STRUCTURAL ENGINEERING DIVISION

Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
RENARDET S.A ((M-4), Package-IIIA)
Construction Supervision of Four Lane Motorway from Faisalabad to Khanewal Project (M-4) 184 km, Package-3A, Shorkot – Dinpur Section (31km) (D & L International)(M/s CGGC)

Reference # CED/TFL **32406** (Dr. Qasim Khan) Dated: 10-01-2019
Reference of the request letter # RSA/M-4/3A/2019/272 Dated: 10-01-2019

Tension Test Report (Page – 1/2)

Date of Test 14-01-2019
Gauge length 2 inches
Description Vertical Post Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	------	(cm)	(cm^2)	(kg)	(kg)	(kg/cm^2)	(kg/cm^2)	(in)		
1	Vertical Post	2.22x0.61	1.35	5000	8000	3692.22	5907.55	0.70	35.00	
2	Vertical Post	2.22x0.61	1.35	4900	7900	3618.37	5833.70	0.70	35.00	
3	Vertical Post	2.22x0.61	1.35	5200	7900	3839.91	5833.70	0.70	35.00	
4	Vertical Post	2.22x0.61	1.35	4900	7900	3618.37	5833.70	0.70	35.00	
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Only Four Samples for Tensile Test										
Bend Test										

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
RENARDET S.A ((M-4), Package-IIIA)
Construction Supervision of Four Lane Motorway from Faisalabad to Khanewal Project (M-4) 184 km, Package-3A, Shorkot – Dinpur Section (31km) (D & L International)(M/s CGGC)

Reference # CED/TFL **32406** (Dr. Qasim Khan) Dated: 10-01-2019
Reference of the request letter # RSA/M-4/3A/2019/272 Dated: 10-01-2019

Weight &Size Test Report (Page – 2/2)

Date of Test 14-01-2019
Gauge length -------
Description Vertical Post Weight and Size Test

Sr. No.	Designation	Weight	Length	Weight per Unit Length	Web Thickness (t_w)	Remark
	-------	(g)	(mm)	(kg/m)	(mm)	
1	**Vertical Post**	**1395**	**103.9**	**13.43**	**6.10**	
2	**Vertical Post**	**1417**	**105.50**	**13.43**	**6.10**	
-	**-**	**-**	-	**-**	**-**	
-	**-**	**-**	-	**-**	**-**	
-	**-**	**-**	-	**-**	**-**	
-	**-**	**-**	-	**-**	**-**	
-	**-**	**-**	-	**-**	**-**	
-	**-**	**-**	-	**-**	**-**	
Only Two Samples for Test						

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STRUCTURAL ENGINEERING DIVISION

Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S China State Construction Engineering Corporation
CSCEC Pakistan Peshawar-Karachi Motorway (Sukkur – Multan Section) Project

Reference # CED/TFL **32407** (Dr. Ali Ahmed) Dated: 10-01-2019
Reference of the request letter # Nil Dated: 09-01-2019

Tension Test Report (Page – 1/4)

Date of Test 14-01-2019
Gauge length -------
Description Chain Link Fabric (Falling Object Prvention Net) Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	**3.20**	**320**	**3.14**	Vertical Leg
2	**3.20**	**360**	**3.53**	Horizontal Leg
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only Two Samples for Test				

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Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S China State Construction Engineering Corporation
CSCEC Pakistan Peshawar-Karachi Motorway (Sukkur – Multan Section) Project

Reference # CED/TFL **32407** (Dr. Ali Ahmed) Dated: 10-01-2019
Reference of the request letter # Nil Dated: 09-01-2019

Size Test Report (Page – 2/4)

Date of Test 14-01-2019
Gauge length -------
Description Falling Object Prvention Net Size Test

Sr. No.	Designation	Diameter of Wire	Grid	
			Length	Width
	-----	(mm)	(mm)	(mm)
1	**Net**	**3.20**	**101.60**	**50.90**
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
Only One Sample for Test				

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Department of Civil Engineering
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Pakistan. Ph: 92-42-99029202

To,
M/S China State Construction Engineering Corporation
CSCEC Pakistan Peshawar-Karachi Motorway (Sukkur – Multan Section) Project

Reference # CED/TFL **32407** (Dr. Ali Ahmed) Dated: 10-01-2019
Reference of the request letter # Nil Dated: 09-01-2019

Tension Test Report (Page – 3/4)

Date of Test 14-01-2019
Gauge length 2 inches
Description Steel Post Steel Strip Tensile Test as per ASTM A36

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	------	(mm)	(mm^2)	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	Steel Post	**24.00x3.00**	**72.00**	**3000**	**3700**	**408.75**	**504.13**	**0.60**	**30.00**	
2		**24.00x3.00**	**72.00**	**3100**	**4100**	**422.38**	**558.63**	**0.55**	**27.50**	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only Two Samples for Tensile Test										
Bend Test										

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To,
M/S China State Construction Engineering Corporation
CSCEC Pakistan Peshawar-Karachi Motorway (Sukkur – Multan Section) Project

Reference # CED/TFL **32407** (Dr. Ali Ahmed) Dated: 10-01-2019
Reference of the request letter # Nil Dated: 09-01-2019

Weight &Size Test Report (Page – 4/4)

Date of Test 14-01-2019
Gauge length -------
Description Steel Post Weight and Size Test

Sr. No.	Designation	Weight	Length	Weight per Unit Length	External Diameter	Internal Diameter	Thickness	Remark
	--------	(g)	(mm)	(kg/m)	(mm)	(mm)	(mm)	
1	**Steel Post**	**952**	**256.80**	**3.71**	**49.20**	**42.80**	**3.20**	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
Only One Sample for Test								

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STRUCTURAL ENGINEERING DIVISION

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Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Project Manager
Liberty Builders
Construction of Zee Avenue Project, 17-A Cooper Road Lahore

Reference # CED/TFL **32413** (Dr. Ali Ahmed) Dated: 11-01-2019
Reference of the request letter # CONC-20190111 Dated: 11-01-2019

Tension Test Report (Page -1/1)

Date of Test 14-01-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.378	3	0.376	0.11	0.111	3300	4800	66200	65540	96200	95400	1.20	15.0	KSR Steel
2	0.373	3	0.374	0.11	0.110	3200	4800	64200	64320	96200	96500	1.30	16.3	
3	4.179	10	1.251	1.27	1.228	45400	60200	78800	81460	104500	108100	1.20	15.0	SJ Steel
4	4.235	10	1.259	1.27	1.245	45200	58400	78500	80020	101400	103400	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Note: only four samples for tensile and two samples for bend test

Bend Test

#3 Bar Bend Test Through 180º is Satisfactory

#10 Bar Bend Test Through 180º is Satisfactory

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UET Lahore, Pakistan.

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Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Project Engineer
Vision Developers (Pvt) Ltd
Park View Apartments Project

Reference # CED/TFL **32414** (Dr. Ali Ahmed) Dated: 11-01-2019
Reference of the request letter # VG/PVA/Apartments/268 Dated: 11-01-2019

Tension Test Report (Page -1/1)

Date of Test 14-01-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.366	3	0.370	0.11	0.108	3100	4800	62200	63460	96200	98300	0.90	11.3	
2	0.356	3	0.365	0.11	0.105	2900	4800	58200	61150	96200	101300	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180º is Satisfactory														

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UET Lahore, Pakistan.

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Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

Ref: CED/TFL/01/32415 Dated: 11-01-19

To
Team Leader – TPB Consultants
Trimmu Panjnad Barrages Consultants
Trimmu and Panjnad Barrages Improvement Project (TPBIP)

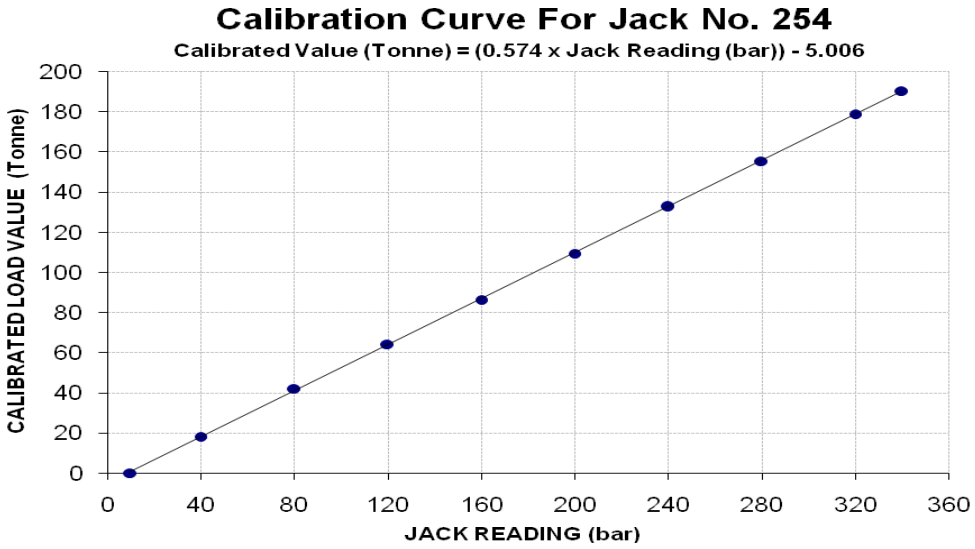
Subject: **- CALIBRATION OF HYDRAULIC JACK (MARK: TFL/01/32415)** (Page -1/2)

Reference to your Letter No. TPBC/2019/2927, dated: 11/01/2019 on the subject cited above. One Hydraulic Jack (Jack No 254, Gauge No. SF 254) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 340(bar)

Hydraulic Jack Reading (bar)		10	40	80	120	160	200	240	280	320	340
Calibrated Load	(Kg)	0	18200	42000	64200	86400	109400	132600	155600	179000	190400
	(Tonne)	0	18.20	42.00	64.20	86.40	109.40	132.60	155.60	179.00	190.40
Calibrated Pressure (bar)		0	32.75	75.58	115.52	155.47	196.86	238.61	279.99	322.10	342.62

The Ram Area of Jack = 545.0 cm^2



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Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

Ref: CED/TFL/01/32415 Dated: 11-01-19

To
Team Leader – TPB Consultants
Trimmu Panjnad Barrages Consultants
Trimmu and Panjnad Barrages Improvement Project (TPBIP)

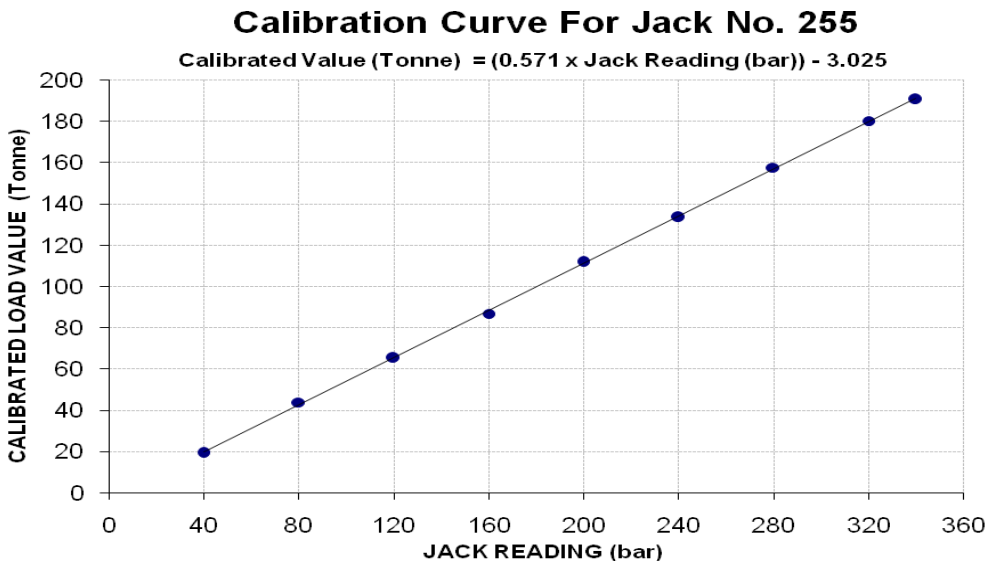
Subject: **- CALIBRATION OF HYDRAULIC JACK (MARK: TFL/01/32415)** (Page -2/2)

Reference to your Letter No. TPBC/2019/2927, dated: 11/01/2019 on the subject cited above. One Hydraulic Jack (Jack No 255, Gauge No. SF 255) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 340(bar)

Hydraulic Jack Reading (bar)		40	80	120	160	200	240	280	320	340
Calibrated Load	(Kg)	19400	44000	65400	86800	111800	133600	157800	180200	190600
	(Tonne)	19.40	44.00	65.40	86.80	111.80	133.60	157.80	180.20	190.60
Calibrated Pressure (bar)		34.91	79.18	117.68	156.19	201.18	240.41	283.95	324.26	342.98

The Ram Area of Jack = 545.0 cm^2



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To,
Resident Engineer
RENARDET S.A ((M-4), Package-II)
Construction of Faisalabad-Khanewal Motorway (M-4) Project, Package-II, Jamani-Shorkot, Section 2B (Nizami Brothers)((M/s China Railway First Group, Ltd)

Reference # CED/TFL **32416** (Dr. Ali Ahmed) Dated: 11-01-2019
Reference of the request letter # RE/M-4/2B/2019/509 Dated: 10-01-2019

Tension Test Report (Page – 1/3)

Date of Test 14-01-2019
Gauge length -------
Description Chain Link Fence Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	**3.20**	**500**	**4.91**	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only One Sample for Test				

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To,
Resident Engineer
RENARDET S.A ((M-4), Package-II)
Construction of Faisalabad-Khanewal Motorway (M-4) Project, Package-II, Jamani-Shorkot, Section 2B (Nizami Brothers)((M/s China Railway First Group, Ltd)

Reference # CED/TFL **32416** (Dr. Ali Ahmed) Dated: 11-01-2019
Reference of the request letter # RE/M-4/2B/2019/511 Dated: 10-01-2019

Tension Test Report (Page – 2/3)

Date of Test 14-01-2019
Gauge length -------
Description Chain Link Fence Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	**3.20**	**550**	**5.40**	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only One Sample for Test				

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To,
Resident Engineer
RENARDET S.A ((M-4), Package-II)
Construction of Faisalabad-Khanewal Motorway (M-4) Project, Package-II, Jamani-Shorkot, Section 2B (Nizami Brothers)((M/s China Railway First Group, Ltd)

Reference # CED/TFL **32416** (Dr. Ali Ahmed) Dated: 11-01-2019
Reference of the request letter # RE/M-4/2B/2019/510 Dated: 10-01-2019

Tension Test Report (Page – 3/3)

Date of Test 14-01-2019
Gauge length -------
Description Chain Link Fence Wire Tensile Test as per AASHTO-M-181

Sr. No.	Diameter of Wire	Breaking Load		Remarks
	(mm)	(kg)	(kN)	
1	**3.20**	**550**	**5.40**	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only One Sample for Test				

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STRUCTURAL ENGINEERING DIVISION

Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
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To,
Manager Coordination
Izhar Construction (Pvt) Ltd
(Hyundai Nishat Motor Pvt. Limited, Faisalabad)

Reference # CED/TFL **32418** (Dr. Ali Ahmed) Dated: 11-01-2019
Reference of the request letter # ICPL/CONST-HNMPL/19/03 Dated: 10-01-2019

Tension Test Report (Page -1/1)

Date of Test 14-01-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size (mm)		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.416	10	10.02	0.11	0.122	4000	5300	80200	72120	106200	95600	1.10	13.8	
2	0.417	10	10.04	0.11	0.123	3800	5300	76200	68270	106200	95300	1.30	16.3	
3	0.417	10	10.04	0.11	0.123	3900	5300	78200	70110	106200	95300	1.10	13.8	
4	0.417	10	10.04	0.11	0.123	3900	5300	78200	70110	106200	95300	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only four samples for tensile and two samples for bend test														
Bend Test														
10mm Dia Bar Bend Test Through 180º is Satisfactory														
10mm Dia Bar Bend Test Through 180º is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION

Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
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To,
M/S Civil & Urban Engineers
Lahore

Reference # CED/TFL **32419** (Dr. Ali Ahmed) Dated: 11-01-2019
Reference of the request letter # Nil Dated: 10-01-2019

Tension Test Report (Page -1/1)

Date of Test 14-01-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight	Diameter/ Size		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.379	3	0.377	0.11	0.111	3400	5000	68200	67300	100200	99000	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180º is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:
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2. The above results pertain to sample /samples supplied to this laboratory.
3- Sealed sample / Unsealed sample / Marked sample/Signed Samples

STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Project Manager
Daelim-Lotte
102MW-Gulpur Hydropower Project
(WMI)

Reference # CED/TFL **32420** (Dr.Ali Ahmed) Dated: 11-01-2019
Reference of the request letter # DLJV-OT-QA-164 Dated: 10-01-2019

Tension Test Report (Page – 1/3)

Date of Test 14-01-2019
Gauge length 640 mm
Description Steel Strand Tensile Test as per ASTM A-416-94a

Sr. No.	Nominal Diameter	Nominal Weight	Measured weight	Yield strength clause (6.3)		Breaking strength clause (6.2)		Young's Modulus of Elasticity	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	**15.24 (0.6")**	**1102.0**	**1108.0**	**25800**	**253.10**	**28100**	**275.66**	**198**	**>3.50**	**5897**
2	**15.24 (0.6")**	**1102.0**	**1106.0**	**24000**	**235.44**	**27400**	**268.79**	**199**	**>3.50**	**5898**
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Only two samples for Test										

Note:
1. Modulus of Elasticity is based on nominal steel area of the steel strand vide clause 13.3 of ASTM – A416a
2. Load versus percentage strain graphs are attached

I/C Testing Laboratoires
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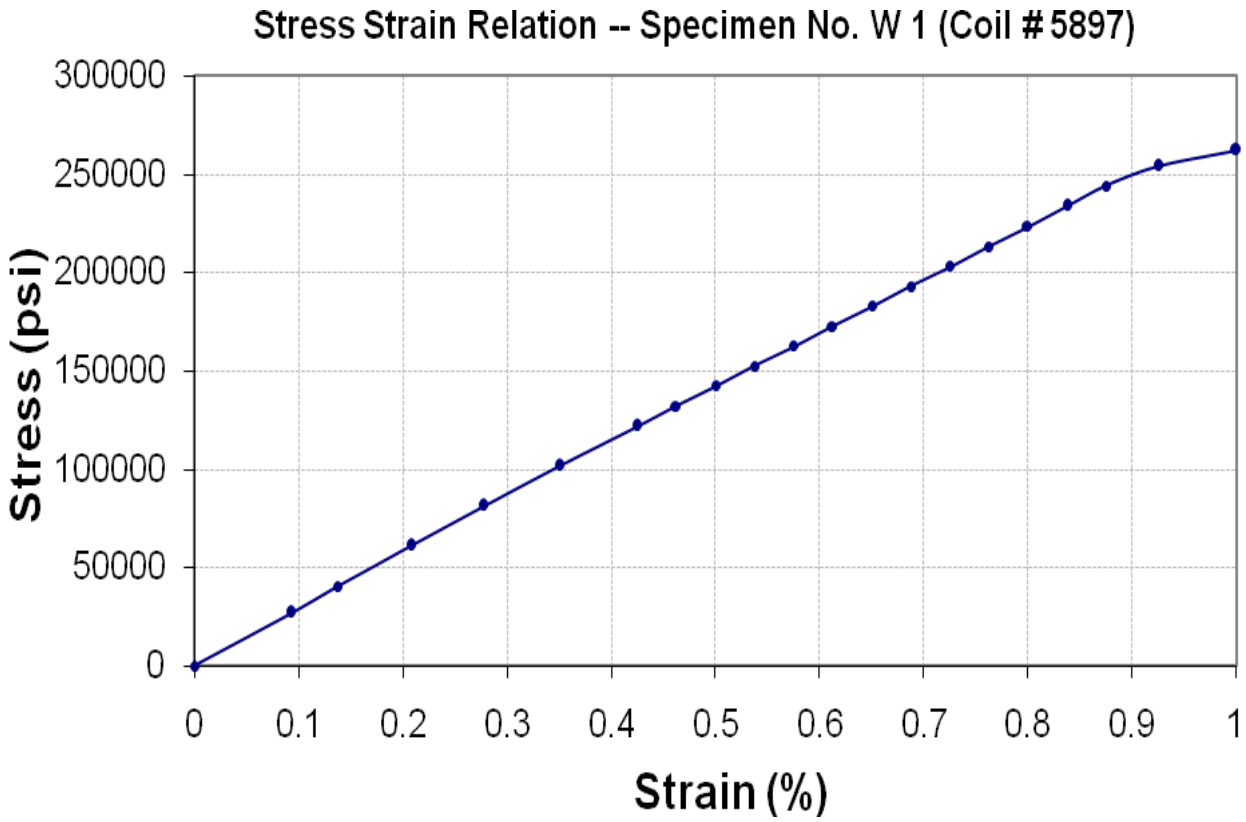
Reference # CED/TFL **32420** (Dr.Ali Ahmed) Dated: 11-01-2019
Reference of the request letter # DLJV-OT-QA-164 Dated: 10-01-2019

Graph (Page – 2/3)



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Reference # CED/TFL **32420** (Dr.Ali Ahmed) Dated: 11-01-2019
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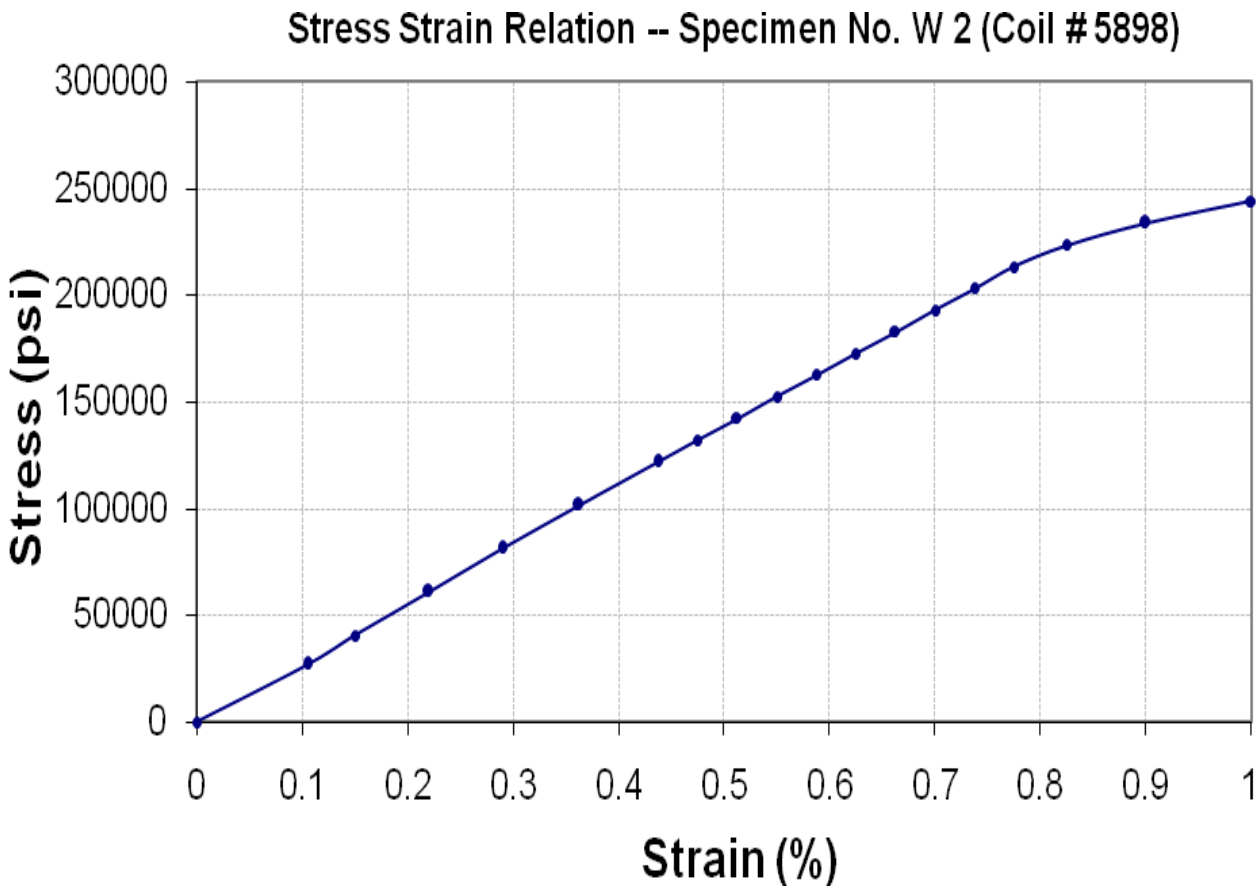
Graph (Page – 3/3)



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