

HUNTER WATER CORPORATION

MEREWETHER - COMMUNICATION TOWER

STRUCTURAL DESIGN



LOCALITY PLAN
NOT TO SCALE

DRAWING LIST:

- 16017-001 COVER SHEET, LOCALITY PLAN AND DRAWING LIST
- 16017-002 BEFORE AND AFTER PERSPECTIVES
- 16017-007 GENERAL ARRANGEMENT PLAN
- 16017-008 GENERAL ARRANGEMENT WITH SURVEY AND UNDERGROUND SERVICES PLAN
- 16017-009 CONCRETE GROUND SLAB, PIT AND SECURITY FENCE ARRANGEMENT AND DETAILS
- 16017-010 TYPICAL DETAILS
- 16017-011 ROCLA POLE ELEVATION VIEW
- 16017-012 HEADFRAME ARRANGEMENT
- 16017-013 HEADFRAME DETAILS
- 16017-014 HEADFRAME MATERIAL LIST

DESIGNED: HR		DATE: 07/12/20	COMPANY: GHD PTY LTD	TITLE: CS04.99
DRAWN: AK		DATE: 07/12/20	COMPANY: GHD PTY LTD	MEREWETHER - COMMUNICATION TOWER STRUCTURAL DESIGN
CHECKED: KR		DATE: 07/12/20	COMPANY: GHD PTY LTD	STRUCTURAL DESIGN
APPROVED: NM		DATE: 07/12/20	COMPANY: GHD PTY LTD	COVER SHEET, LOCALITY PLAN AND DRAWING LIST
INDEX No.	SCALE: NTS	SIZE: A3	DRAWING No.	16017
SHEET	001	REV No.	01	

CONSTRUCTION ISSUE

CONSULTANT DETAILS:



Level 3 GHD Tower 24 Honesdale Drive
Northcote NSW 2150
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E email@ghd.com.au
www.ghd.com.au

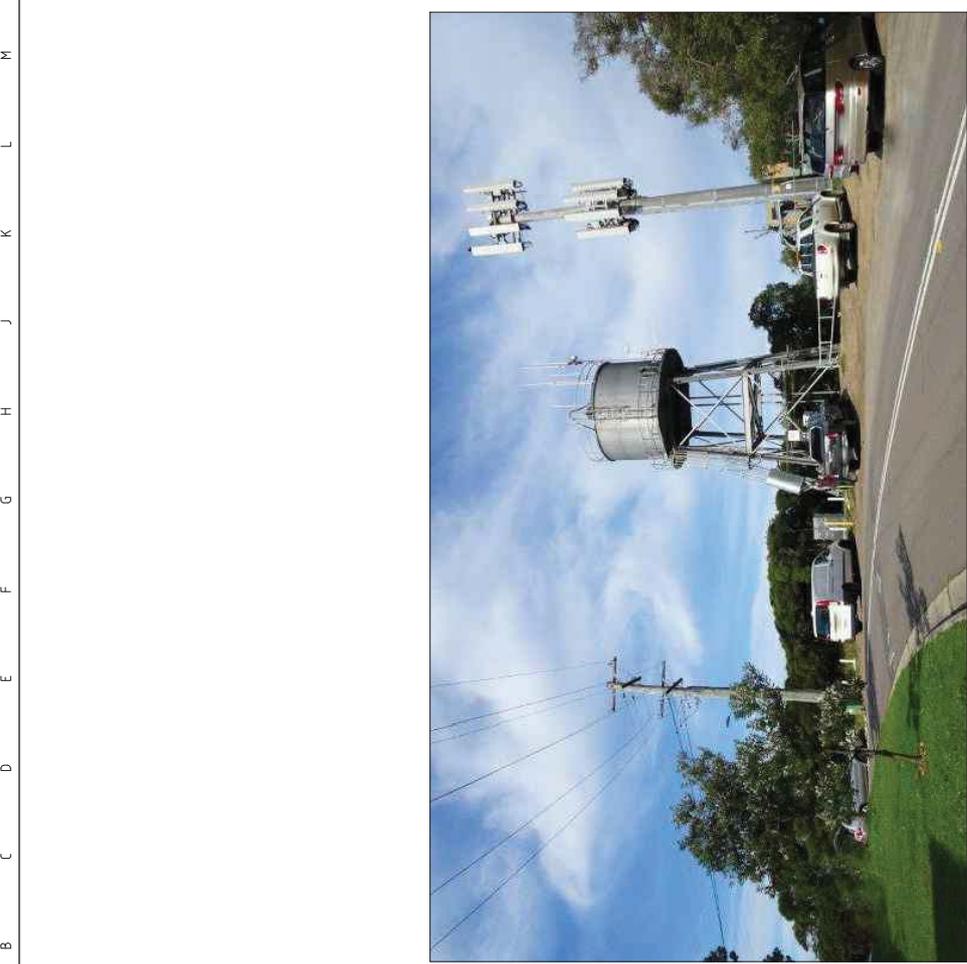
12525175

No.	REVISION DETAILS	DWN	DATE
1	RE-ISSUED FOR CONSTRUCTION	SPB	11/05/21
0	CONSTRUCTION ISSUE	AK	07/12/20





PERSPECTIVE: HICKSON ST., LOOKING SOUTH
BEFORE



PERSPECTIVE: HICKSON ST., LOOKING SOUTH
AFTER

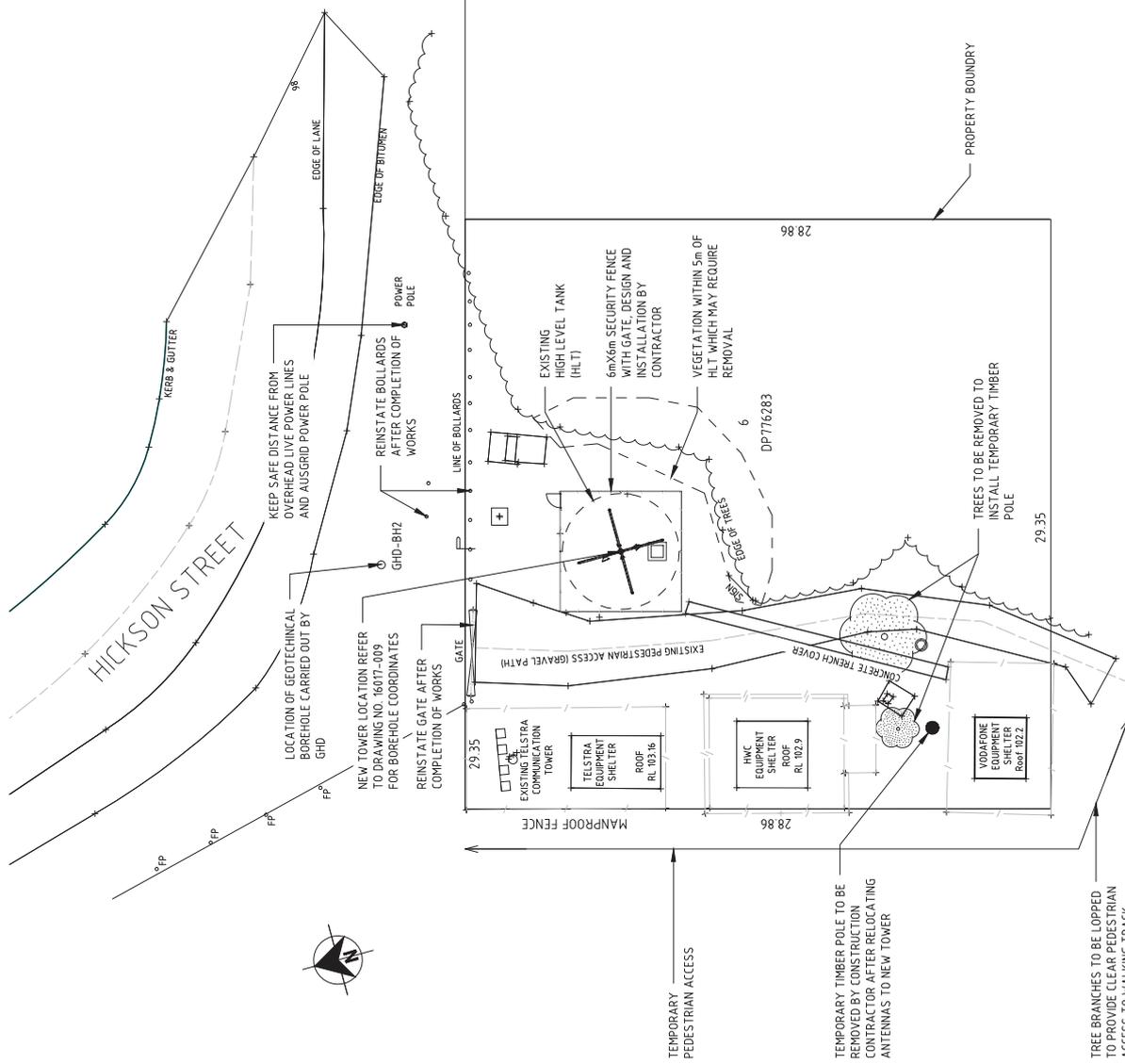
CONSTRUCTION ISSUE

DESIGNED: HR		DATE: 30/06/20	COMPANY: GHD PTY LTD	TITLE: CS04.99
DRAWN: AK		DATE: 07/12/20	COMPANY: GHD PTY LTD	MEREWETHER - COMMUNICATION TOWER STRUCTURAL DESIGN
CHECKED: KR		DATE: 07/12/20	COMPANY: GHD PTY LTD	STRUCTURAL DESIGN
APPROVED: NM		DATE: 07/12/20	COMPANY: GHD PTY LTD	BEFORE AND AFTER PERSPECTIVES
INDEX No.		SCALE: NTS	SIZE: A3	DRAWING No. 16.017
SHEET		REV No.		002
002		16.017		02

CONSULTANT DETAILS:	
Level 13 GHD Tower 24 Honesdale Drive Northcote NSW 2150 T 61 2 9579 9998 F 61 2 9475 0725 E enquiry@ghd.com.au WWW.GHD.COM.AU	
SPB 08/06/21	
SPB 17/05/21	
AK 07/12/20	
DWN	DATE
	12525175



NOTE:
 1. ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATIONS.
 2. FOR EXISTING AND NEW UNDERGROUND SERVICES REFER TO DRAWING NO. 16017-008.



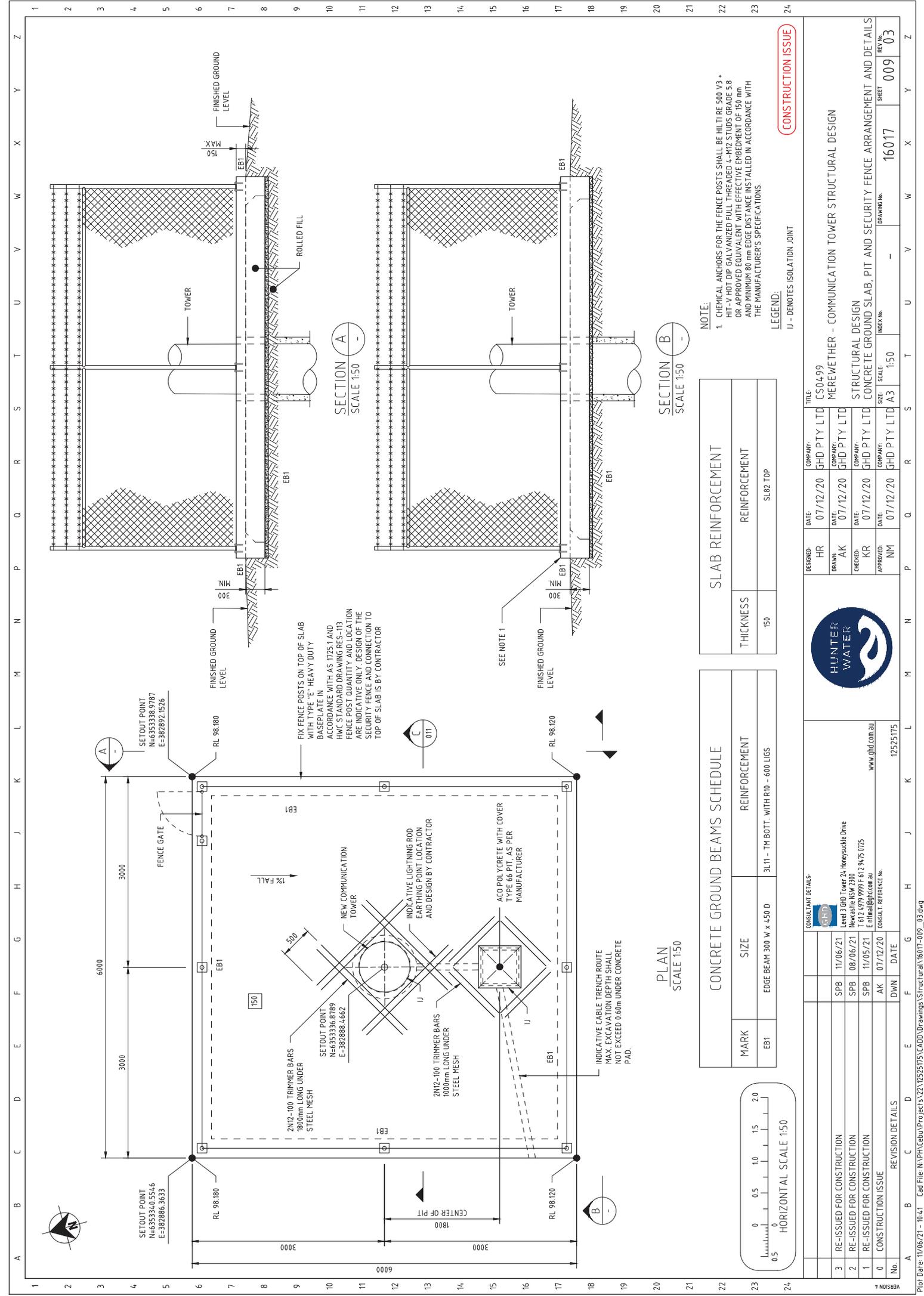
NEW SITE PLAN
 SCALE 1:250

CONSTRUCTION ISSUE

REVISION		REVISION DETAILS		DWN		DATE		CONSULTANT REFERENCE No.	
No.									
3	RE-ISSUED FOR CONSTRUCTION	SPB	08/06/21	CONSULTANT DETAILS: GHD Level 13 GHD Tower 24 Hongjiajie Drive North Sydney NSW 2260 T 61 2 959 9998 F 61 2 9475 9725 E ghd@ghd.com.au www.ghd.com.au					
2	RE-ISSUED FOR CONSTRUCTION	SPB	11/05/21						
1	RE-ISSUED FOR CONSTRUCTION	SPB	16/12/20						
0	CONSTRUCTION ISSUE	AK	07/12/20						

DESIGNED	DATE	COMPANY	TITLE
HR	30/06/20	GHD PTY LTD	CS0499
DRAWN	DATE	COMPANY	
AK	07/12/20	GHD PTY LTD	MEREWETHER - COMMUNICATION TOWER STRUCTURAL DESIGN
CHECKED	DATE	COMPANY	
KR	07/12/20	GHD PTY LTD	STRUCTURAL DESIGN
APPROVED	DATE	COMPANY	
NM	07/12/20	GHD PTY LTD	GENERAL ARRANGEMENT PLAN

INDEX No.	SCALE	SIZE	DRAWING No.	SHEET	REV No.
-	1:250	A3	16017	007	03



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SLAB REINFORCEMENT

THICKNESS	150
REINFORCEMENT	SL.82 TOP

CONCRETE GROUND BEAMS SCHEDULE

MARK	EB1	SIZE	EDGE BEAM 300 W x 450 D	REINFORCEMENT	3L11 - TM-BOTT. WITH R10 - 600 LIGS
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REVISION DETAILS

No.	REVISION DETAILS	DWN	DATE
3	RE-ISSUED FOR CONSTRUCTION	SPB	11/06/21
2	RE-ISSUED FOR CONSTRUCTION	SPB	08/06/21
1	RE-ISSUED FOR CONSTRUCTION	SPB	11/05/21
0	CONSTRUCTION ISSUE	AK	07/12/20

CONSTRUCTION ISSUE

INDEX No. 150
SCALE: 1:50
DRAWING No. 16017
SHEET 009
REV No. 03

LEGEND:
I/- DENOTES ISOLATION JOINT

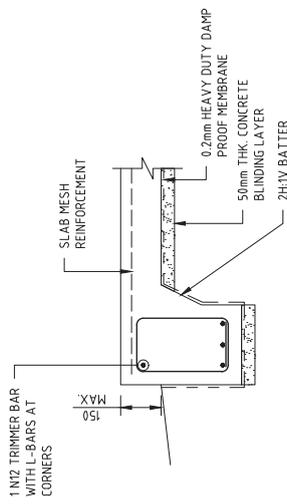
NOTE:
1. CHEMICAL ANCHORS FOR THE FENCE POSTS SHALL BE HILTI RE 500 V3 - HIT-UV HOT DIP GALVANIZED FULL THREADED M12 SLUGS GRADE 5.8 OR APPROVED EQUIVALENT WITH EFFECTIVE EMBEDMENT OF 150 mm AND MINIMUM 80 mm EDGE DISTANCE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

DESIGNED HR 07/12/20
DRAWN AK 07/12/20
CHECKED KR 07/12/20
APPROVED NM 07/12/20

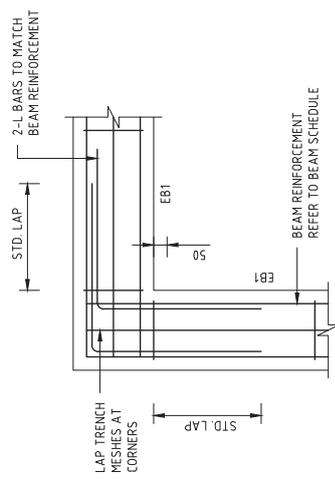
COMPANY: GHD PTY LTD
DATE: 07/12/20
SCALE: 1:50

CONSULTANT DETAILS:
GHD
Level 13, 100 Tower 24, Honga Road, Drive
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WWW.GHD.COM.AU

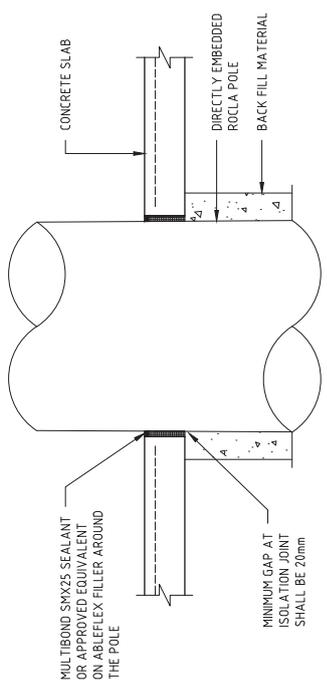
TITLE: CS04.99
COMPANY: GHD PTY LTD
DATE: 07/12/20
SCALE: 1:50
INDEX No.: 150
DRAWING No.: 16017
SHEET: 009
REV No.: 03



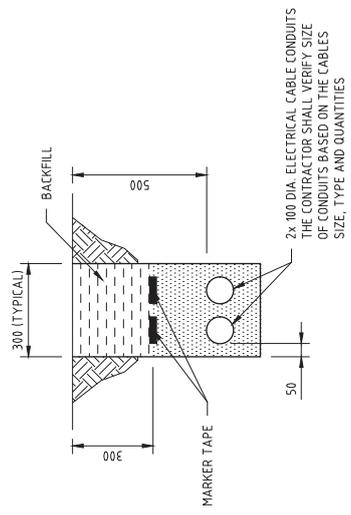
TYPICAL EDGE BEAM (EB1) DETAIL
SCALE 1:20



TYPICAL CORNER FOOTING
REINFORCEMENT DETAIL
SCALE 1:20



ISOLATION JOINT (IJ) DETAIL
SCALE 1:20



TYPICAL TRENCHED CONDUITS DETAIL
SCALE 1:20

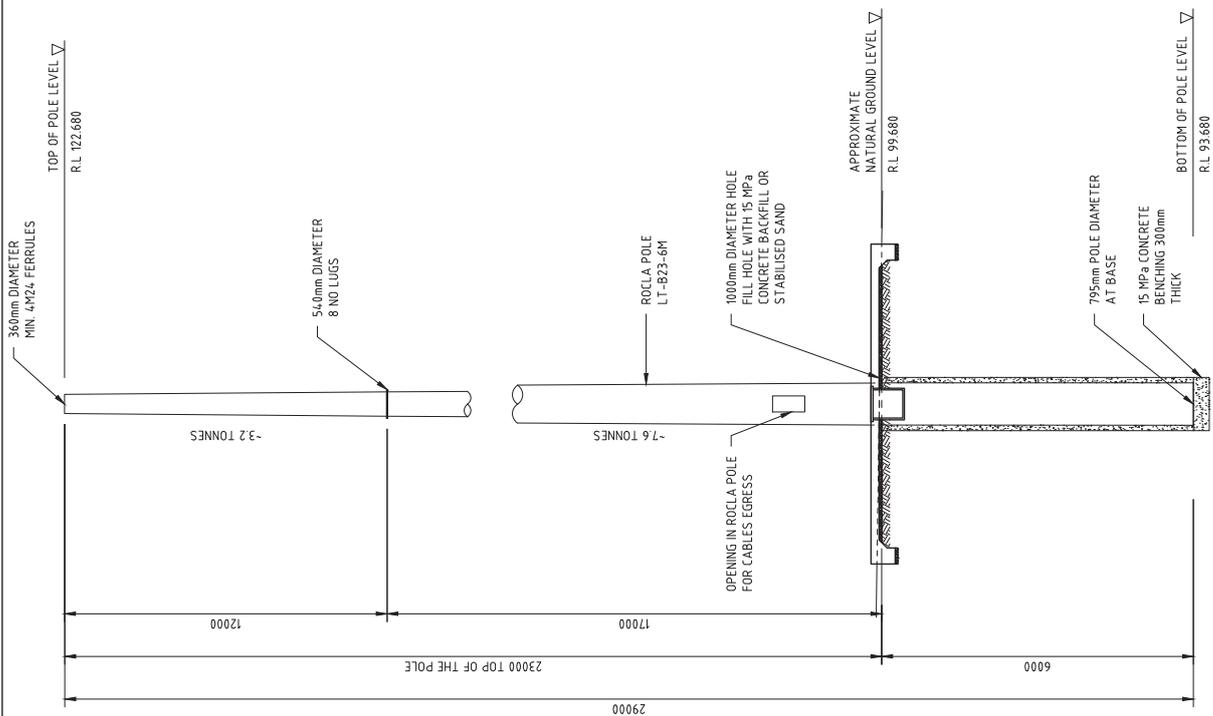


CONSULTANT DETAILS:		GHD Level 13 GHD Tower 21 Hongkong Drive North Sydney NSW 1580 T 61 2 959 0998 F 61 2 9475 0725 E info@ghd.com.au WWW.GHD.COM.AU				TITLE CS04.99 MEREWETHER - COMMUNICATION TOWER STRUCTURAL DESIGN	
DESIGNED:	HR	DATE:	07/12/20	COMPANY:	GHD PTY LTD	SCALE:	1:20
DRAWN:	AK	DATE:	07/12/20	COMPANY:	GHD PTY LTD	INDEX No.	-
CHECKED:	KR	DATE:	07/12/20	COMPANY:	GHD PTY LTD	DRAWING No.	16017
APPROVED:	NM	DATE:	07/12/20	COMPANY:	GHD PTY LTD	SHEET	010
No.	0	REVISION DETAILS	DWN	DATE	11/05/21	REV No.	01
1	RE-ISSUED FOR CONSTRUCTION	SPB	AK	07/12/20			
0	CONSTRUCTION ISSUE	AK					

CONSTRUCTION ISSUE

NOTES:

- 1- THE POLE SHALL BE INSTALLED TO AN ORIENTATION TO ALLOW INSTALLATION OF THE HEADFRAME IN THE INDICATED ORIENTATION WITH CABLE OPENING AT THE BOTTOM NEAREST TO THE PIT. THE ORIENTATION OF TOP FERRULES SHALL ALLOW FOR CORRECT BEARING OF THE DISH ANTENNAS.
- 2- CABLE TRAY ROUTING AND ARRANGEMENT IS BY CONTRACTOR.
- 3- ALL CABLES SHALL BE ROUTED AND FIXED INSIDE THE POLE. ATTACHMENT OF CABLE TRAY OVER THE POLE IS NOT ALLOWED.
- 4- ACCESS TO THE HEADFRAME AND THE POLE IS ONLY POSSIBLE BY ELEVATED WORKING PLATFORM. ADDITION OF CLIMBING MEANS SUCH AS STEP BOLTS OR LADDERS ARE NOT ALLOWED.
- 5- THE BACKFILL AROUND THE POLE SHALL BE FLOWABLE STABILISED SAND OR BLINDING CONCRETE OF STRENGTH GREATER THAN THE CLAYEY SAND THAT IS REPLACED.
- 6- THE BACKFILL SHALL NOT ARCH BETWEEN THE POLE AND SIDE OF THE HOLE TO PREVENT CREATION OF VOIDS.
- 7- REFER TO GEOTECHNICAL REPORT NUMBER 12525175 FOR GEOTECHNICAL PROPERTIES OF THE SOIL. CONTRACTOR SHALL ALLOW FOR AN ON-SITE COMPETENT GEOTECHNICAL ENGINEER TO INSPECT THE ENCOUNTERED SOIL STRATA AND MATERIAL AND REPORT ANY DISCREPANCIES TO THE PRINCIPAL.
- 8- THE POLE SHALL BE TEMPORARILY SUPPORTED UNTIL THE BACKFILL GAINS REQUIRED STRENGTH. THE HEADFRAME SHALL ONLY BE INSTALLED AFTER THE TEMPORARY SUPPORTS ARE REMOVED. PLANNING AND DESIGN OF THE REQUIRED TEMPORARY WORKS ARE BY CONTRACTOR.
- 9- THE CONTRACTOR SHALL VERIFY THE NATURAL GROUND LEVEL SHOWN IN THIS DRAWING AT THE LOCATION OF THE POLE AND REPORT DISCREPANCIES.



SECTION C
SCALE 1:100
NOTE: FENCE NOT SHOWN FOR CLARITY

CONSTRUCTION ISSUE

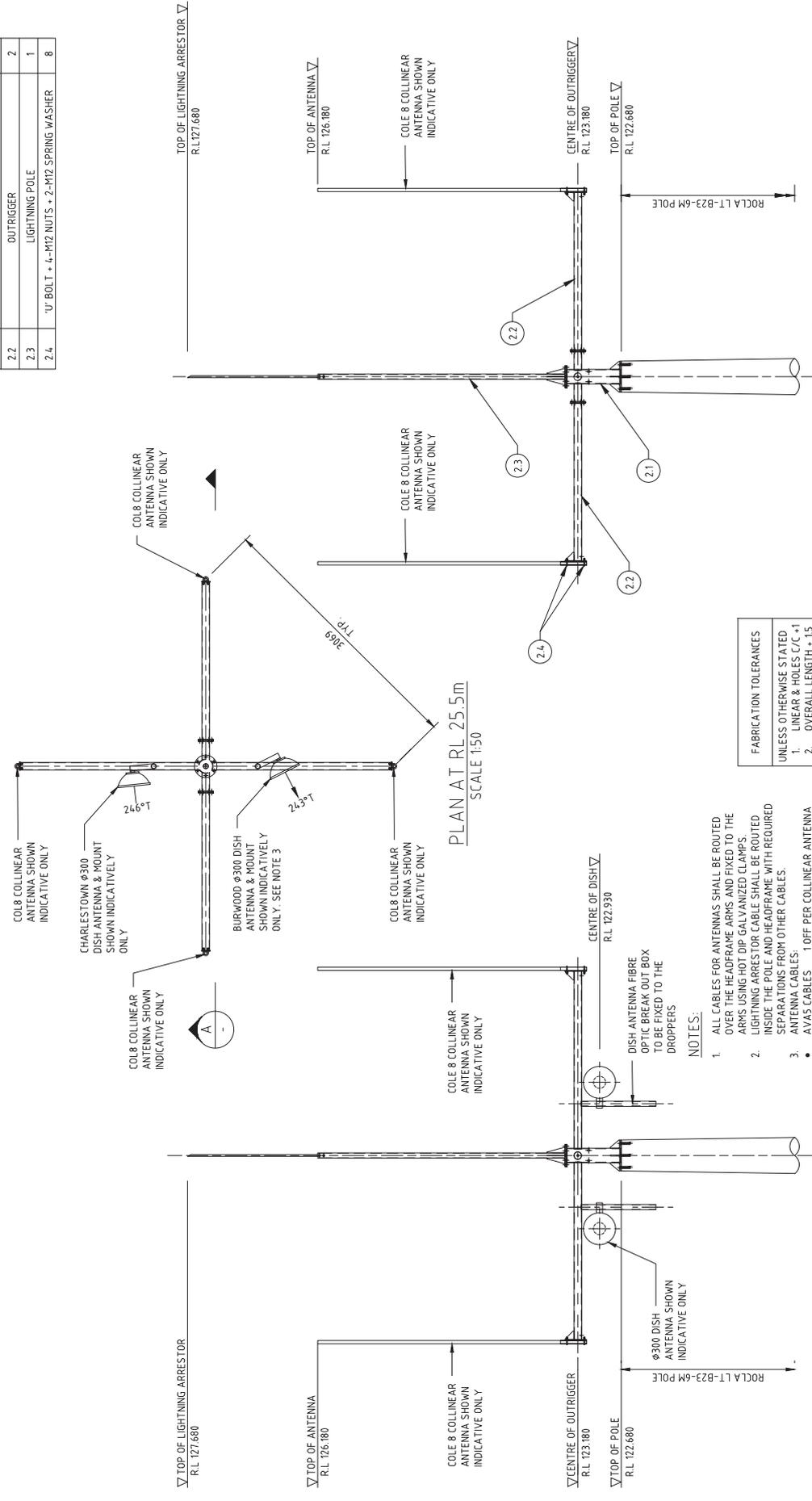
DESIGNED: HR		DATE: 07/12/20	COMPANY: GHD PTY LTD	TITLE: CS04.99
DRAWN: AK		DATE: 07/12/20	COMPANY: GHD PTY LTD	MEREWETHER - COMMUNICATION TOWER STRUCTURAL DESIGN
CHECKED: KR		DATE: 07/12/20	COMPANY: GHD PTY LTD	STRUCTURAL DESIGN
APPROVED: NM		DATE: 07/12/20	COMPANY: GHD PTY LTD	ROCLA POLE ELEVATION VIEW
INDEX No.		SCALE: 1:100	DRAWING No.	SHEET
12525175			16017	011
REVISION No.		REVISION DETAILS		REV No.
0		CONSTRUCTION ISSUE		03



CONSULTANT DETAILS
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SPB	08/06/21	RE-ISSUED FOR CONSTRUCTION
SPB	11/05/21	RE-ISSUED FOR CONSTRUCTION
SPB	16/12/20	RE-ISSUED FOR CONSTRUCTION
AK	07/12/20	CONSTRUCTION ISSUE

ITEM	DESCRIPTION	QTY
2.1	MOUNTING FRAME	1
2.2	OUTRIGGER	2
2.3	LIGHTNING POLE	1
2.4	"U" BOLT + 4-M12 NUTS + 2-M12 SPRING WASHER	8



FABRICATION TOLERANCES

UNLESS OTHERWISE STATED

1. LINEAR & HOLES C/C +1
2. OVERALL LENGTH +15
3. HOLE DIA. +0.5
4. ANGULAR + 30°

SECTION A
SCALE 1:50

WEST ELEVATION
SCALE 1:50

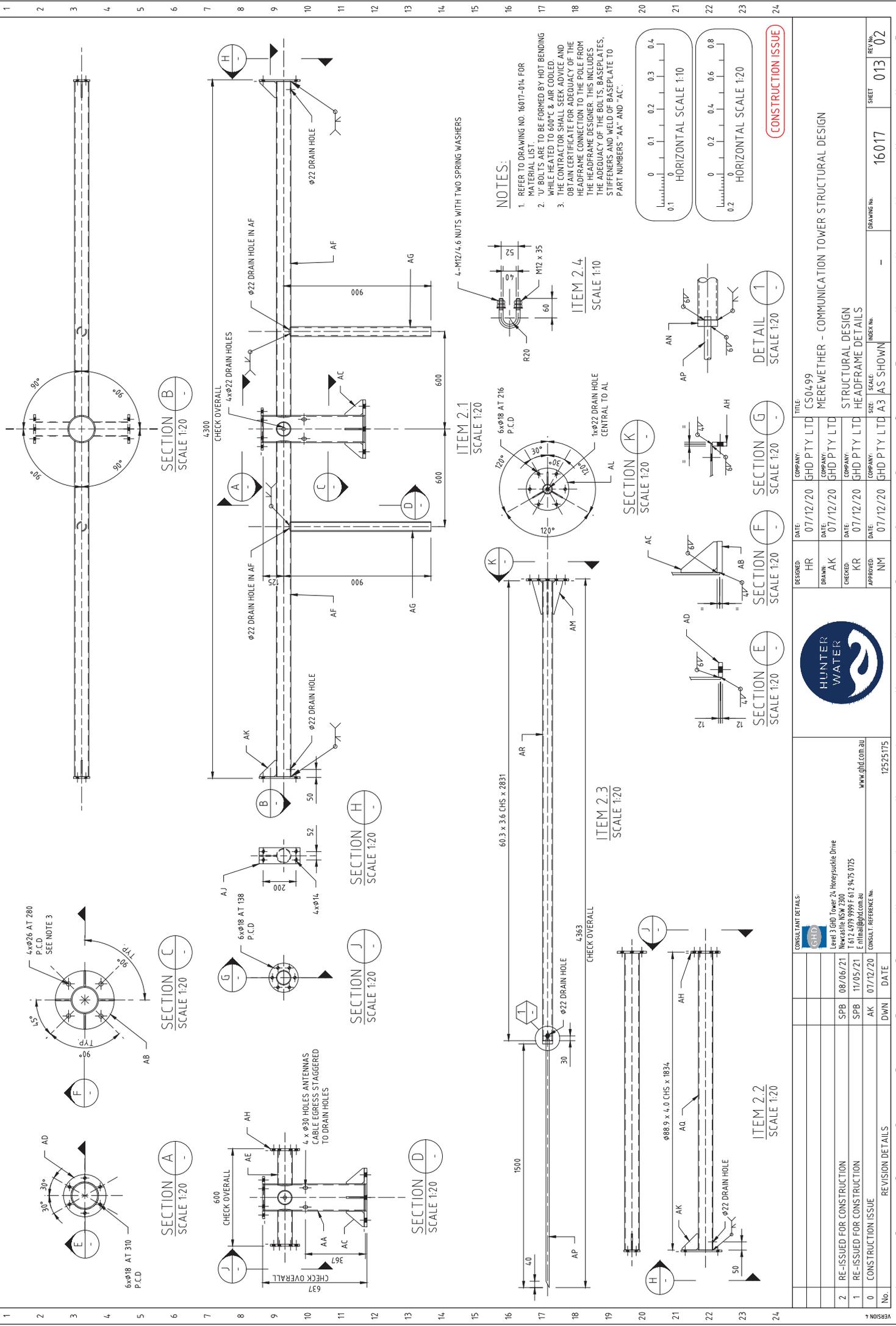


- NOTES:**
1. ALL CABLES FOR ANTENNAS SHALL BE ROUTED OVER THE HEADFRAME ARMS AND FIXED TO THE ARMS USING HOT DIP GALVANIZED CLAMPS.
 2. LIGHTNING ARRESTOR CABLE SHALL BE ROUTED INSIDE THE POLE AND HEADFRAME WITH REQUIRED SEPARATIONS FROM OTHER CABLES.
 3. ANTENNA CABLES:
 - AVAS CABLES 1 OFF PER COLLINEAR ANTENNA
 - CAT 5 CABLES 2 OFF PER DISH ANTENNA
 4. INSTALLATION OF BURWOOD DISH WILL BE BY OTHERS AND IS NOT PART OF THIS SCOPE. INSTALLATION AND ROUTING OF ALL CABLES INCLUDING CABLES FOR THIS DISH IS PART OF THIS SCOPE.
 5. DE TAILED SHOP DRAWINGS SHALL BE PREPARED BY CONTRACTOR AND SUBMITTED TO THE PRINCIPAL FOR REVIEW AND COMMENT PRIOR TO FABRICATION OF THE HEADFRAME. FOR PROTECTIVE COATING OF THE HEADFRAME STEEL STRUCTURE REFER TO PROJECT SPECIFICATIONS.

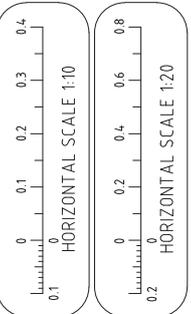
SITE BOLTS:
ARM CONNECTIONS:

- M16x60 LONG 8.8/TB HOT DIP GALVANIZED BOLTS WITH FLAT WASHERS AND TWO NUTS--18 FASTENER ASSEMBLIES REQUIRED
- M24 8.8/S HOT DIP GALVANIZED BOLTS WITH FLAT WASHERS TO SUIT FERROULES - 4 FASTENER ASSEMBLIES REQUIRED

		CONSULTANT DETAILS GHD Level 13, 100 Tower 24, Monaghan Drive North Sydney NSW 2060 T 61 2 959 9998 F 61 2 9475 9725 E ghd@ghd.com.au WWW.GHD.COM.AU		DESIGNED: HR DRAWN: AK CHECKED: KR APPROVED: NM		DATE: 07/12/20 DATE: 07/12/20 DATE: 07/12/20 DATE: 07/12/20		COMPANY: GHD PTY LTD COMPANY: GHD PTY LTD COMPANY: GHD PTY LTD COMPANY: GHD PTY LTD		TITLE: CS04.99 PROJECT: MEREWETHER - COMMUNICATION TOWER STRUCTURAL DESIGN STRUCTURAL DESIGN HEADFRAME ARRANGEMENT		SCALE: 1:50 INDEX No.: - DRAWING No.: 16017		SHEET: 012 REV No.: 03	
<p style="text-align: center;">CONSTRUCTION ISSUE</p>															



- NOTES:**
- REFER TO DRAWING NO. 16017-014 FOR MATERIAL LIST
 - ALL BOLTS ARE TO BE FORMED BY HOT BENDING WHILE HEATED TO 800°C & AIR COOLED
 - THE CONTRACTOR SHALL SEEK ADVICE AND OBTAIN CERTIFICATE FOR ADEQUACY OF THE HEADFRAME CONNECTION TO THE POLE FROM THE ADEQUATE DESIGNER. THIS INCLUDES STIFFENERS AND WELD OF BASEPLATE TO PART NUMBERS "AK" AND "AC".



CONSTRUCTION ISSUE

REVISION No.	REVISION DETAILS	DWN	DATE	CONSULTANT DETAILS:	DESIGNED:	DATE:	COMPANY:	TITLE:
2	RE-ISSUED FOR CONSTRUCTION	SPB	08/06/21	Level 13, 140, Tower 20, Hongyuan Drive, No. 16, KSW 7300, Singapore	HR	07/12/20	GHD PTY LTD	CS04.99
1	RE-ISSUED FOR CONSTRUCTION	SPB	11/05/21	T 61 2 679 999 F 61 7 91 75 075 E email@ghd.com.au www.ghd.com.au	AK	07/12/20	GHD PTY LTD	MEREWETHER - COMMUNICATION TOWER STRUCTURAL DESIGN
0	CONSTRUCTION ISSUE	SPB	07/12/20		KR	07/12/20	GHD PTY LTD	STRUCTURAL DESIGN HEADFRAME DETAILS
		DWN	DATE	CONSULT - REFERENCE No.	APPROVED:	DATE:	COMPANY:	
					NM	07/12/20	GHD PTY LTD	