

Conditions of Use/ Responsibility of Data

These “guideline” specifications are to be used by the A/E as a base document in the development of project/site-specific Division 2 – SITE WORK specifications for Montgomery County Public Schools Construction Projects. They may or may not be complete, correct and/or appropriate for use for any given project. It is the responsibility of the A/E to review these “guideline” specifications and to edit and/or supplement them as required to ensure that they represent the full, complete, correct and code-compliant specifications required for all construction of the project to which they apply. The use of these “guideline” specifications, and/or any information herein, in no way releases the A/E from their Contractual responsibility to prepare and provide the full, complete and correct code-compliant Contract documents, plans and/or specifications required for construction.

Review and editing of these “guideline” specifications shall be performed by appropriately licensed Maryland professional engineer. Specifications are to be prepared in Microsoft Word, edited using the “Track Changes” feature of that software and submitted to MCPS electronically on a compact Disk for review.

SECTION 02512 – CONCRETE SIDEWALKS

PART 1 - GENERAL:

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1, Specification Sections apply to work in this section.

1.2 DESCRIPTION OF WORK:

- A. Section specifies materials and work required to construct Portland cement concrete walks.

1.3 RELATED SECTIONS:

- A. Refer to Section 02100 "Earthwork and Grading", and Section 02514 "Concrete Curbing".

1.4 STANDARDS:

- A. Maryland Department of Transportation State Highway Administration's current "Standard Specifications for Construction and Materials".
- B. Montgomery County, Department of Transportation's current "Design Standards".

1.5 SUBMITTALS:

- A. Contractor shall provide a sample of eight linear feet of typical concrete walk, with a control joint, for approval by Owner’s Representative. No additional concrete walk may be constructed until sample is inspected and approved.

- B. Submit location of product manufacture and of extraction/recovery of primary raw materials.
- C. Submit recycled-content data, designating percentages of post-consumer and post-industrial recycled material.
- D. Submit certification of compliance with albedo requirements.
- E. Submit certification of FSC-certified sustainably harvested wood formwork materials, if applicable.

1.6 PROJECT CONDITIONS:

- A. Traffic: Maintain pedestrian traffic during walk construction operations.
- B. Limitations:
 - 1. Underground Utilities: Do not proceed with concrete construction until underground utility construction is complete.
 - 2. Curbing: Do not proceed with concrete walk construction until adjacent or adjoining curb construction is complete.
 - 3. Environmental: Refer to Section 02200 "Utility Standards".

PART 2 - PRODUCTS:

2.1 MATERIALS:

- A. General: Provide products manufactured and of raw materials extracted/recovered within a 500-mile radius of the Project Site.
- B. Gravel Base:
 - 1. MDOT-SHA GA Base.
 - 2. Recycled concrete RC-6 may, at Contractor's discretion, be used for base in approved locations.
- C. Concrete: Class "A" Portland cement concrete, Section 02200 "Utility Standards".
 - 1. Maximum 50 percent GGBF slag replacement for Portland cement, per MDOT-SHA Specification 902.06.05
 - 2. Albedo: Concrete mix design, including cement and aggregate materials, shall achieve a minimum reflectance (albedo) of 0.3 when compared with tested values of mix designs included in Lawrence Berkeley National Laboratory's "Effects of Composition and Exposure On the Albedo of Portland Cement Concrete", Appendix A: Images and Albedos of All Concretes".
- D. Joint Materials: Expansion and Isolation Joints: ASTM D 994, bituminous preformed joint filler, 1/2 inch thick.
- E. Forms: Steel or wood for straight or tangent walks. Non-rented wood materials shall be FSC-certified sustainably harvested.
- F. Curing Materials: Burlap Mats: AASHTO M182, Class 1.
- G. Miscellaneous Products:
 - 1. Form Release Compound: Non-staining, zero-VOC, 100 percent biodegradable made from plant-based oils and approved by Architect.

2. Cement Mortar: Section 02200 "Utility Standards".

PART 3 - EXECUTION:

3.1 PROTECTION AND RESTORATION:

- A. Concrete: Protect completed concrete from damage. Restore damaged concrete as directed by Owner's Representative or Architect.

3.2 SUBGRADE PREPARATION:

- A. Paved Areas: Section 02100 "Earthwork and Grading" and as noted. Verify sub-grade elevations and compaction and correct discrepancies before proceeding with construction. Verify utility casting elevations and reset or adjust to meet flush with finished concrete surface. Remove loose material from sub-grade prior to gravel base placement.

3.3 GRAVEL BASE PLACEMENT:

- A. Place and compact gravel base on prepared sub-grade to depth indicated. Remove debris from surface of gravel base prior to placement of concrete. Do not place gravel base material on frozen or muddy sub-grade.

3.4 FORMS:

- A. Clean and coat forms with form release compound, prior to use. Install forms to lines, grades and elevations indicated or as specified. Brace forms to prevent movement during concrete placement.

3.5 EXPANSION JOINTS:

- A. Install expansion joints at maximum 25-foot intervals or as indicated. Install expansion joints, adjacent to curbing, opposite curbing joints and as indicated. Place expansion joints perpendicular to concrete surface and with top edge 1/4 inch below concrete surface.

3.6 ISOLATION JOINTS:

- A. Install isolation joints where concrete abuts buildings, existing walk sections, utility structures and concrete curb. Place isolation joints with top edge 1/4 inch below concrete surface.

3.7 CONTRACTION JOINTS (SCORE LINES):

- A. Provide Contraction joints at five-foot intervals or as indicated. Form Contraction joints with 3/4 inch jointing tool.

3.8 CONCRETE PLACEMENT:

- A. Sample Approval: No concrete walks may be constructed until sample section has been inspected and approved by Owner's Representative.
- B. General: Place concrete in forms in one uniform layer. Consolidate concrete by tamping, spading or vibrating to prevent honeycombing. Place and consolidate concrete carefully to prevent dislocation of joint materials.

3.9 FINISHING:

- A. General: Draw a fine hair broom across concrete surface. Where longitudinal grade exceeds five percent, use a coarse texture finish by drawing a stiff bristle broom across concrete surface. Do not add water to finish. Do not wet broom to finish.
- B. Handicapped Ramps: Handicapped ramps shall have exposed aggregate (or other approved detectable) surface.

3.10 CURING:

- A. Mat Method: Moisten mats thoroughly with water before placing on exposed concrete surfaces and overlap six inches. Cover mats with polyethylene sheeting and maintain mats in continuously moist condition for seven calendar days. Repair or replace damaged mats.

3.11 TESTING:

- A. General: Correct work not conforming to tolerances as directed by Owner's Representative or Architect, at no increase to Contract Sum.
- B. Walk Horizontal Alignment Test: Tolerance not to exceed 1/2 inch between any two contacts on 10-foot straightedge, except along horizontal curves. Test locations random and determined by Owner's Representative or Architect. Test observation by Owner's Representative or Architect is required.
- C. Walk Surface Smoothness Test: Tolerance not to exceed 3/8 inch between any two surface contacts on 10-foot straightedge. Test locations random and determined by the Owner's Representative or the Architect. Test observation by the Owner's Representative or the Architect is required.

3.12 WASTE MANAGEMENT:

- A. Recycle waste materials in accordance with Division 1 "Construction Waste Management" requirements.

END OF SECTION