Part 1 General

1.1 SECTION INCLUDES

.1 DigiScan Electric leak detection survey.

.2 DigiScan Testing and measuring apparatus.

1.2 RELATED SECTIONS:

.1 Section 01 45 00 - Quality Control.

.2 Section [_____] - [_____] Roofing.

.3 Section 07 55 52 - Modified Bituminous Protected Membrane Roofing.

.4 Section [_____] - [_____].

.5 Division 22 - Plumbing: Drains and scuppers.

1.3 REFERENCES

.1 RCABC (Roofing Contractors Association of British Columbia) Guarantee Corp. - RCABC Roofing Practices Manual.

.2 Journal of ASTM International (Vol.8, No. 9) Paper ID- JAI 103772 - Electrical Conductance Methods for Locating Leaks in Roofing and Waterproof Membranes.

1.4 SYSTEM DESCRIPTION

.1 Installation of a perimeter cable to facilitate detection of membrane leak locations. The leak locate function is performed by portable measuring equipment.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with other work having a direct bearing on work of this section.

.3 Pre-installation Meeting: Convene four (4) weeks before starting work of this section.

.1 Review preparation and installation procedures and coordinating and scheduling required with related work.

1.6 SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide manufacturer’s data sheets for product components.

.3 Shop Drawings: Indicate cable layout on plans, dimensions, accessories, construction details, methods of anchorage, location and type of roof penetrations and roof drains.

.4 Test Reports: Test reports from approved testing agency certifying that leak detection system conforms to performance characteristics and testing requirements specified.

.5 Test Protocol: Manufacturer's written description of testing protocol and method.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Operation and Maintenance Data: Indicate maintenance requirements for installed products.

.3 Testing Service: Submit proposal to perform membrane integrity scans every year.

1.8 QUALITY ASSURANCE

.1 Products to be listed as Accepted Materials in the RCABC Roofing Practices Manual.

.2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this Section with minimum three (3) years documented experience.

.3 Manufacturer shall be ISO 9000 Certified.

.4 Testing Agency Qualifications: Company specializing in performing the work of this Section with minimum three (3) years documented experience and approved by the manufacturer.

1.9 ENVIRONMENTAL REQUIREMENTS

.1 Do not perform scans when heavy rain is falling.

1.10 WARRANTY

.1 Membrane Integrity Scan: The DigiScan membrane integrity scan provides the integrity condition only at the time of the scan and gives no assurance of future condition. No warranty is expressed or implied.

Part 2 Products

2.1 MANUFACTURERS

.1 SMT Research Ltd.: 778-373-2070 or 778-373-2071. www.smtresearch.ca

.2 Substitutions: Acceptable alternates.

2.2 EQUIPMENT

.1 DigiSCAN Power Supply: Voltage supply to induce electrical potential to the light layer of water on top of membrane relative to the roof deck below.

.2 DigiSCAN Membrane Scanner: Digital Multi-vector 16 probe membrane scanning device which outputs the voltage magnitude and vector direction to the operator. Use of related head attachment for vertical scanning, and corners.

2.3 COMPONENTS

.1 Electrical Cable and Accessories: As recommended by system manufacturer.

[Contact manufacturer for options and systems for permanently installed perimeter or detection grid systems for the location of membrane leaks under the overburden – reference Spec Section 07 0173]

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that membrane penetrations are of a non-conductive material or are electrically isolated by applying applications of additional layers of non-conductive waterproof material or other electrically insulating materials.

.3 Verify that the waterproof membrane extends above all overburden to avoid unintended electrical paths to ground.

.4 Verify that a suitable liquid-applied or weatherproof insulating material or a cap sheet may be applied to insulate exposed concrete. Metal flashings and other metal elements should be clear of overburden and soil to achieve the electrical insulation and avoid unintended grounds.

.5 Verify availability of hose and water supply of sufficient length to reach all points on surfaces to be surveyed.

.6 Coordinate with responsible entity to correct unsatisfactory conditions.

.7 Commencement of work by surveyor is acceptance of installation conditions.

3.2 PREPARATION

.1 Membranes to be scanned to be broom clean (except for follow-up surveys on vegetated waterproofing) and be free of overburden, construction materials, equipment and debris.

3.3 INSTALLATION

.1 Install perimeter cable to manufacturer's written instructions.

.2 Connection point to be coordinated with Testing Agency for future testing.

3.4 SURVEY PROCEDURE

.1 Provide survey to equipment manufacturer's written requirements.

.2 Scan roof surfaces including inside and outside corners of parapets and equipment curbs. Use scanning equipment appropriate to the surfaces being scanned.

.3 Mark breach locations on membrane with a marker approved by the waterproof membrane contractor and/or Inspector.

.4 Record location of membrane breach on sketch or drawings for communication with contractor and/or inspector.

.5 Provide re-scan after repair by membrane installer. Document the repair location.

3.5 FIELD QUALITY CONTROL

.1 Section 01 45 00: Field inspection and testing.

.2 Perform survey after waterproof membrane installation for confirmation that membrane installation by roofing company is complete

[AND/OR]

.3 Perform survey after waterproof membrane installation and immediately prior to covering of the membrane with protection boards, drainage mats or other subsequent overburden.

[AND]

.4 Perform survey immediately following installation of final layer of inverted or vegetated roof.

.5 Correct identified defects or irregularities.

.6 Field Reports: Identify date, time, and weather conditions when surveys are conducted.

- .1 Provide general description of scan/survey equipment and process.
- .2 Describe typical membrane breaches located and areas not accessible by scanning equipment.
- .3 Document survey with photographs and plan view scale drawings with approximate location of breaches noted.

END OF SECTION 07 01 51