ORDINANCE NO. 17-16

AN ORDINANCE SETTING FORTH THE REQUIREMENTS AND CRITERIA FOR CONSTRUCTING SIDEWALKS IN THE VILLAGE OF SPENCER, OHIO, AND DECLARING AN EMERGENCY

NOW, THEREFORE, BE IT ORDAINED by the Council of the Village of Spencer, Ohio, three-fourths (3/4) of its members concurring herein as follows:

Section 1. Sidewalks that are constructed in the Village of Spencer shall be constructed in accordance with the criteria set forth in "Exhibit A" attached hereto and incorporated herein. Any individual, business entity, or contractor constructing sidewalks in the Village of Spencer shall complete sidewalk construction in accordance with the requirements of this Ordinance.

Section 2. All other ordinances in conflict with this Ordinance are hereby repealed.

Section 3. This Ordinance is necessary for the preservation of the public peace, health, safety, and welfare of the Village of Spencer, Ohio, and for the particular reason that this Ordinance is immediately necessary so as to provide guidance and criteria for the construction of the sidewalks in the Village of Spencer so that they are of uniform quality; and it shall take effect and be in full force immediately upon its passage.

PASSED: July 20, 2016

DAN DeROSSETT, Mayor

ATTEST:

SHERI RAMEY, Village Fiscal Officer

Tabled - Not Passed 7/20/2016

CONCRETE WALK

1. **PART 1: GENERAL NOTES:**

1.1 Scope:

1.1.1. Under this item of work, the contractor shall furnish all labor, material and equipment necessary to install fiber mesh reinforced concrete walk in the areas and to the depth indicated on the project plans.

1.2 Applicable Documents:

1.2.1. The project plans and specifications
1.2.2. The contract
1.2.3. The unit price bid proposal
1.2.4. The Ohio Department of Transportation's (ODOT) Construction and Material Specifications dated January 1, 2002
1.2.5. American Concrete Institute (ACI) Specification 301

1.3 Included within this Item:

Each of the following items are included with and considered to be incidental to this item. Costs and fees necessary to provide the labor, material and equipment necessary to satisfactorily complete all these requirements are to be included within the unit price bid for this item. No additional payment will be made for any of the items listed herein.

1.3.1. Excavation necessary to allow for the placement of the concrete sidewalk and a two inch (2") granular subbase material (leveling course) to the line and grade specified
1.3.2. Subgrade preparation
1.3.3. Furnishing, placing, and compacting two inch (2") layer of granular subbase material under concrete
1.3.4. Furnishing and placing any necessary steel reinforcement
1.3.5. Furnishing and placing necessary fiber mesh reinforcement
1.3.6. Furnishing and placing Type C or Type MS concrete to the depths noted on the project plan
1.3.7. Furnishing and placing concrete curing material
1.3.8. Protection of freshly placed concrete
1.3.9. Forming or saw cutting concrete joints

1.4 Unit Price – Measurement and Payment:

1.4.1. Payment will be made based upon the unit price bid per SQUARE FEET of fiber mesh reinforced concrete walk placed AND accepted by the Village of Spencer. Measurements of the in-place pavement area accepted will be filed obtained by the Village. Area will be determined by the field measurement of length and width of the walk. Acceptance of walk is contingent upon successful completion of all items listed in section 1.3 of this specification for reinforced concrete pavement.

1.5 Submittals:

1.5.1. Prior to construction, Contractor shall submit the following:
1.5.1.1. No submittals required
1.5.2. Prior to construction, the Village of Spencer, at its discretion, may require that the Contractor submit the following:
1.5.2.1. Concrete mix design
1.5.2.2. Sieve analysis of base material
1.5.2.3. Manufacturer's certifications indicating compliance with the requirements included herein for the following products:
1.5.2.3.1. Reinforcing steel
1.5.2.3.2. Fiber mesh reinforcement

EXHIBIT A

1.5.2.3.3. Joint materials
1.5.2.3.4. Joint sealants
1.5.2.3.5. Curing materials

1.5.3. Any costs incurred as a result of providing any submittal, whether mandatory (Section 1.5.1. or at the Village's discretion (Section 1.5.2.) must be included within the unit price bid for this item; unless stated otherwise within the bid documents for this project, no additional compensation will be granted to the Contractor for the efforts necessary to provide any submittal, shop drawing, or other documentation.

1.6 Quality Assurance:

1.6.1. All concrete work, including the mixing, placing, finishing, curing and protection of same, shall be in accordance with **ODOT Specification 499 and 511**. State of Ohio Department of Transportation Construction and Material Specifications dated January 1, 2002, and the provisions of this Ordinance.

1.6.2. Contractor shall meet all applicable quality control standards noted within this section. In the case that there is any discrepancy between ODOT, ACI, or any other referenced standard and the Village of Spencer specifications for Reinforced Concrete Pavement (these specifications), these specifications shall rule.

1.6.3. Contractor must meet all wet and cured (field and laboratory) testing requirements for any concrete placed. Inspection and testing specifications are included herein as part of the discussion of quality control requirements for concrete. Contractor will be required to furnish ACI certified Concrete Field Testing Technician – Grade I from an independent testing laboratory as part of this project. Technician will perform field tests on plastic concrete and cast test specimens for laboratory testing. Costs incurred for these services will be furnished under the items for Concrete Inspection and Testing of Concrete Cylinders and Beams.

2. PART 2: PRODUCTS AND MATERIALS:

2.1. Subbase

2.1.1. Subbase shall be furnished in accordance with ODOT Item No. 57 (or 67) or No. 8.

2.2. Concrete

2.2.1. Concrete shall be furnished in accordance with ODOT Item No. 499.

2.2.2. Mix designs shall be submitted to the Village Mayor review and approval prior to issuance of the Notice to Proceed. The Mayor may require modification of the mix design at no additional cost to the Village of Spencer

2.2.2.1. Concrete Mix shall be in general accordance with the following:

ITEM	CLASS C (per ODOT 499.03)	CLASS MS (per ODOT 499.032)
Limestone	1,630 lbs. #57 or #67 per C.Y.	TBD (see 2.2.2.)
Fine Aggregate	1,285 lbs. per C.Y.	TBD (see 2.2.2.)
Cement	600 lbs. per C.Y.	800 lbs. per C.Y.
Water-Cement Ratio	0.50 maximum	0.43 maximum
Admixtures (See Sec. 2.2.2.2.)	TBD	TBD
Entrained Air	4% to 8%	4% to 8%
Slump	1" to 3"	4" max
28-day compressive strength	4,000 psi minimum	4,000 psi minimum

2.2.2.2. Usage of admixtures to modify slump is acceptable upon review and approval of the admixture and the proposed mix design.

2.3. Expansion Joint Materials

2.3.1. Curing materials shall be furnished in accordance with ODOT Item No. 705.03 (preformed fillers).

2.4. Curing Materials (Liquid)

2.4.1. Curing materials shall be furnished in accordance with ODOT Item No. 705.07.

2.5. Fiber Mesh Reinforcement

2.5.1. Fiber reinforcement shall consist of fibrillated polypropylene fiber mesh.
2.5.2. Fibers shall be 100% virgin polypropylene.
2.5.3. Form of the fibers supplied shall be collated fibrillated fiber
2.5.4. Fiber length shall be ½", ¾", and 1 ½".
2.5.5. All fibers supplied must be supplied in accordance with ASTM-C-116.89 "Specifications for Fiber Reinforced Concrete and Shortcrete" classification 4.1.3 TYPE III.
2.5.6. Fiber reinforcement shall be supplied at a minimum of 1.5 pounds per cubic yard of concrete.

3. PART 3: EXECUTION

3.3.1. Subgrade Preparation

3.1.1. The Contractor shall prepare the earth subbase for the concrete walk to the final grade, and the placing of the metal side forms (as necessary) for the concrete pavement.
3.1.2. In areas inaccessible to a roller, the subgrade shall be compacted to the required density by means of an approved mechanical tamper.
3.1.3. Where soft subgrade is encountered, due to no fault of the contractor, the unsuitable material shall be removed by the contractor to a depth required by the engineer, and suitable material, as approved by the engineer, replaced therein, and thoroughly compacted. The excavation thus removed shall be measured and paid for at the unit price bid under item for Removal and Replacement of Unsuitable Base
3.1.4. No concrete will be permitted to be placed upon frozen subgrade.
3.1.5. The subgrade shall be moistened just prior to placement of the concrete thereon.
3.1.6. If form work is necessary, the side forms for the concrete pavement shall be of steel of an approved section shall be straight and of a depth equal to the thickness of the pavement. The base of the forms shall have a width not less than 8 inches.
3.1.7. The forms shall be set to the true line and grade, and shall be supported on thoroughly compacted subgrade for their entire length. The use of bent or damaged forms will not be permitted. The top of the forms shall be cleaned and oiled each time they are used, and shall not be removed until 12 hours after concrete has been placed.

3.3.2. Subbase

3.2.1. Contractor shall furnish and install aggregate base in the locations noted to a depth of two inches (2").

3.3.3 Concrete

3.3.1. Contractor shall furnish and install concrete for walk in the locations and to the depths shown on the project plans and pursuant to the requirements of this Ordinance.
3.3.2. Unless specifically noted otherwise in the plans, specifications or other contract documents, the contractor is required to use either Class C or Class MS Concrete for all new concrete pavement included in this project.
3.3.3. The furnishing of all materials and labor necessary for the mixing, placing, finishing, and curing of reinforced Portland cement concrete pavement, including integral concrete curbs is also included in this item.

3.3.4. Mixing and Delivery

3.3.4.1. The concrete shall be mixed and transported to the job site in approved type truck mixers. The mixers shall be operated at the drum speed as shown on the manufacturer's nameplate on the approved mixer.
3.3.4.2. The volume of concrete missed per batch shall not exceed the mixer's nominal capacity, as shown on the manufacturer's standard rating plate.
3.3.4.3. The concrete shall be delivered to the site of work, and discharge shall be completed within one hour after the addition of the cement to the aggregate.

3.3.5. Placement

3.3.5.1. As provided in the item for Concrete Inspection, the contractor must provide an ACI certified Concrete Field Testing Technician – Level I. Concrete inspector must be present during all concrete placement activities.
3.3.5.2. In no case will the Contractor be permitted to add water in excess of the maximum defined water to cement ration.
3.3.5.3. The subgrade shall be moistened just prior to the placing of the concrete thereon.

3.3.5.4. All concrete placed shall meet the slump, air content, and temperature requirements outlined in section 2.2.2.1. of this item and/or the project plans.

3.3.5.5. Workmen will not be permitted to walk in the freshly poured concrete with boots or shoes coated with earth or foreign material.

3.3.5.6. The surface shall be screeded sufficiently to insure maximum density of the concrete. The concrete adjacent to the forms shall be spaded or vibrated to prevent honeycomb in that area.

3.3.5.7. The surface of the concrete shall be finished to a smooth surface with hand-operated wooden floats and tested for smoothness with an approved standard straight edge, ten feet (10') in length, applied parallel to the centerline of the pavement. Irregularities thus detected that exceed 1/8" in ten feet (10') shall be corrected and the entire surface given a light broom or burlap finish.

3.3.5.8. Concrete shall not be placed between November 15 an March 1, or when the average ambient air temperature is below 40° F and 50 ° F, the concrete immediately after placing in the forms, shall have a temperature of between 50 ° F and 80 ° F AND adequate protection shall be provided to insure the prevention of the concrete from freezing.

3.3.6. Cold Weather Concrete

3.3.6.1. The contractor must adhere to all requirements of ACI Standard Specification for cold weather concrete, Item 306.

3.3.6.2. During placement, the temperature of the plastic concrete must be maintained at a minimum of 50 ° F.

3.3.6.3. When ambient temperatures are expected to be below 40 ° F. at any time during the first ten (10) days after placement, the Contractor must supply and maintain devices to insure that the surface temperature of the concrete does not drop below 50 ° F at any time.

3.3.6.4. Any device, effort, or material provided, including but not limited to insulating blankets, straw, vapor barriers with portable heaters, etc., is concerned to be inherent to this item; no additional payment will be used by the Village.

3.3.7. Quality Control

3.3.7.1. Slump, air content, and temperature of the concrete shall be in accordance with the specifications noted in the table in Section 2.2.2.1. of these specifications. Contractor shall provide an experienced inspector from an independent testing laboratory to complete field testing. One (1) set of four (4) cylinders shall be cast for each 50 yards (or portion thereof) placed. Costs incurred for these services will be furnished under the item for Concrete Inspection. Cylinders shall cure in the filed for no more than 48 hours, after which they will be transported to the testing laboratory. Costs incurred for these services will be furnished as noted under the item for Testing of Concrete Cylinders and Beams.

3.3.7.2.

Minimum Concrete Strength Requirements Table

Age/Type of Test	Class C	Class MS
7-day compressive	3,200 psi	3,600 psi
28-day compressive	4,000 psi	4,000 psi

3.3.7.3. If the concrete does not meet the 4,000 psi minimum compressive strength at twenty-eight (28) days, the concrete shall be removed and replaced by the contractor at no expense to the Village of Spencer.

3.4. Curing

3.4.1. Immediately after the finishing operations have been completed and after the free water has disappeared, all exposed surfaces of the concrete pavement and curbs shall be sealed by spraying thereon a uniform application of curing membrane at a rate of one gallon of material for each 150 square feet of surface treated.

3.4.2. After the side forms have been removed and the honeycomb areas patched, the outside edges of the pavement and curbs shall be sealed.

3.5. Protection of Concrete

3.5.1. General

3.5.1.1. Maintenance of Traffic is a separate and unique item involving the protection of the traveling public (either pedestrian and/or vehicular) both during construction activities as well as after completion of construction, until such time that the concrete placed can be opened to the traveling public without restrictions. Refer to the unit price item for Maintenance of Traffic for further details.

3.5.2. Protection of freshly placed concrete

3.5.2.1. Protection of freshly placed concrete shall be considered as a part of this time.

3.5.2.2. The Contractor shall maintain a watchman for a period of at least four (4) hours after the fresh concrete has been finished to keep foot traffic, bicycles, etc., off the fresh concrete.

3.5.2.2.1. Any damage done to freshly placed concrete prior to its initial set (herein defined as four hours) shall be repaired to the satisfaction of the Village at no additional cost to the Village.

3.5.3. Protection of concrete after initial set

3.5.3.1. The contractor shall furnish and install adequate barricades and protection devices to protect the concrete until the concrete has gained sufficient strength. All loads, other than foot traffic, shall be kept off the surface of the concrete until the concrete has gained sufficient strength.

3.5.3.1.1. Sufficient strength shall be considered to be the minimum strengths for compressive strength for Type C concrete at seven (7) days and Type MS concrete at three (3) days as outlined in section 3.5.6.2. of this item.

3.5.4. Removal of Protection Devices and Barricades

3.5.4.1. Type C Concrete

3.5.4.1.1. If the Type C concrete has gained sufficient strength at seven (7) days, protection devices may be removed .

3.5.4.1.2. Should test results indicate that the concrete has not gained sufficient strength, the Contractor shall maintain the barricades until results of the next scheduled tests are received. The Village may allow testing to the spare cylinder at some point between the initial test and the next scheduled test.

3.5.4.1.3. In no case will protection devices be removed prior to seven (7) days for a Type C concrete.

3.5.4.2. Type MS Concrete

3.5.4.2.1. If the Type MS concrete has gained sufficient strength at three (3) days, protection devices may be removed.

3.5.4.2.2. Should test results indicate that the concrete has not gained sufficient strength, the Contractor shall maintain the barricades until results of the next scheduled tests are received. The Village may allow testing of the spare cylinder at some point between the initial test ant the next scheduled test.

3.5.4.2.3. In no case will protection devices be removed prior to three (3) days for a Type MS concrete.

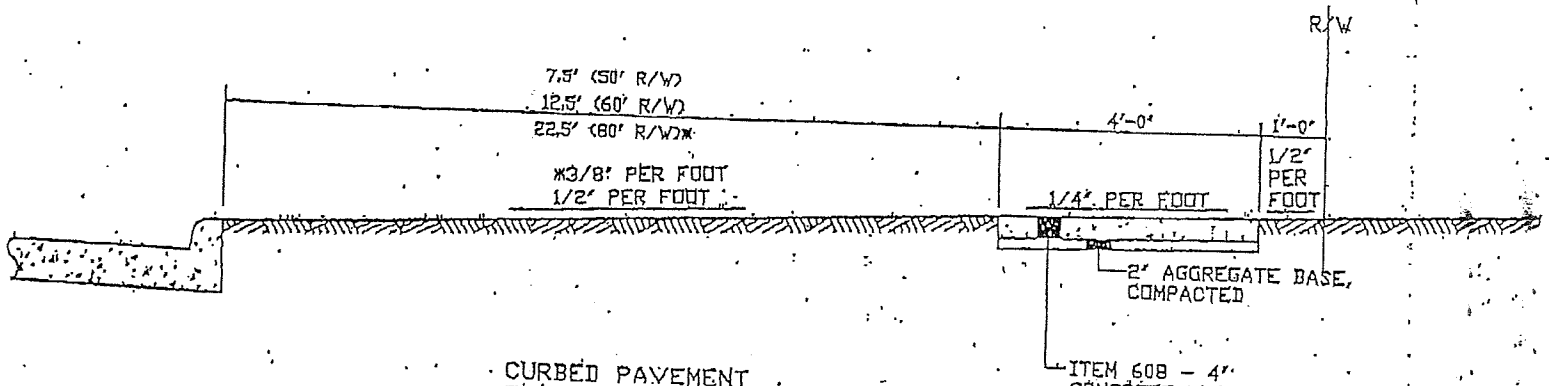
3.6. Pavement Joints

3.6.1. Unless referenced otherwise in the detail, a joint may be formed or saw cut. Slabs adjacent to formed joints shall be edged with a thin metal edger having a radius of ¼ inch. Any impression left in the surface of the pavement by the edging tool shall be eliminated. Sawed joints shall be sawed to a depth of one-eighth the walk thickness within twenty-four (24) hours after concrete placement.

3.7. Miscellaneous

3.7.1. On pavement areas that will remain as existing (i.e., not intended to be replaced and/or repaired) only rubber tired equipment will be allowed. Track equipment may be utilized in pavement areas that are intended to be replaced and/or repaired. Any damage done to existing pavement areas by track equipment must be repaired at no cost to the Village of Spencer.

VILLAGE OF SPENCER
STANDARD SIDEWALK DETAILS



CURBED PAVEMENT
TYPICAL SECTION

GENERAL NOTES:

1. SIDEWALK IN DRIVEWAY SHALL BE MINIMUM 7" THICK.

2. THE SURFACE OF THE CONCRETE WALK SHALL BE STRUCK OFF TO A TRUE SURFACE AND GIVEN A LIGHT BROOM FINISH JUST PRIOR TO THE FINAL SETTING OF THE CONCRETE.

3. THE WALK SHALL BE HAND-SCORED ONE INCH DEEP AT APPROXIMATELY FIVE FOOT INTERVALS. ALL JOINTS SHALL BE HAND FINISHED.

4. NO CONCRETE SHALL BE PLACED ON FROZEN SUBGRADE, AND ADEQUATE PRECAUTIONS SHALL BE TAKEN TO PROTECT THE CONCRETE FROM FREEZING.

5. ADEQUATE LIGHTS, SIGNS, AND BARRICADES SHALL BE FURNISHED AND MAINTAINED TO PROTECT THE WORK AND THE PUBLIC.

6. EXPANSION JOINTS SHALL BE INSTALLED WHEREVER THE WALK MEETS A DRIVEWAY APPROACH OR A CURB, AND WHEN REQUIRED BY THE CITY, WHERE NEW SIDEWALK MEETS EXISTING SIDEWALK.

FEB - - 2002