CITY OF FORT WAYNE MASTER UPDATED: 03/12/2018

SECTION 32 16 00

Curbs, Gutters, Sidewalks, Ramps and Driveways

NTS: If not used in the Project, delete curbs, gutters, sidewalks, ramps, or driveways from the section and all sections accordingly.

1. GENERAL
	1. DESCRIPTION
		1. Contractor shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to furnish and install Portland Cement Concrete (PCCP) curbs and gutters, concrete sidewalks, concrete ramps, and PCCP driveways.
		2. Related Sections:

NTS: List below list of sections covering products, construction and equipment that a user might expect to find in this section, but are specified elsewhere. Do not list administrative and procedural Division 01 sections.

* + - 1. Section 31 00 05, Trenching and Earthwork.

NTS: Section “1.2” is to be included if project is bid on unit price basis. Section to be deleted or revised if project is to be bid on lump sum basis.

NTS: Insert at (--1--) and (--2--) below the various curb, gutter, sidewalk, ramp and driveway, types to be used for project. Adjust Section “1.2” below for additional work item numbers as needed.

* 1. MEASUREMENT AND PAYMENT
		1. Curb and Gutter
			1. Work Item Number and Title

 **32 16 00-A (--1--) Curb and Gutter**

 **32 16 00-B (--2--) Curb and Gutter**

* + - 1. Curb and gutter will be measured by the linear foot along the front face of the section at the finished grade elevation of the type specified.
			2. The accepted quantities of curb and gutter Work will be paid at the unit price per linear foot as listed on the submitted Bid schedule for curb and gutter, of the type specified.
		1. Sidewalks
			1. Work Item Number and Title

 **32 16 00-C- (--1--) Sidewalks**

 **32 16 00-D- (--2--) Sidewalks**

* + - 1. The accepted quantities of sidewalks will be measured by the square yard of finished surface.
			2. The accepted quantities will be paid at the unit price per square yard as listed on the submitted Bid schedule, complete in place.
		1. ADA Curb Ramps
			1. Work Item Number and Title

 **32 16 00-E- (--1--) ADA Curb Ramps, All Types**

* + - 1. Payment for ADA Curb Ramps shall be on a unit price basis for all types.
			2. The pay quantity for ADA Curb Ramps will be the actual number constructed complete in place according to applicable standards.

NTS: Based on the driveway material and types encountered during the project, add additional driveway work items below. Coordinate with the standard details on the Drawings. Examples or varying material and types may include: commercial, residential, gravel, concrete or asphalt. As needed include projects specific requirements for Bollards in Part 2 Products and Part 3 Execution of this Section

* + 1. Driveways
			1. Work Item Title and Number

 **32 16 00-F- (--1--) Driveways**

 **32 16 00-G- (--2--) Driveways**

* + - 1. Payment of these items shall be on a unit price basis for the depth and type shown on the Drawings and includes the portion of the driveway on which the sidewalk and the approach are located.
			2. The accepted quantities for driveways shall be paid at the unit price per square yard as listed on the submitted Bid schedule, complete in place.

NTS: As needed include projects specific requirements for Bollards in Part 2 Products and Part 3 Execution of this Section

* + 1. Bollards
			1. Work Item Title and Number

 **33 44 13-H Bollards**

* + - 1. Payment for bollards shall be on a unit price basis for each bollard furnished and installed in place as shown and specified on the Drawings.
			2. The pay quantity shall be the number of bollards actually furnished and installed.
			3. This item shall include costs to furnish labor, materials, tools, and equipment, both permanent and temporary, for the construction of bollards associated with work shown on the Drawings.
	1. REFERENCES

NTS: Retain all applicable standards below. Add others as required.

* + 1. Standards referenced in this Section are listed below:
			1. Indiana Department of Transportation (INDOT) - Standard Specifications:
				1. Section 502, Portland Cement Concrete Pavement, PCCP
				2. Section 604, Sidewalks, Curb Ramps, Steps, and Handrails
				3. Section 605, Curbing
				4. Section 610, Approaches and Crossovers
				5. Section 702, Structural Concrete
			2. Americans with Disabilities Act (ADA)
				1. Part II Architectural and Transportation Barriers Compliance Board
	1. QUALITY ASSURANCE
		1. Installer: Shall have a minimum of two years’ experience installing PCCP curbs and gutters, concrete sidewalks, concrete ramps, and PCCP driveways.
1. PRODUCTS

NTS: As needed add or remove the projects specific driveway material requirements.

* 1. CONCRETE
		1. Concrete shall be in accordance with INDOT Standard Specifications latest edition, Section 502 for PCCP and 702 for Concrete, Class A.
		2. Unless otherwise specified on the Drawings, the Work shall be plain concrete.
		3. Proportioning and Design of Class “A” Concrete Mix:
			1. Minimum compressive strength at 28 days: 4,000 psi.
			2. Maximum water-cement ratio by weight: 0.45.
			3. Minimum cement content: 564 pounds per cubic yard.

NTS: Include additional requirements for property owners driveways based on project specific requirements. Consider the existing materials and depth of the driveways.

* 1. GRAVEL DRIVE RESTORATION
		1. Pavement replacement for the gravel driveways shall consist of 2” of INDOT #73 on 6” of INDOT 53 compacted stone. Refer to Section 31 00 05 for material gradation requirements.
1. EXECUTION

NTS: Specifier must discuss the proposed typical PCCP section for driveways with Owner prior to finalizing Paragraph “3.1.b”. In addition, this section must comply with any detail(s) included as part of the proposed construction plans.

* 1. DESCRIPTION
		1. The Work shall consist of the construction of PCCP curbs, gutters, concrete sidewalks, concrete ramps and PCCP driveways in accordance with these Specifications and in conformance with the lines and grades shown on the Drawings or established by the Engineer. Unless otherwise noted on the Drawings, all sidewalks shall be 4 inches thick and 6 inches thick through driveways.
		2. PCCP residential driveway approaches shall be 6 inches thick on top of 4 inches compacted aggregate No. 53. PCCP commercial driveway approaches shall be a minimum 8 inches thick on top of 4 inches compacted aggregate No. 53.
		3. All areas, elements and facilities intended for pedestrian access, circulation and use that are constructed, installed or altered in the public right-of-way and which are subject to Title II of the Americans with Disabilities Act (ADA) shall comply with Part II Architectural and Transportation Barriers Compliance Board, latest edition.
	2. EXCAVATION
		1. Excavation shall be made to the required depth and to a width that will permit the installation and bracing of the forms. The foundation shall be shaped and compacted to a firm, even surface conforming to the section view shown on the Drawings. Bracing and staking of forms shall be such that the forms remain in both horizontal and vertical alignment until their removal.
		2. For curb installation, the excavation shall be made to the required depth, and the base upon which the curb is to be set shall be compacted to a firm, even surface in accordance with the section view shown on the Drawings. All soft and unsuitable material shall be removed and replaced with compacted aggregate No.53 or as specified on the Drawings.
	3. FORMS
		1. Forms shall be of wood, metal or other approved material and shall extend for the full depth of the concrete. Forms shall be straight, free from warp and of sufficient strength to resist the pressure of the concrete without springing. Bracing and staking of forms shall be such that the forms remain in both horizontal and vertical alignment until their removal.
	4. PLACING CONCRETE
		1. Concrete shall be proportioned, mixed and placed in accordance with the requirements for the class of concrete specified. After the concrete for the curb is placed, it shall be tamped and spaded or vibrated until mortar entirely covers the surface. The top shall be floated smooth and the outer upper corner rounded to a 1/4 inch radius.
		2. The face and the top of the curb shall be checked with a 10 foot straight-edge. Portions showing irregularities of 1/4 inch or more shall be removed and replaced at the expense of the Contractor.
		3. Compaction of concrete placed in the forms shall be by vibration or other acceptable methods. Forms shall be left in place for 24 hours or until the concrete has set sufficiently so that they can be removed without injury to the curbing. Upon removal of the forms, the exposed curbing face shall be rubbed immediately to a uniform surface. Rubbing shall be accomplished by the use of water and a carborundum brick. For the purpose of matching adjacent concrete finishes or for other reasons, the Engineer may permit other methods of finishing. Plastering will not be permitted.
		4. The foundation shall be thoroughly moistened immediately prior to the placing of the concrete. The proportioning, mixing and placing of the concrete shall be in accordance with the requirements for concrete Class A in compliance with INDOT Standard Specifications latest edition, Section 604.03(d).
	5. FINISHING
		1. Comply with INDOT Standard Specifications latest edition, Section 604.03(e) and provisions thereto for finishing Work.
		2. The surface shall be finished with a float. No plastering of the surface will be permitted. All outside edges of the slab and all joints shall be edged with a 1/4 inch radius edging tool.
	6. JOINTS
		1. For curb and gutter installation, where the adjacent pavement contains joints, such joints shall be continued through the integral curb. Pavement contraction joints shall be carried through integral curb with preformed joint material 1/4 inch thick, shall conform to the cross section of the curb, and shall be set perpendicular to the face and top of the curb. Preformed expansion joints shall be placed at the beginning and end of all curb returns and also at all castings.
		2. Curbing that is not constructed integral with adjacent pavement shall be constructed with intermediate planes of weakness, 1/3 depth, sawed at 10 foot intervals. The width shall not be less than 1/8 inch or more than 1/4 inch, and they shall be placed at the beginning and end of all curb returns and also at all castings.
		3. Expansion joints shall be carried through the sidewalk, with preformed joint filler. Expansion joints shall be a minimum of 1/2 inch wide, full depth and spaced at a distance not to exceed 48 feet. Dummy transverse joints shall be evenly spaced between expansion joints and/or drives and steps with a maximum spacing of 6 feet. Remolded expansion joint filler 1/2 inch thick shall be provided between new and old sidewalks and driveways and abutting existing buildings or steps.
		4. Construction joints shall be formed around all appurtenances such as manholes, utility poles, etc., extending into and through the sidewalks. Pre-molded expansion joint filler 1/4 inch thick shall be installed in these joints. This expansion joint material shall extend for the full depth of the sidewalk.
	7. CURING
		1. Concrete shall be cured for at least 72 hours. Curing shall be by means of moist burlap or mats or by approved curing compounds. The method and details of curing shall be subject to Engineer’s approval. During the curing period, all traffic, both pedestrian and vehicular, shall be excluded.
	8. RECONSTRUCTED CONCRETE SIDEWALKS OR PCCP DRIVEWAYS
		1. This Work consists of the satisfactory removal, disposal of removed material and replacement of existing concrete walk or drives or the placing of new sidewalks or driveways at the locations indicated on the plans or as directed.
		2. Where an existing concrete sidewalk or PCCP driveway is to be reconstructed, all disintegrated concrete, stone, or other material shall be completely removed and replaced with new concrete sidewalk or driveway in accordance with this specification.
		3. The proposed concrete sidewalk shall be constructed the same width as the adjoining walk, or to a width of no less than 18 inches from the face of curb, or to another width as directed or shown on the Drawings.
		4. The removal of a concrete sidewalk or PCCP driveway shall be to uniform lines as directed. The Contractor may be required to cut the sidewalk or driveway to be removed in a straight line with an approved power driven concrete saw if an existing joint is not available. The sawing shall be such that the portion of sidewalk or driveway to remain in place will not be damaged in any way. Any portion of the sidewalk or driveway, which is damaged or removed back of the established line, shall be replaced at the Contractor’s expense.
	9. BACKFILLING
		1. After the concrete has set sufficiently, the spaces in front and behind the curb shall be refilled with suitable material to the required elevation in layers of not more than 6 inches and be thoroughly tamped.
	10. CURB MACHINE
		1. Curb machines may be used to construct curb provided the curb can be constructed to the requirement of these Specifications.
	11. INTEGRAL CURB WORK
		1. If integral curb Work is specified or required it shall be constructed as shown on the Drawings using Concrete, Class A.
	12. DRIVEWAY CLOSURE AND RESTORATION
		1. Property owners shall be notified of work at driveway a week prior to driveway closure.
		2. Replace and repair driveways back to original condition and as specified.

+ + END OF SECTION + +