

SECTION 01690
WASTE MATERIALS
MANAGEMENT AND RECYCLING

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of each prime Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY:

- A. Section Includes: This Section includes required recycling and recovery of the following waste materials and applies to listed waste materials produced during the Work:
 - 1. Land Clearing Debris: Solid waste generated solely from land clearing operations, such as stumps and trees.
 - 2. Concrete and Masonry: Clean concrete, brick, rock, and masonry.
 - 3. Metals: Metal scrap including iron, steel, copper, brass, and aluminum.
 - 4. Untreated Wood: Unpainted, untreated dimensional lumber, timber beams, engineered wood products, plywood, oriented strand board, Masonite, particleboard, wood shipping pallets, and crates.
 - 5. Gypsum Wallboard Scrap: Excess drywall construction materials including cuttings, other scrap, and excess materials. [Edit to suit project.]
 - 6. Paper and Cardboard: Discarded office refuse including unwanted files, correspondence, etc. Clean, corrugated cardboard used for packaging, etc.
- B. Non-Recyclable Waste: Collect and segregate non-recyclable waste for delivery to an permitted landfill site.
 - 1. Mixed Solid Waste: Solid waste commonly collected as a municipal service, exclusive of waste materials listed above.

1.3 DEFINITIONS:

- A. Waste Materials are defined as large and small pieces of listed materials which are excess to contract requirements and generally include materials to be recycled and/or recovered from existing construction and items of trimmings, cuttings and damaged goods resulting from new installations, which can not be effectively used in the Work.
- B. Recycling is defined as the process of collecting and preparing recyclable materials and reusing them in their original form or in manufacturing processes that do not cause the destruction of recyclable materials in a manner that precludes further use.
- C. Recovery is defined as any process that reclaims materials, substances, energy, or other products contained within or derived from waste on-site. It includes waste-to-energy, composting, and other processes.

1.4 SUBMITTALS:

- A. Construction Waste Management Plan: Before start of construction, submit a construction waste management plan for approval of Contracting Officer's Representative indicating how Contractor proposes to collect, segregate, recycle, and recover at least 75% of construction wastes and debris generated by the Work. Submit documentation indicating compliance with regulations specified under "Quality Assurance" article below. Include a list of recycling facilities to which indicated recyclable materials will be sent for recycling. Identify materials that are not recyclable or otherwise recoverable that must be disposed of in a landfill or other means acceptable under governing State of Minnesota and local regulations. List permitted landfills and/or other disposal means to be employed. Indicate instances where compliance with requirements of this specification does not appear to be possible and request resolution from the Contracting Officer through the Contracting Officer's Representative.
- B. Delivery Receipts: Provide to the Construction Quality Manager delivery receipts for waste materials salvaged and sent to permitted waste materials processors or recyclers within 48 hours of delivery that indicate the location and name of firm accepting recyclable waste materials, types of materials, net weights of each type, date of delivery and value of materials.

1.5 QUALITY ASSURANCE:

- A. Regulatory Requirements: Comply with applicable requirements of the State of Minnesota and applicable local ordinances and regulations concerning management of construction, demolition, land clearing, inert, and yard trash debris and subsequent modifications and amendments to same.
- B. Disposal Sites, Recyclers, and Waste Materials Processors: Use only facilities properly permitted by the State of Minnesota, and by local authorities where applicable.
- C. Pre-Construction Waste Management Conference: Prior to beginning work at the site, schedule and conduct a conference to review the Construction Waste Management Plan and discuss procedures, schedules and specific requirements for waste materials recycling and disposal. Discuss coordination and interface between Contractor and other construction activities. Identify and resolve problems of compliance with requirements. Record minutes of the meeting, identifying conclusions reached and matters requiring further resolution. Maintain waste management as an agenda item at future construction meetings.
 - 1. Attendees: Contractor and related Contractor personnel associated with work of this section, including personnel in charge of the waste management program; Construction Quality Manager; Architect; material suppliers where appropriate; and such additional Owner personnel as Owner deems appropriate.
 - 2. Plan Revision: Make revisions to Construction Waste Management Plan agreed upon during the meeting and incorporate resolutions agreed to be made subsequent to the meeting. Submit revised plan to Architect for approval.
- D. Implementation: Designate an on-site party responsible for instructing workers and implementing Construction Waste Management Plan. Distribute copies of Construction Waste Management Plan to job site foreman and each subcontractor. Include waste management and recycling in worker orientation. Provide on-site instruction on appropriate separation, handling, recycling, and recovery methods to be used by all parties at the appropriate stages of the work at the site. Include waste management and recycling discussion in pre-fabrication meetings with subcontractors and fabricators. Also include discussion of waste management and recycling in regular job meetings and job safety meetings conducted during the course of work at the site.

1.6 STORAGE AND HANDLING:

- A. Site Storage: Remove materials for recycling and recovery from the work location to approved containers or storage area as required. Failure to remove waste materials will be considered cause for withholding payment and termination of Contract.
- B. Position containers for recyclable and recoverable waste materials at a designated location on the Project Site. If materials are sorted on site, provide separate collection containers or storage areas for not less than the following materials:
 - 1. Concrete and masonry.
 - 2. Metals.
 - 3. Untreated lumber.
 - 4. Gypsum wallboard scrap. [Edit to suit project.]
 - 5. Paper and cardboard.
- C. Change-out loaded containers for empty containers as demand requires.
- D. Handling: Deposit indicated recyclable, and recoverable materials in storage areas or containers in a clean (no mud, adhesives, solvents, petroleum contamination), debris-free condition. Do not deposit contaminated materials into the containers until such time as such materials have been cleaned.
- E. If the contamination chemically combines with the material so that it can not be cleaned, do not deposit into the recycle containers. In such case, request resolution by the Construction Quality Manager for disposal of the contaminated material. Directions from the Construction Quality Manager do not relieve the Contractor of responsibility for compliance with all legal and regulatory requirements for disposal, nor shall such directions cause a request for modification of the Contract.

1.7 PROJECT/SITE CONDITIONS:

- A. Environmental Requirements: Transport recyclable and recoverable waste materials from the Work Area to containers and carefully deposit in the containers without excess noise and interference with other activities, to minimize noise and dust.
 - 1. Do not place recyclable waste materials on the ground adjacent to a container.
- B. Existing Conditions: Coordinate with "Instructions to Bidders" and "Supplementary Conditions".

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 WASTE MANAGEMENT:

- A. General: Implement waste management procedures in accordance with approved Construction Waste Management Plan. Maintain procedure throughout the life of this Contract.
- B. Source Separation On- or Off-Site: Either separate, store, protect, and handle at the project site all identified recyclable and recoverable waste products to prevent contamination of materials and maximize recyclability and recoverability of materials. Or mix all identified recyclable and recoverable waste products for separation off-site.
- C. Arrange for the regular collection, transport from the site, and delivery to respective approved recycling centers of indicated recyclable waste materials. Maintain records accessible to the Architect for verification of construction waste materials recycling and recovery.

- D. Delivery Receipts: Arrange for timely pickups from the site or deliveries to approved recycling facilities of designated waste materials to keep construction site clear and prevent contamination of materials. Keep and maintain records of deliveries to recycling facilities and pickups of waste materials at the site by others as specified above.

3.2 RECYCLABLE WASTE MATERIALS HANDLING: [Note to author: Edit the following to meet project requirements.]

- A. General: The following paragraphs supplement handling requirements for various of the materials identified for classification and recycling listed in Part 1 "Summary" article above. (Note to author: If the following materials are not recyclable in your area, delete them from the specifications.)
- B. Landclearing Debris: Pile wood debris from landclearing in a clean storage area free from large amounts of dirt and other non wood materials. Chip smaller size tree limbs on site and use as plant mulch. Cut larger tree limbs and trunks into 16 inch lengths and advertise as green firewood if hardwood or softwood suitable for burning. Transport other wood including tree roots to a County waste and recycling center.
- C. Concrete and Masonry: Free of metals, woods and other contaminants. If possible during demolition, crush existing concrete and concrete masonry units on-site into aggregate size. Store crushed material on-site in clean area to avoid contamination from other materials or building processes. Reuse on-site crushed material for fill, for stabilizing soils, or as base and subbase materials. If crushing on site is impractical, store material during demolition processes on site in clean, uncontaminated area. Transport concrete and masonry materials to a certified concrete recycler as needed.
- D. Metals: Cut items to lengths and sizes to fit within the container provided when necessary. Where there is sufficient quantity of a specific recyclable waste item (for example; salvaged metal roofing or duct work), make special arrangements for items to be bundled, banded or tied, and stack in a designated location for a special pick-up. Coordinate special arrangements with the Construction Quality Manager.
- E. Untreated Wood: Salvaged wood materials to be free of metals, concrete, gypsum wallboard, insulation, and other contaminating materials. Stack dimensional wood into like piles. For example, store 2x4s with other 2x4s, and 2x6s with other 2x6s. Also, if quantity is sufficient, separate piles into lengths of 4-foot increments. Reuse lumber on site as studs, backing, blocking or other uses where appropriate. Stack non-dimensional wood in piles for possible reuse on-site or transport off-site. Depending on size of lumber, recycle or chip wood for plant mulch. If wood materials can not be used on site, transport to a certified wood recycler or reuse center.
- F. Gypsum Wallboard Scrap: Separate gypsum wallboard from other wastes. Dispose of waste gypsum wallboard off-site at a gypsum reclamation or recycling facility, or on-site as a soil amendment.
1. For on-site application as a soil amendment, incorporate waste gypsum wallboard in landscape areas under construction, at a rate of 50 pounds per 1000 square feet, or approximately one ton per acre.
 - a. Material must be unpainted gypsum wallboard from new construction, ground to reduce material to a fine particle size (70% passing a 100 mesh screen), and must be fully incorporated into the soil surface.
- G. Paper and Cardboard: Classify and handle waste paper goods as follows:
1. Bond Paper: General office quality paper used for specifications, correspondence, copiers, PC laser printers, and FAX machines. Collect in separate container at each workstation and deposit loose in appropriate recycle container as required.
 2. Newsprint: Newspapers and tabloid style advertising (slick finish magazines and advertising materials are not typically recyclable). Collect in single location and deposit as required in appropriate recycle container.

3. Diazo Prints (drawings): Set up single location for collection. Roll together to minimize space. Deposit as required in appropriate recycle container.
 4. Cardboard and paperboard cartons and boxes: Knock-down, fold flat ,and deposit in appropriate recycle container.
- H. Other Items: Where recyclability classification of any given waste material is unclear, verify with the Construction Quality Manager.

END OF SECTION