T-BALL, SOFTBALL & HARDBALL BACKSTOPS

PART 1 GENERAL

1.1 Description

.1 The section specifies the requirements for the supply and installation of Hardball, Softball and T-Ball Backstops.

1.2 Related Work

.1	All Division 1	Specification Sections
.2	Section 02311	Site Grading
.3	Section 02315	Excavation, Trenching & Backfilling
.4	Section 02821	Chain Link Fences & Gates
.5	Section 03300	Cast-in-Place Concrete

1.3 Reference Standards

.1 OPSS 541, Construction Specification for Chain Link Fence

.2 Canadian Standards Association (CSA).
- .1 CSA-A23.1/A23.2, Concrete Materials and Methods of Concrete Construct ion/Methods of Test for Concrete.
- .2 CSA/CSA-A23.2, Methods of Test of Concrete.
- .3 CAN/CSA-G164-M92 (R2003), Hop Dip Galvanizing of Irregularly Shaped Articles.
- .4 CSA-W59.2-M1991(R2003), Welded Aluminium Construction
- .5 CSA-W59-03, Welded Steel Construction
- .6 CSA-W47.1S1-M1989 (R1998), Certification of Companies for Fusion Welding of Aluminum
- .7 CSA-W47.1-03, Certification of Companies for Fusion Welding of Steel

.3 American Society for Testing and Materials (ASTM).
- .1 ASTM-A53/A53M, Standard Specification for Pipe, Steel, Black and Hot-dipped, Zinc-Coated Welded and Seamless.
- .2 ASTM-A90/A90M, Standard Test Method for Weight Mass of Coating on Iron and Steel Articles with Zinc or Zinc Alloy Coatings.

.4 Canadian General Standards Board (CGSB)
- .1 CAN/CGSB-138.1-96, Fabric for Chain-Link Fence.
- .2 CAN/CGSB-138.2-96, Steel Framework for Chain Link Fence.
- .3 CAN/CGSB-138.3-96, Installation of Chain Link Fence.
- .4 CAN/CGSB-138.4-96, Gates for Chain Link Fence.
- .5 CAN/CGSB-1.181, Ready-Mixed Organic Zinc-Rich Coating.

1.4 Standard Details

.1 Refer to Parks Construction Standard Details, follow the link below: http://www.brampton.ca/en/business/planning-development/guidelines-manuals/pages/streetscape-parks-construction-standard-detail.aspx

1.5 Certification

.1 All Softball and Hardball Backstops drawings shall be stamped by a certified Structural Engineer (P.Eng).

1.6 Scope of Work

.1 Supply and install materials in accordance with City of Brampton standard details and drawings.

.2 Furnish all labour, materials and equipment necessary to construct backstops in accordance with the lines, grades, levels and dimensions shown on the drawing and in accordance with the construction details and specifications herein.

.3 The Contractor is responsible to establish the location of all underground services, sewers, sewers and utility lines prior to commencing any excavation or demolition work. Approximate locations for underground sewer and utility lines are indicated on the drawings and must be confirmed and verified in the field by the Contractor.

.4 The Contractor is responsible for providing the site layout required to execute the Work including grade stakes indicating finished elevations on the site.

1.7 Quality Assurance

.1 The Contractor is to ensure the preparatory Work in advance of the chain-link fence installation, subgrade or sub-base materials, and site compaction have been reviewed by the Consultant before placing posts.

1.8 Job Conditions

.1 All work in this section shall be undertaken in suitable weather conditions and in accordance with the Manufacturer’s requirements.

Organize and carry out all operations to keep the sire dewatered and prevent construction delays. Protect the Work at all times from the intrusion of water from any and all sources and maintain the site in the dewatered condition.

.2 Do not install materials or products susceptible to damage or improper installation if the sire is wet or during rain.

1.9 Submittals

.1 Refer to Section **01330 Submittals.**

1.10 Warranty

.1 Warranty all material and workmanship in this section from movement, settlement, sinking, and deterioration, rusting of any component or any other change in finish quality for a period of two (2) years from date or Substantial Performance of Work.

PART 2 PRODUCTS

2.1 Materials

.1 Brampton standard backstop(s) shall be manufactured as specified and detailed. Any substitutions must be approved in writing. The backstop(s) is of **all-welded construction.**

.2 All mesh to be new and hot dipped galvanized before fabrication in accordance with CAN/CGSB-138 and CSA-162. Top and bottom selvage to have a knuckled finish. Galvanized fabric to have a minimum of 488 g/m2 of zinc on surface area. Fabric shall be installed to the full width indicated on drawings without overlap. Mesh sizes are also noted on detail drawings.

.3 Fabric with galvanized burrs will not be accepted and will be rejected by the Consultant.

.4 Galvanizing: all metal except aluminium shapes and wire mesh shall be hot dip galvanized, after fabrication, in accordance with CSA-G164.

.5 All posts and rails shall be steel pipe with minimum yield strength of 240 MPa and hot dip galvanized confirming to CSA-G164-M92 (R2003).

.6 Fence fabric to be hot dipped galvanized confirming to CSA-G164-

1965(1972) free from blisters, bare spots, projections or other defects not consistent with good galvanizing practice.

.7 The gates shall be installed as noted on drawings. The gate frame to be hot dipped galvanized complete with standard hinges and laches designed to accept a padlock.

.8 Concrete footings shall conform to the certified Structural Engineer drawings.

.9 The chain link mesh shall be diamond pattern, open hearth steel wire, and knuckled at top and bottom ends.

2.2 Finishes

.1 The coating weight and uniformity shall be measured by the Preece Test and shall conform to the following table and in accordance with ASTM A239-95 (2004).

Component	Coating Weight	Preece Dips
Fence Fabric	490 g/m2 (1.6 oz/sq, ft.)	6
Posts and Rails	549 g/m2 – 610 g/m2 (1.8 oz/sq. ft.)	6
All Fittings	484 g/m2 (1.6 oz/sq. ft.)	6

.2 Concrete Post footings mixes and materials: Cast-in-Place concrete CAN/CSA-A23.2.

.1 Nominal aggregate size: 40-5.

.2 Compressive strength: 25 MPa minimum at 28 days.

.3 All welds shall be neatly ground and finished to match the texture of the existing material.

.4 Fittings and hardware: galvanized steel. Post caps to provide waterproof fit, to be fastened securely over posts.

2.3 T-Ball Backstop Materials

.1 Chain Link Fence Fabric: Provide 38 mm x 9 gauge hot dipped galvanized before weaving (G.B.W.) chain link mesh for all fencing.

.2

Posts and rails:	Schedule 40:
Corners and Ends	89 mm O.D
Rails and Cross Braces	43 mm O.D

.3 Tie wire fasteners: single strand, galvanized steel fabric, 9 mm diameter.

.4 Tension bar: 5 mm x 19 mm minimum galvanized steel.

.5 Tension bar bands: 6 mm x 19 mm minimum galvanized steel.

2.4 Softball & Hardball Materials

.1 Chain Link Fence Fabric: 50 mm x 6 gauge chain link mesh galvanized after weaving (G.A.W) for lower portion of backstop and 38 mm x 9 gauge G.A.W. chain link mesh for upper portion of backstop. Zinc coating shall not be less than 610g/m^2 of uncoated wire surface. All other mesh shall be 38mm x 9 gauge galvanized before weaving mesh with zinc coating of not less than 490g/m^2 of uncoated wire surface.

.2 Framing shall be constructed of prime galvanized pipe to **Schedule 40 or Schedule 80** as specified on the Engineers stamped drawings to diameters listed below, unless otherwise specified:

Component	**Softball**	**Hardball**
Corners and Ends	90 mm O.D	114 mm O.D
Uprights	60 mm O.D	70 mm O.D
Rails and Cross Braces	43 mm O.D	48 mm O.D

.3 It is understood that the reference to 43 and 48 mm O.D. rails and cross braces shall include top, middle and bottom rails.

.4 Provide all hardware, caps and enclosures for all framing.

.5 Tie wire fasteners: single strand, galvanized steel fabric, 3 mm diameter.

.6 Tension bar: 5 mm x 19 mm minimum galvanized steel.

.7 Tension bar bands: 6 mm x 19 mm minimum galvanized steel.

PART 3 EXECUTION

3.1 Grading

.1 Remove debris and correct ground undulations along fence line to obtain smooth uniform gradient between posts. There shall be no clearance between the bottom rail and the infield mix.

3.2 Installation

.1 Erect fence along lines as shown in the approved drawings, directed by the Consultant and in accordance with CAN/CGSB-138.3-96.

.2 Excavate post holes to dimensions indicated by methods as shown in the approved drawings, directed by the Consultant. Dispose of all subsoil excavations not suitable for re-use or not dispensable into the new work to an off-site location arranged and paid for by the Contractor.

.3 Space line posts as stated herein.

.4 Place concrete in post holes with sono-tube footings then embed posts into the concrete to depths as indicated herein.

.5 Brace to hold posts in plumb position and true to alignment and elevation. Immediately make corrections to any post found not to be plumb in all directions.

.6 Do not install fence fabric until concrete has cured a minimum for five (5) days.

.7 Install rails between posts and provide continuous weld. All joints shall be mitred or “fish mouthed”. Crimped pipe joints will not be accepted. Secure waterproof caps and overhang tops.

.8 Lay out fence fabric an the side of play in the locations as defined on the drawings. Stretch tightly to tension recommended by manufacturer and fasten to end, corner gate and straining posts with tension bar secured to post with tension bar bands spaced at 250 mm intervals. No exposed wire barbs are to exist on the bottom and top edges of fence fabric.

.9 Secure fabric to top rails, line posts and bottom rail with tie wires at 250 mm intervals. Give tie wires minimum two twists. Wire ends to be twisted so not to create hazard.

.10 All welding shall be Canadian Welding Bureau approved to CSA-W59-03 and W59.2. Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

T-BALL, SOFTBALL & HARDBALL BACKSTOPS

T-Ball Backstop

3.3 Installation

.1 Space line posts 3.048 m apart, measured parallel to ground surface.

.2 Concrete footings shall be 300 mm diameter and extend minimum 1.22 m below finished grade and set concrete 150mm below finished grade.

Softball & Hardball Backstop

3.4 Installation

.1 Space line posts, and uprights as stated by the Certified Structural Engineered stamped drawings.

.2 The concrete footings to be installed as per the approved Certified Engineer design.

3.5 Touch Up

.1 All field to be cleaned with a steel brush removing all shavings, filings, dirt, dust, splatters and other debris prior to field touch-up.

.2 Repair damaged galvanized surfaces. Clean damaged surfaces with wire brush removing loose and cracking coatings. Pre-treat damaged surfaces according to manufacturer's instructions for zinc-rich paint. Apply two (2) coats or organic zinc-rich paint to damaged areas.

3.6 Cleaning

.1 Review the place or work, rake, remove and dispose of all cut pieces of wire, ties or discarded materials.

.2 Promptly as the work proceeds and upon completion. Clean up and remove from the sire rubbish and surplus material resulting from the work.

.3 Clean and reinstate all areas disturbed by operations of the Contractor, sub-trades, or supplier related to the work in this section, replacing damaged subgrade, surfacing, topsoil, sod, to the original finished condition to the approval of the Consultant.

END OF SECTION - 02868