15 | 0-IA SUPPLY PIPING FROM COMPR PACKG | 1-381-01-06004 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 16 | 0-PA SUPPLY PIPING FROM COMPR PACKG | 1-381-01-06005 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 17 | 0-INSTRUMENT AIR HEADER PIPING | 1-381-01-06006 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 18 | 0-PLANT AIR HEADER PIPING | 1-381-01-06007 | 00P | 1 | FOR TOTAL DMD | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 19 | 1-ACW PUMPS DISCHARGE PIPING TO PHEs | 1-381-01-06057 | 00P | 1 | UNIT#1 | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 20 | 1-ACW RETURN PIPING FROM PHEs | 1-381-01-06058 | 00P | 1 | UNIT#1 | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 21 | 2-ACW PUMPS DISCHARGE PIPING TO PHEs | 1-381-01-06073 | 00P | 1 | UNIT#2 | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 22 | 2-ACW RETURN PIPING FROM PHEs | 1-381-01-06074 | 00P | 1 | UNIT#2 | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 23 | 3-ACW PUMPS DISCHARGE PIPING TO PHEs | 1-381-01-06075 | 00P | 1 | UNIT#3 | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 24 | 3-ACW RETURN PIPING FROM PHEs | 1-381-01-06076 | 00P | 1 | UNIT#3 | ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE |
| 25 | STE ROUTED PIPING BOQ | 1-381-01-06080 | 00P | 1 | FOR TOTAL DMD | SEPARATE DRAWING FOR DMD ENCLOSED |
| 26 | CONTINGENCY PIPING FOR DMD | 1-381-01-06082 | 00P | 1 | FOR TOTAL DMD | SEPARATE DRAWING FOR DMD ENCLOSED |
| B UNITISED PIPING - FOR UNIT#1 (TO BE REPLICATED FOR UNITS # 2 & 3) | | | | | | |
| 1 | 1-CEP SUCTION PIPING | 1-381-01-06008 | 00P | 1 | UNIT#1,#2,#3 | NOTE 1.:VENDOR TO NOTE THAT APPLICABLE BOM TO BE MULTIPLIED 3 TIMES(i.e THREE SETS OF PIPING ASSEMBLIES TO BE SUPPLIED FOR EACH DRAWING) NOTE 2 : ISOMETRIC OF RIL HMD TO BE CONSIDERED FOR RIL DMD FOR BID PURPOSE. |
| 2 | 1-CEP DISCHARGE UPTO SJAE | 1-381-01-06009 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 3 | 1-CONDENSATE PIPING FROM SJAE UPTO GSC | 1-381-01-06010 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 4 | 1-CONDENSATE PIPING FROM GSC TO CFT | 1-381-01-06011 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 5 | 1-CONDENSATE MINIMUM RECIRCULATION PIPING | 1-381-01-06012 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 6 | 1-CFP SUCTION PIPING | 1-381-01-06013 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 7 | 1-CFP-A RECIRCULATION PIPING | 1-381-01-06014 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 8 | 1-CFP-B RECIRCULATION PIPING | 1-381-01-06015 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 9 | 1-CFP-C RECIRCULATION PIPING | 1-381-01-06016 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 10 | 1-CFP DISCHARGE PIPING UPTO DRAIN COOLER | 1-381-01-06017 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 11 | 1-CONDENSATE PIPING FROM DC TO LPH1 | 1-381-01-06018 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 12 | 1-CONDENSATE PIPING FROM LPH1 TO LPH2 | 1-381-01-06019 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 13 | 1-CONDENSATE PIPING FROM LPH2 TO LPH3 | 1-381-01-06020 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 14 | 1-CONDENSATE PIPING FROM LPH3 TO DEAERATOR | 1-381-01-06021 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 15 | 1-SPRAY WATER PIPING FROM CFP DISCH TO BSS DS/ COND DUMP NOZZ | 1-381-01-06022 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 16 | 1-HPH6 DRAIN PIPING | 1-381-01-06023 | 00P | 2 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 17 | 1-HPH5 DRAIN PIPING | 1-381-01-06024 | 00P | 2 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 18 | 1-DEAERATOR OVERFLOW & DRAIN PIPING | 1-381-01-06025 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 19 | 1-HP FLASH TANK VENT PIPING | 1-381-01-06026 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 20 | 1-HP FLASH TANK DRAIN PIPING | 1-381-01-06027 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |

| SL NO | ISOMETRIC DESCRIPTION | ISO DRG NO | REV | SHTS | APPLICABLE UNIT | REMARKS |
|-------|--|----------------|-----|------|-----------------|---------------|
| 21 | 1-LPH3 DRAIN PIPING | 1-381-01-06028 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 22 | 1-LPH2 DRAIN PIPING | 1-381-01-06029 | 00P | 2 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 23 | 1-LPH1 DRAIN PIPING TO DC | 1-381-01-06030 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 24 | 1-DC DRAIN PIPING TO CONDENSER | 1-381-01-06031 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 25 | 1-LPH3 VENT PIPING | 1-381-01-06032 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 26 | 1-LPH2 VENT PIPING | 1-381-01-06033 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 27 | 1-LPH1 VENT PIPING | 1-381-01-06034 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 28 | 1-CONDENSER AIR EVACUATION PIPING | 1-381-01-06035 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 29 | 1-SJAE EXHAUST PIPING | 1-381-01-06036 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 30 | 1-GSC EJECTOR EXHAUST PIPING-1 | 1-381-01-06037 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 31 | 1-GSC EJECTOR EXHAUST PIPING-2 | 1-381-01-06038 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 32 | 1-SJAE-A INTER CONDENSER DRAIN PIPING | 1-381-01-06039 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 33 | 1-SJAE-A AFTER CONDENSER DRAIN PIPING | 1-381-01-06040 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 34 | 1-SJAE-B INTER CONDENSER DRAIN PIPING | 1-381-01-06041 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 35 | 1-SJAE-B AFTER CONDENSER DRAIN PIPING | 1-381-01-06042 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 36 | 1-GSC EJECTOR DRAIN PIPING | 1-381-01-06043 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 37 | 1-CFT OVERFLOW & DRAIN | 1-381-01-06044 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 38 | 1-HPH6 SHELL SIDE PSV OUTLET TO ATM FLASH TANK | 1-381-01-06045 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 39 | 1-HPH5 SHELL SIDE PSV OUTLET TO ATM FLASH TANK | 1-381-01-06046 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 40 | 1-LPH3 SHELL SIDE PSV OUTLET TO ATM FLASH TANK | 1-381-01-06047 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 41 | 1-LPH2 SHELL SIDE PSV OUTLET TO ATM FLASH TANK | 1-381-01-06048 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 42 | 1-LPH1 SHELL SIDE PSV OUTLET TO ATM FLASH TANK | 1-381-01-06049 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 43 | 1-DEAERATOR HEATER PSV-1 OUTLET TO ATM | 1-381-01-06050 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 44 | 1-DEAERATOR HEATER PSV-2 OUTLET TO ATM | 1-381-01-06051 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 45 | 1-CW SUPPLY PIPING-1 TO CONDENSER | 1-381-01-06052 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 46 | 1-CW SUPPLY PIPING-2 TO CONDENSER | 1-381-01-06053 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 47 | 1-CW RETURN PIPING-1 FROM CONDENSER | 1-381-01-06054 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 48 | 1-CW RETURN PIPING-2 FROM CONDENSER | 1-381-01-06055 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 49 | 1-ACW PUMPS SUCTION PIPING | 1-381-01-06056 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 52 | 1-CCW SUPPLY PIPING TO ST LUBE OIL COOLERS | 1-381-01-06059 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 53 | 1-CCW SUPPLY PIPING TO STG AIR COOLERS | 1-381-01-06060 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 54 | 1-CCW SUPPLY PIPING TO HPSJ COOLERS | 1-381-01-06061 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 55 | 1-CCW SUPPLY PIPING TO SWAS PANEL | 1-381-01-06062 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 56 | 1-CCW SUPPLY PIPING TO BFP-A AUXILIARIES | 1-381-01-06063 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 57 | 1-CCW SUPPLY PIPING TO BFP-B AUXILIARIES | 1-381-01-06064 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 58 | 1-CCW SUPPLY PIPING TO BFP-C AUXILIARIES | 1-381-01-06065 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 59 | 1-CCW RETURN PIPING FROM ST LUBE OIL COOLERS | 1-381-01-06066 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 60 | 1-CCW RETURN PIPING FROM STG AIR COOLERS | 1-381-01-06067 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 61 | 1-CCW RETURN PIPING FROM HPSJ COOLERS | 1-381-01-06068 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 62 | 1-CCW RETURN PIPING FROM SWAS PANEL | 1-381-01-06069 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 63 | 1-CCW RETURN PIPING FROM BFP-A AUXILIARIES | 1-381-01-06070 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 64 | 1-CCW RETURN PIPING FROM BFP-B AUXILIARIES | 1-381-01-06071 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |
| 65 | 1-CCW RETURN PIPING FROM BFP-C AUXILIARIES | 1-381-01-06072 | 00P | 1 | UNIT#1,#2,#3 | SAME AS ABOVE |

ANNEXURE-C

3. ANNEXURE-C

PMS-PIPING MATERIAL SPECIFICATIONS

| SL.NO | DESCRIPTION | DOCUMENT NUMBER |
|-------|-------------------------------|-----------------|
| 1 | SS 304 CLASS # 300 | 22B |
| 2 | CS CLASS # 150 | 21B |
| 3 | CS CLASS # 150 VACCUM SERVICE | 21G |
| 4 | SS 304 CLASS # 150 | 12B |
| 5 | CS CLASS # 150 | 11B |
| 6 | CS CLASS # 150 | 11D |
| 7 | CS CLASS # 150 (GALVANIZED) | 11E |
| 8 | CS CLASS # 150 VACCUM SERVICE | 11G |

ANNEXURE-D

4. ANNEXURE-D

| PURCHASE SPECIFICATIONS OF PIPING ITEMS | | |
|---|--|-----------------|
| SL.NO | DESCRIPTION | DOCUMENT NUMBER |
| 1 | Technical delivery conditions for ANSI Pipe Fittings | AA0851402. |
| 2 | Purchase specification For CS Pipes | AA10455 |
| 3 | Purchase specification For SS Pipes | AA10755 |
| 4 | Technical Delivery conditions for pipes | AA0490001 |

ANNEXURE-E

5. ANNEXURE-E

| QAP- | | |
|-------|---------------------------------|-----------------|
| SL.NO | DESCRIPTION | DOCUMENT NUMBER |
| 1 | MANUFACTURING QUALITY PLAN- QAP | - |

ANNEXURE-F

6. ANNEXURE F

| WPS- | | |
|-------|-------------|-----------------|
| SL.NO | DESCRIPTION | DOCUMENT NUMBER |
| 1 | PESD WPS | - |

BHEL- Project Engineering & System Division

WPS Number Table

| Sr no. | Welding Between Mat. | Thickness (mm) | New WPS NO. | Remark (with Revision) | Post Weld Heat Treatment Requirement |
|--------|-----------------------|----------------|-----------------------------|--|--------------------------------------|
| 1 | CSto CS (P1 to P1) | Up to 5.0 | WE301 | Only GTAW | PWHT is Required above 19mm Thk . |
| | | > 5.0 to 18.0 | WE003 | GTAW + SMAW | |
| | | > 18.0 to 36.0 | WE004 | GTAW + SMAW | |
| 2 | SSto SS (P8 to P8) | Up to 5.0 | WE313-ER347 WE314-ER308L | Only GTAW | PWHT is NOT Required. |
| | | > 5.0 to 18.0 | WE313+WE042/ 045 | GTAW + SMAW (WE 045 instead of 042 for E347 Electrode) | |
| 3 | CSto SS (P1 to P8) | Up to 5.0 | WE315 | Only GTAW | PWHT is NOT Required. |
| | | > 5.0 to 18.0 | WE315 + WE 046 | GTAW + SMAW | |

ANNEXURE-G

7. ANNEXURE-G

| LIST OF SUB VENDORS FOR BOUGHT OUT ITEMS | |
|--|---------------------------------------|
| SL.NO | VENDOR |
| A | PIPES (AS/ CS SEAM LESS PIPES) |
| 1 | BHEL |
| 2 | ISMT Ltd |
| 3 | Jindal Saw Ltd |
| 4 | Maharashtra Seamless Ltd |
| 5 | JFE Steel Corporation, Japan |
| 6 | Nippon Steel Sumitomo Corp, Japan |
| 7 | Vallourec & Mannesman, Germany |
| 8 | Productos Tubulares, Spain |
| 9 | IBF, Italy |
| 10 | Ratnamani Metals & Tubes Ltd |
| 11 | Heavy Metal & tubes. |
| 12 | Remi metals Gujarat Ltd. |
| 13 | Bentler GROUP |
| 14 | Wyman Gordon |
| B | PIPES (CS-EFSW PIPES) |
| 1 | JINDAL STEEL |
| 2 | TATA STEEL |
| 3 | KLT AUTOMOTIVE & TUBULARES |
| 4 | TUBE INVESTMENT OF INDIA LTD |
| 5 | Ratnamani Metals & Tubes Ltd |
| 6 | LALIT PIPES |
| C | PIPES (ERW PIPES) |
| 1 | JINDAL STEEL |
| 2 | TATA STEEL |
| 3 | KLT AUTOMOTIVE & TUBULARES |
| 4 | TUBE INVESTMENT OF INDIA LTD |
| D | PIPES (SS TUBES & PIPINGS) |
| 1 | BHEL |
| 2 | Ratnamani Metals & Tubes Ltd |
| 3 | Sandvik |
| 4 | Sumitomo japan |
| 5 | remi |
| 6 | Plymouth |
| 7 | ISMT Ltd |
| 8 | Jindal Saw Ltd |
| 9 | Maharashtra Seamless Ltd |
| 10 | JFE Steel Corporation, Japan |
| 11 | Nippon Steel Sumitomo Corp, Japan |
| 12 | Vallourec & Mannesman, Germany |
| 13 | Productos Tubulares, Spain |
| 14 | IBF, Italy |
| 15 | TUBOS REUNIDOS SA ,SPAIN |
| 16 | BENTELER STAHL ROHR |
| 17 | TATA STEEL |
| 18 | KLT AUTOMOTIVE & TUBULARES |
| 19 | TUBE INVESTMENT OF INDIA LTD |

7. ANNEXURE-G

| | |
|----------|--|
| E | PIPE FITTINGS |
| 1 | A K Pipe Fittings |
| 2 | Eby Fasteners |
| 3 | Dee Development |
| 4 | Teekay tubes |
| 5 | M S fittings |
| 6 | Allied International |
| 7 | IBF Italy |
| 8 | Gujarat Infrapipes pvt ltd |
| 9 | CSA Fittings |
| 10 | Tube Products |
| 11 | K S Pipe Fittintgs Pvt Ltd |
| 12 | gujarat engineering |
| 13 | TRUE FORGE PVT LTD |
| 14 | P K TUBES & FITTINGS LTD |
| 15 | PRECISION ENGINEERING INDS |
| 16 | TUBE TURN INDIA P LTD |
| F | Screwe and socket welded fittings |
| 1 | A K Pipe Fittings |
| 2 | Eby Fasteners |
| 3 | Dee Development |
| 4 | Teekay tubes |
| 5 | M S fittings |
| 6 | Allied International |
| 7 | IBF Italy |
| 8 | Gujarat Infrapipes pvt ltd |
| 9 | CSA Fittings |
| 10 | leader valves |
| 11 | Tube Products |
| 12 | KS Pipe Fittings |
| 13 | TRUE FORGE PVT LTD |
| 14 | PRECISION ENGG INDS |
| 15 | P.K. TUBES & FITTINGS PVT. LTD. |
| G | PAINTS |
| 1 | ASIAN PAINTS |
| 2 | AKZO NOBEL |
| 3 | BERGER |
| 4 | HAM PEL |

NOTE : Vendor Seller shall not source material from any raw materials or bought out components required to execute this job from **CHINA** or **East European countries** (i.e ALBANIA, ARM ENIA, AZERBAIJAN, BELARUS,BOSNIA, HERZEGOVINA,BULGARIA,CROATIA,CZECH REPUBLIC, GEORGIA,HUNGARY,KOSOV,M ACEDONIA,M OLDOVA,M ONTENEGRO,POLAND,ROM ANIA,RU SSI A,SERBIA,SLOAVIKIA,SLOVENIA AND UKRAINE) and for raw materials and brought out items seller shall strictly follow vendors mentioned in vendor list.

ANNEXURE-H

8. ANNEXURE-H

LIST OF P&I.D

| SL.NO | DESCRIPTION | DOCUMENT NUMBER |
|-------|--|-----------------|
| 1 | P&ID FOR CONDENSATE SYSTEM | 1-381-01-05776 |
| 2 | P&ID FOR CONDENSATE FORWARDING SYSTEM | 1-381-01-05777 |
| 3 | P&ID FOR HP HEATER DRAIN & VENT SYSTEM | 1-381-01-05779 |
| 4 | P&ID FOR LP HEATER DRAIN & VENT SYSTEM | 1-381-01-05780 |
| 5 | P&ID FOR CCW SYSTEM | 1-381-01-05764 |
| 6 | P&ID FOR CW/ ACW SYSTEM | 1-381-01-05765 |
| 7 | P&ID FOR INSTRUMENT AIR DISTRIBUTION | 2-381-01-04232 |
| 8 | P&ID FOR PLANT AIR DISTRIBUTION | 2-381-01-04233 |
| 9 | P&ID FOR SWAS SYSTEM | 2-381-01-04243 |

ANNEXURE-I

VENDOR TO ALSO ADD THE SITE ROUTED BOQ AND CONTINGENCY BOQ TO THE BELOW LISTED BOQ TO ARRIVE AT THE TOTAL PACKAGE BOQ

| ITEM 1 | ITEM DESCRIPTION | NB1 | NB2 | NB3 | SCHEDULE | RATING | MATERIAL | QTY (m/ Nos) |
|---------------|-------------------------------|------|-----|-----|----------|--------|-------------|-----------------|
| CAP:1000 | CAP ASME B16.9 BW | 1000 | | | STD | | A234GRWPB | 3 |
| CAP:150 | CAP ASME B16.9 BW | 150 | | | STD | | A234GRWPB | 2 |
| CAP:350 | CAP ASME B16.9 BW | 350 | | | S10 | | A234GRWPB | 4 |
| CAP:350 | CAP ASME B16.9 BW | 350 | | | S10S | | A403GRWP304 | 3 |
| CAP:500 | CAP ASME B16.9 BW | 500 | | | S10S | | A403GRWP304 | 3 |
| CAP:750 | CAP ASME B16.9 BW | 750 | | | STD | | A234GRWPB | 3 |
| CRDCR:100_40 | RDCR CONC ASME B16.9 BW | 100 | 40 | | S40XS80 | | A234GRWPB | 9 |
| CRDCR:100_50 | RDCR CONC ASME B16.9 BW | 100 | 50 | | STDSTD | | A234GRWPB | 18 |
| CRDCR:100_80 | RDCR CONC ASME B16.9 BW | 100 | 80 | | S10XS10S | | A403GRWP304 | 2 |
| CRDCR:100_80 | RDCR CONC ASME B16.9 BW | 100 | 80 | | STDSTD | | A234GRWPB | 18 |
| CRDCR:150_100 | RDCR CONC ASME B16.9 BW | 150 | 100 | | S40XS40 | | A234GRWPB | 60 |
| CRDCR:150_100 | RDCR CONC ASME B16.9 BW | 150 | 100 | | STDSTD | | A234GRWPB | 30 |
| CRDCR:150_80 | RDCR CONC ASME B16.9 BW | 150 | 80 | | S10XS10S | | A403GRWP304 | 9 |
| CRDCR:200_100 | RDCR CONC ASME B16.9 BW | 200 | 100 | | S20XS40 | | A234GRWPB | 3 |
| CRDCR:200_100 | RDCR CONC ASME B16.9 BW | 200 | 100 | | S20XSTD | | A234GRWPB | 7 |
| CRDCR:200_100 | RDCR CONC ASME B16.9 BW | 200 | 100 | | S40XS40 | | A234GRWPB | 6 |
| CRDCR:200_150 | RDCR CONC ASME B16.9 BW | 200 | 150 | | S20XS40 | | A234GRWPB | 9 |
| CRDCR:200_150 | RDCR CONC ASME B16.9 BW | 200 | 150 | | S40XS40 | | A234GRWPB | 9 |
| CRDCR:250_150 | RDCR CONC ASME B16.9 BW | 250 | 150 | | S10XS10S | | A403GRWP304 | 9 |
| CRDCR:250_150 | RDCR CONC ASME B16.9 BW | 250 | 150 | | S20XS40 | | A234GRWPB | 12 |
| CRDCR:250_150 | RDCR CONC ASME B16.9 BW | 250 | 150 | | S40XS40 | | A234GRWPB | 3 |
| CRDCR:250_200 | RDCR CONC ASME B16.9 BW | 250 | 200 | | S20XS20 | | A234GRWPB | 18 |
| CRDCR:250_200 | RDCR CONC ASME B16.9 BW | 250 | 200 | | S40XS40 | | A234GRWPB | 3 |
| CRDCR:350_300 | RDCR CONC ASME B16.9 BW | 350 | 300 | | S10XS10S | | A403GRWP304 | 30 |
| CRDCR:400_300 | RDCR CONC ASME B16.9 BW | 400 | 300 | | S10XS20 | | A234GRWPB | 12 |
| CRDCR:400_350 | RDCR CONC ASME B16.9 BW | 400 | 350 | | S10XS10S | | A403GRWP304 | 3 |
| CRDCR:500_350 | RDCR CONC ASME B16.9 BW | 500 | 350 | | S10XS10 | | A234GRWPB | 3 |
| CRDCR:750_600 | RDCR CONC ASME B16.9 BW | 750 | 600 | | STDSTD | | A234GRWPB | 1 |
| CRDCR:80_40 | RDCR CONC ASME B16.9 BW | 80 | 40 | | S10XS40S | | A403GRWP304 | 9 |
| CRDCR:80_50 | RDCR CONC ASME B16.9 BW | 80 | 50 | | S10XS40S | | A403GRWP304 | 5 |
| ELB45:100 | ELBOW LR 45 DEG ASME B16.9 BW | 100 | 100 | | STD | | A234GRWPB | 1 |
| ELB45:150 | ELBOW LR 45 DEG ASME B16.9 BW | 150 | 150 | | S40 | | A234GRWPB | 9 |
| ELB45:150 | ELBOW LR 45 DEG ASME B16.9 BW | 150 | 150 | | STD | | A234GRWPB | 6 |
| ELB45:200 | ELBOW LR 45 DEG ASME B16.9 BW | 200 | 200 | | S20 | | A234GRWPB | 3 |
| ELB45:250 | ELBOW LR 45 DEG ASME B16.9 BW | 250 | 250 | | S20 | | A234GRWPB | 6 |
| ELB45:350 | ELBOW LR 45 DEG ASME B16.9 BW | 350 | 350 | | S10S | | A403GRWP304 | 9 |
| ELB45:500 | ELBOW LR 45 DEG ASME B16.9 BW | 500 | 500 | | S10 | | A234GRWPB | 12 |

| ITEM 1 | ITEM DESCRIPTION | NB1 | NB2 | NB3 | SCHEDULE | RATING | MATERIAL | QTY (m/ Nos) |
|------------|--|------|------|------|----------|--------|-------------|-----------------|
| ELB45:500 | ELBOW LR 45 DEG ASM E B16.9 BW | 500 | 500 | | S10S | | A403GRWP304 | 6 |
| ELB45:750 | ELBOW LR 45 DEG ASM E B16.9 BW | 750 | 750 | | STD | | A234GRWPB | 2 |
| ELB45:80 | ELBOW LR 45 DEG ASM E B16.9 BW | 80 | 80 | | S10S | | A403GRWP304 | 1 |
| ELB45:80 | ELBOW LR 45 DEG ASM E B16.9 BW | 80 | 80 | | STD | | A234GRWPB | 4 |
| ELB45:900 | ELBOW LR 45 DEG ASM E B16.9 BW | 900 | 900 | | XS | | A234GRWPB | 6 |
| ELB90:100 | ELBOW LR 90 DEG ASM E B16.9 BW | 100 | 100 | | S10S | | A403GRWP304 | 13 |
| ELB90:100 | ELBOW LR 90 DEG ASM E B16.9 BW | 100 | 100 | | S40 | | A234GRWPB | 108 |
| ELB90:100 | ELBOW LR 90 DEG ASM E B16.9 BW | 100 | 100 | | STD | | A234GRWPB | 290 |
| ELB90:150 | ELBOW LR 90 DEG ASM E B16.9 BW | 150 | 150 | | S10S | | A403GRWP304 | 66 |
| ELB90:150 | ELBOW LR 90 DEG ASM E B16.9 BW | 150 | 150 | | S40 | | A234GRWPB | 375 |
| ELB90:150 | ELBOW LR 90 DEG ASM E B16.9 BW | 150 | 150 | | STD | | A234GRWPB | 125 |
| ELB90:200 | ELBOW LR 90 DEG ASM E B16.9 BW | 200 | 200 | | S20 | | A234GRWPB | 107 |
| ELB90:200 | ELBOW LR 90 DEG ASM E B16.9 BW | 200 | 200 | | S40 | | A234GRWPB | 15 |
| ELB90:250 | ELBOW LR 90 DEG ASM E B16.9 BW | 250 | 250 | | S20 | | A234GRWPB | 186 |
| ELB90:250 | ELBOW LR 90 DEG ASM E B16.9 BW | 250 | 250 | | S40 | | A234GRWPB | 15 |
| ELB90:300 | ELBOW LR 90 DEG ASM E B16.9 BW | 300 | 300 | | S10S | | A403GRWP304 | 6 |
| ELB90:300 | ELBOW LR 90 DEG ASM E B16.9 BW | 300 | 300 | | S20 | | A234GRWPB | 6 |
| ELB90:350 | ELBOW LR 90 DEG ASM E B16.9 BW | 350 | 350 | | S10S | | A403GRWP304 | 111 |
| ELB90:400 | ELBOW LR 90 DEG ASM E B16.9 BW | 400 | 400 | | S10 | | A234GRWPB | 63 |
| ELB90:40 | ELBOW 90 DEG LR ASM E B16.11 CL3000 SW | 40 | 40 | | CL3000 | | A182GRF304 | 42 |
| ELB90:450 | ELBOW LR 90 DEG ASM E B16.9 BW | 450 | 450 | | S10 | | A234GRWPB | 4 |
| ELB90:500 | ELBOW LR 90 DEG ASM E B16.9 BW | 500 | 500 | | S10 | | A234GRWPB | 31 |
| ELB90:500 | ELBOW LR 90 DEG ASM E B16.9 BW | 500 | 500 | | S10S | | A403GRWP304 | 6 |
| ELB90:50 | ELBOW LR 90 DEG ASM E B16.9 BW | 50 | 50 | | S40 | | A234GRWPB | 225 |
| ELB90:50 | ELBOW LR 90 DEG ASM E B16.9 BW | 50 | 50 | | S40S | | A403GRWP304 | 27 |
| ELB90:50 | ELBOW LR 90 DEG ASM E B16.9 BW | 50 | 50 | | STD | | A234GRWPB | 116 |
| ELB90:600 | ELBOW LR 90 DEG ASM E B16.9 BW | 600 | 600 | | STD | | A234GRWPB | 6 |
| ELB90:750 | ELBOW LR 90 DEG ASM E B16.9 BW | 750 | 750 | | STD | | A234GRWPB | 5 |
| ELB90:80 | ELBOW LR 90 DEG ASM E B16.9 BW | 80 | 80 | | S10S | | A403GRWP304 | 18 |
| ELB90:80 | ELBOW LR 90 DEG ASM E B16.9 BW | 80 | 80 | | STD | | A234GRWPB | 82 |
| ELB90:900 | ELBOW LR 90 DEG ASM E B16.9 BW | 900 | 900 | | XS | | A234GRWPB | 30 |
| EQTEE:1000 | TEE STRT ASM E B16.9 BW | 1000 | 1000 | 1000 | XS | | A234GRWPB | 1 |
| EQTEE:100 | TEE STRT ASM E B16.9 BW | 100 | 100 | 100 | S10S | | A403GRWP304 | 2 |
| EQTEE:100 | TEE STRT ASM E B16.9 BW | 100 | 100 | 100 | STD | | A234GRWPB | 10 |
| EQTEE:150 | TEE STRT ASM E B16.9 BW | 150 | 150 | 150 | S40 | | A234GRWPB | 24 |
| EQTEE:150 | TEE STRT ASM E B16.9 BW | 150 | 150 | 150 | STD | | A234GRWPB | 6 |
| EQTEE:200 | TEE STRT ASM E B16.9 BW | 200 | 200 | 200 | S20 | | A234GRWPB | 8 |

| ITEM 1 | ITEM DESCRIPTION | NB1 | NB2 | NB3 | SCHEDULE | RATING | MATERIAL | QTY (m/ Nos) |
|---------------|--------------------------------------|------|-----|-----|----------|--------|---------------|-----------------|
| EQTEE:250 | TEE STRT ASM E B16.9 BW | 250 | 250 | 250 | S20 | | A234GRWPB | 21 |
| EQTEE:350 | TEE STRT ASM E B16.9 BW | 350 | 350 | 350 | S10S | | A403GRWP304 | 18 |
| EQTEE:400 | TEE STRT ASM E B16.9 BW | 400 | 400 | 400 | S10 | | A234GRWPB | 15 |
| EQTEE:40 | TEE STRT ASM E B16.11 CL3000 SW | 40 | 40 | 40 | CL3000 | | A182GRF304 | 15 |
| EQTEE:500 | TEE STRT ASM E B16.9 BW | 500 | 500 | 500 | S10 | | A234GRWPB | 3 |
| EQTEE:50 | TEE STRT ASM E B16.9 BW | 50 | 50 | 50 | S40 | | A234GRWPB | 9 |
| EQTEE:50 | TEE STRT ASM E B16.9 BW | 50 | 50 | 50 | STD | | A234GRWPB | 7 |
| EQTEE:80 | TEE STRT ASM E B16.9 BW | 80 | 80 | 80 | S10S | | A403GRWP304 | 5 |
| EQTEE:80 | TEE STRT ASM E B16.9 BW | 80 | 80 | 80 | STD | | A234GRWPB | 1 |
| EQTEE:900 | TEE STRT ASM E B16.9 BW | 900 | 900 | 900 | XS | | A234GRWPB | 12 |
| ERDCR:350_150 | RDCR ECC ASM E B16.9 BW | 350 | 150 | | S10XS10S | | A403GRWP304 | 9 |
| ERDCR:400_300 | RDCR ECC ASM E B16.9 BW | 400 | 300 | | S10XS20 | | A234GRWPB | 6 |
| ERDCR:400_350 | RDCR ECC ASM E B16.9 BW | 400 | 350 | | S10XS10 | | A234GRWPB | 2 |
| ERDCR:450_300 | RDCR ECC ASM E B16.9 BW | 450 | 300 | | S10XS20 | | A234GRWPB | 8 |
| ERDCR:500_350 | RDCR ECC ASM E B16.9 BW | 500 | 350 | | S10XS10 | | A234GRWPB | 8 |
| ERDCR:600_400 | RDCR ECC ASM E B16.9 BW | 600 | 400 | | STDXS10 | | A234GRWPB | 2 |
| ERDCR:700_450 | RDCR ECC ASM E B16.9 BW | 700 | 450 | | STDXS10 | | A234GRWPB | 3 |
| ERDCR:80_50 | RDCR ECC ASM E B16.9 BW | 80 | 50 | | S10XS40S | | A403GRWP304 | 2 |
| HCPLNG:100_25 | HALF COUPLING ASM E B16.11 CL3000 SW | 100 | 100 | 25 | CL3000 | | A182GRF304 | 6 |
| HCPLNG:150_20 | HALF COUPLING ASM E B16.11 CL3000 SW | 150 | 150 | 20 | | CL3000 | A105 | 6 |
| HCPLNG:150_25 | HALF COUPLING ASM E B16.11 CL3000 SW | 150 | 150 | 25 | | CL3000 | A105 | 33 |
| HCPLNG:200_25 | HALF COUPLING ASM E B16.11 CL3000 SW | 200 | 200 | 25 | | CL3000 | A105 | 15 |
| HCPLNG:250_20 | HALF COUPLING ASM E B16.11 CL3000 SW | 250 | 250 | 20 | | CL3000 | A105 | 6 |
| HCPLNG:250_25 | HALF COUPLING ASM E B16.11 CL3000 SW | 250 | 250 | 25 | | CL3000 | A105 | 12 |
| HCPLNG:350_20 | HALF COUPLING ASM E B16.11 CL3000 SW | 350 | 350 | 20 | | CL3000 | A182GRF304 | 9 |
| HCPLNG:350_25 | HALF COUPLING ASM E B16.11 CL3000 SW | 350 | 350 | 25 | CL3000 | | A182GRF304 | 6 |
| HCPLNG:80_25 | HALF COUPLING ASM E B16.11 CL3000 SW | 80 | 80 | 25 | CL3000 | | A182GRF304 | 1 |
| PIPE:1000 | PIPE ERW/SAW IS-3589 PE | 1000 | | | T10 | | IS3589GRFE330 | 18.14 |
| PIPE:100 | PIPE ERW/SAW IS-1239 (PART 1) PE | 100 | | | HVY | | IS1239(BLACK) | 510.11 |
| PIPE:100 | PIPE SM LS ASM E B36.10 PE | 100 | | | S10S | | A312GRTP304 | 21.92 |
| PIPE:100 | PIPE SM LS ASM E B36.10 PE | 100 | | | S40 | | A106GRB | 326.01 |
| PIPE:150 | PIPE ERW/SAW IS-1239 (PART 1) PE | 150 | | | HVY | | IS1239(BLACK) | 512.86 |
| PIPE:150 | PIPE SM LS ASM E B36.10 PE | 150 | | | S10S | | A312GRTP304 | 210.66 |
| PIPE:150 | PIPE SM LS ASM E B36.10 PE | 150 | | | S40 | | A106GRB | 1455.9 |
| PIPE:200 | PIPE SM LS ASM E B36.10 PE | 200 | | | S20 | | A106GRB | 201.33 |
| PIPE:200 | PIPE SM LS ASM E B36.10 PE | 200 | | | S40 | | A106GRB | 61.95 |
| PIPE:200 | PIPE ERW/SAW IS-3589 PE | 200 | | | T6 | | IS3589GRFE330 | 207.74 |

| ITEM 1 | ITEM DESCRIPTION | NB1 | NB2 | NB3 | SCHEDULE | RATING | MATERIAL | QTY (m/ Nos) |
|--------------|--|-----|-----|-----|----------|--------|---------------|-----------------|
| PIPE:250 | PIPE SM LS ASM E B36.10 PE | 250 | | | S10S | | A312GRTP304 | 17.28 |
| PIPE:250 | PIPE SM LS ASM E B36.10 PE | 250 | | | S20 | | A106GRB | 521.56 |
| PIPE:250 | PIPE SM LS ASM E B36.10 PE | 250 | | | S40 | | A106GRB | 59.01 |
| PIPE:250 | PIPE ERW/ SAW IS-3589 PE | 250 | | | T6 | | IS3589GRFE330 | 29.38 |
| PIPE:300 | PIPE SM LS ASM E B36.10 PE | 300 | | | S10S | | A312GRTP304 | 14.85 |
| PIPE:300 | PIPE SM LS ASM E B36.10 PE | 300 | | | S20 | | A106GRB | 3.75 |
| PIPE:300 | PIPE ERW/ SAW IS-3589 PE | 300 | | | T6 | | IS3589GRFE330 | 6 |
| PIPE:350 | PIPE SM LS ASM E B36.10 PE | 350 | | | S10S | | A312GRTP304 | 596.4 |
| PIPE:350 | PIPE SM LS ASM E B36.10 PE | 350 | | | S40 | | A106GRB | 3.48 |
| PIPE:350 | PIPE ERW/ SAW IS-3589 PE | 350 | | | T6 | | IS3589GRFE330 | 179.46 |
| PIPE:400 | PIPE EFSW ASM E B36.10 PE | 400 | | | S10 | | A672GRB60 | 30.51 |
| PIPE:400 | PIPE ERW/ SAW IS-3589 PE | 400 | | | T6 | | IS3589GRFE330 | 615.45 |
| PIPE:40 | PIPE SM LS ASM E B36.10 PE | 40 | | | S40S | | A312GRTP304 | 119.97 |
| PIPE:450 | PIPE ERW/ SAW IS-3589 PE | 450 | | | T6 | | IS3589GRFE330 | 32.44 |
| PIPE:500 | PIPE EFSW ASM E B36.10 PE | 500 | | | S10 | | A672GRB60 | 30.93 |
| PIPE:500 | PIPE SM LS ASM E B36.10 PE | 500 | | | S10S | | A312GRTP304 | 67.47 |
| PIPE:500 | PIPE ERW/ SAW IS-3589 PE | 500 | | | T6 | | IS3589GRFE330 | 231.86 |
| PIPE:50 | PIPE ERW/ SAW IS-1239 (PART 1) PE | 50 | | | HVY | | IS1239(BLACK) | 548.74 |
| PIPE:50 | PIPE ERW/ SAW IS-1239 (PART 1) PE | 50 | | | HVY | | IS1239(GALV) | 0.5 |
| PIPE:50 | PIPE SM LS ASM E B36.10 PE | 50 | | | S40 | | A106GRB | 485.67 |
| PIPE:50 | PIPE SM LS ASM E B36.10 PE | 50 | | | S40S | | A312GRTP304 | 127.65 |
| PIPE:600 | PIPE ERW/ SAW IS-3589 PE | 600 | | | T8 | | IS3589GRFE330 | 149.29 |
| PIPE:700 | PIPE ERW/ SAW IS-3589 PE | 700 | | | T8 | | IS3589GRFE330 | 7.99 |
| PIPE:750 | PIPE ERW/ SAW IS-3589 PE | 750 | | | T8 | | IS3589GRFE330 | 70.49 |
| PIPE:80 | PIPE ERW/ SAW IS-1239 (PART 1) PE | 80 | | | HVY | | IS1239(BLACK) | 523.44 |
| PIPE:80 | PIPE SM LS ASM E B36.10 PE | 80 | | | S10S | | A312GRTP304 | 172.26 |
| PIPE:900 | PIPE ERW/ SAW IS-3589 PE | 900 | | | T10 | | IS3589GRFE330 | 156.09 |
| PIPE:900 | PIPE EFSW ASM E B36.10 PE | 900 | | | XS | | A672GRB60 | 17.88 |
| TSTUB:150_25 | TEMP STUB BECHTEL TYPE-T 1 NPT THRD" | 150 | 150 | 25 | | | A105 | 27 |
| TSTUB:200_25 | TEMP STUB BECHTEL TYPE-T 1 1/4 NPT THRD" | 200 | 200 | 25 | | | A105 | 9 |
| TSTUB:250_25 | TEMP STUB BECHTEL TYPE-T 1 1/4 NPT THRD" | 250 | 250 | 25 | | | A105 | 12 |