





MEMORANDUM

NOTE DE SERVICE

TO  
À

Mr. W. R. BINKS  
Director  
Transportation Program  
Design and Construction  
Public Works Canada  
OTTAWA, Ontario

FROM  
DE

Mr. F. E. KIMBALL  
Manager  
Highways Program  
EDMONTON, Alberta

SECURITY - CLASSIFICATION - DE SÉCURITÉ
OUR FILE - N/RÉFÉRENCE  9305-52-300
YOUR FILE - V/RÉFÉRENCE
DATE May 27, 1976

SUBJECT  
OBJET

FINAL DESIGN SUBMISSION - MACKENZIE HIGHWAY  
MILE 735N TO 783.9, MAY, 1976

In accordance with the direction by the Director of Engineering and Architecture Branch, D.I.A.N.D., one set of design plans for contract purposes are enclosed. Thirteen copies of the narrative portion have been forwarded under separate cover.

One set of sepia mylar copies of the design plans for the above-mentioned submission have been forwarded to G. D. Reid for printing and distribution. One set of sepias and five copies of the narrative portion have been forwarded to Mr. C. Amos of D.I.A.N.D. in Yellowknife.

Copies of the plans and narrative have been sent to F. Janz, D.I.A.N.D., D.O.E. in Edmonton and Winnipeg and E.M.R. in Calgary.

The special E.W.G. package has not been produced. Because of budget restrictions, D.I.A.N.D. instructed that the special package be deferred for Mile 725 to 936.

F. E. KIMBALL  
Manager  
Highways Program

Encl.

FINAL DESIGN SUBMISSION

MACKENZIE HIGHWAY

MILE 735N TO 783.9

MAY, 1976

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INTRODUCTION

This Final Design, covering Mile 735N to 783.9, is the second submission for this section of the proposed Mackenzie Highway.

The changes from the Preliminary Design Submission which covered this section involve one minor revision to the horizontal alignment and several revisions to the vertical alignment, the inclusion of detailed culvert design drawings and revised General Requirements and Standard Specifications, Division 1, Section 2 and Division 9, Section 1 to 15.

The Client's comments on the Preliminary Design Submission have been responded to. The E.W.G. comments have been considered in preparation of this submission although detailed responses to individual comments are not included.

The reader should note that this report forms only part of a total design submission, the major portion of which is contained in separate plan form.

CHAPTER I

REFERENCE: Letter of Direction for Preliminary Design Submission  
Miles 802 - 735 - March 30, 1976.

I. ALIGNMENT

(a) Horizontal

Approval of the horizontal alignment is confirmed.

(b) Vertical

It is recommended that attempts be made to eliminate the choppiness of the alignment at the following location:

<u>Mileage</u>	<u>Station</u>
753	1525-1533

(a) Horizontal

No D.P.W. response required.

(b) Vertical

The gradeline has been revised in the specific area.

II. DRAINAGE

(a) Ponding and Icing Problems

The occurrence of all natural icings should be checked at the following locations:

Miles 802 - 735

Mile 796; 792.7, 791.9; 783.4; 776.2; 771.3; 769.1; 765.9; 757.3; 751.5; 745.4; 743.7; 743.4; and generally along escarpment from Mile 820 - 795.

(b) Disturbance to Drainage

Particular attention should be paid to minimizing disturbance to drainage at the locations noted in (a).

(c) *It is noted that clearing of the streambed of Payne Creek may be advantageous in preventing icing but it is recommended that clearing of any streambed should be done only after consultation with and under the supervision of Fisheries and Marine Services on a site specific basis.*

(a) Ponding and Icing Problems

There were no severe natural icing development on this section of the proposed Mackenzie Highway in 1974, 1975 or 1976. Icing observation will continue up to and during construction. Steam lines or overflow pipes will be added if required.

(b) Our field staff will be instructed to ensure that disturbance to drainage is minimized. Particular attention will be paid to the locations listed above.

(c) Clearing of streambeds will be done only after consultation with and if required, under supervision of Fisheries and Marine Services.

III. SOILS

(a) *The weathering properties of any quarried shale should be determined before it is used for erosion prevention purposes.*

(b) *Geotechnical information should be gathered for the revision route east of Kame Lake and included with the final design submission.*

(c) *Further geotech investigations and assessments of potential borrow areas should be made if it becomes apparent that they will be required for construction.*

(d) *Some geotechnical information should be obtained for the proposed Shae Creek crossing before installation of the culvert.*

- (a) Materials used for erosion preparation on this section will be sandstone, limestone and the more weather resistant shale as judged by the Field Engineer.
- (b) Not applicable to this submission.
- (c) Further geotechnical investigations will be undertaken prior to construction to further define borrow areas.
- (d) Not applicable to this submission.

IV. ARCHAEOLOGICAL

*For Miles 735 to 802, sufficient time should be allowed between clearing and construction for the National Museum of Man to complete its survey and carry out any necessary excavation.*

A reasonable time span will be allowed between the clearing and earthmoving for the National Museum of Man to complete its survey and carry out any necessary excavations. This Department will inform the National Museum of Man of the start of any construction activities in the area as soon as firm program information becomes available.

V. EFFECTS ON WILDLIFE AND CONSTRUCTION RESTRAINTS

*Particular care should be taken to minimize changes in the water levels in low-lying marshes, creeks and beaver dam areas.*

Our field staff will be instructed to ensure that changes in water levels in low-lying marshes, creeks and beaver dam areas will be minimized.



CHAPTER II

DESIGN COMMENTS

1. Alignment

A minor alignment improvement has been introduced at Mile 757.6 to 758.2. The revised alignment eliminates a small intersection angle removing the adverse visual impact of a small deflection on a long tangent.

2. Vertical

The vertical alignment has been refined to reduce borrow requirements where possible. Fifty (50) m.p.h. design speed sag curves have been used where this has resulted in significant reductions in embankment heights. Sixty (60) m.p.h. design speed has been retained for crests. The exception to this is the Tieda River crossing at Mile 763.4. Here forty-five (45) m.p.h. sag and fifty-five (55) m.p.h. crest design speed have been used.

3. DRAINAGE

Site specific designs have been provided for all proposed culverts 72" diameter and larger. This in general corresponds to drainage areas greater than 0.7 square miles although drainage from some areas larger than the above minimum have been handled by multiple smaller culverts.

Drainage areas and flood and fish flows have been taken, in general, from the FENCO "Report Bridge and Culvert Hydraulics, Fort Good Hope to Dempster Highway, March, 1974." A study of 1"=3000' aerial photography by D.P.W. staff showed, however, that some of

the FENCO drainage areas were incorrect - some being too small and some incorporating two or more smaller separate basins. Where large discrepancies were noted the drainage areas were re-calculated and the design discharges determined from Figure 15 of the above noted FENCO Report. Fish migration discharges, where applicable, were adjusted in proportion to the changes in design discharge.

Drainage areas and design discharges used for design are summarized in Appendix "A" - Hydrology Summary.

Other information including inlet and outlet velocities at design discharge and where applicable at fish migration discharge is shown on the respective culvert drawings.

#### 4. Soils

Some roadway excavations into ice-rich fine-grained are planned to improve the vertical alignment and to minimize construction costs. The subgrade will here be subexcavated to depth determined by the engineer, (nominal four feet), and the subexcavation backfilled with imported material. The ditches and backslopes will be blanketed with imported material to a nominal thickness of three feet where in the opinion of the engineer this is required.

All ice-rich fine-grained material excavated from the roadway will be wasted within the right-of-way or hauled to a borrow pit. For large quantities, separate off right-of-way waste areas may be required to reduce haul costs and details of these waste areas, as required, will be included in the contract package.

Additional ditch protection has not been specified as the proposed blanketing materials; shale, sandstone and limestone are expected to provide adequate resistance to erosion.

All applicable geotechnical information collected along and near the centreline and within the proposed borrow areas has been shown on the plans. Where information is lacking, additional investigations are proposed prior to construction.

5. Borrow

Approximate borrow pit outlines and access roads are shown on the Environmental Data Sheets and borehole logs are shown on the 1" = 1,000' mosaics.

Alternate areas, outlined in the D.P.W. Report "Geotechnical Investigation Mile 725 to Mile 936 Mackenzie Highway" may be investigated prior to construction.

Borrow requirements and approximate pit sizes are shown below. Quantities shown include allowances for stripping.

<u>Mile</u>	<u>Quantity</u>	<u>Depth</u>	<u>Cleared Area (Acres)</u>
736.2	77,000	45	3.7
737.4	117,000	45	4.7
739.6	147,000	45	5.5
741.4	180,000	40	6.3
744.0	311,000	50	8.2
747.2	261,000	52	7.4
752.1	168,000	55	5.0
754.8	273,000	54	6.8
760.0	470,000	50	10.4

<u>Mile</u>	<u>Quantity</u>	<u>Depth</u>	<u>Cleared Area (Acres)</u>
767.0	349,000	45	9.1
770.5	234,000	42	6.8
773.0	251,000	50	6.8
779.1	286,000	59	6.8
781.9	152,000	43	4.6
783.8	214,000	46	6.4

APPENDIX "A"  
HYDROLOGY SUMMARY

HYDROLOGY SUMMARY

MILE 735 - 784.9

DESIGN DATA				FENCO				COMMENTS
MILE	AREA	Q <sub>D</sub> *	Q <sub>F</sub> *	MILE	AREA	Q <sub>D</sub>	Q <sub>F</sub>	
737.0	1.1	170		737.0	1.5	225		FENCO area includes several drainage areas.
737.7	10.6	650		737.7	13.2	700	175	FENCO area includes several drainage areas. SCHULTZ reports "PROBABLY POOR FISH HABITAT."
738.7	0.6	110						Indistinct channel - multiple C.S.P. installations.
740.6	7.7	565	145	740.6	7.4	560	140	Fish flow based on FENCO chart.
743.7	4.5	370		743.7	8.5	493		FENCO area includes several drainage areas.
746.0	0.5	95		746.0	1.4	210		FENCO area includes drainage area at Mile 746.6, Twin 48" pipe installation.
750.1	1.3	195		750.1	2.1	275		FENCO area includes several drainage areas.
751.6	2.5	270		751.6	4.4	366	92	FENCO area measured incorrectly. SCHULTZ reports steep section below highway crossing blocks fish passage.
753.2	0.5	95						60" C.S.P.P. installation.
753.8	0.4	80						Multiple C.S.P. installations.
754.1	0.7	130		754.1	0.7	130		
755.0	1.4	205						) Indistinct channel, overland flow - multiple C.S.P. installations. ) )
755.4	0.2	50		755.8	3	370		
755.9	1.4	205						
757.2	1.6	230		757.3	1.6	230		
757.5	2.5	320		757.5	3.4	410		) Indistinct channel, overland flow ) multiple C.S.P. installations )
758.0	1.5	215						
758.9	.3	70		759.0	2.2	285		) FENCO area includes several drainage areas. Indistinct channels - ) multiple C.S.P. installations.
759.3	.5	95						
760.4	.8	135						

\* Q<sub>D</sub> = 50 yr. Design Discharge; Q<sub>F</sub> = Fish Migration Discharge

HYDROLOGY SUMMARY

DESIGN DATA				FENCO				COMMENTS
MILE	AREA	Q <sub>D</sub> *	Q <sub>F</sub> *	MILE	AREA	Q <sub>D</sub>	Q <sub>F</sub>	
761.9	2.0	270		761.9	1.6	230		Indistinct channel - multiple C.S.P. installations.
766.0	0.3	70		766.0	1.2	185		FENCO area measured incorrectly. 60" C.S.P.P. installation.
767.7	3.8	410		767.7	5.6	480		FENCO area measured incorrectly.
769.1	0.7	130		769.1	0.8	140		One 60" C.S.P.P. and on 36" C.S.P. proposed.
775.3	1.1	170		775.3	1.1	170		Indistinct channel - multiple C.S.P. installations.
776.1	15.2	750	187	776.1	15.2	750	187	
778.4	0.5	95		778.4	1.0	160		FENCO included adjacent independent areas - multiple C.S.P. installations proposed.
780.6	0.6	110		780.7	1.3	195		FENCO included adjacent independent areas - multiple C.S.P. installations
783.3	0.5	95		783.3	0.8	140	35	FENCO included small drainage area at Mile 783.5. SCHULTZ reports no fish potential at or above the highway crossing.

\* Q<sub>D</sub> = 50 yr. Design Discharge; Q<sub>F</sub> = Fish Migration Discharge

APPENDIX "B"  
DRAFT SPECIFICATION



1.1.1 Description

The description of the contract will be inserted when the client's programming for this section of the proposed highway has been determined.

1.1.2 Location

- .1 The location of the contract limits will be inserted when the client's programming has been determined.
- .2 Inuvik, N.W.T. is adjacent to approximately Mile 971 of the Mackenzie Highway.
- .3 Fort Good Hope, N.W.T. is adjacent to approximately Mile 721 of the Mackenzie Highway.

1.1.3 Project Access and Services

- .1 Inuvik, N.W.T. has a barge landing and all-weather paved airstrip. It is not accessible by public road from southern Canada.
- .2 Fort Good Hope, N.W.T. has a barge landing and airstrip. It is not accessible by public road from southern Canada.
- .3 The nearest barge landing to the north of the project will be at the mouth of Joe Creek adjacent to approximately Mile 821.3 of the Mackenzie Highway. An access road will be constructed along the creek from the Mackenzie River to the highway right-of-way. Full details will be inserted in the contract package.
- .4 The Contractor will be permitted to construct a maximum of one airstrip on a section of the Highway. The roadway may be widened to a maximum top width of seventy (70) feet for a length of approximately three thousand (3,000) feet. The locations will be subject to the approval of the Engineer. Measurement for a payment for construction will be in accordance with the appropriate Unit Price Table items. Maintenance will be performed by the Contractor at no cost to the Department.
- .5 The above information on access is for guidance only and it will be the responsibility of the Contractor to familiarize himself with the availability of transportation and other services.

1.1.4 Commencement Restrictions

The location and nature of the Contractor's campsite and other facilities must receive the approval of the Engineer together with approval under the Land Use Regulations and Northern Inland Waters Act, prior to establishing the camp and commencement of work.

1.1.5 Environmental Protection Restrictions

- .1 No construction activity or alteration or diversion of a stream channel will be permitted in construction of culverts in excess of sixty (60) inches

1.1.5 Environmental  
Protection  
Restrictions (con't.)

in diameter from May 1 to June 30th each year.

- .2 Travel of the Contractor's vehicles or equipment on the Highway right-of-way will not be permitted prior to construction of the embankment to a minimum height of three (3) feet above the original ground; except when the active layer is completely frozen the Engineer may authorize movement of vehicles and equipment on this completely frozen ground without prior embankment construction.
- .3 Stripping of pits and excavation of cuts will only be permitted when the active layer is completely frozen.
- .4 Any restrictions to construction as might be specified in the Operating Conditions of the Land Use Permit.

1.1.6 Milestone Dates

The Contractor's Construction Schedule must show milestone dates as follows:

(MILESTONE DATA 1.2.3 ETC. WILL BE DEVELOPED PRIOR TO CONTRACT TENDER).

1.1.7 Plan Profile  
Drawings and  
1" to 1000'  
Mosaics

- .1 The profile elevations differ from the elevations shown on the 1" to 1000' orthophoto mapping.

The profile elevations are elevations established in the field from Department of Public Works Bench Mark Elevations. The orthophoto mapping elevations are based on a separate map datum and indicate the general relief characteristics of the terrain, with the accuracy obtainable from aerial photogrammetry being approximately within one-half (1/2) the elevation difference between contours in open areas and within one quarter (1/4) the height of the trees in wooded areas. Where there is a discrepancy between the mapping and profile elevations, the profile elevations will govern.

- .2 Where there is a discrepancy between plan and profile relative to a horizontal location, the profile will govern, subject to final layout in the field by the Engineer.

1.1.8 Embankments

- .1 The Contractor shall provide a minimum of one (1) grid roller, one (1) vibrating padfoot drum compaction unit, one (1) vibratory steel drum compaction unit Type B, and two (2) self-powered hand-operated vibrating or tamping units.

The Engineer may instruct that additional compaction unit be placed on the work if necessary to meet the requirements of the Contract schedule.

1.1.8 Embankments  
(con't.)

The above units shall conform with the requirements for compaction equipment described in Division 9, Section 4.

1.1.9 Haul

As overland travel is only permitted during frozen conditions, the Contractor is expected to open up pits ahead in the winter time and construct road embankment back to the haul point for the section of the Contract he expects under construction the following summer.

Where terrain does not permit overland travel, the Engineer will allow the construction of a narrow minimum thickness pad passed the haul point to the next borrow pit.

1.1.10 Culverts

- .1 The locations of all culverts as shown on the Plans are approximate only. The exact location of all culverts and the exact lengths of Corrugated Steel Pipe Culverts will be determined in the field by the Engineer.
- .2 All materials required for Corrugated Steel Pipe Culverts and Corrugated Structural Plate Pipe Culverts will be supplied to the Contractor by the Department by the time of Contract award to a supply stockpile site(s) within a fifty (50) mile radius of Edmonton, Alberta.

1.1.11 Rip-Rap

If suitable rip-rap material is encountered in borrow pits, the Engineer may direct that these materials be sorted.

1.1.12 Engineer's Camp  
and Board

(THE ACTUAL REQUIREMENTS AS TO NUMBER AND TYPE OF TRAILERS, TO BE SPECIFIED PRIOR TO TENDER).

1.1.13 Additional  
Information

Additional information consisting of:

- .1 General Design Data
- .2 Proposed borrow pit layout with waste disposal areas
- .3 Environmental and Geotechnical reports
- .4 Mass haul diagram
- .5 Engineer's scheduling proposal

will be available for viewing in the Department's Edmonton and Inuvik Offices. The information is intended to provide the Contractor with background information used by the Department in preparing the Contract Documents. This information is not part of the Contract Documents under any circumstances.

1.1.14 Change in  
Quantities

The Contractor's attention is drawn to Article II, Paragraphs 2(c) and 2(d) in the Articles of Agreement wherein the Engineer and the Contractor may by an agreement in writing, amend the price set out in the Unit Price Table where the quantities of material performed, used or supplied by the Contractor in executing the work is less than eighty (80) percent or in excess of one hundred and twenty (120) percent of the estimated quantities shown in the Unit Price Table. This provision applies only to those individual items set out in the Unit Price Table each of which has a total tendered amount greater than five (5) percent of the contract tendered amount.

(VERIFY THIS ARTICLE BEFORE TENDER).

1.1.16 Fund Limitations

(IF APPLICABLE, DETAILS WILL BE INSERTED IN THE CONTRACT PACKAGE PRIOR TO TENDER).

1.2.1 Land Use  
Regulations

- .1 The Land Use Permit included in the Specifications was issued to this Department, granting it the authority to carry out the work described in the Specifications and Plans subject to the Territorial Land Use Regulations of the Territorial Land Use Act. The Land Use Permit and the attached Operating Conditions shall be considered part of the Contract Specifications.
- .2 The Contractor's attention is directed to Section 8 of the General Conditions "C" of the Contract and he is hereby advised he will be held fully responsible for all fines and penalties issued against the Department of Public Works as Permittee under the Land Use Permit, and which resulted directly or indirectly from the Contractor's activities on the Project.

1.2.2 Control of  
Materials

Royalties payable to the Crown under the terms of the Territorial Quarrying Regulations for rock, gravel, sand and/or loam are hereby cancelled for the purpose of carrying out work under this contract.

1.2.3 Measurement of  
Quantities

.1 Linear

All linear measurements shall be based on horizontal distances, except for the measurement of culvert installations as noted elsewhere in these Specifications.

.2 Volume

- .1 In computing volume of excavation and embankment, the average end area method will be used, except as otherwise agreed to by the Contractor and the Engineer.
- .2 When materials are to be measured in the haulage vehicle, the vehicle shall be of a size and type acceptable to the Engineer. Unless approved vehicles are of uniform capacity, each must bear a plainly legible identification mark indicating its specific approved capacity. Loads shall be measured at the point of delivery.
- .3 Material specified for measurement by the cubic yard may be weighed and such weights converted to cubic yards for payment purposes. Factors of conversion will be determined by the Engineer and must be agreed to by the Contractor before such method of measurement of pay quantities will be approved by the Engineer.

1.2.3 Measurement of  
Quantities (con't.)

.3 Weight

- .1 The term ton shall mean two thousand (2,000) pounds avoirdupois.
- .2 All materials which are specified for measurement by weight shall be weighed on scales of a type and at a location approved by the Engineer. Trucks used shall be weighed empty at such times as the Engineer directs, and each truck shall bear a clearly legible identification mark.
- .3 Weight measurements will be made by a weighmaster provided by the Department using scales and a scale house to be provided by the Contractor. The scales shall be of suitable design and of sufficient capacity to accommodate any vehicle used on the work in a single weighing operation and shall be inspected and tested for accuracy by the Federal Department of Consumer and Corporate Affairs, Weights and Measures Inspection Branch, as often as may be required by the Engineer. The scale house shall be weatherproof and constructed to afford protection for the recording device of the scales. It shall have one sliding window facing the scale platform, one end window, and a shelf desk at least two (2) feet wide and six (6) feet long. Doors shall not open onto the scale platform. The Contractor shall provide adequate lighting and heating.

The furnishing of scales and scalehouse and the inspection and testing of the scales will be incidental to the work under the Contract and will not be measured separately for payment.

1.2.4 Construction  
Interruptions for  
Environmental  
Protection

- .1 The Contractor will be required to temporarily cease operations on certain sections of the Project for reasons of protecting the environment as outlined in Division 1, Section 1, or in the Operating Conditions of the Land Use Permit. The Contractor shall schedule and organize his works so that the maximum of productive work can continue on other sections of the project during the period(s) of constraint.
- .2 When an unscheduled shutdown of the Contractor's operation has been ordered for reasons of protecting the environment, other than those reasons specified in Division 1, Section 1, or for those reasons in the Operating Conditions of the Land Use Permit, and when, in the opinion of the Engineer, productive work cannot be performed on other sections of the project by the equipment affected by the shutdown,

1.2.4 Construction Interruptions for Environmental Protection (con't.)

payment will be made to the Contractor for equipment and labour standby costs as follows:

.1 Production Equipment Standby

Production Equipment shall include only those units listed in the following group:

motor-scrappers, crawler tractors, front end loaders, motor graders, trucks larger than eight (8) cubic yards, rock drills, compressors and backhoes, draglines and shovels over one-half (1/2) cubic yard. The formula to be applied in determining standby costs for a piece of equipment shall be fifty (50) percent of the current "Alberta Road-Builders Association Rental Rate less the applicable operator wage rate quoted in the Association rate schedule." Such costs will be applicable up to a maximum of 10 hours per day, 5 days per week.

.2 Labour Standby

Labour standby costs will be paid for only those operators assigned to production equipment mentioned above and which have been affected by the shutdown. Measurement for payment will be made in accordance with Section 45 of the General Conditions "C" and shall be based on actual standby wage costs and costs of board and camp operation incurred by the Contractor. The Contractor may be required to present copies of his payroll records to support any labour costs claimed under this section. Payment for board and camp operation may be calculated on the basis of the Unit Price Table Item "Board for Engineer's Staff."

.3 The proposed payments outlined above for Production Equipment Standby and Labour Standby shall be considered full and final compensation for all costs directly or indirectly incurred by the Contractor because of unscheduled shutdown of his operations for protection of the environment.

1.2.5 Barricades and Warning Signs

The Contractor shall, at his own cost, provide, erect and maintain all necessary barricades, suitable and sufficient lights, danger signals and other signs and take all necessary precautions for the protection of the work and the safety of the public.

1.2.6 Project Signs

The Contractor may be required to erect and maintain a standard Department of Public Works project sign(s) supplied by the Department. Measurement for payment

1.2.6 Project Signs  
(con't.)

for the erection and maintenance of the sign(s) will be made in accordance with Section 45 of the General Conditions "C".

1.2.7 Layout of Work

The Engineer will set stakes and bench marks establishing the location, alignment and reference elevations for the work. This will generally include the setting out of one set of clearing markers, offset baseline, bench marks, slope stakes and culvert stakes, together with two sets of second grade stakes.

Any restaking resulting from the careless operations of the Contractor will be at the Contractor's expense

1.2.8 Maintenance of  
Work During  
Construction

.1 General

The Contractor shall at his own cost maintain all work during construction. The maintenance shall constitute continuous and effective work, prosecuted day by day, with adequate equipment and forces so that the roadway and/or structures are, at all times, kept in a condition satisfactory to the Engineer.

.2 Roadway

(a) Ruts and ridges caused by machinery or vehicles shall be removed from the completed or partially completed roadway.

(b) Any portion of the road used for travel shall be kept free of snow.

(c) Prior to spring thaw, snow shall be removed from the top of the road, including shoulders, for the full length of completed or partially completed construction as directed by the Engineer.

.3 Icing of Culverts

The Contractor shall, at his own cost, thaw out iced culverts to ensure that culverts are functioning during the period of spring break-up. The Department will provide a mobile steamer for this purpose. The Contractor will be responsible for operating and maintaining this unit and will return it to the Engineer in good condition upon completing this work.

1.2.9 Use of Roadway  
During Construction

Vehicles of the Government of Canada and the Northwest Territories, or of the Agents or Contractors thereof, will be allowed access within the limits of the project at all times. Unless otherwise



1.2.9 Use of Roadway  
During Construction  
(con't.)

provided in Division 1, Section 1, the Contractor may close the road to the general public during construction. The Engineer may, however, grant the use of the road to other operators.

1.2.10 Construction  
Camp

The Contractor's camp and service area locations are subject to the approval of the Engineer and shall be set up and operated in accordance with the Government of the Northwest Territories Regulations governing operation of temporary field camps.

The development, maintenance and restoration of the Construction Camp and Service Area will be considered incidental to the work under the Contract and will not be measured separately, for payment.

The Contractor shall make application to the Controller of Water Rights, Department of Indian Affairs and Northern Development, Yellowknife, N.W.T., for authorization for the use of water and disposal of domestic sewage wastes at the camp in accordance with the Northern Inland Waters Act. The Contractor shall obtain this authorization prior to camp start-up.

Untreated sewage shall not be discharged directly or indirectly into natural waters. Depending on camp population, soil conditions, climatic conditions and the duration of the camp at one site, the following generally are acceptable methods of sewage disposal.

- .1 Total underground containment or lagooning by means of:
  - (a) Discharge directly to a suitably cribbed and covered cesspool.
  - (b) Discharge to a suitably cribbed leach pit through a septic tank or through a leach cesspool compartment. The septic tank or leach cesspool compartment is for settlement and digestion and for sludge removal as necessary.
  - (c) Discharge to an underground holding pit (which could be a cesspool, leach pit or tank) of at least one week retention capacity and discharged weekly from there to a lagoon by a portable pump and flex-hose or other suitable arrangement. The lagoon shall be suitably located at least three hundred (300) feet away from the camp being served.

1.2.10 Construction  
Camp (con't.)

The lagoon shall have a minimum retention period of one (1) year, a liquid depth of six (6) feet to eight (8) feet, a free board minimum of eighteen (18) inches and impervious berms having a ten (10) foot top width and minimum slopes of three to one (3:1). Suitable precautions shall be taken for erosion control.

2. Package treatment plants such as rotating Bio Disc, Physical Chemical Plant, etc.: The plants are to be sized and operated to produce an effluent of secondary treatment quality. The Contractor shall make every effort to use water-saving fixtures in the camps such as low water-use toilets, urinals, wash basin taps, shower heads, and washing machines.
3. Prior to the installation of the camp and related services, a plan of the layout shall be submitted to the Engineer for approval. Upon being vacated the construction camp and service areas shall be left in a condition acceptable to the Engineer.

1.2.11 Forest Protection  
and Fire Fighting  
Equipment

- .1 The Contractor shall comply with the requirements for forest protection and fire fighting equipment regulations as outlined in the Land Use Permit and the Forest Protection Ordinance, Chapter 38 of the Revised Ordinances of the Northwest Territories.
- .2 The following fire fighting equipment is required for the construction camp(s):

<u>Equipment</u>	<u>Size of Camp (Men)</u>			
	<u>25</u>	<u>50</u>	<u>75</u>	<u>100</u>
Fire Shovels	5	10	15	20
Axes, boys, 2½ lb.	2	4	6	8
Pulaski Tools	5	10	15	20
Chain Saws	1	1	2	2
Backpack Pumps	5	15	20	20
Power Pumps, 1½" discharge	1	2	2	3
Fire Hose, 1½ standard coupling	1500'	3000'	3000'	4500'
Hose Carrying Bags	3	3	6	9
Water Tank, slip on, 500 gal. capacity movable by truck or crawler tractor	1	1	1	2

The chain saw(s) shall weigh approximately twelve (12) lbs. and be equipped with a sixteen (16) inch bar, tools, fuel, oil, spare spark plugs and carburator.

1.2.11 Forest Protection  
and Fire Fighting  
Equipment (con't.)

kit.

The power pumps shall be nine (9) horsepower pumps or larger fully equipped with suction hose, couplings auxiliary tanks, nozzles, funnels, spare spark plugs, fuel, hose wrenches and other tools.

- .3 Fire fighting equipment shall be stored in a conspicuous place in the camp and used exclusively for fire control. Caches should be appropriately signed.
- .4 The Contractor shall designate three (3) persons who will be contacts for the Northwest Lands and Forest Service Field Officer. Prior to commencement of work, the Contractor shall contact the Northwest Lands and Forest Service Field Officer who will instruct the Contractor's "designated persons" so that they will become familiar with the fire regulations, safety precautions and general operating procedures in case of fire.
- .5 The supply of fire fighting equipment is considered incidental to the work under the contract and will not be measured separately for payment.

1.2.12 Employment of  
Native People

- .1 Notwithstanding all the terms of Section 27(2) of the General Conditions "C", special arrangements are required for the employment of local residents on this contract. The Contractor, prior to recruiting his work force, shall meet with the Manager, Canada Manpower Centre, covering the area of the project and advise him of his labour requirements for the project.

The Canada Manpower Centre will identify for the Contractor, local residents in the area of the project who are qualified to perform the duties as outlined by the Contractor and the Contractor must show just cause in event these qualified local people are not offered employment. The Canada Manpower Centre will act as the employment referral agency.

During the progress of the work, the Economic Development Section, Department of Local Government, Government of the Northwest Territories, will make a Liaison Officer available on site to assist the Contractor with any employment arrangements with the local people. The Contractor will maintain contact with Liaison Officers who will provide counselling services as required for employees and their families.

- .2 The Contractor will provide for training on the job

1.2.12 Employment of  
Native People  
(con't.)

contracts, to be arranged by the Territorial Government, for those indigenous Territorial residents who require special assistance in order to fill available jobs.

1.2.13 Climatic  
Conditions

The Contractor's attention is drawn to the severe climatic conditions at the location of the project. Information regarding the climatic conditions can be obtained from the Department of the Environment.

1.2.14 Environmental  
Briefings

When he has commenced operation of all equipment necessary to perform the work identified as clearing and excavation, and thereafter approximately ever three (3) months, the Contractor shall arrange to have all his field staff available for a period of about one hour for environmental briefings. The Contractor shall provide space for the briefings at his camp. The Department will arrange for and bear the cost of having environmental experts available for the briefings. The briefings will be scheduled to fit in with the Contractor's operation (double shift), so as not to require any shutdown of the construction work.

The Department may also have available in the camp, a short photographic slide presentation or movie outlining environmental concerns and precautions to be taken. If such is available, the Contractor shall ensure that all new employees, onto the work view this presentation as soon after arrival as possible.

The Contractor's Superintendent shall meet with the Engineer and the Land Use Officer prior to commencement of any work on this Project to review the requirements of the Land Use Permit Operating Conditions, to identify areas of environmental concern, and to establish special procedures and precautions because of such concern.

1.2.15 Schedules

.1 Tender Schedules

Each Bidder shall submit with his tender a schedule in bar chart form covering excavation, gravel, structural plate culverts, and temporary bridge structures and showing the calendar dates on which activities on each of those items will take place for each five-mile section of the Contract. This schedule must clearly demonstrate that the Bidder has examined all of the requirements of these Specifications, has examined the site conditions, has made himself aware of the access problems to the site and is aware of schedule limitations which may be brought about by Climatic Conditions or Environmental Requirements.

1.2.15 Schedules  
(con't.)

.2 Construction Schedule

After notification of award of Contract, the Contractor must prepare a detailed Construction Schedule showing the calendar time planned for clearing, roadway and borrow excavation, temporary bridge construction, traffic gravel and installation of corrugated steel pipe and corrugated structural plate pipe on the basis of a mile by mile identification for the total length of the Contract. The schedule must meet the requirements of any milestone dates outlined in Division 1, Section 1.

There will be no payment of progress claims until the Construction Schedule is received in a form acceptable to the Engineer.

9.1.1 Description

This item consists of the removal and disposal, in accordance with these Specifications, of trees, brush, stumps, logs and other surface debris from within the highway right-of-way, haul roads, borrow pits, disposal areas, gravel pits and other areas shown on the Plans or designated by the Engineer.

9.1.2 Materials

Not applicable.

9.1.3 Construction

Clearing shall consist of the removal and disposal of all items mentioned in Article 9.1.1, except for trees and shrubs that are designated for preservation. These trees and shrubs shall be protected from scarring, barking or other injury during the construction operations. Dangerous trees and snags overhanging the right-of-way and leaners along the edge of all cleared shall be removed. Shrubs and brush less than three (3) feet in height will not require cutting.

.1 Machine Clearing

The Engineer will designate the areas which may be cleared by machine. Machine Clearing will generally be permitted for the clearing of borrow pits and for the clearing of the right-of-way and haul roads where roadway excavations are proposed.

.2 Hand Clearing

Hand Clearing shall be performed on areas designated by the Engineer and shall consist of cutting to within eight (8) inches of original ground surface, all trees and brush. Generally hand clearing will be confined to the right-of-way, off take ditches and haul roads.

Hand Clearing shall be carried out in a manner that will not damage the existing insulation of organic material. The use of machinery to pile and dispose of the clearing debris will only be permitted over frozen ground conditions.

.3 Debris Piles

Debris piles consisting of trees, rubbish and/or organic materials existing from previous clearing operations shall be removed and disposed of by the Contractor.

.4 Disposal

All clearing debris shall be disposed of as directed by the Engineer. Generally the disposal of right-of-way debris will consist of burning and placing

9.1.3 Construction  
(con't.)

of any unburned debris in disposal pits or disposal areas designated and/or approved by the Engineer. For the clearing of borrow pits, the Contractor will generally be permitted to place the clearing debris into a section of the pit where excavation is completed or along the outside edge of the pit and to flatten, cover with waste excavation and trim such debris to a condition acceptable to the Engineer.

In specific areas, the Engineer may permit or direct that trees from the hand-cut clearing operation be laid into a uniform mat within the limits of future embankment.

.5 Right-of-Way Clearing Limits

Generally the right-of-way will be cleared to a width of one hundred (100) feet or wider, if required, to provide a minimum of fifteen (15) feet from the toe of embankment or from the top of excavation backslope to the edge of the clearing.

.6 Progress of Work

Except as may otherwise be provided or directed by the Engineer, borrow pit areas shall not be cleared in advance of excavation by more than one (1) week. The clearing within the right-of-way shall be completed at least one-half (1/2) mile in advance of the grading operation.

Where portions of the right-of-way have previously been cleared by others, the Contractor shall advise the Engineer no later than October 1st of each year of the section of anticipated embankment construction to take place between October 1st and April 15th.

9.1.4 Measurement

The quantity of CLEARING to be measured for payment shall be the number of acres acceptably cleared in accordance with these Specifications.

The removal of stumps and remaining clearing debris on areas cleared by others will be considered incidental to the clearing operation and will not be measured separately for payment.

Earth material removed along with the clearing debris during the clearing disposal will be considered incidental to the clearing operation and will not be measured separately for payment.

9.2(a).1 Description

This item consists of excavating, loading, hauling within the freehaul distance, placing or disposing and trimming of all Roadway and Borrow Excavation materials. The work is to be carried out in accordance with these Specifications and to the lines and grades shown on the Plans or as designated by the Engineer.

9.2(a).2 Materials

.1 Excavation Rock

Excavation Rock is defined as:

- (a) Material excavated from solid masses of igneous, sedimentary or metamorphic rock which, prior to its removal, was integral with its parent mass.
- (b) Boulder or rock fragments measuring in volume two (2) cubic yards or more.

.2 Excavation Common

Excavation Common shall consist of all other materials of whatever nature, including dense tills, hardpan and frozen materials that do not come under the classification of Excavation Rock.

9.2(a).3 Construction

.1 Roadway Excavation

- (a) Roadway Excavation will include all excavation required for construction of contiguous roadway ditches, embankments, installation of culverts, and the removal and disposal of unsuitable materials.
  - (b) All suitable materials excavated shall be placed in roadway embankments except as otherwise directed by the Engineer.
  - (c) All materials, which in the opinion of the Engineer are unsuitable for embankments will be disposed of at locations and in a manner as directed by the Engineer.
  - (d) All roadway excavation shall be carried out in a manner so as to minimize disturbance to the natural ground cover on adjacent areas.
  - (e) Roadway excavations shall not vary from the grades shown on the Plans or as designated by the Engineer by more than two-tenths (2/10) of a foot. In addition the difference between the constructed grade and the designated grade, roadway, shall not vary by more than one-tenth (1/10) of a foot.
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9.2(a).3 Construction  
(con't.)

- (f) Where the subgrade is in transition from excavation to embankment, sub-excavation will be carried out in the transition area in accordance with the Plans or as designated by the Engineer.
- (g) Where unsuitable material is encountered at the grade level of a cut, the sub-grade shall be sub-excavated to the depth staked by the Engineer.
- (h) Where suitable material is encountered at the grade level of a cut, scarifying to a minimum depth of six (6) inches below sub-grade will be performed prior to shaping and compaction.
- (i) If during excavation, material appearing to conform to the classification of Excavation Rock is encountered, the Contractor shall notify the Engineer and shall provide ample opportunity for the Engineer to investigate and to make such measurements as are necessary to determine the volume of material in question.
- (j) Rock which cannot be ripped, shall be drilled and blasted in such a manner that all material excavated will be usable for embankment construction.
- (k) Where solid rock is encountered at the grade level of a cut, the subgrade shall be sub-excavated to a depth of six (6) inches and backfilled with materials approved by the Engineer.
- (l) Rock slopes shall be scaled down removing boulders and rock fragments to form stable slopes.

.2 Borrow Excavation

- (a) The Engineer will designate and approve all borrow sources and haul roads. Haul roads from borrow pits will consist of one (1) two-way road having a maximum surface width of thirty-two (32) feet or two (2) one-way haul roads each having a maximum surface width of twenty (20) feet. The haul roads will generally be doglegged so that only a short section of the haul road is visible from the highway.
- (b) The vicinity of potential borrow sources has been indicated on the Plans. This information has been provided to give the Contractor an appreciation of the general type of material to be encountered in borrow sources and the

9.2(a).3 Construction  
(con't.)

general spacing of such borrow sources. The actual location, dimensions and depths for excavation of borrow sources will be designated in the field by the Engineer.

- (c) Slopes of the excavated borrow pits shall not be steeper than two to one (2:1) for Excavation Common and one-quarter to one ( $\frac{1}{4}$ :1) for Excavation Rock, unless otherwise directed by the Engineer.
- (d) Unsuitable materials excavated from borrow pits will generally be disposed of by placing it as designated by the Engineer immediately adjacent to the borrow pit in such a location as not to interfere with the natural ground drainage or drainage from or into the borrow pit. The disposed of material will be trimmed as directed by the Engineer. For certain borrow excavations the Engineer may direct that all or part of the unsuitable material be placed back into the excavated area upon completion of the borrow excavation.
- (e) If during excavation, material appearing to conform to the classification of Excavation Rock is encountered, the Contractor shall notify the Engineer and shall provide ample opportunity for the Engineer to investigate and to make such measurements as are necessary to determine the volume of material in question.
- (f) Rock which cannot be ripped shall be drilled and blasted in such a manner that all materials excavated will be usable for embankment construction.

9.2(a).4 Measurement

- .1 The quantity of EXCAVATION COMMON to be measured for payment shall be the number of cubic yards of material in its original position, acceptably excavated and placed in accordance with these Specifications.

Original cross sections will be taken after the clearing is completed.

Scarifying as specified in Article 9.2(a).3.1(h) is considered incidental to the work and will not be measured separately for payment.

- .2 The quantity of EXCAVATION ROCK to be measured for payment shall be the number of cubic yards of material in its original position acceptably excavated and placed in accordance with these Specifications.

9.2(a).4 Measurement  
(con't.)

Original cross sections will be taken on top of the exposed rock surface.

- .3 In roadway rock excavations, where in the opinion of the Engineer unavoidable over-break occurs, measurement for payment will be made for the actual quantity involved provided the over-break does not exceed ten (10) percent of the actual quantity within the lines and grades as staked by the Engineer between the established one-hundred (100) foot station intervals where the over-break occurs. Materials in excess of the allowable over-break when placed in the embankment, will be measured for payment as Excavation Common. Materials in excess of the allowable over-break and not placed in the embankment, will not be measured for payment.
- .4 Where the Engineer directs that unsuitable material from a borrow pit be placed back into the excavated area after completion of the borrow excavation, this work will be measured for payment in accordance with Section 45 of the General Conditions "C".

9.2(b).1 Description

This item consists of excavating, loading, hauling within the freehaul distance, placing or disposing and trimming of all materials classified as Excavation Usable or Excavation Waste. The work is to be carried out in accordance with these Specifications and to the lines and grades shown on the Plans or as designated by the Engineer.

9.2(b).2 Materials

.1 Excavation Usable

All excavated material incorporated into the Roadway Haul Road and Access Road embankments will be classified as Excavation Usable.

.2 Excavation Waste

All excavated material which is not incorporated into the Roadway, Haul Road and Access Road embankments will be classified as Excavation Waste.

9.2(b).3 Construction

.1 Roadway Excavation

- (a) Roadway Excavation will include all excavation required for the construction of contiguous roadway ditches, embankments, installation of culverts and the removal and disposal of unsuitable materials.
- (b) The Engineer will designate the material to be used in embankments and the material to be wasted.
- (c) All roadway excavation shall be carried out in a manner as not to damage the natural ground cover on adjacent areas.
- (d) Roadway excavations shall not vary from the lines and dimensions shown on the Plans or as designated by the Engineer by more than two-tenths (2/10) of a foot. In addition, the difference between the constructed grade and the designated grade, within any one hundred (100) foot length of roadway, shall not vary by more than one-tenth (1/10) of a foot.
- (e) Where the subgrade is in transition from excavation to embankment, subexcavation will be carried out in the transition area in accordance with the Plans or as designated by the Engineer.
- (f) Where unsuitable material is encountered at the grade level of a cut, the subgrade shall be subexcavated to the depth staked by the

9.2(b).3 Construction  
(con't.)

Engineer.

- (g) Waste disposal areas and the manner of waste disposal will be designated by the Engineer.
- (h) Where suitable material is encountered at the grade level of a cut, scarifying to a minimum depth of six (6) inches below subgrade will be performed prior to shaping and recompaction.
- (i) Where solid rock is encountered at the grade level of a cut, the rock shall be subexcavated to a depth of six (6) inches and backfilled with materials approved by the Engineer.
- (j) Rock which cannot be ripped, shall be drilled and blasted in such a manner that all material excavated will be usable for embankment construction.
- (k) Rock slopes shall be scaled down, removing boulders and rock fragments to form stable slopes.

.2 Borrow Excavation

- (a) The Engineer will designate and approve all borrow sources and haul roads. Haul roads will consist of one (1) two-way road having a maximum surface width of thirty-two (32) feet or two (2) one-way haul roads each having a maximum surface width of twenty (20) feet. The haul roads will generally be dog legged so that only a short section of the haul road is visible from the highway.
- (b) The vicinity of potential borrow sources has been indicated on the Plans. This information has been provided to give the Contractor an appreciation of the general type of material to be encountered in borrow sources. The actual location, dimensions and depths for excavation of borrow sources will be designated in the field by the Engineer.
- (c) Slopes of the excavated borrow pits shall not be steeper than two to one (2:1) for Excavation Waste and one-quarter to one (1/4:1) for Excavation Usable unless otherwise directed by the Engineer.
- (d) Waste materials excavated from borrow pits will generally be disposed of by placing as designated by the Engineer immediately adjacent to the borrow pit in such a location

9.2(b).3 Construction  
(con't.)

as not to interfere with the natural ground drainage or drainage from or into the borrow pit. The disposed of material will be trimmed as directed by the Engineer. For certain borrow excavations, the Engineer may direct that all or part of the waste materials be placed back into the excavated area upon completion of the borrow excavation.

- (e) Rock which cannot be ripped, shall be drilled and blasted in such a manner that all materials excavated will be usable for embankment construction.

9.2(b).4 Measurements

- .1 The quantity of EXCAVATION WASTE to be measured for payment shall be the number of cubic yards of material, in its original position, acceptably excavated and disposed of in accordance with these Specifications.
- Original cross sections will be taken after clearing is completed.
- .2 The quantity of EXCAVATION USABLE to be measured for payment shall be the number of cubic yards of material, in its original position, acceptably excavated and placed in accordance with these Specifications.
- .3 There will be no measurement for payment for material excavated beyond the lines shown on the Plans or as staked by the Engineer except in usable roadway excavations, where in the opinion of the Engineer, unavoidable over-break occurs, measurement for payment will be made for the actual quantity involved provided the over-break does not exceed ten (10) percent of the actual quantity within the lines and grades as staked by the Engineer between the established one hundred (100) foot station intervals where the over-break occurs. Materials in excess of the allowable over-break will only be measured for payment if they are acceptably utilized in the construction of embankment.
- .4 Scarifying and relaying as specified in Article 9.2(b)3.1(h) shall be considered incidental to the Roadway and Borrow Excavation operation and will not be measured separately for payment.
- .5 Where the Engineer directs that unsuitable material from a borrow pit be placed back into the excavated area after completion of the borrow excavation, this work will be measured for payment in accordance with Section 45 of the General Conditions "C".

9.3.1 Description

This item consists of the excavation required for permanently deepening, widening and relocating water channels, the construction of ditches other than contiguous roadway ditches, loading, hauling within the free haul distance, placing or disposing and trimming of materials in accordance with these Specifications and to the lines and grades shown on the Plans or as designated by the Engineer. Except for interceptor ditches running generally parallel to the roadway embankment but not contiguous with it, channel excavation will be designated beyond a distance of fifteen (15) feet from the staked toe of the embankment.

9.3.2 Materials

.1 Channel Excavation Rock

Channel Excavation Rock is defined as:

- (a) Channel material excavated from solid masses of igneous, sedimentary or metamorphic rock which, prior to its removal, was integral with its parent mass.
- (b) Boulder or rock fragments measuring in volume two (2) cubic yards or more.

.2 Channel Excavation Common

Channel Excavation Common shall consist of the excavation of all other materials of whatever nature including dense tills, hardpan and frozen materials that do not come under the classification of Channel Excavation Rock.

9.3.3 Construction

All materials excavated shall be disposed of as shown on the Plans or as directed by the Engineer. Suitable material shall be used in the roadway embankment, where considered practical by the Engineer. When excavated material is placed near the banks of a channel or ditch, provision shall be made to ensure proper flow of water from adjacent land to this waterway. The excavation shall be neatly finished and the disposed of material shall be shaped and trimmed to a condition satisfactory to the Engineer. The excavation equipment is subject to the approval of the Engineer.

All Channel Excavation shall be carried out in a manner as not to damage the natural ground cover on adjacent areas.

9.3.4 Measurement

- .1 The quantity of CHANNEL EXCAVATION COMMON to be measured for payment, shall be the number of cubic yards of material, in its original position, acceptably excavated and placed in accordance with these Specifications.

9.3.4 Measurement  
(con't.)

- .2 The quantity of CHANNEL EXCAVATION ROCK to be measured for payment, shall be the number of cubic yards of material, in its original position, acceptably excavated and placed in accordance with these Specifications.
- .3 Measurement for payment of material excavated beyond the lines shown on the Plans or staked by the Engineer will not be made except that for Channel Excavation Rock where, in the opinion of the Engineer unavoidable overbreak occurs. Measurement for payment will be made of the actual quantities involved, provided the overbreak quantity does not exceed ten (10) percent of the actual quantity of rock within the lines and grades as staked by the Engineer between the established one-hundred (100) foot station intervals where the overbreak occurs. Channel Excavation Rock beyond the allowable overbreak will not be measured for payment.



9.4.1 Description

This item consists of the construction of embankments for the highway, haul roads, access roads, ditch blocks and ditch checks and the backfilling of culverts, structures and sub-excavated areas in accordance with these Specifications and to the lines and grades shown on the Plans or as designated by the Engineer.

9.4.2 Materials

The materials shall consist of acceptable earth and/or rock free from wood, brush, roots and other organic matter. All materials shall be subject to the approval of the Engineer prior to use in embankment construction.

9.4.3 Construction

.1 Placing Embankments

- (a) The embankment shall be constructed to the lines and grades shown on the Plans and/or staked by the Engineer. If an embankment is constructed beyond the designated lines and grades, the excess material shall be removed by the Contractor at his own expense and placed where the embankment is below grade level. If the excess material cannot be acceptably used in embankment construction, it shall be disposed of at a location designated by the Engineer in a manner approved by the Engineer at the Contractors cost. Such excess material will be excluded from the excavation measurement at its source.
- (b) The initial lift of embankment material on unstable foundations shall have a minimum thickness of three (3) feet for support of construction equipment. The Engineer may permit the initial lift to be placed in a narrow fill along the uphill side of the embankment area to provide access to various works along the right-of-way. Successive lifts on an unstable foundation and all lifts on stable foundations shall be constructed in uniform layers of eighteen (18) inches maximum thickness across the entire width of the embankment with the final lift of eight (8) inches maximum compacted thickness. In embankments composed primarily of material obtained from rock cuts, the larger stones shall be carefully distributed and the voids filled with smaller stones and other available material to form a compact mass.
- (c) The Contractor shall maintain sufficient crown and/or superelevation during the embankment construction to ensure ready transverse runoff of surface water.

9.4.3 Construction  
(con't.)

- (d) Preliminary shaping of side slopes shall be done as close behind embankment placement as possible.
- (e) Trimming of the top surface, side slopes and toe of the embankments shall be done in a neat and workmanlike manner. Final embankments shall not vary from the grades shown on the Plans or as designated by the Engineer by more than two-tenths (2/10) of a foot. In addition, the difference between the constructed grade and the designated grade, within any one hundred (100) foot length of roadway, shall not vary by more than one-tenth (1/10) of a foot.
- (f) Final trimming shall be under the supervision of a competent foreman and shall be complete by September 15th of each year for all sections of the road which have been constructed to final grade.
- (g) Subsequent work, except for normal maintenance, on sections of the embankment where shaping and trimming has been completed to the satisfaction of the Engineer, shall be carried out as directed by the Engineer.
- (h) Material used in the final eight (8) inch lift of embankment, shall be selected by the Contractor to ensure a minimum of boulders or stone fragments having dimensions larger than six (6) inches. After placing the final eight (8) inch lift, all stones, boulders or rock fragments greater than six (6) inches in dimension, shall be removed from the material and disposed of at locations approved by the Engineer.
- (i) As this project lies within the zone of permanent frost, it will be permissible to construct embankment using soils in a frozen state.

.2 Compaction of Embankments

- (a) Each layer of embankment material shall be spread evenly to the satisfaction of the Engineer. The hauling equipment shall be directed uniformly over the full width of each layer of material placed.
- (b) The Engineer will determine if and when compaction is required in addition to that provided by the hauling units and will designate the type and number of compaction units to be used.

9.4.3 Construction  
(con't.)

- (c) The addition of water to the embankment material may be required during the compaction operation. The Engineer will designate when this is required and the quantities to be applied. The water shall be distributed in accordance with Division 9, Section 10.

.3 Drying of Embankments

During embankment construction, if in the opinion of the Engineer, the material is too wet for compacting, he may direct that drying of the embankment material be carried out. The type and number of drying equipment units and the drying procedure used will be as directed by the Engineer. If in the opinion of the Engineer the weather is not suitable for drying, the drying work will cease and not resume until the Engineer has so directed.

.4 Embankment Adjacent to Structures

(a) Embankment at Bridge Approaches

The permission of the Engineer must be obtained before any fill is placed against concrete arches, abutments or wing walls.

Approach fills to structures, within the lines shown on the Plans or as directed by the Engineer, shall be constructed of approved material placed in layers of maximum compacted thickness of six (6) inches. The amount of compaction and the type of equipment to be used will be determined by the Engineer. For structures requiring embankments on both sides, the embankment shall be placed simultaneously at the same elevations on both sides of the structure.

(b) Embankment at Culverts

Embankment materials around culverts shall be selected by the Engineer and placed to the limits shown on the Plans or as designated by the Engineer. The material shall be placed and compacted in six (6) inch layers alternately on each side of the culvert so as not to displace the culvert during installation. The amount of compaction and the type of equipment to be used will be determined by the Engineer. To obtain the required compaction under the haunches, the material in this area shall be placed and tamped by hand to the satisfaction of the Engineer.

9.4.3 Construction  
(con't.)

(c) Fill - Retaining Walls

The fill behind the walls shall consist of approved material placed in layers not exceeding six (6) inches in thickness and compacted as directed by the Engineer. In the case of cell type retaining walls, the fill behind the wall shall be tamped and kept near but not above the level of the compacted material within the cells. Where fill is to be placed on a sloping surface, the surface must be benched to reduce the load on the retaining structure.

.5 Compaction Equipment

All compactors specified herein for compaction of material shall comply with the following minimum requirements:

- (a) Sheepsfoot compactors shall consist of one or more drum units, having a total minimum width of eight (8) feet. The length of the tamping feet shall not be less than seven (7) inches. Under working conditions, the compactor shall be of such weight that the minimum load upon each tamper foot will not be less than four-hundred (400) pounds per square inch of cross-sectional area of the tamping feet. The sheepsfoot compactor shall be of the self-cleaning type and the ends of the tamping feet shall at all times be kept in a flat condition acceptable to the Engineer.
- (b) Pneumatic-tired rollers shall have a width of not less than six (6) feet. They shall be equipped with pneumatic tires of equal size and diameter. The space between the side walls of adjacent tires shall be not greater than the tire width, and the rear tires shall be staggered in relation to the front tires. The roller shall be equipped with mechanical means of distributing the contact pressure uniformly among all the tires and the tires shall be uniformly inflated so that the air pressure in all tires does not vary more than five (5) pounds per square inch. Pneumatic tired rollers shall be so constructed that the total weight of the roller shall be not less than seventeen (17) tons and that the roller shall develop a minimum of four-hundred (400) pounds pressure per inch width of tire. During rolling, the operating weight of the roller and the tire pressure shall be varied as directed by the Engineer to fit the soil conditions.

9.4.3 Construction  
(con't.)

- (c) Grid Rollers shall weigh not less than fifteen (15) tons. The roller shall have a nominal width of eighty (80) inches; with five (5) inches nominal distance between the centre of the bars forming the grid.
- (d) Type (A) steel drum vibratory compactors shall be of the articulated frame type having a drum width of not less than six (6) feet. The weight on the drum end shall not be less than five (5) tons with minimum total applied forces of five-hundred (500) pounds (combined vertical components of dynamic and static forces) per linear inch of drum.
- (e) Type (B) steel drum vibratory compactors shall consist of a double drum (vibration on both drums), self-propelled compaction unit meeting the following minimum requirements:
- |  |  |
|--|--|
| Total weight   | 1200 lbs.                              |
| Width of drums   | 24 inches                              |
| Total applied force<br>(combined vertical<br>components of dynamic<br>and static forces) | 200 lbs. per<br>linear inch<br>of drum |
- (f) Vibratory padfoot drum compactors shall be of the articulated frame type having a drum width of not less than six (6) feet. The weight on the drum end shall not be less than five (5) tons with a minimum total applied contact pressure (combined dynamic and static pressure) of five hundred (500) pounds per square inch.
- (g) Self-powered, hand-operated vibratory plate units for compaction of backfill and/or embankment immediately adjacent to structures and culverts shall be of a design approved by the Engineer and weighing not less than two hundred (200) pounds.
- (h) Pneumatic, hand operated tamping units for compaction of backfill and the haunches of forty-eight (48) inch and larger diameter culverts shall be the ramming type of approved design and weighing not less than thirty (30) pounds.
- (i) Each compaction unit shall consist of a fully operated compactor. Compaction units described in Articles 9.4.3.5(a), (b), (c), (d), (e) and (f) shall be self-propelled or power-drawn, and be capable of moving at a speed up to four (4)

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(con't.)

miles per hour, with the exception of the compaction units described in Article 9.4.3.5(e) which shall be capable of moving at speeds up to seventy (70) feet per minute.

.6 Drying Equipment

- (a) Drying Equipment shall consist of a heavy duty hinge offset type disc plow meeting the following minimum requirements:

Weight	8000 lbs. with provisions for additional weight as required
Width	8 feet
No. of discs	12
Disc diameter	36 inches

- (b) Each drying unit shall consist of fully operated self-propelled or power-drawn drying equipment. Drying units shall be capable of moving at speeds up to four (4) m.p.h.

.7 Time Recording

- (a) All compaction and drying units with the exception of the self-powered and hand operated vibrating plate and tamping units as described in Articles 9.4.3.5(g) and (h) shall be equipped with an approved time recording device which accurately records the number of hours each machine is in operation.
- (b) It will be the Contractor's responsibility to ensure that the time recording devices are properly mounted and maintained, that the cards are accurately identified as to the machine, date and shift and to daily deliver said cards to the Engineer.
- (c) The Engineer will record the number of operating hours for each machine and both the Engineer and the Contractor will certify daily that such records are correct.

9.4.4 Measurement

- .1 The construction of Embankments will be considered incidental to the work under the Unit Price Table Items, and will not be measured separately for payment.
- .2 The quantity of COMPACTION to be measured for payment, shall be the actual number of approved hours

9.4.4 Measurement  
(con't.)

each compaction unit is operated as directed by the Engineer in accordance with these Specifications.

- .3 The quantity of DRYING to be measured for payment, shall be the actual number of approved hours the drying unit is operated as directed by the Engineer in accordance with these Specifications.
- .4 The Unit Price Table prices for compaction and/or drying units shall be considered allfound fully operated rates including operators as required.
- .5 Other Equipment used in the drying and/or compaction operations, which is not shown in the Unit Price Table, will be considered incidental to the drying and compaction operation and will not be measured separately for payment.
- .6 Work described in Article 9.4.3.1(g) will be measured for payment in accordance with Section 45 of the General Condition "C".
- .7 The removal and disposal of stones, boulders and/or rock fragments as described in Article 9.4.3.1(h) shall be incidental to the embankment construction operation and will not be measured separately for payment.

9.5.1 Description

This item consists of the authorized hauling of excavated material, classified under the various excavation items, in accordance with these Specifications for a distance beyond a free haul distance of one-half (1/2) mile, (2,640 feet).

9.5.2 Materials

Not applicable.

9.5.3 Construction

Not applicable.

9.5.4 Measurement

- .1 The quantity of OVERHAUL to be measured for payment shall be the number of cubic yard miles of haul of authorized material beyond the two thousand six hundred and forty (2,640) foot free haul distance in accordance with these Specifications. The Haul will be calculated by the Mass Diagram Method.

The overhaul distance shall be the distance between the centres of volume of the overhauled material in its original position and its position after placing, less the free haul distance. The haul distance will be measured along the shortest route determined by the Engineer as feasible and satisfactory.

When material is obtained by extra widening of a right-of-way cut, any area of the excavation more than one hundred and fifty (150) feet from the centreline of the roadway will, for the purpose of centre of mass and overhaul calculations, be considered as a separate area off the right-of-way and its distance from the roadway will be measured to the centreline of the roadway.



9.6.1 Description

This item consists of the transportation from the designated supply site(s) and the installation of Corrugated Steel Pipe (C.S.P.) Culverts in accordance with these Specifications and to the lines and grades shown on the Plans or as designated by the Engineer.

9.6.2 Materials

- .1 Culverts, couplers and hardware will be supplied by the Department at the designated supply site(s) listed in Division 1, Section 1. The materials will be palletized.
- .2 Materials used for bedding and the fill around culverts will be selected by the Engineer from items listed in the Unit Price Table.
- .3 Materials for water tight joints and insulation will be supplied by the Department to the Contract site.

9.6.3 Construction

.1 Handling of Culvert Material

- (a) The Contractor shall transport the culvert material in the existing pallets from the designated supply site(s) to the Contractors stockpile site(s). The pallets shall be maintained during shipment.
- (b) Prior to removing the culvert material from the designated supply site(s) supply the Engineer with a certificate acknowledging receipt of the material and from then to completion of the project, the Contractor shall assume full responsibility for the materials and shall replace any lost or damaged items at no cost to the Department.

The culverts have been nested and palletized in a manner most economical for shipment. The pallets are of such size that they will not exceed the width, height, length requirements for highway transport.

- (c) The culvert material shall be handled so as not to bruise or damage the spelter coating. It shall not be dragged on the ground or manipulated with heavy equipment without proper precaution to protect the surface. Any damage to the spelter coating shall be protected by the application of two (2) coats of weather resistant high zinc oxide paint meeting the requirements of the C.G.S.B. Specification No. 1-GP181. The areas damaged shall be thoroughly cleaned and rough edges ground smooth prior to the paint application.

9.6.3 Construction  
(con't.)

.2 Excavation

- (a) The location and elevation of excavations for culverts will be staked by the Engineer.
- (b) During construction the Contractor may be required to provide a temporary channel diversion outside the limits of the culvert. The location of the channel diversion and the method of construction is subject to the Engineers approval.
- (c) Excavation shall be carried out in accordance with Division 9, Section 2(a) or Section 2(b).

.3 Bedding

The culvert bed shall be constructed to provide a uniform and firm foundation throughout its entire area. When a firm foundation is not encountered at the grade established for the culvert, the bottom of the bed shall be sub-excavated to the dimensions staked by the Engineer. The sub-excavated area shall be back-filled with material approved by the Engineer, and compacted as directed by the Engineer.

.4 Installation

- (a) Corrugated Steel Pipe Culverts shall be placed with the inside circumferential laps pointing downstream. The longitudinal laps for annular corrugated culverts shall be located at the side or quarter points.
- (b) The sections of the culverts shall be firmly jointed with coupling bands.
- (c) If watertight joints are specified, the method used shall be as directed by the Engineer.
- (d) If insulation is specified, installation of insulation materials shall be as shown on the Plans or as directed by the Engineer.
- (e) The backfilling around the culvert will be in accordance with the Plans and shall conform with Division 9, Section 4. The material used will be subject to the approval of the Engineer who will also determine the amount of compactive effort required.
- (f) Vehicular traffic and construction equipment will not be allowed to cross over a culvert until the backfill has been constructed and compacted to a minimum depth two (2) feet

9.6.3 Construction  
(con't.)

over the highest point of the culvert.

(g) Strutting of culverts will not be allowed without written approval from the Engineer.

9.6.4 Measurement

- .1 The quantity of CORRUGATED STEEL PIPE to be measured for payment, shall be the number of lineal feet of the various sizes of pipe specified in the Unit Price Table acceptably delivered and installed in accordance with these Specifications.

The measurement will be based on the nominal length of pipe sections.

- .2 Installation of Watertight Joints will be measured for payment in accordance with Section 45 of the General Conditions "C".
- .3 Installation of Insulation will be measured for payment in accordance with Section 45 of the General Conditions "C".
- .4 Quantities of Culvert Excavation, Backfill Material and Compaction will be measured for payment in accordance with the appropriate Unit Price Table Items.
- .5 The provision for a temporary channel diversion as described in Article 9.6.3.2(b) shall be considered incidental to the culvert installation operation and will not be measured separately for payment.

9.7.1 Description

This item consists of the transportation from the designated supply site(s) and the installation of Corrugated Structural Plate Pipe (C.S.P.P.) Culverts in accordance with these Specifications and to the lines and grades shown on the Plans or as designated by the Engineer.

9.7.2 Materials

- .1 The Culvert Plates, Cut-Off Walls, Hold Down Platforms and/or Stiffeners and Steam Lines will be supplied by the Department at the designated supply site(s) listed in Division 1, Section 1.
- .2 Materials used for bedding and the fill around the culverts will be selected by the Engineer from one of the Unit Price Table Items.
- .3 Materials for water tight joints and insulation will be supplied by the Department to the Contract site.

9.7.3 Construction

.1 Handling of Culvert Material

- (a) The Contractor shall transport the culvert material in the existing bundles and/or pallets from the designated supply site(s) to the Contractors stockpile site(s). The bundles and/or pallets shall be maintained during shipment.
- (b) The culvert material shall be handled so as not to bruise or damage the spelter coating. It shall not be dragged on the ground or manipulated with heavy equipment without proper precautions to protect the surface. Any damage to the spelter coating shall be restored by the application of two (2) coats of weather-resistant, high zinc dust oxide paint meeting the requirements of the C.G.S.B. Specification 1-GP181. The areas damaged shall be thoroughly cleaned and rough edges ground smooth prior to the paint application.

.2 Excavation

- (a) The location, lines and grades of the excavation required for the culvert installations will be as shown on the Plans or as designated by the Engineer.
- (b) During the construction, the Contractor may be required to provide a temporary diversion channel outside the limits of the culvert. The location of the channel diversion and the method of construction is subject to the Engineers approval.

9.7.3 Construction  
(con't.)

(c) Excavation shall be carried out in accordance with Division 9, Section 2(a) or Section 2(b).

.3 Foundation

The culvert bed shall provide a firm foundation throughout its entire area. The bed shall be sub-excavated to the dimensions staked by the Engineer and backfilled with approved material which shall be compacted as directed by the Engineer.

.4 Assembly

(a) Placing and assembly of the pipe may only proceed after the excavation, foundation and bedding for the pipe have been approved by the Engineer. The assembly shall be in accordance with the Shop Drawings. All holes shall be filled with bolts and shall be tightened to a torque of not less than one hundred and fifty (150) foot pounds and not more than two hundred (200) foot pounds.

(b) The Contractor shall, when specified in Division 1, Section 1, arrange at his own cost to have in the field a fully qualified representative of the culvert supplier during the period of installation to ensure that the culvert assembly, erection and general construction are in accordance with the Supplier's recommendations.

.5 Backfilling

(a) Assembly and tightening of all bolts shall be completed and approved by the Engineer before backfilling may commence. Backfill material will be designated by the Engineer.

(b) Backfill material shall be placed in successive layers and compacted in accordance with the Plans or as directed by the Engineer. Equipment used for the backfilling operation up to three (3) feet above the top of the pipe shall run parallel and as close to the pipe as possible with simultaneous hand spreading and compaction by vibrators and/or mechanical tampers adjacent to the face of the pipe. The material under the haunches shall be hand placed and tamped as directed by the Engineer.

(c) During the course of backfilling around and above the pipe, the deflections within the pipe will be measured by the Engineer and the results will be made available to the Contractor on a routine basis.

9.7.3 Construction  
(con't.)

If required, the Contractor shall assist the Engineer in placing the measuring devices. Lateral movement of the pipe shall be prevented by controlling the rate of filling on each side. The Contractor will be responsible for the proper placing of the bedding and backfill as evidenced by the deformation of the pipe from its original shape. No strutting of the pipe will be allowed without written approval from the Engineer.

Unless otherwise directed, the following criteria on deflection will be followed. Only vertical deflections that tend to increase the original vertical dimension will be allowed. Increase in vertical dimension will not be permitted to exceed three (3) percent of the original vertical diameter. Horizontal deflections will not be permitted to exceed a five (5) percent decrease of the original horizontal diameter.

- (d) If during the placement of backfill or embankment around and above the pipe the deformations should exceed the above limits, the work shall cease. The Engineer may then order the removal and replacement of the backfill in its entirety or in part and may require that the pipe be strutted either horizontally or vertically. The Contractor shall undertake the corrective work as designated by the Engineer.
- (e) Vehicular traffic and construction equipment will not be allowed to cross over the structure until the backfill has been constructed and compacted to a minimum depth of three (3) feet over the highest point on the pipe, or to a height specified by the culvert supplier for the loadings anticipated.

.6 Cut-Off Walls, Hold Down Platforms, Stiffeners, Steam Lines

Where specified, Cut-Off Walls, Hold Down Platforms, Stiffeners and Steam Lines shall be installed with the culvert installations in accordance with the Plans. Except where otherwise specified, all required materials will be provided to the Contractor along with the culvert materials.

.7 Dewatering

The foundation shall be kept free of water during the excavation and backfilling of the culvert bed and the assembly of the culvert.

9.7.3 Construction  
(con't.)

During the backfilling of the culvert bed and around and above the culvert, water levels abutting the backfill shall be kept at least two (2) feet below the level of backfilling

- .8 If watertight joints are specified, the method used shall be as directed by the Engineer.
- .9 If insulation is specified, installation of insulation materials shall be as shown on the Plans or as directed by the Engineer.

9.7.4 Measurement

- .1 The quantity of CORRUGATED STRUCTURAL PLATE PIPE to be measured for payment shall be as a unit for the acceptable delivery and installation of Corrugated Structural Plate Pipe culverts(s) in accordance with these Specifications at each individual site shown on the Plans and referenced in the Unit Price Table.
- .2 The delivery and installation of Cut-Off Walls, Hold Down Platforms, Stiffeners, and Steam Lines where specified in the Plans shall be considered incidental to the culvert installation operation and will not be measured separately for payment.
- .3 Quantities for Culvert Excavation, Backfill Materials and Compaction will be measured for payment in accordance with the appropriate Unit Price Table Items.
- .4 Installation of Watertight Joints will be measured for payment in accordance with Section 45 of the General Conditions "C".
- .5 Installation of Insulation will be measured for payment in accordance with Section 45 of the General Conditions "C".
- .6 The provision for a temporary channel diversion as described in Article 9.7.3.2(b) shall be considered incidental to the culvert installation operation and will not be measured separately for payment.
- .7 Corrective work as described in Article 9.7.3.5(d) shall be considered incidental to the culvert installation operation and will not be measured separately for payment.
- .8 Dewatering as described in Article 9.7.3.7 shall be considered incidental to the culvert installation operation and will not be measured separately for payment.

9.8.1 Description

This item consists of excavating, screening or otherwise removing oversize material from gravel and loading, hauling and placing the material on the road or in stockpile(s) in accordance with these Specifications or as directed by the Engineer.

9.8.2 Materials

Traffic Gravel will consist of either screened gravel or pit run gravel.

.1 Screened Gravel - 3" Minus

The material shall consist of screened gravel of clean, hard particles, free from clay lumps, cementation and organic or other deleterious material and shall meet the following gradation requirement:

<u>Sieve No.</u>	<u>Percent Passing (By Weight)</u>
3"	100%
No. 4	30-70
No. 200	3-10

.2 Pit Run Gravel

The material shall consist of pit run gravel of clean, hard particles free from clay lumps, cementation and organic or other deleterious material. All oversize material shall be removed at the source or at the road. Material exceeding three (3) inches in dimension is classified as oversize material.

9.8.3 Construction

- .1 Clearing of material source areas, haul road(s) and stockpile site(s) shall be in accordance with Division 9, Section 1.
- .2 Excavation and disposal of material overlaying the gravel source and the construction of haul road(s) and/or stockpile site(s) shall be in accordance with Division 9, Section 2(a) or 2(b) and Section 4.
- .3 To minimize the amount of oversize material hauled to the road, the Contractor shall select and sort out the pit run gravel material at the source.
- .4 Before gravel can be placed either on the road or in stockpile(s), approval must be received from the Engineer.
  - (a) For placement of gravel on the road, the roadbed surface shall be smooth riding and free from potholes and ruts. Scarifying and



9.8.3 Construction  
(con't.)

blading shall be performed as directed by the Engineer.

- (b) Hauling equipment shall be directed over the full width of the traffic lanes to ensure uniform compaction of the roadway surface.
- (c) The gravel shall be dumped and spread uniformly on the roadbed surface at the rate specified by the Engineer.
- (d) When gravel is used to backfill sub-excavated areas, or for backfill material around culverts, the backfill operation will be in accordance with Division 9, Section 4.
- (e) Stockpile site(s) shall be firm and level and clean of all deleterious material. The stockpile(s) shall be shaped as directed by the Engineer and constructed in layers not exceeding three (3) feet in depth over the entire stockpile area. Stockpiles shall be kept free of snow and ice during the stockpiling operation.

9.8.4 Measurement

- .1 The quantity of SCREENED GRAVEL to be measured for payment, shall be the number of tons of material acceptably placed on the road or in the designated stockpile(s) in accordance with these Specifications.
- .2 The quantity of PIT RUN GRAVEL to be measured for payment, shall be the number of tons of material acceptably placed on the road or in the designated stockpile(s) in accordance with these Specifications.
- .3 The quantity of GRAVEL HAUL to be measured for payment shall be the number of ton miles of gravel haul for traffic gravel acceptably placed in accordance with these Specifications.

The quantity will be computed by multiplying the weight of the material in tons, or fractions thereof, by the haul distance measured in miles, or fractions thereof, along the designated route between the point of loading and the designated delivery point.

- .4 Removal from the road surface and disposal of over-size pit run material will be incidental to the traffic gravel operation and will not be measured separately for payment.
- .5 Clearing, removal of overburden and the construction of haul roads and/or stockpile sites will be measured for payment in accordance with the appropriate

9.8.4 Measurement  
(con't.)

Unit Price Table Items.

- .6 Preparation of the roadbed surface, maintenance of haulroads and removal of snow and ice as specified in Article 9.8.3.4 will be considered incidental to the traffic gravel operation and will not be measured separately for payment.

9.9.1 Description

This item consists of excavating, crushing from gravel or stone, loading, hauling and placing material on the road or in stockpile(s) in accordance with these Specifications or as directed by the Engineer.

9.9.2 Materials

.1 Crushed Gravel

The material shall consist of crushed stone or crushed gravel of clean, hard, angular particles free from clay lumps, cementation and organic or other deleterious material, and shall meet the following gradation requirements:

<u>Sieve No.</u>	<u>Percent Passing (By Weight)</u>
3/4"	100%
No. 4	40 - 65
No. 10	25 - 55
No. 40	10 - 30
No. 200	3 - 10

A minimum of fifty (50) percent of the material retained on the No. 4 Sieve shall have at least one fractured face.

9.9.3 Construction

.1 Clearing

Clearing of the material source area(s), haul road(s) and stockpile site(s), shall be in accordance with Division 9, Section 1.

.2 Excavation of Overburden

The Excavation and Disposal of material overlaying the material source and the construction of haul roads and/or stockpile sites shall be in accordance with Division 9, Section 2(a) or 2(b) and Section 4 of these Specifications.

.3 Roadbed Surface Reconditioning

Before placement of gravel on the road, the roadbed surface shall be restored to a condition satisfactory to the Engineer. Scarifying and blading shall be performed as directed by the Engineer.

.4 Placement of Gravel on the Road

The gravel shall be dumped and spread uniformly on the road at the rate specified by the Engineer.

9.9.3 Construction  
(con't.)

.5 Compaction

Compaction of the roadbed surface during the roadbed surface reconditioning and of the gravel surface course will be as directed by the Engineer.

.6 Water for Compaction

Water for Compaction will be in accordance with Division 9, Section 10.

.7 Drying

If drying is required, this shall be performed as directed by the Engineer.

.8 Stockpiling

Stockpile site(s) shall be firm and level and be clean of all deleterious material. The stockpile(s) shall be shaped as directed by the Engineer and constructed in layers not exceeding three (3) feet in depth over the entire stockpile area. Stockpiles shall be kept free of snow and ice during the stockpiling operation.

9.9.4 Equipment

.1 Roadbed Surface Reconditioning Equipment

The Roadbed Surface Reconditioning Equipment shall consist of a motor grader having a minimum net flywheel horsepower of one hundred and fifty (150). The motor grader shall not be more than three (3) years old and shall be equipped with a rear mounted ripper.

.2 Compaction Equipment

All compaction equipment specified in the Unit Price Table shall meet the requirements for compaction equipment specified in Division 9, Section 4.

.3 Drying Equipment

The drying equipment specified in the Unit Price Table shall meet the requirements for drying equipment specified in Division 9, Section 4.

.4 Time Recording

Roadbed reconditioning equipment, compaction units and drying units shall be equipped with an approved time recording devices which accurately record the number of hours each machine is in operation.

9.9.4 Equipment (con't.)

It will be the Contractor's responsibility to ensure that the time recording devices are properly mounted and maintained, that the cards are accurately identified as to the machine, date and shift and to daily deliver said cards to the Engineer.

The Engineer will record the number of operating hours for each machine and both the Engineer and the Contractor will certify daily that such records are correct.

9.9.5 Measurement

- .1 The quantity of CRUSHED GRAVEL to be measured for payment shall be the number of tons of material acceptably placed on the road or in the designated stockpile(s) in accordance with these Specifications.
- .2 The quantity of GRAVEL HAUL to be measured for payment shall be the number of tons of gravel haul for surfacing gravel acceptably placed in accordance with these Specifications.

The quantity will be computed by multiplying the weight of the material in tons or fractions thereof, by the haul distance measured in miles or fractions thereof, along the designated route between the point of loading and the designated delivery point.

- .3 The quantity of Roadbed Surface Reconditioning to be measured for payment shall be the actual number of approved hours that the designated reconditioning equipment is acceptably operated as directed by the Engineer in accordance with these Specifications. Provision and replacement of ripper teeth shall be considered incidental to the roadbed surface reconditioning operation and will not be measured separately for payment.
- .4 Clearing, Excavation of Overburden, Construction of Haul Roads and/or Stockpile Sites, Compaction, Drying and Water for Compaction will be measured for payment under the appropriate Unit Price Table Items.
- .5 Removal of snow and ice as specified in Article 9.9.3.8 shall be considered incidental to the Surfacing Gravel operation and will not be measured separately for payment.

9.10.1 Description

This item consists of loading, transporting and distributing water required for the construction of highway embankment or the placing of road surfacing materials, all in accordance with these Specifications.

9.10.2 Materials

The water shall be free from undesirable quantities of organic matter and mineral salts.

9.10.3 Construction

- .1 Watering equipment shall consist of water-tight tank(s) mounted on adequately powered trucks. The water shall be applied through a spray bar or nozzle of such design as to provide a uniform unbroken spread of water over a minimum width of eight (8) feet. A suitable device for positive shutoff of the spray bar shall be so located as to permit control from the cab of the truck.
- .2 The Engineer will determine the quantity of water to be applied and the rate of application.
- .3 Water used for dust control will not be measured for payment.

9.10.4 Measurement

- .1 The quantity of WATER to be measured for payment, shall be the number of one thousand (1,000) gallon units of water acceptably distributed in accordance with these Specifications.

9.11.1 Description

This item consists of supplying materials and constructing a protective covering of sacked concrete or approved stone, with or without mortar, on an earth bed or granular filter blanket or filter fabric in accordance with these Specifications. Rip-Rap shall be constructed at the locations and in conformity with the lines and grades shown on the Plans or as designated by the Engineer.

9.11.2 Materials

The Contractor will supply all rip-rap materials except for filter fabrics, which will be supplied by the Department to the project. The materials supplied by the Contractor will be subject to approval by the Engineer.

.1 Stone Rip-Rap:

Stone Rip-rap materials shall be of approved quality and shall consist of sound, hard and dense stones, boulders or quarry rocks resistant to the action of air and water and free from seams, cracks or other structural defects.

- (a) Stone Rip-rap materials generally designated for corrugated steel pipe culverts, ditch checks and ditch blocks shall meet the requirements of "Normal Stone Rip-Rap". Normal Stone Rip-Rap shall consist of stones, boulders or quarry rocks having dimensions of not less than six (6) inches in any one direction.
- (b) Stone Rip-Rap materials generally designated for corrugated structural plate pipe culverts, bridges, and channel bank protection shall consist of stones, boulders or quarry rocks meeting with the requirements for "Heavy Stone Rip-Rap" or "Armour Stone Rip-Rap."

HEAVY STONE RIP-RAP

<u>Weight of Stones (lbs)</u>	<u>Percentage</u>
800 - 1,200	40 - 60
400 - 800	20 - 40
50 - 400	10 - 30
Under 50	0

ARMOUR STONE RIP-RAP

<u>Weight of Stones (lbs)</u>	<u>Percentage</u>
1,200 - 2,000	60 - 70
400 - 1,200	20 - 30

9.11.2 Materials  
(con't.)

<u>Weight of Stones (lbs)</u>	<u>Percentage</u>
200 - 400	10 - 20
Under 200	0

- (c) Sand for mortar grout shall conform to the latest C.S.A. Specifications for Aggregate for Masonry Mortar A 82.56 unless otherwise instructed by the Engineer.
- (d) Cement for mortar grout shall be Portland Cement conforming to the latest C.S.A. Specification A5, Type 1.

.2 Sacked Concrete Rip-Rap

- (a) The soil material shall consist of a sand and/or gravel as designated or approved by the Engineer.
- (b) Sacks shall be manufactured from minimum ten (10) ounce burlap and shall be approximately twenty (20) inches by thirty-six (36) inches measured inside the seams when the sack is laid flat. The capacity of each sack shall be approximately one and one quarter (1.25) cubic feet.
- (c) The cement shall be Portland Cement conforming to the latest C.S.A. Specification A5, Type 1.

.3 Filter Blanket

Filter blanket material shall consist of approved well graded granular material free from undesirable quantities of soft particles, organic or other deleterious material. The source shall be subject to the approval of the Engineer.

.4 Filter Fabrics

Filter fabric materials will be supplied to the Contractor in rolls weighing approximately 150 pounds each.

9.11.3 Construction

.1 Preparation of Foundation

- (a) Aprons and slopes to be rip-rapped shall be excavated as shown on the Plans or as directed by the Engineer to provide adequate foundation upon which the rip-rap shall rest. The foundation bed shall be fine graded to form a uniform



9.11.3 Construction  
(con't.)

and even surface. Depressions shall be filled and thoroughly compacted.

- (b) Filter Blankets shall be constructed at locations shown on the Plans or where directed by the Engineer, and to the lines and grades as staked by the Engineer.
- (c) Filter Fabrics shall be placed at locations designated and in a manner directed by the Engineer. A thin lift of fine grained material will generally be placed over the filter fabric when used on other than hand placed rip-rap installation.

.2 Placing of Rip-Rap

(a) Hand Placed Rip-Rap:

The stones, boulders or quarry rocks shall be placed by hand to conform with the lines and dimensions designated by the Engineer. The stones shall be firmly bedded into the slopes and against adjoining stones, with smaller stones used to fill in the voids.

Hand placing will generally be designated for Normal Stone Rip-Rap.

(b) Machine Placed Rip-Rap:

The stones, boulders or quarry rocks shall be sorted and placed so as to produce a uniform thickness of rip-rap conforming with the lines and grades shown on the Plans or designated by the Engineer. The equipment used for the machine placing operation shall have the capability of handling and positioning individual rip-rap particles.

Machine placing will generally be applicable to Heavy Stone Rip-Rap and Armour Stone Rip-Rap.

(c) Random Rip-Rap:

The stones, boulders and quarry rocks shall be dumped onto the surface to be rip-rapped. Sufficient hand and/or machine work shall be performed to produce a uniform thickness of rip-rap conforming with the lines and dimensions designated by the Engineer.

Random placing may be designated for all types of stone rip-rap.

9.11.3 Construction  
(con't.)

(d) Sacked Concrete Rip-Rap:

The Engineer will determine the mix design of the concrete. Each burlap sack shall be filled with approximately one (1) cubic foot of concrete and securely stapled or tied with wire ties. Within one half hour after mixing of the concrete the sacks shall be placed in their final position on the prepared base, kneaded, rammed and packed into conformance with the prepared base and adjacent sacks already in place. Additional courses of sacks shall be placed to obtain the required depth within the area as designated by the Engineer.

The pattern to which the sacks are laid shall be approved by the Engineer. All earth and other debris shall be removed from the surface of sacks in place before succeeding courses are placed.

Following placing, the sacked concrete rip-rap shall be kept moist for a period of twenty-four (24) hours by sprinkling or other means approved by the Engineer.

(e) Grouted Stone Rip-Rap

Grouted Stone rip-rap may be of the hand placed or machine placed type. The surface of the stones, boulders or quarry rocks shall be cleaned and thoroughly wetted before applying the mortar. The spaces between the stones, boulders or quarry rocks shall be filled with cement mortar grout with the outer faces of the stones, boulders or quarry rocks left exposed. The grout shall be composed of one (1) part cement to three (3) parts sand, and of such consistency that it can be placed with a mason's trowel. The thickness of the grout shall be four (4) inches or one-third (1/3) of the average diameter of the stones, boulder or quarry rock thickness whichever is the greater.

Grouted rip-rap shall be cured using curing compounds or wetted burlap or a blanket of earth kept wet for seventy-two (72) hours, or by sprinkling with a fine spray every two (2) hours during the daytime for a period of three (3) days.

The grouting of the rip-rap can only take place when the air temperature is continuously above freezing.

9.11.4 Measurement

- .1 The quantity of RIP-RAP to be measured for payment shall be the number of cubic yards of each type of rip-rap identified in the Unit Price Table which has been acceptably placed in accordance with these Specifications. Measurement of rip-rap will be made in its final position.
- .2 The quantity of CEMENT to be measured for payment shall be the number of eighty (80) pound bags of cement acceptably incorporated into the construction of sacked concrete and/or grouted rip-rap in accordance with these Specification.
- .3 The supply and delivery of filter blanket materials will be measured for payment under the appropriate Unit Price Table Items. Placement of the materials will be measured for payment in accordance with Section 45 of the General Conditions "C".
- .4 Installation of Filter Fabrics will be measured for payment in accordance with Section 45 of the General Conditions "C".
- .5 All other work and materials required for the acceptable completion of the rip-rap installations including the preparation of the foundation will be considered incidental to the Rip-Rap operation and will not be measured separately for payment.

9.12.1 Description

This item consists of supplying materials and constructing a protective lining of approved stone or gravel along ditch bottoms or on other areas subject to surface scour. Ditch Linings shall be constructed in accordance with these Specifications and at locations and in conformity with the lines and grades shown on the Plans or as designated by the Engineer.

9.12.2 Materials

Ditch lining materials shall consist of sound granular material from sources designated or approved by the Engineer. The materials will generally consist of stones smaller than eight (8) inches in diameter. Where designated by the Engineer, the materials shall be selectively excavated to obtain the desired gradation.

9.12.3 Construction

- .1 Prior to placing, the ditch shall be trimmed to the lines and grades staked by the Engineer. The surface shall be smooth and uniform.
- .2 The materials shall be placed and handled in a manner to ensure a uniform layer of the specified thickness. The Engineer may direct that the material be placed in more than one layer from different sources in order to obtain a filter blanket effect.

Hand trimming of the materials in place will be required where the work cannot be acceptably completed by machine.

- .3 Oversize materials shall be removed at the pit or at the ditch lining site. The removal and disposal of oversize materials is considered incidental to the Ditch Lining operation and will not be measured separately for payment.

9.12.4 Measurement

- .1 The quantity of DITCH LINING to be measured for payment shall be the number of cubic yards of material acceptably supplied and placed in accordance with these Specifications. The measurement will be made in the haulage vehicle(s).
- .2 Haul of Ditch Lining materials will be measured for payment in accordance with Division 9, Section 5.

9.13.1 Description

This item consists of the removal and disposal of snow and ice from the right-of-way in accordance with these Specifications and as designated by the Engineer.

9.13.2 Materials

Not applicable.

9.13.3 Construction

.1 Removal of Snow and Ice

- (a) Snow and ice shall be removed from the right-of-way prior to the commencement of roadway excavations or embankment construction. The snow removal shall be kept at least one-half mile ( $\frac{1}{2}$ ) mile in advance of construction but not more than three (3) miles ahead of construction.
- (b) The snow and/or ice removed shall be windrowed along the edge of the right-of-way in such a manner as to avoid damage to adjoining trees. On areas not to be excavated the removal of snow shall be carried out so as to cause minimum disturbance to the natural ground cover.

.2 Snow and Ice Removal Equipment

- (a) The Snow and Ice Removal Equipment shall consist of a crawler tractor(s) having a minimum net flywheel horse power of one-hundred and eighty (180) and equipped with a dozer blade. The blade shall be equipped with two height adjustable mushroom type shoes of a design approved by the Engineer.
- (b) The Snow and Ice Removal Equipment shall be equipped with an approved time recording device which accurately records the number of hours the machine is in operation.
- (c) It will be the Contractor's responsibility to ensure that the device is properly mounted and maintained, that the cards are accurately identified as to date and shift, and to daily deliver said cards to the Engineer.
- (d) The Engineer will record the number of operating hours for the machine and both the Engineer and the Contractor will certify daily that such records are correct.

9.13.4 Measurement

- .1 The quantity of SNOW AND ICE REMOVAL to be measured for payment shall be the actual number of approved hours that the designated equipment is operated as directed by the Engineer in accordance with these

9.13.4 Measurement  
(con't.)

Specifications.

- .2 The removal of snow and ice from borrow pits, haul roads and other related areas as well as removal of snow on the right-of-way after excavation and/or embankment work has commenced will be considered incidental to the roadway construction work and will not be measured separately for payment.

9.14.1 Description

This item consists of supplying and/or delivering, setting up, operating, maintaining and dismantling the Engineers Camp and supplying of meals, linen and cleaning services in accordance with these Specifications.

9.14.2 Accommodation

The Engineer's Camp will be for the exclusive use of the Engineer and his staff for the duration of the work.

- .1 The Engineers Camp will generally consist of the following trailer units: one office trailer, sleeper trailers, one ablution trailer and one recreation trailer.
    - (a) The trailers specified in Article 9.14.2.1 above shall be placed into a self-contained unit joined by a minimum four (4) feet wide walkway having the same floor elevation as the trailers. The walkway shall be weather-proof, insulated and adequately heated. The layout shall be subject to the Engineer's approval.
    - (b) All the trailers specified in Article 9.14.2.1 above shall be adequately blocked and weather skirted for winter operation.
  - .2 In addition to the trailer units specified in Article 9.14.2.1, the Engineers Camp will consist of:
    - (a) One (1), only, unheated but weathertight storage shed, a minimum of eight (8) feet by twelve (12) feet and equipped with one locking door and one interior light. The storage shed shall be placed near the Engineer's camp and will be for the Engineer's exclusive use.
    - (b) Five (5) parking places for vehicles complete with five (5) exterior electrical outlets shall be provided near the office trailer for the exclusive use of the Engineer and his staff.
  - .3 The Engineers Camp shall be set up and ready for occupancy at the same time as the Contractor's camp.
  - .4 The Contractor shall be responsible for the operation, repair and maintenance of the trailers, buildings and facilities in the Engineers Camp.
  - .5 The Contractor shall dismantle, move and re-establish the Engineers Camp whenever he moves his own camp.
-

9.14.2 Accommodation

- .6 The Contractor shall dismantle the Engineers camp upon completion of the work and shall restore the camp area(s) to a condition satisfactory to the Engineer.
- .1 The Contractor shall provide all equipment, supplies and labour required to provide the Engineers staff meals and services of the same quantity and quality as provided for the Contractor's staff.
- .2 The Contractor shall clean trailers daily and change the linen weekly or whenever a change in personnel occurs. "Linen" shall consist of three (3) blankets, two (2) sheets, one (1) pillow, one (1) pillow cover and two (2) towels for each occupant.
- .3 A water and sewer system shall be provided by the Contractor for the Engineer's Camp or the Contractor shall connect the Engineer's ablation trailer to his own system. The Contractor must include the Engineer's trailer units in his application under the Northern Inland Waters Act.
- .4 A steady and dependable source of electric power shall be supplied by the Contractor. The Contractor shall connect all trailers, buildings and exterior outlets to this source.
- .5 The Contractor shall supply all the fuel requirements for the camp and shall see that each heating unit is kept supplied with fuel and is in good operating condition.

9.14.4 Measurement

- .1 The quantity of the ENGINEER'S CAMP to be measured for payment shall be as a Unit for the acceptable accommodation in accordance with these Specifications.
- .2 The quantity of ENGINEER'S BOARD to be measured for payment shall be the number of mandays and fractions thereof that the Engineer's staff is acceptably provided with meals and other related services in accordance with these Specifications.

All part days shall be calculated to the nearest one-third (1/3) based on the number of meals taken by each member of the Engineer's staff.



9.15.1 Description

This item consists of the provision to the Contractor of a fixed sum to cover costs of mobilization of plant, personnel and material, the establishment of temporary buildings, shops, offices and facilities and licenses, fees and premiums necessary to commence the work and which are not specifically measured under any other Item contained in the Unit Price Table.

9.15.2 Measurement

Measurement for payment for mobilization shall be on the basis of the amount pre-established by the Department and shown on the Unit Price Table. This amount is to be included in the total amount of the tender and will be measured for payment on the following schedule.

- .1 Fifty (50) percent of the fixed amount when the Contractor has established his camp, has placed his fuel storage and has delivered to the camp site all the equipment necessary to perform work identified as clearing and excavation.
- .2 Twenty-five (25) percent of the fixed amount when the Contractor has commenced operation of all the equipment indicated in Article 9.15.2.1 above in the performance of that work identified as clearing and excavation.
- .3 Twenty-five (25) percent of the fixed amount when the Contractor has completed construction of the equivalent of ten (10) percent of the total length of the Contract.



These Articles of Agreement made in duplicate this \_\_\_\_\_ day

of \_\_\_\_\_ 19 \_\_\_\_\_

Between

**Her Majesty the Queen**, in right of Canada (referred to in the documents forming the contract as "Her Majesty") represented by the Minister of Public Works (referred to in the documents forming the contract as "the Minister")

and

(referred to in the documents forming the contract as the "Contractor")

Witness that Her Majesty and the Contractor covenant and agree as follows:

**Article I**

---

The Contractor will between the date of these Articles of Agreement and

in a careful and workmanlike manner execute the following work;

which work is more particularly described in the documents that are attached hereto, entitled "Plans and Specifications" and marked "A" (referred to in the documents forming the contract as the "Plans and Specifications") at the place and in the manner therein set out.



**Article II**

- (1) Her Majesty will pay to the Contractor as consideration for the execution of the portion of the work to which the fixed price arrangement is applicable the sum of \$ \_\_\_\_\_ (subject to any additions or deductions provided for in these Articles, the General Conditions, the Terms of Payment, or the Labour Conditions except any addition or deduction which is expressly stated to be applicable only to a unit price arrangement), at the times and in the manner set out or referred to in the document that is attached hereto entitled "Terms of Payment" and marked "B" (referred to in the documents forming the contract as the "Terms of Payment").
- (2) (a) Her Majesty will pay to the Contractor as consideration for the execution of the portion of the work to which the unit price arrangement is applicable a sum equal to the number of units of measurement of each class of labour, plant or material actually performed, used or supplied by the Contractor in the execution of the work as measured by the Engineer and set out in the Engineer's Final Certificate of Measurement multiplied by the price for each such unit of measurement as set out in the Unit Price Table as added to or amended in accordance with paragraphs (b), (c) and (d) of this Article or as, in a proper case, determined in accordance with paragraphs (e) of this Article (such sum being subject to any additions or deductions provided for in the General Conditions, Terms of Payment, Labour Conditions, except any addition or deduction which is expressly stated to be applicable only to a fixed price arrangement) at the times and in the manner set out or referred to in the document that is attached hereto entitled "Terms of payment" and marked "B" (referred to in the documents forming the contract as the "Terms of Payment").
- (b) The Engineer and the Contractor may by agreement in writing add to the Unit Price Table classes of labour, plant or material together with units of measurement, prices per unit and estimated quantities therefor where any labour, plant or material which will be included in the Engineer's Final Certificate of Measurement is not included in any class of labour, plant or material set out in the Unit Price Table.
- (c) The Engineer and the Contractor may by agreement in writing amend the price per unit set out in the Unit Price Table for any class of labour, plant or material included therein where an estimated quantity is set out therein for that class of labour, plant or material, if the Engineer's Final Certificate of Measurement shows or will show that the total quantity of that class of labour, plant or material performed, used or supplied by the Contractor in executing the work is less than 85% of that estimated quantity.
- (d) The Engineer and the Contractor may by agreement in writing amend the price per unit set out in the Unit Price Table for any class of labour plant or material included therein where an estimated quantity is set out therein for that class of labour, plant or material, by establishing a price per unit for units of that class of labour, plant or material performed, used or supplied by the Contractor in executing the work which are in excess of 115% of that estimated quantity.



Article IV

The amount of \$ \_\_\_\_\_, that has been deposited with the Minister by the Contractor as a security deposit for the due fulfilment of the contract will be dealt with in accordance with the provisions concerning security deposit in the General Conditions.

The Contractor has furnished and Her Majesty accepts a Performance Bond, (insert details – name of Company, amount, date, etc.)

and a Labour and Material Payment Bond, (insert details – name of Company, amount, date, etc.)

with respect to the execution of the work by the Contractor, which bond or bonds shall operate according to their tenor. The Contractor shall post on the site of the work a notice that a Labour and Material Payment Bond is in force together with the name and address of the surety thereunder, definition of those persons protected thereunder and an outline of the procedure for submitting a claim thereunder.

Article V

For all purposes of or incidental to the contract, the Contractor's address shall be deemed to be:



**Article VI**

(1) Her Majesty and the Contractor agree that the following table is the Unit Price Table for the purposes of the contract:

Column 1	Column 2	Column 3	Column 4
Class of labour plant or material	Unit of Measurement	Price per Unit	Estimated quantity

(2) The Unit Price Table set out in subsection (1) designates the portion of the work to which the unit price arrangement is applicable.

(3) The portion of the work which does not fall within subsection (2) of this Article is the portion of the work to which the fixed price arrangement is applicable.



EXECUTED ON BEHALF OF HER MAJESTY on the \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_ by

DEPUTY MINISTER (Name to be printed or stamped) in the presence of \_\_\_\_\_ WITNESS } DEPUTY MINISTER

and countersigned by

SECRETARY (Name to be printed or stamped) in the presence of \_\_\_\_\_ Witness } SECRETARY

SEALED, ATTESTED TO AND DELIVERED on the \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_ on behalf of \_\_\_\_\_ (Name of Contractor) by

(Name and Status of Authorized Signing Officer in block letters) SIGNATURE OF AUTHORIZED SIGNING OFFICER Seal of Company

SEALED, ATTESTED TO AND DELIVERED on the \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_ on behalf of \_\_\_\_\_ (Name of Contractor) by

in the presence of \_\_\_\_\_ WITNESS TO SIGNATURE OF (Name of Person signing in right hand column) } SIGNATURE OF PARTNER OR SOLE OWNER Seal

in the presence of \_\_\_\_\_ WITNESS TO SIGNATURE OF (Name of Person signing in right hand column) } SIGNATURE OF PARTNER Seal

N.B. The attention of the Contractor is drawn to the following Statutory provision:

"It is a term of every contract providing for the payment of any money by Her Majesty that payment thereunder is subject to there being an appropriation for the particular service for the fiscal year in which any commitment thereunder would come in course of payment." (Section 33, Financial Administration Act, R.S.C. 1970, F.10).



This document is the document referred to as "Terms of Payment" and marked "B" in the Articles of Agreement entered into on the \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_\_, between Her Majesty the Queen and

**Signatures**

Minister \_\_\_\_\_

Contractor \_\_\_\_\_

**Amount Payable – General**

1. Her Majesty will pay to the Contractor at the times and in the manner hereinafter set out the amount by which

- (a) the aggregate of the amounts described in section 2 of the Terms of payment exceeds
- (b) the aggregate of the amounts described in section 3 of the Terms of Payment

and the Contractor will accept the payment as full consideration for everything furnished and done by him in respect of the work.

**Amounts Payable to the Contractor**

2. (1) the amounts referred to in paragraph (a) of section 1 of the Terms of Payment are:

- (a) the amount set out in Article II of the Articles of Agreement;
- (b) the amount, if any, payable to the Contractor pursuant to section 12 of the General Conditions relating to unexpected soil conditions, neglect or delay;
- (c) the amount, if any, payable to the Contractor on account of a suspension of work pursuant to section 18 of the General Conditions;
- (d) the amount, if any, payable to the Contractor pursuant to section 37 of the General Conditions relating to work not required to be done under the contract but done by the Contractor under order of the Engineer;
- (e) the amount, if any, payable to the Contractor by reason of an order or change pursuant to section 38 of the General Conditions; and
- (f) the amount, if any, payable to the Contractor pursuant to section 39 of the General Conditions relating to cooperation with other contracting persons and workmen.

(2) Paragraph (e) of subsection (1) is applicable only to a fixed price arrangement.

Amounts Payable to  
Her Majesty

3. (1) The amounts referred to in paragraph (b) of section 1 of the Terms of Payment are:
- (a) the amount, if any, which the Contractor is liable to pay to Her Majesty pursuant to section 14 of the General Conditions relating to damage to Her Majesty's material, plant and real property;
  - (b) in the event of delay in completing the work the amount payable to Her Majesty pursuant to section 15 of the General Conditions;
  - (c) the amount, if any, paid by Her Majesty in satisfaction of obligations of the Contractor or a subcontractor pursuant to section 21 of the General Conditions or pursuant to the Labour Conditions;
  - (d) the amount, if any, payable by the Contractor to Her Majesty pursuant to section 36 of the General Conditions relating to matters done by Her Majesty which the Contractor refused or failed to do;
  - (e) the amount, if any, by which the cost of the work to the Contractor was decreased by reason of dispensations or changes pursuant to section 38 of the General Conditions; and
  - (f) the amount referred to in subsection (1) of section 43 of the General Conditions relating to municipal permits if the Contractor is in breach of subsection (3) of the said section.
- (2) Paragraph (e) of subsection (1) is applicable only to a fixed price arrangement.

Time of Payment

4. (1) For the purposes of this section "Payment Period" means an interval of thirty days or such other interval as the Contractor and the Engineer agree upon.
- (2) The Contractor shall upon the expiration of a Payment Period deliver to the Engineer a Progress Claim in writing and shall describe therein any portion of the work completed and any materials delivered to the site of the work but not incorporated into the work during the Payment Period in respect of which the Progress Claim is made.
- (3) Within 14 days of receipt by the Engineer of the Progress Claim the Engineer shall inspect the portion of the work and the material described therein and shall issue a Progress Report, which may take the form of an endorsement on the Progress Claim, indicating the value of the portion of the work and the materials described in the Progress Claim which meet with his satisfaction and which, in the opinion, have been completed or delivered in accordance with the contract and which are not included in any other Progress Report.
- (4) Thirty days after the expiration of the fourteen days referred to in subsection (3) and if the Contractor has made and delivered to the Engineer his Statutory Declaration deposing to the fact that as at the date of the immediately preceding Progress Claim, if any, all his lawful obligations to subcontractors, workmen and suppliers of material in respect of the work are fully discharged, an amount equal to 95% of the value of the work and materials as shown in the Progress Report shall become due and be payable by Her Majesty to the Contractor but where a Labour and Material Payment Bond has not been furnished by the Contractor, the amount payable under this subsection shall be an amount equal to 90% of the value of the work and materials as shown in the Progress Report.



Time of Payment (Cont'd)

(5) Upon the expiration of 60 days from the date of issuance of an Interim Certificate of Completion under subsection (2) of section 40 of the General Conditions and if the Contractor has made and delivered to the Engineer his Statutory Declaration deposing to the fact that all his lawful obligations to subcontractors, workmen and suppliers of material in respect of the work are fully discharged, the amount described in section 1 of the Terms of Payment less the aggregate of

(a) all payments made pursuant to subsection (4);

(b) an amount equal to double the cost to Her Majesty of completing the items and doing the things described in the Interim Certificate of Completion which, in the opinion of the Engineer, are brought about by defects and faults in the work; and

(c) an amount equal to the cost to Her Majesty of completing the items and doing the things described in the Interim Certificate of Completion other than items or things to which paragraph (b) applies;

shall become due and be payable by Her Majesty to the Contractor.

(6) Upon the expiration of 60 days from the date of issuance of a Final Certificate of Completion under subsection (1) of section 40 of the General Conditions and if the Contractor has made and delivered to the Engineer his Statutory Declaration deposing to the fact that all his lawful obligations and lawful claims against him, arising out of the execution of the work, have been discharged and satisfied, the amount described in section 1 of the Terms of Payment less the aggregate of

(a) all payments made pursuant to subsection (4); and

(b) all payments made pursuant to subsection (5);

shall become due and be payable by Her Majesty to the Contractor.

Progress Report and Payment  
thereunder not binding on  
Her Majesty

5. Neither a Progress Report nor a payment by Her Majesty pursuant to the Terms of Payment shall be construed as evidence that the work, material or any part thereof is complete, is satisfactory or is in accordance with the contract.

Delay in Making Payment

6. Delay by Her Majesty in making payment when it becomes due and is payable pursuant to the Terms of Payment shall be deemed not to be a breach of the contract by Her Majesty but such delay shall, if the payment involved is payable pursuant to subsection (4) of section 4 of the Terms of Payment and if the delay continues for more than 15 days, entitle the Contractor to interest on the amount overdue and Her Majesty will, when making payment of the amount overdue, pay to the Contractor interest on the amount overdue, calculated for the period of the said delay at 1½% plus the average accepted tender rate of Government of Canada three-month treasury bills, as announced each week by the Bank of Canada on behalf of the Minister of Finance, which rate shall be that which is announced immediately preceding the date on which payment was originally due the Contractor.

Right of Set-off

7. (1) Without restricting any right of set-off given or implied by law, Her Majesty may set-off against any amount payable to the Contractor under the contract, any amount payable to Her Majesty by the Contractor under this contract or under any current contract and without restricting the generality of the foregoing Her Majesty may when making payment pursuant to section 4 of the Terms of Payment deduct from the amount payable any amount which is then payable to Her Majesty by the Contractor under the contract or which, by virtue of the right of set-off, may be retained by Her Majesty.

(2) For the purposes of this section "current contract" means:

- (a) a contract between Her Majesty and the Contractor under which the Contractor has an undischarged obligation to perform or supply work, labour or materials, or
- (b) a contract between Her Majesty and the Contractor in respect of which Her Majesty has since the date on which these Articles of Agreement were made exercised the right to take the work, the subject of that contract, out of the Contractor's hands.

Payment in Event of  
Termination

8. In the event that the contract is terminated pursuant to section 19 of the General Conditions Her Majesty will as soon as is practicable under the circumstances pay to the Contractor the amount, if any, payable to the Contractor pursuant to that section.



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This document is the document referred to as "General Conditions" and marked "C" in the Articles of Agreement entered into on the \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_, between Her Majesty the Queen and

Signatures

Minister \_\_\_\_\_

Contractor \_\_\_\_\_

Interpretation

- 1. (1) In the contract
(a) "Engineer" means the \_\_\_\_\_ of \_\_\_\_\_ of the Government of Canada, and includes a person specially authorized by him to perform on his behalf any function under the contract;
(b) "herein", "hereby", "hereof", "hereunder" and similar expressions refer to the contract as a whole and not to any particular subdivision or part thereof;
(c) "material" includes all materials, commodities, articles and things required to be furnished under the contract for incorporation in the work;
(d) "Minister" includes a person acting for, or if the office is vacant, in the place of such Minister, under the authority of an order of the Governor General of Canada in Council, and also his successors in the office, and his or their lawful deputy;
(e) "plant" includes all animals, tools, implements, machinery, vehicles, buildings, structures, equipment, articles and things required for the execution of the work;
(f) "security deposit" means the security given by the Contractor to Her Majesty in accordance with the contract;
(g) "subcontractor" means a person, firm or corporation to whom or to which the Contractor has, pursuant to section 4 of the General Conditions and with the consent of the Engineer, subcontracted the whole or any portion of the work;
(h) "superintendent" means the employee of the Contractor who is designated by the Contractor as being in full charge of the field operations of the Contractor for the purposes of the contract; and
(i) "work" includes the whole of the works, materials, matters and things required to be done, furnished and performed by the Contractor under the contract.



**Interpretation (Continued)**

- (2) The marginal notes in the contract form no part of the contract but shall be deemed to be inserted for the convenience of reference only.
- (3) Unless the context otherwise requires, where in the contract reference is made to a subsection or paragraph, the reference shall be deemed to be a reference to a subsection or paragraph of the section or subsection, as the case may be, in which the reference is made.
- (4) In interpreting the contract in the event of discrepancies or conflicts between anything in the Plans and Specifications and the General Conditions, the General Conditions shall govern.
- (5) In interpreting the Plans and Specifications –
- (a) in the event of discrepancies or conflicts between the Plans and Specifications, the Specifications shall govern;
  - (b) in the event of discrepancies or conflicts between the Plans, the Plans drawn with the largest scale shall govern; and
  - (c) in the event of discrepancies or conflicts between figured dimensions and scaled dimensions, the figured dimensions shall govern.

**Successors and Assigns**

2. The contract shall inure to the benefit of and be binding upon the parties hereto and their executors, administrators, successors and assigns.

**Assignment of Contract**

3. The contract may not be assigned without the written consent of the Minister.

**Subcontracting by Contractor**

4. (1) Neither the whole nor any part of the work may be subcontracted by the Contractor without the consent of the Engineer.
- (2) Every subcontracting by the Contractor shall provide that the subcontractor shall comply with all terms and conditions of this contract which can reasonably be applied to his undertaking.

**Description of Work  
All-Inclusive**

5. The description of the work and material set out in the contract includes not only the particular kind of work and material mentioned but also all labour, plant and material necessary for the full execution, completion and delivery ready for use of the work and material.

**No Implied Obligations**

6. No implied obligation of any kind by or on behalf of Her Majesty shall arise from anything in the contract, and the express covenants and agreements herein contained and made by Her Majesty are and shall be the only covenants and agreements upon which any rights against Her Majesty are to be founded; and, without limiting the generality of the foregoing, the contract supersedes all communications, negotiations and agreements, either written or oral, relating to the work and made prior to the date of the contract.

**Time of Essence**

7. Time is of the essence of the contract.



**Indemnification by Contractor**

8. (1) Except as provided in Section 9 of the General Conditions, the Contractor shall indemnify and save harmless Her Majesty from and against all claims, demands, losses, costs, damage, actions, suits or proceedings by whomsoever made, brought or prosecuted in any manner based upon, arising out of, related to, occasioned by or attributable to the activities of the Contractor in executing the work under the contract or to an infringement or an alleged infringement by the Contractor of a patent of invention.

(2) For the purposes of subsection (1), "activities" includes an act improperly carried out, an omission to carry out an act and a delay in carrying out an act.

**Indemnification by Her Majesty**

9. Her Majesty shall indemnify and save harmless the Contractor from and against all claims, demands, losses, costs, damage, actions, suits or proceedings arising out of his activities under the contract which are directly attributable to

(a) lack of or a defect in, title or an alleged lack of or defect in, title to the site of the work; or

(b) an infringement or an alleged infringement of any patent of invention in executing anything for the purposes of the contract, the model, plan or design of which was supplied by Her Majesty to the Contractor.

**Members of House of Commons not to Benefit**

10. No Member of the House of Commons shall be admitted to any share or part of the contract or to any benefit arising therefrom.

**Notices, Orders, etc., to Contractor**

11. (1) Notices for the purposes of paragraph (a) of subsection (1) of section 16, section 18 and section 19 of the General Conditions shall be in writing and shall

(a) be delivered to the Contractor in person or, if the Contractor is a corporation or partnership, be delivered to a senior administrative or executive officer of the corporation or partnership, or

(b) sent by mail to the Contractor or his superintendent addressed to the address mentioned in the contract,

and if any question arises as to whether any such notice was communicated to the Contractor it shall be deemed to have been sufficiently communicated to him

(c) if it was delivered pursuant to paragraph (a), on the day it was delivered, and

(d) if it was sent by mail pursuant to paragraph (b), on the day it was received by the Contractor or on the sixth day after it was mailed, whichever is earlier.

(2) Any notice, order, direction, decision or communication other than a notice to which subsection (1) refers, which may be given to the Contractor pursuant to the contract may be given in any manner, but it shall be deemed to have been sufficiently communicated to the Contractor if it was put in writing and the writing was

(a) delivered to the Contractor in person or, if the Contractor is a corporation or partnership was delivered to a senior administrative or executive officer of the corporation or partnership,



**Notices, Orders, etc.,  
to Contractor (Continued)**

- (b) delivered to the Contractor's superintendent,
- (c) left at the Contractor's office or, if he has more than one office, at one of them, or
- (d) sent by mail to the Contractor or his superintendent addressed to the address mentioned in the contract or to the Contractor's last known place of business or residence.

**Changes in Soil Conditions  
and Neglect or Delay by  
Her Majesty**

12. (1) No payment will be made by Her Majesty to the Contractor in addition to the payment expressly promised by the contract on account of any extra expense, loss or damage incurred or sustained by the Contractor for any reason including a misunderstanding on the part of the Contractor as to any fact, whether or not such misunderstanding is attributable directly or indirectly to Her Majesty or any of Her Majesty's agents or servants (whether or not any negligence or fraud on the part of Her Majesty's agents or servants is involved) unless, in the opinion of the Engineer, the extra expense, loss or damage is directly attributable to

- (a) a substantial difference between information relating to soil conditions at the site of the work, or a reasonable assumption of fact based thereon, in the Plans and Specifications or other documents or material communicated by Her Majesty to the Contractor for his use in preparing his tender and the real soil conditions encountered at the site of the work by the Contractor when executing the work, or
- (b) neglect or delay occurring after the date of the contract on the part of Her Majesty in providing any information or in doing any act which the contract either expressly requires Her Majesty to do or which would be done by an owner, in accordance with the usage of the trade, to enable his Contractor to carry out an undertaking similar to the work being executed under the contract for Her Majesty,

in which case, if the Contractor has given to the Engineer written notice of his claim before the expiration of thirty days from the encountering of the soil conditions giving rise to the claim or from the day on which the neglect occurs or the delay commences, as the case may be, Her Majesty will pay to the Contractor in respect of the additional expense, loss or damage incurred or sustained by reason of that difference, neglect or delay, an amount equal to the cost, calculated in accordance with sections 44 to 47 of the General Conditions of the additional plant, labour and materials necessarily involved.

(2) If, in the opinion of the Engineer, the Contractor has effected a saving of expenditure by reason of the execution of the work by the Contractor being rendered less difficult and less costly because the soil conditions actually encountered by the Contractor at the site of the work when executing the work are substantially different from soil conditions indicated in information or a reasonable assumption of fact based thereon in the Plans and Specifications or other documents or material communicated by Her Majesty to the Contractor for his use in preparing his tender, the amount set out in Article II of the Articles of Agreement shall be reduced by an amount equal to the saving effected by the Contractor.

(3) Paragraph (a) of subsection (1) and subsection (2) are applicable only to a Fixed Price Arrangement.



**Changes in Soil Conditions  
and Neglect or Delay by  
Her Majesty (Continued)**

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(4) If information relating to soil conditions at the site of the work appeared in the Plans and Specifications or in other documents or material communicated by Her Majesty to the Contractor for his use in preparing his tender and if the real soil conditions encountered at the site of the work by the Contractor when executing the work are substantially different from such information, or a reasonable assumption of fact based thereon, so that the cost to the Contractor of executing the work is directly and substantially increased or decreased by reason of such difference then the Engineer and the Contractor shall exercise their powers under subsection (2) of Article II of the Articles of Agreement relating to amendment of the Unit Price Table so that the benefit of a substantial decrease in cost shall accrue to Her Majesty and the burden of a substantial increase in cost will not be borne by the Contractor.

(5) Subsection (4) is applicable only to a Unit Price Arrangement.

**Materials, Plant and Real  
Property Become Property  
of Her Majesty**

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13. (1) All materials and plant and the interest of the Contractor in all real property, licences, powers and privileges acquired, used or provided by the Contractor for the work shall from the time of being so acquired, used or provided, become and they are the property of Her Majesty for the purposes of the work and they shall continue to be the property of Her Majesty

(a) in the case of materials, until incorporated in the work or until the Engineer indicates that he is satisfied that they will not be required for the work, and

(b) in the case of plant, real property, licences, powers and privileges, until the Engineer indicates that he is satisfied that the interest vested in Her Majesty therein is no longer required for the purposes of the work.

(2) Material or plant that is the property of Her Majesty by virtue of this section shall not be taken away from the site of the work, or used or disposed of, except for the purposes of the work, without the consent in writing of the Engineer.

(3) Her Majesty is not liable for loss or damage to material or plant that is the property of Her Majesty by virtue of this section and the Contractor is liable for such loss or damage notwithstanding that the material or plant is the property of Her Majesty.

**Materials, Plant and Real  
Property Supplied by  
Her Majesty**

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14. (1) The Contractor is liable to Her Majesty for loss of or damage to material, plant or real property, whether attributable to causes beyond his control or not, supplied or made available by Her Majesty to the Contractor for use in connection with the work other than loss or damage resulting from and directly attributable to reasonable wear and tear.

(2) The Contractor will not use material, plant or real property to which this section applies except for the purpose of carrying out this contract.

(3) When the Contractor has failed within a reasonable time after being required by the Engineer to do so, to make good any loss or damage for which he is liable under this section, the Engineer may cause the loss or damage to be made good, and the Contractor shall thereupon be liable to Her Majesty for the cost thereof and shall on demand pay to Her Majesty an amount equal to such cost.





**Materials, Plant and Real  
Property Supplied by  
Her Majesty (Continued)**

(4) The Contractor shall keep records of material, plant and real property to which this section applies that the Engineer from time to time requires and shall, from time to time as the Engineer requires, satisfy the Engineer that such material, plant and real property are at the place and in the condition that they ought to be.

(5) This section applies to material, plant and real property supplied or made available by Her Majesty to the Contractor for use in connection with the work.

**Extension of Time**

15. (1) The Minister may, on the application of the Contractor made before the day fixed by Article I of the Articles of Agreement for completion of the work or before any new date for completion fixed under this subsection, if in his opinion it is in the public interest, extend the time for completion of the work by fixing a new day for completion of the work.
- (2) Where the Contractor does not complete the work by the day fixed by Article I of the Articles of Agreement for completion of the work but does complete the work thereafter, the Contractor shall pay to Her Majesty
- (a) an amount equal to all salaries, wages and travelling expenses paid by Her Majesty to persons superintending the work during the period of delay,
  - (b) an amount equal to the value to Her Majesty of the use of the completed work for the period of delay, and
  - (c) an amount equal to all other expenses and damages incurred or sustained by Her Majesty as a result of the work not being completed during the period of delay.
- (3) For the purposes of this section,
- (a) the work shall be deemed to be completed on the day the Engineer issues his Interim Certificate of Completion, and
  - (b) "period of delay" means the period commencing on the day fixed by Article I of the Articles of Agreement for completion of the work and ending on the day immediately preceding the day on which the work is completed, but excluding therefrom any day within a period of extension granted under subsection (1), if on such day, in the opinion of the Minister, causes beyond the control of the Contractor delayed completion of the work.
- (4) The Minister may, if in his opinion, it is in the public interest, waive the right of Her Majesty to the whole or any part of a payment payable pursuant to subsection (2).

**Taking the Work out of  
the Contractor's hands**

16. (1) In any of the following cases, namely,
- (a) where the Contractor has made default or delayed in commencing or in diligently executing the work or any portion thereof to the satisfaction of the Engineer and the Minister or the Engineer has given notice thereof to the Contractor and has by such notice required the Contractor to put an end to such default or delay, and such default or delay continues for six days after such notice was communicated;



**Taking the Work out of  
the Contractor's hands**  
(Continued)

- (b) where the Contractor has made default in the completion of the work, or any portion thereof, within the time limited for such completion by the contract;
- (c) where the Contractor has become insolvent;
- (d) where the Contractor has committed an act of bankruptcy;
- (e) where the Contractor has abandoned the work;
- (f) where the Contractor has made an assignment of the contract without the required consent; or
- (g) where the Contractor has otherwise failed to observe or perform any of the provisions of the contract;

the Minister may, without any other authorization, take all or any part of the work out of the Contractor's hands and may employ such means as he may see fit to complete the work.

(2) Where the work or any portion thereof has been taken out of the Contractor's hands under subsection (1) the Contractor shall not except as provided in subsection (3), be entitled to any further payment including payments then due and payable but not paid and the obligation of Her Majesty to make payments as provided for in the Terms of Payment shall be at an end and the Contractor shall be liable to and upon demand therefor pay to Her Majesty an amount equal to all loss and damage suffered by Her Majesty by reason of the non-completion of the work by the Contractor.

(3) Where the work or any portion thereof has been taken out of the Contractor's hands under subsection (1) and that portion is subsequently completed by Her Majesty, the Engineer shall determine the amount, if any, of hold-back and progress claims of the Contractor unpaid at the time of taking the work out of his hands that in his opinion are not required by Her Majesty for the purposes of the contract and the Minister shall, if he is of the opinion that no financial prejudice to Her Majesty will result, authorize payment of that amount to the Contractor.

**Effect of Taking the  
Work from Contractor**

17. (1) The taking of the work, or any portion thereof, out of the Contractor's hands pursuant to section 16 of the General Conditions does not operate so as to relieve or discharge the Contractor from any obligation under the contract or imposed upon him by law except the obligation to complete the physical execution of that portion of the work so taken out of his hands.
- (2) If the work or any part thereof is taken out of the Contractor's hands pursuant to section 16, all materials and plant and the interest of the Contractor in all real property, licences, powers and privileges acquired, used or provided by the Contractor for the purposes of the work shall, notwithstanding subsection (1) of section 13 of the General Conditions, be the property of Her Majesty without compensation to the Contractor.
- (3) If the Engineer certifies that any interest in the property of Her Majesty by virtue of subsection (2) is no longer required for the purposes of the work and that it is not in the interests of Her Majesty to retain the interest it shall become the property of the Contractor.



**Suspension of Work  
by Minister**

18. (1) The Minister may, when in his opinion it is in the public interest, require the Contractor to suspend execution of the work either for a specified or unspecified period by communicating notice to that effect to the Contractor.
- (2) The Contractor upon receiving notice of the Minister's requirement pursuant to subsection (1) shall suspend all operations except those which, in the Engineer's opinion, are necessary for the care and preservation of the work, the materials and plant.
- (3) During the period of suspension the Contractor shall not remove from the site any part of the work, any materials or any plant without the consent of the Engineer.
- (4) If the period of suspension is 30 days or less, the Contractor, upon the expiration of the period of suspension, shall resume the execution of the work and he is entitled to be paid the cost, calculated in accordance with sections 44 to 47 of the General Conditions, of any plant, labour and material necessarily involved in complying with the suspension.
- (5) If the period of suspension is more than 30 days and if, upon the expiration of the period of suspension, the Minister and the Contractor agree that the execution of the work be completed by the Contractor, the Contractor shall resume operations and complete the execution of the work in accordance with any terms and conditions agreed upon by the Minister and the Contractor.
- (6) If upon the expiration of a period of suspension of more than 30 days, the Minister and the Contractor do not agree that the work will be completed by the Contractor or they are unable to agree upon the terms and conditions under which the Contractor will complete the work, the notice of suspension shall be deemed to be a notice of termination pursuant to section 19.

**Termination of Contract**

19. (1) The Minister may at any time by giving notice to that effect terminate the contract.
- (2) The Contractor will upon receipt of a notice pursuant to subsection (1) cease all operations forthwith.
- (3) If the contract is terminated pursuant to subsection (1) Her Majesty will pay to the Contractor an amount equal to the lesser of
- (a) the cost as agreed upon by the Contractor and the Engineer of all labour, material and plant supplied by the Contractor as at the date of termination or, if the Contractor and the Engineer cannot agree, as calculated in accordance with the formula set out in section 46 of the General Conditions less all amounts already paid to the Contractor by Her Majesty and less all amounts which the Contractor is liable to pay to Her Majesty, and
- (b) the amount calculated in accordance with the Terms of Payment which would have been payable to the Contractor had he completed the work.



**Termination of Contract**  
**(Continued)**

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(4) If the contract is terminated pursuant to subsection (1) Her Majesty will pay to the Contractor an amount equal to the cost as agreed upon by the Contractor and the Engineer of all labour, material and plant supplied by the Contractor as of the date of termination or, if the Contractor and the Engineer cannot agree, as calculated in accordance with the formula set out in section 46 of the General Conditions, less all amounts already paid to the Contractor by Her Majesty and less all amounts which the Contractor is liable to pay to Her Majesty.

(5) Subsection (3) is applicable only to a Fixed Price Arrangement and subsection (4) is applicable only to a Unit Price Arrangement.

**Provision for Execution of Work**

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20. The Contractor will provide everything necessary for the execution of the work except things in respect of which the contract expressly provides otherwise and except the site of the work if the work when completed is to remain permanently affixed thereon.

**Claims Against and Obligations of the Contractor or Subcontractor**

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21. (1) Her Majesty may, in order to discharge lawful obligations of and satisfy lawful claims against the Contractor or a subcontractor arising out of the execution of the work, pay any amount which is due and payable to the Contractor pursuant to the Terms of Payment or is payable pursuant to section 41 of the General Conditions following a conversion or a negotiation of the security deposit directly to the obligees of and the claimants against the Contractor or the subcontractor.

(2) A payment made pursuant to subsection (1) is to the extent of the payment a discharge of Her Majesty's liability under the contract to the Contractor.

(3) To the extent that the circumstance of the work being executed for Her Majesty permits it, the Contractor will comply with all laws in force in the Province where the work is being executed relating to payment periods, mandatory holdbacks, and creation and enforcement of mechanics' liens or, if such Province is the Province of Quebec, the law relating to privileges.

(4) The Contractor will discharge all lawful obligations of his and will satisfy all lawful claims against him arising out of the execution of the work at least as often as the Terms of Payment require Her Majesty to discharge Her obligations to the Contractor.

(5) The Contractor will, whenever so requested by the Engineer, make a Statutory Declaration despositing to the existence and condition of the obligations and claims referred to in subsection (4).

**Execution of Work under Direction of Engineer**

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22. The Contractor will permit the Engineer to have access to the work at all times during the execution of the work, will provide the Engineer with full information concerning what is being done to execute the work and will give the Engineer every possible assistance in respect of the performance of his duty to see that the work is executed in accordance with the contract and also in respect of the performance and exercise of the duties and powers specially imposed or conferred on him by the contract.

**Clearing of Site**

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23. The Contractor will upon completion of the work clear and clean the work and its site to the satisfaction of and in accordance with any directions of the Engineer.



Contractor's Superintendent

24. (1) The Contractor will, during working hours, until the work has been completed, keep on the site of the work a competent superintendent who has authority to receive on behalf of the Contractor any order, direction or other communication that may be given under the contract.
- (2) The Contractor will, upon the request of the Engineer, remove any Superintendent who, in the opinion of the Engineer, is incompetent or has been conducting himself improperly and shall replace a Superintendent so removed with another Superintendent as described in subsection (1).

Unsuitable Workmen

25. The Contractor will, at the request of the Engineer, remove from the work any person employed on the work who, in the opinion of the Engineer, is incompetent or has been conducting himself improperly and the Contractor shall not permit a person so removed to remain on the site of the work.

No Additional Payment  
for Increased Costs

26. (1) The amount payable to the Contractor under the contract will not be increased or decreased by reason of any increase or decrease in the cost of the work brought about by an increase or decrease in the cost of plant, labour, material or the wage rates set out in or prescribed pursuant to the Labour Conditions.
- (2) Notwithstanding section 12 and subsection (1) of this section the amount set out in Article II of the Articles of Agreement shall be adjusted, in the manner provided in subsection (3), in the event of any change in any tax imposed under the *Excise Act*, the *Excise Tax Act*, the *Old Age Security Act*, the *Customs Act* or the *Customs Tariff*
- (a) after the date of the submission by the Contractor of the tender for the contract, and
- (b) that applies to the materials incorporated or to be incorporated in the work and that affects the cost to the Contractor of such materials.
- (3) In the event of any change after the date of submission of the tender for the contract by the Contractor in any tax described in subsection (2) that applies to the materials incorporated or to be incorporated in the work and that affects the cost to the Contractor of such materials the amount set out in Article II of the Articles of Agreement shall
- (a) be increased where the cost to the Contractor of any of the materials has been increased by virtue of the change, or
- (b) be decreased where the cost to the Contractor of any of the materials has been decreased by virtue of the change,
- by an amount equal to such amount as it is established upon examination of the relevant records of the Contractor referred to in section 48, represents the increase or decrease, as the case may be, in the cost to the Contractor of the materials involved that is directly attributable to the change in the tax levied on such materials.
- (4) For the purpose of determining the adjustment in the amount set out in Article II of the Articles of Agreement by virtue of any change in any tax described in subsection (2), where such tax is changed after the date of submission of the tender by the Contractor but public notice of such change has been given by the Minister of Finance before the date of submission of the tender, the change of such tax shall, for the purposes of this section, be deemed to have occurred before the date of submission of the tender.



Canadian Labour and Materials

27. (1) The Contractor will use Canadian labour and material in carrying out the work, to the full extent to which they are procurable, consistent with proper economy and the expeditious carrying out of the work.
- (2) Subject to subsection (1) the Contractor will employ labour from the locality where the work is being executed to the extent to which it is available and shall use the Canada Manpower Centres in the recruitment of workers wherever practicable.
- (3) Subject to subsections (1) and (2) the Contractor will employ a reasonable proportion of men who have served on active service with the armed forces of Canada and have been honourably discharged therefrom.

Security

28. (1) If the Minister is of opinion that national security is involved he may order the Contractor to provide information concerning persons employed or to be employed on the work and may order the removal of any person from the work.
- (2) The Contractor will comply with an order of the Minister pursuant to subsection (1).

Protection of Work and Documents

29. (1) The Contractor will guard or otherwise protect the work and shall protect the contract, specifications, plans, drawings, information, material, plant and real property provided by Her Majesty to the Contractor against loss or damage from any cause, and without limiting the generality of the foregoing, from espionage and sabotage and will not use, issue or disclose them except as may be essential for the execution of the work without the written consent of the Minister.
- (2) If any document or information given or disclosed to the Contractor is given a security rating the Contractor will take all measures directed by the Engineer to ensure the maintenance of the security rating.
- (3) The Contractor will provide facilities for and will assist any person authorized by the Minister to inspect or to take security measures in respect of the work.
- (4) The Engineer may direct the Contractor to do such things and to construct such works which the Engineer considers reasonable and necessary to ensure compliance with or to remedy a breach of this section.

Public Ceremonies

30. (1) The Contractor will not allow or permit any public ceremony in connection with the work without the permission of the Minister.
- (2) The Contractor will not erect or permit the erection of any sign or advertising on the work without the approval of the Engineer.

Insurance

31. (1) The Contractor will at his expense maintain insurance contracts in a form and with companies approved by the Minister of the nature, in the amounts, for the periods and containing the terms and conditions, if any, set out in the Insurance Schedule.
- (2) All fire insurance contracts maintained by the Contractor pursuant to subsection (1) shall provide that the proceeds thereof are payable to Her Majesty.



**Insurance (Continued)**

(3) The Contractor will deposit with the Engineer the originals of all contracts of insurance maintained by the Contractor pursuant to subsection (1) and the Contractor will, when required by the Engineer, submit to him proof that such policies are in force.

(4) Upon application by the Contractor the Engineer may waive compliance with subsections (2) and (3).

**Insurance – Proceeds**

32. (1) If the work or any portion thereof is lost or destroyed and monies are paid to Her Majesty in respect of the loss or damage under a contract of fire insurance maintained by the Contractor pursuant to section 31 of the General Conditions the monies will be held by Her Majesty for the purposes of the contract.

(2) The Minister may, on behalf of Her Majesty, elect to retain absolutely the monies held under subsection (1) and, in such event, the monies belong absolutely to Her Majesty and

(a) the Contractor is liable to Her Majesty in an amount equal to the amount by which the insurance monies payable is less than the loss and damages suffered and sustained by Her Majesty, including costs associated with clearing and cleaning the site of the work, and

(b) there shall be a financial accounting between Her Majesty and the Contractor in respect of the portion of the work which was lost or damaged and in respect of which monies have been retained absolutely by Her Majesty and there shall be included in the financial accounting all amounts paid or payable by Her Majesty under the contract together with all amounts paid or payable by the Contractor under the contract to Her Majesty and Her Majesty will pay to the Contractor any amount which the financial accounting shows to be payable by her Majesty to the Contractor under the contract and similarly the Contractor will pay to Her Majesty any amount which the financial accounting shows to be payable by the Contractor to Her Majesty under the contract.

(3) Upon payment as required by subsection (2) by Her Majesty or the Contractor, as the case may be, Her Majesty and the Contractor are discharged from all rights and obligations under the contract in respect of the portion of the work which was lost or damaged and in respect of which monies have been retained absolutely by Her Majesty, as though such portion of the work had been fully completed and executed by the Contractor in accordance with the contract.

(4) If an election is not made under subsection (2) the Contractor shall restore and replace the portion of the work lost or damaged and the monies shall be disbursed by Her Majesty to the Contractor in the manner and subject to the terms and conditions governing monies payable under the contract to the Contractor by Her Majesty, except that for the purpose of monies "100%" shall be substituted in subsection (4) of section 4 of the Terms of Payment for "95%" and "90%".

**Precautions against Damage, Infringements of Rights, Fire, etc.**

33. (1) The Contractor shall at his own expense do whatever is necessary to ensure that

(a) no person, property, right, easement or privilege is injured, damaged or infringed by reason of the Contractor's activities under this contract;



**Precautions against Damage,  
Infringements of Rights,  
Fire, etc. (Continued)**

- (b) pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted or endangered by the execution or existence of the work and plant;
  - (c) fire hazards are eliminated and in the case of a fire in or about the works that it is promptly extinguished;
  - (d) the health of all persons employed on the work is not endangered;
  - (e) adequate medical supervision of all persons employed on the work is maintained;
  - (f) adequate sanitation measures in respect of the work are taken; and
  - (g) all stakes, buoys, and marks placed on or about the works by or under the authority of the Engineer are protected and are not removed, defaced or altered.
- (2) The Engineer may direct the Contractor to do such things and to construct such works which the Engineer considers reasonable and necessary to ensure compliance with or to remedy a breach of subsection (1).
- (3) The Contractor will at his own expense comply with a direction of the Engineer made pursuant to subsection (2).

**Interpretation of Contract  
by Engineer**

34. (1) If at any time before the work has been completed and the Engineer has issued his Final Certificate of Completion, any question arises as to whether anything has been done as required by the contract or as to what the Contractor is required by the contract to do, and, in particular, and without limiting the generality of the foregoing, as to
- (a) the meaning of anything in the Plans and Specifications;
  - (b) the meaning to be given to the Plans and Specifications in case of any error therein, an omission therefrom, or an obscurity or discrepancy in their wording or intention;
  - (c) whether the quality or quantity of any material or workmanship meets the requirements of the contract;
  - (d) whether the plant, materials or workmen provided by the Contractor for executing the work and carrying out the contract are adequate to ensure that the work will be executed in accordance with the contract and that the contract will be carried out in accordance with its terms;
  - (e) what quantity of any kind of work has been completed by the Contractor; or
  - (f) the timing and scheduling of the various phases of the execution of the work,
- the question shall be decided by the Engineer.
- (2) The Contractor will construct the work in accordance with the decisions and directions of the Engineer given under this section and in accordance with any consequential decisions and directions given by the Engineer.





**Rectification of  
Defects in Work**

35. (1) Without restricting any warranty or guarantee implied or stipulated by law the Contractor will at his own expense rectify and make good any defect or fault however caused, that within twelve months from the date of the Engineer's Final Certificate of Completion appears in the work.

(2) If any defect or fault appears in the work and the Engineer is of the opinion that it is one which the Contractor, either under subsection (1) or under a warranty or guarantee implied or stipulated by law, is obligated to remedy and make good the Engineer may direct the Contractor to remedy and make good the defect or fault by giving notice to the Contractor of the existence of the defect or fault and the notice may specify the time within which the defect or fault is to be rectified and made good.

(3) The Contractor will rectify and make good the defect or fault described in a notice given pursuant to subsection (1) within the time specified in the notice.

**Non-compliance by Contractor**

36. (1) Where the Contractor has failed to comply with any decision or direction given by the Engineer under sections 23, 29, 33, 34 or 35 of the General Conditions, the Engineer may employ such methods, as he deems advisable, to do that which the Contractor failed to do.

(2) The Contractor shall on demand pay to Her Majesty all costs, expenses and damage incurred or sustained by Her Majesty by reason of the Contractor's non-compliance with any decision or direction given by the Engineer under sections 23, 29, 33, 34 or 35 of the General Conditions and by the action taken by the Engineer pursuant to subsection (1).

**Protesting Engineer's  
Decisions**

37. If the Contractor has, within ten days of communication to him by the Engineer of any decision or direction of the Engineer under sections 23, 29, 33, 34, or 35 of the General Conditions given notice to the Engineer in writing that the decision or direction is accepted under protest, Her Majesty will pay to the Contractor for anything the Contractor was required by the Engineer's decision or direction to do beyond what the contract correctly understood and interpreted would have required the Contractor to do, the cost, calculated in accordance with sections 44 to 47 of the General Conditions, of the labour, materials and plant necessarily involved in carrying out the decision or direction.

**Engineer may Order  
Additional Work,  
Changes, etc.**

38. (1) The Engineer may at any time before he issues his Final Certificate of Completion, in writing,

(a) order work or material in addition to that provided for in the Plans and Specifications; and

(b) dispense with or change the dimensions, character, quantity, quality, description, location or position of the whole or any part of the work or material provided for in the Plans and Specifications or as ordered pursuant to paragraph (a),

and the Contractor will execute the work in accordance with such orders, dispensations and changes as if the same had appeared in and been part of the Plans and Specifications.

(2) The Engineer shall determine whether anything done or not done by the Contractor pursuant to an order, dispensation or change made by the Engineer pursuant to subsection (1) increased or decreased the cost of the work to the Contractor.



**Engineer may Order  
Additional Work, Changes,  
etc. (Continued)**

(3) If the Engineer determines under subsection (2), that the cost has been increased Her Majesty will pay to the Contractor the cost, calculated in accordance with sections 44 to 47 of the General Conditions, of the additional labour, materials and plant necessarily involved.

(4) If the Engineer determines under subsection (2), that the cost has been decreased, Her Majesty may reduce the amount payable to the Contractor under the contract by an amount equal to the cost, calculated in accordance with sections 44 to 47 of the General Conditions, of the labour, material and plant necessarily involved.

(5) Subsections (2), (3) and (4) are applicable only to a Fixed Price Arrangement.

**Cooperation with  
other Contractors**

39. (1) Where, in the opinion of the Engineer, it is necessary that contracting persons or workmen, with or without plant and materials, be sent on to the site of the work the Contractor shall, to the satisfaction of the Engineer, allow them access to the work and shall cooperate with them in the carrying out of their duties and obligations.

(2) If the sending onto the work of a contracting firm or workmen under subsection (1) could not have been reasonably foreseen or anticipated by the Contractor when entering into the contract and if, in the opinion of the Engineer, the Contractor has incurred expense in complying with subsection (1) in respect of that contracting firm or those workmen Her Majesty, if the Contractor has given to the Engineer written notice of his claim before the expiration of thirty days from the sending onto the work of the contracting firm or workmen involved, shall pay to the Contractor the cost, calculated in accordance with sections 44 to 47 of the General Conditions, of the material, labour and plant necessarily involved.

**Engineer's Certificates**

40. (1) On the day that

(a) the work has been completed, and

(b) the Contractor has complied with the contract and all orders and directions made pursuant thereto,

to the satisfaction of the Engineer, he shall issue to the Contractor a Final Certificate of Completion.

(2) If the Engineer is satisfied that the work is substantially completed and is acceptable for use by Her Majesty, he may at any time before issuance of a Final Certificate of Completion issue to the Contractor an Interim Certificate of Completion, and shall describe therein the portions of the work not completed to his satisfaction and all things which must be done by the Contractor before a Final Certificate of Completion can be issued.

(3) The Engineer, before issuing a Final Certificate of Completion, may, in addition to the matter described in the Interim Certificate of Completion, require the Contractor to rectify any other portions of the work not completed to the satisfaction of the Engineer and to do any other things necessary for the completion of the work.

(4) The Engineer shall measure and keep records of his measurements of the quantities of labour, material and plant performed, used and supplied by the Contractor in executing the work and shall, at the request of the Contractor, inform him of his measurements and the Contractor will assist and cooperate with the Engineer in such measuring and is entitled to inspect the records of measurement kept by the Engineer.



**Engineer's Certificates**  
(Continued)

(5) On the day that the Engineer issues his Final Certificate of Completion under subsection (1) he shall issue a Final Certificate of Measurement showing the quantity of labour, plant and material performed, used and supplied by the Contractor in executing the work and all measurements included therein shall be binding upon Her Majesty and the Contractor and are conclusive between them as to the quantity of any labour, plant or material performed, used or supplied by the Contractor in executing the work.

(6) Subsections (4) and (5) are applicable only to a Unit Price Arrangement.

**Security Deposit –  
Forfeiture or Return**

41. If the work is taken out of the Contractor's hands pursuant to section 16 of the General Conditions or if the contract is terminated pursuant to section 19 of the General Conditions or if the Contractor is in breach of or in default under the contract Her Majesty may negotiate the security deposit, in the case of bonds, or convert the security deposit to Her own use, in the case of money, and the amount realized by Her Majesty shall be deemed to be a debt payable by Her Majesty to the Contractor and Her Majesty shall have the right of set-off and may set-off against the debt any sum or amount which the Contractor may be liable to pay to Her Majesty and the balance of the debt, if any, after the right of set-off has been exercised, and if such balance, in the opinion of the Engineer, is not required for the purposes of the contract shall be paid by Her Majesty to the Contractor.

**Security Deposit –  
Return all or any  
Part thereof**

42. (1) Upon the Engineer's Interim Certificate of Completion being issued, Her Majesty will, if the Contractor is not in breach of or in default under the contract, return to the Contractor that part of the security deposit which, in the opinion of the Engineer, is not required for the purposes of the contract.

(2) If the security deposit was deposited in the Consolidated Revenue Fund of Canada Her Majesty will pay to the Contractor interest thereon in accordance with the *Government Contracts Regulations*.

**Municipal Permits**

43. (1) The Contractor will within one month from the date of the contract tender to the municipal authority an amount equal to all fees and charges which would be payable to the municipal authority in respect of building permits if the work were being constructed for a person other than Her Majesty.

(2) The Contractor will notify the Minister within ten days of the tender the amount of and whether or not the municipal authority accepted the tender.

(3) If the municipal authority did not accept the tender the Contractor will deliver to the Minister within the time limited by subsection (2) the amount of the tender.

(4) For the purposes of this section "municipal authority" means an authority which would have jurisdiction respecting permission to construct the work if the owner of the work were not Her Majesty.

**Determination of Cost –  
Unit Price Table**

44. Whenever it is necessary for the purposes of sections 12, 18, 37, 38 and 39 of the General Conditions to determine the cost of labour, plant or material the Unit Price Table shall be used, that is the cost shall be equal to the product of the quantity of such labour, plant or material expressed in the unit set out in column 2 of the Unit Price Table in respect of the labour, plant or material involved, multiplied by the price in respect of the unit set out in column 3 of the Unit Price Table.



**Determination of Cost –  
Negotiation**

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45. If the method of determination in section 44 of the General Conditions cannot be used because the labour, plant or material involved is not included in the Unit Price Table, the cost of the labour, plant or material for the purposes of sections 12, 18, 37, 38 and 39 of the General Conditions shall be the amount agreed upon from time to time by the Contractor and the Engineer.

**Determination of Cost –  
Failing Negotiation**

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46. (1) If the method of determination in section 44 of the General Conditions cannot be used and if the Contractor and the Engineer cannot agree as contemplated by section 45 of the General Conditions, the cost of labour, plant or material for the purposes of sections 12, 18, 37, 38 and 39 of the General Conditions shall be equal to the aggregate of

(a) all reasonable and proper amounts actually expended by or legally payable by the Contractor in respect of the labour, plant or material which fall within one of the classes of expenditure described in subsection (2) (being costs which are directly attributable to the execution of the work and are not costs in respect of which the allowance in paragraph (b) is made); and

(b) 10% of the total of the expenditures of the Contractor that meet the test in paragraph (a) being an allowance for all other expenditures by the Contractor and for profit and without limiting the generality of the foregoing, being also an allowance for payments and charges relating to overhead, head office expenses and general administration costs of the Contractor, including finance and interest charges.

(2) Classes of expenditure that are allowable are:

(a) payments to subcontractors;

(b) wages, salaries and travelling expenses of employees of the Contractor while they are actually and properly engaged on the work other than wages, salaries, bonuses, living and travelling expenses of personnel of the Contractor generally employed at the head office, or at a general office, of the Contractor unless such personnel is engaged at the site of the work with the approval of the Engineer;

(c) payments for materials necessary for and incorporated in the work, or necessary for and consumed in the execution of the work;

(d) payments for tools, other than tools customarily provided by tradesmen, necessary for and used in the execution of the work;

(e) payments for preparation, inspection, delivery, installation and removal of plant and materials necessary for the execution of the work;

(f) payments for renting, erecting, maintaining and removing temporary offices, sheds and similar structures necessary for and used by the Contractor in executing the work;

(g) assessments payable under any statutory scheme relating to workmen's compensation, unemployment insurance or holidays with pay;

(h) payments for renting plant and allowances for plant owned by the Contractor necessary for the execution of the work providing that such payments or allowances are reasonable or have been agreed to by the Contractor and the Engineer; and

(i) payments made with the approval of the Engineer that are necessary for the execution of the work.



**Determination of Cost –  
Clarification of Terms**

47. (1) For the purposes of sections 45 and 46 of the General Conditions "plant" does not include tools.

(2) For the purposes of sections 44, 45 and 46 of the General Conditions "Unit Price Table" means the table set out in Article VI of the Articles of Agreement.

**Records to be Kept  
by Contractor**

48. (1) The Contractor shall maintain full records of his estimates of and actual cost to him of the work together with all proper tender calls, quotations, contracts, correspondence, invoices, receipts and vouchers relating thereto, shall make them available to audit and inspection by the Minister, the Comptroller of the Treasury of the Government of Canada or by persons acting on their behalf, shall allow them to make copies thereof and to take extracts therefrom, and shall furnish them with any information which they may require from time to time in connection with such records.

(2) The records maintained by the Contractor pursuant to this section shall be kept intact until the expiration of two years from the date of issuance of the Final Certificate of Completion under subsection (1) of section 40 of the General Conditions or until the expiration of such other period as the Minister may direct.

(3) The Contractor shall require all subcontractors and all firms, corporations and persons directly or indirectly controlled by or affiliated with the Contractor and all firms, corporations and persons directly or indirectly having control of the Contractor to comply with subsections (1) and (2) as if they were the Contractor.



LABOUR CONDITIONS  
CONDITIONS DE TRAVAIL

This document is the French version of the  
Labour Code, Part III, Chapter 1, Section 1.

Le présent document est la version française de  
la Loi sur le Travail, Chapitre 1, Section 1.

Info on the contract to which these conditions  
between the contractor and the contractor.

Information sur le contrat auquel ces conditions  
entre l'entrepreneur et le sous-traitant.

Contractor (Signature) \_\_\_\_\_

Entrepreneur (Signature) \_\_\_\_\_

Contractor (Signature) \_\_\_\_\_

Entrepreneur (Signature) \_\_\_\_\_

Contractor (Signature) \_\_\_\_\_

Entrepreneur (Signature) \_\_\_\_\_

**Interpretation**

1. In these conditions

- (a) "Act" means the *Fair Wages and Hours of Labour Act*;
- (b) "Regulations" means the Fair Wages and Hours of Labour Regulations made pursuant to the Act;
- (c) "contract" means the contract to which these Labour Conditions are attached;
- (d) "contracting authority" means the department of Government or Corporation that is an agent of Her Majesty with whom the contract is made;
- (e) "contractor" means the person who has entered into the contract with the contracting authority;
- (f) "Director" means the Director of Labour Standards, Canada Department of Labour;
- (g) "fair wage officer" means the officer of the Canada Department of Labour designated by the Minister of Labour;
- (h) "Minister" means the Canada Minister of Labour;
- (i) "persons" means those workers employed by the contractor, subcontractor or any other person doing or contracting to do the whole or any part of the work contemplated by the contract.

**Interprétation**

1. Dans ces conditions

- a) "Loi" désigne la *Loi sur les justes salaires et les heures de travail*;
- b) "Règlement" désigne le Règlement sur les justes salaires et les heures de travail établi en application de la Loi;
- c) "contrat" désigne le contrat auquel sont annexées les présentes conditions de travail;
- d) "adjudicateur" désigne le ministère du gouvernement ou la société qui est un agent de Sa Majesté avec lequel le contrat a été passé;
- e) "entrepreneur" désigne la personne qui a passé le contrat avec l'adjudicateur;
- f) "Directeur" désigne le directeur des Normes du travail, ministère du Travail du Canada;
- g) "agent des justes salaires" désigne l'agent du ministère du Travail du Canada désigné par le ministre du Travail;
- h) "Ministre" désigne le ministre du Travail du Canada;
- i) "personnes" désigne les travailleurs employés par l'entrepreneur, le sous-traitant ou toute autre personne exécutant ou s'engageant par contrat à exécuter la totalité ou une partie quelconque des travaux prévus dans le contrat.

**Wage Rates and Working Hours**

- 2. (a) All persons in the employ of the contractor, subcontractor, or any other person doing or contracting to do the whole or any part of the work contemplated by the contract shall during the continuance of the work be paid fair wages; that is, such wages as are generally accepted as current for competent workers in the district in which the work is being performed for the character or class of work in which such workers are respectively engaged; such wages shall in no case be less than the wage rates as set out in Appendix A to these Labour Conditions, or the minimum hourly rate of pay prescribed by or pursuant to the Part III of the Canada Labour Code (Labour Standards).
- (b) Except as provided in paragraph (g) the working hours of persons employed in the execution of the contract shall not exceed 8 hours in a day or 48 hours in a week except where longer daily or weekly hours are authorized by the Minister in cases of exceptional circumstances.
- (c) All persons shall be paid for hours worked in excess of 8 hours in a day or 40 hours in a week at an overtime rate at least one and one-half times the wage rates required to be paid under these Labour Conditions, as set out in paragraph (a).

**Taux de salaire et durée du travail**

- 2. a) A toutes les personnes employées par l'entrepreneur, le sous-traitant ou toute autre personne exécutant ou s'engageant par contrat à exécuter la totalité ou une partie quelconque des travaux prévus dans le contrat, il sera payé, tant que dureront les travaux, des justes salaires, c'est-à-dire les salaires généralement reconnus comme salaires courants pour les travailleurs qualifiés dans la région où les travaux sont exécutés, selon la nature ou la catégorie du travail auquel ces travailleurs sont respectivement affectés; dans aucun cas, ces salaires ne devront être inférieurs aux taux indiqués dans l'Annexe A aux présentes conditions de travail, ou au taux horaire minimum prescrit par la Partie III du Code canadien du travail (Normes du travail) ou en conformité de ce Code.
- b) Sauf dispositions contraires à l'alinéa g), la durée du travail des personnes employées à l'exécution du contrat ne devra pas dépasser 8 heures par jour ni 48 heures par semaine, sauf lorsqu'une journée ou une semaine de travail plus longue a été autorisée par le Ministre en raison de circonstances exceptionnelles.
- c) Toutes les personnes seront rémunérées, pour les heures de travail effectuées en sus de 8 par jour ou de 40 par semaine, à des taux majorés au moins égaux à une fois et demie les taux de salaire exigés dans les présentes conditions de travail; tel que défini à l'alinéa a).

- (d) All applications for permission to exceed 8 hours in a day or 48 hours in a week shall be made to the contracting authority for reference to the Minister.
- (e) The Director may determine at any time and from time to time what are the current or fair and reasonable rates of wages for the purpose of the contract, and may revise the wage rates in Appendix A attached to these Labour Conditions during the term of the contract.

The contractor agrees that where during the term of the contract he receives from the contracting authority a copy of any change in the wage rates referred to in the above paragraph, the contractor will pay not less than the wage rates as changed commencing with the first day following the receipt by him of the copy of the changed wage rates.

- (f) The contractor agrees that where during the term of the contract any question arises as to the proper classification of employment of work for the purpose of the payment of fair wages, the classification shall be determined by the Director. Immediately upon receipt of notice of any decision of the Director hereunder the contractor agrees to adjust the wages and classification of work of the persons affected commencing with the first day following the receipt by him of the copy of the changed wage rates.
- (g) The daily or weekly hours of work set out in paragraph (b) or authorized by the Minister under paragraph (b) may be exceeded where there is serious interference with the ordinary carrying out of the work contemplated by the contract by reason of;
- (i) an accident involving injury to a worker,
  - (ii) a breakdown of or damage to machinery or equipment, or
  - (iii) other unforeseen, unpreventable or emergent circumstances,
- but only to the extent necessary to prevent such serious interference.
- (h) Where because of serious interference referred to in paragraph (g) the working hours of any worker exceeded the weekly hours of work set out in paragraph (b) or authorized by the Minister under paragraph (b), the contractor shall report in writing to the Director, within fifteen days after the end of the week in which such hours of work were exceeded, setting forth;
- (i) the nature of the serious interference,
  - (ii) the names of all workers who worked in excess of the weekly hours of work set out in paragraph (b) or authorized by the Minister under paragraph (b), and
  - (iii) the number of hours each worker worked in excess of the weekly hours of work referred to in subparagraph (ii).

#### Labour Conditions to be Posted

3. For the protection of all persons the contractor agrees to post and keep posted, in a conspicuous place on the premises where work contemplated by the contract is being carried out or on premises occupied or used by persons engaged in carrying out such work, a copy of these Labour Conditions, and any authorization by the Minister for the working hours of persons employed under the contract to exceed 8 hours in a day or 48 hours in a week.

#### The Contractor to keep Records which are to be Kept open for Inspection

4. The contractor agrees to keep proper books and records showing the names, addresses and classifications of em-

- d) Toutes les demandes d'autorisation de travail au delà de 8 heures par jour ou de 48 heures par semaine devront être adressées à l'adjudicateur pour être transmises au Ministre.
- e) Le Directeur pourra en tout temps et à l'occasion déterminer quels sont les taux de salaire courants ou justes et raisonnables, pour les fins du contrat, et pourra revoir les taux de salaire indiqués dans l'Annexe A jointe aux présentes conditions de travail pendant la durée du contrat.

L'entrepreneur convient que s'il reçoit de l'adjudicateur, pendant la durée du contrat, un exemplaire de toute modification aux taux de salaire mentionnés dans l'alinéa ci-dessus, il ne paiera pas moins que les taux de salaire modifiés, à compter du premier jour qui suit la réception, par lui, d'un exemplaire des taux de salaire modifiés.

- f) L'entrepreneur convient que s'il surgit quelque doute, pendant la durée du contrat, quant à la catégorie appropriée d'emploi ou de travail aux fins du paiement des justes salaires, il appartiendra au Directeur de déterminer la catégorie. Dès réception de l'avis de toute décision du Directeur, en vertu des présentes, l'entrepreneur s'engage à rajuster le salaire et la catégorie de travail des personnes touchées, à compter du premier jour qui suit la réception, par lui, d'un exemplaire des taux de salaire modifiés.
- g) La durée journalière ou hebdomadaire du travail énoncée dans l'alinéa b) ou autorisée par le Ministre, en vertu de l'alinéa b), peut être dépassée en cas de danger d'entrave grave à la marche ordinaire des travaux prévus aux termes du contrat par suite
- (i) d'un accident ayant causé une lésion à un employé,
  - (ii) d'une panne ou de l'endommagement de l'outillage ou des appareils, ou
  - (iii) d'autres circonstances imprévues, inévitables ou fortuites,
- mais uniquement dans la mesure nécessaire pour prévenir une telle entrave grave à la marche des travaux.
- h) Lorsque, par suite du danger d'entrave grave à la marche des travaux mentionné dans l'alinéa g), la durée du travail d'un employé a dépassé la durée hebdomadaire du travail énoncée dans l'alinéa b) ou autorisée par le Ministre, en vertu de l'alinéa b), l'entrepreneur doit adresser par écrit au Directeur, dans les quinze jours qui suivent la fin de la semaine au cours de laquelle la durée du travail a été dépassée, un rapport indiquant
- (i) la nature de l'entrave grave à la marche des travaux,
  - (ii) les noms de tous les employés qui ont fourni des heures supplémentaires en excédent de la durée hebdomadaire du travail énoncée dans l'alinéa b) ou autorisée par le Ministre en vertu de l'alinéa b) et
  - (iii) le nombre d'heures supplémentaires fournies par chacun d'entre eux en excédent de la durée hebdomadaire du travail mentionnée dans le sous-alinéa (ii).

#### Affichage des conditions de travail

3. Pour la protection de toutes les personnes, l'entrepreneur s'engage à afficher et à tenir affichés, bien à la vue, à l'endroit où les travaux prévus dans le contrat sont exécutés, ou dans les locaux occupés ou fréquentés par les personnes employées à l'exécution desdits travaux, un exemplaire des présentes conditions de travail, de même qu'un exemplaire de toute autorisation de prolongation de la durée du travail des personnes employées en vertu du contrat, au delà de 8 heures par jour ou de 48 heures par semaine, accordée par le Ministre.

#### L'entrepreneur s'engage à tenir des dossiers pour fins d'inspection

4. L'entrepreneur s'engage à tenir les registres et dossiers appropriés indiquant le nom, l'adresse et la catégorie

ployment and work of all workers employed in work under the contract and the rate of wages, the wages paid and the daily hours worked by such workers.

The contractor also agrees to undertake that his books, records and premises will be open at all reasonable times for inspection by the Minister, a fair wage officer or any other person designated by the Minister.

The contractor also agrees to furnish the Minister, the contracting authority, the fair wage officer or other person designated by the Minister, on request, with such further information as is required to ascertain that the requirements of the Act, the Regulations and the contract with respect to wages, hours of work and other labour conditions have been complied with.

#### Departmental Requirements before Payments made to Contractor

5. The contractor agrees that he will not be entitled to payment of any money otherwise payable under the contract until he has filed with the contracting authority in support of his claim for payment a sworn statement;
  - (i) that he has kept the books and records required by these Regulations;
  - (ii) as to whether any wages in respect of work performed under the contract remain in arrears, and
  - (iii) that to his knowledge, all the conditions in the contract required by the Act and the Regulations have been complied with.

The contractor also agrees that, where the Minister informs the contracting authority and the contractor that fair wages and overtime rates have not been paid by the contractor to persons employed under the contract, the contracting authority will be entitled to withhold from any monies otherwise payable under the contract the amount the Minister indicates should be withheld until such time as the matter has been dealt with to the satisfaction of the Minister.

#### Authority to Pay Wages in the Event of Default by the Contractor

6. The contractor agrees that where he is in default of payment of wages to an employee the contractor will send to the Minister a cheque payable to the Receiver General of Canada for the amount determined by the Minister as being the amount the contractor is in default.

The contractor agrees that when he fails to comply with the preceding provision, the Minister may instruct the contracting authority to pay to the Receiver General of Canada, out of any monies otherwise payable to the contractor, the amount determined by the Minister as being the amount the contractor is in default.

#### Conditions of Subcontracting

7. The contractor agrees that in subcontracting any part of the work contemplated by the contract, he will place in the subcontract conditions respecting wages, hours of work and other labour conditions set out in the contract; and also the contractor agrees that he will be responsible for the carrying out of these conditions.

#### Workers to be Residents of Canada

8. The contractor agrees that all persons employed by him to do any work under the contract will be residents of Canada unless, in the opinion of the contracting authority at the time the work is to commence under the contract;

d'emploi et de travail de tous les travailleurs employés à des travaux exécutés en vertu du contrat, de même que le taux de salaire, le salaire payé et la durée journalière du travail pour chacun de ces travailleurs.

L'entrepreneur s'engage également à faire en sorte que ses registres, ses dossiers et ses locaux soient accessibles en tout temps opportun, pour fins d'inspection par le Ministre, un agent des justes salaires ou toute autre personne désignée par le Ministre.

L'entrepreneur s'engage en outre à fournir, sur demande, au Ministre, à l'adjudicateur, à l'agent des justes salaires ou à toute autre personne désignée par le Ministre tous autres renseignements requis pour permettre de constater qu'on a satisfait aux exigences de la Loi, des règlements et du contrat en ce qui concerne les salaires, la durée du travail et les autres conditions de travail.

#### Exigences du ministère avant le versement des sommes dues à l'entrepreneur

5. L'entrepreneur convient qu'il n'aura droit au paiement d'aucune somme qui autrement devrait lui être versée en vertu du contrat tant qu'il n'aura pas déposé auprès de l'adjudicateur, à l'appui de sa réclamation de paiement, une déclaration sous serment indiquant;
  - (i) qu'il a tenu les registres et dossiers requis par les présents règlements,
  - (ii) si des salaires à l'égard des travaux exécutés en vertu du contrat demeurent impayés et
  - (iii) qu'à sa connaissance, toutes les conditions du contrat exigées par la Loi et les règlements ont été observées.

L'entrepreneur convient en outre que si le Ministre fait savoir à l'adjudicateur et à l'entrepreneur que des justes salaires et des taux applicables aux heures supplémentaires n'ont pas été payés par l'entrepreneur à des personnes employées en vertu du contrat, l'adjudicateur sera autorisé à retenir de toute somme autrement payable en vertu du contrat le montant indiqué par le Ministre comme devant être retenu jusqu'à ce que la question ait été réglée à la satisfaction du Ministre.

#### Paiement des salaires par l'adjudicateur, si l'entrepreneur omet de le faire

6. L'entrepreneur convient qu'à défaut de paiement de salaire à un travailleur, de sa part, il devra envoyer au Ministre un chèque établi à l'ordre du Receveur général du Canada, au montant déterminé par le Ministre comme étant le montant que l'entrepreneur a omis de payer.

L'entrepreneur convient que s'il omet de se conformer à la disposition ci-dessus, le Ministre peut ordonner à l'adjudicateur de payer au Receveur général du Canada, à même les sommes autrement payables à l'entrepreneur, le montant déterminé par le Ministre comme étant le montant que l'entrepreneur a omis de payer.

#### Conditions imposées à un sous-traitant

7. L'entrepreneur convient que dans l'adjudication, à un sous-traitant, de toute partie des travaux prévus par le contrat, il devra insérer dans le sous-contrat les conditions concernant les salaires et la durée du travail et les autres conditions de travail indiquées dans le contrat; l'entrepreneur reconnaît en outre qu'il sera responsable de l'observation desdites conditions.

#### Les travailleurs doivent résider au Canada

8. L'entrepreneur convient que toutes les personnes employées par lui pour exécuter un travail quelconque en vertu du contrat doivent résider au Canada, à moins que, de l'avis de l'adjudicateur, à la date prévue pour le début des travaux en vertu du contrat,



- (a) persons resident in Canada are not available to do the work, or
- (b) special circumstances exist whereby it would not be in the public interest to require that all such persons be residents of Canada.

#### Non-discrimination in Hiring and Employment of Labour

9. The contractor agrees that
- (a) in the hiring and employment of workers to perform any work under the contract, the contractor will not refuse to employ and will not discriminate in any manner against any person because
    - (i) of that person's race, national origin, colour, religion, age, sex or marital status,
    - (ii) of the race, national origin, colour, religion, age, sex or marital status of any person having any relationship or association with that person, or
    - (iii) a complaint has been made or information has been given by or in respect of that person relating to an alleged failure by the contractor to comply with subparagraph (i) or (ii);
  - (b) if any question arises as to whether the contractor has failed to comply with the provision described in paragraph (a), the Minister or any person designated by the Minister shall decide the question and his decision shall be final for the purposes of the contract; and
  - (c) failure to comply with the aforementioned clauses (a) and (b) regarding non-discrimination shall constitute a material breach of the contract.

#### Liquidated Damages

10. In the event of any default in carrying out any of the conditions set out in Section 2 of these Labour Conditions in respect of any employee, the contractor shall pay to Her Majesty as liquidated damages a sum of fifty dollars for every such default, and the Minister under whom the work contemplated by the contract is being executed may direct that the amount assessed as liquidated damages under this paragraph be deducted from any moneys payable to the contractor under the contract and be credited to the Consolidated Revenue Fund.

#### Schedule of Wage Rates

11. A schedule of minimum wage rates, authorized by the Canada Department of Labour, when attached to these Labour Conditions as Appendix A also becomes part of the contract.

The contractor should note that in carrying out any of the work contemplated by the contract, he may also be subject to provincial laws and regulations.

- a) il ne se trouve pas de personnes résidant au Canada disponibles pour exécuter les travaux ou,
- b) il existe des circonstances spéciales par suite desquelles il ne serait pas dans l'intérêt public d'exiger que toutes les personnes en question résident au Canada.

#### Non-discrimination dans l'embauchage et l'emploi de main-d'œuvre

9. L'entrepreneur convient que
- a) dans l'embauchage et l'emploi des travailleurs aux fins de l'exécution de tout travail en vertu du contrat, l'entrepreneur ne refusera pas d'employer une personne ou d'exercer de quelque façon que ce soit des distinctions injustes à l'endroit d'une personne à cause
    - (i) de la race, de l'origine nationale, de la couleur, de la religion, de l'âge, du sexe ou de l'état civil de cette personne,
    - (ii) de la race, de l'origine nationale, de la couleur, de la religion, de l'âge, du sexe ou de l'état civil de toute personne ayant un rapport ou une association avec la personne en question, ou parce que
    - (iii) cette dernière a porté plainte ou a fourni des renseignements ou parce qu'une plainte a été portée ou des renseignements ont été fournis en son nom relativement à toute prétendue omission de la part de l'entrepreneur de se conformer aux sous-alinéas (i) ou (ii);
  - b) en cas de doute sur la question de savoir si l'entrepreneur a négligé de se conformer aux dispositions de l'alinéa a), le Ministre ou toute personne désignée par le Ministre tranchera la question et sa décision sera sans appel aux fins du contrat;
  - c) toute omission de se conformer aux conditions a) et b) ci-dessus concernant la non-discrimination constituera un manquement grave au contrat.

#### Domages-intérêts déterminés à l'avance

10. Advenant un manquement dans l'exécution de l'une ou l'autre des conditions énoncées dans l'article 2 des présentes conditions de travail en ce qui concerne un employé quelconque, l'entrepreneur doit payer à Sa Majesté, au titre de dommages-intérêts fixés à l'avance, cinquante dollars pour chaque manquement, et le Ministre sous la juridiction de qui le travail prévu par le contrat est en voie d'exécution peut ordonner que le montant auquel ont été fixés les dommages-intérêts prédéterminés ainsi que le prévoit le présent alinéa soit déduit de toute somme payable à l'entrepreneur aux termes du contrat et soit crédité au Fonds du revenu consolidé.

#### Echelle de salaires

11. Une échelle de salaires minimums reconnue par le ministère du Travail du Canada, jointe aux présentes conditions de travail en tant qu'Annexe A, devient également partie intégrante du contrat.

L'entrepreneur doit se rappeler que, dans l'exécution de tout travail prévu par le contrat, il peut aussi être assujéti aux lois et règlements provinciaux.

