SPECIFICATION HARBOUR DIVESTITURE MORTIER, NL P/N: 721640

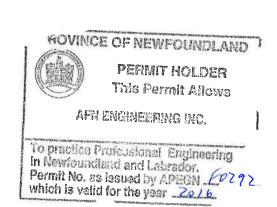
PREPARED FOR

Fisheries and Oceans Canada

DATE

February 1, 2016





LIST OF DRAWINGS

Harbour Divestiture

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DRAWING NO	TITLE
C1 of 7	Existing Site Plan
C2 of 7	Demolition Plan
C3 of 7	New Site Plan
C4 of 7	Wharf Layout
C5 of 7	Elevations
C6 of 7	Sections
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1.1 SCOPE	.1	The work consists of the plant, labour, equipment harbour divestiture at M strict accordance with s accompanying drawings an terms and conditions of	and material for fortier, NL, in pecifications and d subject to all
1.2 DESCRIPTION OF WORK	.1	In general, work under to consist of but will not limited to the following	necessarily be
		existing wharf, as drawings2 Construction o timber crib and spa with treated timber dimensions as indications.	of a new treated on wharf, complete deck, to the ated on the ated of a terminal timber for wheelguard at a timber and ated of shoreline rip
1.3 SITE OF WORK	.1	Work will be carried out in the location as shown accompanying drawings.	
1.4 DATUM	.1	Datum used for this proj Normal Tides (LNT) and i 2.65 metres below PWC 2-	s assumed to be

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with Departmental Representative prior to construction.

.2 Bidders are advised to consult the Tide Tables issued by Fisheries and Oceans in order to make sure of the tidal conditions affecting work.

1.5 FAMILIARIZATION WITH SITE

- Before submitting a bid, Bidders can visit . 1 the site and its surroundings at their own expense and schedule, to review and verify the form, nature and extent of the work, materials needed for the completion of the work, the means of access to the site, severity, exposure and uncertainty of weather, soil conditions, any accommodations they may require, and in general shall obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid or costs to do the work. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.
- .2 Contractors, bidders or those they invite to site are to review specification Section 01 35 29 Health and Safety Requirements before visiting site. Take all appropriate safety measures for any visit to site, either before or after acceptance of bid.
- .3 Obtain prior permission from the Departmental Representative before carrying out such site inspection.

1.6 CODES AND STANDARDS

.1 Perform work in accordance with the latest edition of the National Building Code of Canada, FCC Standard 373 - Standard for

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(http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/373/page00.shtml), and any other code of provincial or local application including all amendments up to project bid closing date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

.2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

1.7 TERM ENGINEER

.1 Unless specifically stated otherwise, the term Engineer where used in the Specifications and on the Drawings shall mean the Departmental Representative as defined in the General Conditions of the Contract.

1.8 SETTING OUT WORK

- .1 Set grades and layout work in detail from control points and grades established by Departmental Representative.
- .2 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated or as directed by Departmental Representative.
- .3 Provide devices needed to layout and construct work.
- .4 Supply such devices as straight edges and templates required to facilitate

 Departmental Representative's inspection of work.
- .5 Supply stakes and other survey markers required for laying out work.

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1.9 COST BREAKDOWN

- .1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price.
- .2 Provide cost breakdown in same format as the numerical and subject title system used in this specification project manual and thereafter sub-divided into major work components as directed by Departmental Representative.
- .3 Upon approval by Departmental Representative, cost breakdown will be used as basis for progress payment.
- .4 All work items not designated in the unit price table as a measurement for payment, are to be included in the lump sum arrangement, as noted on the Bid and Acceptance Form.

1.10 WORK SCHEDULE

- .1 Submit within 7 work days of notification of acceptance of bid, a construction schedule showing commencement and completion of all work within the time stated on the Bid and Acceptance Form and the date stated in the bid acceptance letter.
- .2 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.
- .3 As a minimum, work schedule to be prepared and submitted in the form of Bar (GANTT) Charts, indicating work activities, tasks

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and other project elements, their anticipated durations and planned dates for achieving key activities and major project milestones provided in sufficient details and supported by narratives to demonstrate a reasonable plan for completion of project within designated time, e.g., show target dates for the placement of each crib, if applicable. Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.

- .4 Submit schedule updates on a minimum monthly basis and more often, when requested by Departmental Representative, due to frequent changing project conditions. Provide a narrative explanation of necessary changes and schedule revisions at each update.
- .5 The schedule, including all updates, shall be to Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.
- .6 All work on the project will be completed within the time indicated on the Bid and Acceptance Form.

1.11 ABBREVIATIONS

.1 Following abbreviations of standard specifications have been used in this specification and on the drawings:

CGSB - Canadian Government Specifications Board

CSA - Canadian Standards Association NLGA - National Lumber Grades Authority ASTM - American Society for Testing and

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Materials

.2 Where these abbreviations and standards are used in this project, latest edition in effect on date of bid call will be considered applicable.

1.12 QUARRY AND EXPLOSIVES

.1 Make own arrangements with Provincial authorities and owners of private properties, for the quarrying and transportation of rock and all materials and machinery necessary for work over their property, roads or streets as case may be.

1.13 SITE OPERATIONS

- .1 Arrange for sufficient space adjacent to project site for conduct of operations, storage of materials and so on. Exercise care so as not to obstruct or damage public or private property in area. Do not interfere with normal day-to-day operations in progress at site. All arrangements for space and access will be made by Contractor.
- .2 Remove snow and ice as required to maintain safe access in a manner that does not damage existing structures or interfere with the operations of others.

1.14 PROJECT MEETINGS

- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording minutes.
- .2 Project meetings will take place on site of work unless so directed by the Departmental Representative.
- .3 Departmental Representative will assume responsibility for recording minutes of

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	. 4	meetings and forwarding parties present at the m Have a responsible member at all project meetings.	meetings. er of firm present
1.15 PROTECTION .1	Store all materials and incorporated into work to by any means.		
	. 2	Repair or replace all ma equipment damaged in tra the satisfaction of Depa Representative and at no	ansit or storage to artmental
1.16 EXISTING .1 SERVICES		Where work involves breaconnecting to existing swork at times directed kauthorities, with minimuto site operations, pedetraffic and tenant opera	services, carry out by governing um of disturbance estrian, vehicular
.2	.2	Before commencing work, and extent of service li work and notify Departme Representative of findin	nes in area of ental
. 3		Submit schedule to and of from Departmental Repressibut-down or closure of facility. This includes electrical power and compartices to tenant's open Adhere to approved schedulet to affected particles.	sentative for any active service or disconnection of munication erational areas.

Provide temporary services when directed by Departmental Representative to maintain

Provide adequate bridging over trenches

critical facility systems.

. 4

.5

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		which cross walkways or normal traffic.	roads to permit
	.6	Where unknown services a immediately advise Depar Representative and confiwriting.	tmental
	.7	Protect, relocate or mai active services as requi services are encountered manner approved by autho jurisdiction over service locations of maintained, abandoned service lines.	red. When inactive , cap off in rities having e. Record re-routed and
1.17 DOCUMENTS REQUIRED	.1	Maintain at job site, on following: .1 Contract Drawings .2 Specifications .3 Addenda .4 Reviewed Shop Drawi .5 List of outstanding .6 Change Orders .7 Other modifications .8 Field Test Reports .9 Copy of Approved Wo .10 Site specific Healt and other safety related .11 Other documents as elsewhere in the Contract	ngs to Contract rk Schedule h and Safety Plan documents stipulated
1.18 PERMITS	.1	Obtain and pay for all p certificates and license Municipal, Provincial, F Authorities.	s as required by
	.2	Provide appropriate noti project to municipal and inspection authorities.	

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- .3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.
- .4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.
- .5 Submit to Departmental Representative, copy of quarry permit, if applicable, prior to start of quarry operations.
- .6 Comply with all requirements, recommendations and advice by all regulatory authorities unless otherwise agreed in writing by Departmental Representative. Make requests for such deviations to these requirements sufficiently in advance of related work.

1.19 CUTTING, FITTING AND PATCHING

- .1 Execute cutting, including excavation, fitting and patching required to make work fit properly.
- .2 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work. This includes patching of openings in existing work resulting from removal of existing services.
- .3 Do not cut, bore, or sleeve load-bearing members.
- .4 Make cuts with clean, true, smooth edges.
 Make patches inconspicuous in final
 assembly.

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1.20 EXISTING SUB- SURFACE CONDITIONS	.1	Information pertaining to sub-surface conditions moderated to the Department Representative.	nay be available by
	. 2	Contractors are cautioned previous investigations available for review, we provide general site infinterpolation and/or assurelative to any previous the Contractor's response	that may be ere intended to formation only. Any sumptions made s investigations is
EQUIPMENT .2	.1	Location of work shown of be considered as approxionation shall be as reconditions at time of in its reasonable. Obtain appeartmental Representations	mate. Actual quired to suit as oproval of
	.2	Locate equipment, fixture distribution systems to interference and maximum in accordance with manufactions for safe maintenance.	provide minimum usable space and acturer's
	.3	Inform Departmental Repringending installation of other new or existing condinectives for actual lo	conflicts with omponents. Follow
	. 4	Submit field drawings to position of various serve when required by Department Representative.	rices and equipment
1.22 FISH HABITAT	.1	This work is being condumble where fish habitat may be perform work to conform regulations governing fi	e affected. with rules and sh habitat and in

accordance with authorization for work or

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		undertakings affecting f	fish habitat.
	.2	Contact the local Depart and Oceans detachment at advance of starting any Submit confirmation to tRepresentative that DFO contacted.	t least 48 hours in work on site. the Departmental
1.23 NOTICE TO SHIPPING/MARINERS	.1	Notify the Marine Commun Traffic Services' Centre Oceans Canada, at (709) days prior to commenceme completion of the work, for the issuance of Noti Shipping/Mariners.	e, of Fisheries and 772-2083, ten (10) ent and upon in order to allow
	. 2	During construction any utilized must be marked the provisions of the Cacollision Regulations.	in accordance with
1.24 ACCEPTANCE	.1	Prior to the issuance of of Substantial Performar with Departmental Representation of all work. Corrediscrepancies before fir acceptance.	nce, in company sentative, make a ect all
1.25 WORKS COORDINATION	.1	Responsible for coordinate the various trades, when trades interfaces with the	re the work of such
	.2	Convene meetings between interfaces and ensure the aware of the areas and to interfacing is required trade with the plans and the interfacing trade, assist them in planning their respective work.	nat they are fully the extent of where Provide each specifications of as required, to

Canada will not be responsible for or held

.3

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accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor and shall be resolved at no extra cost to Canada.

1.26 CONTRACTOR'S USE OF SITE

- .1 Construction operations, including storage of materials for this contract, not to interfere with the fishing activity and/or operations at this harbour facility.
- .2 Responsible for arranging the storage of materials on or off site, and any materials stored at the site which interfere with any of the day to day activities at or near the site will be moved promptly at the Contractor's expense, upon request by Departmental Representative.
- .3 Contractor will take adequate precautions to protect existing concrete decks and asphalt when operating tracked equipment.
- .4 Exercise care so as not to obstruct or damage public or private property in the area.
- .5 At completion of work, restore area to its original condition. Damage to ground and property will be repaired by Contractor. Remove all construction materials, residue, excess, etc., and leave site in a condition acceptable to Departmental Representative.

1.27 WORK COMMENCEMENT

.1 Mobilization to project site is to commence immediately after acceptance of bid and submission of Site Specific Safety

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Plan and insurance documentation, unless otherwise agreed by Departmental Representative.

- .2 Project work on site is to commence as soon as possible, with a continuous reasonable work force, unless otherwise agreed by Departmental Representative.
- .3 Weather conditions, short construction season, delivery challenges and the location of the work site may require the use of longer working days and additional work force to complete the project within the specified completion time.
- .4 Make every effort to ensure that sufficient material and equipment is delivered to site at the earliest possible date after acceptance of bid and replenished as required.

1.28 FACILITY SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions.
- 1.29 WORKING ADJACENT 1.
 TO COMMUNITY ROADS
- The Contractor will be responsible to restore any damage to existing roadways.

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	FOR	TESTING	LABORATORY	SERVICES				
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PART 1 - GENERAL

1.1 SECTION .1 Inspecting and testing by inspecting firms or testing laboratories designated by Departmental Representative.

1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

.1 Particular requirements for inspection and testing to be carried out by testing laboratory designated by Departmental Representative are specified under various sections.

1.3 APPOINTMENT AND PAYMENT

- .1 Departmental Representative will appoint and pay for services of testing laboratory except for the following:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Mill tests and certificates of compliance.
 - .4 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.
 - .5 Tests requested by Departmental Representative to confirm material specifications when the applicable manufacturer's documentation or test results are unavailable.
 - .6 Additional tests specified in the following paragraph.
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.

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	FOR TES	STING LABORATORY SERVICES	
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1.4 CONTRACTOR'S RESPONSIBILITIES	.1	Provide labour, equipment	and facilities
KESPONSIBILITIES		.1 Provide access to Wo inspected and tested.	
		<pre>.2 Facilitate inspectio .3 Make good Work distu inspection and test.</pre>	
		.4 Provide storage on s laboratory's exclusive us equipment and cure test s	e to store
	.2	Notify Departmental Represufficiently in advance of allow for assignment of lepersonnel and scheduling	f operations to aboratory
	.3	Where materials are specitested, deliver represent required quantity to test	ative samples in
	. 4	Pay costs for uncovering Work that is covered befo inspection or testing is approved by Departmental	re required completed and
PART 2 - PRODUCTS			
2.1 NOT USED	1	Not Used.	
PART 3 - EXECUTION	_		
3.1 NOT USED	1	Not Used.	

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PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Shop drawings and product data.
- .2 Samples.
- .3 Certificates.

1.2 SUBMITTAL GENERAL REQUIREMENTS

- .1 Submit to Departmental Representative for review submittals listed, including shop drawings, samples, certificates and other data, as specified in other sections of the Specifications.
- .2 Submit with reasonable promptness and in orderly sequence so as to allow for Departmental Representative's review and not cause delay in Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .3 Do not proceed with work until relevant submissions are reviewed by Departmental Representative.
- .4 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .5 Where items or information is not produced in SI Metric units, provide soft converted values.
- .6 Review submittals prior to submission to Departmental Representative. Ensure during review that necessary requirements have been determined and verified, required field measurements or data have been taken, and that each submittal has been checked and

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co-ordinated with requirements of Work and Contract Documents.

- .1 Submittals not stamped, signed, dated and identified as to specific project will be returned unexamined by Departmental Representative and considered rejected.
- .7 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .8 Verify field measurements and affected adjacent work and coordinate.
- .9 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.
- .11 Submittal format: paper originals, or alternatively clear and fully legible photocopies of originals. Facsimiles are not acceptable, except in special circumstances pre-approved by Departmental Representative. Poorly printed non-legible photocopies or facsimiles will not be accepted and be returned for resubmission.
- .12 Make changes or revision to submissions which Departmental Representative may require, consistent with Contract Documents and resubmit as directed by Departmental Representative. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.

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.13 Keep one reviewed copy of each submittal document on site for duration of Work.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, product data, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Number of Shop Drawings: submit sufficient copies of shop drawings which are required by the General Contractor and sub-contractors plus 2 copies which will be retained by Departmental Representative. Ensure sufficient numbers are submitted to enable one complete set to be included in each of the maintenance manuals specified, if applicable.
- .3 Shop Drawings Content and Format:
 - .1 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where items or equipment attach or connect to other items or equipment, confirm that all interrelated work have been coordinated, regardless of section or trade from which the adjacent work is being supplied and installed.
 - .2 Shop Drawings Format:
 - .1 Opaque white prints or photocopies of original drawings or standard drawings modified to clearly illustrate work specific to project requirements. Maximum sheet size to be 1000 x 707 mm.
 - .2 Product Data from manufacturer's standard catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard

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manufactured products, to be original full colour brochures, clearly marked indicating applicable data and deleting information not applicable to project.

- .3 Non or poorly legible drawings, photocopies or facsimiles will not be accepted and returned not reviewed.
- .3 Supplement manufacturer's standard drawings and literature with additional information to provide details applicable to project.
- .4 Delete information not applicable to project on all submittals.
- .4 Allow 10 calendar days for Departmental Representative's review of each submission.
- .5 Adjustments or corrections made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, advise Departmental Representative in writing prior to proceeding with Work.
- Representative, no errors or omissions are discovered or if only minor corrections and comments are made, fabrication and installation may proceed upon receipt of shop drawings. If shop drawings are rejected and noted to be Resubmitted, do not proceed with that portion of work until resubmission and review of corrected shop drawings, through same submission procedures indicated above.
- .7 Accompany each submission with transmittal letter, containing:
 - .1 Date.
 - .2 Project title and project number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.

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- .5 Other pertinent data.
- .8 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and project number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Cross references to particular details of contract drawings and specifications section number for which shop drawing submission addresses.
 - .6 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 The review of shop drawings by the Departmental Representative or their delegated representative is for sole purpose of ascertaining conformance with general concept. This review shall not mean that

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Public Works and Government Services Canada approves the detail design inherent in the shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of the construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.4 SCHEDULES, PERMITS AND CERTIFICATES

- .1 Upon acceptance of bid, submit to
 Departmental Representative copy of Work
 Schedule and various other schedules,
 permits, certification documents and project
 management plans as specified in other
 sections of the Specifications.
- .2 Submit copy of permits, notices, compliance Certificates received by Regulatory Agencies having jurisdiction and as applicable to the Work.
- .3 Submission of above documents to be in accordance with Submittal General Requirements procedures specified in this section.

		SPECIAL PROCEDURES ON	Section 01 35 24
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1.1 SECTION INCLUDES	.1	Fire Safety Requirements.	
	. 2	Hot Work Permit.	
1.2 RELATED WORK	.1	Section 01 35 25 - Special Lockout Requirements.	l Procedures on
	. 2	Section 01 35 29 - Health Requirements.	and Safety
1.3 REFERENCES	.1	Fire Protection Standards Protection Services of Hur Development Canada as fold .1 FCC No. 301-June 1982 Construction Operations (http://www.hrsdc.gc.ca/er fire_protection/policies_ commissioner/301/page00.s .2 FCC No. 302-June 1982 Welding and Cutting (http://www.hrsdc.gc.ca/er fire_protection/policies_ commissioner/302/page00.s .3 FCC standards, may als Regional Fire Protection S (previously known as the R of Canada) located at 99 Wys Dartmouth, NS, Tel: (902)	man Resources Lows: 2 Standard for ng/labour/ _standards/ shtml). 2 Standard for ng/labour/ _standards/ shtml). so be viewed at the Services' office Fire Commissioner se Road, 8th Floor,
1.4 DEFINITIONS	.1	Hot Work defined as: .1 Welding work2 Cutting of materials other open flame devices3 Grinding with equipments	_
1.5 SUBMITTALS	.1	Submit copy of Hot Work Pro of Hot Work permit to Depa Representative for review,	artmental

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		days after notification of ac	cceptance of bid.
	. 2	Submit in accordance with the General Requirements specified 01 33 00.	
1.6 FIRE SAFETY REQUIREMENTS	.1	Implement and follow fire saduring Work. Comply with for .1 National Fire Code, 200 .2 Fire Protection Standar FCC 3023 Federal and Provincial Health and Safety Acts and Especified in Section 01 35 2	llowing: 05 cds FCC 301 and 0ccupational Regulations as
	.2	In event of conflict between of above authorities the most provision will apply. Should in determining the most strateguirement, Departmental Rewill advise on the course of followed.	st stringent a dispute arise ingent epresentative
1.7 HOT WORK AUTHORIZATION	.1	Obtain Departmental Represen "Authorization to Proceed" be any form of Hot work on site	efore conducting
	. 2	To obtain authorization subropertmental Representatives. 1 Contractor's typewritted Procedures to be followed on subelow. 2 Description of the type	: en Hot Work site as specified

.3 Upon review and confirmation that effective fire safety measures will be implemented during performance of hot work, Departmental Representative will provide authorization to

Sample Hot Work Permit to be used.

of Hot Work required.

.3

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proceed as follows:

- .1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;
- .2 Separate work, or segregate certain parts of work, into individual entities. Each entity requiring a separately written "Authorization to Proceed" from Departmental Representative. Follow Departmental Representative's directives in this regard.
- .4 Requirement for individual authorization based on:
 - .1 Nature or phasing of work;
 - .2 Risk to Facility operations;
 - .3 Quantity of various trades needing to perform hot work on project or;
 - .4 Other situation deemed necessary by Departmental Representative to ensure fire safety on premises.
- .5 Do not perform any Hot Work until receipt of Departmental Representative's written "Authorization to Proceed" for that portion of work.
- .6 In tenant occupied Facility, coordinate performance of Hot Work with Facility Manager through the Departmental Representative.

 When directed, perform Hot Work only during non-operative hours of Facility. Follow Departmental Representative's directives in this regard.

1.8 HOT WORK PROCEDURES

- .1 Develop and implement safety procedures and work practices to be followed during the performance of Hot Work.
- .2 Procedures to include:
 - .1 Requirement to perform hazard assessment of site and immediate hot work area

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for each hot work event in accordance with Hazard Assessment and Safety Plan requirements of Section 01 35 29.

- .2 Use of a Hot Work Permit system for each hot work event.
- .3 The step by step process of how to prepare and issue permit.
- .4 Permit shall be issued by Contractor's site Superintendent, or other authorized person designated by Contractor, granting permission to worker or subcontractor to proceed with hot work.
- .5 Provision of a designated person to carryout a Fire Safety Watch for a minimum of 60 minutes immediately upon completion of the hot work.
- .6 Compliance with fire safety codes and standards specified herein and occupational health and safety regulations specified in Section 01 35 29.
- .3 Generic procedures, if used, must be edited and supplemented with pertinent information tailored to reflect specific project conditions. Clearly label as being the Hot Work Procedures applicable to this contract.
- .4 Hot Work Procedures shall clearly establish worker instructions and allocate responsibilities of:
 - .1 Worker(s),
 - .2 Authorized person issuing the Hot Work Permit,
 - .3 Fire Safety Watcher,
 - .4 Subcontractors and Contractor.
- .5 Brief all workers and subcontractors on Hot Work Procedures and Permit system established for project. Stringently enforce compliance.
 - .1 Failure to comply with the established procedures may result in the issuance of a Non-Compliance Notification at Departmental

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Representative's discretion with possible disciplinary measures imposed as specified in Section 01 35 29.

1.9 HOT WORK PERMIT

- .1 Hot Work Permit to include, as a minimum, the following data:
 - .1 Project name and project number.
 - .2 Building name, address and specific room or area where hot work will be performed.
 - .3 Date when permit issued.
 - .4 Description of hot work type to be performed.
 - .5 Special precautions required, including type of fire extinguisher needed.
 - .6 Name and signature of person authorized to issue the permit.
 - .7 Name of worker (clearly printed) to which the permit is being issued.
 - .8 Time Duration that permit is valid (not to exceed 8 hours). Indicate start time and date, and completion time and date.
 - .9 Worker signature with date and time upon hot work termination.
 - .10 Specified time period requiring safety watch.
 - .11 Name and signature of designated Fire Safety Watcher, complete with time and date when safety watch terminated, certifying that surrounding area was under continual surveillance and inspection during the full watch time period specified in Permit and commenced immediately upon completion of Hot Work.
- .2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.
- .3 Each Hot Work Permit to be completed in full and signed as follows:
 - .1 Authorized person issuing Permit before

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hot work commences.

- .2 Worker upon completion of Hot Work.
- .3 Fire Safety Watcher upon termination of safety watch.
- .4 Returned to Contractor's Site Superintendent for safe keeping.

1.10 DOCUMENTS ON SITE

- .1 Keep Hot Work Permits and Hazard assessment documentation on site for duration of Work.
- .2 Upon request, make available to Departmental Representative or to authorized safety representative for inspection.

		SPECIAL PROCEDURES ON	Section 01 35 25
	L	OCKOUT REQUIREMENTS	
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1.1 SECTION INCLUDES	.1	Procedures to isolate and facility or other equipm source.	
1.2 RELATED WORK	.1	Section 01 35 24 - Fire S	Safety Requirements.
	.2	Section 01 35 29 - Healt Requirements.	h and Safety
1.3 REFERENCES	.1	C22.1-06 - Canadian Elect Safety Standard for Elec Installations.	
	.2	CAN/CSA C22.3 No. 1-10 -	Overhead Systems.
	.3	CAN/CSA C22.3 No. 7-10 - U	Inderground Systems.
	. 4	COSH, Canada Occupationa Regulations made under Pa Labour Code.	_
1.4 DEFINITIONS	.1	Electrical Facility: mean equipment, device, appar conductor, assembly or pused for the generation, transmission, distributic control, measurement or electrical energy, and the and voltage that is danger	atus, wiring, art thereof that is transformation, on, storage, utilization of hat has an amperage
	. 2	Guarantee of Isolation: rate competent person in conthat a particular faciliticulated.	ntrol or in charge
	.3	De-energize: in the election a piece of equipment is is	

e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).

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- .4 Guarded: means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent or reduce danger to any person who might touch or go near such item.
- .5 Isolate: means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.
- .6 Live/alive: means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic or other kind of energy that is capable of making the facility dangerous to persons.

1.5 COMPLIANCE REQUIREMENTS

- .1 Perform lockouts in compliance with:
 - .1 Canadian Electrical Code.
 - .2 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in Section 01 35 29.
 - .3 Regulations and code of practice as applicable to mechanical equipment or other machinery being de-energized.
 - .4 Procedures specified herein.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.

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1.6 SUBMITTALS	.1	Submit copy of proposed and sample form of lockotags for review.	

- .2 Submit documentation within 7 calendar days of acceptance of bid. Do not proceed with work until submittal has been reviewed by Departmental Representative.
- .3 Submit above documents in accordance with the submittal requirements specified in Section 01 33 00.
- .4 Resubmit Lockout Procedures with noted revisions as may result from Departmental Representative's review.

1.7 ISOLATION OF EXISTING SERVICES

- .1 Obtain Departmental Representative's written authorization prior to conducting work on an existing active, energized service or facility required as part of the work and before proceeding with lockout of such services or facility.
- .2 To obtain authorization, submit to Departmental Representative the following documentation:
 - .1 Written Request for Isolation of the service or facility and;
 - .2 Copy of Contractor's Lockout Procedures.
- .3 Make a Request for Isolation for each event, unless directed otherwise by Departmental Representative, and as follows:
 - .1 Fill-out standard forms in current use at the Facility when so directed by Departmental Representative or;
 - .2 Where no form exist at Facility, make request in writing identifying:
 - .1 Identification of system or

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equipment to be isolated, including it's location;

- .2 Time duration, indicating Start time and date, and Completion time and date when isolation will be in effect;
- .3 Voltage of service feed to system or equipment being isolated;
 - 4 Name of person making the request.
- .3 Document to be in typewritten format.
- .4 Do not proceed until receipt of written notification from Departmental Representative granting the Isolation Request and authorization to proceed with the isolation of designated equipment or facility. Departmental Representative may designate other individual at the Facility as the person authorized to grant the Isolation Request.
- .5 Conduct safe, orderly shut down of equipment or facilities, de-energize and isolate power and other sources of energy and lockout items in accordance with requirement of clause 1.8 below.
- .6 Plan and schedule shut down of existing services in consultation with the Departmental Representative and the Facility Manager. Minimize impact and downtime of facility operations.
- .7 Determine in advance, as much as possible, in cooperation with the Departmental Representative, the type and frequency of situations which will require a Request for Isolation. Follow Departmental Representative's directives in this regard.
- .8 Conduct hazard assessment as part of the planning process of isolating existing equipment and facilities. Hazard Assessments

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1.8 LOCKOUTS

to conform with requirements of Health and Safety Section 01 35 29.

- .1 Isolate and lockout electrical facilities, mechanical equipment and machinery from all potential energy sources prior to starting work on such items.
- .2 Develop and implement lockout procedures to be followed on site as an integral part of the Work.
- .3 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.
- .4 Use industry standard lockout tags.
- .5 Provide appropriate safety grounding and quards as required.
- .6 Prepare Lockout Procedures in writing.

 Describe safe work practices, work functions and sequence of activities to be followed on site to safely isolate all potential energy sources and lockout/tagout facilities and equipment.
- .7 Include within procedures a system of worker request and issuance of individual lockout permit by a person, employed by Contractor, designated to be "in-charge" and being responsible for:
 - .1 Controlling issuance of permits or tags to workers.
 - .2 Determining permit duration.
 - .3 Maintaining record of permits and tags issued.
 - .4 Submitting a Request for Isolation to Departmental Representative when required in accordance with Clause 1.7 above.
 - .5 Designating a Safety Watcher, when one

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is required based on type of work.

- .6 Ensuring equipment or facility has been properly isolated, providing a Guarantee of Isolation to worker(s) prior to proceeding with work.
- .7 Collecting and safekeeping lockout tags, returned by workers, as a record of the event.
- .8 Clearly establish, describe and allocate, within procedures, the responsibilities of:
 - .1 Workers.
 - .2 Designated person controlling issuance of lockout tags/permits.
 - .3 Safety Watcher.
 - .4 Subcontractors and General Contractor.
- .9 Procedures shall meet the requirements of Codes and Regulations specified in clause 1.5 above.
- .10 Generic procedures, if used, must be edited, supplemented with pertinent information and tailored to reflect specific project conditions. Clearly label as being the procedures applicable to this contract.
 .1 Incorporate site specific rules and procedures established by Facility Manager and in force at site. Obtain such procedures
- .11 Procedures to be in typewritten format.

through Departmental Representative.

.12 Submit copy of Lockout Procedures to
Departmental Representative, in accordance
with submittal requirements of clause 1.6
herein, prior to commencement of work.

1.9 CONFORMANCE

.1 Ensure that lockout procedures, as established for project on site, are stringently followed. Enforce use and

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compliance by all workers.

- .2 Brief all persons working on electrical facilities, mechanical and other equipment fed by an energy source on requirements of this section.
- .3 Failure to perform lockouts in accordance with regulatory requirements or follow procedures specified herein may result in the issuance of a Non-Compliance Notification at Departmental Representative's discretion with possible disciplinary measures imposed as specified in Section 01 35 29.

1.10 DOCUMENTS ON SITE

- .1 Post Lockout Procedures on site in common location for viewing by workers.
- .2 Keep copies of Request for Isolation submitted to Departmental Representative and lockout permits or tags issued to workers during the course of work for full project duration.
- .3 Upon request, make such data available to Departmental Representative or to authorized safety representative for inspection.

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1.1 RELATED WORK	.1 Section 01 35 24 - Sp Fire Safety Requireme	
	.2 Section 01 35 25 - Sp Lockout Requirements.	
1.2 DEFINITIONS	.1 COSH: Canada Occupati Safety Regulations ma the Canada Labour Cod	ade under Part II of
	 .2 Competent Person: mean and; .1 Qualified by virtue knowledge, training perform assigned wor will ensure the heal persons in the works .2 Knowledgeable about occupational health and regulations that and; .3 Knowledgeable about danger to health or with the Work. 	of personal and experience to the in a manner that the and safety of place, and; the provisions of and safety statutes the apply to the Work potential or actual
	which medical treatm	_
	.4 PPE: personal protec	ctive equipment.
	.5 Work Site: where use shall mean areas, low where Work is underto Contractor to perform activities associated performance of the Work Sites and Sites are shown as the Work Sites and Sites are shown as the Work Sites are shown as the Sites are shown as t	ocated at the premises taken, used by mall of the ed with the
1.3 SUBMITTALS	.1 Make submittals in ac	ccordance with Section

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- .2 Submit site-specific Health and Safety Plan prior to commencement of Work.
 - .1 Submit within 10 work days of notification of Bid Acceptance. Provide 3 copies.
 - .2 Departmental Representative will review Health and Safety Plan and provide comments.
 - .3 Revise the Plan as appropriate and resubmit within 5 work days after receipt of comments.
 - .4 Departmental Representative's review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
 - .5 Submit revisions and updates made to the Plan during the course of Work.
- .3 Submit name of designated Health & Safety Site Representative and support documentation specified in the Safety Plan.
- .4 Submit building permit, compliance certificates and other permits obtained.
- .5 Submit copy of Letter in Good Standing from Provincial Workers Compensation or other department of labour organization.
 - .1 Submit update of Letter of Good Standing whenever expiration date occurs during the period of Work.
- .6 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .7 Submit copies of incident reports.

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.8 Submit WHMIS MSDS - Material Safety Data Sheets.

1.4 COMPLIANCE REQUIREMENTS

- .1 Comply with the Occupational Health and Safety Act for the Province of Newfoundland and Labrador, and the Occupational Health and Safety Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II, (entitled Occupational Health and Safety) and the Canada Occupational Health and Safety Regulations (COSH) as well as any other regulations made pursuant to the Act.
 - .1 The Canada Labour Code can be viewed at: www.http://laws.justice.gc.ca/en/L-2/
 - .2 COSH can be viewed at:
 www.http://laws.justice.gc.ca/eng/SOR86-304/ne.html.
 - .3 A copy may be obtained at: Canadian Government Publishing Public Works & Government Services Canada Ottawa, Ontario, K1A OS9 Tel: (819) 956-4800 (1-800-635-7943) Publication No. L31-85/2000 E or F).
- .3 Observe construction safety measures of:
 - .1 Part 8 of National Building Code.
 - .2 Municipal by-laws and ordinances.
- .4 In case of conflict or discrepancy between any specified requirements, the more stringent shall apply.
- .6 Maintain Workers Compensation Coverage in good standing for duration of Contract.

 Provide proof of clearance through submission of Letter of Good Standing.

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.7 Medical Surveillance: Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance documentation.

1.5 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property and for protection of persons and environment adjacent to the site to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by all workers, sub-contractors and other persons granted access to work site with safety requirements of Contract Documents, applicable Federal, Provincial, and local by-laws, regulations, and ordinances, and with site specific Health and Safety Plan.

1.6 SITE CONTROL AND ACCESS

. 1

- Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons.

 Immediately stop and remove non-authorized persons.
 - .1 Departmental Representative will provide names of those persons authorized by Departmental Representative to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.
- .2 Isolate Work Site from other areas of the premises by use of appropriate means.
 - .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to

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protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment.

- .2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.
- .3 Use professionally made signs with bilingual message in the 2 official languages or international known graphic symbols.
- .3 Provide safety orientation session to persons granted access to Work Site.

 Advise of hazards and safety rules to be observed while on site.
- .4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.
- .5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm. Provide security guard where adequate protection cannot be achieved by other means.

1.7 PROTECTION

- .1 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.
- .2 Should unforeseen or peculiar safety related hazard or condition become evident during performance of Work, immediately take measures to rectify situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

1.8 FILING OF NOTICE

.1 File Notice of Project with pertinent provincial health and safety authorities

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		prior to beginning of Wo .1 Departmental Represe assist in locating a	entative will
1.9 PERMITS	.1	Post permits, licenses a certificates, specified 10, at Work Site.	-
	.2	Where a particular permicertificate cannot be observed by the contract obtain approval to processout applicable portion of	otained, notify cive in writing and eed before carrying
1.10 HAZARD ASSESSMENTS	.1	Perform site specific he hazard assessment of the site.	-
	. 2	Carryout initial assessment of Work wit assessments as needed duwork, including when new subcontractors arrive or	th further aring progress of trades and
	.3	Record results and addressafety Plan.	ess in Health and
	. 4	Keep documentation on si duration of the Work.	te for entire
1.11 PROJECT/SITE CONDITIONS	.1	water2 Use of water of platforms3 Wet and slipped.4 Inclement weat	nazards at site: ose proximity of crafts and floating ery conditions.

existing structures.

area.

.6 Heavy equipment activity in the

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		.7 Heavy lifting8 Working at hei .9 Cutting tools construction power .10 Overhead power .11 Risk of electr	ghts. and other tools. //utility lines. ric shock.
		traffic13 Confined space	es.
	. 2	Above items shall not be being complete and incluhealth, and safety hazar during work.	sive of potential
	.3	Include above items into process.	hazard assessment
	. 4	MSDS Data sheets of pert and controlled products be obtained from Departm Representative.	stored on site can
1.12 MEETINGS	.1	Attend pre-construction meeting, convened and charactering and charactering and charactering and commencement of Work, at location determined by I Representative. Ensure and all Superintendent of Work. 2 Designated Health & State Representative. 3 Subcontractors.	naired by Live, prior to Lime, date and Departmental Attendance of:
	. 2	Conduct regularly schedusafety meetings during to conformance with Occupat Safety regulations.	the Work in

Keep documents on site.

.3

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1.13 HEALTH AND SAFETY PLAN

- .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.
- .2 Health and Safety Plan shall include the following components:
 - .1 List of health risks and safety hazards identified by hazard assessment.
 - .2 Control measures used to mitigate risks and hazards identified.
 - .3 On-site Contingency and Emergency Response Plan as specified below.
 - .4 On-site Communication Plan as specified below.
 - .5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.
 - .6 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational health and safety purposes.
- .3 On-site Contingency and Emergency Response Plan shall include:
 - .1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
 - .2 Evacuation Plan: site and floor plan layouts showing escape routes, marshaling areas. Details on alarm notification methods, fire drills, location of fire fighting equipment and other related data.
 - .3 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.

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- .4 Emergency Contacts: name and telephone number of officials from:
 - .1 General Contractor and subcontractors.
 - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
 - .3 Local emergency resource organizations.
- .5 Harmonize Plan with Facility's
 Emergency Response and Evacuation Plan.
 Departmental Representative will
 provide pertinent data including name
 of Facility Management contacts.
- .4 On-site Communication Plan:
 - .1 Procedures for sharing of work related safety information to workers and subcontractors, including emergency and evacuation measures.
 - .2 List of critical work activities to be communicated with Facility Manager which have a risk of endangering health and safety of Facility users.
- .5 Address all activities of the Work including those of subcontractors.
- .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or subcontractor arrive at Work Site.
- .7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request resubmission of the Plan with correction of deficiencies or concerns.
- .8 Post copy of the Plan, and updates, prominently on Work Site.

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1.14 SAFETY SUPERVISION

- .1 Employ Health & Safety Site Representative responsible for daily supervision of health and safety of the Work.
- .2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:
 - .1 Implement, monitor and enforce daily compliance with health and safety requirements of the Work
 - .2 Monitor and enforce Contractor's site-specific Health and Safety Plan.
 - .3 Conduct site safety orientation session to persons granted access to Work Site.
 - .4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.
 - .5 Stop the Work as deemed necessary for reasons of health and safety.
- .3 Health & Safety Site Representative must:
 - .1 Be qualified and competent person in occupational health and safety.
 - .2 Have site-related working experience specific to activities of the Work.
 - .3 Be on Work Site at all times during execution of the Work.
 - .4 All supervisory personnel assigned to the Work shall also be competent persons.
 - .5 Inspections:
 - .1 Conduct regularly scheduled safety inspections of the Work on a minimum bi-weekly basis. Record deficiencies and remedial action taken.

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		.2 Conduct Formal In minimum monthly I standardized safe forms. Distribute subcontractors3 Follow-up and end measures are take .6 Cooperate with Facility Health and Safety reshould one be design Departmental Representation reposition.	basis. Use ety inspection e to sure corrective en. lity's Occupational epresentative nated by entative. orts and
1.15 TRAINING	.1	supervision related site. Use only skilled workers are effectively trained health and safety proces	s on Work Site who in occupational
	_	pertinent to their assignment	gned task.
	. 2	Maintain employee record training received. Make Departmental Representa	data available to
	.3	When unforeseen or peculiazard, or condition occuperformance of Work, for place for Employee's Rigin accordance with Acts Province having jurisdiction writing.	cur during llow procedures in ght to Refuse Work and Regulations of ction and advise
1.16 MINIMUM SITE SAFETY RULES	.1	Notwithstanding requirer federal and provincial regulations; ensure the	health and safety following minimum

safety rules are obeyed by persons granted

.1 Wear appropriate PPE pertinent to the Work or assigned task; minimum being hard hat, safety footwear, safety

access to Work Site:

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	. 2	glasses and hearing processes and hearing report unsite, near-miss accided anage. 3 Maintain site and stortidy condition free or injury. 4 Obey warning signs and Brief persons of discipation are site.	nsafe condition at dent, injury and orage areas in a of hazards causing and safety tags.
		on site.	
1.17 COORECTION OF NON-COMPLIANCE	.1	Immediately address head non-compliance issues is authority having jurisd Departmental Representa	dentified by iction or by
	.2	Provide Departmental Repuritten report of action non-compliance of health identified.	n taken to correct
	.3	Departmental Representation if non-compliance of hear regulations is not correspondent.	alth and safety
1.18 INCIDENT REPORTING	.1	Investigate and report incidents to Departmental 1 Incidents requiring a Provincial Department Safety and Health, We Board or to other resulting in an operation of the Provincial aid injuries and Property damage in expectation of the Provincial aid injuries are sulting in an operation of the Provincial Section of the Provincial Department in Section of the Provincial Section of the Provincial Department in Sect	al Representative: notification to t of Occupational orkers Compensation gulatory Agency xcess of ility operations ational lost to a

Harbour Divestiture		HEALTH AND SAFETY REQUIREMENTS	Section 01 35 29
Mortier, NL P/N: R.721640			Page 13 2016-02-01
	.2	Submit report in writing	g.
1.19 HAZARDOUS PRODUCTS	.1	Comply with requirement Hazardous Materials Info	-
	. 2	Keep MSDS data sheets for delivered to site..1 Post on site..2 Submit copy to Deparamentative.	-
1.20 BLASTING	.1	Blasting or other use o permitted on site withow written permission and Departmental Representation	ut prior receipt of instructions from
	. 2	Do blasting operations local and provincial co	
1.21 POWDER ACTUATED DEVICES	.1	Use powder actuated fas after receipt of writte Departmental Representa	n permission from
1.22 CONFINED SPACES	.1	Abide by occupational he regulations regarding we spaces.	
	. 2	Obtain an Entry Permit Part XI of the Canada O and Safety Regulations existing identified con at the Facility or prem .1 Obtain permit from Fac2 Keep copy of permit i .3 Safety for Inspectors .1 Provide PPE and to Departmental Representations	ccupational Health for entry into an fined space located ises of Work. cility Manager ssued. : raining to

		HEALTH AND SAFETY REQUIREMENTS	Section 01 35 29
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		confined space to inspections2 Be responsible for equipment and safe	r efficacy of ety of persons y and occupancy in
1.23 SITE RECORDS	.1	Maintain on Work Site corelated documentation and stipulated to be produced with Acts and Regulation having jurisdiction and specified herein.	nd reports ed in compliance ns of authorities
	. 2	Upon request, make avail Departmental Represental Safety Officer for inspe	tive or authorized
1.24 POSTING OF DOCUMENTS		Ensure applicable items and orders are posted in location on Work Site in Acts and Regulations of jurisdiction.	n conspicuous n accordance with
	. 2	Post other documents as including: .1 Site specific Health .2 WHMIS data sheets.	
1.25 DIVING OPERATIONS	.1	All diving work to comparequirements of CSA Z279 "Occupational Safety Coo Operations", CSA Z275.4 Standards for Diving Ope Z180.1-00, "Compressed Braystems."	5.2-04, de for Diving -02, "Competency erations "and CSA
	. 2	Dive personnel must meet competency requirements	of the CSA Z275.4-

02 (R2008) and all divers must possess a

	HEALTH AND SAFETY	Section 01 35 29
	REQUIREMENTS	
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valid Category 1 Diving Certificate or an Unrestricted Surface-supplied Certificate.

- .3 Diving in free-swim mode is not permitted at the work site.
- .4 Divers must have a current(less than one year) validated medical examination certificate(s) from a licensed Diving Physician in Newfoundland and Labrador who is knowledgeable and competent in diving and hyperbaric medicine, for all dives.

	El	NVIRONMENTAL PROCEDURES	Section 01 35 43
Harbour Divestiture Mortier, NL P/N: R.721640			Page 1 2016-02-01
1.1 RELATED WORK	.1	Section 01 74 21 - Const: Waste Management and Dis	
1.2 DEFINITIONS	.1	Hazardous Material: Production organism that is used for purpose; and that is eithor a material that may can to the environment or adverse of persons, animals, or preleased into the environment of the environment.	r its original her dangerous goods ause adverse impact ersely affect health plant life when
1.3 FIRES	.1	Fires and burning of ruble permitted.	bish on site not
1.4 DISPOSAL OF WASTES AND HAZARDOUS MATERIALS	.1	Do not bury rubbish and site. Dispose at approved specified in Section 01	d landfill sites as
	.2	Do not dispose of hazardoumaterials, such as minerathinners, oil or fuel into or sanitary sewers or was	al spirits, paints, to waterways, storm
	.3	Store, handle and dispose materials and hazardous with applicable federal a regulations, codes and gr	waste in accordance .nd provincial laws,
	. 4	Dispose of construction of demolition debris, result approved landfill sites of disposal in strict accorded and municipal rules and resout and prevent improper banned from landfills.	ting from work, at only. Carryout such ance with provincial gulations. Separate

.5

Establish methods and undertake construction

practices which will minimize waste and

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optimize use of construction materials. Separate at source all construction waste materials, demolition debris and product packaging and delivery containers into various waste categories in order to maximize recycling abilities of various materials and avoid disposal of debris at landfill site(s) in a "mixed state". Where recycling firms, specializing in recycling of specific materials exist, transport such materials to the recycling facility and avoid disposal at landfill sites.

.6 Communicate with landfill operator prior to commencement of work, to determine what specific construction, demolition and renovation waste materials have been banned from disposal at the landfill and at transfer stations.

1.5 DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with governing regulations and requirements.
- .4 Pumped water must meet applicable federal, provincial, and municipal standards before it can be discharged to a surface water body. If regulatory guidelines exceedences are noted, the Departmental Representative has the right to issue stop pumping instructions to the Contractor. Contractor will not be compensated for any delays associated with

-	El	NVIRONMENTAL PROCEDURES	Section 01 35 43
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Mortier, NL			Page 3
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		retrofitting equipment t	o meet guidelines.
	.5	Provide control devices fabrics, sediment traps to control drainage and adjacent lands. Maintain duration of work.	and settling ponds prevent erosion of
1.6 PERMITS	.1	All guidelines and instr permits must be strictly	
1.7 WORK ADJACENT TO WATERWAYS	.1	Do not operate construct waterways.	ion equipment in
	. 2	Do not use waterway beds i	for borrow material.
	.3	Do not dump excavated fi or debris in waterways.	ll, waste material
	. 4	At borrow sites, design temporary crossings to m waterways in strict conf provincial and federal e regulations.	inimize erosion to ormance with
	.5	Do not skid logs or cons across waterways.	truction materials
	.6	Avoid indicated spawning	beds when

waterways.

.7 Do not blast within 100 m of spawning beds.

constructing temporary crossings of

.8 Do not refuel any type of equipment within 100 m of a water body. Maintain equipment in good working condition with no fluid leaks, loose hoses or fittings.

	ENVIRONMENTAL PROCEDURES	Section 01 35 43
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1.8 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 beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads and around entire construction site.
- .5 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when storage began.
- .6 Have emergency spill response equipment and rapid clean-up kit, appropriate to work, at site. Locate adjacent to work and where hazardous materials are stored. Provide personal protective equipment as required for clean-up.
- .7 Report, to Federal and Provincial Department of the Environment, spills of petroleum and other hazardous materials as well as accidents having potential of polluting the environment. Also notify Departmental Representative and submit a written spill report to Departmental Representative within 24 hours of occurrence.
- .8 Provide a floating debris containment boom whenever any of the Contractors methods of work allow for the potential of floating

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debris.

1.9 WILDLIFE PROTECTION

- .1 Should nests of migratory birds in wetlands be encountered during work, immediately notify Departmental Representative for directives to be followed.
 - .1 Do not disturb nest site and neighbouring vegetation until nesting is completed.
 - .2 Minimize work immediately adjacent to such areas until nesting is completed.
 - .3 Protect these areas by following recommendations of Canadian Wildlife Service.

		TESTING AND QUALITY	Section 01 45 00
Harbour Divestiture		CONTROL	
Mortier, NL			Page 1
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1.1 SECTION INCLUDES	.1	Inspection and testing, enforcement requirement	
	. 2	Tests and mix designs.	
	.3	Mill tests.	
1.2 RELATED SECTIONS	.1	Section 01 33 00 - Subm	ittal Procedures.
SECTIONS	. 2	Section 01 78 00 - Clos	eout Submittals.
1.3 INSPECTION	.1	Facilitate Departmental access to Work. If part fabricated at locations construction site, make access to such Work whe progress.	of Work is being other than preparations to allow
	. 2	Give timely notice requested work designated for spesins or approval Representative or by in having jurisdiction.	cial tests, s by Departmental
	.3	If Contractor covers or work designated for specins or approvals uncover Work until partitests have been fully a completed and until such Representative gives per Pay costs to uncover and	cial tests, sections before such is made, cular inspections or nd satisfactorily time as Departmental rmission to proceed.
	. 4	In accordance with the Departmental Representa part of Work to be exam suspected to be not in	tive may order any ined if Work is

Contract Documents.

	TESTING AND QUALITY CONTROL	Section 01 45 00
Harbour Divestiture		
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1.4 INDEPENDENT INSPECTION AGENCIES

- .1 Departmental Representative may engage and pay for service of Independent Inspection and Testing Agencies for purpose of inspecting and testing portions of Work except for the following which remain part of Contractor's responsibilities:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests as specified within various sections designated to be carried out by Contractor under the supervision of Departmental Representative.
 - .6 Additional tests specified in Clause 1.4.2.
- .2 Where tests or inspections by designated
 Testing Agency reveal work not in accordance
 with contract requirements, Contractor shall
 pay costs for additional tests or inspections
 as Departmental Representative may require
 to verify acceptability of corrected work.
- .3 Employment of inspection and testing agencies by Departmental Representative does not relax responsibility to perform Work in accordance with Contract Documents.

1.5 ACCESS TO WORK

- .1 Furnish labour and facility to provide access to the work being inspected and tested.
- .2 Co-operate to facilitate such inspections and tests.

		TESTING AND QUALITY CONTROL	Section 01 45 00
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	.3	Make good work disturbed tests.	by inspections and
1.6 PROCEDURES	.1	Notify Departmental Represufficiently in advance of for tests, in order for I Representative to make at arrangements with Testing directed by Departmental notify such Agency direct	when work is ready epartmental tendance Agency. When Representative,
	. 2	Submit representative same specified to be tested. If quantities to Testing Age reasonable promptness and sequence so as not to cause	Deliver in required ency. Submit with lin an orderly
	.3	Provide labour and faciling handle samples on site. If space on site for Testing use to store equipment and	Provide sufficient Agency's exclusive
1.7 REJECTED WORK	.1	Remove and replace defect result of poor workmanshi or damaged products and wh in Work or not, which has Departmental Representati conform to Contract Docum	p, use of defective nether incorporated been identified by we as failing to
	. 2	Make good damages to exist including work of other Confront removal or replacement work.	ontracts, resulting
1.8 TESTING BY CONTRACTOR	.1	Provide all necessary instand qualified personnel to designated as Contractor herein or elsewhere in the Documents.	o perform tests s responsibilities

At completion of tests, turn over 2 copies

. 2

	TESTING AND QUALITY CONTROL	Section 01 45 00
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of fully documented test reports to Departmental Representative.

- .3 Submit mill test certificates and other certificates as specified in various sections.
- .4 Furnish test results and mix designs as specified in various sections.

		TEMPORARY FACILITIES	Section 01 50 00
Harbour Divestiture Mortier, NL P/N: R.721640			Page 1 2016-02-01
1.1 ACCESS	.1	Provide and maintain ad project site.	lequate access to
	. 2	Maintain access roads f contract and make good of Contractors' use of roa	damage resulting from
1.2 CONTRACTOR'S SITE OFFICE	.1	Be responsible for and office, if required, in heat, lights and teleph office as directed by Depresentative.	cluding electricity none. Locate site
1.3 DEPARTMENTAL REPRESENTATIVE'S SITE OFFICE	.1	Provide or construct a for the use of the Depa Representative and the The building must be incommencement of work.	rtmental Site Representative
	. 2	Provide heating system inside temperature.	
	.3	The building will be ap x 3600 mm. It will have covered with a weatherp; with plywood or other ap floor will be of 19 mm the provided with suitabl 1 m² of glass and arrange 0.5 m² of screened open fitted with a lockset a	e a suitable frame roof siding and lined pproved material. The nick material. It will e window with at least ed to provide at leasting. The door will be
	. 4	The office will be equichair and a 900 mm x 15 hinged, smooth wooden to	000 mm table having

drafting.

.5

Install electrical lighting system to provide

minimum 750 lux using surface mounted,

		TEMPORARY FACILITIES	Section 01 50 00
		TEM ONANT PACIFITIES	beceion of 50 00
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		shielded commercial fixt light component.	ures with 10% upward
	.6	Maintain office in clear	n condition.
	.7	Arrange and pay for telemachine in the Department Office for Site Represeruse. Long distance calls this phone by the Department or the Site Representation the Departmental Representation	tal Representative's ntative's exclusive s or faxes placed on ental Representative ive will be paid by
	.8	Contractor may, on approach Representative, provide phone. If approval to us phone is granted, be reservices, airtime, licensfees, and all other fees to utilize the phone as manufacturer.	cellular or mobile e cellular or mobile sponsible for all se and network access or charges required
1.4 SANITARY FACILITIES	.1	Provide sanitary facilit in accordance with gover ordinances.	
	. 2	Post notices and take surequired by local health area and premises in sar	n authorities. Keep
1.5 POWER	.1	Arrange, pay for and mai electrical power supply governing regulations ar	in accordance with
	.2	Supply and install all to for power such as pole locables to approval of locauthority.	ines and underground
1.6 WATER SUPPLY	.1	Arrange, pay for and main supply in accordance wit	

		TEMPORARY FACILITIES	Section 01 50 00
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		regulations and ordinanc	es.
1.7 SCAFFOLDING	.1	Design, construct and main rigid, secure and safe with CSA797-09.	
	. 2	Erect scaffolding indepe Remove when no longer re	
1.8 CONSTRUCTION SIGN AND NOTICES	.1	Contractor or subcontraction signboards are not permi	
	. 2	Only notices of safety of permitted on site.	r instructions are
	.3	Safety and Instruction S .1 Signs and notices f instruction shall be in languages.	or safety and
	. 4	Maintenance and Disposal .1 Maintain approved s good condition for durat dispose of off site on coor earlier if directed be Representative.	igns and notices in ion of project and ompletion of project
1.9 REMOVAL OF TEMPORARY	.1	Remove temporary facilit directed by Departmental	

FACILITIES

	TEMPORARY BARRIERS AND	Section 01 56 00
	ENCLOSURES	
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PART 1 - GENERAL

PART 1 - GENERAL		
1.1 SECTION INCLUDES	.1	Barriers.
	. 2	Traffic Controls.
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 HOARDING	.1	Erect temporary site enclosure using new 1.2 m high snow fence wired to rolled steel "T" bar fence posts spaced at 2.4 m centres. Provide one lockable truck gate. Maintain fence in good repair.
1.4 GUARD RAILS AND BARRICADES	.1	Provide secure, rigid guard rails and barricades around open excavations.
	. 2	Provide barricades along wharf structure when wheelguard is removed.
	.3	Provide as required by governing authorities.
1.5 ACCESS TO SITE	.1	Provide and maintain access to adjacent harbour facilities.
1.6 PUBLIC TRAFFIC FLOW	.1	Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform work and protect the public.
1.7 FIRE ROUTES	.1	Maintain access to property including

	ı	TEMPORARY BARRIERS AND ENCLOSURES	Section 01 56 00
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		overhead clearances for uresponse vehicles.	se by emergency
1.8 PROTECTION FOR	.1	Protect surrounding priva	te and public

- 1.8 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.

	SITE MONITOR'S CAMP	Section 01 59 20
	AND BOARD	
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1.1 DESCRIPTION

- .1 This section specifies requirements for board, lodgings and related services to be provided by the Contractor for the Site Monitor.
- .2 Due to the location of this site, it is a requirement of this contract that the Contractor provide and pay for all board and lodgings (within 5km of the project site) for the Site Monitor's sole use for the duration of the project. Provide for and maintain acceptable living accommodations on site for the Site Monitor's sole use. The minimum requirement would be a self-contained unit with private sleeping accommodation and shower or bath or other arrangement approved by the Departmental Representative.

1.2 BOARD AND LODGINGS

- .1 For the purpose of this contract board and lodgings shall include but not necessarily be limited to: sleeping accommodation, meals and dining facilities, washroom facilities, laundry facilities, electrical and heating service, linens and bedding, etc. and any reasonable service as directed by the Departmental Representative.
- .2 Board and lodgings must be approved by the Departmental Representative and Contractor will cooperate in providing all services required to maintain an acceptable standard of living during construction period.
- .3 The Contractor shall include all calendar days, including weekends and statutory holidays in determining the cost.

	SITE MONITOR'S CAMP	Section 01 59 20
	AND BOARD	
Harbour Divestiture		
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1.3 REQUIREMENTS OF REGULATORY AGENCIES

- .1 Comply with any or all applicable Agencies regulation of the Province of Newfoundland and Labrador, relating to the set-up, servicing and maintenance of accommodations for the Site Monitor.
- .2 Obtain and pay for any permits which may be required and comply to regulations of same.

	COMMON PRODUCT	Section 01 61 00
	REQUIREMENTS	beceron or or ov
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1.1 GENERAL

- .1 Use new material and equipment unless otherwise specified.
- .2 Within 7 days of written request by
 Departmental Representative, submit
 following information for any materials and
 products proposed for supply:
 - .1 name and address of manufacturer;
 - .2 trade name, model and catalogue number;
 - .3 performance, descriptive and test data;
 - .4 manufacturer's installation or application instructions;
 - .5 evidence of arrangements to procure.
 - .6 evidence of manufacturer delivery problems or unforseen delays.
- .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
- .4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.
- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.2 PRODUCT QUALITY AND REFERENCED STANDARDS

- .1 Contractor shall be solely responsible for submitting relevant technical data and independent test reports to confirm whether a product or system proposed for use meets contract requirements and specified standards.
- .2 Final decision as to whether a product or system meets contract requirements rest solely with the Departmental Representative

The last Plant III		COMMON PRODUCT REQUIREMENTS	Section 01 61 00
Harbour Divestiture Mortier, NL P/N: R.721640			Page 2 2016-02-01
		in accordance with the	General Conditions.
1.3 ACCEPTABLE MATERIALS AND ALTERNATIVES	.1	Acceptable Materials: We specified include trade or manufacturer's or surrof the material descriptuse one of the names listinto the Work.	names or trade marks pplier's name as part tion, select and only
	.2	Alternative Materials: alternative materials to manufacturer's names specified the bidding periprocedures indicated in Bidders.	to trade names or pecified must be done and following
	.3	Substitutions: After ac substitution of a speci dealt with as a change accordance with the Gene Contract.	fied material will be to the Work in
1.4 MANUFACTURERS INSTRUCTIONS	.1	Unless otherwise specific manufacturer's latest properties for materials and instaused. Do not rely on laprovided with products. instructions directly for the specific structions of the specific structions.	printed instructions llation methods to be abels or enclosure Obtain written
	. 2	Notify Departmental repuriting of any conflict specifications and manufinstructions, so that Expresentative will desis to be followed.	between these facturers Departmental
1.5 AVAILABILITY	1	Immediately notify Deparementative in writing unanticipated material manufacturer. Provide sas per Clause 1.1.2 about	ng of unforeseen or delivery problems by support documentation

		COMMON PRODUCT REQUIREMENTS	Section 01 61 00	
Harbour Divestiture		_		
Mortier, NL			Page 3	
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1.6 WORKMANSHIP	1	Ensure quality of work i executed by workers expin respective duties for employed.	perienced and skilled	
	. 2		Remove unsuitable or incompetent workers from site as stipulated in General Conditions.	
	.3	Ensure cooperation of workers in laying out work. Maintain efficient and continuous supervision on site at all times.		
	. 4	Coordinate work between subcontractors.	n trades and	
	.5	Coordinate placement of accessories.	openings, sleeves and	
1.7 FASTENINGS - GENERAL	.1	Provide metal fastening same texture, colour and in which they occur. Praction between dissiminant non-corrosive fasteners for securing exterior we	d finish as base metal revent electrolytic lar metals. Use s, anchors and spacers	
	. 2	Space anchors within 1 or shear capacity and en positive permanent anch material plugs not accompany and accompany to the second	sure that they provide orage. Wood or organic	
	.3	Keep exposed fastenings evenly and lay out near		
	. 4	Fastenings which cause of material to which an not acceptable.		

Do not use explosive actuated fastening devices unless approved by Departmental Representative. See Section 01 35 29 on

Health and Safety in this regard.

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		COMMON PRODUCT Section 01 61 00 REQUIREMENTS
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1.8 FASTENINGS - EQUIPMENT	.1	Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
	.2	Use heavy hexagon heads, semi-finished unless otherwise specified.
	.3	Bolts may not project more than one diameter beyond nuts.
	. 4	Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur and, use resilient washers with stainless steel.

1.9 STORAGE, HANDLING AND PROTECTION

- .1 Deliver, handle and store materials in manner to prevent deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled materials in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work. Provide additional cover where manufacturer's packaging is insufficient to provide adequate protection.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

	COMMON PRODUCT REQUIREMENTS	Section 01 61 00
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- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Immediately remove damaged or rejected materials from site.
- .9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.10 CONSTRUCTION EQUIPMENT AND PLANT

- .1 On request, prove to the satisfaction of Departmental Representative that the construction equipment and plant are adequate to manufacture, transport, place and finish work to quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed.
- .2 Maintain construction equipment and plant in good operating order. Prevent oil and other contaminant leaks. Should any contaminant leak onto ground or into the water, take immediate and appropriate measures to contain, cleanup and dispose in an environmentally responsible manner.

	CLEANING	Section 01 74 11
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PART 1 - GENERAL

1.1 GENERAL	.1	Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
	.2	Store volatile waste in covered metal containers, and remove from premises at end of each working day.
	.3	Prevent accumulation of wastes which create hazardous conditions.
	. 4	Provide adequate ventilation during use of volatile or noxious substances.
1.2 MATERIALS	.1	Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
1.3 CLEANING DURING CONSTRUCTION	.1	Maintain project grounds and public properties in a tidy condition, free from accumulations of waste material and debris. Clean areas on a daily basis.
	.2	Provide on-site garbage containers for collection of waste materials and debris.
	.3	Remove waste materials and debris from site on a daily basis.
1.4 FINAL CLEANING	.1	In preparation for acceptance of the Work perform final cleaning.

Inspect finishes, fitments and equipment. Ensure specified workmanship and operation.

. 2

	CLEANING	Section 01 74 11
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.3 Broom clean exterior paved and concrete surfaces; rake clean other surfaces of grounds.

Harbour Divestiture		STRUCTION/DEMOLITION WASTE Section 01 74 21 ANAGEMENT AND DISPOSAL
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1.1 RELATED SECTIONS	.1	Section 01 35 43 - Environment Procedures.
	. 2	Section 02 41 16 - Sitework, Demolition and Removal.
	.3	Section 06 05 73 - Wood Treatment.
	. 4	Section 31 53 13 - Timber Cribwork.
	. 5	Section 31 53 16 - Structural Timber.
1.2 WASTE MANAGEMENT PLAN	.1	Prior to commencement of work, prepare waste Management Workplan.
	.2	Workplan to include: .1 Waste audit2 Waste reduction practices3 Material source separation process4 Procedures for sending recyclables to recycling facilities5 Procedures for sending non-salvageable items and waste to approved waste processing facility or landfill site6 Training and supervising workforce on waste management at site.
	.3	Workplan to incorporate waste management requirements specified herein and in other sections of the Specifications.
	. 4	Develop Workplan in collaboration with all subcontractors to ensure all waste management issues and opportunities are addressed.
	.5	Submit copy of Workplan to Departmental Representative for review and approval. 1 Make revisions to Plan as directed by Departmental Representative.
	.6	Implement and manage all aspects of Waste Management Workplan for duration of work.

Harbour Divoctitums		STRUCTION/DEMOLITION WASTE ANAGEMENT AND DISPOSAL	Section 01 74 21
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	. 7	Revise Plan as work progres opportunities for diversional landfill.	_
1.3 WASTE AUDIT	.1	At project start-up, condu .1 Site conditions ident and non-salvageable items a from demolition and remova .2 Projected waste resul packaging and from materia installation work.	ifying salvageable and waste resulting al work. Iting from product
	.2	Develop written list. Recomposition and quantity of salvageable items and waste reasons for waste generation factors which contribute to	of various te anticipated, on and operational
1.4 WASTE REDUCTION	.1	Based on waste audit, devel program.	op waste reduction
	.2	Structure program to priori waste reduction as first property by salvage and recycling edisposal as solid waste.	oriority, followed
	.3	Identify materials and equal 1 Protected and turned Departmental Representative 2 Salvaged for resale key. 3 Sent to recycling factors 4 Sent to waste process for their recycling effort 5.5 Disposed of in approximate 1.5.	over to ve when indicated. by Contractor. cility. sing/landfill site
	. 4	Reduce construction waste installation work. Underta will minimize waste and op new materials on site, such	ke practices which timize full use of

.1 Use of a central cutting area to allow

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for easy access to off-cuts;

- .2 Use of off-cuts for blocking and bridging elsewhere.
- .3 Use of effective and strategically placed facilities on site for storage and staging of left-over or partially cut materials to allow for easy incorporation into work whenever possible avoiding unnecessary waste.
- .5 Develop other strategies and innovative procedures to reduce waste such as minimizing the extent of packaging used for delivery of materials to site, etc.

1.5 MATERIAL SOURCE SEPARATION PROCESS

- .1 Develop and implement material source separation process at commencement of work as part of mobilization and waste management at site.
- .2 Provide on-site facilities to collect, handle and store anticipated quantities of reusable, salvageable and recyclable materials.
 - .1 Use suitable containers for individual collection of items based on intended purpose.
 - .2 Locate to facilitate deposit but without hindering daily operations of existing building tenants.
 - .3 Clearly mark containers and stockpiles as to purpose and use.
- .3 Perform demolition and removal of existing structure components and equipment following a systematic deconstruction process.
 - .1 Separate materials and equipment at source, carefully dismantling, labelling and stockpiling alike items for the following purposes:
 - .1 Reinstallation into the work where indicated.
 - 2 Salvaging reusable items not

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needed in project which Contractor may sell to other parties. Sale of such items not permitted on site.

- .3 Sending as many items as possible to locally available recycling facility.
- .4 Segregating remaining waste and debris into various individual waste categories for disposal in a "non-mixed state" as recommended by waste processing/landfill sites.
- .4 Isolate product packaging and delivery containers from general waste stream. Send to recycling facility or return to supplier/manufacturer.
- .5 Send leftover material resulting from installation work for recycling whenever possible.
- .6 Establish methods whereby hazardous and toxic waste materials, and their containers, encountered or used in the course work are properly isolated, stored on site and disposed in accordance with applicable laws and regulations from authorities having jurisdiction.
- .7 Isolate and store existing materials and equipment identified for re-incorporation into the Work. Protect against damage.

1.6 WORKER TRAINING AND SUPERVISION

- .1 Provide adequate training to workforce, through meetings and demonstrations, to emphasize purpose and worker responsibilities in carrying out the Waste Management Plan.
- .2 Waste Management Coordinator: designate full-time person on site, experienced in waste management and having knowledge of the

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		purpose and content of Was	te Management Plan
		to: .1 Oversee and supervise during work2 Provide instructions all workers and subcontrac reduction, source separate practices.	and directions to
	.3	Post a copy of Plan in a pon site for review by work	
1.7 CERTIFICATION OF MATERIAL DIVERSION	.1	Submit to Departmental Repropersion of certified weigh authorized waste processing receipts from recycling/reconfirming receipt of build quantity of waste diverted	bills from ng sites and sale euse facilities ding materials and
	. 2	Submit data at pre-determined landscape as determined landscape.	
	.3	Compare actual quantities landfill with projections audit.	
1.8 DISPOSAL REQUIREMENTS	.1	Burying or burning of ruble materials is prohibited.	oish and waste
	. 2	Disposal of waste, volation mineral spirits, oil, pair or unused preservative materways, storm, or sanitaprohibited.	nt, paint thinner terial into
	.3	Do not dispose of preservathrough incineration.	ative treated wood
	. 4	Do not dispose of preservation with other materials desting	

or reuse.

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- .5 Dispose of treated wood, end pieces, wood scraps and sawdust at a sanitary landfill.
- .6 Dispose of waste only at approved waste processing facility or landfill sites approved by authority having jurisdiction.
- .7 Contact the authority having jurisdiction prior to commencement of work, to determine what, if any, demolition and construction waste materials have been banned from disposal in landfills and at transfer stations. Take appropriate action to isolate such banned materials at site of work and dispose in strict accordance with provincial and municipal regulations.
- .8 Transport waste intended for landfill in separated condition, following rules and recommendations of Landfill Operator in support of their effort to divert, recycle and reduce amount of solid waste placed in landfill.
- .9 Collect, bundle and transport salvaged materials to be recycled in separated categories and condition as directed by recycling facility. Ship materials only to approved recycling facilities.
- .10 Sale of salvaged items by Contractor to other parties not permitted on site.

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1.1 SECTION INCLUDES

- .1 Project Record Documents as follows:
 - .1 As-built drawings;
 - .2 As-built specifications;
 - .3 Reviewed shop drawings.

1.2 PROJECT RECORD DOCUMENTS

- .1 Departmental Representative will provide two white print sets of contract drawings and two copies of Specifications Manual specifically for "as-built" purposes.
- .2 Maintain at site one set of the contract drawings and specifications to record actual as-built site conditions.
- .3 Maintain up-to-date, real time as-built drawings and specifications in good condition and make available for inspection by the Departmental Representative at any time during construction.

.4 As-Built Drawings:

- .1 Record changes in red ink on the prints. Mark only on one set of prints and at completion of project and prior to final inspection, neatly transfer notations to second set (also by use of red ink). Submit both sets to Departmental Representative. All drawings of both sets shall be stamped "As-Built Drawings" and be signed and dated by Contractor.
- .2 Show all modifications, substitutions and deviations from what is shown on the contract drawings or in specifications.
- .3 Record following information:
 - .1 Horizontal and vertical location of various elements in relation to Geodetic Datum.
 - .2 Field changes of dimension and detail.
 - .3 All design elevations, sections, and details dimensioned and marked-up to consistently report finished

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installation conditions.

- .4 Any details produced in the course of the contract by the Departmental Representative to supplement or to change existing design drawings must also be marked-up and dimensioned to reflect final as-built conditions and appended to the as-built drawing document.
- .5 All change orders issued over the course of the contract must be documented on the finished as-built documents, accurately and consistently depicting the changed condition as it applies to all affected drawing details.
- .5 As-built Specifications: legibly mark in red each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly items substituted from that specified.
 - .2 Changes made by Addenda and Change Orders.
 - .3 Mark up both copies of specifications; stamp "as-built", sign and date similarly to drawings as per above clause.
- .6 Maintain As-built documents current as the contract progresses. Departmental Representative will conduct reviews and inspections of the documents on a regular basis. Frequency of reviews will be subject to Departmental Representative's discretion. Failure to maintain as-builts current and complete to satisfaction of the Departmental Representative shall be subject to financial penalties in the form of progress payment reductions and holdback assessments.

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1.3 REVIEWED .1 Compile 2 full sets of all reviewed shop drawings.

	SITEWORK, DEMOLITION AND	Section 02 41 16
	REMOVAL	
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PART 1 - GENERAL

1.1 DESCRIPTION

- .1 This section specifies requirements for demolishing and removing wholly or in part various items designated to be removed or partially removed.
- .2 Demolition and removal will consist of, but not necessarily be limited to, the following:
 - .1 Demolition and removal of the existing wharf, as noted on the drawings. Submit an underwater diving video after demolition is complete, confirming all debris has been removed from the harbour bottom.
 - .2 Demolition and removal of the existing marginal infrastructure, as noted on the drawings.
 - .3 Protection (and extension where required), of the existing sewer lines, which are in close proximity to the site.

1.2 GENERAL REQUIREMENTS

- .1 A Notice to Shipping is to be issued prior to commencement and upon completion of work.
- .2 During construction, any vessels or barges utilized must be marked in accordance with the provisions of the Canada Shipping Act Collision Regulations.
- .3 Upon completion of the project, a written Notice to Mariners must be issued.

1.3 PROTECTION

.1 Protect existing objects designated to remain. In event of damage, immediately replace or make repairs to approval of and at no additional cost to Canada.

	,		DEMOLITION REMOVAL	AND	Section 02 41	16
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	.2		floating bo ion site to ls.			
	.3		all floating and timely		from water on a	a
PART 2 - PRODUCTS						
NOT APPLICABLE						
PART 3 - EXECUTION						
3.1 EXECUTION	.1	_	ntative obje	_	th Departmental ignated for	
	.2	in oper	-	-	lines. Preserve ive utilities	е
3.2 REMOVAL	.1		in their ent specified f	_	ll materials and val.	d
	.2		disturb adja in place.	.cent woi	rk designated to	0
3.3 DISPOSAL OF MATERIAL	.1	designa of cont and dis Departm accorda is the s to disp	ted to be reuractor and wo posed of to ental Repressible with envisole responsions of all de	sed, wild be a satisfaction sat		ty te It or an

	SITEWORK, DEMOLITION AND	Section 02 41 16
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site is approved and willing to accommodate any materials disposed of from work site.

.2 Contractor shall obtain and pay for all necessary permits and disposal fees for use of an approved waste disposal site.

3.4 RESTORATION

- .1 Upon completion of work, remove debris, trim surfaces and leave work site in clean condition.
- .2 Reinstate areas and existing works outside areas of demolition to conditions that existed prior to commencement of work.

	WOOD TREATMENT	Section 06 05 73
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PART 1 - GENERAL		
1.1 REFERENCES	1	American Wood-Preservers' Association (AWPA) .1 AWPA M2-01, Standard Inspection of Treated Wood Products2 AWPA M4-06, Standard for the Care of Preservative-Treated Wood Products.
	. 2	Canadian Standards Association (CSA) .1 CSA 080 Series-97 (R2007), Wood Preservation2 CSA 080.201-97, Standard for Hydrocarbon Solvents for Preservatives. This Standard covers hydrocarbon solvents for preparing solutions of preservatives. This is not stand alone specification .3 CSA 0322-02, Procedure for Certification of Pressure-Treated Wood Materials for Use in Preserved Wood Foundations.
1.2 QUALITY ASSURANCE	.1	Testing of products treated with preservative by pressure impregnation will be carried out by the manufacturer's testing laboratory to AWPA M2, and revisions specified in CSA 080 Series, Supplementary Requirements to AWPA M2.
	. 2	Inspection and testing of timber materials will be carried out by the manufacturer.
1.3 CERTIFICATES AND ASSAY	.1	Submit certificates and assay retention results in accordance with Section 01 33 00

RETENTION RESULTS

- Submittal Procedures.
- . 2 For products treated with preservative by pressure impregnation submit following information certified by authorized signing officer of treatment plant:

		WOOD TREATMENT	Section 06 05 73
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		treatment with water-box .3 Assay retentions re each treated batch of s	CSA 080 Series, nt to AWPA M2 treatment. Eter drying following rne preservative. esults representing upplied timber. f paint, stain, and be used over treated
1.4 WASTE MANAGEMENT AND DISPOSAL	.1	Do not dispose of present through incineration.	rvative treated wood
	.2	Do not dispose of preservith other materials de or reuse.	
	.3	Dispose of treated wood scraps and sawdust at s approved by Departmenta	anitary landfill
	. 4	Dispose of unused wood p at official hazardous ma site approved by Departa Representative.	aterial collections
	.5	Do not dispose of unused material into sewer systakes, onto ground or in they will pose health of hazard.	tem, into streams, other location where
PART 2 - PRODUCTS			
2.1 MATERIALS	.1	Preservative: to CSA-08	O Series.
	. 2	Solvent: to CSA-080.201	
2.2 PRESERVATIVE	.1	Treat to CSA 080, commod	ity standard 080.18,

	WOOD TREATMENT	Section 06 05 73
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TREATMENTS

Table 1 and its referenced standards, with the following minimum assay retentions:

Species	CCA kg/m3	ACA kg/m3
Dimension Timber		
-Coast Douglas Fir -Western/Eastern	24	24
Hemlock	24	24
-Hemlock, Douglas Fir		
(Wheelguard, Wheelguard Blocking)	10	10
-Birch or Maple	Treat to	Refusal

Note: Birch or maple must be air dried for six (6) months in weather protected environment or kiln dried.

PART 3 - EXECUTION

3.1 FIELD TREATMENT

- .1 Handle pressure treated material in a manner that will avoid damage which may expose untreated material. Rejection of any damaged material may result and replacement will be at the Contractor's expense.
- .2 Fill all bored bolt holes with preservative immediately after boring. Use a pressurized container with hose to apply preservative, or some alternate method acceptable to the Departmental Representative.
- .3 Fill all unused bored holes and spike holes with tight fitting treated wooden plugs.

3.2 CUTTING

.1 Field cuts, if authorized, are to receive

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three (3) liberal coats of the applicable preservative applied to dry wood on each application.

3.3 FIELD QUALITY

- .1 Timber which contain rot, splits exposing untreated wood, excessive wane, or timbers which cannot be fastened in the work so as to be structurally sound are unacceptable.
- .2 The Departmental Representative reserves the right to carry out field testing of treated timber for penetration and retention of preservative. Timber not meeting the requirements of the specification may be rejected for use under the contract.

		JOINT SEALING	Section 07 92 10
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PART 1 - GENERAL			
1.1 SECTION INCLUDES	.1	Materials, preparation and caulking and sealants.	d application for
1.2 RELATED SECTIONS	.1	Section 01 33 00 - Submit	tal Procedures.
	.2	Section 01 45 00 - Testing Control.	g and Quality
	.3	Section 01 61 00 - Common Requirements.	Product
	. 4	Section 01 74 21 - Constru Waste Management and Disp	•
1.3 REFERENCES	.1	Canadian General Standard	s Board (CGSB)
	.2	CAN/CGSB-19.24-M90, Multi Chemical Curing Sealing C	
	.3	Department of Justice Canal. 1 Canadian Environmental 1999 (CEPA).	
	. 4	Health Canada/Workplace Ho Information System (WHMIS .1 Material Safety Data)
	.5	Transport Canada (TC) .1 Transportation of Date 1992 (TDGA).	ngerous Goods Act,
1.4 SUBMITTALS	.1	Submit product data in acceptation 01 33 00 - Submit	tal Procedures.

Manufacturer's product to describe.

.1 Caulking compound.

.2 Primers.

. 2

		JOINT SEALING	Section 07 92 10
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		.3 Sealing compound, compatibility when diff contact with each other	
	.3	Submit manufacturer's accordance with Section Procedures1 Instructions to instructions for each	n 01 33 00 - Submittal nclude installation
1.5 DELIVERY, STORAGE, AND HANDLING	.1	Deliver, handle, store in accordance with Sect Product Requirements.	_
	.2	Deliver and store mate: wrappings and container seals and labels, intacfreezing, moisture, warground or floor.	rs with manufacturer's ct. Protect from
1.6 WASTE MANAGEMENT AND DISPOSAL	.1	Separate waste material recycling in accordance - Construction/Demolitand Disposal.	with Section 01 74 21
	. 2	Remove from site and damaterials at appropriations.	
	. 3	Collect and separate for plastic, polystyrene, or packaging material, in bins, for recycling in Management Plan.	corrugated cardboard, appropriate on-site

. 4

.5 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and

in designated containers.

Place materials defined as hazardous or toxic

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Municipal regulations.

- .6 Unused sealant material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
- .7 Divert unused joint sealing material from landfill to official hazardous material collections site approved by Departmental Representative.
- .8 Empty plastic joint sealer containers are not recyclable. Do not dispose of empty containers with plastic materials destined for recycling.
- .9 Fold up metal banding, flatten, and place in designated area for recycling.

1.7 PROJECT CONDITIONS

- .1 Environmental Limitations:
 - .1 Do not proceed with installation of joint sealants under following conditions:
 - .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C.
 - .2 When joint substrates are wet.
- .2 Joint-Width Conditions:
 - .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions:
 - .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

		JOINT SEALING	Section 07 92 10
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1.8 ENVIRONMENTAL REQUIREMENTS	.1	Comply with requirement Hazardous Materials Inf (WHMIS) regarding use, he disposal of hazardous magarding labeling and passety Data Sheets (MSI Labour Canada.	Formation System Landling, storage, and Laterials; and Lorovision of Material
	. 2	Conform to manufacturer temperatures, relative substrate moisture contand curing of sealants conditions governing us	humidity, and ent for application including special
PART 2 - PRODUCTS			
2.1 SEALANT MATERIALS	.1	Where sealants are quali only these primers.	fied with primers use
2.2 SEALANT	.1	Polysulfide Two Part.	
MATERIAL DESIGNATIONS	. 2	Self-Leveling to CAN/CG Class B, colour to matc	
	.3	Polysulfide Two Part1 Non-Sag to CAN/CGSE B, colour to match cond	3-19.24, Type 2, Class crete.
	. 4	back-up materials1 Polyethylene, Uret Vinyl Foam1 Extruded clos rod2 Size: oversiz .2 Neoprene or Butyl	chane, Neoprene or sed cell foam backer se 30 to 50%.

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		JOINT SEALING Section 07 92 10
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		.3 High Density Foam. .1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m³ density, or neoprene foam backer, size as recommended by manufacturer. .4 Bond Breaker Tape. .1 Polyethylene bond breaker tape which will not bond to sealant.
2.3 JOINT CLEANER	.1	Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.
	. 2	Primer: as recommended by manufacturer.
PART 3 - EXECUTION		
3.1 PROTECTION	.1	Protect installed Work of other trades from staining or contamination.
3.2 SURFACE PREPARATION	.1	Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
	. 2	Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work.
	.3	Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests

have been performed to ensure compatibility of materials. Remove coatings as required.

		JOINT SEALING	Section 07 92 10
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	. 4	Ensure joint surfaces a	re dry and frost free.
	.5	Prepare surfaces in acc manufacturer's direction	
3.3 PRIMING	.1	Where necessary to prevadjacent surfaces prior caulking.	_
	. 2	Prime sides of joints i sealant manufacturer's immediately prior to ca	instructions
3.4 BACKUP MATERIAL	.1	Apply bond breaker tape manufacturer's instruct	-
	.2	Install joint filler to depth and shape, with a compression.	_
3.5 MIXING	.1	Mix materials in strict sealant manufacturer's	
3.6 APPLICATION	.1	nozzle5 Use sufficient preand joints solid.	instructions. It where irregular bint border exists to

smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.

	JOINT SEALING	Section 07 92 10
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- .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
- .8 Remove excess compound promptly as work progresses and upon completion.

.2 Curing.

- .1 Cure sealants in accordance with sealant manufacturer's instructions.
- .2 Do not cover up sealants until proper curing has taken place.

.3 Cleanup.

- .1 Clean adjacent surfaces immediately and leave Work neat and clean.
- .2 Remove excess and droppings, using recommended cleaners as work progresses.
- .3 Remove masking tape after initial set of sealant.

	ROCK AND GRAVEL FILL	Section 31 23 25
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PART 1 - GENERAL

1.1 DESCRIPTION

.1 This section specifies supply, placement and compaction of rock and gravel fill. The areas requiring rock/gravel fill are shown on the drawings, and the Contractor will make his own assessment of the quantities required to meet the lines and grades shown on the drawings.

Rock/gravel fill will not be measured separately for payment, as these costs are to be included in the lump sum arrangement.

PART 2 - PRODUCTS

2.1 ROCK FILL

- .1 Rock fill will be of hard, durable, evenly graded blasted stone having a maximum diameter of 300 mm in major portion of fill and a maximum diameter of 150 mm in upper 600 mm of rock fill. Fill material will contain not more than 6 percent by weight passing the 25 mm sieve. Rock fill to be evenly graded within the limits specified.
- .2 Use of shale rock or slate will not be permitted.

2.2 GRAVEL FILL

.1 Gravel fill will consist of hard, durable, particles of stone mixed with suitable binding material. It shall be free from flat, elongated particles and shall be well graded. When tested by means of laboratory sieves it shall fulfill requirements as follows:

Sieve	Size	%	by	Weight	Passing
56	mm			100	
16	mm			45-80	
4.75	mm			25-55	

	RC	OCK AND GRAVEL FILL	Section 31 23 25
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		. 25 mm	10-35
		.300 mm	5-15
PART 3 - EXECUTION	0.	.075 mm	3-8
3.1 PLACING ROCK FILL	.1	Only rock fill material Departmental Representa placed. Material will b across full cross-secti exceeding 300 mm loose	tive will be e placed uniformly on in layers not
	. 2	Use suitable earth moving grading equipment to planting in continuous and layers.	ace and spread rock
	.3	Compact rock fill after	each 300 mm lift.
	. 4	Place rock fill to 350 finished grade.	mm below bottom of
3.2 PLACING GRAVEL FILL	.1	Top 300 mm of fill will fill as specified in Cl	_

section.

.2 Place gravel fill in two (2) equal lifts to minimum 95% standard proctor density.

	GEOTEXTILE	Section 31 32 21
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PART 1 - GENERAL		
1.1 SECTION INCLUDES	.1	Materials and installation of polymeric geotextiles, purpose of which is to: .1 Separate and prevent mixing of granular materials of different grading2 Act as hydraulic filters permitting passage of water while retaining soil strength of granular structure.
1.2 RELATED WORK	.1	Section 01 33 00 - Submittal Procedures.
	. 2	Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
	.3	Section 31 53 13 - Timber Cribwork.
1 3 REFERENCES	. 1	American Society for Testing and Materials

1.3 REFERENCES

- American Society for Testing and Materials . 1 (ASTM)
 - ASTM D4491-99a(2004)el, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - ASTM D4595-05, Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
 - ASTM D4716-04, Standard Test Method for Determining the (In-Plane) Flow Rate Per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head.
 - ASTM D4751-04, Standard Test Method for Determining Apparent Opening Size of a Geotextile.
- . 2 Canadian General Standards Board (CGSB) CAN/CGSB-4.2-M88, Textile Test

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		.2 No.3-M85, Th Geotextiles. .3 No.7.3-92, G Geotextiles. .4 No.6.1-93, B	branes. ss per Unit Area. ickness of rab Tensile Test for ursting Strength of
		Geotextiles Under Load.	No Compressive
	.3	Canadian Standards Ass. 1 CAN/CSA-G40.20-04 Requirements for Rolle Structural Quality Ste. 2 CAN/CSA-G164-M92(Galvanizing of Irregul Articles.	/G40.21-04, General d or Welded el. R2003), Hot Dip
1.4 SAMPLES	.1	Submit samples in acco 01 33 00 - Submittal P	
	. 2	Submit to Departmental following samples at 1 to commencing work1 Minimum length of of geotextile.	
1.5 MILL CERTIFICATES	.1	Submit to Departmental copy of mill test data least 2 weeks prior to	and certificate at
1.6 DELIVERY AND STORAGE	.1	During delivery and st geotextiles from direct ultraviolet rays, exce	t sunlight, ssive heat, mud,

 $\mbox{\ensuremath{\mbox{dirt}}}$, $\mbox{\ensuremath{\mbox{dust}}}$, $\mbox{\ensuremath{\mbox{debris}}}$ and $\mbox{\ensuremath{\mbox{rodents}}}$.

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1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 Construction/Demolition Waste Management And Disposal.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, and packaging material, in appropriate on-site bins, for recycling in accordance with Waste Management Plan.
- .4 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - PRODUCTS

2.1 MATERIAL

- .1 Geotextile: woven or non-woven synthetic fibre fabric, supplied in rolls.
 - .1 Width: 3.5 m minimum.
 - .2 Length: 50 m minimum.
 - .3 Composed of: minimum 85% by mass of polyester with inhibitors added to base plastic to resist deterioration by ultraviolet and heat exposure.
- .2 Physical properties:
 - .1 Thickness: to CAN/CGSB-148.1, No.3, minimum 2.5 mm.
 - .2 Mass per unit area: to CAN/CGSB-148.1, No. 2, minimum 400 g/m^2 .
 - .3 Tensile strength and elongation (in any principal direction): to ASTM D4595.
 - .1 Tensile strength: minimum 1200 N, wet condition.

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- .2 Elongation at break: 50 to 100 percent.
- .3 Seam strength: equal to or greater than tensile strength of fabric.
- .4 Mullen burst strength: to CAN/CGSB-4.2, method 11.1, minimum 3100 kPa.
- .3 Hydraulic properties:
 - .1 Apparent opening size (AOS): to ASTM D4751, 50 to 150 micrometres.
 - .2 Permittivity: to ASTM D4491, 0.25 cm per second.
- .4 Securing pins and washers: to CAN/CSA-G40.21, Grade 300W, hot-dipped galvanized with minimum zinc coating of 600 g/m² to CAN/CSA G164.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Place one (1) layer of geotextile material from base elevation of crib to top of crib and retain in position with securing pins and washers.
- .2 Place geotextile material by unrolling onto graded surface in orientation, manner and locations indicated and retain in position with securing pins and washers.
- .3 Place geotextile material on sloping surfaces in one continuous length from toe of slope to upper extent of geotextile.
- .4 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.

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	.5	Overlap each successive strip of geotextile 600 mm over previously laid strip.			
	.6 Join successive strips of geotextile by sewing.				
	.7	Pin successive strips securing pins at mid p satisfaction of Depart Representative.	oint of lap to		
	.8	Protect installed geot displacement, damage o before, during and aft material layers.	r deterioration		
.9		After installation, collayer within 4 hours o			
		Replace damaged or det to approval of Departm Representative.	_		
.11	For full cribs, extend geotextile over top of cribwork, in portion of cribwork not containing a concrete deck.				
3.2 CLEANING	1	Remove construction desite and dispose of desenvironmentally responsanner.	bris in an		
3.3 PROTECTION	.1	Vehicular traffic not	permitted directly		

on geotextile.

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PART 1 - GENERAL

1.1 RELATED WORK .1 Section 31 53 13 - Timber Cribwork.

1.2 MEASUREMENT FOR PAYMENT

- Rock Mattress: as specified including base layer, bearing layer, the cost of all plant, labour, equipment and materials required to complete the work, will be measured in cubic metres place measure (CMPM) of material placed in work within the limits indicated. The volume of material will be determined in place from measurements taken prior to and at completion of the work. The rock mattress pay limits are shown on the drawings, and material falling outside the pay limits will not be measured separately for payment.
- Dredging Prior to Rock Mattress Placement:
 Excavation/dredging of material prior to rock mattress placement will be measured in cubic metres to within the limits indicated on the drawings. Confirm with Departmental Representative that dredged bottom is suitable for rock mattress placement, prior to installing rock mattress.
- .3 Provide a sounding survey to PWGSC, taken in the presence of the inspector, before and following placement of rock mattress. No separate payment will be made for the sounding survey.
- .4 Scour Protection: Supply and placement of scour protection, including the cost of all plant, labour, equipment and materials required to complete the work as

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specified, will not be measured for payment and is to be included in the lump sum arrangement.

1.3 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C88-05, Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
 - .2 ASTM C127-07, Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate.
 - .3 ASTM C535-03e1, Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Mattress material to following
 requirements:
 - .1 Crushed quarry stone consisting of hard durable particles free from silt, clay lumps, organic matter, frozen material and other deleterious materials, and free from splits, seams or defects likely to impair its soundness during handling or under action of water.
 - .2 Relative density (formally specific gravity): to ASTM C127 (AASHTO T85), not less than 2.65.
 - .3 Base layer will be uniformly graded quarry run rock ranging in weight from 45 to 400 kg. A minimum of 50% of the total base layer will contain stones with individual weights of 200 kg. No more than 5% by weight to be rocks weighing less than 10 kg.
 - .4 Bearing layer will be uniformly graded quarry run rock ranging in weight

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from 2 to 7 kg with average rock dimensions off 100 and 150 mm respectively. A minimum of 50% of the total bearing layer will contain stones with individual weight of 5 kg.

.2 Rock scour protection:

- .1 Quarried rock: uniformly graded.
- .2 Quarried rock: to be free from splits, seams or defects likely to impair its soundness during handling or by action of water and to approval of Departmental Representative.
- .3 Relative density (formally specific gravity): to ASTM C127, not less than 2.65.
- .4 Absorption, 1.5 to 2.0% maximum as determined by ASTM C127 test procedure.
- .5 Durability, less than 35% abrasion wear, ASTM C535 test procedure.
- .6 Sulphate Soundness Determination maximum 12% by ASTM C88.
- .7 Rock, cubical and angular in shape with ratio of maximum to minimum dimensions of less than 2.
- .8 Stone sizes for scour protection will be in the range indicated on the drawings.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Rock mattress is to be placed only after dredged bottom has been approved by Departmental Representative.
- .2 Sound area in presence of the inspector before placing mattress material, and record elevation of bottom on which mattress to be placed.

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3.2 PLACEMENT	.1	Ensure that no frozen placing.	material is used in
	.2	Do not place mattress bottom area has been a Departmental Represent	approved by
	.3	Place mattress materia dimensions as indicate	
	. 4	Prevent segregation in sizes. Do not drop mat	
	.5	Do not place material judged unsuitable by DR Representative.	
	.6	Place material immedia planned placement of t	
	.7	Level top surface of m grade. Use sweep beam as screed to level sur mattress layer. Other may be employed subject Departmental Represent	suspended from barge rface of each methods of leveling ct to approval of
	.8	In areas where the dependent mattress to be placed 600 mm required for the bearing layer, only thickness of bearing layer required crib seat elements.	is less than the ne full thickness of by place the required layer to reach the
3.3 SCOUR PROTECTION	.1	Place scour protection indicated as soon as placement of cribs.	
3.4 ROCK MATERIAL WASHED OUT OF WORK	.1	Should during the prog any rock material be w work, or through negle	vashed out of the ect of carelessness

of the Contractor or workmen or from any

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		other cause, be dumped in the work or anywhere with channel, so as to interfa- opinion of the Departmen Representative, with acti- water and/or impede navig removed by the Contractor do so by the Departmenta Any material washed out displaced beyond the com- be replaced by the Contra- to Canada.	hin the harbour or ere, in the tal ual depths of gation, it will be r when ordered to l Representative. of the work or tract limits will
3.5 TOLERANCES	.1	Surface of bearing layer with elevation as indicated elevations as indicated.	ted with mean
	.2	Surface of base layer to elevation as indicated w of surface within 100 mm indicated.	ith mean elevation
	.3	Establish mean elevation elevations taken at 2 m allow spot elevation to 6 50 mm from mean.	intervals. Do not
	. 4	Scour protection: +/-100 tolerance is not to be climits but is specified Contractor keeps with acgrades to ensure adequate adequate berthing depths	onsidered pay to ensure the ceptable lines and e protection and
3.6 TESTING	.1	Submit rock materials san to testing laboratory appropriate to testing laboratory appropriate commencement of quarry process sufficient lead time to process before start of process.	proved by the ive prior to roduction. Allow perform and report

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- .2 Contractor will be responsible for procurement of samples for testing and arrange and pay for shipment of samples to testing laboratory.
- .3 Departmental Representative will pay for costs associated with laboratory testing. The cost of retesting due to samples failing to meet the requirements of the contract will be borne by the Contractor.
- .4 Only materials satisfactorily tested and approved by the Departmental Representative will be quarried and placed in the work.

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PART 1 - GENERAL

1.1 DESCRIPTION .1 This section specifies requirements for supply and installation of treated timber and necessary fastenings for fabrication,

placing, and ballasting of timber cribwork.

1.2 RELATED SECTIONS

- .1 Section 01 74 21 Construction/Demolition Waste Management and Disposal.
- .2 Section 06 05 73 Wood Treatment.

1.3 MEASUREMENT FOR PAYMENT

- .1 <u>Treated Timber Cribwork</u>: to be measured in cubic metres (m³) of completed work which include ballast stone, treated timber, fastenings, and all plant, labour, materials and equipment to perform work.
- .2 Measure timber cribwork in cubic metres determined by product. Use following dimensions measured in place:
 - .1 Height: average of measurements taken at each vertical from bottom of lowest timber to top side of uppermost course of timber.
 - .2 Width: average of measurements between outside faces of exterior longitudinal timbers, each width measured on top ties of each row of cross ties.
 - .3 Length: measured horizontally along centre-line of crib between outside faces of exterior cross ties.
- .3 Cribwork below step will be determined by product of following dimensions measured in place:
 - .1 Height: average of measurements taken at each vertical from bottom of lowest timber to top side of uppermost course of

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timber.

- .2 Width: average of measurements between outside faces of exterior longitudinal timbers, measured at each crosstie at low water elevations.
- .3 Length: measured horizontally along centre-line of crib and parallel to level water surface between outside faces of exterior cross ties.
- .4 Cribwork above step will be determined by product of following dimensions measured in place:
 - .1 Height: average of measurements taken at each vertical from top of step crib to top of top course of timber.
 - .2 Width: average of measurements between outside faces of exterior longitudinal timbers, each width measured on top tier of each row of crossties.
 - .3 Length: measured horizontally along centre-line of crib and parallel to level water surface between outside faces of exterior cross ties.
- .5 Measurements of the vertical lengths, widths and lengths of cribwork, will be taken in the presence of both the Contractor and the Inspector and will be verified and signed by both parties on the site to avoid any disputes. Departmental Representative will make final approval in this regard, as there will be no overpayment for cribwork not actually installed in the work.

1.4 SAFETY REQUIREMENTS

.1 Worker protection:

.1 Workers must wear gloves, respirators, dust masks, long sleeved

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clothing, eye protection, protective clothing when handling, drilling, sawing, cutting or sanding preservative treated wood and applying preservative materials.

- .2 Workers must not eat, drink or smoke while applying preservative material.
- .3 Clean up spills of preservative materials immediately with absorbent material. Safely discard of absorbent material to sanitary landfill.

1.5 REFERENCES

- .1 American Society for Testing and Materials (ASTM International)
 - .1 ASTM A307-07b, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile.
 - .2 ASTM C136-06, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- .2 American Wood-Preserver's Association (AWPA)
 - .1 AWPA M4-06, Standard for the Care of Preservation Treated Wood Products.
- .3 Canadian Standards Association (CSA International)
 - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
 - .2 CAN/CSA-G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel/Structural Steel.
 - .3 CAN/CSA G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .4 CAN/CSA-080 Series-97 (R2007), Wood Preservation.
- .4 Canadian Wood Council
 - .1 Wood Design Manual.

		TIMBER CRIBWORK	Section 31 53 13
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	.5	National Lumber Grade .1 Standard Grading Lumber 2000 edition.	s Authority (NLGA) Rules for Canadian
1.6 SUBMITTALS	.1	Ballast: .1 Submit proposed Departmental Represen prior to placing of b	
1.7 WASTE MANAGEMENT	.1	Remove from site and materials at appropri facilities.	
	.2	Dispose of all corrug polystyrene plastic p appropriate on-site b	ackaging material in
	.3	Place materials defin toxic in designated c	
	.4	Ensure emptied contai stored safely.	ners are sealed and
	.5	Do not dispose of pre wood through incinera	
	.6	Do not dispose of pre wood with other mater recycling or reuse.	
	.7	Dispose of treated wo scraps and sawdust at	od, end pieces, wood a sanitary landfill.
	.8	Dispose of unused pre	servative material at

an official hazardous material collections

preservative material into sewer system, streams, lakes, on ground or in any other

site. Do not dispose of unused

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location where they will pose a health or environmental hazard.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Timber: Use timber 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 of CSA.
- .2 Species: Douglas Fir, Pacific Coast Hemlock and Eastern Hemlock.
- .3 Grade: No. 1 Structural.
- .4 Grading authority: NLGA.
- .5 Preservative treatment: To CSA 080 for coastal waters and Section 06 05 73.

 Supply timbers in lengths required. Cut and field treat timbers only as may be necessary to suit site conditions.

 Contractor will have on site sufficient lengths and thickness of treated timber to permit leveling of cribs after ballasting operations.
- .6 Miscellaneous steel: Medium structural steel conforming to CSA Specification G40.21 "Structural Quality Steels".
 - .1 Hot dip galvanized: to CAN/CSA-G164. Minimum weight of zinc coating as stated in Table 1 of this Standard. Fabricator to adhere to recommendations in Appendix A and B of Standard.
 - .2 Wire nails, spikes, staples: to CSA-B111.
 - .3 Bolts, nuts, washers: to ASTM A307.
 - .4 Drift Bolts: to G40.21 from round

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stock, button head and diamond or wedge point.

- .5 Washers:
 - .1 Round Plate Washers: for 19 mm diameter machine bolts, 79 mm diameter by 7.9 mm thick, with hole diameter of 21 mm. Washers to G40.21.
 - .2 Square washers not permitted to be used.
- .6 All hardware galvanized.
- .7 Ballast for filling cribs to following requirements:
 - .1 Stone, consisting of hard durable particles free from clay lumps, organic material and other deleterious materials.
 - .2 Dry density in place: minimum 2600 kg per cubic metre.
 - .3 Ballast stone to be well graded with maximum sizes not exceeding 400 mm on any side and minimum size of not less than 250 mm on any side.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Place cribwork after rock mattress has been approved by Departmental Representative.
- .2 Contractor to confirm with Departmental Representative that rock mattress bearing layer is adequate for cribwork placement.
- .3 Before construction, stockpile sufficient ballast to completely fill cribs. Provide suitable plant and equipment to keep crib in proper position and alignment during sinking operations.
- .4 Take closely spaced accurate soundings and probings, 1500 mm centre to centre or

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less, precisely located by template, to determine actual base area of crib.

. 5 Cribs out of alignment or not correctly located to be refloated and replaced in correct position. Contractor to choose his methodology such that excessive construction loads are not imposed on the cribs during construction, causing them to settle into the rock mattress (or causing the rock mattress to settle into the dredged bottom). Excessive loads imposed on the cribs during construction (as determined by the Departmental Representative), resulting in cribs settling/shifting outside tolerances, will be removed and re-instated at the Contractor's expense.

3.2 CRIB CONSTRUCTION

.1 Construct timber cribwork to 400 mm above LNT prior to sinking in final position in work.

.2 Levelling Pieces:

- .1 Place treated timber levelling pieces beneath bottom timbers to conform to shape of base area.
- .2 Place levelling pieces horizontally.
- .3 Secure succeeding pieces at intersections of bottom timbers and vertical posts, and other levelling pieces with machine bolts.

.3 Bottom timbers:

- .1 Place bottom timbers lengthwise, and crosswise to form bottom three courses of cribs.
- .2 Crosswise bottom timbers to be of one piece.
- .3 Lengthwise bottom timbers to be of one piece.

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.4 Secure three courses of bottom timbers together with machine bolts at every intersection with each other and with vertical posts.

.4 Ballast floor:

- .1 Place ballast floor on pockets on bottom or middle course of bottom timbers.
- .2 Secure each ballast floor timber to bottom timbers with drift bolts securing adjacent ballast floor timbers to same bottom timber.

.5 Longitudinals:

- .1 Longitudinals one length for individual cribs below LNT.
- .2 Longitudinals minimum 6100 mm long above LNT.
- .3 Where cribs are married together, longitudinals of sufficient length to span a minimum of a half a bay of one crib and one and a half bays of the adjacent crib.
- .4 Butt join exterior and interior longitudinals a minimum distance of 600 mm from crosstie with joint in centre of a 1200 mm long joiner block.
- .5 Secure block to lower timber with drift bolt at centre and secure longitudinals and splice at ends to block with drift bolts.
- .6 Stagger joints in longitudinal timbers. Do not join in same bay or on same vertical post.
- .7 Secure longitudinals to intersection of cross ties with drift bolt and to intersection of vertical posts with machine bolt every third course of longitudinals, along with the top course.
- .8 Countersink machine bolts on exterior face above LNT.
- .6 Cross ties: one length across cribs.

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- .1 Secure cross ties to intersection of longitudinals with drift bolt and to intersection of vertical posts with machine bolt every third course of cross tie, along with the top course.
- .7 Vertical posts: one length from bottom of cribwork to top of cribwork. Locate one vertical post at corner of each crib and at intersection of crossties with longitudinals.
- .8 Blocking: install treated timber filler blocking as indicated on drawings.
 - .1 Cut blocking exact length to completely fill spaces and such that the total thickness of crossties and longitudinals carrying the bearing weight of the deck be a minimum of 600 mm if cribwork ends on a crosstie.
 - .2 If cribwork ends on a longitudinal one additional tier of blocking is required.
 - .3 Blocking of same size and material as crossties or longitudinals and fastened with 2 drift bolts into timber immediately below it.
- .9 Levelling: treated timber required for levelling of cribwork after ballasting, must be full width continuous over entire length to be levelled.
- .10 Bolt Sizing and Holing:
 - .1 Drift Bolts: length of drift bolts equal to thickness of timbers fastened less 50 mm, unless otherwise specified. Bore holes for drift bolts 2 mm smaller diameter than bolt and for full length of bolt.
 - .2 Machine Bolts: length of machine bolts equal to thickness of timbers

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		fastened plus thickness 40 m. Where bolts are collength, as noted above, countersink. Thread mack 64 mm. Bore holes for masame diameter as bolts.	ountersunk, the less depth of nine bolts for
3.3 HANDLING TREATED TIMBER	.1	Handle treated material original treatment1 Replace treated tindamage to original treating instructed by Department	mber with major tment, as
	.2	Field treatment: to CAN, saturate cuts, minor sur abrasions, and nail and preservative.	rface damage,
	.3	Ripping of treated timber without prior approval of Representative.	_
3.4 BALLAST	.1	Place ballast to avoid oribwork.	damage to timber
	. 2	Place ballast so that di of fill between adjacent time, will be less than	cells, at any
	.3	Pockets of cribs ballast of top of crib timbers.	ted within 100 mm
3.5 TOLERANCES	.1	1 in 300 in overall dime	ensions.
	.2	Locate cribs within 100 indicated. Horizontal management 100 mm along the outside	isalignment within
	.3	Space between ballasted	

200 mm. No payment for this space will be

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made above or below LNT.

3.6 PROTECTION

- .1 Protect work from damage resulting from work on other sections and from damage resulting from environmental conditions.
- .2 Repair or replace portion or entire crib at no additional cost if damaged by work.

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PART 1 - GENERAL			
1.1 DESCRIPTION	.1	This section specifies supply and installation as follows:	_
		.1 Supply and installadimension timber wheelgo blocking, wales, vertical beams, and associated particular and installadimension hardwood timber associated painting. .3 Supply and installatimber hardwood ladders and associated hardware	uard, wheelguard al wale support, ainting. ation of untreated er fenders, and ation of untreated , ladder handgrips,
1.2 RELATED WORK	.1	Section 02 41 16 - Sitem Removal.	work, Demolition and
	. 2	Section 06 05 73 - Wood	Treatment.
	.3	Section 31 53 13 - Timbe	er Cribwork.
1.3 REFERENCES	.1	American Society for Test (ASTM International) .1 ASTM A307-07b, Spec Steel Bolts and Studs,	ification for Carbon
	. 2	American Wood-Preserver' .1 AWPA M4-06, Standa: Preservation - Treated N	rd for the Care of
	.3	Canadian Standards Associated Canadian Standards Associated CSA B111-1974(R200)	·

Spikes and Staples.

.2 CAN/CSA-G40.21-04, General

Requirements for Rolled or Welded Structural

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		Quality Steel/Structura	
		.3 CAN/CSA G164-M92(F	
		Galvanizing of Irregula .4 CAN/CSA-080 Series Preservation.	
	. 4	Canadian Wood Council .1 Wood Design Manual	- .
	.5	National Lumber Grades .1 Standard Grading F Lumber 2000 edition.	<u>-</u> .
1 A DIMENSIONS	1	Charle and attended to	
1.4 DIMENSIONS	.1	Check existing site din discrepancies to Departa before commencing work.	mental Representative
1.5 PROTECTION	.1	Avoid dropping, bruisin fibres.	g or breaking of wood
	. 2	Avoid breaking surfaces	s of treated timber.
	.3	Do not damage surfaces boring holes or driving them to support temporastaging.	nails or spikes into
	.4	Treat cuts, breaks or a of treated timber with preservative to CSA 080	3 brush coats of
	.5	Treat bolt holes, cutof accordance with CSA 080	
1.6 DELIVERY AND STORAGE	.1	Store timber horizontal and open piled permit ci for prolonged period.	

. 2

When handling long timber, provide support

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at sufficient number of points, properly located to prevent damage due to excessive bending.

- .3 Handle treated timber with hemp, manila or sisal rope slings or other approved means of support that will not damage surface.
- .4 Do not use sharp pointed tools to handle treated timber. Any timber so handled will be rejected and be replaced at Contractor's expense.

1.7 MEASUREMENT FOR PAYMENT

.1 Structural Timber:

- .1 <u>Treated Dimension Timber</u>: The supply and installation of treated dimension timber for wheelguard, wheelguard blocking, wales, vertical wale supports and beams will be measured by the cubic metre (m³) of timber secured in place, including all timber, fastenings, plant, material, equipment, labour, wheelguard bolt hole levelling sealant, painting of wheelguard and wheelguard blocking.
- .2 Untreated Dimension Timber: The supply and installation of untreated dimension hardwood timber for hardwood fenders, and ladders as specified will be measured by the cubic metre (m³) of timber secured in place including all timber, fastenings, plant, material, equipment, and labour, ladder rungs, wheelguard hand grips, and painting of complete ladder uprights.
- .3 <u>Treated Timber Decking</u>: The supply and installation of treated timber deck will be measured by the cubic metre (m³) of timber secured in place. Contractor will provide all timber, fastenings, plant, material,

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equipment, and labour, including all spacers and blocking where required.

.2 Payment for all dimension timber will be made on volume calculated from nominal sizes as indicated on drawing and specified, eg. 200 mm x 200 mm.

PART 2 - PRODUCTS

2.1 TIMBER MATERIALS

- .1 Timber: Use timber graded and stamped in accordance with applicable grading rules and standards of associations or agencies approved to grade lumber by Canadian Lumber Standards Administration Board of CSA.
- .2 Species
 - .1 Wheelguard, wheelguard blocks, wales, vertical wale supports and beams: Hemlock or Douglas Fir (CCA or ACA treated).
 - .2 Hardwood fenders and ladder uprights: Birch or Maple (untreated).
 - .3 Decking: Hemlock (CCA or ACA treated).
- .3 Grade: No. 1 Structural Grade
- .4 Grading Authority: NLGA
- .5 Preservative Treatment: Treat to CSA 080, for coastal waters and Section 06 05 73. Timbers will be treated in the lengths required.

 Unnecessary field cutting will not be permitted.
- .6 Primer: Alkyd undercoat, exterior oil wood primer.
- .7 Paint: Alkyd/Oil Resin paint similar to Pittsburgh Paints "Safety Orange". Paint to conform to CAN/CGSB-1.61-2004.

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2.2 MISCELLANEOUS STEEL AND FASTENINGS

- .1 Miscellaneous Steel: All steel and fastenings to be CSA G40.21, Grade 300 W, galvanized.
- .2 Nails and Spikes: to CSA B111.
- .3 Machine Bolts and Nuts: to ASTM A307. All machine bolts and nuts to be galvanized.
- .4 Drift Bolts: to G40.21 from round stock button head and diamond or wedge point. All drift bolts to be galvanized.

.5 Washers:

- .1 Round Plate Washers: for 16 mm machine bolts will be 76 mm diameter by 6.4 mm thick, for 19 mm machine bolts will be 79 mm diameter by 7.9 mm thick and have a hole diameter of 18 mm and 21 mm diameter respectively. Washers to conform to G40.21. All washers to be galvanized.
- .2 Plain Washers: to CSA B19.1, Class 2. All washers to be galvanized.
- .3 Square washers are not permitted.
- .6 Galvanizing: will conform to CSA G164 "Hot Dip Galvanizing of Irregularly Shaped Articles." Unless otherwise specified, minimum weight of zinc coating will be as stated in Table 1 of this standard. Fabricator is to adhere to recommendations of Appendix A and Appendix B of standard.
- .7 Ladder Rungs and Hand Grips: to CSA G40.21, galvanized.
- .8 Welding in accordance with CSA Standards. The welders will be qualified to the appropriate classification as stated in CSA W47.1 "Certification of Companies for Fusion Welding of Steel Structures." Conform welding to all appropriate requirements and recommendations of CSA Standard W59 "Welded"

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	Steel Construction" (met	al arc welding).		
PART 3 - EXECUTION				
3.1 PREPARATION .1	Install structural timbe on drawings or as specif			
3.2 WHEELGUARD AND .1 WHEELGUARD BLOCKING	will be in minimum lengt specially required with b wheelguard blocking. Whe	Wheelguard timbers to be 200 mm x 200 mm, and will be in minimum lengths of 6100 mm or as specially required with butt joints made over wheelguard blocking. Wheelguard timbers to be chamfered on top, 25 mm on each horizontal and vertical surface.		
. 2	Wheelguard blocks will b 1500 mm on centre as supp			
. 3	Wheelguard will be secur as shown on detail drawi countersunk and filled wifollowing installation.	ngs. Bolts to be		
3.3 BEAMS, WALES AND .1 VERTICAL WALE SUPPORTS	Install beams, wales and supports as shown on the			
3.4 FENDERS .1	Horizontal Fenders: .1 Install hardwood ti minimum length of 4880 mm of wharf. Stagger joints joints in horizontal fend 25 mm on top seaward fac .3 Secure horizontal f with 16 mm diameter lag four (4) each lag screws	n along top perimeter in end beams from ider. Her to be chamfered ee. Tender to end beams screws, minimum of		

at 1500 mm on centre.

.2 Vertical Fenders:

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		at 300 mm on centre alor for exterior corners we closed face for 1500 m .2 Secure each fende 16 mm diameter lag scre All lag screws to be of .3 All fenders to extended	where fenders will be am as directed. From with three (3) each ews at wale locations. Sountersunk. The tend from underside of 100 mm below LNT. Fout fenders to provide the ntinuous blocking will
3.5 LADDERS	.1	Install ladders on face shown on drawings or de	
	. 2	Ladder uprights to be in below LNT to wheelguar to be bevelled at 45° ladder upright to be p	d elevation. Uprights on top and complete
	.3	Construction details a per detail.	and steel handgrips as
	. 4	Secure each upright wit spaced 19 mm diameter of All lag screws to be of	galvanized lag screws.
3.6 PAINTING	.1	Paint four (4) sides a wheelguard, exposed si blocking, and complete directed by the Departm	des of wheelguard ladder uprights as
	.2	Use one (1) coat of ext and two (2) coats of a as specified. Paint ma	lkyd/oil resin paint

to be product of a single manufacturer as specified. Ensure previous coat of primer or paint is dry before second coat is applied.

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3.7 BOLT SIZING	.1	Drift Bolts: Drift bolts have a length equal to the being fastened less 50 m specified. Holes for drif 2 mm smaller diameter that and for full length of both specified in the second specific controls.	chickness of timbers mm unless otherwise t bolts will be bored an size of steel used
	. 2	Machine Bolts: Machine bohave a length equal to the being fastened plus thick 40 mm. Where bolts are continuous that the bolts are continuous to the bolts are continuous	chickness of timbers kness of washers plus

diameter as bolt.

.3 Lag Screws: All lag screws used in the work will have a length equal to thickness of timbers being fastened less 50 mm and depth of countersinking. Holes for lag screws to be drilled same diameter as shank portion of screw and to inside thread diameter for threaded portion of screw and for full length. All lag screws will be countersunk, screwed, not driven in place, and will have one (1) standard washer under the head.

length will be as above less depth of countersinking. Machine bolts will be

threaded for 64 mm. Holes will be drilled same

- .4 Countersink lag screws in hardwood fenders and ladders to the extent that the minimum distance from face of timber to head of bolt is 12 mm.
- .5 Bolting of timbers without properly drilled bolt holes will not be accepted.

3.8 DECKING .1 Install timber deck plank having a uniform thickness of 75 mm to detail shown or specified.

.2 Deck planks to be laid at right angles to deck beams.

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.3 Deck planks to be in width specified and will cross structure in one length.

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PART 1 - GENERAL			
1.1 DESCRIPTION	.1	This section specifies the supplying, producing gravel for quarried ston course to lines, grades sections indicated, or a Departmental Representat	and placing crushed e as a granular base and typical cross as directed by
1.2 REFERENCES	.1	ASTM C 117-04, Test methothan 0.075 mm sieve in miwashing.	
	.2	ASTM C 131-06. Test methodegradation of small size by abrasion and impact in	e coarse aggregate
	.3	machine. ASTM C 136-6, Method for fine and coarse aggregat CAN/CGSB-8.2-M88, Sieves wire, metric	ces,
1.3 DELIVERY, STORAGE AND HANDLING	.1	Deliver and stockpile agg by Departmental Represer	
1.4 MEASUREMENT FOR PAYMENT	.1	Class "A" Granular Base: installation of Class "A be measured in cubic met supplied and installed i all costs in the unit promaterial and labour.	" granular base will cres of materials n the work. Include
	.2	Class "B" Granular Sub-E installation of Class "E will be measured in cubic supplied and installed i	Branular sub-base metres of materials

material and labour.

all costs in the unit price including plant,

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PART 2 - PRODUCTS

2.1 MATERIALS

.1 Granular base fill (Class "A") will consist of clean, hard, durable crushed gravel or stone, free from shale, clay, friable materials, organic matter and other deleterious substances and graded within the following limits when tested to ASTM C136 and ASTM C117 and giving a smooth curve without sharp breaks when plotted on a semi-chart.

ASTM Sieve Designation	% Passing
19.0 mm	100
9.51 mm	50-80
4.76 mm	35-60
1.20 mm	15-35
300 um	7-20
75 um	3-6 (Pit Source)
	3-8 (Rock Source)

- .2 Physical Requirements for Class "A":
 - .1 Liquid Limit ASTM D4318: Maximum 25
 - .2 Plasticity Index ASTM D4318: Maximum 0
 - .3 Los Angeles Abrasion ASTM C131-81 Maximum % loss by weight: 35
 - .4 Crushed Fragments: 50%. The percent of crushed particles will be determined by examining the fraction retained on the 4.76mm sieve and dividing the weight of the crushed particles by the total weight retained on the 4.76 mm sieve.

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- .5 CBR: ASSHTO T193-72 Min 100 when compacted to 100% of AASHTO T180-74 Method D.
- .3 Granular base fill (Class "B") will consist of clean, hard, durable crushed gravel or stone, free from shale, clay, friable materials, organic matter and other deleterious substances and graded within the following limits when tested to ASTM C136 and ASTM C117 and giving a smooth curve without sharp breaks when plotted on a semi-chart.

ASTM Sie	ve Designa	ation %	Passing
50.8 mm		100	
25.4 mm		50 - 1	00
4.76 mm		20 - 5	5
1.20 mm		10 - 3	5
300 um		5 - 20	
75 um		2 - 6	(Pit Source)
		2 - 8 (Rock Source)

- .4 Physical Requirements for Class "B":
 - .1 Liquid Limit ASTM D4318:
 Maximum 25
 - .2 Plasticity Index ASTM D4318:
 Maximum 0
 - .3 Los Angeles Abrasion ASTM C131-81 Maximum % loss by weight: 35
 - .4 Crushed Fragments: 50%.

 The percent of crushed particles will be determined by examining the fraction retained on the 4.76 mm sieve and dividing the weight of the crushed particles by the total weight retained on the 4.76 mm sieve.
 - .5 CBR: ASSHTO T193-72 Min 100 when compacted to 100% of AASHTO T180-74 Method D.

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- . 5 Materials from deposits acceptable as to the quality of the particles, but deficient in sizes to provide the required gradation, may be accepted if the contractor furnishes and satisfactorily incorporates into the product supplementary sizes from other sources to produce the required grading. If the deficiencies occur in Class "A" or Class "B" materials, corrections may be attempted by crushing to a smaller maximum particle size. In that event, the Departmental Representative will furnish special grading limits on the actual maximum particle size.
- Material shall be considered unsuitable . 6 even though particle sizes are within the specified gradation limits if particle shape or any other characteristic precludes satisfactory compaction or fails to provide a roadway suitable for traffic. If, in the opinion of the Departmental Representative, an improved particle shape can be achieved by using a different crushing unit for that proposed by the contractor, then the Contractor shall supply and use a crushing unit of the type directed by the Departmental Representative.
- .7 Class "A" and Class "B" shall be processed by crushing and, when necessary, to eliminate surplus fines passing the 4.76 mm sieve, shall be screened and washed.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Place granular base after sub-base surface is inspected and approved by Departmental Representative.

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.2 Placing:

- .1 Construct granular base to depth and grade in area indicated.
- .2 Ensure no frozen material is placed.
- .3 Place material only on clean unfrozen surface, free from snow and ice.
- . 4 The contractor shall place all granular bases in such a manner as to prevent contamination by other materials and to prevent segregation. If, in the opinion of the Departmental Representative, the methods and techniques used by the Contractor cannot overcome contamination or segregation, then the Departmental Representative may direct a modification in these methods which may require the use of an approved spreader box or other acceptable device.
- .5 All granular bases shall be placed in uniform layers such that the thickness of the compacted layer does not exceed 50 mm.
- .6 Prior to closing down operations for each working day, all granular materials shall be bladed and compacted to the specified density.
- .7 The materials shall be sprayed with water when and as directed by the Departmental Representative, either to aid compaction or reduce dust nuisance or both. When water is added to aid compaction, it shall be applied immediately ahead of the compacting unit
- .8 Each layer of granular base shall be bladed shaped and compacted as

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necessary to produce the required profile and cross-section. finished surface shall not deviate at any place on a 3 m straight edge by more than 10mm for Class "A" and Class "B". The upper layer shall be maintained to these tolerances and to the specified density until compaction of the contract. may require keeping the moisture content at the appropriate value during periods of dry weather in addition to regarding and re-compacting as frequently as may be deemed necessary by the Departmental Representative.

- .3 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
- .4 Compaction Equipment:
 - .1 Compaction equipment to be capable of obtaining required material densities.
- .5 Compacting:
 - .1 All Class "A" and Class "B"
 materials shall be compacted to not
 less than 100% of the maximum
 Standard Proctor Dry Density ASTM
 D698-07el Method D.
 - .2 Compaction operations shall be carried out as closely as possible behind the placing and spreading operation. At the end of each working day, all materials placed shall have been compacted to the specified density.
 - .3 Each layer of material shall be graded and compacted as specified before the next layer is placed.
 - .4 Where necessary to obtain the required compaction, the

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		hall apply sufficient ns of an approved
3.2 INSTALLATION	.1 Testing of material be carried out by designated by the Representative.	
	.2 Contractor will pa and testing.	y costs for inspection
	.3 Sieve Analysis: p material will be suitability for i conformity with s	tested to confirm ntended use and
	.4 Frequency of Tests	s: to be determined by Representative.
3.3 TOLERANCES	.1 Finished base surf or minus 10 mm of estab section but not unifor	
3.4 PROTECTION	.1 Maintain finished conforming to this sec material is applied or Departmental Represent	tion until succeeding until acceptance by

	DREDGING	Section 35 20 23
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PART 1 - GENERAL

1.1 DESCRIPTION .1 This specification section includes requirements for dredging, as noted on the drawings. All dredging is considered to be Class "B" dredging.

1.2 DEFINITIONS

- .1 Dredging: excavating, transporting and disposing of underwater materials.
- .2 Class A material: solid rock requiring drilling and blasting to loosen, and boulders or rock fragments of individual volumes 1.5 m³ or more.
- .3 Class B material: loose or shale rock, silt, sand, quick sand, mud, shingle, gravel, clay, sand, gumbo, boulders, hardpan and debris of individual volumes less than 1.5 m³.
- .4 Obstructions: material other than Class A, having individual volumes of 1.5 m³ or more.
- .5 CMPM: cubic metres place measurement.
- .6 Debris: pieces of wood, wire rope, scrap steel, pieces of concrete and other waste materials.
- .7 Estimated quantity:
 - .1 Volume of material calculated to be above grade and within specified side slopes unless otherwise specified.
- .8 Chart Datum: permanently established plane from which soundings or tide heights are referenced, usually Lowest Normal Tide (LNT).
- .9 Lowest Normal Tide (LNT): plane so low that tide will seldom fall below it.

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	.10	Cleared Area: area of d achieving the required of a Departmental Represen	grade and verified by
1.3 REGULATORY REQUIREMENTS	.1	There are strict enviro	-
	.2	Comply with municipal, national codes and reguproject.	_
	.3	Mark floating equipment accordance with the prov Shipping Act Collision Notices to Mariners.	visions of the Canada
1.4 PROTECTION	.1	Prevent damage to surrou persons. Erect fencing, warnings and display sig take place.	post guards, sound
1.5 SCHEDULING	.1	Submit to Departmental within 2 weeks after ac schedule of work includ during which each operat will be undertaken. At t schedule, meet with Dep Representative to revie	ceptance of bid, ing time periods tion involved in Work time of submission of artmental
	. 2	Adhere to schedule and to correct any slippage altering existing rock mobilizing other equipm Departmental Representa action to be taken.	by effectively removal operations or ent. Notify
1.6 LOCATION	.1	Work comprises dredging on drawings.	of areas as indicated

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1.7 INTERFERENCE TO NAVIGATION	.1	activities in area af	execute Work in manner re with fishing erations and
	.2	Departmental Represen responsible for loss material or any other interference with moo or due to other Contr	of time, equipment, cost related to red vessels in harbour
	.3		
1.8 DATUM, WATER GAUGES AND TARGETS	.1	_	is specification and in metres referred to Services Survey datum.
	.2	Areas to be dredged a vertical bench marks dredging as indicated	
1.9 FLOATING PLANT	.1	Dredges or other floa employed on this Work registry, make or man receive certificate o Industry Canada, Aero Marine Branch and thi accompany bid submiss	, to be of Canadian ufacture, or, must f qualification from space, Defence and s certificate to
	.2	PWGSC-TPSGC 2843 (06/ Bid and Acceptance For Emile Rochon, Aerospa Branch, Industry Cana	ation in format of form 2007) attached to the m to be directed to Mr. ce, Defence and Marine da, CD Howe Building -

Room 733C, 235 Queen Street, Ottawa, Ontario, K1A 0H5, and to be received there not less

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		than 14 days prior to b	id closing.
1.10 SITE INFORMATION	.1	Previous geotechnical r available by contacting Representative.	-
	. 2	Results of most recent so on the drawings. This d all calculations for qu the contractor wishes to a written notice must b Departmental Representa- notice) so the Departme can verify the sounding commencement of any wor	ata will be used for antity purposes. If perform own survey, e submitted to the tive (at least 7 days ntal Representative survey before the
	.3	Take necessary steps to be with potential inclemen conditions in this area	t weather and sea
1.12 SURVEY REQUIREMENTS	.1	Provide, at own expense equipment and crew to s control for location of sound areas immediately verify that grade depth Areas are to be sounded printout display of at 1 to approval of Departme	et up and maintain dredge limits and to after dredging to has been attained. to provide sounding east 2 x 2 m UTM grid
1.13 SURVEYS AND ACCEPTANCE OF WORK	.1	No area will be dredged prepresentative and Contacceptance of the exist topographical survey dadrawings.	ractor's mutual ing sounding and
	.2	A survey will be undert Representative upon com Survey will confirm if d as specified and whethe considered cleared area	pletion of dredging. Tredging is completed r area can be

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electronic sweep equipment. Survey plan at 1:250 plotting least of minimum depths obtained in this survey will identify areas requiring reworking to obtain following elevations using least of minimum mode.

- .3 Contractor to re-dredge as necessary to remove all material which is found to be above grade using the least of minimum mode elevations as specified herein.
- .4 One additional survey will be undertaken at Departmental Representative's cost, for those areas not meeting acceptance criteria for dredging. All additional surveys required to clear areas will be undertaken by the Departmental Representative at Contractor's cost.

1.14 MEASUREMENT FOR PAYMENT

- .1 Dredging prior to rock mattress placement will be measured in Section 31 36 19.
- . 2 Harbour Dredging: Harbour dredging will be measured in cubic metres, determined from existing seabed elevation established from the current sounding survey down to grade depth elevation within pay limits shown on drawings. Quantities will be determined by a sounding survey performed by the Departmental Representative's Survey Crew after dredging survey is completed by using electronic sounding and DPGS positioning equipment. The Departmental Representative will verify that the Contractor has performed dredging to the specified grade depth. No payment will be made for over-dredging. Departmental Representative will conduct an interim and final survey. The Contractor will formally request at least seven (7) days in advance that the final after-dredging survey be performed upon completion of dredging. The

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survey will be dependent on the weather. If the survey and inspection shows that all material has not been removed, the Contractor is to re-dredge to obtain grade depth. The Contractor will perform a sounding survey, using a method approved by the Departmental Representative to verify that the specified dredge depth has been obtained. The Departmental Representative will then perform a third survey for final verification of dredge depth. This third sounding survey and any subsequent surveys will be at the cost of the Contractor.

- .3 No separate payment will be made for Contractor's survey vessel, equipment and crew or diving services.
- .4 Payment will include disposal of excavated or dredged material, using water tight boxes, at locations specified or as directed by the Departmental Representative.
- .5 There will be no additional payment for delays and/or downtime for vessel traffic, fishery operations, marine operations, during periods when no dredging is permitted. Contractor should contact the Harbour Authority to determine schedules of operations.
- .6 There will be no additional payment for downtime and for delays caused by vessel traffic or other activities associated with the on-going fish plant operations.
- .7 Removal of infilling material will not be measured for payment.
- .8 No separate payment will be made for sweeping.

		MOORING DEVICES	Section 35 59 29
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PART 1 - GENERAL			
1.1 DESCRIPTION .		This section specifies the requirements for supply and installation of mooring devices as follows:	
		.1 Supply and install mooring cleats.	ation of Type "B1"
1.2 RELATED WORK	.1	Section 02 41 16 - Sitework, Demolition, and Removal.	
1.3 MEASUREMENT FOR PAYMENT	.1	Mooring Cleats - Type "B1": The supply and installation of Type "B1" mooring cleats, including pedestal, will be measured by the unit secured in place. Contractor to provide all concrete, reinforcing steel, anchor bolts, nuts, washers, welding, grout, fastenings, plant, equipment, and labour.	
PART 2 - PRODUCTS			
2.1 MATERIALS	.1	cast iron cleats, 36.2k drawings2 Anchor Bolts and N galvanized3 Non-Shrink Grout: non-metallic aggregate agents, capable of deve compressive strength of	Juts: to ASTM A307, pre-mixed compound of and plasticizing eloping minimum 50 MPa at 28 days. SA G164, minimum zince 59.

2.2 SHOP DRAWINGS .1 Submit fabricator's shop drawings on cleats

in accordance with Section 01 33 00 -

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Submittal Procedures.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Mooring Cleats Type "B1":
 - .1 Install Type B1 cleats as per the drawings.
 - .2 After cleat installation is complete, bolt holes in cleats to be filled with approved waterproofing compound.