

## **SECTION 103 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

### **103.01      DESCRIPTION**

This Section includes requirements for waste reduction and for the recycling of non-hazardous, recyclable, construction and demolition debris. Reduce waste by minimizing factors that contribute to waste. Use reasonable and legal means to divert construction and demolition debris from landfills and incinerators by facilitating their recycling or reuse through a Contractor developed, and M-NCPPC reviewed, construction waste management program.

### **103.02      REFERENCE STANDARDS**

Not applicable.

### **103.03      DEFINITIONS**

**Waste Reduction:** Construction practices that achieve the most efficient use of resources and materials; uses water efficiently; avoids practices such as over-packaging, improper storage, ordering errors, poor planning, breakage, mishandling and contamination.

**Construction and Demolition Debris:** Solid wastes arising from demolition or removal, excess or unusable construction materials, packing materials for construction products, and other materials generated on site during the construction process but not incorporated into the Work.

**Recyclable Materials:** Construction and demolition debris that can be recovered and processed into new products or materials. Recyclable materials include, but are not limited to, the following:

1. Metals: Ferrous (iron, steel, stainless steel, galvanized steel) and non-ferrous (copper, brass, bronze, aluminum) types and containers made from metals such as pails, buckets and beverage cans.
2. Asphaltic concrete paving.
3. Concrete.
4. Gypsum wallboard.
5. Paper products such as generated from field office activities and clean corrugated packaging cardboard.
6. Wood products, including untreated dimensional lumber, plywood, oriented strand board, hardboard, particleboard and crates and pallets made from wood products.
7. Brick and stone masonry.
8. Carpet and padding.
9. Plastics and containers made from plastics such as pails, buckets, and beverage bottles.
10. Copper wiring.
11. Glass: Glass beverage containers, window and mirror glass.
12. Clean and uncontaminated, excavated soils not intended for other on-site use.
13. Stumps and trees removed as a part of land clearing operations.

Non-Recyclable Materials: Construction and demolition debris not capable of being reused or reprocessed, exclusive of the recyclable materials listed above.

Hazardous Materials: Construction and demolition debris that are regulated for disposal by local, city, county, state, or Federal authorities.

#### **103.04        MATERIALS**

Not applicable.

#### **103.05        SUBMITTALS**

A. Construction Waste Management Program: Submit the proposed waste management program to M-NCPPC Construction Manager for approval prior to start of construction. The program shall be organized and presented to address each of the following items in the order indicated below.

1. Identification of Contractor's staff responsible for enforcing construction waste management.
2. Actions that will be taken to reduce solid waste generation.
3. Description of the specific methods to be used in recycling/reuse of the various construction and demolition debris generated, including the areas and equipment, to be used for processing, sorting, and temporary storage of debris.
4. Characterization, including estimated types and quantities of the construction and demolition debris to be generated. Include percentages of recyclable and non-recyclable debris.
5. List of specific construction and demolition debris materials that will be salvaged for resale, salvaged and reused, or recycled.
6. Name(s) of landfill and incinerator to be used and the estimated costs for use, for construction and demolition debris that is unable to be recycled or reused.
7. Identification of local and regional reuse programs, including non-profit organizations such as schools, local housing agencies, and organizations that accept used and excess construction materials such as materials exchange networks and Habitat for Humanity.
8. Identification of local recycling facilities that will accept construction and demolition debris.
9. Identification of construction and demolition debris that cannot be recycled/reused with an explanation or justification.
10. Anticipated net cost savings determined by subtracting Contractor program management costs and the cost of disposal from the revenue generated by sale of the construction and demolition debris and avoided landfill and incineration costs.

B. Waste Management Reports: With each Application for Payment submit a Waste Management Report in a form acceptable to the M-NCPPC CM. Attach manifests, weight tickets, receipts and invoices. Organize and maintain records to document the following:

1. Quantity of debris generated, for each material recycled, reused or salvaged.

2. Quantity of debris diverted through sale, reuse, or recycling, in tons or cubic yards.
3. Quantity of debris disposed by landfill or incineration.
4. Name and location of each firm accepting the debris, including:
  - a. Types of debris accepted.
  - b. Net weights of each type.
  - c. Date of acceptance.
5. Transportation cost for removal of debris from job site.
6. Amount of money paid or received for the recycled, reused or salvaged materials.
7. Net total cost or savings of recycling, reusing or salvaging materials.

C. Project Closeout: Upon project completion submit the Waste Management Records to the Owner.

### **103.06           QUALITY ASSURANCE**

- A. Construction Waste Management: Prepare a program that minimizes waste and diverts construction and demolition debris from landfills and incinerators by facilitating their reuse or recycling. Name the waste material processors who will accept the construction and demolition debris, the condition of the construction and demolition debris required by the waste material processors, the method proposed to provide the construction and demolition debris in suitable condition and in a quantity acceptable to the disposal sites and waste material processors whom will receive them, and the impact on the project schedule. The Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to the recycling of waste. Revenues or other savings obtained from sale, reuse, and recycling operations shall accrue to the Contractor.
- B. Disposal Sites and Waste Material Processors: Use only facilities with valid legal permits for disposal, recycling and waste processing issued by the jurisdictions in which they are located.
- C. Pre-Construction Waste Management Meeting: Prior to beginning site preparation, schedule and conduct a meeting to review the waste management program. The meeting shall include the Contractor, M-NCPPC CM and any of the Contractor's subcontractors or suppliers whose work will interface with the program. The agenda shall include a discussion of procedures, schedules and specific requirements for construction and demolition debris, sale, reuse, recycling, and disposal. Make any revisions to the program that are agreed to as a part of the meeting and submit the revised program and the meeting minutes to the M-NCPPC CM.

### **103.07           CONSTRUCTION -Waste Management Plan Implementation**

- A. Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, and the M-NCPPC CM.
- B. General: For the duration of the project, implement and maintain construction waste management. During the execution of the Work, encourage the practice of efficient waste reduction when sizing, cutting, and installing products and materials.

- C. Transportation: Arrange for the regular collection, transport from the site, and delivery of the construction wastes and debris to the designated recyclers, and waste material processors and disposal sites.
- D. Separation Facilities: The Contractor shall provide on-site instruction of appropriate separation, handling separation, handling, and recycling, salvage, reuse and return methods to be used by all parties at the appropriate stages of the Project. Provide and designate an on-site area for the separation of construction and demolition debris for reuse and recycling. Locate the area in order that non-recyclable debris will not contaminate materials to be reused or recycled. Provide containers and bins in the designated area to facilitate separation, storage and handling which are clearly and appropriately marked. Cut all items to lengths and sizes to fit within the containers or bins provided. Where there is sufficient quantity of a specific recyclable debris item (for example: salvaged metal doors and frames or duct work), make arrangements for items to be bundled, banded or tied, and stack in a designated location for a special pick-up. Maintain the separation facilities in an orderly condition to prevent contamination of materials placed therein and to maximize reuse and recyclability of debris. Separate construction and demolition debris at the project site by one of the following methods:
1. Source Separated Method: Construction and demolition debris, that is reusable and recyclable, are separated from non-recyclable debris and sorted into appropriately marked separated containers or bins and then transported to the designated recycling facility for further processing. Non-recyclable debris is transported to a landfill or incinerator.
  2. Co-Mingled Method: All construction and demolition debris is placed into containers or bins and then transported to a recycling facility where recyclable and salvageable materials are removed, sorted, and processed and the remaining waste is transported to a landfill or incinerator.

### **103.08            MEASUREMENT AND PAYMENT**

Payment will be full compensation for all material, labor, equipment, tools and incidental items necessary to complete the work. Payment shall be made as a lump sum basis as shown in the bid proposal. *(Can be considered as incidental to all work without specific compensation.)*