

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 35 29.14 - Health and Safety for Contaminated Sites.
- .2 Section 31 23 33.01 – Excavating, Trenching and Backfilling

1.2 REFERENCES

- .1 Manual of Uniform Traffic Control Devices (UTCD) for Streets and Highways – (most recent version).

1.3 PROTECTION OF PUBLIC TRAFFIC

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 When working on travelled way:
 - .1 Place equipment in position to present minimum of interference and hazard to travelling public.
 - .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
 - .3 Do not leave equipment on travelled way overnight.
- .3 Do not close any lanes of road without approval of Contract Administrator. Before re-routing traffic erect suitable signs and devices in accordance with instructions contained in the UTCD.

1.4 INFORMATIONAL AND WARNING DEVICES

- .1 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Temporary Conditions Signs and Devices, of UTCD manual.
- .3 Place signs and other devices in locations recommended in UTCD manual.
- .4 Meet with Contract Administrator prior to commencement of Work to prepare list of signs and other devices required for project. If situation on Site changes, revise list to approval of Contract Administrator.
- .5 Continually maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.

1.5 CONTROL OF PUBLIC TRAFFIC

- .1 Provide competent flag persons, trained in accordance with, and properly equipped as specified in, UTCD manual in following situations:
 - .1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
- .2 Where roadway, carrying two-way traffic, is restricted to one lane, for 24 hours each day, provide portable traffic signal system. Adjust, as necessary, and regularly maintain system during period of restriction. Signal system to meet requirements of Part IV of UTCD Manual.

1.6 OPERATIONAL REQUIREMENTS

- .1 Maintain existing conditions for traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified and approved by Contract Administrator to protect and control public traffic.
- .2 Maintain existing conditions for traffic crossing right-of-way.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 56 00 – Temporary Barriers and Enclosures
- .2 Section 01 35 29.14 - Health and Safety for Contaminated Sites.

1.2 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CGSB 51-GP-51M-81, Polyethylene Sheet for Use in Building Construction.
- .2 Transportation and Dangerous Goods Act (1999)
- .3 Canadian Council of Ministers of the Environment (CCME) Documentation

1.3 SUBMITTALS

- .1 Submit, prior to start of Work, plan detailing management of hazardous wastes.
- .2 Site Layout: within 7 days after date of Notice to Proceed and prior to mobilization to Site, submit Site layout drawings showing existing conditions and facilities, construction facilities and temporary controls provided by Contractor including following:
 - .1 Equipment and personnel decontamination areas.
 - .2 Means of ingress, egress and temporary traffic control facilities. Refer to Section 01 56 00 - Temporary Barriers and Enclosures for traffic control.
 - .3 Equipment and material staging areas.
 - .4 Soil stockpile areas.
 - .5 Exclusion Zones, Contaminant Reduction Zones, and other zones specified in Contractor's Site-specific Health and Safety Plan.
 - .6 Grading, including contours, required to construct temporary facilities.
 - .7 Wastewater treatment facilities and/ or wastewater storage areas.
- .3 Equipment Decontamination Pad: submit equipment decontamination pad design to Contract Administrator for review prior to commencing construction.
- .4 Submit documentation verifying that hazardous materials employees have been trained, tested, and certified to safely and effectively carry out their assigned duties in accordance with Section 01 35 29.14 - Health and Safety for Contaminated Sites.

1.4 REGULATORY REQUIREMENTS

- .1 Provide erosion and sediment control in accordance with regulations.
- .2 Comply with federal, provincial, and local anti-pollution laws, ordinances, codes, and regulations when disposing of waste materials, debris, and rubbish.
- .3 Work to meet or exceed minimum requirements established by federal, provincial, and local laws and regulations which are applicable.

.1 Contractor: responsible for complying with amendments as they become effective.

.4 In event that compliance exceeds scope of Work or conflicts with specific requirements of contract notify Contract Administrator immediately.

1.5 SEQUENCING AND SCHEDULING

.1 Do not commence Work involving contact with potentially contaminated materials until decontamination facilities are operational and approved by Contract Administrator.

1.6 SOIL STOCKPILING FACILITIES

.1 There will be no stockpiling of contaminated soils at the Site.

1.7 VEHICULAR ACCESS AND PARKING

.1 Maintenance and Use:

.1 Prevent contamination of access roads. Immediately scrape up debris or material on access roads which is suspected to be contaminated as determined by Contract Administrator; transport and place into designated area approved Contract Administrator. Clean access roads at least once per shift.

.2 Contract Administrator may collect soil samples for chemical analyses from traveling surfaces of constructed and existing access routes prior to, during, and upon completion of Work. Excavate and dispose of clean soil contaminated by Contractor's activities at no additional cost to Contract Administrator or Client.

1.8 DUST AND PARTICULATE CONTROL

.1 Execute Work by methods to minimize raising dust from construction operations. Implement and maintain dust and particulate control measures as determined necessary by Contract Administrator during construction and in accordance with Province of Manitoba regulations.

.2 Provide positive means to prevent airborne dust from dispersing into atmosphere. Use potable water for water misting system for dust and particulate control.

.3 As minimum, use appropriate covers on trucks hauling fine or dusty material. Use watertight vehicles to haul wet materials.

.4 Prevent dust from spreading to adjacent property Sites.

.5 Contract Administrator will stop Work at any time when Contractor's control of dusts and particulates is inadequate for wind conditions present at Site.

.6 If Contractor's dust and particulate control is not sufficient for controlling dusts and particulates into atmosphere, stop Work. Contractor must discuss procedures that Contractor proposes to resolve problem. Make necessary changes to operations prior to resuming excavation, handling, processing, or other Work that may cause release of dusts or particulates.

1.9 POLLUTION CONTROL

.1 Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious toxic substances and pollutants produced by onSite operations.

- .2 Be prepared to intercept, clean up, and dispose of spills or releases that may occur whether on land or water. Maintain materials and equipment required for cleanup of spills or releases readily accessible on Site.
- .3 Promptly report spills and releases potentially causing damage to environment to:
- .4 Authority having jurisdiction or interest in spill or release including conservation authority, water supply authorities, drainage authority, road authority, fire department, and, Manitoba Conservation Spills Reporting Center at 1-(204) 944-4888.
 - .1 Owner of pollutant, if known.
 - .2 Person having control over pollutant, if known.
 - .3 Contract Administrator.
- .5 Contact manufacturer of pollutant if known and ascertain hazards involved, precautions required, and measures used in cleanup or mitigating action.
- .6 Take immediate action using available resources to contain and mitigate effects on environment and persons from spill or release.
- .7 Provide spill response materials including, containers, adsorbent, shovels, and personal protective equipment. Make spill response materials available at all times in which hazardous materials or wastes are being handled or transported. Spill response materials: compatible with type of material being handled.

1.10 WATER CONTROL

- .1 Maintain excavations free of water.
- .2 Protect Site from puddling or running water. Grade Site to drain. Provide water barriers as necessary to protect Site from soil erosion.
- .3 Prevent surface water runoff from leaving Work areas.
- .4 Do not discharge decontaminated water, or surface water runoff, or groundwater which may have come in contact with potentially contaminated material, off Site or to municipal sewers.
- .5 Control surface drainage including ensuring that gutters are kept open, water is not directed across or over pavements or sidewalks except through approved pipes or properly constructed troughs, and runoff from unstabilized areas is intercepted and diverted to suitable outlet.
- .6 Dispose of impacted water in a licensed liquid waste handling facility in a manner not injurious to public health or safety, to property, or to any part of Work completed or under construction.
- .7 Provide, operate, and maintain necessary equipment appropriately sized to keep excavations, staging pads, and other Work areas free from water.
- .8 Have on hand sufficient pumping equipment, machinery, and tankage in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment.
- .9 Contain and collect wastewaters and transfer such collected wastewaters to Contractor – supplied wastewater storage tanks and/ or on-Site treatment facility.

1.11 DEWATERING

- .1 Dewater various parts of Work including, without limitation, excavations, structures, foundations, and Work areas.
- .2 Employ construction methods, plant procedures, and precautions that ensure Work, including excavations, are stable, free from disturbance, and dry.
- .3 Dewatering Methods: includes sheeting and shoring; groundwater control systems; surface or free water control systems employing ditches, diversions, drains, pipes and/or pumps; and other measures necessary to enable Work to be carried out in dry conditions.
- .4 Provide sufficient and appropriate labour, plant, and equipment necessary to keep Work free of water including standby equipment necessary to ensure continuous operation of dewatering system. Take precautions necessary to prevent uplift of structure or pipeline and to protect excavations from flooding and damage due to surface runoff.

1.12 EROSION AND SEDIMENT CONTROL

- .1 Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas, from stockpiles, staging areas, and other Work areas. Prevent erosion and sedimentation.
- .2 Minimize amount of bare soil exposed at one time. Stabilize disturbed soils as quickly as practical. Strip vegetation, regrade, or otherwise develop to minimize erosion. Remove accumulated sediment resulting from construction activity from adjoining surfaces, drainage systems, and water courses, and repair damage caused by soil erosion and sedimentation as directed by Contract Administrator.
- .3 Provide and maintain temporary measures which may include, silt fences, hay or straw bales, ditches, geotextiles, drains, berms, terracing, riprap, temporary drainage piping, sedimentation basins, vegetative cover, dikes, and other construction required to prevent erosion and migration of silt, mud, sediment, and other debris off Site or to other areas of Site where damage might result, or that might otherwise be required by Laws and Regulations. Make sediment control measures available during construction. Place silt fences and/or hay or straw bales in ditches to prevent sediments from escaping from ditch terminations.
- .4 Hay or Straw Bale: wire bound or string tied; securely anchored by at least 2 stakes or rebars driven through bale 300 mm to 450 mm into ground; chinked (filled by wedging) with hay or straw to prevent water from escaping between bales; and entrenched minimum of 100 mm into ground.
- .5 Silt Fence: assembled, ready to install unit consisting of geotextile attached to driveable posts. Geotextile: uniform in texture and appearance, having no defects, flaws, or tears that would affect its physical properties; and contain sufficient ultraviolet ray inhibitor and stabilizers to provide minimum 2-year service life from outdoor exposure.
- .6 Net Backing: industrial polypropylene mesh joined to geotextile at both top and bottom with double stitching of heavy-duty cord, with minimum width of 750 mm.
- .7 Posts: sharpened wood, approximately 50 mm square, protruding below bottom of geotextile to allow minimum 450 mm embedment; post spacing 2.4 m maximum. Securely fasten each post to geotextile and net backing using suitable staples.
- .8 Plan construction procedures to avoid damage to Work or equipment encroachment onto water bodies or drainage ditch banks. In event of damage, promptly take action to mitigate effects. Restore affected bank or water body to existing condition.

- .9 Installation:
 - .1 Construct temporary erosion control items as indicated. Actual alignment and/or location of various items as directed by Contract Administrator.
 - .2 Do not construct bale barriers and silt fence in flowing streams or in swales.
 - .3 Check erosion and sediment control measures weekly after each rainfall; during prolonged rainfall check daily.
 - .4 Bales and/or silt fence may be removed at beginning of work day, replace at end of work day.
 - .5 Whenever sedimentation is caused by stripping vegetation, regrading, or other development, remove it from adjoining surfaces, drainage systems, and watercourses, and repair damage as quickly as possible.
 - .6 Prior to or during construction, Contract Administrator may require installation or construction of improvements to prevent or correct temporary conditions on Site. Improvements may include berms, mulching, sediment traps, detention and retention basins, grading, planting, retaining walls, culverts, pipes, guardrails, temporary roads, and other measures appropriate to specific condition. Temporary improvements must remain in place and in operation as necessary or until otherwise directed by Contract Administrator.
 - .7 Repair damaged bales, end runs, and undercutting beneath bales.
 - .8 Unless Contract Administrator, remove temporary erosion and sediment control devices upon completion of Work. Spread accumulated sediments to form a suitable surface for seeding or dispose of, and shape area to permit natural drainage to satisfaction of Contract Administrator. Materials once removed become property of Contractor.
- .10 Construct fill and waste areas by selective placement to avoid erosive surface silts or clays. Do not disturb existing embankments or embankment protection.
- .11 Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- .12 If soil and debris from Site accumulate in low areas, storm sewers, roadways, gutters, ditches, or other areas where in the Contract Administrator's determination it is undesirable, remove accumulation and restore area to original condition.
- 1.13 PROGRESS CLEANING**
 - .1 Maintain cleanliness of Work and surrounding Site to comply with federal, provincial, and local fire and safety laws, ordinances, codes, and regulations.
 - .2 Co-ordinate cleaning operations with disposal operations to prevent accumulation of dust, dirt, debris, rubbish, and waste materials.
- 1.14 FINAL DECONTAMINATION**
 - .1 Perform final decontamination of equipment, and materials which may have come in contact with potentially contaminated materials prior to removal from Site.
 - .2 Perform decontamination as specified to satisfaction of Contract Administrator. Contract Administrator will direct Contractor to perform additional decontamination if required.
- 1.15 REMOVAL AND DISPOSAL**
 - .1 Remove surplus materials and temporary facilities from Site.

- .2 Dispose of non-contaminated waste materials, litter, debris, and rubbish off Site.
- .3 Do not burn or bury rubbish and waste materials on Site.
- .4 Do not dispose of volatile or hazardous wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
- .5 Do not discharge wastes into streams or waterways. Dispose of following materials at appropriate off-Site facility identified by Contractor and approved by Contract Administrator:
 - .1 Debris including excess construction material.
 - .2 Non-contaminated litter and rubbish.
 - .3 Disposable PPE worn during final cleaning.
 - .4 Wastewater removed from wastewater storage tank.
 - .5 Wastewater generated from final decontamination operations including wastewater storage tank cleaning.
 - .6 Lumber from decontamination pads.
- .6 Dispose of materials in accordance with applicable municipal, provincial and federal regulations.
- .7 Wastewater sample and analysis: Contract Administrator will perform sampling and analysis of stored wastewater for disposal purposes prior to removal from Site. Results of analyses will determine appropriate methods of disposal. Upon receipt of analytical results, transfer tank contents without spills or release, as directed by Contract Administrator, to liquid waste tankers, sanitary sewer, or off-Site disposal facility. Following completion of tank emptying, decontaminate tank interior with steam or high-pressure water wash supplemented by detergent. Dispose of tank decontamination water with tank contents.
- .8 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.
- .9 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
 - .1 Hazardous wastes recycled in manner constituting disposal;

1.16 RECORD KEEPING

- .1 Maintain adequate records to support information provided Contract Administrator regarding exception reports, annual reports, and biennial reports.
- .2 Maintain bill of lading for minimum of 375 days from date of shipment or longer period required by applicable law or regulation.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Province of Manitoba
 - .1 Workplace Safety and Health Act, R.S.M. 2004.
- .2 Canada Labour Code, Canada Occupational Safety and Health Regulations 2002.

1.2 SUBMITTALS

- .1 Submit Site-specific Health and Safety Plan, within 7 days after date of Notice to Proceed and prior to mobilization to Site. Address following items:
 - .2 Safety and health risk or hazard analysis for each Site task and operation.
 - .3 Develop checklist for items to be inspected on a daily basis. Document actions taken.
 - .4 Personnel training requirements including:
 - .1 Names of personnel and alternates responsible for Site safety and health, hazards present on Site, and use of personal protective equipment.
 - .2 Work practices by which personnel can minimize risks from hazards, safe use of engineering controls and equipment on Site, medical surveillance requirements, including recognition of symptoms and signs which might indicate overexposure to hazards, and elements of Site-specific Health and Safety Plan.
 - .5 Personal protective equipment (PPE) program addressing:
 - .1 Donning and doffing procedures.
 - .2 PPE selection based upon Site hazards.
 - .3 Evaluation of effectiveness of PPE program, and limitations during temperature extremes, and other appropriate medical considerations.
 - .4 Site control measures employed at Site including Site map, Site work zones, use of 'buddy system', Site communications including Site security, alerting means for emergencies, standard operating procedures or safe work practices, and identification of nearest medical assistance.
 - .5 Emergency response requirements addressing: personnel roles, lines of authority and communication, emergency recognition and prevention, safe distances, Site security and control, evacuation routes and procedures, emergency medical treatment and first aid, emergency alerting and response procedures, PPE and emergency equipment, Site topography, layout, prevailing weather conditions, and procedures for reporting incidents to local, provincial, or federal agencies.
 - .6 Procedures dealing with heat and/or cold stress.
 - .6 Contract Administrator will review Contractor's Site-specific Health and Safety Plan and provide comments to Contractor within 7 days after receipt of plan. Revise plan as appropriate and resubmit plan Contract Administrator within 7 days after receipt of comments from Contract Administrator.
- .7 On-Site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
 - .1 Prior to commencing Work involving handling of hazardous materials, develop on-Site Contingency and Emergency Response Plan.

- .2 Plan must provide immediate response to serious Site occurrence such as explosion, fire, or migration of significant quantities of toxic or hazardous material from Site.
- .8 Off-Site Contingency and Emergency Response Plan:
 - .1 Prior to commencing Work involving handling of hazardous materials, develop off-Site Contingency and Emergency Response Plan.
 - .2 Plan must provide immediate response to serious Site occurrence such as explosion, fire, or migration of significant quantities of toxic or hazardous material from Site.

1.3 REGULATORY REQUIREMENTS

- .1 Comply with specified standards and regulations to ensure safe operations at Site containing hazardous or toxic materials.

1.4 SITE CONDITIONS

- .1 Work at Site will involve contact with:
 - .1 Soil impacted with Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX).
 - .2 Water impacted with Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX).
 - .3 Free-Phase Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX).

1.5 GENERAL REQUIREMENTS

- .1 Develop written Site-specific Health and Safety Plan prior to commencing Site Work and continue to implement, maintain, and enforce plan until final demobilization from Site. Health and Safety Plan must address project specifications.
- .2 Ensure Health and Safety guidelines provide for safe and minimal risk working environment for Site personnel and minimize impact of activities involving contact with hazardous materials or hazardous wastes on general public and surrounding environment. Relief from or substitution for portion or provision of minimum Health and Safety Guidelines specified or reviewed Site-specific Health and Safety Plan must be submitted to Contract Administrator in writing. Contract Administrator will respond in writing, either accepting or requesting improvements.

1.6 RESPONSIBILITY

- .1 Be responsible for safety of persons and property on Site and for protection of persons off 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, and local statutes, regulations, and ordinances, and with Site-specific Health and Safety Plan.

1.7 HAZARD COMMUNICATION REQUIREMENTS

- .1 Comply with Workplace Hazardous Materials Information System Regulation, MR 217/06
- .2 Comply with Workplace Safety and Health Act, Man. CCSM c W210
- .3 Comply with Information on Controlled Products Regulation, SOR-88-6

- .4 Provide Contract Administrator with Material Safety Data Sheets (MSDS) and documentation on any "hazardous" chemical that Contractor or Contractor Representatives plan to bring onto Site.

1.8 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.
- .2 Assign responsibility and obligation to Health and Safety Officer where required to stop or start Work when, at Health and Safety Officer's discretion, it is necessary or advisable for reasons of health or safety. Contract Administrator may also stop Work for health and safety considerations.

1.9 UNFORESEEN HAZARDS

- .1 Should unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, stop Work and immediately advise Contract Administrator verbally and in writing.

1.10 PERSONNEL HEALTH, SAFETY, AND HYGIENE

- .1 Training: ensure personnel entering Site are trained in accordance with specified personnel training requirements.
- .2 Levels of Protection: establish levels of protection for each Work area based on planned activity and location of activity.
- .3 Personal Protective Equipment:
 - .1 Furnish Site personnel with appropriate PPE as specified above. Ensure that safety equipment and protective clothing is kept clean and maintained.
- .4 Develop protective equipment usage procedures and ensure that procedures are strictly followed by Site personnel; include following procedures as minimum:
 - .1 Ensure prescription eyeglasses worn are safety glasses and do not permit contact lenses on Site within Work zones.
 - .2 Ensure footwear is steel-toed safety shoes or boots and is covered by rubber overshoes when entering or working in potentially contaminated Work areas.
 - .3 Dispose of or decontaminate PPE worn on Site at end of each workday.
 - .4 Decontaminate reusable PPE before reissuing.
 - .5 Ensure Site personnel have passed respirator fit test prior to entering potentially contaminated Work areas.
 - .6 Ensure facial hair does not interfere with proper respirator fit.
- .5 Heat Stress/Cold Stress: implement heat stress and/or cold stress monitoring program as applicable and include in Site-specific Health and Safety Plan.
- .6 Personnel Hygiene and Personnel Decontamination Procedures. Provide minimum as follows:
 - .1 Suitable containers for storage and disposal of used disposable PPE.
 - .2 Potable water and suitable sanitation facility for decontamination of reusable PPE.
- .7 Emergency and First-Aid Equipment:

- .1 Locate and maintain emergency and first-aid equipment in appropriate location on Site including first-aid kit to accommodate number of Site personnel; portable emergency eye wash; two 9 kg ABC type dry chemical fire extinguishers.
- .2 Blankets and towels; and stretcher.
- .3 As minimum, provide 1 certified standard first-aid technician on Site at all times when Work activities are in progress.
- .8 Site Communications:
 - .1 Post emergency numbers near Site telephones.
 - .2 Ensure personnel use of "buddy" system and develop hand signal system appropriate for Site activities.
 - .3 Furnish selected personnel with 2-way radios.
 - .4 Safety Meetings: conduct mandatory daily safety meetings for personnel, and additionally as required by special or Work-related conditions; include refresher training for existing equipment and protocols, review ongoing safety issues and protocols, and examine new Site conditions as encountered. Hold additional safety meetings on as-needed basis.

1.11 SITE CONTROL

- .1 Prior to commencing Work involving handling of drums and other containers, submit procedures for safe handling of drums and other containers. Implement and enforce drum handling program during activities involving drummed waste characterization including but not limited to handling, opening, sampling, staging, and consolidating.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 35 29.14 - Health and Safety for Contaminated Sites.
- .2 Section 31 23 33.01 – Excavating, Trenching and Backfilling

1.2 DEFINITIONS

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.3 REFERENCES

- .1 Concentric Associates International Incorporated
 - .1 Remedial Action Plan: 1201 Archibald Street, Winnipeg, MB. January 23, 2014.
- .2 Manitoba Provincial Regulation
 - .1 The Dangerous Goods handling and Transportation Act, C.C.S.M. c. D12, as amended
 - .3 Workplace Hazardous Materials Information System Regulation, MR 217/06
 - .4 Workplace Safety and Health Act, Man. CCSM c W210
 - .5 Information on Controlled Products Regulation, SOR-88-6
- .6 Canadian Federal Legislation
 - .1 Canadian Council of Ministers of the Environment
 - .1 Canada-Wide Standards for Petroleum Hydrocarbons (PHCs) in Soil (2008)
 - .2 Canadian Soil Quality Guidelines for the protection of Environmental and Human Health (1999, 2007, 2010)
 - .2 Canada Labour Code (R.S. 1985, c. L-2).
 - .1 Part II (September 200) - Occupational Health and Safety.
 - .3 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.
- .7 All applicable environmental and health and safety laws and regulations for Canada, Province of Manitoba and Municipal by-laws.
- .8 National Electricity Code, 2002.
- .9 National Fire Code, 1995.

1.4 SUBMITTALS

- .1 Prior to commencing construction activities or delivery of materials to Site, submit Environmental Protection Plan for review and approval by the Contract Administrator. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .2 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .3 Environmental protection plan: include:
 - .1 Name(s) of person(s) responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from Site.
 - .3 Name(s) and qualifications of person(s) responsible for training Site personnel.
 - .4 Descriptions of environmental protection personnel training program.
 - .5 Erosion and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
 - .6 Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on Site.
 - .7 Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plans include measures to minimize amount of mud transported onto paved public roads by vehicles or runoff.
 - .8 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized Work areas.
 - .9 Spill Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
 - .10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
 - .11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off project Site.
 - .12 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job Site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
 - .13 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.
 - .14 Historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands.
 - .15 Pesticide treatment plan: to be included and updated, as required.

1.5 FIRES

- .1 Fires and burning of rubbish on Site is not permitted.

1.6 DISPOSAL OF WASTES

- .1 Do not bury rubbish and waste materials on Site unless approved by the Contract Administrator.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .3 Soil at the subject Site was identified as having been adversely impacted by petroleum hydrocarbons (PHC), benzene, toluene, ethylbenzene and xylenes (BTEX). Any adversely environmentally impacted soil encountered during this project is to be removed by a licensed waste hauler and disposed of at a Manitoba licensed contaminated material landfill facility.
 - .1 Obtain from appropriate agency and submit to the Contract Administrator necessary permits for transportation and disposal of impacted soil waste. Ensure that landfill operator is fully aware of nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to the Contract Administrator that suitable arrangements have been made to receive and properly dispose of soil waste.
- .4 Any temporary stockpiling of impacted soil will occur upon polyethylene sheeting or within roll-off bins lined with a polyethylene sheeting. No impacted soil is to be placed directly on the surface grade at any time.
 - .1 Should a rain event be anticipated or the temporarily stored impacted soil be stored overnight, the impacted soil stockpile will be covered with a polyethylene tarp in order to eliminate any rainfall from infiltrating the soil and leaching through.
 - .2 Polyethylene sheeting requirement: minimum 0.15 mm thick, woven fibre reinforced fabric bonded both sides with polyethylene material

1.7 DRAINAGE

- .1 Provide erosion and sediment control plan that identifies type and location of erosion and sediment controls to be provided. Plan: include monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
- .2 Storm Water Pollution Prevention Plan (SWPPP) to be substituted for erosion and sedimentations control plan.
- .3 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.
- .5 The shallow groundwater in the vicinity of subject Site has been identified as being environmentally impacted and there is a potential for PHC impacted groundwater infiltrating into excavations.
 - .1 In the event that the groundwater is reached during remedial excavation activities, Contractor is to provide temporary drainage and pumping as necessary to keep excavations and subject Site free from water. Drainage water is to be removed and disposed of by a licensed hazardous liquid waste removal contractor at the cost of the Contractor.

- .6 Do NOT pump untreated water into sanitary or storm sewer systems. Any fines levied breach of the City of Winnipeg Sanitary Sewer Discharge Bylaw will be charged back directly to the contractor.

1.8 POLLUTION CONTROL

- .1 Control emissions from equipment to local authorities' emission requirements.
- .2 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

1.9 HISTORICAL / ARCHAEOLOGICAL CONTROL

- .1 Provide historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on project Site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onSite or in area are discovered during construction.
- .2 Plan: include methods to assure protection of discovered resources and identify lines of communication between Contractor personnel and the Contract Administrator.

1.10 NOTIFICATION

- .1 The Contract Administrator will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan. Contractor: after receipt of such notice, inform Contract Administrator of proposed corrective action and take such action for approval by the Contract Administrator.
- .2 The Contract Administrator will issue stop order of Work until satisfactory corrective action has been taken.
- .3 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
 - .2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA-O121-M1978(R2003), Douglas Fir Plywood.
- .3 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as Of: May 14, 2004.

1.2 INSTALLATION AND REMOVAL

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

1.3 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around deep excavations.
- .2 Provide as required by governing authorities.

1.4 ACCESS TO SITE

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

1.5 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

1.6 FIRE ROUTES

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.7 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

1.8 PROTECTION OF BUILDING FINISHES

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.

- .2 Confirm with Contract Administrator locations and installation schedule 3 days prior to installation.
- .3 Be responsible for damage incurred due to lack of or improper protection.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 35 14 - Special Procedures for Traffic Control.
- .2 Section 31 23 33.01 – Excavating, Trenching and Backfilling.

1.2 SUMMARY

- .1 Work Includes.
 - .1 Implementation of safety work zones, Site Health and Safety Plans and Emergency Response Plans.
 - .2 Ensurance that treatment has no negative impact on environment.
 - .3 Construction of water control and recovery structures.
 - .4 Management of contaminated waters generated during soil remediation work, including collection and offSite disposal.
 - .5 Backfilling of excavations.
- .2 Unit Prices.
 - .1 Provide unit removal and disposal costs per litre of contaminated groundwater.
 - .2 Provide unit removal and disposal costs per additional cubic metre of contaminated soil in event that additional contaminated materials are found.
 - .3 Quoted price must include costs arising from collection and disposal of additional materials.
- .3 Payment Procedures.
 - .1 Soils excavated for treatment beyond the estimated 600 cubic metres will be paid in accordance with unit price established for additional treatment Work.

1.3 REFERENCES

- .1 Applicable environmental and health and safety laws and regulations for Manitoba of Canada, Municipal by-laws for the City of Winnipeg, Manitoba.
- .2 CCME (Canadian Council of Ministers of the Environment) Contaminated Sites, Contaminated Soil and Groundwater, and Remediation of Contaminated Sites most current publications.

1.4 TRANSPORTATION AND HANDLING

- .1 Contaminated Soil.
 - .1 Analyze, transport and dispose of contaminated soil according to current regulations.
 - .2 Ensure no contact between non-contaminated soil and contaminated soil.
- .2 Contaminated Groundwater
 - .1 Analyze, transport and dispose of contaminated soil according to current regulations.
 - .2 Ensure no contact between non-contaminated soil and drainage or contaminated water.

1.5 PROJECT/SITE CONDITIONS

- .1 Existing Conditions.
 - .1 Review Remedial Action Plan (Appendix A) summarizing extent of soil and groundwater contamination.
 - .2 Contaminated soil removal:
 - .1 Restore excavated portion with non-contaminated material to match existing.

1.6 SEQUENCING

- .1 When floating free phase substance is present, remove free phase from saturated soil without further contaminating soil or groundwater prior to commencing other decontamination Work.

1.7 MAINTENANCE

- .1 Access Roads.
 - .1 Maintain Access Roads in accordance with Section 01 35 14 - Special Procedures for Traffic Control and as required:
 - .1 Obtain permission to use existing roads to access Site.
 - .2 Maintain and clean roads for duration of Work.
 - .3 Repair damage incurred from use of roads.
 - .4 Provide photographic documentation of roads used by construction vehicles before, during and after Work.

Part 2 Products

2.1 MATERIALS

- .1 Contaminated/Volatile Waste.
 - .1 Store appropriately and remove daily.
- .2 Hazardous Waste.
 - .1 Disposed in accordance with regulations.

2.2 EQUIPMENT

- .1 Trucks.
 - .1 Cleaned meticulously between loads of contaminated soil and clean fill.
 - .2 Cleaned meticulously at end of Work.
 - .3 Cover truck bodies with tarpaulins during transportation.
 - .4 Use watertight truck bodies for transporting contaminated soil.

Part 3 Execution

3.1 PREPARATION

- .1 Protection.
 - .1 Keep excavation Sites water free throughout Work and manage recovered water according to contamination level.

- .2 Protect excavation from rainwater.
- .3 Provide temporary structures to divert flow of surface waters for excavation.

3.2 APPLICATION

- .1 Soil Management.
 - .1 Store, transport, and dispose off-Site in accordance with standards, requirements and regulations.
 - .2 Do not dilute contaminated soil with less contaminated soil.
- .2 Groundwater Management.
 - .1 Install equipment necessary for recovery of free product (less dense than water) and pumping of groundwater as required.
 - .2 Store, transport, and dispose off-Site in accordance with standards, requirements and regulations Manitoba of Canada.

3.3 METHOD OF REMEDIATION

- .1 Use dig and dump technology.

3.4 RESTORATION

- .1 Backfill excavation(s) and compact soil to density similar to adjacent natural soil upon completion of remedial excavation according to Section 31 23 33 – Excavating, Trenching and Backfilling.
- .2 Re-instate surface grading to give Site same appearance as before remediation Work.
- .3 Clean permanent access roads of contamination resulting from project activity at request of Contract Administrator.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 35 29.14 – Health and Safety Procedures for Contaminated Sites
- .2 Section 01 56 00 – Temporary Barriers and Enclosures
- .3 Section 01 35 43 - Environmental Procedures Specifications
- .4 Section 02 55 13 - Soil Remediation

1.2 MEASUREMENT PROCEDURES

- .1 Excavated materials will be measured in cubic metres in their original location.
 - .1 Common excavation quantities measured will be actual volume removed within following limits:
 - .1 Width for trench excavation as indicated.
 - .2 Depth from ground elevation immediately prior to excavation, to elevation as directed by Contract Administrator.
 - .2 Sheeting and bracing left in place on direction Contract Administrator will be measured in square metres of surface area of plane surface of sheeting.
 - .3 Shoring, bracing, cofferdams, underpinning and de-watering of excavation will not be measured separately for payment.
 - .4 Backfilling to authorized excavation limits will be measured in tonnes for each type of material specified.

1.3 DEFINITIONS

- .1 Excavation classes: one class of excavation will be recognized; common excavation.
 - .1 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.
- .2 Waste material: excavated material unsuitable for use in Work or surplus to requirements.
- .3 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.
- .4 Recycled fill material: material, considered inert, obtained from alternate sources and engineered to meet requirements of fill areas.
- .5 Unsuitable materials:
 - .1 Weak, chemically unstable, and compressible materials.

1.4 SUBMITTALS

- .1 Preconstruction Submittals:
 - .1 Submit construction equipment list for major equipment to be used in this section prior to start of Work.

- .2 Submit records of underground utility locates, indicating: location plan of existing utilities as found in field, clearance record from utility authority, location plan of relocated and abandoned services, as required.

1.5 QUALITY ASSURANCE

- .1 Qualification Statement: submit proof of insurance coverage for professional liability.
- .2 Keep design and supporting data on Site.
- .3 Engage services of qualified professional Engineer who is registered or licensed in Province of Manitoba, Canada in which Work is to be carried out to design and inspect cofferdams, shoring, bracing and underpinning required for Work.
- .4 Do not use soil material until written report of soil test results are reviewed and approved by Contract Administrator.
- .5 Health and Safety Requirements:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.14 - Health and Safety for Contaminated Sites.

1.6 EXISTING CONDITIONS

- .1 Review Remedial Action Plan: 1201 Archibald Street, Winnipeg, MB. January 23, 2014.
- .2 Buried services:
 - .1 Before commencing Work establish location of buried services on and adjacent to Site.
 - .2 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
 - .3 Prior to beginning excavation Work, notify authorities having jurisdiction establish location and state of use of buried utilities and structures. Authorities having jurisdiction to clearly mark such locations to prevent disturbance during Work.
 - .4 Confirm locations of buried utilities in Work area by careful test excavations.
 - .5 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered.
 - .6 Where utility lines or structures exist in area of excavation, obtain direction of Contract Administrator before removing or re-routing. Costs for such Work to be paid by Contractor.
 - .7 Record location of maintained, re-routed and abandoned underground lines.
 - .8 Confirm locations of recent excavations adjacent to area of excavation.
- .3 Existing buildings and surface features:
 - .1 Conduct, with Contract Administrator, condition survey of existing buildings, trees and other plants, lawns, fencing, service poles, wires, rail tracks, pavement, survey bench marks and monuments which may be affected by Work.
 - .2 Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair as directed by Contract Administrator.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 SITE PREPARATION

- .1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.

3.3 PREPARATION/PROTECTION

- .1 Protect existing features in accordance with Section 01 56 00 - Temporary Barriers and Enclosures and applicable local regulations.
- .2 Keep excavations clean, free of standing water, and loose soil.
- .3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Contract Administrator's approval.
- .4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .5 Protect buried services that are required to remain undisturbed.

3.4 STOCKPILING

- .1 There will be no stockpiling of contaminated soils on Site.
- .2 Stockpile fill materials in areas approved by Contract Administrator.
 - .1 Stockpile granular materials in manner to prevent segregation.
 - .2 Stockpiling of contaminated soil to be conducted in accordance with Section 02 55 13- Soil Remediation.
- .3 Protect fill materials from contamination.
- .4 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.

3.5 COFFERDAMS, SHORING, BRACING AND UNDERPINNING

- .1 Maintain sides and slopes of excavations in safe condition by appropriate methods and in accordance with Section 01 35 29.14 - Health and Safety for Contaminated Sites and Workplace Safety and Health Act for Manitoba.
 - .1 Where conditions are unstable, Contract Administrator to verify and advise methods.
- .2 Construct temporary Works to depths, heights and locations as directed by Contract Administrator.
- .3 During backfill operation:
 - .1 Unless otherwise indicated or directed by Contract Administrator, remove sheeting and shoring from excavations.
 - .2 Do not remove bracing until backfilling has reached respective levels of such bracing.
 - .3 Pull sheeting in increments that will ensure compacted backfill is maintained at elevation at least 500 mm above toe of sheeting.
- .4 When sheeting is required to remain in place, cut off tops at elevations as indicated.
 - .1 Remove cofferdams, shoring and bracing.
 - .2 Remove excess materials from Site and restore watercourses as indicated by Contract Administrator.

3.6 DEWATERING AND HEAVE PREVENTION

- .1 Keep excavations free of water while Work is in progress.
- .2 Provide Contract Administrator's review and approval details of proposed dewatering or heave prevention methods, including dikes, well points, and sheet pile cut-offs.
- .3 Avoid excavation below groundwater table if quick condition or heave is likely to occur.
 - .1 Prevent piping or bottom heave of excavations by groundwater lowering, sheet pile cut-offs, or other means.
- .4 Protect open excavations against flooding and damage due to surface run-off.
- .5 Dispose of water in accordance with Section 01 35 43 - Environmental Procedures and Section 02 55 13- Soil Remediation to approved collection areas and in a manner not detrimental to public and private property, or portion of Work completed or under construction.
 - .1 Provide and maintain temporary drainage ditches and other diversions outside of excavation limits.
- .6 Provide flocculation tanks, settling basins, or other treatment facilities to remove suspended solids or other materials or contaminants before discharging to storm sewers, watercourses or drainage areas.

3.7 EXCAVATION

- .1 Advise Contract Administrator at least 7 days in advance of excavation operations for initial cross sections to be taken.
- .2 Excavate to lines, grades, elevations and dimensions as indicated as directed by Contract Administrator.

- .3 Remove obstructions encountered during excavation.
- .4 Excavation must not interfere with bearing capacity of adjacent foundations.
- .5 Restrict vehicle operations directly adjacent to open trenches.
- .6 Dispose of surplus and unsuitable excavated material off Site.
- .7 Do not obstruct flow of surface drainage or natural watercourses.
- .8 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.
- .9 Notify Contract Administrator when bottom of excavation is reached.
- .10 Obtain Contract Administrator's approval of completed excavation.
- .11 Remove unsuitable material from trench bottom including those that extend below required elevations to extent and depth as directed by Contract Administrator.
- .12 Hand trim, make firm and remove loose material and debris from excavations.
 - .1 Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.

3.8

BACKFILLING

- .1 Do not proceed with backfilling operations until completion of following:
 - .1 Contract Administrator has inspected and approved excavations.
 - .2 Inspection, testing, approval, and recording location of underground utilities.
 - .3 Removal of shoring and bracing; backfilling of voids with satisfactory soil material.
- .2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- .3 Backfill excavation(s) with like material (as approved by Contract Administrator) and compact soil to density similar to adjacent natural soil upon completion of remedial excavation.
- .4 Do not use backfill material which is frozen or contains ice, snow or debris.
- .5 Re-instate surface grading to give Site same appearance as before remediation Work.
- .6 Clean permanent access roads of contamination resulting from project activity at request of Contract Administrator.
- .7 Place backfill material in uniform layers not exceeding 150 mm compacted thickness up to grade. Compact each layer before placing succeeding layer.
- .8 Backfilling around installations:
 - .1 Place bedding and surround material as specified elsewhere.
 - .2 Place layers simultaneously on both sides of installed Work to equalize loading. Difference not to exceed 300 mm.

3.9 RESTORATION

- .1 Upon completion of Work, remove waste materials and debris in accordance to Section 01 35 43 Environmental Procedures Specifications, trim slopes, and correct defects as directed by Contract Administrator.
- .2 Clean and reinstate areas affected by Work as directed Contract Administrator.
- .3 Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

END OF SECTION