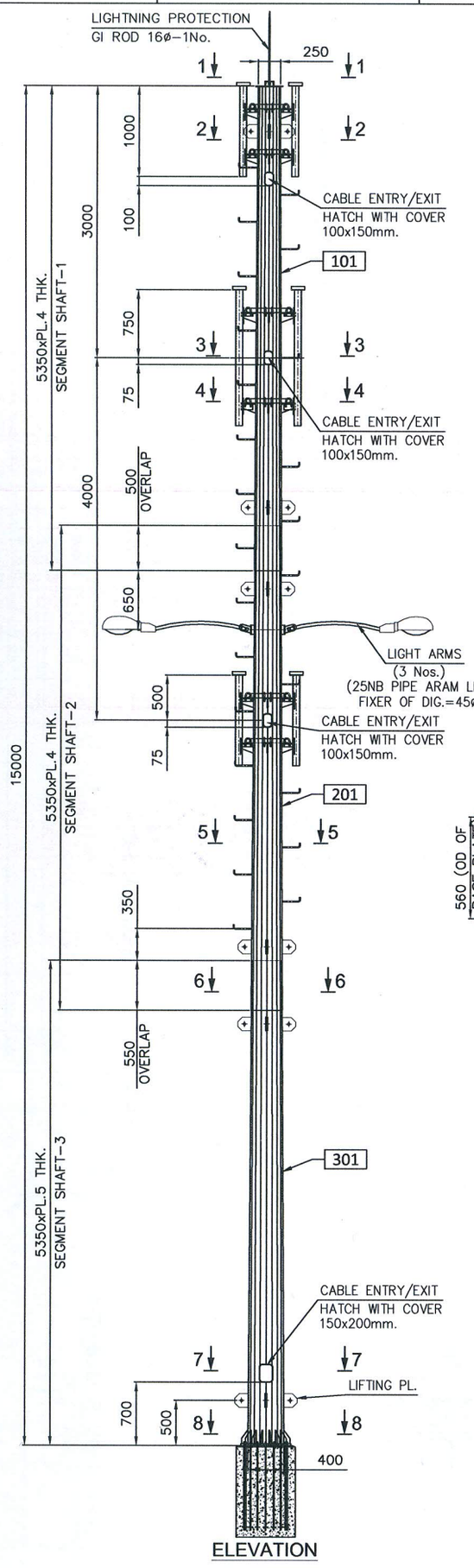
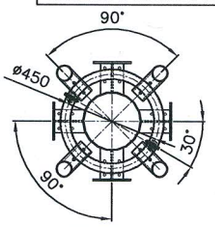
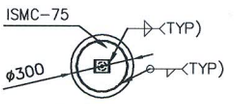


ELEVATION



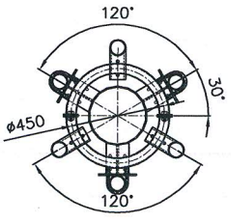
SECTION 2-2
(SCALE 1:20)



SECTION 1-1
(SCALE 1:20)

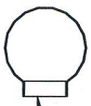
CABLE ENTRY/EXIT
HATCH WITH COVER

SECTION 3-3
(SCALE 1:20)



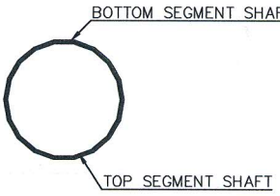
SECTION 4-4
(SCALE 1:20)

SECTION 5-5
(SCALE 1:20)

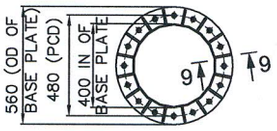


CABLE ENTRY/EXIT
HATCH WITH COVER

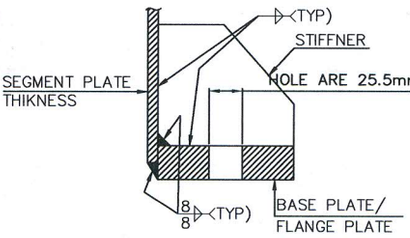
SECTION 7-7
(SCALE 1:20)



SECTION 6-6
(SCALE 1:10)



SECTION 8-8
(16 NOS. M24 BOLT)
(PLATE 20 THK.)
(SCALE 1:20)



SECTION 9-9
(SCALE 1:5)

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OPERATOR ANTENNA DETAILS HAS BEEN FURNISHED IN THE DRAWING IS BASED ON THE INPUTS COLLECTED DURING SITE VISIT WITH RESPECT TO THE ANTENNA MAKE/SPECIFICATIONS AND TECHNICIAN INPUTS.

GENERAL NOTE:

1. ALL DIMENSION ARE IN MILLIMETRE, EXPECTED OTHERWISE SHOWN.
2. POLE SHAFT PROFILE WITH 18 SIDED.
3. MATERIAL–
   - 3.1 MAIN POLE SEGMENT — E350
   - 3.2 PLATES — E250
   - 3.3 BOLTS & NUTS — QUALITY 5.6 GRADE–IS 4000–1992
   - 3.4 ANCHOR BOLTS — QUALITY 5.6 GRADE
   - 3.5 PLAIN WASHER — AS PER STANDARDASTM A 153
4. HOT DIP GALVANIZATION STRUCTURE STEEL COMPONENT ARE HOT DIP GALVANIZED IN ACCORDANCE WITH EN ISO 1461 MEAN/MIN THICKNESS– 85/70 MICRON FOR ALL STEEL THICKNESS. ANCHOR BOLTS SHALL BE FULLY GALVANIZED.
5. ANTENNA DETAILS
   - 5.1 4x 0.6m DIA MW AT 0.5M BELOW TOP LEVEL
   - 5.2 6x 1.468x0.349m GSM AT 3M BELOW TOP LEVEL
   - 5.3 6x 0.45x0.35x.15m RRU AT 7M BELOW TOP LEVEL
6. TOTAL WEIGHT OF POLE =1163.66 KGS

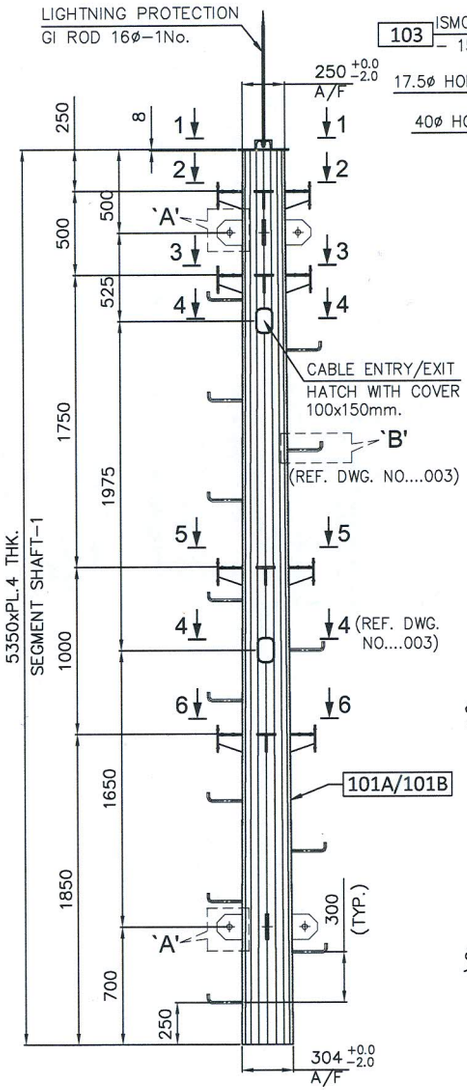
SUBMITTED FOR	APPROVAL	INFORMATION	REFERENCE	RECORD	CONSTRUCTION

TOWER PROJECT FOR BHUTAN TELECOM

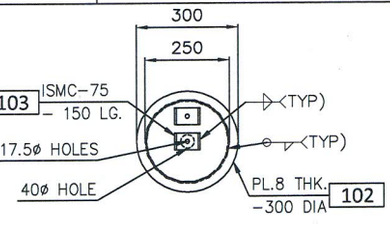
CONSULTANT:
Principle ACS Engineering India Pvt. Ltd.
Hyderabad, India

REV.	DATE	REVISION & DESCRIPTION	DRAWN	CHCK'D	APPR.
0					
1					
2					
3					

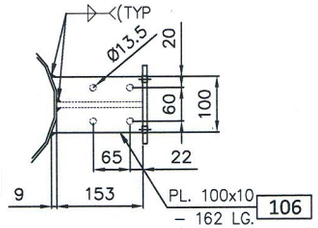
DRAWN	D.DAS	SPAR 156SJ MONOPOLE ELEVATION			
CHECKED AND VERIFIED	A.B				
APPROVED	M.S	SCALE – 1:40	SHEET	REV.	SIZE
DATE	06.02.21	2021–PACS–SPAR 156SJ–FAB–001	1 OF 1	0	A3



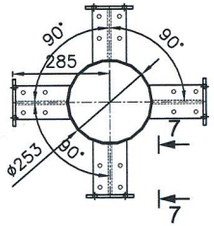
ELEVATION, SEGMENT-1
(SCALE 1:30)



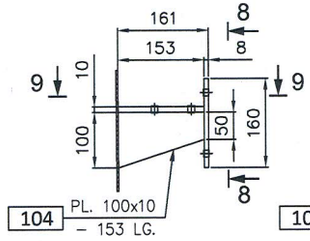
SECTION 1-1
(SCALE 1:10)



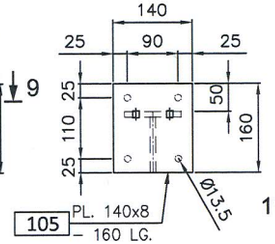
SECTION 9-9
(SCALE 1:5)



SECTION 2-2
(SCALE 1:10)



SECTION 7-7
(SCALE 1:5)



SECTION 8-8
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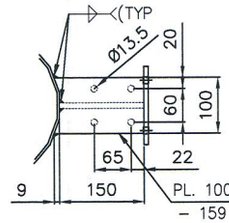

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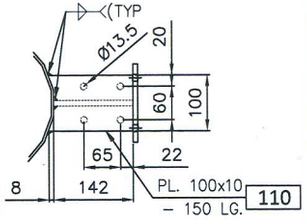
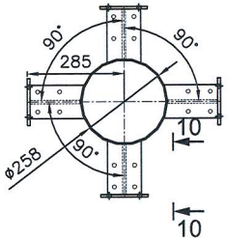


SECTION 13-13
(SCALE 1:5)



SECTION 3-3
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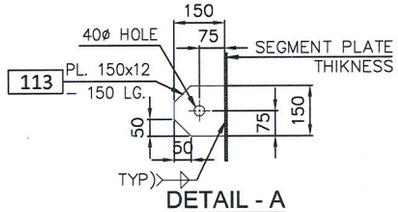
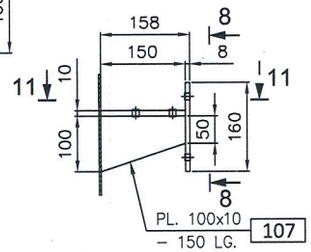
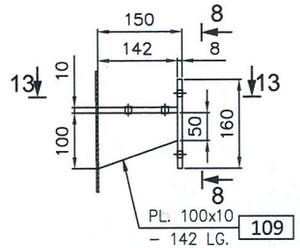


DETAIL - A
(SCALE 1:10)



SECTION 10-10
(SCALE 1:5)



SECTION 12-12
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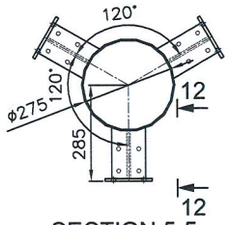
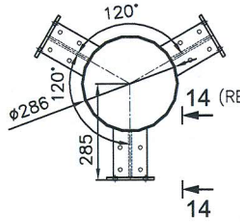


SECTION 5-5
(SCALE 1:10)



SECTION 6-6
(SCALE 1:10)

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GENERAL NOTE:

1. ALL DIMENSIONS ARE IN MILIMETERS, EXCEPT OTHERWISE SHOWN.

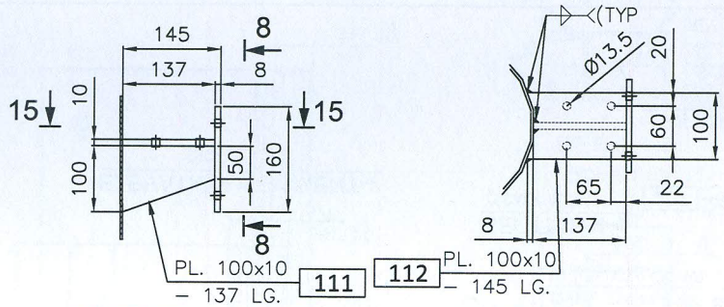
SUBMITTED FOR	✓ APPROVAL	INFORMATION	REFERENCE	RECORD	CONSTRUCTION

TOWER PROJECT FOR BHUTAN TELECOM

CONSULTANT:
Principle ACS Engineering India Pvt. Ltd.
Hyderabad, India

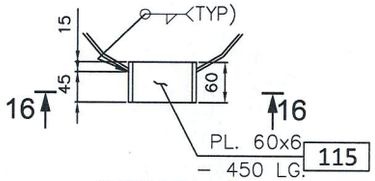
REV.	DATE	REVISION & DESCRIPTION	DRAWN	CHCK'D	APPR.
0					
1					
2					
3					

DRAWN	D.DAS	SPAR 156SJ			
CHECKED AND VERIFIED	A.B	DETAILS OF SEGMENT–1			
APPROVED	M.S	SCALE – 1:40	SHEET	REV.	SIZE
DATE	06.02.21	2021–PACS–SPAR 156SJ–FAB–002	1 OF 1	0	A3

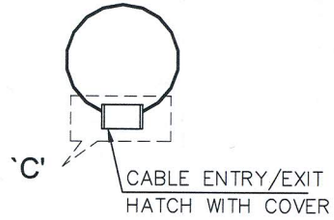


SECTION 14-14
(SCALE 1:5)
(REF. DWG. NO....002)

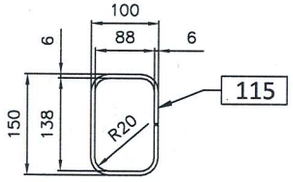
SECTION 15-15
(SCALE 1:5)



DETAIL - C
(SCALE 1:10)



SECTION 4-4
(SCALE 1:20)
(REF. DWG. NO....002)



SECTION 16-16
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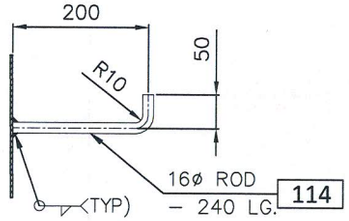

DETAIL - B
(SCALE 1:5)
(REF. DWG. NO....002)

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TOWER PROJECT FOR BHUTAN TELECOM

CONSULTANT:
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Hyderabad, India

REV.	DATE	REVISION & DESCRIPTION	DRAWN	CHCK'D	APPR.
0					
0					
0					
0					

DRAWN	D.DAS	SPAR 156SJ DETAILS OF SEGMENT–1			
CHECKED AND VERIFIED	A.B				
APPROVED	M.S	SCALE – 1:40	SHEET	REV.	SIZE
DATE	06.02.21	2021–PACS–SPAR 156SJ–FAB–003	1 OF 1	0	A4

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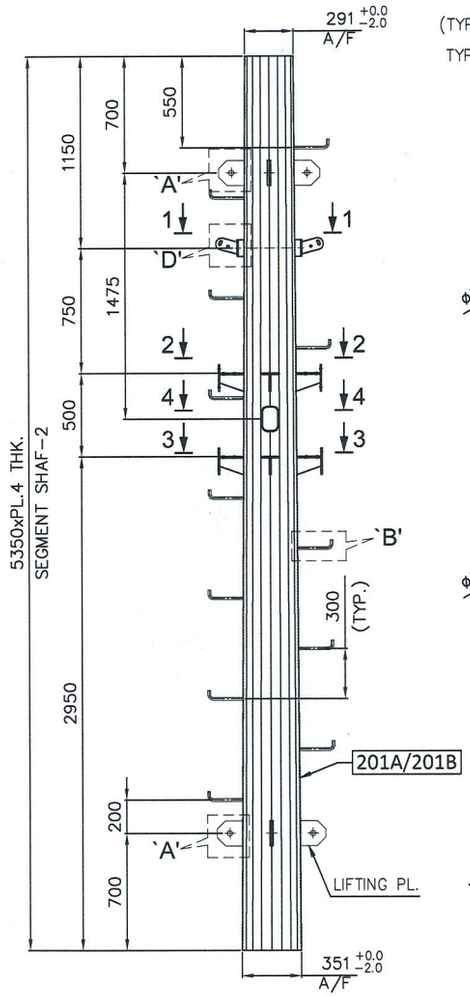
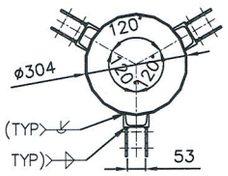
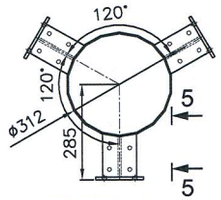


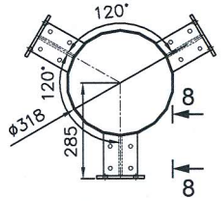
ELEVATION, SEGMENT-2
(SCALE 1:30)



SECTION 1-1
(SCALE 1:10)



SECTION 2-2
(SCALE 1:10)



SECTION 3-3
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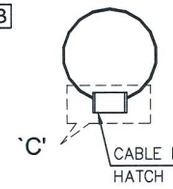
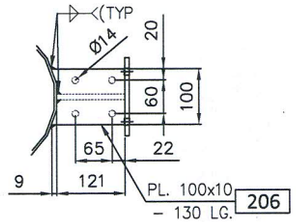
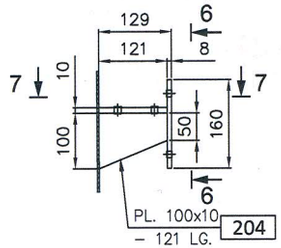


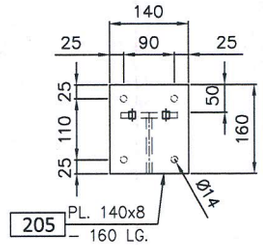
SECTION 4-4
(SCALE 1:20)



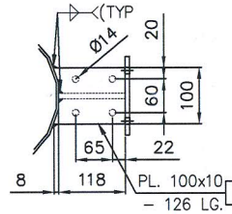
SECTION 7-7
(SCALE 1:5)



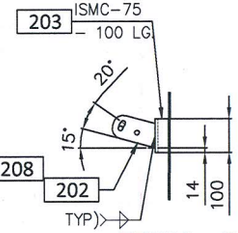
SECTION 5-5
(SCALE 1:5)



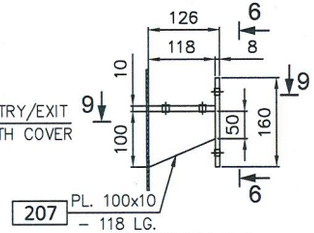
SECTION 6-6
(SCALE 1:5)



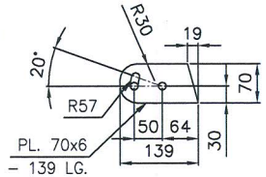
SECTION 9-9
(SCALE 1:5)



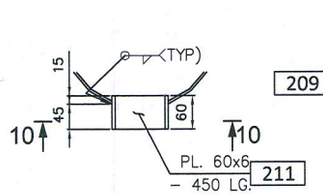
DETAIL - D
(SCALE 1:10)



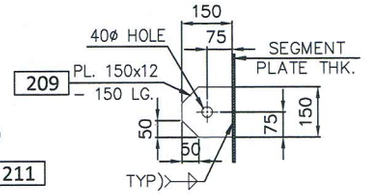
SECTION 8-8
(SCALE 1:5)



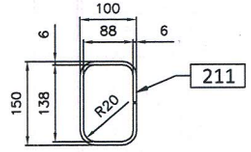
ITEM MKD.-202
(SCALE 1:5)



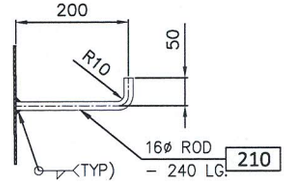
DETAIL - C
(SCALE 1:10)



DETAIL - A
(SCALE 1:10)



SECTION 10-10
(SCALE 1:10)



DETAIL - B
(SCALE 1:5)

FOR M12-13.5ø HOLE
FOR M16-17.5ø HOLE

GENERAL NOTE:

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	✓				
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TOWER PROJECT FOR BHUTAN TELECOM

CONSULTANT:
Principle ACS Engineering India Pvt. Ltd.
Hyderabad, India

REV.	DATE	REVISION & DESCRIPTION	DRAWN	CHK'D	APPR.
0					
1					
2					
3					

DRAWN	D.DAS	SPAR 156SJ DETAILS OF SEGMENT-2		
CHECKED AND VERIFIED	A.B			
APPROVED	M.S	SCALE – 1:40	SHEET	REV. SIZE
DATE	06.02.21	2021-PACS-SPAR 156SJ-FAB-004	1 OF 1	0 A3

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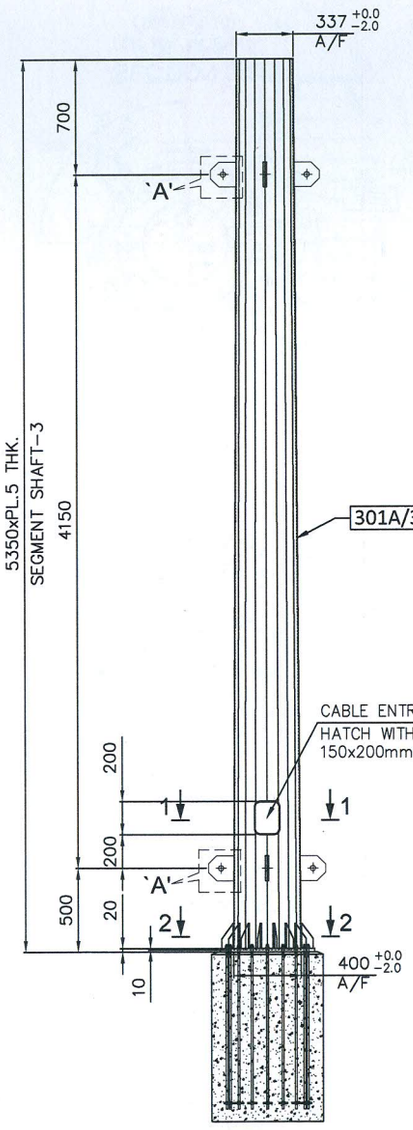
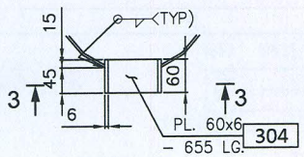
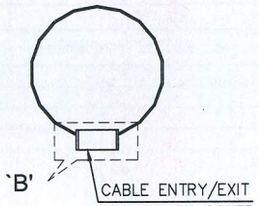
OPERATOR ANTENNA DETAILS HAS BEEN FURNISHED IN THE DRAWING IS BASED ON THE INPUTS COLLECTED DURING SITE VISIT WITH RESPECT TO THE ANTENNA MAKE/SPECIFICATIONS AND TECHNICIAN INPUTS.



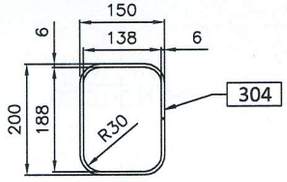
ELEVATION, SEGMENT-3
(SCALE 1:30)



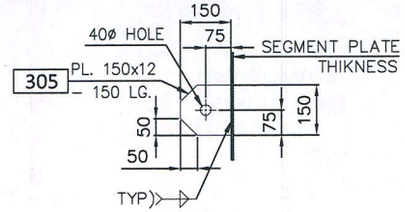
DETAIL - B
(SCALE 1:10)



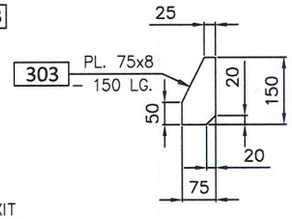
SECTION 1-1
(SCALE 1:20)



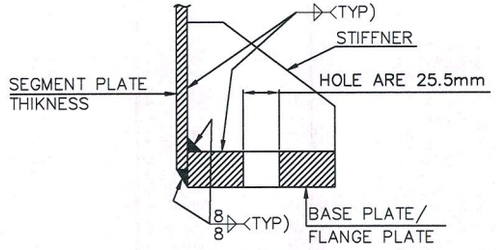
SECTION 3-3
(SCALE 1:10)



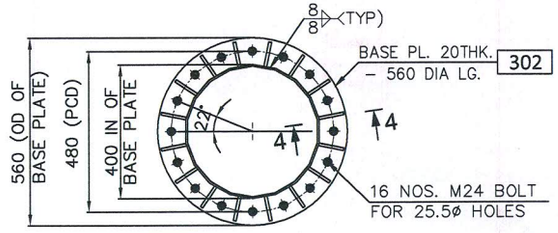
DETAIL - A
(SCALE 1:10)



BASE PLATE STIFFNERS DETAILS
(SCALE 1:10)



SECTION 4-4
(SCALE 1:5)



SECTION 2-2
(BASE PLATE)
(SCALE 1:20)

GENERAL NOTE:

1. ALL DIMENSIONS ARE IN MILIMETERS, EXCEPT OTHERWISE SHOWN.

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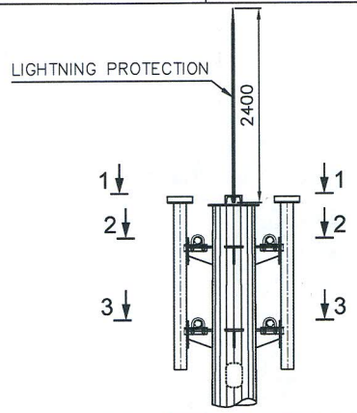
TOWER PROJECT FOR BHUTAN TELECOM

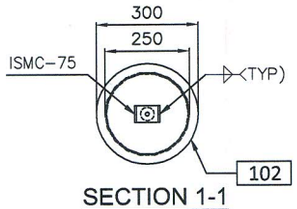
CONSULTANT:
Principle ACS Engineering India Pvt. Ltd.
Hyderabad, India

REV.	DATE	REVISION & DESCRIPTION	DRAWN	CHCK'D	APPR.
1					
2					
3					
4					

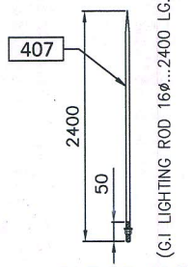
DRAWN	D.DAS	SPAR 156SJ DETAILS OF SEGMENT-3		
CHECKED AND VERIFIED	A.B			
APPROVED	M.S	SCALE – 1:40	SHEET	REV. SIZE
DATE	06.02.21	2021-PACS-SPAR 156SJ-FAB-005	1 OF 1	0 A3



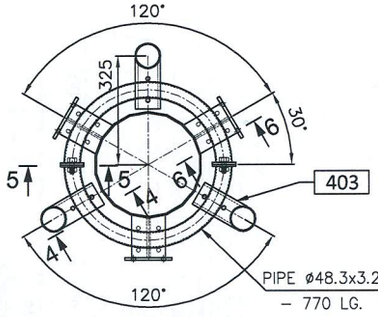
LA & ANTENNA DETAILS
(SCALE 1:20)



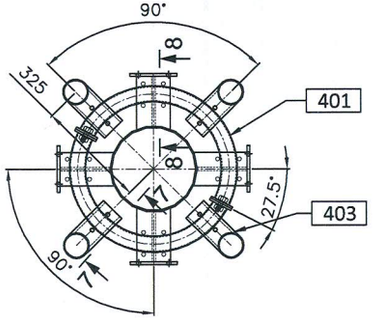
SECTION 1-1
(SCALE 1:10)



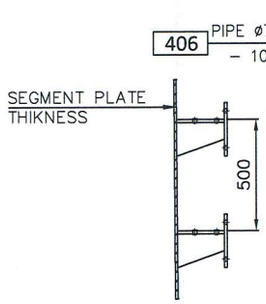
GI ROD 16Ø



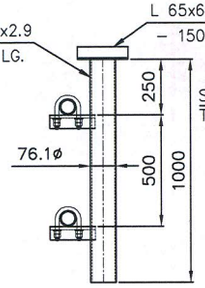
SECTION 2-2
GSM & RRU ANTENNA
(SCALE 1:10)



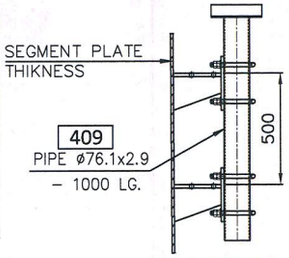
SECTION 3-3
FOR MW ANTENNA
(SCALE 1:10)



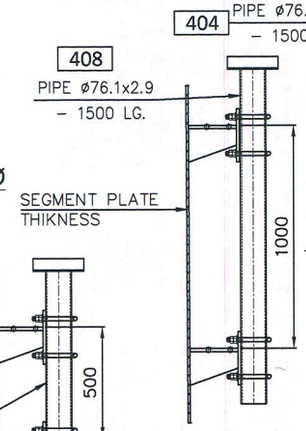
SECTION 8-8
(SCALE 1:10)



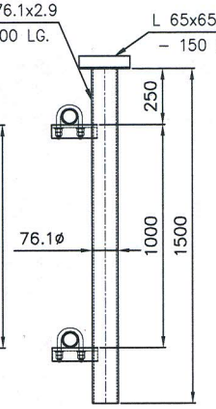
SECTION 7-7
(SCALE 1:10)



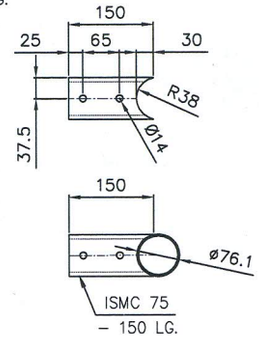
SECTION 8-8
(FOR RRU ANTENNA)
(SCALE 1:10)



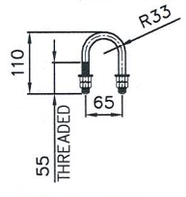
SECTION 4-4
(SCALE 1:10)



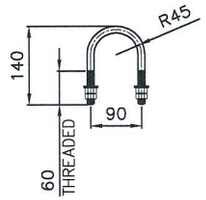
SECTION 6-6
(SCALE 1:10)



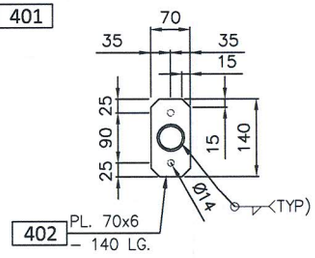
ITEM MKD.-403
(SCALE 1:5)



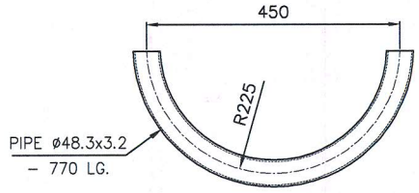
12Ø U BOLT ...265 LG.)
(FOR ø48.3 PIPE)



12Ø U BOLT ...340 LG.)
(FOR ø76.1 PIPE)



SECTION 5-5
(SCALE 1:5)



ITEM MKD.-401
(SCALE 1:5)

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SUBMITTED FOR	APPROVAL ✓	INFORMATION	REFERENCE	RECORD	CONSTRUCTION

TOWER PROJECT FOR BHUTAN TELECOM

CONSULTANT:
Principle ACS Engineering India Pvt. Ltd.
Hyderabad, India
Principle ACS Audits, Engineering And Services

REV.	DATE	REVISION & DESCRIPTION	DRAWN	CHCK'D	APPR.
0					
0					
0					
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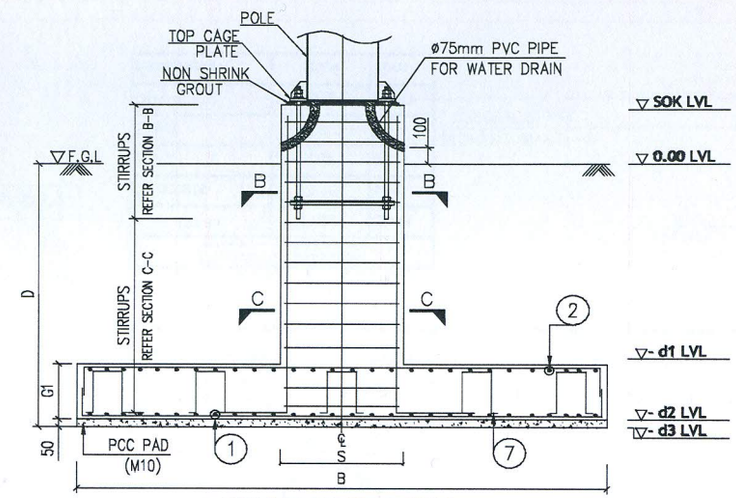
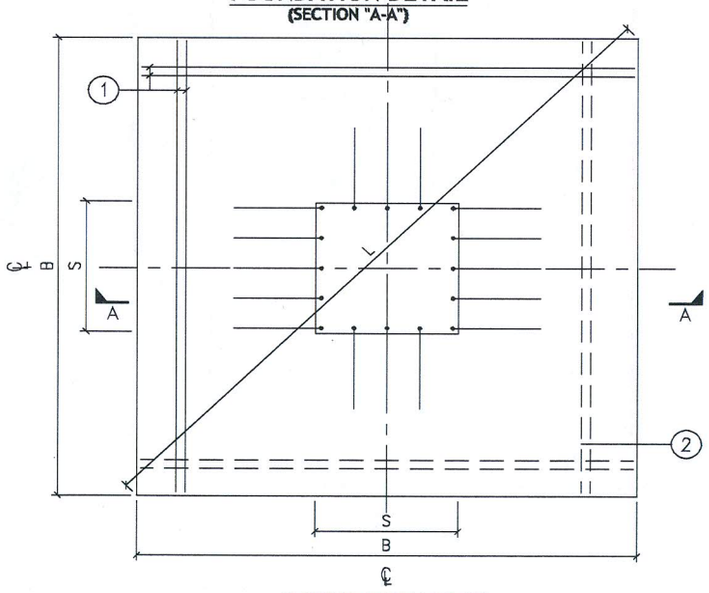
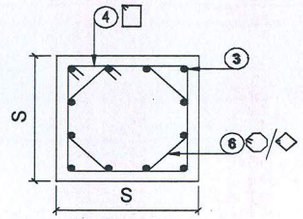
DRAWN	D.DAS	SPAR 156SJ			
CHECKED AND VERIFIED	A.B	LA & ANTENNA DETAILS			
APPROVED	M.S	SCALE – 1:40	SHEET	REV.	SIZE
DATE	06.02.21	2021-PACS-SPAR 156SJ-FAB-006	1 OF 1	0	A3



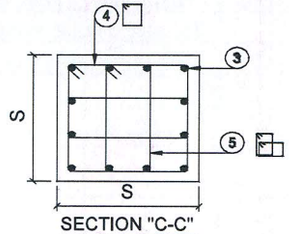
FOUNDATION DETAIL
(SECTION "A-A")



FOUNDATION PLAN
(SHOWING BOTTOM & TOP REINFORCEMENT DETAILS)



SECTION "B-B"



SECTION "C-C"

Dimensions	
L	3.748 m
B	2.650 m
S	0.850 m
D	1.750 m
d1	1.450 m
d2	1.450 m
d3	1.700 m
SOK lvl	0.500 m
Section B-B	600 mm
Section C-C	1530 mm

Assumed parameters considered in foundation design:
Allowable Net safe bearing capacity (NSBC) ≥ 10 T/m)
Ground water level : : Nil
Depth of foundation : 1.75m
material ≥ 1600 kg/m
Frustum angle ≥ 10 deg.
Density of back filling

Notes on foundation drawing:

- This is a generic foundation drawing.
- Before commencement of construction work using these designs, the owner/client/civil contractor shall carry out detailed soil investigation of every site.
  Further, the soil investigation report shall be reviewed by a consultant and certification shall be obtained to ensure conformity between assumed parameters and soil report values before start of construction.
- The foundation design is applicable only when the assumed SBC is available at (or) within the 1.75m depth from E.G.L. Inboth cases the minimum foundation depth shall be 1.75m from E.G.L.
- In case the required SBC is not available at/beyond 1.75m depth, this foundation design does not stand applicable.
- This foundation design shall not be used in case of organic silt, organic clay or peat layers are found upto depth "2b" from founding level during soil investigation (where b= pad/raft width).
- This foundation design shall not be adopted at sites where soil is subjected to ground improvements/Liquefaction.In this case special foundation shall be done.
- In case ground water table is found within the foundation depth. This foundation design does not stand applicable.

ICON Power Solution Pvt Ltd

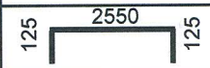
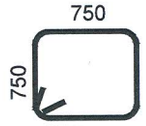
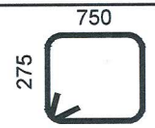
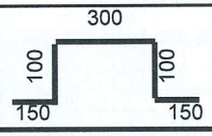
DRN BY.	CHD BY.	APD BY.	SCALE	NTS
xxxx	xxxx	xxx	PROJ.	

TITLE :- 15 Mtr. Foundation Drawing

DRG.NO:- MONOPOLE-15Mtr-001.05 SHEET NO:-

REV. NO.	00	REV. DATE	29.10.2020	AUTH. SIG.	

BAR BENDING SCHEDULE

#	Shape of Bar	Length of Bar (mm)	Dia. of Bar (mm)	Spacing (mm)	No.of Bars	Unit Weight	Total Weight per Pole
1		2800	12	130	42	0.89	104.7
2		2800	12	250	24	0.89	59.8
3		2800	20	-	12	2.47	83.0
4		3200	8	150	15	0.39	18.7
5		2250	8		44	0.39	38.6
6		2600	8	150	5	0.39	5.1
7		800	12	750	16	0.89	11.4

Weight of steel (kg)	321.3
Wastage and splices (kg)	16.1
Total Steel Quantity (kg)	337.3

Foundation Quantity

Items	Pole	Units
Concrete	3.16	cum
PCC	0.4	cum
Steel	337.3	kg
Shuttering	9.3	sq.m
Excavation	23.4	cum

ICON Power Solution Pvt Ltd

DRN BY.	CHD BY.	APD BY.	SCALE	NTS
xxxx	xxxx	xxx	PROJ.	

TITLE :- 15 Mtr. Foundation (Bar Bending)

DRG.NO:- MONOPOLE-15Mtr-001.05.1 SHEET NO:-

REV. NO.	00	REV. DATE	29.10.2020	AUTH. SIG.	