

## **Specifications for Driveway Approaches, Sidewalks, and Curbs**



**City of Huber Heights**

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**Huber Heights, Ohio 45424**

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### **General:**

- A.** All work in PUBLIC RIGHT-OF-WAY is by PERMIT ONLY. All permits shall be accompanied by a cash bond or security of no less than \$25,000. A property owner may perform concrete work in front of their property by a no cost permit if they construct the work entirely themselves. If the property owner performs the work, the bond requirement will be waived.
- B.** All new replacement driveway approaches, sidewalks, and curbs shall be constructed of Portland cement concrete material unless a material change is authorized in the permit. In Zoning Districts A, R-1, and R-2 only, driveway aprons may be constructed of asphalt material as an alternate to the Portland cement material as outlined further in these specifications.
- C.** All work shall be done in accordance with the Specifications and Standard Drawings of the City of Huber Heights. Work shall be complete in every respect including restoration of adjacent areas, clean-up of site, and removal of mud and debris from surrounding areas and haul routes.
- D. Driveway approaches:**
  - 1. Material shall be City of Huber Heights 4,000 PSI concrete @ 28 days mix using 6 3/8 bags of cement per cubic yard of concrete mix or ODOT Class C

(600) concrete mix. All concrete material shall have 6.0% + 1% air entertainment and a maximum slump of four inches (4").

2. After the concrete has been finished it shall immediately be cured meeting the specifications and requirements of the latest edition of the State of Ohio Department of Transportation "Construction and Material Specification Manual".
3. Residential drive aprons shall be six inches thick concrete placed on three inches of compacted ODOT Item #304 material.
4. Commercial property drive aprons shall be seven inches thick concrete placed on three inches of compacted ODOT Item #304 material.
5. Expansion joint material (asphalt type) shall be used wherever new concrete abuts old concrete and as shown by the Huber Heights Standard Drawings.
6. If curb is to be replaced with the driveway, it shall conform to the original gutter grade. Permit holder is responsible for all asphalt work and to restore pavement at cut to the original and/or overlaid condition. Asphalt shall be saw cut straight a minimum of 12 inches from the front of the gutter and the existing pavement and shall be given a tack coat with a bituminous material before the placement of ODOT Type #404 asphalt. The gutter plate of apron shall not be covered with any asphalt material unless specifically directed by the engineering inspector. Replacement curb and gutter at driveways shall be cut at joints only for full length removal unless otherwise marked by the City Inspector.
7. Driveway approaches shall be constructed using good construction practices. It shall have a center joint, wing joints, be edged, and have a rough finished texture on both commercial and residential applications. Edges shall be tooled and the concrete surface shall have a broom finish parallel to the street. All contraction joints shall have a minimum tooled or sawed depth of  $\frac{1}{4}$  the thickness of concrete placed.
8. Drives shall not exceed 25 feet width measured at the back of the sidewalk. A variance request to add up to ten feet of driveway apron width must have a

detailed statement showing cause and be approved by the Board of Zoning Appeals.

9. In areas Zoned A, R-1, or R-2, asphalt approaches may be substituted for Portland cement concrete approaches within the City right-of-way. These approaches shall have a minimum aggregate base (#304) thickness of six inches and shall be constructed on a compacted sub-grade approved by the City Inspector. A minimum of two inches of #404 surface asphalt shall be placed on the approved base. In the case of the restoration of existing asphalt driveways in zoning districts where they are permitted, the contractor shall place a two-inch lift of #404 surface asphalt on an approved tacked asphalt base as approved by the City Inspector.

**Sidewalk:**

1. Sidewalk material shall be Portland cement concrete having a strength of 4,000 PSI strength at 28 days, either City of Huber Heights 6 3/8 bag mix or ODOT Class C (600) mix shall be used with 6.0% + 1% air entrainment and a maximum slump of four inches. All edges shall be tooled, and a light broom finish shall be placed on the finished concrete. Immediately after finishing, the concrete shall be properly cured following the specifications and requirements of the latest edition of the State of Ohio Department of Transportation "Construction and Material Specifications Manual."
2. Sidewalks shall be four inches thick concrete placed on three inches of compacted ODOT Item #304 aggregate base material, except at driveways where the sidewalk shall be six inches thick placed on three inches of compacted Item #304 aggregate base material. All sidewalks shall be five feet wide except on residential or local class streets where sidewalks four feet wide are acceptable. The minimum replacement area is one full block unless the Inspector allows the sawing of a partial block. Surface patching in lieu of replacement is not allowed.
3. Expansion joints shall be used wherever new material abuts old concrete and as shown in the Huber Heights Standard Drawings. Expansion joints shall be made of preformed asphalt fiberboard and the void between the existing concrete surface and the expansion joint shall be filled with concrete caulking.

4. Sidewalks shall be constructed using good construction practices. Sidewalks shall be installed using forms and have contraction joints plated at a uniform rate of 4 feet for 4 foot wide sidewalk and 5 feet for 5 foot wide sidewalk. Edges shall be tooled, and the concrete surface shall have a broom finish perpendicular to the street. Contraction joints shall be tooled or sawed a depth of  $\frac{1}{4}$  the thickness of concrete placed.
5. On handicap ramps, a heavier broom finish shall be used perpendicular to the slope of the handicap ramp. The inspector shall review this finish prior to approval of the handicap ramp.

**E. Curbs:**

1. Curb and gutter material shall be 4,000 PSI concrete at 28 days. Either City of Huber Heights 6 3/8 bag mix or ODOT Class C (600) mix shall be used with 6.0% + 1% air entrainment and a maximum slump of four inches (4").
2. Curbs and gutters shall be constructed in accordance with the City of Huber Heights Specifications and Standard Drawings. Curbs shall have a front, back, and side forms contouring to the profile of the curb. Depressed curbs at driveways shall have a 1 1/2 inch lip. Curbs shall have contraction joints placed at five feet centers.
3. Curbs at a sidewalk terminus shall be provided with a wheelchair ramp for handicapped persons in accordance with City of Huber Heights Specifications and Standard Drawings (see Sidewalk Item #5 for special surface roughness requirements).
4. Asphalt street restoration work adjacent to new curb and gutter construction shall not cover the concrete gutter plate but leave it exposed unless otherwise directed by the inspector. Asphalt work shall be in accordance with these specifications, concerning sawing, placement, tacking, and sealing. The contractor shall remove existing asphalt from adjacent gutter plate areas when directed by the inspector to facilitate drainage.

5. The front face of all barrier type curbs shall be hand troweled and finished to a depth of eight inches below the top of the curb.
6. Expansion joint material (asphalt type) shall be used wherever new concrete abuts old concrete and as shown by the Huber Heights Standard Drawings.

**F. Restoration**

1. After the concrete has had time to cure and as soon as the forms have been removed the excavated area behind the curb should be backfilled, tarped, then seeded or sodded. Any settlement in the backfill behind the curb within one year after placement shall be corrected by the contractor at no expense to the City of Huber Heights. All pavement restoration work must also be completed. All castings disturbed or damaged by the contractor shall be replaced and reset. This must be done before final acceptance and/or the release of the bond.

**G. Limitation:**

The construction season for rebuilding drive approaches, sidewalks, and curb work is from April 15 to October 31 or depending on weather conditions and approval by the Engineer. Permission must be granted for any time period before and after the reconstruction season has begun or ended. Extra precaution and/or admixtures to the concrete may be advised by the inspector if the work is permitted. The inspector is hereby granted the right to extend the construction season in accordance with good engineering practices.

**H. General Specification:**

Specifications for the construction and installation of aprons, sidewalks, curbs, concrete structures and related construction within the right-of-way and on the property of the City of Huber Heights by persons, firms, corporations, etc., other than the City of Huber Heights Departments, the permit holder shall hold the City free and harmless from any and all loss, damage, expense, including but not restricted to attorney's fees, court cost arising from, cause by or incident or related to injuries or damage to property (including but not limited to property of the City) or injury or death to any person or persons.

1. Excavation shall consist of the excavation of all materials necessary in the construction of the listed projects, all the lines and grades indicated on the plans or as directed by the engineer. All labor and equipment shall be furnished for the proper execution of said work. Excavation to be wasted shall be disposed of offsite by the contractor as directed by the engineer.
2. No concrete shall be poured until the inspector has been properly notified, has inspected the premises, and approved the proposed work in writing. The degree of subbase compaction will be carefully reviewed by the inspector prior to approval of the work. The City requires a 24-hour notice. Concrete may not be poured on Sundays, legal holidays, or before or after regular work hours without specific approval of the inspector. After all work is complete, the contractor shall contact the City Inspector to make a final inspection. Work finished shall not be accepted by the City, until the finished work has been inspected and all completion or correction items have been finalized to the satisfaction of the City.
3. Unless otherwise provided, contraction joints shall be placed in five foot intervals for curbs and sidewalks. The inspector or the engineer shall determine in advance of placement when these contraction joint intervals may be varied.
4. Expansion joints of acceptable bituminous materials shall be placed parallel (or perpendicular) to all:
  - a. Retaining and building walls;
  - b. Catch basins, gas and water boxes, manholes and poles;
  - c. Near trees and other plantings as may be determined by the engineer.
  - d. Every 100 running feet of curb or as determined by the engineer.  
-Every 40 running feet for sidewalk.
  - e. When a curb, sidewalk, or step form a continuous point of contact.

- f. Whenever a gutter forms a continuous point of contact with a separately poured curb or separately poured concrete street.
  - g. Pavement contraction joints shall be sawed every 17 running feet or as directed by the engineer. The joint shall be sawed on a six to one skew as shown on the plans.
  - h. There will be a sawed joint every 200 square feet of pavement unless waived in writing by the engineer (normal 17x12).
  - i. Whenever new concrete is placed adjacent to existing concrete.
  - j. At curb, sidewalk sides of apron, sidewalk, and building sides of driveway.
5. After the removal of forms all curbs, sidewalks, or other structures except those specifically excluded by the inspector shall be backfilled with approved soil (free from stones larger than 1" diameter), compacted, and either sodded or seeded as may be determined at the beginning of the contract or the issuance of a permit. Compacted top soil shall be placed in the top four inches of fill. In no case shall concrete, wood, metal, stones, other debris, or scraps be allowed in the backfill area or general excavation area.
6. All fill shall be on a slope no greater than three-to-one unless written permission to the contrary is received.
7. Steel forms shall, be used throughout the work unless wooden forms are accepted by the inspector. Radius forms shall be used on curbed work. All forms shall be oiled and kept in good condition. All forms shall be removed before backfilling.
8. All work shall be warranted for one year after completion and acceptance. For these purposes, one year shall start when total delineated contracting areas are completed, and a letter of acceptance sent to said contractor by the City of Huber Heights contracting officer. The contractor shall also be responsible for any settlement of disturbed areas within one year.

9. Unless specifically excluded herein, the contractor and his representative shall adhere to all laws of the City of Huber Heights and the State of Ohio.
10. The contractor and his entire work force shall follow such sanitary provisions of the City through its laws and regulations at all times.
11. When in the opinions of the inspector, the subgrade upon which concrete is to be placed is not structurally adequate to support 3,000 pounds per square foot without yielding and will not provide a proper base, he may require:
  - a. Compacted #304.02 aggregate base material (6" minimum additional thickness), or #2 stone base material, or an approved substitute.
  - b. Wire mesh, steel bars, or any combination of these reinforcement, and base materials.
  - c. Any fill concrete used for bridging shall be reinforced when determined in the best interests of sound construction.
  - d. Size of bars and mesh shall be approved by the City Engineer taking into consideration load, subsoil, and other conditions that may affect structural strength.

Any or all of the above measures shall be undertaken by the contractor at no expense to the City of Huber Heights, but shall be a cost of the project born by the contractor.

12. All concrete shall be completely covered with a white pigmented curing compound after finishing but before setting. Curing compound and application device shall be approved by the inspector prior to commencement of work. Minimum application rate shall be one gallon per 200 square feet of surface. Wind protection spray shall be provided. After September 15, no curing compound shall be used on concrete flat work (pavement, aprons, driveways, and sidewalks) unless directed by the inspector. All work poured after this date will be sprayed with an anti-spall mixture approximately one week after the concrete is placed. This mixture shall be made of 50% boiled linseed oil and 50% kerosene. The contractor



shall protect all freshly poured concrete against marking or defacing. The contractor shall promptly replace any defective, deface, or marred concrete at no expense to the City or homeowner.

13. All structural concrete exposed to weathering shall also be completely covered by spraying with an anti-spall mixture before backfilling. The mixture shall be applied seven days after the forms are stripped.
14. All items placed within the right-of-way may be tested anytime to verify that they conform with good construction practices. In case of dispute as to methods of testing and structural requirements, the State of Ohio Department of Transportation "Construction and Materials Specifications Manual" on file within the office of the City Manager shall prevail. The City Manager may, upon notice, change the methods of inspection. In case of disputes, the City Manager may require materials to be tested by a testing laboratory at the contractor's expense.
15. The following additional practices will be required unless otherwise specified by the inspector when the following weather conditions occur:

#### **Cold Weather**

Straw, polyethylene cover, curing blankets, or other acceptable means of protections shall be placed over the fresh concrete whenever there is an indication of freezing, materials shall be on hand when the temperature is below 40 degrees F. No concrete shall be placed on frozen subgrade and blankets will be placed over subgrade, prior to pouring, whenever the overnight temperature falls to 32 degrees F. However, during cold weather, the contractor may use heated water in the production of concrete for the City of Huber Heights work. The forms may also be heated; however, no calcium chloride shall be added to the concrete in any case.

#### **Hot or Windy Weather**

When in the opinion of the inspector, the temperature of the atmosphere or wind conditions are such that accelerated drying or setting of the concrete would be caused he may require wet burlap bags, other suitable substitutes

to be applied to the concrete surface, or he may suspend the placement of concrete.

16. All pavement, driveway, curb, and sidewalk concrete shall be poured between ambient temperatures of 90 degrees F and 40 degrees F. The inspector is granted the right to extend these limits and to include any conditions in the accordance with good engineering practices.
17. The inspector shall at all times receive a copy of all concrete batch tickets from the truck drivers or the job foreman. These tickets shall show the volume, time of batching, type of add mixtures, mix or strength, addition of jobsite water, and specified slump, etc.
18. All concrete poured within the right-of-way shall not be internally colored, pigmented, nor painted, except for those sections which are so marked for traffic control work or which may be approved by the City Engineer.
19. Any driveway cuts, any cuts in the pavement, barrier curb, curb and gutter portion of the right-of-way shall be by complete replacement of the sections involved from existing joint to existing joint, unless otherwise marked by the City. Any openings which are cut in concrete pavement, apron, sidewalk for any purpose shall require the replacement of full sections of concrete from existing joint line to existing joint line, unless otherwise marked or directed by the inspector.
20. All excavation cuts on hard surfaced streets or structures within the right-of-way shall be made to the full depth of such structures as directed by the inspector. Lights and barricades shall be placed around excavations and uncured concrete work.
21. All catch basins, sanitary and storm manholes, valve boxes, and other appurtenances in the construction area or those which are involved in the completion of the work shall be kept free from construction materials, rubbish, and shall be cleaned to the satisfaction of the City at the conclusion of the work.

22. Concrete delivery trucks shall be washed out only where directed by the inspector. The washing area shall be within the limits of the construction site and shall be self-contained. In no case, shall the concrete trucks be washed out adjacent to a natural area, catch basin, or manhole.
23. Mud and other debris shall be promptly removed from the site or from adjacent streets when it is trucked onto the roadways, aprons, or sidewalks by concrete delivery trucks or other construction vehicles operating within or to and from the construction site.
24. Safety devices and techniques shall be used as mandated by OSHA and as directed by the inspector. Reflectorized barrels or Type II barricades of plastic or metal construction in accordance with ODOT "Manual of Traffic Control for Construction and Maintenance Operations", shall be placed at each end of the excavation for sidewalks and curbs. At driveway aprons, reflectorized barrels shall be spaced at close intervals so that cars may not pass between the barrels. Any safety device not meeting the approval of the inspector shall be promptly removed from the project. The inspector may order the use of warning lights on the barrels or barricades, when in the opinion of the City Engineer, situations warrant the use of such warning lights.
25. All new asphalt pavement restoration which causes water ponding shall be corrected by sawing and removal of the faulty portion. New #404 and #402 asphalt pavement shall be machine re-laid unless otherwise approved by the inspector. All joints shall be sealed with sealer material. Any damage arising from corrective work shall be replaced at the expense of the contractor.
26. No exceptions to these specifications may be taken unless written permission is received from the City Manager.
27. All permit holders are assumed to have read and understood the foregoing. Failure to follow the foregoing will not be an excuse for nonperformance. Bidders must comply with all other regulations of the City of Huber Heights.
28. No lateral drains shall be placed through the curb by the property owner unless specifically authorized in writing by the City. During the

reconstructions of curb and gutter work by the City's sidewalk contractor, all such existing drains shall be disconnected. The purpose of this regulation is to limit the deterioration of the streets by minimizing water coming to the gutter and to encourage the installation of onsite yard basins connected to the storm sewer.

### **Horizontal Curb Sawing**

#### **Horizontal sawing of concrete**

This contract requires that where concrete aprons have settled and if the apron is in good condition, the adjoining curb may be sawed to the level of the apron provided that the apron settlement is not severe enough to prevent a positive slope being maintained from the apron to the concrete gutter plate.

Curbs and other concrete sections shall be sawed horizontally to produce a uniform slope from the driveway apron to the face of the curb section near the gutter. No sawing work will be accepted which does not have a positive slope across the curb to the gutter plate.

This work shall be accomplished by using a horizontal carbide tipped saw of sufficient diameter to produce the full cut and mounted in a controlled manner from a ground mounted jig or truck mounted stationary platform.

#### **Preapproval of Contractor**

Only contractors who have been preapproved by the City of Huber Heights in writing shall perform this contract work. The contractor shall demonstrate to the City his proficiency and the accuracy of his equipment.

Prior to being accepted by the City, no public or private horizontal sawing work shall be performed in the public right-of-way by a non-certified contractor.

#### **Operation Details**

The contractor shall saw the curb or other concrete unit adjacent to the apron flush with the surface of the apron at a slope towards the gutter at least equal to the slope of the apron.

The contractor shall bevel cut each end of his horizontal sawing operation to make a smooth transition between the original curb and height and the sawed section.

All concrete curb sections, flushings, and other matter removed shall be disposed of by the contractor.

Sharp saw edges in the finished concrete work shall be dressed with a hand-held concrete sander.

The sawed surface shall receive one coat of 50% linseed oil and 50% kerosene after the surface has dried. If a section of concrete curb below the sawing level disintegrates or falls out during the operation, the contractor shall clean out the failed area or pocket and the City of Huber Heights shall replace this area with #404 asphalt.

The above operations shall constitute full payment on a lineal foot basis for horizontal curb sawing, except that no payment shall be made in sections where the curbing is disintegrated in the option of the engineer.

### **Jacking of Slabs**

#### **Jacking of concrete slabs**

In some cases where a slab of sidewalk or apron has settled and is still sound, it may be possible to return this slab to proper alignment and grade by jacking of a mud slurry under the slab to raise it to serve a proper function. The work shall be accomplished by drilling a small hole or holes in the concrete at specific locations inserting a hose into the hole and pumping a slurry mixture under the slab to align it properly. After the slab is brought to grade, the hose shall be withdrawn and the small hole filled with concrete mortar.

### **Pre-Approval of Contractor**

This work shall be performed only by a contractor who has been accepted by the City of Huber Heights. Work shall be carefully performed to ensure that cracks do not appear in the slab. In the event that the slab cannot be raised and adjusted to align with adjacent concrete sections, the work shall be abandoned and the slab replaced by conventional means.

### **Payment**

After the work is fully inspected by the City of Huber Heights, payment shall be made to the contractor. The unit bid shall be for each section of concrete slab raised to grade.

The above referenced specification shall be incorporated as part of City Ordinance No. 82-0-72 and 83-0-119.