

**SUPPLEMENTAL SPECIFICATIONS  
TO  
STANDARD SPECIFICATIONS  
OCTOBER 2018 EDITION**



**REVISIONS THROUGH 4/26/2021**

**SUPPLEMENTAL SPECIFICATIONS TO STANDARD SPECIFICATIONS  
LIST OF SUPPLEMENTAL SPECIFICATIONS  
TABLE OF CONTENTS**

**DESCRIPTION**

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- 200 SITEWORK AND EARTHWORK**
  - 203 Excavation and Embankment**  
(SS 2018-203-01 10/3/19)
  - 205 Trench & Structure Excavation and Backfill**  
(SS 2018-205-01 2/6/19)
  
- 400 CONCRETE CONSTRUCTION**
  - 410 Concrete Curb and Gutter**  
(SS 2018-410-01 4/8/19)
  
- 600 WATER SYSTEM**
  - 601 Water Line Improvements (12-Inches and smaller)**  
(SS 2018-601-01 4/26/21)
  
- 800 TRAFFIC CONTROL FACILITIES**
  - 801 Actuated Controller**  
(SS 2018-801-01 7/2/19)
  - 802 Coordinated Controller**  
(SS 2018-802-01 7/2/19)
  - 840 Traffic Paint Pavement Markings**  
(SS 2018-840-01 5/2/19)
  - 841 Thermoplastic Pavement Marking**  
(SS 2018-841-01 5/2/19)
  - 845 Pavement Marking Removal**  
(SS 2018-845-01 5/2/19)
  
- 900 MISCELLANEOUS CONSTRUCTION**
  - 907 Fences and Gates**  
(SS 2018-907-01 2/11/19)

**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
EXCAVATION AND EMBANKMENT**

**SECTION 203** of the Standard Specifications for Public Works Construction, October 2018 Edition, is hereby amended as follows:

**203.03 CLASSIFICATION**

The third paragraph of this subsection shall be deleted and replaced with the following:

“Select Material” shall consist of excavation made from borrow areas outside the limits of the project. It shall be the Contractor’s responsibility to locate and obtain the select material subject to the approval of the Engineer. Select material shall be granular, maximum particle size of 3 inches, graded from coarse to fine, conforming to AASHTO classification A-1, A-2-4 or A-2-5, or a sandy or gravely clay conforming to classification A-2-6 or A-6 with the exception that the plasticity index shall not exceed 15. Select material shall also have a minimum CBR value of 10. Crusher screenings and non-plastic materials will not be allowed as Select Material. The Contractor shall furnish, at his expense, test data to indicate compliance of select material with this specification. “Select Material” shall only be used if the Contractor demonstrates to the Engineer that no suitable On-Site Borrow is available. Select Material will also be used if shown on the plans or as directed by the Engineer.



**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
TRENCH & STRUCTURE EXCAVATION AND BACKFILL**

**SECTION 205** of the Standard Specifications for Public Works Construction, October 2018 Edition, is hereby amended as follows:

**205.05 BEDDING**

This sub-section shall be deleted in its entirety and replaced with the following:

All pipe, boxes, and conduits shall be installed on a firm and stable bedding material that conforms to the grade of the pipe and provides contact with the pipe at every point throughout the entire length of the pipe. Pipe shall be bedded in accordance with Class "B" Bedding from the trench subgrade to a minimum of 6 inches above the pipe. This area shall be referred to herein as the "pipe zone." Box culverts and conduits shall have the same "pipe zone" as pipe.

Bell holes shall be excavated in the bedding material immediately prior to placing the pipe in the trench and shall be such depth that the pipe bell will not come into contact with the pipe bed. After the joint has been made, the bell hole shall be carefully filled with bedding material to provide support for the pipe throughout its length. Blocking shall not be used to bring the pipe to grade.

Bedding material shall be placed within the pipe zone, with maximum lift thickness of 8 inches, by any approved method which will not injure or disturb the pipe and will result in the compaction specified in subsection 205.08.

Placing of concrete encasement around the pipe shall be accomplished in such a manner that will prevent flotation of, or damage to, the pipe. The pipe shall be supported on concrete blocks at approximately 6 foot spacing. During pouring, the concrete shall be thoroughly vibrated to ensure the filling of all voids with concrete under the bottom and under the haunches of the pipe.

When called for on the plans or in the Special Conditions, or as directed by the Engineer, bedding for structures shall be provided as specified. Sand shall not be used for fine grading or bedding beneath structures.

**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
CONCRETE CURB AND GUTTER**

**SECTION 410** of the Standard Specifications for Public Works Construction, October 2018 Edition, is hereby amended as follows:

**410.03 CONSTRUCTION REQUIREMENTS**

The following shall be added to item C. MACHINE PLACEMENT:

The use of GPS systems on slip-form/extrusion machines for alignment and grade control shall not be allowed.



**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
WATER LINE IMPROVEMENTS (12-INCHES AND SMALLER)**

**SECTION 601** of the Standard Specifications for Public Works Construction, October 2018 Edition, is hereby amended as follows:

**601.05 CONSTRUCTION METHODS**

The following shall be added to Item D. FIRE HYDRANTS

A 24 inch by 24 inch by 6 inch cast in place concrete collar shall be installed around the fire hydrant vertical riser pipe a minimum of 8 inches below grade in accordance with AWWA M17 regardless of soil type.

**601.07 MEASUREMENT AND PAYMENT**

- G. FIRE HYDRANT ASSEMBLY (TYPE). Regular and Parallel Fire hydrant assemblies will be measured and payment made according to the number acceptably placed and approved. Payment for the fire hydrant assembly at the contract unit price listed in the proposal shall be considered full compensation for the hydrant, gate valve, valve box, valve box concrete collar, restraint system, the extension length necessary to install the hydrant at finished grade, the ductile iron pipe length between the line and the fire hydrant, the vertical riser pipe length necessary to install the fire hydrant at finished grade, vertical riser pipe concrete collar, crushed rock for the drains; and removal, salvage, and delivery of any existing hydrant.
- I. FIRE HYDRANT. Fire hydrants will be measured and payment made separately when replacement of only the existing fire hydrant is required, and not the full assembly. Payment for the fire hydrant at the contract unit price listed in the proposal shall be considered full compensation for the removal, salvage, and delivery of the existing fire hydrant, furnishing and installing the new hydrant, ductile iron pipe required for moving the hydrant, the vertical riser pipe length necessary to install the hydrant at finished grade, and miscellaneous fittings, vertical riser pipe concrete collar, restraint system, and crushed rock for drains.

SS 2018-801-01  
Page 1 of 1  
7/2/2019



**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
ACTUATED CONTROLLER**

**SECTION 801** of the Standard Specifications for Public Works Construction, October 2018 Edition, is hereby amended as follows:

**801.05 BASIS OF PAYMENT**

The first paragraph of this subsection shall be deleted and replaced with the following:

Work completed and accepted and measured as provided above, will be paid for at the contract unit price bid per each for Actuated Controller of the phases specified, which price shall be full compensation for furnishing the cabinet and controller; for mounting the controller cabinet; for installing, wiring, and testing the controller (including connecting the controller to the meter); for excavation and backfilling; for construction of the mounting pad; and for all materials, labor, equipment, tools, and incidentals necessary to complete the work.

SS 2018-802-01  
Page 1 of 1  
7/2/2019



**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
COORDINATED CONTROLLER**

**SECTION 802** of the Standard Specifications for Public Works Construction, October 2018 Edition, is hereby amended as follows:

**802.05 BASIS OF PAYMENT**

The first paragraph of this subsection shall be deleted and replaced with the following:

Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per each for Coordinated Controller (Local, Local/Master), which price shall be full compensation for furnishing the cabinet and controller; for mounting the controller cabinet; for installing, wiring, and testing the controller (including connecting the controller to the meter); for excavation and backfilling; for construction of the mounting pad; and for all materials, labor, equipment, tools, and incidentals necessary to complete the work.



**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
TRAFFIC PAINT PAVEMENT MARKINGS**

**SECTION 840** of the Standard Specifications for Public Works Construction, October 2018 Edition, is hereby amended as follows:

**840.03 CONSTRUCTION REQUIREMENTS**

The second sentence of the second paragraph of item B. SURFACE RESTORATION shall be deleted and replaced with the following:

This blasting and grinding is considered pavement marking removal and shall be measured and paid for as specified in Section 845.

**840.04 MEASUREMENT AND PAYMENT**

Item C. PAVEMENT MARKING REMOVAL and item D. PAVEMENT MARKING REMOVAL (WORDS, ARROWS, & EMBLEMS) shall be deleted from this subsection.

The following pay items shall be deleted from this subsection:

Traffic Paint Pavement Marking Removal (\_\_\_\_”) LF

Traffic Paint Pavement Marking Removal EA  
(Words, Arrows, & Emblems)

**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
THERMOPLASTIC PAVEMENT MARKING**

The following new specification section is hereby added to the Standard Specifications for Public Works Construction, October 2018 Edition:

**SECTION 841  
THERMOPLASTIC PAVEMENT MARKING**

**841.01 DESCRIPTION**

This item shall consist of furnishing and placing thermoplastic pavement markings, including words, arrows, and emblems, of the color and type specified, and the removal of pavement markings, all according to these specifications and in conformity with the dimensions and at the locations shown on the plans or as directed.

The markings are to be placed under existing traffic conditions. The work shall comply with the MUTCD except as modified by these specifications.

**841.02 MATERIALS**

The material used shall be a product especially compounded for traffic markings and be listed on the ArDOT Qualified Products List. Each container shall be clearly and adequately marked to indicated color, weight, batch or lot number, and type of material.

The material shall meet the requirements of AASHTO M 249 with the following exceptions on yellow materials:

Color Specifications							
Color Specification Limits – Daytime Initial							
Chromaticity Coordinates							
1		2		3		4	
x	y	x	y	x	y	x	y
0.499	0.466	0.545	0.455	0.518	0.432	0.485	0.454
Luminance Factor, Y(%)							
Minimum				Maximum			
40.0				60.0			

Initial daytime color determination will be made in accordance with AASHTO T 250. Values shall be evaluated on material without the drop-on beads.

Color Specification Limits – Daytime Retained							
Chromaticity Coordinates							
1		2		3		4	
x	y	x	y	x	y	x	y
0.560	0.440	0.490	0.510	0.420	0.440	0.460	0.400

Retained daytime color limits shall conform to the specifications for a minimum of ninety days for construction pavement markings and one year for all other markings. Retained readings will be determined on a beaded surface in accordance with the requirements of ASTM E 2366.

Color Specification Limits – Nighttime Initial with drop-on beads							
Chromaticity Coordinates							
1		2		3		4	
x	y	x	y	x	y	x	y
0.575	0.425	0.508	0.415	0.473	0.453	0.510	0.490

Initial nighttime color limits will be determined in accordance with the requirements of ASTM E 2367 on a beaded surface.

The pigments used for the pavement marking material compound shall not contain any compounds that will exceed the values listed in the Environmental Protection Agency Code of Federal Regulations (CFR) 40, Section 261.24, Table 1.

The material shall not break down or deteriorate if held at the plastic temperature for a period of four hours nor by reason of four re-heatings to the plastic temperature. The temperature-viscosity characteristics of the thermoplastic material shall remain consistent and there shall be no obvious change in the color of the material.

The material shall not deteriorate by contact with sodium chloride, calcium chloride, or other chemical formations on the roadway or streets, or because of the oil contact on pavement material, or from oil droppings from traffic.

After application and proper drying time, material shall show no appreciable deformation nor discoloration under local traffic conditions and in air or road temperatures ranging from 0° F to 160° F. The material shall not smear or spread under normal traffic conditions at temperatures below 160° F.

Under this specification, the term “drying time” shall be defined as the minimum elapsed time after application when the pavement marking shall have and retain the characteristics required in the preceding paragraphs. In addition, the drying time shall be established by the minimum elapsed time after application when traffic will leave no impression or imprint on the applied marking. The drying time shall not exceed a characteristic straight-line curve, the limits of

which are two minutes at 50° F and 15 minutes at 90° F, measured at a maximum relative humidity of 70%.

The pavement marking material shall maintain its original dimension and placement. The exposed surface shall be free of tack. Cold ductility of the material shall be such as to permit normal movement with the road surface without chipping or cracking. The material shall not be slippery when wet and it shall not lift from the pavement in freezing weather.

The marking shall have a uniform cross section. The density and character of the material shall be uniform throughout its thickness and shall be completely reflectorized both internally and externally.

The glass beads used for the drop-on application shall meet AASHTO M 247 with a Type I gradation and shall be suitably treated to resist moisture and retain free flow properties. Beads shall not be specially treated to enhance flotation.

### **841.03 CONSTRUCTION REQUIREMENTS**

The thermoplastic compound shall be screed or ribbon extruded to the pavement surface. The equipment used to apply the thermoplastic compound onto the pavement shall be suitably equipped for heating and controlling the flow of material. The equipment shall be constructed to provide continuous mixing and agitation of the material. The conveying parts of the equipment, between the main material reservoir and applicator, shall be so constructed as to prevent accumulating and clogging. The equipment shall be constructed so that all mixing and conveying parts, up to and including the applicator, maintain the material at the plastic temperature. The thermoplastic material shall be dispensed at a temperature recommended by the manufacturer. The applicator shall include a cutoff device remotely controlled to provide clean, square stripe ends and to provide a method for applying skip lines.

The thermoplastic reservoir shall be insulated and equipped with an automatic thermostatic control to maintain the proper temperature of the material.

The thermoplastic machine shall comply with the requirements of the National Board of Fire Underwriters.

Beads applied to the surface of the completed stripe shall be applied by an automatic bead dispenser attached to the pavement marking equipment in such a manner that the beads are immediately dispensed upon the completed line. The bead dispenser shall be equipped with an automatic cutoff control, synchronized with the cutoff of the pavement marking equipment. The beads shall be automatically applied at a minimum uniform rate of eight pounds of glass beads to every 100 square feet of surface.

Thermoplastic markings shall not be applied to the pavement surface when the pavement surface temperature is less than 50° F or when the pavement surface shows evidence of moisture.

On new concrete pavements where no pavement markings exist or on existing concrete or asphalt pavements where the existing pavement markings are paint or thermoplastic and do not conflict with the proposed markings, blasting with water or sand or a combination thereof will be required to remove any curing compound, oxidized paint or thermoplastic, or dirt to ensure a good bond. This blasting is considered surface preparation. On newly constructed asphalt pavements any sand, grit, or other surface contaminants must be removed using compressed air and/or sweeping. Water blasting may be necessary to remove surface contaminants which cannot be removed by the use of compressed air and/or sweeping. This work is considered surface preparation.

Conflicting pavement markings that exist shall be removed by blasting with water and/or sand or by grinding. This blasting or grinding is considered pavement marking removal and shall be measured and paid for as specified in Section 845.

The thickness of thermoplastic markings above the roadway surface shall be 90 mils (a minimum of 1,584 pounds per mile of 4" line). The thickness will be measured by a device supplied by the Contractor during the course of the project capable of measuring the thickness of the marking as installed on the pavement. The minimum thickness, as required above, will be measured in the center of the line when gauged by the equipment described above. The minimum thickness ½" from the edges shall not be less than 75% of the thickness required in the center. Maximum thickness of markings is 3/16".

On concrete pavements, except where thermoplastic markings are to be applied over existing thermoplastic markings, primer shall be applied prior to the thermoplastic markings. The primer shall be recommended by the thermoplastic manufacturer and shall be applied in accordance with the manufacturer's recommendations. The time between application of the primer and application of the thermoplastic markings shall also be in accordance with the manufacturer's recommendations.

Spotting the pavement for centerline location on two-way roadways is required. It will be the responsibility of the Contractor to spot using a string line or chain so that spots are placed at intervals not exceeding 10'. The Engineer will establish the no passing zones if required. On one-way roadways spotting is required for the initial edge line or lane line placed. Edge lines and/or lane lines may be installed by referencing to center or lane lines. Edge lines shall not be broken for driveways. The trace of the thermoplastic line shall be uniform.

The finished lines shall have well defined edges, shall be uniform in thickness, and shall be straight and true. No stripe shall be less than the specified width. Any corrections or variations in width or alignment of the stripes shall not be made abruptly. Lines that cannot be corrected to

meet these requirements shall be removed in accordance with Section 845 at the Contractor's expense.

Line removal as specified on the plans shall be performed in such a manner that no conflicting pavement marking will be left in place. Removal of the pavement marking by a means that will gouge the surface will not be permitted.

The Contractor shall only use workers experienced in installing thermoplastic markings.

#### **841.04 MEASUREMENT AND PAYMENT**

- A. **THERMOPLASTIC PAVEMENT MARKINGS.** Thermoplastic Pavement Markings shall be measured by the linear foot of material actually placed for the specified color and width of stripe. Work completed and accepted under the item of Thermoplastic Pavement Markings will be paid for at the contract price bid per linear foot in place, which price shall be full compensation for furnishing and installing markings; for surface preparation; for furnishing and installing primer (where required); and for all labor, tools, equipment, furnishing thickness gauge, and incidentals necessary to complete the work.
- B. **THERMOPLASTIC PAVEMENT MARKINGS (WORDS, ARROWS, & EMBLEMS).** Words, Arrows, Railroad Emblems, and Bicycle Sharrows will be measured by the unit. Thermoplastic Pavement Marking (Words), (Arrows), (Railroad Emblems), and (Sharrows) will be paid for at the contract price bid per each in place, which price shall be full compensation for furnishing and installing Words, Arrows, Railroad Emblems, and Bicycle Sharrows; for surface preparation; for furnishing and installing primer (where required); and for all labor, tools, equipment, furnishing thickness gauge, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Thermoplastic Pavement Marking White (___")	LF
Thermoplastic Pavement Marking Yellow (___")	LF
Thermoplastic Pavement Marking (Words)	EA
Thermoplastic Pavement Marking (Arrows)	EA
Thermoplastic Pavement Marking (Railroad Emblems)	EA
Thermoplastic Pavement Marking (Sharrows)	EA

**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
PAVEMENT MARKING REMOVAL**

The following new specification section is hereby added to the Standard Specifications for Public Works Construction, October 2018 Edition:

**SECTION 845  
PAVEMENT MARKING REMOVAL**

**845.01 DESCRIPTION**

This item shall consist of the removal of existing pavement markings on both asphalt and concrete pavements, regardless of pavement marking material, at the locations shown on the plans or as directed. Pavement markings shall be removed by blasting with water and/or sand or by grinding. Markings shall be removed under existing traffic conditions, and all work shall comply with the MUTCD.

**845.02 MEASUREMENT AND PAYMENT**

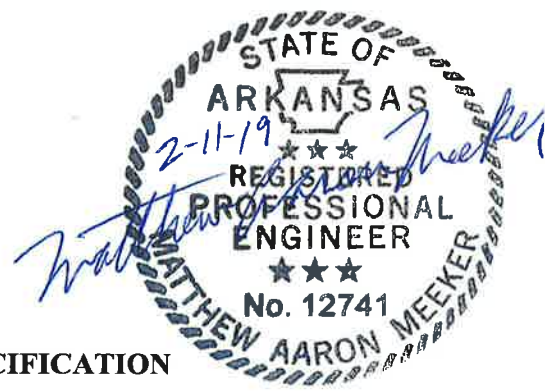
- A. **PAVEMENT MARKING REMOVAL.** Pavement Marking Removal will be measured by the linear foot of marking actually removed for the width specified. Any pavement markings removed from detours or during staged construction, by milling or any other pavement removal operations, or covered over with successive pavement courses, shall not be measured for payment. Any pavement markings removed as part of surface restoration or surface preparation as specified in Sections 840 and 841 of these specifications shall not be measured for payment. Unless otherwise specified on the plans, only pavement markings that are in conflict with new or proposed pavement markings shall be measured for payment. Work completed and accepted under the item of Pavement Marking Removal will be paid for at the contract price bid per linear foot, which price shall be full compensation for all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- B. **PAVEMENT MARKING REMOVAL (WORDS, ARROWS, & EMBLEMS).** Pavement Marking Removal will be measured by the unit for each word, arrow, railroad emblem, or bicycle sharrow actually removed. Any words, arrows, or emblems removed from detours during staged construction, by milling or any other pavement removal operations, or covered over with successive pavement courses, shall not be measured for payment. Any words, arrows, or emblems removed as part of surface restoration or surface preparation as specified in Sections 840 and 841 of these specifications shall not be measured for payment. Unless otherwise specified on the plans, only pavement markings that are in conflict with new or proposed pavement markings shall be measured

for payment. Work completed and accepted under the item of Pavement Marking Removal (Words, Arrows, & Emblems) will be paid for at the contract price bid per each, which price shall be full compensation for all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Pavement Marking Removal (____")	LF
Pavement Marking Removal (Words, Arrows, & Emblems)	EA





**CITY OF FORT SMITH SUPPLEMENTAL SPECIFICATION  
FENCES AND GATES**

**SECTION 907** of the Standard Specifications for Public Works Construction, October 2018 Edition, is hereby amended as follows:

**907.02 MATERIALS**

Item D. CONCRETE is hereby deleted and replaced with the following:

- D. CONCRETE. Concrete for fence post installation shall be Class "B" 2500 psi. Concrete for concrete mow strips shall be Class "AA" 3500 psi. All concrete shall conform to the requirements of Section 401 "Concrete General."

Item E. SALVAGED MATERIALS is hereby deleted.

**907.04 CONSTRUCTION**

Item E. REMOVAL AND RECONSTRUCTION OF FENCES is hereby deleted and replaced with the following:

- E. CONCRETE MOW STRIP. Where called for on the plans, a one foot wide by six inch deep concrete mow strip shall be constructed at the base of the fence. The top of the mow strip shall be placed at the same elevation as finished grade and shall have a slope of one inch per foot to allow for positive drainage. Fence posts shall be centered in the mow strip, and a two inch gap shall be left between the top of the mow strip and the bottom of the fencing fabric or pickets. Mow strips shall have transverse control joints every 10 feet and transverse expansion joints every 100 feet. Control and expansion joints shall align with the joints of any adjacent concrete retaining walls, channels, and/or ditches.

The following shall be added to item F. TEMPORARY FENCING:

Removed chain link fencing that has not been damaged may be used by the Contractor as temporary fencing.

**907.05 MEASUREMENT AND PAYMENT**

The third paragraph of this subsection shall be deleted and replaced with the following:

The contract unit prices mentioned above shall be full compensation for clearing,

grading, setting posts, concrete, erecting fence; for excavation and backfill; for concrete mow strips (when called for on the plans); for furnishing materials; and for all equipment, tools, labor, and incidentals necessary to complete the work.

The sixth paragraph of this subsection shall be deleted and replaced with the following:

Removal and disposal of existing fences and gates, including any clearing, excavation and backfill, labor, equipment, tools, and incidentals necessary to complete such work, shall be incidental to other items in the contract and no separate payment shall be made.

The eighth paragraph of this subsection shall be deleted and replaced with the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
__ ' Chain Link Fence	LF
__ ' Chain Link Fence With Concrete Mow Strip	LF
__ ' PVC Coated Chain Link Fence	LF
__ ' PVC Coated Chain Link Fence With Concrete Mow Strip	LF
__ ' Wood Fence	LF
__ ' Wood Fence With Concrete Mow Strip	LF
__ ' Woven Wire Fence	LF
Barbed Wire Fence ( ) Strand	LF
Barbless Wire Fence ( ) Strand	LF
Gates - Chain Link ( )	EA
Gates - Chain Link ( ) With Concrete Mow Strip	EA
Gates - PVC Coated Chain Link ( )	EA
Gates - PVC Coated Chain Link ( ) With Concrete Mow Strip	EA
Gates - Wood ( )	EA
Gates - Wood ( ) With Concrete Mow Strip	EA

SS 2018-907-01  
Page 3 of 3  
2/11/2019

Gates - Galvanized Steel (or Aluminum)

EA