

DEMOLITION

1. GENERAL

1.1 Work Included

- .1 Demolition of building, scale pit foundations and removal of existing weighscale with associated equipment, as indicated on Drawings.
- .2 Protection of adjacent buildings, roadways, services during demolition work.
- .3 Protection of general public and workers during demolition work.
- .4 Removal of utility services within buildings being demolished.
- .5 Removal of buried tanks and service piping.
- .6 Grading and backfilling.
- .7 Final cleaning of site, soiled roadways and sidewalks.

1.2 Related Work

- .1 Site clearing: Section 02100

1.3 Codes, Regulations

- .1 Conform to municipal and provincial Safety Regulations governing building construction and demolition.

1.4 Protection

- .1 Do not interfere with use of adjacent buildings. Maintain free and safe passage to and from.
- .2 Prevent movement or settlement of adjacent structures. Provide and place bracing or shoring and be responsible for safety and support of such structures. Be liable for any such movement or settlement and any damage or injury caused.
- .3 Cease operations and notify the Contract Administrator immediately if safety of any adjacent structures appear to be endangered. Take all precautions to properly support these structures. Do not resume operations until permission is granted by the Contract Administrator.
- .4 Install additional bracing and shoring when the Contract Administrator considers it necessary to safeguard and prevent building movement or settlement.
- .5 Prevent movement, settlement or collapse of adjacent services, sidewalks, driveways and trees. Be liable for such movement, settlement or collapse. Promptly repair damage when ordered.

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- .6 Provide, erect and maintain barricades, lighting and guard rails as required by local authority's regulations to provide full protection for general public, workers and adjoining property.
- .7 Maintain and preserve utility services traversing site.

1.5 Permits and Regulations

- .1 Arrange and pay for all permits, notices and inspections necessary for the proper execution and completion of demolition.

1.6 Existing Services

- .1 Arrange and pay for disconnecting and removing utility and other services to areas of demolition. Disconnect and stub off where and as indicated on drawings. Notify the affected utility companies in advance and obtain approval before commencing with this work.
- .2 Place markers to indicate location of disconnected services. Identify service lines and capping locations on record drawings.

1.7 Temporary Partitions

- .1 Erect weatherproof closures as required to close off exterior openings. Maintain exit requirements.
- .2 Erect and maintain dustproof partitions as required to prevent spread of dust, fumes and smoke to other parts of the building. On completion, remove partitions and make good surfaces to match adjacent surfaces.
- .3 During the removal of existing parapets and roofing, provide proper protection from falling objects over all entrances which are to be kept open during normal working hours.
- .4 Provide adequate guard rails in stairwells and around open shafts to protect workers. Post warning signs which are clearly visible.
- .5 Carry out demolition work in a manner to cause as little inconvenience to the adjacent occupied building areas as possible.

1.8 Sequencing

- .1 The existing weigh scale must remain in service at its original location until the new scales are commissioned and operational.

1.9 Maintaining Traffic

- .1 Do not close or obstruct roadways without permits.

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- .2 Conduct operations with minimum interference to public or private roadways.

2. PRODUCTS

2.1 Materials

- .1 Except where noted otherwise, maintain possession of all materials being demolished. Immediately remove from site.
- .2 Relics and antiques (i.e., cornerstones and their contents, commemorative plaques, and tablets) and similar objects found or indicated remain the property of the City. Notify Contract Administrator prior to removal and obtain his direction regarding method of removal and turn over.
- .3 Carefully remove, store, and protect the following materials and equipment to be retained by the City or reinstalled by Contractor. Deliver and store where directed by the Contract Administrator.
 - .1 Existing weighscale and associated equipment
 - .2 Signage
 - .3 Radiation detectors and related equipment
 - .4 Fencing
 - .5 Building components identified by the Contract Administrator
 - .6 IT/Computer and communications equipment

3. EXECUTION

3.1 Demolition

- .1 Completely demolish the structures and appurtenances to extent indicated on drawings and required to accommodate new work.
- .2 Take particular care in area of new work ensuring protection of existing foundations and supporting structures.
- .3 Demolish in an orderly and careful manner, in reverse to original construction. Use of explosives is not permitted.
- .4 Repair all demolition performed in excess of that indicated or required, to the approval of the Contract Administrator and at no cost to the City.
- .5 Keep work wetted down to prevent dust. Provide hoses and water main or hydrant connections.

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- .6 Do not burn debris on site unless permission is obtained from local governing authorities.
- .7 Obtain permission from adjacent property owners when outriggers, swinging cranes, etc. may have to traverse their property. Provide protective insulating plastic cover guards on overhead live electric wiring near crane booms and structures being demolished.

3.2 Shoring

- .1 Provide, erect and maintain all necessary shoring and strutting for the protection and safety of adjacent buildings and workers. Be entirely responsible for the design, construction and efficiency of such supports for the purposes for which they are erected.
- .2 Make good any damage caused by inadequate shoring and failure of shoring at no expense to the City.

3.3 Dangerous Materials

- .1 Remove contaminated, vermin infested and other dangerous materials encountered from the site and dispose by safe means so as not to endanger the health of workers and the public.

3.4 Buried Tanks

- .1 Pump out buried tanks located outside building proper. Remove tanks and service piping from site.

3.5 Moving Structures/Equipment

- .1 Structures and scale equipment being removed from site in part or whole are to be carefully raised, supported and transported in a manner acceptable to local governing authorities. Brace and reinforce structures and scale equipment to withstand all moving stresses, which may be encountered.
- .2 Ensure that grounds, roads, and bridges are capable of safely supporting loads involved and that clearances are available for moving.
- .3 Make all arrangements for transport. Arrange and pay for all licences, permits, and escort fees required. Protect and maintain all services encountered.

3.6 Grading, Backfilling

- .1 Rough grade all areas affected by demolition and leave relatively level maintaining grades and contours of site. Do not mix backfill into existing topsoil.
- .2 Backfill areas excavated for demolition, abandoned pits with crushed or pit run gravel or crushed natural stone graded within the following limits:

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Sieve Size (Square Opening)	Percent Passing
25 mm	100
20 mm	95-100
10 mm	60-80
5 mm	40-60
2.5 mm	28-48
600 micrometre	13-29
300 micrometre	9-21
150 micrometre	6-15
75 micrometre	4-10

Note: At least 60% of material retained on 5 mm sieve to be fractured material.

- .3 Compact in layers to 90% Standard Proctor density.

3.7 Clean-up

- .1 Remove all demolished materials, debris, tools and equipment from site upon completion of work. Leave site in a condition acceptable to the Contract Administrator.
- .2 As demolition proceeds keep roads, streets and sidewalks clean of dirt and debris. Clean these areas to remove dirt and debris caused by demolition which may be hazardous to vehicular and pedestrian traffic. Perform at end of each working day.

END OF SECTION

**COMMON EXCAVATION -
UNSUITABLE SITE MATERIAL**

1. GENERAL

1.1 Scope of Work

- .1 This section outlines the requirements for the excavation and disposal of unsuitable site material.

1.2 Measurement and Payment

- .1 Excavation of unsuitable site material from ditch and pavement areas will be measured and paid for in accordance with City of Winnipeg Standard Construction Specification CW 3170 for Common Excavation-Unsuitable Site Material.
- .2 No payment will be made for the placement and compaction of unsuitable site material and all associated works in performing all operations herein described.

2. EXECUTION

2.1 General

- .1 Do not perform work during inclement weather conditions or under adverse field conditions such as frozen ground or ground covered with snow, ice, or standing water.
- .2 The excavated unsuitable site material shall be hauled and stockpiled adjacent to the clay borrow area as indicated on Drawing C1.02.
- .3 After the excavation and placing of the clay borrow material obtained from the designated borrow location as shown on Drawing C1.02, the unsuitable site material shall be placed and compacted in clay borrow area. The Contractor maybe be required to pump out all water from the bottom of the clay borrow pit prior to the placement of unsuitable site material.

2.2 Placement of Unsuitable Site Material

- .1 Unsuitable site material shall be placed in 300 mm maximum depth loose lifts and compacted to a minimum of 90% of its Standard Proctor density to the elevation that positively drains to the existing ditch along Charette Road.

END OF SECTION

1. GENERAL

1.1 Work Included

- .1 Trenching, backfilling and compaction for all buried utilities, drainage lines and services
- .2 Shoring
- .3 Dewatering

1.2 Related Work

- .1 Trenching and backfilling for structures: Section 02223

1.3 Codes, Regulations

- .1 Comply with excavation and trenching regulations of Provincial and municipal authorities.
- .2 Conform to requirements of the National Building Code of Canada and the Canadian Construction Safety Code.

1.4 Protection

- .1 Protect fences, trees, shrubs and lawns, areas to receive planting, rock outcropping and other features remaining as part of final landscaping.
- .2 Protect bench marks, structures, roads, sidewalks, paving and curbs against damage.
- .3 Protect excavations by shoring, bracing, sheet piling, or by other methods, as required to prevent cave-ins or loose dirt from falling into excavations.
- .4 Underpin and support structures, service lines, and piping which will, or may be damaged by excavation Work.
- .5 Notify the Contract Administrator of any unexpected sub-surface conditions. Discontinue Work in the area until the Contract Administrator provides notification to resume Work.
- .6 Protect bottom of excavations and soil around and beneath foundations and structures from frost.
- .7 Avoid disturbing roots of trees shown to remain. If excavation through roots is required, excavate by hand and cut roots with sharp axe.
- .8 Avoid disturbing trees shown to remain. If pruning is necessary, make cuts clean, smooth and slanted. Apply tree paint on all wounds.

1.5 Samples

- .1 If requested by the Contract Administrator submit 20 kg sample of each type of proposed backfill material for analysis by testing laboratory.
- .2 Ship samples prepaid or deliver in tightly closed containers to testing laboratory designated by the Contract Administrator.
- .3 Costs for analysis will be paid by the Contract Administrator.

1.6 Compaction Testing

- .1 Testing of compacted fill materials will be performed by the Contract Administrator. Testing will be performed so as to least encumber the performance of Work.
- .2 The Contract Administrator will pay for one series of tests only, on the area being evaluated. Pay costs for additional testing if required due to improper performance of Work.
- .3 Tests are to be performed in accordance with ASTM D698 for Standard Proctor Density.
- .4 When Work of this Section or portions of Work are completed to own satisfaction, notify the Testing Firm to perform density tests. Do not proceed with additional portions of Work until results have been verified and accepted.
- .5 If, during progress of Work, tests indicate that compacted materials do not meet specified requirements, remove defective Work, replace and retest at own expense, as directed by the Contract Administrator.
- .6 Ensure compacted fills are tested and approved before proceeding with placement of surface materials.

2. PRODUCTS

2.1 Backfill Materials

- .1 All materials to be subject to the Contract Administrator's approval.
- .2 Granular materials to be composed of sound, hard, uncoated particles, free from injurious quantities of clay, flaky particles, soft shale, friable materials, roots, vegetable matter and frozen lumps.
- .3 Grading of granular materials to show no marked fluctuations between opposite ends of extreme limits.
- .4 Granular Backfill: crushed or pit run gravel or crushed natural stone, graded within the following limits:

**TRENCHING, BACKFILLING
AND COMPACTION**

Sieve Size (Square Opening)	Percent Passing
25 mm	100
20 mm	95-100
10 mm	60-80
5 mm	40-60
2.5 mm	28-48
600 micrometre	13-29
300 micrometre	9-21
150 micrometre	6-15
75 micrometre	4-10

Note: At least 60% of material retained on 5 mm Sieve to be fractured material.

- .5 Excavated Earth: remove all rocks over 300 mm in largest dimension from excavated earth to be used as backfill.

3. EXCAVATION

3.1 Preparation and Layout

- .1 Establish all elevations and lines required. Designate and identify datum elevations.
- .2 Provide and set all stakes, hubs, pins, templates, flagging, poles, etc. required for the Work.
- .3 Maintain bench marks, monuments and other reference points. Re-establish if disturbed or destroyed, at no additional cost to the Contract Administrator.

3.2 Existing Utilities

- .1 Prior to commencement of excavation Work, establish location and extent of all underground utilities occurring in Work area. Notify Utility Companies to remove and relocate lines which interfere with excavation.
- .2 Maintain, re-route or extend as required, existing utility lines which pass through Work area and which must remain. Pay all costs for this Work, except costs borne by Utility Companies.
- .3 Protect utility services uncovered by excavation.
- .4 Remove abandoned utility service lines encountered from areas of construction. Cap, plug or seal such lines and identify at grade with markers.
- .5 Accurately locate and record abandoned and active utility lines re-routed or extended, on Record Drawings.

3.3 Frost Removal

- .1 Remove frost in areas to be excavated.
- .2 Comply with local regulations when burning.

3.4 Excavation

- .1 Excavate on lines and to depths and grades shown on the Drawings or required.
- .2 Minimum trench width to be 300 mm greater than outside pipe diameter.
- .3 Maximum trench width at top of pipe to be not greater than outside pipe diameter plus 900 mm plus allowance for timbering.
- .4 If maximum trench width is exceeded through error, provide a better class of bedding to the Contract Administrator's approval at no additional cost to the Contract Administrator.
- .5 Where excavation is made below depth shown through error, fill to required depth with granular backfill at no additional cost to the Contract Administrator. Compact to 95% of Standard Proctor Density.
- .6 Hand trim and leave excavations free from loose material and organic matter.
- .7 Excavations are not to encroach on normal 45° bearing support under any foundation.
- .8 Removal of boulders and buried concrete in excess of 0.4 m³ will be considered as rock removal, and is not within the scope of this Section. Remove boulders and large stones to provide 150 mm minimum clearance under and on sides of pipes.
- .9 Remove concrete, paving, walks and other obstructions encountered in the course of excavation. Cut pavement and concrete to neat lines each side of trenches.
- .10 Make good all damage occurring as a result of inadequate, unauthorized or defective methods of protection.
- .11 When complete, request the Contract Administrator to inspect excavations.
- .12 Cut out soft areas of trench bottoms, backfill with granular backfill, compact to 95% of Standard Proctor Density.

3.5 Tolerances

- .1 Excavations to conform to depths and grades shown on Drawings, ±13 mm.

3.6 Shoring, Bracing, Sheet Piling

- .1 Provide all shoring, bracing and sheet piling required to prevent damage to excavations and injury to personnel.

- .2 Comply with all applicable rules and regulations of governmental authorities.
- .3 Erect independent of utilities and structures.
- .4 Prefabricated cages or shields may be used to supplement or replace conventional shoring, provided they comply with all applicable safety regulations and permit placing and tamping of bedding material under and around utility piping.
- .5 Maintain during backfilling and remove in stages as backfilling progresses.
- .6 Remove all shoring, bracing, and sheet piling unless otherwise permitted by the Contract Administrator.
- .7 If shoring is allowed to remain, cut off to a level at least 600 mm below finish grade.
- .8 Assume full responsibility for any failure, collapse or movement of shoring, bracing and sheet piling, collapse of earth banks, trenches or other excavations.

3.7 Dewatering

- .1 Keep excavations dry at all times. Provide necessary equipment including pumps, piping and temporary drains and trenches.
- .2 Furnish and operate suitable pumps on a 24 hour basis to keep excavations free of water.
- .3 Do not discharge drainage water lines into sanitary sewers without the Contract Administrator's approval. Ensure water discharge does not contain silt held in suspension.
- .4 Direct discharge away from excavated area. Do not allow spillage over embankments.
- .5 Control grading in and adjacent to excavations to prevent water running into excavated areas or onto adjacent properties or public thoroughfares.
- .6 Water flow over fresh concrete is not permitted. Do not pump during placing of concrete and for at least 24 hours after, unless from sumps separated from concrete with watertight walls or bulkheads.

3.8 Preparation for Backfilling

- .1 Do not commence backfilling operations until utilities, drainage lines and services have been inspected and approved by the Contract Administrator and authorities having jurisdiction.
- .2 Ensure trenches are free from debris, snow, ice and water and that ground surfaces are not in a frozen condition.

3.9 Backfilling

- .1 Bedding of pipes and utilities and backfill over to 300 mm above top of pipes and utilities is included in other sections.

**TRENCHING, BACKFILLING
AND COMPACTION**

- .2 Backfill around structures and in other filled sections as shown on Drawings with granular backfill. Place and compact in layers of 150 mm maximum depth.
- .3 Backfill remainder with excavated earth. Place and compact in layers of 150 mm maximum depth.
- .4 Maintain optimum moisture content of backfill materials to permit compaction to specified densities.
- .5 After compaction, top of backfill to be level with surrounding ground.
- .6 When backfilling around structures, place and compact evenly around to prevent damage or displacement. Grade top surface to direct water away.
- .7 Where additional pipes are to be or have been laid, crossing trench being backfilled and at higher elevation, use special care and ensure backfill is well compacted from lower pipe up to invert elevation of higher pipe. Use granular backfill between pipes.
- .8 Use motorized compaction equipment with extreme caution. Do not use in immediate vicinity of concrete Work, pipes, ducts, or other buried conductors. Place backfill in such areas in 150 mm deep layers and compact each layer with hand tampers.
- .9 Compact backfilled trenches by water flooding and drop hammer method, to density equivalent to that of surrounding undisturbed earth. Compact to sufficient density to prevent future settlement in any trenches which will be under pavement.

3.10 Compaction Densities

- .1 Compaction densities are based on Standard Proctor Density tests per ASTM D698.
- .2 Compact backfill 100% of Standard Proctor Density under pavement, concrete slabs, sidewalks, and structures.
- .3 Compact backfill to 90% of Standard Proctor Density in all other areas.

3.11 Surplus Material

- .1 Remove and dispose of surplus material as directed by the Contract Administrator.

3.12 Clean-up

- .1 As excavation proceeds, keep roads, streets and sidewalks clean of dirt and excavated material.
- .2 Clean-up and wash down to remove all dirt and excavated materials caused by Work of this Section.
- .3 Clean at end of each working day as directed by the Contract Administrator.

**TRENCHING, BACKFILLING
AND COMPACTION**

3.13 Settlement

- .1 Promptly repair any settlement of backfill which occurs prior to the end of the warranty period.
- .2 Re-compact defective areas and place and compact additional backfill up to grade. Use matching material and compact to specified density.
- .3 Pay all costs to repair damages to other Work caused by such settlement.

END OF SECTION

1. GENERAL

1.1 Work Included

- .1 Excavation to elevations indicated on Drawings.
- .2 Excavation for foundations and structures.
- .3 Capping, sealing, and removal of discontinued utility lines in excavated areas.
- .4 Dewatering, shoring, and bracing in excavations.
- .5 Backfilling and compaction around foundations and structures to attain indicated grades and profiles.
- .6 Excavation and grading for piling equipment supports.
- .7 Excavation to below pile cut-off elevations as required for construction.
- .8 Granular base under concrete slabs and structures on grade.
- .9 Disposal of surplus excavated material.

1.2 Codes, Regulations

- .1 Comply with excavation and trenching regulations of Provincial and municipal authorities.
- .2 Conform to requirements of the National Building Code of Canada and the Canadian Construction Safety Code.

1.3 Protection

- .1 Protect fences, trees, shrubs and lawns, areas to receive planting, rock outcropping and other features remaining as part of final landscaping.
- .2 Protect bench marks, structures, roads, sidewalks, paving and curbs against damage.
- .3 Protect excavations by shoring, bracing, sheet piling, or by other methods, as required to prevent cave-ins or loose dirt from falling into excavations.
- .4 Underpin and support structures, service lines and piping which will, or may be damaged by excavation Work.
- .5 Notify the Contract Administrator of any unexpected subsurface conditions. Discontinue Work in the area until the Contract Administrator provides notification to resume Work.
- .6 Protect bottom of excavations and soil around and beneath foundations and structures from frost.

1.4 Samples

- .1 If requested by the Contract Administrator submit 20 kg sample of each type of fill material specified for analysis by testing laboratory. For coarse gravelly soil or coarse crushed stone, submit 60 kg sample of each.
- .2 Ship samples prepaid or deliver in tightly closed containers to testing laboratory designated by the Contract Administrator.
- .3 Costs for analysis will be paid by the Contract Administrator.

1.5 Compaction Testing

- .1 Testing of compacted fill materials will be performed by the Contract Administrator. Testing will be performed so as to least encumber the performance of Work.
- .2 The Contract Administrator will pay for one (1) series of tests only, on the area being evaluated. Pay costs for additional testing if required due to improper performance of Work.
- .3 Tests are to be performed in accordance with ASTM D698 for Standard Proctor Density.
- .4 When Work of this Section or portions of Work are completed to own satisfaction, notify the Testing Firm to perform density tests. Do not proceed with additional portions of Work until results have been verified and accepted.
- .5 If, during progress of Work, tests indicate that compacted materials do not meet specified requirements, remove defective Work, replace and retest at own expense, as directed by the Contract Administrator.
- .6 Ensure compacted fills are tested and accepted before proceeding with placement of surface materials.

2. PRODUCTS

2.1 Fill and Backfill Materials

- .1 All materials to be subject to the Contract Administrator's acceptance.
- .2 Granular materials to be composed of sound, hard, uncoated particles, free from injurious quantities of clay or silt sized particles, flaky particles, soft shale, friable materials, roots, organic matter and frozen lumps.
- .3 Grading of granular materials to show no marked fluctuations between opposite ends of extreme limits.
- .4 Type 1: pit run gravel or crushed natural stone graded within the following limits:

**EXCAVATION AND BACKFILLING
 FOR STRUCTURES**

Canadian Metric Sieve Size	Percent Passing
75,000	100
25,000	80 – 100
5,000	40 – 70
315	10 – 35
80	5 – 30

- .5 Type 2: base course, crushed gravel graded within the following limits:

Canadian Metric Sieve Size	Percent Passing	
	Crushed Granular	Crushed Limestone
25,000	100	-
20,000	80 – 100	100
5,000	40 – 70	40 - 70
2,500	25 – 55	25 - 60
315	13 – 30	8 - 25
80	5 – 15	6 - 17

At least 60% of material retained on 5 mm sieve to have at least one (1) freshly fractured face.

- .6 Type 3: natural river or bank sand, free from silt, clay, loam, friable or soluble materials and vegetable matter, graded within the following limits:

Canadian Metric Sieve Size	Percent Passing
10,000	100
5,000	90 - 100
630	25 - 60
80	0 - 3

- .7 Type 4: common fill, excavated earth free from roots, stones larger than 50 mm in size and building debris. Fill under landscaped areas to be free from alkali, salt, petroleum products and other materials detrimental to plant growth. Use subsoil excavated from Site only if accepted by the Contract Administrator and if conforming to requirements for Type 4.

3. EXECUTION

3.1 Preparation and Layout

- .1 Establish extent of excavation by area and elevation. Designate and identify datum elevations.

- .2 Set out all lines and levels as indicated on Drawings and required for proper excavation. Clearly indicate, by stakes, areas to be excavated.
- .3 Maintain bench marks, monuments and other reference points. Re-establish if disturbed or destroyed, at no additional cost to Contract Administrator.
- .4 Erect batter boards and securely anchor.

3.2 Utilities

- .1 Prior to commencement of excavation Work, establish location and extent of all underground utilities occurring in Work area. Notify Utility Companies to remove and relocate lines which interfere with excavation. Notify Utility Company to identify and locate existing lines within excavations.
- .2 Maintain, re-route or extend as required, existing utility lines which pass through Work area and which must remain. Pay all costs for this Work, except costs borne by Utility Companies.
- .3 Protect utility services uncovered by excavation.
- .4 Remove abandoned utility service lines encountered from areas of construction. Cap, plug or seal such lines and identify at grade with markers.
- .5 Accurately locate and record abandoned and active utility lines re-routed or extended, on Record Drawings.

3.3 Excavation

- .1 Excavate to elevations and dimensions indicated on Drawings plus space required to erect formwork, lay foundation drainage and for review.
- .2 Perform additional excavation only by written authorization of the Contract Administrator.
- .3 Machine slope banks of all excavated areas.
- .4 Hand trim and leave excavations free from loose material and organic matter.
- .5 When complete, request the Contract Administrator to review excavations.
- .6 Correct unauthorized excavation as directed by the Contract Administrator at no additional cost to Contract Administrator.
- .7 Fill over-excavated areas under structure bearing surfaces with Type 2 backfill material. Compact to 100% Standard Proctor Density.
- .8 Excavations are not to encroach on normal 45° bearing support under any foundation.

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- .9 Make good all damage occurring as a result of inadequate, unauthorized or defective methods of protection.
 - .10 Excavate at pile locations to below pile cut-off elevations and over area sufficient to perform piling Work and to install formwork for construction including void form. Remove excavated material from Site.
 - .11 Remove concrete, paving, walks and other obstructions encountered in the course of excavation. Cut pavement and concrete to neat lines at excavations.

3.4 Tolerances

- .1 General excavation shall be to the elevations indicated on Drawings, ± 50 mm.

3.5 Shoring/Bracing

- .1 Provide all shoring and bracing required to prevent damage to excavations and injury to personnel.
- .2 Comply with all applicable rules and regulations of governmental authorities.
- .3 Protect excavations and adjacent property against cave-ins, shear failure, slides, undermining, erosion, and settlement. Erect shoring, cribbing, bracing, sheet piling or planking as necessary to provide such protection. Place such Work so as not to interfere with operations and independent of any footings. Leave Work in position until permission is received from the Contract Administrator to proceed with backfilling.
- .4 Assume full responsibility for any failure, collapse or movement of shoring or bracing, collapse of earth banks, trenches or other excavations.

3.6 Dewatering

- .1 Excavation, pits, and the entire sub-grade in the vicinity of the Work shall be kept free of water. Positive surface drainage shall be maintained away from the excavation at all times. Provide and operate pumps or other suitable equipment, and provide and maintain a temporary drainage system within the excavation. Discharge from pumps or other dewatering equipment shall be located and controlled such that loss, damage, nuisance, or injury to the Work does not result. Additional excavation made necessary by water in the excavation shall be at no additional cost to the City.

3.7 Finishing Surfaces

- .1 Finished excavated surfaces are to be in neat condition, true to lines, levels and grades.
- .2 When acceptable trimming is not obtainable by mechanical means, hand finish area.
- .3 Use Type 3 sand for leveling in area of general excavation up to 50 mm below required final levels.

3.8 Preparation for Backfilling

- .1 Do not commence backfilling operations until mechanical and electrical services and Site drainage system have been reviewed and accepted by the Contract Administrator and authorities having jurisdiction.
- .2 Ensure areas to be backfilled are free from debris, snow, ice and water and that ground surfaces are not in a frozen condition.
- .3 Do not backfill over existing subgrade surfaces which are porous, wet or spongy.
- .4 Perform all necessary compaction of existing subgrade surfaces under structures and slabs on grade if densities are not equal to that required for fill materials.
- .5 Cut out soft areas of existing subgrade, backfill with Type 1 and compact to density specified for fill.

3.9 Backfilling, Filling

- .1 Backfill and fill to grades, contours, levels and elevations indicated on Drawings.
- .2 Where temporary unbalanced pressures are liable to develop on walls, erect necessary shoring to counteract imbalance.
- .3 Backfill simultaneously on both sides of walls and grade beams to equalize soil pressures.
- .4 Place and compact materials in continuous layers not exceeding 150 mm loose depth. Use method to prevent disturbance to buried services, drainage lines and waterproofing.
- .5 Maintain optimum moisture content of materials to permit compaction to specified densities.
- .6 Compact fill and backfill to specified densities.

3.10 Fill Types and Compaction

- .1 Compaction densities indicated herein are based on ASTM D698 for Standard Proctor Density.
- .2 Exterior side of foundations and structures: Type 1 fill to subgrade elevation. Compact to 95% density.
- .3 Under concrete slabs-on-grade: provide 150 mm compacted depth Type 2 base course topped with 50 mm compacted depth of Type 3 levelling sand. Compact to 100% density.
- .4 Fill under landscaped areas: Type 4 fill to subgrade elevation. Compact to 85% density.

3.11 Surplus Material

- .1 Remove and dispose of surplus material as directed by the Contract Administrator.

- .2 Remove all excavated concrete, paving, walks from the Site.

3.12 Clean-up

- .1 As excavation proceeds, keep roads, streets and sidewalks clean of dirt and excavated material.
- .2 Clean-up and wash down to remove all dirt and excavated materials caused by Work of this Section.
- .3 Clean at end of each working day as directed by the Contract Administrator.

END OF SECTION

STRIPPING AND STOCKPILING TOPSOIL

1. GENERAL

1.1 Scope of Work

- .1 This section outlines the requirements for the stripping and stockpiling of topsoil.

1.2 Measurement and Payment

- .1 Stripping and Stockpiling will not be measured and payment for all work under this section to be included in Item No. 1 – Construction of New Entrance and Scale Facility as listed in Form B: Prices.

2. EXECUTION

2.1 General

- .1 Do not perform work during inclement weather conditions or under adverse field conditions such as frozen ground or ground covered with snow, ice, or standing water
- .2 The Contract Administrator and the Contractor will determine the exact location of the topsoil stockpile (within the construction area) prior to the stripping of the topsoil.

2.2 Placement of Stockpiled Topsoil

- .1 Placement of the on-site topsoil shall be in accordance with City of Winnipeg Standard Construction Specification CW 3540.
- .2 The on-site topsoil which has been stockpiled does not require shredding or to be screened. The topsoil to be placed as shown on Drawing No. C1.02 shall be free of clay lumps and other extraneous matter.

END OF SECTION

FINISH GRADING

1. GENERAL

1.1 Work Included

- .1 Finish grading subgrade over entire Site.
- .2 Excavate and trim areas to receive base materials for paving and sidewalks.
- .3 Providing topsoil as required.
- .4 Placing topsoil to final grades, elevations and contours.

1.2 Related Work

- .1 Section 02922: Seeding

1.3 Protection

- .1 Prevent damage to existing fencing, landscaping, benchmarks, pavement, and utility lines. Correct any damage, to the Contract Administrator's approval at no additional cost to the City.

2. PRODUCTS

2.1 Materials

- .1 Topsoil: friable loam free from subsoil, roots, grass, excessive amount of weeds, stones, foreign matter and other objects; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4% and a maximum of 25% organic matter. Use topsoil stockpiled on-site if conforming to these requirements.

3. EXECUTION

3.1 Subgrade Preparation

- .1 Ensure that subgrade is not frozen when placing topsoil.
- .2 Fine grade subgrade, eliminating uneven areas and low spots. Remove debris, roots, branches, stones in excess of 50 mm in size. Remove subsoil which has been contaminated with petroleum products.
- .3 Excavate and trim areas to subgrade elevation, which are shown to receive granular base for paving and sidewalks.
- .4 Fine grade to required levels, profiles, and contours indicated on Drawings. Make changes in grade natural. Blend slopes into level areas.
- .5 Slope grade away from building at minimum 1% unless indicated otherwise on Drawings.

FINISH GRADING

- .6 Cultivate subgrade to a depth of 75 mm, where topsoil is to be placed. Repeat cultivation in areas where equipment used for hauling and spreading topsoil has compacted sub-grade.
- .7 Compact subgrade to the following:
 - .1 90% Standard Proctor Density where topsoil is to be placed.
 - .2 95% Standard Proctor Density where granular base for paving is to be placed.
 - .3 95% Standard Proctor Density where granular base for concrete sidewalks is to be placed.

3.2 Placing Topsoil

- .1 Provide all additional topsoil required if stockpiled quantity is insufficient.
- .2 Place topsoil in areas where seeding, sodding is to be performed. Place to the following minimum depths, up to finished grade elevations:
 - .1 150 mm for seeded areas
 - .2 115 mm for sodded areas
- .3 Use topsoil which is in a relatively dry state. Place during dry weather.
- .4 Fine grade topsoil eliminating rough and low areas to ensure positive drainage. Follow levels, profiles and contours of subgrade.
- .5 Remove stones, roots, grass, weeds, debris and other foreign non-organic material while spreading.
- .6 Manually spread topsoil around building to prevent damage as may be caused by grading equipment.
- .7 Lightly roll placed topsoil to compact and retain surface contours and profiles.

3.3 Surplus Material

- .1 Remove and dispose of surplus material as directed by the Contract Administrator.
- .2 Stockpile areas and entire jobsite are to be left completely clean and raked, ready to receive landscaping.

END OF SECTION

CLAY BORROW MATERIAL

1. GENERAL

1.1 Scope of Work

- .1 This section outlines the requirements for the excavation of clay borrow material.

1.2 Measurement and Payment

- .1 Further to City of Winnipeg Standard Construction Specifications, work under this section will not be measured. Payment for all work is to be included in Item No. 1 – Construction of New Entrance and Scale Facility as listed in Form B: Prices.

2. EXECUTION

2.1 General

- .1 Do not perform work during inclement weather conditions or under adverse field conditions such as frozen ground or ground covered with snow, ice, or standing water.
- .2 The topsoil shall be striped within the clay borrow location and stockpiled adjacent to the clay borrow location in a location determined by the Contract Administrator (Drawing C1.02).
- .3 Unsuitable site material within the limits of the clay borrow location shall be stockpiled with the unsuitable site material excavated from the proposed pavement area adjacent to the clay borrow location in a location determined by the Contract Administrator (Drawing C1.02).
- .4 After excavating and placing clay borrow material obtained from the clay borrow location as shown on Drawing C1.02, stockpiled unsuitable site material shall be placed and compacted in clay borrow area. The Contractor will be required to pump out any water that may have accumulated from the bottom of the clay borrow pit prior to the placement of stockpiled unsuitable site material.
- .5 The Contractor shall level and trim the clay borrow area and then place the stockpiled topsoil located adjacent to the clay borrow area evenly throughout the location and positively grade the topsoil to the ditch along Charette Road.

END OF SECTION

SITE LAYOUT

1. GENERAL

1.1 Scope of Work

- .1 This section outlines the requirements for site surveying and construction layout by the Contractor.

1.2 Measurement and Payment

- .1 Surveying and construction layout undertaken by the Contractor will not be measured and payment for all work under this section is to be included in Item No.1 – Construction of New Entrance and Scale Facility as listed in Form B: Prices.

2. EXECUTION

2.1 Protection of Survey Infrastructure

- .1 Known survey infrastructure including geodetic control monuments located in the vicinity of the Work is shown on the Drawings.
- .2 Confirm the location of survey infrastructure within the vicinity of the Work and notify the Contract Administrator of any conflicts with the Work.
- .3 Provide the Contract Administrator with 48 hours notice to permit referencing for future replacement where a control monument lies in the line of the work and will be disturbed. Failure to provide this notice will result in paying costs associated with replacing or relocating the disturbed survey infrastructure.
- .4 Arrange for restoration of survey infrastructure as directed by the Contract Administrator that has been disturbed, moved, covered, mutilated or destroyed by careless construction at Contractor's own cost.

2.2 Stakes and Marks

- .1 Survey control for Work is shown on the Drawings and will be provided by the Contract Administrator prior to the start of the Work. It shall be the responsibility of the Contractor to maintain and protect control monuments for the duration of the Work.
- .2 The Contractor shall provide all required instruments and competent personnel for performing all construction layouts from the control survey shown on the Drawings and shall be responsible for the true and proper final layout of the Works including position, levels, dimensions, and alignment.
- .3 All lines and levels shall be subject to checking by the Contract Administrator and the Contractor shall cooperate by making the Work available for such checking at suitable times

SITE LAYOUT

as required by the Contract Administrator. This checking shall not relieve the Contractor from his responsibility for the correctness of his layout.

- .4 Should any error appear or arise in position, levels, dimensions, and/or alignments during the course of the works, the Contractor shall promptly rectify such errors, at his own cost, to the satisfaction of the Contract Administrator.
- .5 Any control monuments removed or destroyed by the Contractor, without the consent of the Contract Administrator, shall be replaced by the Contractor at his cost to the satisfaction of the Contract Administrator.
- .6 An electronic copy of the proposed work will be available to the Contractor to assist in the layout of the Works.

END OF SECTION

BORED CONCRETE PILES

1. GENERAL

1.1 Work Included

- .1 Excavate and grade for equipment support at pile locations.
- .2 Excavate to cut-off elevations at pile locations.
- .3 Machine drill pile shafts.
- .4 Dewatering.
- .5 Place concrete and reinforcement and prepare piles for capping.
- .6 Remove all excavated materials from site.

1.2 Related Work

- .1 Excavation and grading for piling equipment support: Section 02223
- .2 Excavation to top of pile elevations: Section 02223
- .3 Concrete pile caps: Section 03300

1.3 Quality Assurance

- .1 Construct piles in accordance with CAN/CSA-A23.1.

1.4 Qualifications

- .1 If required by Contract Administrator, produce satisfactory proof of successful installation experience with this type of foundation, in similar conditions and with piles of similar capacities.

1.5 Pile Design

- .1 Design length of each pile as shown on drawings.
- .2 Cast-in-place concrete type.
- .3 Skin friction to be 15.2 kPa.

1.6 Shop Drawings

- .1 Submit detailed shop drawings for review in accordance with Section 01300.
- .2 Clearly detail and schedule piling work, identify pile lengths, diameters, reinforcement, drilling and concrete placement techniques, sequence and related scheduling.

BORED CONCRETE PILES

1.7 Inspection and Testing

- .1 Inspection of piling work is to be performed by the Contract Administrator and an Inspection Firm appointed and paid by the City.
- .2 Concrete sampling and testing is to be performed by a Testing Firm appointed and paid by the City.
- .3 Provide free access to all portions of work and cooperate with inspection and testing personnel.
- .4 Notify Inspection and Testing firms and Contract Administrator before placing any concrete, in ample time to permit scheduling inspections and tests.
- .5 Submit proposed concrete mix design to Testing Firm and Contract Administrator.
- .6 Three concrete test cylinders will be taken for every 50 or less m³ of concrete placed.
- .7 At least three concrete test cylinders will be taken on any day when concrete is placed.
- .8 One additional test cylinder will be taken during cold weather concreting, and be cured on job site under same conditions as concrete it represents.
- .9 Slump tests will be taken as necessary to verify quality of concrete.
- .10 Testing of concrete will be performed in accordance with CAN/CSA-A23.2. Test results will be issued to the Contractor, Contract Administrator and the City.
- .11 Pay costs for retesting required due to defective materials or workmanship.
- .12 Contract Administrator and Inspection Firm will inspect shaft and bottom bearing prior to placement of concrete or reinforcement. Cooperate and schedule inspection visits.

1.8 Field Records

- .1 Maintain accurate records of each pile placed. Records are to include the following:
 - .1 Pile sizes and lengths, location of piles in groups, location or designation of pile groups.
 - .2 Final bearing and head elevations.
 - .3 Condition of base materials.
 - .4 Tested concrete strengths; concrete slumps; date and time concrete placed.
 - .5 Reinforcing details.
 - .6 Shaft diameter.

BORED CONCRETE PILES

- .2 Submit six (6) copies of field records to the Contract Administrator.

2. PRODUCTS

2.1 Materials

- .1 Cement: sulphate resistant Type HS, conforming to CAN/CSA-A3000.
- .2 Water and Aggregates: conforming to CAN/CSA-A23.1.
- .3 Reinforcing Steel: CSA G30.18; grade 400 deformed for vertical reinforcing and dowels; grade 300 for ties; sizes as shown on drawings.

2.2 Concrete Mix

- .1 Pay all costs for mix design. Submit design to Testing Firm and Contract Administrator for review.
- .2 Provide concrete mixed in accordance with Clause 18, CAN/CSA-A23.1.
- .3 Proportion concrete mix as follows. Type HS Portland cement; aggregate to be 40 mm maximum size, 5 mm minimum size.
- .4 All concrete: 35 MPa 28 day compressive strength, 80±30 mm slump.
- .5 Concrete: 0.40 maximum water: cement ratio, 360 kg/m³ minimum cement content.
- .6 Use accelerating admixtures in cold weather only when approved by Contract Administrator. If approved, use of admixtures will not relax cold weather placement requirements. Do not use calcium chloride.
- .7 Use set-retarding admixture during hot weather only when approved by Contract Administrator.
- .8 All admixtures are subject to the approval of the Contract Administrator. List all proposed admixtures in mix design submission. Do not change or add admixtures to approved design mixes without Contract Administrator approval.

3. EXECUTION

3.1 Condition of Site

- .1 Excavate and grade at each pile location as required to support piling equipment, to properly install piles and permit load testing when required.

BORED CONCRETE PILES

- .2 Preparation of site for piling will be done under other Sections of the specification. Ensure that site conditions at each pile location are adequate to support piling equipment, to properly install piles and permit load testing when required.
- .3 Keep drilled holes free of water at all times, until concrete is placed.
- .4 Provide necessary equipment including pumps, piping and temporary drains and trenches.
- .5 Do not discharge drainage water into municipal sewers without municipal approval.

3.2 Drilling

- .1 Drill for piles where and as indicated on drawings.
- .2 Ensure pile shafts are drilled vertically, and diameters and depths indicated on drawings. Piles are not to deviate from true vertical alignment more than 2% of pile length, nor more than 75 mm off centre from true location, with tops not more than 25 mm from cut-off elevations shown on drawings.
- .3 Do not drill for adjacent piles less than 48 hours after piles have been formed unless piles are more than 5 shaft diameters apart.
- .4 Install steel casings in excavations as required to prevent cave-ins and water entry.

3.3 Placing Piles

- .1 Immediately following drilling, if required place removable liners in shaft, jacking firmly in place.
- .2 Clean bottom and arrange for inspection. Provide lighting necessary for inspection of shaft and base. Immediately after approval, place reinforcing steel and concrete. Perform these operations on the same day, for each pile.
- .3 Reinforce in accordance with drawings. Place reinforcing and secure in position. Provide concrete cover in accordance with Clause 12, CAN/CSA-A23.1. Extend steel for connection of pile caps or grade beams.
- .4 Place concrete to prevent concrete from striking sides of shaft and to prevent any foreign material from falling into shaft. Vibrate concrete in top 3m of pile. Place concrete continuously from bearing to top.
- .5 Place concrete by means of a tremie, should an inflow of water occur that cannot be removed by pumping. Place to a height sufficient to effect a seal. Notify Contract Administrator prior to carrying out this work.
- .6 Withdraw removable liner as concrete is placed, maintain at least 1.5m depth of concrete in liner at all times.

BORED CONCRETE PILES

- .7 Form pile tops at cut-off elevations.
- .8 Provide dowels for connection of other structures. Secure in position until concrete is set.
- .9 During cold weather, provide concrete protection in accordance with CAN/CSA-A23.1.

3.4 Defective Piles

- .1 The Contract Administrator may, at his discretion, reject any pile that is out of alignment or out of position or otherwise fails to meet specified requirements.
- .2 Replace rejected piles with new piles as directed by the Contract Administrator at no additional cost to the City.

END OF SECTION

PILE FOUNDATIONS, GENERAL

1. GENERAL

1.1 Description

- .1 This Section provides the requirements associated with the installation of cast-in-place concrete piles as specified in Section 02362.

1.2 Existing Conditions

- .1 Review the Geotechnical Report prior to submitting Tender for the Work.
- .2 Notify the Contract Administrator in writing if subsurface conditions at Site differ from those indicated and await further instructions from the Contract Administrator.

1.3 Scheduling

- .1 Submit schedule of planned sequence of installation to the Contract Administrator for review, not less than two weeks prior to commencement of pile drilling.

2. PRODUCTS

2.1 Materials

- .1 Material requirements for piles are specified in Section 02362.
- .2 Supply or fabricate full length reinforcement for piles as indicated and provide equipment to handle full length pile reinforcement without cutting and splicing.
- .3 Do not splice piles without written permission of the Contract Administrator. When permitted, provide details for the Contract Administrator. Design details of splice to bear dated signature stamp of Professional Engineer registered in the Province of Manitoba.
- .4 In the event that Site conditions require pile extensions, the extensions shall be constructed in accordance with the details shown on the Drawings.

3. EXECUTION

3.1 Equipment

- .1 Prior to commencement of pile installation, if requested submit to the Contract Administrator for review, details of equipment for installation of piles.
 - .1 Piling rig: give manufacturer's name and type.

PILE FOUNDATIONS, GENERAL

3.2 Preparation

- .1 Ensure that ground conditions at pile locations are adequate to support pile drilling operation. Make provision for access and support of piling equipment during performance of Work.
- .2 Undertake review of all adjacent infrastructure with the Contract Administrator complete with a photographic record sufficient to establish pre-drilling condition of the existing adjacent infrastructure.

3.3 Field Measurement

- .1 Contractor shall cooperate with the Contract Administrator and shall allow access during the pile drilling installation operations so that all field measurements can be performed expeditiously.
- .2 Accurate records will be maintained of drilling for each pile, including:
 - .1 Type and make of pile rig
 - .2 Other drilling equipment including casings
 - .3 Pile size and length, location of pile in pile group, location or designation of pile group
 - .4 Sequence of drilling piles in group
 - .5 Final tip and top of pile elevations
- .3 If requested by the Contract Administrator, submit all measurements and observations.

3.4 Drilling

- .1 Drill piles to diameters and lengths indicated on Drawings ensure pile drilling does not extend into underlying glacial till as outlined in the Geotechnical Report.
- .2 Drill pile holes vertically plumb and true.
- .3 If drilling into frozen ground increase pile diameters by minimum 50 mm.
- .4 Ensure top of piles are neatly and squarely at elevations as indicated on Drawings. Do not cut other reinforcement which will be used to tie supported structure above to pile. A minimum of 500 mm of reinforcement shall remain for this purpose.

3.5 Obstructions

- .1 Where obstruction is encountered that causes sudden unexpected change in drilling or deviation from specified tolerances, proceed as directed by the Contract Administrator.

PILE FOUNDATIONS, GENERAL

3.6 Repair/Restoration

- .1 The Contract Administrator may require one or more of the following remedial measures:
 - .1 Leave rejected pile in place and cut off as directed by the Contract Administrator.
 - .2 Leave rejected pile in place, place adjacent pile(s), and modify pile cap as directed by the Contract Administrator.
- .2 No extra compensation will be made for replacing or other Work made necessary through rejection of defective piles.

3.7 Protection

- .1 Protect adjacent structures, services, and Work of other Sections from hazards due to pile drilling operations.
- .2 Arrange sequencing of pile drilling operations and methods such that no damage occurs to adjacent existing structures. If damaged, remedy damaged items to restore to original or better condition at own expense.

END OF SECTION

PIPE CULVERTS

1. GENERAL

1.1 Scope of Work

- .1 This section outlines the requirements for the Supply and Installation of culverts as shown on Drawing C1.02.

1.2 Measurement and Payment

- .1 Supply and Installation of culverts will not be measured and payment for all work under this section shall be included in Item No. 1 – Construction of New Entrance and Scale Facility as listed in Form B: Prices.

2. EXECUTION

2.1 General

- .1 Do not perform work during inclement weather conditions or under adverse field conditions such as frozen ground or ground covered with snow, ice, or standing water.

2.2 CMP Culvert Installation

- .1 CMP Culverts will be completed in accordance with City of Winnipeg Standard Construction Specification CW 3610.
- .2 Excavate 300mm below the culverts and place a 300mm granular foundation along the full length of the culvert. The culvert granular foundation shall be prepared and compacted to the staked gradeline and for a width sufficient to permit compaction of the bedding under the culvert haunches.
- .3 Fill material under haunches shall be placed alternately in 150mm layers on both sides of the culvert to permit thorough compaction. The fill material under the haunches must be in firm contact with the entire bottom surface of the structure. (Backfill and compaction under haunches is a manual job, consisting of shovel placement, timber rammer or hand held packers.)
- .4 Backfill material shall be placed and compacted in uniform layers until the embankment has been constructed to a height of 300mm above the top of the culvert so that normal grading equipment can operate without distorting the culvert.
- .5 The culverts shall be 2.8mm gauge and 125mm x 25mm corrugation profile and culvert corrugated couplers shall be 610mm wide.

END OF SECTION

PAINTED TRAFFIC LINES AND MARKINGS

1. GENERAL

1.1 Scope of Work

- .1 This Section outlines the requirements for the painting of permanent traffic lines and markings.

1.2 Measurement and Payment

- .1 Painted traffic lines will not be measured and payment for all work under this section is to be included in Item No. 1 – Construction of New Entrance and Scale Facility as listed in Form B: Prices.

2. PRODUCTS

2.1 Paint

- .1 All materials supplied under this Specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
- .2 The paint supplied for parking stall lines and markings shall be in accordance with the latest CAN/CGSB-1.220-2001. The paint colour shall be an approximate match to the following U.S. federal Standard 595B colours when tested in accordance with CGSB Standard 1-GP-71:
 - .1 White – 37925
 - .2 Yellow – 33538

2.2 Glass Beads

- .1 All materials supplied under this Specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
- .2 Reflectorizing Glass Beads shall be supplied in accordance with OPSS 1750 Material Specification for Traffic Paint Reflectorizing Glass Beads.

3. EXECUTION

3.1 General

- .1 Do not perform work during inclement weather conditions or under adverse field conditions such as frozen ground or ground covered with snow, ice, or standing water.

PAINTED TRAFFIC LINES AND MARKINGS

3.2 Application

- .1 Paint and glass beads shall be applied in accordance with CAN/CGSB-1.220-2001.
- .2 All paint markings shall be painted within plus or minus 10 mm.
- .3 The colour of the applicable paint marking shall be as indicated on the drawings.

END OF SECTION

CHAIN LINK FENCES AND GATES

1. GENERAL

1.1 Scope of Work

- .1 The following Specification shall be used in the removal fencing at the Brady Road Landfill Site.

1.2 Measurement and Payment

- .1 Removal of Chain Link Fence will be not measured and payment for all work under this section is to be included in Item No. 1 – Construction of New Entrance and Scale Facility as listed in Form B: Prices.

2. PRODUCTS

2.1 Materials

- .1 No products.

3. EXECUTION

3.1 Removal of Fence

- .1 Carefully remove and salvage all above-grade fencing components and return to the City of Winnipeg. Any components damaged by the Contractor shall be replaced at his expense.
- .2 Remove and dispose of all fence posts, as directed by the Contract Administrator and backfill all remaining holes with compacted base course material to existing grade. Backfilling and compaction of backfill in post holes shall be considered incidental to the removal of the fence.

END OF SECTION

1. GENERAL

1.1 Work Included

- .1 Supply and installation of steel bollards as shown on the Drawings.

2. PRODUCTS

2.1 Materials

- .1 The steel bollards shall be supplied in accordance with ASTM A53, DN 150, 168.3 mm O.D. (Weight Class XS, 10.97 mm wall thickness) galvanized pipe.
- .2 Concrete for filling the steel bollards shall be CW 3310 Type 2 mix supplied in accordance with CW 3310-R10.

3. EXECUTION

3.1 General

- .1 Familiarization
 - .1 Prior to all Work of this Section, become thoroughly familiar with the Site, the Site conditions, and all portions of the Work falling within this Section.
- .2 Protection
 - .1 Before starting Work, locate all utilities serving the Site. Notify all agencies or companies having jurisdiction over the specific utilities and protect, relocate, remove, or discontinue service according to their requirements. Any damages shall be repaired at the Contractor's expense.
 - .2 Protect and restore pavements, boulevards, grassed areas, etc., that may be opened or damaged in the performance of the Work.
 - .3 During construction, and at the completion of the contract, all roads used to haul materials shall be cleaned of materials dropped on them.
- .3 Installation
 - .1 The steel bollards shall be installed as shown on the Drawings.

END OF SECTION

SEEDING

1. GENERAL

1.1 Scope of Work

- .1 Further to CW 3520-R7 and CW3540-R5, this specification covers supply and placement of topsoil and seed.
- .2 Topsoil selection and placement shall conform to the standards outlined in section 02233

1.2 Measurement and Payment

- .1 Seeding will be measured and paid for in accordance with City of Winnipeg Standard Construction Specification CW 3520 for Seeding.

2. PRODUCTS

2.1 Fertilizer

- .1 A complete synthetic starter fertilizer with an N-P-K analysis of 8-32-16 shall be placed.

2.2 Grass Seed

- .1 Two seed mixtures, defined below, shall be spread on this site.
- .2 Mix 1 shall be 40% Fults Alkaligrass, 30% Walsh Western Wheatgrass, 20% Aberdeen Creeping Red Fescue, 10% Perennial Rye.
- .3 Mix 2 shall be 25% Tall Fescue, 25% Slender Wheatgrass, 20% Tall Wheatgrass, 10% Alfalfa, 10% Dahurian Wild Rye, 10% Sweet Clover.

2.3 Hydro Mulch

- .1 Hydro mulch shall be a cellulose fibre product.

3. EXECUTION

3.1 General

- .1 Do not perform work during inclement weather conditions or under adverse field conditions such as frozen ground or ground covered with snow, ice, or standing water.
- .2 The synthetic starter fertilize shall be placed via a drop spreader on the areas at a rate defined by the manufacturer and incorporated into the upper 50 mm of the topsoil.

SEEDING

- .3 Two seed mixtures, defined below, shall be spread on this site. Mix 1 shall be seeded the roadside to the base of the through the median and along the roadside to the base of the ditches. Mix 2 shall be seeded on the backslope of the ditches, the north side of the north ditch and the south side of the south ditch.
- .4 Water all areas prior to the application of the hydro mulch. Seed bed should be moist to maintain seed germination and grass growth.
- .5 Further to CW 3520, the established turf area shall be mowed at regular intervals to a height of 50-60 mm. To ensure seedling vigour, and limit damage to the leaf tissue, only sharp mower blades shall be used.

END OF SECTION