

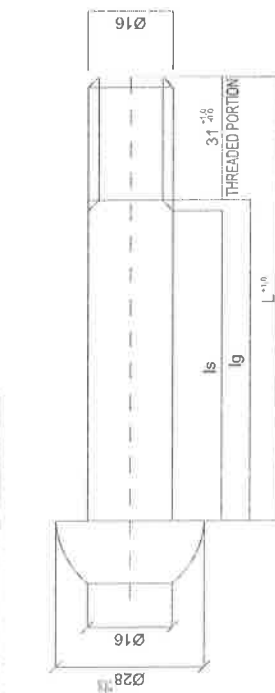


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CERT.				
CHKD.	A.Ashery			
DESCRIPTION	Issued For Approval			
BY	Wael			
DATE	30-04-2020			
NO.	00			
REVISIONS				
DRAWN				
BY	Wael			
DATE	April 2020			
CHECKED				
BY	A.Ashery			
DATE	April 2020			
OPRG. DEPT.				
BY				
DATE				
ENG'G. DEPT.				
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CERTIFIED				
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DATE				

* LENGTH TABLE OF THE BOLT													
SIZE OF BOLT	L	LT	L-S	ALLOWABLE CLAMPING			THICKNESS			EXT.			REMARKS
							WASHER	NUT	PAL				
M16	40	31	9	5	-	9	4	15	5	7	-	11	
	45	31	14	10	-	14	4	15	5	7	-	11	
	50	31	19	15	-	19	4	15	5	7	-	11	
	55	31	24	20	-	24	4	15	5	7	-	11	
	60	31	29	25	-	29	4	15	5	7	-	11	
	65	31	34	30	-	34	4	15	5	7	-	11	
	70	31	39	35	-	39	4	15	5	7	-	11	
	75	31	44	40	-	44	4	15	5	7	-	11	
	80	31	49	45	-	49	4	15	5	7	-	11	
	85	31	54	50	-	54	4	15	5	7	-	11	
	90	31	59	55	-	59	4	15	5	7	-	11	
	95	31	64	60	-	64	4	15	5	7	-	11	
	100	31	69	65	-	69	4	15	5	7	-	11	
M20	50	36	14	10	-	14	4	18	6	8	-	12	
	55	36	19	15	-	19	4	18	6	8	-	12	
	60	36	24	20	-	24	4	18	6	8	-	12	
	65	36	29	25	-	29	4	18	6	8	-	12	
	70	36	34	30	-	34	4	18	6	8	-	12	
	75	36	39	35	-	39	4	18	6	8	-	12	
	80	36	44	40	-	44	4	18	6	8	-	12	
	85	36	49	45	-	49	4	18	6	8	-	12	
	90	36	54	50	-	54	4	18	6	8	-	12	
	95	36	59	55	-	59	4	18	6	8	-	12	
	100	36	64	60	-	64	4	18	6	8	-	12	
	105	36	69	65	-	69	4	18	6	8	-	12	
M24	50	41	9	5	-	9	4	21	7	9	-	13	
	55	41	14	10	-	14	4	21	7	9	-	13	
	60	41	19	15	-	19	4	21	7	9	-	13	
	65	41	24	20	-	24	4	21	7	9	-	13	
	70	41	29	25	-	29	4	21	7	9	-	13	
	75	41	34	30	-	34	4	21	7	9	-	13	
	80	41	39	35	-	39	4	21	7	9	-	13	
	85	41	44	40	-	44	4	21	7	9	-	13	
	90	41	49	45	-	49	4	21	7	9	-	13	

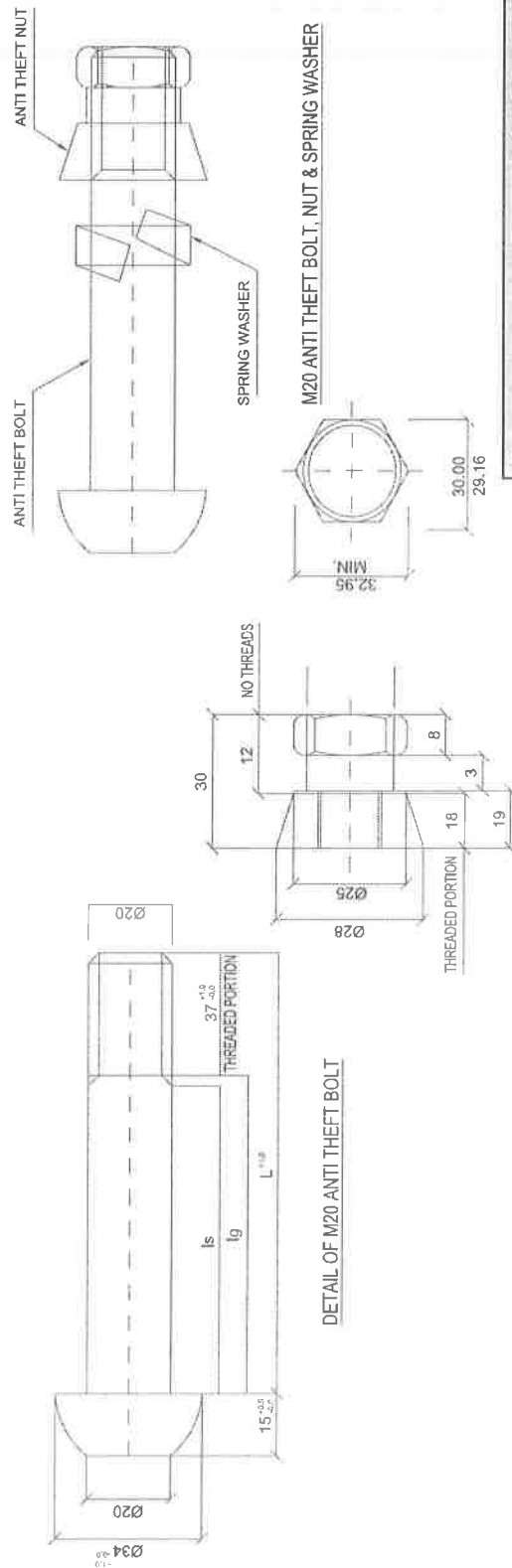
AS BUILT BY	NCC	DATE :	30-04-2020	DRAWING CONTROL	SHEET EE-600832	
DRAWING TITLE		INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	REV. NO.
BOLTS GRIP CHART FOR M16, M20 & M24		A	HA322	EE-601070	02 OF 02	00
380kV OHTL BETWEEN SHEDGUM-2 380/115kV BSP AND ENERGY INDUSTRIAL CITY (EIC) 380/115kV BSP		JOB ORDER NO. 3-1813001.04		CONTRACT NO. 4400011875		
ABQAIQ	SAUDI ARABIA					

THIS DRAWING IS NOT BE USED FOR CONSTRUCTION OF FOR ORDERING MATERIAL UNTIL CERTIFIED AND



Technical drawing of a bolt head and threaded portion. The drawing shows a cross-section of a bolt. The head is a hexagon with a width of 18 mm (labeled Ø18) and a height of 7 mm. The threaded portion has a major diameter of 23 mm (labeled Ø23) and a minor diameter of 20 mm (labeled Ø20). The total length of the bolt is 25 mm. The head has a thickness of 11 mm. The threaded portion has a length of 14 mm. The bolt is labeled "NO THREADS" and "THREADED PORTION".

Technical drawing of a hexagonal nut. The drawing shows a top view of the nut with a central hole. The outer hexagonal shape has a width of 24.00. The inner circular hole has a diameter of 23.67. The distance from the center of the hole to the bottom flat surface of the hexagon is labeled as 26.75 MIN.



DETAIL OF M20 ANTI THEFT NUT

ANNEX#3-PR#50444

ANNEX#3A-PR#50444

ALL INFORMATION ARE IN ALL CAPS

- 4) **MAIN** AND **DB** :
CONNECTION BOLTS : ASTM A325M TYPE 1, OR EQUIVALENT
NOTES : ACC. TO ASTM A325M OR EQUIVALENT
 5) **ANCHT THRT BOLTS** : ACC. TO ASTM A325 (TYPE 1) OR EQUIVALENT
 6) **SPRING BOLTS** : DIN 127
QUALIFYING STANDARD
 7) **ROCK AND NUT** : ASTM F354 (MIN. STRENGTHS +53 MEGAPAS)
ROST
 8) **ANCHT THRT BOLTS** : ONE ANCHT THRT BOLT - ONE ANCHT THRT NUT
 9) **SPRING BOLTS** :
 ONE SET OF ANCHT THRT BOLT & NUT SHALL BE INSTALLED AT THE
 ONE POINT OF BRACING MEMBERS UP TO 5M FROM CHORD END LEVEL



ISSUED FOR APPROVAL

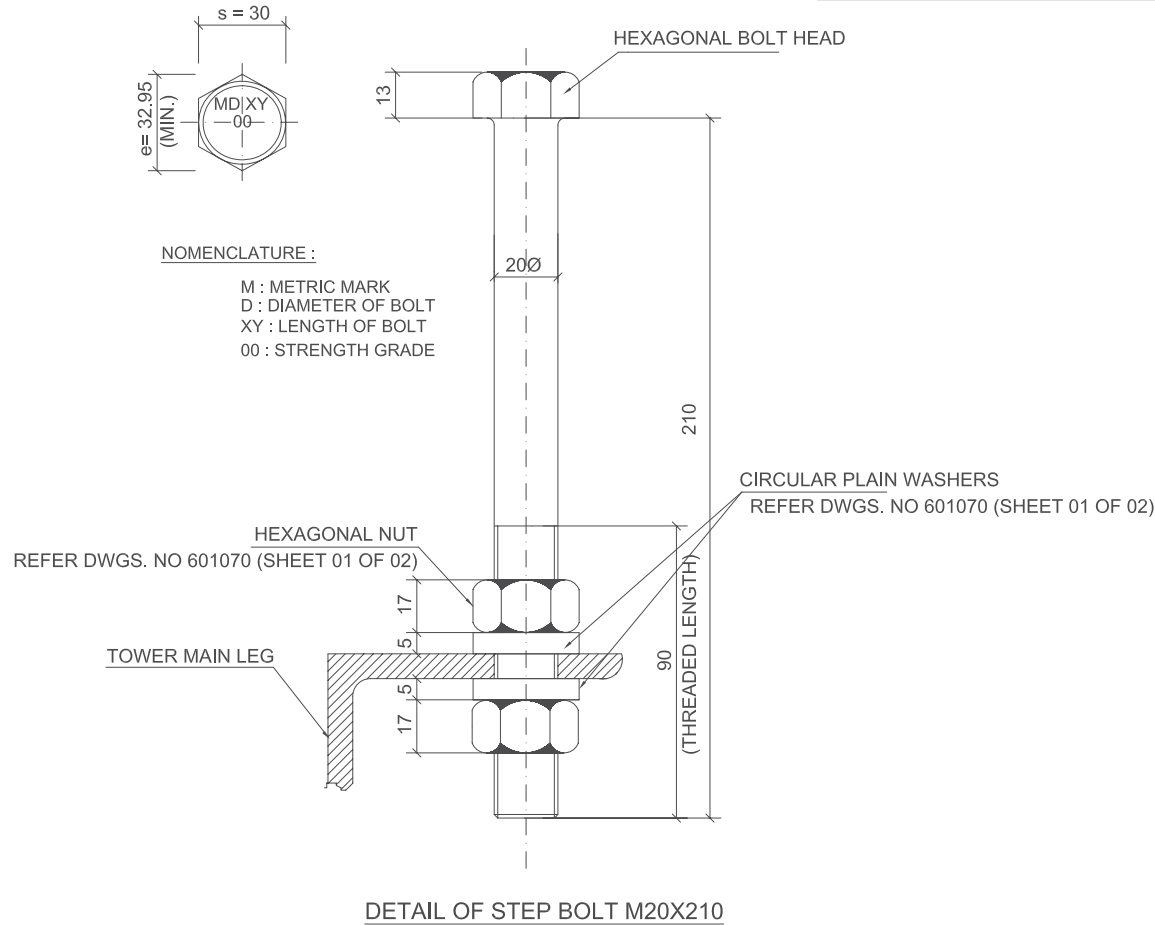
LEGEND

REFERENCE DRAWINGS		DATE	
SYMBOL TITLE	PROJECT NO.	DATE	DATE
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2. SECTION	10000		
3. ELEVATION	10000		
4. DETAIL	10000		
5. AS-BUILT	10000		
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الشركة السعودية للكهرباء
Saudi Electricity Company

[illegible]

ANNEX#2-PR#50444 (R.V)



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. MATERIALS
 - a) BOLT AND NUT : BOLTS : ASTM A304 TYPE 0 OR EQUIVALENT NUTS : ACC. TO ASTM A304 TYPE A OR EQUIVALENT
 - PLAIN WASHER : ASTM F436 OR EQ.
 - PL. NUT : DIN 7967
3. GALVANIZING STANDARD
 - a) BOLT AND NUT : ASTM 153. (MIN. THICKNESS = 53 MICRONS)
4. BOLT SET
 - a) STEP BOLT : ONE BOLT + TWO PLAIN WASHER + TWO NUT.
5. THE MINIMUM TIGHTENING TORQUE FOR BOLTS SHALL BE :
 - M16 = 120±20 N.M , M20 = 200±30 N.M



ISSUED FOR APPROVAL

LEGEND

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	EE-600832
PROJECT TECHNICAL SPECIFICATIONS	PTS-1803004

AS-BUILT BY: DATE:

REV. NO.	DATE	BY	DESCRIPTION	CHG.	CERT.	APPRO.
00	20-04-2020	MEHJUN	ISSUED FOR APPROVAL	WAEI	WAEI	WAEI

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MEHJUN CHECKED BY: WAEI SCALE: NTS
DATE STARTED: DATE COMPLETED:
OPNG. DEPT: ENG. DEPT:

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED APPROVAL/CERTIFICATION INFORMATION DOC. NO. REV. NO.

DETAILS OF M20X210 STEP BOLT
380KV OHTL BETWEEN SHEDGUM-2
380/115KV BSP ENERGY INDUSTRIAL CITY (EIC)

ABQAIQ SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1813001.04	M	HA322	EA-601071	01 OF 01	00

EDMS (VECTOR) RECA00