

**MOORPARK CITY COUNCIL
AGENDA REPORT**

TO: Honorable City Council

FROM: Hugh R. Riley, Assistant City Manager 
Dave Klotzle, City Engineer/Public Works Director

BY: Ky Spangler, Special Projects Consultant 

DATE: April 9, 2012 (CC Meeting of 4/18/12)

SUBJECT: Consider Additional Funding for Materials Testing, Special Inspection and Geotechnical Services Associated with Construction of an Asphalt Overlay of the Northbound Lanes of Spring Road from Flinn Avenue and Amendment No. 2 to the Professional Services Agreement with Southwest Testing Engineers, dba Vertical-V Testing Engineer for the Ruben Castro Human Services Center

BACKGROUND & DISCUSSION

During the course of the construction of the Ruben Castro Human Services Center (RCHSC) the decision was made to install an offsite storm drain connection in Spring Road to alleviate drainage coming from the railroad right of way to the north of the project site. On November 2, 2011 the City Council approved the preliminary estimate for the storm drain construction and on April 4, 2012 authorized additional funding necessary to move forward with the project. Construction of the storm drain began on April 9, 2012.

An asphalt overlay of the northbound lanes of Spring Road between Flinn Avenue and the Union Pacific Railroad tracks was proposed conjunction with the storm drain construction to improve drainage conditions in this location. The City Council approved the preliminary estimate for this work at their November 2, 2011 meeting and is considering an additional allocation of funding to perform the work as a separate agenda item. In the event that the City Council approves the additional funding to move forward with the asphalt overlay, some minor additional costs will be necessary for asphalt materials testing.

Southwest Testing Engineers, Inc., dba Vertical-V Testing Engineers/BTC Labs (Vertical-V) is the professional services consultant performing materials testing, special inspection, and geotechnical services for the construction of the RCHSC. Their original contract in the amount of \$156,151.50 plus a ten percent contingency (\$15,615.15) was approved by the City Council at their meeting on January 19, 2011. An amendment in the amount of \$13,795.00 was issued for materials testing and special inspection associated with the Spring Road offsite storm drain construction, leaving a contingency balance of \$1,820.15 remaining.

Vertical-V has submitted a proposal (Attachment 1) in the amount of \$5,486.00 for materials testing, special inspection and geotechnical services required for the asphalt overlay project which is \$3,665.85 above the available contingency. Therefore staff is seeking the approval of this additional amount in conjunction with the overlay project.

FISCAL IMPACT

The Capital Improvement budget for the Ruben Castro Human Services Center (Fund 5020) is \$11,038,064. To date \$5,363,356 has been encumbered with an available balance of \$1,105,213. Therefore, no additional funds need to be budgeted for the proposed work at this time. Sufficient funds exist in the budget to cover this work.

STAFF RECOMMENDATION (ROLL CALL VOTE)

Approve additional funding in the amount of \$3,665.85 materials testing, special inspection and geotechnical services associated with the asphalt overlay of the northbound lanes of Spring Road for the Ruben Castro Human Services Center and authorize the City Manager to execute Amendment No. 2 in the amount of \$5,486.00 to Southwest Testing Engineers, Inc., dba Vertical-V Testing Engineers, subject to final language approval of the City Manager and City Attorney.

Attachment 1: Vertical-V/BTC Labs, Inc. Proposal dated March 29, 2012

ATTACHMENT 1

N|V|5

BTC LABS VERTICAL FIVE

March 16, 2012 (Revised March 29, 2012)

Proposal No: 4502.12.059

City of Moorpark
c/o Balfour Beatty Construction
300 East Esplanade, Suite 1120
Oxnard, CA 93036

ATTENTION: Dennis Kuykendall

SUBJECT: **Proposal for Materials Testing and Inspection for the Ruben Castro
Asphalt Overlay**

BTC LABS - Vertical Five is pleased to submit this proposal for the referenced project.
Our estimated scope of services and costs are summarized below.

Scope of Work and Cost Estimate

	<u>Rate</u>	<u>Units</u>	<u>Total</u>
Asphalt:			
Asphalt Paving Technician (trench patch)	\$ 81.00 hr	24	\$ 1,944.00
Asphalt Paving Technician (ARHM)	\$ 81.00 hr	16	\$ 1,296.00
Asphalt Paving Batch Plant	\$ 81.00 hr	16	\$ 1,296.00
AC Max Density (LTMD)	\$ 210.00 ea	2	\$ 420.00
Extraction & Gradation	\$ 145.00 ea	2	\$ 290.00
Engineering review	\$ 120.00 hr	2	\$ 240.00
	TOTAL:		\$ 5,486.00

Notes:

- 1 Travel time and mileage will be waived to project job site for inspectors.
- 2 Travel by Field Technicians and inspectors to offsite locations will be charged portal-to-portal and mileage.
- 3 Special Inspectors 4 hrs. daily minimum, actual hours thereafter.
- 4 Technicians 2 hr. daily minimum, actual hours thereafter at hourly rate.

Assumptions:

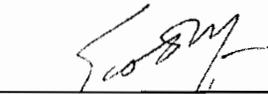
- 1 Proposal is based on information provided by client's representative.
- 2 This estimate is provided for budgetary purposes only and is not a lump sum / not to exceed cost. Billing will be for actual service provided.
- 3 Additional services will be charged in accordance with the attached 2012 Fee Schedule.
- 4 Our cost estimate is based upon California Prevailing Wage rates.
- 5 Services will be performed in accordance with the accompanying "Terms and Conditions" made a part of this agreement.

BTC Labs appreciates the opportunity to be of service. If you have any questions, please do not hesitate to contact us.

Respectfully Submitted,
BTCLABS VERTICAL FIVE


Carol Harrison
Marketing Manager

Reviewed By,


Scott Moors, CEG 1901
President

Attachments: Agreement w/ Terms and Conditions
2012 Fee Schedule

BTC LABS - VERTICAL FIVE

1868 Palma Drive, Suite A, Ventura, CA 93003
Phone: (805) 656-6074 Fax (805) 650-6264

An NV5, Inc. Company
www.NV5.com
Offices Nationwide

2012 FEE SCHEDULE

GENERAL CONDITIONS

Testing Samples - An hourly preparation charge will be added to all samples submitted to the laboratory that are not ready for testing. There will be a 50% premium charge for "RUSH/PRIORITY" testing.

Scheduling - A minimum of 24-hour notice is required to schedule personnel (48-hour notice is required for DSA projects). For same-day scheduling, a 50% premium applies. If less than 24 hour notice is provided on a cancellation, a charge of 2 hours will be assessed.

Minimum Charges – Special Inspections: A minimum charge of 4 hours applies to inspection call-out between 0 and 4 hours. Eight (8) hours will be charged for work performed over 4 hours up to eight hours. A 4-hour minimum charge shall apply to all cancellations after inspector has been dispatched. Travel time is not normally charged for inspections within 25 miles of the laboratory.

Technicians: A minimum charge of 2 hours applies to technician call-out between 0 and 2 hours. Additional time will be charged in 2-hour increments. Technician time is portal-to-portal from lab-to-site-to-lab. A 2-hour minimum charge shall apply to all cancellations after technician has been dispatched.

Overtime Rates - Rates are based on an 8-hour workday between the hours of 7:00 a.m. and 4:00 p.m., Monday through Friday. Work outside of these hours or in excess of 8 hours in one day or over 40 hours in one week will be charged at 1.5 times the listed rates. Work over 12 hours in one day or over 8 hours on the 7th consecutive day, or work on holidays will be charged at 2.0 times quoted rates.

Holidays - The following holidays are observed: New Years Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and the following Friday, and Christmas Day.

Should a holiday fall on Saturday or Sunday, the closest previous or following regular workday will be observed for the holiday.

Travel – Hourly travel is charged portal-to-portal for technicians. Travel charges are normally waived for inspectors within 40 miles of our laboratory. Mileage will be charged at \$0.65 per mile for all projects with a \$30 minimum charge per trip.

Per Diem – Per diem will be charged at 1.1 times the Federal (GSA) rate for all out-of-town assignments unless other arrangements are made.

Review & Distribution of Reports - All assignments are under the supervision of a Registered Professional Engineer. Engineering time of 0.1 hour per inspection day or ½-hour/week (min) will be included for scheduling, report review, and data evaluation. Up to hard 2 copies and 6 electronic copies of reports are provided at no additional charge. Additional hard copies will be billed at \$2 per report.

Outside Services / Subcontractors - Cost plus 15% will be charged for outside services and for any materials procured.

Prevailing Wage – Client agrees to notify the Laboratory, in writing, of any requirement for payment of California Prevailing Wages or other predetermined contract wage condition. Client agrees to indemnify BTC Labs – Vertical Five against all costs related Client's failure to notify Lab of predetermined wage requirements.

Certified Payroll – A \$45 per week, per project processing fee for Certified Payroll will be assessed on Prevailing Wage Projects.

Escalation – Listed rates are subject to annual escalation consistent with the Consumer Price Index (www.bls.gov). Prevailing Wage labor rates will be adjusted in accordance with DIR mandated increases plus 30%. (<http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm>)

I. PROFESSIONAL, TECHNICAL, & SUPPORT STAFF

(Hourly rates unless otherwise indicated. Charges are portal-to-portal from to BTC Labs)

A. Professional Staff			
		<u>Standard</u>	
Principal Engineer/Geologist/Consultant		\$170	
Senior Engineer/Geologist/Consultant (PE, CEG)		\$145	
Project Engineer/Geologist/Consultant/Manager		\$125	
Staff Engineer/Geologist/Consultant		\$95	
B. Field Sampling, Inspection & Testing			
	<u>Prevailing Wage</u>	<u>Standard</u>	
Special (Deputy) Inspector	\$86	\$78	
<i>(Concrete, P-T Concrete, Masonry, Structural Steel, Fireproofing, Pile Driving)</i>			
Mechanical/Electrical Inspector	\$95	\$90	
Roofing/Waterproofing Inspector	\$95	\$85	
Concrete/Asphalt Batch Plant Inspection	\$86	\$78	
ACI Concrete Technician	\$88	\$74	
Senior Technician* <i>(Soil/Asphalt Special Testing)</i>	\$90	\$76	
Nondestructive Exam/Testing (UT/Mag Part /Dye Pen.)	\$92	\$84	
Trp Charge (within 25 radius of Lab. if >25 mi hourly + mileage)		\$30	

**Services include density by nuclear gauge, "Schmidt Hammer" readings, pachometer survey, torque tests and pull tests are performed by Senior Technicians*

C. DSA / OSPHD Inspection & Testing			
	<u>Prevailing Wage / Standard</u>		
Project Inspector / IOR, DSA Class I		\$110	
Project Inspector / IOR, DSA Class II/III		\$95	
DSA Masonry / Shotcrete Inspection		\$90	
DSA Form 5 (Inspector Qualifications)		\$45 ea.	
Special Inspection Verified Report (SIVR/VR)		\$185 (min.) ea.	
Laboratory / Geotechnical Verified Report		\$385 (min.) ea.	

D. Sample Pickup & Delivery, Mileage			
	<u>Prevailing Wage</u>	<u>Standard</u>	
Sample Pickup (>25mi radius of Lab) – plus applicable unit price		\$55/hr	
Field Equipment & Supply Delivery (1 hr min)		\$55/hr	
Saturday Pickup (hourly, 4 hr minimum, plus mileage)		\$75 /hr	
Mileage – Field Vehicle (\$30/day minimum charge)		\$0.60/mi	
Mileage – Coring Truck		\$0.70/mi	

See Unit Prices for pickup charges of cylinders, prisms, panels, etc.

E. Support Staff & Special Services		<u>Prevailing Wage</u>	<u>Standard</u>
Laboratory Technician			\$85
File Search, Reissue of Report		\$45 (min.)	
Certified Payroll Admin. (0.5 hr min./wk)			\$80
Court Appearance and Depositions (4 hr min)			\$280
Drafting/CADD			\$70
Clerical			\$60

II. MATERIALS AND EQUIPMENT

A. Equipment		<u>Rate</u>
1. Air Meter (Concrete)		\$45/day
2. Calibrated Ram (Pull test)		\$75/day
3. Ceiling Wire Dead-Weight Equip.		\$110/day
4. Concrete Relative Humidity Meter		\$265/day
5. Concrete Slab Moisture Emission Kit		\$55/ea
6. Floor Flatness (plus labor – 4hr min)		\$550/day
7. Generator		\$65/day
8. Ground Penetrating Radar (GPR) – (plus labor – 4 hr min)		\$385/dy
9. Magnetic Particle Equipment & Consumables		\$50/day
10. Nuclear Gauge		\$25/day
11. Pachometer (Rebar) Survey Equipment		\$85/day
12. Schmidt Hammer		\$35/day
13. Skidmore Wilhelm, per day		\$75/day
14. Torque Wrench (Large), per day		\$50/day
15. Torque Wrench (Small), per day		\$15/day
16. Ultrasonic Equipment & Consumables		\$60/day
17. Vehicle – Field Truck		\$55/day
B Diamond Coring (min. charge = (field time w/travel + 1 hr. mob./dcmob.)		
1. Machine, truck & 1 operator (accessible flatwork only)	\$190/hr	\$150/hr.
2. Machine, truck, operator and helper	\$275/hr	215/hr.
3. Coring Bit Charge		\$2/inch
4. Coring truck mileage (portal to portal)		\$0.70/mi
5. Traffic Control		Per Quote



BTC Labs is certified or approved by DSA, CCRL, AMRL, AASHTO, & Caltrans.

III. LAB TESTS: AGGREGATE & SOIL

A Soils - Geotechnical

1	Atterberg Limits (LL and PL) – ASTM D4318, CTM 204	\$ 142
2	Consolidation (Incremental Loading) – ASTM D2435	\$ 315
3	Direct Shear, remolded sample – ASTM D3080	\$ 285
4	Direct Shear, undisturbed (ring) sample – ASTM D3080	\$ 235
5	Expansion Index – ASTM D4829	\$ 158
6	Hydrometer analysis (without specific gravity) – ASTM D422	\$ 132
7	Permeability, Constant Head – remolded - ASTM D2434, CT 220	\$ 360
8	pH (soil) – ASTM D4972	\$ 35
9	Resistivity – ASTM G57	\$ 60
10	Resistivity (Minimum), includes pH – CTM 643	\$ 155
11	Soil Cement – Moist-Dens. or Sample Prep set of 3 - ASTM D558	\$ 240
12	Soil Cement – Wet-Dry Durability – ASTM D559	\$ 1100
13	Soil Cement – Compressive Strength – ASTM D1633	\$ 60
14	Soil Classification – ASTM D2488 – Visual-Manual	\$ 24
15	Soluble Chloride (soils)	\$ 75
16	Soluble Sulfate (soils)	\$ 75
17	Unconfined compression on prepared specimens	\$ 95

B Particle Size Analysis

18	Sand equivalent (ASTM 2419, CTM 217)	\$ 110
19	Sieve #200 wash only (ASTM D1140, CTM 202)	\$ 65
20	Sieve (coarse or fine only, no wash – ASTM C136, CTM 202)	\$ 85
21	Sieve (coarse & fine w/ wash) – ASTM C136, CTM 202)	\$ 105
22	Sieve w/ Hydrometer (ASTM D422, CTM 203, no specific grav.)	\$ 165

C Moisture Density Relationship

23	Max Density-Opt. Moisture (4 in. mold) – ASTM D1557, D698	\$ 175
24	Max Density-Opt. Moisture (6 in. mold) – ASTM D1557, D698	\$ 195
25	Maximum Density Checkpoint	\$ 65
26	Moisture & Dry Density (ring samples)	\$ 20
27	Moisture determination (aggregate samples)	\$ 35
28	Caltrans Relative Compaction (Wet Density) – CTM 216	\$ 225

D Aggregate, Soil & Rock

29	Abrasion Resistance by LA Rattler – ASTM C131, CTM 211	\$ 165
30	Absorption, sand or gravel – ASTM C127, C128	\$ 60
31	Acid solubility (includes Haz Mat Fee)	\$ 225
32	California bearing ratio (CBR) with expansion – ASTM D1883	\$ 365
33	California bearing ratio (CBR) at 95% (3 points) – ASTM D1883	\$ 585
34	Cement Treated Base (CTB), compact, cure & test	\$ 225
35	Cement Treated Base – compression (make, cure, test – 3 spec)	\$ 565
36	Cement Treated Base – stability	\$ 525
37	Clay lumps and friable particles, per primary size – ASTM C142	\$ 115
38	Cleanliness Test – CTM 227	\$ 128
39	Crushed particles, per primary size	\$ 165
40	Durability Index (\$120 per size fraction) – CTM 229	\$ 215
41	Fine Aggregate Angularity – AASHTO T304	\$ 175
42	Flat & Elongated Particles (per bin size) – ASTM D4791	\$ 190
43	Lightweight pieces, per size fraction – ASTM C123	\$ 400
44	Lime content of treated materials (by titration)	
a	Lime content curve determination, for each material	\$ 395
b	Lime content, including untreated control sample	\$ 145
45	Mortar making properties of Sand ASTM C87	\$ 360
46	Mortar Properties - CTM 515	\$ 410
47	Organic Impurities – ASTM C40	\$ 75
48	Petrographic Analysis of Gravel – ASTM C295 (single grading)	\$ 450
49	Petrographic Analysis of WC Sand – ASTM C295 (pre-graded)	\$ 850
50	Potential Reactivity Test ASTM C289 Chemical Method	\$ 495
51	Potential Reactivity ASTM C227 Mortar Bar Method (3 month)	\$ 785
Each additional month		\$ 118
52	Potential Reactivity Test ASTM C1260 Rapid Method	\$ 589
53	Potential Reactivity ASTM C1293 Mortar Bar w/ Pozz. (12 month)	\$ 1600
Extend to 24-months add (C1293 requires Sp Grav. & Unit Weight)		\$ 800
54	Potential Reactivity Test ASTM C1567 Rapid-Cement Combo	\$ 760
55	"R" Value (HVEEM) (Treated material by quote)	\$ 270
56	Rip Rap, Slope Protection, Quarry Stone Acceptance	Per Quote
57	Specific gravity w/ absorption - coarse (ASTM C127, CTM 206)	\$ 100
58	Specific gravity w/ absorption - fine (ASTM C128, CTM 207)	\$ 125
59	Sulfate Soundness, 5 cycle test per primary size – ASTM C88	\$ 325
60	Uncompacted Void Content of Fine Aggregate – AASHTO T304	\$ 145
61	Unit weight – ASTM C29	\$ 72

IV. LAB TESTS: CEMENT, CONCRETE, & MASONRY

A Cement

1.	Alkali content of Portland Cement	Per Quote
2.	Grab sample (CCR Title 24) includes 1 year storage	\$ 48
3.	Testing individual samples of cement, ASTM C150	Per Quote

B Concrete

1.	Cement content of hardened concrete – ASTM 1085	\$ 550
2.	Concrete compression: 6x12 cylinders – ASTM C39:	\$ 25
3.	Concrete compression: 4x8 cylinders – ASTM C39:	\$ 20
4.	Concrete cylinder pickup: 6x12 (>25mi radius of Lab add hourly pickup rate)	\$ 50
5.	Concrete cylinder pickup: 4x8 (>25mi radius of Lab add hourly pickup rate)	\$ 50
6.	Concrete cylinder mold (w/ lid - spare)	\$ 5
7.	Concrete core compression test – ASTM C42	\$ 35
8.	Concrete Trial Batch (includes 6 compression tests)	\$765
9.	Concrete Mix Design Review (excludes testing & revisions)	\$230
10.	Concrete mix proportion revision	\$150
11.	Density of concrete cylinder (unit weight)	\$64
12.	Drying shrinkage – ASTM C157 (set of 3, 5 ages)	\$495
13.	End preparation of cores, diamond sawing, per cut	\$15
14.	Flexural beam pick-up (>25mi radius of Lab add hourly pickup rate)	\$13
15.	Flexural strength, 6"x6" beam – ASTM C78 & C293	\$ 33
16.	Shotcrete/Gunite core compression test (not including coring)	\$35
17.	Coring of Shotcrete/Gunite panel in laboratory, each core	\$50
18.	Shotcrete/Gunite panel pick-up (>25mi radius of Lab add hourly pickup rate)	\$38
19.	Lab. trial batch, not including specimen tests - ASTM C192	Per Quote
20.	Lightweight, insulating concrete compress. 4 req. – ASTM C107	\$40
21.	Lightweight insulating concrete – unit weight (oven dry)	\$15
22.	Modulus of elasticity, 6"x12" cylinder – ASTM C469	\$15
23.	Petrographic analysis of hardened concrete – ASTM C856	\$10
24.	Poisson's Ratio on 6"x12" cylinders – ASTM C469	\$10
25.	Splitting tensile – ASTM C496	\$75
26.	Statistical Analysis (\$105 minimum)	Per Quote
27.	Non-Shrink (Dry-Pack) Grout – 2"x2"x2"; set of 3	\$96

C Masonry

1.	Absorption - brick, 5 required – ASTM C67	\$ 75
2.	Absorption - masonry unit, 3 required – ASTM C140	\$ 45
3.	Compressive strength, brick, 5 required – ASTM C67	\$ 45
4.	Compression - masonry core	\$ 35
5.	Compression - masonry prisms 8"x 8" – ASTM E447 (other sizes by quote – may require cutting charge)	\$ 145
6.	Compression - masonry unit, 3 required – ASTM C140 (requires absorption/unit weight tests for Net Area)	\$ 65
7.	Dimensions – masonry unit, 3 required	\$ 40
8.	Masonry Prism Pickup	\$ 20
9.	Masonry Unit Acceptance Test – ASTM C140 (includes absorption, compression, dimensions, unit weight)	\$ 50
10.	Compression test, grout specimens	\$ 30
11.	Compression test, mortar specimens	\$ 25
12.	Diamond sawing of masonry specimens, if required (minimum)	\$ 24
13.	Efflorescence, first unit @ \$125, each additional @	\$ 54
14.	Linear shrinkage, masonry unit, 3 required – ASTM C426	\$ 98
15.	Modulus of rupture, brick, 5 required – ASTM C67	\$ 42
16.	Moisture content - masonry unit (as received), 3 req'd – ASTM C140	\$ 42
17.	Shear test on masonry core	\$ 80
18.	Tensile test on masonry block	\$ 80
19.	Unit weight, masonry unit, 3 required – ASTM C140	\$ 15

V. LAB TESTS: REINFORCING & STRUCTURAL STEEL

A General Testing

1.	Processing mill certification (each size & heat)	\$18 ea
2.	Rockwell or Brinell Hardness, average of three readings	\$24 ea
3.	Zinc coating, each item (includes Haz Mat Fee)	\$187

B Reinforcing Steel

1.	Deformation, reinforcing steel	\$40
2.	Pre-stress, strand or wire, tensile & elongation	Per Quote
3.	Proof test on post-tension assembly	Per Quote
4.	Bend Test (rebar)	\$45
5.	Tensile test (rebar), up to & including #8	\$45
6.	Tensile test (rebar) #9, #10, #11	\$60
7.	Tensile test (rebar) #14, #18	\$70
8.	Rebar Mechanical Coupler (Tension) Test (up to #11 bar)	\$125

C Structural Steel

1	Cutting & machining charges	\$72/hr
2	Bend test, structural, all sizes	\$55
	Tensile test, structural, <¼" cross-section (cutting & machining extra)*	\$75
	Tensile test, structural, >¼" cross-section (cutting & machining extra)*	\$95
5	Flattening test of pipe	\$42
	*Tensile and yield by percent offset, add \$85	

D High Strength Bolts

1	DSA-Certified High Strength Bolt Set ea. (Bolt, Nut, & Washer)	\$ 325
2	Bolts – proof load (non-DSA)	\$ 45
	Bolts – ultimate load	\$ 65
	Bolts – hardness	\$ 35
3	Nuts – proof load	\$ 45
	Nuts – hardness	\$ 35
4	Washers – hardness	\$ 35

E Welding Procedure and Welder Qualification Tests

	<i>Coupon thickness (mild steel only)</i>	<i>to 3/8"</i>	<i>over 3/8"</i>
1	Fracture bend (fillet)		\$42
2	Macroetch	\$49 ea.	
3	Free bend		\$60
4	Nick break	\$41 ea.	\$33
5	Side, face or root bend	\$22 ea.	\$27
6	Tensile	\$31 ea.	\$43
7	Welder Qualification Records		\$115

Includes evaluation of test specimens and preparation of Stamped Welder Procedure Qualification Records per applicable code.

**Welder qualification examinations are given in our laboratory or at fabricator's shop with 4-hour minimum witnessing charge.*

***Fees listed are for tests only. Sample preparation, coupon machining, etc., will be charged at applicable hourly lab rates and cost plus 15% for Outside Direct Costs.*

VI. MISCELLANEOUS CONSTRUCTION MATERIALS TESTS

1	Calibration Certificates	Per Quote
2	Density of Sprayed Fireproofing	\$70
3	Fireproofing Bond Pull Test	\$38
4	Roof Tile Strength	\$54
5	Roof Tile Absorption	\$38
6	Roof Cut Tests (total weight only)	\$57
7	Ply count, separation, bituminous content, etc.	Per Quote
8	Jobsite Trailer or Mobile Laboratory	Per Quote
9	Universal Testing Machine (Hourly)	\$150
10	Ground Rod Test (plus travel)	\$150

ADDITIONAL TESTS: BTC LABS and NV5 perform a broad spectrum of field and laboratory testing. This Fee Schedule list only the most common tests performed. For information regarding additional testing services, please contact our laboratory.

VII. ASPHALT & ASPHALTIC CONCRETE

A. Asphalt Pavement Engineering

1.	CALTRANS Third Party Resolution Documentation Fee	\$350
2.	Pavement Evaluations	\$425 (minimum)

B. Asphaltic Cements And Liquid Asphalts

1.	Absolute viscosity @140°F – ASTM D-2171, AASHTO T-202	\$155
	Other temperature	\$185
2.	Conc penetration – ASTM D-217	\$125
3.	Flash point Cleveland Open Cup – ASTM D-92, AASHTO T-48	\$125
4.	Kinematic viscosity @140 or 275°F – D-2170, T-201	\$125
	Other temperature	\$155
5.	Penetration – ASTM D-5, AASHTO T-49 (at 77°F)	\$115
	Other temperature	\$135
6.	Softening point – ASTM D-36	\$125
7.	Solubility in trichloroethylene – ASTM D2042, AASHTO T-44	\$185
8.	Specific gravity – ASTM D-70, AASHTO T-228	\$125

C. Emulsions And Slurry Seals

1.	Cement mixing – ASTM D-244, AASHTO T-59	\$105
2.	Consistency test – ASTM D-3910	\$95
3.	Demulsibility – ASTM D-244, AASHTO T-59	\$115
4.	Miscibility – ASTM D-244	\$115
5.	Particle charge – ASTM D-244, AASHTO T-59	\$75
6.	pH determination	\$75
7.	Oven cook off (% residue)	\$100
8.	Set time – ASTM D-3910	\$85
9.	Settlement, 5 or 7 day – ASTM D-244, AASHTO T-59	\$155
10.	Slurry seal mix proportion	\$1,750
11.	Solids content by evaporation and extraction (slurry)	\$205
12.	Storage stability, 1 day – ASTM D-244	\$150
13.	Torsional Recovery	\$125
14.	Wet Track Abrasion – ASTM D-3910 (prep. not included)	\$270

D. Asphaltic Concrete, Aggregate And Mixes

1.	Bulk Specific Gravity (max density, bulk AC) CTM 308, AASHTO T166	
	3 pt. LTMD	\$210
	5 pt. LTMD	\$325
2.	Coring of asphaltic concrete – See Section E Diamond Coring	
3.	Extraction, % bitumen and sieve analysis	
	Solvent Extraction Method – ASTM D2172, C137	\$325
	Ignition Oven Method – CTM 382, 202	\$225
4.	Extraction, % bitumen only	
	Solvent Extraction Method – ASTM 2172	\$265
	Ignition Oven Method – CTM 382	\$145
5.	Film stripping – CTM 302	\$165
6.	Ignition Oven Correction Factor – CTM 382	\$650
7.	Marshall - Stability and flow (core) – ASTM D-1559	\$125
8.	Marshall - Stability and flow (bulk) – ASTM D-1559	\$325
9.	Marshall - Specific Gravity	\$225
10.	Mix proportion - Marshall Method	\$2,900
	with R.A.P.	\$3,700
11.	Mix proportion - HVEEM Method	\$2,700
	with R.A.P.	\$3,500
12.	Theoretical Maximum Specific Gravity (RICE) – ASTM D-2041	\$200
13.	Moisture content – ASTM D-1461	\$115
14.	Recovery of Extracted Asphalt (extraction only) - ASTM D-5404	\$250
15.	Recovery of rubber from ARHM extraction	\$115
16.	Specific gravity of core – ASTM D-2726	\$60
17.	HVEEM Stabilometer test on premixed sample – CTM 366	\$185
	Stabilometer test and mixing of sample	\$400
18.	Surface abrasion CTM 360	\$445
19.	Swell test in conjunction with stabilometer – CTM 305	\$115
20.	Resistance to Moisture Induced Damage (untreated) – T-283, CT 371	\$1,700
21.	Resistance to Moisture Induced Damage (lime) – T-283, CT 371	\$1,850
22.	Viscosity curve for ARHM (% rubber) binder blend - 6 hr.	\$870
	- 8 hr.	\$1,200

NOTE: Where prices are listed for mix proportions, the necessary specific gravity tests and sieve analyses are included; however, aggregate and asphalt qualification tests are not.