SECTION  – membrane roofing inspection and testing

1. General
   1. summary
      1. This Section is included for the information of the Contractor and Roofing Subcontractors so that they can coordinate their activities with the Owner's inspection and testing agency; Costs for inspection and testing will be paid for by the Owner from a Cash Allowance; Contractor and Subcontractors shall include coordination costs only, do not include any costs for actual inspection and testing.
      2. This Section specifies inspection and testing of roofing assemblies specified Section **[INSERT ROOFING SECTION NUMBER HERE]**.
      3. Intent of this section is to provide requirements daily roof inspections (not full time inspection) for duration of roofing installation, with registered roofing inspector providing site specific recommendations and corrections to deficient materials or workmanship, and recording observations, recommendations and corrections on weekly basis.
      4. Related Requirements:
         1. Section 07 01 50 – Maintenance Roofing Work.
         2. Section 07 08 15 – Building Envelope Inspection and Testing.
         3. Section 07 52 16.13 – SBS Modified Bituminous Membrane Roofing - Mop/Torch.
         4. Section 07 53 23 – Elastomeric Membrane Roofing.
         5. Section 07 54 23 – Thermoplastic Polyolefin Roofing (TPO).
         6. Section 07 55 56.13 – Hot-Applied Rubberized Asphalt Protected Membrane Roofing."
         7. Section 07 62 00 – Prefinished Metal Flashing and Trim.
         8. Section 07 72 33 – Roof Hatches and Accessories.
         9. Section 07 92 00 – Joint Sealants.
   2. definitions
      1. Registered Roofing Observer (RRO): Holding a Registered Roofing Observer (RRO) Certification through International Institute of Building Enclosure Consultants (IIBEC), and a member in good standing with IIBEC, CRCA and OIRCA.
   3. reference standards
      1. Canadian Roofing Contractors Association (CRCA):
         1. Manual on Good Roofing Practice and Accepted Roofing Systems.
      2. Ontario Industrial Roofing Contractors' Association (OIRCA):
         1. Good Practice and Minimum Standards Code No. GP-67-1; Latest revision.
      3. International Institute of Building Enclosure Consultants (IIBEC):
         1. 2020 IIBEC Manual of Practice: Roofing, Waterproofing, and Exterior Wall Consulting, and Quality Observation.
      4. American Society for Testing and Materials (ASTM):
         1. ASTM D4434 96, Standard Specification for Poly (Vinyl Chloride) Sheet Roofing.
         2. ASTM D5036 99, Standard Practice for Application of Adhered Poly (Vinyl Chloride) Sheet Roofing.
      5. Canadian General Standards Board (CGSB):
         1. CGSB 37 GP 56M, Membrane, Modified, Bituminous, Prefabricated and Reinforced for Roofing.
      6. Canadian Standards Association (CSA):
         1. CSA A123.4 M1979, Bitumen for Use in Construction of Built-up Roof Coverings and Dampproofing and Waterproofing Systems.
      7. Underwriters Laboratories Canada (ULC):
         1. CAN/ULC S701 01, Thermal Insulation, Polystyrene, Boards and Pipe Covering.
         2. CAN/ULC S704 2001, Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.
   4. QUALITY ASSURANCE
      1. Registered Roofing Observer (RRO) shall be experienced in all aspects of the required work and be familiar with specified roofing materials.
      2. RRO shall be independent of Contractor and Roofing Subcontractor.
   5. submittals
      1. Provide required information in accordance with Section 01 33 00 – Submittal Procedures.
      2. Notify Consultant and Owner of noncompliant workmanship or materials and recommended corrective action within one (1) day of discovery.
      3. Submit daily inspection reports on a weekly basis.
      4. Submit a final report summarizing previous reports and specifically stating a belief as to the compliance of the work; signed by RRO responsible for inspection and testing program.
      5. Submit copies of reports to:
         1. Owner.
         2. Consultant.
         3. Contractor.
         4. Roofing Subcontractor.
2. Products
   1. general
      1. It is the responsibility of Contractor to notify RRO regarding timing of inspection and testing.
      2. RRO must coordinate with Contractor's schedule and make themselves aware of the current work schedule and bring to the attention of Consultant and Contractor any inspection or testing requirement apparently being overlooked.
      3. RRO shall make daily site visits for the duration of the roofing work, having a duration as required to form an opinion on compliance of the work.
      4. Immediately inform Consultant and seek instructions where RRO recommends additional inspection or testing beyond that stipulated in this scope of service.
      5. Immediately inform Consultant where site conditions are such that a reduced program of inspection and testing is deemed appropriate.
   2. reports
      1. Maintain a daily log of events, observations and recommendations, deficiencies, and corrective instructions, and submit on a weekly basis.
      2. Terms of reference for inspection and testing services for roofing membranes include:
         1. Review and reporting of drawings, details, and specifications for compliance with CRCA and OIRCA requirements for an OIRCA warranty:
            1. Provide suggested modifications to Consultant's documents and Manufacturer's standard details (if any) required for compliance with CRCA requirements.
            2. Coordinate a preinstallation meeting with Consultant, Contractor, and Roofing Subcontractor to discuss any modifications to documents required for compliance with CRCA requirements.
         2. Review and report on going roofing work relating to substrate preparation, installation of air/vapour membranes, insulation, blockings and curbs, roofing accessories, drains and penetrations, flashings, membrane flashings and membranes.
         3. RRO is responsible for daily review of work and reporting compliance to References and Contract Documents during progress of the work at regularly scheduled intervals.
         4. Responsibility for quality of construction and compliance with Contract Documents rests solely with Contractor.
         5. Consultant will make all engineering decisions with respect to rejection criteria and rework required.
         6. All copies of roofing inspection reports shall be addressed to Owner with copies sent to Consultant, Contractor, Roofing Subcontractor and OIRCA's "standard form of warranty".
3. Execution
   1. initial inspection
      1. Confirm that materials being used for project are as specified.
      2. Confirm that curb construction, roof slope, perimeter blocking and materials are as specified and are acceptable to CRCA.
      3. Conduct review of roof deck and substrates, comment on condition and acceptability for specified roof membranes.
      4. Conduct a pre installation meeting and coordinate manufacturer's written instructions and OIRCA's workmanship warranty.
      5. Record observations and instructions, clarifications and corrective actions stated during pre installation meeting and initial review.
   2. interim inspections
      1. Conduct on going daily reviews of work progress, recording progress and deficiencies, and written instructions, clarifications or corrective actions required by Roofing Subcontractor, and as follows:
         1. Record weather conditions.
         2. Record name of supervisor and workers, including their trade status (i.e.: journeyman, apprentice or labourer)
         3. Record names and certificate numbers of Registered Torch Applicators.
         4. Prepare roof plan indicating work to be completed on day of observation.
         5. Confirm on following day's report extent of roofing completed on previous day, and prepare new roof plan indicating current day's planned objectives.
         6. Confirm that roofing materials, flashings, roofing accessories and ancillary materials are in accordance with specification and manufacturer's requirements.
      2. Coordinate number of required interim reviews with Roofing Subcontractor's work schedule as approved by Contractor.
   3. final inspection
      1. Prepare deficiency list indicating corrective measures required and any hold back amounts required where corrective measures are not forthcoming.
      2. Prepare final roof plan indicating penetrations and roofing accessories.
      3. Make final submissions required by OIRCA and facilitate delivery of roofing warranties from the roofing manufacturer to the Owner.
   4. ADDITIONAL INSPECTION AND TESTING
      1. Additional inspections, reviews or testing is to be conducted only as instructed by Contractor. No costs for extra work will be accepted unless preapproved by Contractor.

END OF SECTION