Description of the Office of Structural Materials and Consultant Services Needs

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From the Office of Structural Materials
The Office of Structural Materials

• Quality Assurance and Source Inspection Branch (QASI)

• Quality Assessment and Management Branch (QAM)

• The Structural Materials Testing Branch (SMTL)
  • A2LA accredited lab tests structural products including reinforcing and pre-stressing steel, bearing pads, steel plates and rebar coupling systems.

• The Concrete Materials Testing Branch (CMTB)
  • Aggregate, Cement, and Concrete Laboratories conduct acceptance and prequalification testing of concrete materials for projects throughout the State.

• The Corrosion and Field Investigation Branch
  • The Field Investigation Team (FIT) conducts investigations and corrosion testing throughout the State for numerous functional units within the Department.
Quality Assurance and Source Inspection (QASI) Branches

- divided into three areas to facilitate inspections and staffing.

Vallejo

Los Angeles

Sacramento
Different Levels of Inspection

- **METS QA**
  - Award, Advertise, Administered by Caltrans
- **METS OVERSIGHT**
  - Award, Advertise, Administered by Local Agency
- **METS IQA**
  - Alternate Delivery / Design Build Contracts
- **ENHANCED IQA**

**Conflict of interest may be an issue depending on service provided to LA**
Statewide Source Inspection A&E Contract

1. CT AAA & Local Agency Oversight
2. DPAC Pilot Selection Process

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<td>3 Years</td>
<td>$25 Million</td>
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MATERIALS ENGINEERING AND TESTING SERVICES (METS)
Quality Assurance and Source Inspection (QASI) Branch

- Coordinates inspection, sampling, and release of a wide variety of fabricated and manufactured products
- Determine level of inspection appropriate for a given product
- Verify that the structural materials for Caltrans contracts are compliant prior to arrival to the jobsite
- Provide fabrication inspection at the source
- Inspection occurs in state, out of state and internationally.
- May also observe field welding at job sites and review quality submittals.
- Develop specifications with design
- Coordinates with industry and fabricators regarding structural materials
## Personnel Requirements

<table>
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<tr>
<th>Position</th>
<th>Requirements</th>
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<tr>
<td><strong>Project Manager</strong></td>
<td>3 years experience managing on-call contracts as a Project Manager. Must demonstrate knowledge in fabrication and erection of bridges</td>
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<tr>
<td><strong>Structural Materials Representatives</strong></td>
<td>Qualifications equivalent to Caltrans Transportation (Civil), Range C or Range D</td>
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<tr>
<td><strong>Welding Inspectors</strong></td>
<td>Certified as Certified Welding Inspector (CWI) in accordance with AWS QC-1. Fracture Critical (3 years bridge experience)</td>
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<tr>
<td><strong>NDT Level III Inspector</strong></td>
<td>ASNT Level III certificate holder in UT, PT, MT and RT</td>
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<tr>
<td><strong>NDT Inspector</strong></td>
<td>Level II per ASNT TC-1A in at least two of the following disciplines UT, RT, MT and PT</td>
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<td><strong>Pre-cast Concrete Inspector</strong></td>
<td>PCI Level II or III Certification</td>
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<tr>
<td><strong>Paint and Coating Inspector</strong></td>
<td>NACE Certified Coating Inspector- Level III</td>
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<tr>
<td><strong>Technical Experts</strong></td>
<td>Metallurgical Engineering, Welding Engineering, Corrosion Engineering, Failure analysis Engineering, Structural Concrete Engineering</td>
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The Function of the OSM Consultant

- A&E staff are integrated into OSM / Caltrans staff
- On-call Contract
- Provide inspection and engineering services for:
  - Capital Projects and Oversight of Local Agency Projects
  - Maintenance Contracts and Permit Jobs
  - Specialty Services (metallurgy, welding engineering, paint, timber, etc.)
The Role of the OSM Consultant

1. Provide Level III Program to insure consultant’s Level II inspectors are trained and qualified
   - ASNT-Certified Level III UT, RT, MT, and PT
   - Company conforms to ASNT TC-1A Written Practice
The Role of the OSM Consultant

2. Provide Trained & Certified Inspectors

- CWI – Fracture Critical
- Level II UT, RT, MT & PT
- PCI Level II
- NACE Level III
- Perform QA Testing & Sampling
- Communicate with project team members
- Ability to navigate and interpret codes and specifications
QASI Inspector Expectations

- Highly trained and certified in:
  - Welding Inspection (CWI, NDT) – Fracture Critical
  - Precast/Prestressed Concrete Inspection (PCI, ACI)
  - Paint Inspection (NACE)
  - Miscellaneous fabrication (timber, plastics, etc.)

- Must stay current in specification changes and industry practices

- Inspect to verify that the fabricator’s approved Quality Control plans are implemented effectively

- Identify non-conformance issues – clearly communicate to SMR

- Multiple certifications beneficial to OSM
The Role of the OSM Consultant

3. Provide Engineering staff – SMRs
   • Regional responsibility assigned to one of the branches
   • Single Point of Contact between OSM and
     • Construction
     • Fabricators
     • Other Caltrans functional units
   • Interpret plans and specifications
   • Ability to perform research of materials and documentation and make materials related decisions and recommendations
   • Coordination between project team members
The Structural Materials Representative (SMR)

- Manages the Quality Assurance methodology for structural materials for each project, including shop drawing and control plan submittals
- Understands various fabrication practices and provides technical recommendations to Construction in a timely manner
- Need for SMRs to be flexible, resourceful and able to handle multiple projects concurrently.
- Effective communication to Construction, other OSM personnel, and Branch Seniors
The Role of the OSM Consultant

4. Expert recommendations
   - Welding Engineering (AWS D1.1, D1.5)
   - Metallurgical Engineering
   - Corrosion Engineering
   - Failure Analysis
   - Structural Concrete Engineering
Snapshot of CT Projects

1. Districts 1, 2, & 3 – 159 Active, Approx. 15-20 new per month
2. Districts 6 & 10 – 59 Active, Approx. 10-15 new per month
3. Districts 4 & 5 – 195 Active, Approx 25-30 new per month
4. Districts 7, 8, 9, 11, & 12 – 261 Active, Approx 35-40 new per month

Total 704 Active Contracts

Does not include all permit jobs, minor contracts, or cooperative agreement contracts
1. **Dynamic** in nature. OSM is not always aware of fabrication schedule until the fabricator notifies OSM.

2. Inspections are managed and coordinated by State Dispatchers

3. Inspection is coordinated upon notification
   - Inspector is dispatched to review contract documents, set up travel, execute inspection, then document the inspection.
   - May have multiple projects inspected at one time, at various stages of production
Purpose

Contract

Assurance that the structural materials delivered to the jobsite meet contract requirements

Specifications & Codes

Verification

Documentation
Typical Capital Project

194 Bid Items, 26 of which OSM would typically inspect and release at the source of fabrication

Other OSM-related items released via programmatic inspection or by the RE at the jobsite
1. Furnish Steel piling (2.4m) – Granite Falls, Washington (CWI + UT or RT)
2. Furnish Steel piling (760mm) – St. Louis, Missouri (CWI+UT or RT)
3. Furnish Steel piling (Class 625) - Unknown
4. Drive Steel piling – Field welding (CWI + UT inspection)
5. PTFE Sliding Bearings – Seattle, Washington (Sp. Training for Engineer or Inspector)
6. Prestressing (CIP) strand – Unknown (typically Sumiden Wire Products, Stockton)
7. Prestressing (CIP) anchorages – Unknown (Could be Avar in Campbell, CA or SDI, or other as proposed by Contractor)
8. Joint Seal Assembly – Unknown (Could be Watson Bowman in Buffalo or D.S. Brown in Ohio)
9. Rebar Couplers – Unknown
10. Signal and Lighting Poles (Unknown, Omaha, Canton, Tulsa typ.)
Multiple inspection Locations require **flexibility!**
Consider the Signal and Lighting Source Inspection ... 

- 1 inspector per shipment
- EXAMPLE:
  - 3 contracts District 7
  - 2 contracts District 3
  - 4 contracts District 4
Consultants Roles

• Provide flexibility for Construction support
• Provide efficiency to work on multiple contracts
• Maintain consistency!

• Keeps projects moving forward!
Conclusion

Thank you for your interest
Any Questions ???

Provide a safe, sustainable, integrated and efficient transportation system to enhance California’s economy and livability