



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government
Services Canada/Réception des soumissions Travaux
publics et Services gouvernementaux Canada
800 Burrard Street, Room 219
800, rue Burrard, pièce 219
Vancouver
British Columbia
V6Z 0B9
Bid Fax: (604) 775-9381

SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise
indicated, all other terms and conditions of the Solicitation
remain the same.

Ce document est par la présente révisé; sauf indication contraire,
les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Public Works and Government Services Canada - Pacific
Region
800 Burrard Street, Room 219
800, rue Burrard, pièce 219
Vancouver
British C
V6Z 0B9

Title - Sujet PWRC Roof Replacement	
Solicitation No. - N° de l'invitation K4A22-210296/A	Amendment No. - N° modif. 002
Client Reference No. - N° de référence du client K4A22-210296	Date 2020-11-18
GETS Reference No. - N° de référence de SEAG PW-SPWY-031-8859	
File No. - N° de dossier PWY-0-43113 (031)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Pacific Standard Time PST on - le 2020-12-03 Heure Normale du Pacifique HNP	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Leung, Janie	Buyer Id - Id de l'acheteur pwy031
Telephone No. - N° de téléphone (778) 919-3273 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: ECCC – Pacific Wildlife Research Centre – Delta, BC	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

This Amendment 002 is raised to:

- Extend the solicitation closing date
- To address questions
- To issue Addendum No. 1

Extension of Time for Tenderers
PWRC Roof Replacement
Pacific Wildlife Research Centre, Delta, BC

Solicitation No: K4A22-210296/A

Notice is hereby given that the time for reception of tenders previously due at **2:00 p.m. P.S.T. on 26 November 2020** is hereby extended to **2:00 p.m. P.S.T. on 3 December 2020.**

Questions and Answers

Question 1. On Section 01 11 00 it stated that all low slope and steep slope roofs requires 10-year RGC Warranty. But on Section 07 31 29 did not specified this warranty requirement. Please confirm if the 10-year RGC warranty is applicable for the cedar shingles roof?

Answer 1. Yes, the 10 Year RGC Roofstar guarantee or pre-approved equivalent is also applicable to the steep slope cedar roofs. Please see Addendum No. 1.

Question 2. In addition to the RFIs we sent on November 10th, we have another one regarding skylights at the Pacific Wildlife Research Centre (K4A22-21-296/A). It is not clear on Specifications if we need to remove and install new skylights. The Drawings show "New Skylights" but there is not a section covering this product with detailed information.

Answer 2. The skylights are part of the Science Wing and the Science Wing is not part of the current roof replacement project. Hence, skylight replacement is not to be included.

Question 3. Per bid from BA 06 Construction Time and section 01 11 00; clause 1.2, it stated that the Contractor must perform and complete the Work within ten (10) weeks from the date of contract award. Please confirm if the re-roofing project will be done during the winter season or can it be started by early March 2021?

Answer 3. Yes, the roof replacement project is to begin during the winter season.

Question 4. Could you please confirm the method for the bid submission? Can we submit the bid by dropping off at 800 Burrard Street (Room 219), or does it have to be submitted through ePost Connect service?

Answer 4. You can either drop off the bid at 219-800 Burrard Street OR submit your bid through ePost Connect. If you want to drop off your bid, please keep in mind that the bid receiving unit in Vancouver is operating with limited staff and limited hours: Monday to Friday, from 10:30 am to 2:30 pm (Pacific Time).

Question 5. General Requirements-Division 01 Summary of Work Section 01 11 1.14 Warranty states in line 1.14.3 that the contractor is to provide RCABC RGC RoofStar Guarantee, for a period of 10 years. It is my belief that under the Canadian Free Trade Agreement interested parties cannot be excluded from bidding on a project by membership of an association. To provide the RCABC RoofStar Guarantee would require membership of the Roofing Contractors Association of BC. Can you confirm that membership is not a requirement as part of this bid in accordance with the Canadian Free Trade Agreement. All other Warranty Requirements are to be as specified

Answer 5: Aside from the RCABC Rooftstar guarantee, we will accept pre-approved equivalent. Please see attached Addendum No. 1.

Question 6: When is the anticipated start date of the project

Answer 6: It is anticipated the Contract will be awarded within 2 weeks of the closing date and that will be the start date.

Question 7: Is there any opportunity to offer Enviroshake for this? Enviroshake is approx. the same cost as real cedar but has a much longer lifespan. Installed very much like real cedar and has a very authentic look.

Answer 7: No, this cannot be accepted as an equivalent.

Please see attached Addendum No. 1.

All other terms and conditions remain unchanged.



Addendum No.1

QSF-7-090 R-05 JAN31/10

Project:	Roof Replacement Program 2020	Page No:	1 of 1
Facility:	Pacific Wildlife Research Centre	Date:	November 18, 2020
Address:	5421 Robertson Rd Delta, BC V4K 3N2	IRC Ref. No:	VR20-092SP-21476
		Client Ref.	n/a

All Bidders are hereby notified of the following changes and clarifications to the Bid Documents made by this Addendum, issued by IRC Group prior to Bid Closing.

Following are additions, modifications, and clarifications to questions arising during the bid preparation:

Replace Specification Section 01 11 00 Summary of Work and Section 07 31 29 Cedar Shingles with the revised enclosed herein. Section 07 31 29 includes bidder / installer qualifications.

Enclosed:

Specification Section 01 11 00 Summary of Work (R1)

Specification Section 07 31 29 Cedar Shingles (R1)

End of Addendum No. 1

PART 1 - GENERAL

1.1 DESCRIPTION

- .1 Contractor to provide all labour, equipment, and materials necessary to perform to completion Work as described in these Contract Documents for:
 - .1 Roof Replacement Program 2020 on designated roof areas of:
Pacific Wildlife Research Centre, located at 5421 Robertson Road, Delta, BC, V4K 3N2.
- .2 Contract Documents to be reviewed in their entirety with all sections, including Division 1-General Requirements, to be considered interrelated and form part of this section.

1.2 PROJECT SCHEDULE

- .1 Substantial Completion of Work is to be achieved 10 weeks after Award of Contract.

1.3 EXAMINATION OF DRAWINGS, SPECIFICATIONS, AND WORKSITE

- .1 Carefully examine and study all Bid Requirements together with existing site conditions and any other necessary data or conditions that may affect performance of Work in order to determine full extent of Work.
 - .1 Under no circumstances will any claims be allowed against Owner resulting from failure to ascertain full extent of Work herein described, specified, or implied.
- .2 Contractor to verify to own satisfaction that existing site conditions, roof components, and measurements are accurately reported in Bid Requirements. Obtain or check all measurements and dimensions at worksite as may be necessary and required for performance of Work.
 - .1 Drawings, specifications, and schedules are complementary to each other; what is called for by one to be binding as if called for by all.
 - .2 Should any discrepancy appear between documents leaving doubt as to intent or meaning, most stringent requirement shall govern unless directed otherwise in writing by Consultant.
- .3 Bid submission to be based on products, equipment, and/or suppliers named and identified as approved or accepted in technical specifications and drawings.
 - .1 Bid Documents constitute acceptable roofing installations.
 - .2 No deviation from specifications, drawings, or approved shop drawings allowed without prior written approval by Consultant, and if applicable by Manufacturer.
- .4 Cost for any hazardous materials encountered during Work that requires specialized handling will be covered by Approved Change Order only.
- .5 Weather conditions are considered incidental to Work and will not be considered additional to Bid Price.

1.4 OWNER OCCUPANCY

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

1.5 CONTRACTOR USE OF PREMISES

- .1 Contractor to limit use of premises for Work, for storage and access.
- .2 Coordinate use of premises under direction of Owner and Consultant.
- .3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

1.6 GENERAL SITE REQUIREMENTS

- .1 Perform Work between hours of 07:00 to 18:00 hours, Monday through Friday. Consult with Client/Building Owner for special access times.
- .2 Temporary Barriers, enclosures and signage will be highly enforced given use of property.
- .3 Contractor to ensure safety and proper execution of public routing; ensuring temporary access to fire exits if and when they are affected as part of Work.
- .4 Obtain Construction/Building Permit and sidewalk/roadway occupation permits as required by local municipality.
- .5 Determine nature and extent of all site services above and below grade prior to commencement of Work.
- .6 Coordination of trades will be responsibility of Contractor to ensure work is completed as soon as possible. Provide weather protection and heating as required to perform Work if required and as specified.
- .7 Supply, set-up, maintain and remove scaffolding, man-lift platforms and/or swing-stages during performance of Work as required to access work areas. If scaffolding is to be used, Contractor to provide complete shop drawings bearing seal of a Professional Engineer, licensed to practice in Place of Work. Work to include review and approval of installed scaffolding by Designer. Allowance should be made for access to all elevations of building.
- .8 No public access to Work area to be allowed. Ensure access to fire exits are maintained and hoarded through Work area. Pedestrian access along sidewalks must be maintained as per Owner's requirements. No areas of access to or around building are to be restricted without approval of Owner.
- .9 Sanitary Facilities
 - .1 Provide on-site washroom facilities on ground level only, secured in a locked compound. The Contractor will not have access to the building washrooms.
 - .2 Maintain facilities in clean condition.
 - .3 Workers will not be permitted to use any other sanitary facilities, intended for the use of public or building personnel.
- .10 Install temporary protection at all locations of Work, as required to ensure safe, clean, orderly removal and disposal work, and to provide protection for all interior and exterior building components, vehicles, pedestrians, and occupants.
- .11 Provide temporary support to existing structural and cladding components during performance of work if required.
- .12 Install temporary protection for all materials and building components, which have been exposed during demolition/removals as specified.

- .13 Dispose of all materials unable or unsuitable for recycling at landfill site authorized by authorities having jurisdiction.
- .14 Pay for any additional testing and observations required by Observer for correction of Work, without additional cost to Owner, when initial tests and observations reveal work failing to meet contract requirements and when construction extends beyond the schedule submitted by the contractor.

1.7 PROTECTION OF ROOFS

- .1 Protect all roof areas within area of Work and where equipment or materials are stored. Do not store equipment or materials directly on roof surface.
- .2 Protect existing roof systems to remain against damage from traffic generated by new Work.
- .3 Protection of existing and newly installed roof membranes to use sheets of 25mm (1") expanded polystyrene insulation cover with 13mm (0.5") plywood.

1.8 SCOPE OF WORK: LOW SLOPE MEMBRANE ROOFING

- .1 On Roof Areas L-1.1 and L-1.2: Remove existing system components, projection and perimeter flashings, and old appurtenances down to existing plywood deck in preparation for installation of a new waterproofing system in accordance with Section 07 52 00.
 - .1 Review entire existing roof deck with Consultant to identify damaged areas requiring repair or replacement. Consultant to be notified 48 hours prior to roof deck examination.
 - .2 Install new compatible deck materials where required to repair and restore existing deck.
 - .3 Install 1 layer of laminated asphaltic board base sheet support panel, adhered.
 - .4 Install 1 ply modified bitumen base sheet flashings, adhered.
 - .5 Install 1 ply granular modified bitumen cap sheet and flashings, adhered.
 - .6 On Roof Area L1.1: Contractor is to include for 30 lineal feet of fascia board replacement within the Base Bid. Fascia board is to match existing in size, shape and profile. Allow for painting of new fascia board to match existing as needed.
 - .7 Install new prefinished metal flashings, hook strips, and trim at all perimeter and projection locations where indicated on drawings and detailed in related technical sections.

1.9 SCOPE OF WORK: STEEP SLOPE CEDAR SHINGLE REPLACEMENT

- .1 On Roof Areas L-2.1, L-2.2 and T-1.1: Supply all labour, equipment, and materials to install new cedar wood shingle roof system. New cedar roof system is to be installed per Section 07 31 29 and to include, but not be limited to the following provisions:
 - .1 Remove down to existing wood sheathing and dispose of existing wood shingles, underlayment roof membrane, projection and perimeter flashings, and old appurtenances to an appropriate site.
 - .2 Review entire existing roof deck with Consultant to identify areas requiring replacement. Consultant to be notified 48 hours prior to roof deck examination.
 - .3 Repair and replace all damaged wood siding and fascia. Prime and paint all new and repaired wood siding and fascia remaining exposed and unprotected by new prefinished metal flashings.

- .4 Within the attic, supply and install new insulation to increase R-value from R28 to R50, where applicable.
- .5 Install new metal drip edge flashing where applicable as per Section 07 62 00.
- .6 Install new self-adhering eave protection membrane along valleys, ridges, eaves, perimeters, roof penetrations and at the entire roof deck surfaces.
- .7 Install 26-gauge metal flashings at every 3rd row of shingles with 12" wide ice & water interlay sheets.
- .8 Install cedar shingles in shingle wave pattern with average exposure of 70mm (2.75"). Use wide shingles close to valley centre and feather extra rows to keep exposure consistent. Cedar shingles weave pattern shall have no exposed nails. Mechanically fasten using stainless steel fasteners. Use short nails on exposed soffits.
- .9 Install cedar shingle at the hip, valley, and eave locations in the steam bent/curved fashion to match existing installation. Boiling shingles is not allowed.
- .10 Supply and install new custom-made copper gooseneck vents. Vents are to match existing in size and profile.
- .11 Supply and install appropriate new vent and exhaust fan flashings where applicable. Contractor is to install new custom-made copper static roof vents to comply with BC Building Code venting requirements, minimum 75 sq inch for 400 sq feet of roof area. The actual static roof vent dimensions are to be determined by the Contractor prior to installation and to suit the installation of the new cedar shingles. Roof vent flange is to be minimum 4 inches wide. Install peel & stick on top of the flange and all the way around the roof vent prior to installing the cedar shingles.
- .12 Provide neat row of overlapping cedar wood ridge shingles at hip and ridge locations.
- .13 Preserve existing metal rain gutters and downpipes.
- .14 Provide new clear brick sealer to brick chimneys above deck.
- .15 On Roof Area L2.2: Install new 76mm (3") stainless-steel gable vents within every second rafter at eave locations at the entire roof perimeter. Contractor is to cut a new 3" opening in the wood blocking and fasten the gable vent to the wood blocking covering the entire opening. The new openings are to be centred in between the rafters and the wood blocking. New gable vent colour is to match the existing surrounding wood blocking.
- .16 Install new prefinished metal flashings, hook strips, and trim at all perimeter and projection locations where indicated on drawings and detailed in related technical sections.

1.10 SCOPE OF WORK: STEEP SLOPE CEDAR SHINGLE REPLACEMENT

- .1 On Roof Area A-2.3 and S-2.3: Supply all labour, equipment, and materials to install new cedar wood shingle roof system. New cedar roof system is to be installed per Section 07 31 29 and to include, but not be limited to the following provisions:
 - .1 Remove down to existing wood sheathing or wood strapping and dispose of existing wood shingles, underlayment roof membrane, projection and perimeter flashings, and old appurtenances to an appropriate site.
 - .2 Review entire existing roof deck and strapping with Consultant to identify areas requiring replacement. Consultant to be notified 48 hours prior to roof substrate examination.

- .3 Repair and replace all damaged wood siding and fascia. Prime and paint all new and repaired wood siding and fascia remaining exposed and unprotected by new prefinished metal flashings.
- .4 Within the attic, supply and install new insulation to increase R-value from R28 to R50, where applicable.
- .5 Install new metal drip edge flashing where applicable as per Section 07 62 00.
- .6 Install new self-adhering SBS eave protection membrane along valleys, ridges, eaves, perimeters, roof penetrations and at the entire roof deck surfaces.
- .7 Supply and install new metal flashings in valley locations.
- .8 Install cedar shingles in shingle wave pattern with average exposure of 70mm (2.75"). Use wide shingles close to valley centre and feather extra rows to keep exposure consistent. Cedar shingles weave pattern shall have no exposed nails. Mechanically fasten using stainless steel fasteners. Use short nails on exposed soffits.
- .9 Provide neat row of overlapping cedar wood ridge shingles at hip and ridge locations.
- .10 Preserve existing metal rain gutters and downpipes.
- .11 Supply and install appropriate new vent and exhaust fan flashings where applicable. Contractor is to install new custom-made copper static roof vents to comply with BC Building Code venting requirements, minimum 75 sq inch for 400 sq feet of roof area. The actual static roof vent dimensions are to be determined by the Contractor prior to installation and to suit the installation of the new cedar shingles. Roof vent flange is to be minimum 4 inches wide. Install peel & stick on top of the flange and all the way around the roof vent prior to installing the cedar shingles.
- .12 Provide neat row of overlapping cedar wood ridge shingles at hip and ridge locations.
- .13 Preserve existing metal rain gutters and downpipes.
- .14 Install new prefinished metal flashings, hook strips, and trim at all perimeter and projection locations where indicated on drawings and detailed in related technical sections.

1.11 SCOPE OF WORK: REMOVAL OF HAZARDOUS MATERIALS

- .1 Design Authority has documentation indicating there is no asbestos present in the tested samples in Phase 1.
 - .1 If any found, Contractor responsible for co-ordination of abatement procedures for all Asbestos Containing Materials (ACM) pertinent to successful performance of Work.
 - .2 All ACM work to be in compliance with current provincial asbestos abatement regulations for Place of Work.

1.12 MISCELLANEOUS

- .1 It shall be the responsibility of the Contractor to verify that all existing conditions and roof system components are accurately reported in these specifications.
- .2 All details specified by this Scope of Work constitute acceptable installations. Any deviation from these specifications must first be approved by the Consultant prior to any installation.

- .3 All reasonable precautionary measures will be undertaken. It shall be the responsibility of the Contractor to ensure minimal dust and debris contamination of the interior and exterior of the work site.
- .4 At the end of each day's work drag a magnetic bar across all work areas to remove all fasteners from the grounds. All loose debris shall be removed from the designated roof areas and disposed of accordingly.
- .5 It shall be the responsibility of the Contractor to arrange and pay for the disconnect and reconnect of all ventilation, mechanical and A/C units as required to execute the Work.
- .6 If the removal of any exhaust vents or equipment results with an opening in the deck that cannot be permanently sealed that day, the Contractor shall be responsible for providing overnight security to the building by a company approved by the Consultant.
- .7 It shall be the responsibility of the Contractor to ensure that no attachments (wiring, lighting, etc.) are attached to the underside of any deck that is to be removed. The contractor shall notify a representative of the Owner, who will then disconnect any such services, if necessary.
- .8 Security fencing shall be provided at all times for equipment and materials at stored at ground level. No materials or equipment shall be left unsecured on the ground. The materials and equipment compound shall be locked when access is not required.
- .9 Cover all roof materials properly with suitable tarps to prevent exposure to moisture and sunlight. Manufacturer's packaging does not constitute adequate tarping and protection. All roof materials are to be elevated on appropriate dunnage.
- .10 Existing grounds shall be restored to original condition upon completion of project by the Contractor to the satisfaction of the Consultant.

1.13 CLEANING

- .1 Perform daily and final clean-up of Work area and surrounding areas of site.

1.14 WARRANTY

- .1 Contractor's Workmanship Warranty:
 - .1 Provide Owner with Contractor's two (2) Year Warranty for Workmanship and Materials on Contractor's letterhead.
- .2 Manufacturer's Low Slope System Warranty:
 - .1 Provide the Owner with a written Twenty (20) Year Membrane Manufacturer's No Dollar Limit System Warranty from the date of Approved Final Review.
- .3 Manufacturer's Steep Slope Material Warranty:
 - .1 Provide the Owner with a Manufacturer's 30 Year Limited Lifetime Material Warranty.
- .4 RCABC RGC RoofStar Guarantee or pre-approved equivalent (On All Low Slope and Steep Slope Roofs):
 - .1 Provide to the Owner a Ten (10) Year Guarantee. The cost of the Guarantee administration fee and milestone reviews is to be included in the Tender price.
- .5 Cost of all warranties to be included in Tender Price.
- .6 Cost of all Field Reviews to be paid directly to the Consultant by the Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION - 01 11 00

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PART 1 - GENERAL

1.1 SCOPE OF WORK

- .1 Existing roofing components to be removed, in preparation for installation of a new steep slope cedar shingles roof system and associated materials over prepared substrate.
- .1 Supply all labour, materials, and equipment to remove existing roofing components down to existing roof deck and replace with new cedar roof shingles and underlayment. Work to include, but not be limited to:
 - .1 Remove and dispose of existing wood shingles, underlayment, and all metal flashings, to an approved landfill site or recycling facility, including provision for protection at building walls and windows during removal.
 - .2 Examine existing wood sheathing, fascia, and soffit. Remove and replace all deteriorated sections with material to match existing in thickness. Contractor is to supply and install new components to match existing.
 - .3 Install specified roofing assembly, including eave protection membrane/underlayment, new cedar shingles, accessories, related penetration hardware, sheet metal flashings, prefinished metal flashings and trims, and as indicated within the Project Documents.
 - .4 Perform daily and final clean-up of work area and surrounding areas and site.
- .2 Work is to be executed to highest standards of workmanship in industry, by fully trained applicators in accordance with RCABC guidelines and the Cedar Shake and Shingle Bureau Roof Construction Manual.

1.2 BIDDER / INSTALLER QUALIFICATIONS:

- .1 Bidders / installers interested in performance of specified Work must:
 - .1 Have a minimum ten (10) years' of successful work experience with the application of products, materials, systems and assemblies specified or similar comparable products,
 - .2 Be a member in good standing with Roofing Contractors Association of BC (RCABC) or bonded with an alternate equivalent guarantor per Section 1.2.2 Guarantee,
 - .3 Fully competent with the standards, methods and techniques required by the Guarantee specified below in Section 1.2.2 Guarantee,
 - .4 Installer must be pre-approved, trained and certified by the product manufacturer for the specified materials and installation type,
 - .1 Installers supervisor / foreman shall be a ticketed journeyman having minimum of (10) years' work experience in low slope SBS membrane and cedar roof replacement.
 - .5 Have a WorkSafeBC account number and WorkSafeBC clearance letter,
 - .6 Contractor's employees and Subcontractors must be WHMIS certified.
 - .7 Owner reserves the right to reject any proposed Subcontractor for reasonable cause.
 - .8 And be licensed and insured at the Place of Work.

.2 Guarantee:

- .1 Provide a full-system roofing guarantee provided by the RCABC Guarantee Corp., or a pre-approved alternate equivalent. Proof of an equivalent guarantee must be submitted to the Owner prior to the Tender Close. The Guarantee must:

- .1 be underwritten by an industry recognized Guarantor,
 - .2 who is financially independent of the installer or the material or system manufacturer.
 - .3 with no fewer than twenty years' experience underwriting roofing and waterproofing assemblies.
- .2 be issued for a ten (10) year guarantee period.
- .3 cover materials and workmanship, without penalty for depreciation.
- .4 extend coverage for the project up to the full original value of the contract, for the duration of the Guarantee period.

.2 The Guarantee must

- .1 provide written assurance to a building Owner against leaks arising from the failure of materials, or against the failure of workmanship performed by the bonded installer.
- .2 furnish the Owner with an established claims process by which claims for material for workmanship failure may be duly processed and expedited.
- .3 be issued through an established quality assurance program (QA Program) offered by the Guarantor. The QA Program must include
 - .1 installers who
 - .1 subscribe to a common set of ethical standards and membership requirements.
 - .2 furnish performance bonds to the Guarantor.
 - .3 employ trade-qualified installers for each guaranteed project.
 - .2 pre-qualified materials supported by bonds that are furnished to the Guarantor by each material manufacturer.
 - .3 widely recognized material, installation and performance standards and best practices published by the Guarantor.
 - .4 nationally recognized training for trade-qualified installers.
 - .5 independent reviews, provided by independently qualified observers, that include
 - .1 frequent course-of-construction field reviews.
 - .2 a 2-year post-construction performance review.

- .3 periodic, scheduled performance reviews that identify performance and maintenance issues for the building owner such as at year 5 and 8.
 - .1 Costs for scheduled performance reviews are to be held in trust for the Owner.
- .3 Warranty:
 - .1 Warrant the work of this Section against defects and/or deficiencies in accordance with General Conditions of the Contract as amended to include:
 - .1 Provide to Owner a written certificate issued by a Guarantor, as described herein, for a period of ten (10) years.
 - .2 Provide a true certificate from the Guarantor of a pending guarantee, as proof of the trade contractor's ability to deliver the guarantee described above.
- .4 All materials to be new and in perfect condition, free from defects which may impair strength, durability, or appearance.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- .1 Section 01 11 00 – Summary of Work
- .2 Section 02 41 13 – Selective Demolition
- .3 Section 06 10 00 - Rough Carpentry
- .4 Section 07 62 00 – Prefinished Sheet Metal Flashing
- .5 Section 07 92 00 – Joint Sealants

1.4 REFERENCES

- .1 Latest edition of all listed references; most stringent requirements to govern in conflicts:
 - .1 American Society for Testing and Materials (ASTM) International:
 - .1 D1970: Self-Adhering Polymer Mod. Bit. Sheet in Steep Roofing Underlayment.
 - .2 D3019: Standard Specification for Lap Cement, Asbestos-Free
 - .3 E108-11: Test Methods for Fire Tests of Roof Coverings (ULC S107)
 - .4 F1667: Driven Fasteners - Nails, Spikes & Staples, Type I, Style 20.
 - .2 Canadian Standards Association (CAN/CSA):
 - .1 A123-3-M1979: Asphalt Saturated Organic Roofing Felt.
 - .2 B111: Fasteners - Wire Nails, Spikes, and Staples.
 - .3 CAN2-51.32: Sheathing, Membrane, Breather Type Paper.
 - .4 0121M: Douglas Fir Plywood.
 - .5 0151M: Canadian Softwood Plywood.

- .3 Canadian General Standards Board (CAN/CGSB):
 - .1 37.4: Fibrated, Cutback Asphalt, Lap Cement for Asphalt Roofing.
 - .2 37.5: Cutback Asphalt Plastic Cement
 - .3 51.32: Sheathing, Membrane, Breather Type.
 - .4 51.34: Vapour Barrier Polyethylene Sheet, for Use in Building Construction.
- .4 Underwriters Laboratories (UL):
 - .1 790: Exterior Exposure- Test Methods for Fire Tests of Roof Coverings.
 - .2 997: Wind Resistance of Prepared Roof Covering Materials.
- .5 National Research Council Canada (NRC)/Institute for Research in Construction (IRC) - Canadian Construction Materials Centre (CCMC).
 - .1 CCMC, Registry of Product Evaluations.
- .6 Roofing Contractors Association of BC (RCABC): Roof Practices Manual, Latest Revision, and includes Technical Updates issued at the time of tender.
- .7 Canadian Roofing Contractors Association (CRCA): Roofing and Waterproofing Manual.

1.5 EXTRA MATERIALS

- .1 Unused shingles still in factory wrappings shall be provided to the Owner.

1.6 SUBMITTALS

- .1 Provide to Quality Assurance Observer, at Prestart Meeting:
 - .1 Finalized project work schedule listing start date, anticipated number of working days working, and manpower assignments for project.
 - .2 Safety Data Sheets (SDS) pertaining to all proposed materials to be used on site to perform Work, which can be maintained at site.
 - .3 Documented abatement procedures for Asbestos Containing Materials (ACM) pertinent to successful performance of Work, and sub-contractor selected to perform this work.
 - .4 List of "Trained and Carded Membrane Approved Applicators" to work and be present during performance of Work.

1.7 QUALITY ASSURANCE

- .1 Perform Work in accordance with Contracts Documents and Manufacturer's written instructions.
- .2 Make no deviation from Project Specifications or approved shop drawings without prior written approval by Consultant and, if applicable, Manufacturer.
- .3 Upon completion of new installation, provide certification that all work has been done in strict accordance with Contract Documents and to Manufacturer's requirements.

- .1 Manufacturers or Guarantors requirements are to be considered as a Minimum Standard, with Design Authority Specified Standards having precedence. If Standards conflict, discuss with Consultant prior to proceeding with work.
- .4 Workmanship shall follow RCABC Guarantee Standards for Cedar Shingle Roof Assemblies, 1:3 (4" in 12") or steeper.

1.8 QUALITY ASSURANCE OBSERVATION

- .1 IRC Building Sciences Group, hereafter known as "Observer", is an independent Quality Assurance Observation Agency appointed by Owner to observe performance of roof Work:
 - .1 Arrange Prestart site meeting with Observer no more than three (3) weeks prior to commencement of Work on site. Obtain Observer's instructions and reference procedures to be followed on project.
 - .2 Provide to Observer date when each phase of work will begin, at least forty-eight (48) hours prior to commencement of Work for phase.
 - .3 Arrange Final Observation and examination of installed roof with both Observer and Manufacturer's Technical Representative.
- .2 Cooperate with Observer and afford all facilities necessary to permit full access for Quality Assurance Observations during performance of Work. Act immediately on instructions given by Observer.
- .3 When required, provide roof cut-outs and samples in field where directed by Observer and make good without additional cost to Owner.
- .4 When initial tests and observations reveal work failing to meet contract requirements, pay for any additional testing and observations required by Observer or third party testing agency for correction of Work, without additional cost to Owner.
- .5 Copies of Q.A. Observation Reports to be issued by Observer to Owner, Prime Contractor, and Roofing Contractor.

1.9 DELIVERY, STORAGE, AND HANDLING

- .1 Site storage is limited. Where applicable, location of storage and related facilities to be coordinated with Prime/General Contractor.
- .2 All materials to be delivered and stored in their original packaging bearing manufacturers label, grade and product weight, including all other related standards, specifications, and like.
- .3 All materials to be adequately protected from inclement weather conditions and stored in a dry, well ventilated and weather protected location. Use only dry materials and apply only during weather that will not introduce moisture into roofing system.
- .4 Remove only in quantities required for same day use.
- .5 During extreme temperature, materials to be stored in a heated location with a 4.4°C (40°F) minimum temperature and removed only as needed.
- .6 All materials in a rolled configuration to be stored on end, elevated off ground, and on a pallet or skid to protect bottom surface from foreign debris and moisture.

- .7 Restrict stockpiling of material in one location on roof to prevent exceeding specified deck live load capacity. Avoid point loading that may compromise structural integrity of roof.
- .8 Handle and store products in a manner to prevent damage and deterioration.
- .9 Remove and replace damaged products at own expense and to satisfaction of Consultant.

1.10 ENVIRONMENTAL REQUIREMENTS

- .1 Do not apply roofing materials to damp, wet, or frozen deck or substrates.
- .2 Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- .3 Only install as much new roofing as can be made weather-tight each day, including all flashing and detail work.
- .4 All work to be scheduled and executed without exposing interior building areas to adverse effects of inclement weather. Existing building and its contents to be protected against all risks.
- .5 All new and temporary construction, including equipment and accessories, to be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- .6 Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, provide all necessary protection and barriers to segregate work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over felt or plywood over insulation board to be provided for all new and existing roof areas that receive rooftop traffic during construction.
- .7 Prior to and during application, all dirt, debris and dust to be removed from surfaces by vacuuming, sweeping, blowing with compressed air, and/or similar methods.
- .8 Follow all safety regulations as required by OHS (Occupational Health and Safety) and any other applicable authority having jurisdiction.
- .9 All roofing, flashings and metal work removed during construction to be immediately taken off site to a legal dumping area authorized to receive such materials. Hazardous materials, such as materials containing asbestos, are to be removed and disposed of in strict accordance with applicable Local, Provincial, and National requirements.
- .10 All new roofing waste material (i.e., scrap roof membrane, empty cans of adhesive) to be immediately removed from site by Contractor and properly transported to a legal dumping area authorized to receive such material.
- .11 Flammable adhesives and primers to not be stored and not be used in vicinity of open flames, sparks and excessive heat.
- .12 All rooftop contamination that is anticipated or that is occurring to be reported to manufacturer to determine corrective steps to be taken.
- .13 Verify that all roof drain lines, rain gutters, and downspouts are functioning correctly (not clogged or blocked) before starting work. Report any such blockages in writing to Consultant for corrective action prior to installation of roof system.
- .14 Immediately stop work if any unusual or concealed condition is discovered and immediately notify Consultant of such condition in writing in order to obtain additional instruction.

- .15 Site cleanup, including both interior and exterior building areas that have been affected by construction, to be completed to satisfaction of Consultant.
- .16 All landscaped areas damaged by construction activities to be repaired at no cost to Owner.
- .17 Take precautions when using adhesives at or near rooftop vents or air intakes. Avoid adhesive odours from entering building. Coordinate operation of vents and air intakes in such a manner as to avoid intake of adhesive odour while ventilating building. Keep lids on unused cans at all times.

1.11 PREPARATORY WORK

- .1 Review roof levels and advise Consultant of any deviation from specified tolerances.
- .2 Review rain gutters, and downspouts. Advise Consultant of any deviation or alteration from specifications.
- .3 Sweep roof deck free of dust or dirt and remove all debris prior to any installation work.

1.12 SAFETY AND PROTECTION

- .1 Refer to Section 01 35 23 – Health and Safety.

1.13 WASTE MANAGEMENT AND DISPOSAL

- .1 Place materials defined as hazardous or toxic in designated containers.
- .2 Ensure emptied containers are sealed and stored safely for disposal away from children.
- .3 Use the least toxic sealants, and adhesives necessary to comply with requirements of this section.
- .4 Close and seal tightly. Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .5 Place used hazardous sealant tubes and adhesive containers in areas designated for hazardous materials.

1.14 WARRANTY

- .1 Roof Replacement Material Warranty:
 - .1 On All Steep Slope Roof Replacement Areas: Contractor is to supply Owner with Manufacturer's Warranties as specified below:
 - .1 Limited Lifetime 30 Year Material Warranty.
- .2 RCABC RGC RoofStar Guarantee or pre-approved equivalent:
 - .1 Provide to the Owner a (10) Year Guarantee. The cost of the Guarantee administration fee and milestone reviews is to be included in the Tender price.
- .3 Cost of field reviews / quality assurance observations is to be paid for by Owner.
- .4 Cost of all warranties to be included in Contract Price.

PART 2 - PRODUCTS

2.1 GENERAL

- .1 All materials listed below must be used on project. Under no circumstances will substitute materials be used unless approval in advance, in writing by Consultant. Use of substitute materials without prior approval may result in complete removal and replacement of non-specified materials at no cost to Owner.

2.2 FASTENERS

- .1 Cedar Shingle Fasteners: Stainless-steel round head ringed nails (Type 304 or 316), 13 to 14 gauge in thickness, 2.4mm (0.092") x max. 51mm (2") long.

2.3 SHINGLE UNDERLAYMENT

- .1 Eave Protection and Underlayment: Self Adhered SBS Modified Rubberized Asphalt, High Temperature, and Roofing Underlayment.
 - .1 Standard of acceptance is to be Platinum HT-SA as manufactured by FT Synthetics or Owner approved equivalent.

2.4 CEDAR SHINGLES

- .1 Cedar Shingles: To CSA 0118.1-97 Western Red Cedar Shakes, No. 1 Perfection Shingles, CCA Treated, Blue Label Royals, 457 mm (18") long or Owner approved equivalent.
 - .1 Treatment: CCA Pressure Preservative Treatment to CSA 080 Series 97 with water based clear preservative to improve fungus, moisture resistance.

2.5 SHINGLE ACCESSORIES

- .1 Gooseneck and Static Roof Vents:
 - .1 Custom made copper gooseneck and static roof vents to comply with BC Building Code venting requirements, minimum 75 sq inch for 400 sq feet of roof area. Goosenecks are to be custom-made copper and are to match existing in size and profile. Static roof vent dimensions are to be determined by the Contractor prior to installation and to suit the installation of the new cedar shingles. Roof vent flange is to be minimum 4 inches wide.
- .2 Roof Gable Vents:
 - .1 76mm (3") round stainless-steel gable vents.
- .3 Plumbing Stack Flashings:
 - .1 Plumbing Stack Flashings: Custom aluminum stack flashings with slope to match existing roof slope, complete with settlement caps.
- .4 Concrete Sealer: Apply clear concrete sealer coat to brick chimneys above deck. Fabrishield 761 by Fabrikem or Owner approved equivalent.
- .5 Underlayment Primer: Rubber based, compatible with underlayment, Perm-a-Barrier primer, or Owner approved equivalent as recommended by underlayment manufacturer.
- .6 Underlayment Mastic: single component, rubber-based mastic, compatible with underlayment, or as recommended by underlayment manufacturer.

- .7 Sealants: Sealant shall be a high performance, high movement, single component, medium modulus, low VOC, UV Stable, non-sag material and be of a hybrid nature, utilizing silyl-modified polyurethanes, also identified as an MS Polymer.
 - .1 Tremco Dymonic 100 or Owner approved alternate equivalent Hybrid Sealants discussed with Consultant. Colour of sealant to be selected to match cladding components.
 - .2 Primer: As recommended by sealant manufacturer to assure adhesion of compound, to prevent staining of substrate.
 - .3 Joint Backing: Polyethylene, urethane, neoprene, or vinyl, extruded closed cell foam in circular shape with diameter 25% greater than joint width before installation; joint breaking tape approved by sealant manufacturer where specified.
 - .4 Cleaning Material: As recommended by sealant manufacturer
- .8 Sealing compound: to CAN/CGSB-37.29, for asphalt shingles.
 - .1 Acceptable material: Polybitume or Owner approved equivalent as dictated by shingle manufacturer.

2.6 METAL FLASHINGS

- .1 Prefinished Flashings, Step Flashings, Diverters & Trim: At Eaves, Fascia, Rakes, Valleys, and Dormers:
 - .1 Compatibility between materials is essential. Use only materials that are known to be compatible when incorporated in a completed assembly.
 - .2 Prefinished Metal Flashing: 24-gauge (0.026" or 0.66mm) steel with G90 (Z275) zinc coating conforming to ASTM A653A/A653M. Surface with Silicone Modified Polyester (SMP) factory-baked finish. Colour selected by Owner from Manufacturer's standard colour range.
 - .3 Valley metal flashings to be broken in a W shape, with a centre line splash diverter as detailed. Install prefinished valley metal flashings in min. widths of 610mm (24").
 - .4 Cascadia Metals Inc. and Makin Metals or Owner approved equivalent.
- .2 Cleats and Hook Strips Not Otherwise Specified: Two gauges heavier of material matching that of flashing being employed; minimum 22 gauge (0.032" or 0.82mm).

PART 3 - EXECUTION

3.1 GENERAL

- .1 Examine site conditions and surfaces to ensure that they are in satisfactory condition for commencement of this section. Prior to starting work, arrange a meeting with Owner to clarify general scope of work.
- .2 Examine existing conditions and substrates upon which work of this section is dependent. Report to Owner in writing any unusual or deteriorated construction revealed during removal of existing roofing or siding components. Commencement of work implies acceptance of existing conditions and assuming full responsibility for finished condition of work.

- .3 Ensure that no attachment (wiring, lighting, etc.) exists at underside of any deck section that is to be removed. Contractor to notify a representative of Owner, who will then disconnect any such services, if necessary.

3.2 PREPARATION

- .1 On All Designated Roof Replacement Areas: The Roofing Contractor is responsible to conduct a pre-construction survey, including photo documentation, of existing interior ceiling and attic spaces to identify existing damage, nail pops in gypsum, organic growth, inadequate ventilation (blocked soffits), etc. prior to the start of work.
- .2 All building walls, windows, doors etc. to be protected with wood sheathing in vicinity of work area.
- .3 Examine work of other trades for defects and discrepancies and report them to Owner/Consultant in writing. Do not proceed with work until surfaces are satisfactory.
- .4 Any rooftop equipment requiring disconnection to be responsibility of Contractor in consultation with Owner unless otherwise specified in this document.
- .5 All details supplied with this scope of work package are acceptable installations. Any deviance from these details must first approved by Departmental Representative prior to installation.
- .6 Disconnect and reconnect Electrical Services as / if required.
- .7 Disconnect and reconnect Mechanical Equipment as / if required.
- .8 Replace rotten plywood decking as directed by the consultant. Fill knot holes and surface cracks with latex filler at areas of bonded eave protection. Cover knot holes with sheet metal.

3.3 EXISTING ROOF SYSTEM REMOVAL

- .1 On All Designated Roof Replacement Areas: Remove down to existing wood deck and dispose of existing wood shingles, underlayment roof membrane, projection and perimeter flashings, and old appurtenances to an appropriate site.
- .2 Review entire existing roof deck to identify damaged areas requiring replacement. Consultant to be notified of any damage or concerns.
 - .1 Report any anomalies found that may impact soundness and structural integrity of roof system to Consultant and Owner immediately. Areas with damaged decking must be replaced or repaired before any further work may take place on that particular section.
 - .1 Roofing contractor is to document damage and repairs made for review by the Consultant if physical confirmation cannot be made in a timely fashion.
- .3 Prior to installation of underlayment, roof deck and structural members on all designated areas to be reviewed for any deterioration or defect that may impact soundness and structural integrity of new roof sheathing and roof system. Any deficiencies found in decking members are to be reported to Consultant and Owner immediately.
- .4 Any wood found to be deteriorated or otherwise not suitable for to its intended function will be replaced with new material to match existing in all aspects of configuration.
- .5 Damaged or otherwise deficient structural members must be replaced or repaired before any further work can take place on that particular roof section. Cost to be approved by Departmental Representative covered under Change Order.

- .6 Areas with damaged decking must be replaced or repaired before any further work can take place on that particular roof section. Cost to be approved by Departmental Representative covered under Change Order.
- .7 Re-secure loose existing strapping, wood deck components with specified fasteners.
- .8 Remove all nails and other fasteners used to secure existing wood blocking, slates and flashings. Do not set broken nails and other fasteners. Ensure deck is free of all dirt and loose materials.
- .9 Ensure substrate is smooth. Remove sharp edges or protrusions that could impair performance of new underlayment.
 - .1 In area of eave protection clean surface of deleterious material to ensure proper adhesion as required by product manufacturer.
 - .2 Ensure roof decks are firm, straight, smooth, dry, free of snow, ice, frost, oils, or other contaminants. Decking must be properly cleaned of any dust and debris prior to proceeding with new installation.
- .10 Close in openings of exiting wood roof deck with new material at locations where existing roof vents or abandoned equipment are to be removed.

3.4 CARPENTRY

- .1 On All Designated Replacement Roof Areas: Refer to detail drawings for carpentry requirements and install wood blocking, plywood, and cant strips to accommodate required slopes, roofing, and finish sheet metal. Any carpentry alterations will be performed to accepted trade practice.
- .2 Replace any seriously damaged or deteriorated wood at perimeters and projections with new wood blocking or exterior grade plywood. Determination of suitability to re-use or replace existing wood to be approved by the Departmental Representative under Change Order.
 - .1 Ensure existing wood blocking remaining at perimeters and curbs is securely fastened to existing substrate before installing any new blocking.
- .3 Wood to wood, wood to metal, wood to masonry or concrete to be secured at 305mm (12") on center with alternating fasteners staggered.
 - .1 Avoid protruding fastener heads. Where possible, all fasteners to be flush or slightly sunk with surface of wood blocking being secured.
- .4 All wood blocking and plywood is to be considered part of roof, and to be made watertight by end of each working day to eliminate moisture infiltration into roof system.
- .5 Cut in appropriate breathing strips for new ridge vents and off-peak vents as appropriate. Do not cut into ridge board or rafters beneath. Do not bring strips within 152mm (6") of rakes or overhang at rakes.
- .6 Make good all holes in plywood deck from previous breather vents, which may require removal of additional existing deck to allow repair to be flush with decking and allow attachment into minimum 2 sides of rafters. Install H Clips as needed on adjacent sides.

3.5 UNDERLAYMENT INSTALLATION

- .1 On All Roof Replacement Areas: Install specified self-adhering shingle underlayment in accordance to manufacturer's written recommendations. If required due to cold temperature

installation or unusual substrate conditions, sheathing is to be primed. Adequate adhesion must be demonstrated to delete application of primer.

- .1 The entire roof deck surfaces are to be covered with the same self adhered HT underlayment.
- .2 Apply self-adhering membrane in 152mm (6") strip at rake edges (review details for specific rake edges), extending 51mm (2") over edge.
- .3 Apply self-adhering membrane in 914mm (36") strip at all valley locations, centered in the valley.
- .4 Apply self-adhering membrane in shingle fashion, and square to roof edge, overlapping apron flashings. Install up roof slope to provide coverage minimum 305mm (12") beyond edge of flashing.
- .5 Maintain a minimum 100mm (4") side lap and 152mm (6") end lap of self-adhering membrane. Stagger all end laps
- .6 At walls and dormers, self-adhering membrane is to be installed as detailed (see typical details). In all cases, self-adhering membrane to be installed in shingle-fashion, starting at lower end of detail and proceeding up slope lapping all lower flashings a minimum 100mm (4") or as detailed.
- .7 Ensure continuous adhesion by rolling or brooming membrane. All Wrinkles to be cut out and patched. Perimeters of all patches to be treated with specified mastic.

3.6 STEP & SUPPORT FLASHINGS

- .1 On All Designated Roof Replacement Areas: Metal step flashings to be installed at all roof/wall junctions where plane of wall is parallel to roof slope. Install underlayment and/or self-adhering membrane as detailed, prior to beginning step flashing/shingle installation.
- .2 Apron flashing shall extend a minimum 125mm (5") up vertical surfaces, 100mm (4") over the roof material and 100 mm (4") around the corners.
 - .1 On areas that need more than one length of flashing e.g. adjacent walls, only standing seams or 'S' locks can be used to join pieces.
- .3 Step flashings to be fabricated from sheet metal stock, 240mm x 200mm (10½" x 9") in size.
 - .1 Step flashings shall extend a minimum 125mm (5") up vertical surfaces, 100mm (4") between courses of roofing and have a 75mm (3") head lap.
 - .2 Step flashing shall extend a minimum 75mm (3") beyond the down slope corners and be folded, but not cut.
 - .3 Step flashing shall be placed flush with the butt edge (bottom) of each cedar shingle course.
 - .4 Fastening shall be a nail placed 50mm (2") down from the top edge and 25mm (1") in from the outside edge on the deck flange portion of each step flashing
 - .5 First step flashing at eave edge shall incorporate a diverter fold.
- .4 Start installation at base of slope, install first step flashing over starter shingle. Press step flashing into corner of roof/wall junction. Secure step flashing with a nail, driven into roof sheathing at upper edge of step flashing, at corner away from wall. Install new shingle over step flashing. Do not nail shingle at end through step flashing, set nail back from edge of shingle.

- .5 Install next section of step flashing over previously installed shingle, ensuring a 75mm (3") overlap with last step flashing installed. Secure as noted above and repeat with each succeeding shingle course.
- .6 At masonry walls, ensure a new metal flashing is installed to cover step flashings down to roof surface and terminated into a saw cut into masonry and caulked. At walls clad with siding, step flashings should be installed behind siding and building paper. Remove and reinstall siding as required to install step flashings.
- .7 Backpan flashing shall extend a minimum 152mm (6") up vertical surfaces, 450mm (18") up the slope and 100mm (4") beyond the corners.
 - .1 Corners must be folded, but not cut. If the upstand is more than 750mm (30") wide, a saddle is required.
 - .2 In lieu of a saddle, a backpan that extends a minimum of one-sixth the width of the upstand but not less than 152mm (6") vertically and up the roof slope to a point equal in height but not less than 450mm (18") must be used.
 - .3 All back-pan flashings shall incorporate integral capillary tabs to lead water around the corner.
- .8 Install sheet metal diverter flashings at all transitions from roof to gutter at rake corner areas. Secure with minimum 2 nails under adjacent course of shingles.

3.7 SHINGLE INSTALLATION

- .1 Place shingles in accordance with RCABC and CSSB requirements to produce a shingle wave pattern with 70mm (2.75") weather exposure to produce a layered thickness over the roof area.
- .2 Provide a triple course at eaves.
- .3 The hips, valleys and eaves are to be installed in the steam bent fashion to match existing.
- .4 Project first course 38mm (1-1/2 inches) beyond the face of fascia boards at eaves and 25mm (1 inch) at rakes and gables. Provide a prefinished metal drip edge along the eave only as per details.
- .5 Where roof adjoins walls, cut siding 50mm (2") above finished height of shingles. Apply primer and paint to raw cut edges to match existing.
- .6 Contractor to provide a Unit Price to replace rotten siding with new as required and as approved by Departmental Representative under an approved Change Order. New wood siding material to match existing in size and shape and shall be primed/painted to match existing
- .7 Coordinate installation of roof mounted components or work projecting through roof with weather tight placement of counter flashings.
- .8 Complete installation to provide weather tight service.
- .9 Aesthetics are considered of paramount importance, and manufacturer's requirements and their specifications for the creation of an aesthetically pleasing system will be enforced. Installations that do not meet appearance standards are subject to rejection and replacement at the contractor's expense.

3.8 MISCELLANEOUS MECHANICAL & ELECTRICAL

- .1 Unless stated in writing elsewhere, Contractor responsible for all Mechanical, Electrical Work or telecommunications work required to perform complete installation of new roofing. Any and all costs associated with HVAC disconnection, removal, and reconnection, including modification of gas and conduit lines, to be included in Pricing, unless specified otherwise.
 - .1 Coordinate any planned disruptions in advance with Owner to minimize inconvenience.
- .2 Gas Lines and Conduits: Disconnect, modify, and reconnect all gas lines, electrical lines, and conduits as required to suit new roof installation height and configuration of projection detailing.
 - .1 All gas line work must be performed by a qualified Gas Fitter and must conform to requirements of CSA B149.1-10.
 - .2 Re-install gas lines and conduits at a height of 152mm (6") to 200mm (8") above finished roof surface. Secure all loose cabling and conduits off surface of roof membrane.
 - .3 Ensure that all gas line penetrations are separated from all electrical line penetrations with their own roof flashing supports. Provide any new sleeves, goosenecks, or curbs required using IRC Group approved flashing supports and installation methods.
 - .4 At threaded gas line piping, which cannot be permanently enclosed or covered, construct new insulated dog house detail with removable lid for periodic thread inspection.
 - .5 Paint all gas lines on areas of roof work with exterior grade, yellow paint for metal surfaces; Rust Paint by Tremclad or Owner approved equivalent.
- .3 Underdeck Securement: Where existing sections of roof decking are to be removed, ensure any cabling, conduits, and attachments (plumbing, electrical wiring, lighting fixtures, etc.) secured to underside are disconnected, removed, and relocated. Notify Owner's Representative, if necessary, to have interior services disconnected, removed, and relocated by Owner.
- .4 Temporary Security: Provide overnight security, at no additional cost to Owner, where removal of any venting or HVAC equipment results with an opening in roof deck that cannot be permanently sealed on same day. Security Company must be preapproved by both Owner and Consultant in advance.

3.9 PROTECTION

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

3.10 METAL FLASHINGS

- .1 On All Roof Replacement Areas: After installation of roof membrane and membrane flashings, new perimeter metal and metal flashings to be installed as detailed in Section 07 62 00 and as indicated on detail drawings.

3.11 SEALANTS

- .1 On All Roof Replacement Areas: After installation of roof membrane and membrane flashings, install sealants as per Section 07 92 00 – Sealants and as recommended by membrane manufacturer.

3.12 CLEAN-UP

- .1 On All Roof Replacement Areas: Clean up and remove from job site on a daily basis, all rubbish and surplus materials resulting from this work.
- .2 Drag a magnetic bar across work area and grounds to ensure removal of all discarded fasteners and sharp metal debris.
- .3 Final cleaning:
 - .1 Remove temporary protection.
 - .2 Remove dust, dirt, and foreign matter from surfaces.
 - .3 Broom clean paved exterior surfaces rake clean other exterior surfaces.
 - .4 Ensure that all fasteners have been removed from roof and surrounding site. Clean all gutters and downspouts of debris generated as a result of this work.
 - .5 Remove full garbage bins immediately. Do not pile debris or garbage on project site.
 - .6 At end of project, landscaping to be repaired to match original conditions.

END OF SECTION - 07 31 29

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