Date: 02nd June, 2020

Submission:

Subject: Revision of Schedule of Rates (SoR) - for various consultancy services provided by the Department of Civil Engineering.

The Department of Civil Engineering at IITRAM is well equipped with state-of-the-art facilities. In order to optimally use these facilities along with regular academics, the department had started various material testing consultancy services for various government and private organizations in the field of construction industries, since November 2017-18. As on date there are more than 30 such agencies whom we are providing this consultancy services. This aids to generate the revenue which can be used for development of laboratories and research purpose. The schedule of rates for various material testing, has not been revised after 2017-18.

With this, the proposal of revised schedule of rates (SoR) – 2020-21 which shall be applicable with immediate effect (i.e. new financial year 2020-21) is attached for your perusal and kind approval please. The SoR is revised and updated by considering the SoR: 2018-19 of Gujarat Engineering Research Institute (GERI) and SoR of SVNIT, Surat as reference.

For your kind consideration and approval please.

Dr. Jiten Shah
Assistant Professor,
Department of Civil Engineering
IITRAM.

Dr. Yogesh Shah
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INSTITUTE OF INFRASTRUCTURE, TECHNOLOGY RESEARCH AND MANAGEMENT IITRAM AHMEDABAD - 380026

2.6.2020

Director

Director General 3/6/2020

I/c Registrar

Encl: 1. Revised SoR – Department of Civil Engineering, IITRAM – 2020-21

Institute of Infrastructure, Technology, Research and Management (IITRAM)
Department of Civil Engineering

Schedule of Rates for Material Testing Consultancy Services Offered by Department of Civil Engineering, IITRAM For the Year 2020-21 (W.E.F. 1st April 2020)

A] TRANSPORTATION ENGINEERIGN LABORATORY –

Code/ Sr. No.	NAME OF TEST	Unit per	Amount in (Rs.) (INR)	
			For Govt. Agency	For Private Agency
	ROAD MATERIAL TESTING			
1	**COARSE AGGREGATE (For Road and Building Construction)**			
1.1	Grading or Mechanical Analysis	No.	800	1000
1.2	Impact Test	No.	600	750
1.3	Soundness Test (3 Cycle)	No.	2160	2700
1.4	Soundness Test (5 Cycle)	No.	2480	3100
1.5	Loss Angels Abrasion Test	No.	1400	1750
1.6	Crushing Value Test	No.	1360	1700
1.7	Specific Gravity	No.	800	1000
1.8	Water Absorption Test	No.	480	600
1.9	Flakiness Index	No.	640	800
1.10	Elongation Index	No.	640	800
1.11	Combined Flakiness and Elongation Index Test	No.	1040	1300
1.12	Bulk Density	No.	400	500
1.13	Alkali Reactivity	No.	6160	7700
1.14	Stripping Value Test	No.	1200	1500
1.15	Deleterious Constituents	No.	2800	3500

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2	**FINE AGGREGATE (For Road and Building Construction)**			
2.1	Soundness Test (3 Cycle)	No.	2160	2700
2.2	Soundness Test (5 Cycle)	No.	2480	3100
2.3	Specific Gravity	No.	800	1000
2.4	Water Absorption Test	No.	480	600
2.5	Bulk Density	No.	400	500
2.6	Alkali Reactivity	No.	6160	7700
2.7	Silt Content	No.	400	500
2.8	Fineness Modulus	No.	600	750
2.9	Sand Equivalent Test (For 6mm & Stone Dust)	No.	1680	2100
2.10	Percentage of Fractured Test	No.	1200	1500
2.11	Plasticity Index (Stone Dust)	No.	1440	1800
3	**Bitumen**			
3.1	Softening Test	No.	1920	2400
3.2	Penetration Test	No.	1640	2050
3.3	Ductility Test	No.	1480	1850
3.4	Viscosity Test (Tar Viscometer)	No.	1600	2000
3.5	Viscosity Test (Absolute/Kinematic)	No.	2240	2800
3.6	Bitumen Content By Centrifuge Method	No.	2960	3700
3.7	Specific Gravity Test	No.	600	750
3.8	Short term Aging of Bitumen using RTFO	Set of 5 samples	12000	15000
3.9	Long term Aging of Bitumen using PAV	Set of 8 samples	18400	23000

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4	**MIX DESIGN**			
4.1	**Bituminous Mix Design**			
4.2	(a) Marshal Mix Design - for Bituminous mix - Standard	No.	52000	65000
	(b) Marshal Mix Design - for Bituminous mix - Modified	No.	56000	70000
4.3	Mix Design for Wet Mix Macadam (WMM)	No.	19200	24000
4.4	Mix Design for Granular Sub-base (GSB)	No.	19200	24000
4.5	Marshall Stability And Flow Test (For 3 Sample)			
	(a) Ready Mould	No.	1200	1500
	(b) With Casting	No.	2160	2700
4.6	Retained Tensile Strength (Water Sensitivity) (For 3 Sample) (with casting)	No.	4800	6000
5	**PAVEMENT DESIGN AND EVALUATION**			
5.1	Flexible Pavement Thickness Design (Data Supplied by Client)	Design	48000	60000
5.2	Benkleman Beam Test (Truck and Labour to be arranged by Client)	No.		1000/km/lane
5.3	Traffic Volume Study	As per Site condition		
5.4	Speed Survey (Using Radar Gun- On Sample Basis; 30 representative samples/hr.)	No.	2400/ direction/lane location/ shift (8 hrs.)	3000/ direction/lane location/ shift (8 hrs.)

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B] SOIL MECHANICS LABORATORY:

Sr. No.	NAME OF TEST	UNIT	Amount in (Rs.) (INR)	
			For Govt. Agency	For Private Agency
	SOIL MATERIAL TESTING			
1	Hydrometer Analysis	No.	1520	1900
2	Sieve Analysis	No.	880	1100
3	Atterberg's Limit	No.	1440	1800
4	Specific Gravity	No.	1040	1300
5	Shrinkage Limit	No.	1120	1400
6	Field Dry Density & Moisture Content by Core Cutter Method	No.	1200	1500
7	Field Dry Density & Moisture Content by Sand Replacement Method	No.	1040	1300
8	Light Compaction (Proctor Test)	No.	1720	2150
9	Heavy Compaction (Modified Proctor Test)	No.	2400	3000
10	Relative Density	No.	2040	2550
11	Swelling Pressure	No.	2320	2900
12	Free Swell Index	No.	880	1100
13	Unconfined Compression Test (3 Specimen of 38 mm × 76 mm)	No.	720	900
14	Laboratory Vane Shear Test (3 Specimen)	No.	1200	1500
15	Box Shear Test (60 mm × 60 mm Specimen)	No.	1520	1900
16	Consolidation Test (60 mm Diameter)	No.	5760	7200
17	Unconsolidated Undrained Triaxial Test (3 Specimen of 38 mm × 76 mm)	No.	5280	6600
18	Unconsolidated Undrained Triaxial Test (3 Specimen of 50 mm × 100 mm)	No.	6400	8000
19	Unconsolidated Undrained Triaxial Test (3 Specimen of 100 mm × 200 mm)	No.	8000	10000

20	Consolidated Undrained Triaxial (3 Specimen of 38 mm × 76 mm)	No.	8400	10500
21	Consolidated Undrained Triaxial (3 Specimen of 50 mm × 100 mm)	No.	10000	12500
22	Consolidated Undrained Triaxial (3 Specimen of 100 mm × 200 mm)	No.	11600	14500
23	Natural Moisture Content	No.	520	650
24	CBR test (Unsoaked) 3 specimen	No.	2020	2600
25	CBR test – Heavy Compaction (Unsoaked) 3 Specimen	No.	2800	3500
26	CBR test (Soaked) 3 specimen	No.	2880	3600
27	CBR test – Heavy Compaction (Soaked) 3 Specimen	No.	3600	4500
28	Silt Content	No.	400	500

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C] ENVIRONMENTAL ENGINEERING LABORATORY:

Code/ Sr.No.	NAME OF TEST	UNIT	Amount in (Rs.) (INR)	
			For Govt. Agency	For Private Agency
1	Complete Chemical Analysis Of Engr. Material Like Cement/Lime/Lime Stone Pozzolona	No.	5610	7010
2	Percent. Loss On Igni.(Part Analy. Of 18.01)	No.	560	700
3	% Silica(Part Analysis Of 18.01)	No.	2240	2800
4	% Fe2 O3(Ferric Oxide)(Part Analysis Of 18.01)	No.	3370	4200
5	% Al2 O3 (Alluminium Oxide) (Part Analysis Of 18.01)	No.	3370	4200
6	% So3 (Sulphate)(Part Analysis Of 18.01)	No.	3370	4200
7	% Cao (CALCIUM OXIDE) (PART ANALYSIS OF 18.01)	No.	3930	4910
8	% Mgo (MAGNESIUM OXIDE)(PART ANALYSIS OF 18.01)	No.	5050	6310
9	Sulphate(Part Analysis Of Water)	No.	1420	1770
10	Total Soluble Salt (Part Analysis Of Water)	No.	990	1240
11	Ph Value(Part Analysis Of Water)	No.	500	620
12	Carbonate & Bicarbonate(Part Analysis Of Water)	No.	700	890
13	Chloride(Part Analysis Of Water)	No.	700	890
14	Sodium & Potassium(Part Analysis Of Water)	No.	700	890
15	Silt Content(Part Analysis Of Water)	No.	500	620
16	Calcium(Part Analysis Of Water)	No.	700	890
17	Magnesium (Part Analysis Of Water)	No.	700	890
18	Complete Chemical Analysis Of Soil Extract	No.	3140	3930
19	Preparation Charges For Soil Extract	No.	300	380
20	Organic Impurity Test Of Sand (Is 2386 Part I 1962)	No.	640	800
21	Organic Matter Of Soil	No.	1730	2160
	WATER QUALITY ANALYSIS			
1	Fluoride	No.	1130	1410
2	Sulphate	No.	700	880

3	Phosphate	No.	680	850
4	Nitrate	No.	700	890
5	Dissolved Oxygen	No.	600	760
6	Bichemical Oxygen Demand	No.	1630	2040
7	Chemical Oxygen Demand	No.	1210	1520
8	Oil & Grease	No.	670	830
9	Phenolic Compound	No.	810	1010
10	Coliform	No.	1680	2100
11	Pesticides	No.	5150	6440
12	Chromium	No.	1000	1250
13	Manganese	No.	1000	1250
14	Iron	No.	1000	1250
15	Copper	No.	1000	1250
16	Zinc	No.	1000	1250
17	Cadmium	No.	1000	1250
18	Lead	No.	1000	1250
19	Mercury	No.	1000	1250
20	Arsenic	No.	1000	1250
21	Odour	No.	140	180
22	Total Suspended Solid	No.	560	700
23	Colour	No.	380	480
24	Ph Value	No.	500	620
25	Turbidity	No.	500	620
26	Inorganic Solids	No.	670	840
27	Organic Solids	No.	670	840
28	Total Dissolved Solids	No.	670	840

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D] CONSTRUCTION MATERIALS LABORATORY:

Code/ Sr.No.	NAME OFTEST	UNIT	Amount in (Rs.) (INR)	
			For Govt. Agency	For Govt. Agency
1	**BRICKS**			
1.1	Compressive Strength (5 No. Of Bricks)	Set	1200	1500
1.2	Water Absorption (5 No. Of Bricks)	Set	1280	1600
1.3	Efflorence Test (5 No. Of Bricks)	Set	1160	1450
1.4	Dimension & Tolerance (20 No. Of Bricks)	Set	496	620
1.5	Compressive Strength (Acid Resistance Bricks) -(5 No. Of Bricks)	Set	1880	2350
1.6	Water Absorption (Acid Resistance Bricks) - (5 No. Of Bricks)	Set	1160	1450
1.7	Flexural Strength (Acid Resistance Bricks) - (5 No. Of Bricks)	Set	1200	1500
2	**BUILDING STONE**			
2.1	Preparation Of One Test Sample From Rubble By Cutting (For 6 Nos).	Set	2400	3000
2.2	Compressive Strength Of Prepared Test Specimen	No.	280	350
2.3	Weathering Test	Sample	8800	11000
2.4	Durability Test	No.	8000	10000
2.5	Specific Gravity (Apparent) And Water Absorption	No.	1280	1600
2.6	Specific Gravity (True)	No.	1280	1600
3	**CEMENT**			
3.1	Consistency Test	No.	740	930
3.2	Initial & Final Setting Time	No.	1160	1450
3.3	Soundness Test (By Lechattlier)	No.	400	510
3.4	Compressive Strength		0	
a.	For Ready Moulds	No.	1840	2300
b.	For moulds casted in our lab	No.	2640	3300
3.5	Fineness By Sieving	No.	320	400
3.6	Fineness By Blains	No.	1520	1900

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3.7	Comp. Strength Of Cement Mortar Cube (Any Size) (For 3 Nos.)	Set	420	530
3.8	Transverse Strength Of any Mortar	No.	420	530
3.9	Tensile Strength Of any Mortar	No.	420	530
3.10	Bond Strength Of any Mortar	No.	480	600
3.11	Determination Of Best Proportion Of Cement Mortar	No.	11200	14000
3.12	Permeability Of Cement Mortar Of Size 10 X 5 Cms	No.	4040	5050
4	**CONCRETE**			
4.1	Concrete Mix Design With Cubes Only	No.	38400	48000
4.2	Concrete Mix Design With Flexural Strength Test	No.	66000	82500
4.3	Casting And Preparing Cubes (6 No.) Of 15 Cms. Size Of Given Concrete Mix	Set	4800	6000
4.4	Mix Design Of Pre-Stressed Concrete	No.	51200	64000
4.5	Mass Concrete Mix Design	No.	56400	70500
4.6	Permeability Of Cement Concrete Cylinder Of 15 X 15 Cms Size (3 Samples)	Set	9400	11750
4.7	Casting & Testing Of 15 Cms X 15 Cms X 70 Cms Size Beam Of Given Concrete Mix	No.	7390	9240
4.8	Concrete Rebound Hammer Test	Reading	170	210
4.9	Testing Of Concrete By Ultra Sonic Concrete Tester	Reading	140	170
4.10	Additional Cement Testing For Mix Design	No.	3600	4500
4.11	Comp. Strength Of C C Cube Or Cylinder (For 3 Nos. Of Cube = 1 Set)	Set	420	530
4.12	Flexural Strength Of Concrete Beam	No.	660	820
5	**Foundation Core**			
5.1	Drilling Of Concrete Rubble and Testing Same For Comp. Strength	No.	3240	4050
5.2	Cutting & Polishing Of Core	No.	490	610
5.3	Compressive Strength Of Foundation Core	No.	460	570
5.4	Specific Gravity And Water Absorption	No.	680	850
5.5	Density (Dry &Wet)	No.	760	950

6	**Lime**			
6.1	Consistency	No.	1640	2050
6.2	Fineness Test	No.	630	790
6.3	Initial & Final Setting Time	No.	760	950
6.4	Soundness	No.	650	810
6.5	Compressive Strength	No.	1000	1250
6.6	Determination Of Best Proportion Of Lime/Surkhi/Sand/Mortar	No.	20040	25050
6.7	Determination Of Best Proportion Of Lime/Surkhi/Sand/Mortar With Surkhi.	No.	26800	33500
6.8	Calcination Of Lime Stone	No.	2900	3630
6.9	Slacking Of Quick Lime To Produce Lime	No.	1840	2300
7	**Pozzolana Material**			
7.1	Fineness By Sieving	No.	340	430
7.2	Fineness By Blain`s Air Permeability	No.	1390	1740
7.3	Lime Reactivity	No.	1860	2320
7.4	Compressive Strength	No.	2020	2520
7.5	Determination of best proportion of cement/surkhi/sand /mortar	No.	22400	28000
7.6	Determination of permeability of cement/surkhi/sand /mortar	No.	6920	8650
7.7	Specific gravity of pozzolana	No.	970	1210
8	**Steel**			
8.1	Tensile strength including yield stress/ elongation	No	1060	1330
8.2	Bend Test for MS and TMT steel	No	790	990
8.3	Bend-rebend	No	1500	1800
9	**Tiles**			
9.1	Water Absorption (1 set = 6 Nos)	Set	1370	1720
9.2	Transverse Strength (1 set = 6 Nos)	Set	1240	1560
9.3	Dimension and Tolerance (1 set = 6 Nos)	Set	530	660

9.4	Flexural Strength of canal lining/block tiles (1 set = 6 Nos)	Set	1200	1500
10	**Hollow Blocks**			
10.1	Water Absorption (1 set = 3 Nos.)	Set	3350	4190
10.2	Compressive Strength (1 set = 3 Nos.)	Set	620	780
10.3	Breaking Strength (1 set = 3 Nos.)	Set	630	790
11	**Paver Block and Kerb Stone**			
11	Compressive Strength (1 set = 3 Nos.)	Set	480	600
11.2	Water Absorption (1 set = 3 Nos.)	Set	1240	1550
11.3	Kerb Core (including preparation of surface)	Set	880	1100

Note: Additional GST shall be applicable for testing of any items listed under A, B, C and D above, as per the norms.

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E] OTHER CONSULTANCY SERVICES: Along with the above services, the department also provides various design and third party inspection (TPI) consultancy services as below but not limited to:

Sr. No.	Division	Technical Consultancy Services/ TPI
1	Transportation Engineering	1. Traffic volume study and intersection design 2. Speed surveys 3. Pavement structural and mix design 4. Geometric design of highways 5. Pavement maintenance management 6. Road safety audit 7. Accident studies and Analysis 8. Proof checking of DPRs 9. Special studies related to field of Transportation Engineering 10. Performance evaluation of public transportation systems 11. Parking surveys and studies and analysis
2	Water Resources and Environmental Engineering	1. Hydraulic design of water distribution network 2. Analysis of existing water distribution network 3. Hydraulic design of storm drainage/sewerage network 4. Analysis of existing storm drainage/sewerage network 5. Design of Water Treatment Plant (WTP) and Sewerage Treatment Plant 6. Hydraulic analysis of flow through pipes/ canal (using ANSYS FLUENT) 7. Hydraulic design of canal and other hydraulic structures 8. Dam break flow analysis 9. Proof checking of DPRs
3	Geotechnical Engineering	1. Design and recommendation of Shallow Foundation 2. Design of Pile and Piled-Raft Foundation 3. Recommendations for Ground improvement 4. Design of Reinforced Earth Structures 5. Slope Stability Analysis 6. Design of Diaphragm/ Cutoff walls 7. Design of Soil nailing, anchors, sheet-pile walls, bulk heads, excavation stability 8. Liquefaction susceptibility evaluation 9. Numerical analysis of geotechnical engineering problems 10. Design of landfills, canal slope, embankment 11. Recommendations for Waste stabilization and reutilization
4	Structural Engineering	1. Proof checking and consultancy services for structural design of buildings, bridges, and other civil engineering infrastructures 2. Structural audit and health assessment of existing RC/ Masonry/Steel Structures 3. Proof checking, Inspection and testing of water retaining and water transport structures like pipes, water tanks etc 4. Proof checking and consulting services for underground structures 5. Non-destructive testing and evaluation using GPR, Rebound Hammer, and UPV.

Note: The rates for the above consultancy expert services shall be decided based on the nature of the work with mutual consent of the organization and IITRAM.

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