



SPECIFICATIONS

Wye Lake Trail & Sign Post Forest Trail
Improvements
Town of Watson Lake, YT

ISSUED FOR TENDER



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Drawing List

Sign Post Forest Trail Improvements

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L1.0	Existing Conditions Plan
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Wye Lake Trail Improvements

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L2.0	Site and Materials Plan (Wye Lake North)
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L4.4	Toilet Building Details

END OF SECTION

Part 1 General

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- .1 All requirements noted within the Contract Documents shall be completed by the Contractor unless specifically stated otherwise.
- .2 Without limiting the scope of work, the work of this Contract generally comprises the following works in the community of Watson Lake:
 - .1 Sign Post Forest Trail Improvements:
 - .1 Demolition and disposal of existing furnishings.
 - .2 Construction of granular pathways including but not limited to; excavation and subgrade preparation, grading, supply and placement of granular fill, gravel base, and granular surface course, and compaction.
 - .3 Supply and installation of site furnishings including accessible precast concrete picnic tables, timber kiosk, timber archway, metal benches, and garbage/recycling bin.
 - .4 Supply and installation of timber entry archway.
 - .5 Rehabilitation of disturbed landscape areas.
 - .6 Miscellaneous construction as indicated on Drawings and Specifications.
 - .2 Wye Lake Trail Improvements:
 - .1 Clearing and grubbing of trees and understory for trail improvements.
 - .2 Demolition, removal and disposal of existing furnishings including benches, existing boardwalk and outhouse building.
 - .3 Construction of granular pathways including but not limited to; excavation and subgrade preparation, grading, supply and placement of granular base, and granular surface course and compaction.
 - .4 Installation of drainage culvert under pathway.
 - .5 Supply and installation of timber boardwalk on mudsill foundation.
 - .6 Supply and installation of site furnishings including accessible precast concrete picnic tables, timber trailhead kiosk, metal benches, bike rack, access control gates, garbage/recycling bin, pet waste dispensers and accessible outhouse building.
 - .7 Supply and installation of wayfinding signage markers.
 - .8 Supply and installation of rip rap along shoreline including turbidity curtain.
 - .9 Rehabilitation of disturbed landscape areas.
 - .10 Miscellaneous construction as indicated on Drawings and Specifications.

1.2 WORK BY OTHERS

- .1 Co-operate with Owner's staff in carrying out their respective works and carry out instructions from Owner's Representative.

1.3 PROJECT LOCATION

- .1 The project is located in the Town of Watson Lake, Yukon.

1.4 CONSTRUCTION SCHEDULE

- .1 The contractor is required to provide and maintain a work schedule as described in section 01 32 16 Construction Schedule and the final completion date must be met as a requirement of this contract.

1.5 WORK SEQUENCE

- .1 Contractor shall schedule Work progress to allow Owner / Owner's Representative unrestricted access to inspect all phases of the Work.
- .2 Co-ordinate Progress Schedule with Owner during construction.
- .3 Obtain Substantial Completion of the Work by October 15, 2027.
- .4 Obtain Final Completion of the Work by October 15, 2028.

1.6 WORK SITE SAFETY

- .1 The Contractor shall, for the purposes of the Occupational Health and Safety Act (Yukon), and for the duration of the Work of this Contract:
 - .1 Submit a site-specific Health and Safety Plan in accordance with Section 01 35 29 – Health and Safety Requirements.
 - .2 Be the "prime contractor" for the "work site" and do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the Act and its regulations, as required to ensure the health and safety of all persons at the "work site."
- .2 The Contractor shall direct all Subcontractors, Sub-subcontractors, Other Contractors, employers, workers and any other persons at the "work site" on safety related matters, to the extent required to fulfill its "prime contractor" responsibilities pursuant to the Act, regardless of:
 - .1 Whether or not any contractual relationship exists between the Contractor and any of these entities, and
 - .2 Whether or not such entities have been specifically identified in this Contract.

1.7 CONTRACTOR USE OF PREMISES

- .1 Co-ordinate use of premises under direction of the Owner's Representative.
- .2 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

- .3 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .4 Repair or replace portions of existing work which have been damaged during construction operations to match existing or adjoining work, as directed by Owner's Representative.
- .5 At completion of operations condition of existing work: equal to or better than that which existed before new work started.
- .6 Owner will occupy premises during entire construction period for execution of normal operations.
- .7 Co-operate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

1.8 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 Environmental Protection Plan.
 - .12 Basic Impact Analysis.
 - .13 Permits.
 - .14 Survey.
 - .15 Other documents as specified.

Part 2 Products**2.1 NOT USED**

- .1 Not used.

Trail Improvements

Town of Watson Lake, Yukon

Issued for Tender

Section **01 11 00****SUMMARY OF WORK**Page **4** of **4**

Part 3 Execution**3.1 NOT USED**

.1 Not used.

END OF SECTION

1. General

- .1 Payments will be made on the basis of the unit prices bid in the Tender, and in accordance with Terms of the Contract.
- .2 The prices bid for various items of work, unless specifically noted otherwise, shall include the supply of all labour, PLANT, MATERIAL and PRODUCT equipment necessary to construct THE WORK in accordance with the drawings and specifications.
- .3 The prices bid for supply and installation shall be full compensation for supplying, hauling, installing, cleaning, testing, and placing in service together with all other work subsidiary and incidental thereto for which separate payment is not provided elsewhere.
- .4 The method of measurement of the quantities for payment and the basis for payment will be in accordance with the following items of this section. All measurements will be done by the CONSULTANT using generally accepted field survey methods.
- .5 Where the Tender shows separate items for supply and installation, the unit prices or lump sum prices bid for supply shall include supplying, delivering, loading, unloading and all allowances for handling, storage, breakage and waste. Payment will be made only for MATERIAL actually installed in THE WORK.
- .6 Progress Payment for supply-only items shall be made only for MATERIAL and PRODUCT on the WORKSITE and in the CONTRACTOR'S care, and shall then become the Property of the OWNER.
- .7 Other materials on site, whether existing structures, vegetation, topsoil, gravel, sand or other excavated or piled materials, are the property of the OWNER or of the owner of the land on which THE WORK is located. Only those materials specifically noted in the specification or on drawings as belonging to the CONTRACTOR shall become the CONTRACTOR'S property.
- .8 Where there are excess excavated materials, unsuitable materials excavated or materials of any kind that are excavated but not used in THE WORK, such materials are not the property of the CONTRACTOR unless authorized in writing by the CONSULTANT or specified to be disposed of by the CONTRACTOR.
- .9 With each progress payment claim, the CONTRACTOR and any Pre-selected Supplier shall jointly certify a claim for payment for preordered MATERIAL used or incorporated into THE WORK or delivered to the site of THE WORK during that claim period.
- .10 Upon Total Completion of THE WORK, the CONTRACTOR shall credit the OWNER for MATERIAL paid for as supplied on the WORKSITE, but not incorporated in THE WORK, and remove the surplus MATERIAL from the WORKSITE.

- .11 Surface restoration items are incidental to THE WORK, and additional payment will not be made for items such as topsoil or seeding.
- .12 Restoration of roads impacted by the work is considered incidental to THE WORK and shall be completed before the final progress payment certificate is issued.

2. Measurement and Payment

2.1 General Requirements

.1 Mobilization and Demobilization

Mobilization and demobilization shall include the CONTRACTOR's costs of mobilization at the beginning of THE WORK and the costs of demobilization at the end of THE WORK.

Included in mobilization are such items as bonding, insurance, permits, construction photographs and videos, moving personnel, materials and equipment to the WORKSITE, setting up temporary facilities and fencing, installation of temporary tree protection fencing, preparation of work schedules, notification of landowners and all preparation for performing THE WORK.

Included in demobilization are preparation and submission of operation and maintenance manuals, submission of red line drawings and drill information, removal of all personnel, materials and equipment; and cleanup of the WORKSITE.

The lump sum price bid for this work shall be relative to the costs involved but shall not exceed ten percent of the Tender Price.

Payment: Payment will be made as follows, as approved by the CONSULTANT:

- i) 60% of the lump sum bid will be included in the first progress payment certificate;
- ii) 40% of the lump sum bid will be included in the final progress payment certificate.

The CONSULTANT may at their discretion recommend partial payment if mobilization or demobilization is not complete.

2.2 Site Work.1 Demolition and Removals

Demolition shall include removal of existing site furnishings, and boardwalk as identified on the drawings, and disposal of materials to an approved off-site location, and all related incidental work not specified elsewhere.

Payment: Lump sum price.

Measurement: Work completed.

.2 Excavation and Subgrade Preparation

Excavation and subgrade preparation shall include excavating, subgrade preparation and compaction as specified within the CONTRACT DOCUMENTS, and disposal of any unsuitable material to an approved off-site location, and all related incidental work not specified elsewhere.

Payment: Tendered unit price.

Measurement: Metre squared.

.3 Clearing and Grubbing

Clearing and grubbing shall include the clearing of designated trees and underbrush within the trail alignment, and grubbing and close-cut clearing as indicated in the CONTRACT DOCUMENTS and all related incidental work not specified elsewhere.

Payment: Tendered unit price.

Measurement: Metre squared.

.4 Rip Rap Shoreline Protection

Rip rap shoreline protection shall include the supply and installation of approved non-ARD metal leaching rip rap, gravel bedding filter and geotextile as indicated in the CONTRACT DOCUMENTS and all related incidental work not specified elsewhere.

Payment: Tendered unit price.

Measurement: Metre cubed.

.5 Granular Trail Surfacing

Granular surfacing shall include the supply, installation and compaction of geotextile, granular base and surface course as indicated in the CONTRACT DOCUMENTS and all related incidental work not specified elsewhere.

Payment: Tendered unit price.

Measurement: Metre squared.

.6 Timber Boardwalk

Timber boardwalk shall include the supply and installation of boardwalk including mudsill foundations as indicated in the CONTRACT DOCUMENTS and all related incidental work not specified elsewhere.

Payment: Tendered unit price.

Measurement: Linear Metre.

.7 Timber Edger

Timber edger include the supply and installation of timber edger as indicated in the CONTRACT DOCUMENTS and all related incidental work not specified elsewhere.

Payment: Tendered unit price.

Measurement: Linear metre.

2.3 Provisional Items

2.4 Site Furnishings

.1 Benches, Signage, Kiosk, Accessible Picnic Tables, Accessible Outhouse Building, Access Control Gate, Timber Arch, Pet Waste Dispenser, Garbage/Recycling Bin, Bicycle Rack

Site furnishings shall include the supply and installation of furnishing and foundations as indicated in the CONTRACT DOCUMENTS and all related incidental work not specified elsewhere.

Payment: Tendered unit price.

Measurement: Each.

END OF SECTION 01150

Part 1 General

1.1 INTENT

- .1 The Work shall be designed, constructed, and commissioned in a manner which is compliant with local authorities.
- .2 The Contractor shall be required to apply for and receive all relevant permits prior to starting Work.

1.2 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant territorial and other regulations.

1.3 USE OF SITE

- .1 The Work Site specified in these specifications shall only be used for the purposes of the Work. The Work Site will be made available by the Owner to the Contractor for its nonexclusive use for the duration of the Work, unless otherwise provided in the Contract Documents. The Contractor shall include in the tender, payment to taxes properly levied by law (Federal, Territorial and Municipal) including the cost of any collection of permits and business licenses.
- .2 Site is limited by existing adjacent properties, existing vegetation and ordinary high water mark.
- .3 Execute Work with least possible interference or disturbance to normal use of area. Contractor shall maintain adequate drainage and siltation control at the Wye Lake Worksite. Make arrangements with Owner's Representative to facilitate work as stated.

1.4 HOURS OF WORK

- .1 Carry out noise generating Work between the hours of 7:00 AM and 7:00 PM. Notify Owner's Representative for approval if Work will be executed outside of standard working hours.

1.5 TEMPORARY FENCING, BARRIERS OR ENCLOSURES

- .1 Erect in accordance with Section 01 56 00 – Temporary Barriers and Enclosures.

1.6 EXISTING SERVICES

- .1 Notify Owner's Representative and private and public utility companies one week prior to intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Owner's Representative 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Coordinate

with the Owner's Representative to determine the best time for service interruptions to minimize disturbance.

1.7 SMOKING ENVIRONMENT

- .1 Smoking is only allowed in designated areas.

Part 2 Products**2.1 NOT USED**

- .1 Not Used.

Part 3 Execution**3.1 NOT USED**

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

- .1 The Contractor shall schedule and administer regular project meetings throughout the progress of the work as requested by the Owner's Representative including the following items;
 - .1 Prepare agenda for meetings.
 - .2 Distribute written notice of each meeting seven days in advance of meeting date to all parties.
 - .3 Record the meeting minutes and include significant proceedings and decisions with identification of actions by parties.
 - .4 Reproduce and distribute copies of minutes within three days after meetings and transmit to meeting participants and, affected parties not in attendance.
- .2 Representative of Consultant, Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.2 PRECONSTRUCTION MEETING

- .1 The Owner's Representative shall schedule, prepare agenda and chair the Pre-Construction Meeting, and shall be responsible for preparing minutes of the Pre-Construction Meeting.
- .2 Senior representatives of the Owner, Consultants and Contractor will be in attendance.
- .3 Owner's Representative shall establish time and location of meeting and notify parties concerned at minimum 5 days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include, but not be limited to:
 - .1 Appointment of official representative of participants and Reporting Relationships in the Work.
 - .2 Schedule of Work: in accordance with Section 01 32 16 - Construction Schedule. Work sequencing proposals to be discussed.
 - .3 Schedule of submission of samples, and product data. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
 - .5 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
 - .6 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.

- .7 Record drawings in accordance with Section 01 33 00 - Submittal Procedures, and Section 01 78 00 - Closeout Submittals.
- .8 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .9 Monthly progress claims, administrative procedures, photographs, hold backs.
- .10 Appointment of third party testing agencies or firms by Contractor.
- .11 Insurances, transcript of policies.
- .12 Review of Health and Safety Plan and appointment of Health and Safety Coordinator in accordance with Section 01 35 29 Health and Safety Requirements.

1.3**PROGRESS MEETINGS**

- .1 During course of Work and until project completion, schedule progress meetings every two weeks.
 - .2 Contractor, major Subcontractors involved in Work and Owner's Representative and Owner are to be in attendance.
 - .3 Notify parties minimum 7 days prior to meetings.
 - .4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within three (3) days after meeting.
- .2 Agenda to include, but not be limited to the following:
- .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations.
 - .4 Potential issues that may impede schedule and solutions to avoid or mitigate the issues.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Construction schedule updates.
 - .7 Progress schedule, during succeeding work period.
 - .8 Review submittal schedules.
 - .9 Quality control/quality assurance updates.
 - .10 Review proposed changes for affect on construction schedule and on completion date.
 - .11 Safety; incidents and near misses.
 - .12 Other business.

1.4**WARRANTY MEETINGS**

- .1 Owner reserves the right to require meetings during the warranty period to review Contract deficiencies, to determine action required for their correction, and to monitor progress of corrections related to previously identified Contract deficiencies.
- .2 Contractor, affected Subcontractors, Consultant and Owner are to be in attendance.

1.5 SPECIAL MEETINGS

- .1 Owner and/or Consultant reserve the right to require special meeting which may be held on short notice and at which the attendance by the Contractor and representative of the affected Subcontractors and Suppliers is mandatory.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General**1.1 DEFINITIONS**

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally, a Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: significant event in project, usually completion of major deliverable.
- .8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones.

1.2 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

1.3 ACTION AND INFORMATION SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 The Contractor shall submit to Owner's Representative a Master Plan within 5 working days of Award of Contract.

- .3 Submit Project Schedule to Consultant within 5 working days of receipt of acceptance of Master Plan.

1.4 MASTER PLAN

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Consultant will review and return revised schedules within 5 working days.
- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.5 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award.
 - .2 Shop Drawings, Samples.
 - .3 Permits.
 - .4 Mobilization.
 - .5 Clearing and Grubbing.
 - .6 Rough Grading.
 - .7 Rip Rap Placement.
 - .8 Gravel Placement and Compaction.
 - .9 Site Furnishings.
 - .10 Rehabilitation.

1.6 PROJECT SCHEDULE REPORTING

- .1 The Contractor shall update Project Schedule every two weeks reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.7 PROJECT MEETINGS

- .1 Discuss updates to Project Schedule at regular site meetings. Identify potential issues that may impede schedule and provide measures to mitigate the issues. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Delays due to extreme, unexpected weather, with their remedial measures will be discussed and negotiated.

Trail Improvements

Town of Watson Lake, Yukon
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Section **01 32 16**

CONSTRUCTION PROGRESS SCHEDULE

Page **3** of **3**

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 11 00 Summary of Work.
- .2 Section 01 45 00 Quality Control.
- .3 Section 01 78 00 Closeout Submittals.

1.2 ADMINISTRATIVE

- .1 Submit to the Owner's 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 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 Owner's 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 Owner's 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 Owner's Representative review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Owner's Representative's review.
- .10 Keep one reviewed copy of each submission on site.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work that are specific to project requirements.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes, and other information necessary for completion of Work.

- .3 Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to Contract drawings and specifications.
- .4 Allow 5 business days for Consultant, and Owner's Representative for review of each submission.
- .5 Adjustments made on shop drawings by Consultant, Owner's Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant, Owner's Representative before proceeding with Work.
- .6 Make changes in shop drawings as Consultant, Owner's Representative may require, consistent with Contract Documents. When resubmitting, in writing of revisions other than those requested.
- .7 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Contractor
 - .2 Subcontractor.
 - .3 Supplier.
 - .4 Identification of product data.
 - .5 Other pertinent data.
- .8 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of site measurements and compliance with Contract Documents.

1.4 SAMPLES

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Owner's Representative or at bi-weekly site meetings.
- .3 Notify Owner's Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Adjustments made on samples by Owner's Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Owner's Representative prior to proceeding with Work.
- .5 Make changes in samples which Owner's Representative may require, consistent with Contract Documents.
- .6 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.5 CERTIFICATES AND TRANSCRIPTS

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

Part 2 Products**2.1 NOT USED**

- .1 Not Used.

Part 3 Execution**3.1 NOT USED**

- .1 Not Used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Health and safety considerations required to ensure that Contractor shows due diligence towards health and safety on construction sites, and meets the requirements laid out in applicable Health and Safety Acts and Regulations.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 – Submittal Procedures.

1.3 REFERENCE STANDARDS

- .1 Yukon Territory
 - .1 Occupational Health and Safety Act, R.S.Y.

1.4 ACTION AND INFORMATION SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 5 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 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly.
- .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 Owner will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan.
- .7 Revise plan as appropriate and resubmit plan to Departmental Representative within 5 days after receipt of comments from Departmental Representative.
- .8 Owner'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 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.5 FILING OF NOTICE

- .1 File Notice of Project with Territorial authorities prior to beginning of Work.
- .2 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

1.6 SAFETY ASSESSMENT

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

1.7 MEETINGS

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

1.8 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 Owner may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.9 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.

1.10 COMPLIANCE REQUIREMENTS

- .1 Comply with Occupational Health and Safety Act, General Safety Regulations, O.I.C.,

1.11 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 of Saskatchewan and advise Departmental Representative verbally and in writing.
- .2 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise Safety Officer or Health and Safety co-ordinator and follow procedures in accordance with Acts and Regulations of Territory having jurisdiction and advise Owner verbally and in writing.

1.12 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 with the project requirements.
 - .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.
 - .5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.13 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 the Province of Saskatchewan, and in consultation with Departmental Representative.

1.14 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address 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.

1.15 WORK STOPPAGE

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

Part 2 Products**2.1 NOT USED**

- .1 Not used.

Part 3 Execution**3.1 NOT USED**

- .1 Not used.

END OF SECTION

Part 1 General**1.1 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 humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to commencing construction activities or delivery of materials to site, the Contractor shall review the YESAA Submission and provide a plan to address any mitigation measures for Owner's Representative approval.
- .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .4 The Contractor will provide:
 - .1 Traffic control plan including measures to reduce erosion of roadbeds by construction traffic, especially during wet weather. Plans to include measures for temporary closure of road and trail entrances to restrict public access to construction areas.
 - .2 Plan for equipment access, staging and storage of materials and equipment including plans for securing areas with temporary construction fencing.

1.3 FIRE PREVENTION AND CONTROL

- .1 Contractor to be aware of current fire hazard conditions within the community.
- .2 Carry fire extinguisher for use on each machine and at locations as required in the event of fire.
- .3 Construction equipment shall be operated in a manner and with all original manufacturer's safety devices to prevent ignition of flammable materials in the area.
- .4 Care shall be taken while smoking on the construction site to ensure that the accidental ignition of any flammable material is prevented.
- .5 In case of fire, the Contractor or worker shall take immediate action to extinguish the fire provided it is safe to do so. The Owner's Representative, and and Yukon Wildfire

Service shall be notified of any fire immediately, and fire services should be contacted at 911.

- .6 Fires and burning of rubbish on site not permitted.

1.4 DISPOSAL OF WASTE

- .1 All garbage must be stored and handled in conformance with local regulations.
- .2 All surplus and waste materials shall be removed from the job site to approved sites. Disposal of all wastes shall be in compliance with the Environmental Contaminants Act and applicable provincial regulations while observing the Code of Good Practice for Management of Hazardous and Toxic Wastes at Federal Establishments.
- .3 Contractor shall remove all demolition, construction, and trade waste from the site and dispose of materials at designated site on a regular basis or when directed by Owner's Representative. Various rate schedules may apply for unsorted waste, scrap metal, asphalt shingles, appliances, and painted wood.
- .4 No food, domestic garbage or hazardous wastes may be deposited in the trade waste site. Obtain bear proof garbage containers on-site for domestic garbage generated on-site by Contractor's personnel. Proper site management, particularly of garbage and fuel storage, should minimize the risk of attracting bears or other animals to the site.
- .5 Dispose of all hazardous wastes in conformance with the Environmental Contaminants Act and applicable territorial regulations while observing the Code of Good Practice for Management of Hazardous and Toxic Wastes at Federal Establishments.
- .6 Maintain the site in a tidy condition, free from the accumulation of waste products, debris and litter.
- .7 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .8 No separate payment will be made for waste disposal. Costs of this work shall be considered incidental to the contract.
- .9 Do not burn or bury rubbish and waste materials on-site.
- .10 Remove all demolition, construction, and trade waste from the site and dispose to an approved landfill.

1.5 WILDLIFE

- .1 Avoid or terminate activities on-site that attract, disturb or harass wildlife and vacate the area and stay away from the immediate location if bears display aggressive behaviour or persistent intrusion. Wildlife must be allowed to pass through the site freely.
- .2 Notify the Owner's Representative immediately of bear or other wildlife encounters on or around the site. Other wildlife encounters should be reported within 24 hours.
- .3 Pets will not be permitted on site.

- .4 Work within the requirements for migratory birds and fish, as outlined in the YESAA submission and approval.

1.6 DRAINAGE

- .1 The Contractor shall ensure proper sediment control in accordance with the YESAA documents.

1.7 SITE CLEARING AND PLANT PROTECTION

- .1 Review the existing trees to be protected and protection requirements on site with the Owner's Representative. Any materials that inadvertently fall outside the work limits are to be removed promptly in a manner that does not damage existing trees or vegetation in that location.
- .2 When working adjacent to existing trees the Contractor shall exercise all possible care to avoid injury to vegetation. Where roots or limbs over 25 mm in diameter and bark are damaged during operations, trim damaged portion. The Owner's Representative will inspect all trimmed areas and approve them.
- .3 Tree and vegetation removal shall be limited to trees and vegetation flagged and confirmed for removal and approved by Owner's Representative.
- .4 Protect roots of trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .5 No stripping or vegetation removal shall occur outside the designated areas or as directed by Owner's Representative.
- .6 Restrict tree removal to areas indicated or designated and approved by the Owner's Representative.

1.8 CONTRACTOR'S EMPLOYEE BRIEFING

- .1 The Contractor shall conduct briefing sessions for all employees and subcontractor employees highlighting the requirements of this section, including operation of equipment strictly.
- .2 An initial site meeting with Contractor, and Owner's Representative will take place prior to construction commencing.

1.9 CONTRACTOR'S OPERATIONS

- .1 Confine all operations to the work limits as staked by Contractor and approved by the Owner's Representative. No activities of any kind may be carried out beyond these work limits without Owner Representative's written approval.
- .2 Do not store or stockpile construction materials in existing trees bordering or being preserved on-site. Do not unreasonably encumber the site with products.
- .3 Storage areas shall be located within the project boundaries on disturbed or hardened areas. Storage locations to be approved by Owner's Representative.

- .4 Storage locations shall be completely cleaned up and returned to original condition prior to Contractor de-mobilization in the spring, in the fall and finishing the project.
- .5 Equipment maintenance shall only be carried out in designated areas or as approved by the Owner's Representative. The use of on-site areas for equipment oil changes and other servicing will not be permitted.
- .6 Obtain permit from Authority Having Jurisdiction for on-site storage of fuel or other inflammable liquids. Observe all restrictions and conditions imposed by the permit regarding special protection and berming to control spills and tank damage, fire protection considerations, provisions for the disposal of fouled material and used petroleum products.
- .7 Conduct operations at all times in such a manner as to preserve the natural features and vegetation in the area. Cut and fill slopes shall be blended with adjoining topography. Material from fill slopes will not be permitted to sluff or roll into surrounding tree cover or to bury any plant material designated to be retained.
- .8 When, in the opinion of the Owner's Representative, negligence on the part of the Contractor results in damage or destruction of vegetation, or other environmental or aesthetic features beyond the staked or designated work area, the Contractor shall be responsible, at his expense, for complete restoration including the replacement of trees, shrubs, topsoil, grass, etc., to the satisfaction of the Owner's Representative.
- .9 Review construction access requirements with the Owner's Representative both at start-up and an ongoing basis.
- .10 The contractor shall ensure that the environment beyond the work limits is not negatively impacted or damaged by worker's vehicles or machinery and shall instruct workers so that the 'footprint' of the project is kept within defined boundaries.
- .11 If heavy machinery is required, only light low ground pressure (tracked) machinery will be permitted to operate in wetland areas.
- .12 All machinery will work above the high-water mark; no machinery will be stored overnight within 30m of any surface water.
- .13 All machinery will be cleared of vegetation and soil before being moved to or off the project area to prevent the spread of invasive species.
- .14 Work On and Adjacent to Steep Slopes: avoid equipment operation on steep slopes (e.g. when placing angular rock in eroded area); Provide barriers in place to prevent rolling of debris down slopes onto roads or into vegetated areas.

1.10 EQUIPMENT MAINTENANCE, FUELING, AND OPERATION

- .1 Provide, operate, and maintain equipment as indicated in this Project Manual and as follows:
 - .1 The Contractor shall ensure that all soil, seeds and any debris attached to construction equipment to be used on the project site shall be removed (e.g. power washing) before delivery to the work site.
 - .2 On-site re-fueling and fuel storage:

- .1 Pick-up truck with a mounted tidy tank; jerry cans transported via UTVs for re-fueling equipment on site.
- .2 All re-fueling activities occur over containment trays (drip pans).
- .3 All stationary machinery will have containment trays placed under them.
- .4 Spill response plan to be prepared by the contractor and approved by the Proponent.
- .5 Spill kits to be available on-site.
- .6 Fuel will be removed from site daily.
- .7 Mobile fuel containers (e.g. slip tanks, small fuel carboys) shall remain in the service vehicle at all times.
- .8 Oil changes, lubricant changes, greasing and machinery repairs shall be performed at locations approved by the Owner's Representative. Waste lubrication products (e.g. oil filters, used containers, used oil, etc.) shall be secured in spill-proof containers and properly recycled or disposed of at an approved facility. No waste petroleum, lubricant products or related materials are to be discarded, buried or disposed of on-site or within the Park.
- .9 The Contractor shall ensure that all equipment is inspected daily for fluid/fuel leaks and maintained in good working order.

1.11 WORK ADJACENT TO WATERWAYS

- .1 Turbidity curtains will be installed around in-water work areas prior to the placement of rip rap in a waterbody, to isolate suspended sediment in small work areas along the shoreline.
- .2 Excavated materials and debris will be disposed of above the high-water mark and located such that they do not enter the waterbody.
- .3 All wood products used for construction of boardwalks will adhere to the Best Management Practices for the use of preserved wood in aquatic and sensitive environments (Western Wood Preservers Institute, 2018).
- .4 All machinery will work above the high-water mark; no machinery will be permitted to enter the waterbody.
- .5 Do not use waterway beds for borrow material without Owner Representative's approval.
- .6 Do not dump excavated fill, waste material or debris in waterways.
- .7 Design and construct temporary crossings to minimize erosion to waterways.

1.12 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities' emission requirements.

- .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .5 The Contractor shall prevent any deleterious and objectionable materials from entering streams, rivers, wetlands, water bodies or watercourses that would result in damage to aquatic and riparian habitat. Hazardous or toxic products shall be stored no closer than 100 metres from any watercourse.
- .6 The containment, storage, security, handling, use, unique spill response requirements and disposal of empty containers, surplus product or waste generated in the use of any hazardous or toxic products shall be in accordance with all applicable federal and provincial legislation. Hazardous products shall be stored no closer than 100 metres from any watercourse.
- .7 The Contractor shall prevent blowing dust and debris by covering and/or providing dust control for temporary roads and on-site work by methods that are approved by the Owner's Representative.
- .8 The Contractor shall provide spill kits at re-fuelling, lubrication, and repair locations that will be capable of dealing with 110% of the largest potential spill and shall be maintained in good working order on the construction site. The Owner's Representative prior to project start-up must approve these spill kits. The Contractor and site staff shall be informed of the location of the spill response kit(s) and be trained in its use.
- .9 Timely and effective action shall be taken to stop, contain and clean-up all spills as long as the site is safe to enter. The Owner's Representative shall be notified immediately of any spill. If not available, contact the Local Fire Department immediately.
- .10 In the event of a major spill, all other work shall be stopped, and all personnel devoted to spill containment and clean-up.
- .11 The costs involved in a spill incident (the control, clean up, disposal of contaminants and site remediation to pre-spill conditions), shall be the responsibility of the Contractor. The site will be inspected to ensure completion to the expected standard and to the satisfaction of the Owner's Representative.

1.13 NOTIFICATION

- .1 Owner's 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 Owner's Representative of proposed corrective action and take such action for approval by Owner's Representative.
- .3 Owner's 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.

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Section **01 35 43****ENVIRONMENTAL PROCEDURES**Page **7** of **7**

Part 2 Products**2.1 NOT USED**

.1 Not Used.

Part 3 Execution**3.1 NOT USED**

.1 Not Used.

END OF SECTION

Part 1 General

1.1 TESTING BY THE CONTRACTOR

- .1 The Contractor shall be fully responsible and bear all costs for all quality control testing and shall conduct such testing in the following manner:
 - .1 Provide testing facilities and personnel for the tests and inform the Owner's Representative in advance to enable the Owner's Representative to witness the tests if it so desired;
 - .2 Notify the Owner's Representative when sampling will be conducted;
 - .3 Within one Day after completion of testing, submit test results to the Owner's Representative; and
 - .4 Identify test reports with the name and address of the organization performing all tests, and the date of the tests.
- .2 All testing required to meet the specifications is considered Quality Control testing and shall be conducted by a certified material and testing agency to be engaged and paid by for the contractor at no additional cost to the Work.
- .3 Testing required to provide quality control to assure that the Work strictly complies with the Contract requirements shall include, but not be limited to:
 - .1 All testing specified in the Contract Documents; and
 - .2 Any other testing required as a condition for deviation from the specified Contract procedures.
- .4 Approval of tested samples will be for characteristics or use named in such approval and shall not change or modify any Contract requirements.
- .5 Testing agencies, their inspectors, and their representatives are not authorized to revoke, alter, relax, enlarge or release any requirement of the Contract Documents, nor to approve or accept any part of the Work.

1.2 INSPECTION

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

not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Owner's Representative shall pay cost of examination and replacement.

1.3 INDEPENDENT INSPECTION AGENCIES

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

1.4 PROCEDURES

- .1 Notify appropriate agency and Owner's Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.5 REJECTED WORK

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

1.6 REPORTS

- .1 The Contractor shall submit electronic copies of all inspection and test reports to Owner's Representative in accordance with Section 01 33 00 Submittal Procedures.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SUBMITTALS

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

1.2 INSTALLATION AND REMOVAL

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and secured for use by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area, and details of fence installation. Ingres/egress points must be secured.
- .2 Identify areas which have to be protected prevent tracking of mud.
- .3 Indicate use of supplemental or other staging area for Owner's approval.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

1.3 HOISTING

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

1.4 SITE STORAGE/LOADING

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

1.5 CONSTRUCTION PARKING

- .1 Limited parking will be permitted on site provided it does not disrupt performance of Work.
- .2 Follow vehicle parking limitations and permit requirements with the local authorities.
- .3 Personal vehicles shall not be parked on any natural or undisturbed areas. Parking will be confined to parking lots and roads or as approved by the Owner's Representative.

1.6 OFFICES

- .1 A Construction Office may be included, at the Contractors discretion and expense. Coordinate exact location with Owner's Representative.
- .2 The Contractor shall supply and make available a marked and fully stocked first-aid case in a readily available location.

1.7 EQUIPMENT, TOOL AND MATERIALS STORAGE

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

1.8 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.

1.9 DEWATERING

- .1 Provide temporary drainage and pumping facilities to keep excavations free from standing water.

1.10 CONSTRUCTION SIGNAGE

- .1 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Owner's Representative.
- .2 Company signage is allowed on trailers or vehicles, not elsewhere on site.

1.11 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Owner's Representative.
- .2 Protect travelling public from damage to person and property.
- .3 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .4 Dust control: adequate to ensure safe operation at all times.

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.

1.13 FIRE PROTECTION FACILITIES

- .1 Provide fire extinguisher and other equipment on site and maintain emergency vehicle access at all times.

1.14 DISRUPTION

- .1 Provide dust protection and schedule noisy work accordingly, as not to affect general public, traffic, and adjacent facilities.
- .2 No excessive noise will be permitted. Demolition methods that contribute to excessive noise will not be permitted. Low vibration and noise demolition equipment shall be used throughout the project. Best management practices will be followed by the Contractor to reduce noise on site. Equipment and vehicles shall be in good working condition and fitted with proper noise suppressing devices. Combine noisy operations to occur in the same time period. The Contractor is to take care when dropping materials from a height. Minimize drop heights at material transfer locations. Shut or throttle down equipment (e.g. backhoes, loaders, generators, bobcats) whenever they are not in actual use. If in the opinion of the Owner's Representative there is excessive noise, the Contractor will adjust the work schedule of the activity, reduce the sound levels (e.g. use of sound barriers), or implement alternative demolition processes or quieter equipment.

Part 2 Products**2.1 NOT USED**

- .1 Not Used.

Part 3 Execution**3.1 NOT USED**

- .1 Not Used.

END OF SECTION

Part 1 General**1.1 REFERENCES**

- .1 Canadian Standards Association (CSA International)
 - .1 CSA-O121-[M1978(R2003)], Douglas Fir Plywood.

1.2 INSTALLATION AND REMOVAL

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

1.3 TEMPORARY FENCING, GUARD RAILS AND BARRICADES

- .1 Security fencing is required to ensure public protection in accordance with OH & S guidelines. Security fencing is required around staging area.
- .2 Provide secure, rigid guard rails and barricades around any deep, open excavations, or any other safety related hazards or conditions that may pose a danger to the public. Owner's Representative may request additional fencing if the limits of work are being impeded.
- .3 Contractor to co-ordinate with Owner's Representative on appropriate type of temporary safety fencing, guard rails or barricades prior to installation.

1.4 SITE CONTROL AND ACCESS

- .1 Provide and maintain access roads and pathways as may be required for access to Work.
- .2 Provide for vehicular traffic control as needed.
- .3 Erect signage at entry control points and at other strategic locations around site, clearly identifying construction area(s) as being "off limits" to unauthorized persons.

1.5 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.

Part 2 Products**2.1 NOT USED**

- .1 Not Used.

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Section **01 56 00**

TEMPORARY BARRIERS AND ENCLOSURES

Page **2** of **2**

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner's Representative.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Owner's Representative.
- .3 Remove animal attractants from site at daily regularly scheduled times, including food items and food waste.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .6 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

1.2 FINAL CLEANING

- .1 When Work is Substantially Performed the Contractor shall:
 - .1 Remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
 - .2 Remove waste products and debris and leave Work clean and suitable for occupancy.
 - .3 Prior to final review remove remaining products, tools, construction machinery and equipment.
 - .4 Remove waste materials from site at regularly scheduled times or dispose of outside of property.
 - .5 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
 - .6 Sweep and wash clean paved areas.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

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Section **01 74 11****CLEANING**Page **2** of **2**

Part 3 Execution**3.1 NOT USED**

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 78 00 – Closeout Submittals.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures
 - .1 Pre-Substantial Performance Tasks:
 - .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Consultant in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Submit list of incomplete items with an attached estimated value for each item.
 - .3 Submit a schedule for completion of all remaining work.
 - .2 Pre-Substantial Submittals:
 - .1 Submit all submittals as required by Section 01 78 00 – Closeout Submittals.
 - .2 Operation of systems: submit written certificate verifying demonstration to Owner's maintenance personnel, and that all required training complete.
 - .3 Submit to Owner a letter of Good Standing from the Yukon Workers' Compensation Board and the required Statutory Declaration.
 - .3 Request Consultant's inspection in writing.
- .2 Consultant's Inspection:
 - .1 Owner, Consultant and Contractor to inspect Work and identify defects and deficiencies no later than 10 working days after receipt of the application from the Contractor.
 - .2 Consultant to establish a list and estimated value of all deficient an/or incomplete items of the Work.
 - .3 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 Certificates required by Authorities Having Jurisdiction: submitted.

- .4 Work: complete and ready for final inspection.
- .4 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by Consultant, Owner, and Contractor.
 - .2 When Work incomplete according to Consultant, complete outstanding items and request re-inspection.
- .5 Declaration of Substantial Performance: when Consultant 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.
- .7 Payment for Deficiencies: The Owner will not, except in special circumstances, approve application for payment for partial completion of deficiencies after the issuance of Substantial Performance.
- .8 Final Payment:
 - .1 When Consultant considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
 - .2 Refer to CCDC Contract when Work deemed incomplete by Consultant, complete outstanding items and request re-inspection.
- .9 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

1.3 FINAL CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.

Part 2 Products**2.1 NOT USED**

- .1 Not Used.

Part 3 Execution**3.1 NOT USED**

- .1 Not Used.

END OF SECTION

Part 1 General**1.1 ADIMINISTRATIVE REQUIREMENTS**

- .1 Pre-warranty Meeting:
 - .1 Convene meeting one week prior to contract completion with Consultant, Owner's Representative, and contractor's representative, in accordance with Section 01 31 19 - Project Meetings to:
 - .1 Verify Project requirements.
 - .2 Review warranty requirements.
 - .2 Owner 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.

1.2 ACTION AND INFORMATION SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Prior to placing surfacing, submit one set of project record documents showing the locations of:
 - .1 Underground site services.
 - .2 Under or in slab services, equipment and materials.
- .3 10 Working Days prior to Substantial Performance of the Work, submit to the Consultant for review, one electronic copy of the closeout submittals specified in this section. This first submission must include the following data:
 - .1 Contractor Designed System Data.
 - .2 Shop Drawings Stamped by Contractor and Consultant.
 - .3 Installation Instructions.
 - .4 Operating Instructions.
 - .5 Maintenance Instructions.
 - .6 Spare Parts Lists.
 - .7 Suppliers and Contractors Lists.
 - .8 Product Data.

- .4 The Consultant's review to determine Substantial Performance of the Work will not take place until the Consultant has received acceptable copies of the Closeout Submittals.
- .5 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.
- .6 Provide evidence, if requested, for type, source and quality of products supplied.
- .7 Submit three printed copies and one electronic copy of completed closeout submittals prior to Total Performance of the Work.

1.3 FORMAT

- .1 Organize data as instructional manual.
- .2 Binders:
 - .1 Bound using expanding spine catalogue binders complete with plated piano hinges, hard covered, expandable pots, 210 x 275 mm with spine and face embossed with Project title and identification in white. Maximum thickness of 100 mm.
 - .2 Divider Tabs:
 - .1 Heavy weight coloured paper, mylar laminated with tab number and title printed on tab as follows:
 - .1 Main Divisions: White tabs, labeled with division name, two bank tab length.
- .3 When multiple binders are used correlate data into related consistent groupings.
 - .1 Identify contents of each binder on spine.
- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Language: All text to be in English.
- .9 Drawings: provide with reinforced punched binder tab.
 - .1 Bind in with text; fold larger drawings to size of text pages.
- .10 Electronic Copy: Provide electronic copy of all closeout submittals on a USB storage device as follows:
 - .1 File type to be a composite electronically indexed portable document format file (PDF).
 - .2 Name each indexed document file in the composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.

- .3 Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
- .4 File Names and Bookmarks: .1 Enable bookmarking of individual documents based on file names.
 - .1 Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents.
 - .2 Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree.
 - .3 Configure electronic manual to display bookmark panel on opening file.
- .5 Enable inserted reviewer comments on draft submittals.

1.4 CONTENTS - PROJECT RECORD DOCUMENTS

- .1 Table of Contents for Each Volume: provide title of project; .1 Date of submission; names.
 - .1 Addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.
 - .2 Schedule of products and systems, indexed to content of volume.
- .2 For each product, major equipment, system, material or finish, organize operation and maintenance data as follows:
 - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
 - .2 Maintenance Division: include the following, as applicable:
 - .1 Maintenance Tasks and Schedules.
 - .2 Spare Parts.
 - .3 Suppliers and Contractors.
 - .4 Tags and Directories.
 - .3 Contract Document Division: include the following, as applicable:
 - .1 Drawings List.
 - .2 Shop Drawings and Product Data.
 - .3 Certifications.
 - .4 Warranties and Bonds.
 - .5 Maintenance Brochures.
 - .6 Reports.
- .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.

- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data.
 - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section [01 45 00- Quality Control].

1.5 AS -BUILT DOCUMENTS AND SAMPLES

- .1 Maintain, in addition to requirements in General Conditions, at site for Owner's Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed product data and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction.
 - .1 Provide files, racks, and secure storage.
- .3 Maintain record documents in clean, dry and legible condition.
 - .1 Do not use record documents for construction purposes.
- .4 Keep record documents and samples available for inspection by Owner's Representative.

1.6 RECORDING INFORMATION ON ACTUAL SITE CONDITIONS

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Owner.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information on red line set of Issued for Construction drawings, and in copy of Project Manual.
- .4 Record information concurrently with construction progress.
 - .1 Do not conceal Work until information is recorded.
- .5 Contract Drawings and Shop Drawings: mark each item to record actual construction, including:
 - .1 Measured depths of elements in relation to finish grade.

- .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
- .3 Field changes of dimension and detail.
- .4 Changes made by change orders.
- .5 Details not on original Contract Drawings.
- .6 References standards related to shop drawings, samples and modifications.
- .6 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly substitute items.
 - .2 Changes made by Addenda and change orders.
- .7 Other Documents: maintain inspection certifications, field test records, required by individual specifications sections.
- .8 Provide digital photos for site records.

1.7 MAINTENANCE MATERIALS

- .1 Spare Parts and Extra Stock Materials:
 - .1 Provide spare parts, maintenance and extra materials, and special tools in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to site; place and store.
 - .4 Receive and catalogue items. .1 Submit inventory listing to Consultant.
 - .1 Include approved listings in Maintenance Manual.
 - .2 Obtain receipt for delivered products and submit prior to final payment.

1.8 WARRANTIES AND BONDS

- .1 Develop warranty management plan to contain information relevant to Warranties.
- .2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Consultant for approval.
- .3 Warranty management plan to include required actions and documents to assure that the Government of Yukon receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase, to Consultant for approval prior to each monthly pay estimate.
- .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within [ten] days after completion of applicable item of work.
- .4 Verify that documents are in proper form, contain full information, and are notarized.
- .5 Co-execute submittals when required.
- .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Conduct joint 12-month warranty inspection, measured from date of Substantial Performance, by Consultant.
- .9 Include information contained in warranty management plan as follows:
 - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
 - .2 Listing and status of delivery of Certificates of Warranty for extended warranty items specified in individual specification sections.
 - .3 Provide list for each warranted equipment, item, feature of construction or system indicating:
 - .1 Name of item.
 - .2 Location where installed.
 - .3 Name and phone numbers of manufacturers or suppliers.
 - .4 Names, addresses and telephone numbers of sources of spare parts.
 - .5 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
 - .6 Cross-reference to warranty certificates as applicable.
 - .7 Summary of maintenance procedures required to continue warranty in force.

Part 2 Products**2.1 NOT USED**

- .1 Not Used.

Trail Improvements

Town of Watson Lake, Yukon

Issued for Tender

Section **01 78 00****CLOSEOUT SUBMITTALS**Page **7** of **7**

Part 3 Execution**3.1 NOT USED**

.1 Not Used.

END OF SECTION

Part 1 General**1.1 REFERENCES**

- .1 Canadian Standards Association (CSA International)
 - .1 CSA S350-M1980(R1998), Code of Practice for Safety in Demolition of Structures.

1.2 SUBMITTALS

- .1 Name and address of waste facilities.

Part 2 Products**2.1 NOT USED**

- .1 Not used.

Part 3 Execution**3.1 PREPARATION**

- .1 Inspect site with Owner's Representative and verify extent and location of items designated for removal and disposal, and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.
- .4 Disconnect, cap, plug or divert, as required, existing public utilities within the property where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.
- .5 Immediately notify Owner's Representative and utility company concerned in case of damage to any utility or service, designated to remain in place.
- .6 Immediately notify the Owner's Representative should uncharted utility or service be encountered and await instruction in writing regarding remedial action.

3.2 PROTECTION

- .1 Prevent movement, settlement, or damage to adjacent structures, utilities, and landscaping features and parts of building to remain in place. Provide bracing and shoring required.

- .2 Keep noise, dust, and inconvenience to occupants to minimum.
- .3 Provide temporary dust screens, covers, railings, supports and other protection as required.

3.3 SALVAGE

- .1 Not Used.

3.4 DISPOSAL

- .1 Dispose of removed materials at off-site location in accordance with authority having jurisdiction.

END OF SECTION

1. General

1.1 REFERENCE DOCUMENTS

.1 American Society for Testing and Materials (ASTM):

- .1 ASTM A307-10, Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength

.2 American Wood Preservers Association (AWPA):

- .1 AWPA Book of Standards, 2002

.3 Canadian Standards Association (CSA):

- .1 CSA B111-74(R2003) Wire Nails, Spikes and Staples
- .2 CSA G164-M92(R2003) Hot Dip Galvanized of Irregularly Shaped Articles
- .3 CSA O80 Series-08 Wood Preservation
- .4 CSA O112 Series-M1977 Adhesives for Wood (R2006)
- .5 CAN/CSA O141-05(R2009) Softwood Lumber
- .6 CSA O151-09 Canadian Softwood Plywood
- .7 CSA O153-M1980(R2008) Poplar Plywood
- .8 CSA O325.0-92 (R2003) Construction Sheathing

.4 National Lumber Grading Authority (NLGA):

- .1 NLGA-07 Standard Grading Rules for Canadian Lumber

1.2 QUALITY ASSURANCE

.1 Regulatory Agency Approvals:

- .1 Lumber shall be graded and stamped by an agency certified by Canadian Lumber Standards Administrative Board.
- .2 Plywood shall be graded and stamped in accordance with applicable CSA standards.
- .3 Panel products shall be marked with a recognized, visible grade stamp.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Delivery and Acceptance Requirements:

- .1 Protect materials from weather in transit and on job site.

- .2 Storage and Handling Requirements:
 - .1 Store materials a minimum of 150 mm off the ground on raised supports. Cover materials with waterproof covering. Provide adequate air circulation and ventilation under covering.
 - .2 Do not store seasoned materials in wet or damp areas.
 - .3 Protect edges and corners of sheet materials from damage during handling and storage.

1.6 CERTIFICATES

- .1 For products treated with preservative by pressure impregnation submit following information certified by authorized signing officer of treatment plant:
- .2 Information listed in AWP A M2 applicable to specified treatment.
- .3 Moisture content after drying following treatment with water-borne preservative.
- .4 Indicate acceptable types of paint, stain, and clear finishes that may be used over treated materials to be finished after treatment.

2. Products

2.1 LUMBER

- .1 Grades: Use CLS grade-marked lumber conforming to the Standard Grading Rules for Canadian Lumber published by the National Lumber Grades Authority.
- .2 Lumber: to CAN/CSA 0141, softwood, S-P-F, S4S, surface-dry, graded and stamped in accordance with current National Lumber Grades Authority (NLGA) Standard Grading Rules for Canadian Lumber.
 - .1 All lumber to be Spruce, Fir or Pine.
 - .2 All timber boardwalk and wayfinding marker posts to be pressure treated.
 - .3 Moisture Content: maximum 19% at time of installation.
 - .4 Finger jointed lumber is not acceptable.
- .3 Furring, Blocking, Nailing Strips, Grounds, Rough Bucks, Cants, Curbs Fascia Backing and Sleepers: S4S, "Standard" or better grade for board, post and timber sizes, "Standard" light framing or better for dimension sizes.

2.2 PANEL PRODUCTS

- .1 Provide panel products manufactured with phenol-formaldehyde or formaldehyde-free adhesives.
- .2 Canadian Softwood Plywood: to CSA O325, 10 mm thick S1S, with no knot fillers detrimental to areas to receive finish, thickness as indicated on Drawings.
- .3 Douglas Fir Plywood: to CSA 0121, thickness as indicated on Drawings.
- .4 Poplar Plywood: to CSA 0153, standard construction, thickness as indicated on Drawings.

2.3 FASTENING DEVICES AND HARDWARE

- .1 Nails and Spikes: to CSA B111:
 - .1 Use common spiral nails and spiral spikes except where indicated otherwise.
 - .2 Use hot dip galvanized finished steel for exposed exterior work, highly humid interior areas and for pressure - preservative and fire-retardant treated lumber.
- .2 Bolt, nut, washer, screw and pin type fasteners: hot dip galvanized finish to CSA G164.
- .3 Metal Framing Anchors
 - .1 General: Provide products with allowable structural capacity to support the loads from members as shown on the drawings. Manufacturer's published values shall be determined from empirical data and rational engineering analysis, and shall be supported by comprehensive testing performed by a qualified testing company.
 - .2 Galvanized Steel: Hot-dip, zinc coated steel sheet complying with ASTM A653/A653M, G60 (Z180) coating designation. Minimum thickness 1.3 mm.
 - .3 Joist Hangers: U-shaped joist hangers with 50 mm long seat and 32 mm wide nailing flanges at least 85% of joist depth.
 - .4 I-Joist Hangers: U-shaped joist hangers with 50 mm long seat and 32 mm wide nailing flanges full depth of joist. Nailing flanges to provide lateral support as the joist top chord.
 - .5 Top Flange Hangers: U-shaped joist hangers, full depth of joist, formed from 50 mm wide metal strap with tabs bent to extend over and be fastened to support member.
 - .6 Joist Ties: 32 mm wide flat straps with holes for fasteners for tying joists together over supports, [400 mm] [600 mm] long.

- .7 Rafter Tie-Downs: 38 mm wide bent strap tie for fastening rafters or roof trusses to wall studs below. Tie fastens to side of rafter or truss, face of top plates and side of stud below.
- .8 Floor to Floor Ties: Flat straps with holes for fasteners for tying upper floor wall studs to band joists and lower floor studs, 32 mm wide by 900 mm long.

2.4 ANCILLARY MATERIALS

- .1 Surface applied wood preservative: copper naphthanate base or pentachlorophene, prepared in accordance with CSA O80.15, coloured green.
 - .1 SCAQMD Rule #1113 - Architectural Coatings.
 - .2 Maximum allowable VOC limit 350 g/L.
- .2 Polyethylene Film: to CAN/CGSB-51.34, 100 micrometre thick.

2.5 STAINING OF WOOD

- .1 All exposed timber for the Timber Kiosk and Wayfinding Markers shall be treated with:
 - .1 Broda Protektor DR preservative.
 - .2 Apply wood finish as per manufacturer's instructions.

2.6 PRESSURE PRESERVATIVE TREATED WOOD

- .1 Pressure Preservative Treated lumber:
 - .1 Lumber graded and stamped in accordance with applicable grading rules and standards of associations or agencies approved to grade lumber by Canadian Lumber Standards Accreditation Board in accordance with CAN/CSA O80.20M.
 - .2 Species: Pine or Spruce-Pine
 - .3 Grade: No.2 or better structural posts and lumber, pieces may be grade stamped or shipment certified by letter of compliance.
 - .4 Grading authority: NLGA, paragraph 131CC
 - .5 Material having twisted grain or structural defects affecting integrity of lumber will not be acceptable for this project.
 - .6 Use only material with radius edges, minimum 6 mm.
 - .7 Kiln dry lumber materials to 8% moisture content or less.
- .2 Pressure Preservative Treated Plywood: Treated in accordance with CAN/CSA O80.9M using water-borne preservative to obtain minimum net retention of 4 kg/m³ of wood. Plywood or laminated materials shall be manufactured with exterior grade adhesives. After treatment, plywood shall be kiln dried to moisture content of 8% or less.

- .3 Water-borne preservative treated wood shall have maximum moisture content of 19% after treatment.
 - .1 SCAQMD Rule #1113 - Architectural Coatings.
 - .2 Maximum allowable VOC limit 350 g/L.
- .4 Provide coatings that do not contain chemical listed in GS-II.

3. Execution

3.1 ROUGH CARPENTRY WORK

- .1 Accurately frame and properly assemble rough carpentry work. Include necessary nails or other connectors.

3.2 APPLICATION OF SURFACE APPLIED WOOD PRESERVATIVE

- .1 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of surface applied wood preservative before installation.

3.3 ERECTION OF FRAMING MEMBERS

- .1 Install members true to line, levels and elevations. Space uniformly.
- .2 Construct continuous members from pieces of longest practicable length.
- .3 Install spanning members with "crown-edge" up.
- .4 Install blocking to facilitate installation of finishing materials, fixtures, specialty items and trim.

END OF SECTION

Part 1 General

1.1 DEFINITIONS

- .1 Clearing consists of cutting off trees and brush vegetative growth to not more than specified height above ground and disposing of felled trees, previously uprooted trees and stumps, and surface debris.
- .2 Close-cut clearing consists of cutting off standing trees, brush, scrub, roots, stumps and embedded logs, removing at, or close to, existing grade and disposing of fallen timber and surface debris.
- .3 Clearing isolated trees consists of cutting off to not more than specified height above ground of designated trees and disposing of felled trees and debris.
- .4 Underbrush clearing consists of removal from treed areas of undergrowth, deadwood, and trees smaller than 50 mm trunk diameter and disposing of fallen timber and surface debris.
- .5 Grubbing consists of excavation and disposal of stumps and roots to not less than specified depth below existing ground surface.

1.2 ACTION AND INFORMATION SUBMITTALS

- .1 Not used.

1.3 STORAGE AND PROTECTION

- .1 Prevent damage to existing paving, utility lines and boxes, existing trees, and root systems of trees which are to remain.
 - .1 Repair damaged items to approval of Owner's Representative.
 - .2 Replace trees designated to remain, if damaged, as directed by Owner's Representative.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 During Clearing and Grubbing operations the Contractor shall separate and prepare salvageable timber as follows:
 - .1 Contractor to make merchantable timber harvested incidentally available for public salvage.
 - .2 The Forest Management Branch (FMB) defines a merchantable log as a minimum of 12.5 cm diameter at breast height (dbh) at a height of 1.3m from the base of the tree, 8 cm in diameter at the top, and contains 50% sound wood. This includes standing dead timber.
 - .3 All other timber of smaller size shall be considered non-salvageable.
 - .4 All non-salvageable felled timber and grubbed vegetative material may be chipped, stockpiled and spread on site as directed by Owner's Representative to rehabilitate disturbed landscape areas.

- .5 All other non-chipped, non-salvageable felled timber and vegetative material to be removed and disposed of offsite.
- .6 Burning and burying on site is not permitted.
- .2 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

Part 2 Products

2.1 MATERIALS

- .1 Material for Fill:
 - .1 Excavated clean, clay fill material: free of debris, roots, wood, scrap material, vegetable matter, refuse, soft unsound particles, deleterious, or objectionable materials.
 - .2 Remove and store clean, clay fill material for reuse.

Part 3 Execution

3.1 BREEDING BIRD WINDOW

- .1 If vegetation clearing is planned within the breeding bird window of May 3 – August 20 a QEP with experience in bird surveys shall be retained by the Contractor to ensure there are no active nests within or near the work area prior to clearing, including waterfowl nesting along the shore.
- .2 If clearing required during this time, a qualified person will check for active nests and if any are found, buffers will be put in place until the young have fledged.
- .3 Only trees required to be cleared for the trail route will be cleared; all other mature trees will remain in place.
- .4 The Contractor shall avoid clearing of big/old growth trees during the roosting period for Little Brown Myotis to the greatest extent possible. If clearing of big/old trees will occur during the roosting period (approximately April through September), the Proponent shall contact the Government of Yukon – Conservation Data Centre and/or Environment and Climate Change Canada for details on how to recognize roosting trees and avoid effects to this species.

3.2 TEMPORARY EROSION AND SEDIMENT CONTROL

- .1 Provide temporary erosion and sediment control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to sediment and erosion control plan, specific to site.
- .2 Inspect, repair, and maintain erosion and sediment control measures during construction until seed has been established.

- .3 Remove erosion and sediment controls and restore and stabilize areas disturbed during removal.
- .4 Erosion and sediment control in accordance with YESAA documents.

3.3 PREPARATION

- .1 Inspect site and verify with Owner's Representative, items designated to remain.
- .2 Locate and protect utility lines: preserve in operating condition active utilities traversing site.
 - .1 Notify Owner's Representative immediately of damage to or when unknown existing utility lines are encountered.
 - .2 When utility lines which are to be removed are encountered within area of operations, notify Owner's Representative in ample time to minimize interruption of service.
- .3 Notify utility authorities and Owner's Representative before commencing any clearing and grubbing operations.
- .4 Keep roads and walks free of dirt and debris.

3.4 CLEARING

- .1 Clearing includes felling, trimming, cutting of trees into sections and satisfactory disposal of trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within cleared areas.
- .2 Clear by cutting at height of not more than 300 mm above ground. In areas to be subsequently grubbed, height of stumps left from clearing operations to be not more than 1000 mm above ground surface.
- .3 Cut off branches overhanging area cleared as directed by Owner's Representative.
- .4 Cut off unsound branches on trees designated to remain as directed by Owner's Representative.

3.5 CLOSE CUT CLEARING

- .1 Close cut clearing to within 100 mm of ground surface.
- .2 Perform close cut clearing by hand so that existing muskeg is not damaged.
- .3 Cut off branches overhanging area cleared as directed by Owner's Representative.
- .4 Cut off unsound branches on trees designated to remain as directed by Owner's Representative.

3.6 ISOLATED TREES

- .1 Cut off isolated trees as directed by Owner's Representative at height of not more than 300 mm above ground surface.
- .2 Grub out isolated tree stumps.

- .3 Prune individual trees as indicated.
- .4 Trim trees designated to be left standing within cleared areas of dead branches 4 cm or more in diameter; and trim branches to heights as indicated.
- .5 Cut limbs and branches to be trimmed close to bole of tree or main branches.
- .6 Paint cuts more than 3 cm in diameter with approved tree wound paint.

3.7 UNDERBRUSH CLEARING

- .1 Clear underbrush from areas as indicated to within 100 mm of ground surface.

3.8 GRUBBING

- .1 Remove and dispose of roots larger than 5cm in diameter, matted roots, and designated stumps from indicated grubbing areas.
- .2 Grub out stumps and roots to not less than 300 mm below design subgrade.
- .3 Grub out visible rock fragments and boulders, greater than 300 mm in greatest dimension, but less than 0.25 m³.
- .4 Fill depressions made by grubbing with suitable material and to make new surface conform with existing adjacent surface of ground.

3.9 FINISHED SURFACE

- .1 Leave ground surface in condition suitable for stripping of topsoil to approval of Owner's Representative.

3.10 CLEANING

- .1 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, flagging tape, tools and equipment.

END OF SECTION

Part 1 General**Part 2 Execution****2.1 TEMPORARY EROSION AND SEDIMENT CONTROL**

- .1 Provide temporary erosion and sediment control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to YESAA documents.
- .2 Provide temporary erosion and sediment control measures around stockpile.
- .3 Inspect, repair, and maintain erosion and sediment control measures during construction until permanent vegetation has been established.
- .4 Remove erosion and sediment controls and restore and stabilize areas disturbed during removal.
- .5 Co-ordinate temporary erosion and sediment control measures with Environmental Management Plan.

2.2 STRIPPING OF TOPSOIL

- .1 Remove topsoil before construction procedures commence to avoid compaction of topsoil.
- .2 Do not handle topsoil while in wet or frozen condition or in any manner that may adversely affect the soil structure.
- .3 Remove vegetation from targeted areas by non-chemical means and dispose of stripped vegetation by alternative disposal.
- .4 Remove brush from targeted area by non-chemical means and dispose of through alternative disposal.
- .5 Strip topsoil to depths as indicated.
 - .1 Confirm acceptable depths with Owner's Representative prior to commencing work.
 - .2 Avoid mixing topsoil with subsoil.
- .6 Pile topsoil by mechanical hoe in berms in locations as directed by Owner's Representative.
 - .1 Stockpile height not to exceed 1.0m.
 - .2 Pile topsoil and grade the pile to give a natural appearance as directed by Owner's Representative.
 - .3 Provide erosion and sediment control for stockpile, if required.
- .7 Dispose of unused topsoil in location as indicated by Owner's Representative.
- .8 Protect stockpiles from contamination and compaction.

- .9 Cover topsoil that has been piled for long term storage, with trefoil or other material approved by Owner's Representative to maintain agricultural potential of soil.

2.3 CLEANING

- .1 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 31 11 00 – Clearing and Grubbing.
- .2 Section 32 11 23 – Aggregate Base Course.

1.2 REFERENCE STANDARDS

- .1 ASTM International
 - .1 ASTM D698-[07e1], Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m³).
- .2 Underwriters' Laboratories of Canada (ULC).

Part 2 Products

2.1 MATERIALS

- .1 Excavated or graded material existing on site suitable to use as fill for grading work if approved by Owner's Representative and meets specified compaction requirements.
- .2 Suitable replacement soils would include imported clay fill with a moisture content within 2% of its optimum moisture content for compaction or imported granular materials suitable for compaction.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate are acceptable for rough grading installation.
 - .1 Visually inspect substrate in presence of Owner's Representative.
 - .2 Inform Owner's Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Owner's Representative.

3.2 GRADING

- .1 Rough grade to levels, profiles, and contours allowing for surface treatment as indicated.
- .2 Establish natural contours and eliminate uneven areas and low spots, ensuring positive drainage.

- .3 Grade gravel areas to slopes indicated.
- .4 Tie-in and feather all expanded gravel areas into existing grades as necessary. Design intent is to retain existing grades as close as possible when tying in expanded campsite and roadway areas, to minimize disturbance to existing vegetation. Review any grading concerns on site with Owner's Representative.
- .5 Prior to placing fill over existing ground, scarify surface to depth of 150 mm minimum before placing fill over existing ground. Maintain fill and existing surface at approximately same moisture content to facilitate bonding.
- .6 Compact filled and disturbed areas as indicated on drawings, in lifts not exceeding 150mm.
- .7 Do not disturb soil within branch spread of trees or shrubs to remain.

3.3 TESTING

- .1 Inspection and testing of compaction will be carried out by a third party testing agency and paid for by Contractor.

3.4 CLEANING

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

3.5 PROTECTION

- .1 Protect existing trees, landscaping, natural features, and roadways which are to remain as directed by Owner's Representative. If damaged, restore to original or better condition unless directed otherwise.
- .2 Maintain access roads to prevent accumulation of construction related debris on roads.

END OF SECTION

1. GENERAL

1.1 Section Includes

- .1 Supply of all equipment, material, and labour required to install geotextile products required for the Work, and other applications incidental to the Contract.

1.2 References

- .1 American Society for Testing and Materials (ASTM International).
 - .1 ASTM D 4595 – Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Test Method, latest edition.
 - .2 ASTM D 4355 – Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Apparatus, latest edition.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CSGB-148.1 Methods of Testing Geotextiles and Complete Geomembranes, latest edition.
 - 1 No.2-M85, Methods of Testing Geosynthetics – Mass per Unit Area.
 - 2 No.3-M85, Methods of Testing Geosynthetics – Thickness of Geotextiles.
 - 3 No.6.4, Methods of Testing Geotextiles and Normal Water Permeability Under No Compressive Load.
 - 4 No.7.3-92, Methods of Testing Geotextiles and Geomembranes – Grad Tensile Test for Geotextiles.
 - 5 No.10-94, Methods of Testing Geosynthetics – Geotextiles – Filtration Opening Size.

1.3 Submittals

- .1 Submit samples in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit following samples to Owner's Representative, not less than four (4) weeks prior to commencement of Work:
 - .1 Minimum 2m length of geotextile fabric, full roll width.
 - .2 Two (2) pins or staples used for securing fabric to ground surface.
- .3 Submit to Owner's Representative, for review, copies of mill test data and certificates, if requested, not less than four (4) weeks prior to commencement of Work.

1.4 Delivery, Storage and Handling

- .1 Deliver, store and protect geotextile products from direct sunlight, ultraviolet light, excessive heat, mud, dirt, dust, debris, snow, rain and rodents.

1.5 Waste Management and Disposal

- .1 Remove from the site and dispose of all packaging materials, waste, and surplus materials, and dispose of at appropriate and approved recycling or waste management facility.

2. PRODUCTS**2.1 Materials**

- .1 Geotextile: 100% continuous filament, polypropylene woven or polyester non-woven synthetic fiber, engineered fabric, resistant to freeze-thaw cycles, soil chemicals and ultra-violet light exposure, supplied in rolls.

- .1 Terrafix Woven GEOTEX 200ST

PROPERTY	TEST	UNIT	VALUE(MARV)
Mechanical			
Grab Tensile Strength	ASTM D-4632	N (ib)	890 (200)
Grab Elongation	ASTM D-4632	%	150
CBR Puncture*	ASTM D-6241	N (ib)	3114 (700)
Trapezoidal Tear	ASTM D-4533	N (ib)	334 (75)
Hydraulic			
Apparent Opening Size	ASTM D-4751	mm (US Sieve)	0.425 (#40)
Permittivity	ASTM D-4491	sec ⁻¹	0.05
Water Flow Rate	ASTM D-4491	l/m/m ² (gpm/ft ²)	163 l/min/m ² (4 gpm/ft ²)
Endurance			
U/V Resistance	ASTM D-4355	% retained at 500 hrs	70
Packaging			
Roll Size	Measured	M (ft)	3.81 x 131.7 (12.5' x 432') 4.57 x 109.7 (15.0' x 360') 5.33 x 94.2

			(17.5' x 309')
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.2 Terrafix 270R – Non-Woven Geotextile

.1	PROPERTY	TEST	VALUE (METRIC UNITS)
	Weight (Typical)	ASTM D-5261	108 g / m ² (~3.2 oz/sqyd)
	Grab Tensile Strength	ASTM D-4632	445 N
	Grab Elongation	ASTM D-4632	50-105%
	Tear Resistance	ASTM D-4533	200 N
	CBR Puncture	ASTM D-6241	1320 N
	Permittivity	ASTM D-4491	2.0 sec
	Water Flow Rate	ASTM D-4491	6095 l/min/m ²
	Apparent Opening Size	ASTM D-4751	0.212 mm
	U/V Resistance	ASTM D-4355	70% @ 500 hrs

.3 Securing Staples: To manufacturer's recommendations, hot dip galvanized.

- .3 Available from: Terrafix Geosynthetics Inc.
1205 10 Street Nisku Industrial Park,
Nisku, AB T9E 8L6
Tel. (780) 463-9535
Email: info@terrafixgeo.com

3. EXECUTION

3.1 Installation

- .1 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.
- .2 Overlap each successive section of geotextile minimum 600 mm over previously laid sections.
- .3 Protect installed geotextile material from displacement, damage or deterioration, before, during and following placement of overlying materials.
- .4 Secure fabric as needed with staples or pins, to manufacturer's recommendations.
- .5 Following geotextile fabric installation, place cover material within four (4) hours of placement. Do not leave unfinished overnight.
- .6 Replace damaged, deteriorated, or rejected geotextile to approval of Owner's Representative.

3.2 Protection

- .1 Do not allow equipment or vehicular traffic on installed geotextile fabric, except where it may be used for temporary protection of soil in traffic or storage areas.

3.3 Cleaning

- .1 To Section 01 74 23 – Cleaning
 - .1 Organize work area, remove waste, debris, and surplus materials at the end of each workday, or as directed by Owner's Representative.
 - .2 Leave any unused or surplus materials for use by Owner, or dispose of materials off site, as directed by Owner's Representative.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 31 32 21 – Geotextiles

1.2 REFERENCE STANDARDS

- .1 Preferred Practices for Works Affecting Yukon Water, Government of Yukon
- .2 Canadian Water Quality Guidelines for the Protection of Aquatic Life, Canadian Council of Ministers of the Environment

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .3 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .4 Product data: Product literature and data sheets for stone confirming source and location.
- .5 Sustainable design submittals: Information demonstrating mineralogy and physical characteristics assessed for non-metal leaching and non-acid rock drainage (ARD) to ensure suitability for use near a water course.

1.2 QUALITY ASSURANCE

- .1 Mock-Ups: Construct in accordance with Section 01 43 00 - Quality Assurance.
 - .1 Construct test area to demonstrate proposed work methods and timing will produce rip-rap meeting requirements of this Section.
 - .2 Minimum size: 400 m².
 - .3 Acceptable mock-ups may remain as part of the Work.

Part 2 Products

2.1 MATERIAL

- .1 Stone:
 - .1 Hard, dense, durable quarry stone, free from seams, cracks or other structural defects, to meet the following size distribution for use intended:
 - .1 Armour rip-rap:
 - .1 Maximum of 10% of total volume of stones, with individual volume less than 30 dm³.
 - .2 Minimum of 50% of total volume of stones, with individual volume of 225 dm³ or more.
 - .3 Remaining percentage of total volume with uniform distribution of stones between 30 and 225 dm³.
- .2 Bedding Material:
 - .1 Aggregate: Coarse gravel or crushed rock, minimum 150 mm thick.
 - .2 Compose material of tough, durable particles.

Part 3 Execution

3.1 SURFACE PREPARATION

- .1 Install turbidity curtain around in-water work areas prior to the placement of rip rap in the waterbody.
- .2 Where rip-rap is to be placed on slopes, excavate trench at toe of slope to dimensions as indicated on Drawings.
- .3 Fine grade area to be rip-rapped to uniform, even surface. Fill depressions with suitable aggregate material and compact to provide firm bed.

3.2 PLACING

- .1 Water quality during instream works to adhere to the Preferred Practices for Works Affecting Yukon Water guidelines, and CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life.
- .2 Place rip-rap to thickness and details as indicated on Drawings.
- .3 Produce a well graded mass with a maximum 5% of voids, in conformance with lines and grades indicated.
- .4 Place stones to secure surface and create a stable mass. Place larger stones at bottom of slopes.
- .5 Riprap will be placed into the waterbody individually by equipment, not end-dumped.
- .6 Hand placing:
 - .1 Use larger stones for lower courses and as headers for subsequent courses.
 - .2 Stagger vertical joints and fill voids larger than 25 mm with rock spalls or cobbles.
 - .3 Finish surface evenly, free of openings larger than 25 mm and neat in appearance.

3.3 CLEANING

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

END OF SECTION

1. GENERAL

1.1 Related Sections

- .1 Section 31 22 13 – Rough Grading.

1.2 Submittals

- .1 Not less than two (2) weeks prior to commencing work, inform the Owner's Representative of proposed source of granular materials.
- .2 Provide a sieve analysis of the materials proposed for use for review by the Owner's Representative.
- .3 If requested, samples of granular base and surface course aggregates shall be submitted to the Owner's Representative for approval prior to commencing work.
- .4 Preliminary review of the proposed materials, as represented in the test results, shall not constitute general acceptance of all material in the deposit or source of supply. Materials may be considered unsuitable even though particle sizes are within the limits of the gradation sizes required, if particle shapes are thin or elongated or any other characteristic precludes satisfactory compaction, or if the material fails to provide satisfactory performance. Rejected material will not be paid for. The Owner's Representative has the right to require additional testing if there are any concerns with the proposed aggregate.

1.3 Quality Assurance

- .1 Test Reports: certified tests reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by the supplier, certifying materials comply with specified performance characteristics, criteria and physical characteristics.

1.4 References

- .1 ASTM International
 - .1 ASTM C136-06, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .2 ASTM C117-04, Standard Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
 - .3 ASTM D4318-05, Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

- .4 STM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³).
- .2 Canadian General Standards Board (CGSB)
 - 1. CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.
 - .2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

1.6 Administrative Requirements

- .1 Access: allow access to work area at all times for authorized personnel.
- .2 Scheduling: co-ordinate work to minimize interference with other construction in progress on the site.

1.7 Delivery, Storage and Handling

- .1 Deliver and store materials on site as directed by the Owner's Representative.
- .2 Store materials in a safe manner and protect from vandalism, theft, and contamination.
- .3 Handle materials in an efficient and safe manner, in accordance with recognized industry practices.

2. MATERIALS

2.1 Granular Base

- .1 Material for the granular base course shall consist of sound, hard, durable crushed rock or gravel and shall not contain organic or soft, thin, elongated, or laminated materials, materials that break up when alternately frozen and thawed or wetted and dried, or other deleterious materials. When compacted near the optimum moisture content to not less than 100% of the maximum dry density, corrected for the stone content as determined by ASTM D698, the material shall have a minimum bearing ratio as defined by ASTM D1883 of 55%.
 - .2 Granular base course shall meet the following gradation when tested to ASTM C136 and ASTM C117, and give a smooth curve without sharp breaks when plotted on a semi-log grading chart:
-

Table 1

Sieve Size (mm)	Percent Passing
20 mm	100
12.5 mm	64-100
10 mm	-
5 mm	36-72
2.5 mm	18-54
1.25 mm	12-42
0.315 mm	4-22
0.080 mm	3-6

- .3 At least 40 percent by weight of material retained on a 5,000 sieve shall have two or more fractured faces.
- .4 The liquid limit shall not exceed 25 and the plasticity index shall not exceed 6 for that portion of material passing a 400 sieve.

3. EXECUTION

3.1 Placing

- .1 Base material shall not be placed until the underlying course has been accepted by the Owner's Representative. Granular material shall be placed in uniform layers not exceeding 150 mm in thickness before compaction. The material shall be placed by mechanical spreaders or deposited in windrows and leveled with suitable equipment.

3.2 Compaction

- .1 Each layer of granular base shall be compacted near the optimum moisture content to not less than 98% Standard Proctor Density (SPD) at 100% of the maximum dry density corrected for the stone content as determined by ASTM D698 Method A for the material used.
- .2 During compaction, the moisture level shall be maintained at the optimum moisture content as determined by ASTM D698. If the moisture content exceeds the optimum level the material shall be aerated by mechanical means until dried sufficiently to reach the optimum moisture content. Water shall be added if the moisture content is below optimum.

3.3 Compaction Testing

- .1 Compaction results shall be based on a minimum of one density test per 1,500 square meters of surface. Additional tests may be called for by the Owner's Representative as deemed necessary.

- .2 Field density tests shall conform to ASTM D1556, ASTM D2167, or ASTM D2922 for comparison with a maximum density determined according to ASTM D698 Method A.

3.4 Shaping and Finishing

- .1 The finished surface of the granular base course shall conform to grades indicated and approved by the Owner's Representative and shall show no depression more than 5 mm under a 3 m straight edge. Surfaces higher than the approved grades shall be cut to the required grades and re-compacted as needed.

3.5 Inspection

- .1 Before acceptance by the Owner's Representative the granular base course surface must be true to cross-sections and grades indicated on the Contract Drawings and shall conform to the density and bearing ratio requirements specified.
- .2 Field density and moisture content tests may be carried out by the Owner's Representative or their representative to ensure the material is satisfactory. Material not meeting the specification requirements will be rejected.

END OF SECTION

Part 1 General**1.1 REFERENCE STANDARDS**

- .1 ASTM International
 - .1 ASTM C136-[06], Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .2 ASTM C117-[04], Standard Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
 - .3 ASTM D4318-[05], Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
 - .4 ASTM D698-[07e1], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³).
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-8.2-[M88], Sieves, Testing, Woven Wire, Metric.

1.2 DELIVERY, STORAGE AND HANDLING

- .1 Store crushed stone as and where directed by Owner's Representative.

1.3 ACTION AND INFORMATION SUBMITTALS

- .1 Two (2) weeks after contract award, inform Owner's Representative of proposed source of granular materials.
- .2 The Contractor shall provide a sieve analysis of the material for approval.
- .3 Granular materials shall be approved by Owner's Representative before being used.

Part 2 Products**2.1 MATERIALS**

- .1 10 mm Minus Crushed Gravel Granular topping:
 - .1 Screenings: hard, durable, crushed stone particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
 - .2 Optimum Moisture Content: 7.5%
 - .3 Grain Size Distribution:
 - .1 Gravel – 21.8%
 - .2 Sand – 61.5%
 - .3 Silt – 12.8%
 - .4 Clay – 3.9%
 - .4 Gradations: within limits specified when tested to ASTM C136.

Sieve Designation	% Passing
16	100
12.5	98 – 100
10	80 – 98
5	55 – 80
2.5	40 – 60
1.25	35 – 50
0.63	28 – 43
0.315	23 – 36
0.160	15 – 25
0.080	8 – 18

Part 3 Execution**3.1 SUBGRADE**

- .1 Ensure subgrade preparation conforms to levels and compaction required, to allow for installation of granular base.

3.2 10 MM MINUS CRUSHED GRAVEL TOPPING

- .1 Place granular topping to compacted thickness of 100 mm minimum.
- .2 Place material in uniform layers not to exceed 50 mm compacted thickness.
- .3 The gravel must be laid upon a dry firm sub-grade / gravel base, true to grade and cross-section and free from all screening or other loose or foreign material. No gravel to be installed when the sub-grade / aggregate base is wet or when other conditions prevent proper spreading, finishing or compaction of the gravel.

3.3 FIELD QUALITY CONTROL

- .1 Inspection and testing of crushed stone surfacing:
 - .1 Gravel Area – Trails:
 - .1 Compact layer to 95% Standard Density in accordance with ASTM D698.

3.4 CLEANING

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

3.5 PROTECTION

- .1 Prevent damage to landscaping, roads, trees, buildings and natural features outside the project area.
 - .1 Repair damages incurred.

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Section **32 15 40****CRUSHED STONE SURFACING**Page **3** of **3**

END OF SECTION

PART 1 GENERAL

1.1 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Provide manufacturer's instructions, printed product literature and data sheets for site furniture and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Shop Drawings:
 - .1 Submit shop drawings indicating dimensions, sizes, assembly, anchorage and installation details for each furnishing specified.

1.2 CLOSEOUT SUBMITTALS

- .1 Provide maintenance data for care and cleaning of site furnishings.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect furnishings from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

PART 2 PRODUCTS

2.1 BICYCLE RACK

- .1 Supplier: Duncan's Ltd., or approved equal
- .2 Address: 106 Copper Road, Whitehorse YT Y1A 2Z6
- .3 Material: Galvanized Steel
- .4 Fixings: Tamper Proof Anchor Bolt System

2.2 PET WASTE BAG DISPENSER

- .1 Supplier: Sudden Fun Recreation, or approved equal
- .2 Tel: 403-254-0500
- .3 Email: info@suddenfun.com
- .4 Colour: Green Gloss
- .5 Dimensions: 18" L x 10" W x 5" D

- .6 Material: Frame: Powder Coated Aluminum

2.3 ACCESSIBLE PRECAST CONCRETE PICNIC TABLE

- .1 Supplier: Mackay Precast, or approved equal
- .2 Tel: 250-758-3412
- .3 Web: www.mackayprecast.com
- .4 Product: Wheelchair Accessible Picnic Table
- .5 Model No: PCI-0011-8
- .6 Material:
 - .1 Top & Seats: Precast Coloured Concrete
 - .2 Legs: Exposed Aggregate
- .7 Size: 2400 mm (96") L (TOP) X 1500 mm (60") W X 760 mm (30") H

2.4 BENCH (BACKLESS)

- .1 Supplier: Columbia-Cascade, or approved equal
- .2 Tel: 867-334-6852
- .3 Product: TimberForm Palomar Bench with Armrests
- .4 Model No.: 2642-6
- .5 Length: 6'
- .6 Colour:
 - .1 Legs – Black;
 - .2 Seat - Evergreen

2.5 BENCH (BACKED)

- .1 Supplier: Columbia-Cascade, or approved equal
- .2 Tel: 867-334-6852
- .3 Product: TimberForm Palomar Bench with Armrests
- .4 Model No.: 2645-6
- .5 Length: 6'
- .6 Colour:
 - .1 Legs : Black
 - .2 Seat : Evergreen

2.6 GARBAGE/RECYCLING BIN

- .1 Supplier: Haul-All, or approved equal
- .2 Web: www.haulall.com
- .3 Product: Standard Hid-A-Bag II, with Recycling Hood

- .4 Volume: 500 L
- .5 Weight: 150 KG
- .6 Paint: Standard Powder Coat
- .7 Colour: To be confirmed by Owner

2.7 ACCESSIBLE TOILET BUILDING

- .1 Supplier: Mackay Precast, or approved equal
- .2 Tel: 250-758-3412
- .3 Web: www.mackayprecast.com
- .4 Product: Accessible Toilet Building

2.8 HOLDING TANK

- .1 Supplier: Tanks-a-Lot
- .2 Tel: 780-472-8265
- .3 Material: Pre-Cast Concrete
- .4 Model No: Y0700

PART 3 EXECUTION**3.1 PREPARATION**

- .1 Locate and protect utility lines.
- .2 Notify and acquire written acknowledgement from utility authorities before beginning installation Work.

3.2 INSTALLATION

- .1 Assemble furnishings in accordance with manufacturer's written recommendations.
- .2 Install furnishings true and plumb, as indicated.
- .3 Touch-up damaged finishes to approval of Owner's Representative.

3.3 CLEANING

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

3.4 PROTECTION

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

END OF SECTION

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Section **32 33 00****SITE FURNISHINGS**Page **4** of **4**

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 32 92 19.13 – Mechanical Seeding

1.2 PAYMENT

- .1 Testing of topsoil: the Contractor will pay for cost of tests.

1.3 REFERENCE STANDARDS

- .1 Agriculture and Agri-Food Canada
 - .1 The Canadian System of Soil Classification, Third Edition, 1998.
- .2 Canadian Council of Ministers of the Environment
 - .1 PN1340-2005, Guidelines for Compost Quality.

1.4 DEFINITIONS

- .1 Compost:
 - .1 Mixture of soil and decomposing organic matter used as fertilizer, mulch, or soil conditioner.
 - .2 Compost is processed organic matter containing 40% or more organic matter as determined by Walkley-Black or Loss On Ignition (LOI) test.
 - .3 Product must be sufficiently decomposed (i.e., stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below (25) (50)) and contain no toxic or growth inhibiting contaminants.
 - .4 Composed bio-solids to: CCME Guidelines for Compost Quality, Category (A) (B).

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Quality control submittals:
 - .1 Soil testing: submit certified test reports showing compliance with specified performance characteristics and physical properties.
 - .2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Do not dispose of unused soil amendments into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

Part 2 Products**2.1 TOPSOIL**

- .1 Topsoil for seeded areas: mixture of particulates, micro organisms and organic matter which provides suitable medium for supporting intended plant growth. Topsoil acceptance shall be at the sole discretion of the Owner's Representative.
 - .1 Planting soil for seeded areas: mix 3 parts topsoil with 1 part manure or compost and 1 part sand.
 - .2 Topsoil: friable, neither heavy clay nor of very light sandy nature.
 - .1 35% Sand, 35% Silt, 30% Clay.
 - .2 Containing a minimum of 5% organic matter to maximum of 20% by weight.
 - .3 Soil pH to range from 6.0 – 7.5 inclusive.
 - .4 Contain no toxic elements or growth inhibiting materials.
 - .5 Finished surface free from:
 - .1 Debris and stones over 50 mm diameter.
 - .2 Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.
 - .6 Consistence: friable when moist.

2.2 SOIL AMENDMENTS

- .1 Sand: washed coarse silica sand, medium to course textured.
- .2 Organic matter: unprocessed organic matter, such as rotted manure, hay, straw, bark residue or sawdust, meeting the organic matter, stability and contaminant requirements.
- .3 Limestone:
 - .1 Ground agricultural limestone.
 - .2 Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve.
- .4 Fertilizer: industry accepted standard medium containing nitrogen, phosphorous, potassium and other micro-nutrients suitable to specific plant species or application or defined by soil test.

2.3 SOURCE QUALITY CONTROL

- .1 Advise Owner's Representative of sources of topsoil to be utilized with sufficient lead time for testing.
- .2 Contractor is responsible for amendments to topsoil as specified.
- .3 Soil testing by recognized testing facility for PH, P and K, and organic matter.

- .4 Testing of topsoil will be carried out by third party testing laboratory designated and paid for by Contractor and provided to Owner's Representative for approval.
 - .1 Soil sampling, testing and analysis to be in accordance with Provincial standards.

Part 3 Execution**3.1 PREPARATION OF EXISTING GRADE**

- .1 Verify that grades are correct.
 - .1 If discrepancies occur, notify Owner's Representative and do not commence work until instructed by Owner's Representative.
- .2 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.
- .3 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials.
 - .1 Remove soil contaminated with calcium chloride, toxic materials and petroleum products.
 - .2 Remove debris which protrudes more than 75 mm above surface.
 - .3 Dispose of removed material off site.
- .4 Cultivate entire area which is to receive topsoil to depths specified.
 - .1 Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

3.2 PLACING AND SPREADING OF TOPSOIL/PLANTING SOIL

- .1 Place topsoil only after Owner's Representative has accepted subgrade.
- .2 Spread topsoil in uniform layers not exceeding 150 mm, over unfrozen subgrade free of standing water.
- .3 Spread topsoil as indicated to following minimum depths after settlement.
 - .1 200 mm for seeded areas.
- .4 Manually spread topsoil/planting soil around trees, shrubs and obstacles.
- .5 Establish traffic patterns for equipment to prevent driving on topsoil after it has been spread to avoid compaction.

3.3 FINISH GRADING

- .1 Grade to eliminate rough spots and low areas and ensure positive drainage.
 - .1 Prepare loose friable bed by means of cultivation and subsequent raking.
 - .2 Leave surfaces smooth, uniform and firm against deep foot printing.

3.4 ACCEPTANCE

- .1 Owner's Representative will inspect tested topsoil in place and determine acceptance of depth of topsoil and finish grading.

3.5 SURPLUS MATERIAL

- .1 Dispose of materials except topsoil not required where directed by Owner's Representative.

3.6 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 32 91 19.13 - Topsoil Placement and Grading.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Scheduling:
 - .1 Schedule installation when frost is not present in ground.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for seed, and fertilizer.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements:
 - .1 Labelled bags of fertilizer identifying mass in kg, mix components and percentages, date of bagging, supplier's name and lot number.
 - .2 Fertilizer must be dry.
- .3 Storage and Handling Requirements:
 - .1 Store fertilizer in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.

1.5 WARRANTY

- .1 For seeding, 12 months warranty period is extended to 1 full growing season.
- .2 Contractor hereby warrants that seeding will remain free of defects in accordance with General Conditions, but for 1 full growing season.
- .3 End-of-warranty inspection will be conducted by Owner's Representative.

Part 2 Products**2.1 GRASS SEED**

- .1 "Canada No. 1 Grass Mixture" in accordance with Government of Canada "Seeds Act" and "Seeds Regulations".
 - .1 Grass mixture: "Certified", "Canada No. 1 Grass Mixture" in accordance with Government of Canada "Seeds Act" and "Seeds Regulations."
 - Mixture composition:
 - .1 25% Slender Wheatgrass
 - .2 25% Bluejoint Reedgrass
 - .3 10% Tufted Hairgrass
 - .4 10% Awned Wheatgrass
 - .5 10% Canada Wildrye
 - .6 10% Common Yarrow
 - .7 5% Northern Bedstraw
 - .8 5% Junegrass
- .2 In packages individually labelled in accordance with "Seeds Regulations" and indicating name of supplier.

2.2 WATER

- .1 Free of impurities that would inhibit germination and growth.

Part 3 Execution**3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrate previously installed under other Sections or Contracts are acceptable for mechanical seeding installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Owner's Representative.
 - .2 Inform Owner's Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Owner's Representative.

3.2 SEED BED PREPARATION

- .1 Do not perform work under adverse field conditions as determined by Owner's Representative.

- .2 Remove and dispose of weeds; debris; stones 50 mm in diameter and larger; soil contaminated by oil, gasoline and other deleterious materials off site as directed by Owner's Representative.
- .3 Verify that grades are correct. If discrepancies occur, notify Owner's Representative and commence work when instructed by Owner's Representative.
- .4 Fine grade surface free of humps and hollows to smooth, even grade, elevations indicated to tolerance of plus or minus 15 mm, surface draining naturally.
- .5 Cultivate fine graded surface approved by Owner's Representative to 25 mm depth immediately prior to seeding.

3.3 SEED PLACEMENT

- .1 For mechanical seeding:
 - .1 Mechanical landscape drill seeder ("Brillion" type or equivalent) which accurately places seed at specified depth and rate and rolls in single operation.
 - .2 Use equipment and method acceptable to Owner's Representative.
- .2 For manual seeding:
 - .1 Use manually operated drop seeder ("Cyclone" type or equivalent).
 - .2 Use manually operated, water ballast, landscaping type, smooth steel drum roller. Ballast as directed by Owner's Representative.
 - .3 Use equipment and method acceptable to Owner's Representative.
- .3 On cultivated surfaces, sow seed uniformly at rate of:
 - .1 60 kg seed mixture per hectare.
- .4 Sow half of required amount of seed in one direction and remainder at right angles as applicable.
- .5 Incorporate seed by light raking in cross directions.

3.4 CLEANING

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

3.5 MAINTENANCE DURING ESTABLISHMENT PERIOD

- .1 Perform following operations from time of seed application until acceptance by Owner's Representative:
 - .1 Water seeded area to maintain optimum soil moisture level for germination and continued growth of grass. Control watering to prevent washouts.

- .2 Repair and reseed dead or bare spots to allow establishment of seed prior to acceptance.
- .3 Adjust protection barrier as necessary to protect against deterioration due to pedestrian or other traffic as needed.

3.6 FINAL ACCEPTANCE

- .1 Seeded areas will be accepted by Owner's Representative provided that:
 - .1 Areas are uniformly established free of rutted, eroded, bare or dead spots and extent of weeds apparent in grass is acceptable.
 - .2 Areas have been fertilized.
- .2 Areas seeded in fall will be accepted in following spring, one month after start of growing season provided acceptance conditions are fulfilled.

3.7 MAINTENANCE DURING WARRANTY PERIOD

- .1 Perform following operations from time of acceptance until end of warranty period.
 - .1 Water seeded area to maintain optimum soil moisture level for continued growth of grass. Control watering to prevent washouts.
 - .2 Repair and reseed dead or bare spots to satisfaction of Owner's Representative.

END OF SECTION