

1.0 GENERAL

1.1 DESCRIPTION

- .1 Comply with the General Conditions, Supplementary Conditions, the requirements of Division 1, and any supplements and/or addenda.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Cast-in-place Concrete Section 03300
- .2 Division 15
- .3 Division 16

1.3 DEFINITIONS

- .1 "Earth Excavation" shall include removal of quicksand, sand, clay, loam, earth, hard pan, boulder clay, old macadam, bituminous, or gravel roadway surface, together with removal of old timber, stone filled or stone abutments and piers (except where otherwise specifically provided), boulders, old concrete and stone masonry under 28 cu.ft. (1 cu.m) volume, and solid rock in place which can be broken and removed by state-of-the-art, heavy duty mechanical excavating equipment.
- .2 "Rock Excavation" shall include old concrete, stone, masonry or boulders equal or greater than 28 cu.ft. (1 cu.m) in volume, and solid rock in place which cannot be broken and removed by state-of-the-art, heavy duty mechanical excavating equipment.

1.4 REGULATIONS

- .1 Shore and brace excavations, protect slopes and banks and perform all Work in accordance with Provincial and Municipal regulations whichever is more stringent.
- .2 Comply with Explosives Act of Canada R.S., c.E15, s.1. Perform blasting in accordance with Provincial and Municipal regulations. Repair damage to approval of Contract Administrator. No blasting will be permitted within 3 m of any building and where damage would result.

1.5 BURIED SERVICES

- .1 Before commencing Work verify the location of all buried services on and adjacent to the site.
- .2 Arrange with appropriate authority for relocation of buried services that interfere with execution of Work. Pay costs of relocating services.
- .3 Remove obsolete buried services within 2 m of foundations. Cap cutoffs.

1.6 PROTECTION

- .1 Protect excavations from freezing.
- .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 manmade 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.

1.1 **SUBMITTALS**

- .1 Conform to Section 01330.
- .2 Submit samples of imported fill materials to the inspection and testing company as and when requested. Materials tested and approved shall constitute a standard for the acceptance of material delivered to site.
- .3 Submit for approval 2'-0" (600mm) long x full width sample of filter fabric.

2.0 **PRODUCTS**

2.1 **MATERIALS**

- .1 Sand: to CAN3-A23.1-M77, for fine aggregate.

- .2 "A" Base:

| Metric Sieve Size | % Passing |
|-------------------|-----------|
| 25 000 | 100 |
| 20 000 | 80 - 100 |
| 5 000 | 40 - 70 |
| 2 000 | 25 - 55 |
| 315 | 13 - 30 |
| 80 | 5 - 15 |

- .3 "C" Base:

| Metric Sieve Size | % Passing |
|-------------------|-----------|
| 25 000 | 100 |
| 20 000 | |
| 5 000 | 25 - 80 |
| 2 500 | |
| 315 | |
| 80 | 5 - 18 |

- .4 Imported Fill: containing no organic or foreign matter and which is proven compactable to density of 95% Standard Proctor. Check silt content of imported fill.
- .5 Drainage Tile: Where applicable, 4" (100mm) diameter plastic drainage tile, to CGSB 41-GP-29Ma, perforated.
- .6 Filter Fabric: Where applicable, "270-R" by:
 - Terrafix Geosynthetics Inc.
425 Attwell Drive
Rexdale, Ontario M9W 5C4
Tel: (416) 674-0363
or approved equal in accordance with B7.

3.0 EXECUTION

3.1 PREPARATION

- .1 Carefully examine drawings and the site, including access to the site. Establish the extent and nature of the materials which may be necessary to be removed and the amount of fill (including imported fill) to provide the required grades.
- .2 Maintain all stakes for lines and levels.

3.2 EXCAVATION AND BACKFILL

- .1 Excavate to lines and levels indicated on the drawings.
- .2 Where possible, keep excavations sufficiently wide and deep to permit erection, inspection and removal of formwork and not less than 18" (460mm) clear of the construction.
- .3 Prior to commencement, ensure location and protection of services.
- .4 Excavate as required for the installation of paving and sub-base.
- .5 Where acceptable to Contract Administrator, place and compact under slab fills directly over existing asphalt or concrete paving if applicable.
- .6 Excavation and backfilling for trenches and all excavation for pipe and service lines shall be carried out to the requirements of Divisions 15 and 16 and under the direction of the respective trades installing such services. Work for Divisions 15 and 16 shall be taken to five feet outside the exterior building wall. Pipe and service lines include, without being limited to: electricity, telephone, gas and plumbing services. Slope earth adjacent to foundations or trenches at an incline not exceeding the recommendations of the Soils Report.
- .7 Remove, cap or divert any existing or unused services, piping, drains, to the approval of local municipal authorities having jurisdiction.
- .8 Engage a contractor licensed in the province to remove and dispose of any existing underground oil tanks and associated contaminated soil.
- .9 Remove unacceptable material from the site.
- .10 Unauthorized Excavation
 - .1 For excavation to greater depths than shown or authorized at foundations, backfilling will not be accepted. Structural work shall be extended at no additional cost to the City.
 - .2 Over-excavation of areas scheduled to receive floor slabs, walks and paving shall be brought to correct elevation with compacted granular fill of the type and level of consolidation determined by the Contract Administrator. Extra work resulting from unauthorized excavation shall be executed without additional cost to the City.
- .11 Extra Depths
 - .1 At unsatisfactory bearing levels, extend excavation to levels authorized by the Contract Administrator in writing.

.12 Water in Excavation

- .1 Keep excavations for footings dry. Remove soil affected by free water and replace with concrete at no additional cost.
- .2 Generally keep excavations free of water.
- .3 When required supply, install and maintain in efficient operation all pumping equipment, piping and hoses.
- .4 Dewater the perched water table as excavation proceeds as required.

.13 Backfilling and Compaction

- .1 Prior to installation of backfill, the entire sub-grade area shall be proof rolled using approved equipment. Make two passes in one direction and two passes perpendicular to the other. Cut out all soft spots, rutted or displaced areas; fill and re-compact.
- .2 Do not backfill over frozen ground, organic matter or debris. Do not place backfill until the sub-grade, footings, foundation walls and drainage channels have been inspected and approved. Do not backfill at ambient temperatures, below 0° C, without approval of the Contract Administrator.
- .3 Remove soft spots and unstable material and refill with backfill material.
- .4 Maximum lift thickness of compacted layers; "A" Base: 6" (150mm); "C" Base: 6" (150mm).
- .5 Do not commence backfilling until Contract Administrator's approval is given. Backfill with 'C' Base material and compact to 95% Standard Proctor Density maximum. Coordinate backfilling with the placement of drainage piping. After backfilling is complete, scarify surface to a uniform depth sufficient to eliminate all depressions and irregularities.
- .6 Do not compact closer than 7'-0" (2 m) from wall with heavy equipment, use hand controlled light compaction equipment.
- .7 Fill and Base to Slabs on Grade: bring sub-base to required elevation as specified above using 'C' Base material at 6" (150mm) deep lifts and compact each lift to 95% Standard Proctor Density. Install base of 6" (150mm) of 'A' Base material, and proof roll to 98% Standard Proctor Density.
- .8 Fill Beneath Asphaltic Concrete Paving: after removal of all soil with organic content, the black silty clay and clay mixed with gravel fill should than be compacted by a sheepsfoot roller until the clay has a minimum density of 95% standard proctor density. Bring sub-grade to required elevation using 'C' Base material or suitable on-site material as directed by Contract Administrator at 6" deep lifts and compact each lift to minimum 95% Standard Proctor Density. Install minimum 6" (150mm) deep lift of "A" Base material. Grade and compact each lift layer of base ("A" Base gravel) to minimum density of 100% standard proctor density.
- .9 Use vibratory equipment in proximity of foundations. Make good any damage due to settlement and at no cost to the City. Complete backfilling to correct elevations.

.14 Rough Grading

- .1 Rough grade to levels, profiles and contours required, allowing for surface treatment indicated on the drawings.
- .2 Slope grade away from building 1:50 (2%) minimum.
- .3 Grade ditches to depths indicated on drawings and to provide positive runoff to drainage inlets without causing ponding.
- .4 Uniform slopes shall be constructed between points for which finished grades and contours are indicated. Existing grades shall be met and blended in, in a smooth manner.
- .5 Establish and maintain sub-grade parallel to the proposed finished grade and shape to allow adequate surface runoff, prevent ponding, scouring and erosion. If necessary, provide temporary relief, or diversionary swales and ditches at no extra cost.
- .6 Do not carry out rough grading when soil is frozen or wet.
- .7 In all areas where fill is to be placed on existing grade, scarify the surface to a minimum depth of 3" (75mm) in order to provide a good bond and prevent slipping of fill or topsoil.
- .8 Do final cleaning upon completion of this work and be responsible for cleaning of mud tracking during construction.

3.3 FIELD QUALITY CONTROL

- .1 In accordance with Section 01400, engage and pay for the services of an inspection and testing company to carry out the following testing and reporting:
 - .1 Verification that earth bearings for foundations will sustain design loads.
 - .2 Verification that sub-grade exposed by removal of existing soil is capable of supporting fill, floor slabs and pavements.
 - .3 Sampling of fill materials intended for use to determine:
 - a) Natural moisture content.
 - b) Optimum moisture and density.
 - c) Amount of moisture to be deleted from or added to fill.
 - d) Ensure correct moisture content for compaction and maximum density.
 - .4 Verification that sub-grade has been compacted to specified density.
 - .5 Verification that fill has been placed and compacted as specified and to specified compaction density.
- .2 The agency shall report all test and inspection results to the Contract Administrator and the contractor immediately after they are performed.
- .3 Co-operate fully and arrange for Inspection Company to be on site well in advance of time needed.

- END OF SECTION -

1.0 GENERAL

1.1 SECTION INCLUDES

- .1 Methods and procedures for demolition of structures, parts of structures, basements and foundation walls and includes abandonment and removal of septic tanks.

1.2 RELATED SECTIONS

- .1 Summary of Work Section 01110
- .2 Project Management and Coordination Section 01310
- .3 Regulatory Requirements Section 01060
- .4 Construction Facilities Section 01500

1.3 REFERENCES

- .1 Canadian Standards Association (CSA).
 - .1 CSA S350, Code of Practice for Safety in Demolition of Structures

1.4 QUALITY ASSURANCE

- .1 Prior to start of Work arrange for site visit with Contract Administrator to examine existing site conditions adjacent to demolition work
- .2 Hold project meetings every month.
- .3 Ensure key personnel, site supervisor, project manager, subcontractor representatives, attend.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials in accordance with 3.4 below and utilize alternate disposal method where possible.
- .2 Remove from site all demolition waste and debris, following all government regulations and City ordinances.

1.6 EXISTING CONDITIONS

- .1 Should material resembling spray or trowel applied asbestos or any other designated substance be encountered in course of demolition, stop work, take preventative measures, and notify Contract Administrator immediately. Do not proceed until written instructions have been received.
- .2 Structures to be demolished to be based on their condition on date that Bid is accepted.
- .3 Salvage items as identified by Contract Administrator. Remove, protect and store salvaged items as directed by Contract Administrator. Deliver to the City as directed.

1.7 DEMOLITION DRAWINGS

- .1 Where required by authorities having jurisdiction, submit for approval drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning.
- .2 Submit drawings stamped and signed by qualified professional engineer licensed in Province of Manitoba.

1.8 ENVIRONMENTAL PROTECTION

- .1 Ensure Work is done in accordance with Provincial Environmental Regulations.
- .2 Prevent movement, settlement or damage of adjacent structures, services, walks, paving, trees, landscaping, adjacent grades parts of existing building to remain.
- .3 Support affected structures and, if safety of structure being demolished or adjacent structures or services appears to be endangered cease operations and notify Contract Administrator.
- .4 Prevent debris from blocking surface drainage system, elevators, mechanical and electrical systems which must remain in operation.
- .5 Ensure that demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
- .6 Fires and burning of waste or materials is not permitted on site.
- .7 Do not bury waste or materials on site.
- .8 Do not dispose of waste or volatile materials such as mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers. Ensure proper disposal procedures are maintained throughout project.
- .9 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.
- .10 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities' requirements.
- .11 Protect trees, plants and foliage on site and adjacent properties where indicated.
- .12 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.
- .13 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.

1.9 SCHEDULING

- .1 Ensure project time lines are met without compromising specified minimum rates of material diversion. Notify Contract Administrator in writing of delays.

2.0 PRODUCTS (Not applicable)

3.0 EXECUTION

3.1 PREPARATION

- .1 Do Work in accordance with Provincial Health and Safety Regulations.
- .2 Disconnect electrical and telephone service lines entering buildings to be demolished. Post warning signs on electrical lines and equipment which must remain energized to serve other properties during period of demolition.
- .3 Disconnect and cap designated mechanical services.

- .1 Sewer and water lines: remove to property line if being abandoned, or as directed by the City / Contract Administrator to location for reconnection.
 - .2 Other underground services: remove and dispose of as directed by Contract Administrator.
 - .4 Do not disrupt active or energized utilities designated to remain undisturbed.
 - .5 Remove rodent and vermin as required by Contract Administrator.
- 3.2 SAFETY CODE
- .1 Do demolition work in accordance with Canadian Construction Safety Code and all Provincial regulations.
 - .2 Blasting operations not permitted during demolition.
- 3.3 DEMOLITION
- .1 Demolish foundation walls to minimum of 300mm below finished grade.
 - .2 Demolish foundation walls and footings, and concrete floors below or on grade.
 - .3 Break 100mm holes per 10m² area in concrete slabs which are not to be removed, to prevent accumulation of water. Keep floor drains open if permanent drainage still connected.
 - .4 Pieces of concrete and masonry not larger than 200 mm broken from demolition work may be used as backfill in open basements on excavations provided voids are filled. Keep demolition fill 300 mm below finished grade level. Do not backfill basement areas until inspected by Contract Administrator.
 - .5 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.
 - .6 At end of each day's work, leave Work in safe and stable condition. Protect interiors of parts not to be demolished from exterior elements at all times.
 - .7 Demolish to minimize dusting. Keep materials wetted as directed by Contract Administrator.
 - .8 Remove structural framing.
 - .9 Contain all fibrous materials (e.g. Insulation) to minimize release of airborne fiber while being transported to waste disposal site or alternative disposal location.
 - .10 Only dispose of material specified by selected alternative disposal option as directed by Contract Administrator.
 - .11 Ensure that these materials will not be disposed of in landfill or waste stream destined for landfill.
 - .12 Remove and dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.
 - .13 Environmental:

- .1 Remove contaminated or dangerous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimized danger at site or during disposal.
- .2 Septic Tanks:
 - .1 Pump out buried septic tanks, left in place. Fill with sand.
 - .2 Remove tanks within area of new construction or under paved areas and slabs.
- .14 Prior to the start of any demolition work remove contaminated or hazardous materials as defined by authorities having jurisdiction, from site and dispose of at designated disposal facilities.
- .15 Prior to the start of any demolition work remove underground storage tanks and piping as directed.
- .16 Use natural lighting to work by wherever possible. Shut off all lighting except those required for security purposes at the end of each day.

3.4 STOCKPILING

- .1 Stockpile materials in a location as directed by Contract Administrator.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Separate from general waste stream each of the following materials. Stockpile materials in neat and orderly fashion in location and as directed by Contract Administrator for alternate disposal where possible. Stockpile materials in accordance with applicable fire regulations.
 - .1 Glass fiber ceiling tiles.
 - .2 Wood fiber ceiling tiles.
 - .3 Power source poles deemed unfit for reuse by Contract Administrator.
 - .4 Wiring and conduit.
 - .5 Outlets/Switches
 - .6 Floor receptacles.
 - .7 Metal duct work, baffles, HVAC equipment.
 - .8 Demountable partitions.
 - .9 Drapes.
 - .10 Tracks and blinds.
 - .11 Insulation batts.
 - .12 Miscellaneous metals.
 - .13 Carpet.
- .4 Supply separate, clearly-marked disposal bins for all categories of waste material. Do not remove bins from site until inspected and approved by Contract Administrator.
- .5 Provide collection areas for collection of miscellaneous metals in the area of demolition.

3.5 REMOVAL FROM SITE

- .1 Notify Contract Administrator in writing of any materials identified as not suitable for alternate disposal. Provide reasons prior to approval for disposal.

- .2 Dispose of materials as directed by Contract Administrator.
- .3 Remove stockpiled material as directed by Contract Administrator when it interferes with operations of project construction.
- .4 Remove stockpiles of like materials by an alternate disposal option once collection of materials is complete.
- .5 Transport material designated for alternate disposal in accordance with applicable regulations.
- .6 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.

3.6 REPORTING

- .1 Record off-site removal of debris and materials and provide following information regarding removed materials to Contract Administrator within 24 hours.
 - .1 Time and date of Removal
 - .2 Description of Material
 - .3 Weight and Quantity of Materials.
 - .4 Breakdown of reuse, recycling and landfill quantities.
 - .5 End Demolition of Materials.

3.7 COORDINATION

- .1 Coordinate alternative disposal activities with Contract Administrator's on site waste diversion representative.

- END OF SECTION -