

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Debris: Non-hazardous solid waste generated during construction, demolition, or renovation of a structure which exceeds 2.5 inches (60 millimeters) particle size that is: a manufactured object; plant or animal matter; or natural geologic material (e.g., cobbles and boulders). A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if mixture is comprised primarily of debris by volume, based on visual inspection.
- C. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- D. Disposal: Removal offsite of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- E. Environmental Pollution and Damage: Presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances; or degrade utility of environment for aesthetic, cultural, or historical purposes.
- F. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.
- G. Hazardous Materials: Material regulated as a hazardous material in accordance with 49 CFR 173 (Code of Federal Regulations) and Arizona Administrative Code Title 18, Chapter 18, requires a Safety Data Sheet (SDS) in accordance with 29 CFR 1910.1200, or which during end use, treatment, handling, storage,

transportation or disposal meets or has components which meet or have potential to meet the definition of Hazardous Waste in accordance with 40 CFR 261.

- H. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- I. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- J. Solid Waste: Garbage, debris, sludge, or other discharged material (except hazardous waste) including solid, liquid, semisolid, or contained gaseous materials resulting from domestic, industrial, commercial, mining, or agricultural operations.
- K. Universal Wastes: Material regulated through 40 CFR 273 and Arizona Administrative Code Title 18, Chapter 8, including batteries, pesticides, mercury containing equipment, lamps and aerosol cans.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Project shall minimize creation of construction, deconstruction, and demolition waste to protect and restore natural habitat and resources. Minimize factors contributing to waste such as over packaging, improper storage, ordering error, poor planning, breakage, mishandling, and contamination. A Waste Management Plan shall be developed to ensure that existing site and building materials are reused, salvaged, or recycled. Minimize waste disposal in landfills.
- B. Salvage /Recycle Requirements:
 - 1. Develop waste management plan resulting in end-of-project rates for salvage/recycling of total waste generated by the Work. The following waste categories, at a minimum, shall be diverted from a landfill:
 - a. Land clearing debris.
 - b. Clean dimensional wood, palettes.
 - c. Plywood, OSB (oriented strand board), and particle board.
 - d. Concrete (can be ground and used for fill onsite).
 - e. Asphaltic concrete (can be ground and used for fill onsite).
 - f. Cardboard, paper, packaging, newsprint.
 - g. Metals (from banding, stud trim, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze).
 - h. Non-hazardous paint and paint cans.
 - i. Beverage Containers: Aluminum, glass, and plastic containers.
 - j. Insulation.
 - k. Ceiling grid and tiles.

- l. Ductwork.
 - m. Wiring.
 - n. Other mixed construction and demolition waste as appropriate.
- C. If waste materials encountered during deconstruction/demolition or construction phase are found to contain lead, asbestos, polychlorinated biphenyls (PCBs), (such as fluorescent lamp ballasts), or other harmful substances, they are to be handled and removed in accordance with local, state, and federal laws and requirements concerning hazardous waste. Refer to the following reports for more information on regulated building materials:
 1. *Regulated Building Materials Survey Grant Village Wastewater Treatment Plant Project*, Terracon. December 2021.
- D. Existing items and material to be removed during deconstruction/demolition phase shall be reused in construction phase of the Project. Items that cannot be reused shall be recycled. Items considered for reuse must be in refurbishable condition and must meet quality standards set forth in these specifications. Contractor shall ensure quality of the item(s) in question will meet or exceed accepted industry or trade standards for first quality commercial grade application. During construction, deconstruction, or demolition Contracting Officer (CO) may designate other objects or materials for reuse.
- E. Salvage/Recycle Requirements:
 1. Government goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible. Government has established minimum goals for the following materials:
 - a. Cleared Vegetation: Stockpile debris for application subsequent to topsoil placement.
 - b. Timber: For trees larger than 2 inches in diameter, yard timber and haul to the Mesa Pit in the Park; location as shown on the Drawings (Overall Site Vicinity Map). Salvaged timber will be set aside per the direction of the Contracting Officer.
 - c. Topsoil: Strip and windrow or stockpile topsoil for re-application during surface restoration.
 - d. Existing Asphalt Pavement: Grind and strip asphalt pavement for reuse as road base during surface restoration.
 - e. Existing Road Base: Strip and reuse as recycled road base during surface restoration.
 - f. Existing Concrete Structures: For structures to be removed, dispose of concrete offsite for reuse as fill material. Demolish, crush and bury structures in-place where called for on the Drawings.

- g. Existing Water Main and Appurtenances: Dispose of pipe, meters, hydrants, fittings, valves and all other existing water main appurtenances to be removed at a metal recycling facility.
- h. Scrap metal can be recycled following 40 CFR 261.4.

1.4 SUBMITTALS

A. Action Submittals:

- 1. Waste Management Plan: After award of Contract and prior to scheduled Pre-Construction Conference, Contractor shall submit a draft Waste Management Plan to Contracting Officer for approval. Submit three copies of plan. Revise and resubmit Plan as required by Contracting Officer. Approval of Contractor's Plan will not relieve Contractor of responsibility for compliance with applicable environmental regulations.
- 2. Waste Reduction Calculations: Before request for Substantial Completion, submit three copies of calculated end-of-project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

B. Informational Submittals:

- 1. Progress Documentation: Supplemental to Waste Management Plan, document solid waste disposal, diversion, and cost/revenue analysis and submit completed worksheet on a monthly basis.
- 2. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- 3. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- 4. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- 5. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- 6. Qualification Data: For Waste Management Coordinator and refrigerant recovery technician.
- 7. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating refrigerant that was present was recovered and recovery was performed according to Environmental Protection Agency (EPA) regulations. Include name and address of technician and date refrigerant was recovered.
- 8. Progress Payment Requirements:
 - a. With each Application for Payment, submit an updated Project Waste Management Plan worksheet for solid waste disposal and diversion.

- b. With each Application for Payment, submit manifests, weight tickets, receipts, and invoices specifically identifying the Project and waste material.
- 9. Closeout Submittals: With Closeout Submittals, submit a summary of a Project Waste Management Plan worksheet for solid waste disposal and diversion.

1.5 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm or individual, with record of successful waste management coordination of projects with similar requirements.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Waste Management Meeting:
 - 1. Conduct separate meeting or cover in Pre-Construction Conference and comply with requirements in Section 01 31 00, Project Management and Coordination. Review methods and procedures related to waste management including:
 - a. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 - b. Review requirements for documenting quantities of each type of waste and its disposition.
 - c. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - d. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - e. Review waste management requirements for each trade.

PART 2 PRODUCTS

2.1 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification and waste reduction work plan. Include separate sections in plan for demolition and construction waste. Indicate quantities by weight or volume but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 3. Handling and Transportation Procedures: Include method used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project Site where materials separation will be located.
- D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan.
1. Include:
 - a. Landfill tip fees per ton.
 - b. If diverted, tip fee savings from landfill diversion.
 - c. Costs of recycling, salvage, or reuse.
 - d. Revenue from recycling, salvage, or reuse.
 - e. Total cost or savings from diversion. (Calculate by using tip fee savings and subtracting costs of recycling or adding revenue from recycling.)

PART 3 EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan as approved by Contracting Officer. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during entire duration of Contract.
- B. Waste Management Coordinator: Engage waste management coordinator responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project Site full time for duration of Project.
- C. Contractor shall establish contacts with local recycling and reuse companies to set up lines of responsibility. Contractor shall be responsible for coordination in terms of identifying materials, pickup schedules, and standard quality for recycled materials.
- D. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project Site.

1. Distribute waste management plan to everyone concerned within 3 days of submittal return.
 2. Distribute waste management plan to entities when they begin work onsite. Review plan procedures and locations established for salvage, recycling, and disposal.
- E. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- F. Separation Facilities:
1. Contractor shall designate and Contracting Officer shall approve specific area or areas to facilitate separation of materials for potential reuse, salvage, recycling, and return.
 2. Place waste and recycling bins near each other, and close to point of waste generation but out of traffic pattern.
 3. Keep recycling and waste bin areas neat, clean, and clearly marked in order to avoid co-mingling of materials.
 4. Protect bins during non-working hours from offsite contamination.
 5. Check garbage dumpsters periodically for recyclables being thrown away and undocumented materials that could be recycled.
- G. Materials Handling Procedures: Material to be recycled shall be protected from contamination and shall be handled, stored, and transported in a manner that meets requirements set by designated facilities for acceptance. Establish defined area for operations of each trade, especially woodcutting so off-cuts are kept in one area and can be sorted by dimension for future reuse.
- 3.2 SALVAGING DEMOLITION WASTE
- A. Refer to Section 02 41 00, Demolition, for more information.
- 3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL
- A. General: Contractor will be responsible for management of all recycling and wastes generated during demolition and construction activities.
- B. Recycle paper and beverage containers used by onsite workers.
- C. Recycling Receivers and Processors: Demolition Contractor to identify approved recycling facilities.

D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project Site to maximum extent practical.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project Site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials onsite without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off ground and protect from weather.
5. Remove recyclable waste off Government property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

- A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.
- B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
- C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
- D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- E. Metals: Separate metals by type.
- F. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.
- G. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
- H. Plumbing Fixtures: Separate by type and size.
- I. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- J. Lighting Fixtures: Separate lamps by type and protect from breakage.

- K. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.
- L. Conduit: Reduce conduit to straight lengths and store by type and size.
- M. Electronic Products: Ensure non-usable electronic products are reused, donated, sold, or recycled using environmentally sound management practices at end of life.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:

- 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in dry location.
- 2. Polystyrene Packaging: Separate and bag materials.
- 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project Site. For pallets that remain onsite, break down pallets into component wood pieces and comply with requirements for recycling wood.
- 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes: Chip brush, branches, and trees as directed by Government.

C. Wood Materials:

- 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
- 2. Clean Sawdust: Bag sawdust not containing painted or treated wood.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project Site and legally dispose in landfill or incinerator acceptable to authorities having jurisdiction.

- 1. Except as otherwise specified, do not allow waste materials to accumulate onsite.
- 2. Remove and transport debris in manner preventing spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Government property and legally dispose of them.

END OF SECTION

