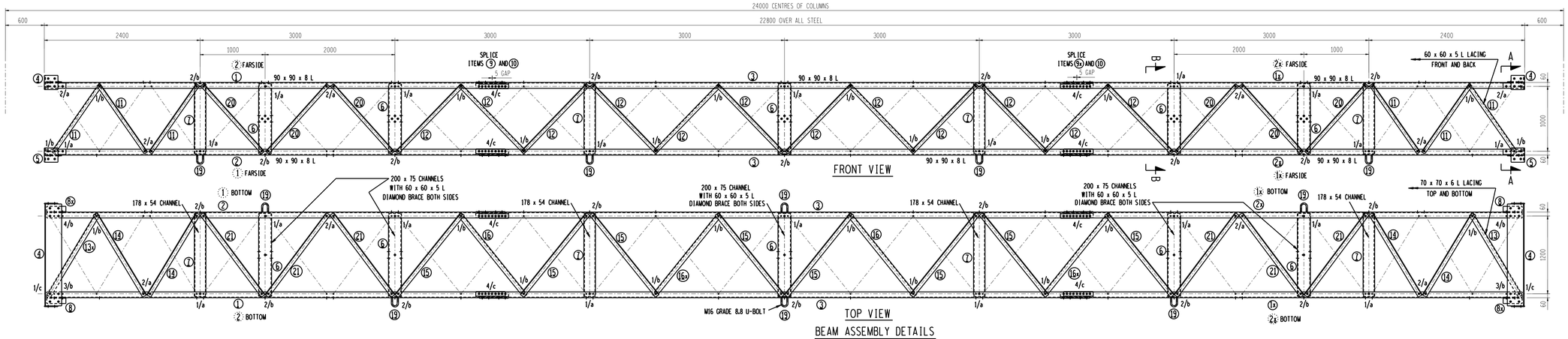
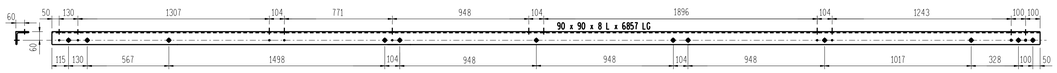


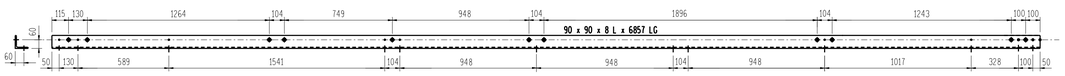
BEAM ASSEMBLY DETAILS

1:25



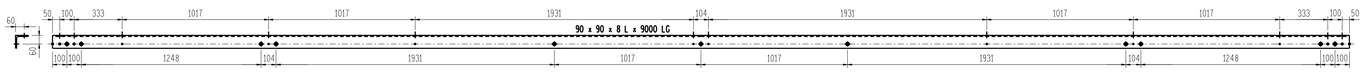
2-MAIN ANGLES REQ'D AS DRAWN Mkd 1
2-MAIN ANGLES REQ'D TO OPPOSITE HAND Mkd 1x

1:15



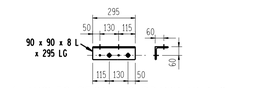
2-MAIN ANGLES REQ'D AS DRAWN Mkd 2
2-MAIN ANGLES REQ'D TO OPPOSITE HAND Mkd 2x

1:15



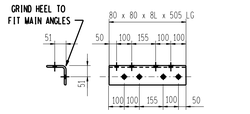
4-MAIN ANGLES REQ'D AS DRAWN Mkd 3

1:15



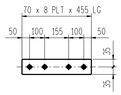
4-ANGLES REQ'D AS DRAWN Mkd 8
4-ANGLES REQ'D TO OPP. HAND Mkd 8x

1:15



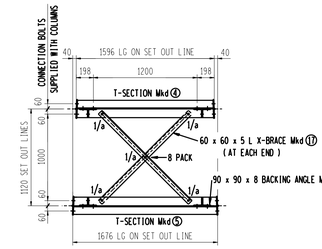
4-SPLICE ANGLES REQ'D AS DRAWN MKD 9
4-SPLICE ANGLES REQ'D TO OPP. HAND MKD 9x

1:10



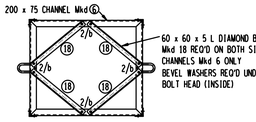
16-SPLICE PLATES REQ'D AS DRAWN MKD 10

1:10



SECTION A - A

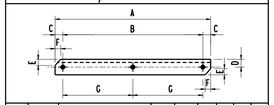
1:25



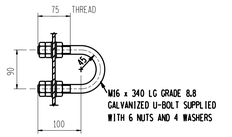
SECTION B - B

1:25

LACING / BRACING SCHEDULE

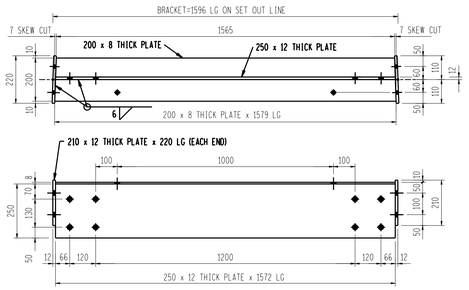


MARK	NO OFF	TYPE	A	B	C	D	E	F
.11	.12	....60.x.60.x.5.....	1279	1219	.30	.32	...	...
.12	.24	....60.x.60.x.5.....	1450	1390	.30	.32	...	...
.13	..2	....70.x.70.x.6.....	1479	1399	.40	.35	.25	.15
13x	..2	..OPP.HAND.OF.13...	...	...	...	...	...	...
.14	..8	....70.x.70.x.6.....	1479	1399	.40	.35	...	...
.15	.16	....70.x.70.x.6.....	1621	1541	.40	.35	...	...
.16	..4	....70.x.70.x.6.....	1621	1541	.40	.35	.20	.15
16x	..4	..OPP.HAND.OF.16...	...	...	...	...	...	...
.20	.12	....60.x.60.x.5.....	1403	1343	.30	.32	...	...
.21	.12	....70.x.70.x.6.....	1578	1498	.40	.35	...	...
...	...	.....	...	...	...	...	...	...
...	...	.....BRACING.....	.A.	.B.	.C.	.D.	.E.	...
.17	..4	....60.x.60.x.5.....	1674	1414	.30	.32	.707	...
.18	.40	....60.x.60.x.5.....	.780	.720	.30	.32	....	...
...	...	.....	...	...	...	...	....	...
...	...	.....	...	...	...	...	....	...



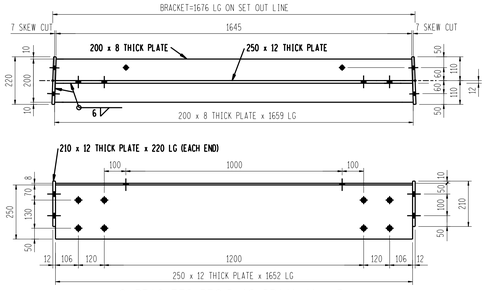
M16 SHACKLE BOLT - 10 NO OFF REQ'D Mkd 19

1:5



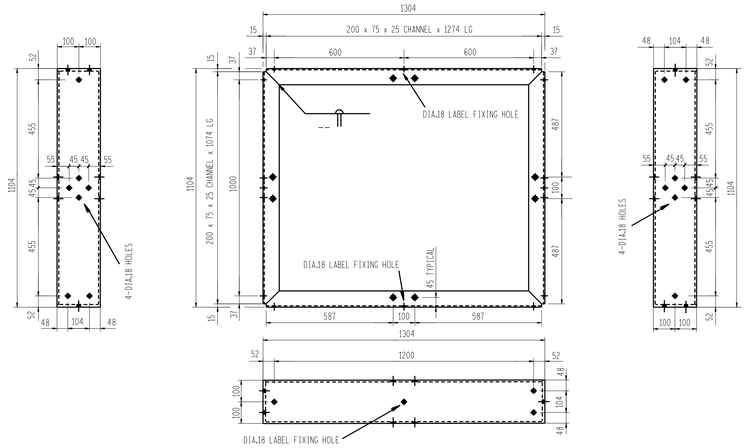
2-BRACKETS REQ'D AS DRAWN Mkd 4

1:10



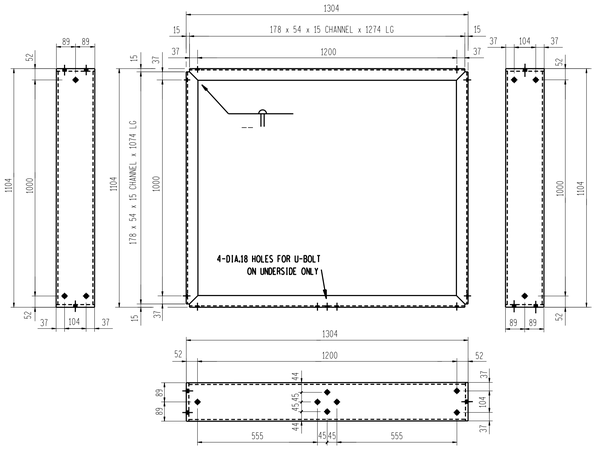
2-BRACKETS REQ'D AS DRAWN Mkd 5

1:10



5-ATTACHMENT MEMBERS REQ'D AS DRAWN MKD 6

1:10



4-ATTACHMENT MEMBERS REQ'D AS DRAWN MKD 7

1:10

BOLT SCHEDULE

*** STRENGTH GRADE 8.8 ***			
MARK	TYPE	NO OFF	LENGTH
.a.	M20	.90	40.
.b.	M20	224	45.
.c.	M20	.68	50.
...	...	...	...
80 BEVEL WASHERS REQ'D			

NOTES ON BOLTS:
1) BOLTS TO BE SUPPLIED WITH NUT AND WASHER.
2) BOLTS ERECTED WITH HEAD TO INSIDE PREFERED.
3) WASHER TO BE PLACED UNDER NUT.
4) ALL BOLTS TO BE GALVANISED.
5) BOLT POSITIONS INDICATED THUS: NO OFF/MARK eg.6/a
6) BOLT TIGHTENING: "SNUG TIGHT" USING STANDARD PODGER SPANNER OR IMPACT WRENCH.

MASS OF STEELWORK (BOLTS EXCLUDED)	_3178 kg
MASS OF GRADE 8.8 BOLTS	.80. kg
NO. OFF GRADE 8.8 U-BOLTS	.10.

NOTES

UNLESS OTHERWISE NOTED :

1) QUANTITIES SHOWN ARE FOR ONE BEAM ONLY.
2) ALL STRUCTURAL STEEL TO BE GRADE 300W.
3) ALL STEELWORK TO BE HOT DIP GALVANIZED TO S.A.B.S. 763.
4) ALL HOLES TO BE 22 DIAMETER U.O.N.
5) OPEN HOLES AND SITE BOLTS INDICATED THUS: ✦ ✦
6) THE CONTRACTOR SHALL SUPPLY ALL NUTS, BOLTS, WASHERS, ETC, REQUIRED FOR ERECTION.
7) ALL PORTIONS OF WELDED JOINTS, NOT SEALED BY STRUCTURAL WELD, SHALL BE SEAL WELDED.
8) ALL MARKS TO BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANIZING.
9) ALL MARKS TO BE PREFIXED : AEW_____
10) LIMITATIONS OF GENERAL USAGE-
THESE STRUCTURES HAVE BEEN DESIGNED TO SAFELY WITHSTAND THE FOLLOWING LOADING CONDITIONS:
A) MAX. CONDUCTOR LOADS OF 28 kN PER PHASE AT -10 DEGREES CENTIGRADE.
NOTE: NOMINAL STRINGING TENSION TO BE 18 kN PER PHASE AT 20 DEGREES CENTIGRADE .
B) WIND LOADS RESULTING FROM A FREE STREAM VELOCITY PRESSURE (qz) OF 1000 Pa AS DEFINED IN CLAUSE 4.5.3 OF SABS 0160-1980. THIS DESIGN PRESSURE IS APPLICABLE FOR TERRAIN CATEGORY 2 LOCATIONS THROUGHOUT SOUTH AFRICA, WITH THE EXCEPTION OF THE AREA BOUNDED BY THE TOWNS OF UPINGTON, KIMBERLEY, COLESBURG AND LAINSBURG INCLUSIVE. WHERE THE STRUCTURES ARE TO BE LOCATED WITHIN THIS AREA, OR ANYWHERE WITHIN SOUTH AFRICA AT A TERRAIN CATEGORY 1 LOCATION (ie. IN A SEVERELY EXPOSED LOCATION), APPROVAL TO USE THESE STRUCTURES MUST BE OBTAINED FROM ESCOM'S CIVIL ENGINEERING DIVISION.
C) SHORT-CIRCUIT LOADS DUE TO PHASE-TO-PHASE AND PHASE-TO-EARTH FAULTS.

REV	AUTH	DATE	REVISION/REVISIES	BY	CHKD	REFERENCE DRAWINGS
	MAG	DATUM	INDEX REF/INDEKSVERW	DELIN	NAGES	VERWYSINGSTEKENINGE
4	DJCS	02.05.88	ONE 46 BOLTS CHANGED TO ONE 68	AT	DJCS	
3	D.D.	01.04.88	LABEL FIXING AREA.	J.A.D.	D.D.	
2	D.D.	01.03.88	U-BOLTS AND U-BOLT HOLES REVISED.	J.A.D.	D.D.	
1	D.D.	01.02.88	HOLE DIA REVISED.	J.A.D.	D.D.	
0			FIRST ISSUE / EERSTE UITREIKING			0-54 S2 AND S3.

DRAWER REGISTRE: J.SCOTT

DRAWN TEKEN: ...A.D...

SCALE SKAAL: AS SHOWN...

APPROVED: W. BARNARD... 24 02 88

SOUTH AFRICA SUID AFRIKA

ESCOM • EVKOM

400 kV YARD STEELWORK

ASSEMBLY AND DETAILS OF SIBINGER STRAIN BEAM WITH OPESEIS.

TYPE N82

GOEDGEKEUR

0-54 / 3533 4

THIS DRAWING HAS BEEN CREATED ON A C.A.D. SYSTEM. ANY AMENDMENT MUST BE EFFECTED ON THE SAME SYSTEM. C.A.D. REFERENCE No [03 , 164] 035338000 . 803 : 1 .