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Addendum #1
File # 15-0674
DRIVEWAY REPLACEMENT AT FIREHALL #6

This addendum serves to notify all bidders of the following changes to the solicitation documents:

- 1) Additional specifications for the project as listed in the table of contents:
 - a. 31.23.16, 32.12.16, 32.13.13, 32.16.13, and 32.92.23

Please acknowledge receipt of this Addendum by signing, dating, and submitting a copy with your bid/proposal. Thank you.

Signature

Date

Posted November 12, 2015.

SECTION 31 23 16

EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Excavating for parking lot volumes.

1.02 RELATED REQUIREMENTS

- A. Document Section - 02 32 00: Geotechnical report; bore hole locations and findings of subsurface materials.
- B. Section 31 23 23 - Fill: Fill materials, filling, and compacting.

1.03 PROJECT CONDITIONS

- A. Verify that survey bench mark and intended elevations for the Work are as indicated.
- B. Protect plants, lawns, and other features to remain.
- C. Protect bench marks, survey control points, existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain and protect from damage.

3.02 EXCAVATING

- A. Excavate to accommodate new structures and construction operations.
- B. Notify Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- C. Cut utility trenches wide enough to allow inspection of installed utilities.
- D. Remove excess excavated material from site.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for general requirements for field inspection and testing.
- B. Provide for visual inspection of load-bearing excavated surfaces before placement of foundations.

3.04 PROTECTION

- A. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

- A. Applicable provisions of Division 1 shall govern the work of this section.

1.02 APPLICABLE PUBLICATIONS

- A. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto.
 - 1. American Society for Testing and Materials (ASTM), Annual Book of Standards:
 - a. ASTM D946 - Specification for Penetration - Graded Asphalt Cement for Use in Pavement Construction, Current Edition.
 - 2. Minnesota Department of Transportation (Mn/DOT), Standard Specifications for Construction, Current Edition.

1.03 DESCRIPTION OF WORK

- A. The work under this section includes all materials, equipment, supervision, and labor necessary to construct a plant-mixed bituminous pavement on the prepared foundation of base course or existing surface, as indicated on the contract drawings and specified herein.
- B. All work shall conform to the requirements specified in Section 2360 of the Mn/DOT Specifications, for the particular class, type and grade of material specified.

1.04 RELATED WORK ELSEWHERE

- A. Submittals
- B. Earthwork - Street and Roadways
- C. Erosion Control
- D. Aggregate Base Course

1.05 SHOP DRAWINGS

- A. Contractor shall submit such product literature and catalog cuts of materials to be supplied to relate these materials to the specifications. Information shall be in conformance with requirements of the Submittals - Division 1 of these specifications.

1.06 OPERATION/MAINTENANCE MANUALS AND INSTRUCTIONS (NONE)

PART 2 PRODUCTS

2.01 ASPHALT CEMENT

- A. Asphalt cement shall conform to Mn/DOT PG 58-28 (Performance Graded Asphalt Binder)

2.02 WEAR COURSE AGGREGATES

- A. Surface course aggregates, including mineral filler (when required), shall be sound, angular crushed stone, crushed gravel or sand conforming to the gradation requirements

of Section 2360 of the Mn/DOT Specifications. Mixtures made in the laboratory with aggregates -and asphalt cement proposed for the work shall yield a Marshall stability of not less than 1000, a void content of the compacted mixture between 3 and 5 percent, and a flow value of not more than 18.

- B. If the proposed aggregates are primarily crushed limestone, natural sand shall be blended with the crushed stone in such proportions, within the range of gradation, to provide workability of the finished mixture satisfactory to the Engineer.
- C. Recycled asphaltic pavement shall not be used in the surface course. Virgin materials as specified shall only be used in the surface course.

2.03 BASE COURSE AGGREGATES

- A. Base course aggregates shall conform to the gradation requirements of Section 2350, of the Mn/DOT Specifications.

2.04 BITUMINOUS MIX

- A. Bituminous Wear Course shall be **SPWEA240B**, conforming to the requirements of Section 2360, Mn/DOT Specifications.
- B. Bituminous Base Course shall be **SPNWB240B**, conforming to the requirements of Section 2360, Mn/DOT Specifications.

PART 3 EXECUTION

3.01 GENERAL

- A. All work shall conform to the requirements specified in Section 2360 of the Mn/DOT Specifications for the particular class, type and grade of material specified.

3.02 PREPARATION -

- A. Trim edges of all existing pavement by saw cutting in accordance with Mn/DOT Specifications, Section 2104.3B2b.
- B. All existing asphaltic concrete pavement removals, including driveway removals, shall be saw cut to the limits designated as pavement removal on the contract drawings or to the limits staked by the Engineer in the field.
- C. Weeds shall be removed on all streets to be resurfaced prior to the application of the tack coat or construction asphaltic concrete pavement. Prior to the application of the tack coat or construction asphaltic concrete, the surface of the prepared foundation shall be cleaned by brooming all dust, dirt, debris or other foreign or loose material.
- D. The Contractor shall perform all final shaping and grading of aggregate bases necessary to achieve the required roadway cross sectional contour.
- E. All valve boxes, manhole frames, and other utility appurtenances shall be adjusted to the final grade prior to the placement of the final pavement course.

3.03 PLACEMENT

- A. Bituminous pavements shall be placed in reasonable conformity with the thickness shown on the contract drawings, or specified in the Special Conditions - Division 1.

- B. All bituminous pavement greater than or equal to 2-1/2 inches in thickness shall be placed in two layers, and to the greatest extent possible with an asphaltic paving machine.
- C. The maximum compacted thickness of an individual course layer shall not exceed 3 inches.
- D. The minimum compacted thickness of individual layers of the binder course shall not be less than 1-1/2 inches, and not less than 1 inch for individual layers of the surface course.

3.04 COMPACTION

- A. Compaction methods and requirements shall conform to Section 2360 of the Mn/DOT Specifications.

3.05 TOLERANCES

- A. Flatness: Maximum variation of 1/8 inch measured with 10 foot straight edge, maintain drainage.
- B. Scheduled Compacted Thickness: Within 1/4 inch, without deficiency adjustments.

3.06 TESTING

The owner (ISD 709) shall contract with an independent testing firm for bituminous testing.

- A. If requested by the Owner or Engineer, submit samples of all proposed materials for test and analysis. The materials shall not be used until approved. Job mix formula shall be provided by the Contractor to Engineer for approval.

**END OF
SECTION**

**SECTION 32 13 13
CONCRETE PAVING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete sidewalks, exterior stairs and platforms.
- B. Fine grading.

1.02 RELATED DOCUMENTS AND SECTIONS

- A. Soil Data.
- B. Earthwork: For rough grading and for backfilling against completed work.

1.03 REFERENCES

- A. Comply with the provisions of the following codes, specifications, and standards except where more stringent requirements are shown on the Drawings or specified herein:
 - 1. Minnesota Department of Transportation (Mn/DOT), 'Standard Specifications for Construction', 2016 Edition, including Supplements current as of Bid Date.

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01340:
 - 1. Manufacturer's Literature: Materials description for proprietary products specified.
 - 2. Mix Design: Concrete mix design, including report on design strength test.
- B. Submit the following in accordance with Section 01411:
 - 1. Test reports specified in PART 3 under FIELD QUALITY CONTROL.

1.05 QUALITY ASSURANCE

- A. Walks and stairs on public property, if any, shall comply with all laws, rules and regulations of governmental authorities having jurisdiction over such work.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver, handle and store material at the job site in such a manner as to prevent damage. Packaged material shall be in original containers with seals unbroken and labels intact until time of use. Damaged and otherwise unsuitable materials, when so determined, shall be immediately removed from the Project site.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Form Materials: Plywood, metal, or other acceptable panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
 - 1. Use flexible or curved forms for curves of 100-foot or less radius.
- B. Form Coating: A commercial product to facilitate stripping without staining or damaging concrete or impairing future concrete treatment.
- C. Portland Cement: ASTM C150-97, Type I, normal Portland cement; uniform gray color, from single source.
- D. Aggregates: All fine and coarse aggregate shall conform to ASTM C33-93.
 - 1. Fine Aggregates: Natural or artificial, hard clean sand.
 - 2. Coarse Aggregates: Crushed stone, size 57.

- E. Water: Potable.
- F. Air Entraining Admixture: ASTM C260-95, "Air Mix" (The Euclid Chemical Co.) "MB-VR" or "Micro Air" (Master Builders); "Darex" (W.R. Grace & Co.); "Sika AER" (Sika Chemical Corp.); add only to normal portland cement concrete to meet requirements specified for air content.
- G. Non-slip Abrasive: Sintered aluminum oxide graded to pass a No. 12 sieve but retained on a No. 24 sieve. Minimum aluminum oxide content shall be 75 percent.
- H. Liquid Membrane Curing Compound: Water emulsified white pigmented resin curing compound, ASTM C309-97 Type 2 Class B, "White Pigmented Curing Compound" (Brock-White); "Promulsion 200" (Protex Industries, Inc.); or approved substitution.
- I. Preformed Fiber Joint Filler: ASTM D175 1-830991), "Fiber Expansion Joint Filler, Code 1390" (W.R. Grace & Co.); "Fibre Expansion Joint (W.R. Meadows Inc.); or "Flexcell" (The Celotex Corporation), nonextruding, for expansion joints which are to be sealed.

2.02 PROPORTIONING AND MIXING

- A. The testing laboratory shall design the mix for the concrete to obtain a strength, as determined by test cylinders, at least 15 percent higher than specified.
- B. The adequacy of the design shall be verified by tests on standard cylinders; 2 tested at 7 days and 2 at 28 days, in accordance with ASTM C39-96, and C192-95.
- C. The testing laboratory shall submit the copies of the mix design and the test results to the Architect for approval before any concrete is placed.
- D. Cement content shall be in accordance with the following minimum requirements:

1.	Design Strength	Cement Content
	psi	sacks/cu. yd.
	4000	5.5
- E. Ready-Mixed Concrete shall conform with ASTM C94-96, **Fiber Reinforced**.
- F. The mixture shall contain no more water than is necessary to produce concrete which is workable and plastic within the limits specified herein for slump. The amount of water and proportion of mortar to coarse aggregate shall be the least which will produce uniformly dense concrete, free from aggregate pockets or honeycomb. Corrections shall be made for the amount of moisture contained in the aggregates and allowances shall be made for absorption of moisture by the aggregates during the period of mixing and handling. A uniform consistency shall be maintained continuously. Mixture shall contain 5-7 percent air entrainment. NO CALCIUM CHLORIDE shall be used.
- G. The consistency shall be determined by the method specified in ASTM C143-90a.
- H. In general the slump shall be not less than 3" nor more than 5" for concrete which is not compacted by vibration; and not less than 2" or more than 4" for concrete which is compacted by vibration. In each of the above cases, slumps outside of the limits named may be used when satisfactory workability cannot be obtained within such limits and the slump is approved by the Engineer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine the areas and conditions under which concrete paving is to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Proof-roll prepared subgrade surface to check for unstable areas and verify need for additional compaction. Subgrade shall not be built-up under forms after forms are in place.

Subgrade shall be tested with an approved template. High spots shall be lowered and low spots raised. Subbase shall be compacted and leveled to grade.

1. Refer to Soils Report for compaction requirements.
- B. Set, brace, and secure edge forms and intermediate screed guides for paving to required lines, grades, and elevations. Coat with form release agent as required to ensure separation from concrete without damage. Check completed formwork for grade and alignment to following tolerances:
1. Top of Forms: Not more than 1/8" in 10 feet.
 2. Vertical Face on Longitudinal Axis: Not more than 1/4' in 10 feet.
- C. Install welded wire fabric in accordance with ACI 301-89, Articles 5.7.4, and as specified herein. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least 1 (one) full mesh and lace splices with 16 gauge wire. Do not make end laps midway between supporting beams, or directly over beams of continuous structures. Offset end laps in adjacent widths to prevent continuous laps in either direction

3.03 PLACING CONCRETE

- A. Wet the prepared subgrade to ensure a moist condition when concrete is placed.
- B. Place concrete immediately after mixing. Deposit concrete in uniform, horizontal layers not more than 24" deep work around all reinforcing and in corners of forms. Properly spade and puddle by use of rods, shovels and hand spades, and agitate by means of internal and/or external vibrators to obtain densest possible concrete without over-vibrating to the point where segregation results. Deposit concrete continuously until completion of each section or unit.
1. Concrete transported by truck mixer or agitator shall be completely discharged within 90 minutes (60 minutes for hot weather concreting) after water has been added to the cement or cement has been added to the aggregates.
- C. In hot weather, to prevent the development of high temperatures in fresh concrete, concrete shall be protected in accordance with ACI 305R-89.
- D. In cold weather, concrete shall not be placed when temperature is, or is predicted to be within the following 48 hours, below 40 degrees F. unless proper provisions have been made for heating and protecting concrete in accordance with ACI 306.1-90.

3.03 SIDEWALKS AND STAIRS

- A. Screed surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.
- B. Finishing
1. Float surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Finish to true planes within a tolerance of 1/4" in 10 feet as determined by a 10-foot straightedge. Cut down high spots and fill low spots. Refloat surface immediately to a uniform granular surface.
 2. Surfaces shall receive a light broom finish applied generally perpendicular to the direction of travel. Vary depth and direction of finish at handicapped access as shown on the Drawings.
 3. Provide non-slip abrasive on all exposed concrete stair treads and ramps. Embed the non-slip material in the concrete surface with the final troweling in accordance with the manufacturer's instructions. Unless otherwise directed the amount of abrasive shall be 1/4 lb. per s.f. After curing, lightly work surface of concrete with a steel brush, or abrasive stone, and water to expose the abrasive aggregate.
- C. Joints

1. Control Joints
 - a. Locate maximum 5'-0" o.c. or as indicated on the Drawings.
 - b. Saw cut 1/8" x 1/3 the slab depth; or
 - c. Form by cutting slab with steel "T" bar 1/3 the slab depth.
2. Expansion Joints
 - a. Install expansion joint material behind curb at abutment to sidewalks, curb returns, adjacent structures and maximum 60' -0" o.c. in sidewalks and platforms.
 - b. Place top of expansion joint material 1/2" below curb or slab surface.

3.04 CURING

- A. The surface of the newly placed concrete shall be wetted if it becomes dry before the curing material is placed, The water shall be applied as a fine spray so that it will not mar or injure the surface. The top and edges of the concrete shall not be unprotected for a period of more than 1/2 hour at the time the forms are removed.
- B. Curing shall be maintained for at least 72 hours and may be accomplished by wetting and covering with wetted burlap, impermeable paper, polyethylene sheeting, or in lieu of wetting and covering, by membrane spray.
 1. Apply liquid membrane curing compound at the rate of 150 s.f. of surface curing area per gallon.

3.05 FIELD QUALITY CONTROL

The owner (ISD 709) shall contract with an independent testing firm for concrete testing.

- A. Testing laboratory shall make the following inspections and tests:
 1. Test materials for compliance, or review available test reports.
 2. Verify Contractor's mix designs.
 3. Perform tests on placed concrete in accordance with ACI 301-89 and the following:
 - a. Perform compression strength test for each 25 c.y. of concrete, or fraction thereof on specimens taken at point of discharge from the truck immediately before placing. Make a minimum of one strength test for concrete placed in one day. A set of specimens for a test shall consist of 4 standard 6 x 12 cylinders.
 - b. 4 additional concrete cylinders shall be made during a placement which requires temporary heating. These cylinders shall be left in the enclosure in same environment as concrete placed. Perform tests as specified above to verify adequacy of temporary heating system.
 - c. Perform slump tests in accordance with ASTM C143-90a. Furnish slump cone at the site. Perform a minimum of one test per set of cylinders.
 - d. Test for air-entrainment in accordance with ASTM C173-94a, or ASTM C23 1-97. Furnish and maintain equipment for testing air content at the site. Perform a minimum of one test per set of cylinders of air entrained concrete. Concrete samples tested for slump shall not be used for air-entrainment tests.
- B. If, in the opinion of the Architect, foregoing tests indicate concrete strengths below those required, or visual defects indicate concrete of poor quality has been placed, additional tests shall be made and reported as directed by the Architect at the expense of the Contractor.

END OF SECTION

SECTION 32 16 13

2531 CONCRETE CURB AND GUTTER (ADA)

REVISED 03/12/14

SP2014-164 modified: This work shall consist of constructing Concrete Curb and Gutter and the necessary Aggregate Base in accordance with the provisions of MN/DOT 2531, other Contract provisions, and the following:

1. CONSTRUCTION REQUIREMENTS

Concrete Curb and Gutter - The curb and gutter shall be constructed to meet the details in the Plan. The transition from the existing curb and gutter section to the new curb and gutter section should occur within 5-10 feet of the point where the curb and gutter construction begins. The gutter inslope shall be constructed as detailed in the plans. The gutter inslope transitions shall occur outside of the zero height curb area. The proposed gutter width shall be modified as necessary so as not to protrude into the adjacent travel lane with approval from the Engineer.

At all locations where new curb and gutter meets existing curb and gutter, place saw cut to leave a minimum 3 feet of in place curb and gutter between an existing joint and the proposed saw cut. If the 3 foot minimum cannot be maintained, place the saw cut over the existing joint. At this saw cut location the Contractor shall drill and grout 2 No. 4 x 12 inch long reinforcement bars (Epoxy coated). Reinforcement bars shall be placed a minimum of 3 inches from face and back of gutter section. When not accounted for in the Plan, payment for these bars will be made under Item 2301.602 (Drill & Grout Reinforcement Bar (Epoxy Coated)) by the Each at the Predetermined Price of \$ 10.00 per bar furnished and installed. **The Contractor shall not be eligible for compensation at the Predetermined Price above for drill and grout reinforcement bar work when required for replacement of unacceptable work.**

The Contractor must form, at a minimum, the top 1.5 inches of the gutter face. The Contractor shall not use the existing roadway edge as a form for the top 1.5 inches of the gutter face unless approved by the Engineer.

If the gutter flow line in front of the proposed curb ramps exceeds 2.0% slope, the flow line should be adjusted to allow a flatter slope in front of the curb ramps, but still provide positive drainage. The bituminous patch in front of the truncated domes must not exceed 5% measured perpendicular to the flow line. In no case shall a newly constructed curb and gutter flow line exceed 8% unless the roadway profile exceeds 8%.

The Contractor shall not alter any existing drainage patterns unless called for in the plans or approved by the Engineer.

The Contractor shall construct a contraction joint through the curb and gutter section at the bottom of the curb height transitions where the curb height equals zero inches. If any curb and gutter joints fall within the PAR, they shall meet MN/DOT 2521.3C.

When constructing directional curb where truncated domes are placed perpendicular to the path of travel, the concrete between the grade break/edge of truncated domes and the gutter toe shall be constructed integral.

2. METHOD OF MEASUREMENT

Measurement of Concrete Curb and Gutter will be by the linear foot measured at the face of the curb.

3. BASIS OF PAYMENT

Payment will be made under Item 2531.603 (Concrete Curb and Gutter) at the Contract bid price per linear foot, which shall be compensation in full for all costs of furnishing and installing the required material including Aggregate Base.

END OF SECTION

SECTION 32 92 23

SODDING

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

- A. Applicable provisions of Division 1 shall govern work of this section.

1.02 APPLICABLE PUBLICATIONS

- A. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto.
 - 1. State of Minnesota, Department of Transportation (Mn/DOT), Standard Specifications for Construction, Current Edition.

1.03 DESCRIPTION OF WORK

- A. The work covered under this section shall consist of furnishing all material, equipment, and labor required to execute the seeding and sodding for this project. All areas disturbed by the construction and not covered with pavement, aggregate base course or other structures shall be sodded or seeded, fertilized and mulched.

1.04 RELATED WORK ELSEWHERE

- A. Submittals - Division 1
- B. Earthwork - Streets and Roadways
- C. Site Grading
- D. Excavating, Trenching and Backfilling for Utilities
- E. Erosion Control

1.05 SHOP DRAWINGS

- A. Contractor shall submit such product literature and catalog cuts of materials to be supplied to relate these materials to these specifications. Information shall be in conformance with requirements of Submittals - Division 1 of these specifications.

PART 2 - PRODUCTS AND MATERIALS

2.01 TOPSOIL BORROW

- A. Materials. Topsoil shall conform to 3877.2A of the Mn/DOT Specifications and shall be modified so that the organic matter is 10%.

2.02 SOD

- A. Materials. Sod shall be vigorous, well rooted, healthy nursery grown lawn grass turf free from disease, insect pests, weeds, stones and other foreign material. Sod shall conform to Section 3878 of the Mn/DOT Specifications. Sod shall be cut in uniform strips

approximately 18 inches wide and have a thickness of not more than 1-1/2 inches nor less than 1 inch, and have grass approximately 2 inches high.

PART 3 - CONSTRUCTION METHODS

3.01 TOPSOIL

- A. General. All areas disturbed by the Contractor's activities shall be topsoiled to the depth of 4 inches.

3.02 SODDING

- A. Sod shall be installed within 48 hours after cutting. Do not lay sod during freezing weather or on a frozen bed.
- B. Match to existing and lay sod snugly with alternating joints, stamp firmly and evenly by hand. After laying, clean surface of extraneous material, and compact with a roller weighing not more than 100 pounds per lineal foot nor less than 25 pounds per lineal foot. Finished surface shall be true to grade, smooth and equally firm at all points.
- C. A total of three waterings are required; an initial and two subsequent waterings within 10 days after sod placement. Watering shall be done with a slow fine spray to a minimum penetration depth of 4 inches.
- D. Sodding shall be done in conformance with Section 2575.3J of the Mn/DOT Specifications.

END OF SECTION