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**1 GENERAL**

**1.01 RELATED REQUIREMENTS**

.1 Section

**1.02 WORK COVERED BY CONTRACT DOCUMENTS**

- .1 Remove, supply and install Cedar Shingles on the following Buildings at Fort Walsh National Historic Site of Canada near Maple Creek, Saskatchewan.
  - .1 Remove and Install cedar shingles for the following Buildings
    - o Superintendent's Residence - 1525 sq ft
    - o Commissioner's Residence - 1300 sq ft
  - .2 Remove, supply and install cedar shingles for the Following Buildings
    - o Officer's Mess - 1725 sq ft
    - o Armoury - 900 sq ft
- .2 Remove existing roof planks/boards on buildings listed. Note: planks are screwed in place. Screws to be removed.
- .3 Remove and replace 32 square feet of roof boards that are in poor condition with material of matching species and dimension. Area and locations to be confirmed with the Parks Canada Representative.
- .4 Remove damaged and decayed fascia. Supply and install new fascia, species and profile to match existing. Parks Canada Agency will stain or paint all fascias.
- .5 Remove and reinstall miscellaneous roof accessories as necessary to complete the work.
- .6 Utilize existing stockpile of cedar shingles and tar paper stored on site. There are approximately 180 bundles currently stored onsite at Fort Walsh NHS
- .7 Supply and install new fire-retardant-treated western red cedar shingles, Cedar Shake and Shingle Bureau (CSSB) Certi-Guard #1 Grade, length and thickness to match stored cedar shingles.
  - 1. Fire retardant treatment to be by pressure impregnation. Install with same exposure as existing. Submit samples to Parks Canada Representative for acceptance prior to installation.
  - 2. Fire-retardant treatment: to CSA O118.1, Appendix G.
- .8 Nail material and coating if applicable to be as recommended by fire-retardant treatment applicator.
  - 1. Staples not permitted. Electro-galvanized coatings not permitted.
  - 2. Nail size as per CSSB "New Roof Construction Manual".
  - 3. Submit samples of proposed nail type(s) to Parks Canada Representative for acceptance prior to installation.
- .9 Do wood shingle work in accordance with CSSB "New Roof Construction Manual".
  - 1. Install shingles over open strapping, spaced 1/4" to 3/8".
  - 2. Stagger joints minimum of 1-1/2" in succeeding courses.
  - 3. Ensure that in any 3 courses no two joints are in alignment.
- .10 Use two nails per shingle.
  - 1. Space nails 3/4" from edge and 1-1/2" above butt line of following course. Drive nails flush but do not crush shingles.
- .11 At Roof Ridge, supply and install flashing and underlay
  - 1. 26 gauge galvanized and pre-painted grey colour sheet 12" wide
  - 2. With underlay of 24" wide 30 lb. roofing felt;
- .12 At Roof edge - supply and install two rows of underlay of 24" wide 30 lb roofing felt for total approximately 46" width from edge of roof.
- .13 Haul debris and waste material from site and dispose in an approved landfill authorized to accept the debris;

- .14 Clean site to satisfaction of the Parks Canada Representative;
- .15 Provide one (1) year warranty for labour and materials for the Work.
- .16 All work to comply with National Building Code 2010, National Fire Code 2010, Saskatchewan amendments to the 2010 National Building Code, and Cedar Shake and Shingle Bureau - "New Roof Construction Manual", April 2013.
- .17 All work to be completed by November 30, 2014.

### **1.03 CONTRACT METHOD**

- .1 Construct Work under stipulated price contract.

### **1.04 WORK BY OTHERS**

- .1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from Parks Canada Agency Representative.
- .2 No work by Others is anticipated at this time

### **1.05 WORK SEQUENCE**

- .1 Construct Work in stages to accommodate Owner's intermittent use of premises during construction.
- .2 Co-ordinate Progress Schedule and co-ordinate with Owner Occupancy during construction.
- .3 Maintain fire access/control.

### **1.06 CONTRACTOR USE OF PREMISES**

- .1 Unrestricted use of site until Substantial Performance.
- .2 Limit use of premises to allow:
  - .1 Owner occupancy.
- .3 Co-ordinate use of premises under direction of Parks Canada Agency Representative
- .4 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .5 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .6 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Parks Canada Agency Representative.
- .7 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

### **1.07 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.

**1.08                    ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING**

- .1     Execute work with least possible interference or disturbance to building operations and normal use of premises. Arrange Parks Canada Agency Representative to facilitate execution of work.

**1.09                    EXISTING SERVICES**

- .1     Notify, Parks Canada Agency Representative and utility companies of intended interruption of services and obtain required permission.
- .2     Where Work involves breaking into or connecting to existing services, give Parks Canada Agency Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to operations.
- .3     Do not interfere with routes for personnel and vehicular traffic.
- .4     Submit schedule to and obtain approval from Parks Canada Agency Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.

**1.10                    DOCUMENTS REQUIRED**

- .1     Maintain at job site, one copy each document as follows:
  - .1     Contract Drawings.
  - .2     Specifications.
  - .3     Addenda.
  - .4     Reviewed Shop Drawings.
  - .5     List of Outstanding Shop Drawings.
  - .6     Change Orders.
  - .7     Other Modifications to Contract.
  - .8     Field Test Reports.
  - .9     Copy of Approved Work Schedule.
  - .10    Health and Safety Plan and Other Safety Related Documents.
  - .11    Other documents as specified.

**2                        PRODUCTS**

**2.01                    NOT USED**

- .1     Not used.

**3                        EXECUTION**

**3.01                    NOT USED**

- .1     Not used.

**END OF SECTION**

**1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 52 00 - Construction Facilities.
- .3 Section 01 56 00 - Temporary Barriers and Enclosures.
- .4 Section 01 78 00 - Closeout Submittals.

**1.02 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 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.
- .8 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

**1.03 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, 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 Appointment of official representative of participants in the Work.
  - .2 Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .3 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
  - .4 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
  - .5 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
  - .6 Owner provided products.
  - .7 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.

- .8 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
- .9 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .10 Monthly progress claims, administrative procedures, photographs, hold backs.
- .11 Appointment of inspection and testing agencies or firms.
- .12 Insurances, transcript of policies.

#### **1.04 PROGRESS MEETINGS**

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

### **2 PRODUCTS**

#### **2.01 NOT USED**

- .1 Not Used.

### **3 EXECUTION**

#### **3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

**1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- .1 None

**1.02 REFERENCES**

- .1 None

**1.03 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.

**1.04 SHOP DRAWINGS AND PRODUCT DATA**

- .1 Refer to CCDC 2 GC 3.11.
- .2 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.
- .3 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Saskatchewan, Canada.
- .4 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.

- .5 Allow 5 days for Departmental Representative's review of each submission.
- .6 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.
- .7 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.
- .8 Accompany submissions with transmittal letter, in duplicate, 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.
- .9 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 Operating weight.
    - .8 Wiring diagrams.
    - .9 Single line and schematic diagrams.
    - .10 Relationship to adjacent work.
  - .6 After Departmental Representative's
  - .7 Submit electronic copy of shop drawings for Departmental Representative may reasonably request.
  - .8 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.
  - .9 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.

.10 Submit electronic copies of manufacturers instructions for requirements

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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 Material Safety Data Sheets concerning impedances, hazards and safety precautions.

.11 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.

.12 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.13 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.

.14 Delete information not applicable to project.

.15 Supplement standard information to provide details applicable to project.

.16 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.

.17 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.

## **1.05**

### **SAMPLES**

.1 Submit for review sample as requested in respective specification Sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to Departmental Representative.

.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.

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.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

**1.06**

**CERTIFICATES AND TRANSCRIPTS**

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

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

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**1 GENERAL****1.01 RELATED REQUIREMENTS**

- .1 Section 01 33 00 - Submittal Procedures.

**1.02 REFERENCES**

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Saskatchewan
  - .1 Occupational Health and Safety Act, 1993, S.S. - Updated 2012.

**1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. 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 electronic copy of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS MSDS - Material Safety Data
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 5 days after receipt of comments from Departmental Representative.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 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 Departmental Representative.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

**1.04 FILING OF NOTICE**

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Contractor shall be responsible and assume the Principal Contractor role for each work zone location and not the entire complex. Contractor shall provide a written acknowledgement of this responsibility with 3 weeks of contract award. Contractor to submit written acknowledgement to CSST along with Ouverture de Chantier Notice.

**1.05 SAFETY ASSESSMENT**

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

**1.06 MEETINGS**

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

**1.07 GENERAL REQUIREMENTS**

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

**1.08 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 Contractor will be responsible and assume the role Constructor as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.
- .3 Contractor shall be the Principal Contractor as described in the Quebec Act Respecting Health and Safety code for the Construction for only their scope and areas of work as defined and described this project specification.
- .4 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.

**1.09 COMPLIANCE REQUIREMENTS**

- .1 Comply with Occupational Health and Safety Regulations, 1996.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

**1.10 UNFORSEEN HAZARDS**

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.
- .2 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

**1.11 HEALTH AND SAFETY CO-ORDINATOR**

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:

- .1 Have site-related working experience specific to activities associated

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with roofing replacement.

.2 Have working knowledge of occupational safety and health regulations.

.3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.

.4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

## **1.12 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 Departmental Representative.

## **1.13 CORRECTION OF NON-COMPLIANCE**

.1 Immediately address any and all health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.

.2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

## **1.14 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.

## **2 PRODUCTS**

### **2.01 NOT USED**

.1 Not used.

## **3 EXECUTION**

### **3.01 NOT USED**

.1 Not used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

.1 Section [\_\_\_\_].

### **1.02 REFERENCES**

.1 Definitions:

.1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.

.2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

.2 Reference Standards:

.1 Canadian Construction Documents Committee (CCDC)  
.1 CCDC 2-2008 Stipulated Price Contract.

### **1.03 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 all products supplied and installed and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit [2] copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements and 01 35 43 - Environmental Procedures.

.3 Before commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review by Departmental Representative,

.4 Environmental Protection Plan must include comprehensive overview of known or potential environmental issues to be addressed during construction.

.5 Address topics at level of detail commensurate with environmental issue and required construction task[s].

.6 Include in Environmental Protection Plan:

.1 Name[s] of person[s] responsible for ensuring adherence to Environmental Protection Plan.

.2 Name[s] and qualifications of person[s] responsible for manifesting hazardous waste to be removed from site.

.3 Name[s] and qualifications of person[s] responsible for training site personnel.

.4 Descriptions of environmental protection personnel training program.

.7 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use.

.1 Plan to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.

.8 Spill Control Plan to include procedures, instructions, and reports to be used

in event of unforeseen spill of regulated substance.

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- .9 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .10 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
- .11 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

#### **1.04 FIRES**

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

#### **1.05 SITE CLEARING AND PLANT PROTECTION**

- .1 Protect trees and plants on site and adjacent properties.
- .2 Protect trees and shrubs adjacent to construction work, storage areas and trucking lanes.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage.

#### **1.06 NOTIFICATION**

- .1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
  - .1 Take action only after receipt of written approval by Departmental Representative.
- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

### **2 PRODUCTS**

#### **2.01 NOT USED**

- .1 Not Used.

### **3 EXECUTION**

#### **3.01 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section [01 74 11 - Cleaning].
  - .1 Leave Work area clean at end of each day.
  - .2 Do not bury rubbish and waste materials on site.



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- .3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**END OF SECTION**

**1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- .1 Section 01 33 00 - Submittal Procedures.

**1.02 REFERENCES**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-1994, Stipulated Price Contract.
- .2 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as of: May 14, 2004.

**1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

**1.04 INSTALLATION AND REMOVAL**

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Indicate use of supplemental or other staging area.
- .3 Provide construction facilities in order to execute work expeditiously.
- .4 Remove from site all such work after use.

**1.05 SCAFFOLDING**

- .1 Scaffolding in accordance with CAN/CSA-S269.2.
- .2 Provide and maintain scaffolding.

**1.06 HOISTING**

- .1 Provide, operate and maintain hoists required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
- .2 Hoists to be operated by qualified operator.

**1.07 SITE STORAGE/LOADING**

- .1 Refer to CCDC 2, GC 3.12.
- .2 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .3 Do not load or permit to load any part of Work with weight or force that will endanger Work.

**1.08 CONSTRUCTION PARKING**

- .1 Parking will be permitted on site provided it does not disrupt performance of Work.
- .2 Provide and maintain adequate access to project site.

**1.09 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

**1.10 SANITARY FACILITIES**

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

**1.11 PROTECTION AND MAINTENANCE OF TRAFFIC**

- .1 Maintain access as necessary to maintain vehicular and pedestrian traffic.

**1.12 CLEAN-UP**

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

**1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- .1 Section [\_\_\_\_\_].

**1.02 REFERENCES**

- .1 Canadian General Standards Board (CGSB)
  - .1 CGSB 1.59-[97], Alkyd Exterior Gloss Enamel.
  - .2 CAN/CGSB 1.189-[00], Exterior Alkyd Primer for Wood.
- .2 Canadian Standards Association (CSA International)
  - .1 CSA-O121-[M1978(R2003)], Douglas Fir Plywood.
- .3 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as Of: May 14, 2004.

**1.03 INSTALLATION AND REMOVAL**

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

**1.04 GUARD RAILS AND BARRICADES**

- .1 Provide secure, rigid guard rails and barricades around open edges of floors and roofs.
- .2 Provide as required by governing authorities.

**1.05 ACCESS TO SITE**

- .1 Provide and maintain access roads, and sidewalk crossings as may be required for access to Work.

**1.06 FIRE ROUTES**

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

**1.07 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY**

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

**1.08 PROTECTION OF BUILDING FINISHES**

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.

- .3 Confirm with Departmental Representative locations and installation schedule 3 days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

**1.09 WASTE MANAGEMENT AND DISPOSAL**

Separate waste materials in accordance with Section 01 74 21 -  
Construction/Demolition Waste Management And Disposal.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

**1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- .1 Section 01 33 00 - Submittal Proc.

**1.02 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.

**1.03 MATERIALS**

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

**1.04 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.

**1.05 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.

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**Execution**

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- .6 Restore work with new products in accordance with requirements of Contract Documents.
- .7 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .8 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

**1.06 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

**1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- .1 Section [\_\_\_\_\_].

**1.02 REFERENCES**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-94, Stipulated Price Contract.

**1.03 PROJECT CLEANLINESS**

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site at daily regularly scheduled times. Do not burn waste materials on site.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Provide and use marked separate bins for recycling.
- .6 Dispose of waste materials and debris at licensed Sanitary Landfill.
- .7 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .8 Ensure adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .9 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .10 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

**1.04 FINAL CLEANING**

- .1 Refer to CCDC 2, GC 3.14.
- .2 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .3 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .4 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .5 Remove waste products and debris other than that caused by Owner
- .6 Remove waste materials from site at regularly scheduled times. Do not burn waste materials on site.
- .7 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .8 Remove dirt and other disfiguration from exterior surfaces.



- .9 Clean and sweep roofs, gutters, areaways, and sunken wells.
- .10 Clean roofs, downspouts, and drainage systems.

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**2 PRODUCTS**

**2.01 NOT USED**

.1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

.1 Not Used.

**END OF SECTION**

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**1 GENERAL****1.01 WASTE MANAGEMENT GOALS**

- .1 Minimize amount of non-hazardous solid waste generated by project
- .2 Protect environment and prevent environmental pollution damage.

**1.02 RELATED REQUIREMENTS**

- .1 Section [\_\_\_\_\_].

**1.03 REFERENCES**

- .1 Definitions:
  - .1 Non-hazardous waste - construction renovation and demolition waste.
  - .2 Construction, Renovation and/or Demolition (CRD) Waste: Class III solid, non-hazardous waste materials generated during construction, demolition, and/or renovation activities
  - .3 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
  - .4 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
  - .5 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
    - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
    - .2 Returning reusable items including pallets or unused products to vendors

**1.04 USE OF SITE AND FACILITIES**

- .1 Execute Work with minimal interference and disturbance to normal use of premises.
- .2 Maintain security measures established by facility provide temporary security measures approved by Departmental Representative.

**1.05 DISPOSAL OF WASTES**

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose into waterways, storm, or sanitary sewers.
- .3 Remove materials on-site as Work progresses.

**2 PRODUCTS**

2.01

NOT USED

.1 Not Used.

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### **3 EXECUTION**

#### **3.01 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

**1      GENERAL**

**1.01            RELATED REQUIREMENTS**

- .1      Section [\_\_\_\_\_].

**1.02            REFERENCES**

- .1      Canadian Construction Documents Committee (CCDC)
  - .1      CCDC 2-[2008], Stipulated Price Contract.

**1.03            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 Owner and 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 Owner'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

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for final payment.

.2 Refer to CCDC 2: 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.

**1.04 FINAL CLEANING**

.1 Clean in accordance with Section 01 74 11 - Cleaning.

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

**2 PRODUCTS**

**2.01 NOT USED**

.1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

.1 Not Used.

**END OF SECTION**

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**1 GENERAL****1.01 RELATED REQUIREMENTS**

- .1 Section 01 31 19 - Project Meetings.
- .2 Section 01 33 00 - Submittal.

**1.02 ADMINISTRATIVE REQUIREMENTS**

- .1 Pre-warranty Meeting:
  - .1 Convene meeting one week prior to contract completion with contractor's representative and Departmental Representative, in accordance with Section 01 31 19 - Project Meetings to:
    - .1 Verify Project requirements.
    - .2 Review manufacturer's installation instructions and warranty requirements.
- .2 Departmental Representative to establish communication procedures for:
  - .1 Notifying construction warranty defects.
  - .2 Determine priorities for type of defects.
  - .3 Determine reasonable response time.
- .3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
- .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

**1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, electronic copy of maintenance manual in English.
- .3 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.
- .4 Provide evidence, if requested, for type, source and quality of products supplied.

**1.04 MATERIALS AND FINISHES**

- .1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.
  - .1 Provide information for re-ordering custom manufactured products.
  - .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

- .3 Moisture-protection and weather-exposed products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods,

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- and recommended schedule for cleaning and maintenance.
- .4 Additional requirements: as specified in individual specifications sections.

**1.05 WARRANTIES AND BONDS**

- .1 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

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**1 GENERAL****1.01 RELATED REQUIREMENTS**

- .1 Section [\_\_\_\_\_].

**1.02 REFERENCES**

- .1 Canadian Standards Association (CSA International)
  - .1 CSA A123.3-[05], Asphalt Saturated Organic Roofing Felt.
  - .2 CSA B111-[1974(R2003)], Wire Nails, Spikes and Staples.
- .2 National Building Code of Canada - 2005 (NBC)

**1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
  - .1 Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures].
    - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Saskatchewan, Canada.
  - .2 Indicate details of flashing installation.
- .3 Samples:
  - .1 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Provide duplicate full size shingles, of finish, profile and pattern specified.

**1.04 QUALITY ASSURANCE**

- .1 Mock-ups:
  - .1 Construct portion of roof shingling including ridge showing repetitive pattern, weather exposure, fitting, dressing and nailing.
  - .2 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with wood shingle and shake Work.

**1.05 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store, handle and protect materials in accordance manufacturer's recommendations.
- .2 Provide a platform to prevent bundles or loose shingles/shakes coming in contact with ground.
- .3 Use boards to cover top of pile to keep out rain and prevent over-drying of bundles or loose shingles/shakes in top layer.
- .4 Waste Management and Disposal:



- .1 Separate waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

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## **1.06 EXTENDED WARRANTY**

- .1 For work done of this Section, 12 month warranty period prescribed in Section 24, Subsection 32.1 of GC General Conditions "C" will be extended to 24 months.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 new fire-retardant-treated western red cedar shingles, Cedar Shake and Shingle Bureau (CSSB) Certi-Guard #1 Grade, length and thickness to match stored cedar shingles.
- .2 Underlayment/eave protection:
- .1 Roofing felt: 30 lb. asphalt-saturated organic felt to CSA A123.3.
- .3 Flashing:
- .1 Hot dipped 26 ga galvanized.
- .4 Nail material and coating if applicable to be as recommended by fire-retardant treatment applicator.
1. Staples not permitted. Electro-galvanized coatings not permitted.
2. Nail size as per CSSB "New Roof Construction Manual".
- Submit samples of proposed nail types to Parks Canada Representative for acceptance prior to installation.

## **3 EXECUTION**

### **3.01 STRIPPING OFF OF EXISTING FINISHES**

- .1 Remove existing roof and dormer]finishes, flashings and underlay, and expose sheathing or log purlins of roof and dormers.
- .2 Withdraw existing shingle and flashing nails or screws, setting those nails or screws which break off. Leave surfaces free from dirt and loose material.
- .3 Report to Departmental Representative unforeseen deficiencies and deterioration. Repair as directed.

### **3.02 ROOF DECK**

- .1 Replace cut out portions of sheathing boards with boards of equal sectional dimensions, of specified grade.
- .1 Seat each end of board on rafter, with 25 mm minimum bearing.
- .2 Secure to rafter with nails.
- .2 Spaced roof sheathing: sheathing members on centres same as shingle exposure. At chimneys, ventilators and skylights, board roof to first rafter on each side; lay additional boarding front and back in addition to any chimney saddle.
- .3 Solid roof sheathing: lay boards with tight joints.
- .4 Inform Departmental Representative when work is completed and ready for inspection.

### **3.03 INSTALLATION OF FLASHINGS**

- .1 Valley flashings:

- .1 Intersecting roof planes of equal pitch: valley sheets to extend from centreline of valley, up each side a distance of at least 300 mm.

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- .2 Intersecting roof planes of unequal pitch: valley sheets to extend from centreline of valley, up side of valley with steeper pitch at least 300 mm, and up side of valley with lower pitch a distance of 300 mm.
- .3 Valley flashings for open valley, to be made shingle fashion, lapped not less than [200] [250] mm.
- .4 Valley flashings for open valley to be discontinuous, interwoven with shingle courses and have [100] [130] [150] mm headlap.
- .5 Valley flashings for close or closed valleys to be discontinuous, interwoven with shingle courses and have [200] mm headlap.
- .2 Change of slope:
- .1 Extend exposed change of slope on upper slope flashing as far as possible without being punctured by nails and cleated. On lower slope extend change of slope minimum [100] [150] mm over shingles. Insert Wood cant held by soldered metal straps [25] mm above butts of first course of upper slope.
- .2 Extend concealed change of slope on upper slope flashing as far as possible without being punctured by nails and cleated. On lower slope carry change of slope down between shingles of double course to within [13] mm of butts. Fasten these shingles with countersunk brass screws passing through lead washers over flashing.
- .3 Hip and ridge:
- .1 Install hip and ridge flashing beneath last course of shingles. Flashing to extend on each side of ridge to depth of last course.
- .2 Extend hip and ridge flashing over centreline of hip or ridge on each side for distance of not less than 75 mm.

### **3.04**

#### **ROOF**

- .1 Install shingles over dry substrate.
- .2 Spacing:
- .1 Roof application:
- .1 Shingles under 130 mm wide minimum 3 mm joints.
- .2 Shingles over 130 mm wide 6-13 mm joints.
- .3 Rived or sawn shingles, generally 6-10 mm joints.
- .4 Hand split shakes 6-10 mm joints.
- .3 Joints:
- .1 Stagger side lap joints 38 mm with no joint lining up within three courses.
- .4 Nailing:
- .1 For concealed nailing, typical roof and single course sidewalls use 2 nails per shingle. Space nails 25 mm from edge with additional nails 100 mm apart across face of shingle and 50 mm above butt line of following course.
- .2 For "butt nailing" double coursed side walling use 2 or more nails. Space nails 19 mm from each edge of shingle, and a third nail in centre of all shingles wider than 200 mm and 50 mm above butt line of following course.
- .3 Bottom shingles of double starter course to have additional line of nailing 13 mm back from overhang. Spacing to be similar to that of typical roof course. Ensure nails not

driven through eave boards if overhang does not have a soffit.

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- .4 Provide extra nailing to final course of shingles at ridge, 25 mm plus down from ridge if sawing off, or breaking off of extra shingle length, in situ, is required.
- .5 Drive nails flush but do not crush shingles.

### **3.05 SHINGLE AND SHAKE ROOFING**

- .1 Eave protection:
  - .1 Provide eave protection as specified in NBC - Subsection 9.27.5.
  - .2 Use No. 30 perforated, asphalt-saturated organic felt laid as a continuous sheet without use of cement where and as specified in NBC, Subsection 9.27.5.
  - .3 Fasten bottom edge of eave protection with roofing nails not more than 300 mm on centre.
  - .4 Ensure eave protection projects minimum 40 mm behind hanging gutters.
- .2 Underlayment:
  - .1 Install breather type, asphalt-saturated paper under shingle roof.
  - .2 Install parallel to eaves with head and end lap of not less than 50 mm.
  - .3 Top edge of each strip to be fastened with sufficient roofing nails to hold it in place until shingles are applied.
  - .4 Overlap eave protection by not less than 100 mm.
  - .5 After each course of shakes is applied, lay 450 mm wide strip of No. 30 perforated, asphalt-saturated organic roofing felt over top portion of shakes, extending onto sheathing, with bottom edge of felt positioned at minimum distance above butt equal to twice weather exposure.
- .3 Hip and ridge protection:
  - .1 Apply strip of [No. 25] [No. 30] perforated, asphalt-saturated organic felt 200 mm wide over crown of [hips] [ridges].
- .4 Starter course:
  - .1 Double shingles at eaves.
  - .2 Block up starter course sufficient to bring high points of all shingle courses into alignment.
  - .3 Project butts 40 mm from first sheathing board or face of crown moulding.
- .5 Typical course:
  - .1 Install shingles with weather exposure and having double thickness of shingles at any given point.
  - .2 Lay shingles with grain perpendicular to eaves.
  - .3 In laying mixed flat and vertical grain shingles, avoid lining up joints with centrelines of "hearts" and never break a joint directly below centrelines of "hearts".
  - .4 Split flat grained shingles wider than 200 mm. Minimum width: 100 mm.
  - .5 Keep shingles 25 mm clear of any vertical flashing.
- .6 Finishing gable rake:
  - .1 Place 150 mm tilting fillet of cedar bevel siding full length of each gable and with thick edge flush with sheathing edge.
  - .2 Butts of shingles which rest on tilting fillet to be cut back to produce slight slant.
  - .3 Upper corner of edge shingles to be clipped off.
  - .4 Edge protection of shingles over end rafters or barge boards and mouldings to be from 25-40 mm.
- .7 Finishing open valleys:

- .1 Sheathing to be blocked out at base of valley where and as indicated.
- .2 Tilting fillets to run along both sides of all valleys.
- .3 Do not lay shingles with grain parallel to centreline of valleys.

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- .4 Cut to proper mitre shingles extending into valleys.
- .5 Joints shall not be broken into valleys.
- .6 Line up at least 25 mm farther back from centreline of valley on lower slope side, shingles extending into valleys formed by roofs of unequal pitch.
- .7 Open portion of valley should be [at least [100] [150] mm] tapered from width of at least 50 mm where it starts to wider width as it descends at rate of 5 mm/m of length.
- .8 Finishing close valleys:
  - .1 Do not lay shingles with grain parallel to centreline of valleys.
  - .2 Keep mitred edges of shingles laid each side of valley 13 mm apart.
  - .3 Use only unbroken joints into valleys.
- .8 Finishing ridges:
  - .1 "Boston" lap, site applied shingles:
    - .1 Select shingles of approximately same width and strictly vertical grain for use as ridge shingles.
  - .2 Carry slope [shingles] [shakes] of main roof up to centreline of ridge.
  - .3 Start laying ridge cap at each end with double starter course and proceed to centre. At that point nail small saddle of shingles butts to splice two lines.
  - .4 First [shingles] [shakes] is nailed in place with one edge resting against [guide strip] [chalked line] from centreline of ridge.
  - .5 Edge of [shingles] [shakes] projecting over centre of ridge to be cut back on bevel.
  - .6 Shingles on opposite side is applied and projecting edge cut back to fit.
  - .7 Apply [shingles] [shakes] in following courses, alternately in reverse order.
  - .8 Weather exposure should be same as that used on main roof.
- .3 Common lap:
  - .1 Butts of shingles comprising top courses, either side of ridge, to be placed against guide strip down from centreline of ridge.
  - .2 Run shingles ends over alternately at centreline of ridge and dress to bevel of opposite side of roof.
- .4 Combing:
  - .1 Butts of shingles comprising top courses, either side of ridge, to be placed against guide strip down from centreline of ridge.
  - .2 Feather ends of shingles on leeward side to be cut flush with top of ridge.
  - .3 Feather ends of shingles on windward side to be run 25 or 50 mm over and past ends of cut-off shingles.

**END OF SECTION**

