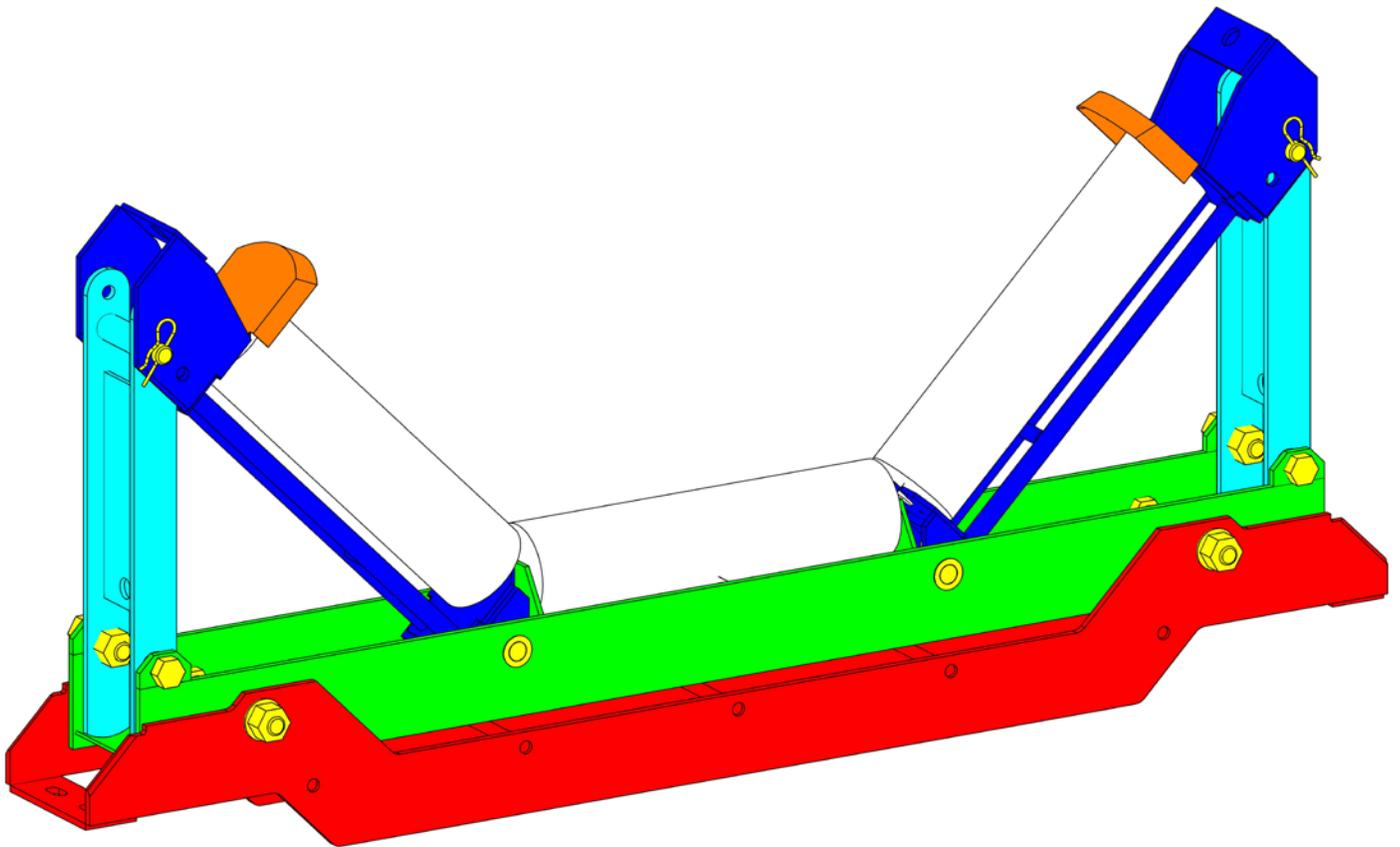




**DROP DOWN RETRACTABLE IDLER (D.D.R.I.) FRAME
ASSEMBLIES**

HB1498-IOM-01 rev 1



**INSTALLATION
OPERATING
MAINTENANCE
MANUAL**



**INSTALLATION
OPERATING
MAINTENANCE
MANUAL**

CLIENT	JOY / SKM - RIO TINTO PTY LTD
PROJECT/SITE	CAPE LAMBERT PORT 'B' PROJECT
SUBJECT	DROP DOWN RETRACTABLE IDLER FRAME ASSEMBLIES (D.D.R.I's)
H & B JOB No	HB1498
CLIENT's PROJECT No	CLB-M-SM-2513
CLIENT JOB No	2513
JOY PURCHASE ORDER No	4504041485



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SECTION 1 – INTRODUCTION

SECTION 2 – INSTALLATION

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SECTION 1 – INTRODUCTION

H & B Mining Services can offer the following range of Maintenance friendly Conveyor Idler types:-

- 1) DROP DOWN IDLER (D.D.I.).
- 2) **DROP DOWN RETRACTABLE IDLER (D.D.R.I.)**.
- 3) EASY MAINTENANCE TILT IDLER (E.M.T.I.).

All of the above products are designed to facilitate & simplify the removal / replacement of worn or damaged Conveyor Idler Rolls whilst the units remain in an “Insitu” location under Skirted or difficult access areas on the Conveyors.

This IOM Manual covers the DROP DOWN RETRACTABLE IDLER (D.D.R.I.) type only.

The Drop Down Retractable Idler (D.D.R.I.) frame was developed to further enhance the Easy Maintenance features of the Standard Drop Down idler (D.D.I.) frame, by adding a Retractable capability which improves access to the Central Idler Roll.

Due to the nature of the Drop Down & Retractable Action, the D.D.R.I. frames can only be designed to support a more conventional arrangement of a Single Row of Rolls, rather than the Dual Row of Rolls supported on the Standard D.D.I. frames.

1.1– DESCRIPTION / DESIGN

1.1.1. The H & B Mining D.D.R.I. Idler Assembly consists of the following components :-
Refer Diagram “A” overleaf.

- A. D.D.R.I. Frame Full Assembly.
- B. Guide Frame (one off).
- C. Slide Frame (one off).
- D. Wing Frame (two-off).
- E. Brace Frame (two off).
- F. Valley Pin (four off).
- G. Wing Pin (two off).
- H. Lock Bolt (four off).
- I. Locating Bolt (four off).
- J. Idler Roll (three off) – two Wing & one Centre. – BY OTHERS.
- K. Stone Guard (two off). – BY OTHERS.

1.1.2. The H & B Mining D.D.R.I. Idler Assembly is designed to replace the Standard Conveyor Impact & Carry Idler Assemblies within a Skirted or difficult access area on the Conveyor.
Therefore they are manufactured to facilitate the Site Standard Impact or Carry Idler rollers or any other rollers the Client may nominate.

1.1.3. The H & B Mining D.D.R.I. Idler Assembly is designed to be Raised, Lowered & Retracted, to replace the Idler Rolls using a minimum of Two $\frac{3}{4}$ tonne Lever / Chain blocks (Supplied By others).

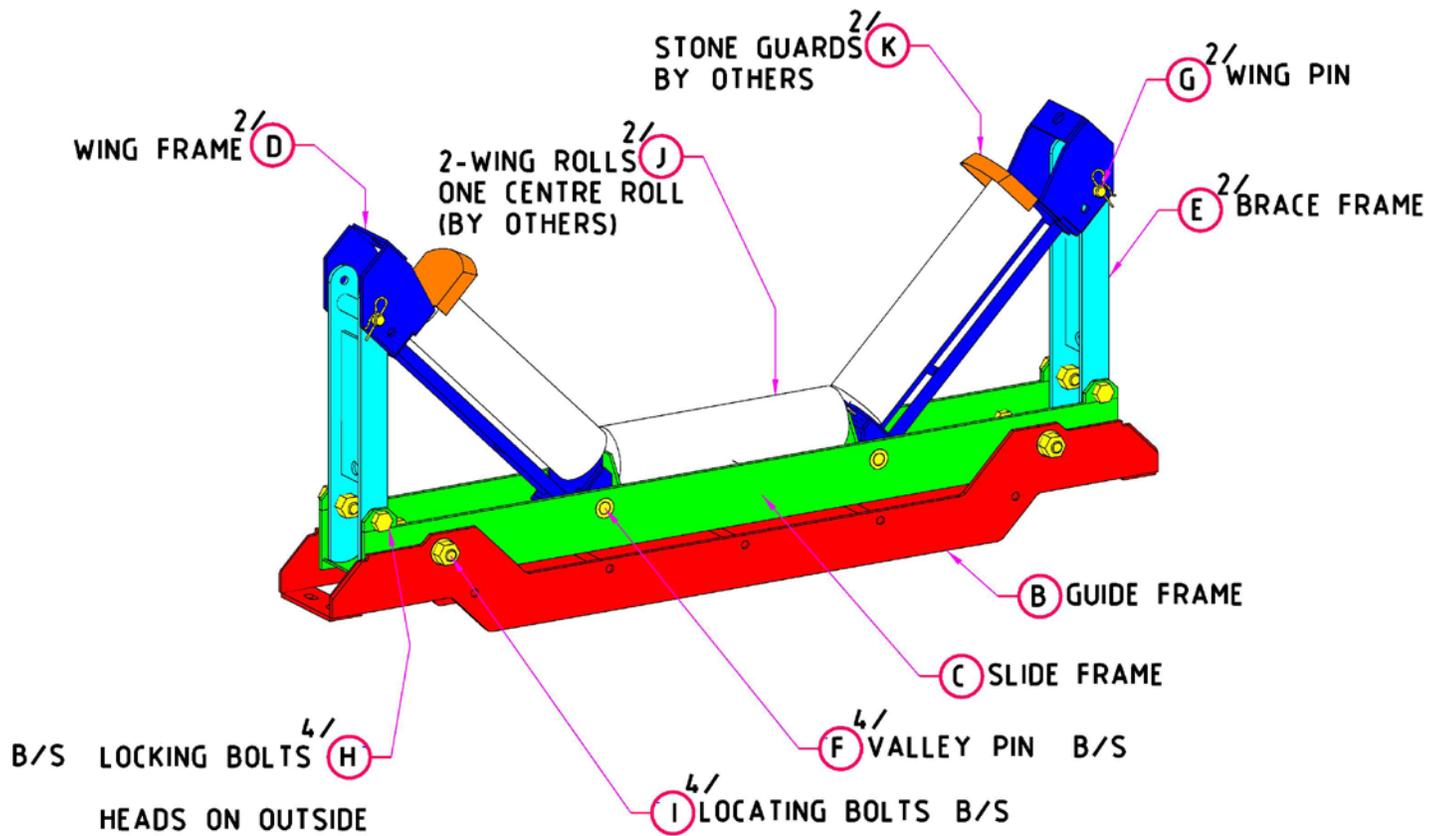


DIAGRAM "A" – D.D.R.I. COMPONENTS



SECTION 2 – INSTALLATION

2.1 – INSTALLATION (REFER DRAWING “DDRI-1800-1-A2”, “DDRI-1524-1-A2”)

2.1.1 **IMPORTANT SAFETY NOTE !**

Prior to commencing any Installation, Operation or Maintenance of the D.D.R.I. Idlers, all Site Standard Inductions, Access Permits, Shut Down Permits, JHA’s, Take Five Check Lists, Conveyor / Equipment Isolation & Lock Out Procedures must be completed & adhered to for the duration of the task.

2.1.2 Each D.D.R.I. Idler Frame is supplied to site with all frame components (‘B’ to ‘I’) fully assembled.

2.1.3 Site bolt DDRI Frame Assembly to Stringers using M20 class 8.8 Galv. Hex head bolts, c/w Hex nuts & H.F.W’s (for Stringers with dia 22 holes, a minimum M16 class 8.8 Galv. H.D. Bolts can be used for Stringers with dia 18 holes).

IMPORTANT H.D. BOLT NOTE !

Ensure H.D. Bolts are installed with bolt heads on top, nuts & washers underneath. This will ensure the Slide frame will clear the bolt heads when lowered & retracted.

2.1.4 Install 3 No dia 152 x 633 lg face width Idler rolls:-

One Centre roll Part No “100476778” (c/w 21309 Bearings) – SUPPLIED BY OTHERS.

2 No Wing roll Part No “100498573” (c/w 6309 Bearings) – SUPPLIED BY OTHERS.

2.1.5 Install 2 No Stone Guards Part No “SG7019BS” – SUPPLIED BY OTHERS.

2.1.6 Using Standard Site Installation Practices ensure Idler Assemblies are fully aligned & leveled with adjoining Conveyor Idlers & Stringers.

SECTION 3 – OPERATING / MAINTENANCE

3.1 – DESIGN PRINCIPLES (REFER DRG “DDRI-1800-1-A3”, “DDRI-1524-1-A3”)

3.1.1 The D.D.R.I. Idler Frame Assembly is designed to allow the easy replacement of the Idler Rolls, by one of the following Procedures, raising, lowering & retracting the frame components as required using Standard ¾ tonne Lever / Chain Blocks or similar:-

PROCEDURE ‘A’ – Replacement of Wing Roll Only.

Either of the two Wing Rolls can be replaced by simply lowering / raising the Idler Wing & Brace Frame Sub Assembly using one Lever / Chain Block hung from steelwork above.

A detailed step by step process for this Operation is given in Section 3.1.2.

PROCEDURE ‘B’ – Replacement of Centre Roll & one or both Wing Rolls.

The Centre Roll can be replaced without having to gain access onto the Return Belt & remaining on the Conveyor Walkway by firstly lowering the Slide, Wing & Brace Frames Sub Assembly, lowering one Wing & Brace Frame Sub Assembly & finally retracting the Slide assembly out from underneath the Belt.

This is carried out using two Lever / Chain Blocks (one hung from steelwork above, the second attached to the oversized Mid rail member along the Conveyor Walkways.

Any of the Wing Rolls can also be replaced during this operation.

A detailed step by step process for this Operation is given in Section 3.1.3.

SECTION 3 – OPERATING / MAINTENANCE

3.1.2 –PROCEDURE ‘A’ – Replacement of Wing Roll Only **(REFER DRAWINGS DDRI-1800-1-A3 & DDRI-1524-1-A3, DIAGRAMS ‘B’ & ‘C’.)**

a) **IMPORTANT SAFETY NOTE !**

Prior to commencing any Installation, Operation or Maintenance of the D.D.I. Idlers, all Site Standard Inductions, Access Permits, Shut Down Permits, JHA’s, Take Five Check Lists, Conveyor / Equipment Isolation & Lock Out Procedures must be completed & adhered to for the duration of the task.

- b) This Procedure should be used as a guide only in preparing a Site Specific “Safe Work Procedure” for this task.
- c) During this Procedure “SIDE 1” referred to in the text & Diagrams, will be the side of the Conveyor on which the Idler Roll is to be removed. “SIDE 2” will refer to the Opposite or Far Side of the Conveyor.
- d) Install a ¾ Tonne Lever / Chain Block onto the adjacent steelwork above the Idler Assembly, in line with the Wing & Brace Frames Pivot Point (Side 1”). If a specific Lifting lug has not been provided, use a Soft Sling around the Lifting member. [REFER DIAGRAM “B”](#).
- e) Attach the Lower Hook of the Lever / Chain Block to the Lifting hole provided in the Idler Wing Frame (D) & take up tension. [REFER DIAGRAM “B”](#).
- f) Remove 2 No M30 Lock Bolts (H) connecting bottom of Brace Frame (E) to Slide Frame (C) by lifting the Frames Sub Assembly up approx. 1-2mm to take the load off the bolts. The Lever / Chain Block is now holding the Wing & Brace Frames in place. [REFER DIAGRAM “B”](#).
- g) Release base of Brace Frame (E) from curved ‘Rest Plate’ on the Slide Frame (C), by manually pulling the frame away from the Belt & towards the operator. [REFER DIAGRAM “C”](#).
- h) Swing the Brace Frame (E) manually outwards, whilst lowering the Wing Frame (D) with the Lever / Chain Block until the Frame lands on the Slide Frame ‘Rest Plate’. [REFER DIAGRAM “C”](#).
- i) Whilst standing with one foot on the Walkway & one foot on the Return Belt, lift out the Idler Wing roll (J) & replace with a New Roll (ensure safe lifting procedures are followed).
1800 Belt width roll = 27 kg, 1524 Belt width roll = 21 kg.
- j) To return the Idler back to the operational position raise the Wing Frame (D) with the Lever / Chain Block, whilst manually swinging the Brace Frame (E) back onto the ‘Rest plate’ in the Slide Frame (C).
- k) Replace 2 No M30 Lock Bolts (H), tighten bolts then remove the Lever / Chain Block.
NOTE! Heads of Lock Bolts to be installed on outside. No Washers to be used on the Lock Bolts.
- l) The Idler Frame Assembly can now be returned to service.
-

3.1.2 –PROCEDURE ‘A’ – Replacement of Wing Roll Only

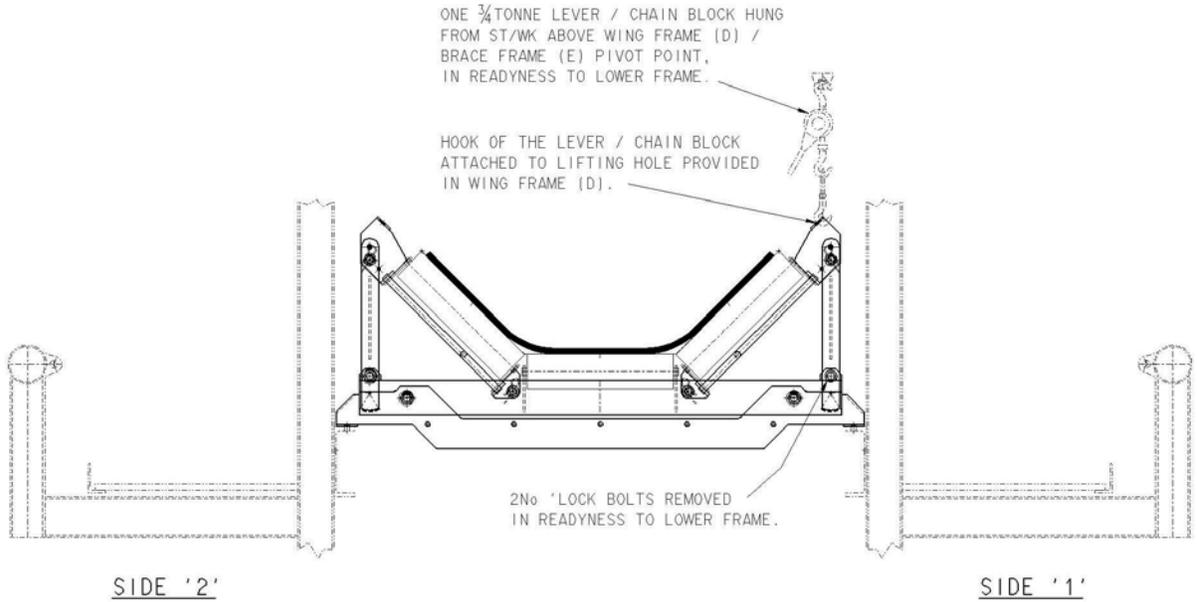


DIAGRAM 'B' - DDR IDLER ASSEMBLY PREPARED TO LOWER WING FRAME

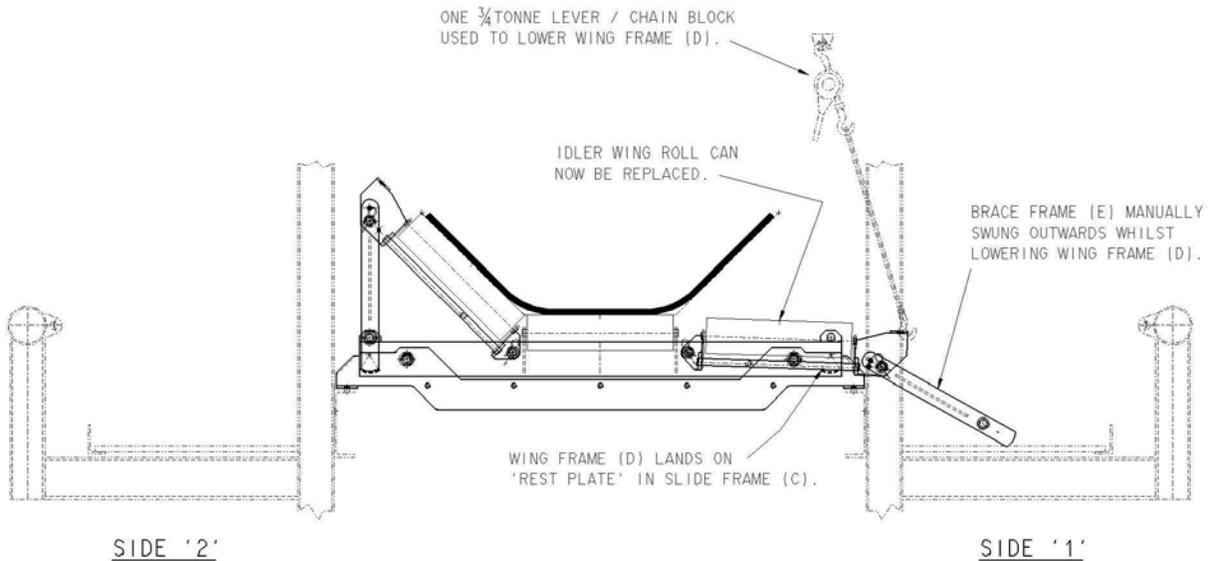


DIAGRAM 'C' - DDR IDLER ASSEMBLY WITH ONE WING FRAME LOWERED

SECTION 3 – OPERATING / MAINTENANCE

3.2.2 –PROCEDURE ‘B’ – Replacement of Centre & one or both Wing Rolls (REFER DRAWINGS DDRI-1800-1-A3 & DDRI-1524-1-A3, DIAGRAMS “D”, “E”, ”F”, ”G” & “H”.)

- a) **IMPORTANT SAFETY NOTE !**
Prior to commencing any Installation, Operation or Maintenance of the D.D.I. Idlers, all Site Standard Inductions, Access Permits, Shut Down Permits, JHA’s, Take Five Check Lists, Conveyor / Equipment Isolation & Lock Out Procedures must be completed & adhered to for the duration of the task.
- b) This Procedure should be used as a guide only in preparing a Site Specific “Safe Work Procedure” for this task.
- c) During this Procedure “SIDE 2” referred to in the text & Diagrams, will be the side of the Conveyor on which the Idler Roll is to be removed. “SIDE 1” will refer to the Opposite or Far Side of the Conveyor.
- d) Install Two ¾ Tonne Lever / Chain Blocks onto the adjacent steelwork above the Idler Assembly, in line with both Wing & Brace Frame Pivot Points (“Side 1” & “2”). If specific Lifting lugs have not been provided, use a Soft Slings around the Lifting members. [REFER DIAGRAM “D”](#).
- e) Attach the Lower Hooks of the Lever / Chain Blocks to the Lifting holes provided in the Idler Wing Frames (D) & take up tension. [REFER DIAGRAM “D”](#).
- f) Remove 4 No M30 Locating Bolts (I) connecting Slide Frame (C) to Guide Frame (B) by lifting the Frames Sub Assembly up approx. 1-2mm to take the load off the bolts. The Lever / Chain Block is now holding the Slide, Wing & Brace Frames assembly in place. [REFER DIAGRAM “D”](#).
- g) Lower both sides of the Slide Frame (C) 30mm onto the dia 20 support rods of the Guide Frame (B). The Centre Idler Roll is now approx. 30mm clear of the Conveyor Belt. [REFER DIAGRAM “E”](#).
- h) The Sub Frame Assembly is now self supporting, therefore the Lever / Chain Block on “Side 2” can be removed & relocated to the horizontal pulling position. Attach the Lever / Chain Block to the adjacent walkway oversized Mid Rail member. If a specific Lifting lug has not been provided, use a Soft Sling around the Mid Rail member. [REFER DIAGRAM “E”](#).
- i) Remove 2 No M30 Lock Bolts (H) connecting bottom of Brace Frame (E) to Slide Frame (C) by lifting the Frames Sub Assembly up approx. 1-2mm to take the load off the bolts. The Lever / Chain Block is now holding the Wing & Brace Frames in place. [REFER DIAGRAM “E”](#).
- j) Release base of Brace Frame (E) from curved ‘Rest Plate’ on the Slide Frame (C), by manually pulling the frame away from the Belt & towards the operator. [REFER DIAGRAM “F”](#).
- k) Swing the Brace Frame (E) manually outwards, whilst lowering the Wing Frame (D) with the Lever / Chain Block until the Frame lands on the Slide Frame ‘Rest Plate’. [REFER DIAGRAM “F”](#).

- l) At this stage the “Side 1” Wing Roll can now be replaced if required.
Whilst standing with one foot on the Walkway & one foot on the Return Belt, lift out the Idler Wing roll (J) & replace with a New Roll (ensure safe lifting procedures are followed).
1800 Belt width roll = 27 kg, 1524 Belt width roll = 21 kg.
- m) The “Side 1” Brace Frame (E) should now be further rotated manually to line up the 22 dia holes in both the Brace Frame (E) & Wing Frame (D). A M20 bolt can then be temporarily placed in the hole to ‘lock’ the Brace Frame (E) horizontally, lifting it clear of the Walkway Grid Mesh.
This will assist in the Retraction & re-installation of the Slide Frame Sub Assembly.
[REFER DIAGRAM “F”](#).
- n) The 2nd Lever / Chain Block on “Side 1” can now be removed & relocated to the Horizontal Pulling Position. Attach the Lever / Chain Block to the adjacent walkway oversized Mid Rail member. If a specific Lifting lug has not been provided, use a Soft Sling around the Mid Rail member.
Ensure a minimum of 950mm of slack chain is available to the Lever / Chain Block prior to retraction of the Slide Frame (C). [REFER DIAGRAM “G”](#).
- o) The Slide, Wing & Brace Frames Sub Assembly is now retracted from under the Conveyor Belt towards the operator on “Side 2” using the Lever / Chain Block.
Pull the Assembly out a maximum of 950mm (for 1800 wide belt), or 825mm (for 1524 wide belt).
The Idler Frame assembly may tip slightly but is prevented from over balancing by the Conveyor Belt.
IMPORTANT NOTE !
Ensure the four Valley Pins (F) remain Hard up against the Slide Frame side plates to ensure they clear the Guide Frame (B) during the Extraction & Re-installation process. [REFER DIAGRAM “H”](#).
- p) The Centre Roll can now be removed & replaced.
Whilst standing with one foot on the Walkway & one foot on the Return Belt, lift out the Idler Centre roll (J) & replace with a New Roll (ensure safe lifting procedures are followed).
1800 Belt width roll = 28 kg, 1524 Belt width roll = 23 kg.
- q) The 2nd Wing Roll on “Side 2” can also be changed out at this stage if required.
- r) To return the Idler back into Operational Position, release the Lever / Chain Block on “Side 2” & relocate to the adjacent steelwork above the Idler Assembly, in line with the Wing & Brace Frames Pivot Point.
Pull the Slide Frame (C) back under the Belt using the Lever / Chain Block on “Side 1”.
- s) The Slide Frame (C) & Guide Frame (B) have notches in their side plates with vertical faces which line up, indicating when the frame is back in its original horizontal position.
- t) Remove the temporary M20 bolt from the Wing & Brace Frame locking hole, Relocate the Lever / Chain Block on “Side 1” to the adjacent steelwork above the Idler Assembly, in line with the Wing & Brace Frames Pivot Point.
Raise the “Side 1” Wing Frame (D) with the Lever / Chain Block, whilst manually swinging the Brace Frame (E) back onto the ‘Rest plate’ in the Slide Frame (C).
- u) Replace 2 No M30 Lock Bolts (H), tighten bolts then remove the Lever / Chain Block.
NOTE! Heads of Lock Bolts to be installed on outside. No Washers to be used on the Lock Bolts.

- v) Attach the Lever / Chain Block on “Side 2” to the Lifting hole provided in the Idler Wing Frame (D). Lift the Slide, Wing & Brace Frames sub assembly 30mm & re-install the 4 No M30 Locating Bolts c/w nuts & flat washers.
Tighten Bolts & remove the Lever / Chain Blocks.
- w) The Idler Frame Assembly can now be returned to service.

3.2.2 –PROCEDURE ‘B’ – Replacement of Centre & one or both Wing Rolls

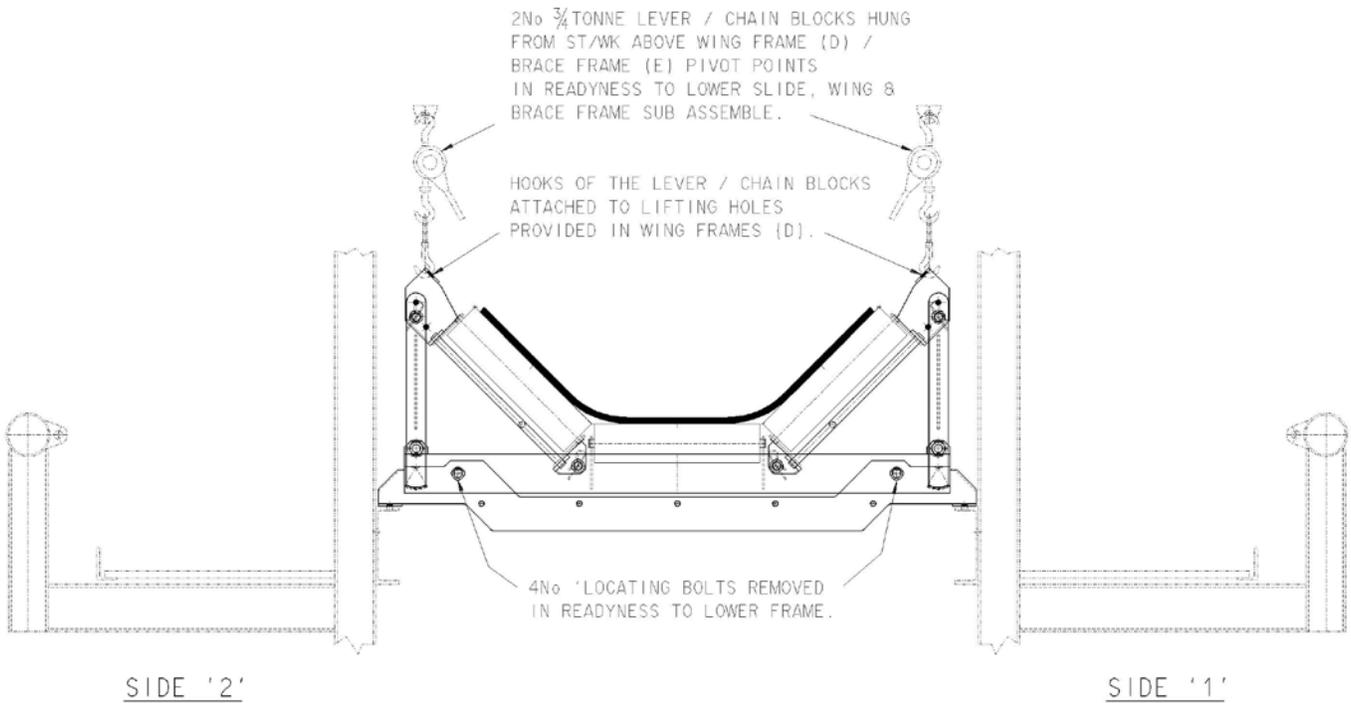


DIAGRAM 'D' - DDR IDLER ASSEMBLY PREPARED TO LOWER SLIDE FRAME

3.2.2 –PROCEDURE ‘B’ – Replacement of Centre & one or both Wing Rolls

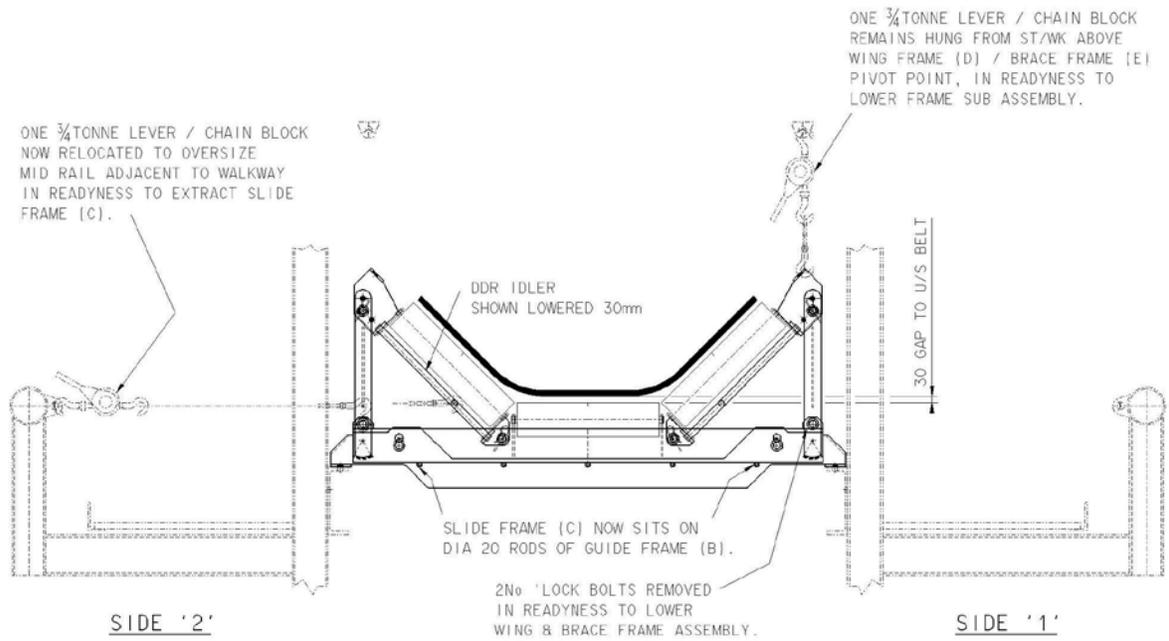


DIAGRAM 'E' - DDR IDLER ASSEMBLY SLIDE FRAME LOWERED 30mm

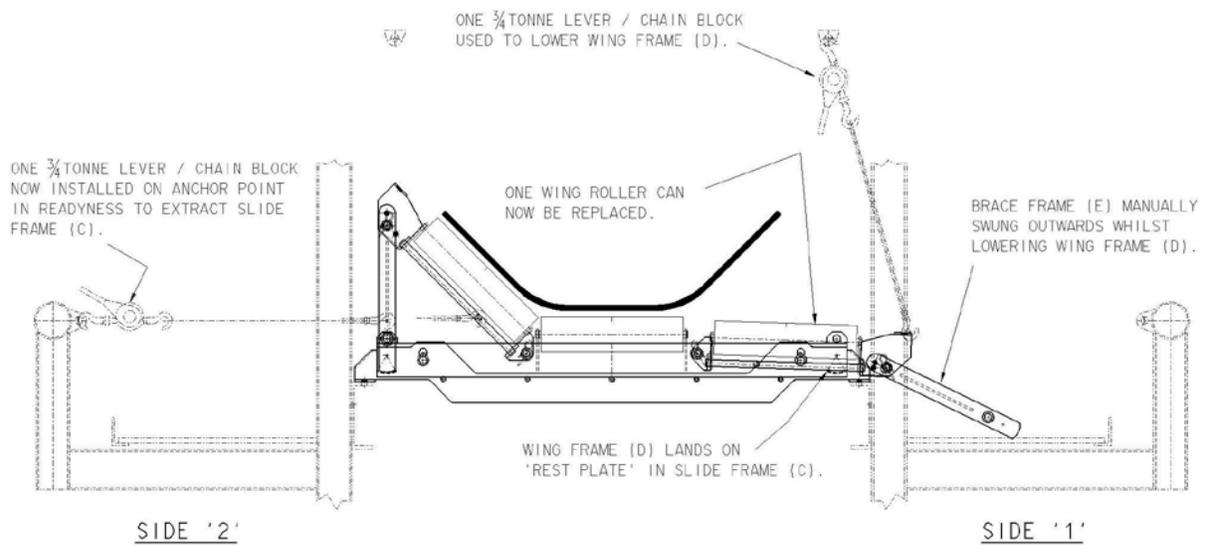


DIAGRAM 'F' - DDR IDLER ASSEMBLY WING ROLL FRAME LOWERED

3.2.2 –PROCEDURE ‘B’ – Replacement of Centre & one or both Wing Rolls

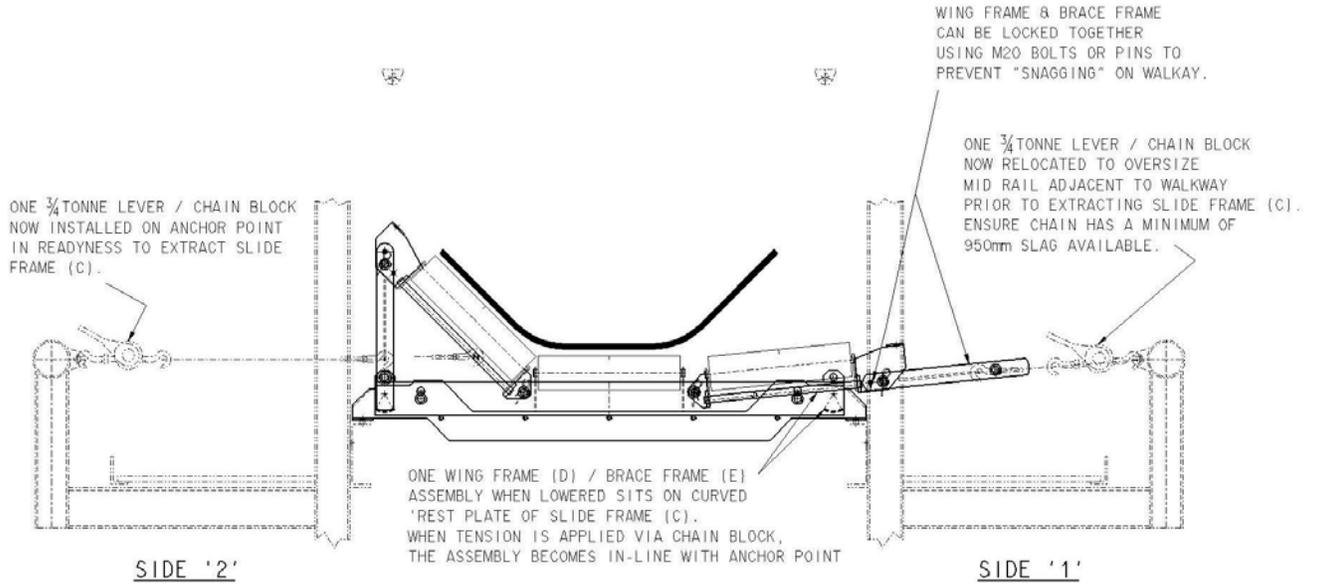


DIAGRAM 'G' - DDR IDLER ASSEMBLY WING ROLL FRAME LOWERED

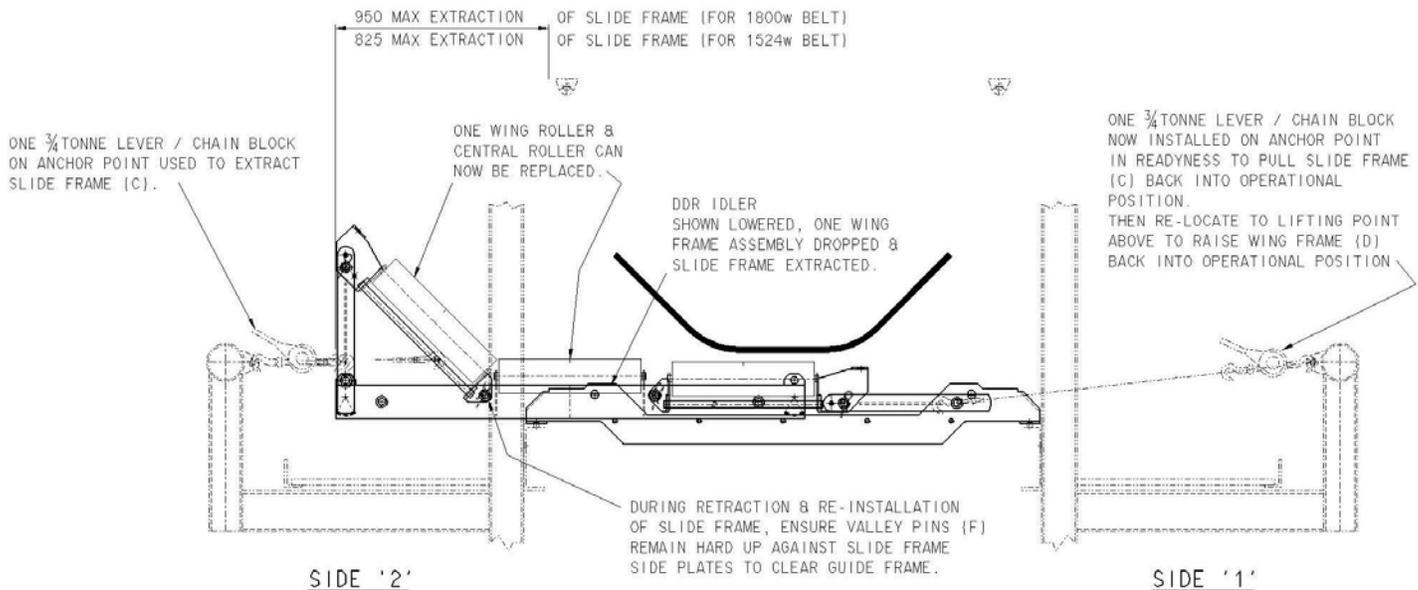


DIAGRAM 'H' - DDR IDLER ASSEMBLY SLIDE FRAME EXTRACTED



SECTION 4 – AS-BUILT DRAWINGS

4.1 – DRAWING REGISTER

ITEM	DESCRIPTION DRG	No H&B	DRG No
1	GENERAL ARRANGEMENT OF 1800 x 45 DEG DDRI IDLER.	CL4980-VM-00081	DDRI 1800-1-A1
2	GENERAL ARRANGEMENT OF 1524 x 45 DEG DDRI IDLER.	CL4980-VM-00082	DDRI 1524-1-A1
3	INSTALLATION ARRANGEMENT 1800 x 45 DEG DDRI IDLER.	FOR MANUAL ONLY	DDRI 1800-1-A2
4	INSTALLATION ARRANGEMENT 1524 x 45 DEG DDRI IDLER.	FOR MANUAL ONLY	DDRI 1524-1-A2
5	OPERATION ARRANGEMENT 1800 x 45 DEG DDRI IDLER.	FOR MANUAL ONLY	DDRI 1800-1-A3
6	OPERATION ARRANGEMENT 1524 x 45 DEG DDRI IDLER.	FOR MANUAL ONLY	DDRI 1524-1-A3

4.2 – A3 DRAWINGS OVERLEAF



H & B DRAWING No:-
DDRI-1800-1-A1
1800 x 45 DEG 3 - ROLL

NEW COMPONENTS LIST

ITEM	MARK	QTY	COMPONENT
(A)	NOT USED		
(B)	"DDRI-18-1-GF"	ONE	DDRI GUIDE FRAME
(C)	"DDRI-18-1-SF"	ONE	DDRI SLIDE FRAME
(D)	"DDRI-18-1-WF"	2No	DDRI WING FRAME
(E)	"DDRI-18-1-BF"	2No	DDRI BRACE FRAME
(F)	"DDRI-18-1-VP"	4No	DDRI VALLEY PIN
(G)	"DDRI-18-1-WP"	2No	DDRI WING PIN
(H)	"LOCK BOLT"	4No	M30 x 75 1g CLASS 8.8 HEX BOLT (GALV.) C/W NUT - NO WASHER
(I)	"LOCATING BOLT"	4No	M30 x 75 1g CLASS 8.8 HEX BOLT (GALV.) C/W NUT & H.F. WASHER
(J)	"100498573"	2No	152 DIA, 633 1g FACE STEEL WING ROLL (6309 BEARINGS)
(J)	"100476778"	ONE	152 DIA, 633 1g FACE STEEL CENTRE ROLL (21309 BEARINGS)
(K)	"SG7019BS"	2No	STONE GUARD

REFER DRGS "DDRI-1800-1-A2 & A3" FOR MAINTENANCE / OPERATION PROCEDURES.

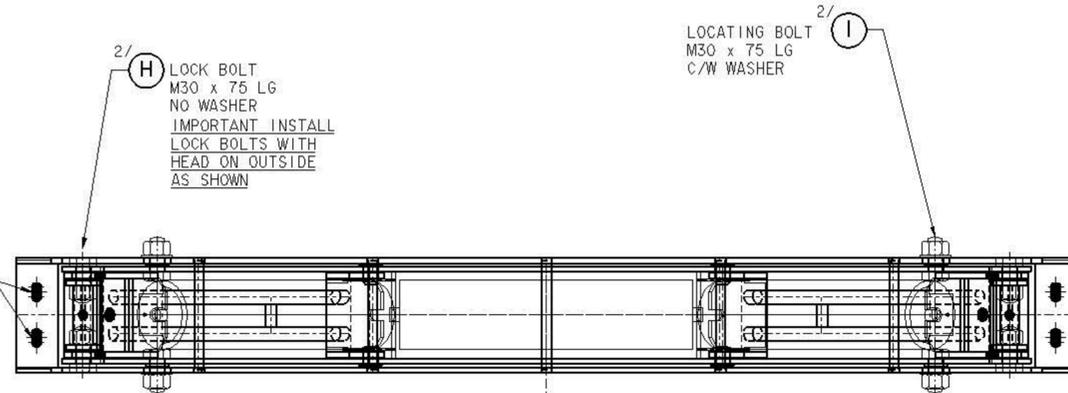
GENERAL FABRICATION NOTES :-

- 1). ALL HOLES TO BE 22 DIA U.N.O.
- 2). ALL BOLTS TO BE M20 CLASS 8.8 U.N.O.
- 3). ALL WELDS TO BE 6 mm CONT. FILLET U.N.O.
- 4). ALL WELDS TO CONFORM TO AS 1554 CATAGORY S.P. U.N.O.
- 5). ALL FITTINGS LOCATED CENTRALLY U.N.O.
- 6). ALL INTERNAL NOTCHES TO HAVE 11mm RADIUS U.N.O.
- 7). ALL STEELWORK, WELDING & FABRICATION TO CONFORM TO CURRENT S.A.A. CODES & STANDARD SPECIFICATION "SKM-STD-C-009".
- 8). ALL R.H.S. & S.H.S. TO CONFORM TO AS1163 U.N.O.
- 9). ALL PAINTING & TREATMENT TO BE IN ACCORDANCE WITH STANDARD SPECIFICATION "SKM-STD-C-011". HOT DIP GALVANIZED.
- 10). ALL MARK NUMBERS TO BE HARD STAMPED & PAINTED AFTER TREATMENT IN LOCATION SHOWN ON DRAWING. U.N.O.
- 11). ALL SNIPES TO BE 15 x 15 U.N.O.
- 12). ALL BURRS AND SHARP EDGES TO BE REMOVED.

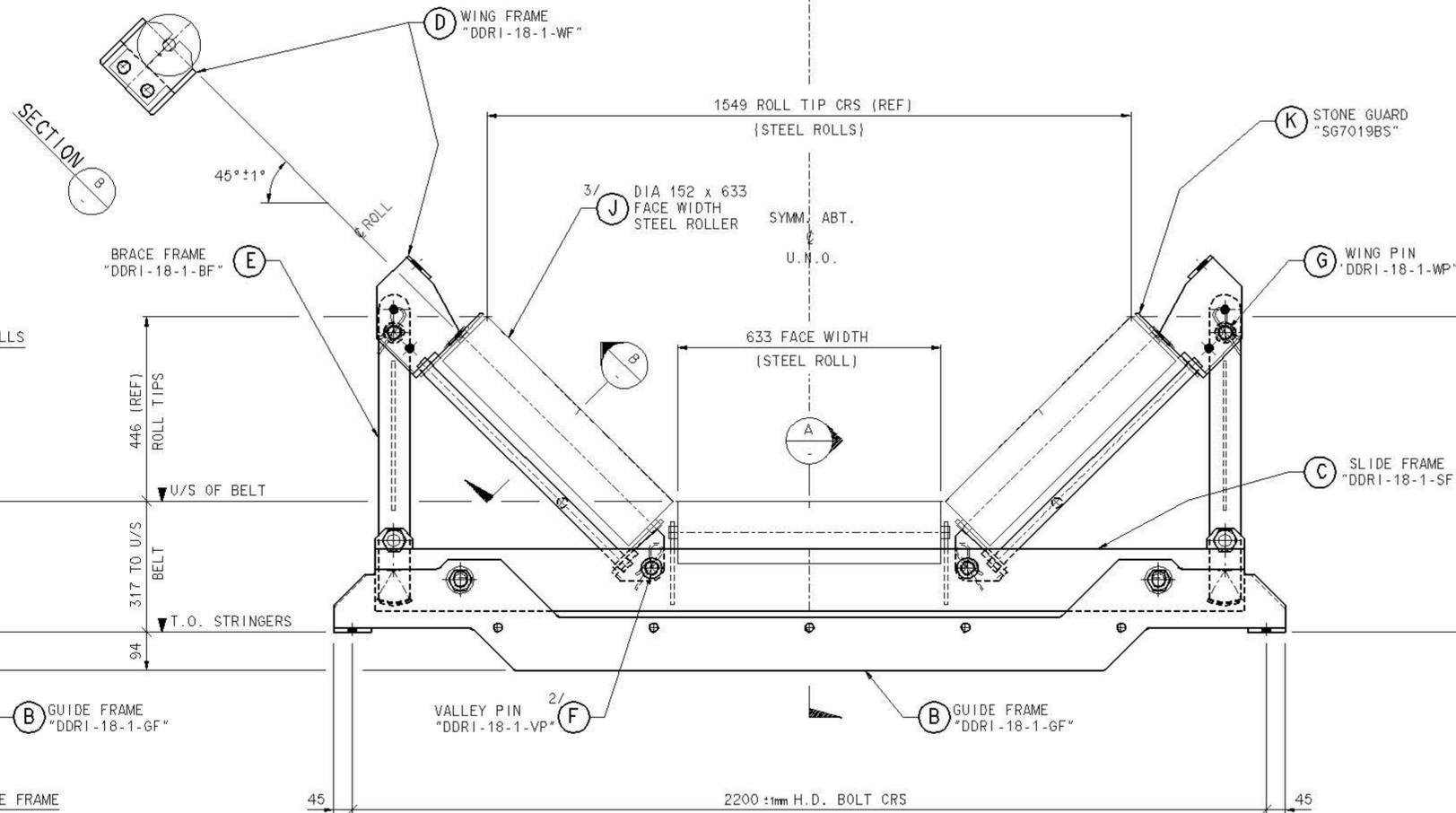
DIA 22 x 44 1g SLOTTED HOLES. ENSURE H.D. BOLTS ARE INSTALLED WITH HEADS ON TOP, NUTS & WASHERS TO BE UNDERNEATH (TO CLEAR SLIDING FRAME).

2/ (H) LOCK BOLT M30 x 75 LG NO WASHER IMPORTANT INSTALL LOCK BOLTS WITH HEAD ON OUTSIDE AS SHOWN

2/ (I) LOCATING BOLT M30 x 75 LG C/W WASHER



PLAN VIEW



DDR IDLER ASSEMBLY TYPE "DDRI-1800-1"

(1800 WIDE x 45 DEG TROUGH - 3 DIA 152 ROLLS)
(TOTAL MASS - WITH ROLLS = 303 kg, WITHOUT ROLLS = 222 kg)

CL-4980-VM-00097 GENERAL EQUIPT ROLLER DIMENSION TABLE

REV	BY	DATE	DESCRIPTION
A	GB	1.9.11	DRAWING ADOPTED FOR PH 9999
B	GB	29.10.11	GENERAL REVISIONS
C	GB	14.2.12	RE-DRAWN TO CLIENT'S APPROVAL COMMENTS
D	GB	2.8.12	LOCK BOLT WASHERS REMOVED
O	GB	18.8.12	APPROVED FOR CONSTRUCTION FOR PH 9999
1	GB	24.9.12	AS-BUILT

CHKD	APP	REV	BY	DATE	DESCRIPTION
EH	GB				
EH					

DRAWN	DATE
G.BRAITHWAITE	1.9.11
E.HODGKINSON	2.9.11
G.STAGG	



CAPE LAMBERT - PORT B EXPANSION - GENERAL EQUIPMENT - DROP DOWN RETRACTABLE IDLER (DDRI) - 1800 x 45° BELT GENERAL ARRANGEMENT

SCALE	DRAWING NUMBER	REV
1:2.5	CL-4980-VM-00081	1
	PROJECT NUMBER PH 9999	



H & B DRAWING No.-
DDRI-1800-1-A2
 1800 x 45 DEG 3 - ROLL

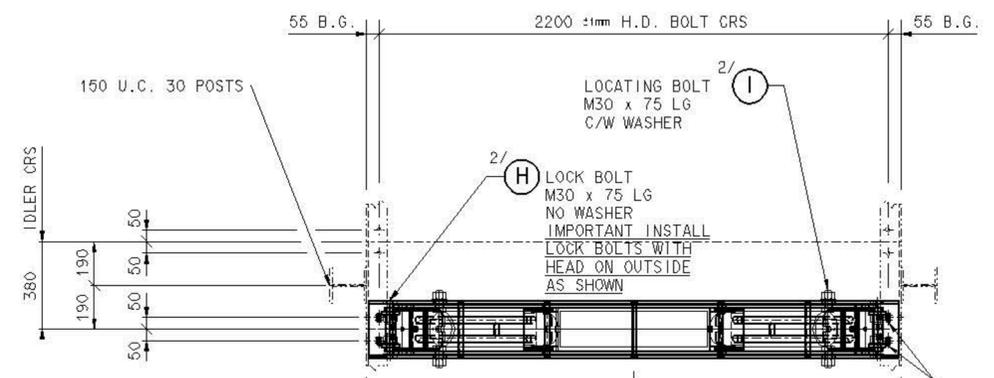
GENERAL FABRICATION NOTES :-

- 1). ALL HOLES TO BE 22 DIA U.N.O.
- 2). ALL BOLTS TO BE M20 CLASS 8.8 U.N.O.
- 3). ALL WELDS TO BE 6 mm CONT. FILLET U.N.O.
- 4). ALL WELDS TO CONFORM TO AS 1554 CATAGORY S.P. U.N.O.
- 5). ALL FITTINGS LOCATED CENTRALLY U.N.O.
- 6). ALL INTERNAL NOTCHES TO HAVE 11mm RADIUS U.N.O.
- 7). ALL STEELWORK, WELDING & FABRICATION TO CONFORM TO CURRENT S.A.A. CODES & STANDARD SPECIFICATION SKM-STD-C-009.
- 8). ALL R.H.S. & S.H.S. TO CONFORM TO AS1163 U.N.O.
- 9). ALL PAINTING & TREATMENT TO BE IN ACCORDANCE WITH STANDARD SPECIFICATION SKM-STD-C-011. - HOT DIP GALVANIZED.
- 10). ALL MARK NUMBERS TO BE HARD STAMPED & PAINTED AFTER TREATMENT IN LOCATION SHOWN ON DRAWING. U.N.O.
- 11). ALL SNIPES TO BE 15 x 15 U.N.O.
- 12). ALL BURRS AND SHARP EDGES TO BE REMOVED.

NEW COMPONENTS LIST

ITEM	MARK	QTY	COMPONENT
(A)	NOT USED		
(B)	"DDRI-18-1-GF"	ONE	DDRI GUIDE FRAME
(C)	"DDRI-18-1-SF"	ONE	DDRI SLIDE FRAME
(D)	"DDRI-18-1-WF"	2No	DDRI WING FRAME
(E)	"DDRI-18-1-BF"	2No	DDRI BRACE FRAME
(F)	"DDRI-18-1-VP"	4No	DDRI VALLEY PIN
(G)	"DDRI-18-1-WP"	2No	DDRI WING PIN
(H)	"LOCK BOLT"	4No	M30 x 75 1g CLASS 8.8 HEX BOLT (GALV.) C/W NUT - NO WASHER
(I)	"LOCATING BOLT"	4No	M30 x 75 1g CLASS 8.8 HEX BOLT (GALV.) C/W NUT & H.F. WASHER
(J)	"100498573"	2No	152 DIA, 633 1g FACE STEEL WING ROLL (6309 BEARINGS)
(K)	"100476778"	ONE	152 DIA, 633 1g FACE STEEL CENTRE ROLL (21309 BEARINGS)
(L)	"S67019BS"	2No	STONE GUARD

REFER DRAWING "DDRI-1800-1-A3" FOR MAINTENANCE / OPERATION PROCEDURE STEPS.

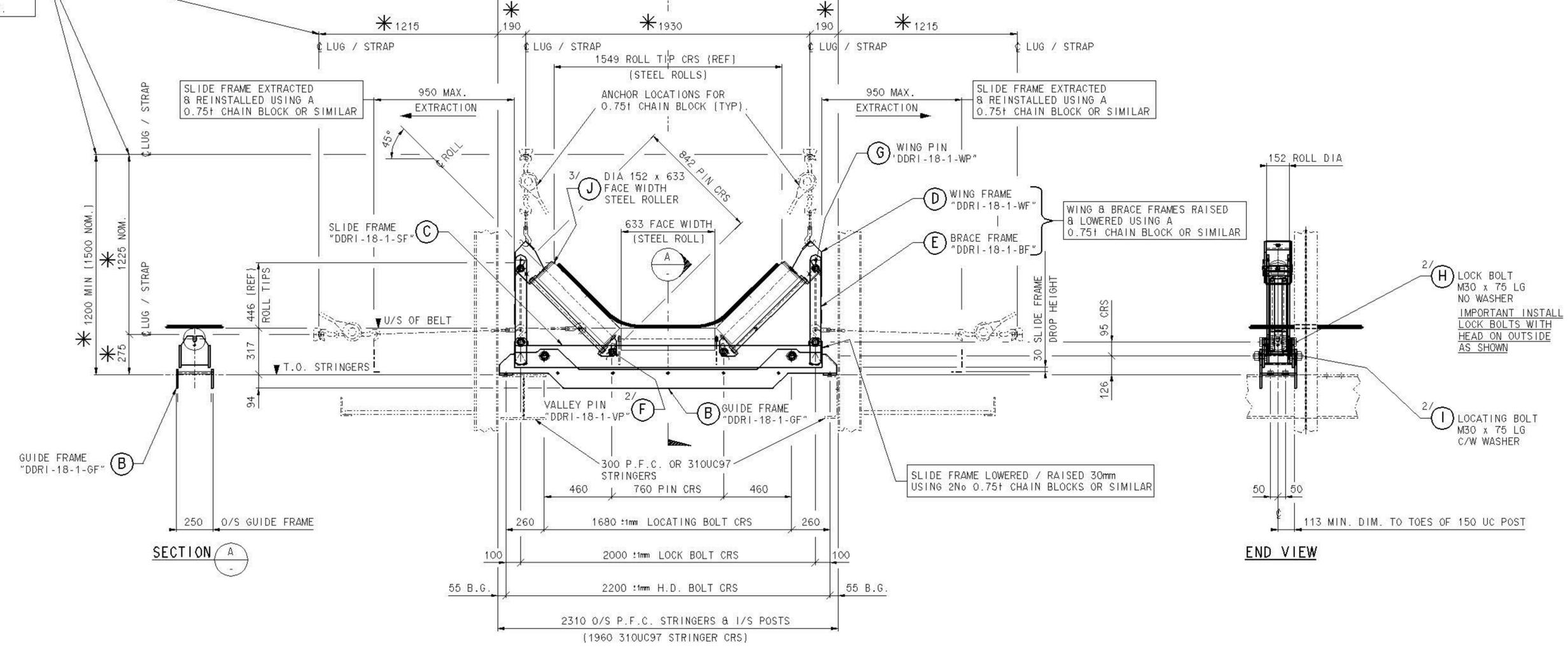


PLAN VIEW

SYMM. ABT.
U.N.O.

ENSURE H.D. BOLTS ARE INSTALLED WITH HEADS ON TOP, NUTS & WASHERS TO BE UNDERNEATH (TO CLEAR SLIDING FRAME).

* APPROX. DIMENSIONS TO LIFTING / WINCHING LUGS / STRAPS REQUIRED ON ADJACENT STEELWORK TO OPERATE DDRI IDLER ASSEMBLY. FINAL DIMENSIONS DETERMINED ON SITE.



SECTION A-A

END VIEW

DDR IDLER ASSEMBLY TYPE "DDRI-1800-1"

{1800 WIDE x 45 DEG TROUGH - 3 DIA 152 ROLLS}
 (TOTAL MASS - WITH ROLLS = 303 kg, WITHOUT ROLLS = 222 kg)

DDRI-1800-1-A1 DDRI IDLER 1800 x 45 DEG BELT G.A. SHT 1	0	QB	FEB 12	DRAWING ADOPTED FOR P/N 9999	EH														
DDRI-1800-1-A2 DDRI IDLER 1800 x 45 DEG BELT G.A. SHT 2																			
	REV BY	DATE		DESCRIPTION	CHKD APP	REV BY	DATE		DESCRIPTION	CHKD APP									

DRAWN G.BRAITHWAITE FEB 2012

CHECKED E.HODGKINSON FEB 2012

SUPT DRAFT

PROJ. ENG. GLENN STAGG

APPROVED

APP. FOR CONY.

RioTinto

CAPE LAMBERT - PORT B EXPANSION -
 GENERAL EQUIPMENT -
 DROP DOWN RETRACTABLE IDLER (DDRI) -
 1800 x 45' BELT INSTALLATION G.A. SHT 2

SCALE 1:10

DRAWING NUMBER DDRI-1800-1-A2

PROJECT NUMBER P/N 9999



H & B DRAWING No:-
DDR1-1524-1-A2
1524 x 45 DEG 3 - ROLL

GENERAL FABRICATION NOTES :-

- 1]. ALL HOLES TO BE 22 DIA U.N.O.
- 2]. ALL BOLTS TO BE M20 CLASS 8.8 U.N.O.
- 3]. ALL WELDS TO BE 6 mm CONT. FILLET U.N.O.
- 4]. ALL WELDS TO CONFORM TO AS 1554 CATAGORY S.P. U.N.O.
- 5]. ALL FITTINGS LOCATED CENTRALLY U.N.O.
- 6]. ALL INTERNAL NOTCHES TO HAVE 11mm RADIUS U.N.O.
- 7]. ALL STEELWORK, WELDING & FABRICATION TO CONFORM TO CURRENT S.A.A. CODES & STANDARD SPECIFICATION SKM-STD-C-009.
- 8]. ALL R.H.S. & S.H.S. TO CONFORM TO AS1163 U.N.O.
- 9]. ALL PAINTING & TREATMENT TO BE IN ACCORDANCE WITH STANDARD SPECIFICATION SKM-STD-C-011.
- HOT DIP GALVANIZED.
- 10]. ALL MARK NUMBERS TO BE HARD STAMPED & PAINTED AFTER TREATMENT IN LOCATION SHOWN ON DRAWING. U.N.O.
- 11]. ALL SNIPES TO BE 15 x 15 U.N.O.
- 12]. ALL BURRS AND SHARP EDGES TO BE REMOVED.

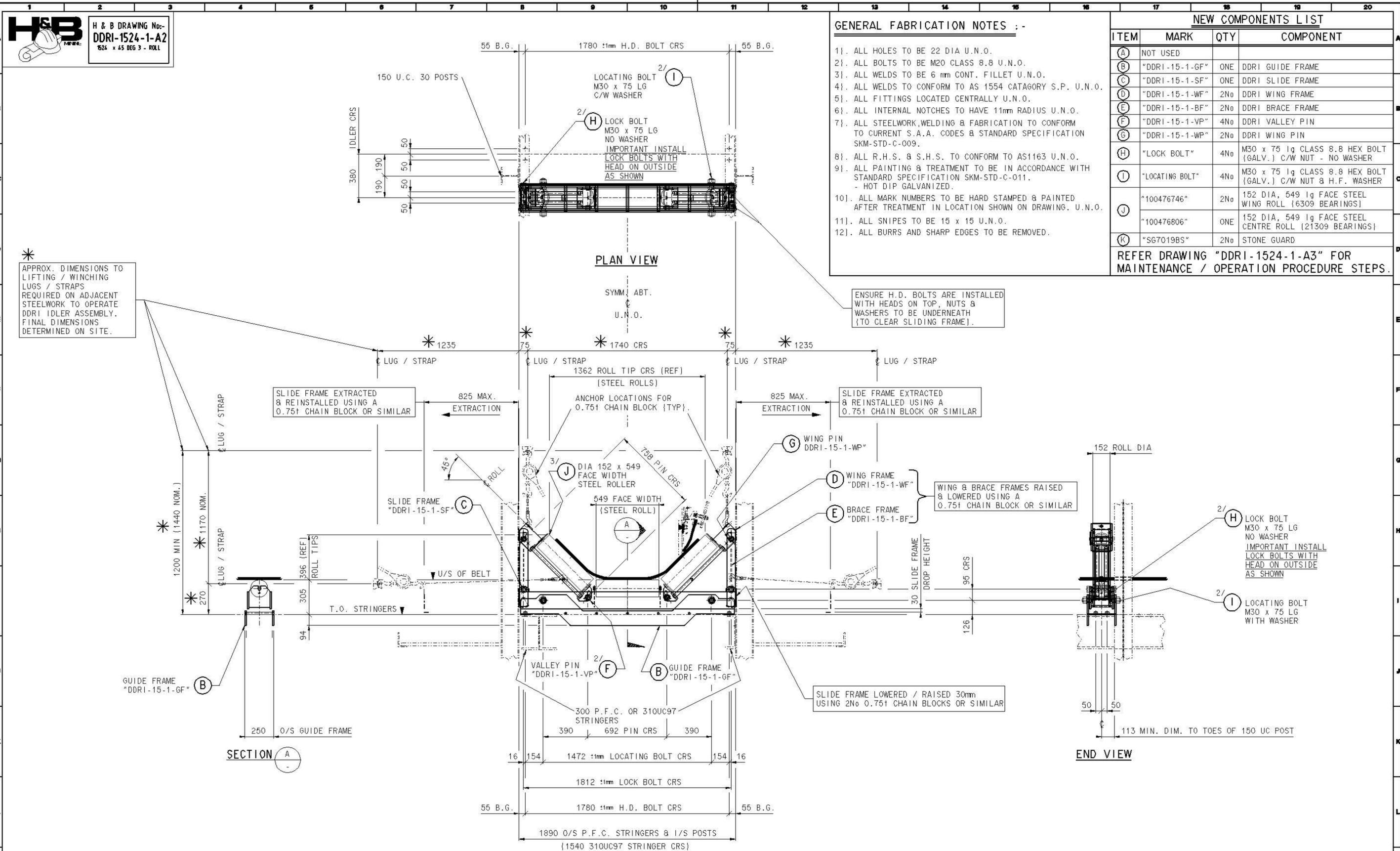
NEW COMPONENTS LIST

ITEM	MARK	QTY	COMPONENT
(A)	NOT USED		
(B)	"DDR1-15-1-GF"	ONE	DDR1 GUIDE FRAME
(C)	"DDR1-15-1-SF"	ONE	DDR1 SLIDE FRAME
(D)	"DDR1-15-1-WF"	2No	DDR1 WING FRAME
(E)	"DDR1-15-1-BF"	2No	DDR1 BRACE FRAME
(F)	"DDR1-15-1-VP"	4No	DDR1 VALLEY PIN
(G)	"DDR1-15-1-WP"	2No	DDR1 WING PIN
(H)	"LOCK BOLT"	4No	M30 x 75 lg CLASS 8.8 HEX BOLT (GALV.) C/W NUT - NO WASHER
(I)	"LOCATING BOLT"	4No	M30 x 75 lg CLASS 8.8 HEX BOLT (GALV.) C/W NUT & H.F. WASHER
(J)	"100476746"	2No	152 DIA, 549 lg FACE STEEL WING ROLL (6309 BEARINGS)
(J)	"100476806"	ONE	152 DIA, 549 lg FACE STEEL CENTRE ROLL (21309 BEARINGS)
(K)	"S67019BS"	2No	STONE GUARD

REFER DRAWING "DDR1-1524-1-A3" FOR MAINTENANCE / OPERATION PROCEDURE STEPS.

* APPROX. DIMENSIONS TO LIFTING / WINCHING LUGS / STRAPS REQUIRED ON ADJACENT STEELWORK TO OPERATE DDR1 IDLER ASSEMBLY. FINAL DIMENSIONS DETERMINED ON SITE.

ENSURE H.D. BOLTS ARE INSTALLED WITH HEADS ON TOP, NUTS & WASHERS TO BE UNDERNEATH (TO CLEAR SLIDING FRAME).



DDR IDLER ASSEMBLY TYPE "DDR1-1524-1"

{1524 WIDE x 45 DEG TROUGH - 3 DIA 152 ROLLS}
{TOTAL MASS - WITH ROLLS = 264 kg, WITHOUT ROLLS = 200 kg}

<table border="1"> <tr> <td>DDR1-1524-1-A1</td> <td>DDR1 IDLER 1524 x 45 DEG BELT G.A. SHT 1</td> <td>0</td> <td>GB</td> <td>FEB 12</td> <td>DRAWING ADOPTED FOR P/N 9999</td> <td>EH</td> <td>06</td> </tr> <tr> <td>DDR1-1524-1-A3</td> <td>DDR1 IDLER 1524 x 45 DEG BELT G.A. SHT 3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	DDR1-1524-1-A1	DDR1 IDLER 1524 x 45 DEG BELT G.A. SHT 1	0	GB	FEB 12	DRAWING ADOPTED FOR P/N 9999	EH	06	DDR1-1524-1-A3	DDR1 IDLER 1524 x 45 DEG BELT G.A. SHT 3							<table border="1"> <tr> <td>REV</td> <td>BY</td> <td>DATE</td> <td>DESCRIPTION</td> <td>CHKD</td> <td>APP</td> <td>REV</td> <td>BY</td> <td>DATE</td> <td>DESCRIPTION</td> <td>CHKD</td> <td>APP</td> </tr> <tr> <td> </td> </tr> </table>	REV	BY	DATE	DESCRIPTION	CHKD	APP	REV	BY	DATE	DESCRIPTION	CHKD	APP													<table border="1"> <tr> <td>DRAWN</td> <td>G.BRAITHWAITE</td> <td>FEB 12</td> </tr> <tr> <td>TRACED</td> <td></td> <td></td> </tr> <tr> <td>CHECKED</td> <td>E.HODGKINSON</td> <td>FEB 12</td> </tr> <tr> <td>SUPT DRAFT</td> <td></td> <td></td> </tr> <tr> <td>PROJ. ENG.</td> <td>GLENN STAGG</td> <td></td> </tr> <tr> <td>APPROVED</td> <td></td> <td></td> </tr> <tr> <td>APP. FOR CONST.</td> <td></td> <td></td> </tr> </table>	DRAWN	G.BRAITHWAITE	FEB 12	TRACED			CHECKED	E.HODGKINSON	FEB 12	SUPT DRAFT			PROJ. ENG.	GLENN STAGG		APPROVED			APP. FOR CONST.			<p>RioTinto</p> <p>CAPE LAMBERT - PORT B EXPANSION - GENERAL EQUIPMENT - DROP DOWN RETRACTABLE IDLER (DDR1) - 1524 x 45° BELT INSTALLATION G.A. SHT 1</p> <p>SCALE 1:15 DRAWING NUMBER DDR1-1524-1-A2 PROJECT NUMBER P/N 9999</p>	<table border="1"> <tr> <td>FLBARA IRON ASSET MANAGER FOR HAMERSLEY IRON PTY LTD</td> <td>THIRD ANGLE</td> </tr> <tr> <td>HAMPDEN PTY LTD AND ROBE RIVER MINING COMPANY PTY LTD</td> <td>PROJECTION</td> </tr> </table>	FLBARA IRON ASSET MANAGER FOR HAMERSLEY IRON PTY LTD	THIRD ANGLE	HAMPDEN PTY LTD AND ROBE RIVER MINING COMPANY PTY LTD	PROJECTION
DDR1-1524-1-A1	DDR1 IDLER 1524 x 45 DEG BELT G.A. SHT 1	0	GB	FEB 12	DRAWING ADOPTED FOR P/N 9999	EH	06																																																														
DDR1-1524-1-A3	DDR1 IDLER 1524 x 45 DEG BELT G.A. SHT 3																																																																				
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HAMPDEN PTY LTD AND ROBE RIVER MINING COMPANY PTY LTD	PROJECTION																																																																				



H & B DRAWING No:-
DDRI-1800-1-A3
 1800 x 45 DEG 3 - ROLL

IMPORTANT MAINTENANCE NOTE
 SLIDE FRAME ONLY NEEDS TO BE LOWERED WHEN REPLACING THE CENTRAL ROLLER.
 WING ROLLERS CAN BE REMOVED WITHOUT LOWERING THE SLIDE FRAME.

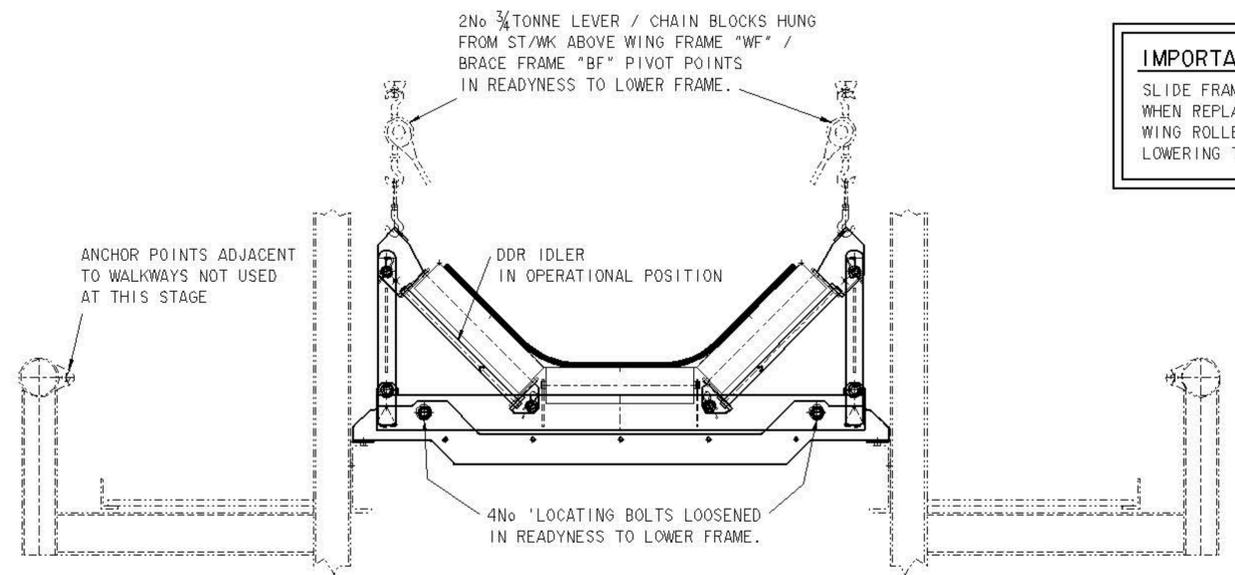


DIAGRAM '1' - DDR IDLER ASSEMBLY IN OPERATIONAL POSITION

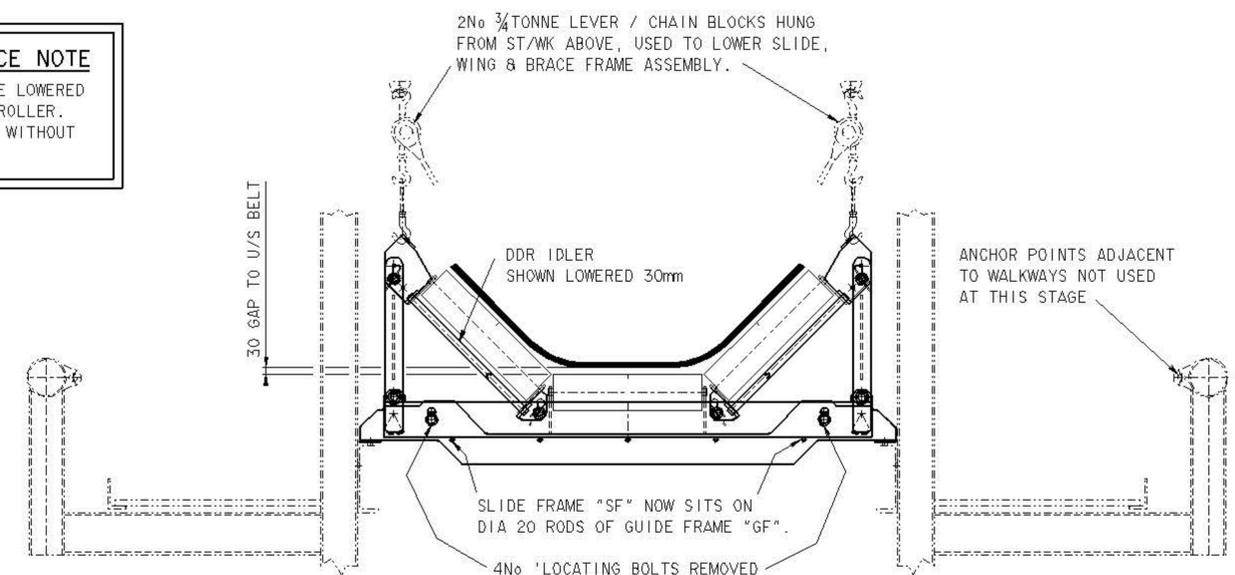


DIAGRAM '2' - DDR IDLER ASSEMBLY LOWERED 30mm

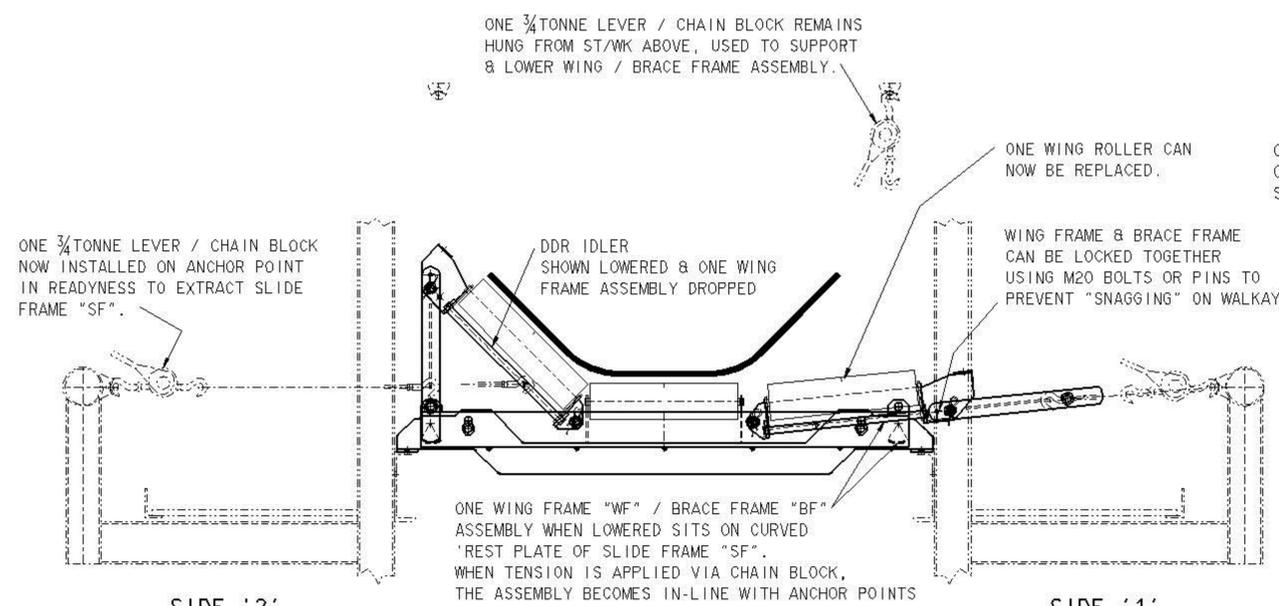


DIAGRAM '3' - DDR IDLER ASSEMBLY WING ROLL FRAME LOWERED

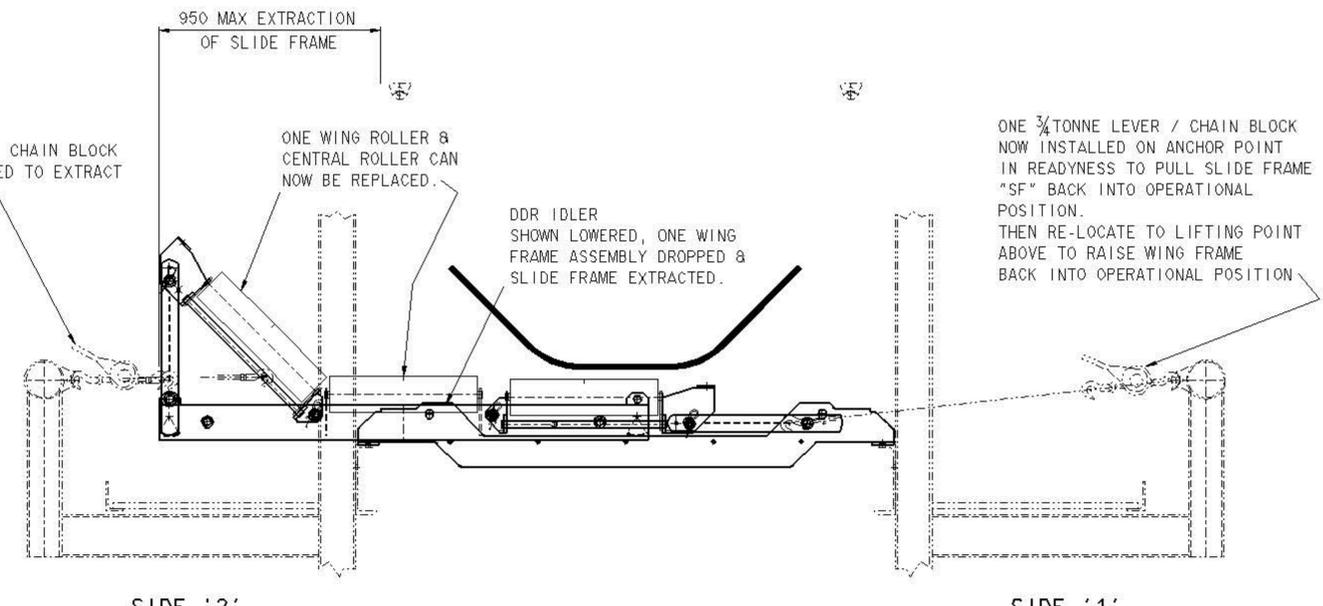


DIAGRAM '4' - DDR IDLER ASSEMBLY SLIDE FRAME EXTRACTED

THIS DRAWING TO BE READ IN-CONJUNCTION WITH :-
 INSTALLATION G.A. SHT 2 DRG "DDRI-1800-1-A2"

DDRI-1800-1-A2 DDR IDLER - 1800x45' BELT INSTALL G.A. SHT 2	D	GB	FEB 12	DRAWING ADOPTED FOR P/N 9999	EH	GB
REVISIONS						
REV BY	DATE	DESCRIPTION	CHK	APP	REV BY	DATE

REVISIONS						
REV BY	DATE	DESCRIPTION	CHK	APP	REV BY	DATE

DRAWN	G.BRAITHWAITE	FEB 2012
TRACED		
CHECKED	E.HODGKINSON	FEB 2012
BUILT DRAFT		
PROJ ENGR	GLENN STAGG	
APPROVED		
APP FOR CONST.		

Rio Tinto

CAPE LAMBERT - PORT B EXPANSION -
 GENERAL EQUIPMENT -
 DROP DOWN RETRACTABLE IDLER (DDRI) -
 1800 x 45' BELT - OPERATION G.A. SHT 3

SCALE 1:10

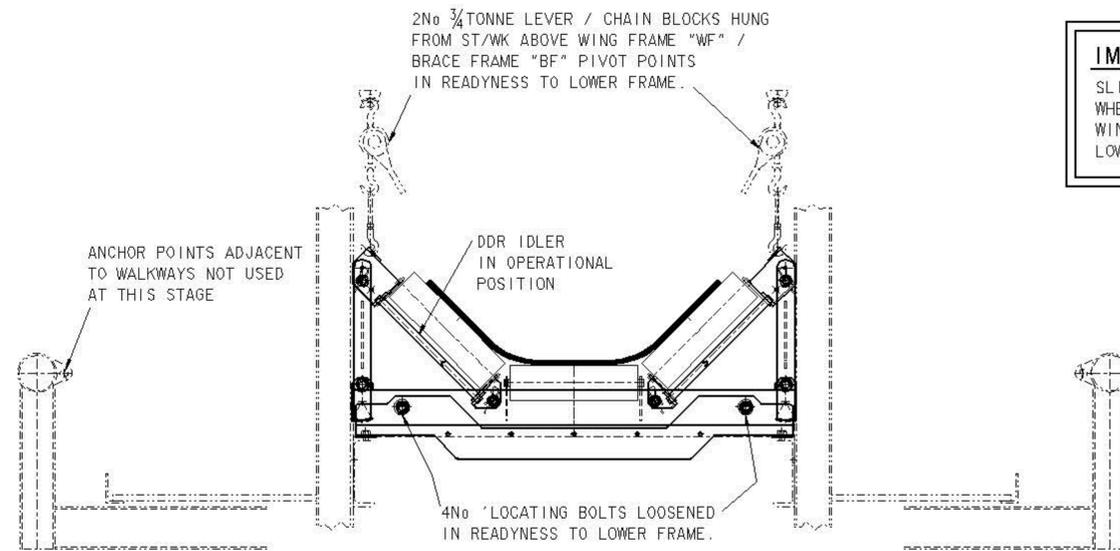
DRAWING NUMBER
DDRI-1800-1-A3

PROJECT NUMBER P/N 9999

THIRD ANGLE PROJECTION

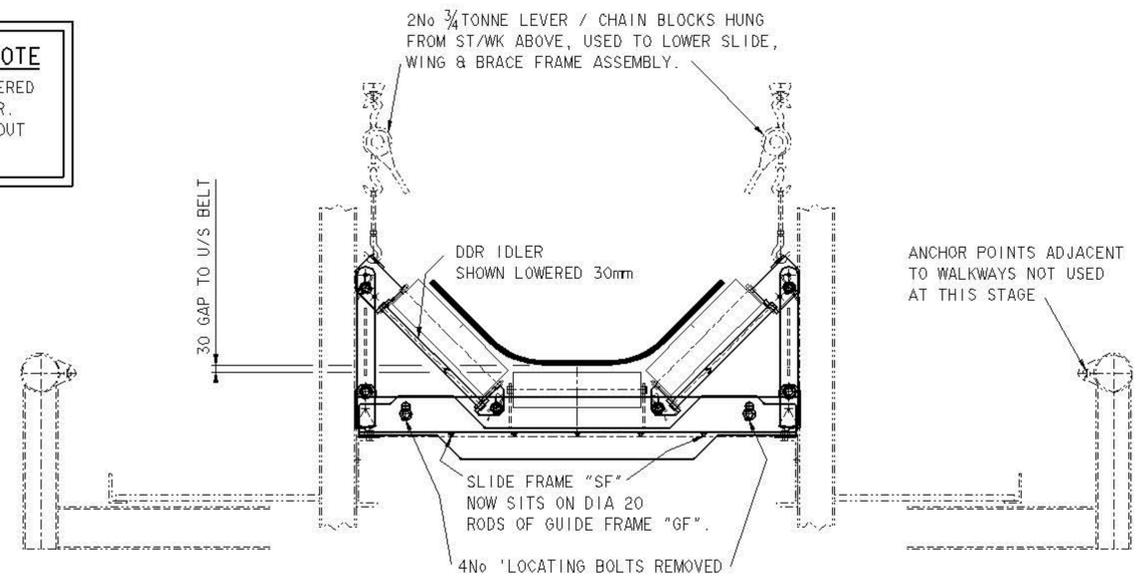


H & B DRAWING No:-
DDRI-1524-1-A3
 624 x 45 DEG 3 - ROLL

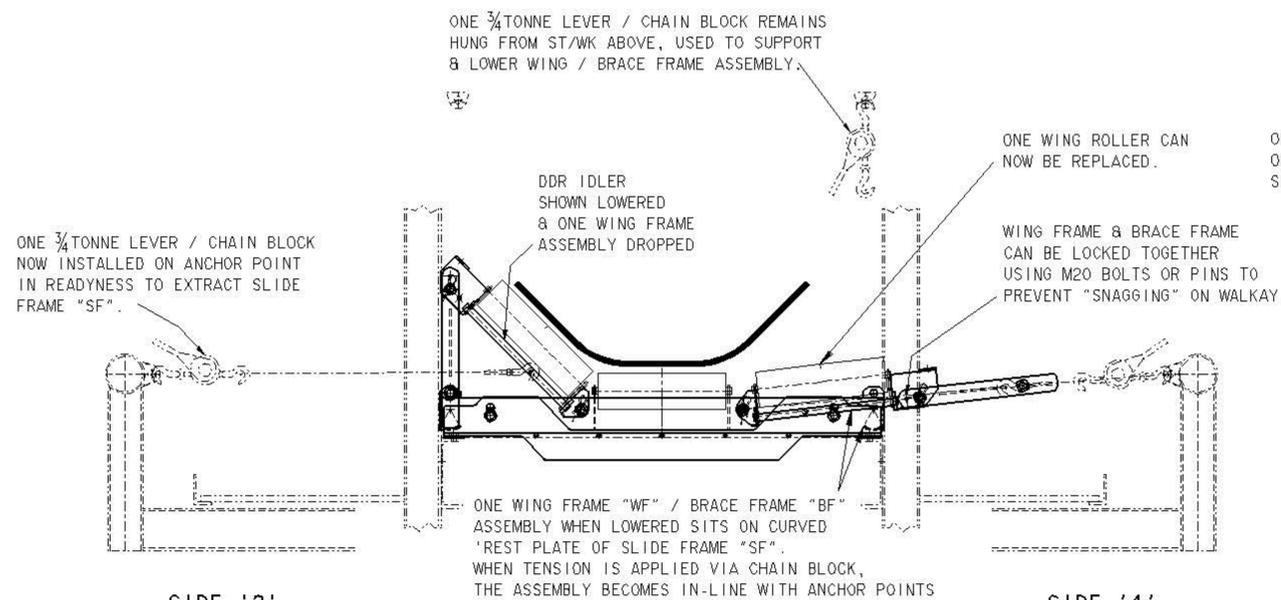


SIDE '2' SIDE '1'
DIAGRAM '1' - DDR IDLER ASSEMBLY IN OPERATIONAL POSITION

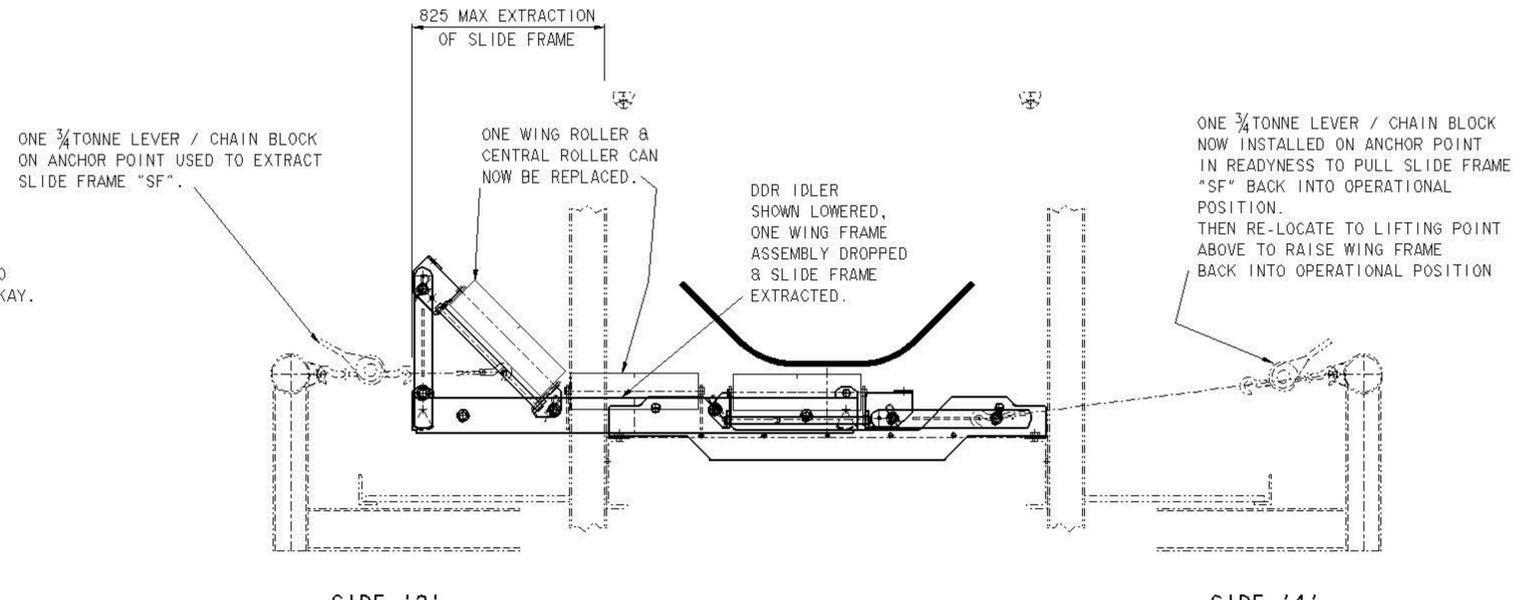
IMPORTANT MAINTENANCE NOTE
 SLIDE FRAME ONLY NEEDS TO BE LOWERED WHEN REPLACING THE CENTRAL ROLLER. WING ROLLERS CAN BE REMOVED WITHOUT LOWERING THE SLIDE FRAME.



SIDE '2' SIDE '1'
DIAGRAM '2' - DDR IDLER ASSEMBLY LOWERED 30mm



SIDE '2' SIDE '1'
DIAGRAM '3' - DDR IDLER ASSEMBLY WING ROLL FRAME LOWERED



SIDE '2' SIDE '1'
DIAGRAM '4' - DDR IDLER ASSEMBLY SLIDE FRAME EXTRACTED

THIS DRAWING TO BE READ IN-CONJUNCTION WITH :-
 INSTALLATION G.A. SHT 2 DRG "DDRI-1524-1-A2"

REV	BY	DATE	DESCRIPTION	CHKD	APP	REV	BY	DATE	DESCRIPTION	CHKD	APP

DRAWN	G.BRAITHWAITE	FEB 2012
TRACED		
CHECKED	E.HODGKINSON	FEB 2012
SUPT DRAFT		
PROJ. ENG.	GLENN STAGG	
APPROVED		
APP. FOR CONST.		

RioTinto

CAPE LAMBERT - PORT B EXPANSION -
 GENERAL EQUIPMENT -
 DROP DOWN RETRACTABLE IDLER (DDR) -
 1524 x 45' BELT - OPERATION G.A. SHT 3

SCALE 1:15
 DRAWING NUMBER
DDRI-1524-1-A3
 PROJECT NUMBER P/N 9999

REVISIONS

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SECTION 5 – PROJECT DATA

5.1 – PROJECT SPECIFIC DATA

- (a) 666 No FULLY ASSEMBLED DROP DOWN RETRACTABLE IDLER FRAMES WERE SUPPLIED. (484 No 1800 x 45 DEG FRAMES & 182 No 1524 x 45 DEG FRAMES).
- (b) ALL IDLER ROLLERS WERE SUPPLIED BY JOY GLOBAL (P & H MINEPRO).

DROP DOWN RETRACTABLE IDLER FRAMES – SUPPLIED TO THE CLB PROJECT (PHASE 'A')
 JOB NUMBER HB1498

CONVEYOR	Qty
CV520 Conveyor 1800w	46
CV511 Conveyor 1800w	47
CV521 Conveyor 1800w	23
CV650 Conveyor 1800w	23
CV651 Conveyor 1800w	39
CV655 Conveyor 1800w	23
CV852 Conveyor 1524w	23
CV853 Conveyor 1524w	23
CV854 Conveyor 1800w	23
CV450 Conveyor 1800w	28
CV654 Conveyor 1800w	153
CV711 Conveyor 1800w	76
CV851 Conveyor 1524w	134
SPARE DDRI Frames 1800w	3
SPARE DDRI Frames 1524w	2
TOTALS	666



SECTION 5 – PROJECT DATA

5.2 – SPARE PARTS LISTS

DDRI 1800-1 – SPARE PARTS LIST (JOB NUMBER HB1498)

COMPONENT MARK	DESCRIPTION	QTY PER ASSEMBLY
“DDRI-18-1-GF”	1800 WIDE DDRI GUIDE FRAME	ONE
“DDRI-18-1-SF”	1800 WIDE DDRI SLIDE FRAME	ONE
“DDRI-18-1-WF”	1800 WIDE DDRI WING FRAME	TWO
“DDRI-18-1-BF”	1800 WIDE DDRI BRACE FRAME	TWO
“DDRI-18-1-VP”	1800 WIDE DDRI VALLEY PIN	FOUR
“DDRI-18-1-WP”	1800 WIDE DDRI WING PIN	TWO
“LOCK BOLT”	M30 x 75 LONG (GALV.) CLASS 8.8 HEX HD BOLT c/w HEX NUT - NO WASHER.	FOUR
“LOCATING BOLT”	M30 x 75 LONG (GALV.) CLASS 8.8 HEX HD BOLT c/w HEX NUT & HARD FLAT WASHER.	FOUR
“100498573”	152 DIA, 633 lg FACE WING ROLL (6309 BEARINGS)	TWO
“100476778”	152 DIA, 633 lg FACE CENTRE ROLL (21309 BEARINGS)	TWO

DDRI 1524-1 – SPARE PARTS LIST (JOB NUMBER HB1498)

COMPONENT MARK	DESCRIPTION	QTY PER ASSEMBLY
“DDRI-15-1-GF”	1524 WIDE DDRI GUIDE FRAME	ONE
“DDRI-15-1-SF”	1524 WIDE DDRI SLIDE FRAME	ONE
“DDRI-15-1-WF”	1524 WIDE DDRI WING FRAME	TWO
“DDRI-15-1-BF”	1524 WIDE DDRI BRACE FRAME	TWO
“DDRI-15-1-VP”	1524 WIDE DDRI VALLEY PIN	FOUR
“DDRI-15-1-WP”	1524 WIDE DDRI WING PIN	TWO
“LOCK BOLT”	M30 x 75 LONG (GALV.) CLASS 8.8 HEX HD BOLT c/w HEX NUT - NO WASHER.	FOUR
“LOCATING BOLT”	M30 x 75 LONG (GALV.) CLASS 8.8 HEX HD BOLT c/w HEX NUT & HARD FLAT WASHER.	FOUR
“100476746”	152 DIA, 549 lg FACE WING ROLL (6309 BEARINGS)	TWO
“100476806”	152 DIA, 549 lg FACE CENTRE ROLL (21309 BEARINGS)	TWO



H & B MINING SERVICES – HB1498 – I.O.M. MANUAL

JOY GLOBAL / SKM. – RIO TINTO PTY LTD

CAPE LAMBERT PORT 'B' (CLB) PROJECT – DDRI IDLER FRAME ASSEMBLIES



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CAPE LAMBERT PORT 'B' (CLB) PROJECT – DDRI IDLER FRAME ASSEMBLIES



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Australia
Phone: (08) 9403 2993
Email: info@handbmining.com.au

www.handbmining.com.au

H & B Mining: “The Experts in Conveyor Skirts”

H & B Mining design and supply a range of “Easy Maintenance” conveyor transfer products to the Australian mining industry with the aim of providing a safer, easier to maintain and more efficient working environment at conveyor transfer points.

H & B Mining was established in April 1993 with the promise of providing a standalone conveyor design service tailored to accommodate the mines of Australia. After witnessing maintenance crews struggling to maintain and change out poorly designed products for conveyor transfers H & B decided to expand its portfolio by developing its own range of ‘Easy Maintenance Products’ for conveyor transfer points including: conveyor idlers, conveyor skirting systems, hinged dust covers, conveyor guards, conveyor diversion plough, streamline conveyor transfer design and the retractable loading boot.

The “Easy Maintenance” conveyor product range harnesses H & B’s vast experience in the field along with the innovative design technology nurtured over the years within the H & B design team. The Australian mining industry has benefited from H & B’s toil, witnessing enhanced overall productivity, reduced shutdown time and improved safety whilst gaining cost effective mining conveyor operations. H & B Mining products have been installed as mine standard by Rio Tinto, BHP Billiton, Roy Hill and FMG, amongst others.

Drop Down Retractable Idler

The H and B Mining conveyor idlers are designed to facilitate & simplify the removal/replacement of worn or damaged idler rollers whilst the units remain in an “Insitu” location under skirted or difficult access areas on conveyor systems.

The H and B Drop Down Retractable Idler is designed for use on a conventional conveyor system arrangement of a single row of rollers and incorporates a retractable capability which improves access to the central idler roller, enabling easy maintenance. They are manufactured to facilitate site standard impact or carry idler rollers or any other nominated rollers used by the Australian mining industry.

The Drop Down Retractable Idler allows for replacement of the wing rollers alone (Procedure A) or the central roller and one or both of the Wing rollers (Procedure B). Idler Rollers are replaced by using standard ¾ tonne lever/chain blocks or similar to raise, lower & retract the frame components as required.