

SECTION 324000 – SITE APPURTENANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to this section.

1.2 SUMMARY

- A. Provide all labor, materials and equipment as necessary to complete all work as indicated on the Drawings and specified herein.

Note: Designer shall reserve materials to be provided by owner with the Landscape Services Construction Coordinator at (517) 355-7750 prior to completion of bid documents. Modify documents to reflect each material's availability accordingly.

- 1. Verify quantities needed*
- 2. Schedule approximate pick-up dates*
- 3. Obtain quote from Landscape Services and include cost in project budget*

- B. This Section Includes:

1. Site Appurtenances such as: Posts, bike loops, and site furnishings.
2. Install Owner-provided Landscape Forms products as shown on Drawings.
3. Normal activities and materials to construct the various items below or additional work not listed below shall be considered incidental and not due additional compensation. To be considered for additional compensation, work items must be identified and noted by the Project Representative, prior to the installation.

- C. Sign(s), (manufacturing or installation) for posts or bollards, is not part of the Contract.

1.3 DEFINITIONS

- A. MDOT Specification: Michigan Department of Transportation, 2012 Standard Specifications for Construction.

1.4 QUALITY ASSURANCE

- A. Refer to Division 01 Section "General Requirements - Quality Requirements."
- B. Installation shall meet requirements as indicated by the Project Representative.

PART 2 - PRODUCTS

For this section only, concrete shall meet same requirements of Division 03 Section "033015 - CONCRETE FOR BUILDING CONSTRUCTION;" with a maximum 4-inch slump.

2.1 BENCHES, TABLES AND LITTER RECEPTACLES

- A. Provided by Owner
- B. Installed by Owner
- C. Concrete pad by Contractor
 - 1. In accordance with manufactures requirements
- D. As indicated on Drawings and manufactured by Landscape Forms, Inc. unless otherwise specified.

2.2 BIKE LOOP

- A. Provided by Owner
- B. Installed by Contractor
- C. As indicated on Drawings and manufactured by Wabash Valley Manufacturing

2.3 BOLLARDS

A. BARRIER-FREE PARKING BOLLARD

- 1. Provided by Owner
- 2. Installed by Contractor
- 3. Concrete by Contractor
- 4. As indicated on Drawings. .
 - a. Bollard: 7"x7"x1/4" wall square hot dip galvanized steel.
 - b. Sign Post: 2"x2" square hot dipped galvanized steel.
 - c. Parking Meter Arm: 2" I.D. round schedule 40 galvanized ste-1

B. GUARD POST BOLLARD

- 1. Provided by Owner
- 2. Installed by Contractor
- 3. Concrete by Contractor
- 4. Standard weight galvanized steel, 6-inch diameter, 0.25-inch wall thickness, 17.02 pounds. If painted, Sherwin Williams paint is to be used.
- 5. Guard Post Cover:
 - a. Color: Yellow.
 - b. Manufactured by Ideal Shield, 255 Clark Street, Detroit, MI 09210; Phone: 313-842-7290, Fax: 313-842-7290

C. REMOVABLE STEEL BOLLARD

- 1. Provided by Owner
- 2. Installed by Contractor

3. Concrete by Contractor
4. As indicated on Drawings and manufactured by Alden Enterprises, 1402 E. Jolly Road, Okemos, MI 48864; 517-349-2443.

D. SIGN POST BOLLARD

1. As indicated on drawings.
 - a. U-channel sign post(s) and sign(s) provided by owner.
 - b. Concrete and form by Contractor

2.4 PLAY FIELD EQUIPMENT

A. BASKETBALL POST AND GOAL

1. Provided by Contractor
2. Installed by Contractor

B. VOLLEYBALL POST

1. Provided by Contractor
2. Installed by Contractor

2.5 POST AND CHAIN FENCE

- A. Provided by Owner
- B. Installed by Contractor

2.6 SIGNS

A. GREEN PANEL SIGNS

1. Provided by Owner
2. Installed by Owner

PART 3 - EXECUTION

3.1 GENERAL

- A. Installation shall be according to Drawings provided. If not provided, installation shall be according to Project Representative's instructions.

Note: The following; BENCHES, TABLES AND LITTER RECEPTACLES can typically be deleted because these items are typically installed by Owner. Be sure products are ordered and provide Landscape Services with anticipated delivery date.

3.2 BENCHES, TABLES AND LITTER RECEPTACLES

A. WOOD BENCH INSTALLATION

1. Work includes hauling furnished bench to the work site from a campus storage site, removal and recycling of shipping carton, protecting bench during transport and installation, attaching Owner-furnished brackets (1 to each of 4 legs) to the bench and installing them on existing concrete or into a Contractor-installed footing.
2. When required, the footings shall be 42-inch deep x 8-inch diameter.
3. When brackets are installed into existing concrete, drill four 3/4-inch holes into the concrete and anchor the brackets into the holes with an approved anchoring compound.

B. METAL BENCH INSTALLATION

1. Place concrete footing. Place concrete footing and level top of footing.
2. Work includes hauling furnished bench to the work site from a campus storage site, removal and recycling of shipping carton, protecting bench during transport and installation.
3. Following manufacturer's recommendations, assemble bench, install 6 anchor bolts (using an approved anchoring system) into existing pavement. Level with aluminum shims if needed and bolt furniture to pavement. Direct bury post shall be in an 8-inch x 42-inch augured hole footing. Protect benches from damage, including surface scratches, during transport from Owner's holding area to the Project site, during, and following installation. Should repainting be required, it shall be paid for by Contractor. Contractor to unpack benches and dispose of shipping cartons and pallet material.

C. METAL TABLE INSTALLATION

1. Work includes hauling new furnished table to the work site from a campus storage site, removal and disposal of shipping carton. Protect table from damage during transport and installation.
2. Following manufacturer's recommendations, assemble bench, install 4 anchor bolts (using an Owner approved anchoring system) into existing pavement, leveling with rust-free shims if needed and bolt furniture to pavement.
3. Existing example of the "Carousel" table is at the MRI terrace on the east side of the Clinical Center. This is a direct-bury installation. Assume the surface mount installation with 4 to 6 bolts through horizontal tube frame members.

D. LITTER RECEPTACLE INSTALLATION

1. Work includes hauling furnished receptacle to the work site from a campus storage site, removal and disposal of shipping carton, installing anchor bolts (using an Owner approved anchoring system) into existing pavement, leveling with aluminum shims if needed and bolting furniture to pavement. Protect container from damage during

transport from Owner's area to the Project site, during, and following installation. Should repainting be required, it shall be paid for by Contractor. Contractor to unpack litter receptacle and recycle shipping cartons and pallet material.

3.3 BIKE LOOP INSTALLATION

- A. Install as indicated on Drawings. All footings (2 per loop) shall be separate from one another. Top of footing shall be below the bottom of surface of the surrounding pavement.
- B. Align loops vertical in both directions and in line with other loops. Since loops vary somewhat in shape, center loops in rows. Review other installations. Loop installation will be approved by the Project Representative prior to pouring the concrete footings.
- C. Do not use loops which, are misshapen to the degree that they will not provide a good appearance. Return damaged or misshaped loops to MSU Landscape Services Construction Coordinator
- D. One sign loop is to be placed per group of loops. Sign is provided by Owner.

3.4 BOLLARDS

A. BARRIER-FREE PARKING BOLLARD INSTALLATION

- 1. Install posts and bollards as indicated on Drawings with a 42-inch footing and straight vertical walls.
- 2. The top of the concrete footing shall be flush with the bottom of the adjacent pavement or if located in the lawn, shall be formed to shed water away from the post.
- 3. In pavement installations, the intent of the installation is for the ability to remove and replace the bollard if the bollard is damaged. Therefore, as indicated on the Drawings, the footing and pavement provides for a larger opening than the size of the bollard. The bollard shall not be used as the form for the footing sleeve and pavement installation. The footing sleeve and pavement opening shall be formed prior to the installation of the bollard.

B. GUARD POST BOLLARD INSTALLATION

- 1. Install as indicated on Drawings. Post shall be positioned plumb.

C. REMOVABLE STEEL BOLLARD INSTALLATION

- 1. Install as indicated on Drawings. Protect bollard from damage, including surface scratches, during transport and installation. Should repainting be required, it shall be paid for by the Contractor.
- 2. The bollard shall be plumb with the padlock access opening positioned parallel to normal pedestrian path of travel.

3.5 PLAY FIELD EQUIPMENT

A. BASKETBALL POST AND GOAL INSTALLATION

1. Install standard MSU basketball goal posts and goals in a square footing 42-inch deep and 3-foot square. Form the top 10 inches of the footing and slope concrete away from the goal post in all 4 directions. Excavation, disposal of excavation, clean up and lawn repair (if any) included.

B. VOLLEYBALL POST INSTALLATION

1. See Drawings for detail of court construction.
2. Work includes removal of sod and topsoil to a depth of 4 inches, place 7 inches of washed sand and grade.
3. Install 2 standard volleyball net posts (furnished) in augured holes with 10-inch x 42-inch concrete footings, site clean-up and repair turf ruts.

3.6 POST AND CHAIN INSTALLATION (2 TYPES OF SYSTEMS)

- A. Install as indicated on Drawings. Posts shall be positioned plumb.
- B. Space posts as indicated on Drawings.
- C. Top of concrete footing shall be below the existing grade as indicated on Drawings.
- D. Installation includes installing vinyl coated chain with specified connectors (including weld). Prime and paint connectors after welding with same paint system used on the posts.

3.7 PLAQUE BASES AND PLAQUE INSTALLATION

- A. Usually, this will be hand work in a confined area.
- B. Excavate as required with a 42-inch deep footing below ground and up to 12 inches above.
- C. Form above ground portion with a slight cant and shape to accommodate the provided plaque.
- D. Securely install plaque and the plastic concrete, while protecting the plaque surface from contamination from the concrete.
- E. Finish above ground surface after removal of forms.
- F. Clean up site after removal of forms.

3.8 BASKETBALL GOAL INSTALLATION

- A. Work includes delivery of goal to site, disposal of shipping container, assembly of goal and backboard, excavation of footing hole, positioning of post vertical and plumb and at the proper height, installation of compacted backfill and cleanup.

3.9 PARKING CONTROL BOOTH AND GATE CARD ISLANDS

- A. Work includes layout as indicated on Drawings, asphalt removal and spade cutting (may not be required in some installations), excavation for integral curb, 4-inch diameter steel posts, steel post installation in frost free footing, forming island, waiting for others to install detector loops, conduit and junction boxes, pouring and finishing concrete, stripping forms and finishing vertical surfaces, painting steel posts with primer and 2 coats of safety yellow, following manufacturer's instructions and site cleanup.
- B. See Drawings for gate card island sizes and number of posts to install.
- C. For installations in existing pavement where pavement is in good condition, pavement shall not be overcut.

3.10 ASH URN

- A. The Owner provided ash urn is a 3-inch x 5-inch rectangular steel tube approximately 4 feet long.
- B. The direct bury version requires a 10-inch diameter x 42-inch deep concrete filled, augured hole.
- C. The surface mount version requires 4 bolts using an approved anchoring system (Hilti; or approved equal).
- D. The urn shall be positioned plumb. For the surface mount unit, some shims may be required.
- E. Protect urn from damage, including surface scratches, during transport from Owner's holding area to the Project site, during, and following installation. Should repainting be required, it shall be paid for by Contractor. Contractor to unpack urn and dispose of shipping cartons and pallet material.

END OF SECTION 324000