



3.3/11.03

CAST-IN-PLACE CONCRETE
CONCRETE REPLACEMENT SPECIFICATIONS

SECTION 03300

I. Information to be submitted as a part of the bid.

- A. Furnish at least three (3) references including names of contact persons. Previous work shall have been completed at least six (6) month to eighteen (18) months prior to the date of this bid.
- B. Submit with the bid a quantity takeoff showing the specific areas of work included by size and number. Use of a sketch is recommended. Indicate on bid when work is to be done – either spring or fall is preferred.

II. General requirements

- A. Contractor shall pay unemployment and social security taxes or other taxes imposed by local, state or federal government, and shall certify to Owner that this has been done before final payment is made to contractor.
- B. Contractor shall obtain and pay for all permits, licenses, bonds, certificates and other fees.
- C. Contractor shall purchase and maintain liability insurance to protect from claims under work's or workers' compensation acts and other employee benefits acts claims for damages because of bodily injury, including death, or for claims for damages to property which may arise from the contractor's operation or any subcontractor or anyone directly or indirectly employed by any to them. Minimum limits shall be as are acceptable to the Owner. Certificates of such insurance shall be filed with the Owner prior to commencement of the work.
- D. Each bid shall include the entire scope of this specification.
- E. Contractor shall prepare a schedule fixing dates for the work to begin and end and shall obtain the Owner's approval of the schedule before commencing any work.
- F. The contract may be changed only by written Change Order signed by the Owner and authorized by Wisconsin Housing and Economic Development Authority (WHEDA).
- G. An inspection of the work will be made after completion of the work. Contractor shall notify Owner's representative ten (10) days prior to date required for the inspection.
- H. Final payment in the amount of 10% of the contract amount (retainage) will be made within thirty (30) days of final acceptance by Owner and WHEDA.
- I. Contractor shall supply lien waivers for all materials and work prior to final payment.
- J. All workmanship and material shall be guaranteed to be free from defect for a period of two (2) years from the completion except where a longer period is specified

Scope of work

The following descriptions are not intended to indicate the specific locations where concrete is to be replaced, but to identify those conditions where the replacement of concrete is required. The need to replace the concrete is dictated by the requirement to eliminate hazardous conditions that may potentially cause injury. All areas requiring remedial work are to be marked by the Owner with an "X" using an aerosol spray paint prior to receiving bids. If those areas have not been indicated by the Owner, bidder must verify extent of work and conditions at the site with the Owner's representative prior to submitting a bid. The successful bidder is to mark and confirm with the Owner's representative all areas to receive remedial work before commencing any work.

- A. Replace any entrance platform where it has settled out of plane, or where it is more than 7 ¾ inches below any adjacent raised doorsill. Platforms shall slope (away from building) not less than 1% (1/8" per 1') to ensure drainage, but not more than 2% (1/4" per 1').
- B. Replace cracked platforms and entry slabs or section of patios and sidewalks where an offset in the surface can cause someone to trip and/or fall. Surface offsets are not to exceed 3/4" at family sites or 1/2" at elderly housing development sites.
- C. Replace slabs or sidewalk section that have settled (or heaved) relative to any adjoining concrete or asphalt surface sufficiently to cause someone to potentially trip and/or fall. Additionally, replace all settled areas that permit water to pond water in an amount sufficient to create an ice hazard condition.
- D. Replace sidewalks that have settled at steps. Replace at an elevation so all step risers are equal in height. Replacement steps shall have treads which are no less than 9 ½" deep or risers that are no greater than 7 ¾" in high.
- E. Replace any sections of sidewalk or patio where multiple cracks exist in excess of ¼" in width within that section. Replace any section of sidewalk where a longitudinal crack (a crack in the direction of travel) occurs.
- F. Replace any section of sidewalk, patio, or entrance platform where the concrete surface has spalled ¼" or more in depth. Random stone or cherts are acceptable.

III. Materials

- A. The following list of general concrete materials are intended to imply inclusion of all related materials, attachments, additives, insert and/or processes to fully complete the concrete work;
 - 1. Ready-mixed concrete: Comply with the requirements of ASTM C94
 - 2. Concrete for Exterior Use: 3,000-psi at 28-day compressive strength (4,000-psi concrete with fibermesh reinforcement), water-cement ratio 0.45 maximum - 6% air-entrained, ¾" maximum aggregate size, 3" slump limit at point of placement.
 - 3. Expansion joint material: ½" asphalt impregnated fibrous material.
 - 4. Reinforcing Bars: ASTM A615, Grade 60, deformed, #4 rebar dowels.

5. Welded Steel Wire Fabric: ASTM A185, 6 x 6 10/10 reinforcing wire. Fibermesh reinforcement is an allowable substitute for steel wire mesh.
6. Rigid Insulation: ASTM C578, Type IV – Rigid cellular polystyrene thermal insulation with closed cells, and integral high-density 25 psi compressive strength
7. Liquid Membrane-Forming Curing Compound: Complying with ASTM C309, Type I, Class A, moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft./gal, maximum VOC (volatile organic compound) reading of 350 mg per liter.

V. Preparation

- A. Remove full sections of deficient concrete when practical. Saw cut concrete to provide a smooth straight edge. Break up and remove damaged concrete from site.
- B. No granular fill is anticipated to be required below replacement sections of sidewalks or patios. Replacement sections will be placed on existing compacted subgrade — exception heaved concrete at building entrances shall be constructed as detailed in attached drawing.
- C. Replacement concrete shall be thickness required to match existing concrete but not less than 4" minimum except at driveways. At driveways, concrete shall be a minimum of 8" thick, 5" thick sidewalk where concrete curb is provided, and shall be reinforced.
- D. Sidewalks and ramps shall not exceed a longitudinal slope; i.e., along the direction of travel, of more than 5% (1' in 20') for elderly sites and 8.3% (1' in 12') for family housing sites. Minimum cross slope at walks shall not be less than 0.5% (1/16" per 1') nor more than 2% (1/4" per 1') and must match existing where required.

IV. Installation (Refer to attached installation drawing)

- A. Drill holes into abutting concrete 16" o.c. for dowels. Provide snug fit.
- B. Install ½" premolded expansion joint material where replacement flatwork abuts concrete steps, existing walls, curbing and/or other flatwork.
- C. Provide ½" expansion joint material at a minimum of every 30 feet of walk.
- D. Flatwork thickness shall be a minimum of 4". All concrete shall be thoroughly worked around reinforcement, fixtures and into corners of forms.
- E. Control joints shall be scored at a minimum of every 4- or 5-foot intervals and in each way at patios or duplicate patio scoring pattern.
- F. All flatwork shall be given a light broom finish at right angles to direction of travel. Tool finish all control joints and edges.
- G. Curbing, step faces and stoop sides shall be finished after removing forms from the "green" uncured concrete. Exposed surfaces shall be rubbed and finished so that they are smooth and without imperfections.

- H. Apply concrete curing compound - - concrete sealer per manufacturer's specifications.
- I. Ponding or puddling resulting from finish work shall be repaired or replaced at the contractor's expense.
- J. Adequately protect work from weather and traffic until concrete has cured.
- K. Concrete forms shall remain in place until work has reached 90% of its design strength.
- L. Do not pour concrete in freezing weather or onto frozen subgrade.

VII. Final requirements

- A. Barricades are to remain in place until concrete has cured.
- B. Remove all forming materials from site.
- C. Add topsoil as needed to meet concrete surface allowing for thickness of sod.
- D. Cut and install nursery sod to meet existing grade and concrete.
- E. All workmanship to be of professional quality.
- F. Repair any damage to the site property as a result of this work.

VIII. ALTERNATES:

- A. Mudjacking Concrete Sections (optional):
 - 1. As a separate (add or deduct) cost figure, submit a quotation for the mudjacking some or all of existing settled sections of concrete into alignment with adjacent sections of sidewalk(s) and/or patios in lieu of full removal and replacement. The use of an equipment pressure gauge is recommended.
 - 2. Contractor it to assume responsibility for resultant damage to any adjacent concrete areas not scheduled for replacement. Resultant cracked concrete is to be replaced at no expense to Owner.
- B. Grass Seeding In Lieu of Sod (optional):
 - 1. Provide new topsoil at finished concrete to raise grade flush with adjacent lawn.
 - 2. Grass Seed: Provide fresh, clean, new-crop seed mixture composed of grass species and percentages to local conditions all complying with tolerance for purity and germination established by Official Seed Analysis of North America.

End of Specifications

Attachments:

Concrete Replacement Details, Nov. 2003
Concrete Replacement Bid Form and Reference Listing, Nov. 2003

[b l a n k p a g e]

CONCRETE REPLACEMENT BID FORM

(In accordance with WHEDA Concrete Replacement Specifications
3.3/11.03 Scope of Work.)

This form must be fully completed and attached to all concrete replacement proposals submitted for WHEDA-financed projects. The required information may be included as a part of the contractor's standard bid form. Failure to provide the requested information will be sole cause for bid rejection.

Project name/address _____

Project owner/contact _____

Contractor's name _____ Phone # (___) _____

Contractor's address _____

COMPLETE REPLACEMENT BID:

Total area (square feet) of concrete to be replaced is _____ square feet. Attach separate sheet listing locations, sizes, and numbers of concrete replacement work.

Fill in below the Total Quantities of Concrete Replacement work:

Sidewalk	_____ Sq. Ft.	Curbs	_____ Ln. Ft
Number of Patios	_____	Total Area of Patios	_____ Sq. Ft.
Steps	_____	Other	_____

Complete the following bid information in the spaces provided below. If none, write "None".

Total square feet of 6X6 10/10 reinforcing mesh to be provided: _____ S.F.

Total lineal feet of saw-cutting (saw-cutting mandatory): _____ L.F.

Total number of drilled holes with dowels to be installed: _____

Cost of landscaping work of topsoil and sod included in Base Bid: \$_____

Total contract price included the limited 2-year guarantee for all work. "Hairline" cracks in concrete flatwork will be considered as acceptable within the guarantee period.

TOTAL BASE BID: \$_____

Alternate #1 - Mudjacking Bid:

(Add) (Deduct) \$_____ from the above-stated total base bid (contract amount) for accepting the alternate for mud-jacking of _____ S. F. of concrete and/or _____ number of sections of intact but out-of-plane concrete work.

Alternate #2 - Seed In Lieu of Sod Bid:

Deduct from base bid for topsoil and grass seeding landscaping work: \$_____

Contractor's signature

Date

Complete and attach with bid the following Reference Listing form (page 7).

REFERENCE LISTING

List at least three references for similar work completed within at least six (6) and eighteen (18) months prior to the date for this bid for Owner's review. Failure to provide the requested information can be just cause for rejection of bid.

Project Name: _____ Location: _____

Description of Work Performed _____

Contact Person: _____ Phone # (___) _____

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Project Name: _____ Location: _____

Description of Work Performed _____

Contact Person: _____ Phone # (___) _____

* * * *

Project Name: _____ Location: _____

Description of Work Performed _____

Contact Person: _____ Phone # (___) _____

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Project Name: _____ Location: _____

Description of Work Performed _____

Contact Person: _____ Phone # (___) _____

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