

PROCEDURE FOR INSTALLATION OF BREASTPLATE AND SEALING FRAME (ITEMS 1 & 2):

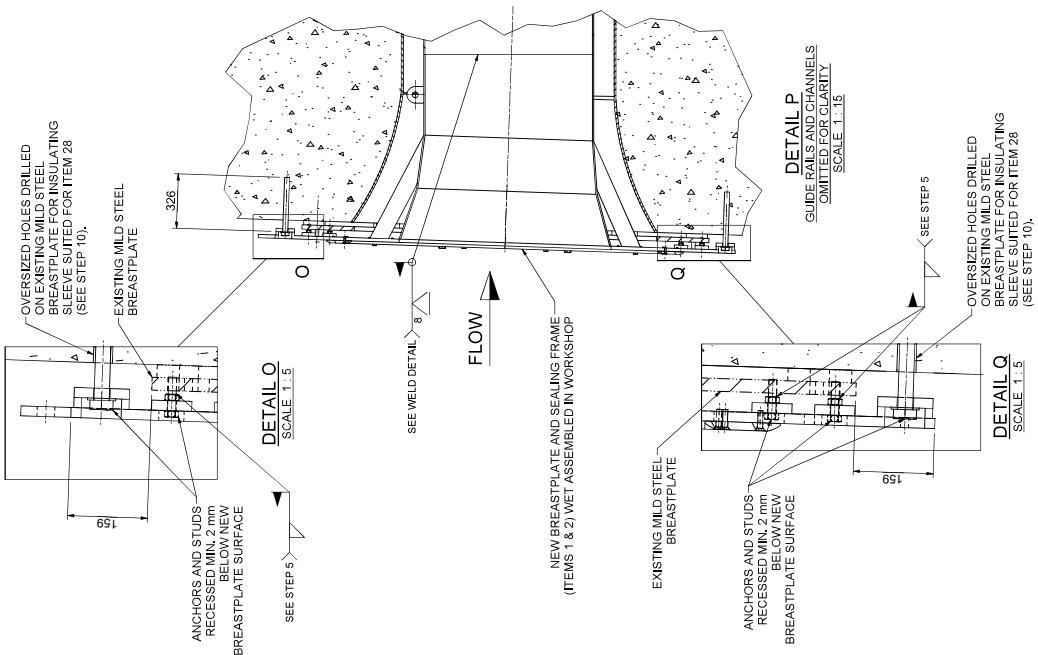
THE PROCEDURE BELOW FOR THE INSTALLATION OF THE NEW BREASTPLATES SHALL BE FOLLOWED REGARDLESS OF THE LARGER INSTALLATION PROCEDURE FOLLOWED. THE CONTRACTOR SHALL ENSURE THAT THE CORROSION PROTECTION IS PRESERVED DURING SITE WORKS, REMEDIAL CORROSION PROTECTION IN ACCORDANCE TO DWS 9900 SHALL BE CARRIED OUT WHEN COATINGS ARE DAMAGED ON SITE. BREASTPLATES AND SEALING FRAMES (ITEMS 1 & 2) SHALL BE WET ASSEMBLED IN THE WORKSHOP PRIOR TO DELIVERY TO SITE. THE CONTRACTOR SHALL PROVIDE THE NECESSARY TOOLS AND EQUIPMENT TO CARRY OUT THE SITE WORKS SHALL BE PROVIDED BY THE CONTRACTOR.

1. IDENTIFY FURTHERST- TO LEAST PROTRUDING EXISTING BREASTPLATE (IF ANY). THIS SHALL ESTABLISH INSTALLATION ORDER FOR THAT LINE (MOST PROTRUDING SHALL BE FIRST, LEAST PROTRUDING SHALL BE LAST). IF ALL BREASTPLATES ARE FLUSH TO EACH OTHER (WITHIN 5 mm), THE INSTALLATION SHALL BEGIN FROM LEVEL A UPWARDS.
2. THE CONTRACTOR SHALL REMOVE THE EXISTING BREASTPLATE SHALL BE MARKED WITH A USED CONCRETE MARKER. THE LOWER SURFACE OF THE EXISTING BREASTPLATE SHALL BE VERTICAL ALIGNMENT IS OUT OF TOLERANCE, SIDE SHIMS OF ITEM 23 SHALL BE ADJUSTED ACCORDINGLY ON ITEMS 3, 4, 5, AND 6.
3. THE NEW BREASTPLATE SHALL BE SAFELY LOWERED CENTRALLY OVER THE EXISTING BREASTPLATE (SEE DETAIL VIEWS O, P AND Q, AS WELL AS SECTION D-D FOR CENTRAL POSITIONING OF THE NEW BREASTPLATE).
4. THE NEW BREASTPLATE SHALL BE SAFELY LOWERED CENTRALLY OVER THE NEW BREASTPLATE (SEE DETAIL VIEWS O, P AND Q, AS WELL AS SECTION D-D FOR CENTRAL POSITIONING OF THE NEW BREASTPLATE).
5. THE STUD, ONE NUT AND ONE WASHER SHALL BE INSTALLED ON THE TAPPED HOLES, THE NEW BREAST PLATE SHALL THEN BE POSITIONED ON THE STUDS (ITEM 25) AND SECURED USING THE REMAINING WASHERS AND NUTS, THESE PAIRS OF NUTS AND WASHERS SHALL BE ADJUSTED UNTIL FLATNESS (WITHIN 1.5 mm) IS ACHIEVED AND APPROVED BY THE ENGINEER. THE SLOPE OF 1:30 (2°) SHALL BE MAINTAINED ON THE NEW WELD BY TACK WELDING THE NUT TO THE STUD AS WELL AS TACK WELDING THE STUD TO THE EXISTING BREASTPLATE. THEREAFTER, THE EXISTING BREASTPLATE SHALL BE CORROSION PROTECTED IN ACCORDANCE WITH PARTICULAR SPECIFICATION DLD.
6. WITH THE NEW BREASTPLATE IN POSITION, THE DISTANCE BETWEEN THE LOWEST OUTER POINT OF THE BELL MOUTH PIPE AND THE EXISTING PIPE INNER DIAMETER SHALL BE MEASURED, THE LOWER SHIMS (ITEM 23) SHALL BE ADJUSTED ON ITEMS 3, 4, 5, AND 6.
7. THE NEW BREASTPLATES 3, 4, 5 AND 6 ACCORDINGLY, THE NEW BREASTPLATE SHALL BE REMOVED SAFELY IF ITEMS 3, 4, 5 AND 6 ARE INSTALLED FROM THE UPSTREAM SIDE OF THE DAM AND REPOSITIONED ONCE THE NEW PIPES ARE PLACED CORRECTLY.
8. THE WELDING PROCEDURE FOR SITE WELDING OF ITEMS 1, 3, 4, 5 AND 6 ARE DETAILED BELOW, ALL SITE WELDS SHALL BE DYE PEN- AND 100% ULTRASONICALLY TESTED, EXCESS PIPE LENGTH PROTRUDING FROM THE DOWNSTREAM SIDE OF THE DAM WALL SHALL BE CUT IN ACCORDANCE WITH DETAIL SECTION VIEWS M, N & E.
9. THE NEW BREASTPLATES SHALL BE WELDED TO THE EXISTING BREASTPLATE USING 1.5 mm WELDS TO THE STUD AS WELL AS TACK WELDING THE STUD TO THE EXISTING BREASTPLATE. THE REQUIRED SLOPE, SUITABLE HOLES (OVERSIZED WHERE REQUIRED) FOR ITEM 28 SHALL BE DRILLED AND THE CHEMICAL ANCHORS THEREOF SHALL BE INSTALLED.
11. ONCE CONFIRMED, HOLES ARE MARKED AND DRILLED FOR ANCHORING OF THE EMERGENCY GATE GUIDE RAILS AND TRASH SCREEN GUIDE CHANNELS, THESE HOLES SHALL BE IN VERTICAL ALIGNMENT BETWEEN THE THREE LEVELS, CHEMICAL ANCHORS SHALL BE INSTALLED TO THE REQUIRED LEVEL, THE GUIDE RAILS AND TRASH SCREEN GUIDE CHANNELS SHALL BE INSTALLED TO THE REQUIRED LEVEL.
12. PRIOR TO TESTING THE RAILS, ALL ANCHORS AND STUDS SHALL BE CONFIRMED NOT TO PROTRUDE ABOVE THE NEW BREASTPLATE SURFACE, ANCHORS AND STUDS SHALL BE RECESSED AT LEAST 2 mm BELOW THE BREASTPLATE SURFACE.
13. A DRY TEST SHALL THEN BE CONDUCTED, ONCE APPROVED BY THE ENGINEER, GROUTING OF THE CAVITY MAY COMMENCE.
14. ONCE THE GROUT HAS CURED AND THE CASING REMOVED FROM THE REFURBISHED EMERGENCY GATE, THE CONTRACTOR SHALL CONDUCT A WET TEST TO ENSURE THE EMERGENCY GATE UNDER BALANCED AND UNBALANCED CONDITIONS. THE WET TEST SHALL BE CONDUCTED UNDER FULL FLOW CONDITIONS.

DRY TESTING:
THE EMERGENCY GATE SHALL BE LOWERED FROM THE NOC LEVEL ALONG THE GUIDE RAILS AND STOPPED AT EACH LEVEL UNTIL REACHING THE BOTTOM STOPS, SEALING INTERFACES SHALL BE INSPECTED FOR LEAKS. THE CONTRACTOR SHALL ENSURE THAT THE GATE TRAVELERS ALONG THE RAILS WITH NO INTERFERENCES AGAINST OTHER CIVIL / MECHANICAL EQUIPMENT.

WET TESTING:
THE EMERGENCY GATE SHALL BE LOWERED FROM THE NOC LEVEL ALONG THE GUIDE RAILS AND STOPPED AT EACH LEVEL UNTIL REACHING THE BOTTOM STOPS, THE CONTRACTOR SHALL ENSURE THAT THE GATE TRAVELERS ALONG THE RAILS WITH NO INTERFERENCES AGAINST OTHER CIVIL / MECHANICAL EQUIPMENT. SEALING INTERFACES SHALL BE INSPECTED FOR LEAKS. THE CONTRACTOR SHALL ENSURE THAT THE GATE TRAVELERS ALONG THE RAILS WITH NO INTERFERENCES AGAINST OTHER CIVIL / MECHANICAL EQUIPMENT.

- DRY AND WET TEST CRITERIA:**
- VERIFY FUNCTIONALITY OF EMERGENCY GATE AGAINST GUIDE RAILS.
 - VERIFY FUNCTIONALITY OF TRASH SCREEN (WITH GRAPPLE) AGAINST GUIDE CHANNELS.
 - VERIFY SEALING OF EMERGENCY GATE UNDER BALANCED AND UNBALANCED CONDITIONS (WET TEST ONLY).



FLANGE FACE FINISH DETAIL (U.O.S.) (CONTINUOUS OR CONCENTRIC GROOVES)
R NOSE RADIUS 0.2-0.6
R 6 ANGLE 50°-60°
X DEPTH 0.8-1.0

REV	DATE	DESCRIPTION
B	04/2025	

SCALE (mm) 100

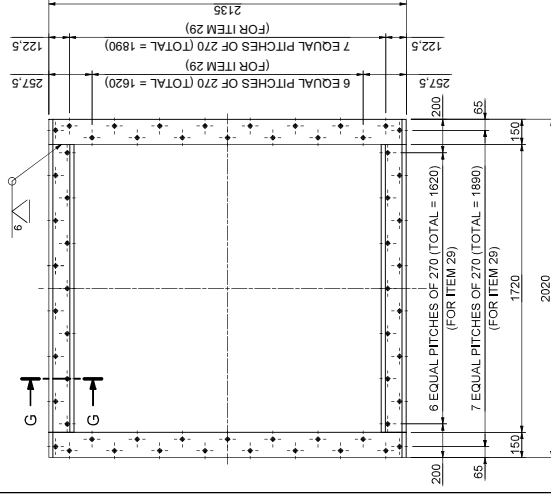
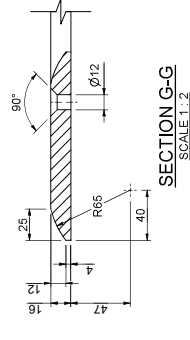
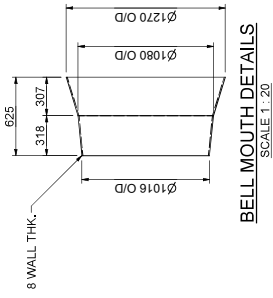
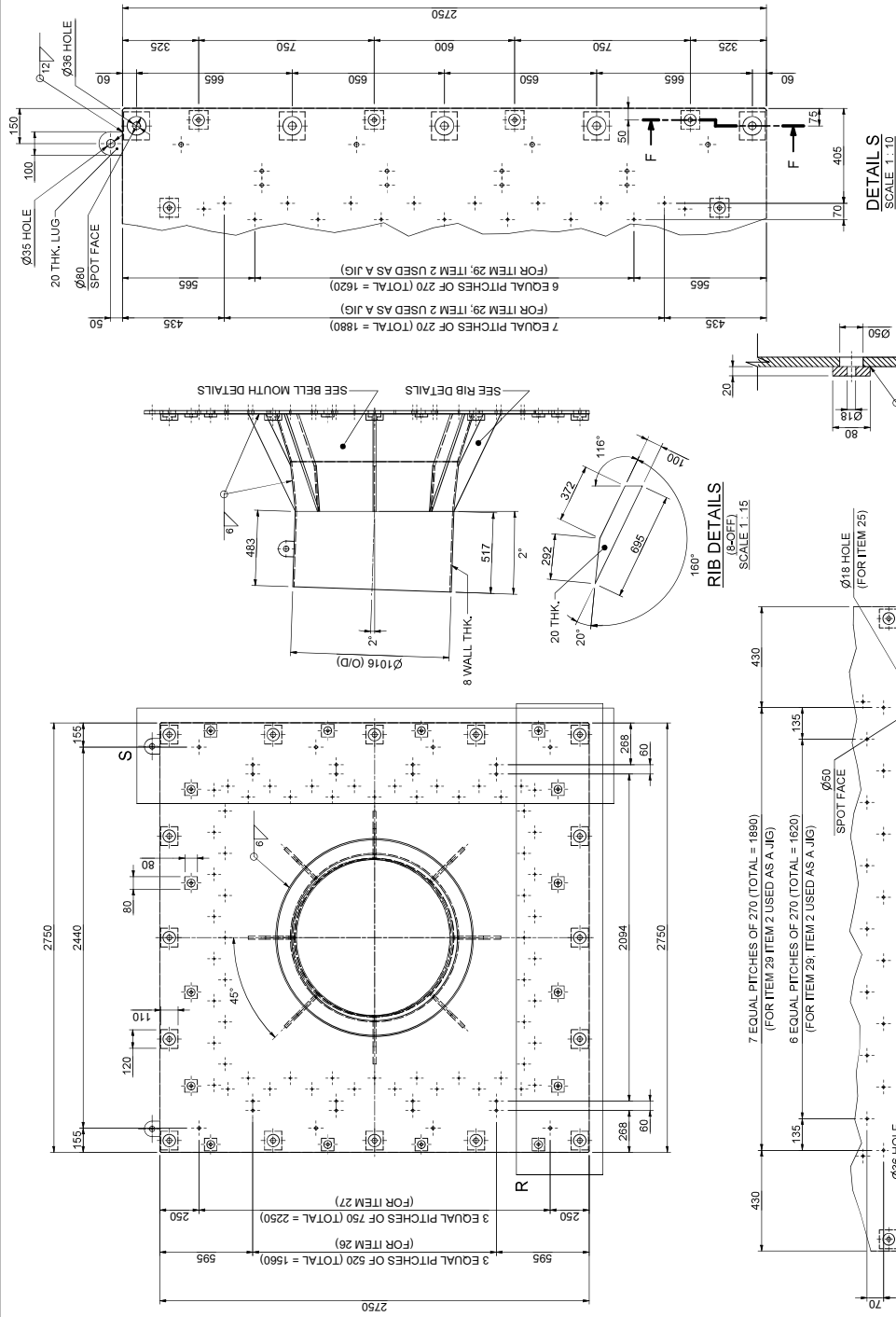
ROUND ALL SHARP EDGES / REMOVE BURRS

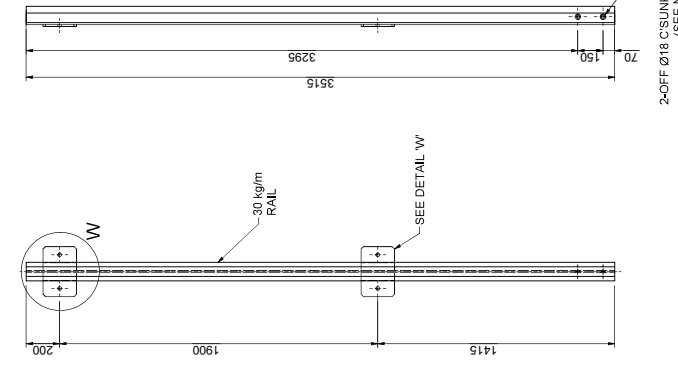
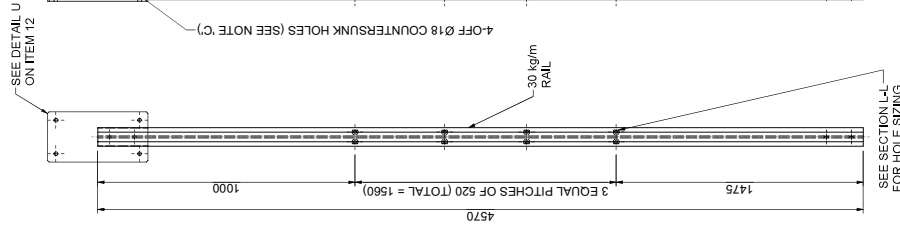
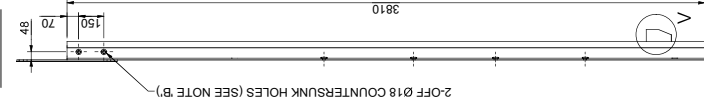
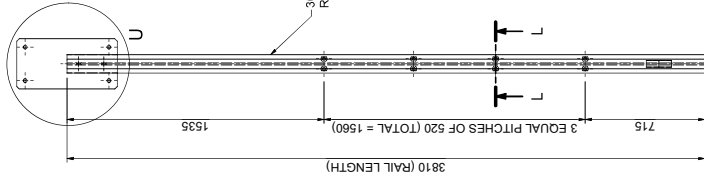
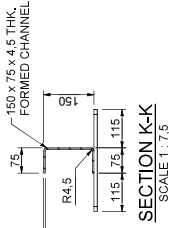
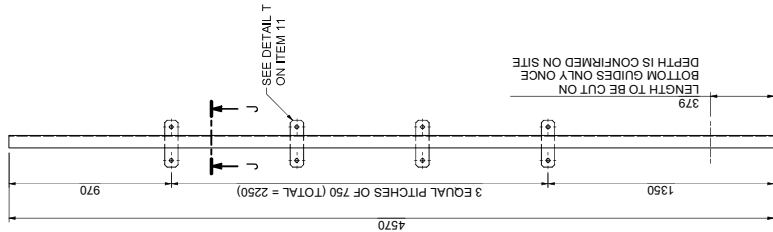
ALL DIMENSIONS IN MILLIMETERS RL'S IN METRES

DO NOT SCALE DRAWING

PROJECTION AXIS 01/11

GENERAL NOTES	QUALITY CONTROL
GENERAL DIMENSIONAL TOLERANCES (U.O.S.) DIMENSIONS UP TO 300: ± 0.5 mm DIMENSIONS ABOVE 300 TO 400: ± 0.8 mm DIMENSIONS ABOVE 400 TO 1000: ± 1.0 mm FLATNESS TOLERANCE: 0.2 mm SQUARENESS TOLERANCE: 0.2 mm THE QUALITY TOLERANCE ON PIPE CORNER RADIUS FOR PLAIN ENDED PIPE ENDS SHALL BE ± 2.4 mm AND FOR PIPE END ROOT FACE SHALL NOT DEVIATE FROM 0.8 mm OVER LENGTH OF 100 mm. SQUARENESS TO THE PIPE AXIS BY MORE THAN 5 mm.	CORROSION PROTECTION IN ACCORDANCE WITH STANDARD SPECIFICATION DWS 9900 2nd EDITION. 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[illegible]



ITEM 11		GUIDE CHANNEL B	
MAT'L: ST. STEEL 316L		QTY.: 10	
MASS: 46.6 kg		SCALE: 1 : 15	

NOTE 'B':
 - 5 OFF ITEM 12 TO HAVE COUNTERSUNK HOLES
 DRILLED ON LEFT HAND SIDE OF RAIL WEB.
 - 5 OFF ITEM 12 TO HAVE COUNTERSUNK HOLES
 DRILLED ON RIGHT HAND SIDE OF RAIL WEB.

NOTE 'C':

- 10 OFF ITEM 13 TO HAVE COUNTERSUNK HOLES DRILLED ON LEFT HAND SIDE OF RAIL WEB.
- 10 OFF ITEM 13 TO HAVE COUNTERSUNK HOLES DRILLED ON RIGHT HAND SIDE OF RAIL WEB.

NOTE 'D':
-5 OFF ITEM 14 TO HAVE COUNTERSUNK HOLES DRILLED ON LEFT HAND SIDE OF RAIL WEB.
-5 OFF ITEM 14 TO HAVE COUNTERSUNK HOLES DRILLED ON RIGHT HAND SIDE OF RAIL WEB.

GENERAL DIMENSIONAL TOLERANCES (U.O.S.)

DIMENSIONS UP TO 120:	± 0.3mm
DIMENSIONS ABOVE 120 TO 400:	± 0.5mm
DIMENSIONS ABOVE 400 TO 1000:	± 0.8mm
DIMENSIONS ABOVE 1000:	± 2mm

FLATNESS TOLERANCE:
SQUARENESS TOLERANCE:

3mm/m W	3mm/m W
3mm AC	3mm AC
DIAGONAL	DIAGONAL

L. NOTES:

GENERAL WELDING NOTES:

- PERFORM NECESSARY WELD PREPS.
- SEAL WELD ALL OPEN INTERFACES.
- BETWEEN PLATE CONNECTIONS.
- IDENTICAL WELDS SYMBOLISED ONCE ONLY.
- ALL WELDS SHALL BE CONTINUOUS FULL PENETRATION WELDS.
- REMOVE WELD SPATTER.
- WELDERS' SIGNATURES NECESSARILY QUALIFIED.
- WELDS TO BE PROTECTED.
- ITEMS 9, 10 & 11 TO BE PICKLED AND PASSIVATED.
- ITEMS 12 TO 14 IN ACCORDANCE WITH PARTICULAR SPECIFICATION ID.

	SCALE (mm)
ROUND ALL SHARP EDGES / REMOVE BURRS	
ALL DIMENSIONS IN MILLIMETERS R/L'S IN METRES	
DO NOT SCALE DRAWING	 PROJECTION SAIS 10111

REVISION
DESCRIPTION

DEPARTMENT OF WATER AND SANITATION REPUBLIC OF SOUTH AFRICA  MECO, C/O THE ENGINEERS BUILDINGS M/E ENGINEERING PRIVATE BAG X313 PRETORIA 0001	DIRECTOR GENERAL		DEPTO Y. MULLA	
	CHECKED:	DATE	DATE	DATE
ENGINEER		EXTERNAL APPROVAL	DATE	DATE
(SEE ENGINEER OR DESK) DATE:		(SEE DIRECTOR) DATE:		

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