PART 1 - GENERAL

1.1 SUMMARY

A. This specification covers the furnishing of all labor, material, tools, equipment and performance of all work and services necessary or incidental to the construction of concrete flatwork, including pavements, curb and gutter, sidewalk, driveways and aprons.

1.2 METHOD OF MEASUREMENT AND PAYMENT

A. Measurement and payment for work included in this section will be made according to the referenced specification, as indicated in the bidding schedule, or as modified below:

1. Concrete Curb and Gutter shall be paid by the LINEAR FOOT (LF) as measured along the face of the curb.

2. Concrete Driveway Pavement shall be paid by the SQUARE FOOT (SF) at the specified thickness.

3. Concrete Sidewalk shall be paid by the SQUARE FOOT (SF) at the specified thickness.

4. Truncated Domes shall be paid by the SQUARE FOOT (SF).

B. The furnishing and installing of specific items and/or the performance of work under certain circumstances shall not be individually paid in the absence of a specific bid item for the work. The costs shall be included in the contract price bid for the associated work. Such items of work include but are not limited to:

1. Excavation, removal and disposal of existing surface improvements (i.e. concrete sidewalks and driveways, bituminous pavement, curb & gutter, turf, etc.) to accommodate proposed work.

2. Saw cutting of existing surface improvements prior to removal.

3. Aggregate base placed under the concrete curb & gutter, sidewalk, driveways, etc.

4. Furnishing and installing expansion joint material.

5. Saw cutting control joints.

6. Providing adequate barricades and personnel to protect fresh concrete from pedestrian traffic and graffiti.

7. Providing temporary walkways around or across the newly placed concrete as necessary to maintain access to buildings.


9. Furnishing and installing anchor bolts, metal angles, or other embeds as required.
10. Furnishing and installing reinforcement bars and tie bars as specified.

11. Admixtures, curing compounds and accessories as required.

12. Patching bituminous pavements adjacent to proposed improvements.

1.3 SPECIFICATION REFERENCES
A. Minnesota Concrete Flatwork Specification for Local Government Agencies (included in appendix).

1.4 SUBMITTALS
A. The following items shall be submitted for approval:
   1. Concrete Mix Design
   2. Jointing Plan (if requested)

PART 2 - PRODUCTS

2.1 CONCRETE SIDEWALK
A. Concrete sidewalks shall be fibermesh reinforced with Propex Fibermesh 300 or approved equal.
B. The fibermesh reinforcement shall be added according to the manufacturer’s recommendations.

2.2 CONCRETE DRIVEWAY
A. Concrete driveways shall be reinforced with #4 epoxy coated bars at 24” O.C. in both directions.

2.3 AGGREGATE BASE
A. Aggregate base material for use under sidewalks, driveways, curbs etc. shall meet the requirements of MNDOT Specification Section 2211 Aggregate base, Class 5.

2.4 DETECTABLE WARNING PLATES
A. Detectable warning plates shall be unpainted cast iron unless otherwise specified.
B. Detectable warning plates shall be from the MNDOT approved products list.

2.5 COARSE AGGREGATE FOR CONCRETE
A. Coarse aggregate for concrete shall comply with the requirements of Table 3, Course Aggregates for General Use, of the referenced specification.

2.6 REINFORCEMENT BARS AND TIE BARS
A. Unless otherwise specified, reinforcing bars shall be #4 deformed bars; tie bars shall be #4 smooth bars. All reinforcing bars and tie bars shall be epoxy coated.
PART 3 - EXECUTION

3.1 INSPECTION, LIMITATIONS AND PROTECTION

A. Notify Owner a minimum of 24-hours prior to commencement of concrete placement.

B. Conduct all work in existing area during normal working hours unless otherwise mutually agreed upon with the Owner.

C. Inasmuch as the existing site and adjacent buildings will be occupied by the Owner, coordinate with the Owner to provide as little inconvenience to the occupants as possible.

D. Schedule all work in existing areas with the Owner sufficiently well in advanced to enable the Owner to make any necessary arrangements to the occupants as possible.

E. Do not use the Owner’s facilities except as specifically approved. Do not obstruct parking lots and service drives with materials or equipment, these areas must be accessible at all times.

F. Project access for execution of the work shall be determined by the Owner and Contractor at the pre-construction meeting.

G. The contractor shall provide and maintain barricades and lights as required to protect the public.

H. At all times take reasonable and adequate precaution to protect all the existing structures and contents from damage by the elements, including flooding, rainstorms, windstorms, etc.

I. Work area and concrete may be exposed to potential damage after initial set has been achieved. Take measures to protect concrete during initial set and curing.

J. All streets, sidewalks, lawn, shrubbery and existing structures shall be protected as required to maintain their condition. Any damage caused by the work of this Contractor shall be corrected and restored to a “like new” condition regardless of the original condition, to the satisfaction of the Owner, at no additional cost.

3.2 CONSTRUCTION REQUIREMENTS

A. Remove existing turf, landscaping, bituminous pavement, curb and gutter, sidewalk, driveway, steps or other surface improvements to allow for the construction of the project as directed.

B. Remove and dispose of all unsuitable material, stones, stumps, roots and other debris from within the pavement area prior to placing the aggregate base for the new pavement. The pavement zone is defined as the planned concrete surface and aggregate base.

C. Tree roots which enter into the area of the new concrete pavement shall be cut off 6" beyond the extent of the new concrete pavement. All root material shall be cleared from the area to a depth of 6" below the pavement zone.

D. Properly dispose of all material and debris removed as part of the project.

E. Saw cut all bituminous and concrete surfaces prior to removal to produce a clean-cut breakage joint.
F. Salvage and reinstall all signage as necessary for construction of the project.

G. Provide box outs or ½-inch isolation/expansion material adjacent to fixed objects within the new concrete surface.

H. Tie all new concrete curbs, walks and driveways to the existing adjacent concrete curb, walks and driveways with 18” epoxy coated #4 bars at 12” O.C. Provide a minimum of 2 tie bars for curbs.

I. All new concrete curbs, walks and driveways shall be placed on a minimum of 4” compacted Aggregate Base, Cl. 5.

J. All new concrete sidewalks shall be 6” minimum thickness unless otherwise specified. All new concrete driveway aprons and pavements shall be 7” minimum thickness unless otherwise specified. Concrete sidewalks constructed through a driveway shall be constructed to the same thickness as a driveway.

K. All reinforcing bars, if specified, must be on chairs. Hand lifting without supports during pour is prohibited.

L. Place concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours that would cause new cold joints to occur.

M. Excessive honeycombing or embedded debris in concrete is not acceptable. Contractor shall replace or repair.

N. Any concrete found to be non-conforming to required levels and lines, thickness, details, and elevations shall be subject to replacement at no cost to the Owner.

O. In accordance with industry standards any section of concrete showing any signs of failure such as, but not limited to cracks, spalling, scaling, or disintegration within the guarantee period, shall be repaired by replacing the panel or panels affected at no cost to the Owner.

P. Repair or replace concrete not properly placed, damaged, not of the specified type, frozen, spalling, under strength by more than 15%, or improperly cured. Testing agency that designed concrete, Engineer and/or Architect shall be final arbiters of quality.

3.3 QUALITY CONTROL

A. Concrete testing, if required, shall be in accordance with Table 5, Minimum Testing Rates for Curb and Gutter, Sidewalks, and Pavements of the referenced specification.

B. Testing shall be by an independent third party secured by the Owner.

END OF SECTION