

Section Number	Section Title	No. of Pages
01 11 00	Summary of Work	2
01 21 00	Allowances	2
01 29 00	Payment Procedures	2
01 31 19	Project Meetings	3
01 33 00	Submittal Procedures	4
01 35 29	Health, Safety, and Emergency Response Procedures	2
01 35 43	Environmental Procedures	1
01 45 00	Quality Control	2
01 51 00	Temporary Utilities	1
01 61 00	Common Product Requirements	4
01 73 00	Execution	2
01 74 00	Cleaning	2
01 77 00	Closeout Procedures	2
06 08 99	Rough Carpentry for Minor Works	3
07 31 29	Wood Shingles	4
07 62 00	Sheet Metal Flashing and Trim	2

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Owner/Contractor Agreement

**1.2                WORK COVERED BY CONTRACT DOCUMENTS**

- .1            Work of this Contract comprises the removal of existing shingle and/or board-on-board roofing and installation of new cedar shingle roofing to the following buildings at the Fort Walsh National Historic Site:

- Non-commissioned Officers Barracks (1967), approximately 176 m<sup>2</sup> in floor area.
- Courthouse/Granary (1946), approximately 70 m<sup>2</sup> in floor area.
- Stable (1943), approximately 278 m<sup>2</sup> in floor area.
- Bastion on Palisade (1978), approximately 102 m<sup>2</sup> in floor area.

There is also a requirement to remove existing fascias, gable trims and roof sheathing under a Prime cost Sum specified in Section 01 21 00.

**1.3                CONTRACT METHOD**

- .1            Construct Work under stipulated price contract.

**1.4                WORK SCHEDULE**

- .1            Construct Work in full scale until completion.  
.2            Co-ordinate Progress Schedule and co-ordinate with Owner Occupancy during construction.  
.3            Work shall commence after Labour Day 2019.

**1.5                OWNER OCCUPANCY**

- .1            Owner will occupy premises during entire construction period for execution of normal operations.  
.2            Co-operate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

**1.6                DOCUMENTS REQUIRED**

- .1            Maintain at job site, one copy each document as follows:  
.1            Specifications.  
.2            Addenda.  
.3            Reviewed Shop Drawings.  
.4            List of Outstanding Shop Drawings.  
.5            Change Orders.

- .6 Other Modifications to Contract.
- .7 Field Test Reports.
- .8 Copy of Approved Work Schedule.
- .9 Health and Safety Plan and Other Safety Related Documents.
- .10 Other documents as specified.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Owner/Contractor Agreement
- .2            Project Supplementary Conditions

**1.2                PRIME COST SUM**

- .1            Include in Contract Price specified Prime Cost Sum (PCS).
- .2            PCS, unless otherwise specified, covers net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage installation and other authorized expenses incurred in performing Work.
- .3            Contract Price, and not PCS, includes Contractor's overhead and profit in connection with such PCS.
- .4            Contract Price will be adjusted by written order to provide for excess or deficit to each cash allowance.
- .5            Where costs under a PCS exceed amount of allowance, Contractor will be compensated for excess incurred and substantiated plus allowance for overhead and profit as set out in Contract Documents.
- .6            Include progress payments on accounts of work authorized under PCS in Department Representative's monthly certificate for payment.
- .7            Prepare schedule jointly with Department Representative to show when items called for under PCS must be authorized by Department Representative for ordering purposes so that progress of Work will not be delayed.
- .8            Amount of PCS, for Work specified in respective specification Sections is as follows:
  - .1            Section 06 08 99 – Rough Carpentry for Minor Works:
    - .1            Provide a cash allowance of \$7,500 for the removal and replacement of damaged or rotted fascias, gable trim and roof sheathing. Extent to be determined at site review with Department Representative.

**Part 2            Products**

**2.1                NOT USED**

- .1            Not Used.

**Part 3            Execution**

**3.1                NOT USED**

- .1            Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Owner/Contractor Agreement.

**1.2                APPLICATIONS FOR PROGRESS PAYMENT**

- .1            Make applications for payment on account as provided in Agreement monthly as Work progresses.
- .2            Date applications for payment last day of agreed [monthly] payment period and ensure amount claimed is for value, proportionate to amount of Contract, of Work performed and Products delivered to Place of Work at that date.
- .3            Submit to Department Representative at least 14 days before first application for payment. A schedule of values for parts of Work, aggregating total amount of Contract Price, to facilitate evaluation of applications for payment.

**1.3                SCHEDULE OF VALUES**

- .1            Provide schedule of values supported by evidence as Department Representative may reasonably direct and when accepted by Department Representative, be used as basis for applications for payment.
- .2            Include statement based on schedule of values with each application for payment.
- .3            Support claims for products delivered to Place of Work but not yet incorporated into Work by such evidence as Department Representative may reasonably require to establish value and delivery of products.

**1.4                SUBSTANTIAL PERFORMANCE OF WORK**

- .1            Prepare and submit to Department Representative comprehensive list of items to be completed or corrected and apply for a review by Department Representative to establish Substantial Performance of Work or substantial performance of designated portion of Work. Failure to include items on list does not alter responsibility to complete Contract.
- .2            No later than 10 days after receipt of list and application, Department Representative will review Work to verify validity of application, and no later than 7 days after completing review, will notify Contractor if Work or designated portion of Work is substantially performed.
- .3            Department Representative: state date of Substantial Performance of Work or designated portion of Work in certificate.
- .4            Immediately following issuance of certificate of Substantial Performance of Work, in consultation with Department Representative, establish reasonable date for finishing Work.

**1.5                PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF WORK**

- .1            After issuance of certificate of Substantial Performance of Work:

- .1 Submit application for payment of holdback amount.
  - .2 Submit sworn statement that accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Performance of Work and for which Owner might be held responsible have been paid in full, except for amounts properly retained as holdback or as identified amount in dispute.
- .2 After receipt of application for payment and sworn statement, Department Representative will issue certificate for payment of holdback amount.

**1.6 FINAL PAYMENT**

- .1 Submit application for final payment when Work is completed.
- .2 Department Representative will, no later than 10 days after receipt of application for final payment, review Work to verify validity of application. Department Representative will give notification that application is valid or give reasons why it is not valid, no later than 7 days after reviewing Work.
- .3 Department Representative will issue final certificate for payment when application for final payment is found valid.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                ADMINISTRATIVE**

- .1     Schedule and administer project meetings throughout the progress of the work at the call of Departmental Representative.
- .2     Prepare agenda for meetings.
- .3     Distribute written notice of each meeting four days in advance of meeting date to Departmental Representative.
- .4     Departmental Representative will provide physical space and make arrangements for meetings.
- .5     Preside at meetings.
- .6     Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- .7     Reproduce and distribute copies of minutes within [three] days after meetings and transmit to meeting participants Departmental Representative and, affected parties not in attendance.
- .8     Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

**1.2                PRECONSTRUCTION MEETING**

- .1     Within 15 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2     Departmental Representative, Senior representatives of Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
- .3     Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
- .4     Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5     Agenda to include:
  - .1     Safety.
  - .2     Appointment of official representative of participants in the Work.
  - .3     Schedule of Work: provide schedule in GANTT chart format,
  - .4     Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .5     Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
  - .6     Delivery schedule of specified materials in accordance with Section
  - .7     Site security.

- .8 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
- .9 Owner provided products if required.
- .10 Record documents in accordance with Section 01 33 00 - Submittal Procedures.
- .11 Maintenance manuals in accordance with Section 01 77 00 - Closeout Submittals.
- .12 Take-over procedures, acceptance, warranties in accordance with Section 01 77 00 - Closeout Submittals.
- .13 Monthly progress claims, administrative procedures, photographs, hold backs.
- .14 Insurances, transcript of policies.

### **1.3 PROGRESS MEETINGS**

- .1 During course of Work and bi-weekly.
- .2 Contractor, major Subcontractors involved in Work, Departmental Representative are to be in attendance.
- .3 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 3 business days of meeting.,
- .4 Agenda to include the following:
  - .1 Safety.
  - .2 Review, approval of minutes of previous meeting.
  - .3 Review of Work progress since previous meeting.
  - .4 Field observations, problems, conflicts.
  - .5 Problems which impede construction schedule.
  - .6 Review of off-site fabrication delivery schedules.
  - .7 Corrective measures and procedures to regain projected schedule.
  - .8 Revision to construction schedule.
  - .9 Progress schedule, during succeeding work period.
  - .10 Review submittal schedules: expedite as required.
  - .11 Maintenance of quality standards.
  - .12 Review proposed changes for affect on construction schedule and on completion date.
  - .13 Other business.

### **Part 2 Products**

#### **2.1 NOT USED**

- .1 Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1            Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Section 01 77 00 – Closeout Submittals

**1.2                REFERENCE STANDARDS**

- .1            Not Used.

**1.3                ADMINISTRATIVE**

- .1            Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2            Do not proceed with Work affected by submittal until review is complete.
- .3            Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4            Where items or information is not produced in SI Metric units converted values are acceptable.
- .5            Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6            Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7            Verify field measurements and affected adjacent Work are co-ordinated.
- .8            Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9            Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10           Keep one reviewed copy of each submission on site.

**1.4                SHOP DRAWINGS AND PRODUCT DATA**

- .1            The term shop drawings means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2            Submit drawings stamped and signed by professional engineer registered or licensed in Saskatchewan, Canada.
- .3            Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which

adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

- .4 Allow 5 days review of each submission by Departmental Representative.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor s name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .8 Submissions include:
  - .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor s stamp, signed by Contractor s authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.
    - .4 Capacities.
    - .5 Performance characteristics.
    - .6 Standards.
    - .7 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.

- .12 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
  - .2 Testing must have been within 3 years of date of contract award for project.
- .13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Statements printed on manufacturer s letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit electronic copies of manufacturers instructions for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .16 Delete information not applicable to project.
- .17 Supplement standard information to provide details applicable to project.
- .18 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .19 The review of shop drawings by Parks Canada Agency (PCA) is for sole purpose of ascertaining conformance with general concept.
  - .1 This review shall not mean that PCA approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
  - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

## 1.5 SAMPLES

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's business address.

- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

#### **1.6 PHOTOGRAPHIC DOCUMENTATION**

- .1 Submit electronic copy of colour digital photography in jpg format, fine resolution monthly with progress statement.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Number of viewpoints: 4 locations at each building.
  - .1 Viewpoints and their location as determined by Departmental Representative.
- .4 Frequency of photographic documentation: monthly, or as construction progress dictates.

#### **1.7 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

#### **Part 2 Products**

##### **2.1 NOT USED**

- .1 Not Used.

#### **Part 3 Execution**

##### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1            Section 01 33 00 - Submittal procedures.

**1.2                REFERENCES**

- .1            Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .2            Province of Saskatchewan
  - .1            S-15.1 The Saskatchewan Employment Act.

**1.3                SUBMITTALS**

- .1            Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2            Submit site-specific Health and Safety Plan: Health and Safety Plan must include:
  - .1            Results of site specific safety hazard assessment.
  - .2            Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .3            Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .4            Submit copies of incident and accident reports.
- .5            Submit Material Safety Data Sheets (MSDS) to Department Representative.
- .6            Medical Surveillance: Where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Department Representative.

**1.4                FILING OF NOTICE**

- .1            File Notice of Project with Provincial authorities prior to commencement of Work.

**1.5                SAFETY ASSESSMENT**

- .1            Perform site specific safety hazard assessment related to project.

**1.6                GENERAL REQUIREMENTS**

- .1            Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2            Department Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

**1.7 RESPONSIBILITY**

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

**1.8 COMPLIANCE REQUIREMENTS**

- .1 Comply with S-15.1 The Saskatchewan Employment Act.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

**1.9 UNFORSEEN HAZARDS**

- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, and follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction. Advise Consultant verbally and in writing.

**1.10 POSTING OF DOCUMENTS**

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Consultant.

**1.11 CORRECTION OF NON-COMPLIANCE**

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Department Representative.
- .2 Provide Department Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Department Representative may stop Work if non-compliance of health and safety regulations is not corrected.

**1.12 WORK STOPPAGE**

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                SECTION INCLUDES**

- .1      Site fires.
- .2      Plant protection.
- .3      Work adjacent to waterways.
- .4      Pollution control.

**1.2                RELATED REQUIREMENTS**

- .1      Section 01 74 19 - Construction Waste Management and Disposal.
- .2      This section describes requirements applicable to all Sections within Divisions 02 to 49.

**1.3                FIRES**

- .1      Fires and burning of rubbish on site is not permitted.

**1.4                PLANT PROTECTION**

- .1      Protect trees and plants on site and adjacent properties where indicated.

**1.5                WORK ADJACENT TO WATERWAYS**

- .1      Do not operate construction equipment in waterways.
- .2      Do not dump waste material or debris in waterways.
- .3      Do not skid logs or construction materials across waterways.

**1.6                POLLUTION CONTROL**

- .1      Maintain temporary pollution control features installed under this contract.
- .2      Control emissions from equipment and plant to local authorities emission requirements.
- .3      Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Section 01 21 00 – Prime Cost Sum

**1.2                REFERENCE STANDARDS**

- .1            Owner/Contractor Agreement.

**1.3                INSPECTION**

- .1            Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2            Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3            If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4            Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative will pay cost of examination and replacement.

**1.4                INDEPENDENT INSPECTION AGENCIES**

- .1            Independent Inspection/Testing Agencies may be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative
- .2            Provide equipment required for executing inspection and testing by appointed agencies.
- .3            Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4            If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and reinspection.

**1.5                ACCESS TO WORK**

- .1            Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2            Co-operate to provide reasonable facilities for such access.

**1.6 PROCEDURES**

- .1 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .2 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

**1.7 REJECTED WORK**

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative, it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

**1.8 REPORTS**

- .1 Submit 4 copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested or manufacturer or fabricator of material being inspected or tested.

**1.9 MILL TESTS**

- .1 Submit mill test certificates as required by specification Sections.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Owner/Contractor Agreement.

**1.2                INSTALLATION AND REMOVAL**

- .1            Provide temporary utilities controls in order to execute work expeditiously.
- .2            Remove from site all such work after use.

**1.3                WATER SUPPLY**

- .1            Departmental Representative will provide continuous supply of potable water for construction use until the end of September 2019. Contractor will be responsible for supply of potable water after this date, if required.
- .2            Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.
- .3            Departmental Representative will pay for utility charges at prevailing rates, based on General Conditions of Contract.

**1.4                TEMPORARY POWER**

- .1            Departmental Representative will pay for temporary power during construction for operating of power tools, to a maximum supply of 115 volts 15 amps.

**1.5                FIRE PROTECTION**

- .1            Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.
- .2            Burning rubbish and construction waste materials is not permitted on Site.

**Part 2            Products**

**2.1                NOT USED**

- .1            Not Used.

**Part 3            Execution**

**3.1                NOT USED**

- .1            Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Owner/Consultant Agreement.

**1.2                REFERENCE STANDARDS**

- .1            Within text of each specifications section, reference may be made to reference standards.
- .2            Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .3            If there is question as to whether products or systems are in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4            Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

**1.3                QUALITY**

- .1            Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2            Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3            Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4            Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .5            Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .6            Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

**1.4                AVAILABILITY**

- .1            Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

- .2 In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

## **1.5 STORAGE, HANDLING AND PROTECTION**

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer s instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer s seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Store sheet materials, lumber above grade in dry location.
- .6 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .7 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

## **1.6 TRANSPORTATION**

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Transportation cost of products supplied by Owner will be paid for by Departmental Representative. Unload, handle and store such products.

## **1.7 MANUFACTURER'S INSTRUCTIONS**

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer s instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

## **1.8 QUALITY OF WORK**

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.

- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

## **1.9 CO-ORDINATION**

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

## **1.10 REMEDIAL WORK**

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

## **1.11 FASTENINGS**

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

## **1.12 FASTENINGS - EQUIPMENT**

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 316 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

## **1.13 PROTECTION OF WORK IN PROGRESS**

- .1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

**Part 2            Products**

**2.1                NOT USED**

.1            Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1            Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Section 01 45 00 – Quality Control.

**1.2                ACTION AND INFORMATIONAL SUBMITTALS**

- .1            Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2            Submit written request in advance of cutting or alteration which affects:
  - .1            Structural integrity of elements of project.
  - .2            Integrity of weather-exposed or moisture-resistant elements.
  - .3            Efficiency, maintenance, or safety of operational elements.
  - .4            Visual qualities of sight-exposed elements.
  - .5            Work of Owner or separate contractor.
- .3            Include in request:
  - .1            Identification of project.
  - .2            Location and description of affected Work.
  - .3            Statement on necessity for cutting or alteration.
  - .4            Description of proposed Work, and products to be used.
  - .5            Alternatives to cutting and patching.
  - .6            Effect on Work of Owner or separate contractor.
  - .7            Written permission of affected separate contractor.
  - .8            Date and time work will be executed.

**1.3                MATERIALS**

- .1            Required for original installation.
- .2            Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

**1.4                PREPARATION**

- .1            Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2            After uncovering, inspect conditions affecting performance of Work.
- .3            Beginning of cutting or patching means acceptance of existing conditions.
- .4            Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5            Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

**1.5 EXECUTION**

- .1 Execute cutting, fitting, and patching to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .6 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .7 Restore work with new products in accordance with requirements of Contract Documents.
- .8 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

**1.6 WASTE MANAGEMENT AND DISPOSAL**

- .1 Dispose of refuse in nearest landfill site that will accept waste.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Owner/Contractor Agreement.

**1.2                PROJECT CLEANLINESS**

- .1            Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.
- .2            Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .3            Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4            Dispose of waste materials and debris off site.
- .5            Contain and remove wildlife attractants, like food waste, daily.
- .6            Store volatile waste in covered metal containers and remove from premises at end of each working day.
- .7            Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .8            Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

**1.3                FINAL CLEANING**

- .1            When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2            Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3            Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4            Remove waste products and debris other than that caused by Owner or other Contractors.
- .5            Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .6            Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7            Remove stains, spots, marks and dirt from decorative work.
- .8            Remove dirt and other disfiguration from exterior surfaces.
- .9            Clean and sweep roofs, gutters, areaways, and sunken wells.
- .10          Clean roofs.

**Part 2            Products**

**2.1                NOT USED**

.1                Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1                Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Owner/Contractor Agreement

**1.2                ADMINISTRATIVE REQUIREMENTS**

- .1            Acceptance of Work Procedures:
  - .1            Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
    - .1            Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
    - .2            Request Departmental Representative inspection.
  - .2            Departmental Representative Inspection:
    - .1            Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
    - .2            Contractor to correct Work as directed.
  - .3            Completion Tasks: submit written certificates in English that tasks have been performed as follows:
    - .1            Work: completed and inspected for compliance with Contract Documents.
    - .2            Defects: corrected and deficiencies completed.
    - .3            Work: complete and ready for final inspection.
  - .4            Final Inspection:
    - .1            When completion tasks are done, request final inspection of Work by Departmental Representative and Contractor.
    - .2            When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.
  - .5            Declaration of Substantial Performance: when Departmental Representative considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
  - .6            Commencement of Lien and Warranty Periods: date of Department Representative's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
  - .7            Final Payment:
    - .1            When Departmental Representative considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.

.2 Refer to Owner/Contractor Agreement: when Work deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.

.8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

**1.3 FINAL CLEANING**

.1 Clean in accordance with Section 01 74 00 - Cleaning.

.1 Remove surplus materials, excess materials, rubbish, tools and equipment from site.

**Part 2 Products**

**2.1 NOT USED**

.1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 07 31 29 – Wood Shingles.

**1.2 REFERENCE STANDARDS**

- .1 CSA Group (CSA)
  - .1 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
  - .2 CSA O141-05 (R2009), Softwood Lumber.
  - .3 CAN/CSA-O325.0-07, Construction Sheathing.
- .2 National Research Council Canada (NRC)
  - .1 National Building Code of Canada 2015 (NBC).
- .3 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber 2010.

**1.3 QUALITY ASSURANCE**

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA standards.
- .3 Plywood, OSB and wood based composite panel construction sheathing identification: by grademark in accordance with applicable CSA standards.

**1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer s name and address.
- .3 Storage and Handling Requirements:
  - .1 Store materials off ground in dry location and in accordance with manufacturer s recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect wood from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.

**1.5 PRIME COST SUM**

- .1 Refer to Section 01 21 00 – Prime Cost Sum.
- .2 A PCS is included in Contract for the removal and replacement of damaged or rotted fascias, gables and wood sheathing.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
  - .1 CAN/CSA-O141.
  - .2 NLGA Standard Grading Rules for Canadian Lumber.
- .2 Furring, blocking, nailing strips, grounds, fascia backing and sleepers:
  - .1 S2S is acceptable for semi-concealed items.
  - .2 Board sizes: Standard or better grade, sized to match existing.
  - .3 Dimension sizes: Standard light framing or better grade, sized to match existing.
  - .4 Post and timbers sizes: Standard or better grade, sized to match existing.

### **2.2 ACCESSORIES**

- .1 Fasteners: to CAN/CSA-G164, for exterior work.
- .2 Nails, spikes: to CSA B111, stainless steel.
- .3 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for rough carpentry installation in accordance with manufacturer s written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied.

### **3.2 INSTALLATION**

- .1 Comply with requirements of National Building Code of Canada (NBC), supplemented by the following paragraphs.
- .2 Install furring and blocking as required to space-out and support facings, fascia, soffit, siding, and other work as required.
- .3 Align and plumb faces of furring and blocking to tolerance of 1:600.
- .4 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .5 Install wood fascia, nailers and other wood supports as required and secure using galvanized fasteners.
- .6 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

- .7 Countersink bolts where necessary to provide clearance for other work.

**3.3 CLEANING**

- .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 06 08 99 – Rough Carpentry for Minor Works.
- .2 Section 07 62 00 – Sheet Metal Flashing and Trim.

**1.2 REFERENCE STANDARDS**

- .1 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.
- .2 CSA Group (CSA)
  - .1 CSA A123.3-05 (R2010), Asphalt Saturated Organic Roofing Felt.
  - .2 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
  - .3 CSA O118.1-08, Western Red Cedar Shakes and Shingles.
- .3 Cedar Shake and Shingle Bureau (CSSB)
  - .1 CSSB-97, Cedar Shake and Shingle Grading Rules.
  - .2 CSSB New Roof Construction Manual for Roof Application Details 2011.
- .4 National Research Council Canada (NRC)
  - .1 National Building Code of Canada 2015 (NBC).

**1.3 DEFINITIONS**

- .1 Shingle: tapered slice of wood sawn from block with taper in direction of grain or axial direction.

**1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for wood shingles and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Include information on preservation and restoration of shingles.
- .3 Samples:
  - .1 Submit duplicate full-size shingles, of finish and profile specified.

**1.5 QUALITY ASSURANCE**

- .1 Qualifications:
  - .1 Installer: company or person who has adequate plant, equipment and skilled tradesmen and is known to have been responsible for satisfactory work similar to that specified.

- .2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

## **1.6 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer s written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer s name and address.
- .3 Storage and Handling Requirements:
  - .1 Exercise care to avoid damage during unloading and storing.
  - .2 Store materials in dry location off ground and in accordance with manufacturer s recommendations in clean, dry, well-ventilated area.
  - .3 Store and protect shingles from nicks, scratches, and blemishes.
  - .4 Replace defective or damaged materials with new.
  - .5 Remove only in quantities required for same day use.

## **1.7 UNUSED MATERIALS**

- .1 Unused shingles remain property of Owner.
- .2 Turn over unused shingles to Owner. Retain packaging or rewrap shingles to form complete bundles.
- .3 Label packages to identify product, quantity and manufacturer/supplier.
- .4 Deliver and store in location designated by Departmental Representative.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Red cedar shingles: to CSA O118.1, 450 mm length, square pattern, hand split and re-sawn, Certigrade 18” Perfections No. 1 Blue Label, pressure treated..
  - .1 CAN/CSA-Z809 or FSC or SFI certified.
- .2 Roofing felt: to CSA A123.3, asphalt felt; No.15 unless otherwise specified.
- .3 Breather Underlay: 7 mm thick polypropylene matt breather membrane designed to allow water to drain and air to circulate.
- .4 Nails: to CSA O118.1, Appendix E, type 316 stainless steel.
- .5 Screws: GRK stainless steel screws.
- .6 Pressure preservative treatment: to CSA O118.1, Appendix F.

**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied.

**3.2 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

**3.3 REMOVAL OF EXISTING ROOFING**

- .1 Remove existing roofing, flashings and underlay, and expose sheathing or shingle lath of roof.
- .2 Withdraw existing shingle and flashing nails, set those which break off. Do not drive existing nails into sheathing. Leave surfaces free from dirt and loose material.
- .3 Departmental Representative to inspect roof sheathing. Take up, cut out, remove burn out portion of sheathing boards affected by fungal or insect attack as directed on site by Departmental Representative.
- .4 Replace cut out portions of sheathing boards or lath with boards of equal sectional dimensions, and specified grade. Seat each end of board on rafter, with 25 mm bearing, and secure to rafter.

**3.4 APPLICATION**

- .1 Do wood shingle work in accordance with National Building Code of Canada (NBC) CSA O118.1, Appendix C, except where indicated otherwise.
- .2 Lap roof felts 150 mm in direction of roof slope.
- .3 Lay breather underlay with butt joints, smooth side up. Start breather underlay back 12 mm from fascia edge.
- .4 Install shingles over dry substrate.
- .5 Space shingles from 6 to 10 mm.
- .6 Stagger joints minimum of 40 mm in succeeding courses. Ensure that in any 3 courses no two joints are in alignment.
- .7 Use two nails per shingle. Space nails 20 mm from edge and 40 mm above butt line of following course. Use nails long enough to penetrate into existing roof sheathing 19 mm but do not penetrate through sheathing.
- .8 Drive nails flush but do not crush shingles.

### **3.5 SHINGLE ROOFING**

- .1 Eave protection:
  - .1 Install 2-ply Type No.15 roofing felt system.
- .2 Double shingles at eaves, projecting butts 40 mm from first sheathing board or fascia. Project shingles 19 mm minimum at gable ends.
- .3 Lay shingles with grain perpendicular to eaves.
- .4 Install metal flashing at eaves and ridge, minimum 150 mm legs each side, lap joints 100mm..
- .5 Install metal drip flashing at eaves.
- .6 Saw shingles parallel to valley centre line. Do not break joints into valley.
- .7 Use shingles of uniform width approximately 150 mm wide at hips and ridges. Apply shingles at same weather exposure as field of roof. Fabricate roof cap with cedar shingles and GRK screws.

### **3.6 CLEANING**

- .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

### **3.7 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by wood shingle installation.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Section -07 31 29 – Wood Shingles.

**1.2                REFERENCE STANDARDS**

- .1            ASTM International (ASTM)
  - .1            ASTM A606/A606M-15, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance.
  - .2            ASTM A 653/A 653M-15e1, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .3            ASTM F1667-15 Standard Specification for Driven Fasteners: Nails, Spikes and Staples.
- .2            Canadian Roofing Contractors Association (CRCA)
  - .1            Roofing Specifications Manual 2012.
- .3            CSA Group (CSA)
  - .1            CSA A123.3-05 (2015), Asphalt Saturated Organic Roofing Felt.

**1.3                ACTION AND INFORMATIONAL SUBMITTALS**

- .1            Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2            Product Data:
  - .1            Submit manufacturer's printed product literature including product specifications and technical data sheets for sheet metal flashing fasteners and accessory materials. Include product characteristics, performance criteria, physical size, finish and limitations.
- .3            Shop Drawings:
  - .1            Submit shop drawings for all sheet metal fabrications.
  - .2            Indicate sheet thickness, flashing dimensions and fastenings. Include anchorage, expansion joints and other provisions for thermal movement.

**1.4                DELIVERY, STORAGE AND HANDLING**

- .1            Handle and store flashing materials to prevent creasing, buckling, scratching, or other damage.

**Part 2            Products**

**2.1                BASE SHEET METAL MATERIALS**

- .1            Zinc coated steel sheet: Z275 designation zinc coating, 0.8 mm thick.

## **2.2 ACCESSORIES**

- .1 Loose laid underlay for metal flashing: No. 15 perforated asphalt felt to CSA A123.3.
- .2 Nails: of same material as sheet metal, flat head roofing nails of length and thickness suitable for metal flashing application. Do not penetrate underside of exposed roof sheathing,

## **2.3 FABRICATION**

- .1 Fabricate sheet steel flashings and other sheet steel work as indicated and in accordance with applicable CRCA 'FL' series details.
- .2 Form pieces in 2400 mm maximum lengths. Make allowance for expansion at joints.
- .3 Hem exposed edges on underside 12 mm. Mitre and seal corners with sealant.
- .4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

## **Part 3 Execution**

### **3.1 MANUFACTURER S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer s written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

### **3.2 INSTALLATION**

- .1 Install sheet metal work CRCA FL series details.
- .2 Provide underlay under sheet metal. Secure in place and lap joints 100 mm.

### **3.3 CLEANING**

- .1 Proceed in accordance with Section 01 74 00 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.
- .3 Leave work areas clean, free from grease, finger marks and stains.

### **3.4 SCHEDULE**

- .1 Provide flashings as indicated and in accordance with the following trade standard detail schedule:
  - .1 Ridges.
  - .2 Valleys.
  - .3 Drip edges.

**END OF SECTION**