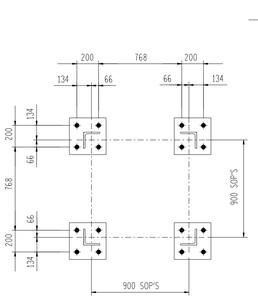
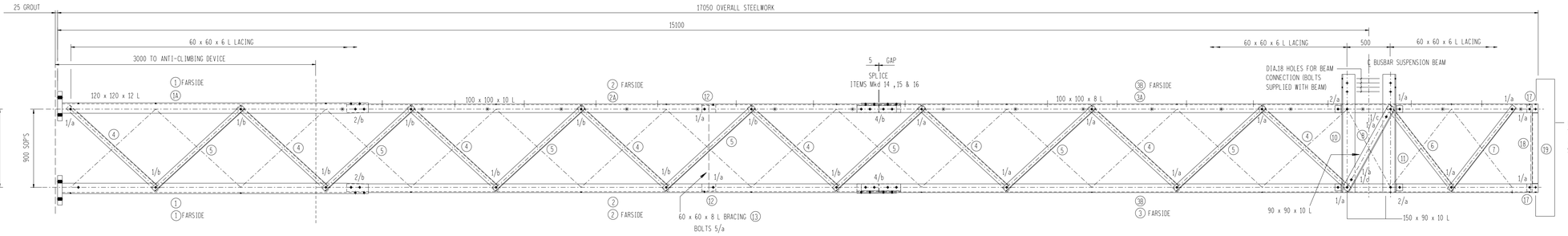
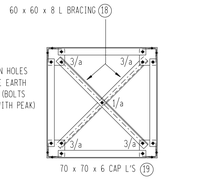


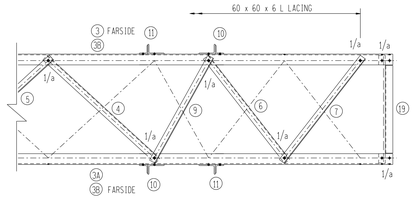
BASE LAYOUT
1:20

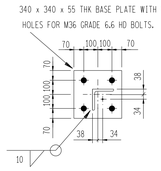


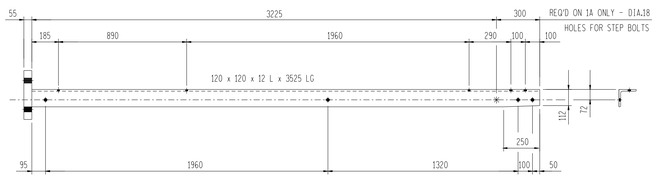
COLUMN ASSEMBLY DETAILS
1:20



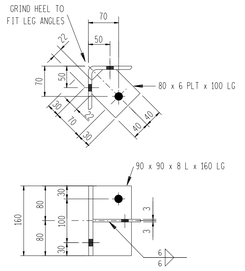
PLAN ON COLUMN CAP
1:20



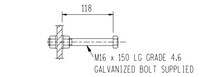




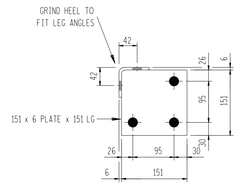
4 - LEG ANGLES REQ'D AS NOTED Mkd 3/1 & 1/1A
1:15

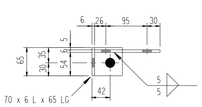


4-X BRACING BRACKETS REQ'D AS DRAWN MKD 12
1:5



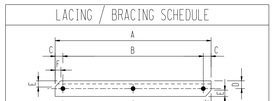
STEP BOLT - 33 NO OFF REQ'D
1:5





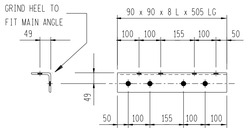
4 - COLUMN CAP PLATES REQ'D AS DRAWN Mkd 17
1:5

LACING / BRACING SCHEDULE

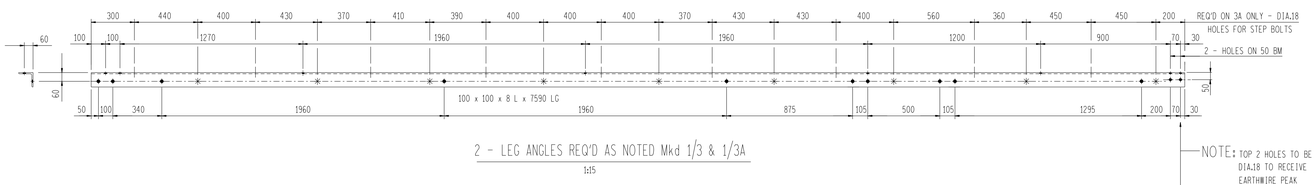


MARK	NO OFF	TYPE	A	B	C	D	E	F
4	32	60 x 60 x 6	1410	1330	40	30	5	4
5	28	60 x 60 x 6	1410	1330	40	30		
6	4	60 x 60 x 6	1220	1140	40	30	14	11
7	4	60 x 60 x 6	1220	1140	40	30		
9	2	60 x 60 x 6	1110	1030	40	30		
19	4	70 x 70 x 6	810	750	30	40		
		X-BRACING	A	B	C	D	G	
13	2	60 x 60 x 8	1296	1216	40	30	608	
18	2	60 x 60 x 8	1140	1060	40	30	530	

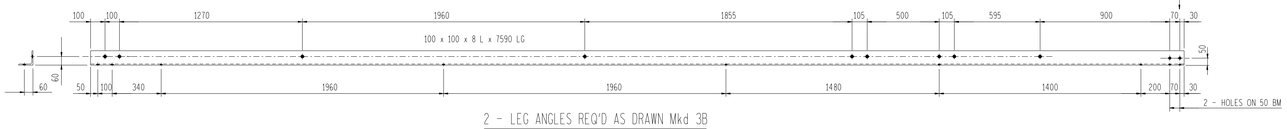
4 - LEG ANGLES REQ'D AS NOTED Mkd 3/2 & 1/2A
1:15



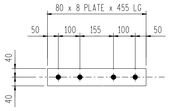
4 - SPLICE ANGLES REQ'D AS DRAWN Mkd 14
1:10



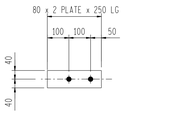
2 - LEG ANGLES REQ'D AS NOTED Mkd 1/3 & 1/3A
1:15



2 - LEG ANGLES REQ'D AS DRAWN Mkd 3B
1:15



8 - SPLICE PLATES REQ'D AS DRAWN Mkd 15
1:10

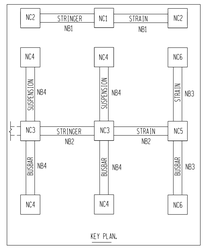


8 - SPLICE PACKS REQ'D AS DRAWN Mkd 16
1:10

BOLT SCHEDULE

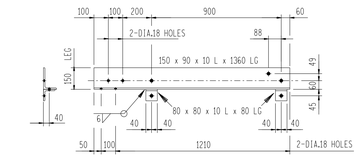
***	STRENGTH GRADE 8.8	***
MARK	TYPE	NO OFF	LENGTH
a	M20	86	45
b	M20	84	50
c	M20	4	60

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) TIGHTENING TORQUE = 340 Nm

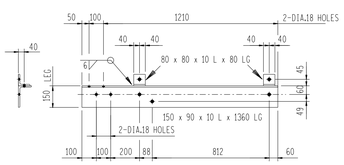


NOTES

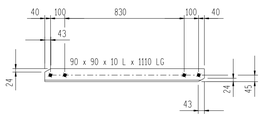
UNLESS OTHERWISE NOTED :
1) QUANTITIES SHOWN ARE FOR ONE COLUMN ONLY.
2) ALL STRUCTURAL STEEL TO BE GRADE 300W.
3) ALL STEELWORK TO BE HOT DIP GALVANIZED TO S.A.B.S. 763.
4) ALL HOLES TO BE 22 DIAMETER U.O.N.
5) OPEN HOLES AND SITE BOLTS INDICATED THUS: ● ╋
STEP BOLTS INDICATED THUS: ✳ ╋
6) THE CONTRACTOR SHALL SUPPLY ALL NUTS, BOLTS, WASHERS, ETC, REQUIRED FOR ERECTION.
7) H. D. BOLTS SUPPLIED UNDER SEPARATE CONTRACT.
8) ALL PORTIONS OF WELDED JOINTS, NOT SEALED BY STRUCTURAL WELD, SHALL BE SEAL WELDED.
9) ALL MARKS TO BE STAMPED ONTO STEELWORK AND SHALL BE CLEARLY LEGIBLE AFTER GALVANIZING.
10) ALL MARKS TO BE PREFIXED : 70L
11) LIMITATIONS OF GENERAL USAGE -
THESE STRUCTURES HAVE BEEN DESIGNED TO SAFELY WITHSTAND THE FOLLOWING LOADING CONDITIONS:
A) CONDUCTOR SUSPENSION LOAD OF 4.5KN PER PHASE.
B) WIND LOADS RESULTING FROM A FREE STREAM VELOCITY PRESSURE (q_z) 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 ESKOM'S CIVIL ENGINEERING DIVISION.



2 - BEAM CONNECTION BRACKETS REQ'D AS DRAWN Mkd 10
1:15



2 - BEAM CONNECTION BRACKETS REQ'D AS DRAWN Mkd 11
1:15



2 - BRACING ANGLES REQ'D AS DRAWN Mkd 8
1:15

MASS OF STEELWORK (BOLTS EXCLUDED)	2014 kg
MASS OF GRADE 4.6 BOLTS (STEP BOLTS)	10 kg
NO. OFF GRADE 8.8 BOLTS	174

REV	AUTH MAG	DATE DATUM	REVISION/REVISIES INDEX REF/INDEKSVERW 52 ; 59	BY DEUR	CHKD NAGES	REFERENCE DRAWINGS VERWYSINGTEKENINGE
1	D.J.C.S	89 10 16	REFERENCE DRAWINGS REVISED	PHD	D.J.C.S	3903sht.2 EARTHWIRE SPLICE EXT.
1	D. D.	89 04 14	AS BUILD REVISION.	A. D.	D. D.	3907 BEAM NB1
0			FIRST ISSUE / EERSTE UITREIKING			3903 COL.NC3
						3904sht.1 EARTHWIRE PEAK
						3911 ANTI-CLIMBING DEVICE

DRG/TEK REGISTR
CHKD NAGES
DRAWN GETEKEN
SCALE SKAAL

A.C. B. 87 03 25
D. D. 89 04 14
DELPORT 89 04 14
AS SHOWN

ESKOM

APPROVED N. BARNARD. 06 03 89
GOEDGEKEUR

275 kV YARD STEELWORK
ASSEMBLY AND DETAILS OF BUSBAR SUSPENSION COLUMN TYPE NC4

0·54 / 3904
REV 2

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 [103 , 164] 03904A000 . R01 ; 1

SIZE GROOTTE A0