

GEOCRES No:
31M00-3

CONTRACT FOR THE
CONSTRUCTION OF STOPE CAPS
TOWN OF COBALT
CONTRACT NO. 327-87

CORPORATION: Town of Cobalt
18 Silver Street
Cobalt, Ontario
POJ 1C0

CONSULTANT: Golder Associates
3151 Wharton Way
Mississauga, Ontario
L4X 2B6

Morrison, Hershfield Limited
4 Lansing Square
North York, Ontario
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(Sub-Consultant to Golder Associates)

CORPORATION OF THE TOWN OF
COBALT
CONTRACT FOR THE CONSTRUCTION
OF STOPE CAPS

CONTRACT # 327-87

September 1987

INDEX TO CONTRACT DOCUMENTS

SECTION

A	INFORMATION TO TENDERS
B	FORM OF TENDER
C	SPECIAL PROVISIONS - ITEMS
D	SPECIAL PROVISIONS - GENERAL
E	GENERAL CONDITIONS
F	ARTICLES OF AGREEMENT

SECTION A

INFORMATION TO TENDERS

CORPORATION OF THE TOWN OF COBALT

CONTRACT NO. 327-87

INDEX TO SECTION A

INFORMATION TO TENDERERS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1.	GENERAL DESCRIPTION	A-1
2.	SCOPE OF WORK	A-1
3.	COORDINATION WITH OWNER'S REPRESENTATIVE	A-3
4.	DEFINITION OF OWNER AND ENGINEER	A-3
5.	TENDERS	A-4
6.	ACCEPTANCE OR REJECTION OF TENDERS	A-4
7.	TENDER DEPOSIT	A-5
8.	SUPERSEDE OR WITHDRAWAL OF TENDER	A-5
9.	INFORMAL OR UNBALANCED TENDERS	A-5
10.	BOND REQUIREMENTS	A-6
11.	AGREEMENT TO BOND	A-6
12.	AWARD AND EXECUTION OF CONTRACT	A-6
13.	WORKMEN'S COMPENSATION DECLARATION	A-7
14.	CONTRACTOR'S SCHEDULE OF WORK	A-7
15.	ABILITY AND EXPERIENCE OF BIDDER	A-7
16.	ASSIGNMENT AND SUBLETTING	A-8
17.	ROADS AND STRUCTURES FAIR WAGE SCHEDULE	A-8
18.	PROGRESS AND TIME FOR COMPLETION	A-8
19.	SOIL CONDITIONS	A-8
20.	ENVIRONMENTAL CONSIDERATIONS	A-9
21.	SOURCES OF CONCRETE AGGREGATE	A-9

1. GENERAL DESCRIPTION

The site is located on Highway 11B at the South end of Cobalt, Ontario.

The work consists of overburden excavation to bedrock, construction of timber and lean mix concrete stope caps, granular backfilling and reconstruction of a section of Highway 11B and all other measures necessary to complete the work in accordance with the details set out more specifically hereafter and as shown on the accompanying Contract Drawings.

2. SCOPE OF WORK

The Scope of Work covered by this Contract shall include, but may not be limited to, the following components, to be carried out in accordance with the Drawings and Specifications:

- (a) Furnish all transportation, equipment, and labour required to perform the Work and supply all materials and equipment FOB the Site, including off-loading at the Site;
- (b) Prepare all necessary stockpile areas, etc., as may be required for construction purposes;
- (c) Excavate overburden, consisting of sand and gravel and waste rock fill, subsoil (glacial till) and loose rock, within the designated area down to the surface of the bedrock, transport the derived materials and stockpile them in the designated area for reuse or dispose of them as required;
- (d) Clean the bedrock surface to allow for detailed inspection and geologic mapping, radar survey, sounding with a steel weight and resurvey by radar (Excavation 'A' only).

- (e) Construct perimeter thrust blocks anchored to the bedrock, mass lean concrete supports on either side of any exposed stope holes and bridge over the holes with timbers; supply, place and compact lean mix concrete to backfill the excavation to an appropriate level and shape top surface to a slightly depressed localized area;
- (f) Drill drain holes in the depressed area through the lean mix concrete and bedrock and install a geotextile over the drain holes; backfill upper portion of the excavation with pit run granular fill to the underside of the roadway subbase level, and reinstate the excavated portion of the pavement structure of Highway 11B in accordance with the appropriate Specifications of the Ministry of Transportation and Communications, Ontario, as well as reinstating the original ground surface contours within the area specified and re-establish continuous drainage along both side of the highway within the construction limits as required;
- (g) Clean up the work area upon completion of the work and remove from the Owner's land all surplus materials, wastes and equipment;
- (h) Provide all necessary surveying services, including a pre-construction survey, proper setting out of the Work to the locations, lines and grades shown on the Construction Drawings and measurement of as-constructed dimensions and elevations.

In addition, the Contractor shall provide a Theodolite, such as a Wilde T2 or equivalent, a tripod and a metric scale rod, for the Engineer's use during the Contract.

The Contractor's attention is drawn to point(d) above and Sections B and C Special Provision - Items 5 and 6, detailing the requirements for detailed geological mapping, survey of bedrock by radar, sounding of the bedrock and resurvey by radar, at Excavation 'A'. Bedrock cleaning shall be completed and unrestricted access to Excavation 'A' shall be available to the Engineer for a period of four (4) calendar days to allow completion of mapping and testing. The Contractor shall schedule his work, equipment and labour force so as to ensure the continued progress of the overall work during the above operations as no charges will be accepted nor payment made for the delay or standby of any equipment or labour caused by those operations.

3. CO-ORDINATION WITH OWNER'S REPRESENTATIVE

The Contractor shall provide a full-time Superintendent to co-ordinate the Work with the Owner and/or his Representative to assure that the Project is completed in an accurate and timely manner.

4. DEFINITION OF OWNER AND ENGINEER

Wherever the word "Owner" or "Corporation" appears in this contract, it may be interpreted as meaning the "Corporation of the Town of Cobalt".

Wherever the word "Ministry" or "Department of Highways" or "Department of Transportation and Communications" appears, it shall mean the "Ministry of Transportation and Communications (M.T.C.) for the Province of Ontario".

Wherever the word "Engineer" appears in this Contract, it shall be interpreted as meaning the "Consulting Engineers, Golder Associates" or such other officers as may be authorized by the Corporation to act in any particular capacity.

5. TENDERS

Sealed Tenders on forms prepared by the Consulting Engineer and plainly marked Contract No. 327-87 will be received at the Town Office, Town of Cobalt, 18 Silver Street, Cobalt, Ontario until 4:30 P.M., E.D.T. on September 16, 1987 and shall be addressed to:

Town of Cobalt
c/o Ms. D.R. Beatty
Clerk-Treasurer,
Box 70, 18 Silver Street
Cobalt, Ontario
P05 1C0

Tenders are subject to the approval of the Corporation and the lowest or any tender may not necessarily be accepted.

The tender form must be legible and all items must be bid with the unit price for every item, where required, and other entries being fully clear.

The tender form must be signed and witnessed in the spaced provided on the form with the signature of the Bidder or a responsible official of the organization bidding.

6. ACCEPTANCE OR REJECTION OF TENDERS

The Owner shall not be responsible for any liabilities, costs, expenses, loss or damage incurred, sustained or suffered by any Tenderer prior or subsequent to or by reason of the acceptance or non-acceptance by the Owner of any tender or by reason of any delay in the acceptance of a tender. Tenders are subject to a formal Contract being prepared and executed. The Owner reserve the right to reject any or all tenders and to waive formalities.

7. TENDER DEPOSIT

Each tender must be accompanied by a certified cheque payable to the Corporation of the Town of Cobalt for an amount equal to or greater than the amount shown in the table below.

<u>Total Amount of Contractor's Tender</u>	<u>Minimum Deposit Required</u>
\$ 20,000.00 or less	\$ 1,000.00
\$ 20,000.01 to \$ 50,000.00	\$ 2,500.00
\$ 50,000.01 to \$ 100,000.00	\$ 5,000.00
\$ 100,000.01 to \$ 250,000.00	\$ 13,000.00
\$ 250,000.01 to \$ 500,000.00	\$ 25,000.00
\$ 500,000.01 to \$1,000,000.00	\$ 50,000.00
\$1,000,000.01 to \$2,000,000.00	\$100,000.00

The tender deposit of all but the lowest two tenderers will be returned within ten days after the date of opening tenders. The tender deposit of the two lowest tenderers will be retained until a tender has been accepted, the required Maintenance and Performance Bond, and other documents required herein, have been accepted by the Owner and a Contract executed by the Owner and the successful tenderer.

8. SUPERSEDE OR WITHDRAWAL OF TENDER

A Tenderer who has already submitted a tender may submit a further tender at any time up to the official closing date. The last tender received shall supersede and invalidate all tenders previously submitted by that Tenderer for this Contract.

A Tenderer may withdraw his tender at any time up to the official closing time by submitting a letter bearing his signature and seal as in his tender to the Secretary who will mark thereon the time and date of receipt.

9. INFORMAL OR UNBALANCED TENDERS

Tenders which are incomplete, conditional, illegible or obscure, or that contain additions not called for, reservations, erasures, alterations or irregularities of any kind, may be rejected as informal.

Tenders that contain prices which appear to be so unbalanced as likely to affect adversely the interests of the Owner may be rejected.

Wherever in a tender the amount tendered for an item does not agree with the extension of the estimated quantity and the tendered unit price, the unit price shall govern and the amount and the Total Tender Price shall be corrected accordingly.

The Owner reserves the right to waive formalities at his discretion.

Tenderers who have submitted tenders that have been rejected by the Owner because of informalities will normally be notified of the reasons for the rejection within ten days after the closing date for tenders.

10. BOND REQUIREMENTS

A Performance and Maintenance Bond for the Corporation of the Town of Cobalt and for the complete tendered value of the works shall be provided in triplicate prior to the signing of a Contract. The maintenance period shall not be less than twelve (12) months after the Date of Substantial Performance.

11. AGREEMENT TO BOND

An Agreement to Bond in the form bound herein as Page B-6, is required with this Tender.

12. AWARD AND EXECUTION OF CONTRACT

The Engineer, when so instructed by the Owner, shall forward three complete copies of the Contract Documents to the successful Tenderer for execution. The Tenderer agrees that if he has been notified that his tender has been recommended to the Owner for

acceptance, he will execute Articles of Agreement in triplicate in the form bound herein, within five (5) days after being notified so to do by the Owner, or anyone acting on their behalf. Three copies of the Contract Documents, fully executed on behalf of the Contractor, shall be forwarded for acceptance by the Owner, together with the following, in triplicate:

- a) Workmen's Compensation Declaration
- b) Liability Insurance Declaration
- c) Performance and Maintenance Bond

13. WORKMEN'S COMPENSATION DECLARATION

The Contractor shall, at the time of entering into a Contract, make a Statutory Declaration or provide a satisfactory Clearance Letter than all assessments or compensation payable to the Workmen's Compensation Board have been paid.

14. CONTRACTOR'S SCHEDULE OF WORK

The Contractor shall, upon award of this Contract, prepare a Contractor's Schedule of Work. The Contractor's Schedule of Work will be itemized, outlining the items to be scheduled by the Contractor and the Contractor must complete and submit his schedule to the Engineer before commencement of the work. If changes to the Schedule become necessary, the Contractor shall revise the Schedule and resubmit to the Engineer.

15. ABILITY AND EXPERIENCE OF BIDDER

The Owner reserves the right to reject the tender of any bidder who, if required, does not furnish satisfactory evidence of sufficient capital, plant and experience to successfully prosecute and complete the work in the specified time.

16. ASSIGNMENT AND SUBLETTING

All bidders shall submit to the Owner, a List of Proposed Subcontractors and Major Suppliers, showing the type (and value) of work to be sublet to each in the form bound herein as Page B-9.

17. ROADS AND STRUCTURES FAIR WAGE SCHEDULE

The Fair Wage Schedule has been included in the Contract Documents. The Tenderers are hereby notified that a further revision to the Schedule may be made by the Ministry. All increased costs to the Contractor due to an increase in the wage schedule shall be deemed to have been included in the unit price bid for each respective item and no additional payment will be made on this account.

18. PROGRESS AND TIME FOR COMPLETION

The Contractor's attention is hereby drawn to Clause 8 of the Special Provisions - General.

19. SOIL CONDITIONS

The expected soil and rock conditions at the site are given on the Contract Drawings and provided on Golder Associates Report No. 871-1289, entitled "Preliminary Engineering Assessment and Suggested Remedial Measures, "P-S" Stope Intersection Crown Pillar, Hwy #11B, Cobalt, Ontario" dated August, 1987. Information shown on the sections is interpreted from borings put down during the subsurface investigations but the accuracy of the information between boreholes cannot be guaranteed.

A copy of the above referenced report is available for review at the office of the Corporation of the Town of Cobalt, 18 Silver Street, Cobalt, Ontario.

20. ENVIRONMENTAL CONSIDERATIONS

- a) Easily removed vegetation should be preserved for as long as possible until grading/excavation operations are ready to commence.
- b) Accumulated debris and soil should be temporarily stored or disposed of in a manner acceptable to adjacent property owners and/or the Ministry of the Environment and the Ministry of Natural Resources.
- c) The Contractor will be responsible for all clean-up after construction to the complete satisfaction of the Engineer.

21. SOURCES OF CONCRETE AGGREGATE

All concrete aggregate used for Item #6 on the Form of Tender shall be non-alkaline reactive. Aggregate sources for concrete under this item shall be limited to those pits currently on the approved M.T.C. Regional Concrete Aggregate Source List.

Prior to placing concrete, it shall be the Contractor's responsibility to disclose his aggregate source and provide adequate test results to the satisfaction of the Engineer that the aggregate is both non-alkaline reactive and meets all current M.T.C. specifications. Any costs incurred in satisfying the Engineer that the aggregate is acceptable are to be borne by the Contractor.

All concrete aggregate used in Items #7 and 20 on the Form of Tender shall meet only the requirements of that specific mix design. Aggregate sources on the approved M.T.C. Regional Concrete Aggregate source list and non-alkaline reactive aggregate are not required.

SECTION B

FORM OF TENDER

FORM OF TENDER
FOR THE
CONSTRUCTION OF STOPE CAPS
TOWN OF COBALT
CONTRACT NO. 327-87

TO: THE MAYOR AND MEMBERS OF COUNCIL,
TOWN OF COBALT

This Tender is Submitted by

Firm Name

.....
Address

.....

.....
Telephone No.

1. I,
of

DECLARE that no person, firm or corporation other than the one whose signature or the signature of whose proper officers and the seal is or are attached below, has any interest in this tender or in the contract proposed to be taken.

2. I FURTHER DECLARE that this tender is made without any connection, knowledge, comparison of figures or arrangements with any other company, firm or person making a tender for the same work and is in all respects fair and without collusion or fraud.

FORM OF TENDER
FOR THE
CONSTRUCTION OF STOPE CAPS
TOWN OF COBALT
CONTRACT NO. 327-87

TO: THE MAYOR AND MEMBERS OF COUNCIL,
TOWN OF COBALT

This Tender is Submitted by

Firm Name

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Address

.....

.....

Telephone No.

1. I,
of

DECLARE that no person, firm or corporation other than the one whose signature or the signature of whose proper officers and the seal is or are attached below, has any interest in this tender or in the contract proposed to be taken.

2. I FURTHER DECLARE that this tender is made without any connection, knowledge, comparison of figures or arrangements with any other company, firm or person making a tender for the same work and is in all respects fair and without collusion or fraud.

3. I FURTHER DECLARE that no member or any officer of the Corporation of the Town of Cobalt is or will become interested directly or indirectly as a contracting party or otherwise in or in the performance of the Contract, or in the supplies, work or business to which it relates or in any portion of the profits thereof, or of any such supplies to be used therein or in any of the monies to be derived therefrom.

4. I FURTHER DECLARE that the several matters stated in the said tender are in all respects true.

5. I FURTHER DECLARE that I have carefully examined locality and site of the proposed works, as well as all the Drawings, Preliminary Engineering Assessment Report, Form of Tender, Information to Tenderers, Specifications, Special Provisions, General Conditions, Agreement to Bond, and Addenda No..... to Addenda No. relating to the said Contract, and hereby acknowledge the same to be part and parcel of any contract to be let for the work herein described or defined.

6. I do hereby tender and offer to enter into a contract, to do all of the work and to furnish all necessary labour, machinery, tools, apparatus and other means of construction, and to provide, furnish, deliver and place all materials described, in strict accordance with the plans, specifications and supplemental specifications and to accept in full payment therefor, the sums calculated in accordance with the actual measured quantities at the unit prices set forth in the tender herein, as follows:

SCHEDULE OF UNIT PRICES

In the column headed "Spec. No", the number refers to the latest issue of the Ontario Provincial Standard Specifications (OPSS). "S.P." refers to the Special Provisions. "L.S. under the heading "unit" refers to a lump sum bid for that item.

SECTION B - FORM OF TENDER

B-3

ITEM NO.	SPEC. NO.	DESCRIPTION	ESTIMATED QUANTITIES	UNIT	CONTRACTOR'S BID PER UNIT	CONTRACTOR'S TOTAL BID
1	S.P.	Mobilization and Demobilization	--	L.S.	--	.....
2	S.P.	Temporary Safety Fence Installation	--	L.S.	--	.....
3	900.01 900.02 S.P.	Permanent Safety Fence Installation	40	lin.m	.....	.....
4	902 S.P.	Overburden Excavation to Bedrock Including 320 m ² of Bedrock Cleaning	--	L.S.	--	.....
5	S.P.	Sounding Rock	10	hr.	.....	.....
6	904 S.P.	Supply and Installation of Rock Dowels	430	each	.....	.....
7	904	Concrete for Thrust Blocks	60	m ³	.....	.....
8	S.P.	Roller-Compacted Concrete Using Select Sand and Gravel or Standard Concrete Aggregate	1600	m ³	.....	.....
9	S.P.	Stope Cap Timbers	375	lin.m	.....	.....
10	S.P.	Drain Holes, including 50m ² of Geotextile	35	lin. m	.....	.....
11	314 S.P.	Backfill Over Roller Compacted Concrete-Pit Run Sand and Gravel	4000	tonne	.....	.....
12	314 1010 S.P.	Granular "A"	255	tonne	.....	.....

SECTION B - FORM OF TENDER

ITEM NO.	SPEC. NO.	DESCRIPTION	ESTIMATED QUANTITIES	UNIT	CONTRACTOR'S BID PER UNIT	CONTRACTOR'S TOTAL BID
13	314 1010 S.P.	Granular "B"	460	tonne	.....	.....
14	501 S.P.	Water For Com- paction and Dust Control	100	m ³	.....	.....
15	310 1150 S.P.	Asphaltic Concrete (HL-4)	120	tonne	.....	.....
16	S.P.	Transportation of Concrete Cylinders for Testing	17	sets	.....	.....
			Sub Total			.....
PROVISIONAL ITEMS						
17(a)	905	Rock Bolts	30	each	.....	.....
17(b)	905	Wire Mesh	50	m ²	.....	.....
18	902 S.P.	Additional Overburden Excavation	500	m ³	.....	.....
19	S.P.	Extensometer Installation	--	L.S.	--	.....
			TOTAL BID PRICE			.....

7. I agree that this offer is to continue open to acceptance until the formal contract is executed by the successful Tenderer for the said work or until thirty days after the tender closing date, whichever event first occurs, and that the Corporation may at any time within that period, without notice, accept this tender whether any other tender has been previously accepted or not.

8. Except as provided for in Section A-6, I agree that if I withdraw this tender before the Council of the said Corporation shall have considered the tenders and awarded the Contract in respect thereof, at any time not later than thirty days after the tender closing date, the amount of the deposit accompanying this tender shall be forfeited to the Corporation.

9. I agree that the awarding of the Contract based on ~~this tender by the Council~~ of the said Corporation shall be an acceptance of this tender.

10. If this tender is accepted, I agree to furnish an approved Surety Bond for the proper fulfillment of the Contract as required and to execute the Contract Documents in triplicate, within fifteen (15) calendar days after being notified so to do. In the event of default or failure on our part so to do, I agree that the Corporation of the Town of Cobalt, shall be at liberty to retain the money deposited by us to the use of the Corporation and to accept the next lowest or any tender or to advertise for new tenders, or to carry out the works in any other way they deem best.

11. I propose the Bonding Company named hereunder
.....
(Name of Bonding Company)

A company which is willing to become bound with
in the amount designated for the due performance and fulfillment of the Contract, for which this is a tender.

AGREEMENT TO BOND
CONTRACT NO. 327-87

We, the undersigned, hereby agree to become bound as Surety for

.....
.....

in a bond totalling One Hundred Per Cent (100%) of the Contract amount,
and conforming to the Instruments of Contract attached hereto, for the
full and due performance of the works shown as described herein if the
Tender.....
..... is accepted by the Owner.

It is a condition of this Agreement that if the above mentioned Tender is
accepted, application for a Performance and Maintenance Bond must be
completed with the undersigned within fifteen (15) days of acceptance of
the tender related thereto, otherwise this Agreement shall be null and
void.

DATED THIS day of 1987

.....
Name of Bonding Company

.....
Signature of Authorized Person Signing for Bonding
Company (Company Seal)

.....
Position

SCHEDULE OF PLANS, SPECIFICATIONS, STANDARD DRAWINGS AND DOCUMENTS

CONTRACT NO. 327-87

The work specified in this Contract shall be performed in strict accordance with, but not limited to, the following Plans, Specifications, Standard Drawings and Documents:

A. SPECIAL SPECIFICATIONS

Special Provisions -- General

Special Provisions -- Items

B. M.T.C. AND ONTARIO PROVINCIAL STANDARD SPECIFICATIONS

OPSS 127 (Apr. 1987)	OPSS 206 (Sept. 1984)	OPSS 314 (Dec. 1983)
OPSS 315 (Dec. 1983)	OPSS 501 (Dec. 1983)	OPSS 502 (Dec. 1983)
OPSS 514 (Dec. 1984)	OPSS 902 (Dec. 1983)	OPSS 904 (Dec. 1983)
OPSS 905 (Dec. 1984)	OPSS 919 (Dec. 1984)	OPSS 1010 (Dec. 1983)
OPSS 1150 (Dec. 1983)	OPSS 1860 (Sept. 1984)	

Mutatis Mutandis

It will be the Contractor's responsibility to obtain current copies of the Ministry of Transportation and Communications Standard Specification Forms and Ontario Provincial Standard Specification forms listed above, which form part of this Contract.

C. GENERAL CONDITIONS

Form M100

D. PLANS

Drawing 187-0327-1

Drawing 187-0327-2

E. M.T.C. AND ONTARIO PROVINCIAL STANDARD DRAWINGS

- O.P.S.D. - 200.01 - Undivided Highway Earth Grading Sections
- O.P.S.D. - 206.01 - Undivided Highway Granular Base Sections
- O.P.S.D. - 208.01 - Benching of Earth Slopes
- O.P.S.D. - 210.01 - Asphalt Pavement and Shoulder Sections
- O.P.S.D. - 900.01 - Chain Link Security Fence
- O.P.S.D. - 900.02 - Installation of Barbed Wire

It will be the Contractor's responsibility to obtain current copies of the Ministry of Transportation and Communications Metric Standard Drawings and Ontario Provincial Standard Drawings listed above, which form part of this Contract.

By my/our signature(s), hereunder, I/we hereby agree to complete this Contract in accordance with the terms contained herein.

DATED AT this day of 1987

.....
Witness

.....
Signature of Authorized Person
Signing for Contractor
(Company Seal)

.....
Position

FORM OF TENDER
FOR THE
CONSTRUCTION OF STOPE CAPS
TOWN OF COBALT
CONTRACT NO. 327-87

STATEMENT "A"
LIST OF SUB-CONTRACTORS

SUB-TRADE	NAME OF SUB-CONTRACTOR	ADDRESS OF SUB-CONTRACTOR

SECTION C

SPECIAL PROVISIONS - ITEMS

Mobilization and Demobilization - Item 1

The Contractor shall, for the lump sum price bid for this item, mobilize to the site prior to the start of work, or as required during the progress of the work, and demobilize from site at the end of the work, all equipment necessary to ensure the orderly progression of the work. Included in this lump sum price are all facilities and labour required to mobilize and demobilize the equipment and all supervision during mobilization, throughout the duration of the work and demobilization.

Temporary Safety Fence Installation - Item No. 2

The Contractor shall, for the lump sum price bid for this item, erect a temporary safety fence around the perimeter of the entire work area as shown on the Contract Drawings. This fence shall be of a type similar to that which already exists around a portion of the site (chain link).

Payment for this item shall include the cost for all labour, equipment and material required to realign a portion of the existing fence, erect, maintain, and remove all such fences upon completion of the work. Removal shall be required for all fences indicated on the Contract Drawings as temporary upon completion of the Contract.

Permanent Safety Fence Installation - Item No. 3

The Contractor shall, for the unit price bid for this item, erect a permanent safety fence around the perimeter of the area as shown on the Contract Drawings. This fence shall be of a type similar to that which already exists immediately to the north of the main Cave-In area (chain link).

Payment for this item shall include the cost for all labour, equipment and material required to erect such a fence in accordance with O.P.S.D. 900.01 and 900.02 for the installation of chain link security fence and barbed wire.

Overburden Excavation to Bedrock - Item No. 4

At the contract price for this item, the Contractor shall, in accordance with the Contract Drawings, excavate the existing overburden to bedrock to the limits shown on the Drawings.

The requirements of O.P.S.S. Form 902 shall apply, with the exception of the measurement for payment which shall be amended as follows:

Payment for this item shall be on a lump sum basis.

The Contractor's attention is drawn to the Occupational Health and Safety Act, Revised Statutes of Ontario, 1980 (or most recent revisions) as it relates to requirements for open excavations. Overburden excavation slopes steeper than those shown on the Drawings will require certification by a registered Professional Engineer as to the stability of such slopes.

The volume of overburden excavated equivalent to the volume of the slope cap fill concrete placed shall be deemed surplus to the construction. Payment for this item shall include the cost for all labour, equipment and material required to excavate the overburden, dispose of the material deemed surplus (in an acceptable manner) and stockpile all remaining excavated materials which the Engineer may approve as suitable for reuse.

Also included in the lump sum price for this item shall be the cost of cutting of the existing asphalt roadway to meet flush with new asphalt to be placed under Item No. 15 and cleaning of the bedrock surface using air/water jet(s) over the area where the caps are to be constructed. Cleaning of the bedrock will be carried out to such a level as to allow for detailed inspection and geological mapping of surface fractures.

Sounding Rock - Item No. 5

At the unit price for this item, the Contractor shall supply a 160 kg (approx. 350 lb) steel weight, cable and appropriate equipment capable of raising this weight to heights varying between 1 m and 5 m and allowing the weight to free-fall onto the bedrock. Such operations shall be carried out at various locations as designated by the Engineer.

Supply and Installation of Rock Dowels - Item No. 6

At the contract price for this item, the Contractor shall, in accordance with the Contract Drawings, supply steel dowels having an ultimate tensile strength of not less than 290 KN (29 Tons f) and a minimum yield strength of 200 KN (20 Tons f), drill holes for these dowels in the bedrock and grout the dowels in place as detailed below:

- (a) Steel dowels shall be 25 M (25 mm diameter) deformed bars, 1100 mm total length, bent at 90 degrees for an additional 190 mm length.
- (b) Dowels shall be installed in 50 mm diameter holes drilled into the bedrock to a depth of 800, 2 per set 500 mm apart, spaced at 500 mm centre to centre. The holes shall be flushed of all drill cuttings, sludge and debris with compressed air prior to installation of the dowels.
- (c) Grout for the dowels shall be a fast setting non-shrink cement grout, 30 MPa minimum compressive strength, such as M-BED SUPERFLOW or approved equivalent.

Concrete for Thrust Blocks - Item No. 7

The contractor shall, at the unit price for this item supply, place and vibrate 30 MPa concrete, maximum slump of 50 mm (2 in.). Included in this unit price shall be all labour, equipment and materials necessary for the construction of the thrust blocks.

All concrete shall be made using aggregates obtained from M.T.C. approved sources. The concrete shall comply fully to the specifications detailed in Section A, Information to Tenderers, Item 21 "Sources of Concrete Aggregate" and Section D, Special Provisions, Item 21 "Concrete".

Roller Compacted Concrete Using Selected Sand & Gravel or Concrete Aggregate - Item No. 8

The Contractor shall, at the unit price for this item supply, place, vibrate and compact lean mix in general compliance with OPSS 315.

The materials shall consist of normal Portland cement (Type 10); the water shall be potable and the aggregate shall consist of 100 mm (4 inch) minus pit run material with gradation of the "50 per cent finer than" portion conforming to OPSS 1010 Granular 'A' or standard concrete aggregate conforming to the gradational specification CSA CAN 3-A23.1-M77.

The mix proportions of the concrete shall be designed to achieve a minimum compressive strength of 7 MPa at 28 days. The minimum cement content permissible shall be 8 per cent. Water shall be added to achieve maximum density after compaction and will be approximately 7 per cent of the dry mass of the granular materials.

The roller compacted concrete shall be placed in maximum 300 mm thick lifts, each lift spread evenly starting at the lowest spot. The concrete shall be vibrated and then compacted by a minimum of 2 passes of a walk-behind smooth drum vibratory roller having a static weight of 1000 kg, or approved equivalent, capable of compacting the concrete to minimum 100 per cent of the Standard Proctor maximum dry density of the material. Plate tampers shall be used where required to carry out compaction in restricted spaces.

The concrete fill shall be placed without delay between successive lifts. When more than 12 hours elapses between lifts, the surface of the base lift must be completely wire-brushed and air/water cleaned to provide adequate bond.

Stope Cap Timbers - Item No. 9

The Contractor shall, for the unit bid price, provide and install timbers across any open holes as directed by the Engineer.

The timbers shall be in sound conditions and have minimum cross dimensions of 200 mm. The timbers shall be cut, as required, to suite the width of the opening and laid in one full length across the opening, supported for a length of at least 600 mm on both ends. The timbers

shall be strapped where necessary and positioned across the holes to fully enclose the holes while the lean mix concrete supports at the ends is still fresh.

Drain Holes - Item No. 10

The Contractor shall for the unit bid price drill 100 mm dia. drain holes at the locations shown on the Drawings through the stope cap fill concrete and bedrock.

The Contractor's unit price shall include all equipment, labour and materials required to drill the drain holes, including the supply and installation of approximately 50 sq.m of geotextile filter fabric such as Terrafix 270 R or approved equivalent.

Backfill Over Roller Compacted Concrete - Item No. 11

The Contractor shall, for the unit bid price of this item, supply, place and compact backfill consisting of pit run sand and gravel having a maximum particle size of 150 mm and shall be free of deleterious and organic materials. The backfill shall be placed over the stope cap fill concrete up to the underside of the roadway structure in a manner such that segregation of the material shall be prevented and "nesting" of single sized particles avoided. If such segregation and/or nesting occurs this backfill shall be remixed and re-spread to the satisfaction of the Engineer. Backfill shall be placed in maximum 300 mm thick loose lift thickness and compact to at least 100 per cent of the Standard Proctor maximum dry density of the material.

Granular Materials - Item No. 12 and No. 13

The Contractor shall, for the unit price of these items, supply Granular 'A' and Granular 'B' meeting OPSS form 1010 (Dec. 1983) and supply test results to the satisfaction of the Engineer that his sources do meet the required grading. Failing to satisfy the Engineer with existing test results, the Contractor shall furnish all equipment necessary to allow the Engineer to sample the Contractor's source.

The unit bid price for these tender items shall include all equipment, labour and materials to supply, place and compact granular material as shown on the Contract Drawings. Placement of these granular materials shall be carried out in maximum 300 mm thick loose lifts and compacted to not less than 100 per cent of the Standard Proctor maximum dry density of the materials.

The top surface of these materials shall be shipped in accordance with OPSD-206.01 in preparation for placement of the asphaltic concrete road surface.

Water for Compaction and Dust Control - Item No. 14

The Contractor shall, for the unit price of this item, supply water and water spraying equipment to allow for the wetting of the granular fill during compaction, as required by the Engineer. Such spraying equipment shall also be capable of, and made available to, spray any exposed soil surfaces in the construction area in order to keep dust under control.

HL-4 Asphaltic Concrete - Item No. 15

The Contractor shall, for the unit price of this item supply, spread and compact hot mix asphaltic concrete required to provide a 75 mm thick roadway surface course. The asphaltic concrete mixture shall meet or exceed the requirements of HL-4 asphaltic concrete in accordance with OPSS Specification 1150 (Dec. 1983). The asphaltic concrete shall be spread in two layers and compacted to at least 96 per cent of the Marshall density of the material.

The equipment and construction procedures shall comply with the Ministry of Transportation and Communications (MTC) for the reconstruction of the roadway and with OPSD-210.01 "Asphalt Placement and Shoulder Sections".

Transporation of Concrete Cylinders for Testing - Item No. 16

The Contractor shall, for the unit price of this item supply transportation of the concrete cylinder cast for testing to a testing laboratory of the Engineer's choice. This laboratory shall be located within a 40 km. radius of the site. The specimens shall be transported within 20+ 4 hours of casting or as directed by the Engineer.

All casting of cylinders will be carried out by the Engineer, or his designated representative, at a rate of one set of 3 cylinders per 100 cubic meters of roller compacted concrete and one set of 3 cylinders per 25 cubic meter of concrete for thrust blocks. At least one set of 3 cylinders shall be cast per day.

PROVISIONAL ITEMS

Rock Bolts - Item No. 17(a)

Rock reinforcing steel shall consist of grouted rock bolts and/or welded wire mesh to be utilized to stabilize or maintain the stability of rock blocks where such are to remain in place as deemed by the Engineer.

Rock bolts shall consist of 25M (25 mm dia.) deformed bars with an ultimate tensile strength of 290 KN (29 Tons f) and a minimum yield strength of 200 KN (20 Tons f). Each rock bolt shall have one end coarse threaded over a minimum 150 mm (6 in) length. Each bolt shall be fitted with a 200 mm (8 in) by 200 mm (8 in) by 12 mm (0.5 in) face plate, two bevelled, hardened steel washers and a hexagonal nut.

The steel for the nuts and washers, shall conform to ASTM A325. Bearing plates shall conform to CSA G40.21, Grade 33G or equivalent. Rock bolt holes, installation and grouting of the bolts shall be carried out in accordance with the procedure delaited for Item 4 (Rock Dowels). A nominal 100 mm (4 in) of thread bolt shall extend out of the hole.

Wire Mesh - Item No. 17(b)

Welded wire mesh for the anchorage of loose rock wedges shall be 102 x 102 MW 13.3 X MW 13.3 (4x4 x W2.1/W2.1). The minimum yield strength of the wire shall be 413 MPa (3850 Tsf). The wire mesh shall be installed in conjunction with rock bolts as directed by the Engineer. Adjacent welded wire mesh strips shall be overlapped over a minimum width of 200 mm (8 in).

Additional Overburden Excavation - Item 18

Where directed by the Engineer, the Contractor shall, for the unit price of this item, excavate existing overburden to bedrock beyond the limits shown on the Drawings. Payment for this item shall include the cost of all labour, equipment and material required to excavate the overburden, dispose of the material deemed unsuitable for reuse (in an accepted manner) and stockpile all remaining excavated material which the engineer may approve as suitable for reuse.

Extensometer Installation - Item No. 19

Upon completion of roadway construction, the Contractor shall, for the contract price for this item, install an extensometer at a location to be specified by the Engineer. The extensometer shall consist of an approximately 7 m long, 36 mm diameter (1 1/2 in) steel rod. The rod shall be grouted for a maximum length of 300 mm into the bottom of a 100 mm diameter cored borehole and the top cut to suite field conditions. The borehole shall be advanced to within 200 mm of the stope crown. A 100 mm diameter casing shall be drilled and grouted into the upper 100 mm (max.) of the bedrock as shown on the Contract Drawing.

A guide ring for the extensometer rod shall be installed at the top of the casing.

The extensometer shall be protected at the top of the hole by a 500 mm diameter casing of c.s.p. 1000 mm in length. This upper casing shall be embedded in the overburden and protrude a maximum of 100 mm above the ground surface. It shall have a lid, and a locking mechanism.

SECTION D

SPECIAL PROVISIONS - GENERAL

CORPORATION OF THE TOWN OF COBALT
CONTRACT NO. 327-87

INDEX TO SECTION D - SPECIAL PROVISIONS - GENERAL

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1.	INTERPRETATION	D-1
2.	CLARIFICATION	D-3
3.	GENERAL CONDITIONS OF THE CONTRACT	D-3
4.	SUPPLEMENTAL SPECIFICIATIONS	D-3
5.	REGULATION OF PITS AND QUARRIES	D-4
6.	FEDERAL SALES TAX	D-4
7.	PROVINCIAL SALES TAX	D-6
8.	PROGRESS AND TIME FOR COMPLETION	D-7
9.	BONUS FOR EARLY COMPLETION	D-11
10.	CO-ORDINATION MEETINGS	D-11
11.	LABOUR CONDITIONS FOR PROVINCIAL ZONE ONLY	D-11
12.	SCHEDULE OF MINIMUM TRUCK HAUL RATES FOR SINGLE AND DUAL REAR AXLE TRUCKS	D-19
13.	HANDLING, STORAGE AND DEMURRAGE OF MATERIALS	D-19
14.	DISPOSAL AND USE OF EXCAVATED MATERIALS	D-19
15.	HAUL ROAD	D-20
16.	DUST CONTROL	D-20
17.	NO OPEN BURNING	D-21
18.	PROPERTY OWNER'S RELEASE OF PIT AREAS AND WASTE DISPOSAL AREAS ON PRIVATELY-OWNED AND MUNICIPALLY- OWNED LAND USED BY THE CONTRACTOR	D-22
19.	PROTECTION OF ADJACENT STRUCTURES, UTILITIES AND PRIVATE PROPERTY	D-23
20.	FIRST AID EQUIPMENT	D-23
21.	CONCRETE	D-24
22.	REINFORCING STEEL	D-28
23.	MISCELLANEOUS	D-30
24.	CONTRACTOR'S CONSTRUCTION METHOD	D-31

1. INTERPRETATION1. Abbreviations

"AASHTO"	- American Association of State Highway
"AASHO"	Transportation Officials
"ASA"	- American Standards Association
"ASTM"	- American Society for Testing and Materials
"AWG"	- American Wire Gauge
"CESA"	- Canadian Engineering Standards Association
"CGSB"	- Canadian Government Specifications Board
"CSA"	- Canadian Standards Association
"CWB"	- Canadian Welding Bureau
"OHBDC"	- Ontario Highway Bridge Design Code - 1983
"DHO"	
"DOT"	
"DTC"	- Ministry of Transportation and Communciations
"MTC"	(Ontario)

2. "Access Road" - means a private road built or used by the Contractor to gain access to the work or to a source of material but excluding any haul road and the road under contract.
3. "Base" - means a layer of material of specified type and thickness placed immediately below the pavement, driving surface, curb and gutter or sidewalk.
4. "Earth Grade" - means the earth surface, whether in cut or fill, as prepared for the base or sub-base.
5. "Grade" - when used in the sense of elevation as in the expressions to "to grade", "up to grade", "above grade", "below grade", or expressions of similar implications, means the required elevation of the completed work.
6. "Grade Line" - means the line representing the established elevation of the completed work in profile or longitudinal section taken along a reference line established for the control of the work.

1. INTERPRETATION (cont'd)

7. "Grade Point or Transition Point" - means the point where the grade line passes from cut to fill.
8. "Haul Road" - means any public road excluding the road under contract, which forms part of a materials haul route.
9. "Minister" - means the Minister of Transportation and Communications.
10. "Ministry" - means the Ministry of Transportation and Communications.
11. "Pavement" - means a wearing course or courses placed on the roadway and consisting of asphaltic concrete or Portland cement concrete.
12. "Profile Grade" - means unless otherwise specified in the contract, the top surface elevation of the uppermost layer of granular material whether treated or untreated.
13. "Road Allowance" or "Highway" - means the lands acquired at any time for the use of the public as a common highway.
14. "Roadbed" - means that portion of the work which is designed to support the wearing surface and shoulders of the roadway.
14. "Roadway" - means that part of the highway designed or intended for use by vehicular traffic and shall include the shoulders.
16. "Rock Grade" - means the rock surface, whether in cut or fill, as prepared for the base or sub-base.
17. "Shoulders" - means that portion of the roadway between the edges of the surfacing material and the inside edges of the ditch or fill slopes.

1. INTERPRETATION (cont'd)

18. "Sub-base" - means a layer of material of specified type and thickness between the subgrade and the base.

19. "Subgrade" - means the earth or rock surface, whether in cut or fill, as prepared for the base or sub-base.

2. CLARIFICATION

It will be the Contractor's responsibility, before submitting his bid, to clarify with the Engineer, any details in question not mentioned in this Contract or shown on the attached drawings. The unit prices as tendered shall include the supply of all labour, equipment and materials required to complete this Contract to the satisfaction of the Engineer.

3. GENERAL CONDITIONS OF THE CONTRACT

All the requirements of the General Conditions Form M100 shall apply to this Contract as modified in Section E of this Contract.

4. SUPPLEMENTAL SPECIFICATIONS

A number of special provisions which have been in constant use in MTC contracts over a period of years are now published as "supplemental specifications". Some of the supplemental specifications modify the general conditions or standard specifications. Other supplemental specifications are applicable to items of work which are not covered by the standard specifications.

Items of work in this contract which are not covered by standard specifications are covered by supplemental specifications or special provisions.

The general conditions and standard specifications pertinent to this contract are deemed to include those supplemental specifications which modify them, and the terms and conditions of such supplemental specifications are fully applicable to the work under this contract.

Present holders of MTC "Manual on General Conditions and Standard Specifications of the Contract" have been issued with a new manual entitled "Ministry of Transportation and Communications, General Conditions, Standard Specifications and Supplemental Specifications", wherein are contained Supplemental Specifications. Additional copies for the information of bidders are available from the Tenders Office or the Contract Control Office of the Ministry of Transportation and Communications of Ontario.

The complete package of "supplemental specifications" will form part of the contract between the successful bidder and the Corporation.

5. REGULATION OF PITS AND QUARRIES

Bill 120, An Act to Regulate Pits and Quarries and to provide for their rehabilitation is now in effect and shall be applicable in such parts of Ontario as the Lieutenant Governor shall from time to time designate by Regulation.

The Contractor cannot assume that he will receive permission to use any pit source. Before permission is granted, the Contractor shall obtain, in writing, the consent of the Municipality in which the pit is located. In the event that the Municipality objects to the Contractor's proposal, such objections shall be submitted together with the application.

All costs related to this specification will be deemed to have been included in the appropriate tender items and no separate payment will be made therefore.

6. FEDERAL SALES TAX

i) Basis of Exemption

Certain goods sold to or imported by municipalities for their own use and not for resale are covered by Section 1(g) and 1(h) of Part XII of Schedule III of the Excise Tax Act and as such, are exempt from Federal Sales Tax.

6. FEDERAL SALES TAX (cont'd)

ii) Requirement of Tender

Except as otherwise instructed herein or indicated in the Excise Tax Act (the Excise Tax Act is the Governing Document), the tendered prices shall exclude where applicable, Federal Sales Tax.

The Tenderer shall allow in his tendered prices for all Federal Sales Tax that he will have to pay in purchasing items not eligible for refund.

iii) Recovery of Tax Paid

The Contractor is required by the Contract and by the Excise Tax Act to pay Federal Sales Tax when purchasing materials or equipment but he will be able to obtain a refund of the tax paid on eligible materials to be incorporated into the permanent works by completing and submitting to Customs and Excise Division of the Department of National Revenue that Department's completed Forms N-15 and N-15A together with the supporting invoices.

At the beginning of the Contract, the Corporation will provide the Contractor with a letter or form bearing the Corporation's Federal Sales Tax exemption certificate(s) to enable the Contractor to obtain refund of tax on eligible items.

The Contractor shall be responsible for the preparation and submission of the claims passed to him (by his sub-contractors), for informing himself of the relevant rulings and required procedure for providing Customs & Excise Division with such information or further documentation as it may require. Refunds of tax obtained by the Contractor in respect of claims made by sub-contractors shall be forwarded promptly to the sub-contractors concerned.

The Corporation will not consider any claim made to it by the Contractor for reimbursement of tax paid but refund of which was disallowed by Customs and Excise unless such disallowance is based upon a change in legislation or ruling announced after the closing time for receipt of tenders for the Contract, or upon a ruling given by Customs & Excise which is contrary to information given herein, and unless the Engineer considers the Contractor's claim to be justified.

If a change in legislation or ruling regarding exemption of tax announced after the closing time for receipt of tenders for the Contract results in the Contractor receiving of being entitled to receive a greater refund of tax paid than would have been the case pursuant to the legislation or rulings applicable immediately prior to such closing time, the increase in refund of tax obtained or obtainable thereby shall be paid to the Corporation by the Contractor. The Contractor shall take whatever action is necessary to obtain the full amount of applicable refund of tax from Customs and Excise.

iv) Summary of Tax Claimed

The Engineer may require the Contractor to submit to the Corporation for statistical or other purposes, a certified summary showing the amounts of Federal Sales Tax claimed under the Contract by the contractor and each of his sub-contractors and the corresponding amounts refunded by Customs and Excise. The Contractor shall comply promptly with any request by the Engineer requiring any such information.

7. PROVINCIAL SALES TAX

The tendered unit prices shall include Ontario Retail Sales Tax.

8. PROGRESS AND TIME FOR COMPLETION

i) TIME

Time shall be the essence of this Agreement.

ii) PROGRESS OF THE WORK AND TIME FOR COMPLETION

Work on this Contract shall commence five (5) calendar days after the date of mailing the notification of award of the Contract by the Corporation and the Contractor shall diligently carry out work on this Contract to completion on or before the expiration of thirty (30) further calendar days from the date as defined above for commencement.

If this time limit above specified is not sufficient to permit completion of the work by the Contractor working a normal number of hours each day or week on a single daylight shift basis, it is expected that additional and/or augmented daylight shifts will be required throughout the life of the Contract to the extent deemed necessary by the contractor to ensure that the work will be completed within the time limit specified. Any additional costs occasioned by compliance with these provisions will be considered to be included in the prices bid for the various items of work and no additional compensation will be allowed therefore.

Working time shall be charged until the date of acceptance of the work by the Corporation, at which time all work required in the Contract, including all final clean-up and trimming shall have been completed.

An extension to the Contract will be allowed for each day on which the Contractor is prevented by inclement weather or conditions resulting immediately therefrom adverse to controlling operation or operations, as determined by the Engineer, from proceeding with at least 60% of the normal labour and equipment force engaged on such operation or operations for at least five (5) hours toward completion of such operation or operations. A controlling operation or operations is to be construed to include a feature of the work considered at the time by the Engineer and the Contractor which if delayed, will delay the time of completion of the Contract.

The Engineer will furnish the Contractor with a weekly statement showing the number of days charged to the Contract for the preceding week, the number of days specified for completion of the Contract and the number of days remaining to complete the Contract. The Contractor will be allowed one week in which to file a written protest setting forth in what respects the said weekly statement is incorrect, otherwise the statement shall be deemed to have been accepted by the Contractor as correct.

If the Contractor is delayed in the completion of the work:

- (a) by reason of changes or alterations made under Section 103-2 of the General Conditions, Form M100;
- (b) by reason of any breach of contract or prevention by the Corporation, or other contractor of the Corporation of any employee of any one of them;
- (c) by reason of delay by the Corporation in issuing instructions or information or in delivering materials;
- (d) by any other act or neglect of the Corporation or any other contractor of the Corporation or any employee of any one of them;

iii) WORKING DAY (cont'd)

(e) for any cause beyond the reasonable control of the Contractor;

or

(f) by Acts of God, or of the Public Enemy, Acts of the Province or of any Foreign State, Fire, Flood, Epidemics, Quarantine Restrictions or Embargoes, and due to such causes the time of completion shall be extended in writing at any time on such terms and for such periods as shall be determined by the Engineer, and notwithstanding such extensions, time shall continue to be deemed of the essence of this Contract.

An application by the contractor for an extension of time as herein provided shall be made to the Corporation in writing at least fifteen days prior to the date of completion fixed by the Contract. All bonds or other surety furnished to the Corporation by the Contractor shall be amended where necessary at the expense of the Contractor to provide coverage beyond the date of any extension of time granted, and the Contractor shall furnish the Corporation with evidence of such amendment of the bonds or other surety.

Any extension of time that may be granted to the Contractor shall be so granted and accepted without prejudice to any rights of the Corporation whatsoever under this Contract, and all of such rights shall continue in full force and effect after the time limited in this Contract for the completion of the work and whenever in this Contract power and authority is given to the Corporation or the Engineer or any person to take any action consequent upon the act, default, breach, neglect, delay, non-observance or non-performance by the Contractor in respect

of the work or or Contract, or any portion thereof, such powers or authorities may be exercised from time to time and not only in the event of the happening of such contingencies before the time limited in this Contract for the completion of the work but also in the event of the same happening after the time so limited in the case of the Contractor being permitted to proceed with the execution of the work under an extension of time granted by the Engineer.

iv) LIQUIDATED DAMAGES

It is agreed by the parties of the Contract that in case all the work called for under the Contract is not finished or completed within the number of working days as set forth in the Special Provisions, damage will be sustained by the Corporation and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the Corporation will sustain in the event of and by reason of such delay and the parties hereto agree that the Contractor will pay to the Corporation, the sum of one thousand dollars (\$1000.00) for liquidated damages for each and every day delay in finishing the work in excess of the number of days prescribed and it is agreed that this amount is an estimate of the actual damage to the Corporation which will accrue during the period in excess of the prescribed number of days.

The Corporation may deduct any amount due under this paragraph from any monies that may be due or payable to the Contractor on any account whatsoever. The liquidated damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or other alternative that may be available to the Corporation.

If the time available for the completion of the work is increased because of an overrun of a major item in the Contract,

the Corporation may increase the number of working days by adding therefrom, a number of days calculated on the average daily production of the most productive 50% of the working time shown on the Contractor's Schedule, divided into the difference between the actual quantity and the estimated tender quantity, provided that this basis for calculation may not be used where in the opinion of the Corporation, all or any of the relevant major items are carried out concurrently.

9. BONUS FOR EARLY COMPLETION

In view of the benefit which can be realized by the Corporation of the Town of Cobalt in completion of the contract before the expiry of the specified days, a bonus will be paid to the Contractor at the rate of \$ 500 for each day not used on completion of the Contract.

This amount will be paid in units of whole days only and will be calculated by the Engineer on the day when the Certificate of Substantial Performance is issued.

10. CO-ORDINATION MEETINGS

The Contractor shall attend such meetings with the Corporation and/or Utility Company authorities as may be required by the Engineer to co-ordinate services affected by the Contract.

11. LABOUR CONDITIONS FOR PROVINCIAL ZONE ONLY (REVISED JUNE 10, 1985)

General

This Special Provision is to be read where applicable, in conjunction with the General Conditions of the Contract, Section 108-7, Payment of Workmen and is subject to The Industrial Standards Act, the Employment Standards Act, 1980 and the regulations made thereunder.

The wage rates set out in the Roads and Structures Fair Wage Schedule are subject to change periodically. Any increase in costs incurred by a change in the wage rates shall be borne by the Contractor.

Definitions

For the purpose of this Special Provision,

(a) "regular rate" means,

(i) the hourly rate paid to an employee for their normal non-overtime work week, or

(ii) in the case of an employee to whom sub-clause (i) does not apply, the amount obtained by dividing their total earnings for the week by the number of hours they worked in the week;

(b) "work on roads" means the preparation, construction, finishing and construction maintenance of roads, streets, highways and parking lots and includes all work incidental thereto other than work on structures;

(c) "work on structures" means the construction, reconstruction, repair, alteration, remodelling, renovation or demolition of any bridge, tunnel or retaining wall and includes the preparation for and the laying of the foundation of any bridge, tunnel or retaining wall and the installation of equipment and appurtenances incidental thereto;

provided, however, that the Minister of Labour, Ontario may at his/her sole discretion determine where any particular work is to be classified as work on roads or as work on structures and such decision may be made notwithstanding the definitions herein contained.

11. LABOUR CONDITIONS FOR PROVINCIAL ZONE... (cont'd)

Hours of Work and Wages

The regular work week for a person employed on work on roads being done under this Contract or any other Contract subject to these or similar labour conditions shall not exceed 55 hours and all time worked by such person in excess of 55 hours a week shall be overtime except that part of the hours of work in excess of 55 hours a week which, together with the hours worked in the preceding week, do not exceed 55 hours in that preceding week. But, in no case shall the number of hours that can be included in the hours of work for that preceding week exceed 22 hours.

The regular work week for a person employed on work on structures being done under this Contract or any other Contract subject to these or similar labour conditions shall not exceed 50 hours and all time worked by such person in excess of 50 hours a week which, together with the hours worked in the preceding week, do not exceed 50 hours in that preceding week. But, in no case, shall the number of hours that can be included in the hours of work for that preceding week exceed 22 hours.

Every person employed by the Contractor or a Sub-Contractor or other person to do any part of the work contemplated by this Contract shall be paid while employed on such work at not less than the wage rate set out in the Roads and Structures Fair Wage Schedule hereunder for the appropriate classification of such work or not less than such other wage rates as, during the continuance of the work, are fixed by the Minister of Labour, Ontario, for hours of work that are not overtime and shall be paid one and one-half times his/her regular rate for all hours of work that are overtime.

Notwithstanding that a Contractor pays wages in excess of the wage rates set out in the Roads and Structures Fair Wage Schedule

Hours of Work and Wages (cont'd)

hereunder, they shall not, in computing overtime wages payable to an employee, set off against such overtime wages any part of the wages earned by the employee in respect of their regular work period.

Where a person is working on more than one contract that is subject to these conditions, including any municipal contract that contains similar labour conditions, the regular work week and the entitlement to overtime for that person shall be based upon the total hours worked on all such contracts and if, on this basis, overtime is worked on this contract the Contractor shall pay such person at the overtime rate and no waiver by that third party by way of an employment agency or as the nominal employer of that person shall relieve the Contractor of his/her obligation to pay that person the overtime wages.

Decisions by Minister of Labour

Where there is no appropriate classification set out in the Roads and Structures Fair Wage Schedule for any particular class of work, the Minister of Labour, Ontario may designate or establish the appropriate classification and the wage rate.

The contractor, upon receipt of notice of any decision of the Minister of Labour, Ontario made under this Contract, shall immediately adjust the wage rates, hours and classification of work so as to give the effect to such decision.

Fair Wage Schedule To Be Posted

The Contractor shall post, and where applicable in accordance with Section 107-9 of the General Conditions, the Road and Structures Fair Wage Schedule and any amendments thereto.

Contractor To Keep Records Which Are To Be Open For Inspection

The Contractor shall keep proper books and records showing the names, trades, addresses and hourly wage rates of all workers in his/her employ or employed on this Contract through an employment agency and the wages paid to and time worked by such workers both at regular wage rates and at overtime wage rates, and the books or documents containing such records shall be open for inspection by officers of the Government at any time it may be expedient to the Minister of Labour to have the same inspected.

Ministry Requirements Before Payments Made to Contractor

The Contractor shall from time to time upon request, furnish the Ministry with such detailed information and evidence as may be required in order to establish that these labour conditions have been compiled with not only by him/her but by any Sub-Contractor or other person doing any part of the work contemplated by the Contract.

For The Purpose Of These Special Provisions And For The Labour Conditions Applicable to M.T.C. Contracts, The Following Interpretation Will Apply

1. Off Site Work

The Labour Conditions are intended for application primarily to work on the contract site. Work that is carried out on sites that are not in the immediate vicinity of the contract site or that are not used exclusively for the purposes of contracts including municipal contracts, containing similar labour conditions will not be subject to the Labour Conditions.

2. Training Period For Equipment Operators

- (a) Employees, other than students, learning to operate equipment are classified as "apprentice equipment operators" during,

2. Training Period For Equipment Operators (cont'd)

- (1) their first 3 months operating equipment which does not require a licensed operator; or
- (2) their first 18 months operating equipment which requires a licensed operator.

(b) The wages for apprentice equipment operators are as follows:

WINDSOR ZONE	- The wage rate for Cement Improver
HAMILTON ZONE	- The wage rate for Asphalt Raker
TORONTO ZONE	- The wage rate for Asphalt Raker
OTTAWA ZONE	- The wage rate for Skilled Labourer
PROVINCIAL ZONE	- The wage rate for Skilled Labourer

3. Pile Driver

Employees other than an operator are to be classified as "Pile Driver Men" and shall be entitled to the wage rate for "Labourer" - Structure Section.

4. Servicing of Equipment By Operator "On Site"

The operator shall be entitled to his/her wage rate for the work in accordance with the terms of the "Special Provisions - Labour Conditions".

5. Travelling Time

Travelling time will not be subject to the Fair Wage Schedule. The hours and wages or monies paid for travelling time are to be deleted from the wage record of an employee in computing his wage entitlement.

6. Gravel and Chip Spreader

Employees engaged in this classification of work shall be paid the wage rate of Equipment and Maintenance Operator, Group "B".

7. Room and Board Allowance

The amount of room and board allowance will be negotiated between the employer and employee, but in no case will the net amount of wages due to an employee be less than such wages an employee in General Construction work would receive at the minimum wage of \$4.25 per hour and overtime at one and one-half times that rate for hours worked in excess of 44 a week and the maximum deduction for Room and Board of \$51.00 per week, as required by Regulation under the Employment Standards Act.

8. Farm Or Industrial Tractors With Attachments

The attachment must be power operated and be an integral part of the tractor.

9. Wage Rates For Students

- (a) Students employed as FLAGPERSONS or WATCHPERSONS shall be entitled to the wage rate for these classifications.
- (b) Students performing work in positions that are classified in the Fair Wage Schedule, other than FLAGPERSONS or WATCHPERSONS, shall be entitled to receive the student rate, notwithstanding the rate set out in the Schedule for the classification applicable to the work.
- (c) Students employment for more than three months in a classified position shall then be entitled to the wage rate for that classification.
- (d) Students performing work in positions that are not classified in the Fair Wage Schedule shall be entitled to receive the student rate, regardless of the location of the contract.

EFFECTIVE DATE: JUNE 24, 1985

ROADS AND STRUCTURES FAIR WAGE SCHEDULE
PROVINCIAL ZONE

MUNICIPAL
MINISTRY OF LABOUR

- CONTRACT NO. 327-87
- FILE NO.

ROAD BUILDING SECTION

CLASSIFICATIONS

RATE PER HOUR
June 10, 1985

Licensed Operators	\$10.43
Licensed Mechanics & Welders, Class "A"	\$ 9.79
Equipment and Maintenance Operators, Group "A"	\$ 9.68
Equipment and Maintenance Operators, Group "B"	\$ 9.20
Skilled Labourers	\$ 8.82
Truck Drivers-Two Tractor Operators-Rollermen(Grade)	\$ 8.65
Labourers	\$ 8.44
Flagperson	\$ 7.09
Watchperson	\$ 7.09
Students (see Special Provisions, Section 9 for Definition)	\$ 6.82

STRUCTURE SECTION

Carpenters, Form Builders	\$10.43
Rodmen, Concrete Finishers, Painters	\$ 9.57
Structure Labour Operations	\$ 8.55
Structural Trainees	\$ 8.65

CLASSIFICATION DEFINITIONS:

LICENSED OPERATORS: Includes Shovel, Clam, Gradall, Backhoe, Dragline, Pile Driver, Operator.

EQUIPMENT AND MAINTENANCE OPERATORS, GROUP "A": Includes Mechanic and Welder, Class "B", Rollerwoman - Asphalt, Burnerman, Powderman, Boiler Engineer (with papers). Float Driver (over 25 tons), Concrete Paver (over 1 cu.yd.), Bulldozer (75 Drawbar H.P. and over), Grader, Class "A" (Finished Grading), Front End Loader (1-1 1/2 yds. and over), Scraper, Crusher, Asphalt Spreader Operator.

SKILLED LABOURERS: Includes Labourer on Structures.

STRUCTURAL TRAINEE: Means an Employee who is enrolled in the Ontario Road Builder's Association Pilot Training Programme.

12. SCHEDULE OF MINIMUM TRUCK HAUL RATES FOR SINGLE AND DUAL REAR AXLE TRUCKS

The following schedule of minimum truck haul rates shall apply to the contract:

	BY MASS (Per Tonne)	BY HOUR (Per Hour)
For the first 3 km or any portion thereof	85 cents	Single Rear Axle \$28.50
For each km, or any portion thereof, in excess of 3 km, up to and including the 16th km.	10 1/2 cents	Dual Rear Axle
For each km, or any portion thereof, in excess of 16 km up to and including the 32nd km.	7 cents	
For each km or any portion thereof in excess of 32 km.	5 1/2 cents	

Where tarping of loads is required:

- (a) for all trucks hauling by weight; a separate and additional payment of 1 cent per tonne per load.
- (b) for all trucks used on an hourly basis; 15 cents per hour in addition to the normal hourly rental.

13. HANDLING, STORAGE AND DEMURRAGE OF MATERIALS

The contractor shall be liable for all rental or other charges for handling, hauling or storing materials or excess materials ordered by the Contractor for the contract including demurrage charges.

14. DISPOSAL AND USE OF EXCAVATED MATERIALS

All excavated material including muskeg, rubble, broken concrete and debris resulting from carrying out the work of the various tender items in this Contract and which is unsuitable for or which is

14. DISPOSAL AND USE OF EXCAVATED MATERIALS (cont'd)

surplus to the requirements for backfill shall be disposed of outside the Contract Limits.

The Contract price for the item requiring such work shall be compensation in full for excavating, loading, hauling, placing and trimming and for all other work which may be required to dispose of the unsuitable or surplus material and for providing a suitable site for material which is to be disposed of outside the right-of-way.

15. HAUL ROAD

Section 212.10.03 of OPSS Form 212 shall be amended by the deletion of the final paragraph thereof and its replacement by the following paragraph:

"No payment shall be made for materials placed and work performed in accordance with the requirements of this Section".

16. DUST CONTROL

The Contractor shall take such steps as may be required to prevent dust nuisance resulting from his operations either within the right-of-way or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a roadway through the work.

Where the work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust, wherever dust would affect traffic or wherever dust would be a nuisance to residents of the area where the work is being carried out.

16. DUST CONTROL (cont'd)

The cost of all such preventative measures shall be borne by the Contractor except, however, where water or calcium chloride is used to reduce the dust caused by traffic on a roadway which it is the Contractor's responsibility to maintain for public traffic, the cost of such quantities of water and calcium chloride are as authorized by the Engineer to restrict dust to acceptable levels, shall be paid for by the Corporation at the Contract prices for the appropriate tender items for Water for Compaction and Dust Control or Calcium or both.

17. NO OPEN BURNING

Open fires shall not be located within the limits of this contract unless written approval is obtained from the Engineer and/or other authorities having jurisdiction.

Brush and debris shall be disposed of outside the right-of-way in a manner approved by the Engineer, so as not to be unsightly or potentially unsightly from any road. The Contractor shall arrange for disposal areas at his own expense.

18. PROPERTY OWNER'S RELEASE OF PIT AREAS AND WASTE DISPOSAL AREAS ON PRIVATELY-OWNED AND CORPORATION-OWNED LAND USED BY THE CONTRACTOR

Upon completion of the Contract, the Contractor shall provide the Engineer with two (2) copies of a form of release signed by the Pit Owner as follows:

Date

Ms. D.R. Beatty
Clerk-Treasurer
Town of Cobalt
Box 70, 18 Silver Street
COBALT, Ontario
POJ 1C0

RE: CORPORATION OF THE TOWN
OF COBALT
STOPE CAP CONSTRUCTION
Contract No. 327-87

Dear Sir:

I hereby certify that (Contracting Firm Name) have fulfilled the terms of our agreement and have left my property in a satisfactory condition.

I have accepted their final payment and release (Contracting Firm Name), the Ministry of Transportation and Communications and the Town of Cobalt from further obligations.

Yours very truly,

Final payment will not be paid to the Contractor until all the applicable forms of release have been signed by Pit Owners and received and confirmed by the Engineer.

19. PROTECTION OF ADJACENT STRUCTURES, UTILITIES AND PRIVATE PROPERTY

The Contractor shall, at his own cost and expense and in a manner approved by the Engineer, sustain in their places and protect from damage any and all poles and posts, all drains, all services (except where removals are called for), conduits, service pipes, and all other structures or property in the vicinity of his work, whether over or underground, or which appear in the excavation.

If the damage to any structure or utility occurs by reason of the Contractor's operations, even though special precautions have been employed, the Contractor shall be entirely responsible for such damage whether such operations and the work resulting therefrom have received the proper approval of the Engineer or not, and all such damage shall be satisfactorily rectified at the Contractor's expense.

The Engineer has endeavoured to plot on the Contract Drawings, all known existing utilities, pipes, conduits, poles, or other objects being located underground, on the surface or above ground; but should the plottings of such be found to be incorrect, incomplete or omitted, the Contractor shall have no claim for any damages or delay caused to him on this account.

The Engineer considers it to be the duty of the Contractor to notify all local utility companies requesting the staking or marking of cable, conduit, etc. before the start of construction.

20. FIRST AID EQUIPMENT

The Contractor shall provide and maintain the necessary First Aid items and equipment as called for under the First Aid Regulations of the Workmen's Compensation Act.

21. CONCRETE

Supply of Portland Cement

All cement required to complete the work under this Contract shall be supplied by the contractor and compensation therefore shall be deemed to be included in the prices bid.

In all other respects, the supply of cement shall be in accordance with the requirements of the Standard Specifications.

Supply of Concrete

The contractor shall supply read-mix concrete for this Contract, from a plant that has been approved by the M.T.C. Materials and Testing Branch with respect to operation and aggregates. If the proposed plant has not received such approval, it will be the contractor's responsibility to arrange for same.

Compensation for the above requirements shall be deemed to be included in the unit prices bid for the respective items.

Heating and Protection of Concrete

No separate payment will be made for the heating and protection of concrete.

Payment at the contract prices for placing concrete shall be full compensation for all costs of heating, protection and other special measures which may be required for placing concrete in cold weather in accordance with the requirements of this Contract.

CONCRETE MIX PROPORTIONS

The Contractor shall be responsible for the concrete mix design, (except for the 7 MPa concrete which the Engineer will design,) and for providing concrete of the specified properties. Concrete shall conform to the requirements of OPSS 1350 except as noted below:

- (1) Sub-section 1350.07.07.01 is deleted and replaced by the following:

1350.07.07.01 Contractor Designed Mix

Mix proportions shall be selected in accordance with A.C.I. Standard 211.8-81 "Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concretes" and the requirements of this special provision.

The values given in Table 5.3.6 of the A.C.I. standard for the determination of the volume of coarse aggregate in the concrete mix shall be increased by not less than 10 percent except where the concrete is deposited using a pump.

At least 3 weeks prior to the placement of concrete the Contractor shall submit to the Engineer a statement indicating the source of coarse and fine aggregate to be used in the concrete work.

The mix proportions and the required test data, for each class of concrete, shall be submitted to the Engineer at least 7 days prior to the placement of concrete. They shall be submitted in the standard Form PH-CC-433 under the headings (A) and (B).

(A) Contractor Designed Concrete Mix

Mix Proportions shall be expressed as follows:

- i) Portland Cement - Type, Source and Content in kilograms per cubic metre of concrete.
- ii) Cementitious Hydraulic Slag - Percent Slag, Source and Content in kilograms per cubic metre of concrete.
- iii) Coarse Aggregate - Nominal maximum size, Relative Density (Dry), Source, Content in kilograms per cubic metre of concrete and Dry Rodded Density in kilograms per cubic metre of concrete.
- iv) Fine Aggregate - Fineness Modulus, Relative Density (Dry), Source and Content in kilograms per cubic metre of concrete.
- v) Water - Content in kilograms per cubic metre of concrete.
- vi) Chemical Admixture Source, Type and Dosage per 100 kilograms cement.
- vii) Air Entraining Admixture - Source and Type.

Mix proportions shall be based on an aggregate in an oven dry condition.

(B) Strength Test Data

The contractor shall produce the following information with regard to the mix design. The information shall consist of test data from a laboratory or field mixed batch of concrete, or a summary of test data from previous work using similar concrete mix proportions, as follows:

i) Laboratory or Field Mixed Batch of Concrete

The test data shall include compressive strength tests consisting of at least 1 set of standard cylinders tested at 7 days, and 1 set of standard cylinders tested at 28 days. For mixes with cementitious hydraulic slag, the compressive strength tests shall also include 1 set of standard cylinders tested at 3 days. The air content, temperature and slump of the samples of concrete used to fabricate the test cylinders shall be stated.

Note: The intent of the laboratory or field mixed batch of concrete is to indicate the ability of the proposed mix proportions to produce concrete of the required properties.

ii) Summary of Test Data

The test data shall include at least ten consecutive 28 day strength tests from previous work. The data shall report individual strength tests and the average of all groups of three consecutive strength tests. The air content and slump of the samples of concrete used to fabricate the test cylinders shall be stated. The tests shall have been carried out within a period of 2 years prior to the award of the contract.

- (2) Sub-section 1350.08.01.02 is deleted and replaced by the following: .

1350.08.01.02 Sampling of Mix Design Materials

For Contractor designed mixed samples of acceptable aggregates, cement, water, chemical admixtures and air entraining admixtures representative of the materials to be used in the work shall be provided to the Engineer when requested.

Basis of Payment

All costs of the above work shall be included in the contract price for the appropriate concrete item(s).

22. REINFORCING STEEL

Amendment to Form 905

Form 905 is amended by the addition of the following:

Coated Reinforcing Steel

All tie-wires, chairs and bar supports and other materials used for the installation of the coated reinforcing bars shall be either coated with the powdered epoxy resin or acceptable material at all contact points and within 50 mm of exposed faces or be of an acceptable non-metallic material.

All sheared bar ends shall be coated with patching material meeting the requirements of Form 1443 before any rusting occurs and before shipment to the job site.

All systems for handling, transporting and storing coated bars shall be such that the coating shall not be damaged. Bar to bar abrasion

and excessive sagging shall be prevented. Bars shall not be dropped or dragged and shall be stored on suitable non-metallic supports.

All bars with damaged coating shall be repaired as soon as practical with patching materials meeting the requirements of Form 1443. If infrequent or small damaged areas rust before being repaired, the rust shall be completely removed before the areas are repaired. Bars with heavy rusting shall be rejected and removed.

Splices shall only be provided where shown on the contract plans. No other splices will be permitted without written approval of the Engineer. The cutting of coated bars by burning will not be permitted. The placing of the concrete shall be controlled such that the coating of the reinforcing steel is not damaged.

Section 905.10 of Form 905 is amended by replacing paragraph one with the following:

Payment at the contract price for the item(s) "Coated Reinforcing Steel" shall be full compensation for all labour, equipment and materials required for:

- a) Supplying coated reinforcing steel, supports and tie-wires
- b) Handling, storing and protecting
- c) Bending and cutting the reinforcing steel where specified
- d) Placing, supporting and tying
- e) Repairing or replacing the coated reinforcing steel
- f) All other work necessary to complete the work

The supply of reinforcing steel at the work site properly stored and protected and in a proper condition for incorporation in the work shall be deemed for progress payment purposes to constitute 75 percent of the work to be carried out under the item(s) Reinforcing Steel, Coated Reinforcing Steel.

23. MISCELLANEOUS

(1) Work In Open Trenches

The Contractor's attention is directed to the regulations issued by the Ministry of Labour for the Province of Ontario in regard to work in open trenches and the Trench Excavator's Protection Act in regard to Excavation in Open Trenches.

(2) Site Restoration and Monitoring

The site should be restored to as near preconstruction conditions as possible after completion of construction.

Interim erosion/sediment control measures should be installed where necessary until long-term protection can be effectively implemented.

The Contractor will be responsible for all clean-up after construction to the complete satisfaction of the Engineer.

(3) The Occupational Health and Safety Act 1980

The Contractor's attention is directed to The Occupational Health and Safety Act 1980 and Regulation 4 For Construction Projects. The Contractor shall comply with the requirements of this Act, and amendments thereto and regulations made thereunder.

This Contract is deemed to be an individual "Project" for the purposes of The Act, and the regulations made thereunder and the Contractor to whom the Contract is awarded shall be deemed to be the "constructor" as defined in the said Act, of this "Project" and shall carry out all the obligations and shall bear all the responsibilities of the construction as set out in the said Act and regulations.

24. CONTRACTOR'S CONSTRUCTION METHOD

Should the method of construction preferred by the Contractor for any part of the work necessitate any re-design, alterations, additions or changes to the structure, such changes, re-designs, alterations and/or additions, where approved, shall be provided entirely at the Contractor's expense. In addition, all additional costs of inspection and/or testing necessitated by these changes shall be borne by the Contractor.

SECTION E

GENERAL CONDITIONS

CORPORATION OF THE TOWN OF COBALT

CONTRACT NO. 327-87

Ontario Provincial Standard Form M100 shall apply to this Contract but has not been inserted in the tendering package.

The following amendments have been made to Form M100 and constitute part of this Contract.

Section 101-2 Definitions

The following terms are re-defined under this Contract.

"Engineer" - means an Engineer of Golder Associates or such persons, partnerships or Corporations as may be authorized to act in their behalf in a particular capacity.

"Tonne" - means 1000 kilograms.

"Plan Quantity" means that quantity as computed from within the boundary lines of the work as shown in the Contract.

"Quantity Sheet" means a breakdown list of the quantities of work to be done.

"Adjusted Plan Quantity" means that plan quantity which has been adjusted because of any or all of the following: a mistake in calculation, approved additions, approved deletions. Measurement for these additions and deletions will be by plan quantity procedures or, when necessary, actual field measurement.

"Measured Quantity" means that quantity within the approved limits of the work, measured in the field.

"Final Quantity" means that quantity used in the final payment.

"Lump Sum Item" means a tender item indicating a portion of a contract in total - for which payment will be made at a single tendered price. Payment is not based on a measured unit quantity, although quantities may or may not be given in the Contract. Quantities shown are computed as per "Plan Quantity".

Subsection 101-2 of Form 100 is amended by deleting the definition of "Contract Plans" or "Contract Drawings" and replacing it with the following:

"Contract Plans" or "Contract Drawings" means plan or drawings provided by the Ministry for the work and without limiting the generality thereof includes soil profiles, foundation investigation reports, reinforcing steel schedules, aggregate source lists, quantity sheets, cross-sections and standard drawings.

Add, Under Section 102, Part 4 the following:

102-4 Equivalents

Where pursuant to the Specifications, the Contractor is required to supply an article or group of related articles designated by a trade or other name or an "approved equal", the tender shall be based only upon supplying the article or group or articles so designated, which shall be regarded as the standard of quality required by the Specifications. After the acceptance of a tender, the Contractor may apply to the Engineer to substitute as an approved equal, another article or group of related articles identified by a different trade or other name for an article or group of related articles designated as aforesaid. The application shall be in writing and shall state the price for the proposed substitute article or group of related articles, the price for the article or group of articles designated as aforesaid and such other information as the Engineer may require.

No ruling on a proposed substitution will be made prior to the acceptance of a tender. No substitution shall be made without the prior approval of the Engineer. The approval or rejection of a proposed substitution shall be at the discretion of the Engineer and his decision shall be final. If the proposed substitution is approved by the Engineer, the contractor shall be entitled to the first \$100 of the aggregate saving in cost by reason of such substitution and to 50% of any additional saving in cost in excess of such \$100. Each such approval shall be conveyed to the Contractor by the issuance of a Letter of Equality and if any adjustment to the Contract Price is to be made by reason of such substitution, a Contract Change Order shall be issued in addition.

Section 104-6 "Conflicts and Omissions", delete Paragraphs 1 and replace with:

104-6 Conflicts and Omissions

The Contractor shall do all work and furnish all materials in accordance with the best practice, and in the event of any inconsistency or conflict in the provisions of the plans or specifications, such provisions shall take precedence and govern in the following order:

- (1) Agreement
- (2) Addenda, if any
- (3) Information for Tenderers
- (4) Special Provisions
- (5) Supplemental General Conditions, if any
- (6) General Conditions
- (7) Supplemental Specifications
- (8) Contract Drawings
- (9) Standard Specifications
- (10) Standard Drawings
- (11) Tender

Under Section 104 of Form M100, delete 104-11 "Excise Loading of Motor Vehicles" and add the following parts:

104-11 Drainage

The contractor shall keep all portions of his work properly and efficiently drained during construction and until completion, and he will be held responsible for all damage which may be caused or result from water backing up or flowing over, through, from or along any parts of the works, or which any of his operations may cause to flow elsewhere. The Contractor shall dewater all work sites and excavations as necessary or as directed to enable the works to be constructed in a satisfactory manner. The Contractor shall not be entitled to any additional payment for compliance with the requirements hereof beyond the prices tendered for the construction of the works.

Part 3 of Section 106, "Liability Insurance", delete Paragraph 1 and replace with the following:

106-2 Insurance

Without restricting Section 106-1, the Contractor shall provide, maintain and pay for the insurance coverages listed in this General Condition unless otherwise stipulated:

(a) General Liability Insurance

General Liability Insurance shall be in the joint names of the Contractor, and the Owner with limits of not less than three million dollars (\$3,000,000.00) inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof, with a Property Damage deductible of five hundred dollars. This insurance shall be maintained continuously from commencement of the Work

until twelve (12) months following the date of the Certificate of Substantial Performance of the Work, or until the Certificate of Total Performance of the Work is issued, whichever is the later, and with respect to Completed Operations Coverage for a period of not less than twelve (12) months from the date of the Certificate of Total Performance of the Work.

The liability insurance shall be endorsed to provide that the policy does:

1. Not contain any exclusions or limitations in respect of shoring, underpinning, raising or demolition of any building or structure, pile driving, caisson work, collapse of any structure or subsidence of any property, structure or land from any cause.
2. Cover the use of explosives prior to such use when the work involves such use. The Contractor shall be solely responsible for all damage, loss or costs resulting directly or indirectly from such use. The Contractor shall indemnify and save harmless the Corporation from and against all claims, demands, loss, damage and costs resulting directly or indirectly from each use.

The liability insurance shall also be endorsed to provide that the policy or policies will not be altered, cancelled or allowed to lapse without thirty days prior written notice to the Engineer.

Under Section 106, the following part is added to Form M100:

106-14 Workers' Compensation Act

The Contractor shall, at the time of entering into any contract with the Corporation, made a statutory declaration or furnish a satisfactory clearance letter from the Workers' Compensation Board stating that all assessments or compensation payable to

the Workers' Compensation Board have been paid, and the Corporation may, at any time during the performance or upon the completion of such contract, require further proof that such assessments or compensation have been paid.

Section 108, Part 3, "Prices and Payments, delete Paragraphs 1 through 7, inclusive and replace with the following:

108-3 Certificates of Completion

(a) The Contract shall be considered as substantially performed when

(1) the works have satisfactorily passed the required inspection and testing and are ready for use or are being used for the purposes intended, and

(2) the works are capable of being completed or, where there is a known defect, corrected at a cost of not more than,

(i) 3 percent of the first \$500,000 of the contract price plus

(ii) 2 percent of the next \$500,000 of the contract price plus

(iii) 1 percent of the balance of the contract price.

(b) Where the works or a substantial part thereof are ready for use or are being used for the purposes intended, but part of the works cannot be completed expeditiously for reasons beyond the control of the Contractor or where the Corporation and the Contractor agree to delay completion of the works, the cost, as determined by the Engineer, of completing the outstanding work shall be deducted from the contract price in determining substantial performance and the value of the work completed.

- (c) As soon as, in the opinion of the Engineer, the Contract has been substantially performed in accordance with the foregoing, the Engineer will issue a Certificate of Substantial Performance on submission by the Contractor of the following documents:
- (1) A written undertaking by the Contractor to complete expeditiously any outstanding work and to discharge all unfulfilled obligations under the Contract.
 - (2) The Contractor's final claim (except in respect of outstanding work).
 - (3) A release by the Contractor in a form satisfactory to the Engineer releasing the Corporation from all further claims relating to the Contract (except in respect of outstanding work).
 - (4) A statutory declaration in a form satisfactory to the Engineer that all liabilities incurred by the Contractor and his Sub-contractors in carrying out the Contract have been discharged and that all liens in respect of the Contract and Sub-contracts thereunder have expired or have been satisfied, discharged or provided for by payment into Court.
 - (5) A satisfactory clearance certificate from the Worker's Compensation Board.
- (d) The Engineer shall set out in the Certificate of Substantial Performance, the date on which the Contract was substantially performed and within seven days after signing the said certificate, he shall provide a copy to the Contractor.

- (e) Upon receipt of a copy of the Certificate of Substantial Performance, the Contractor shall forthwith, as required by Section 32(I) Paragraph 5 of The Construction Lien Act, publish a copy of the said certificate in a construction trade newspaper. Such publication shall include placement in the Daily Commercial News.

- (f) Where the contractor fails to publish a copy of the Certificate of Substantial Performance as required above within seven days after receiving a copy of the said certificate signed by the Engineer, the Corporation may publish a copy of the certificate at the Contractor's expense.

- (g) Except as otherwise provided in Section 31 of The Construction Lien Act, the 45 day period prior to the release of holdback as referred to in (f) above, as amended, shall commence from the date of publication of the Certificate of Substantial Performance as provided for in (e) and (f) above.

- (h) The works shall be deemed to be completed when
 - (1) the works have satisfactorily passed the required inspection and testing, and

 - (2) the cost of completion of all outstanding work and known defects is not more than the lesser of
 - (i) one percent of the contract price, and,
 - (ii) \$1,000.00

- (i) As soon as, in the opinion of the Engineer, the works have been completed in accordance with paragraph (h) above, the Engineer will issue a Certificate of Completion on

submission by the Contractor of the following documents:

- (1) The contractor's final claim (including the value of work completed since the date of the claim referred to in paragraph (c) (2) above).
 - (2) An up-to-date release by the Contractor in a form satisfactory to the Engineer releasing the Corporation from all further claims relating to the Contract.
 - (3) An up-to-date statutory declaration in a form satisfactory to the Engineer that all liabilities incurred by the Contractor and his Sub-contractors in carrying out the contract have been discharged and that all liens in respect of the contract and sub-contractors thereunder have expired or have been satisfied, discharged or provided for by payment into Court.
- (j) The Engineer shall set out in the Certificate of Completion, the date on which the works were completed and within seven days of signing the said certificate, he shall provide a copy to the Contractor.
- (k) Payment due to the Contractor following issuance of the Certificate of Completion shall be as provided for in Section 108-13 hereof.

Add to Form M100, after Section 108-9, the following:

108-10 Release of Holdback to Sub-contractors

Notwithstanding that the Contract as a whole has not yet been substantially performed, the Engineer may, if requested in writing by the Contractor, approve the completion of a sub-contract and the release to a sub-contractor through the Contractor of the 10% holdback retained by the Corporation in

respect of the work covered by the said sub-contract provided that:

(a) the contractor certifies

- (1) that the said sub-contract has been completed satisfactorily, or
- (2) that the said sub-contract has been completed satisfactorily except for work not exceeding in value the lesser of
 - (i) one percent of the sub-contract price, and
 - (ii) \$1,000.00

and gives reasons why the uncompleted work is still outstanding.

(b) the Engineer is satisfied

- (1) that the said sub-contract has been completed satisfactorily, or
- (2) that the said sub-contract has been completed satisfactorily to the fullest extent reasonably possible at that date and that the work remaining to be completed does not exceed in value the sum derived from (a) (2) above.
- (3) that all required or necessary inspection and testing of the works covered by the said sub-contract have been carried out and that the results are satisfactory.

- (c) the Contractor has furnished to the Engineer
- (1) a release by the Contractor in a form satisfactory to the Engineer releasing the Corporation from all further claims (excepting holdback monies) relating to the said sub-contract.
 - (2) evidence satisfactory to the Engineer that the said sub-contractor has discharged all liabilities incurred by him in carrying out the said sub-contract and that all liens in respect of the completed sub-contract have expired or have been satisfied, discharged or provided for by payment into Court.
 - (3) a satisfactory clearance certificate or letter from the Workers' Compensation Board relating to the said sub-contractor.
 - (4) the required maintenance security in respect of the said sub-contract.
- (d) The Engineer retains sufficient money to cover the cost of completing any work which remains uncompleted under the said sub-contract.
- (e) If he so requests, the Engineer is furnished with a photostat copy of the contract between the Contractor and the said sub-contractor and with a satisfactory statement showing the total amount due from the Contractor to the said sub-contractor.

The Engineer shall, within seven days after he approves a certificate wherein it is certified that the sub-contract has been completed, give a copy of the said certificate to the Contractor and to the sub-contractor concerned.

On receipt of the holdback monies from the Corporation, the Contractor shall forthwith pass to the Sub-contractor concerned, the payment due under the said sub-contract and shall pass to the Engineer, a copy of the transmittal letter showing the amount of the said payment.

The period of maintenance for the work carried out under the said sub-contract shall continue until the issuance of the Final Certificate for the Contract.

Release of holdback monies by the Corporation in respect of a sub-contract in accordance with the foregoing shall not relieve the Contractor of his surety of any of their responsibilities and shall not be made until a period of 45 days has elapsed from the date of approval of the certificate certifying the said sub-contract to be completed.

108-11 Payment

- (a) The Engineer at the end of each calendar month will prepare a fully itemized statement showing the estimated value of the permanent work executed up to the end of the month based on the unit prices shown in the Contract and Section 108-4 "Force Account Payment".
- (b) From each monthly statement including the statement based on the final measurement, the Engineer will prepare a Monthly Payment Certificate and will include therein so much as he considers fair and reasonable in respect of the value of work executed and of the major items of material and equipment on site.
- (c) Ten percent (10%) of all monies due the Contractor in accordance with the Monthly Payment Certificate up to a limit of 10% of the contract price, shall be retained by the Corporation (except as may otherwise be provided for in the Contract) and shall be termed the holdback.

- (d) The Monthly Payment Certificate will show the Engineer's gross valuation of the work performed and materials supplied, the deduction of the appropriate amount of holdback, the previous payments to the Contractor and the amount due him.

- (e) No progress estimate or payment shall be held to bind the Engineer in his valuation of the work on its completion and the Engineer may on any Monthly Payment Certificate, make correction or modification to any previous certificate he has made.

- (f) At the time of issuance by the Engineer of the Certificate of Substantial Performance in accordance with Section 108 - 3(c) of the General Conditions, as amended, the Engineer shall
 - (1) Notify the Contractor of the value of the maintenance security required by The Supplementary Conditions.

 - (2) Prepare a Substantial Performance Payment Certificate showing:
 - the value of work completed to date
 - the value of outstanding or uncompleted work
 - the value of the required maintenance security
 - the amount of the 10% holdback (allowing for any previous releases of holdback to the Contractor in respect of completed sub-contractors and deliveries of pre-selected equipment)
 - the amount due the Contractor

 - (3) Prepare a payment certificate releasing to the Contractor the 10% holdback due in respect of work performed up to the date of Substantial Performance. Subject to the provisions of The Construction Lien Act and the submission by the Contractor of the documents

required by Section 108-3(3) hereof, as amended, such holdback shall become payable after 45 days from the date of publication of the Certificate of Substantial Performance.

(g) At the time of issuance by the Engineer of the Certificate of Completion in accordance with Section 108-3(i) of the General Conditions, as amended, the Engineer shall

(1) Prepare a Completion Payment Certificate showing

- the Final Contract Price
- the amount of the further 10% holdback (based on the value of further work completed over and above the value of work completed shown in the Substantial Performance Payment Certificate referred to in (f) above.
- the amount due the contractor

(2) Prepare a payment certificate releasing to the Contractor, the further 10% holdback. Subject to the provisions of The Construction Lien Act and the submission by the Contractor of the documents required by Section 108-3(i) hereof, as amended, such further 10% holdback shall become payable after 45 days from the date of completion of the works as established by the Certificate of Completion.

(h) If, when the Engineer issues the Final Certificate at the end of the period of maintenance (see Section 108(e) hereof, as amended), any monies are still being retained by the Corporation as maintenance security or for other reasons, the Engineer will issue a Final Payment Certificate releasing the monies due the Contractor.

SECTION F
ARTICLES OF AGREEMENT

ARTICLES OF AGREEMENT

THIS AGREEMENT made the _____ day of _____, 1987.

B E T W E E N:

(herein and throughout the Contract Documents called the "Contractor")

- and -

THE CORPORATION OF THE TOWN OF COBALT

(herein and throughout the Contract Documents called the "Owner" or "Corporation")

WITNESSETH that in consideration of the sum of Five Dollars (\$5.00) now paid by each of the parties hereto to the other of them (receipt whereof is hereby acknowledged) and of the mutual covenants, conditions, and agreements herein contained, the parties hereto have agreed and do hereby agree as follows:

ARTICLE

- (a) This Agreement applies to the construction of stope caps at the location shown in the Contract Plans, within the Town of Cobalt.
- (b) This Agreement, together with Sections A to F of the Contract Documents constitute the "Contract" and are to be read herewith and form part of the Contract as fully and completely to all intents and purposes as though all the stipulations thereof had been embodied herein.

(c) In case of any inconsistency or conflict between the provisions of this Agreement and the other sections of the Contract, the provisions of each of the Contract Documents shall take precedence and govern in the following order, namely:

- (1) This Agreement
- (2) Addenda, if any
- (3) Information for Tenderers
- (4) Special Provisions
- (5) Supplemental General Conditions, if any
- (6) General Conditions
- (7) Supplemental Specifications
- (8) Contract Plans (Including Quantity Tables, Reinforcing Steel Schedules)
- (9) Standard Specifications
- (10) Standard Drawings
- (11) Form of Tender

(d) Three copies of the Contract have been signed for identification by both the parties, which copies have been prepared by Golder Associates, 3151 Wharton Way, Mississauga, Ontario, L4X 2B6, acting as, and herein (and throughout the Contract) entitled the "Engineer".

ARTICLE II

THE CONTRACTOR UNDERTAKES AND AGREES:

- (a) To supply (except as otherwise provided herein) all the materials and to perform all the work described in this Contract.
- (b) To complete the work described in this Contract within twenty-five (25) working days commencing five (5) calendar days after receiving the Engineer's notification to proceed.

All requests for extension of said completion dates shall be by registered mail to the Owner and the decision of the Owner with respect to such requests is to be considered final and binding upon the Contractor.

- (c) To guarantee that under normal operating conditions and until the issuance by the Engineer of the "Final Certificate" mentioned in sub-clause (c) of the Article III hereof, the said work shall be maintained in such condition as will meet with the approval of the Engineer and the appropriate officials of the Corporation of the Town of Cobalt for a period of twelve (12) months from the date of Substantial Performance.
- (d) The decision of the Engineer is to be final and binding on the Contractor and the Owner as to the nature and cause of any imperfections and as to the remedy required for each and as to which party shall bear the cost of such remedy. Failure to comply with the directions of the Engineer within forty-eight hours after written notice may result in the Engineer having the work performed by others and the cost thereof being deducted from the amount due to the Contractor.
- (e) To furnish a Performance and Maintenance Bond for the full tendered value of the work.

ARTICLE III

THE OWNER UNDERTAKES AND AGREES:

- (a) That the Contractor shall receive payment for work done, and materials supplied according to the unit prices contained in the Form of Tender, in accordance with the provisions of this Contract. The unit prices will be applied by the Engineer to the actual quantities of work and materials supplied by the Contractor whether these quantities be more or less than those estimated in the said Form of Tender and shown on the Contract Drawings.

- (b) That the Contractor shall receive payments monthly, or one payment the month following completion of the work should the said work be completed in one calendar month or less, at the rate of ninety percent (90%) of the work actually done and materials in place, according to the estimate of the Engineer, less all forfeitures and deductions provided for in the Contract. These payments shall be authorized on Contract Payment Certifications issued by the Engineer, which will be based on approximate estimates only, and must not be construed as an acceptance of the work so estimated or as an admission of liability by the Owner in respect thereof.
- (c) Within 45 days following the date of publication of the Certificate of Substantial Performance as required by the Construction Lien Act 1983 and when all the work has been completed in accordance with the Contract, a Payment Certificate will be issued by the Engineer at the rate of ninety-eight percent (98%) of the whole amount due under this Contract.

After the expiration of twelve months from the date of Substantial Performance and when all deficiencies have been corrected to the satisfaction of the Engineer, a Final Payment Certificate will be issued by the Engineer at the rate of one hundred percent (100%) of the whole amount due under this Contract.

ARTICLE IV

If and whenever either party desires to give notice to other party or to the Engineer under or in connection with this Contract, such notice will be effectively given if sent by prepaid registered mail addressed to:

The Contractor at:

-& to the Owner at:

Town of Cobalt
Box 70, 18 Silver Street
Cobalt, Ontario
P05 1C0

Attention: Ms. D.R. Beatty
Clerk-Treasurer

-& to the Engineer at:

Golder Associates
Consulting Geotechnical and Mining Engineers
3151 Wharton Way
Mississauga, Ontario
L4X 2B6

Attention: Mr. J.R. Busbridge, P. Eng.

and will be considered having been so given on the date of receipt.

ARTICLE V

This Agreement shall apply to and be binding on the parties hereto and their respective successors, administrators, executors and assigns.

IN WITNESS WHEREOF the parties hereto have hereunder set their hands and seals the day and year first above writte or caused their corporate seals to be affixed, attested by the signature of their proper officers, as the case may be.

SIGNED, SEALED AND DELIVERED

in the presence of:

)	
)	
)	
)	
.....)	)	.....(seal)

Witness to Signature of
Contractor

)	
)	
)	
)	
)	
)

AUTHORIZED AND APPROVED) Mayor, Town of Cobalt

BY BY-LAW NO.....)

)

)

)

)

DATE.....)
-----------	---	-------

) Clerk-Treasurer, Town of Cobalt

FORM M-100
APRIL 1983

GENERAL CONDITIONS
OF
CONTRACT

INDEX

	Page #		Page #
SECTION 101	1	SECTION 105	
INTERPRETATION		CONTROL OF MATERIALS	
SECTION 102		105-1 Supply of Materials	9
CONTRACTOR'S INVESTIGATIONS' SURETY AND CONFORMITY OF WORK WITH PLANS AND SPECIFICATIONS		105-2 Source of Supply and Quality of Materials	9
102-1 Conformity of Work with Plans and Specifications	3	105-3 Defective Materials Affecting Work	9
102-2 Contractor's Investigations	3	SECTION 106	
102-3 Surety and Deposit	3	LEGAL RELATIONS AND RESPONSIBILITY	
SECTION 103		106-1 Contractor's Responsibility for Damages	10
SCOPE OF WORK		106-2 Liability Insurance	11
103-1 Estimated Quantities	4	106-3 Provision for Traffic	11
103-2 Changes and Alterations	4	106-4 Provision of a Road Throughout the Work	12
103-3 Extra Work	5	106-5 Access to Properties Adjoining the Work	13
103-4 Cleaning Up Before Acceptance	5	106-6 Construction Affecting Railway Property	13
103-5 Acceptance of the Work	5	106-7 Explosives	13
SECTION 104		106-8 Trees and Shrubs	14
CONTROL OF THE WORK		106-9 Protection Against Royalties or Patented Inventions	14
104-1 Engineer's Authority	6	106-10 Licenses and Permits	14
104-2 Claims and Negotiations	6	106-11 Notice to the Contractor	14
104-3 Right of the Engineer to Modify Methods and Equipment	6	106-12 Notice to the Owner	15
104-4 Plans and Working Drawings	6	106-13 Mail Boxes	15
104-5 Deviation from Plans	7	SECTION 107	
104-6 Conflicts and Omissions	7	PROSECUTION AND PROGRESS	
104-7 Lines and Grades	7	107-1 Time and Order of Completion	16
104-8 Right of Entry	7	107-2 Extension of Time	16
104-9 Contractor's Responsibility	7	107-3 Assignment, Subletting and Renting	16
104-10 Damage by Vehicles and other Equipment	8	107-4 Non-Fulfillment of the Contract	17
104-11 Condition of Site	8	107-5 Suspension of Work	17

SECTION 101

INTERPRETATION

101-1 "Contract"

- means the agreement, covering the performance of the work, including the supply of any and all work, labour, implements and materials that could reasonably be required properly and satisfactorily to complete the work to be performed and also includes the plans, specifications, contract bond and any written supplementary agreements that may be made in order to ensure the completion of the work in an acceptable manner.

101-2 "Contractor"

- means the person, partnership or company undertaking the execution of the work under the terms of the Contract.

101-3 "Corporation"

- means the municipal corporation entering into the Contract with the Contractor.

101-4 "Engineer"

- means the Engineer of the Corporation, his designate or such other person, partnership or company as may be authorized by the Corporation, to act on his behalf.

101-5 "Inspector"

- means any person, partnership or company that the Engineer may appoint for the purpose of assisting in the supervision and inspection of the work and the materials to be used in the work.

101-6 "Major Item"

- means any individually bid Tender item that has an actual value, calculated on the basis of its actual or estimated tender quantity, whichever is the larger, and its tender price, equal to or greater than 5% of the total tender value, calculated on the basis of the total of all the estimated tender quantities and the tender unit prices.

101-7 "Plans" or "Drawings"

- The terms plans and drawings are used interchangeably and mean any contract plans or contract drawings or any approved working plans or approved working drawings or any reproductions of plans and drawings pertaining to the work.

"Contract Plans" or "Contract Drawing"

- means plans or drawings provided by the Corporation for the work.

"Working Plans" or "Working Drawings"

- means any plans or drawings prepared by the Contractor and approved by the Engineer for the execution of the work.

101-8 "Rate(s) of Interest"

- means the rate(s) determined by the Corporation from time to time, which is 2 percent below the prime rate of the Chartered Banks of Canada and which is revised when the movement of the prime rate is 0.5 percent or greater.

101-9 "Specifications"

- means all written or printed descriptions or instructions pertaining to the method and manner of performing the work, or to the quantities and qualities of the materials to be furnished and works to be carried out under the Contract, and includes the Tender, General Conditions, Standard Specifications, Supplemental Specifications and Special Provisions, together with all written agreements, made or to be made pertaining to the method or manner of performing the work, or to the quantities or qualities of materials to be furnished and works to be carried out under the Contract.

101-10 "Standard Specifications"

- means the requirements and stipulations of standard practice by the Corporation for the control of work.

101-11 "Supplemental Specifications"

- means the specifications, supplemental to the general conditions and standard specifications.

101-12 "Special Provisions"

- means special directions containing requirements peculiar to the work not adequately provided for by the general conditions, standard or supplemental specifications.

101-13 "Subcontractor"

- means a person, partnership or company undertaking the execution of a part of the work by virtue of an agreement between himself and

the Contractor, and who has independent control over, and who is paid either by a lump sum or by stated unit prices for the work to be done under such agreement.

101-14 "Work"

- means the work undertaken by the Contractor pursuant to the provisions of the Contract.

101-15

The words "approved", "directed", "required", "considered necessary", "authorized", "acceptable", "satisfactory", or words of like import shall mean approval of, directed, required, considered necessary or authorized by and acceptable or satisfactory to the Engineer.

SECTION 102

CONTRACTOR'S INVESTIGATIONS, SURETY AND
CONFORMITY OF WORK WITH PLANS AND
SPECIFICATIONS

102-1 Conformity of Work with Plans and
Specifications

The Contractor shall perform all work and shall furnish all materials and complete the whole of the work in strict conformance with the plans and specifications.

102-2 Contractor's Investigations

The Contractor declares that in tendering for the work and in entering into the contract, he has either investigated for himself the character of the work to be done and all local conditions including the location of any utility which can be determined from the records or other information available at the offices of any person, partnership, Corporation, including the municipal corporation and any board or commission thereof, having jurisdiction or control over the utility, that might affect his Tender or his acceptance of the work, or that, not having so investigated, and except as hereinafter provided he is willing to assume and does assume, all risk of conditions now existing or arising in the course of the work which might or could make the work, or any items thereof more expensive in character, or more onerous to fulfill, than was contemplated or known when the tender was made or the contract signed.

The Contractor also declares that in tendering

for the work and in entering into the contract he did not and does not rely upon information furnished by the Corporation or any of its servants or agents respecting the nature or conformation of the ground at the site of the work, or the location, character, quality and quantity of the materials to be removed, or to be employed in the construction of the work, or the character of the equipment or facilities needed to perform the work, or the general and local conditions and all other matters which could in any way affect the performance of the work under the contract other than information furnished in writing for or in connection with the tender or the contract by the Engineer, except information specifically excluded from this sub section.

102-3 Surety and Deposit

Where applicable, the performance and any payment bonds or the cash or collateral deposited with the Corporation in connection herewith shall be held by the Corporation to secure the due performance and observation of the contract and the payment of all creditors as required by the contract.

The cash deposit made with the tender shall be released to the Contractor when the contract has been signed by him, proof of Workman's Compensation Board coverage submitted, and the performance and any payment bonds or cash or collateral deposited with and approved by the Corporation.

SECTION 103

SCOPE OF WORK

103-1 Estimated Quantities

The estimated quantities set forth in the tender are approximate only. If the quantity of work to be done and material to be furnished exceeds or is less than the estimated quantity, the Contractor shall proceed with the work and payment will be made for the actual amount of work done and material furnished at the unit prices set forth in the contract except as provided below.

(a) In the case of a major item where the quantity of work done or material furnished exceeds the tender amount by more than 20 percent and where with such overrun the unit cost of the work done or material furnished is higher or lower than the tender price, then upon the written request of either party to the contract, negotiations shall be carried out as soon as reasonably possible to determine the revised unit price. Adjustments of compensation shall be applied only to the final quantity less 120 percent of the tender quantity. The revised unit price shall be based on the actual cost plus a reasonable allowance for profit and applicable overhead.

(b) In the case of a major item where the quantity of work done or material furnished is less than the tender quantity by more than 20%, then upon the written request of the Contractor, consideration shall be given for an allowance to compensate for the Contractor's losses in fixed costs. If the Corporation considers that compensation is justified it will be at a rate equal to 10% of the tender unit price on the amount of the under-run in excess of 20% of the tender quantity.

(c) "Lump Sum Concrete Items" - Should the estimated quantities of concrete as shown in the tendering information, for any specific lump sum concrete item, differ by more than 3% from the theoretical quantities as determined from the design dimensions of the structure component and where such discrepancy in quantities does not result from a change in design made in accordance with sub-section 103-2 of Form M-100, then either party to the contract upon the written request of the other, shall as soon as reasonably possible, negotiate upward or downward, the compensation for that portion of the concrete which is in excess of or less than the estimated quantity plus or minus the 3% increase or decrease.

103-2 Changes and Alterations

The Engineer may, by order in writing, at any time before or after the commencement of the work, delete, extend, increase, decrease, vary, or otherwise alter the work to be done or material to be furnished or any part thereof. If the character of the work to be done or material to be furnished is actually changed from that on which the Contractor based his bid, by reason of such written order of the Engineer or by reason of incorrect written information supplied by the Corporation, and if the change increases or decreases the cost of the work to be done or material to be furnished, the Contractor shall proceed with the work to be done and upon the written request of either party to the contract, negotiations shall, as soon as reasonably possible, be carried out to determine the amount of compensation to be paid, provided that if such change in character relates solely to quantities, it shall be dealt with under Sub-Section 103-1 and not otherwise.

103-3 Extra Work

Where the Engineer directs or otherwise authorizes the Contractor in writing to undertake work in addition to that provided for in the contract and for which the Engineer and the Contractor agree that there is no applicable tender item, the Contractor shall proceed with the work and such work shall be considered extra work and shall be paid for as negotiated.

Where it is impractical to negotiate a price or where agreement cannot be reached on a price for approved extra work, payment for such work may be made on a time and material basis as provided in subsection 108-4.

103-4 Cleaning Up Before Acceptance

Before any work shall be finally accepted by the Corporation, the Contractor shall make such replacements of improper materials and such corrections of faulty workmanship as have been directed by the Engineer and do such trimming and disposal of rubbish and surplus materials as to leave the work neat and presentable.

103-5 Acceptance of the Work

The Contractor shall notify the Engineer in writing when, in the opinion of the Contractor, the work has been satisfactorily completed and the Engineer shall then cause the work to be inspected. The Contractor may notify the Engineer in writing when, in the opinion of the Contractor, a portion of the work has been completed and if the Engineer is of the opinion that such portion is a significant portion of the project, the Engineer may then cause the portion to be inspected. When the whole of the works or the portion thereof is found by the Engineer to be completed in accordance with the plans and specification, the Engineer, subject to any extended warranties on material and workmanship, and subject to the provisions of Subsection 104-1, may give notice of acceptance in writing to the Contractor and the Corporation shall henceforth assume the maintenance of the accepted work or portion thereof.

SECTION 104

CONTROL OF THE WORK

104-1 Engineer's Authority

The Engineer may supervise and direct all work to the extent of ensuring the fulfillment of the contract and the completion of the work in accordance with the plans and specifications. He shall determine the quantities of the several kinds of work which are to be paid for under contract, and determine all questions relating to the said work and the construction thereof. The Engineer shall in all cases decide every question which may arise relative to the performance of the contract, and his estimate and findings shall be final. He shall, within a reasonable time, render a decision on all claims by the Contractor and all questions which may arise relative to the performance of the work, or the interpretation of the contract. The Contractor shall at all times and at his own expense furnish all reasonable aid and assistance required by the Engineer or any Inspector for the proper inspection and examination of the work or part thereof. The Contractor shall, at his own expense, furnish samples for testing when required and shall furnish all reasonable facilities for the inspection of material and workmanship. The Contractor shall obey the directions and instructions of any Inspector and they shall be made in writing at the request of the Contractor.

Notwithstanding any inspection that the Corporation might carry out, the failure of the Engineer or the Inspector to condemn or object to any defective work or material shall not constitute a waiver of any specification or the approval or acceptance of such defective work or material and, except as otherwise provided herein, the Contractor shall be and remain liable for such defective work or material and any loss, costs, charges or expenses in connection therewith.

104-2 Claims and Negotiations

Where the Contractor wishes to submit a claim or to request a negotiation, the Contractor shall give notice on the form prescribed by the Engineer within 7 days of the date of commencement of that specific portion of the tender item or other work out of which the claim or request for negotiation arises.

The Contractor shall submit claims not later than 30 days after the date of his receipt of the final payment certificate (which is the final detailed statement) for the entire work, identifying the item or items in respect of which the claim arises, state the grounds upon which the claim is made, and submit the records maintained by the Contractor under Subsection 108-8 which support such claim. The Corporation may require the Contractor to submit such further and other particulars as the Corporation might require to assess the claim and the Contractor shall submit the information within 30 days thereof.

104-3 Right of the Engineer to Modify Methods and Equipment

The Contractor shall make such alterations in his method, equipment and working forces as the Engineer in writing directs if at any time the method or equipment or working forces are found by the Engineer to be unsafe or inadequate to ensure the protection, safety or quality of the work or to ensure a rate of progress sufficient in the opinion of the Engineer to complete the work within the time limited therefore under the contract but, notwithstanding the foregoing, the onus is on the Contractor to ensure that such required safety protection, progress and quality of the work are maintained.

The Contractor shall be required to change his method of operation, sequence of operation or type of equipment when the Contractor's method of operation causes erosion or other adverse environmental effects contrary to the Environmental Protection Act RSO 1980 Chapter 141 and amendments thereto.

104-4 Plans and Working Drawings

When the nature of the work so requires, the Corporation shall provide the Contractor with plans showing the details of the construction required. Working drawings showing shop details, erection diagrams, falsework, formwork and such other details as may be required for the work and which are not shown on the drawings furnished by the Corporation shall be provided by the Contractor in as many copies as required.

The work related to the working drawings shall not proceed until such drawings have been signed by the Engineer and marked with the words "Permission to Construct". One copy of the drawings so marked shall be available at the site at all times. Such permission by the Engineer shall not relieve the Contractor from any responsibility for the adequacy or soundness of such working drawings or for the work they represent.

104-5 Deviation from Plans

The Contractor shall not deviate from the contract plans, specifications and approved working drawings without the consent in writing of the Engineer.

104-6 Conflicts and Omissions

The Contractor shall do all work and furnish all materials in accordance with the best practice; and in the event of any inconsistency or conflict in the provisions of the plans or specifications, such provisions shall take precedence and govern in the following order:

- (i) Special Provisions
- (ii) Contract Plans
- (iii) Supplemental Specifications
- (iv) Standard Specifications
- (v) Tender
- (vi) General Conditions
- (vii) Working Drawings

Neither party to the contract shall take advantage of any apparent error or omission in the plans or specifications, but the Engineer shall be permitted to make such corrections and interpretations as may be necessary for fulfillment of the intent of the plans and specifications. Any work or material not herein specified but which may be fairly implied as included in the contract, of which the Engineer shall be the judge, shall be done or furnished by the Contractor as if such work or material had been specified.

104-7 Lines and Grades

The Engineer will only set such stakes as he may deem necessary to properly define the

general location, alignment, elevation and grade of the work. The Contractor shall give the Engineer reasonable notice of the time and place where the lines and grades will be needed. The Contractor shall assume full responsibility for detail, dimensions and elevations measured from the lines, grades and elevations so established.

All stakes, marks and reference points shall be carefully preserved by the Contractor and in case of their destruction or removal by him, his agents or his employees, such stakes, marks and reference points shall be replaced by the Engineer at the Contractor's expense.

The Engineer may require the Contractor at the Contractor's expense to provide and erect such masts, scaffolds, batter boards, straight edges, templates and other devices as may be necessary to facilitate laying out, inspecting and constructing the work.

Whenever necessary, work shall be suspended for such reasonable time as may be necessary to permit the Engineer to lay out and inspect any portion of the work, and the Contractor shall not be allowed any extra compensation for this suspension of work.

104-8 Right of Entry

The Contractor shall co-operate with other Contractors, Utility Companies and the Corporation and they shall be allowed free access to their work at all times. The Engineer reserves the right to alter the method of operations on this contract to avoid interference with other work.

104-9 Contractor's Responsibility

The Contractor shall be responsible for and shall give adequate attention to the prosecution and completion of the work in accordance with the terms of the contract. The Contractor shall at all times have on the work, as his agent, a competent superintendent or foreman capable of reading and thoroughly understanding the plans and specifications and of adequately communicating with the Engineer and his representatives and thoroughly experienced in the type of work being performed, who shall receive instructions from the Engineer or his authorized

representatives. Such superintendence shall be furnished irrespective of the amount of work sublet and shall include the supervision and direction of all subcontractors.

The Engineer shall be provided to his satisfaction with the address and telephone number of a Contractor's representative who may be contacted and available within reasonable notice 24 hours a day, 7 days a week, on matters relating to this contract.

In order to avoid any misunderstanding as to the nature of the work to be performed herein, the Contractor, by executing the Contract unequivocally acknowledges that he is the Contractor within the meaning of the Occupational Health and Safety Act, 1980 and amendments thereto.

104-10 Damage by Vehicles and Other Equipment

If at any time, in the opinion of the Engineer, damage is being done or is likely to be done to any highway or any improvement thereon, other than such portions as are part of the work, by the Contractor's equipment, the Contractor shall, on the direction of the

Engineer and at the Contractor's own expense make changes in or substitutions for such equipment or shall alter loadings or shall in some other manner remove the cause of such damage to the satisfaction of the Engineer.

104-11 Condition of Site

The Contractor during the progress of the work, shall keep the site and work in as tidy a condition as practicable. He shall not deposit any material on any portion of street, sidewalk, boulevard, or other Corporation or public property, without permission of the Engineer, and shall remove same without delay when and as directed by the Engineer.

Unless all surplus material, or plant, rubbish, falsework, etc. is removed from time to time, when and as directed, the Engineer will proceed to do whatever is necessary to restore the site, street, sidewalk, boulevard, or other Corporation or public property, to a tidy condition, and charge the cost thereof against the Contractor. Whenever and wherever any work is closed, suspended or stopped for the winter, all material of every description shall be removed from the streets, foot-walks, and boulevards, provided always there shall be no stoppage of work without the approval in writing of the Engineer.

SECTION 105

CONTROL OF MATERIALS

105-1 Supply of Materials

All materials necessary for the proper completion of the work, except those listed as being supplied by the Corporation, shall be supplied by the Contractor. Measurement for Payment and Basis of Payment clauses as may be included in material specifications shall not apply to this contract. The contract prices for the appropriate tender items shall be deemed to include full compensation for the supply of such materials.

105-2 Source of Supply and Quality of Materials

All materials supplied by the Contractor shall conform to the requirements of the specifications and be approved by the Engineer prior to use in the work. Where required by the Engineer, the Contractor shall furnish a complete written statement of the origin, composition and manufacture of any materials to be supplied by him and shall furnish samples thereof for testing purposes. The Contractor shall not change the source of supply of materials without the written authorization of the Engineer.

Approval of any materials by the Engineer shall not be considered as waiver of objection to the work or materials at any subsequent time, due to their failure to conform with the specifications.

The Corporation may carry out on the supplier's premises, such inspection, sampling and testing as may be required before materials can be approved. In order to make such inspection and testing possible, the Contractor shall notify the Engineer of his sources of supply, at least three weeks in advance of the material shipping dates and shall arrange with suppliers for the Corporation representatives to have free access to such parts of the plant as concern the manufacture or production of the materials ordered.

105-3 Defective Materials Affecting Work

Upon the direction of the Engineer, the Contractor at his own expense, shall replace or correct any defective work resulting from faulty material supplied by the Contractor, or resulting from material supplied by the Corporation, which has been damaged while under the Contractor's care.

SECTION 106

LEGAL RELATIONS AND RESPONSIBILITY

106-1 Contractor's Responsibility for Damages

The Contractor, his agents and all workmen and persons employed by him or under his control, including Sub-Contractors, shall use due care that no person or property is injured and that no rights are infringed in the prosecution of the work, and the Contractor shall be solely responsible for all damages by whomsoever claimable in respect of any injury to persons or to lands, buildings, structures, utilities, survey markers, fences, livestock, trees, crops, roads, ways, ditches, drains and water-courses, whether natural or artificial, or property of whatever description and in respect of any infringement of any right, privilege or easement whatever occasioned in the carrying on of the work or any part thereof, or by any neglect, misfeasance or nonfeasance on the Contractor's part or on the part of any of his agents, workmen or persons employed by him or under his control including Subcontractors, and shall bear the full cost thereof and shall at his own expense make such temporary provisions as may be necessary to ensure the avoidance of any such damage, injury or infringement and to prevent the interruption of or danger or menace to the traffic on any railway or any public or private road entrance or sidewalk and to secure to all persons and corporations the uninterrupted enjoyment of all their rights, in and during the performance of the work and the Contractor shall indemnify and save harmless the Corporation from and against all claims, demands, loss, costs, damages, actions, suits or other proceedings by whomsoever made, brought or prosecuted in any manner based upon, occasioned by, or attributed to any such damage, injury or infringement.

Wherever any work is of such an extent and nature that it must necessarily be confined to

particular areas of the right of way, the Contractor shall use reasonable care not to damage or deface the remaining portions of the right of way, and if any damage is occasioned as a result of the Contractor's operations, it shall be rectified by the Contractor at his own expense, to the satisfaction of the Engineer.

Notwithstanding the indemnity provisions contained in this section, where in the opinion of the Engineer the Contractor has failed to rectify any damage, injury or infringement or has failed to adequately compensate any person for any damage, injury or infringement for which the Contractor is responsible under the contract, the Engineer, following notice in writing to the Contractor of his intention so to do, may withhold payment of any monies due to the Contractor under this or any other contract until the Contractor has rectified such damage, injury or infringement or has paid adequate compensation for such damage, injury or infringement, provided, however, that the Corporation will withhold such monies where in the opinion of the Engineer there are reasonable grounds upon which the Contractor denies liability for such damage, injury or infringement and the Contractor has given the claimant a reasonable time in which to establish the validity of his claim, and provided further that the amount withheld under this section shall not exceed the amount of such claims against the Contractor.

Where the Contractor uses privately owned lands for pits or waste disposal areas, the Contractor shall provide the Engineer with a release signed by or on behalf of the owner of each pit or waste disposal area used by the Contractor. If the said release is not obtained, then sufficient monies will be withheld from the Contractor pursuant to sub-section 108-6 except, however, where the owner's signature is withheld solely on the basis of damage, injury, or infringement, it will be dealt with as provided elsewhere in this subsection.

106-2 Liability Insurance

The Contractor shall take out and keep in force until the date of acceptance of the entire work by the Engineer, a comprehensive policy of public liability and property damage insurance acceptable to the Engineer providing insurance coverage in respect of any one accident to the limit of at least \$1,000,000, exclusive of interest and cost, against loss or damage resulting from bodily injury to or death of one or more persons and loss of or damage to property and such policy shall name the Corporation as an additional insured thereunder and shall protect the Corporation against all claims for all damage or injury including death to any person or persons and for damage to any property of the Corporation or any other public or private property resulting from or arising out of any act or omission on the part of the Contractor or any of his servants or agents during the execution of the contract and the Contractor shall forward with the executed contract documents a certified copy of the policy or certificate thereof, as the Corporation may direct.

106-3 Provision for Traffic

The Contractor shall at all times carry on the work in a manner that will create the least interference with traffic, consistent with the faithful performance of the work.

The Contractor shall not close the road or reduce the width or number of traffic lanes available for traffic except as specified in the contract documents or unless he has received the approval of the Engineer.

When it is required to maintain a road through the work, traffic within, entering or leaving the construction zone shall be controlled by and at the expense of the Contractor, by the

erection, operation and maintenance, and by the relocation where necessary, of such signs, delineators, barricades, lanterns and flashing lights in accordance with the Ministry of Transportation and Communications "Traffic Control Manual for Roadway Work Operations (TCMRWO), dated 1981, and by the provision of such flaggers as are required for the proper notification and protection of the public. With respect to work carried out on or adjacent to railway property, the Contractor will be responsible for the cost of flaggers and other devices for the control of traffic, which may be required by or provided by the railway authority.

Signs, delineators, barricades, lanterns and flashing lights shall be of types prescribed by the TCMRWO and shall be provided by the Contractor. Upon the final acceptance of the work by the Engineer, signs and delineators shall, at the Contractor's expense, be removed from the work. Flagging procedures shall conform to the recommendations of the Construction Safety Association of Ontario.

Without limiting the responsibility of the Contractor to properly notify the public of and protect it from traffic hazards, the Engineer may require the Contractor to provide additional notification or protection for the public.

If at any time the Contractor fails to provide for the safe passage and control of traffic on any existing road or detour for which, under the contract, he is responsible, and if the Contractor fails to correct forthwith such an unsatisfactory condition upon being so directed in writing, the Engineer may immediately correct the unsatisfactory condition and take such other action as he deems necessary to provide for the safe passage and control of traffic. The Corporation may deduct from any monies due or to become due to the Contractor on any account any cost or expense incurred by the Corporation under this paragraph. No act or failure to act

on the part of the Engineer under this paragraph shall relieve the Contractor from his responsibilities under the contract.

106-4 Provision of a Road
Throughout the Work

Where a roadway is affected by construction, the highway must be kept open to traffic, and the Contractor shall, except as otherwise provided in this subsection, provide and maintain for the duration of the work, a road throughout the length of the work, whether along an existing public road including the road under construction, or on detours within or adjacent to the right of way.

The Contractor will not be required to maintain a road through the work until such time as the Contractor has commenced operations or during seasonal shut down or on any part of the contract that has been accepted in accordance with Subsection 103-5 or on public roads outside the limits of the contract.

Where localized and separated sections of the roadway only are affected by the Contractor's operations, the Contractor will not be required to maintain intervening sections of the existing public road until such times as these sections are located within the limits of the roadway affected by the Contractor's general operations under the contract. The Contractor will not be required to apply de-icing salts or abrasives or carry out snow-plowing operations as may be required for the safe passage and control of traffic.

Where the contract provides for or the Engineer requires detours at specific locations, payment for the construction of the detours and if required, for the subsequent removal of the detours will be made at the contract prices appropriate to such work and

the Corporation will arrange for the acquisition of lands required for such detours.

The cost of supplying all labour, equipment and material required to maintain in a satisfactory condition for traffic, a road through the work including any detours constructed in accordance with the contract or with the approval of the Engineer, shall be paid by the Corporation at the contract prices appropriate to such work or where there are no such prices, at negotiated prices. Notwithstanding the foregoing, the cost of blading required to maintain the surface of such roads and detours shall be deemed to be included in the prices bid for the various tender items and no additional payment will be made.

Where the work under this contract is for any reason discontinued and will not be resumed until the following working season or for any extended period, the Contractor shall, when directed by the Engineer, open and place the highway and detours in a passable, safe and satisfactory condition for public travel and the highway shall not again be closed to traffic, or traffic thereon be obstructed, without written authority of the Engineer.

Where the Contractor constructs a detour which is not specifically provided for in the contract, or required by the Engineer, the construction of the detour and if required, the subsequent removal shall be carried out at the Contractor's expense. The detour shall be constructed and maintained to structural and geometric standards approved by the Engineer. Removal shall be carried out as directed and at the discretion of the Engineer and shall consist of the disposal, levelling and trimming of the excavated material and such restorative measures as may be required.

Where, with the written approval of the Engineer, the road is closed and the traffic

diverted entirely off the road allowance, to any other public roads, the Contractor shall at his own expense supply and erect barricades, lights, including flashing lights and such other protection as may reasonably be required by the Engineer at all points where traffic might enter on that portion of the road so closed to traffic. The Contractor, when required by the Engineer, shall supply watchmen to protect the barricades and direct traffic at each end of the portion or portions of the highway closed to traffic. The Contractor shall at his own expense erect signs and lights and maintain such approved detours over other public roads which may be used during the said closure of the road, as directed by the Engineer.

The foregoing provisions shall in no way relieve the Contractor of his obligations under the various provisions of the contract dealing with the Contractor's responsibility for damage claims, except for claims arising on sections of road within the limits of the contract that are being maintained by the Corporation.

106-5 Access to Properties Adjoining the Work

The Contractor shall provide at all times and at his own expense, adequate pedestrian access to private homes and commercial establishments unless otherwise authorized by the Engineer.

Where interruptions to access have been authorized by the Engineer, reasonable notice shall be given by the Contractor to the affected property owners and such interruptions shall be arranged so as to create a minimum interference to those affected.

106-6 Construction Affecting Railway Property

The methods of construction and the timing of work within or adjacent to railway property shall be subject to the approval of the Engineer.

Arrangements shall be made by the Corporation with the Railway Company for the Contractor's employees to enter on the lands of the Railway Company in order to carry out the work. The Contractor shall carry out the work subject to whatever conditions the Railway Company may consider necessary for the protection of its traffic.

Before any work is commenced, the Contractor shall give the Engineer at least 7 days prior notice in writing, so that arrangements can be made for the Railway Company to appoint flaggers and to provide protection according to Railway Company requirements.

The Contractor shall provide and pay for all protection and flagging required in accordance with Section 106-4.

106-7 Explosives

The Contractor shall comply with all statutes, regulations, by-laws and orders relating to the supply, hauling, handling, use of and storing of explosives.

Before any blasting operations are carried out, the Contractor shall give reasonable notice to any department or agency of Government and to any person, partnership or corporation including a municipal corporation and any board or commission thereof affected thereby.

In addition to any other precaution that may be necessary, the Contractor shall, immediately prior to a blast, clear the blasting area of

all residents, vehicular and pedestrian traffic, and shall post flaggers on each road entering the blasting area, who shall stop all traffic and shall prevent such traffic from entering the area until the blast has taken place.

Notwithstanding any direction of the Engineer in regard to explosives, drilling or methods of blasting used, the Contractor shall take all precautions necessary to ensure that persons are not injured and that adjoining property and structures, including public utilities are not damaged. Without limiting the generality of Section 106-1, the Contractor shall be responsible for all claims whatsoever arising from the hauling, handling, use of or storing of explosives and all effects direct or indirect of the blasting operation.

No payment shall be made for protective measures or for damage to persons or for damages or repairs to property, structures or public buildings, or for any claim whatsoever arising from blasting operations. All such costs shall be included in the unit prices bid for the items requiring the blasting.

Whenever in the opinion of the Utility Authority, standby crews are necessary during blasting operations, the Contractor shall make the necessary arrangements with the Utility Authority and the cost of such crews and equipment shall be billed to the Contractor by the Utility Authority.

106-8 Trees and Shrubs

Except as otherwise provided for in the contract, the Contractor shall protect from injury all trees and shrubs on or near the line of the work and on private property.

Where the line of a trench passes close to trees the Contractor shall construct timber barricades around each tree or group of trees, or tunnel below the trees. Excavated material shall not be placed in contact with any tree, and the cutting of branches will not be allowed except with the written approval of the Engineer and the owners of the trees. No extra payment will be allowed the Contractor on account of any expense incurred in protecting existing trees, and the Contractor shall be responsible for any damage done to the trees by his workmen, trucks or equipment.

106-9 Protection Against Royalties or Patented Inventions

The Contractor shall indemnify and save harmless the Corporation from all and every claim for damages, royalties or fees for the infringement of any patented invention or copyright occasioned by him in connection with work done or material furnished by him under the contract.

106-10 Licenses and Permits

The Contractor shall obtain at his own expense all licenses or permits required by by-law or statutes, and regulations made thereunder.

106-11 Notice to the Contractor

Any notice in writing to be given to the Contractor in relation to any matter arising under the Contract or in respect of the work to be done hereunder may be given by delivering same to the Contractor, or the Contractor's representative, for the time being, or by mailing the same addressed to the Contractor at such address as he may have specified in his Tender and in default of any such address being so specified, such notice shall be deemed to have been given at the time of mailing of such notice to the last address which the Corporation may have for the Contractor.

106-12 Notice to the Owner

Any notice to be given to the Corporation shall be in writing and shall be directed to the Engineer.

106-13 Mail Boxes

The Contractor shall at his own expense, carefully remove and satisfactorily replace mail boxes which must be removed in order to carry out the work.

SECTION 107

PROSECUTION AND PROGRESS

107-1 Time and Order of Completion

Before starting the work the Contractor shall submit in writing to the Engineer his proposed methods and sequence of work and shall obtain approval therefore but such approval shall not relieve the Contractor of any of his duties and obligations under this contract.

The Engineer may direct the Contractor in writing as to the time, precedence or order in which any work to be done under the contract shall be performed.

The work shall not be commenced until the Contractor has received a written order to commence the same, signed by the Engineer and it shall thereupon be commenced within seven days of the commencement date specified therein and continuously and with utmost diligence and dispatch carried on to completion subject to any other provisions of this contract and shall be completed and full possession thereof given to the Corporation within the time allowed in the special provisions, said time to commence on the date of said written order; unless a longer time shall be allowed in writing by the Engineer, in which case it shall be carried on to completion and possession given to the Corporation within the additional time as allowed.

107-2 Extension of Time

An extension of time may be granted in writing by the Engineer in the event of the work being delayed beyond the prescribed time for completion as a result of causes beyond the Contractor's control. Such extensions shall be for such time as the Engineer may prescribe, and the Engineer shall fix the terms on which the said extension may be granted. An application by the Contractor for an extension of time as herein provided shall be made to the Engineer in writing on the form prescribed at

least fifteen calendar days prior to the date of completion fixed by the contract. Where applicable, all bonds or other surety furnished to the Corporation by the Contractor shall be amended where necessary at the expense of the Contractor to provide coverage beyond the date of any extension of time granted, and the Contractor shall furnish the Engineer with evidence of such amendments of the bonds or other surety.

Any extension of time that may be granted to the Contractor shall be so granted and accepted without prejudice to any rights of the Corporation whatsoever under the contract, and all of such rights shall continue in full force and effect after the time limited in the contract for the completion of the work and whenever in the contract, power and authority is given to the Corporation or the Engineer or any person to take any action consequent upon the act, default, breach, neglect, delay, non-observance or non-performance by the Contractor in respect of the work or contract, or any portion thereof, such powers or authorities may be exercised from time to time and not only in the event of the happening of such contingencies before the time limited in the contract for the completion of the work but also in the event of the same happening after the time so limited in the case of the Contractor being permitted to proceed with the execution of the work under an extension of time granted by the Engineer. In the event of the Engineer granting an extension of time, time shall continue to be deemed of the essence of the contract.

107-3 Assignment, Subletting and Renting

The Contractor shall not assign, transfer or sublet the whole or any portion of the contract, or the whole or any portion of the work to be performed under the contract, without the consent in writing of the Engineer, and the Contractor shall not transfer or assign any monies which may be due or which may become payable under the contract without the consent

In writing of the Engineer, provided that any consent so given shall not under any circumstances relieve the Contractor of liabilities and obligations assumed by him under the contract.

Where a bidder has withdrawn his bid on the contract after the closing of tenders or, having been offered the contract by the Corporation has for any reason failed to enter into it the Contractor shall not assign, transfer or sublet any part of the contract nor shall he rent any equipment required for the contract if such assignment, transfer subletting or rental will result in such bidder or any person, firm or corporation having an interest in such bidder, directly or indirectly receiving any benefit. The Contractor shall not purchase from such bidder or from any firm or corporation having an interest in such bidder, material required for the contract, without the consent of the Engineer in writing.

Except as provided in this subsection, the Contractor, in renting equipment for the contract, shall give preference to competent, qualified and available resident dealers and operators in the general area of the contract.

107-4 Non-Fulfillment of the Contract

If the Contractor fails or neglects to commence or to prosecute the work diligently and at a rate of progress that in the opinion of the Engineer will ensure the entire completion of it within the time limited therefore under the contract, or should the Contractor become bankrupt or insolvent, commit any act of insolvency, abandon the work, or fail to observe and perform any of the provisions of this

contract, of which the Engineer shall be the sole judge, or should the Contractor default in the completion of the work within the time or extended time limited therefore under the contract, then in any of such cases, the Engineer may notify him to discontinue all work under the contract, and the Corporation may then employ such means as it may deem necessary to complete the work, and in such a case the Contractor shall have no claim for further payment in respect of work performed and no claim against the Corporation for any loss or damage caused by or resulting from the work being taken out of the control of the Contractor but the Contractor shall be chargeable with and shall remain liable for all loss, damage, expense or cost which may be suffered by the Corporation by reason of such default, bankruptcy, insolvency or act of insolvency. If the said loss, damage, expense or cost exceeds the sum which would have been payable under the contract, if the same had been completed by the said Contractor, the Contractor or his surety, where applicable, shall pay the amount of such excess to the Corporation, and such amount or any portion thereof may be deducted from any monies due or to become due to the Contractor.

107-5 Suspension of Work

The Contractor shall, upon written notice from the Engineer, discontinue or delay any or all of the work when, in the opinion of the Engineer it is unwise to proceed for any reason whatsoever, and the work shall not be resumed until the Engineer shall in writing so direct.

107-6 Losses and Damages

Except as otherwise provided for in the contract all loss or damage occasioned to the work or arising out of the nature of the work to be done, or from the normal action of the elements or from any reasonably foreseeable circumstance in the prosecution of the same, or from any

normal difficulties which may be encountered in the prosecution of the work, having regard to the nature thereof, shall be sustained and borne by the Contractor at his own expense and all material required to replace any defective or rejected work, or to restore any failure shall be at the expense of the Contractor.

107-7 Labour Disputes

Except to the extent that relief is granted under subsection 107-2, the Contractor shall bear the risk and responsibility of any loss, damage or expense to the work or to himself of any nature and kind whatsoever arising from strikes or labour disputes other than such loss, damage or expense caused by the failure of the Corporation to meet its obligations under the contract.

107-8 Character and Employment of Workers

The Contractor shall employ only orderly, competent and skilful workers to do the work and shall give preference to available residents in the area of the contract. Whenever the Engineer shall inform him in writing that any worker on the work is, in the opinion of the Engineer, incompetent, unfaithful or disorderly, such worker shall be discharged from the work and shall not again be employed on the work without the consent in writing of the Engineer.

107-9 Notices by the Contractor

Before work is carried out which may affect any department or agency of government or any person, partnership or corporation including a municipal corporation or any board or commission thereof, and in addition to such notices of the commencement of specified operations as are prescribed elsewhere in the contract, the Contractor shall give at least 48 hours

advance notice of the date of commencement of such work, to the person, partnership, corporation, board, or commission so affected.

In the case of damage to, or interference with any utilities, pole lines, pipe lines, farm tiles, or other public or other privately owned works, the Contractor shall immediately notify the owner and the Engineer of the location and details of such damage or interference.

The Contractor shall post prominently and maintain on the site of the work and wherever else the Engineer may require, legible copies of any notice, schedule or other information that he is required to post under this contract or under any statute, regulation, by-law or agreement.

107-10 Obstructions

The Contractor assumes all the risks and responsibilities arising out of any obstruction on or under the highway right-of-way and any traffic conditions caused by such obstruction including traffic conditions on any highway or road giving access to the contract area and he shall not make any claim against the Corporation for any loss, damage or expense occasioned thereby.

During the course of the contract, it is the Contractor's responsibility to consult with municipal authorities or utility companies for further information in regard to the exact location of utilities, to exercise the necessary care in construction operations, and to take such other precautions as are necessary to safeguard the utility from damage.

107-11 Limitations of Operations

Except for such work as may be required by the Engineer to maintain the works in a safe and satisfactory condition, the Contractor shall not carry his operations under the contract on Sundays without permission in writing of the Engineer.

FORM M-100

APRIL 1983

(Revised 83-04-05)

- 19 -

The Engineer may, in writing, require the Contractor to cease or limit his operations under the contract on any day or days if the operations are of such a nature or if the work is so located or if the traffic is of such a

volume that the Engineer deems it necessary or expedient so to do.

107-12 Time of the Essence of the Contract

Time shall be deemed to be of the essence of the contract.

SECTION 108

PAYMENT

108-1 Price for Work

The Contractor shall accept the compensation as herein provided in full payment for furnishing all necessary materials, labour, tools, equipment, supplies and other incidentals and for performing all work under the contract.

108-2 Advance Payments to Contractor

Subject to the approval in writing of the Engineer, advanced payment for materials intended for use in the work may be made to the Contractor, upon his written request, according to the terms and conditions hereinafter specified.

1. The Contractor shall, in advance of receipt of the shipment of the material, arrange for adequate and proper storage facilities and notify the Engineer of the location(s) of the same.
2. The value of aggregates, processed and stockpiled, shall be assessed according to the following percentage of the tender item unit price for the appropriate material.
 - (a) Granular A and 16mm crushed material shall be assessed at the rate of 60% of the tender item unit price.
 - (b) Coarse aggregates for hot mix asphaltic concrete, surface treatment, and batched-on-site portland cement concrete, shall be assessed at the rate of 30% of the tender item unit price.

Payment for granular materials and aggregates obtained from commercial sources will be considered only if the material is hauled and stockpiled at a location

other than a commercial source.

3. Payment for all other materials, unless otherwise specified elsewhere in the contract, shall be based on the invoice price paid by the Contractor, and the Contractor shall submit proof of payment to the Engineer before payment can be made by the Corporation.
4. The payment for all materials shall be prorated against the appropriate tender item by paying for sufficient units of the item to cover the value of the material. Such payment shall not exceed 80% of the contract price bid for the item.
5. All materials for which the Contractor wishes to receive advance payment shall be placed in the designated storage location immediately upon receipt of the material and shall thenceforth be held by the Contractor in trust for the Corporation as collateral security for any monies advanced by the Corporation and for the due completion of the said work. The Contractor shall not exercise any act of ownership inconsistent with such security, or remove any material from the storage locations, except for inclusion in the work, without the consent, in writing, of the Engineer.
6. The said materials shall remain at the risk of the Contractor who shall be fully responsible for any loss, damage, theft, improper use or destruction of the material however caused.

108-3 Prices and Payments

Within forty days from the commencement of the

work on a date to be determined by the owner and monthly thereafter, an estimate in writing will be made by the Engineer of the amount of work done and material furnished and of the value thereof according to the terms of the contract. The first estimate will be of the amount or quantity and value of the work done since the Contractor commenced the performance of the contract, and every subsequent estimate, except the final one, will be the amount or quantity of work done since the last preceding estimate was made. Two copies of each estimate will be delivered to the Contractor by the Engineer. The Contractor shall present to the Corporation one copy of the estimate certified by him to be correct in the manner prescribed by the Corporation.

Within twenty (20) days of the receipt of one copy of the estimate, certified as aforesaid and upon its approval by the Engineer, the Corporation subject to sub-sections 106-1 shall pay to the Contractor, 90% of such estimated value.

When the contract is duly completed in accordance with the terms herein contained, and the entire work is accepted by the Engineer, the Corporation will, after the expiration of 45 calendar days from the date of acceptance, pay to the Contractor such amounts of the estimated value of the work done and material furnished in accordance with the terms of the contract including Extra Work under Section 103-3 in excess of the amounts paid under the preceding paragraph as the Corporation deems proper.

Following the acceptance of the entire work by the Engineer, a final detailed statement shall be made by the Engineer of the value of all the work done and material furnished under the contract including work done or material furnished as Extra Work under Section 103-3 and within 5 months after the date of acceptance

of the entire work two copies thereof shall be delivered to the Contractor. Within 30 days after such delivery to him, the Contractor shall present to the Corporation, one copy of such detailed statement certified by him to be correct and also on the forms prescribed, Contractor's and Subcontractor's verification certificates and a Worker's Compensation Board clearance certificate. Upon receipt by the Engineer of the verified statement and certificates and except as herein otherwise provided, there shall be paid to the Contractor within one month of the date of receipt by the Corporation of the certified detailed statement, an amount equal to the amount of the said detailed statement, less all amounts previously paid to the Contractor, provided that the Corporation may retain any portion of such payment that it deems necessary for its protection against claims for liabilities or for protection against any claims that the Corporation may have against the Contractor, under this contract or otherwise.

Delay by the Corporation in making any payment due to the Contractor following the acceptance of the entire work by the Engineer for work done or material furnished under the contract and listed on the final detailed statement, shall be deemed not to be a breach of the contract by the Corporation but the Corporation shall, in respect of any such payment made more than seven months after the date of acceptance of the entire work by the Engineer, pay the Contractor the "Rate(s) of Interest" for the period from the day next following the expiration of the said seven month period to the date of payment.

Except as provided in this section, the Corporation shall not pay interest on any amount which may at any time become payable to the Contractor under this Contract.

108-4 Payment for Extra Work on a Time and Material Basis

For the purposes of this section, "Cost of Labour" means the amount of wages, salary and payroll burden paid or incurred directly by the Contractor to or in respect of labour and supervision by foremen actively and necessarily engaged on the extra work based on the recorded time and hourly rates of pay for such labour and supervision, but shall not include any payment or costs incurred for general supervision, administration or management time spent on the entire work or any wages, salary or payroll burden for which the Contractor is compensated by any payment made by the Corporation for equipment.

"Payroll Burden" means the payments in respect of workmen's compensation, vacation pay, unemployment insurance, public liability, and property damage insurance, sickness and accident insurance, pension fund and such other welfare and benefit payments as form part of the Contractor's normal labour costs and shall include any cost or expense as the Engineer may approve, which has been incurred by the Contractor for food, lodging or similar items.

"Cost of Material" means the cost of material purchased by the Contractor for the extra work as shown by itemized invoices and the cost of material from the Contractor's stock used on the extra work, valued at current prices.

"The 527 Rate" means the rate for a unit of equipment as listed in MTC Form 527 (Schedule of Rental Rates for Construction Equipment) which is current at the time the extra work is carried out or for equipment which is not so listed, the rate which has been calculated by the Corporation, using the same principles as used in determining the 527 rates.

"Rented Equipment" means equipment that is

rented or leased on an ad hoc basis from a person, firm or corporation that is not an associate or affiliate of the lessee as defined by the Securities Act RSO 1980, Chapter 466, but does not include equipment under a rental purchase agreement, a lease purchase agreement or under a lease or rental agreement.

"Working Time" means each period of time during which a unit of equipment is actively and of necessity engaged on a specific operation and the first two hours of each immediately following period during which the unit is not so engaged but during which the operation is otherwise proceeding and during which time the unit cannot practically be transferred to other work but must remain on the site in order to continue with its assigned tasks and during which time the unit is in a fully operable condition.

"Standby Time" means any period of time which is not considered working time and which together with the working time does not exceed 10 hours in any one working day and during which time a unit of equipment cannot practically be used on other work but must remain on the site in order to continue with its assigned task and during which time the unit is in fully operable condition.

"Work" means Extra Work approved by the Engineer pursuant to Section 103-3 and paid for on a time and material basis. Such work may be supervised by the Engineer and shall be carried out by an equipment and labour force and in such a manner as the Engineer may permit in writing. The work shall be subject to all the terms, conditions, specifications and provisions of the Contract.

Daily work records prepared by the Engineer and reporting the labour and equipment employed and the material used on each extra work project, shall be reconciled and signed by the Contractor's representative each day.

Except where there is agreement to the contrary prior to the commencement of the work, the compensation as herein provided shall be accepted by the Contractor as compensation in full for all costs and expenses arising out of the extra work and no other payment or allowances will be made in respect of such work.

The Corporation will pay the Contractor for labour and supervision employed on each extra work project, at the rate of 135% of the cost of labour up to \$1,000 plus 120% of any portion of the cost in excess of \$1,000.

The Corporation will pay the Contractor for material used on each extra work project, 120% of the cost of material up to \$1,000 plus 115% of any portion of the cost in excess of \$1,000.

The Corporation will pay the Contractor for the working time of equipment other than rented equipment on the basis of 527 Rates, with a cost adjustment as follows:

- (a) Where the cost based on 527 rates of all non rented equipment used on the extra work project is \$5000 or less, there will be no adjustment.
- (b) Where the cost based on 527 rates of all non rented equipment used on the extra work project is greater than \$5000 but less than \$10,000 the Corporation will pay the Contractor \$5000 plus 90% of the portion in excess of \$5,000.
- (c) Where the cost based on 527 rates of all non rented equipment used on the extra work project is greater than \$10,000 the Corporation will pay the Contractor \$9500 plus 80% of the portion in excess of \$10,000.

The Corporation will pay the Contractor for the working time of rented equipment used on the extra work project at 105% of 527 rates.

Where the Contractor makes use of operated rented equipment, the Corporation will pay the Contractor for the working time of operated rented equipment used on the extra work project at 105% of the operated equipment invoice price approved by the Engineer prior to the work being carried out.

The Corporation will pay the Contractor for the standby time of equipment other than rented equipment at one third the 527 Rate. In addition, the Corporation will include in the cost of labour, the wages, salary and payroll burden of the operator or operating crew who cannot be otherwise employed during the standby period.

The Corporation will pay the Contractor for the standby time of rented equipment and for the downtime of rented equipment which has been idled by the circumstances giving rise to the extra work project, at 35% of the 527 rate. In addition, the Corporation will include in the cost of labour, the wages, salary and payroll burden of the operator or operating crew who cannot be otherwise employed during the standby period or during the period of enforced idleness. Alternatively, however, the Engineer may require rented equipment idled by the circumstances giving rise to the extra work project, to be returned to the lessor until the work requiring the equipment can be resumed, in which case, the Corporation will pay such costs as result directly from the enforced return of the equipment.

When equipment is transported to or from the site of the work, payment will be made by the Corporation only in respect to the transporting units. When equipment is moved under its own power it shall be deemed to be working. The method of moving the equipment and the rates

shall be subject to the approval of the Engineer.

Where the Contractor arranges for extra work, on a time and material basis, to be carried out by others and has received approval prior to the commencement of the work, the Corporation shall pay the Contractor 105% of the compensation as herein provided. However, such percentage allowance over the prescribed compensation shall apply only once regardless of the number of times the work has been assigned or sublet and no percentage allowance over the prescribed compensation will be paid to any associate or affiliate as defined by the Securities Act, R.S.O. 1980, Chapter 466 or in respect of any compensation for rented equipment.

Notwithstanding any other provision of this section, no payment shall be made to the Contractor for or in respect of hand tools or equipment that are tools of the trade.

Each month, the Contractor may submit an Invoice to the Engineer covering work performed on the extra work project during the preceding month and to the extent that the work covered by the Invoice can be verified by the Engineer, the Invoice will be processed by the Corporation for payment.

The final Invoice shall be submitted by the Contractor within 30 days after the completion of the extra work project.

Separate Invoices shall be submitted in triplicate for each extra work project. Each Invoice shall include the order number and covering dates of the work and shall itemize separately, labour, materials and equipment and submitted with the Invoice, shall be Invoices for materials, rented equipment and other charges incurred by the Contractor on the extra work.

108-5 Measurement of Excavated Materials

Whenever this contract requires the payment for excavation at a price per unit of volume, then the volume shall be measured in the original position and computed in the appropriate units by the method of average end areas unless otherwise provided for under the specifications for the item of work requiring their use.

108-6 Contractor's Discharge of Liabilities

The Contractor shall discharge and cause each Subcontractor to discharge all liabilities incurred for labour, materials or services, used or reasonably required for use in the performance of this contract on the date upon which each becomes due. At the request of the Corporation, the Contractor shall furnish the Corporation with evidence satisfactory to it that his liabilities and those of the Subcontractors, as aforesaid, have been discharged and this shall include a certificate or certificates from the Worker's Compensation Board that they have complied with the requirements of the Worker's Compensation Board and are in good standing on the books of the Board.

No payment to which the Contractor is otherwise entitled under this contract shall at the discretion of the Corporation be due and payable to him so long as he or any Subcontractors are in default under this section, and upon such default occurring, the Corporation may in respect of claims submitted by creditors having a contractual relationship with the Contractor, after notice in writing to the Contractor and his Surety, if any, withhold payment on the whole or any part of any such liability of the Contractor. Interest will not be paid on any such funds withheld.

108-7 Payment of Workers

The Contractor shall, in addition to any fringe benefits, pay the workers employed by him on the work in accordance with the Labour Conditions set out in the Special Provision of this contract and at intervals of not less than twice a month or in accordance with the Labour Conditions in any Corporation By-Law, whichever is the more frequent.

The Contractor shall require each Subcontractor or other person doing any part of the work contemplated by this contract to covenant with the Corporation that he shall pay the workmen employed by him on the work at the wage rates and in the manner required by this section.

Where any person employed by the Contractor or any Subcontractor or other person on work contemplated by this contract is paid less than the amount required to be paid under this contract, the Corporation may deduct from any monies payable to the Contractor under this or any other contract and pay to such person a sum sufficient to bring that person's wages up to the amount required to be paid under this contract.

108-8 Books, Payrolls, Accounts and Records

The Contractor shall maintain and keep sufficiently complete and accurate books, payrolls, accounts and records relating to the work or any extensions or additions thereto or claims arising therefrom to permit the verification and audit thereof and he shall have no claim for repayment of any nature and kind whatsoever therefore, unless such books, payrolls, accounts and records have been so maintained and kept.

Daily work records prepared by the Engineer and reporting the labour and equipment employed and the material used on any specific portion of the work, shall be reconciled with and signed by the Contractor's representative each day, whenever in the opinion of the Engineer such records are required.

The Corporation or the Ministry of Labour or both may inspect and audit the books, payrolls, accounts and records of the Contractor at any time during the period of the contract and at any time thereafter as deemed necessary, and the Contractor shall supply certified copies of payrolls and any other records required whenever requested by the Corporation or the Ministry of Labour.

The Contractor shall preserve all original records pertaining in any way to the work of the contract or any extensions or additions thereto or claims arising therefrom, for a period of 12 months after the date of mailing by the Corporation of the final detailed statement to the Contractor or the final settlement of all claims and negotiations whichever is the longer and the Contractor shall require that all Subcontractors employed by him preserve all original records pertaining in any way to the work of the contract, or any extensions or additions thereto or claims arising therefrom for a similar period of time.

The Contractor shall file with the Corporation forthwith upon the appointment of each Subcontractor a consent and covenant of each Subcontractor under seal by which the Subcontractor agrees to the provisions of this subsection the same way as if the subsection read, "Subcontractor" for "Contractor".

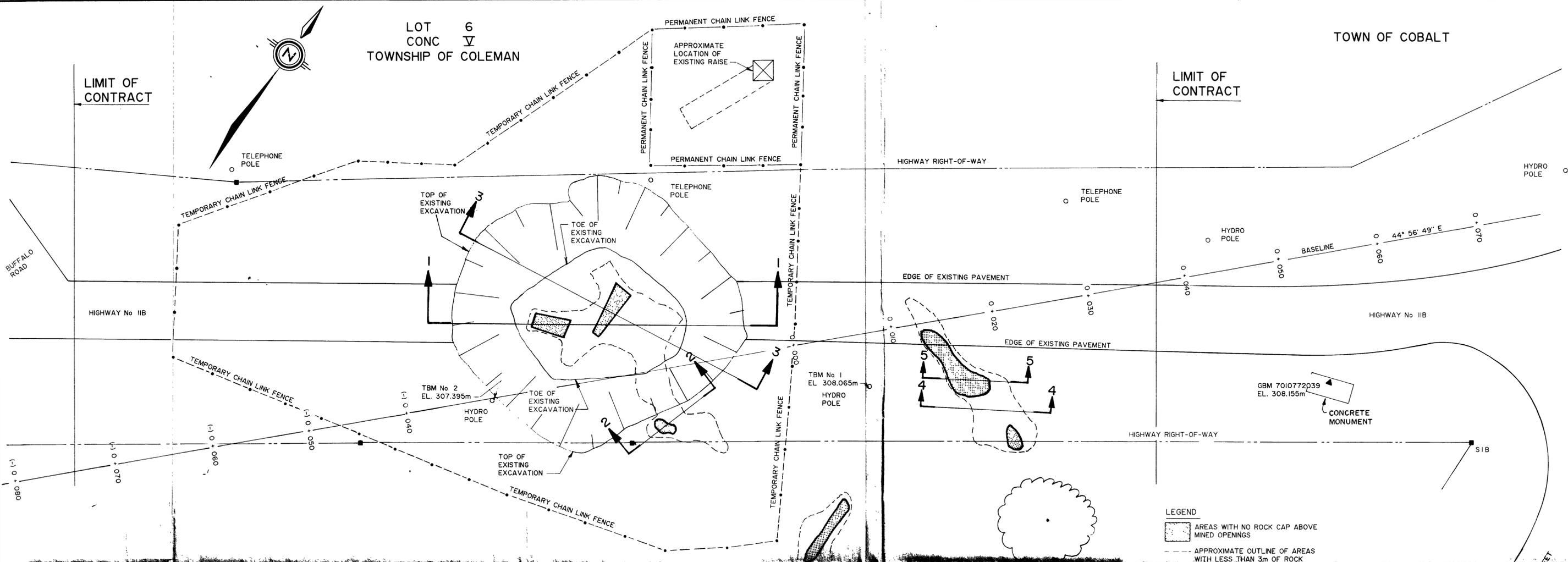
108-9 Fuel and Sales Taxes

The Contractor shall pay all taxes under existing legislation on all fuels and materials used by him in the performance of the contract. The Contractor undertakes not to make any claim for refund of taxes paid by him or any Subcontractor and acknowledges that no

refund of tax shall be granted to him or to any Subcontractor on any fuel and materials used for any purpose whatsoever in the performance of the contract unless such refund is specifically authorized under existing legislation.

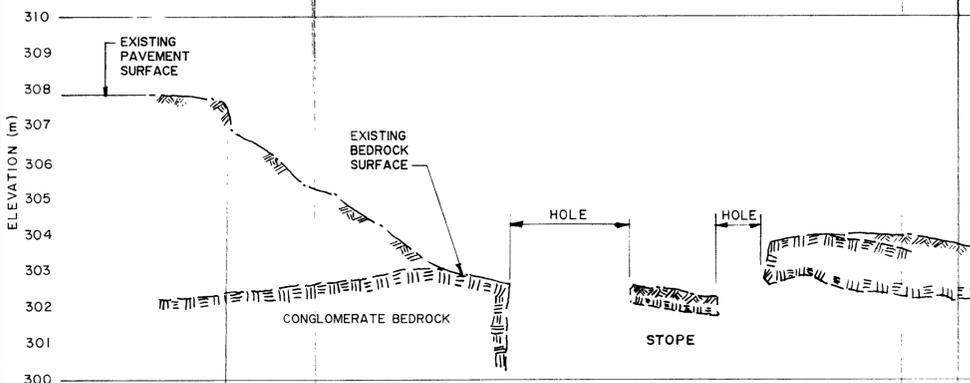
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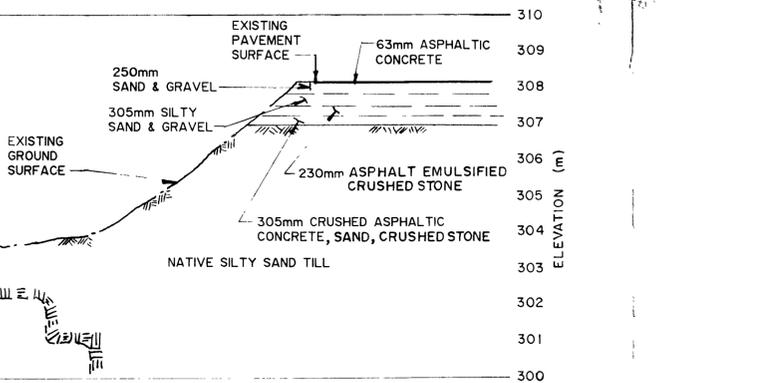


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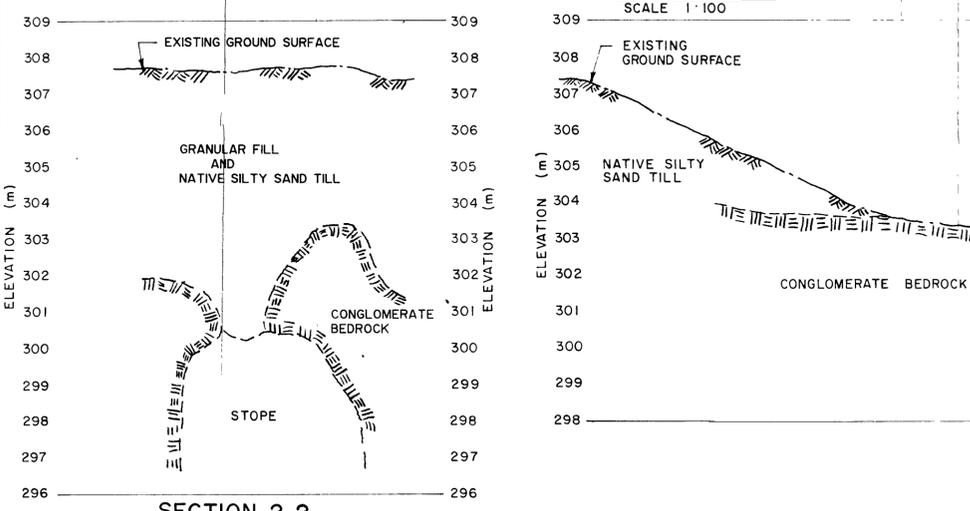
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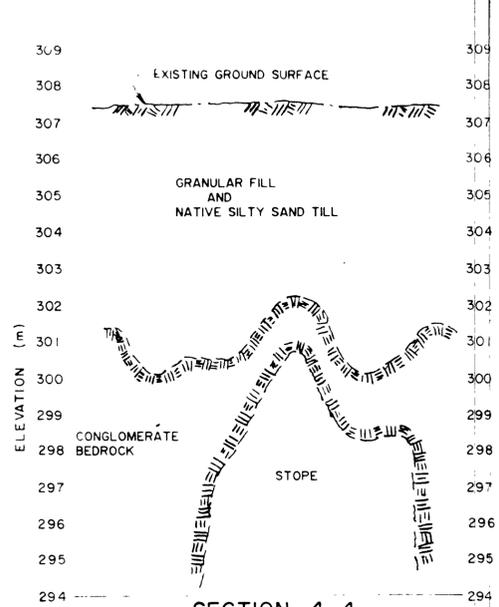
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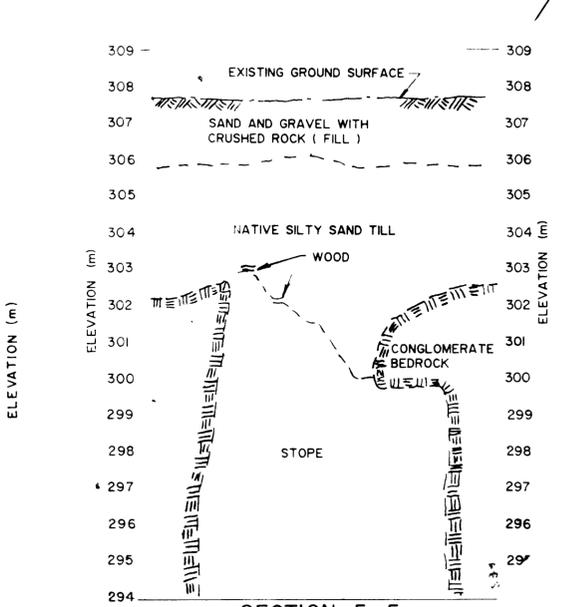
SECTION 2-2
SCALE 1:100



SECTION 3-3
SCALE 1:100



SECTION 4-4
SCALE 1:100



SECTION 5-5
SCALE 1:100

NO.	DATE	REVISION	BY



Golder Associates
CONSULTING GEOTECHNICAL AND MINING ENGINEERS

Morrison Hershfield Limited
Consulting Engineers

COBALT STOPE CAPS
COBALT, ONTARIO

EXISTING CONDITIONS
PLAN & SECTIONS

SCALE: AS SHOWN DATE: SEPTEMBER 1987

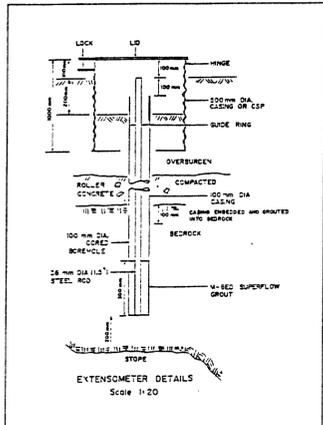
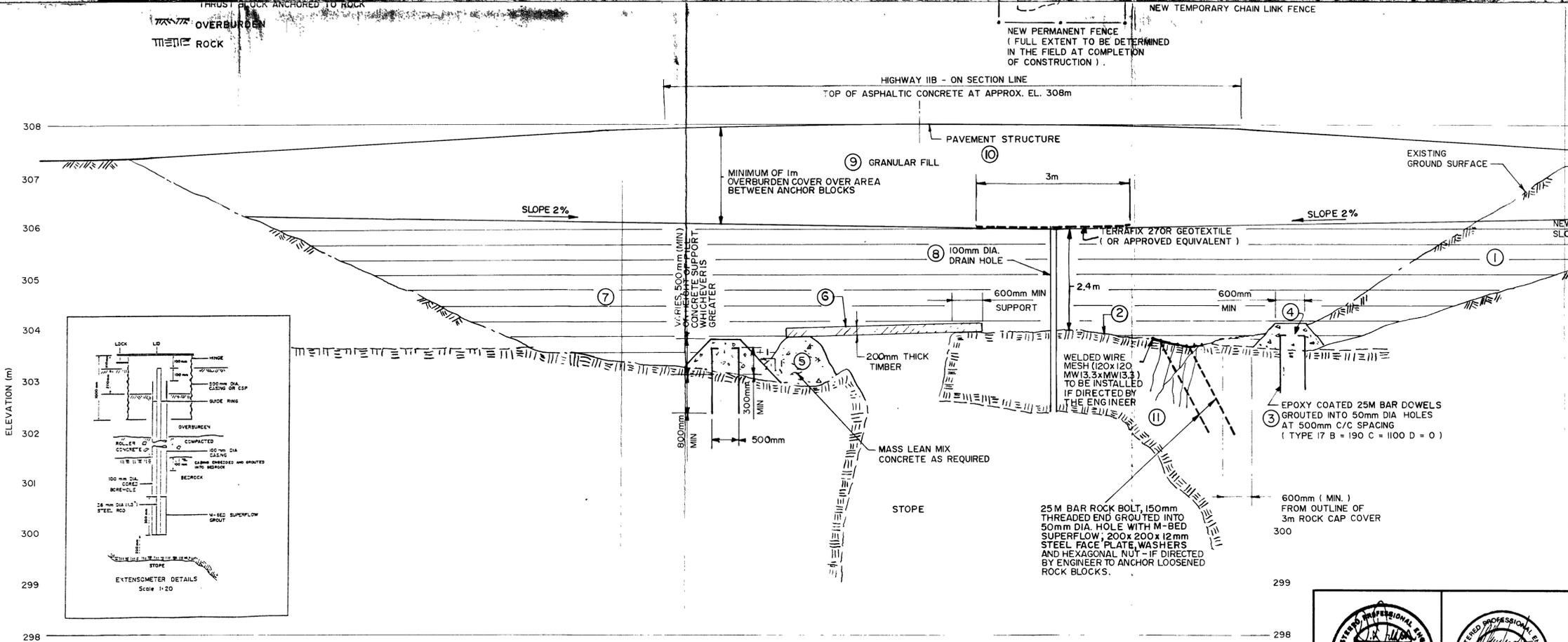
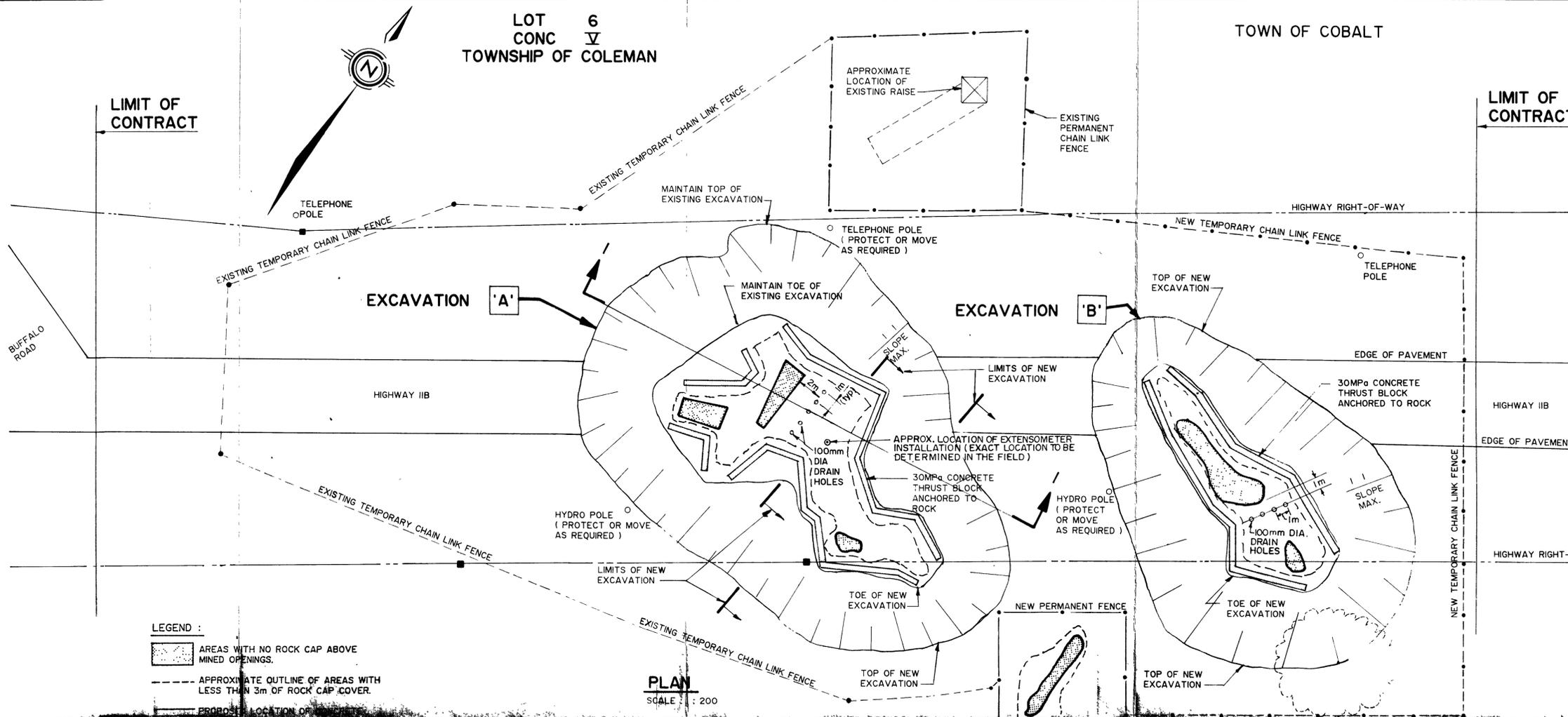
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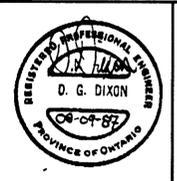
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NOTES

- EXCAVATE TO BEDROCK (B/R) TO MIN. DIMENSIONS SHOWN ON THE DRAWING. TOE OF EXCAVATIONS TO EXTEND AT LEAST 600 mm BEYOND THE 3 m B/R ISOPACH. EXCAVATION SLOPES IN OVERBURDEN (O/B) NO STEEPER THAN 1 (H): 1 (V).
- CLEAN EXPOSED B/R WITH AIR/WATER JET(S)
 - INSPECT B/R; GEOLOGICAL MAPPING
 - CARRY OUT RADAR SURVEY
 - SOUND B/R WITH STEEL WEIGHT/VARIOUS DROPS
 - REPEAT RADAR SURVEY
- DRILL 2 - 50 mm DIA. HOLES, 500 mm APART AT 500 mm C/C SPACINGS TO 800 mm MIN. DEPTH
 - INSTALL 1100 mm LONG DOWELS - DOWELS TO BE EPOXY COATED 25 M BARS GROUTED USING "M-BED" SUPERFLOW GROUT OR APPROVED EQUIVALENT.
- CONSTRUCT THRUST BLOCKS AS SHOWN USING 30 MPa CONCRETE HAVING MAX. SLUMP OF 50 mm.
- CONSTRUCT CONCRETE END SUPPORTS FOR TIMBERS AS REQUIRED ON BOTH SIDES OF "CAVE IN" HOLES. SUPPORTS TO BE LEAN MIX CONCRETE, PLACED IN LAYERS AND COMPACTED (SEE NOTE 7).
- PLACE 200 mm MIN. THICK TIMBERS ACROSS HOLES TO FULLY BLOCK HOLES. TIMBERS TO BE PLACED ON THE CONCRETE SUPPORTS WHILE CONCRETE IS FRESH. TIMBERS TO BE SUPPORTED FOR AT LEAST 600 mm ON BOTH ENDS. TIMBERS TO BE STRAPPED WHERE NECESSARY.
- PLACE "ROLLER COMPACTED CONCRETE" IN 300 mm THICK LIFTS, EVENLY SPREAD ACROSS EXCAVATION STARTING AT THE LOWEST SPOT. VIBRATE AND THEN COMPACT USING WALK BEHIND SMOOTH DRUM VIBRATORY ROLLER HAVING A WEIGHT OF AT LEAST 1000 kg, OR EQUIVALENT AS DIRECTED BY THE ENGINEER. COMPACT BY AT LEAST 2 PASSES.
 - WHERE OBSTRUCTIONS ARE ENCOUNTERED, SMALLER PLATE TAMPING EQUIPMENT TO BE USED.
 - REPEAT PLACEMENT AND COMPACTION TO PROVIDE TOTAL THICKENING OF 2.4 m AS SHOWN. CONCRETE TO BE PLACED WITHOUT DELAY BETWEEN SUCCESSIVE LIFTS. WHEN MORE THAN 12 HOURS ELAPSES BETWEEN LIFTS, THE SURFACE OF THE BASE LIFT MUST BE COMPLETELY WIRE-BRUSHED AND AIR/WATER CLEANED TO PROVIDE ADEQUATE BOND.
 - TOP SURFACE TO BE SLOPED AT 2% TOWARDS THE DRAIN HOLES.
- MIN. 3 DAYS AFTER COMPLETION OF LEAN MIX CONCRETE PLACEMENT, DRILL 100 mm DIA. DRAIN HOLES THROUGH THE CONCRETE AND CAP ROCK AS SHOWN. DRAIN HOLES TO BE SPACED AT 1000 mm C/C.
- PLACE TERRAFIX 270 R (OR EQUIVALENT AS APPROVED BY THE ENGINEER) GEOTEXTILE OVER DRAIN HOLES. GEOTEXTILE TO EXTEND 1.5 m (MIN.) FROM DRAIN HOLES.
 - PLACE PIT RUN GRANULAR FILL HAVING MAX SIZE OF 150 mm IN 300 mm LOOSE LIFTS AND COMPACT TO MIN. 95% OF THE STANDARD PROCTOR MAX. DRY DENSITY.
- CONSTRUCT THE PAVEMENT STRUCTURE TO MATCH THE EXISTING SURFACE PROFILE. PAVEMENT STRUCTURE TO CONSIST OF:
 - 75 mm HL-4 ASPHALTIC CONCRETE TO OPSS SPECIFICATION 1150 (1983).
 - 150 mm M.T.C. GRAN 'A' TO OPSS SPECIFICATION 1010 (1983).
 - 300 mm M.T.C. GRAN 'B' TO OPSS SPECIFICATION 1010 (1983).
 - ASPHALTIC CONCRETE AND GRANULAR MATERIALS TO BE COMPACTED TO MIN. 96% OF MARSHALL DENSITY AND 100% OF STANDARD PROCTOR MAX. DRY DENSITY, RESPECTIVELY.
- IF REQUIRED, AS DETERMINED BY THE ENGINEER AFTER COMPLETION OF SOUNDING THE BEDROCK, ROCK BOLTS AND POSSIBLY WIRE MESH ARE TO BE PROVIDED AND INSTALLED AS DIRECTED BY THE ENGINEER TO ANCHOR LOOSE ROCK BLOCKS.
- UPON COMPLETION OF CONSTRUCTION OPERATIONS, A 36 mm DIAMETER STEEL ROD SHALL BE GROUTED INTO A 100 mm DIAMETER PRE-CORED AND CASED BOREHOLE AS SHOWN ON THE DETAILED SECTION. THE UPPER 500 mm LENGTH OF THE HOLE SHALL BE ENLARGED AND CASED TO 300 mm DIAMETER TO ALLOW THE ATTACHMENT OF A GUIDE RING AND GRADUATED RULER FOR MONITORING. THE UPPER LARGER CASING SHALL HAVE A LID AND BE PROVIDED WITH A LOCKING MECHANISM.



No.	DATE	REVISION	BY



Golder Associates
CONSULTING GEOTECHNICAL AND MINING ENGINEERS

Morrison Hershfield Limited
Consulting Engineers

DESIGNED: D D
DRAWN: J C
PROJ. ENG.: M. H. M
APPROVED:
DRAWING NO.:
187-0327-2

COBALT STOPE CAPS
COBALT, ONTARIO
PROPOSED REMEDIAL WORKS
CONSTRUCTION DETAILS.

SCALE: AS SHOWN
DATE: SEPTEMBER 1987