

PART 1 - GENERAL1.1 RELATED
SECTIONS

- .1 Section 03 10 00 - Concrete Forming and Accessories
- .2 Section 03 20 00 - Concrete Reinforcing
- .3 Section 03 30 00 - Cast-in-Place Concrete
- .4 Section 05 50 10 - Aluminum Bridge Fabrication
- .5 Section 31 05 17 - Aggregate Materials.
- .6 Section 31 23 10 - Excavation, Trenching and Backfilling
- .7 Section 31 24 13 - Excavation, Embankment and Compaction
- .8 Section 31 26 13 - Reshaping Roadway Subgrade
- .9 Section 31 32 21 - Geotextiles
- .10 Section 32 11 23 - Fill Materials.
- .11 Section 32 15 50 - Erosion Control.
- .12 Section 32 91 21 - On-Site Soil Amendment and Grading.
- .13 Section 32 91 24 - Dry Mulching.
- .14 Section 32 92 21 - Hydraulic Seeding.
- .15 Section 35 42 60 - Waterway Channel Maintenance.

1.2 SECTION
INCLUDES

- .1 Title and description of Work.
- .2 Alterations to existing.
- .3 Existing services.
- .4 Contract method.
- .5 Work sequence.
- .6 Contractor use of premises.

1.3 PRECEDENCE

- .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract generally comprises the following:
 - .1 Mobilization, including but not limited to: provision of contract security, provision of insurance, preparation of health and safety plans, preparation of site specific Environmental Protection Plan, provision of site trailer, if required by the Contractor, demobilization, cleanup and any other incidental activities required to complete the work.
 - .2 Provision of erosion control measures during construction, including a silt boom upstream of the outlet to Edwards Pond as may be required to meet applicable regulations. Erosion control measures to include installation of equipment and maintenance throughout the duration of the project to meet applicable regulations.
 - .3 Removal of existing wooden bridge and the concrete supports.
 - .4 Construction of a reinforced concrete control structure as shown on the drawings.
 - .5 Supply and placement of a pedestrian bridge as shown on the drawings.
 - .6 Supply and placement of 75 mm Dia. galvanized steel piping as shown on the drawings to be used to house monitoring equipment.
 - .7 Construction of control structure approach berms and trail gravels
 - .8 Dewatering as required to install the concrete control structure, approach berms and all other aspects of the work.
 - .9 Placement of materials excavated for construction of the control structure foundation in the approach berms as

instructed by the Departmental Representative.

- .10 Reinstatement of the site access roads and general cleanup at completion of the work.

1.5 EXISTING SERVICES

- .1 Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Carry out work at times as directed by governing authorities with minimum disturbance to pedestrian and vehicular traffic.
- .3 Confirm location and extent of service lines in area of work with utility companies before starting Work. Notify Departmental Representative of findings.

Note: CBRM sewer lines are located in the trail/roadway running from Pitt Street to the Sydney Harbour.

- .4 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .5 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.

1.6 WORK SEQUENCE

- .1 Contractor is required to obtain the necessary permit from Nova Scotia Environment (NSE) for construction of the works before proceeding with the work. To assist with expediting this approval process, PWGSC have provided NSE with drawings and specifications for the project in advance of the tender call. Concerns of NSE have been outlined in Section 01 35 43 Environmental Procedures.
- .2 Construct Work in stages to accommodate logical progression of work and

coordination of site activities to minimize impacts to the surrounding community, private residential.

- .3 Coordinate work to minimize environmental impacts and to facilitate a steady stream of progress.
- .4 Work to be scheduled and constructed to allow for quality control and quality assurance to occur in a logical and efficient manner.

1.7 CONTRACTOR RESPONSIBILITIES

- .1 Contractor Responsibilities:
 - .1 Designate submittals and delivery date for each product in progress schedule.
 - .2 Review shop drawings, product data, samples, and other submittals. Submit to Departmental Representative notification of any observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
 - .3 Inspect materials jointly with Departmental Representative, record shortages, and damaged or defective items.
 - .4 Handle products at site, including handling and storage.
 - .5 Protect products from damage, and from exposure to elements.
 - .6 Assemble, install, connect, adjust, and finish products.
 - .7 Provide installation inspections required by public authorities.
 - .8 Repair or replace items damaged by Contractor or subcontractor on site (under his control)
 - .9 Acquisition of NSE Approvals prior to commencement of work.

1.8 DOCUMENTS

REQUIRED

- .1 Maintain at job site, one copy each document as follows:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders.
 - .5 Other Modifications to Contract.
 - .6 Field Test Reports.
 - .7 Copy of Approved Work Schedule.
 - .8 Health and Safety Plan and Other Safety Related Documents.
 - .9 Environmental Protection Plan.
 - .10 Other documents as specified.

PART 1 - GENERAL1.1 GENERAL

- .1 Unit rate and Lump Sum items bid are full compensation for the work necessary to complete each item in the Contract in the Form of Tender. The prices bid are complete and separate from other or related bid items.
- .2 All measurements shall be along the actual surface to be measured except where noted in the individual measurement and payment items.
- .3 Additional instructions for measurement and/or payment for items of the Work may be contained in specific sections of the Technical Specifications. In the case of a conflict between the instructions for measurement and payment contained in this section and another section, the requirements of this section shall govern.

1.2 LUMP SUM PRICES**.1 Mobilization/Demobilization:**

- .1 Consists of but is not necessarily limited to transport of equipment to and from project site, establish site field office and all temporary facilities, security, secure all necessary regulatory permits, insurance and bonding, establish health, safety and environmental protocols and associated submittals, establish site survey control and the construction and maintenance of all necessary temporary roads including re-instatement of existing site access roads at the completion of work.

.2 Erosion Controls:

- .1 There will be no measurement for payment for Erosion Controls.
- .2 Payment for erosion controls will be lump sum. This item includes all costs associated to provide proper erosion and sediment control and protection for the project, to meet the specifications and applicable

regulations. Work will include the supply, installation and maintenance of a silt boom prior to the outlet of Edwards Pond as may be required to meet applicable regulations. Also included is the preparation of an Erosion and Sediment Control Plan to be provided by the Contractor as part of this contract. The required work to maintain the erosion control features, which is also to include the removal of sediment build up, as required, and disposal of same by burying on-site in the control structure approach berms is also to be captured in this lump sum pay item. Removal of all existing and new erosion control features at the completion of the works is also included.

.3 Water Control:

- .1 There will be no measurement for payment for water control.
- .2 Payment for water control shall be Lump Sum. This item includes all costs associated with the control of water levels at the outlet structure to allow the installation of the reinforced concrete control structure. This item will include all equipment, labour and materials as required to provide pumps, sandbags, dewatering sumps, and any other measures that may be required to carry out the work.

.4 Cast-in-Place Concrete:

- .1 Measurement for payment for cast-in-place concrete shall be Lump Sum and shall include all cast-in-place features including concrete weir, retaining walls, abutments, stop logs, wooden sill board, misc. metals, and inserts. Excavation and backfilling for concrete structures is to be included in this item. Also included is disposal of excavated materials for the weir structure at the base and within the approach berms. Backfill

around and under the structures will consist of Type 1 and Type 2 granulars, Type C3 and Type C4 clear stone and Type 4 till as shown on the drawings. Price is to include supply, placement, and compaction of the backfill materials as noted above in and around the limits of the concrete structure, except Type C3 clear stone, payment for which will be by unit rate (see Item 1.3.4). Payment for Type 1 granulars on the approach berm trail surface within the concrete structure will be by unit rate (see Item 1.3.2.2).

.5 Pedestrian Bridge:

- .1 There will be no measurement for payment for the design, fabrication, delivery and installation of the Pedestrian Bridge.
- .2 Payment for the fabrication, delivery and erection of the complete Pedestrian Bridge Structure and ancillary equipment, including fencing, edge guard for fencing, wooden rail, grating, S.S. bearing plates, slide pads, anchor bolts and grouting shall be lump sum. This item shall include all costs for preparation and submission of stamped shop drawings, fabrication, labour materials, equipment and delivery required to supply and install the Pedestrian Bridge as shown on the drawings and as described in these specifications to the full satisfaction of the Departmental Representative. This item will also include signage indicated the maximum allowable loading for the Pedestrian Bridge as indicated in Section 05 50 10 and as shown on the drawings.

.6 Soil Amendment, Dry Mulching and Hydraulic Seeding of Disturbed Areas:

- .1 There will be no measurement for payment for Soil Amendment, Dry

Mulching and Hydraulic Seeding of areas disturbed by the Contractor during the course of the work.

.2 Payment for Soil Amendment, Dry Mulching and Hydraulic Seeding of Disturbed Areas shall be a Lump Sum item for work carried out in accordance with the relevant specification sections for stabilizing disturbed areas.

.7 Remove existing bridge:

.1 There will be no measurement for payment for Remove existing bridges.

.2 Payment for removal of the existing wooden bridge and the concrete supports will be lump sum. This item includes all costs associated to remove the wooden bridge and concrete supports and properly dispose of these items at an approved disposal site.

.8 75 Dia. Galvanized Steel Piping:

.1 There will be no measurement for payment for the supply and install of the 75 mm Dia. Galvanized steel piping as identified on the drawings.

.2 Payment for the supply and install of the 75 mm Dia. Galvanized steel piping will be lump sum. This item includes all costs associated with the supply, fabrication and installation, complete with all anchoring systems and miscellaneous items required to complete the installation as shown on the drawings.

1.3 UNIT RATE PRICES

.1 Type 4 Imported Till

.1 Measurement for payment for the supply and placement of Type 4 Imported Till shall be the number of cubic metres of material successfully placed to construct the approach berms north and south of the control structure,

all as noted on the drawings. Calculations of volume shall be based on cross sections determined by the Contractor and verified by the Departmental Representative, measured from the exposed subgrade after all excavation operations are complete to the final grade after all Type 4 Till has been placed. Any excavation which is beyond indicated lines and grades will not be measured or paid for without prior approval of the Departmental Representative through a contract change order.

- .2 Payment for Type 4 Till shall be made at the tendered applicable unit price for the unit of measure stated in the Bid Form and shall include all costs for the purchase, delivery, placement and compaction to the required thickness of Type 4 Till in the areas noted on the contract drawings, except Type 4 Till included in backfilling the front section of the weir as noted under item 1.2.4 and as shown on the drawings.

.2 Type 1 and 2 Granular Fill:

- .1 There is no direct payment for supply and placement of Type 2 Granular Fill in the areas noted on the contract drawings in and around the concrete weir structure as described under item 1.2.4.
- .2 Payment for Type 1 Granular Fill shall be made at the tendered unit price for the unit of measure stated in the Bid Form and shall include for all costs for the delivery, placement grading and compaction to the required thickness for construction of the approach berm trail. Payment for the supply, placement and compaction of Type 1 Granular Fill shall be based on the number of tonnes of material successfully placed to the lines and thickness noted on the contract drawings except for the Type 1

Granular Fill noted for the subgrade layer beneath the box weir slab, which is to be included under Item 1.2.4 in the lump sum price for Cast-In-Place Concrete. Measurement will be based on scale tickets signed by the Departmental Representative.

.3 Type R5 Riprap:

- .1 Measurement for payment for the supply and placement of Type R5 Riprap shall be the number of tonnes of material successfully placed to the thickness noted on the contract drawings. Measurement will be based on scale tickets signed by the Departmental Representative.
- .2 Payment for Type R5 Riprap shall be made at the tendered applicable unit price for the unit of measure stated in the Bid Form and shall include all costs for the purchase, delivery, placement to the required thickness of the Type R5 Riprap in the areas noted on the contract drawings.

.4 Type C3 Clear Stone:

- .1 Measurement for payment for the supply and placement of Type C3 Clear Stone shall be the number of tonnes of material successfully placed as noted on the contract drawings. Measurement will be based on scale tickets signed by the Departmental Representative.
- .2 Payment for Type C3 Clear Stone shall be made at the tendered applicable unit price for the unit of measure stated in the Bid Form and shall include all costs for the purchase, delivery, placement, grading, and compaction to the requirements and thicknesses of the Type C3 Clear Stone in the areas noted on the contract drawings.

.5 Non-Woven Geotextile Fabric:

- .1 Measurement for payment for the supply and placement of the Non-Woven Geotextile Fabric shall be the number of square metres of material successfully placed to lines shown on the drawings. Overlapping will not be measured for payment. Measurement will be along the actual surface for a true measure of the surface area.
- .2 Payment for the Non-Woven Geotextile Fabric shall be made at the tendered applicable unit price for the unit of measure stated in the Bid Form and shall include all costs for the purchase, delivery, and placement of the Non-Woven Geotextile Fabric in the areas shown on the contract drawings.

.6 Grubbing:

- .1 Measurement for payment for grubbing shall be the number of square metres removed to a minimum depth of 300 mm in vegetated areas requiring placement of Type 4 Till or Selected Backfill for construction of weir approach berms.
- .2 Payment for grubbing shall be made at the tendered applicable unit price for the unit of measure stated in the Bid Form and shall include all costs for removal of grubbing material as well as proper disposal, shaping and stabilizing grubblings on the site as directed by the Departmental Representative.

.7 Common Excavation:

- .1 Measurement for payment for the common excavation required for widening the Edwards Pond Outlet and other work, except for excavation of the outlet structure foundation covered under Item 1.2.4 shall be the

number of cubic metres of material successfully excavated for possible reuse as per the details noted on the contract drawings or for disposal on site if deemed surplus. At the commencement of the excavation the contractor shall take and record longitudinal sections and cross-sections to determine the form and elevations of the ground surface. A further series of sections shall be taken at the completion of common excavation. All such sections will be checked by the Departmental Representative and mutually agreed upon between the Contractor and the Departmental Representative and shall not thereafter be subject to dispute. Measurement will be by survey performed by Contractor's surveyor and the data collected is to be conveyed to the Departmental Representative for verification.

Payment for Common Excavation shall be made at the tendered applicable unit price for the unit of measure stated in the Bid Form and shall include all costs for the excavation to the lines noted on the contact drawings and possible disposal on site if the material is deemed surplus as well as required survey for measurement of quantities for this item.

.8 Selected Backfill:

.1 Measurement for payment for selected backfill of surplus suitable materials excavated during common excavation except for backfill generated from excavation of the outlet structure foundation shall be the number of cubic metres of material successfully placed and compacted as indicated on the contract drawings.

.2 Payment for Selected Backfill shall be made at the tendered

applicable unit price for the unit of measure stated in the Bid Form and shall include all costs for transportation of common excavation material to the area to be backfilled and compaction to the lines and elevations indicated on the contract drawings.

PART 1 - GENERAL

- 1.1 PRECEDENCE .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 1.2 DEFINITIONS
- .1 Activity: An element of Work performed during course of Project. An activity normally has an expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart). A graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: Original approved plan (for Project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: Number of work periods (not including holidays or other nonworking periods) required to complete an activity or other Project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: A summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: A significant event in Project, usually completion of major deliverable.
- .8 Project Schedule: The planned dates for performing activities and the planned dates for meeting milestones. A dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives.

Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.

- .9 Project Planning, Monitoring and Control System: Overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.

1.3 REQUIREMENTS

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

1.4 SUBMITTALS

- .1 Submit to Departmental Representative within 7 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .2 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

1.5 MASTER PLAN

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

1.6 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as

follows:

- .1 Award.
- .2 Mobilization
- .3 Placement of erosion control measures.
- .4 Construction of reinforced concrete control structure.
- .5 Construction of approach berms
- .6 Fine grading, soil amendment, hydroseeding and mulching disturbed areas
- .7 Substantial completion.

1.7 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule on monthly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.8 PROJECT MEETINGS

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

1.1 RELATEDSECTIONS

- .1 Section 01 45 00 - Quality Control.
- .2 Section 05 50 10 - Aluminum Bridge Fabrication
- .3 Section 31 23 10 - Excavation, Embankment and Compaction.
- .4 Section 31 24 13 - Excavation, Embankment and Compaction.
- .5 Section 31 32 21 - Geotextiles.
- .6 Section 32 11 23 - Fill Materials.
- .7 Section 32 15 50 - Erosion Control.
- .8 Section 32 91 21 - On-Site Soil Amendment.
- .9 Section 32 91 24 - Dry Mulching
- .10 Section 32 92 21 - Hydraulic Seeding.
- .11 Section 03 30 00 - Cast-in-place Concrete.

1.2 REFERENCES

- .1 Public Works Government Services Canada (PWGSC)
 - .1 PWGSC - AES Best Practice - Shop Drawing Review Process - December 2002.

1.3 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are

acceptable.

- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.

1.4 PROGRESS PHOTOGRAPHS

- .1 Submit progress photographs in accordance with Section 01 78 00 - Closeout Submittals.

1.5 CERTIFICATES AND TRANSCRIPTS

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

PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Section 01 33 00 - Submittal Procedures.
- 1.2 SECTION INCLUDES .1 Health and safety considerations required to ensure that PWGSC shows due diligence towards health and safety on construction sites, and meets the requirements laid out in PWGSC/RPB Departmental Policy DP 073 - Occupational Health and Safety - Construction.
- 1.3 PRECEDENCE .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 1.4 REFERENCES .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
 .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 .1 Material Safety Data Sheets (MSDS).
 .3 Province of Nova Scotia
 .1 Occupational Health and Safety Act, S.N.S. 1996.
- 1.5 SUBMITTALS .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
 .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 .1 Results of site specific safety hazard assessment.
 .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
 .3 Safe work procedures for tasks to be undertaken as part of the project activities.
 .4 Excavation Plan for all areas outlining excavation and removal procedures on each site.

- .5 Details of arrangements to prevent public access to the sites.
- .3 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports within 24 hours of the occurrence.
- .6 Submit WHMIS MS - Material Safety Data Sheets in accordance with Section 01 33 00-Submittal Procedures.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 3 days after receipt of comments from Departmental Representative.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

- 1.6 FILING OF NOTICE .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- 1.7 SAFETY ASSESSMENT .1 Perform site specific safety hazard assessment related to project.
- 1.8 MEETINGS .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.
- 1.9 REGULATORY REQUIREMENTS .1 Do Work in accordance with Regulatory Requirements.
- 1.10 PROJECT/SITE CONDITIONS .1 Work at site will involve contact with:
- .1 Coal fines.
 - .2 Coal mine waste rock material.
 - .3 Airborne dust resulting from the movement of surface soils.
 - .4 Acid rock drainage which typically results in low pH waters with elevated acidity and metal concentrations in the pond water.
 - .5 Construction and demolition waste material.
 - .6 Scrap metal.
 - .7 Arsenic and metals in soil, surface waters, groundwater and sediments.
- 1.11 GENERAL REQUIREMENTS .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.
- 1.12 RESPONSIBILITY .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.13 COMPLIANCE
 REQUIREMENTS

- .1 Comply with Occupational Health and Safety Act, Occupational Safety General Regulations, N.S. Reg.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.14 UNFORSEEN
 HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.15 HEALTH AND SAFETY
 CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-coordinator. Health and Safety Co-coordinator must:
 - .1 Have minimum 2 years' site-related working experience specific to activities associated with heavy civil works projects.
 - .2 Have working knowledge of occupational safety and health regulations.
 - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
 - .5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

- 1.16 POSTING OF DOCUMENTS .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative.
- 1.17 CORRECTION OF NON-COMPLIANCE .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.
- 1.18 BLASTING .1 Blasting or other use of explosives is not permitted on site.
- 1.19 WORK STOPPAGE .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

PART 1 - GENERAL1.1 RELATED
SECTIONS

- .1 Section 01 45 00 - Quality Control.
- .2 Section 31 23 10 - Excavation, Trenching and Backfilling.
- .3 Section 31 24 13 - Excavation, Embankment and Compaction.
- .4 Section 31 32 21 - Geotextiles.
- .5 Section 32 11 23 - Fill Materials.
- .6 Section 32 15 50 - Erosion Control.
- .7 Section 32 91 21 - On-Site Soil Amendment and Grading.
- .8 Section 32 91 24 - Dry Mulching.
- .9 Section 32 92 21 - Hydraulic Seeding.
- .10 Section 03 30 00 - Cast-in-place Concrete.

1.2 REFERENCES

- .1 Canadian Council of Ministers of the Environment (CCME), Environmental Quality Guidelines.
- .2 Nova Scotia Department of Environment and Labour, Air Quality Regulations, Section 112 of the *Environment Act*.
- .3 Nova Scotia Department of Environment and Labour, Erosion and Sedimentation Control Handbook for Construction Sites.
- .4 Environment Canada, Section 36(3) of the *Fisheries Act*, prohibits the planned or accidental discharge of deleterious substances to waters frequented by fish.
- .5 Environment Canada, *Migratory Birds Convention Act*, prohibits the deposit of oil, oil wastes, or other substances harmful to migratory birds or in any area frequented by birds.

- .6 Environment Canada, The Federal Policy on Wetland Conservation.

1.3 ENVIRONMENTAL PROTECTION PLAN

- .1 Prepare in writing a site specific Environmental Protection Plan in order to clearly define environmental protection measures. The plan must expand on the use of materials, products, procedures, and application techniques that respond to and have effects on the environment and contingency plans to deal with environmental problems that may arise due to the work.

- .2 The Environmental Protection Plan must incorporate any activities to be undertaken by sub-contractors if any are employed in the process. The Environmental Protection Plan must, at a minimum address the following elements:

- .1 Introduction
- .2 Mandate
- .3 Goals and Objective
- .4 Roles and Responsibilities
- .5 Project Description
- .6 Mitigation Procedures
- .7 Emergency and Contingency Plans
- .8 Key Contact List

- .3 As sub-sections to the Mitigation Procedures there will be the following:

- .1 Petroleum, Oils, Lubricant Materials
- .2 Grubbing, Stripping and Materials Excavation on Land
- .3 Waste Management
- .4 Water Management
- .5 Equipment Movement (Truck Traffic, Lining of Truck Boxes, Cleaning of Truck Body and Tires)
- .6 Dust Control
- .7 Erosion Control
- .8 Noise Control
- .9 Solid Waste Disposal
- .10 Sewage Disposal
- .11 Fencing

- .4 As sub-sections to the Emergency and Contingency Plans there will be the

following:

- .1 Fuel and Hazardous Materials Spills
- .2 Travel Load Loss
- .3 Heritage Resources

- .5 Each sub-section will include:
 - .1 Principal Environmental Concerns
 - .2 Environmental Protection Procedures

- .6 The Departmental Representative is to review the EPP prior to any work commencing on site.
 - .1 A draft EPP must be submitted to the Departmental Representative 5 working days prior to any activity commencing on the site.
 - .2 The Departmental Representative's review of the Contractor's Plan will not relieve the Contractor of the responsibility for compliance with applicable environmental regulations.

- .7 Each Contractor's employee is to be provided an orientation on the final Environmental Protection Plan prior to work commencing on the site. The Contractor will keep a record of the employees and their orientation sessions. Copies of the Environmental Protection Plan will be made available to employees.

- .8 Once the Plan has been submitted to the Departmental Representative, the Contractor must take the necessary steps to ensure its full implementation over the course of the project.

- .9 Submission of the Environmental Protection Plan does not relieve the Contractor in its overall responsibilities for Health and Safety of workers or for its environmental responsibilities, including use, storage and disposal of materials in accordance with governing laws and regulations.

1.4 FIRES

- .1 Fires and burning of rubbish on site are not permitted.

1.5 DISPOSAL OF
WASTES

- .1 Burying of rubbish and waste materials on site is not permitted except as directed by the Departmental Representative or as specified herein.
- .2 All waste or volatile materials, such as mineral spirits, oil or paint thinner shall be disposed of in such a manner as to prevent entry into nearby watercourses, storm or sanitary sewers.
- .3 All waste materials or other materials shall be disposed of in such a way as to prevent entry into nearby watercourses.
- .4 All waste material, except as specified herein, is to be disposed of at an approved waste disposal site in a manner in accordance with applicable Federal and Provincial laws and regulations.
- .5 All construction wastes and debris are to be confined to the site limits, stored in suitable, secure piles where possible, and graded as determined by the Departmental Representative. Periodic removal of waste from the site is required (daily upon accumulation).

1.6 DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Control, filtration and/or treatment of natural runoff, induced runoff or any water containing suspended materials is required.
- .3 All stockpiled material must be covered and or dyked to prevent erosion and silt-laden runoff.
- .4 Site grading activities should be coordinated with timely placement of fill materials, to minimize the length of time of grading activities. Runoff from any exposed soil areas must be controlled by water control methods such as silt fences to prevent run-off from the site and potential siltation of the adjacent watercourse. The contractor is responsible

for ensuring that all environmental controls are maintained under all weather conditions encountered and that suspended solids levels in water leaving the site are maintained at the levels described below.

- .5 Water released to the environment must be carried out in a manner to avoid disturbance of the receiving watercourse and meet all applicable Federal and Provincial regulations and guidelines.
- .6 Monitoring of the suspended solids will be undertaken by the Departmental Representative of surface drainage from the project site. In accordance with the CCME Environmental Quality Guidelines, the maximum increase of the suspended solids in the receiving watercourses shall not be higher than 25 mg/L from background levels at any time when background levels are between 25 and 250 mg/L. The level of suspended solids must not increase more than 10% at background levels when background is greater than 250 mg/L. Should an unacceptable level be present, work will be stopped as directed by the Departmental Representative. The Contractor will not be allowed any extra compensation or time resulting from this suspension of work.

1.7 WORK ADJACENT TO WATERWAYS/WETLANDS

- .1 Do not operate construction equipment in waterways/wetlands.
- .2 Do not deposit excavated fill, waste material or debris in waterways/wetlands.
- .3 Do not skid logs or construction materials across waterways/wetlands.
- .4 The Contractor is to store equipment and establish project staging in previously disturbed areas and not on wetlands.

1.8 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Air Pollution
 - .1 Control emissions from equipment and

- plant to local authorities emission requirements.
- .2 Cover or wet down dry materials and rubbish to prevent blowing dust or debris.
 - .3 Transport dusty materials in covered haulage vehicles.
 - .4 Public roadways and existing site road shall be kept clean and free of mud.
 - .5 An independent Contractor will be on site for the duration of the construction period monitoring air quality. If levels are found to exceed acceptable limits on site, work may be stopped and further mitigation may be required.
- .3 Noise Pollution
- .1 Establish and maintain site procedures such that noise levels from construction areas are minimized.
 - .2 Control noise level in accordance with local by-laws.
 - .3 Use vehicles and equipment equipped with efficient muffling devices.
 - .4 Provide and use devices that will minimize noise level in construction area.
- .4 Refueling Areas
- .1 Review in detail proposed route of construction to plan areas, access routes and fueling areas.
 - .2 Establish suitable fueling and maintenance areas and obtain approval from the Departmental Representative.
 - .3 Do not refuel or maintain equipment adjacent to or in watercourses.
 - .4 Do not fuel equipment within 30 meters of any watercourses.
- .5 Cleaning Equipment
- .1 Do not clean equipment in water watercourses.
 - .2 Clean construction equipment prior to driving on public roadways.
 - .3 Do not clean equipment in locations where debris can gain access to watercourses.

- .6 Spills:
 - .1 Keep all materials required for clean-up of spillages readily accessible on site.
 - .2 Be prepared at all times to intercept, clean-up and dispose of any spillage that may occur whether on land or water.

- .7 Borrow Material:
 - .1 The contractor is to make their source for borrow material available to testing by the Departmental Representative at least 7 days prior to the start of work. The borrow material must meet Canadian Council of Minister of the Environment Soil Quality Guidelines.

1.9 WATER
MANAGEMENT PLAN

- .1 Prepare in writing a Water Management Plan. The plan must detail the handling methods for all waters that may be present on the project site. The plan must address water handling during all stages of construction as well as periods of construction suspension.
- .2 The Water Management Plan must incorporate any activities to be undertaken by subcontractors if any are employed in the process.
- .3 A draft Water Management Plan must be submitted to the Departmental Representative 5 working days prior to any activity commencing on the site.
- .4 Once the Plan has been submitted to the Departmental Representative, the Contractor must take the necessary steps to ensure its full implementation over the course of the project.
- .5 Submission of the Water Management Plan does not relieve the Contractor in his/her overall responsibilities for Health and Safety of workers or for his/her environmental responsibilities, including release of waters in accordance with governing laws and regulations.

- 1.10 REGULATIONS
- .1 The work will be carried out in accordance with all applicable Provincial and Federal regulations.
 - .2 The Contractor will be responsible for obtaining all applicable permits. This includes providing the Departmental Representative with a copy of the NSE Approval for the project prior to commencement of the work.
- 1.11 REPORTING
- .1 All releases of hazardous substances into the environment (e.g. groundwater, drains, sewer systems, ditches, roads, parking areas, etc.) shall be reported to the Departmental Representative as soon as possible.
- 1.12 INSPECTION
- .1 The project site from time to time may be inspected to ensure compliance with Federal, Provincial and local environment requirements.
 - .2 All spills reported under paragraph 1.11 of this section are subject to inspection by the Departmental Representative to confirm cleanup and disposal have been carried out satisfactorily (including confirmatory sampling at the expense of the Contractor).

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 31 23 10 - Excavation, Trenching and Backfilling.
- .2 Section 31 24 13 - Excavation, Embankment and Compaction.
- .3 Section 31 32 21 - Geotextiles.
- .4 Section 32 11 23 - Fill Materials.
- .5 Section 32 15 50 - Erosion Control.
- .6 Section 32 91 21 - On-Site Soil Amendment and Grading.
- .7 Section 32 91 24 - Dry Mulching.
- .8 Section 32 92 21 - Hydraulic Seeding.
- .9 Section 03 30 00 - Cast-in-place Concrete.

1.2 INSPECTION

- .1 Allow Departmental Representative access to Work.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and

replacement.

1.3 INDEPENDENT
INSPECTION AGENCIES

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

1.4 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.5 PROCEDURES

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

PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Section 01 22 16 - Measurement and Payment.
- 1.2 INSTALLATION AND REMOVAL .1 Prepare site plan indicating proposed location of trailers, if they are required by the Contractor and avenues of ingress/egress.
- .2 Identify areas that have to be graveled to prevent tracking of mud. Temporary wash station for vehicles leaving the site may be required if contractor cannot maintain clean approach to site due to haul traffic.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.
- 1.3 CONSTRUCTION PARKING .1 Parking will be permitted on site provided it does not disrupt performance of Work.
- .2 Provide and maintain adequate access to project site.
- 1.4 SECURITY .1 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays as necessary to protect material, equipment, or the general public in the event of unsafe site conditions.
- 1.5 OFFICES .1 A site office is only required if deemed necessary for security by the Contractor.
- .2 If an office is required, provide office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.

- .3 Provide marked and fully-stocked first aid case in a readily available location.
- .4 Subcontractors to provide their own offices as necessary. Direct location of these offices.

1.6 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.7 CONSTRUCTION SIGNAGE

- .1 Direct requests for approval to erect Consultant/Contractor signboard to Departmental Representative. For consideration general appearance of Consultant/Contractor signboard must conform to project identification site sign. Wording in both official languages.
- .2 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN3-Z321.
- .3 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

1.8 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .3 Protect traveling public from damage to person and property as a result of work under this contract.
- .4 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

- .5 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .6 Construct access and haul roads necessary.
- .7 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .8 Dust control: adequate to ensure safe operation at all times.
- .9 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.
- .10 Remove, upon completion of work, haul roads designated by Departmental Representative.

1.9 CLEAN-UP

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.

PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Section 01 32 18 - Construction Progress Schedule.
- 1.2 SECTION INCLUDES .1 Field engineering survey services to measure and stake site.
- .2 Survey services to establish and confirm inverts for Work.
- .3 Recording of subsurface conditions found.
- 1.3 PRECEDENCE .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 1.4 REFERENCES .1 Canada's identification of existing survey control points and property limits.
- 1.5 QUALIFICATIONS OF SURVEYOR .1 Qualified registered land surveyor, licensed to practice in Nova Scotia, acceptable to Departmental Representative.
- 1.6 SURVEY REFERENCE POINTS .1 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .2 Make no changes or relocations without prior written notice to Departmental Representative.
- .3 Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- .4 Require surveyor to replace control points in accordance with original survey control.

- 1.7 SURVEY REQUIREMENTS
- .1 Establish two permanent benchmarks on each site, referenced to established benchmarks by survey control points. Record locations, with horizontal and vertical data in Project Record Documents.
 - .2 Establish lines and levels. Locate and lay out by instrumentation.
 - .3 Stake for grading, fill removal and placement.
 - .4 Stake slopes and berms.
 - .5 Establish pipe invert elevations.
- 1.8 EXISTING SERVICES
- .1 Buried services may exist within the contract boundary. The Client has been informed by the CBRM that sewer lines are buried beneath the existing road/trail running from Pitt Street to the Ocean. The Contractor will be required to make good any damage to these utilities if disturbed by construction traffic, activities, etc.
 - .2 Remove abandoned service lines within area of work if encountered. Report findings to Departmental Representative immediately.
- 1.9 RECORDS
- .1 Maintain a complete, accurate log of control and survey work as it progresses.
 - .2 On completion of work, prepare a certified survey showing dimensions, locations, angles and elevations of Work. Survey to be submitted in electronic format in accordance with Section 01 33 00-Submittals.
- 1.10 SUBMITTALS
- .1 Submit name and address of Surveyor to Departmental Representative.
 - .2 On request of Departmental Representative, submit documentation to verify accuracy of field engineering work.
 - .3 Submit certificate signed by surveyor

certifying those elevations and locations of
completed Work that conform and do not conform
with Contract Documents.

PART 1 - GENERAL1.1 RELATED
SECTIONS

.1 Section 01 77 00 - Closeout Procedures.

1.2 PROJECT
CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris as required for contractor's workforce.
- .5 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

1.3 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean.
- .4 Remove waste products and debris other than that caused by others.
- .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative.

PART 1 - GENERAL

- 1.1 RELATED SECTIONS
- .1 Section 01 22 16 - Measurement and Payment.
 - .2 Section 01 33 00 - Submittal Procedures.
 - .3 Section 01 45 00 - Quality Control.
 - .4 Section 01 74 11 - Cleaning.
- 1.2 INSPECTION AND DECLARATION
- .1 Contractor's Inspection: Contractor and Subcontractors: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Inspection and that corrections have been made.
 - .2 Request Departmental Representative Inspection.
 - .2 Departmental Representative Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor to correct Work accordingly.
 - .3 Completion: submit written certificate that following have been performed:
 - .1 Work has been completed and inspected for compliance with Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Work is complete and ready for final inspection.
 - .4 Final Inspection: when items noted above are completed, request final inspection of Work by Departmental Representative, and Contractor. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request reinspection.
- 1.3 CLEANING
- .1 In accordance with Section 01 74 11-Cleaning.
 - .2 Remove waste and surplus materials, rubbish and construction facilities from the site.

PART 1 - GENERAL

- 1.1 RELATED SECTIONS
- .1 Section 01 33 00 - Submittal Procedures.
 - .2 Section 01 45 00 - Quality Control.
 - .3 Section 31 24 13 - Excavation, Embankment and Compaction.
 - .3 Section 01 35 43 - Environmental Procedures.
- 1.2 SUBMITTALS
- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
 - .3 Copy will be returned with Departmental Representative's comments.
 - .4 Revise content of documents as required prior to final submittal.
 - .5 Furnish evidence, if requested, for type, source and quality of products provided.
 - .6 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
 - .7 Pay costs of transportation.
- 1.3 FORMAT
- .1 Organize data as instructional manual.
 - .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
 - .3 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
 - .4 Arrange content by under Section numbers and sequence of Table of Contents.

- .5 Provide 1:1 scaled CAD files in dwg format on CD.

1.4 AS-BUILTS AND
 SAMPLES

- .1 Maintain, at site for Departmental Representative, one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

1.5 RECORDING
 ACTUAL SITE
 CONDITIONS

- .1 Record information on set of black line and in copy of Project Manual, Departmental Representative. Information to be transferred to digital copy of the plans by the contractor prior to completion.
- .2 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .3 Contract Drawings and shop drawings: mark each item to record actual construction and update electronic copy of the drawing

accordingly.

- .4 Actual construction is to be captured and recorded on "AS BUILT" drawings which are to be submitted prior to final completion in digital form in dwg format.
- .5 Other Documents: maintain inspection certifications, field test records, required by individual specifications sections.

1.6 FINAL SURVEY

- .1 Submit final site survey certificate in accordance with Section 01 71 00 Examination and Preparation, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents. Survey plan is to be completed by a qualified, registered land surveyor. Costs of survey are to be considered incidental to the contract and are not to be measured for payment purposes.