CONSTRUCTION TESTING AND INSPECTION SERVICES MASTER CONTRACTS - SUMMARY OF SERVICES MATRIX

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**Geotechnical Services**

- Pre-construction Soil Exploration and Testing
- Percolation Tests, Recommendations for Septic Systems
- Foundation and Pavement Design Recommendations
- Observation and Testing of Existing Soils during Excavation and Grading
- Laboratory Testing of Proposed Fill Material
- Observation and Testing of Fill and Backfill for Moisture, Compaction
- Other___see individual contract___________________________________________

**Concrete Testing and Inspection Services**

- Concrete, Grout Mix Design
- Observe and Document Formwork Construction
- Observe and Document Placement of Reinforcing Steel
- Slump, Temperature, and Air Entrainment Tests of Fresh Concrete
- Cast, Cure and Test Concrete Cylinders for Compressive Strength
- Other___see individual contract___________________________________________

**Masonry Testing and Inspection Services**

- Mortar, Masonry Fill Mix Design
- Laboratory Tests on Masonry Prisms
- Laboratory Test of Mortar and Core-fill for Compressive Strength and Bond Strength
- Special Inspection of Structural Masonry Construction (Continuous___/ Periodic___)
- Other___see individual contract___________________________________________
<table>
<thead>
<tr>
<th>Structural Steel Testing and Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strength Testing of Embedded Bolts</td>
</tr>
<tr>
<td>Observe and Test Welded and Bolted Connections during Structural Steel and Precast Concrete Erection</td>
</tr>
<tr>
<td>Observe and Test Welding and Screw Fastening during Metal Deck Installation</td>
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<tr>
<td>Other <strong>see individual contract</strong>_________</td>
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<thead>
<tr>
<th>Pavement Testing and Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observe and Test Rolling Operations on Subgrade Soils</td>
</tr>
<tr>
<td>Field and Laboratory Tests on Aggregate Base</td>
</tr>
<tr>
<td>Field and Laboratory Tests during Bituminous Paving (Continuous___/Periodic___)</td>
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<tr>
<td>Other <strong>see individual contract</strong>_________</td>
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<tr>
<th>Fireproofing / Firestopping Testing and Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Installed Spray-on Fireproofing for Thickness, Density, Adhesion</td>
</tr>
<tr>
<td>Observe and Document Installation of Fire-Resistive Joint Systems</td>
</tr>
<tr>
<td>Other______________________________________________</td>
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</tbody>
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<th>Other</th>
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<tbody>
<tr>
<td>Window/Curtain Wall Testing and Inspection</td>
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<tr>
<td>Roofing/Waterproofing Testing and Inspection</td>
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Phase I Archaeological Resources Investigation

Determine whether cultural resources are present within the project area, and whether these resources are potentially eligible for the National Register of Historic Places (NRHP).

All field methods and reporting of the Phase I Archaeological Resources Investigation will comply with the Minnesota State Historic Preservation Office guidelines as well as federal guidelines, and will meet the requirements of the Secretary of the Interior’s Standards.

If an archaeological site is found, wash, analyze, and catalogue all recovered artifacts. Laboratory and curation procedures will follow appropriate standard guidelines.

Curate the artifacts at the Minnesota Historical Society under Contractor’s curation agreement. Contractor’s lab director will ensure that the cataloging and curation meet the requirements of Minnesota’s repository guidelines.

Other ________________________________
|-----------------------|-------------|---------------|---------------|----------------------|------------------------|-------------------|------------------------|----------------------------|----------------|------------------------|---------------------|------------------------|-----------|-------------------|

### Phase II Archaeological Resources Investigation

Excavate and document designated features in accordance with Minnesota State Historic Preservation Office guidelines as well as federal guidelines, and will meet the requirements of the Secretary of the Interior’s Standards.

Record excavation data on standardized forms and in the log book of the principal investigator including location and methods of testing; the numbers, types, and locations of recovered cultural materials; the depth and thickness of excavated soil layers; soil textures and inclusions; and soil color according to Munsell color charts.

Take up to 5 radiocarbon samples if suitable materials are encountered and complete standard radiometric analysis.

Clean, catalogue, label and bag all recovered artifacts in accordance with professional standards and submit recovered materials to the Minnesota Historical Society for curation.

Other ________________________________

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Phase I Environmental Investigation

Complete a Phase I Environmental Site Assessment in a manner consistent with the American Society of Testing and Materials standard for a Phase I ESA and the Minnesota Pollution Control Agency Voluntary Investigation and Cleanup Program Guidance Document #8.

Conduct a visual (existing structures) assessment for typical suspect asbestos containing materials (ACM).

Assess the presence of PCBs at the subject site.

Collect and evaluate available historical information to determine if evidence exists indicating an existing release, a past release, or a material threat of a release of hazardous substances, hazardous materials or petroleum products to the Property.

Other see individual contract

Architectural Testing
Bay West LLC
Braun Intertec
Carlson McCain
Chosen Valley Testing
Constr Engineering Lab
EPC Enng & Testing
Indust Hygine Services
Independent Test Technol
INSPEC
Landmark Environmental
Northern technologies Inc
Professional Serv Indust
Roof Spec
Twin Ports Testing
Prepare a workplan for the Phase II Investigation in a manner consistent with the American Society of Testing and Materials standard for a Phase I ESA and the Minnesota Pollution Control Agency Voluntary Investigation and Cleanup Program Guidance Document #11 to determine if potential sources of contamination identified during the Phase I Investigation are causing a release or threatened release of hazardous substances, contaminants or pollutants to the soil, surface water and ground water on the property in question.

Prepare a site safety and contingency plan in a manner consistent with the American Society of Testing and Materials standard for a Phase I ESA and the Minnesota Pollution Control Agency Voluntary Investigation and Cleanup Program Guidance Document #10.

Conduct Phase II Environmental Investigation in accordance with approved work plan and in a manner consistent with the American Society of Testing and Materials standard for a Phase I ESA and the Minnesota Pollution Control Agency Voluntary Investigation and Cleanup Program Guidance Documents.

Other ___ see individual contract _________________________________

Phase II Environmental Investigation

Prepare a workplan for the Phase II Investigation in a manner consistent with the American Society of Testing and Materials standard for a Phase I ESA and the Minnesota Pollution Control Agency Voluntary Investigation and Cleanup Program Guidance Document #11 to determine if potential sources of contamination identified during the Phase I Investigation are causing a release or threatened release of hazardous substances, contaminants or pollutants to the soil, surface water and ground water on the property in question.

Prepare a site safety and contingency plan in a manner consistent with the American Society of Testing and Materials standard for a Phase I ESA and the Minnesota Pollution Control Agency Voluntary Investigation and Cleanup Program Guidance Document #10.

Conduct Phase II Environmental Investigation in accordance with approved work plan and in a manner consistent with the American Society of Testing and Materials standard for a Phase I ESA and the Minnesota Pollution Control Agency Voluntary Investigation and Cleanup Program Guidance Documents.

Other ___ see individual contract _________________________________
|------------------------|-------------|----------------|---------------|------------------------|---------------------|----------------------|------------------------|--------|----------------------|-------------------------|------------------------|-----------|------------------|

**Remediation Services**

Prepare and, upon approval, implement the Response Action Plan (RAP) and in a manner consistent with the American Society of Testing and Materials standard for a Phase I ESA and the Minnesota Pollution Control Agency Voluntary Investigation and Cleanup Program Guidance Documents.

Following completion of the RAP, prepare an Implementation Report for submission to the MPCA for review and approval in a manner consistent with the American Society of Testing and Materials standard for a Phase I ESA and the Minnesota Pollution Control Agency Voluntary Investigation and Cleanup Program Guidance Documents.

Other___see individual contract___________________________________________