

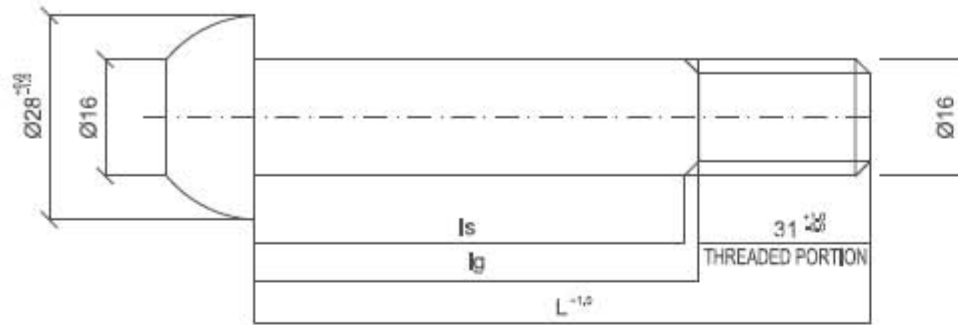




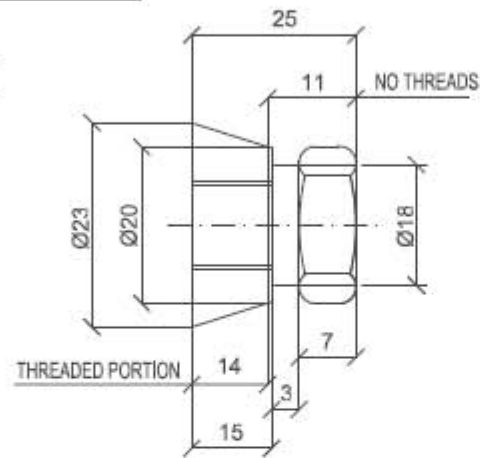
APPD.				
CERT.				
CHKD.	A.Ashery			
DESCRIPTION	Issued For Approval			
BY	Wael			
DATE	30-04-2020			
NO.	00			
REVISIONS				
DRAWN				
BY	Wael			
DATE	April 2020			
CHECKED				
BY	A.Ashery			
DATE	April 2020			
OPRG. DEPT.				
BY				
DATE				
ENG'G. DEPT.				
BY				
DATE				
CERTIFIED				
BY				
DATE				

* 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	

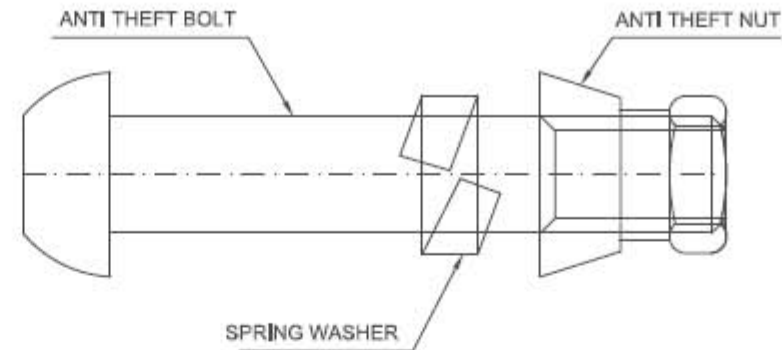
AS BUILT BY	NCC	DATE :	30-04-2020		DRAWING CONTROL		SHEET EE-600832	
DRAWING TITLE			INDEX	PLANT NO.	DRAWING NO.	SHEET NO.		REV. NO.
<u>BOLTS GRIP CHART FOR M16, M20 &amp; M24</u>			A	HA322	EE-601070	02 OF 02		00
<u>380kV OHTL BETWEEN SHEDGUM-2 380/115kV BSP AND ENERGY INDUSTRIAL CITY (EIC) 380/115kV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



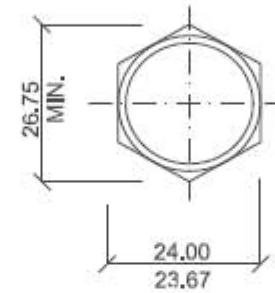
DETAIL OF M16 ANTI THEFT BOLT



DETAIL OF M16 ANTI THEFT NUT



M16 ANTI THEFT BOLT, NUT & SPRING WASHER



**ANNEX#3-PR#50444**

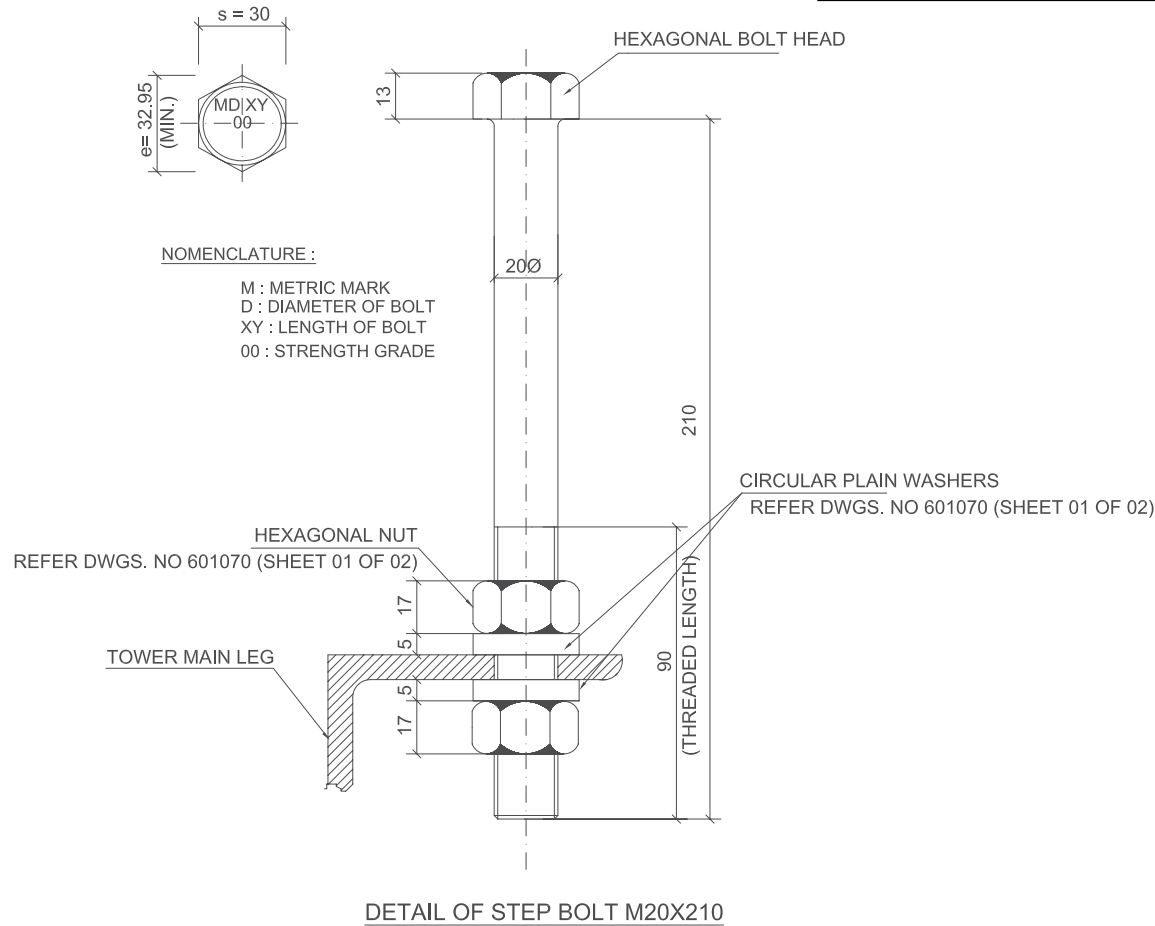
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. MATERIALS:
  - a) BOLT AND NUT : CONNECTION BOLTS : ASTM A325M TYPE 1 OR EQUIVALENT NUTS : ACC. TO ASTM A353 OR EQUIVALENT
  - b) ANTI THEFT BOLTS : ACC. TO ASTM A325 (TYPE 1) OR EQUIVALENT
  - c) SPRING WASHER : DEN 127
3. GALVANIZING STANDARD:
  - a) BOLT AND NUT : ASTM 155. (MIN. THICKNESS =53 MICRONS)
4. BOLT SET:
  - a) ANTI THEFT BOLT : ONE ANTI THEFT BOLT + ONE ANTI THEFT NUT + SPRING WASHER.
5. ONE SET OF ANTI THEFT BOLT & NUT SHALL BE INSTALLED AT THE END POINT OF BRACING MEMBER UP TO 5M FROM GROUND LEVEL.



ISSUED FOR APPROVAL

# 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	01

EDMS (VECTOR) RECA00