

SUPPLEMENTAL CONDITIONS

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(1) Applies only to City contract projects

(2) On projects involving FHWA funding this section amended or deleted – See Job Special Provisions

CITY OF GRANDVIEW

SUPPLEMENTARY CONDITIONS

A. CONTRACT SPECIFICATIONS: All work shall conform to the latest edition of the *Kansas City Metropolitan Chapter of the American Public Works Association Standard Specifications*, unless otherwise noted.

B. MODIFICATIONS TO GENERAL CONDITIONS: The General Conditions shall be modified as follows:

1. Article 1.18 ENGINEER is hereby amended to read:

The Public Works Director of the City of Grandview, or his designee, unless specified otherwise in the Job Special Provisions.

2. Article 1 Definitions is amended by the addition of:

1.43.1 Working Day - A working day is defined as any day when, in the judgment of the engineer, soil and weather conditions would permit the major operation of the project for six consecutive hours or over within the project's normal working hours unless other unavoidable conditions prevent the contractor's operations. If conditions require the contractor to stop work in less than six hours, the day will not be counted as a working day.

Saturdays, Sundays, holidays designated in Section E of the Supplemental Conditions, and the period from December 15 to March 15, both dates inclusive, will not be counted as working days.

The count of working days will start on the effective date of the notice to proceed. The Contractor will be allowed to schedule utility locations, perform construction staking, mobilize equipment and establish a storage yard during a seven-calendar day period preceding the notice to proceed date. The engineer will determine when a working day is to be charged. The engineer may make allowance for working days lost due to causes justifying their elimination from the count of working days. No allowance will be made for delay or suspension of the prosecution of the work due to fault of the contractor. Each week the engineer will give the contractor written notice of the number of working days charged for the preceding week. Any objection by the contractor to the number of working days so charged shall be made in writing within five days, setting forth the contractor's objections and specifying the reasons therefore, or those objections shall be forever waived and may not constitute the basis for an excusable or compensable delay.

In case the final value of all work performed exceeds the original contract amount, an extension in the working days will be granted the contractor. The extension will be made by increasing the contract time by the ratio of the total final cost of all work performed under the contract to the total amount of the original contract. Incentive/disincentive, bonus or deduction adjustments will not be used in this computation. If it can be established that the extra work required more time than indicated, the actual number of working days required, as determined by the engineer, may be allowed.

3. Article 5.1 Performance, Payment and Other Bonds (2) is hereby amended to read:

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CONTRACTOR shall furnish Performance and Maintenance Bonds in the amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR'S obligations under the Contract Documents. These Bonds shall remain in effect at least two years after the date the project is accepted by the Board of Aldermen. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

4. Article 6.20 Safety and Protection is hereby amended by adding the following

6.20.3.a the contractor shall take such steps to protect manholes, water valves, gas valves and other similar objects that protrude more than one inch (1") above the pavement surface that is open for public travel. This protection shall include but not be limited to a temporary surface reducing the protrusion to one inch or less for a distance of at least three feet in all directions, and painting the lid and ring a fluorescent color. The contractor shall coordinate the adjustment of manholes, water valves, gas valves and other similar objects with the its owner to minimize the hazard to the public.

5. Article 13 Tests and Inspections; Correction, Removal, or Acceptance of Defective Work (2) shall be modified by deleting 13.4. and replacing with the following statement:

The CONTRACTOR shall employ and pay for all testing as required by the Director of Public Works.

All laboratory testing shall be performed by an independent third party testing laboratory under the direction of a professional engineer. Field testing shall be performed by certified engineering technicians, certified for the test being performed, employed either by the Contractor or a third party testing laboratory. Technicians currently certified by the MoDOT Technician Certification Program for the test being performed shall meet the requirements of this provision.

Field testing is any test performed on a material at its location of incorporation into the final product. Laboratory testing is any test where a sample is removed from its present location to a building where the actual test is performed.

6. Article 14 Payments to Contractor and Completion (1) (2) shall be modified by deleting 14.2 and replacing with the following:

Application for Progress Payment:

14.2. At least six calendar days before the end of a month, the ENGINEER shall prepare an Application for Payment (Pay Estimate) based upon the quantities of WORK complete as of the previous day. The ENGINEER shall give the CONTRACTOR the opportunity to review the Application for Payment prior to submittal for payment. The ENGINEER may recommend payment on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site, or at another location agreed to in writing. In order for the ENGINEER to make such recommendation, the CONTRACTOR must submit a bill of sale, paid invoice or other documentation substantiating the quantities and actual cost of the material, all of which will be satisfactory to OWNER. The amount

of retainage with respect to progress payments will be FIVE PERCENT (5%). The FINAL FIVE PERCENT (5%) of the contract amount shall be released once all items identified by the project's final inspection, certified payrolls, wage rate affidavits, change orders, and other items specified in the contract documents have been completed and delivered to the City

C. MODIFICATIONS TO DIVISION II OF KANSAS CITY METROPOLITAN AMERICAN PUBLIC WORKS SPECIFICATIONS:

1. Section 2101, "Clearing, Grubbing and Demolition", shall be modified by the addition of the following:

Tree roots encountered shall be removed to a point at least six inches (6") below and six inches (6") outside the limits of any proposed sidewalk. Cuts shall be smooth and perpendicular. Severed roots larger than two inches (2") in diameter shall be painted with either a pruning paint or an asphalt-based paint. Clearance between the edge of any sidewalk and tree trunk shall be at least six inches (6") and the sidewalk shall be neatly blocked out when necessary. Location of the contraction and expansion joints shall be adjusted to align with the resulting changes in sidewalk width.

No direct payment will be made for removing tree roots. It will be considered subsidiary to other items in the proposal.

2. Section 2101.3, "Construction Details", shall be modified by the addition of the following:

2101.3.H

Existing Traffic Signs: This shall cover all existing traffic signs and posts within the right of way and shall include, but not be limited to, stop signs, yield signs, lane usage signs, parking signs, street name signs, informational signs, and speed limit signs. The term sign shall mean both the sign and its post. Unless necessary for construction, including adjustments in heights due to change in surrounding grade, a sign shall be left in place. If removal from the existing location is necessary, the sign shall be temporarily set in a means and at a location that allows the sign to be visible and effective to the travelling public. If the Engineer determines that a sign can be temporarily removed from service, a written statement, identifying the specific sign and duration of removal, shall be given the Contractor. The Contractor will then be responsible for photographing the sign(s) prior to removal from service, storage in a place that prevents theft and/or damage, and its reinstallation. Any sign within the right of way damaged either while in place, temporarily set, or in storage shall be replaced by the Contractor at its expense. All set signs shall comply with the MUTCD. All work associated with this requirement shall be considered incidental to the contract.

3. Section 2102.7 Finishing is deleted and replaced with the following:

Section 2102.7 Finishing: This section governs the finish grading of the project.

A. Definition: In areas where sodding or seeding is proposed, the upper 12 inches (30.48 cm) of the surface area shall be earth material suitable for sustaining grass and meeting the requirements of 2102.7.B.

B. Materials:

(1) Soil excavated upon the project may be used for the upper 12 inches of fill if meeting the following: It shall be fertile, friable, loam of uniform quality, without

admixtures of subsoil materials, and shall be free from materials such as hard clods, stiff clay, hardpan, partially disintegrated stone, pebbles larger than ½ inch in diameter, and any other similar impurities. Soil shall be relatively free of grass, roots, weeds, and other objectionable plant material; such as undesirable vegetable debris, which will prevent the formation of a suitable seedbed.

(2) Soil obtained from sources approved by the Director of Public Works. It shall be **BLACK**, fertile, friable, loam soil of uniform quality, without admixture of subsoil materials, and shall be free from materials such as hard clods, stiff clay, hardpan, partially disintegrated stone, pebbles larger than ½ inch in diameter, and any other similar impurities. The soil shall be relatively free of grass, roots, weeds, and other objectionable plant material; such as undesirable vegetable debris which will prevent the formation of a suitable seedbed.

C. Construction Requirements:

The Contractor shall repair any damaged surface, and shall not use any finishing equipment that will leave a marred surface. When the subgrade preparation is included as a part of the finishing, the work shall be accomplished according to the requirements of Section 2201 entitled "Subgrade Preparation", and shall be considered incidental to finishing the grading work.

Except where other permit or utility work is in progress, the graded surface shall be free of rock, concrete, and brick, or fragments thereof, or rubbish and shall be finished to the lines, grades, and cross-section indicated on the plans, including shoulder, berm and sidewalk spaces.

4. Section 2205.2 "Materials", shall be modified by the addition of the following:

C. Recycled Material: Recycled Materials are permitted in all Asphaltic Concrete Base mixes. Recycled materials are prohibited from Asphaltic Concrete Surface Mixes unless specially allowed by the Job Special Provisions. See Section 2205.3 for mix proportions. Use of RAS (recycled asphalt shingles) is only permitted when approved by the Engineer. When permitted, RAS must comply with the latest version of MoDOT's **MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION** Section **403.2.6.2**

5. Section 2208.2.B "Concrete" shall be modified to read as follows:
All concrete utilized for pavement or curb & gutter shall be MCIB MIX NO WA 610-1-4-0.410. If the contractor elects to use a machine to place the pavement or curb & gutter MCIB MIX NO WA 561-1-2-0.410 may be used in lieu of MCIB MIX NO WA 610-1-4-0.410. Any concrete placed using a paving machine (pavement, curb & gutter, sidewalk) shall have an air content of 6% - 8% when measured other than behind the paver. Concrete used in the fillet area between new curb and existing pavement may be either of the above specified mixes.

6. Section 2301.2 A, "Concrete Mix", shall be modified to read as follows:

Concrete shall conform to the requirements of MCIB MIX No. WA 610-1-4-0.410.

All concrete shall conform to Midwest Concrete Industries Board (MCIB) Concrete Specifications Section 1 thru Section 3, dated November 2007. The concrete supplier shall provide recent certification, by an independent laboratory, that aggregates to be used on this project meet the requirements of Section 1 Concrete Materials 2.1.C and 2.1.D of MCIB. Aggregates are not required to meet the requirements of the Kansas City Metropolitan Materials Board (KCMMB). Following placement of all concrete, the contractor shall provide written

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certification, signed by an officer of the concrete supply company, that all aggregates used in the production of the supplied concrete were from the sources identified in the pre-construction certification. All cement utilized in the non-colored concrete shall be from the same source. All cement utilized in the integral colored concrete shall be from the same source. Use of fly ash, natural pozzolans, and ground granulated blast furnace slag (supplemental cementitious materials) to the extent necessary, but not more than 40% of total cementitious content, to reduce the concrete mix's susceptibility to alkali-silica reactivity is permitted.

If the contractor elects to use a machine to place the sidewalk MCIB MIX NO WA 561-1-2-0.041 may be used in lieu of MCIB MIX NO WA 610-1-4-0.410. Any concrete placed using a paving machine (pavement, curb & gutter, sidewalk) shall have an air content of 6% - 8% when measured other than behind the paver.

7. Section 2301.9 Detectable Warnings shall be modified to read as follows:
 Detectable warnings are required standardized surface features built in or applied to walking surfaces on sidewalks or ramps to warn visually impaired people of hazards on a circulation path. Those hazards include, but are not limited to interfaces between sidewalks and areas where moving vehicles may be present.
- A. **Dimensions:** Detectable warnings shall consist of raised truncated domes with a 0.9 in (23 mm) nominal diameter, a nominal 0.2 in (5mm) height, and a nominal center to center spacing of 1.6 in (41mm) minimum and 2.4 in (61 mm) maximum. They shall extend across the full walking surface of the walk or ramp, and shall be 2 feet (0.6 m) long in the direction of pedestrian travel.
- B. **Material:** Preapproved detectable warnings are the **Mason Supply Company** 2' wide, CASTinTACT Detectable Warning Panels, or a pre-qualified supplier from the MoDOT listing from ADA COMPLIANCE FIELD SECTION 1067 QUALIFIED TRUNCATED DOMES (1067TRDO) FS-1067 Table 1 (Revised 8/7/2013) (http://www.modot.org/business/contractor_resources/documents/1-2-2014.pdf), except the City will **not** allow use of the following: *Cast-In-Place* panel by **ADA Solutions, Inc**, or *Cast In Place* by **Armor-Tile**.
- Acceptable colors for Detectable Warning panels shall be yellow and brick red dependent on which color provides best visual contrast with adjacent gutter, street or highway or pedestrian access route surface, either light-on dark or dark-on-light. ADA compliant Detectable Warnings shall be installed per manufacturer's specifications
8. Section 2503.2.6.c "Design" shall be amended to read;
 Pipe shall have an integral bell and spigot joint. Wall thickness shall be SDR 26 or SDR 21 as shown on the plans. If for any reason the depth of cover on any portion of a line between two manholes exceeds 20 feet the entire line must be SDR 21 pipe or written approval by the City of Grandview Public Works Department.
9. Section 2503.2.6.e "Fittings" shall be amended to read:
 Fittings defined as tee (T) or wye (Y) connections suitable for assembly to the four (4) inch or six (6) inch building service lines shall be bell –end with a minimum wall thickness conforming to SDR 26 and shall be furnished by the pipe manufacturer. A special design is required for service connections 8 inches and larger. Saddle tees or wyees will not be permitted during sewer main installation
10. Section 2509 "Testing"

Add the following to Section 2509.4.c.(5) "When the pipe material is plastic, the low-pressure test shall conform to the testing procedure described in ASTM F1417-92, entitled *Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low Pressure Air*.

Delete the following sentence in Sec. 2509.5.d 'The testing shall be conducted after the final trench backfill' and replace with 'The testing shall be conducted not less than 30 days following the final trench backfill'.

11. Section 2510.9 "*Manhole Testing*: Delete Section 2510.9.2 and 2510.9.3 and replace with the following: 2510.9.2. Utilizing the test procedure and equipment equivalent to that supplied by P.A. Glazier, inc., P.O. Box 1002, Worcester, Massachusetts 01613, 1-800-822-6488, a vacuum of 10 inches of mercury shall be drawn, the vacuum pump shut off, all valves closed, and the time measured for the vacuum to drop to 9 inches. The manhole shall pass if the time is greater than 60 seconds for 48" diameter, 75 seconds for 60" diameter, and 90 seconds for 72" diameter.

12. Section 2602.2.E-2 Add the following to Section 2602.2 Materials: between Section 2602.2.E and 2602.2.F
 - E-2 High Density Polyethylene Pipe
 - a. Pipe shall be semi-rigid having a corrugated/angular exterior surface with a smooth interior unless specified otherwise. The pipe shall be joined by a bell and spigot joint.

 - b. Pipe and fittings, 12 inch to 60 inch diameter, shall meet the requirements of AASHTO M 294, Type S, with a soil tight bell/spigot/ gasket fitting. The virgin material shall be high-density polyethylene conforming to the minimum requirements of cell classification 435400C as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The material shall comply with the notched constant ligament-stress (NCLS) test as specified in Section 9.5 of AASHTO M 294. Each individual section of pipe shall be marked in accordance with AASHTO M294

 - c. Pipe and fittings, 4 inch to 10 inch diameter, shall meet the requirements of AASHTO M 252, Type S, with a soil tight bell/spigot/ gasket fitting. The virgin material shall be high-density polyethylene conforming to the minimum requirements of cell classification 435400C as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The material shall comply with the notched constant ligament-stress (NCLS) test as specified in Section 9.5 of AASHTO M 294. Each individual section of pipe shall be marked in accordance with AASHTO M252

 - d. Installation shall be in accordance with ASTM D2321 and the manufacture's published installation guidelines.

 - e. Manning's "n" value for use in design shall be 0.012 or less.

13. Section 2603.C.1 – Figure 1. Change *C – Flowable Fill* to read *C- Granular bedding material or Flowable Fill (CLSM)*

14. Section 2603.C.3 – Figure 3. Change *FLOWABLE FILL UNDER ALL PAVED AREAS* to read *OPTIONAL FLOWABLE FILL UNDER ALL PAVED AREAS*.

15. Section 2605.2.A "Concrete" Delete the paragraph and replace with:
A. Concrete: Concrete shall be MCIB Mix Number A618-1-4.

- D. INSURANCE: (1) In accordance with Article 5.4, the CONTRACTOR shall maintain insurance, with the City of Grandview named as an additional insured, with the following minimum amounts of coverage.

"Workmen's Compensation"

Employer's Liability	Statutory \$500,000 each person \$500,000 each accident \$500,000 each policy
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"Automobile Liability"

Bodily Injury	\$1,000,000.00 Each Person
Bodily Injury	\$1,000,000.00 Each Occurrence
Property Damage	\$ 50,000.00 Each Occurrence
Combined Bodily & Property Damage	Limit of \$2,000,000.00

"General Liability"

Personal Injury	\$2,000,000.00 Each Person
Personal Injury	\$2,000,000.00 Each Occurrence
Property Damage	\$1,000,000.00 Each Occurrence
Property Damage	\$1,000,000.00 Aggregate
Personal Injury & Property Damage.	Combined Single Limit of \$2,000,000.00

Railroad Protective Liability Insurance: When construction work is required on railroad property, the Contractor shall obtain, pay for and maintain a Protective Liability Insurance contract for and in behalf of each railroad involved and as specified in the Special Provisions.

- E. HOLIDAYS: The following days will be recognized as Holidays by the City of Grandview:
- New Year's Day- January 1st, when January 1st falls on Saturday the preceding Friday will also be observed as a holiday, when January 1st falls on Sunday the following Monday will also be observed as a holiday.
 - Martin Luther King Day- the third Monday of January
 - Memorial Day- the last Monday in May.
 - 4th of July - July 4th and when July 4th falls on Saturday the preceding Friday will also be observed as a holiday, when July 4th falls on Sunday the following Monday will also be observed as a holiday.

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- Labor Day - the first Monday in September
- Thanksgiving Holiday - the fourth Thursday in November and the following Friday.
- The Christmas holiday shall be comprised of two days, December 24 and December 25, except when December 25th falls on Saturday, Sunday, or Monday. If December 25th falls on Saturday, the City will observe Thursday the 23rd and Friday the 24th as holidays. If December 25th falls on Sunday the City will observe Friday the 23rd and Monday the 26th as holidays. If December 25th falls on Monday the City will observe Monday the 25th and Tuesday the 26th as holidays.

F. CORRESPONDENCE: Correspondence mailed to the Contractor's address shall be considered as received by the Contractor.

G. BURNING: Open burning of debris will not be permitted.

H. BLASTING: Unless specifically allowed by the Job Special Provisions, Blasting is not permitted. If permitted a Blasting Permit obtained through the Grandview Fire Department is required.

I. WORK RESTRICTIONS: No work shall be done between 5:00 p.m. and 8:00 a.m., nor on Saturdays, Sundays, or Holidays without the written permission of the Owner. However, emergency work may be done without prior permission.

A condition of working during the restricted time shall be the reimbursement to the Owner of all inspection costs incurred during the restricted time. The Owner, at its sole discretion, may waive this condition.

J. CONSTRUCTION STAKING: The construction staking necessary to construct this project shall be performed by or under the direction of a registered professional engineer/surveyor, who shall be employed by the contractor, and approved by the Owner.

A copy of construction staking notes and grade sheets, etc., shall be furnished to the Owner and/or their authorized representative.

Unless specifically identified as a pay item in the proposal, payment for construction staking shall be considered subsidiary to other items in the proposal.

K. AMERICAN MADE PRODUCTS: (1) (2) In performance of any contract resulting from this solicitation, the successful bidder will be requested to use products manufactured, assembled or produced in the United States, if the quality and price are comparable.

L. TAX EXEMPT PURCHASE OF MATERIALS: (1) This section applies only to projects that involve a contract between the City of Grandview and a contractor for construction of the project.

The City shall provide a project tax exempt certificate and letter to be used by the general contractor to authorize tax exempt purchases for the project. The purchases shall be only for personal property and materials which are to be incorporated into, or consumed in, the completion of the project.

The general contractor shall furnish copies of the certificate and letter to subcontractors which have been authorized by the general contractor to purchase personal property and materials for the City's project. Subcontractors shall present the certificate and letter to

suppliers as their authorization to purchase tax exempt materials to be incorporated into, or consumed in, the completion of the project.

The invoices which the suppliers execute to the buying contractors shall reference the name of the exempt entity and the project identification number. Invoices shall be retained by the buying contractors for five years and are subject to audit by the Director of Revenue of the State of Missouri.

The purchase of construction machinery, equipment or tools used on the project are not exempted from taxation.

- M. SUBGRADE PREPARATION: Unless specifically permitted in the job special provision, rock, gravel or sand type materials will not be used in subgrade preparation for sidewalk, driveways or curbs. All over excavated areas or areas which require fill, shall be stripped of vegetative material and be filled and compacted with clay type soil, free of all foreign materials such as but not limited to concrete, asphalt, sod, roots and other organic materials.
- N. SOD AND SEED SEASONS: Sod will not be placed between June 1 and September 1. Permanent Seed and Mulch will not be placed between April 15 and August 15. Temporary seeding as part of erosion control is not confined to any date. The Contractor shall request in writing any request for deviation from the above dates.
- O. CONCRETE CURING: All concrete will be cured in accordance with MCIB Bulletins, except as modified by the addition of the following:

All Membrane cure used on non-decorative concrete shall be white pigmented. Decorative concrete is stamped, colored, or otherwise treated as to provide an aesthetic aspect to a project. Membrane cure used on decorative concrete shall be clear or that recommended by treatment manufacturer for the aesthetic aspect. Plain gray concrete used on a project that includes features constructed with decorative concrete will receive a clear membrane cure.

- P. DISPOSAL OF MATERIALS: The contractor will obtain any required permits and approvals from the Department of Community Development for the disposal of any material(s) within the city limits of the City of Grandview.

Q. TESTING: (2)

1) Concrete: The contractor shall, at its expense, prepare and have compression testing performed on one set of three test cylinders for each 50 cubic yards or significant portion thereof, of concrete placed. Each set of cylinders shall be tested as follows: one cylinder shall be tested at 7 days and the other two shall be tested at 28 days. The contractor shall, at its expense, have slump and air content tests performed by a testing laboratory for each 100 cubic yards or significant portion thereof, of concrete placed.

2) Subgrade: The contractor shall, at its expense, derive a standard proctor for each type of soil to be utilized within the project. In-place density and moisture tests in accordance with Section 2102.6.F shall be performed as directed on every lift of fill and on the top 6" of subgrade which shall be under the street. This shall be performed by the contractor at its expense. On projects involving small areas with fill of less than 12" total thickness, the City may allow for the surface to be roll tested in lieu of testing in accordance with Section 2102.6F. The roll testing shall be in accordance with Section 2201.3.E.

3) Sewers: See Supplementary Conditions C.10 and C.11

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4) Asphalt: The contractor shall, at its expense, perform density tests as follows on every 3,000 square yards of base material and every 4,000 square yards of surface of material based upon each lift of such material.

5) See Supplementary Conditions B.5

R. **FENCING:** This work may consist of removal and re-installation of existing fencing, installation of fencing at a new location, installation of new fencing or a combination of these as needed to permit construction of the project.

1) Removal and Re-installation. Prior to removing the existing fence, the Contractor shall notify each property owner to discuss the various details of the work.

a. Removals: The fence shall be carefully removed so as to prevent damage and stored at a location designated by each Property Owner. All existing post, including those set in concrete shall be pulled, including the concrete, and replaced with new posts.

b. Re-installation: The existing fence shall be reinstalled by the Contractor in as good or better condition than what existed prior to construction. Any material that cannot be saved, shall be replaced with the same size and type of material which was used in the original fence. These fences shall be replaced to match the new ground line. The replacement location shall match the original location except in cases where new physical conditions prevent such, the property owners requests slightly modifications, or as directed by the Engineer. This may cause an increase or decrease in the amount of final in place fence from the amount of original in place fence. The contractor shall be responsible for providing any additional material or disposing of any excess material.

2) New Fencing: Fencing involving woven wire and/or barb wire shall be in accordance with the latest edition of the *Missouri Standard Specifications for Highway Construction* Section 607.20 and *Missouri Standard Plans for Highway Construction* 607.20F. Fencing involving chain link shall be in accordance with the following

a. **SCOPE.** This specification covers chain link fencing and gates.

b. **FENCE TYPE.** Fencing shall conform to the alignment and details shown on the drawings and shall consist of galvanized or aluminum-coated steel fabric, steel posts, top rail, and bottom rail or tension wire. Posts shall be set in concrete.

c. **MATERIALS.** All steel or malleable iron parts and accessories shall be hot-dip galvanized or aluminum coated after fabrication.

ITEM	SPECIFICATION
Fabric	9 gauge, 2-inch mesh; galvanized ASTM A392, Class II or aluminum-coated ASTM A491, Class II.
Posts	Steel H-Section, 0.35 percent carbon; steel pipe, ASTM A120, standard weight (Schedule 40); or steel hollow structural tubing, ASTM A500 or A501.
Line Posts	
For 6-foot Fencing	H-Section 4.10 pounds per foot; 2 3/8 inch OD pipe, 3.65 pounds per foot; or 2 inch square, 3.85 pounds per foot.
For 42-inch Fencing	H-Section, 2.70 pounds per foot; or 1 7/8 inch OD pipe, 2.72 pounds per foot.

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(1) Applies only to City contract projects (2) On projects involving FHWA funding this section amended or deleted – See Job Special Provisions

ITEM	SPECIFICATION
Terminal Posts	End, corner, and pull posts.
For 6-foot Fencing	2 7/8 inch OD pipe, 5.79 pounds per foot; or 2 ½ inch square, 5.59 pounds per foot.
For 42-inch Fencing	2 3/8 inch OD pipe, 3.65 pounds per foot; or 2 inch square, 3.85 pounds per foot.
Gate Posts	Gate or leaf 6 foot or less, 2 7/8 inch OD pipe, 5.79 pounds per foot; or 2 ½ inch square, 5.59 pounds per foot; gate or leaf over 6 foot, 4 inch OD pipe, 9.10 pounds per foot; or 3 inch square, 9.10 pounds per foot.
Top Rail	1 5/8 inch OD steel tubing, 1.40 pounds per foot.
Rail Couplings	Sleeve type, 6 inches long.
Post Tops (when barbed wires are required at the top of the fence)	Pressed steel, malleable iron, with pressed steel extension arm, or hole for top rail, designed to prevent entry of moisture into tubular posts.
Posts Tops	Pressed steel, malleable iron, or cast aluminum; designed to prevent entry of moisture into tubular posts.
Barbed Wire	Galvanized, ASTM A121, Class 2 or aluminum coated ASTM A585, Class II; two 12 ½ gauge steel wires with 4 point barbs.
Stretcher Bars	Steel, 3/16 inch by 3/4 inch, or equivalent area.
Fabric Ties	Aluminum bands or wires.
Gate Frames	Steel tubing, 1 7/8 inch OD, 2.09 pounds per foot; or 2 inch square, 2.10 pounds per foot.
Tension Wire	Galvanized or aluminum coated coil spring wire, 7 gauge.
Handrail-Setting Cement	Hallemite "Por-Rok Cement".

d. **GATES:** Gates shall be swing type, hinged to swing 90° from closed to open, complete with frames, latches, stops, keepers, hinges, and fabric. Gate leaves shall have intermediate members and diagonal truss rods as required for rigid construction. Joints between frame members shall be made by welding or by means of heavy fittings, and shall be rigid and water tight. Gate fabric shall be same as fence fabric and shall be attached to frame ends by stretcher bars, bolt hooks, or other mechanical means.

Hinges shall be heavy pattern with large bearing surfaces and shall not twist or turn under the action of the gate. Latches shall be plunger bar type, full gate height, and arranged to engage the gate stop, except single gates less than ten feet (10') wide may be provided with a forked latch. Latches shall be arranged for padlocking with the padlock accessible from both sides of the gate. Stops shall consist of a roadway plate with anchor set in concrete and arranged to engage the plunger. Keepers shall consist of mechanical devices for securing and supporting the free end of gates when in the full-open position.

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Gates shall be installed so that they cannot be removed without disassembly of the hardware. Hardware attachment bolts shall be peened so that removal will be difficult.

e. FENCE CONSTRUCTION. The installed fence shall conform to the alignment and finish grade indicated. All posts shall be plumb and unless otherwise shown or required shall be spaced ten feet (10') feet apart for 6-foot fencing and six feet (6") apart for 42-inch fencing. Where necessary, the fence grade shall be adjusted to fit the ground contour by slipping the fence fabric links. Ground surface irregularities shall be graded as required to maintain not more than a one half inch (1/2") clearance below the bottom of the fence fabric.

Where posts are set in earth, concrete foundations thirty-six inches (36") deep shall be provided. If bedrock is encountered, post excavation shall be continued to the thirty-six inch (36") depth or eighteen inches (18") into the rock, whichever is less. Concrete foundations shall be circular in horizontal section, not less than 10 inches (10") in diameter for line posts, and with a diameter not less than the post OD plus nine inches (9") for terminal and gate posts, except that foundations in bedrock shall be a minimum of six inches (6") larger than the outside dimension of the post. Foundations shall extend above the ground surface and shall be crowned approximately one inch (1"). Concrete for foundations shall conform to the requirements of MCIB Mix No. 495-3/4-4. Each foundation shall be cured for a least seventy-two (72) hours before further work is done on the post.

Top rails and bottom tension wires shall be installed before the fabric. Top rails shall be furnished in at least eighteen foot (18') lengths and shall be securely connected to gate and terminal posts. Tension wires shall be installed approximately six inches (6") above grade and shall be attached to each post and securely anchored at terminal and gate posts. Straight runs between braced posts shall not exceed 1,500 feet. A terminal post shall be provided at each change in slope.

Fabric shall be attached to the top rail, bottom rail, and bottom tension wire at twenty-four inch (24") centers and to the line posts at fifteen inch (15") centers. Barbed wire shall be fastened to each extension arm by internal clips or external fabric ties. Each stretcher bar shall be threaded through the fabric and anchored to the post at fifteen inch (15") center by positive mechanical means.

Each gate and terminal post shall be braced by horizontal pipe brace and an adjustable truss extending to an adjacent line post. Corner posts shall be braced in both directions.

Fabrics shall be stretched taut and anchored so that a pull of 150 pounds at the middle of a panel will not lift the bottom of the fabric more than six (6").

3. Temporary Fencing: The intent of the temporary fencing is to provide safety and protection during the time frame which the permanent fencing is removed. The temporary fencing shall be installed within 4 hours of the removal of the existing fence on the property. The temporary fencing may consist of either 4 foot snow fencing or the Contractor may reuse portions of the existing fencing which was removed. In cases where the residential fence is 6 feet high as a required safety feature of a swimming pool on the lot, the temporary fence must also be 6 ft in height. In commercial/industrial areas, the fence height must match that of adjacent fence unless directed otherwise by the Engineer. The temporary fencing shall connect with remaining permanent fencing, when available, to provide for a complete enclosure. Within residential areas, such enclosure shall be capable of containing domestic animals. Within commercial/industrial areas such enclosure shall be capable of prevention of intrusion to the same degree as adjoining fence. The contractor is required to take all steps necessary to comply with the enclosure requirement. Temporary fencing shall be installed at locations shown on the plans or as directed by the Engineer.

- S. **MEASUREMENTS AND PAYMENTS:** Measurements and payments for items listed in the proposal will be made in accordance with the KC Metro APWA specifications, except as modified by the Job Special Provisions
- T. **EROSION AND SEDIMENT CONTROL:** In accordance with City of Grandview Ordinance No. 6198 an erosion and sediment control permit may be required for this project. The Job Special Provisions shall state whether or not a permit is required. If a permit is required, the \$500 permit fee will be waived by the City if the project is being constructed by a contractor of the City of Grandview. Section 2150 Erosion and Sediment Control of the *Kansas City American Public Works Association* will govern the necessary work to construct and maintain the required erosion and sediment control for this project. A log, including at a minimum, dates on which each measure was installed, inspections of the measures, noted deficiencies of the measures, and dates of corrections must be on site.

Failure to properly install erosion control measures, maintain the erosion control measures, to have the SWPP and log records up to date and available, and perform the required inspections of the erosion control measures are violations of Ordinance No. 6198. Violations of Ordinance No. 6198 may result in a stop work order on the project, corrective measures taken by the City with any incurred costs deducted from the Contractor's payments, and fines of \$100 /offense/day. No allowance will be made for delay or suspension of the prosecution of the contracted work due to any stop work order issued for failure of the contractor to abide with Ordinance No. 6198.

A copy of Ordinance No. 6198 is available from the City of Grandview Public Works Department or on the internet at <http://www.grandview.org/index.aspx?page=628>.

U. **SMALL QUANTITIES OF MATERIALS**

Small quantities of materials may be accepted for a project based on some combination of certification documentation, delivery tickets and visual inspection. This allowance is intended for materials that will not adversely affect the completed facility. Prior to commencing work on the project the contractor shall submit a written request stating the type of materials or construction along with the total amount to be used on the project for which acceptance is requested. The City shall either confirm or deny in writing the items for which acceptance is approved of use on the project. The table below provides the schedule of materials and associated quantities which may be accepted without complying with the material submittals, sampling, and testing requirements found in other parts of the specifications. The quantity limits is the total quantity of the material to be used on the project not the quantity for which acceptance is requested. The delivery ticket must include the material designation i.e. Type 3-01 asphaltic concrete, WA610-1-4 PCC, MoDOT Type 5 aggregate, etc.

Small Material Quantity Acceptance Table		
Type of Construction or Material	Basis of Acceptance	Quantity Limits
Aggregate for base	<ul style="list-style-type: none"> • Weights on delivery tickets • Visual inspection 	• 500 tons/project
Aggregate for surfacing	<ul style="list-style-type: none"> • Weights on delivery tickets • Visual inspection 	• 500 tons/project
Asphalt Concrete mixes	<ul style="list-style-type: none"> • Weights on delivery tickets • Visual inspection 	• 100 tons/per mix type/project
Concrete sidewalks	<ul style="list-style-type: none"> • Volumes on delivery tickets • Visual inspection 	• 500 yd ² /project
Concrete base	<ul style="list-style-type: none"> • Volumes on delivery 	• 500 yd ² /project

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	<ul style="list-style-type: none"> tickets • Visual inspection 	
Pavement patching	<ul style="list-style-type: none"> • Weights or volumes on delivery tickets • Visual inspection 	<ul style="list-style-type: none"> • 100 tons/project (AC) • 50 yd³/project (PCC)
Temporary pavement	<ul style="list-style-type: none"> • Weights or volumes on delivery tickets • Visual inspection 	<ul style="list-style-type: none"> • 500 yd²/project
Concrete curb and gutter	<ul style="list-style-type: none"> • Volumes on delivery tickets • Visual inspection 	<ul style="list-style-type: none"> • 100 lin ft/project
Paved ditches	<ul style="list-style-type: none"> • Volumes on delivery tickets • Visual inspection 	<ul style="list-style-type: none"> • 50 yd³/project
Concrete for pipe encasement	<ul style="list-style-type: none"> • Volumes on delivery tickets • Visual inspection 	<ul style="list-style-type: none"> • 15 yd³/project
Precast masonry items	<ul style="list-style-type: none"> • Visual inspection • Material certification 	<ul style="list-style-type: none"> • 100 pieces/project
Concrete for fence posts	<ul style="list-style-type: none"> • Volumes on delivery tickets • Visual inspection 	<ul style="list-style-type: none"> • 10 yd³/project
Concrete for pole bases	<ul style="list-style-type: none"> • Volumes on delivery tickets • Visual inspection 	<ul style="list-style-type: none"> • 10 yd³/project
Concrete for bases and/or inverts used in catch basins, manholes, inlets	<ul style="list-style-type: none"> • Volumes on delivery tickets • Visual inspection 	<ul style="list-style-type: none"> • 50 yd³/project
Pipe	<ul style="list-style-type: none"> • Visual inspection • Material certification 	<ul style="list-style-type: none"> • 100 lin ft/project

- V. LAWN/LANDSCAPING SPRINKLER SYSTEMS: Sprinkler systems are not an *UNDERGROUND FACILITY* as defined by Mo statute Sec 319.015, and are not located in junction with notification to Missouri One Call. The Contractor shall inspect to project for the presence of underground sprinkler systems. The Contractor will be responsible for the repairs or modifications to existing sprinkler systems caused by his activity, regardless of notification to Missouri One Call. No direct payment will be made for this item.