



**Kenya Electricity Transmission Company Limited**  
"Building a World Class National Grid"

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Phone: 020 4956000, 0719018000, 0732128000  
Web: www.ketraco.co.ke | email: info@ketraco.co.ke

Our ref: KETRACO/PT/017/2020

24<sup>th</sup> November, 2020

NOTICE TO ALL INTERESTED BIDDERS

**RE: TENDER ADDENDUM AND CLARIFICATION 2**

**TENDER FOR PROCUREMENT OF ANTI – THEFT BOLTS AND NUTS FOR ALL TRANSMISSION LINE TOWERS TENDER NUMBER KETRACO/PT/017/2020**

The following amendments are made to the specified provisions of the tender for procurement of Anti – Theft Bolts and Nuts for all Transmission Lines, Tender Number KETRACO/PT/017/2020. Save where expressly amended by the terms of this clarification, the Principal Tender Document shall continue to be in full force and effect.

Find herein the ADDENDUM and CLARIFICATION No. 2, consisting of TWO (2) pages into the Principal Tender Documents. This document should be returned along with dully filled Form of Tender.

S/NO	BIDDERS QUERY	KETRACO RESPONSE
1.	Kindly provide the drawings for 12MM, 16MM, 20MM & 24MM of Antitheft bolt nut and washer with dimensional detail so that we can submit tender accordingly	See the attached drawings for 12MM,16MM, 20MM and 24MM with actual dimensions.
2.	Kindly advise what ISO tolerance measurement you require for bolt, nut and Flat washer	See the attached drawings with actual dimensions and accepted tolerances.
3.	Kindly confirm one set of anti – theft bolt is = 1 bolt + 1 nut + 1 anti-theft nut + 1 flat washer.	One set of anti – theft bolt comprises of 1 anti-theft bolt +1 flat/spring washer + 1 anti-theft shear nut. The shear Nut comprise of two different pieces that is conical threaded section and a thin hexagonal type nut. Once the force applied to tighten the shear nut reaches the shear-off torque, the hexagon section snaps off, leaving only the conical section.  Photo of anti-theft bolt and shear nut attached.

Attached are the drawings and photos for antitheft bolts and nuts.

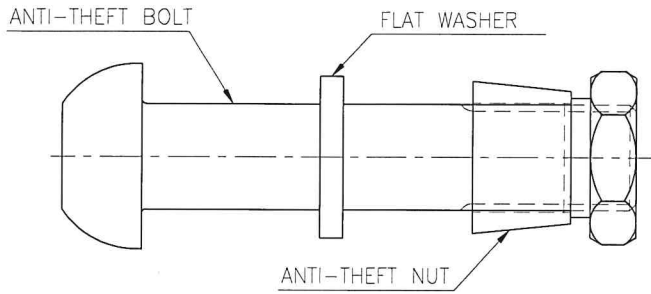
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For any clarifications, kindly email [fsuma@ketraco.co.ke](mailto:fsuma@ketraco.co.ke). [pkubasu@ketraco.co.ke](mailto:pkubasu@ketraco.co.ke).

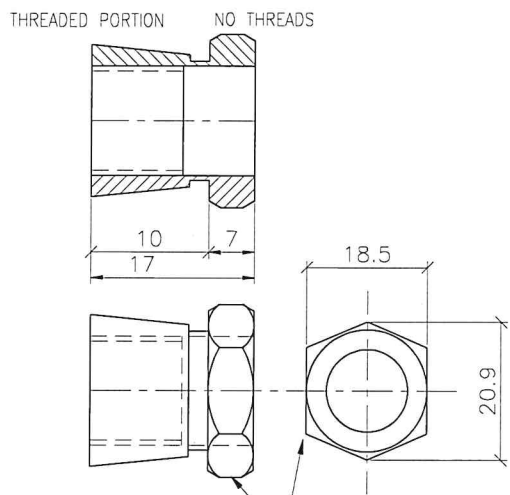
The Tender Closing Date shall remain as per the tender document. All other terms and conditions of the tender document remains the same.

A handwritten signature in blue ink, consisting of a series of loops and a long horizontal stroke extending to the right.

**PETER NJEHIA**  
**SENIOR MANAGER, SUPPLY CHAIN**

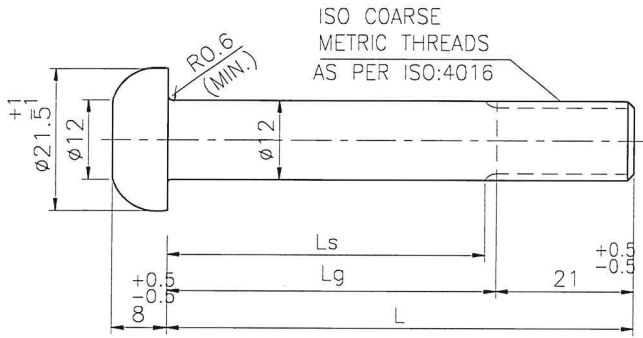


**ANTI THEFT BOLT & NUT & FLAT WASHER**  
Scale-1:5

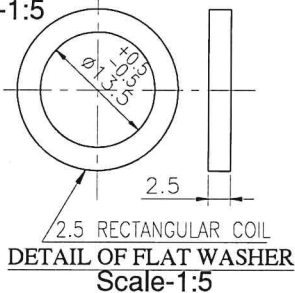


DIMENSION ARE AS PER ISO:398/4034

**DETAIL OF ANTI THEFT NUT**  
Scale-1:5




**DETAIL OF ANTI THEFT BOLT**  
Scale-1:5



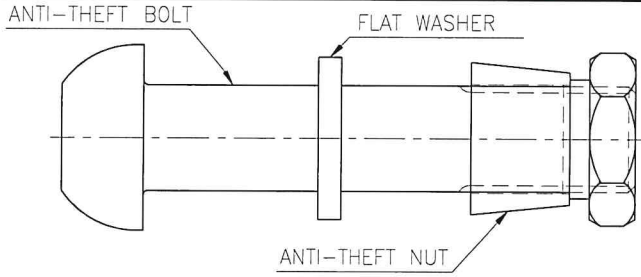
**DETAIL OF FLAT WASHER**  
Scale-1:5

- NOTES :-**
1. ALL DIMENSIONS ARE IN M.M.
  2. MATERIAL:- CONFORMING TO ISO 898 PROPERTY CLASS FOR BOLT 5.6 & FOR NUT-5.
  3. BOLT-NUT TO BE HOT DIP GALVANIZED AFTER MANUFACTURE AS PER ASTM A153 CLASS-C.
  4. NUT TO BE TAPPED OVER SIZE FOR GALVANIZED BOLT.
  5. FLAT WASHER TO BE SUPPLIED WITH EACH BOLT.
  6. FLAT WASHER TO BE ELECTROPLATED.

**AS BUILT**

0	06.01.2017	AS BUILT				
Revision.	Date.	Description.				
PURCHASER.		 <b>KENYA ELECTRICITY TRANSMISSION COMPANY LIMITED (KETRACO)</b>				
PROJECT.		Design , Supply & Installation Procurement of 132kV D/C Transmission Lines: Lessos-Kabarnet, Nanyuki-Nyahururu, Olkaria-Narok & Sotik-Bomet				
CONSULTANT						
TITLE.		<b>DETAILS OF 12 DIA ANTI-THEFT BOLT &amp; NUT</b>				
Drawn By.	Checked By.	Approved By.	Scale.	Drawing No.	Sheet No.	Revision
			1 : 5		1 OF 1	0

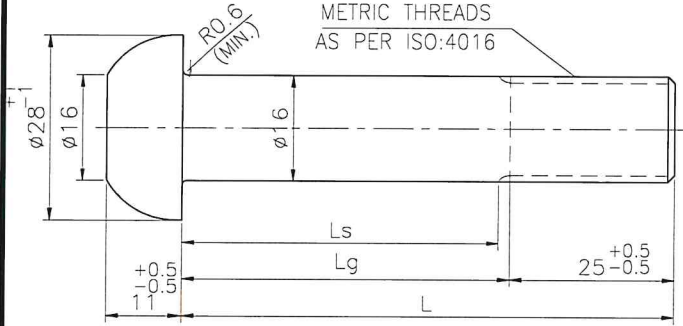
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**ANTI THEFT BOLT & NUT & FLAT WASHER**

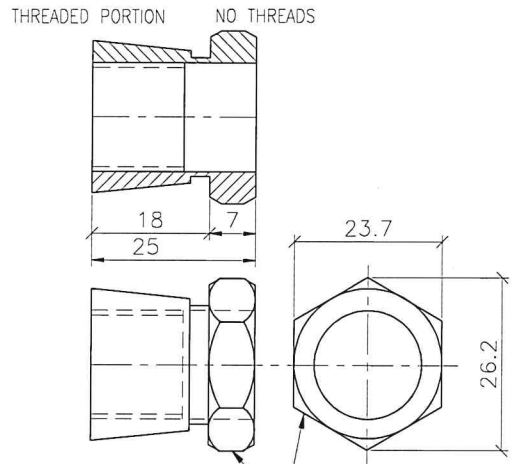
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ISO COARSE  
METRIC THREADS  
AS PER ISO:4016



**DETAIL OF ANTI THEFT BOLT**

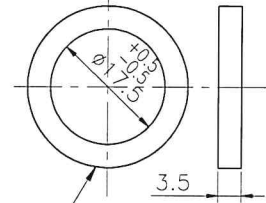
Scale-1:5



DIMENSION ARE AS  
PER ISO:398/4034

**DETAIL OF ANTI THEFT NUT**

Scale-1:5




**DETAIL OF FLAT WASHER**

Scale-1:5

**NOTES :-**

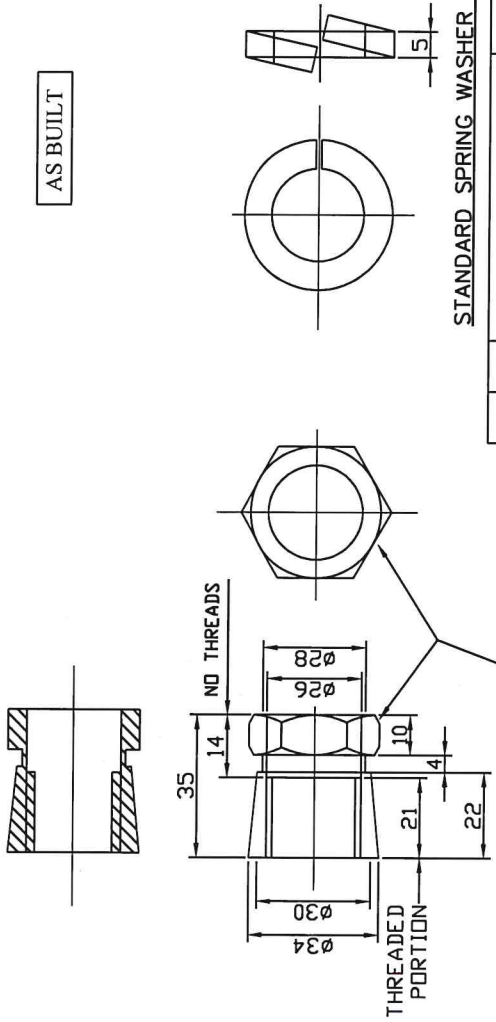
1. ALL DIMENSIONS ARE IN M.M.
2. MATERIAL:- CONFORMING TO ISO 898 PROPERTY CLASS FOR BOLT 5.6 & FOR NUT-5.
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5. FLAT WASHER TO BE SUPPLIED WITH EACH BOLT.
6. FLAT WASHER TO BE ELECTROPLATED.

**AS BUILT**

0	06.01.2017	AS BUILT				
Revision.	Date.	Description.				
PURCHASER.		 <b>KENYA ELECTRICITY TRANSMISSION COMPANY LIMITED (KETRACO)</b>				
JSL W.O.NO.	J - 893	CONTRACT NO.	KETRACO/PT/002/2012			<b>LOT-1</b>
PROJECT.	Design , Supply & Installation Procurement of 132kV D/C Transmission Lines: Lessos-Kabarnet, Nanyuki-Nyahururu, Olkaria-Narok & Sotik-Bomet					
CONSULTANT						
TITLE.	<b>DETAILS OF 16 DIA ANTI-THEFT BOLT &amp; NUT</b>					
Drawn By.	Checked By.	Approved By.	Scale.	Drawing No.	Sheet No.	Revision
			1 : 5	J 893 / ACC-04	1 OF 1	0

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AS BUILT

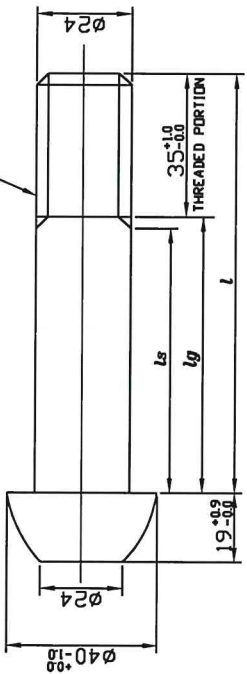


STANDARD SPRING WASHER

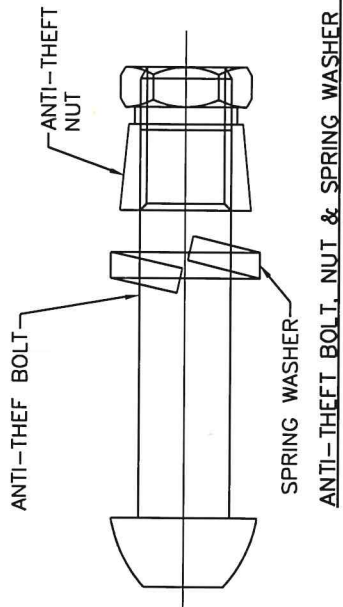
DIMENSIONS ARE AS PER ISO:898/4034

DETAIL OF ANTI-THEFT NUT

ISO COARSE METRIC THREADS AS PER ISO: 4016



DETAIL OF ANTI-THEFT BOLT



NOTES:-

1. ALL DIMENSIONS ARE IN MM
2. MATERIAL- CONFIRMING TO PROPERTY CLASS FOR BOLT - 5.6 & NUT-5 AS PER ISO 898 (PART I & II)
3. BOLT-NUT TO BE HOT DIP GALVANIZED AFTER MANUFACTURE AS PER EN-ISO 1461
4. NUT TO BE TAPPED OVER SIZE FOR GALVANIZED BOLT.
5. SPRING WASHER TO BE ELECTROPLATED SUPPLIED WITH EACH BOLT SHALL CONFORM TO DIN 127
6. BREAKING TORQUE = 8.8 - 10 Kg.m.

APPROVAL REFERENCE LETTER No.

APPROVED AS PER CLIENT DRR NO. 289 DATED 08.09.2011

REV	DATE	DESCRIPTION	DESIGNED	CHECKED	APPR
A	14/11/2014	ISSUE FOR AS BUILT			
CONSULTANT					

KENYA ELECTRICITY TRANSMISSION COMPANY LIMITED (KETRACO)  
REPUBLIC OF KENYA



CONTRACT TITLE  
MOMBASA - NAIROBI 400 KV TRANSMISSION LINE  
CONSTRUCTION OF 400 KV & 220 KV TRANSMISSION LINES

PB DRW No.:

KETRACO DRW No.:

KETRACO / 1 / 6 / 09

CLIENT'S CONTRACT No.:

CONTRACTOR

PROJECT  
MOMBASA - NAIROBI 400 KV TRANSMISSION LINE  
(LOT 1 - R08M - TSANO TRANSMISSION LINE)  
(LOT 2 - TSANO - ENBAKASI TRANSMISSION LINE)

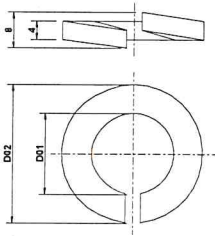
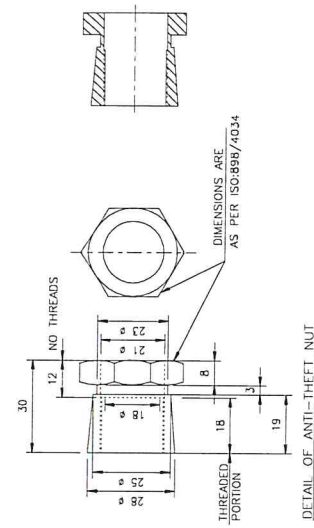
TITLE

240 ANTI THEFT BOLTS & NUTS

KPTL DRAWING NO. - 162A / KETRACO / AC-14

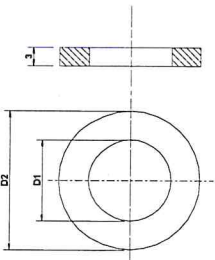
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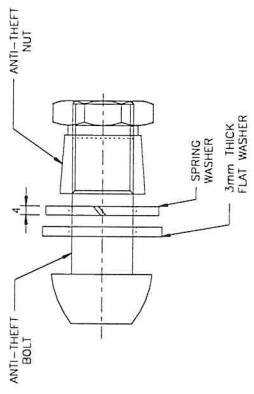
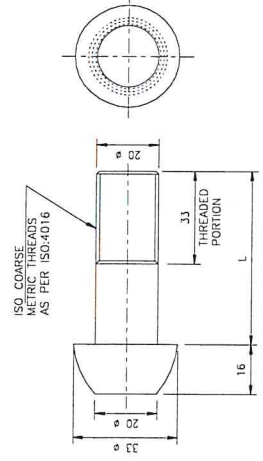
SP. WASHER DIA.	D01	D02
M20	20.2	33.6

**DETAIL OF SPRING WASHER**  
(REF. NOTE NO. 3)



WASHER DIA.	D1	D2
M20	22	37

**DETAIL OF FLAT WASHER**  
(REF. NOTE NO. 3)



SYMBOL FOR BOLT LENGTH	M20 grade 5.6	
	BOLT LENGTH mm	GRIP LENGTH mm
AB	40	3
AC	45	8
AD	50	13
AE	55	18
AF	60	23
AG	65	28
AH	70	33
AJ	75	38
AK	80	43
AL	85	48
AM	90	53
AN	95	58
AP	100	63

**GRIP LENGTH WITH ANTI-THEFT BOLT WITH NUT, FLAT WASHER AND SPRING WASHER**

- GENERAL NOTES:-**
1. ALL DIMENSIONS ARE IN MM.
  2. BOLTS, NUTS USED CONFORM TO ISO 898 (PART I & II) WITH MECHANICAL PROPERTIES CONFORM TO PROPERTY CLASS 5.6 FOR BOLTS & CLASS 5 FOR NUTS. (REFER TECHNICAL SCHEDULE, PAGE NO B1-180 OF SPECIFICATION)
  3. SPRING WASHERS (TYPE-B) AS PER B.S. 4464 & FLAT WASHERS AS PER B.S. 4320 FORM E GRADE 5.6 TO BE USED UNDER EACH NUT.
  4. DIMENSIONAL PROPERTIES FOR BOLTS AS PER ISO-4016 & NUTS AS PER ISO-4034.
  5. AS PER TECHNICAL SCHEDULE MIN 55 μm HOT-DIP GALVANISING OF BOLTS & NUTS SHALL BE DONE. (REFER TECHNICAL SCHEDULE, PAGE NO B1-180 OF SPECIFICATION)
  6. THREADED PORTION FOR M 20 DIA BOLTS = 33 mm.
  7. TORQUE VALUE TO BE APPLIED UNTIL NUT BROKEN.





PMW



Amal