

# ATTACHMENT A

## COST PROPOSAL FOR QUALITY ASSURANCE CONSTRUCTION INSPECTION AND MATERIALS TESTING SERVICES

### I. SOILS & EARTHWORK

1. **Field Geotechnical Engineer** \$\_\_\_\_\_/hour  
The engineer who will visually inspect the excavated sub-grade, estimate the bearing capacity and/or verify consistency with the test borings from the original geotechnical investigation and verify the suitability of the bearing strata. Once suitability is verified, they will prepare a report of acceptance accordingly.
  
2. **Soil Compaction & Moisture Content Testing** \$\_\_\_\_\_/hour  
The technician will determine the soil moisture content (ASTM D 3017) and perform field compaction testing in accordance with ASTM D2922 (Nuclear Method) or ASTM D1556 (Sand Cone Method), observe and document the compaction procedures followed and daily report findings to all concerned.
  
3. **Electronic Nuclear Moisture-Density Gauge** \$\_\_\_\_\_/day  
Usage Charge
  
4. **Modified Proctor** \$\_\_\_\_\_/each  
4 pt moisture-density relationship (ASTM D1557)
  
5. **Washed Sieve Analysis** \$\_\_\_\_\_/each  
Includes mechanical analysis and #200 wash (ASTM D422)
  
6. **Loam Analysis** \$\_\_\_\_\_/each  
Includes organic content, pH, soil texture & classification nutrient along with recommendations for additives to bring nutrient content and pH to satisfactory levels for seeding.

### II. CAST IN-PLACE CONCRETE

1. **Certified Concrete Batch Plant Inspector** \$\_\_\_\_\_/hour  
**(Proof of Inspector's Certification required)**  
Inspector who will review the plant's QC procedures, verify the moisture content and gradation of both the fine and coarse aggregates then confirm adjustments to the batch weights accordingly, view the batching procedure, confirm batch ingredients & proportions and record yardage.
  
2. **ACI Certified Concrete Field Technician (ACI-CFTT)** \$\_\_\_\_\_/hour  
**(Proof of MCIB or ACI Certification required)**

## ATTACHMENT A

Technician who will sample the fresh concrete (ASTM C172), test the mix for slump (ASTM C143) and air content (ASTM C173), fabricate concrete cylinders ASTM C31); record temperature (ASTM C1064), concrete mix duration, workability, site added water, appearance, placement procedures & location, total yardage placed; and daily report to all concerned. Inspect curing, cold weather protection and hot weather protection procedures.

3. **Concrete Test Cylinders 4" x 8"** \$\_\_\_\_\_/each  
Compressive Strength Test (ASTM C31 & C39) slump (ASTM C143), air content (ASTM C231 or C173), temperature (ASTM C1064) and lightweight concrete unit weight (ASTM C567) for conformance with construction documents
4. **Mix Design Review** \$\_\_\_\_\_/each  
With computer generated analysis & report
5. **Vapor Emission & pH Testing of Concrete Floors** \$\_\_\_\_\_/hour  
Using Anhydrous Calcium Chloride kit \$\_\_\_\_\_/test kit  
(ASTM E 1907 & F 1869)
6. **Determination of Relative Humidity in Concrete Floors** \$\_\_\_\_\_/hour  
Using in-situ probes (ASTM F 2170-11) \$\_\_\_\_\_/probe
7. **Floor Flatness-Levelness Inspection** \$\_\_\_\_\_/day  
ASTM E1155

### III. MASONRY

1. **Field Masonry Inspector** \$\_\_\_\_\_/hour  
Inspector who will monitor grout, and/or mortar proportions, mixing procedure, prevailing temperature & fabricate mortar cubes and/or grout prisms. The Inspector will also monitor work activities for quantity, quality of workmanship and accuracy of placement for compliance to contract documents. Conduct sufficient number of periodic field review of mortar and grout proportioning, mixing and consistency for conformance ACI 530.1. They will also check horizontal and vertical reinforcing steel, installation of control/expansion joints, mortar joints including tooling and filling of head joints, brick to stud anchors, brick wash down procedure, condition of cavity wall, weep holes, and construction of any specialized masonry flashing systems.
2. **IBC Certified Structural Masonry Special Inspector** \$\_\_\_\_\_/hour  
**(Proof of Inspector's Certificate required)**
3. **Laboratory Services**
  - a. Test Concrete Masonry Unit (ASTM C-140) \$\_\_\_\_\_/set  
Evaluation of units to ensure compliance with ASTM C-90 including:  
Measurement, absorption, & compressive strength total for testing a set of 6 units.
  - b. Grout Prisms or cylinders (ASTM C1314) \$\_\_\_\_\_/each
  - c. Strength Test CMU Prisms (ASTM C-1314) \$\_\_\_\_\_/each

## ATTACHMENT A

Made by Mason

d. Mortar or Non-Shrink Grout Cubes (ASTM C780) \$\_\_\_\_\_/each

### **IV. STRUCTURAL & REINFORCING STEEL, JOISTS, DECK, STUDS, LIGHT GAUGE METAL FRAMING (LGMF), MISC. METAL, AND NON-DESTRUCTIVE EXAMINATION (NDE)**

1. **Formwork & Reinforcing Steel Inspection** \$\_\_\_\_\_/hour  
Detailed visual inspection utilizing the approved shop drawings to insure all of the formwork and reinforcing conforms in all respects to the approved shop drawings and other contract documents including any field cutting or welding of rebar and cold weather protection provisions.
2. **Visual Steel Erection Inspection** \$\_\_\_\_\_/hour  
Of all structural steel components and/or connections to include torque testing of any bolted connections, witnessing of impact wrench calibrations by a Skidmore Wilhelm Torque Tension Gauge, inspection of steel joist and/or trusses, steel deck, shear studs, light gauge metal framing & shear wall fasteners, misc. metals (such as steel pan stairs & railings), curtain wall framing, metal wall panels or veneers and any pre-cast connections.
3. **AWS Certified Welding Inspector** \$\_\_\_\_\_/hour
4. **Nondestructive Examination** \$\_\_\_\_\_/hour  
Of any field weldments by an ASNT Certified Level II Technician to include:
  - a. Ultrasonic Evaluation of full penetration welds
  - b. Magnetic Particle or Dye Penetrant evaluation of fillet welds.

### **V. SPRAY FIREPROOFING**

1. **ICC Certified Fireproofing Inspector** \$\_\_\_\_\_/hour  
**(Proof of Inspector's certification required)**  
To perform an evaluation of the Sprayed-on Fireproofing for proper coverage, thickness & density (ASTM E-605) and adhesion (ASTM E-736).
  - a. Adhesion Test \$\_\_\_\_\_/each
  - b. Density Test \$\_\_\_\_\_/each

### **VI. FIRESTOPPING**

1. **ICC Certified Fireproofing Inspector** \$\_\_\_\_\_/hour  
**(Proof of Inspector's certification required)**  
To perform an evaluation of the Sprayed-on Fireproofing for proper coverage, thickness & density (ASTM E-605) and adhesion (ASTM E-736).

## ATTACHMENT A

- a. Certification of method and type of application for Opening and rating required and in compliance with FM/ UL criteria \$\_\_\_\_\_/each

### VI. BUILDING ENVELOPE (ROOFING, AIR/VAPOR BARRIER, SIDING, WATERPROOFING, WINDOWS, STORE FRONT & CURTAIN WALLS)

1. **Visual Inspection of Building Envelope Components** \$\_\_\_\_\_/hour  
An experienced Technician who will check all materials and procedures for strict conformance to project specifications. The technician will inspect application of roofing, curtain wall, air barrier systems, flashings, waterproofing, thermal & sound insulation, waterproofing, caulking and/or other joint sealants and will prepare a daily report recording weather conditions and all work performed that day along with any deficiencies noted.
2. **Applicable Field Testing:**
- a. **Air and Water Infiltration Test** \$\_\_\_\_\_/day  
(ASTM E 783 and ASTM E1105)  
Includes all testing equipment and a 2-person crew. Field determination of air infiltration and water penetration of installed exterior windows, curtain walls and doors by uniform or cyclic static air pressure difference. Note: Any carpentry needed to field fabricate any specialized wooden test chambers is to be supplied by the GC.
- b. **Water Leakage Check (AAMA 501.2)** \$\_\_\_\_\_/hour  
Utilizing a 2-person crew. Field hose test on metal framed windows & curtain walls.
- c. **Air Leak Testing (ASTM E1186 4.2.6)** \$\_\_\_\_\_/day  
Smoke test, 2-person crew on air/vapor barrier assemblies.
- d. **Air Leak Testing (ASTM E1186 4.2.7)** \$\_\_\_\_\_/hour  
1-person crew for testing of seams & fastener penetrations on the air/vapor barrier utilizing a vacuum leak detection unit.
- e. **Air/Vapor Barrier Adhesion Pull Test** \$\_\_\_\_\_/hour  
(ASTM D4541)
- g. **Joint Sealant Adhesion Pull Test** \$\_\_\_\_\_/hour  
(ASTM C1193)
- g. **Infrared Thermal Scan** \$\_\_\_\_\_/day
- h. **Fastener pull-out test** \$\_\_\_\_\_/hour  
SPRI FX-1
- j. **Heat Welded Seam Testing** \$\_\_\_\_\_/hour

## ATTACHMENT A

k. Roof Drain Testing \$\_\_\_\_\_/hour

### VII. BITUMINOUS ASPHALT

1. **NETTCP Certified Bituminous Field Technician** \$\_\_\_\_\_/hour  
**(Proof of Inspector's Certificate required)**  
Field Technician who will make certain that the preliminary paving surface is properly prepared for paving, check the delivery temperature of the mix, inspect the paving and rolling operation, check the pavement thickness and determine in place density in accordance with ASTM D-2950 utilizing a nuclear density gauge.
2. **Thickness Evaluation and/or coring of Pavement Mixture Field**  
Specimens for lab analysis (in accordance with ASTM D-3549)
3. **Laboratory Tests**
  - a. Preparation of Marshall Specimens \$\_\_\_\_\_/each set  
(AASHTO T245)
  - b. Bulk Specific Gravity of Mixtures \$\_\_\_\_\_/each  
(AASHTO T166)
  - c. Theoretical Maximum Specific Gravity \$\_\_\_\_\_/each  
(AASHTO T209)
  - d. Extraction of Bitumen from Mix & Gradation \$\_\_\_\_\_/each  
(AASHTO T164)

### VIII. MISCELLANEOUS

1. **QA/QC Consultant Services or research (if needed)** \$\_\_\_\_\_/hour
2. **Registered Professional Engineer/Special Inspection Coordinator (if needed)**  
\$\_\_\_\_\_/hour
3. **Cross Trained QA/QC Inspector (full time)** \$\_\_\_\_\_/hour  
(One Dedicated Technician to perform multiple inspection disciplines including Soil Comp, Rebar, Concrete, Masonry & Bit Asphalt & Bldg Envelope Inspection and/or Testing)
4. **Mileage Expense to/from site per round trip** \$\_\_\_\_\_/round trip
5. **Round Trip Travel time per site visit** \$\_\_\_\_\_ hours/round trip
6. **Transportation of samples from the site to laboratory** \$\_\_\_\_\_/trip
7. **Normal turnaround time for lab results is X working days from date received.**
  - a. Requested "Rush" Laboratory Results will be charged at:  
24 hour turnaround time (or less) = regular rate x ( )

**ATTACHMENT A**

24 to 48 hour turnaround time = regular rate x (        )

8. **Overtime rate (over 8 hours on site)**

2nd shift rates

3rd shift rates

Saturday Rate

Sunday/Holiday Rate

Base Rate x \$ \_\_\_\_\_

Base Rate x \$ \_\_\_\_\_

Base Rate x \$ \_\_\_\_\_

Base Rate x \$ \_\_\_\_\_

Base Rate x \$ \_\_\_\_\_

Hourly rates assume a 4-hour minimum per site visit. Travel time is to be billed @ straight time rate (not OT rate). Inspectors will be required to sign in and out at the Owner's Project Representative's office to verify time spent on site. No additional time will be permitted to be billed for daily report preparation or for review of reports by Supervisor or P.E. Rates include all phone calls, report distribution to 4 parties and all other miscellaneous charges.