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County Executive

Saint Louis
COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS

Sheryl L. Hodges, D.E., P.E., L.P.G.
Director

May 16, 2014

ADDENDUM NO. 2

Notice to All Persons and Firms Proposing
to Submit a Bid or Furnish Materials for
Shrewsbury Avenue – Lansdowne Avenue Infrastructure
St. Louis County Project No. AR-1388
Federal Project No. STP-4901(635)

The construction contract for this project has been revised as follows:

No. 1
Delete Contract Book Section 1100.70.8, Transverse and Longitudinal Joint Pavement Repair (6-Foot Minimum Width) With Special Concrete Types and Construction Procedures

No. 2
Insert New Contract Book Section 1100.70.8, Concrete Pavement Repair (18 Pages total)

No. 3
Delete Contract Book Page 252 of 264

No. 4
Insert New Contract Book Page 252A of 264

No. 5
Delete Contract Book Page 253 of 264

No. 6
Insert New Contract Book Page 253A of 264

No. 7
Delete Contract Book Page 254 of 264

No. 8
Insert New Contract Book Page 254A of 264

No. 9
Delete Plan Sheet 2 of 39

No. 10
Insert New Sheet 2A of 39

No. 11
Delete Plan Sheet 3 of 39

No. 12
Insert New Sheet 3A of 39

No. 13
Delete Plan Sheet 4 of 39

No. 14
Insert New Sheet 4A of 39

No. 15
Delete Plan Sheet 5 of 39

No. 16
Insert New Sheet 5A of 39

No. 17
Delete Plan Sheet 6 of 39

No. 18
Insert New Sheet 6A of 39

No. 19
Delete Plan Sheet 7 of 39

No. 20
Insert New Sheet 7A of 39

ATTENTION BIDDERS: CHECK THE ADDENDUM ACKNOWLEDGEMENT IN THE BID DOCUMENTS AND COMPLETE APPROPRIATELY.

Daniel R. Naunheim, P.E.
Division Manager, Design

DRN/DJF/jlh

Attachments: Contract Book Section 1100.70.8, Concrete Pavement Repair (18 Pages);
Contract Book Pages 252A, 253A, and 254A of 264
Plan Sheets 2A, 3A, 4A, 5A, 6A, and 7A of 39
Addendum Receipt Acknowledgement ***(Please sign and return.)***

1100.70.8 CONCRETE PAVEMENT REPAIR

Delete Section 613 and substitute the following:

613.1 **Description**

613.1.1 Full depth pavement, joint and base repair shall consist of removing specified areas of existing variable thickness of non-reinforced Portland Cement Concrete and replacing with reinforced or non-reinforced Portland Cement Concrete as specified in the contract documents.

613.1.2 Pavement repair greater than 15 feet in length shall be reinforced with macro-synthetic fiber material specified herein.

613.1.3 Pavement repair thickness may be increased by up to 2 inches at no additional cost to the county, to meet the required minimum opening compressive strength.

613.1.4 Very Early Strength repairs shall be opened to traffic in 4 to 6 hours. High Early Strength repairs shall be opened to traffic in 24 to 48 hours. Mix designs are included as a suggestion and not as a requirement. Pavement repair that does not meet the required opening time due to not meeting the minimum specified compressive strengths as specified in Sec 613.3.27.2 will receive a pay adjustment.

613.1.5 Due to high volumes of traffic on most of the roadways where work is to be performed, bid items and quantities for fast setting concrete have been included to allow the Engineer and Contractor some flexibility in dealing with lane closures, traffic control and access to streets and driveways. The Engineer shall have final approval over the type of concrete to be used. Payment as approved by the Engineer shall be made under the appropriate bid items.

613.2 **Materials**

All materials, unless specified otherwise in this specification, shall conform to Division 1000, Materials Details, and specifically as follows:

Item	**Section**
Aggregates for Concrete	1005
Bituminous Materials	1015
Silica Fume (Microsilica)	1016
Ground Granulated Blast Furnace Slag	1017
Fly Ash for Concrete	1018
Cement	1019
Reinforcing Steel for Concrete	1036
Epoxy Resin Material	1039
Concrete Admixtures	1054
Concrete Curing Material	1055
Material for Joints	1057

613.3 **Construction Requirements**

613.3.1 Pavement **Removal Locations.** Approximate locations and areas of pavement sections to be removed will be shown on the plans. Specific locations and areas of pavement repair removal shall be as specified by the Engineer.

613.3.2 **Pavement Removal and Base Replacement.** Specified areas of full depth pavement repair shall be removed in accordance with the applicable requirements of Section 202.30 except that the saw-cut shall be full-depth for pavement thickness of 7 inches or greater. A diamond saw shall be used for perimeter cuts, and saw-cuts shall not be made more than one calendar day before concrete slab removal. Saw cut such that traffic will not dislodge any pieces or segments. A rock saw may be used to make this cut with prior approval of the Engineer. Any damage caused to the pavement due to pre-sawing shall be repaired by the contractor at the contractor's expense. Asphalt backfill and maintenance of saw cut will be at no cost to the County.

613.3.2.1 **Pavement Repair Breaking and Removal.** Inside the saw cut outline, do not impact the surface within 18 inches of the pavement to remain in place. The full depth of pavement shall be removed from the middle-portion of the slab toward the adjacent concrete to be used-in-place, with a minimum disturbance of sound base. For pavement repair less than 7 inches in thickness and when removing concrete within six (6) inches of a sawed or formed joint, only use a 15-pound jackhammer to remove excess concrete.

613.3.2.2 **Pavement Repair Base Removal and Compaction.** Any aggregate base disturbed by the Contractor shall be recompacted or removed and backfilled with Portland Cement Concrete as an integral part of the repair. Unstable base aggregate shall be removed and replaced in accordance with Section 304, as directed by the

Engineer. Subgrade compaction shall be performed in areas of unstable subgrade in accordance with Section 210, if directed by the Engineer. In areas of unstable subgrade, the unstable subgrade may be removed and replaced with Type 5 aggregate base material in accordance with Section 304 at the Contractor's option. Compaction shall be in accordance with Section 304 and to the satisfaction of the Engineer.

613.3.2.3 **Base Repair Forming.** Forming for concrete pavement repair shall be in accordance with Section 502 of the standard specifications.

613.3.2.4 **Undercut Spalling.** When concrete removal operations result in deterioration of the bottom slab of sound concrete surrounding the repair area the Contractor shall saw back into the adjacent slab until sound concrete is encountered.

613.3.2.5 **Removal of Excess Water.** The repair area shall be dry, free from standing water. The Contractor shall pump water from the repair area or drain it through a trench cut into the shoulder. The base shall be recompacted in accordance with Sec 304.3.5.2 and to the satisfaction of the Engineer.

613.3.3 **Transverse Joint Reinforcement.** Transverse joints shall be provided in accordance with Sec 505.2.4.

613.3.3.1 **Dowel Bar Installation.** Dowel bar diameter shall be based on repair thickness. Horizontal displacement is defined as difference in the actual dowel bar location from its theoretical position as detailed in the standard details. The maximum allowable horizontal displacement is 2 inches. The dowel holes shall be drilled on 12" centers, located vertically at mid-depth ± ½ inch of the slab drilled, drilled with an automatic gang-mounted dowel drilling rig, referenced off the slab surface. Single, hand-held drills are not permitted because of the likelihood of misalignment. Standard pneumatic and hydraulic percussion drills are acceptable for drilling dowel bar holes. The drilling rig shall be able to maintain proper bar alignment, drilled to required diameter + 1/8 inch, and to a depth approximately ½ the length of the dowel bar. Dowel bars shall have a typical spacing of 6 inches from any longitudinal joint or edge of pavement. The holes shall be blown clean and allowed to dry.

613.3.3.2 **Dowel Bar Epoxy Anchoring.** The holes shall be injected with an epoxy bonding agent meeting the requirements of Section 1039.3 of the current St. Louis County Standard Specifications for Highway Construction. If the epoxy bonding agent is either in bulk or cartridge form, it shall be thoroughly mixed in the proper ratio by an automatic mixing unit prior to injection into the dowel holes. The automatic mixing unit shall be an integral part of the injection device. The bonding agent shall be injected into the dowel hole by inserting the injection device to the back of the hole and slowly withdrawing the device while dispensing sufficient material to completely fill the void around the dowel when the dowel is inserted.

613.3.3.3 **Dowel Bar Insertion.** Prior to inserting the dowel into the hole, a thin plastic disk, manufactured to slip tightly over the dowel, shall be placed over the dowel at approximately midpoint to prevent the bonding agent from flowing from the hole during placement of the dowel and to create an effective face at the entrance of the dowel hole. The dowel shall be inserted into the hole with a twisting motion so the material in the back of the hole is forced up and around the dowel. The dowel shall be placed parallel to the surface and the centerline of the travel way and shall not vary more than ¼ inch in alignment. Dowels shall be firmly seated prior to placing concrete.

613.3.3.3.1 **Dowel Bar Alignment Tolerance.** Dowel bar(s) that vary more than ¼ inch per 12 inches of bar in horizontal skew or vertical tilt alignment on more than three bars shall be cause for removal of the dowels, re-sawing the pavement repair boundaries beyond the embedded bar, removing the concrete and re-installing the dowel bars for the full length of the repair joint. No additional compensation will be made for removal and replacement of dowels and concrete pavement and other incidentals associated with their replacement.

613.3.4 **Longitudinal Joint Reinforcement Installation.** Tie bar size shall be based on repair thickness. The 30" long steel epoxy coated No. 5 or No. 6 round deformed dowel bar, in accordance with Sec 1057.4, shall have holes drilled on 30-inch centers that are located vertically at mid-depth ± ½ inch of the slab drilled, 1/8 inch in diameter larger than the actual bar diameter required, to a depth approximately ½ the length of the tie-bar drilled with an automatic gang-mounted dowel drilling rig, referenced off the slab surface. Single, hand-held drills are not permitted because of the likelihood of misalignment. Standard pneumatic and hydraulic percussion drills are acceptable for drilling tie-bar holes. Tie bars shall have a typical spacing of 15 inches from any transverse joint or edge of pavement. Horizontal displacement is defined as difference in the actual dowel bar location from its theoretical position as detailed in the standard details. The maximum allowable horizontal displacement is 2 inches. The holes shall be blown clean and allowed to dry.

613.3.4.1 **Tie Bar Epoxy Anchoring.** The holes shall be injected with an epoxy bonding agent meeting the requirements of Section 1039.3 of the current St. Louis County Standard Specifications for Highway Construction. A standard keyway section shall be provided for pavement repair depths 7 inches or greater wherever new pavement widening is to abut a full depth pavement repair section.

613.3.4.2 **Tie Bar Alignment Tolerance.** Tie bar(s) that vary more than ¼ inch per 12 inches of bar in horizontal skew or vertical tilt alignment on more than three bars shall be cause for removal of the bars, re-sawing the pavement repair boundaries beyond the embedded bar, removing the concrete and re-installing the dowel bars for the full length of the repair joint. No additional compensation will be made for removal and replacement of dowels and concrete pavement and other incidentals associated with their replacement.

613.3.5 **Macro-Synthetic Fiber Reinforcement.** When pavement repairs require reinforcement macro-synthetic fibers shall be used. Fibers shall meet the minimum requirements in accordance with Sec 505.2.3. Fiber manufacturer, brand and weight per cubic yard shall be included in the concrete mix design and on concrete delivery ticket. The concrete producer-supplier is required to obtain and submit the following macro-synthetic fiber information for review:

- Specific product brand name;
- Independently performed test results (include minimum average residual strength at dosage rate specified);
- Material Safety Data Sheet;
- Technical Data Sheet;
- Contact person’s name, title, address, email address, and phone number;

- A letter stating the subject material will not be changed without prior written notification to the county.

613.3.5.1 **Macro-Synthetic Approved Sources.** The following sources are considered approved for use as macro-synthetic fiber for concrete reinforcement at a rate of 5 pounds per cubic yard for pavement repair:

Suggested Macro Fiber Material by Source and Trade Name

Source	**Fiber Trade Name**
BASF Construction Chemical-Admixture Systems	MasterFiber™ MAC 100
Euclid Chemical Company	TUF-STRAND SF
Forta Corporation	Fort A-Ferro® Fiber
Fabpro	Performax
General Resources Technology, Inc.	Advantage Structural Fiber
Propex Concrete Systems	Novomesh 950 Fibermesh 650
PSI Packaging, Inc.	Max Ten
W.R. Grace & Company	Strux 90/40

613.3.5.2 **Macro-Synthetic Fiber Storage, and Handling.** Macro-synthetic fiber blend material shall be delivered, stored, handled, and mixed in accordance with Sec 505.2.3.1.

613.3.6 **Repair Removal and Waste Disposal.** Repairs shall be made to only one lane at a time. The removed concrete and any excavated subgrade material shall be disposed of at a location furnished by the Contractor or at locations on the right-of-way approved by the Engineer. If the material is disposed of outside the right-of-way, an acceptable written agreement executed with the property owner on whose property the material is placed shall be submitted by the Contractor.

613.3.7 **Crack Relief.** Crack relief is required at all locations where the repair is intersected by a full-depth pavement crack.

613.3.7.1 If the crack is located further than 6 feet from an established joint, an additional dowel basket assembly shall be installed and the pavement appropriately jointed.

613.3.7.2 If the crack is located 6 feet or less from an established joint omit the tie bars from that section and establish crack relief by installing and securing to the slab face a 1/4 inch thick by 3 inch wide (minimum) commercial quality polyethylene, flexible foam expansion material across the crack prior to concrete placement. Extend the isolation joint material from flush with the top of pavement repair to the base of the pavement with the full-depth crack. Maintain the isolation joint material in a vertical position throughout the entire thickness of the repair.

613.3.8 **Early Opening to Traffic Concrete Mix Design.** The contractor shall provide a trial mix design with materials proportioned so that the slump, entrained air content, workability, minimum compressive strength and minimum opening times are achieved. All mixes shall have fine aggregate proportioned at a minimum amount of 35 percent of the total aggregate volume.

The Contractor shall submit all mix design(s) for review and approval in accordance with Sec 501.

613.3.8.1 Mix designs shall be prepared by personnel experienced in the use of ASTM C 94, ASTM C 192, ACI 211.5R-01, ACI 301, and ACI 318 Chapter 5.

613.3.8.2 The contractor shall submit to the Engineer the following for review and approval no less than 14 days in advance of pre-production trial batch:

- **Mix Design.** Strength type, Pavement Repair Class, opening time, minimum opening compressive strength, sources, grade or type, and volumetric properties of the proposed concrete-mix materials (water, cement, coarse aggregate, fine aggregate, macro-fiber and admixture(s) (brands and dosages), and production water/cement ratio for 1 cubic yard of concrete at the specified target air entrainment. The mix should be developed that uses the minimum amount of cementitiuos materials to achieve performance requirements.

- **Special Requirements:** A Polycarboxylate-based HRWR (ASTM C494 Type F) is required for all mix designs. For Very Early Strength, at least 2 gallons of non-chloride accelerator (NCA) is required per cubic yard. For all mix designs, when the forecasted low air temperature during placement through the curing period to achievement of the minimum required strength is at or below 45 F, a minimum dosage of 2 gallons per cubic yard of calcium nitrite NCA with calcium chloride accelerator (up to 1 gallon of per cubic yard) is required.

- **Curing Material Plan.** The plan shall include moisture and thermal materials used to cure, cover and weight the cover materials so when placed and weighted that they remain in contact with the pavement surfaces and edges, providing an airtight enclosure during moisture and thermal curing period.

613.3.8.3 The contractor is responsible for complying with opening times, specified slump, plastic air content and minimum compressive strengths specified. The concrete for standard joint repair will be composed of materials, proportioning, air-entraining, mixing, slump, and transporting shall be in accordance with Sections 501 and 502, as applicable to concrete pavement, or as specified in this provision. Changes in the source of materials or concrete-mix proportions shall not be made without written authorization of the Engineer. Supplementary cementitiuos materials may be use, but are not required. Dosage of admixtures shall be determined by the manufacturer in accordance with ambient conditions expected at the time of placement. Admixture dosage shall be adjusted to achieve, slump, entrained air content, temperature and compressive strength requirements within the specified opening time. The admixture dosage shall not permit the segregation of aggregate at the time of concrete placement. Addition of non-chloride calcium nitrite accelerating or Type F or G polycarboxylate high-range water-reducing admixtures to increase slump after the concrete is delivered, but not discharged, is allowed only once. Failure to achieve the minimum air entrainment, concrete temperature, slump at the time of placement and compressive strength within the early opening time specified shall be cause for application of penalties or rejection of the mix design and the concrete placed.

613.3.8.4 **Water Reduction and Accelerator Requirements.** The County does not warranty the performance of the following mix designs as admixture dosages are

suggested and their amount can vary with cement and admixture manufacturer, ambient temperature, haul distance and batching sequence. It is required that optimum mix trials be made before the start of job site pours. This will allow the ready-mix concrete producer to determine the proper batching sequence and the required dosage of other admixtures needed to deliver the specified concrete mix to the job site. Type F or G Polycarboxylate-based High Range Water Reducer (HRWR) is required to be added at the manufacturing plant. Calcium chloride or Non-Chloride calcium nitrite Accelerator (NCA) is recommended to be added at the job the site.

613.3.8.5 When more than 3 gallons of NCA are used, the contractor may substitute up to 1 gallon of calcium nitrite NCA with 1 gallon of calcium chloride accelerator per cubic yard.

613.3.8.6 **Trial Slabs.** Before starting slab replacement work, the contractor shall complete a minimum of one (1) trial slab for each mix design, specified herein, as per the pay item in the contract documents. If the specified mix design fails to meet specification requirements, the contractor shall submit alternate mix design(s) using adjusted batch weights of the materials and admixtures specified. Trial slab(s) must be a minimum of 10 by 15 feet. The trial slab thickness must be at least 8 inches. The contractor shall produce a 4 ± 1 cubic yard pre-production trial batch at a non-critical location, at an on-site location selected by the Contractor, and agreed upon by the Engineer. The trial slabs shall be produced at approximately the same season and ambient temperature conditions as those anticipated during production. The trial slab concrete shall be manufactured, transported, constructed, finished, cured, and tested with the materials, tools, equipment, personnel, and methods to be used in completing concrete pavement repair. The Contractor shall provide the Engineer a 7-day minimum advance notification of trial batch production. The Contractor shall produce, transport, place, finish, moist cure and thermally cure the trial batch in the presence of the Engineer.

613.3.8.6.1 **Contingent Item.** Payment for trial slab, reinforced or non-reinforced, shall be made at the contract price for concrete pavement, joint repair or base (Non-reinforced) for the thickness placed. If no concrete pavement pay item exists, payment for the trial slab will be made at $75.00 per square yard.

613.3.8.7 **Concrete Placement and Workability.** Mobile volumetric mixers are not permitted. The maximum time permitted from the end of mixing to the completion of concrete discharge shall be twenty (20) minutes. All concrete remaining in the drum after this time shall be rejected and removed from the work site. No cold joints are allowed.

613.3.8.8 **Trial Slab Performance.** The trial slab(s) shall demonstrate that the contractor is capable of producing slab repair in conformance with these specifications. The contractor will be required to produce additional trial batches, at their expense, if the initial trail batch fails to conform to these specifications.

613.3.9 **Concrete Maturity Testing.** The contractor shall be required to provide maturity loggers and assist in the development, maintenance and verification of repair's strength-maturity relationship in accordance with County Standard Specification Section 507 Strength of Concrete Using the Maturity Method, when specified or allowed. When maturity testing is required, no trial slab will commence without contractor supplied maturity loggers. The maturity curve shall be

submitted to the Contractor by the Engineer after completion of the approved trial slab and at least 4 days in advance of production pavement repair.

613.3.10 **High Early Strength (24 - 48 Opening Time).** For pavement repair to be made and opened to traffic between 24 and 48 hours after placement, the Type I/II Portland cement, Polycarboxylate-based HRWR, water/cement ratio and slump suggested requirements are as follows:

High Early Strength (24 – 48 Hour Opening)
7.50 sack Type I/II Cement Trial Mix Design

Property	**Amount**
Type I/II cement, lbs	705
Coarse Aggregate (Class D), lbs	1725
Fine Aggregate (Class A), lbs	1155
Water (Maximum Allowable), lbs (gals)	268 (32.2)
ASTM C 260 Air Entraining Agent	Dosage to achieve 5.5%
Polycarboxylate-based HRWR (ASTM C494 Type F), ounces per cubic yard[1]	106
[1] EXP 950, Sika Sikament 610, Euclid Eucon SPC, GRT EVO 2500 or an approved equal shall be added at the manufacturing plant. Additional HRWR may be added once before placement to increase slump Type IL cement may be substituted for Type I/II cement	

613.3.10.1 The allowable Type I/II cement content shall not be less than 700 pounds or exceed 850 pounds per cubic yard. Water/cementitiuos ratio shall be maintained at ± 0.02 from the target established on the mix design and shall be within the minimum-maximum range when the tolerance is applied. All concrete shall have the additional properties:

Required High Early Strength (24-48 Hour Early Opening)
Mix Properties at the Time of Placement

Property	**Minimum**	**Maximum**
Water / Cement Ratio	0.30	0.40
Temperature at time of placement, °F	83	-
Slump at the time of placement, inch	4	6
Entrained Air, percent	4.0	7.0

613.3.10.2 No addition of water to the concrete shall be permitted after addition of the HRWR.

613.3.10.3 **Applicable Pavement Repair Pay Item Descriptions.** The accepted quantity for High Early Strength pavement or joint repair, not including trial slab(s), will be paid for at the contract unit price for each of the pay items included in the contract.

613.3.10.3.1 Joint Repair (High Early Strength), Item No. 613.10.17

613.3.10.3.2 Joint Repair (High Early Strength), Item No. 613.10.90

613.3.10.3.3 **Contingent Item.** Additional payment for Portland cement concrete pavement repair in excess of 8 inches thick shall be made at the rate of 10% of the contract unit price for the pavement, joint or base repair item specified for each additional inch in excess of 8" per S.Y. as a contingent item. (Ex.: Unit Price = $40.00, Thickness = 10". Additional payment: 10%/inch x $40.00 x (10-8 inches) = $8.00 per S.Y.)

613.3.11 **Very Early Strength (4 - 6 Hour Opening Time).** For the repair to be made and opened to traffic in 4 to 6 hours after placement, the Type I/II or III Portland cement, Polycarboxylate-based high-range water reducer (HRWR), water/cement ratio and slump requirements shall be option I (Type I/II cement) or 2 (Type III cement). Water/cementitiuos ratio shall be maintained at ± 0.02 from the target established on the mix design and shall be within the minimum-maximum range when the tolerance is applied.

613.3.11.1 Option I. The allowable Type I/II cement content shall not be less than 850 pounds or exceed 950 pounds per cubic yard.

Very Early Strength (4 – 6 Hour Opening)
9.57 sack Type I/II Cement Trial Mix Design

Material	**Amount**
Type I/II Cement, lbs	900
Coarse Aggregate (Class D), lbs	1630
Fine Aggregate (Class A), lbs	1080
Maximum Batch Water, lbs (gal)	342(41)
ASTM C 260 Air Entraining Agent	Dosage to achieve 5.5%
Polycarboxylate-based HRWR (ASTM C494 Type F), ounces	59
Calcium Nitrite (30% min.) Non-Chloride Accelerator (NCA) –ASTM C 494 Type C, ounces (gal)	980 (7.65)
[1]Aggregate Weights at SSD condition Type IL cement may be substituted for Type I/II cement	

613.3.11.2 Option II. The allowable Type III cement content shall not be less than 650 pounds or exceed 800 pounds per cubic yard.

Very Early Strength (4 – 6 Hour Opening)
7.00 sack Type III Cement Trial Mix Design

Material	**Amount**
Type III Cement, lbs	658
Coarse Aggregate (Class D), lbs [1]	1795
Fine Aggregate (Class A), lbs [1]	1170

Very Early Strength (4 – 6 Hour Opening)
7.00 sack Type III Cement Trial Mix Design

Material	**Amount**
Maximum Batch Water, lbs (gal)	250 (30)
ASTM C 260 Air Entraining Agent	Dosage to achieve 5.5%
Polycarboxylate-based HRWR (ASTM C494 Type F), ounces	100
Calcium Nitrite (30% min.) NCA ASTM C 494 Type C, ounces (6.6 gal)	842(6.6)
[1]Aggregate Weights at SSD condition	

613.3.11.2 No addition of water to the concrete shall be permitted after addition of the HRWR. All 4-6 hour very early opening concrete shall have the additional properties:

Required Very Early Strength (4 - 6 Hour Opening)
Mix Properties at the Time of Placement

Property	**Minimum**	**Maximum**
Water / Cement Ratio	0.30	0.40
Temperature at time of placement, °F	88	-
Slump at the time of placement, inch	4	6
Entrained Air, percent	4.0	7.0

613.3.11.3 **Applicable Pavement Repair Pay Item Descriptions.** The accepted quantity for Very Early Strength pavement repair, not including trial slab(s), will be paid for at the contract unit price for each of the pay items included in the contract.

613.3.11.3.1 Joint Repair (Very Early Strength), Item No. 613.10.90

613.3.11.3.2 Concrete Base (8" Non-Reinforced), Very Early Strength, Item No. 309-10.08

613.3.11.3.3 **Contingent Item.** Additional payment for Portland cement concrete pavement repair in excess of 8 inches thick shall be made at the rate of 10 percent of the contract unit price for the pavement repair item specified for each additional inch in excess of 8” per S.Y. as a contingent item. (Ex.: Unit Price = $40.00, Thickness = 10”. Additional payment: 10 percent / inch x $40.00 x (10-8 inches) = $8.00 per S.Y.)

613.3.12 **Concrete Mixing and Placement Limitations.** ~~Weather~~ Concrete Mixing and placement limitations shall be in accordance with Section 502.4.1.

613.3.13 **Entrained Air.** The quantity of air by volume entrained in early opening strength concrete shall be 5.5 ± 1.5 percent as determined in accordance with County Test Method QA-3 Air Content of Freshly Mixed Concrete by the Pressure Method.

613.3.14 **Consolidation.** Internal concrete vibrator(s) shall be supplied in accordance with Sec 502.3.7. Concrete shall be consolidated in accordance with Sec 502.4.7.3. Vibrators and equipment to operate vibrators shall be on-site and functional prior to arrival of concrete on site. No concrete shall be placed without operational vibrators.

613.3.15 If the concrete pavement has been resurfaced and where no additional structure is to be added to the existing overlay, or where the existing bituminous overlay is to be removed by milling, the repaired area shall be filled to the surface of the existing bituminous overlay with Portland cement concrete.

613.3.16 If the concrete pavement has been resurfaced and additional lifts are to be added over the existing overlay, the repair area shall be filled with Portland cement concrete to the surface of the underlying concrete pavement, and the remaining area shall be filled with approved hot-mix asphalt to the existing bituminous overlay surface. The hot-mix asphalt shall be placed in accordance with the specifications for that mix.

613.3.17 When the concrete pavement requires all milled areas to be resurfaced in the same work day prior to opening the pavement to traffic, pavement repairs identified after milling will be marked for future repair, and the area shall be resurfaced as planned for that work day. No additional lifts of hot-mix asphalt will be allowed until the marked pavement is repaired. The pavement repair shall be performed in accordance with Sec 613.

613.3.18 **Strike-off.** Delete Section 502.3.6 and replace with the following: The use of a vibrating screed parallel to the pavement's centerline is required for full depth repairs over 10 feet in length. For repairs 10 feet or less in length use a 10-foot straight edge, pulling the tool blade parallel to the longitudinal joint.

613.3.19 **Concrete Pavement Repair Smoothness.** All repaired areas shall be finished to provide a smooth ride and to the satisfaction of the Engineer. Prior to surface texturing, repaired areas shall be checked with a straightedge in accordance with Sec 502.4.7.7 if required by the Engineer. When straightedged, the surface of the repaired area shall not vary more than 1/8" per 10' from a straight line between the surface of the existing pavement on each side of the repaired area, regardless if the repair is to be resurfaced or not. When the tolerance is not met, plastic concrete shall be added or removed from the repair until the surface tolerance is met.

613.3.20 **Surface Texturing.** No concrete shall be placed without proper texturing equipment on the job. The repair texture shall be similar to that on the surrounding pavement. For concrete not to be overlaid and placed on Arterial roads, concrete shall be finished with a wire comb in accordance with Sec 502.3.8.3. For all other conditions, concrete shall be finished with a burlap fabric drag in accordance with Sec 502.3.8.1.

613.3.21 **Pavement Repair Date Stamping.** Using metal dies in accordance with Sec 502.3.10.2 the Contractor shall stamp the pour date into the repair that is not to be overlaid after surface texturing, but before curing is applied. The placement date (MM-DD-YY) of each pavement repair shall be stamped in the plastic concrete. The stamped date shall be located near the repair's transverse and longitudinal joint on a troweled surface not closer than 1 foot to edge of pavement repair and face outward so as to be read from the near shoulder. On roadways with narrow shoulders or curbs, the pour date shall be oriented (parallel with the transverse joint) so that they can be read from the roadway in the direction of traffic flow.

613.3.22 **Rain Protection.** Rain protection shall be in accordance with Secs 502.3.11 and 502.10.1. No concrete shall be placed without adequate type and quantity of rain protection material on the job.

613.3.23 **Moisture and Temperature Retention Curing.** No concrete shall be placed without proper curing material on the job. Immediately after finishing and as soon as marring of the concrete will not occur, the entire surface of the newly placed concrete shall be cured with one or more of the following methods:

613.3.23.1 **Moisture Retention Curing.** Moisture retention curing material is required If temperature retention material is not certified to meet the water retention requirements in this section. Material shall be on repair site prior to concrete placement. Immediately after finishing and as soon as marring of the concrete will not occur, typically within 30 minutes after placement, the entire surface of the newly placed concrete shall be cured with one of the five following moisture retention materials:

613.3.23.1.1 **Polyethylene Sheeting.** Polyethylene sheeting for moist curing Portland cement concrete shall have a minimum nominal thickness of 4.0 mils and be white opaque (Hot Weather), clear or black (Cold Weather). Polyethylene sheeting physical requirements shall be in accordance with ASTM C 171. Sheeting shall extend 12 inches beyond the edges of placement, be secured to the perimeter of the pavement repair with 15-pound minimum sand bags spaced 12 inches center-to-center, beginning at the repair edge and proceeding inward in a grid pattern over the entire placement area to ensure an air-tight enclosure.

613.3.23.1.2 **White-Burlap Polyethylene Sheeting.** White-Burlap Polyethylene Sheeting for moist curing shall consist of burlap weighing not less than 9 ounces/yard^2 extrusion coated on one side with white opaque polyethylene of a minimum nominal thickness of 4.0 mils and meeting the requirements of ASTM C 171. Sheeting shall be secured to the perimeter of the pavement repair to ensure an air-tight enclosure in the same manner as the polyethylene sheeting. Burlap shall be maintained in a moist condition through the curing period.

613.3.23.1.3 **High Performance Curing Compound**. Curing compound for moist curing concrete not to be overlaid with hot mix asphalt shall consist of a high performance white liquid membrane-forming compound that conforms to the requirements of ASTM C 1315 for Type 2, Class A or B as follows:

1. Percent Solids. The curing compound shall have a minimum of 42 percent solids (total solids minus pigment) by total weight and the vehicle shall be 100 percent poly-alpha-methylstyrene (PAMS)

2. Water retention. As per ASTM C 156 the loss of water shall not be more than 0.15 kg/m2 at 24 hours and no more than 0.40 kg/m^2 at 72 hours

3. Reflectance. As per ASTM E 1347, the three-day reflectance readings shall be greater than 65

4. Drying Time. As per ASTM C 1315 Part 8.3, shall set to touch in no longer than one hour after application and will be tack-free in no longer than four hours after application.

5. Application rate. The application rate of at least 1 gallon per no more than 200 square feet is required.

6. Flash Point. As per ASTM C 1315 Part 8.3, shall have a flash point greater than 100 F

613.3.23.1.**4 Tack Coat.** When hot mix asphalt is to be applied immediately after compressive strength is achieved and before opening to traffic, apply SS-1H meeting the requirements of Sec 1015 and applied in accordance with Sec 407 at a rate of 0.07 to 0.10 gallon per square yard.

613.3.23.1.5 **Self-Dissipating Curing Compound.** When hot mix asphalt is to be applied after a minimum of 5 days after compressive strength is achieved and after opening to traffic, apply a dissipating curing compound shall be applied with material being in accordance with ASTM C 309 Type I, Class B curing compound. The application rate of at least 1 gallon per no more than 200 square feet is required.

613.3.23.2 **Temperature Retention Curing.** If temperature retention material is not certified to meet the water retention requirements for water vapor transmission rate (WVTR) of the sheet material of no more than 10g/m^2 when tested in accordance with ASTM E 96, then moisture retention curing or polyethylene sheeting will be required with temperature retention curing. In accordance with Sec 1058, all polyethylene sheeting will be required to be a minimum of 4.0 mils thick. After moisture retention curing is applied and has set, closed-cell curing blankets shall be used. Closed-cell curing blankets (multi-use) shall be manufactured for hot and cold weather concrete curing use in accordance with Sec 1055.4.1.4 Closed-Cell Curing Blankets (Multi-Use), and shall be certified having a minimum R-value of 3. Cover materials shall be so placed and weighted that they remain in contact with the pavement surfaces and edges, providing an airtight enclosure in the same manner as in Sec 613.3.23.1. Application of curing blankets shall be based on ambient temperature and desired opening time in accordance with the following tables.

High Early Strength (24-48 Hour Opening to Traffic)
Temperature Retention Requirements*

Minimum Ambient Temperature Range in Curing Period, °F	**Time to Opening Time (TOT), hrs**		
	TOT ≤ 24	24 < TOT ≤ 36	36 < TOT ≤ 48
< 50**	Yes	Yes	Yes
50 - 65	Yes	No	No
> 65	No	No	No

*To reduce thermal cracking thermal curing shall be removed when the concrete temperature reaches 140° F.
** Concrete exposed to temperatures below 45° F may require additional curing blankets.

Very Early Strength (4-6 Hour Opening to Traffic)
Temperature Retention Requirements*

Minimum Ambient Temperature Range in Curing Period, °F	Opening Time (T), hrs
	4 ≤ T ≤ 6
≤ 80**	Yes
> 80	No
*To reduce thermal cracking thermal curing shall be removed when the concrete temperature reaches 140° F. **Concrete exposed to temperatures below 45° F may require additional curing blankets.	

613.3.24 **Concrete Joint Sawing.** Equipment shall be in accordance with Sec 502.3.14 and the requirements specified herein. Concrete maturity shall be used to determine the compressive strengths specified below when maturity testing is required.

613.3.24.1 **Standard Concrete Saw**. When a standard (water cooled diamond bladed) concrete saw is used to cut the transverse or longitudinal joint when the pavement reaches 950 psi compressive strength (before final set) the following applies:

- For pavement < 7 inches thick, saw the joint to a minimum depth of one-fourth (T/4) the specified pavement thickness.

- For pavements ≥ 7 inches thick, saw the joint to a minimum depth of one-third (T/3) the specified pavement thickness.

- Saw joints 3/8 inch ± 1/16 inch wide as measured at the time of sawing.

613.3.24.2 **Early-Entry Saw.** When using early-entry (dry cut, light weight) saws, only use saw blades and skid plates as recommended by the manufacturer. Perform the early entry sawing reaches 150 psi compressive strength (after initial set and before final set) as follows:

- Saw the joint 2-1/4 to 2-1/2 inches deep.

- Saw joints approximately 1/8 inch ± 1/16 inch wide as measured at the time of sawing.

613.3.25 **Concrete Joint Sealing.** If the repaired area is not to be resurfaced, the joints and overcut from the sawing operations shall be filled with an approved joint material. For concrete pavement not to be resurfaced, seal joints in accordance with Sec 502.9.

613.3.25.1 **Sealing Crack Relief.** Remove isolation joint material to a depth of 1 inch below the pavement surface. Immediately prior to sealing, the crack relief must be clean, dry, and free of all incompressible material. Seal the crack relief with hot-poured sealant as specified in Sec 613.3.25. The top of the sealant (after cooling) must be flush to 1/8 inch below the surface of the pavement.

613.3.26 **Compressive Strength Requirements.** For High Early Strength (24 to 48 hour opening) repair, the opening compressive strength shall be attained based upon concrete cylinders cast in the field and broken by the Division of Construction-Materials Section. At the

contractor's option, the opening compressive strength of the 24 to 48 hour mix may be determined in accordance with Sec 507. For Very Early Strength (4 to 6 hour opening) repair, the opening compressive strength shall be attained based upon concrete maturity in accordance with Sec 507. When the repair is to be made and opened early to traffic, the concrete shall be in accordance with the following requirements:

28-Day Minimum Compressive Strength Requirement

Property	Repair Thickness	Minimum Required, psi
28-day Compressive Strength	All thicknesses	5,000

Early Compressive Strength for Opening Requirements

Repair Class	Repair Thickness, inches	Compressive Strength for Opening to Traffic, psi[a]	
		Repair Length, 6 - 10 feet	Repair Length, > 10 feet
A	$T \leq 8$	3,000	3,600
B	$8 < T \leq 9$	2,400	2,700
C	$9 < T < 10$	2,200	2,300
D	$T \geq 10$	2,000	2,000

[a]The cure time shall be the time determined to reach the minimum compressive strength for opening to traffic. The roadway shall not be opened to traffic in less than the early opening time specified. See Sec 613.3.27.2 when time to opening exceeds the specified maximum for the type of pavement, joint or base repair.

613.3.27 **Damaged or Defective Concrete.** Rain damage, spalling and transverse shrinkage cracks will be cause for rejection of the concrete. Concrete pavement not in compliance with straightedge smoothness specifications shall be corrected by grinding or removal and replacement. Concrete repair with low pavement repair compressive strength at the time of opening will be subject to a pay adjustment.

613.3.27.1 The Engineer shall reject any pavement repair area that develops 1 or more transverse cracks within 21 days after placement. The contractor shall remove and replace this pavement repair with pavement repair concrete that complies with the specifications. A transverse crack is a crack running from one longitudinal edge of the panel to the other. The Engineer shall adjust payment for concrete pavement repair that is not opened within the specified time due to failure to meet the specified minimum compressive strength. Compressive strength will be determined as specified for the early opening repair required.

613.3.27.2 **Pay Adjustment for Failure to Meet Minimum Opening Compressive Strength of Pavement, Joint or Base Repair.** The Engineer shall adjust payment for

concrete repair that is not opened within the specified time due to failure to meet the specified minimum compressive strength as follows:

613.3.27.2.1 Payment at the Contract price for the above bid items shall be full compensation for all labor, equipment and material required to do the Work. Work is the defined as all the pavement, joint or base repair work performed during each closure period. Where Work does not conform to the minimum compressive strength requirements and delays the time to opening beyond the maximum of 6.0 hours for Very Early Strength or 48.0 hours for High Early Strength, a payment adjustment (PA) will be made according to the following equation:

PA = Quantity x Bid Unit Price x (PF)

Time to opening (TTO) is measured from when the last repair concrete placement is begun until removal of the traffic control from the lane closure is completed. Time of opening shall be determined by the Engineer to a quarter hour basis. Pay factor shall be determined to the nearest 0.01. The pay factor (PF) for the each lane closure shall be determined according to the following appropriate Tables:

Very Early Opening	
Time to Opening (TTO), hrs	**Pay Factor (PF)**
TTO ≤ 6.0	PF = 1.00
6.0 < TTO < 8.0	PF = 1-0.25x(TTO-6)
TTO ≥ 8.0	PF = 0.50

High Early Opening	
Time to Opening (TTO), hrs	**Pay Factor (PF)**
TTO ≤ 48.0	PF = 1.00
48.0 < TTO < 72.0	PF = 1-0.0208x(TTO-48)
TTO ≥ 72.0	PF = 0.50

613.3.27.3 **Diamond Grinding.** Pavement repair(s) that fail to meet the smoothness requirement shall be corrected by diamond grinding in accordance with the following.

613.3.27.3.1 **Description.** This work shall consist of grinding the surface of Portland cement concrete pavement repair as directed by the Engineer and as specified in these special provisions.

613.3.27.3.2 **Location.** Grinding shall begin and end at lines perpendicular to the pavement center line and shall be centered within the lane width. When deficient concrete repair pavement is ground, the grinding shall take place in the longitudinal direction of the traveled way, shall cover the full lane width and smoothly transition into and out of the repair.

613.3.27.3.3 **Texture.** Grinding concrete pavement repair must result in a parallel corduroy texture with grooves from 0.08 to 0.12 inch wide and from 50 to 60 grooves per foot of width. Grooves must be from 0.06 to 0.08 inch from the top of the ridge to the bottom of the groove.

613.3.27.3.4 **Profile Grinding.** Grinding concrete pavement repair constructed as part of the project that is not in compliance with straightedge smoothness specifications must comply with the following:

1. Both sides of transverse joints and cracks must have the same depth of texture. The surface must be within 0.01 foot of the lower edge of a 10-foot long straightedge when laid parallel with the centerline with its midpoint at the joint or crack.

2. If necessary, perform additional grinding to achieve the required surface smoothness. Straightedge requirements do not apply to areas abnormally depressed from subsidence or other localized causes. End straightedge testing 25 feet before and resume 25 feet after these areas.

3. Cross-slope must be uniform and have positive drainage across the traveled way and shoulder. The surface must be within 0.02 foot of the lower edge of a 10-foot long straightedge when laid perpendicular to the centerline.

613.3.27.3.5 **Pavement Grinding Residue.** Remove grinding residue with a vacuum attached to the grinding machine. Prevent residue from flowing across the pavement or remaining on the pavement surface. Dispose of grinding residue at an appropriate disposal facility. Do not store concrete pavement grinding residue within the highway. If authorized, the Contractor may transport liquid grinding residue to an offsite location for drying. The offsite drying location must be identified and protected under the SWPPP or Water Pollution Control Program.

613.3.27.3.6 **Pavement Repair Replacement.** Instead of grinding, the Contractor may remove and replace deficient concrete repair pavement at their expense. The new concrete pavement must be the same thickness as the removed pavement. Replace between longitudinal joints or pavement edges and between transverse joints. Do not remove portions of slabs.

613.4 **Method of Measurement.**

613.4.1 Measurement for furnishing and placing Portland Cement Concrete and macro-fiber will be made to the nearest 0.1 square yard.

613.4.2 Full depth pavement removal will be measured as Removal of Rigid Pavement to the nearest square yard.

613.4.3 Measurement for rock base preparation and stabilization will be made to the nearest 0.1 square yard.

613.4.4 No measurement will be made for drilling dowel or tie-bar holes, keyway construction, furnishing and installing dowels, tie-bars, epoxy or polyester bonding agent, saw cutting and removing existing concrete pavements, concrete maturity loggers, assistance with creation,

verification and maintenance of concrete-maturity curve, curing, macro-fiber, date stamping, or for subgrade or aggregate base compaction.

613.5 **Basis of Payment**. The accepted quantities of pavement repair at transverse or longitudinal joints or concrete base will be paid for at the contract unit price for removal of rigid pavement and for pavement repair. No direct payment will be made for: drilling and installing dowels; saw cutting pavements; subgrade or aggregate base compaction; aggregate base material used to replace unstable grade; or other work incidental to the completed pavement repair.

613.5.1 No extra compensation for removal and replacement of temporary repair, contractor optional extra repair depth not to exceed 2 inches, corrective finishing or repairs to damaged or defective concrete will be paid.

613.5.2 The Pay Adjustment shown in Sec 613.3.27.2 is used for the purpose of determining penalties. The Engineer shall adjust payment for concrete pavement repair when opening to traffic exceeds the maximum specified. (Ex.: PA = Quantity x Bid Unit Price x (PF); for a very early opening time to reach the minimum compressive strength it took 7 hours; unit price is $300/sy; the quantity represented by the closure was 75 SY; the PF = 1-0.25*(TTO-6) = 1-0.25*(7-6) = 1-0.25 = 0.75; so the actual payment is the PA = 75 sy x $300/sy x 0.75 = $16,875)

ITEMIZED BID

FEDERAL PROJECT NO. STP-4901(635)
COUNTY PROJECT NO. AR-1388

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
ROADWAY ITEMS					
201-20.11	Clearing Vegetation from Pedestrian Access Route	L.S.	1		
202-20.10	Removal of Improvements	L.S.	1		
202-20.10	Removal of Rigid Pavement	S.Y.	394.6		
203-10.00	Class "A" Excavation	C.Y.	688.7		
203-10.30	Land Disturbance Permits	L.S.	1		
304-05.04	Type 5 Aggregate Base (4" Thick)	S.Y.	3,081.3		
309-11.08	Concrete Base (8", Non-Reinforced)	S.Y.	233.9		
404-09.04	Superpave Asphaltic Concrete SP 95 (PG 70-22) D	TON	110.0		
404-12.72	Superpave Asphaltic Concrete SP 125 (PG 70-22) DLP	TON	3,680.1		
405-30.10	Type "C" Bituminous Concrete (Pavement)	TON	10.8		
405-30.20	Type "D" Bituminous Concrete (Pavement)	TON	28.9		
405-30.30	Type "X" Bituminous Concrete (Base)	TON	859.1		
407-10.27	Tack Emulsified Asphalt (SS-1H)	GAL.	3,100		

ITEMIZED BID

FEDERAL PROJECT NO. STP-4901(635)
COUNTY PROJECT NO. AR-1388

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
412-10.02	Pavement Surfacing and Texturing (0" to 2"), Concrete or Asphalt	S.Y.	28,117		
509-10.08	Concrete Base (8", Non-Reinforced), Very Early Strength	S.Y.	160.7		
603-10.35	Adjust Water Service Valve Box to Grade	EACH	3		
604-20.30	Adjusting Manhole to Grade	EACH	21		
604-21.95	Replace Precast Inlet Top	EACH	6		
604-90.40	Adjust Inlet Stone to Grade	EACH	1		
604-90.50	Replace Precast Inlet Top and Adjust to Grade	EACH	4		
604-90.52	Replace Inlet Sill	EACH	3		
608-10.90	Remove & Replace Concrete Median / Island	S.Y.	180.8		
608-50.96	Remove & Replace Paved Approach (6")	S.Y.	68.2		
609-10.54	Curb & Gutter, Mountable (6")	L.F.	200		
609-10.93	Remove and Replace Curb & Gutter (Various Widths), Vertical / Mountable	L.F.	3,334		
609-20.90	Remove and Replace Integral Curb (6" Height and Under)	L.F.	257		
612-30.10	Standard Traffic Control Devices	L.S.	1		
612-60.92	Arrow Panel, Type "B" (Noiseless), Rental	EACH	4		

ITEMIZED BID

FEDERAL PROJECT NO. STP-4901(635)
COUNTY PROJECT NO. AR-1388

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
613-10.18	Joint Repair - Transverse, High Early Strength	S.Y.	368.6		
613-10.91	Joint Repair - Transverse, Very Early Strength	S.Y.	52.0		
619-00.00	Mobilization	L.S.	1		
803-20.00	Strip Sodding	S.Y.	1,232		
806-45.00	Inlet Protection	L.S.	1		
	SUB TOTAL ROADWAY ITEMS				
PEDESTRIAN & BICYCLE ITEMS					
412-20.00	Sidewalk Grinding	EACH	100		
608-60.08	Concrete Sidewalk, Curb Ramp	EACH	27		
608-60.94	Remove & Replace Concrete Sidewalk (4" Thick)	S.Y.	473.9		
608-60.96	Remove & Replace Concrete Sidewalk (6" Thick)	S.Y.	110.2		
608-60.98	Truncated Domes for Curb Ramp (New Construction)	S.F.	30		
	SUB TOTAL BICYLCE & PEDESTRIAN ITEMS				

SUMMARY OF QUANTITIES

SHREWSBURY AVENUE - LANSDOWNE AVENUE INFRASTRUCTURE
ST. LOUIS COUNTY PROJECT NO. AR-1388
FEDERAL PROJECT NO. STP-4901 (635)

SUBTOTAL	PROJECT TOTAL	UNIT	ITEM NO.	DESCRIPTION	REMARKS
				ROADWAY ITEMS	
1	1	L.S.	201-20.11	CLEARING VEGETATION FROM PEDESTRIAN ACCESS ROUTE	Not shown on B sheets.
1	1	L.S.	202-20.10	REMOVAL OF IMPROVEMENTS	Not shown on B sheets.
394.6	394.6	S.Y.	202-22.30	REMOVAL OF RIGID PAVEMENT	
626.1	688.7	C.Y.	203-10.00	CLASS "A" EXCAVATION	10% added. Includes Removal of Bituminous Concrete pavement.
1	1	L.S.	203-10.30	LAND DISTURBANCE PERMIT	
2801.2	3081.3	S.Y.	304-05.04	TYPE 5 AGGREGATE BASE (4" Thick)	Includes 10% additional.
233.9	233.9	S.Y.	309-11.08	CONCRETE BASE (8" NON-REINFORCED)	
110.0	110.0	TON	404-09.04	SUPERPAVE ASPHALTIC CONCRETE MIXTURE SP95 (PG 70-22) D	
3,345.5	3,680.1	TON	404-12.72	SUPERPAVE ASPHALTIC CONCRETE MIXTURE SP125 (PG 70-22) DLP	Estimated at 2" thick and 2.16 T/ CY. Includes side street approaches. 10% added.
9.8	10.8	TON	405-30.10	TYPE "C" BITUMINOUS PAVEMENT	Includes 10% additional
24.1	28.9	TON	405-30.20	TYPE "D" BITUMINOUS CONCRETE (PAVEMENT)	As directed by Engineer, 20% additional shown.
781.0	859.1	TON	405-30.30	TYPE "X" BITUMINOUS CONCRETE (BASE)	Includes 10% additional
3,100	3,100	GAL	407-10.27	TACK-EMULSIFIED ASPHALT (SS-1H)	Estimated at 0.10 Gallon / SY. Includes 10% additional (rounded to up nearest 10 gal.)
28,117	28,117	S.Y.	412-10.02	PAVEMENT SURFACING AND TEXTURING (0" - 2"), CONCRETE OR ASPHALT	Includes side street approaches
100	100	EACH	412-20.00	SIDEWALK GRINDING	
160.7	160.7	S.Y.	509-10.08	CONCRETE BASE (8" NON-REINFORCED), VERY EARLY STRENGTH *	
3	3	EACH	603-10.35	ADJUST WATER SERVICE VALVE BOX TO GRADE	
21	21	EACH	604-20.30	ADJUSTING MANHOLE TO GRADE	
6	6	EACH	604-21.95	REPLACE PRECAST INLET TOP	
1	1	EACH	604-90.40	ADJUST INLET STONE TO GRADE	
4	4	EACH	604-90.50	REPLACE PRECAST INLET TOP AND ADJUST TO GRADE	
3	3	EACH	604-90.52	REPLACE INLET SILL	
180.8	180.8	S.Y.	608-10.90	REMOVE AND REPLACE CONCRETE MEDIAN / ISLAND	
68.2	68.2	S.Y.	608-50.96	REMOVE AND REPLACE PAVED APPROACH (6")	
27	27	EACH	608-60.08	CONCRETE SIDEWALK, CURB RAMP	Includes all items as described in Special Provision 100.20.9 and sawcutting as needed
473.9	473.9	S.Y.	608-60.94	REMOVE AND REPLACE CONCRETE SIDEWALK (4" THICK)	Includes sawcutting.
110.2	110.2	S.Y.	608-60.96	REMOVE AND REPLACE CONCRETE SIDEWALK (6" THICK)	Includes sawcutting.
30	30	S.F.	608-60.98	TRUNCATED DOMES FOR CURB RAMPS (New Construction)	
200	200	L.F.	609-10.54	CURB & GUTTER, MOUNTABLE (6")	Includes sawcutting as needed
3,334	3,334	L.F.	609-10.93	REMOVE AND REPLACE CURB & GUTTER (VARIOUS WIDTHS), VERTICAL/ MOUNTABLE	Includes sawcutting, excavation, removal of entire C&G section, and aggregate base
257	257	L.F.	609-20.90	REMOVE AND REPLACE INTEGRAL CURB (6" HEIGHT AND UNDER)	Includes sawcutting and aggregate base
1	1	L.S.	612-30.10	STANDARD TRAFFIC CONTROL DEVICES	Not shown on B sheets.
4	4	EACH	612-60.92	ARROW PANEL, TYPE "B" (NOISELESS), RENTAL	
368.6	368.6	S.Y.	613-10.18	JOINT REPAIR - TRANSVERSE, HIGH EARLY STRENGTH *	Includes all items as described in JSP 1100.70.8
52.0	52.0	S.Y.	613-10.91	JOINT REPAIR - TRANSVERSE, VERY EARLY STRENGTH *	Includes all items as described in JSP 1100.70.8
1	1	L.S.	619-00.00	MOBILIZATION	
1,120	1,232	S.Y.	803-20.00	STRIP SODDING	Includes 10% additional
1	1	L.S.	806-45.00	INLET PROTECTION	Not shown on B sheets.
				COUNTY TRAFFIC SIGNAL ITEMS	
24	24	EACH	904-24.01	SIGNAL HEAD, TYPE 1S, PEDESTRIAN	
7	7	EACH	904-28.10	POST, SIGNAL W/ SQUARE PEDESTAL BASE AND POST CAP, 10' TOTAL HEIGHT, ALUMINUM	
24	24	EACH	904-49.20	DETECTOR, PEDESTRIAN PUSH BUTTON	
23	23	L.F.	904-51.00	CONDUIT, 1"	
89	89	L.F.	904-52.00	CONDUIT, 2"	
1	1	EACH	904-74.99	CONDUIT REPAIR (LOCATE BROKEN CONDUIT, EXCAVATE, REMOVE EXISTING CABLE, REPAIR/ REPLACE CONDUIT,	
				REINSTALL CABLE, BACKFILL AND RESTORE). (DOES NOT INCLUDE SIDEWALK OR PAVEMENT R & R)	
840	840	L.F.	904-83.05	CABLE, SIGNAL, #14 GAUGE, 5 CONDUCTOR	
160	160	L.F.	904-84.00	WIRE, STRANDED GROUND, #6 GAUGE	
484	484	L.F.	904-85.05	CABLE DETECTOR LOOP, #14 GAUGE, 1 CONDUCTOR, W/ TUBE JACKET (IN CONDUIT AND PULL BOXES)	
10,653	10,653	L.F.	904-85.06	CABLE DETECTOR LOOP, #14 GAUGE, 1 CONDUCTOR, W/ TUBE JACKET (IN SAWED SLOT)	
810	810	L.F.	904-85.18	CABLE, PUSH BUTTON AND/ OR DETECTOR LOOP LEAD-IN, #18 GAUGE, 2 CONDUCTOR (SHIELDED)	
7	7	EACH	904-91.73	BASE, TYPE C-3, CONCRETE	
7	7	EACH	904-95.10	OPENING DRILLED IN EXISTING CONCRETE PULL BOX	
1	1	EACH	904-95.31	ADJUSTMENT OF PREFORMED PULL BOX	
4	4	EACH	904-95.40	ADJUSTMENT OF CONCRETE SINGLE PULL BOX	
24	24	EACH	904-97.42	REMOVAL OF SIGNAL HEAD	
1	1	EACH	904-98.60	RELOCATION OF EXISTING PUSH BUTTON	
1	1	EACH	904-98.70	RELOCATION OF EXISTING SIGNAL HEAD	
				*** INDICATES CHANGE IN PAY ITEM NUMBER AND DESCRIPTION UNDER ADDENDUM NO.2**	

COUNTY PROJECT NO. AR-1388

FEDERAL PROJECT NO. STP-4901(635)

E-W GATEWAY TIP NO. 5562-14

MSD: N/A

MSD BASE MAP: J-22, J-23

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
	5/16/14			ADDENDUM NO. 2

DISCLAIMER OF RESPONSIBILITY: I hereby certify that the documents intended to be authorized by my seal are limited to the sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part of the contemplated project or survey

STATE OF MISSOURI REGISTERED PROFESSIONAL ENGINEER DANIEL JOSEPH FAUKE NUMBER PE-2007002782

DATE: May 16, 2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
ST. LOUIS, MISSOURI 63132
(314) 615-8643

DANIEL JOSEPH FAUKE
PROFESSIONAL ENGINEER
LICENSE NO. 2007002782

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

SHREWSBURY AVENUE - LANSDOWNE AVENUE INFRASTRUCTURE

SUMMARY OF QUANTITIES

DESIGNED: DJF

DRAWN: DJF

CHECKED:

SHEET SEQUENCE: 2A OF 39

202-22.30 REMOVAL OF RIGID PAVEMENT

As directed by the Engineer. Includes sawcutting.

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y.(0.1)	REMARKS
Shrewsbury Ave	Rt / Lt		233.9	R&R 8" concrete base (see Item No. 309-11.08)
Shrewsbury Ave	Rt / Lt		160.7	R&R 8" concrete base (see Item No. 309-10.08)
TOTAL			**394.6**	

203-10.00 CLASS "A" EXCAVATION

For R&R 8" concrete base, asphalt base repairs, R&R concrete median/ islands, R&R 6" paved approaches, and R&R 6" sidewalk (4" depth unless noted otherwise).

LOCATION	SIDE (Rt / Lt)		QUANTITY C.Y.(0.1)	REMARKS
Shrewsbury Ave	Rt / Lt		17.9	R&R 8" concrete base (see Item No. 309-10.08)
			26.0	R&R 8" concrete base (see Item No. 309-11.38)
Lansdowne Ave	Rt / Lt		542.3	Type "X" asphalt base repair; 12" depth (see Item No. 405-30.30)
Shrewsbury Ave	Rt / Lt		20.1	R&R concrete median/ island (see Item No. 608-10.90)
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		7.6	R&R 6" paved approach (see Item No. 608-50.96)
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		12.2	R&R 6" sidewalk (see Item No. 608-60.96)
TOTAL			**626.1**	

304-05.04 TYPE 5 AGGREGATE (4" THICK)

For use under 8" concrete bases, asphalt base repairs, 6" sidewalks, paved approaches, transverse joint repairs, and concrete medians.

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y.(0.1)	REMARKS
Shrewsbury Ave	Rt / Lt		160.7	for R&R 8" concrete base (see Item No. 309-10.08)
			233.9	for R&R 8" concrete base (see Item No. 309-11.38)
Lansdowne Ave	Rt / Lt		1627.0	for Type "X" asphalt base repair (see Item No. 405-30.30)
Shrewsbury Ave	Rt / Lt		180.8	for R&R concrete median/ island (see Item No. 608-10.90)
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		68.2	for R&R 6" paved approach (see Item No. 608-50.96)
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		110.0	for R&R 6" sidewalk (see Item No. 608-60.96)
Shrewsbury Ave	Rt / Lt		368.6	for transverse joint repair (see Item No. 613-10.17)
			52.0	for transverse joint repair (see Item No. 613-10.90)
TOTAL			**2,801.2**	

309-11.08 CONCRETE BASE (8" NON-REINFORCED)

As directed by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y.(0.1)	REMARKS
4111 Shrewsbury	Rt		16.0	(12' x 12'); located in through lane
4113 Shrewsbury	Rt		20.0	(15' x 12'); located in curb lane
7502 Arlington	Rt		12.0	(12' x 9'); located in through lane
7502 Arlington	Rt		18.0	(18' x 9'); located in curb lane
7502 Arlington	Rt		8.7	(13' x 6'); located in curb lane
7505 Shrewsbury	Rt		32.0	(12' x 24'); located in through lane
7500 Lansdowne	Rt		13.3	(12' x 10'); located in curb lane
7501 Murdoch (office building)	Rt		18.3	(15' x 11'); located in through lane
Shrewsbury at Arlington	Lt		15.6	(10' x 14'); located in curb lane
Laclede Gas Complex	Lt		40.0	(12' x 30'); located in curb lane (opposite 7504 Suffolk)
Laclede Gas Complex	Lt		20.0	(15' x 12'); located in through lane (opposite 7504 Suffolk)
Laclede Gas Complex	Lt		20.0	(15' x 12'); located in curb lane (opposite 7504 Suffolk)
TOTAL			**233.9**	

404-09.04 SUPERPAVE ASPHALTIC CONCRETE MIXTURE SP95 (PG70-22)D

Exact locations & quantities to be determined by the Engineer. Estimated at 2.16 T/CY.

LOCATION	FROM	TO	QUANTITY TON (0.1)	REMARKS
Shrewsbury Ave	Big Bend Blvd	Murdoch Ave	110.0	For use in spot wedging
TOTAL			**110.0**	

NOTE:

ITEM NUMBER 309-10.08, CONCRETE BASE (8" NON-REINFORCED), TYPE III CEMENT W/ ACCELERATOR, 8.5 SACK HAS BEEN REPLACED WITH ITEM NO. 509-10.08, CONCRETE BASE (8" NON-REINFORCED), VERY EARLY STRENGTH PER ADDENDUM NO. 2.

404-12.72 SUPERPAVE ASPHALTIC CONCRETE MIXTURE SP125 (PG70-22)DLP

Exact locations & quantities to be determined by the Engineer. Approximately 2" thick, estimated at 2.16 T/CY.

LOCATION	FROM	TO	QUANTITY TON (0.1)	REMARKS
Shrewsbury Ave	Big Bend Blvd	I-44 (End of Maint.)	1,400.4	mainline pavement north of I-44
			22.4	approach at Suffolk Ave
			44.6	approach at Arlington Ave
	I-44 (End of Maint.)	Murdoch Ave	921.2	mainline south of I-44; includes approaches at Murdoch Ave
			28.1	approaches at Sutherland Ave (117 SY each)
			36.6	approaches at Lansdowne Ave
			18.7	approaches at Devonshire Ave
Lansdowne Ave	Shrewsbury	St. Vincent Ave	616.9	mainline; does not include approaches at Shrewsbury Ave
			15.5	side street (St. Vincent Ave).
Lansdowne Ave	St. Vincent Ave	City Limits (EOM)	170.6	mainline; does not include approach at Murdoch Cutofff
			70.3	approach at Mudoch Cutoff
TOTAL			**3,345.5**	

405-30.10 TYPE "C" BITUMINOUS CONCRETE (PAVEMENT)

Exact locations & quantities to be determined by the Engineer. Estimated at 2.16 T/CY.

LOCATION	FROM	TO	QUANTITY TON (0.1)	REMARKS
Laclede Gas entrance	Lt		5.0	overlay drive approach; (11' x 34', 2" thick); opposite 4117
Laclede Gas entrance	Lt		4.8	overlay drive approach; (11' x 33', 2" thick); opposite 4113
TOTAL			**9.8**	

405-30.20 TYPE "D" BITUMINOUS CONCRETE (PAVEMENT)

Exact locations & quantities to be determined by the Engineer. Estimated at 2.16 T/CY.

LOCATION	SIDE (Rt / Lt)		QUANTITY TON (0.1)	REMARKS
7500 Big Bend (KFC)	Rt		3.4	overlay drive approach; (40' x 8.5', 1.5" thick)
4009 Shrewsbury	Rt		0.8	overlay drive approach; (13' x 6', 1.5" thick)
4015 - 4101 Shrewsbury	Rt		1.8	overlay drive approach; (30' x 6', 1.5" thick)
4103 - 4105 Shrewsbury	Rt		1.7	overlay drive approach; (28' x 6', 1.5" thick)
4105 Shrewsbury	Rt		1.0	overlay drive approach; (17' x 6', 1.5" thick)
4107 Shrewsbury	Rt		0.7	overlay drive approach; (13' x 5.5', 1.5" thick)
4111 Shrewsbury	Rt		1.1	overlay drive approach; (18' x 6', 1.5" thick)
4113 Shrewsbury	Rt		0.8	overlay drive approach; (13' x 6', 1.5" thick)
4115 Shrewsbury	Rt		0.9	overlay drive approach; (15' x 6', 1.5" thick)
4117 Shrewsbury	Rt		0.9	overlay drive approach; (15' x 6', 1.5" thick)
4119 Shrewsbury	Rt		1.4	overlay drive approach; (23' x 6', 1.5" thick)
3917 Shrewsbury	Rt		1.7	overlay drive approach; (28' x 6', 1.5" thick)
3920 Shrewsbury Ave (Overhead Door Co.)	Lt		2.7	overlay drive approach; (27' x 10', 1.5" thick)
Lansdowne Ave at Shrewsbury Ave	Lt		2.7	overlay shoulder along 4400 Shrewsbury; (100' x 4', 1" thick)
7326 Lansdowne	Rt		1.0	overlay drive approach; (12' x 8', 1.5" thick)
7324 Lansdowne	Rt		1.5	overlay drive approach; (17' x 9', 1.5" thick)
TOTAL			**24.1**	

405-30.30 TYPE "X" BITUMINOUS CONCRETE (BASE)

Exact locations & quantities to be determined by the Engineer. Estimated at 2.16 T/CY.

LOCATION	SIDE (Rt / Lt)		QUANTITY TON (0.1)	REMARKS
7420 Lansdowne	Rt		24.0	asphalt base repair (shoulder), (9' x 50', 8" thick)
7420 Lansdowne	Lt		22.4	asphalt base repair (shoulder), (7' x 60', 8" thick)
7418 Lansdowne	Lt		28.8	asphalt base repair (drive lane), (15' x 36', 8" thick)
7416 Lansdowne	Rt		21.6	asphalt base repair (shoulder), (9' x 45', 8" thick)
7414 Lansdowne	Rt		50.4	asphalt base repair (drive lane), (15' x 63', 8" thick)
7408 Lansdowne	Rt		28.8	asphalt base repair (shoulder), (9' x 60', 8" thick)
7412 Lansdowne	Lt		50.4	asphalt base repair (drive lane), (15' x 63', 8" thick)
7404 Lansdowne	Rt		44.8	asphalt base repair (drive lane), (12' x 70', 8" thick)
7402 Lansdowne	Lt		14.4	asphalt base repair (shoulder), (9' x 30', 8" thick)
7340 Lansdowne	Rt		21.6	asphalt base repair (drive lane), (9' x 45', 8" thick)
7336 Lansdowne	Lt		50.4	asphalt base repair (drive lane), (15' x 63', 8" thick)
7324 Lansdowne	Rt		48.0	asphalt base repair (drive lane), (15' x 60', 8" thick)
7324 Lansdowne	Lt		96.0	asphalt base repair (drive lane), (15' x 120', 8" thick)
7318 Lansdowne	Lt		44.0	asphalt base repair (drive lane), (15' x 55', 8" thick)
7312 Lansdowne	Lt		36.0	asphalt base repair (drive lane), (15' x 45', 8" thick)
7312 Lansdowne	Lt		60.0	asphalt base repair (drive lane), (15' x 75', 8" thick)
7310 Lansdowne	Rt		12.0	asphalt base repair (drive lane), (15' x 15', 8" thick)
7308 Lansdowne	Rt		26.4	asphalt base repair (drive lane), (15' x 33', 8" thick)
7306 Lansdowne	Lt		48.0	asphalt base repair (drive lane), (15' x 60', 8" thick)
Lansdowne at St. Vincent Ave	Lt		44.0	asphalt base repair (drive lane), (15' x 55', 8" thick)
Murdoch Cutoff right turn lane	Rt		9.0	asphalt base repair (drive lane), (21' x 8', 8" thick)
TOTAL			**781.0**	

COUNTY PROJECT NO. AR-1388

FEDERAL PROJECT NO. STP-4901(635)

E-W GATEWAY TIP NO. 5562-14

MSD: N/A

MSD BASE MAP: J-22, J-23

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
	5/16/14			ADDENDUM NO. 2

DISCLAIMER OF RESPONSIBILITY: I hereby certify that the documents intended to be authorized by my seal are limited to those sheets, and I hereby disclaim all responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part of the engineering project or survey

STATE OF MISSOURI REGISTERED PROFESSIONAL ENGINEER DANIEL JOSEPH FAUKE NUMBER PE-2007002782

DATE: May 16, 2014

PREPARED BY: DESIGN DIVISION 1050 N. LINDBERGH BLVD. ST. LOUIS, MISSOURI 63132 (314) 615-8543

DANIEL JOSEPH FAUKE PROFESSIONAL ENGINEER LICENSE NO. 2007002782

Saint Louis COUNTY HIGHWAYS & TRAFFIC PUBLIC WORKS Sheryl L. Hodges, D.E., P.E., LPG Director

SHREWSBURY AVENUE - LANSDOWNE AVENUE INFRASTRUCTURE

DETAILED QUANTITIES

DESIGNED: DJF

DRAWN: DJF

CHECKED:

SHEET SEQUENCE: 3A OF 39

407-10.27 TACK-EMULSIFIED ASPHALT (SS-1H)

Estimated at 0.10 Gal / S.Y.

LOCATION	FROM	TO	QUANTITY GAL. (10)	REMARKS
Shrewsbury Ave	Big Bend Blvd	I-44 (End of Maint.)	1,167	mainline pavement north of I-44
			19	approach at Suffolk Ave
			37	approach at Arlington Ave
	I-44 (End of Maint.)	Murdoch Ave	768	mainline south of I-44; includes approaches at Murdoch Ave
			23	approaches at Sutherland Ave (117 SY each)
			31	approaches at Lansdowne Ave
			16	approaches at Devonshire Ave
Lansdowne Ave	Shrewsbury	St. Vincent Ave	514	mainline; does not include approaches at Shrewsbury Ave
			13	side street (St. Vincent Ave).
			25	for driveway overlays
Lansdowne Ave	St. Vincent Ave	City Limits (EOM)	142	mainline; does not include approach at Murdoch Cutofff
			59	approach at Mudoch Cutoff
Shrewsbury Ave	Big Bend Blvd	I-44 (End of Maint.)	24	for overlaying drive approaches
Shrewsbury Ave	Big Bend Blvd	Murdoch Ave	260	for spot wedging
TOTAL			**3,100**	(rounded up to nearest 10 gal.)

412-10.02 PAVEMENT SURFACING AND TEXTURING (0" - 2"), CONCRETE OR ASPHALT

Approximately 2" depth. Includes butt joints and side streets as directed by the Engineer.

LOCATION	FROM	TO	QUANTITY S.Y. (1.0)	REMARKS
Shrewsbury Ave	Big Bend Blvd	I-44 (End of Maint.)	11,670	mainline pavement north of I-44
			187	approach at Suffolk Ave
			372	approach at Arlington Ave
	I-44 (End of Maint.)	Murdoch Ave	7,677	mainline south of I-44; includes approaches at Murdoch Ave
			234	approaches at Sutherland Ave (117 SY each)
			305	approaches at Lansdowne Ave
			156	approaches at Devonshire Ave
Lansdowne Ave	Shrewsbury	St. Vincent Ave	5,141	mainline; does not include approaches at Shrewsbury Ave
			129	side street (St. Vincent Ave).
Lansdowne Ave	St. Vincent Ave	City Limits (EOM)	1,422	mainline; does not include approach at Murdoch Cutofff
			586	approach at Mudoch Cutoff
Shrewsbury Ave	Big Bend Blvd	I-44 (End of Maint.)	238	for overlaying drive approaches
TOTAL			**28,117**	

412-20.00 SIDEWALK GRINDING

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY (EACH)	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		100	
TOTAL			**100**	

509-10.08 CONCRETE BASE (8" NON-REINFORCED), VERY EARLY STRENGTH

As directed by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y.(0.1)	REMARKS
Shrewsbury Ave at BNSF Rail Overpass	Lt		36.0	(27' x 12'); located in curb lane
Shrewsbury Ave at BNSF Rail Overpass	Lt		36.0	(27' x 12'); located in through lane
4500 Shrewsbury	Lt		8.7	(13' x 6'); located in curb lane
7404 Sutherland	Lt		40.0	(30' x 12'); located in curb lane
7404 Sutherland	Lt		40.0	(36' x 10'); located in curb lane
TOTAL			**160.7**	

603-10.35 ADJUST WATER SERVICE VALVE BOX TO GRADE

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
7402 Lansdowne	Rt		1	
7330 - 7326 Lansdowne	Rt		1	
7403 Lansdowne	Lt		1	
TOTAL			**3**	

NOTE:

ITEM NUMBER 309-10.08, CONCRETE BASE (8" NON-REINFORCED), TYPE III CEMENT W/ ACCELERATOR, 8.5 SACK HAS BEEN REPLACED WITH ITEM NO. 509-10.08, CONCRETE BASE (8" NON-REINFORCED), VERY EARLY STRENGTH PER ADDENDUM NO. 2.

604-20.30 ADJUSTING MANHOLE TO GRADE

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave at Suffolk Ave	Rt		1	center turn lane
Shrewsbury Ave at Arlington Ave	Rt		2	
Shrewsbury at Sutherland	Rt		2	
4401 Shrewsbury	Rt		1	
Shrewsbury at Devonshire	Rt		1	
4605- 4607 Shrewsbury	Rt		1	
Shrewsbury at Murdoch	Lt		2	located in northest quadrant
4400 Shrewsbury (Police Station)	Lt		1	
Lansdowne Ave	Rt / Lt		6	all locations along CL of Lansdowne
Lansdowne Ave at Shrewsbury Ave	Lt		1	in right turn lane at double curb Inlet
Shrewsbury NE of Carr Lane	Lt		1	
Shrewsbury at Big Bend	Lt		1	located in left turn lane to southbound Big Bend
Shrewsbury at Big Bend	Lt		1	located in through lane opposite KFC entrance
TOTAL			**21**	

604-21.95 REPLACE PRECAST INLET TOP

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shresbury Ave at Big Bend	Rt		2	located in southwest radius
7424 Lansdowne	Rt		2	
Lansdowne Ave at St. Vincent Ave	Lt		2	located in northwest radius
TOTAL			**6**	

604-90.40 ADJUST INLET STONE TO GRADE

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
7424 Devonshire	Lt		1	
TOTAL			**1**	

604-90.50 REPLACE PRECAST INLET TOP AND ADJUST TO GRADE

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave at Suffolk Ave	Rt		1	southwest corner
4105 Shrewsbury Ave	Rt		2	
4400 Shrewsbury (Police Station)	Lt		1	
TOTAL			**4**	

604-90.52 REPLACE INLET SILL

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
4105 Shrewsbury Ave	Rt		1	
7424 Lansdowne	Rt		2	
TOTAL			**3**	

608-10.90 REMOVE & REPLACE CONCRETE MEDIAN / ISLAND

Exact locations & quantities to be determined by the Engineer. Incudes removal of exisitng island, sawcutting, and dowel bars

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y. (0.1)	REMARKS
Shrewsbury Ave at BNSF Rail Overpass	Rt / Lt		153.9	between Arlington Ave and I-44
Shrewsbury Ave at Murdoch Ave	Rt		26.9	northwest quadrant; rebuild as 3-leg cut through island
TOTAL			**180.8**	

608-50.96 REMOVE & REPLACE PAVED APPROACH (6")

Exact locations & quantities to be determined by the Engineer. Includes sawcutting

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y. (0.1)	REMARKS
3917 Shrewsbury	Rt		18.3	drive approach to garage (30' x 5.5')
4009 Shrewsbury	Rt		9.3	(6' x 14')
4111 Shrewsbury	Rt		12.0	(18' x 6')
7409 Lansdowne	Lt		8.0	(4.5' x 16')
7403 Lansdowne	Lt		6.1	(5' x 11')
7326 Lansdowne	Rt		7.5	(4.5' x 15')
7324 Lansdowne	Rt		7.0	(4.5' x 14')
TOTAL			**68.2**	

COUNTY PROJECT NO. AR-1388

FEDERAL PROJECT NO. STP-4901(635)

E-W GATEWAY TIP NO. 5562-14

MSD: N/A

MSD BASE MAP: J-22, J-23

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
	5/16/14			ADDENDUM NO. 2

STATE OF MISSOURI
DANIEL JOSEPH FAUKE
NUMBER PE-2007002782
REGISTERED PROFESSIONAL ENGINEER

DATE: May 16, 2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
ST. LOUIS, MISSOURI 63132
(314) 615-8543

DANIEL JOSEPH FAUKE
PROFESSIONAL ENGINEER
LICENSE NO. 2007002782

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

SHREWSBURY AVENUE - LANSDOWNE AVENUE INFRASTRUCTURE

DETAILED QUANTITIES

DESIGNED: DJF

DRAWN: DJF

CHECKED:

SHEET SEQUENCE: 4A OF 39

608-60.08

CONCRETE SIDEWALK, CURB RAMP

For curb ramp reconstruction. Includes all items as described in Special Provision 100.20.9 and sawcutting as needed

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY (EACH)	REMARKS
Shrewsbury at Big Bend	Rt		1	
	Lt		1	
Shrewsbury at Suffolk Ave	Rt		2	
Shrewsbury at Arlington Ave	Rt		2	
Shrewsbury at Sutherland Ave	Rt		2	
	Lt		1	
Shrewsbury at Lansdowne Ave	Rt		2	
Shrewsbury at Devonshire Ave	Rt		2	
	Lt		2	
Shrewsbury at Murdoch Ave	Rt		2	
	Lt		2	
Lansdowne at St. Vincent Ave	Lt		2	
Lansdowne at Murdoch Cutoff	Rt		1	SW corner (at American Legion Hall)
	Rt		3	Island (3-leg cut-through)
	Rt		1	SE corner (at gas station)
	Lt		1	
TOTAL			**27**	

608-60.94

REMOVE & REPLACE CONCRETE SIDEWALK (4" THICK)

Exact locations & quantities to be determined by the Engineer. To include sawcutting.

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y. (0.1)	REMARKS
7500 Big Bend (KFC)	Rt		2.7	6' x 4'
3917 Shrewsbury / 7501 Suffolk	Rt		8.9	20' x 4'
7504 Suffolk	Rt		6.7	15' x 4'
4009 Shrewsbury	Rt		4.4	10' x 4'
4015 Shrewsbury	Rt		4.4	10' x 4'
4101 Shrewsbury	Rt		2.2	5' x 4'
4103 Shrewsbury	Rt		2.2	5' x 4'
4105 Shrewsbury	Rt		4.4	10' x 4'
4111 Shrewsbury	Rt		6.7	15' x 4'
4113 Shrewsbury	Rt		6.7	15' x 4'
4121 Shrewsbury	Rt		4.4	10' x 4'
7502 Arlington	Rt		20.0	45' x 4'
4401 Shrewsbury	Rt		6.7	12' x 5'
4405 Shrewsbury	Rt		7.1	116' x 4'
7505 Lansdowne	Rt		10.0	18' x 5'
7501 Devonshire	Rt		2.2	5' x 4'
7501 Murdoch	Rt		11.1	5' x 20'
7419 Murdoch (apartment building)	Lt		17.8	(25' x 4') + (10' x 6')
7424 Devonshire	Lt		20.0	30' x 6'
4508 Shrewsbury	Lt		2.2	5' x 4'
4500 Shrewsbury	Lt		8.3	15' x 5'
4500 Shrewsbury (police station)	Lt		11.1	5' x 20'
7404 Sutherland (parking lot)	Lt		5.6	5' x 10'
4500 Shrewsbury (Lansdowne side)	Rt		2.7	6' x 4'
7424 Lansdowne	Rt		3.6	8' x 4'
7422 Lansdowne	Rt		2.7	6' x 4'
7418 Lansdowne	Rt		2.7	6' x 4'
7414 Lansdowne	Rt		2.7	6' x 4'
7412 Lansdowne	Rt		2.7	6' x 4'
7408 Lansdowne	Rt		6.2	14' x 4'
7402 Lansdowne	Rt		5.3	12' x 4'
7340 Lansdowne	Rt		5.3	12' x 4'
7334 Lansdowne	Rt		2.7	6' x 4'
7326 Lansdowne	Rt		2.7	6' x 4'
7324 Lansdowne	Rt		6.2	14' x 4'
7320 Lansdowne	Rt		2.7	6' x 4'
7318 Lansdowne	Rt		2.7	6' x 4'
7316 Lansdowne	Rt		2.7	6' x 4'
7312 Lansdowne	Rt		2.7	6' x 4'
7306 Lansdowne	Rt		2.7	6' x 4'
Lansdowne at Murdoch Cutoff	Rt		10.7	24' x 4'
7250 Lansdowne (gas station)	Rt		9.3	21' x 4'
7307 Lansdowne	Lt		5.3	12' x 4'
7311 Lansdowne	Lt		5.3	12' x 4'
7313 Lansdowne	Lt		2.7	6' x 4'
7317 Lansdowne	Lt		8.0	18' x 4'
7401 Lansdowne	Lt		5.3	12' x 4'
4400 Shrewsbury (park)	Lt		60.0	135' x 4'

The following locations of R&R 4" Sidewalk are intended for use in curb ramp reconstruction as directed by the Engineer.

Assumes one 5'x 5' and one 5' x 4.5' slab (5.3 SY) at each location new curb ramps tie to existing sidewalks.

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y. (0.1)	REMARKS
Shrewsbury at Big Bend	Rt		10.6	
	Lt		10.6	
Shrewsbury at Suffolk Ave	Rt		15.9	10.6 SY (NW corner) + 5.3 SY (SW corner)
Shrewsbury at Arlington Ave	Rt		10.6	5.3 SY each corner
Shrewsbury at Sutherland Ave	Rt		15.9	5.3 SY (NW corner) + 10.6 SY (SW corner)
	Lt		10.6	NE corner
Shrewsbury at Lansdowne Ave	Rt		10.6	5.3 SY each corner
Shrewsbury at Devonshire Ave	Lt		5.3	SW corner
Shrewsbury at Murdoch Ave	Rt		15.9	5.3 SY (NW corner) + 10.6 SY (SW corner)
Lansdowne at St. Vincent Ave	Lt		10.6	5.3 SY each corner
Lansdowne at Murdoch Cutoff	Rt		5.3	SW corner (at American Legion Hall)
	Lt		10.6	midlblock ramp
TOTAL			**473.9**	

COUNTY PROJECT NO.
AR-1388

FEDERAL PROJECT NO.
STP-4901(635)

E-W GATEWAY TIP NO.
5562-14

MSD:
N/A

MSD BASE MAP:
J-22, J-23

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
	5/16/14			ADDENDUM NO. 2

DISCLAIMER OF RESPONSIBILITY
I hereby disclaim responsibility for the documents intended to be authorized by my seal are limited to this sheet and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part of the engineering project or survey

STATE OF MISSOURI
DANIEL JOSEPH FAUKE
NUMBER PE-2007002782
REGISTERED PROFESSIONAL ENGINEER

DATE:
May 16, 2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
ST. LOUIS, MISSOURI 63132
(314) 615-8843

DANIEL JOSEPH FAUKE
PROFESSIONAL ENGINEER
LICENSE NO. 2007002782

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

SHREWSBURY AVENUE - LANSDOWNE AVENUE INFRASTRUCTURE

DETAILED QUANTITIES

DESIGNED: DJF

DRAWN: DJF

CHECKED:

SHEET SEQUENCE:
5A OF 39

608-60.96 REMOVE & REPLACE CONCRETE SIDEWALK (6" THICK)

Exact locations & quantities to be determined by the Engineer. To include sawcutting.

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y. (0.1)	REMARKS
4015 Shrewsbury	Rt		8.9	20' x 4'
4111 Shrewsbury	Rt		7.1	16' x 4'
7500 Lansdowne	Rt		3.6	8' x 4'
4500 Shrewsbury (Lansdowne side)	Rt		12.0	27' x 4'
7424 Lansdowne	Rt		5.3	12' x 4'
7422 Lansdowne	Rt		6.7	15' x 4'
7418 Lansdowne	Rt		4.4	10' x 4'
7412 Lansdowne	Rt		2.7	6' x 4'
7404 Lansdowne	Rt		6.7	15' x 4'
7402 Lansdowne	Rt		4.4	10' x 4'
7340 Lansdowne	Rt		2.7	6' x 4'
7330 Lansdowne	Rt		2.7	6' x 4'
7326 Lansdowne	Rt		6.7	15' x 4'
7318 Lansdowne	Rt		6.2	14' x 4'
7310 Lansdowne	Rt		2.7	6' x 4'
7306 Lansdowne	Rt		2.7	6' x 4'
7250 Lansdowne (gas station)	Rt		3.3	6' x 5'
7307 Lansdowne	Lt		8.0	18' x 4'
7321 Lansdowne	Lt		2.7	6' x 4'
7323 Lansdowne	Lt		8.0	18' x 4'
7401 Lansdowne	Lt		2.7	6' x 4'
TOTAL			**110.2**	

608-60.98 TRUNCATED DOMES FOR CURB RAMPS (New Construction)

Exact locations & quantities to be determined by the Engineer. To include sawcutting & thickened areas.

LOCATION	SIDE (Rt / Lt)		QUANTITY S.F. (1)	REMARKS
Shrewsbury at Murdoch	Rt		30	for island reconstruction, northwest quadrant; 3 - 2' x 5'
TOTAL			**30**	

609-10.54 CURB & GUTTER, MOUNTABLE (6")

Exact locations & quantities to be determined by the Engineer. To include sawcutting as needed.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1)	REMARKS
Lansdowne east of Shrewsbury (park)	Lt		200	for shoulder upgrades
TOTAL			**200**	

609-10.93 REMOVE & REPLACE CURB & GUTTER (VARIOUS WIDTHS), VERTICAL, MOUNTABLE

Exact locations & quantities to be determined by the Engineer. To include sawcutting, excavation, and aggregate base. Includes R&R of entire C&G section.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1)	REMARKS
7502 Suffolk	Rt		25	
4111 Shrewsbury	Rt		12	
4115 Shrewsbury	Rt		12	
4117 Shrewsbury	Rt		12	
4119 Shrewsbury	Rt		10	
7502 Arlington	Rt		18	
4401 Shrewsbury	Rt		42	
4405 Shrewsbury	Rt		12	
7500 Lansdowne	Rt		45	
7501 Devonshire	Rt		20	
7501 Murdoch	Rt		26	
7419 Murdoch (apartment building)	Lt		20	
7424 Devonshire	Lt		70	
4504 Shrewsbury	Lt		20	
4500 Shrewsbury	Lt		10	
4500 Shrewsbury (police station)	Lt		40	
7404 Sutherland (parking lot)	Lt		12	
4118 Carr Lane (Laclede Gas Complex)	Lt		70	
4118 Carr Lane (Laclede Gas Complex)	Lt		15	
4118 Carr Lane (Laclede Gas Complex)	Lt		6	
4118 Carr Lane (Laclede Gas Complex)	Lt		9	
4118 Carr Lane (Laclede Gas Complex)	Lt		9	
4118 Carr Lane (Laclede Gas Complex)	Lt		10	
4118 Carr Lane (Laclede Gas Complex)	Lt		20	
4118 Carr Lane (Laclede Gas Complex)	Lt		50	
Lansdowne Ave	Rt		1,498	R&R all curb & gutter; south side of Lansdowne
Lansdowne Ave	Lt		1,241	R&R all curb & gutter; north side of Lansdowne
TOTAL			**3,334**	

609-20.90 REMOVE & REPLACE INTEGRAL CURB (6" HEIGHT AND UNDER)

Exact locations & quantities to be determined by the Engineer. To include sawcutting and aggregate base.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1)	REMARKS
7500 Lansdowne	Rt		12	for concrete base replacement
4500 Shrewsbury (at Lansdowne)	Lt		13	for concrete base replacement
7404 Sutherland	Lt		36	for concrete base replacement
7404 Sutherland	Lt		30	for concrete base replacement
4118 Carr Lane (opposite 7504 Suffolk)	Lt		42	for concrete base replacement; 3 sections (15' + 15' + 12')
4118 Carr Lane (opposite Arlington Ave.)	Lt		10	for concrete base replacement
Shrewsbury at Suffolk	Rt		6	for joint repair
7502 Suffolk	Rt		12	for joint repair
4117 Shrewsbury	Rt		6	for joint repair
4121 Shrewsbury	Rt		6	for joint repair
Shrewsbury at Arlington	Rt		6	for joint repair
7502 Arlington	Rt		6	for joint repair
4405 Shrewsbury	Rt		6	for joint repair
Shrewsbury Ave at BNSF Rail Overpass	Lt		6	for joint repair
4118 Carr Lane (opposite 4115 Shrews.)	Lt		6	for joint repair
4118 Carr Lane (opposite 4107 Shrews.)	Lt		6	for joint repair
4118 Carr Lane (opposite 4101 Shrews.)	Lt		6	for joint repair
4118 Carr Lane (opposite 4009 Shrews.)	Lt		6	for joint repair
4118 Carr Lane (opposite 7504 Suffolk)	Lt		6	for joint repair
4118 Carr Lane (opposite 7502 Suffolk)	Lt		12	for joint repair (2 - 6' sections)
4118 Carr Lane (opposite Suffolk Ave)	Lt		6	for joint repair
4400 Shrewsbury (police station)	Lt		12	for joint repair (2 - 6' sections)
TOTAL			**257**	

612-60.92 ARROW PANEL, TYPE "B" (NOISELESS), RENTAL

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		4	
TOTAL			**4**	

613-10.18 JOINT REPAIR - TRANSVERSE, HIGH EARLY STRENGTH

Exact locations & quantities to be determined by the Engineer. Includes all items as described in JSP 1100.70.8

LOCATION	SIDE (Rt / Lt)	DIMENSIONS (L.F. x L.F.)	QUANTITY S.Y. (0.1)	REMARKS
Shrewsbury at Suffolk	Rt	11' x 6'	7.3	located at SW radius in curb lane; also R&R 6 LF integral curb
7502 Suffolk	Rt	2- (11' x 6')	14.7	2 sections; located in curb lane; also R&R 12 LF integral curb
4009 Shrewsbury	Rt	12' x 6'	8.0	located in turn lane
4101 Shrewsbury	Rt	12' x 6'	8.0	located in through lane
4105 Shrewsbury	Rt	12' x 6'	8.0	located in through lane
4117 Shrewsbury	Rt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4117 Shrewsbury	Rt	12' x 6'	8.0	located in through lane
4121 Shrewsbury	Rt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
Shrewsbury at Arlington	Rt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
7502 Arlington	Rt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4405 Shrewsbury	Rt	11' x 6'	7.3	located in turn lane
4405 Shrewsbury	Rt	11' x 6'	7.3	located in curb lane; also R&R 6 LF integral curb
7505 Lansdowne	Rt	12' x 6'	8.0	located in turn lane
7505 Lansdowne	Rt	11' x 6'	7.3	located in through lane
7500 Lansdowne	Rt	2- (11' x 6')	14.7	2 sections; located in through lane
7501 Devonshire	Rt	11' x 6'	7.3	located in through lane
7501 Murdoch (office building)	Rt	3- (11' x 6')	22.0	3 sections; located in through lane
7419 Murdoch (apartment building)	Lt	2- (11' x 6')	14.7	2 sections; located in through lane
7424 Devonshire	Lt	3- (11' x 6')	22.0	3 sections; located in through lane
7425 Devonshire	Lt	3- (11' x 6')	22.0	3 sections; located in through lane
4500 Shrewsbury	Lt	11' x 6'	7.3	located in through lane
Shrewsbury Ave at BNSF Rail Overpass	Lt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4118 Carr Lane (opposite Arlington)	Lt	2- (12' x 6')	16.0	2 sections; located in through lane
4118 Carr Lane (opposite 4115 Shrews.)	Lt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4118 Carr Lane (opposite 4115 Shrews.)	Lt	12' x 6'	8.0	located in through lane
4118 Carr Lane (opposite 4107 Shrews.)	Lt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4118 Carr Lane (opposite 4101 Shrews.)	Lt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4118 Carr Lane (opposite 4009 Shrews.)	Lt	2- (12' x 6')	16.0	2 sections; located in through lane
4118 Carr Lane (opposite 4009 Shrews.)	Lt	12' x 6'	8.0	located in turn lane
4118 Carr Lane (opposite 4009 Shrews.)	Lt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4118 Carr Lane (opposite 7504 Suffolk)	Lt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4118 Carr Lane (opposite 7502 Suffolk)	Lt	2- (12' x 6')	16.0	2 sections; located in through lane
4118 Carr Lane (opposite 7502 Suffolk)	Lt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4118 Carr Lane (opposite 7502 Suffolk)	Lt	16' x 6'	10.7	located in curb lane; also R&R 6 LF integral curb
4118 Carr Lane (opposite Suffolk Ave)	Lt	18' x 6'	12.0	located in curb lane; also R&R 6 LF integral curb
TOTAL			**368.6**	

NOTE:
ITEM NUMBER 613-10.17, JOINT REPAIR - TRANSVERSE, TYPE I CEMENT, 7.5 SACK
HAS BEEN REPLACED WITH ITEM NO. 613-10.18, JOINT REPAIR - TRANSVERSE, HIGH EARLY STRENGTH AND
ITEM NUMBER 613-10.90, JOINT REPAIR - TRANSVERSE, TYPE III CEMENT W/ ACCELERATOR, 8.5 SACK
HAS BEEN REPLACED WITH ITEM NO. 613-10.91, JOINT REPAIR - TRANSVERSE, VERY EARLY STRENGTH
PER ADDENDUM NO. 2.

COUNTY PROJECT NO. AR-1388
FEDERAL PROJECT NO. STP-4901(635)
E-W GATEWAY TIP NO. 5562-14
MSD: N/A
MSD BASE MAP: J-22, J-23

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
	5/16/14			ADDENDUM NO. 2

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STATE OF MISSOURI
DANIEL JOSEPH FAUKE
NUMBER PE-2007002782
REGISTERED PROFESSIONAL ENGINEER

DATE: May 16, 2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
ST. LOUIS, MISSOURI 63132
(314) 615-8543

DANIEL JOSEPH FAUKE
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LICENSE NO. 2007002782

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

SHREWSBURY AVENUE - LANSDOWNE AVENUE INFRASTRUCTURE

DETAILED QUANTITIES

DESIGNED: DJF
DRAWN: DJF
CHECKED:
SHEET SEQUENCE: 6A OF 39

613-10.91 JOINT REPAIR - TRANSVERSE, VERY EARLY STRENGTH

Exact locations & quantities to be determined by the Engineer. Includes all items as described in JSP 1100.70.8

LOCATION	SIDE (Rt / Lt)	DIMENSIONS (L.F. x L.F.)	QUANTITY S.Y. (0.1)	REMARKS
4400 Shrewsbury (police station)	Lt	9' x 6'	6.0	located in curb lane; also R&R 6 LF integral curb
4400 Shrewsbury (police station)	Lt	15' x 6'	10.0	located in through lane
4400 Shrewsbury (police station)	Lt	12' x 6'	8.0	located in curb lane; also R&R 6 LF integral curb
4118 Carr Lane (opposite 4117 Shrews.)	Lt	12' x 6'	8.0	located in through lane
3920 Shrewsbury / 3640 Big Bend	Lt	12' x 6'	8.0	located in through lane (opposite 3917 Shrewsbury)
3920 Shrewsbury / 3640 Big Bend	Lt	18' x 6'	12.0	located in through lane (opposite 3917 Shrewsbury)
TOTAL			52.0	

803-45.02 STRIP SODDING

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY S.Y. (1.0)	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		1,120	
TOTAL			1,120	

904-24.01 SIGNAL HEAD, TYPE 1S, PEDESTRIAN

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		24	
TOTAL			24	

904-28.10 POST, SIGNAL, w/ SQUARE PEDESTAL BASE AND POST CAP, 10' TOTAL HEIGHT, ALUMINUM

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		7	
TOTAL			7	

904-49.20 DETECTOR, PEDESTRIAN PUSH BUTTON, FREEZEPROOF

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		24	
TOTAL			24	

904-51.00 CONDUIT, 1"

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1)	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		23	
TOTAL			23	

904-52.00 CONDUIT, 2"

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1)	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		89	
TOTAL			89	

904-74.99 CONDUIT REPAIR (LOCATE BROKEN CONDUIT, EXCAVATE, REMOVE EXISTING CABLE, REPAIR/ REPLACE CONDUIT, REINSTALL CABLE, BACKFILL AND RESTORE). (DOES NOT INCLUDE SIDEWALK OR PAVEMENT REMOVAL AND REPLACEMENT)

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		1	As determined by the Engineer
TOTAL			1	

904-83.05 CABLE , SIGNAL, #14 GAUGE, 5 CONDUCTOR

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1.0)	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		840	
TOTAL			840	

904-84.00 WIRE, STRANDED GROUND, #6 GAUGE

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1.0)	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		160	
TOTAL			160	

NOTE:
ITEM NUMBER 613-10.17, JOINT REPAIR - TRANSVERSE, TYPE I CEMENT, 7.5 SACK
HAS BEEN REPLACED WITH ITEM NO. 613-10.18, JOINT REPAIR - TRANSVERSE, HIGH EARLY STRENGTH AND
ITEM NUMBER 613-10.90, JOINT REPAIR - TRANSVERSE, TYPE III CEMENT W/ ACCELERATOR, 8.5 SACK
HAS BEEN REPLACED WITH ITEM NO. 613-10.91, JOINT REPAIR - TRANSVERSE, VERY EARLY STRENGTH
PER ADDENDUM NO. 2.

904-85.05 CABLE DETECTOR LOOP, #14 GAUGE, 1 CONDUCTOR, W/ TUBE JACKET (IN CONDUIT AND PULL BOXES)

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1.0)	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		484	
TOTAL			484	

904-85.06 CABLE DETECTOR LOOP, #14 GAUGE, 1 CONDUCTOR, W/ TUBE JACKET (IN SAWED SLOT)

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1.0)	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		10,653	
TOTAL			10,653	

904-85.18 CABLE, PUSH BUTTON AND/ OR DETECTOR LOOP LEAD-IN, #18 GAUGE, 2 CONDUCTOR (SHIELDED)

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY L.F. (1.0)	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		810	
TOTAL			810	

904-91.73 BASE, TYPE C-3, CONCRETE

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		7	
TOTAL			7	

904-95.10 OPENING DRILLED INTO EXISTING CONCRETE PULL BOX

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		7	
TOTAL			7	

904-95.31 ADJUSTMENT OF PREFORMED PULL BOX

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury at Arlington	Rt		1	for ramp reconstruction, SW corner
TOTAL			1	

904-95.40 ADJUSTMENT OF CONCRETE PULL BOX

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury at Sutherland	Rt		1	for ramp reconstruction, SW corner
Shrewsbury at Devonshire	Lt		1	for ramp reconstruction, NE corner
Shrewsbury at Murdoch	Lt		1	for ramp reconstruction, NE corner
Shrewsbury at Murdoch	Rt		1	for island reconstruction, NW corner
TOTAL			4	

904-97.42 REMOVAL OF SIGNAL HEAD

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		24	
TOTAL			24	

904-98.60 RELOCATION OF EXISTING PUSH BUTTON

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		1	
TOTAL			1	

904-98.70 RELOCATION OF EXISTING SIGNAL HEAD

Exact locations & quantities to be determined by the Engineer.

LOCATION	SIDE (Rt / Lt)		QUANTITY EACH	REMARKS
Shrewsbury Ave / Lansdowne Ave	Rt / Lt		1	
TOTAL			1	

COUNTY PROJECT NO. AR-1388
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SHREWSBURY AVENUE - LANSDOWNE AVENUE INFRASTRUCTURE

DETAILED QUANTITIES

DESIGNED: DJF
DRAWN: DJF
CHECKED:
SHEET SEQUENCE: 7A OF 39

Saint Louis COUNTY HIGHWAYS & TRAFFIC

May 16, 2014

ADDENDUM FAX COVER LETTER

ADDENDUM NO. 2

FROM: St. Louis County Department of Highways and Traffic

RE: Shrewsbury Avenue-Lansdowne Avenue Infrastructure
St. Louis County Project No. AR-1388
Federal Project No. STP-4901(635)

DATE:_____ TIME: _____

NUMBER OF PAGES (Including Cover Letter): **Thirty (30)**

IF YOU DO NOT RECEIVE ALL PAGES, CALL (314) 615-8543.

PLEASE DELIVER TO RECIPIENT AS SOON AS POSSIBLE.

UPON RECEIPT OF THIS FAX TRANSMISSION, **PLEASE SIGN AND DATE** (IN THE INDICATED LOCATIONS BELOW), AND **FAX THIS ACKNOWLEDGEMENT TO THIS DEPARTMENT AT 615-8194** (Attn: DESIGN DIVISION) TO VERIFY RECEIPT

COMPANY_____
RECEIVED BY_____
DATE _____