

JACKSON COUNTY, MO. PUBLIC WORKS  
ENGINEERING DIVISION, 303 W. WALNUT, INDEPENDENCE, MO. 64050

ROCK ISLAND RAIL CORRIDOR SHARED USE PATH-SOUTH SEGMENT  
FEDERAL PROJECT NO. STP-345(401)

COUNTY PROJECT #3205  
COUNTY BID NO. PW 07-2017

**ADDENDUM NO. 2**  
**Dated November 7, 2017**

Each bidder shall note these revisions to the Bidding Documents and incorporate these revisions in their bid. Each bidder shall acknowledge receipt of this addendum in the Bid Form of the Bidding Documents.

This addendum consists of this page and the following revisions:

**1. RESPONSE TO BIDDERS QUESTIONS**

**BID OPENING, November 9, 2017 at 2:05 p.m.**

Phone calls Questions from contractors relating to the Contract:

- 1-1. **Question:** *The time for the Bid Opening on November 9, 2017 had 2:05 p.m. and 2:30 p.m.. Which time does the County want to use for the Bid Opening?*

**Answer:** Jackson County Public Works (JCPW) wants the Bid Opening to be 2:05p.m. for the project, Rock Island Rail Corridor Shared Use Path-South Segment. The location of the Bid Opening on November 9, 2017 is the same as the original contract at the following address:

Jackson County Public Works  
303 W. Walnut  
Independence, MO. 64050

All the sealed proposal bids must be submitted to the office of the Director of Public Works, Engineering Division, 303 W. Walnut, Independence, Missouri 64050, prior to 2:00 p.m. on November 9, 2017.

- 1-2. **Question:** *The construction plans and specifications show in multiple locations the start of the project in the Raytown, MO. Is Brickyard Road in Raytown or Kansas City?*

**Answer:** The beginning of the project on Brickyard Road is near the intersection of Noland Road and Brickyard Road in Kansas City, MO.. The Corporate Limit Line or City Boundaries for Kansas City, MO. and Lee's Summit, MO. is approximately 650' South of E 98<sup>th</sup> Street along the existing Rock Island Rail Road Tracks. The end of the project is at Jefferson St. near the intersection of Jefferson Street and Scherer Road in Lee's Summit, MO.

- 1-3. **Question:** *Are the quantities for the Bid Form changing for the project?*

JACKSON COUNTY, MO. PUBLIC WORKS  
ENGINEERING DIVISION, 303 W. WALNUT, INDEPENDENCE, MO. 64050

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COUNTY PROJECT #3205  
COUNTY BID NO. PW 07-2017

**Answer:** Yes, based on further design evaluations and construction items quantities adjusted a revised Bid Form will be issued with this Addendum. Several of the revised Bid Items will be addressed on this Addendum. At the left hand corner of the footer of the Bid Form documents, the text "ADDENDUM-2" and the date "11/6/17" is shown. **ALL CONTRACTORS SHALL FILL OUT THE REVISED BID FORMS PRIOR TO SUBMITTING THEIR BIDS.**

- 1-4. **Question:** *If the contractor plans to work at three different locations at the same time within the 6.43 miles of the South Segment, then will there be enough Orange Construction Fencing for the project?*

**Answer:** No, based on the reevaluation of the contractor working in three different locations at the same time for this project, JCPW is increasing the Orange Construction Fencing from 300 to 500. See the revised Bid Form. Please note that the Orange Construction Fencing will be at "Various Locations As Needed and Approved by JCPW Engineering."

- 1-5. **Question:** *Was the Unclassified Excavation quantities adjusted for the contract?*

**Answer:** Yes, Unclassified Excavation was decreased from 15,129 CY to 14,629 CY. Also, the Embankment in Place quantities was decreased from 14,672 CY to 14,172 CY. Both items were adjusted for the new Bid Item, Remove & Replace Unsuitable Material quantity of 1,312 CY.

- 1-6. **Question:** *If the contractor plans to work at three different locations at the same time within the 6.43 miles of the South Segment, then will there be enough Channelizers for the project?*

**Answer:** No, based on the reevaluation of the contractor working in possibly three different locations at the same time for this project, JCPW is increasing the Channelizers from 50 to 100. See the revised Bid Form. Please note that the channelizers will be at "Various Locations As Needed and Approved by JCPW Engineering." The type of Channelizers being used for this project are the Trim-Line. The Bid Item description has been changed to Channelizers (Trim-Line).

- 1-7. **Question:** *The specifications and construction plan sheets refers to Type III Barricades. How is this item being paid in the contract?*

**Answer:** The Type III Barricade will be a new pay item on the Bid Form. It will be labeled as Type III Barricades (8'L) with Flashers and will be paid as EACH. See Technical Specifications TS-24 MAINTENANCE OF TRAFFIC and construction plan sheet 69 of 266 reference material for Type III Barricades. 36 Each of Type III Barricades (8'L) with Flashers is on the Bid Form.

- 1-8. **Question:** *Was the Mulch Filter Berm or Silt Fence quantities adjusted for the*

JACKSON COUNTY, MO. PUBLIC WORKS  
ENGINEERING DIVISION, 303 W. WALNUT, INDEPENDENCE, MO. 64050

ROCK ISLAND RAIL CORRIDOR SHARED USE PATH-SOUTH SEGMENT  
FEDERAL PROJECT NO. STP-345(401)

COUNTY PROJECT #3205  
COUNTY BID NO. PW 07-2017

*contract?*

**Answer:** Yes, the Mulch Filter Berm or Silt Fence quantities were increased from 46,956 LF to 50,450 LF based on further design evaluations. Please note that this bid item will be at "Various Locations As Needed and Approved by JCPW Engineering."

1-9. **Question:** *Was the Ditch Checks quantities adjusted for the contract?*

**Answer:** Yes, the Ditch Checks quantities were increased from 115 Each to 230 Each based on further design evaluations. Please note that this bid item will be at "Various Locations As Needed and Approved by JCPW Engineering."

1-10. **Question:** *Was the Sediment Removal quantities adjusted for the contract?*

**Answer:** Yes, the Sediment Removal quantities were increased from 585 CY to 1,170 CY based on further design evaluations and potential construction sequencing by the contractor at various locations. Please note that this bid item will be at "Various Locations As Needed and Approved by JCPW Engineering."

1-11. **Question:** *Was the Sod quantities adjusted for the contract?*

**Answer:** Yes, the Sod quantities were increased from 200 SY to 300 SY based on further design evaluations. Please note that this bid item will be at "Various Locations As Needed and Approved by JCPW Engineering."

1-12. **Question:** *Will the Rock Blanket cover some of the ditches for the culvert structures?*

**Answer:** Yes, after further evaluation of the design, JCPW is increasing the Rock Blanket from 411 to 511 CY. Please note that the Rock Blanket will be at "Various Locations As Needed and Approved by JCPW Engineering."

1-13. **Question:** *Was the Woven Wire Fence quantities adjusted for the contract?*

**Answer:** Yes, the Woven Wire Fence quantities were increased from 1,617 LF to 1,850 LF based on further design evaluations. Please note that this bid item will be at "Various Locations As Needed and Approved by JCPW Engineering."

1-14. **Question:** *On sheet 67 & 68 of the construction plans, they show a detail for an RRFB installation. They indicate on sheet 67 the measure and payment for the RRFB shall be per each. The plans do not show where these RRFB's are to be installed. There is no quantity listed and there is no bid item for it.*

**Answer:** On the construction plans, the two RRFBs (Rectangular Rapid Flashing

JACKSON COUNTY, MO. PUBLIC WORKS  
ENGINEERING DIVISION, 303 W. WALNUT, INDEPENDENCE, MO. 64050

ROCK ISLAND RAIL CORRIDOR SHARED USE PATH-SOUTH SEGMENT  
FEDERAL PROJECT NO. STP-345(401)

COUNTY PROJECT #3205  
COUNTY BID NO. PW 07-2017

Beacon) are shown on Sheet 44 of 266 and the details are on Sheet 67 of 266.  
Also, see Technical Specifications TS-27-03.

1-15. **Question:** *Will all the reinforcement for the RCBs be black steel or epoxy steel?*

**Answer:** All the reinforcing steel for all the RCBs for this project shall be Epoxy coated steel. See Revised Technical Specifications TS-29 STORM SEWERS part A.12.

1-16. **Question:** *Where on the TS and Plans addresses Utility Poles and Temporary Utility Support Structures?*

**Answer:** On the construction plan sheet General Note 18 on Sheet 2 of 266 references both the Utility Poles and Temporary Utility Support Structures. Further clarification is addressed on TS-12 PROJECT ADMINISTRATION part J.2.

## 2. SPECIFICATIONS

2-1. Due to several changes to the Technical Specifications of the construction documents, the entire Technical Specifications sections will be resubmitted to the Contractor as part of this Addendum. At the left hand corner of the footer of the Technical Specifications documents, the text "ADDENDUM-2" and the date "11/6/17" will be shown.

2-2. Within the Special Provision SP-9 CONTRACTOR' S OFFICE AT WORK SITE requires that the Contractor shall provide a minimum of 150 square feet of floor space for the Common-Use Field Office. This item as referenced in the specifications shall be subsidiary to the unit bid for Mobilization. Contractor shall follow all requirements as stated in SP-9 of the specifications and TS-13 PROJECT MOBILIZATION part A.3 for the Common-Use Field Office.

2-3. Within the Technical Specifications TS-13 PROJECT MOBILIZATION, the following shall be added:

- a) All required permit(s) from Kansas City, MO. and Lee's Summit, MO. shall be obtained prior to start of construction by the Contractor. All permit(s) shall be subsidiary to the unit bid for Mobilization. See TS-13 PROJECT MOBILIZATION part A.6.
- b) AS-BUILT Surveys and As-Built drawings shall be provided to JCPW Engineering for all the RCBs, all construction improvements, etc. The Contractor shall supply two full size (34"x22") and two half size (17"x11") surveyed drawings and electronic AutoCAD and PDF drawings. All the drawings shall signed and sealed by a registered Missouri Professional Land Survey (PLS) prior to submitting to JCPW Engineering. See TS-13

**JACKSON COUNTY, MO. PUBLIC WORKS  
ENGINEERING DIVISION, 303 W. WALNUT, INDEPENDENCE, MO. 64050**

ROCK ISLAND RAIL CORRIDOR SHARED USE PATH-SOUTH SEGMENT  
FEDERAL PROJECT NO. STP-345(401)

COUNTY PROJECT #3205  
COUNTY BID NO. PW 07-2017

**PROJECT MOBILIZATION part A.7.**

- 2-4. Class C Excavation line item has been added to the revised Bid Form and to the TS-16 SITE PREPARATION part B.2 and part C.2. This line item was added based on further design evaluations. Measurement and Payment for Class C Excavation shall be per cubic yard (CY).
- 2-5. Temporary Asphalt Surface (4" Thick) line item has been added to the revised Bid Form and to the TS-22 SIDEWALKS, RAMPS, DRIVEWAYS, AND BICYCLE/PEDESTRIAN PATHS part A.9, B.1, C.1. On the original plans on Sheet 68 of 266 of the construction plans shows Temporary Asphalt Surface to provide a sidewalk during construction. These temporary asphalt surfaces are being added to the following roads: Old Pryor Road, Longview Road, Ward Road, and Jefferson St. This line item was added based on further design evaluations. Measurement and Payment for Temporary Asphalt Surface (4" Thick) shall be per square yard (SY).
- 2-6. JCPW wants the Permanent Seeding and Mulch to be Hydroseed process. Therefore, the line item states Permanent Seeding and Mulch (Hydroseeding). The quantity for Permanent Seeding and Mulch (Hydroseeding) has changed from 19 to 20 acres. Also, the quantity for Temporary Seeding and Mulch has changed from 5 to 10 acres. These changes were added based on further design evaluations.
- 2-7. Remove and Replace Unsuitable Material line item has been added to the revised Bid Form and to the TS-16 SITE PREPARATION parts A.6, B.3 and C.3. This line item was added based on further design evaluations. Measurement and Payment for Class C Excavation shall be per cubic yard (CY) and shall Approved by JCPW Engineering.
- 2-8. Concrete Encase Existing Fiber Conduit explanation has been added to the TS-16 SITE PREPARATION parts J.4.
- 2-9. Several locations in the Specification book that references the 2016 MODOT Standard Specifications. It should be the 2017 Missouri or MODOT Standard Specifications for Highway Construction.
- 2-10. Within the Bid Packet the bidder contractor shall sign the Proposal page P-2 "Addenda Certification" and note they received their ADDENDUM No. 1.

**3. CONSTRUCTION PLANS**

- 3-1. On Sheet 17 of 266 has a leader pointing to the Bannister Road Arch Tunnel that states 18'x28.5'x453'. The dimension for this tunnel should be 18' x 23' x 453'. The 28.5' Tall structure should be 23' Tall structure. Sheet 121 of 266 thru 123 of 266 Arch Tunnel details have the correct dimensions. The Bid Form quantities are

**JACKSON COUNTY, MO. PUBLIC WORKS  
ENGINEERING DIVISION, 303 W. WALNUT, INDEPENDENCE, MO. 64050**

ROCK ISLAND RAIL CORRIDOR SHARED USE PATH-SOUTH SEGMENT  
FEDERAL PROJECT NO. STP-345(401)

COUNTY PROJECT #3205  
COUNTY BID NO. PW 07-2017

correct for the Bannister Tunnel Repairs bid items. Also, sheets 148 of 266 thru 152 of 266 plans and details for the Bannister Tunnel Lighting are correct. All bid items on the Bid Forms are correct for all the Bannister Tunnel Lighting.

- 3-2. On Sheet 109 of 266 within the DRAINAGE STRUCTURES table for the 18" Group C Pipe and 18" Group C Flared End Sections, the stationing reference should be 970+40.67 instead of 570+40.67.
- 3-3. On Sheet 109 of 266 within the TEMPORARY TRAFFIC CONTROL DEVICES table, the AS NEEDED quantity of 90 sf has been increased to 214 sf. Therefore, the Total Area of will be increased from 576 to 700 sf. This has been reflected on the revised Bid Form within the Temporary Construction Signs bid item. Also, this bid item will be at "Various Locations As Needed and Approved by JCPW Engineering",

ADDENDUM 2 Prepared by: Chris Jenkins, Project Manager, with Jackson County Public Works

**END OF ADDENDUM NO. 2**

**Jackson County Missouri - Department of Public Works - Engineering Division**  
**ROCK ISLAND RAIL CORRIDOR SHARED USE PATH**  
**FEDERAL PROJECT NO. STP-3453(401) - COUNTY PROJECT NO. 3205 - BID NO. PW-07-2017**  
**BID FORM (CONT.)**

ITEM NO.	SPEC. REF.	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL PRICE
1	TS-13-01	MOBILIZATION	1	L.S.		
2	TS-12-01	UTILITY POTHoles	20	EA.		
3	TS-12-02	TEMPORARY UTILITY SUPPORT STRUCTURES	3	EA.		
4	TS-12-03	CONCRETE ENCASE EXISTING FIBER CONDUIT	100	L.F.		
5	TS-24-01	ORANGE CONSTRUCTION FENCING	500	L.F.		
6	TS-27-05	EDUCATIONAL MARKERS	3	EA.		
7	TS-15-01	CLEARING AND GRUBBING	27	ACRES		
8	TS-15-02	REMOVAL OF RAILS AND TIES	33302	L.F.		
9	TS-15-03	REMOVAL OF BRIDGE RAILS AND TIES	289	L.F.		
10	TS-15-04	REMOVALS (NON-RAIL)	1	L.S.		
11	TS-16-01	UNCLASSIFIED EXCAVATION	14629	C.Y.		
12	TS-16-02	EMBANKMENT IN PLACE (CONTRACTOR FURNISHED)	14172	C.Y.		
13	TS-16-03	CLASS C EXCAVATION	550	C.Y.		
14	TS-16-04	REMOVE & REPLACE UNSUITABLE MATERIAL	1312	C.Y.		
15	TS-19-01	TYPE 5 AGGR. BASE (4 IN. THICK)	5048	S.Y.		
16	TS-20-01	CRUSHED ROCK SURFACING (8 IN. THICK)	32387	S.Y.		
17	TS-21-01	CONCRETE PAVEMENT (6 IN. WITH FIBERS)	4604	S.Y.		
18	TS-22-01	CONCRETE SIDEWALK (4 IN.)	148	S.Y.		
19	TS-22-02	CONCRETE CURB AND GUTTER (CG-1)	230	L.F.		
20	TS-22-03	CONCRETE CURB RAMP (ADA)	329	S.Y.		
21	TS-22-04	TRUNCATED DOMES	355	S.F.		
22	TS-22-05	8 IN. CONCRETE MEDIAN STRIP	335	S.F.		
23	TS-22-06	TEMPORARY ASPHALT SURFACE (4" THICK)	270.4	S.Y.		
24	TS-25-01	24" SOLID WHITE PREFORMED THERMOPLASTIC	531	L.F.		
25	TS-25-02	12" SOLID YELLOW PREFORMED THERMOPLASTIC	12	L.F.		
26	TS-25-03	4" DOUBLE YELLOW PREFORMED THERMOPLASTIC	133	L.F.		

Jackson County Missouri - Department of Public Works - Engineering Division  
**ROCK ISLAND RAIL CORRIDOR SHARED USE PATH**  
**FEDERAL PROJECT NO. STP-3453(401) - COUNTY PROJECT NO. 3205 - BID NO. PW-07-2017**  
**BID FORM (CONT.)**

ITEM NO.	SPEC. REF.	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL PRICE
27	TS-25-04	6" SOLID YELLOW PREFORMED THERMOPLASTIC	143	L.F.		
28	TS-25-05	"XING" SYMBOL PREFORMED THERMOPLASTIC	2	EA.		
29	TS-25-06	BIKE SYMBOL PREFORMED THERMOPLASTIC	2	EA.		
30	TS-25-07	EXIST. PAVEMENT MARKINGS REMOVAL	262	L.F.		
31	TS-27-01	PERMANENT SIGNS	312	S.F.		
32	TS-27-02	SIGN POST (SQUARE STEEL)	32	EA.		
33	TS-35-01	COLLAPSIBLE BOLLARD	12	EA.		
34	TS-27-03	RRFB	2	EA.		
35	TS-24-02	TEMPORARY CONSTRUCTION SIGNS	700	S.F.		
36	TS-24-03	CHANNELIZERS (TRIM-LINE)	100	EA.		
37	TS-24-04	FLAGGERS	6	EA.		
38	TS-24-05	TYPE III MOVABLE BARRICADES (8' LONG) W/ FLASHERS	36	EA.		
39	TS-17-01	MULCH FILTER BERM OR SILT FENCE	50,450	L.F.		
40	TS-17-02	DITCH CHECKS	230	EA.		
41	TS-17-03	SEDIMENT REMOVAL	1,170	C.Y.		
42	TS-17-04	STABILIZED CONSTRUCTION ENTRANCE	12	EA.		
43	TS-17-05	TEMPORARY SEED & MULCH	10	ACRES		
44	TS-28-01	PERMANENT SEED & MULCH (HYDROSEEDING)	20	ACRES		
45	TS-28-02	SOD	300	S.Y.		
46	TS-29-01	REINFORCED CONCRETE BOX CULVERT	320.5	C.Y.		
47	TS-29-03	5' x 3' GRATE & BEARING PLATE	2	EA.		
48	TS-29-04	18" GROUP C PIPE	17	L.F.		
49	TS-29-05	18" GROUP C FLARED END SECTIONS	2	EA.		
50	TS-29-06	UNDERDRAINS	2019	L.F.		
51	TS-23-01	ROCK BLANKET	511	C.Y.		
52	TS-26-01	WOVEN WIRE FENCE	1850	L.F.		
53	TS-26-02	48" PEDESTRIAN FENCE (GROUND MOUNT)	391	L.F.		



Jackson County Missouri - Department of Public Works - Engineering Division  
**ROCK ISLAND RAIL CORRIDOR SHARED USE PATH**  
**FEDERAL PROJECT NO. STP-3453(401) - COUNTY PROJECT NO. 3205 - BID NO. PW-07-2017**  
**BID FORM (CONT.)**

ITEM NO.	SPEC. REF.	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL PRICE
<b>BANNISTER TUNNEL REPAIRS</b>						
54	TS-30-01	BUTTRESS WALL REPAIR AREA	340	S.F.		
55	TS-30-02	WALL (SUBSTRUCTURE) REPAIR AREA	680	S.F.		
56	TS-30-03	TOP (SUPERSTRUCTURE) REPAIR AREA	3400	S.F.		
57	TS-31-01	CONCRETE MASONRY SEALER	25350	S.F.		
<b>LITTLE BLUE RIVER BRIDGE MODIFICATIONS</b>						
58	TS-34-01	PRECAST CONCRETE DECK PANELS	2434	S.F.		
59	TS-26-03	48" PEDESTRIAN FENCE (BRIDGE MOUNT)	372	L.F.		
60	TS-34-02	CAST-IN-PLACE CONCRETE (4KSI)	1	C.Y.		
61	TS-34-03	REINFORCING STEEL (GRADE 60)	229	LBS.		
<b>3RD STREET BRIDGE MODIFICATIONS</b>						
62	TS-15-05	REMOVE BRIDGE BALLAST (4 IN. - 8 IN. THICK)	191	S.Y.		
63	TS-19-02	TYPE 5 AGGREGATE BASE (4 IN. THICK)	206	S.Y.		
64	TS-21-02	CONCRETE PAVEMENT (6 IN. REINFORCED)	206	S.Y.		
65	TS-26-04	PEDESTRIAN RAIL	192	L.F.		
66	TS-34-04	STRUCTURAL STEEL PLATING	3512	LBS.		
<b>BANNISTER TUNNEL LIGHTING</b>						
67	TS-32-01	LUMINAIRE, 159W LED (TUNNEL)	13	EA.		
68	TS-32-02	BASE MOUNTED-METERED CONTROL STATION 120/240V - 4 CIRCUIT	1	EA.		
69	TS-32-03	CONDUIT, 2 IN. RIGID, IN TRENCH	48	L.F.		
70	TS-32-04	CONDUIT, 2 IN. SCH. 40 PVC, IN TRENCH	1250	L.F.		
71	TS-32-05	CONDUIT, 1 1/2 IN. GRC, ON EXTERNAL STRUCTURE	1092	L.F.		
72	TS-32-06	CABLE, 4 AWG, 1 CONDUCTOR	1212	L.F.		
73	TS-32-07	CABLE, 4 AWG, BARE GROUND	606	L.F.		
74	TS-32-08	CABLE, 18 AWG, 1 CONDUCTOR	3276	L.F.		
75	TS-32-09	PULL BOX, CLASS 1 PREFORMED	1	EA.		

Jackson County Missouri - Department of Public Works - Engineering Division  
**ROCK ISLAND RAIL CORRIDOR SHARED USE PATH**  
**FEDERAL PROJECT NO. STP-3453(401) - COUNTY PROJECT NO. 3205 - BID NO. PW-07-2017**  
**BID FORM (CONT.)**

ITEM NO.	SPEC. REF.	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL PRICE
76	TS-32-10	PULL BOX, TYPE METAL NEMA	28	EA.		
77	TS-32-11	PULL BOX, TYPE KCPL SECTIONALIZER (INSTALL ONLY)	2	EA.		
78	TS-32-12	TRANSFORMER BOX BASE, TYPE KCPL (INSTALL ONLY)	1	EA.		
79	TS-32-13	OCCUPANCY SENSOR DIMMING CONTROL UNIT, LOW VOLTAGE INFRARED	13	EA.		
80	TS-32-14	POWER PACK RELAY	2	EA.		
<b>WARD ROAD SIGNAL MODIFICATIONS</b>						
81	TS-33-01	POLE, TRAFFIC SIGNAL PEDESTAL, 8' HEIGHT	2	E.A.		
82	TS-33-02	POLE, TRAFFIC SIGNAL PEDESTAL, 8' HEIGHT (RELOCATE)	1	E.A.		
83	TS-33-03	BASE TYPE C, TRAFFIC SIGNAL POLE	3	E.A.		
84	TS-33-04	PULLBOX, CLASS 1	2	E.A.		
85	TS-33-05	CABLE, 5c-#14	220	L.F.		
86	TS-33-06	CABLE, 2c-#14	218	L.F.		
87	TS-33-07	CABLE, GROUND #6	229	L.F.		
88	TS-33-08	TRAFFIC SIGNAL HEAD (TYPE M)	4	E.A.		
89	TS-33-09	CONDUIT, 2" HDPE	54	L.F.		
90	TS-33-10	CONDUIT, 2" SCH. 80 PVC	34	L.F.		
91	TS-33-11	GROUND ROD	6	E.A.		
92	TS-33-12	APS PUSHBUTTON ASSEMBLY	4	E.A.		
93	TS-33-13	PEDESTRIAN CROSSING SIGN, R10-3E	4	E.A.		
<b>TOTAL</b>						

## TECHNICAL SPECIFICATIONS

Technical Specification	Title	Page
TS-1	GENERAL.....	2
TS-2	WORK ZONE TRAFFIC MANAGEMENT PLAN.....	2
TS-3	UTILITIES.....	3
TS-4	FINAL PAYMENT DOCUMENTS.....	4
TS-5	ADA COMPLIANCE AND FINAL ACCEPTANCE OF CONSTRUCTED FACILITIES.....	5
TS-6	ACCEPTANCE OF PRECAST CONCRETE MEMBERS AND PANELS.....	6
TS-7	ITEMS NOT LISTED IN THE PROPOSAL.....	6
TS-8	SUBSIDIARY WORK.....	6
TS-9	ESTIMATED QUANTITIES.....	6
TS-10	SHOP DRAWING REVIEW AND SUBMITTAL.....	7
TS-11	SUMMARY OF WORK.....	7
TS-12	PROJECT ADMINISTRATION.....	8
TS-13	PROJECT MOBILIZATION.....	22
TS-14	CONTRACTOR PROVIDED SURVEYING AND CONSTRUCTION STAKING.....	23
TS-15	CLEARING AND GRUBBING, AND REMOVALS.....	27
TS-16	SITE PREPARATION.....	29
TS-17	EROSION AND SEDIMENT CONTROL.....	32
TS-18	TRAIL SUBGRADE PREPARATION.....	34
TS-19	UNTREATED COMPACTED AGGREGATE.....	34
TS-20	CRUSHED ROCK SURFACING.....	35
TS-21	PORTLAND CEMENT PAVEMENT.....	37
TS-22	SIDEWALKS, RAMPS, DRIVEWAYS, AND BICYCLE/PEDESTRIAN PATHS.....	38
TS-23	ROCK BLANKET.....	41
TS-24	MAINTENANCE OF TRAFFIC.....	42
TS-25	PAVEMENT MARKING.....	48
TS-26	FENCING AND RAIL.....	49
TS-27	SIGNAGE.....	53
TS-28	SODDING, SEEDING AND OVERSEEDING.....	54
TS-29	STORM SEWERS.....	56
TS-30	CONCRETE MASONRY REPAIR.....	59
TS-31	CONCRETE MASONRY SEALER.....	60
TS-32	BANNISTER TUNNEL LIGHTING.....	61
TS-33	TRAFFIC SIGNAL CONSTRUCTION.....	61
TS-34	BRIDGE MODIFICATIONS.....	61
TS-35	COLLAPSIBLE BOLLARDS.....	62
TS-36	GUIDELINES FOR OBTAINING ENVIRONMENTAL CLEARANCE FOR PROJECT SPECIFIC LOCATIONS	

## **TS-1 GENERAL**

The Federal Government is participating in the cost of construction of this project. All applicable Federal laws, and the regulations made pursuant to such laws, shall be observed by the contractor, and the work will be subject to the inspection of the appropriate Federal Agency in the same manner as provided in Sec 105.10 of the Missouri Standard Specifications for Highway Construction with all revisions applicable to this bid and contract.

This contract requires payment of the prevailing hourly rate of wages for each craft or type of work required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations, and requires adherence to a schedule of minimum wages as determined by the United States Department of Labor. For work performed anywhere on this project, the contractor and the contractor's subcontractors shall pay the higher of these two applicable wage rates. State Wage Rates, Information on the Required Federal Aid Provisions, and the current Federal Wage Rates are available on the Missouri Department of Transportation web page at [www.modot.org](http://www.modot.org) under "Bidding". Effective Wage Rates will be posted 10 days prior to the applicable bid opening. These supplemental bidding documents have important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

The latest edition of the following specifications is incorporated into the Contract Documents by reference:

- American Public Works Association, Kansas City Metropolitan Chapter Standard Specifications and Design Criteria (KCAPWA)
- Missouri Standard Specifications for Highway Construction 2017 Edition, from Missouri Highways and Transportation Commission.

Technical specifications for the work shall consist of the above referenced specifications referred to herein as the Standard Specifications, with such revisions, amendments, and supplements as are contained herein. Rock Island Shared Use Path will be constructed in accordance with the KCAPWA standard specifications unless otherwise noted herein or in the Plans.

Specification sections 2000 through 5800 refer to the KCAPWA specifications unless otherwise noted.

Specification sections 1 through 1092 refer to MoDOT specifications unless otherwise noted.

The previous table lists some of the sections of the Standard Specifications, which are applicable to the work. See Special Provision SP-4 "Contract Intent of Specifications and Plans" for order of preference should any conflicts arise in these specifications.

## **TS-2 WORK ZONE TRAFFIC MANAGEMENT PLAN**

### **A. DESCRIPTION.**

Work zone traffic management shall be in accordance with applicable portions of Division 100 and Division 600 of the Standard Specifications, and specifically as follows.

### **B. TRAFFIC MANAGEMENT SCHEDULE.**

Traffic management schedules shall be submitted to the engineer for review prior to the start of work and prior to any revisions to the traffic management schedule. The traffic management schedule shall include the proposed traffic control measures, hours traffic control will be in place, and work hours.

The contractor shall notify the engineer prior to lane closures or shifting traffic onto detours.

The engineer shall be notified as soon as practical of any postponement due to weather, material or other circumstances.

In order to ensure minimal traffic interference, the contractor shall schedule lane closures for the absolute

minimum amount of time required to complete the work. Lanes shall not be closed until material is available for continuous construction and the contractor is prepared to diligently pursue the work until the closed lane is opened to traffic.

#### C. TRAFFIC CONGESTION.

The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone.

##### 1. Traffic Delay.

The contractor shall be responsible for maintaining the existing traffic flow through the job site during construction. If disruption of the traffic flow occurs and traffic is backed up in queues of 15 minute delays or longer, then the contractor shall review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from occurring again.

##### 2. Traffic Safety.

Where traffic queues routinely extend to within 1000 feet of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet of the ROAD WORK AHEAD, or similar, sign on an undivided highway, the contractor shall extend the advance warning area, as approved by the engineer.

When a traffic queue extends to within 1000 feet of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet of the ROAD WORK AHEAD, or similar, sign on an undivided highway due to non-recurring congestion, the contractor shall deploy a means of providing advance warning of the traffic congestion, as approved by the engineer. The warning location shall be no less than 1000 feet and no more than 0.5 mile in advance of the end of the traffic queue on divided highways and no less than

500 feet and no more than 0.5 mile in advance of the end of the traffic queue on undivided highways.

#### D. WORK HOUR RESTRICTIONS.

The Contractor shall not perform any construction operation on the active lanes, including the hauling of material within the project limits, during restricted periods, holiday periods or other special events specified in the contract documents.

#### E. METHOD OF MEASUREMENT

None.

#### F. BASIS OF PAYMENT.

No direct payment will be made to the contractor to recover the cost of equipment, labor, materials or time required to fulfill the above provisions, unless specified elsewhere in the contract document.

### TS-3 UTILITIES

For informational purposes only, the following is a list of names of the known utility companies in the area of the construction work for this improvement (telephone numbers are included in TS-12):

Utility Name	Known Required Adjustment	Type
AT&T	None	Communications
COMCAST	None	Communications
GOOGLE FIBER NOC	None	Communications

KCMO WATER SERVICES	None	Water
KCP&L	None	Power
MAGELLAN MIDSTREAM PARTNERS LP	None	Gas
MISSOURI GAS ENERGY (SOUTHERN UNION GAS)	None	Gas
SPRINT – ERICSSON	None	Communications
LEE'S SUMMIT R-7 SCHOOL DISTRICT	None	Communications
SUREWEST INTERNET	None	Communications
SUREWEST TELEPHONE & TV	None	Communications
TIME WARNER CABLE	None	Communications
TW TELECOM	None	Communications
UNITE PRIVATE NETWORKS	None	Communications
VEOLIA ENERGY	None	Power
VERIZON COMMUNICATIONS INC.	None	Communications
ZAYO	None	Communications

The existence and approximate location of utility facilities known to exist, as shown on the plans, are based upon the best information available to the County at this time. This information is provided by the County "as-is" and the County expressly disclaims any representation or warranty as to the completeness, accuracy, or suitability of the information for any use. Reliance upon this information is done at the risk and peril of the user, and the County shall not be liable for any damages that may arise from any error in the information. It is, therefore, the responsibility of the contractor to verify the above listing information indicating existence, location and status of any facility. Such verification includes direct contact with the listed utilities.

#### **TS-4 FINAL PAYMENT DOCUMENTS**

##### **A. DESCRIPTION.**

If the final payment documents are not completed and ready for final payment in accordance with Sec 109.8 of the MoDOT Standard Specifications, within 60 calendar days of final acceptance of the project, the Contractor shall pay to the Contracting Authority the amount of \$2425 as liquidated damages and as a penalty for each Calendar Day until the final payment documents are completed and ready for final payment. The amount of liquidated damages shall be deducted from any payments due or to become due to the Contractor. Final payment documentation shall include but not be limited to the following:

An affidavit, on the form prescribed by Jackson County Public Works, to the effect that all payments have been made and all claims have been released for all material, labor and other items covered by the contract bond.

A Certification, on the form prescribed by Jackson County Public Works, showing the actual final DBE participation on the project including name of DBE, type of work and amount paid to each DBE firm.

An affidavit, on the form prescribed by Jackson County Public Works, to the effect that all workers have been paid in compliance with prevailing wage requirements within the contract.

## **TS-5 ADA COMPLIANCE AND FINAL ACCEPTANCE OF CONSTRUCTED FACILITIES**

### **A. DESCRIPTION.**

The contractor shall comply with all laws pertaining to the Americans with Disabilities Act (ADA) during construction of pedestrian facilities on public rights of way for this project. An ADA Checklist is provided herein to be utilized by the contractor for verifying compliance with the ADA law. The contractor is expected to familiarize himself with the plans involving pedestrian facilities and the ADA Post Construction Checklist prior to performing the work.

### **B. ADA CHECKLIST.**

The contractor can locate the ADA Checklist form on the Missouri Department of Transportation website:

[http://www.modot.mo.gov/business/contractor\\_resources/forms.htm](http://www.modot.mo.gov/business/contractor_resources/forms.htm)

The ADA Checklist is intended to be a helpful tool for the contractor to use during the construction of the pedestrian facilities and a basis for the commission's acceptance of work. Prior to work being performed, the contractor shall bring to the engineer's attention any planned work that is in conflict with the design or with the requirement shown in the checklist. Situations may arise where the checklist may not fully address all requirements needed to construct a facility to the full requirements of current ADA law. In those situations, the contractor shall propose a solution to the engineer that is compliant with current ADA law using the following hierarchy of resources: 2010 ADA Standards for Accessible Design, Draft Public Rights of Way Accessibility Guidelines (PROWAG) dated November 23, 2005, MoDOT's Engineering Policy Guidelines (EPG), or a solution approved by the U.S. Access Board.

It is encouraged that the contractor monitor the completed sections of the newly constructed pedestrian facilities in attempts to minimize negative impacts that his equipment, subcontractors or general public may have on the work. Completed facilities must comply with the requirements of ADA and the ADA Checklist or have documented reasons for the non-complaint items to remain.

### **C. COORDINATION OF CONSTRUCTION.**

Prior to construction and/or closure on an existing pedestrian path of travel, the contractor shall submit a schedule of work to be constructed, which includes location of work performed, the duration of time the contractor expects to impact the facility and an accessible signed pedestrian detour compliant with MUTCD Section 6D that will be used during each stage of construction. This plan shall be submitted to the engineer for review and approval at or prior to the pre-construction conference. Accessible signed detours shall be in place prior to any work being performed that has the effect of closing an existing pedestrian travel way.

When consultant survey is included in the contract, the contractor shall use their survey crews to verify that the intended design can be constructed to the full requirements as established in the 2010 ADA Standards. When 2010 ADA Standards do not give sufficient information to construct the contract work, the contractor shall refer to the PROWAG.

When consultant survey is not included in the contract, the contractor shall coordinate with the engineer, prior to construction, to determine if additional survey will be required to confirm the designs constructability.

### **D. FINAL ACCEPTANCE OF WORK.**

The contractor shall provide the completed ADA Checklist to the engineer at the semi-final inspection. ADA improvements require final inspection and compliance with the ADA requirements and the ADA Checklist. Each item listed in the checklist must receive either a "YES" or an "N/A" score. Any item receiving a "NO" will be deemed non-compliant and shall be corrected at the contractor's expense unless deemed otherwise by the engineer. Documentation must be provided about the location of any non-complaint items that are allowed to

remain at the end of the construction project. Specific details of the non-complaint items, the ADA requirement that the work was not able to comply with, and the specific reasons that justify the exception are to be included with the completed ADA Checklist provided to the engineer.

Slope and grade measurements shall be made using a properly calibrated, 2 foot long, electronic digital level approved by the engineer.

#### **E. BASIS OF PAYMENT.**

The contractor will receive full pay of the contract unit cost for all sidewalk, ramp, curb ramp, median, island, approach work, cross walk striping, APS buttons, pedestrian heads, detectible warning systems and temporary traffic control measures that are completed during the current estimate period as approved by the engineer. Based upon completion of the ADA Checklist, the contractor shall complete any necessary adjustments to items deemed non-compliant as directed by the engineer.

No direct payment will be made to the contractor to recover the cost of equipment, labor, materials, or time required to fulfill the above provisions, unless specified elsewhere in the contract documents.

There will be no measurement or separate payment for any items of work not specifically identified and listed in the Proposal, and all costs pertaining thereto will be included in the contract unit prices for other items listed in the Proposal.

### **TS-6 ACCEPTANCE OF PRECAST CONCRETE MEMBERS AND PANELS**

The following procedures have been established for the acceptance of precast concrete girders, slab panels, MSE wall systems, and other structural members. Shop drawings shall be submitted for review and approval to the engineer. The approval covers only the general design features, and in no case shall this approval be considered to cover errors or omissions in the shop drawings. The engineer requires the fabricator to furnish a certification of contract compliance and substantiating test reports. In addition, the reports shown below shall be required.

1. Certified mill test reports, including results of physical tests on the prestressing strands in reinforcing steel, as required.
2. Test reports on concrete cylinder breaks.

The engineer will verify and document that the dimensions of the precast units were checked at the jobsite and found to be in compliance with the shop drawings.

### **TS-7 ITEMS NOT LISTED IN THE PROPOSAL**

There will be no measurement or separate payment for any items of work not specifically identified and listed in the Proposal, and all costs pertaining thereto will be included in the contract unit prices for other items listed in the Proposal.

### **TS-8 SUBSIDIARY WORK**

All work shown in the plans or referred to in the technical specifications and not specifically set forth in the Itemized Proposal as a pay item shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the prices named in the proposal.

### **TS-9 ESTIMATED QUANTITIES**

Payment for the following listed items will be based on the contract quantity shown on the plans. No final measurement of quantities will be made.

Clearing and Grubbing

Unclassified Excavation



Embankment in Place (Contractor Furnished)

In the event of authorized changes, during construction, or appreciable error found in an estimated quantity, the Contractor may request in writing that a final measurement for payment be made of that item. Likewise, the engineer may require final measurement for payment. If a measurement and re-computation of the quantity is done it shall be in accordance with these Technical Specifications and the Standard Specifications and payment made based on the unit and unit price noted in the proposal.

## **TS-10 SHOP DRAWING REVIEW AND SUBMITTAL**

### **A. GENERAL**

This Section supplements the requirements of General Condition 10. These procedures shall apply to all types of submittals including shop drawings, samples, material certifications, and supporting documentation.

Contractor shall provide to the Engineer electronic pdf copies of all shop drawings, samples, material certifications, and supporting documentation. The pdf submittals shall be reviewed, stamped accordingly, and returned to the Contractor electronically.

Review action by the Engineer will consist of the following:

1. "Approved" requires no further action or re-submittal by the Contractor. The Contractor may proceed with fabrication or construction of that item.
2. "Approved if corrected as noted" will be used only for very minor corrections and obvious typos. Re-submittal of the drawings is required, but further approval is not. The Contractor may proceed with fabrication or construction of that item.
3. "Correct & Re-submit" will require the Contractor to make changes to the submittal and re-submit for approval. Fabrication and/or construction of that item may not begin until approval is provided.
4. "Not Approved"
5. Engineer will reject all submittals not properly stamped or annotated with CONTRACTOR'S approval. Engineer may reject submittals of marginal legibility.
6. Portions of the Work requiring a shop drawing, sample, or material certification shall not begin until the Engineer has approved the Shop drawing, sample, or certification. A copy of all approved submittals shall be kept in good order by the CONTRACTOR at the site and shall be available to the Engineer.

The approval of any shop drawing which substantially deviates from the requirements of the contract must be evidenced by a Change Order.

### **B. PAYMENT**

No separate payment will be made for this item. All costs pertaining thereto shall be subsidiary to the Contract Unit Prices for other items as listed in the Proposal.

## **TS-11 SUMMARY OF WORK**

- A. GENERAL.** Furnish all necessary labor, supervision, materials, supplies, tools and equipment to complete the work in accordance with the Contract Documents and as shown Drawings prepared by the City of Kansas City, Missouri for Jackson County, Missouri. Any references to "County" or "OWNER" listed within these specifications will be interpreted as referring to Jackson County, Missouri.
- B. PROJECT DESCRIPTION.** Construct the Rock Island Shared Use Path, which begins at Brickyard Road and continues south through Kansas City and Lee's Summit, MO approximately 6.43 miles and ending at Jefferson Street. The project will include a base bid and no alternates. The Trail will typically be a 10-foot wide bicycle and

pedestrian trail and improvements will include the trail, erosion control, existing bridge modifications, tunnel repairs, metal fencing, wood fencing and gates, storm drainage, grading, aggregate base, signal improvements, and appurtenances.

This is a public improvement project funded in part with Jackson County, Missouri funds known as:

**Rock Island Corridor Shared-Use Path**

**TS-12 PROJECT ADMINISTRATION**

**A. MEASUREMENT AND PAYMENT**

1. Payment for Work performed by the Contractor under these Contract Documents will be made in accordance with the General Conditions at the approved Contract Unit Price. Such payment shall compensate the Contractor for all labor, equipment, materials, tools, incidental expense, overhead and profit, and all Work and risk necessary to complete the project as indicated by the Contract Documents.
2. Work required to complete the project as indicated by the Plans, Specifications, and Contract Documents, but which has no corresponding unit or lump sum price, shall be a subsidiary item, whether or not so indicated. Contractor's cost to complete subsidiary items shall be included as part of the Contract Unit Prices for other items.
3. Plan Measure. Pay item quantities specified to be "Plan Measure" have been calculated from the dimensions indicated on the Plans. The quantities as listed on the Bid Form shall be the final quantities, except where significant scope changes occur, in which case the quantity will be modified by a duly executed Change Order.
4. Field Measure. "Field Measure" items will be measured in-place following their construction. The Engineer or his representative will determine actual quantities and classify the Unit Price Work. Payment will be made for actual quantities constructed in accordance with the Contract Documents, be they more or less than the listed quantities. The method and precision of such measurements for each respective "field measure" item is specified in the APWA Construction and Material Specifications, unless modified herein.

**B. UNIT PRICES**

1. Drawings, general provisions of the Contract, and all other technical specifications apply to this Section
2. Unit price is a price per unit measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.
3. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.
4. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
5. Owner reserves the right to make a final determination of the actual quantities and classifications of Unit Price Work in accordance with GC-57 ESTIMATED QUANTITIES.
6. List of Unit Prices: Unit prices are included in the Bid Tab. Technical specifications referenced in the list contain requirements for materials described under each unit price.

**C. SUBSIDIARY WORK**

1. All work shown in the plans or referred to in the plans or technical specifications and not specifically set forth in the Itemized Proposal as a pay item is considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the prices named in the proposal.

**D. CONSTRUCTION PROVISIONS**

1. The Contractor shall view the site of the work prior to submitting its bid to make its own determination of the conditions to be encountered in accomplishing the Work. Waste Disposal Sites shall be located in accordance with the plans and specifications.
2. The general specifications and technical specifications governing the completion of the Work contemplated shall be the Kansas City Metropolitan Chapter of the American Public Works Association, Standard Specification and Design Criteria (APWA) as amended and supplemented by the Kansas City, Missouri Public Works Department; the Missouri Standard Specifications for Highway Construction (2017) and supplemental specification revisions; and the provisions contained in the Project Manual and contract documents. See SP-4 NATURE AND INTENT OF SPECIFICATIONS AND PLANS for specifics.
3. The Contractor shall conduct the work in a manner that will ensure, as far as practical, the least obstruction to traffic and shall provide for the convenience and safety of the general public and residents along and adjacent to the shared use path in an adequate and satisfactory manner.
4. The Contractor shall at all times take necessary precautions to protect the life and health of all persons employed on the project. The Contractor shall be familiar with the latest accepted accident prevention methods and shall provide necessary safety devices and safeguards accordingly. The County will refuse to provide inspection services at plants or work sites where adequate safety measures are not provided and maintained. The Contractor shall provide and maintain in a neat and sanitary condition, such accommodations for the use of employees as may be necessary to comply with the requirements and regulations of any agency having jurisdiction over public health and sanitation. The Contractor shall permit no public or private nuisance. All sanitary facilities and safety devices shall be furnished free to employees and no direct payment will be made for such facilities or devices.
5. All materials and each part or detail of the Contractor's work shall be subject to inspection by the Engineer or authorized representatives, officials of Jackson County, Missouri Public Works Department and any other State or Federal government agencies having jurisdiction over the Work or funding of the project. The Contractor shall provide adequate access to all parts of the Work or project site at no extra cost to the project.
6. The quantities contained in the proposal represent an estimate of the work to be accomplished and shall be considered the final pay quantities unless appreciable errors in excess of 5% (in quantity) can be verified and documented by the Contractor. If a variation in excess of 5% is found due to errors in quantity calculations or changed field conditions, the Contractor may request to be paid for the quantity of work actually accomplished at the unit price contained in his proposal.
7. The Contractor shall be aware of specific construction restrictions concerning work in any streams. Construction of Temporary Stream Crossings or work pads shall follow all guidelines stipulated by the governing environmental agencies.
8. Testing of materials shall be conducted by Owner or other approved personnel. The Contractor shall make all necessary arrangements to provide access to the construction areas where testing shall be conducted.
9. Contractor shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound levels in the area during working hours. All construction machinery and vehicles shall be equipped with practical sound-muffling devices, and operated in a manner to cause the least noise consistent with efficient performance of the Work.
10. During construction activities on or adjacent to occupied buildings, and when appropriate, Contractor shall erect screens or barriers effective in reducing noise in the building and shall conduct its operations to avoid unnecessary noise which might interfere with the activities of building occupants.
11. The erection, including excavation, demolition, alteration, or repair of any building in or adjacent to a

residential area other than between the hours of 7:00 a.m. and 6:00 p.m. on weekdays, except in the case of urgent necessity in the interest of public safety, shall require a letter of permission from the County.

12. All existing fences affected by the Work shall be maintained by Contractor until completion of the Work. Where fences must be maintained across the construction easement, adequate gates shall be installed. Gates shall be kept closed and locked at all times when not in use.
13. On completion of the Work across any tract of land, Contractor shall restore all fences to their original or to better condition and to their original location.
14. No claim shall be made against Owner by reason of any act of an employee or trespasser, and Contractor shall make good all damage to Owner's property resulting from his failure to provide security measures as specified.

#### **E. PROJECT CONSTRUCTION PROGRESS MEETINGS**

1. Contractor shall schedule and hold progress meetings at least monthly and at other times as requested by Engineer or required by progress of the Work. Contractor, Engineer, and all Subcontractors active on the site shall be represented at each meeting. Contractor may at his discretion request attendance by representatives of its Suppliers, manufacturers, and other Subcontractors. Representatives of utilities and others should be requested to attend, as appropriate, if the work affects their infrastructure.
2. Contractor shall preside at the meeting. Meetings minutes shall be prepared and distributed by Contractor after reviewed by Engineer. The purpose of the meetings will be to review the progress of the Work, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems, which may develop on this project.

#### **F. COOPERATION WITH UTILITIES**

1. The existence and approximate location of utility facilities known to exist, as shown on the plans, are based upon the best information available to the County at this time. This information is provided by the County "as-is" and the County expressly disclaims any representation or warranty as to the completeness, accuracy, or suitability of the information for any use. Reliance upon this information is done at the risk and peril of the user, and the County shall not be liable for any damages that may arise from any error in the information. It is, therefore, the responsibility of the Contractor to verify the above listing information indicating existence, location and status of any facility. Such verification shall include direct contact with the listed utilities.
2. The Contractor agrees that any effects of the presence of the utilities, their relocation, Contractor's coordination of work with the utilities and any delay in utility relocation shall not be compensable as a suspension of work, extra work, a change in the work, as a differing site condition or otherwise including but, without limitation, delay, impact, incidental or consequential damages. The Contractor's sole remedy for the effects of the presence of utilities, delay in their relocation or any other effects shall be an excusable delay as provided in the Contract. The Contractor waives, for itself, its subcontractors and suppliers the compensability of the presence of utilities, delay in their relocation and any cost to the Contractor, its subcontractors and suppliers in any claim or action arising out of or in relation to the work under the contract.
3. The Contractor shall make suitable and timely written requests two weeks prior to commencing work that impacts utilities, if/as noted on the plans, and to make notifications to all utility owners, all pipe line owners, or other parties affected, and endeavor to have all necessary adjustments of the public or private utility fixtures, pipe lines, and other appurtenances within or adjacent to the limits of construction, made as soon as practicable.
4. Water lines, gas lines, wire lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cableways, signals, and all other utility appurtenances within the limits of the proposed construction which are to be relocated or adjusted are to be moved by the Utilities except as otherwise

provided or as noted on the plans.

5. The Contractor shall coordinate its operations with the work of Utilities making necessary adjustments, removals, or construction of new fixtures, and shall permit free access to the site for such work.
6. It is understood and agreed that the Contractor has considered in its bid all of the permanent and temporary utility appurtenances in their present or relocated positions whether or not shown on the plans and that no additional compensation will be allowed for any delays, inconvenience, or damage sustained by him due to any interference from the said utility appurtenances or the operation of moving them.
7. The general location of principal water mains, sewer pipes, telephone conduits, gas mains, pipe lines, pole lines, and other public and private utility facilities which will affect construction operations are indicated on the plans insofar as their locations are known. Some of these utilities may remain in place; others may be removed entirely or in part by the Utilities for relocation elsewhere.
8. When the failure of the owners of utility facilities to cooperate and coordinate their work with that of the Contractor results in actual delay to the Contractor in the over-all completion of his work, such delay will be considered in the count of working days or date specified for completion, provided the Contractor notifies the Engineer in writing of the delay at the time it occurs.
9. Should there be located within the right of way any public or private utility facilities which are to remain in place and which will interfere with the Contractor's proposed methods of operation, the Contractor shall make all necessary arrangements with the owners for any temporary or permanent removal or relocation of such facilities desired for his convenience. Any cost involved shall be borne by the Contractor.
10. The Contractor shall use every precaution necessary to prevent damage to all public and private utility wires, lines, pipes, poles, cables, and conduits within the right of way. The Contractor shall be responsible for all damage to any utility facility due directly to his operations regardless of location and shall repair and replace as necessary any such damaged facility or make payment to the owner for repair or replacement.
11. Power lines will not be taken out of service during this project. The Contractor shall coordinate with the power companies to relocate the power poles and lines. Shielding of the power lines may be necessary to construct certain items of this contract. The Contractor shall be responsible for all costs incurred for shielding the power lines by the utility and any damage done to the power lines or poles while performing work for this contract. The Contractor shall contact the proper utility company to determine the cost of shielding the power lines.
12. Contractor's representatives on site shall have an emergency utility contact listing available at all times. Utilities and numbers shown below should be verified prior to the pre-construction meeting by the Contractor.

Utility	Emergency Phone Number
AT&T	1-800-246-8464
Comcast	888-262-5101
Google Fiber NOC	1-866-954-1572
KCMO Street and Traffic Division	311, or 816-513-0421
KCMO Water Services Dept Dispatcher	311, or 816-513-1313
KCMO Water Services Pollution Control	311, or 816-513-1313
KCP&L	1-888-544-4852

Magellan Midstream Partners LP	1-800-720-2417
Missouri Gas Energy (Southern Union Gas)	1-800-582-0000
MISSOURI ONE-CALL	1-800-344-7483
Sprint – Ericsson	1-800-521-0579
KCMO Street Lighting /Black & McDonald	816-483-0257
Surewest Internet	913-825-2981
Surewest Telephone & TV	913-825-3000
Time Warner Cable	(888) 826-2074
TW Telecom	800-829-0420
Unite Private Networks	866-963-4237
Veolia Energy	816-889-4950
Verizon Communications Inc.	1-800-624-9675
Zayo	1-866-236-2824

#### **G. UTILITY ADJUSTMENTS**

1. Items under this heading include utility adjustments in conjunction with the scope of work for this project as follows: water mains, water service lines, sewer service lines, gas service lines and buried and or overhead cables, utility poles, traffic signals, fiber optic lines, signal poles and signal cables belonging to public utility companies or the private consumers. These utility companies and/or private consumers include (but are not limited to) the KCMO Water Services Department, KCMO Streets & Traffic Division, Gas Service, electric, cable TV, telephone, and other non-franchise utility companies. Damage during the construction of this project shall be repaired as necessary in conformance with the regulations of the involved utilities.
2. The Contractor is responsible for the maintenance of service of all sewer mains and building sewers encountered during construction. The Contractor shall not be entitled to additional compensation for the repair of any such lines damaged during his operations.
3. Gas Valve Box Adjustments. Missouri Gas Energy (MGE) shall be notified of broken boxes or missing lids; MGE will repair and adjust the box or provide new lids to the Contractor. The Contractor shall notify the appropriate MGE District Supervisor at least two (2) days in advance, of any tear-out location which involves a gas valve cover within a concrete area. This notification shall include the specific location and the date of the scheduled tear-out. The Contractor shall not place new concrete or asphalt over a gas valve cover.

#### **H. UTILITY RELOCATIONS**

1. If required, relocations or adjustments to facilities owned by Utility Companies will be accomplished by the Utility at no cost to the Contractor. The County will endeavor to have all necessary adjustments or relocations of public or private utility facilities in direct conflict with the roadway work made as soon as practicable. Such adjustments or relocations will be made at no cost to the Contractor. The adjustments or relocations may be completed before the Contractor progresses to the points affected.
2. Under some circumstances, however, such adjustments or relocations may have to be performed during the Contractor's Work. The Contractor shall be responsible for coordinating its work with that of the Utility or its Contractors so as to cause the least possible delay in the work.
3. Locations or grades of items shown on the Plans are considered approximate only. No guarantee is made as to the accuracy or completeness thereof.

4. It is anticipated that unknown items not shown on the plans will also be uncovered during excavations and shall require adjustment as specified herein. The Contractor shall carefully note the location of all such items exposed and report the information to the Utility. The Contractor's employees shall not knowingly permanently cover over any such items unless specifically instructed to do so.
5. The Contractor shall be solely responsible and liable for incidental and consequential damage to any utility facilities or interruption of the service caused by it or its subcontractors operation. The Contractor shall hold and save harmless the County from damages to any utility facilities interruption of service by it or its subcontractor's operation.
6. It shall be noted by the Contractor that Jackson County, Kansas City, Lee's Summit, and MoDOT are members of Missouri One Call (800 Dig Rite). Some work on this project may be in the vicinity of their utility facilities, which includes but is not limited to traffic signal cables, highway lighting circuits, ITS cables, cathodic protection cables, etc. Prior to beginning work, the Contractor shall request locates from Missouri One Call.

**I. UTILITIES IN STREET RIGHT-OF-WAY OR TRAIL EASEMENTS**

1. Utilities located in street right-of-way or trail easements; except water, sanitary sewer, and street lighting; requiring adjustment or relocation for this construction shall be adjusted or relocated by the Utility at no cost to the Contractor. The Contractor shall be responsible for coordinating this activity with the responsible Utility.

**J. UTILITY PROTECTION**

1. Utilities located in utility easements or private easements shall be protected. The Contractor efforts when enlisting the assistance of the utility owner for such protection shall be incidental to the project except as indicated below.
2. The Bid Form for this project includes 'Utility Potholes' that shall be used as needed and as directed by the engineer to locate utilities that are near construction items of this project. 'Utility Potholes' shall be measured and paid for per each at the unit cost included in the Bid Form. Over-run, under-run, or complete elimination of the bid item for "Utility Potholes" shall not be justification for unit price adjustment.
3. The Bid Form for this project includes 'Temporary Utility Support Structures' that shall be used as needed and as directed by the engineer to temporarily support existing utilities that will remain in place during construction of this project. Shop drawings depicting the plan for Temporary Utility Support Structures shall be submitted to the County for review and approval prior to use. 'Temporary Utility Support Structures' shall be measured and paid for per each at the unit cost included in the Bid Form. Over-run, under-run, or complete elimination of the bid item for "Temporary Utility Support Structures" shall not be justification for unit price adjustment.
4. The Bid Form for this project includes 'Concrete Encase Existing Fiber Conduit' that shall be used as needed and as directed by the engineer to protect existing fiber conduit that will be left in place near structures constructed with this project. This item shall include the placement of non-reinforced concrete around existing fiber conduits. The concrete shall be placed to provide a minimum cover of 6" beyond the outside of existing fiber conduit. 'Concrete Encase Existing Fiber Conduit' shall be measured and paid for per linear foot along the existing fiber conduit to be encased at the unit cost included in the Bid Form. Over-run, under-run, or complete elimination of the bid item for "Concrete Encase Existing Fiber Conduit" shall not be justification for unit price adjustment.

**K. COOPERATION BETWEEN CONTRACTORS**

1. If separate contracts are let within the limits of any one project, each contractor shall conduct its work so as not to interfere with or hinder the progress or completion of the work being performed by other contractors. Contractors working on the same project shall cooperate with each other as directed.

2. Each Contractor involved shall assume all liability, financial or otherwise, in connection with its contract and shall protect and save harmless the County from any and all damages or claims that may arise because of inconvenience, delay, or loss experienced because of the presence and operations of other contractors working within the limits of the same project.
3. The Contractor shall arrange its work and shall place and dispose of the materials being used so as not to interfere with the operations of the other contractors within the limits of the same project. The Contractor shall join its Work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.
4. There are the current projects that may occur simultaneously near or around the project area which may include adjacent private property owners or utilities that Contractor shall cooperate with each other as directed.

#### **L. JOB SITE ADMINISTRATION**

1. The Contractor, or duly authorized Representative to act for the Contractor, shall continually be present at the site of the Work while Work is in progress for the duration of this project. The Contractor shall give the Work the constant attention necessary to facilitate the progress thereof, and shall cooperate with the Engineer and other Contractors in every possible way. In the absence of the Contractor or Representative, suitable communication equipment, which will ensure receipt of messages within one (1) hour, will be required.
2. If the project includes federal or state funds, Missouri Department of Transportation and/or Federal Highway Administration Representatives shall have right of access to the project at any time. A Missouri Department of Transportation Representative will be present at the Final Inspection.
3. Contractor shall designate, in writing, a duly authorized Representative(s) at the pre-construction meeting. The duly authorized Representative(s) shall be an official liaison between the County and Contractor regarding the signing of pay estimates, change orders, work day reports and other forms necessary for communication and project status inquiries. Upon project commencement, the County Engineer shall be notified, in writing, within five (5) working days of any changes in the Contractor's Representative(s).
4. The Contractor shall have on the work site at all times, as his agent, a competent superintendent capable of reading and thoroughly understanding the Plans and Specifications and thoroughly experienced in the type of work being performed, who shall receive instructions from the Engineer. The superintendent shall have full authority to execute orders or directions of the Engineer without delay, and to promptly supply such materials, equipment, tools, labor, and incidentals as may be required. Such superintendence shall be furnished regardless of the quantity of work sublet.
5. The Contractor shall make its own arrangements for material and equipment storage areas and field office location. When private properties are used for any of the preceding reasons, the Contractor shall contact the Engineer or his representative, prior to usage of the property, to form a three party agreement between the County, the Contractor and the Property Owner.

#### **M. REGULATORY REQUIREMENTS**

1. The City of Kansas City, Missouri, "Erosion and Sediment Control Specifications", City Standards and KCMO Supplements are available on the Internet.

Director of Public Works  
Development Assistant Group  
5th Floor, City Hall

2. The APWA Standard Specifications and Design Criteria are available from:

<http://www.kcapwa.net>



**3. KCMO STANDARD DRAWINGS AND SPECIFICATIONS:**

The effective standard drawings and specifications and KCMO Supplements adopted by the Director of Public Works can be found at:

<http://kcmo.gov/publicworks/design-construction-standards/>

**4. Procedures, formats, guidelines and references pertaining to Infrastructure Improvement reviews, permitting and inspections**

<http://kcmo.gov/planning/land-development-2/>

**5. The City of Lee's Summit, Missouri Design and Construction Manual including standard details and specifications can be found at:**

<http://cityofls.net/Development/Development-Regulations/Design-and-Construction-Manual>

Missouri Department of Transportation Standard Drawings and Standard Specifications can be found at:

<http://www.modot.org/business/index.htm>

**N. CONTRACTOR USE OF PREMISES**

1. Contractor may use permanent right-of-way easements and temporary easements, and easements obtained for this project, which define the project limits for its construction activities. If the Contractor needs additional space for materials and equipment storage areas, field office location, waste area, and waste removal, Contractor shall make his own arrangements. Any additional easements and access to private property, which is desired outside of the project limits, is the responsibility of the Contractor. All environmental permits and clearances will be required prior to occupying or disturbing any additional areas outside of the project right-of-way. Acquisition of all necessary environmental permits and clearances for areas outside of existing right-of-way is the responsibility of the Contractor.
2. When private properties are used for any of the preceding reasons, the Contractor shall contact the Engineer prior to usage of the property to form a two party agreement between the Contractor and the Property Owner and provide a copy to the County.
3. Contractor will take necessary measures to allow County and private property owners occupancy of their respective sites. Contractor shall keep driveways and entrances serving premises clear and available to owners, owner's employees, and emergency vehicles at all times. Contractor shall not use these areas for parking or storage of materials and shall schedule deliveries to minimize use of driveways and entrances. Contractor shall also schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
4. County and property owners will occupy site during entire construction period. Contractor shall cooperate during construction operations to minimize conflicts and facilitate usage and perform the Work so as not to interfere with operations.

**O. PROTECTION OF PARKING AREAS AND PEDESTRIANS**

1. Due to the location and nature of the work, specific requirements for protecting private and public property and right of access will be enforced. The following represent the minimum criteria that the Contractor shall meet regarding protection of existing parking areas and pedestrians:
2. Confine all work, equipment, and personnel within the limits of the cleared existing right-of-way and easements, both permanent and temporary. Clearing of additional right-of-way beyond what is needed for the construction of the project for the purposed of equipment storage and staging areas shall only be completed after receiving written permission from the County.

3. Take all precautions necessary to preserve and protect public access to all existing businesses and other improvements located within the project right-of-way and easements.
4. Coordinate construction activities with adjacent property owners through the County.
5. Provide for safe passage of vehicles and pedestrians utilizing adjacent properties.
6. Take necessary precautions to prevent damage to vehicles driving through or parking in the affected areas.

**P. PROTECTION OF EXISTING TREES AND FORESTED AREAS**

1. The Contractor shall limit clearing activities to those defined in the plans.
2. Care shall be taken to avoid any unnecessary clearing. No area outside of those identified in the plans shall be cleared without written consent from the Engineer.
3. Potential bat habitat was identified along the corridor. Potential bat habitat has been identified in the plans. Removal of habitat shall be coordinated with the Engineer prior to commencing work.

**Q. PROJECT COORDINATION**

1. All construction activities shall be coordinated with utility owners.
2. All construction activities shall be coordinated with adjacent businesses and/or property owners affected by construction of these improvements at least 48 hours in advance.

**R. PROTECTION OF EXISTING PROPERTY**

1. The Contractor shall protect existing public and private property from damage by construction operations, including the following measures:
  - a. Confine all work, equipment, and personnel within the limits of the project right-of-way and temporary and permanent easements shown on the drawings.
  - b. Take all precautions required to preserve and protect all existing trees, shrubs, and other improvements located within the project right-of-way and easements, except those items designated to be removed by this contract.
  - c. Where fences are to be breached on private property, the owners thereof shall be contacted and arrangements made to ensure proper protection of any property thus exposed. This shall include the construction of temporary fencing by the Contractor for the protection and containment of children and animals.
2. The applicable requirements specified for protection of the Work shall also apply to the protection of existing property.
3. Before acceptance of the Work by County, Contractor shall replace or repair all existing improvements damaged by his operations.
4. All property pins removed or displaced shall be reset to its original location by a licensed surveyor.

**S. CONTROL OF DRAINAGE**

1. Control of drainage within the limits of the project right-of-way and easements for this contract shall be the Contractor's responsibility throughout the construction period.
2. The Contractor shall provide temporary ditches, culverts, structures, sumps, pumping, and other facilities necessary to prevent the detention of surface or subsurface drainage on the project site and abutting property, and to carry drainage through the site and discharge it without damage to the receiving property.

## **T. TESTING AND CONTROL OF WORK AND MATERIALS, AND SUBMITTALS**

### **1. Contractor's Responsibility and Testing:**

The Contractor will be fully responsible for complying with the Technical Specifications, Plans and other Contract Documents and shall obtain such certificates of compliance and have such tests made as will assure full compliance. Copies of such certificates and test reports shall be furnished to the Engineer, prior to payment of pay items.

Manufacturers shall provide test facilities and personnel as required by the Technical Specifications and shall have such tests made as required to assure full compliance with the Contract Documents.

The County will perform field testing as desired by the County. Such testing, or failure to test, on the part of the County shall in no way relieve the Contractor of complete responsibility for furnishing materials and constructing the Project in accordance with the Contract Documents. The cost of acceptance testing services arranged by the County, if testing results are found to be in compliance with the Contract Documents, will be borne by the County. The cost of acceptance testing services arranged by the County, if testing results are found to not be in compliance with the Contract Documents, will be borne by the Contractor.

### **2. Certificates of Compliance:**

The Contractor, prior to payment for the pay items, shall submit, in triplicate, certificates of compliance from manufacturers, producers, fabricators and suppliers of items to be incorporated in the work attesting that all items and materials supplied in connection with the work conform to the requirements of the Specifications, as provided in the various sections of these Contract Documents.

Whenever the items so certified deviate from the requirements of the Technical Specifications, Plans and other Contract Documents, then the Contractor shall point out such deviation in the letter of transmittal. Unless this procedure is followed and such deviations are specifically accepted in writing by the Engineer, then the Engineer's acceptance of such certifications will not constitute approval of the deviations.

Said certificates may be accepted by the County and Engineer as adequate evidence of compliance with the Contract Documents. However, at its option, the County may test any or all of said items for compliance. If found to be in compliance with the Contract Documents, the cost of testing will be borne by the County. If found to be not in compliance, the Contractor shall pay for such testing.

### **3. Requirements for Certifications, Shop Drawings and Testing:**

Specific requirements for certifications, shop drawings and testing are given in the following subparagraphs.

- a. Manufactured items, as follows, will require certificates of compliance, with shop drawings, catalog data or installation instructions where so indicated.
  - Asphalt cement for asphaltic concrete.
  - Portland cement.
  - Reinforcing steel and welded wire fabric for all reinforced concrete work.
  - Structural steel and metal work (Shop drawings required for fabricated items.)
  - Iron castings.
  - Concrete repair products and materials.
  - Epoxies and sealers.
  - Pre-cast Concrete products

- Other items if County requests them.
- b. Rock and Sand Products will require certificates of compliance, as follows:
- Aggregates for portland cement.
  - Aggregates for asphaltic concrete.

**4. Backfill:**

It is recognized that, due to mixing of types of materials found in County Construction, it may sometimes be difficult to correlate actual performance with test results. The Engineer may make notations of waiver on certain field moisture-density test reports when, in his judgement, the Specification requirements have been met based on visual inspection and the test reports do not truly indicate the field condition. However, the Contractor will be fully responsible for settlement of backfill.

**5. Concrete:**

The actual mix proportions shall be determined by the Contractor, based on satisfactory experience with the proposed materials and the specified mix. Mix proportions, typical test reports and complete data on materials and plant, supporting their acceptability under the Specifications, shall be submitted to the Engineer in triplicate for concurrence before beginning concrete work.

Air content shall be measured in accordance with the requirements of ASTM C 173.

Visual inspections and tests for performance of concrete may be made by the Engineer to satisfy himself that consistency, air content, minimum compressive strength, materials, gradation and cement content are in compliance with the Technical Specifications.

Concrete shall be tested by the Contractor in accordance with TS-21 PORTLAND CEMENT PAVEMENT.

**6. Asphaltic Concrete Mix:**

The actual mix proportions shall be determined by the Contractor, based on satisfactory experience with the proposed materials and the specified mix. Mix proportions, typical test reports and complete data on materials and plant, supporting their acceptability under the Specifications, shall be submitted to the Engineer in triplicate for concurrence before beginning concrete work.

**U. GUIDELINES FOR OPEN EXCAVATIONS**

1. Required excavations shall be restored to the level of the adjacent surfaces as soon as practicable. Unsupervised open excavations on public properties are not permitted. Every person who for any purpose makes or causes to be made any excavation in, upon, under, through or adjoining any street, sidewalk, alley, park, boulevard, parkway or any other public properties, and shall leave any part or portion thereof open shall provide effective protection to the public.
2. All excavations in roadways shall be protected and secured in compliance with existing federal, state and local codes and standards, including, but not limited to the most current edition of the Manual of Uniform Traffic Control Devices.
3. All unsupervised excavations not within roadways shall be protected and secured. A protective cover over an excavation shall be installed so that it can sustain the weight of any persons and/or objects placed upon it. The cover shall be fixed to the ground so it cannot be moved. Protective covers shall have no opening(s) or protuberance(s) of sufficient size to cause a fall and/or injury. Protective coverings shall meet OSHA requirements. Advance warning devices shall be installed as necessary.
4. Any excavation that is not covered shall be fenced in such a way that it surrounds that entire area under excavation so as to prevent entry by any persons. The protective fencing shall be a minimum of 42" in height.

The protective fence shall be constructed in such a manner that it is adequately secured and will remain upright at all times under normal site conditions. Protective fencing shall meet OSHA requirements.

5. All protective coverings and/or fences on excavations shall be inspected at least daily to assure integrity. Protective coverings and/or fences in heavily trafficked areas shall be inspected more often as necessary.
6. All necessary and applicable permits shall be secured for any work contemplated on public properties before commencing any activity. In all instances the applicant agrees to perform all work in accordance with the permit and to indemnify and hold harmless the County from all liability, judgments, costs, expenses and claims growing out of damages or alleged damages, of any nature to any person to property arising out of performance or non-performance of said work or the existence of facilities and/or appurtenances thereof.

#### **V. TREE OR SHRUB PROTECTION**

1. The Contractor shall use appropriate precautions when working around trees and shrubs to remain in place to prevent damage to them. The Contractor will be responsible for any damage caused by work in the vicinity of any trees or shrubs along the project. All damage to trees within City or County right-of-way are to be reported, immediately repaired, and care efforts coordinated with the County and/or City and their Representative.
2. Inside the drip lines of trees to be saved, storm sewer pipe shall be tunneled to safe distances outside of the drip line.
3. During trenching operations in the vicinity of trees that are to be saved, any tree roots encountered shall be kept intact as much as possible. Upon exposing tree roots within the drip lines of the adjacent live trees, the roots shall be carefully pruned and protected from drying out. The roots shall be kept intact as much as possible, and torn ends shall be sheared with sharp tools. Exposed roots shall be kept moist and shall not be allowed to dry out. Where roots cannot be kept moist by other means, organic spray moisture protective coatings shall be used.

#### **W. DEBRIS CONTROL**

1. During construction, care shall be taken to ensure public safety in the project area. The Contractor shall maintain the project area so that it is free of debris at all times. As each major component of work is completed, excess materials and unnecessary equipment shall be removed from the project area and corresponding backfilling and clean up shall be done promptly.

#### **X. POLLUTION CONTROL**

1. Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities. No sanitary wastes will be permitted to enter any drain or watercourse other than sanitary sewers. No sediment, debris, or other substance will be permitted to enter sanitary sewers or any other drain or watercourse.
2. Contractor shall prevent unnecessary dust. Earth surfaces subject to dusting shall be kept moist with water or be approved application of an approved chemical suppressant. Dusty materials in piles or in transit shall be covered to prevent blowing.
3. Contractor shall make provisions so that buildings or operating facilities that may be affected by dust shall be adequately protected from dust. Existing or new machinery, motors, instrument panels, or similar equipment shall be protected by suitable dust screens. Proper ventilation shall be included with dust screens.
4. Contractor shall maintain and keep clean streets throughout work period.
5. No open burning will be permitted.

## Y. MATERIAL AND EQUIPMENT STORAGE

1. The Contractor shall make its own arrangements for material and equipment storage areas and field office location. During construction hours, equipment, material and vehicles utilized in construction of the project will only be permitted on shoulders, medians or pavements where the locations are closed to traffic, properly signed and occupied by ongoing construction operations, unless otherwise approved by the engineer. Except in cases of emergency, construction equipment, material and vehicles will not be permitted on pavements or shoulders being utilized by traffic. If the contract specifies time periods the contractor will not be permitted to perform work, construction equipment or vehicles shall not enter or leave the construction area via the pavements handling traffic nor be operated on the pavements handling traffic within the construction area during the restricted time periods. During non-construction hours, construction equipment, material and vehicles will not be permitted within 30 feet of the edge of the pavement or shoulders carrying traffic unless the equipment, material and vehicles are located in a properly protected area, an off-site storage area or as otherwise directed by the engineer.
2. Fire hydrants on and adjacent to the highway shall be kept accessible to firefighting apparatus at all times, and no obstruction shall be placed within 15 feet of any such hydrant. Footways, gutters, sewers, outlets, inlets and portions of highways adjoining the work under construction shall not be obstructed. Pavements over which hauling is performed shall be kept clean of spilled or tracked-on material at all times when in use by traffic.
3. When private properties are used for any of the preceding reasons, the Contractor shall contact the Engineer or his representative, prior to usage of the property, to form a three party agreement between the County, the Contractor and the Property Owner.
4. This section provides for the required procedures for selecting, acquiring, shipping, and storing products for the Work.
  - a. Selection & Acquisition: Do not use materials and equipment removed from existing premises, except as specifically permitted by the Specifications. All products shall be new, never used before, unless otherwise specified. Provide interchangeable components of the same manufacturer, for similar removable components, such as T-bolts, glands, and gaskets.
  - c. Shipment: All materials and equipment incorporated into the work shall be suitably packaged to facilitate handling and protect against damage during transit and storage. Painted surfaces shall be protected against impact, abrasion, discoloration, and other damage. All painted surfaces that are damaged prior to acceptance of materials and equipment shall be repainted to the satisfaction of the County.

Each item, package, bundle of material, or piece of equipment shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment.

Pipe and fitting linings shall be protected against damage.

- e. Storage: Offsite storage of materials and equipment shall conform to manufacturer's recommendations. Offsite storage arrangements shall be approved by the County. Such offsite storage arrangements shall be presented in writing and shall afford adequate and satisfactory security and protection. Offsite storage facilities shall be bonded and accessible to County. Onsite storage of materials and equipment shall conform to manufacturer's recommendations. Onsite storage shall not interfere with public access and/or safety.
- f. Other Requirements. Bedding material shall be stored so that it is protected from significant change in moisture content and so that large frozen masses will not form in freezing weather. All components shall be protected from weather. Gaskets shall be protected from exposure to sunlight.

## **Z. BORROW AND WASTE AREAS**

1. When private properties are used for borrow or waste areas, the Contractor shall contact the Engineer or his representative prior to usage of the property, to form a three-party agreement between the County, the Contractor and the Property Owner. All borrow areas shall meet requirements of Section 203 of the Missouri Standard Specifications for Highway Construction, 2017 Edition.
2. Should the project involve state or federal funds, Contractor shall follow provisions in the project manual for proper environmental clearances prior to delivery of borrow material.
3. All products of demolition, clearing and grubbing, pavement removal, and excess excavated materials shall be removed from the project site and disposed of in a properly permitted waste site or at locations as indicated in the plans.

## **AA.CLEANUP OPERATIONS**

1. All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), Standard Specifications and Design Criteria apply
2. Contractor shall pursue cleanup operations as quickly as possible. This cleanup work shall be performed as areas of work are brought near completion.
3. Attention is directed to the technical spec for any clean-up requirements related to the type of work. Project completion includes the cleanup and all other work necessary, as detailed in the Contract Drawings and the APWA-KCMO Specifications.

## **BB.DEMOLITION DISPOSAL**

1. All demolition debris not to be salvaged shall be disposed of at a legal landfill or at some other site where dumping of such materials is allowed under federal, state and local laws. Such site must be previously approved in writing by the County.
2. In Kansas City, demolition debris dumpsites are permitted by the Board of Zoning Adjustment. For further information on City approved dumpsites contact:  
  
City Planning & Development Department  
  
City Hall  
  
414 E. 12th Street, 15th floor  
  
Kansas City, MO 64106-2795  
  
Tel: (816) 513-2846  
  
Fax: (816) 513-2838
3. Earthen Landfills:  
  
Soil, rock, and gravel are not considered to be demolition debris and can be placed at properly permitted locations. Obtain grading permits, erosion control permits, and floodplain certificates as applicable (from County).
4. Submittals:  
  
At the pre-construction conference, Contractor shall submit the proposed sites for disposal of demolition debris and earthen material, in writing, to the County. Once work starts, all substitute sites shall be submitted in writing to the County. Submittals shall include a copy of the permit authorizing disposal at each site whether in or out of the City/County Limits.

County's Representative will confirm that the proposed sites, both within and out the City/County Limits, are properly authorized. County's Representative will advise Contractor in writing if a disposal site is not properly authorized. Lack of a response to inquiry is sufficient cause to reject a disposal site.

**5. Remedy:**

Failure to abide by these contract requirements to use only approved dumpsites, whether intentional or inadvertent, is deemed to be a major violation of the contract. In the event of such violation, the County shall have two special remedies, in addition to local ordinance penalties. It may, at its sole option:

- a. Direct that the materials which have been dumped at a site other than the approved one be moved to the approved location, and that the site where the unapproved dumping took place to be restored to its previous condition, or
  - b. Terminate the contract immediately by written notice to the Contractor, in which case the Contractor shall have no right to cure its default. The Contractor shall be entitled to be paid for the completed portion of his contract less the expense to remedy the unauthorized dumping. Such payment shall be made only after the work is complete and all costs are finally determined.
- 6.** Before either of such remedies is invoked, the Contractor will be given five (5) Working Days written notice of the alleged violation. During the five (5) day period, the Contractor may submit information for consideration by the County. Due to the nature of illegal dumping, County need not have proof positive; "alleged" is herewith adjudged sufficient evidence to terminate this contract.

## **TS-13 PROJECT MOBILIZATION**

### **A. GENERAL**

- 1.** Preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site.
- 2.** Establishment of all offices, buildings, and other facilities necessary for work on the project except as provided in the Contract as separate bid items.
- 3.** A common use field office (150 square feet) shall be provided and the costs shall be subsidiary to 'Mobilization'.
- 4.** All other work and operations which must be performed or costs incurred prior to beginning work on the various items on the project site.
- 5.** Completion of all surveying and staking as required to accurately complete construction of the project.
- 6.** Any permit required by the City of Lee's Summit, MO including the 'Infrastructure Permit' and 'Temporary Traffic Control Permit' required for the construction of the project and not previously provided by the County shall be subsidiary to 'Mobilization'.
- 7.** The costs to complete as-built surveys and as-built drawings are subsidiary to 'Mobilization'. This work shall include providing the following:
  - a. Two (2) full size copies (34" x 22") of surveyed as built drawings including all trail elements, structures, drainage, signals, lighting, etc.
  - b. Two (2) half size copies (17" x 11") of the same.
  - c. AutoCAD electronic copies of the same.
  - d. All hard copy drawings shall be signed and sealed by a Professional Land Surveyor (PLS) registered in



the State of Missouri.

8. Completion of all final paperwork documentation as defined in the Project Manual.

## **B. PAYMENT**

Payment will be made for Mobilization at the contract lump sum price for "Mobilization" as listed in Bid Form and such payment and price shall constitute full compensating for all labor, tools, materials and equipment necessary to complete this item. Any additional work or change required by the Owner for the completion of the project shall be considered incidental to the contract and no additional compensation shall be allowed. Partial payments will be made as follows:

1. When 5 percent or more of the original contract amount is earned, 25 percent.
2. When 10 percent or more of the original contract amount is earned, an additional 25 percent.
3. When 25 percent or more of the original contract amount is earned, an additional 25 percent.
4. When 50 percent or more of the original contract amount is earned, an additional 15 percent.
5. When Final payment documentation is completed and accepted, the final 10 percent.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the contract.

## **TS-14 CONTRACTOR PROVIDED SURVEYING AND CONSTRUCTION STAKING**

### **A. GENERAL**

This work shall consist of providing the necessary surveying and staking to successfully complete the construction of the project. The Engineer will provide project control points and benchmark data necessary to layout the job as indicated on the plans. Except as specified herein, the Contractor shall provide all other surveying and staking including but not limited to recovery and perpetuation of project horizontal and vertical control networks, additional project control points and benchmarks, centerline stakes, slope stakes, pipe stakes and all reference and grade stakes locating all drainage, roadway and bridge structures as necessary for the successful completion of the work. Control network perpetuation and construction staking work shall be in accordance with generally accepted surveying practices and provisions herein.

### **B. PRESERVATION OF EXISTING MONUMENTS**

The Contractor shall be responsible for the preservation of all Geographic Reference Stations, U.S. Army Corps of Engineers, State of Missouri and City of Kansas City Missouri or Jackson County, Missouri maintained benchmarks, section corners, property monuments of any kind and other reference marks set by the County or any other governmental authority as shown on the plans or informed of in writing.

1. The Contractor shall give written notice to the Engineer at least five (5) working days in advance of any need to disturb or destroy any of the above listed monumentation and shall submit a copy of said notice to the Engineer.
2. The Contractor shall not disturb nor destroy any of the above listed monumentation without specific written approval from the Engineer.
3. Only a Professional Land Surveyor registered in the State of Missouri shall perform the surveying to reset or replace any of the above listed monumentation. The Professional Land Surveyor shall follow all rules, regulations, provisions and laws of the State of Missouri, as applicable.
4. If any of the above listed monumentation is used as a project control point or project benchmark, then the procedures outlined in this section, B. PRESERVATION OF EXISTING MONUMENTS, shall take precedence over the procedures outlined below in section C RECOVERY, PERPETUATION AND

CHECKING for project control points and project benchmarks.

5. The cost of replacement of any of the above listed monumentation carelessly or willfully destroyed or disturbed by the Contractor will be charged against the Contractor and deducted from payment for Work.

### **C. RECOVERY, PERPETUATION AND CHECKING**

The Contractor shall be responsible for the perpetuation and preservation of the project horizontal and vertical control networks. Prior to construction the Contractor shall recover and check all project control points and project benchmarks for positional tolerance. The Contractor shall also check construction match points for correct alignment and elevations.

1. The Contractor shall recover and check the relative horizontal positions of all project control points by checking each control point with at least two other project control points. On plans that have only two project control points, the distance between them shall be checked. Where a project control point position has changed more than plus or minus fifteen millimeters (15mm) from the plan position, a full explanation of the situation and supportive documentation shall be submitted by the Contractor to the Engineer within two (2) working days of the discovery. The Engineer will review the data, validate the problem and inform the Contractor in writing of a method of resolution within three (3) working days of notification.
2. The Contractor shall recover and check the relative elevations of all project benchmarks and control points by running a 3-wire level loop using the project benchmarks and control points as turning points in the loop. Where an elevation has changed more than plus or minus six millimeters (6mm) from the plan position, a full explanation of the situation and supporting documentation shall be submitted by the Contractor to the Engineer within two (2) working days of the discovery. The Engineer will review the data, validate the problem and inform the Contractor in writing of a method of resolution within three (3) working days of notification.
3. The Contractor shall not disturb nor destroy any project control point without written approval from the Engineer. The Contractor shall inform the Engineer in writing at least five (5) working days in advance of any need to disturb or destroy a project control point and shall submit a plan to perpetuate the project horizontal control network without the use of said point. All additional control points established by the Contractor shall be referenced with no less than three (3) reference points (ties) and a copy of the references and coordinates submitted by the Contractor to the Engineer within five (5) working days of establishment. All control points and coordinates shown on the plans and all additional control points set shall be in project coordinates. The Contractor shall provide evidence of the perpetuation of the project horizontal control network before requesting approval from the Engineer to disturb or destroy a project control point. The Engineer will respond in writing within three (3) working days of receiving such request.
4. The Contractor shall not disturb nor destroy any project benchmark without written approval from the Engineer. The Contractor shall inform the Engineer in writing at least five (5) working days in advance of any need to disturb or destroy a project benchmark and shall submit a plan to perpetuate the project vertical control network without the use of said benchmark. Any benchmarks set by the Contractor shall include a detailed description of the benchmark, a general description of the benchmark location and the benchmark's project elevation. A copy of the full description and elevation of any benchmarks set shall be submitted by the Contractor to the Engineer within five (5) working days of establishment. All construction elevations and benchmarks shown on the plans and all additional benchmarks set shall be in project datum. The Contractor shall provide evidence of the perpetuation of the project vertical control network before requesting approval from the Engineer to disturb or destroy a project benchmark. The Engineer will respond in writing within three (3) working days of receiving such request.
5. The Contractor shall be responsible for checking all existing elevations, alignments, and profiles where new construction matches existing structures, inverts, roadways, sidewalks, or any other permanent structure or surface. The Engineer shall be notified as soon as possible of any deviation of horizontal or vertical

alignment from that shown on the plans. In no event, shall the County be held liable for any delays in construction caused by the horizontal or vertical misalignment of new construction to an existing, permanent structure or surface.

#### D. DOCUMENTATION

The Contractor shall document any and all horizontal and vertical control work and checks, reference ties, checks of construction match points, all construction staking and any other surveying work performed.

1. All survey documentation shall be kept either in a written, permanently bound form, herein after referred to as field books or as electronic files stored in a data collector or on a computer. If electronic files are not used, then all survey measurements and calculations shall be shown in the field books.
2. Electronic files may be used in addition to field books. Electronic files shall be referenced in the field books, such reference shall include date and point numbers observed in addition to the other information required herein. The electronic files and/or field books shall show the instrument occupation station, back-sight point used, horizontal reading observed on the back-sight, distance observed to the back-sight and all observations made from that instrument station.
3. All survey documentation shall be made available to the County within two (2) working days of any request. If an electronic data collector or computer is used, then a list of point codes used shall also be supplied along with the electronic files. All documents shall be labeled with the County project number, project location, Contractor name, Survey Company name, party chief name and date of survey. Observation records in electronic files shall not be edited in any way other than to meet the criteria established under section "G. Submittals".

#### E. STAKING

All surveying and staking performed by the Contractor shall be sufficient and accurate to construct the work in accordance with the contract documents. Any delays or additional costs to the project that result from insufficient construction staking or time lost for corrective action as a result of insufficient construction staking will be considered inexcusable and no additional compensation shall be made. Stakes shall be laid out as needed and directed by the Contractor for the purposes of construction. Additional quality control stakes shall be set as outlined in this section, "E. Staking".

1. The beginning and ending points of tangent (straight-line) sections, horizontal curves (PC's and PT's), vertical curves (PVC's and PVT's) and points of horizontal and vertical intersection (PI's and PVI's) shall be staked. Areas through tangent sections and curves shall be staked at a maximum interval of one hundred feet (100') except as indicated below. Additional stakes shall be set as needed and/or directed by the Contractor.
2. Quality control stakes shall be set to a horizontal positional tolerance of three-eighths inch (3/8") unless otherwise indicated and a vertical positional tolerance of one-quarter inch (1/4") unless otherwise indicated. All cuts shall be calculated to within one and one-quarter inch (1 1/4") for dirt work and gravel areas and to within one-eighth inch (1/8") for all other areas, structures and surfaces. References to positional tolerance in this section, "E. Staking", shall be at the sixty-eight percent (68%) confidence level.
  - a. Slope stakes shall have a maximum interval of fifty feet (50') and a horizontal tolerance of six inches (6"). Other stakes for dirt work shall have a maximum interval of fifty feet (50') and a horizontal tolerance of two and one-half inches (2 1/2").
  - b. Sanitary and storm water structures shall have a minimum of two (2) stakes per structure. Stakes for curb inlets and sanitary or storm water structures built in a concrete or asphalt surface shall be set to a horizontal tolerance of one-half inch (1/2"). All other sanitary and storm water structures shall be set to a horizontal tolerance of one inch (1") and vertical tolerance of one-half inch (1/2").
  - c. Each line of pipe shall have three (3) stakes set twenty-five feet (25') apart within the first one hundred feet

(100') of the start of any line and one stake set every fifty feet (50') thereafter. For the purposes of this section (E. Staking), a "line of pipe" shall consist of all pipe sections laid from one storm water structure, sanitary sewer structure, angled section of pipe, end section of pipe or open section of pipe to another.

d. Curb stakes shall be set at the following maximum intervals:

- 1) Every twenty-five feet (25') along a horizontal tangent section or horizontal curve with a radius of more than one hundred feet (100');
- 2) Every ten feet (10') along a horizontal curve with a radius less than or equal to one hundred feet (100');
- 3) Curb stakes shall also include a stake set at the radius point (center of the arc circle) of any horizontal curve with a radius less than or equal to one hundred (100'). No elevation or cut is required for the radius point.

e. Stakes for edge of asphalt where no curb is to be built shall have a maximum interval of fifty feet (50'), a horizontal tolerance of one inch (1"), and a vertical tolerance of one-half inch (1/2").

f. Stakes for asphalt and gravel shoulders shall have a maximum interval of fifty feet (50'), a horizontal tolerance of one inch (1") and a vertical tolerance of one-half inch (1/2").

3. Each stake shall have an accessory indicating the station, offset, item referenced and "cut" to the item. Such accessory shall be permanent marker on wood or spray paint designated "pavement marking quality" on concrete or asphalt surfaces. Accessories shall be a maximum distance of one foot (1') from their reference stake.
4. All cuts shall be written, printed or copied to paper in a columnar form or table and presented to the Engineer within twenty-four (24) hours of the performance of the work. This data shall include the station, offset, item referenced and "cut" to the item.
5. Quality control stakes and their accessories shall be maintained for tolerance and remain accessible and readable until the construction and final inspection of the staked item is complete.

#### **F. PLAN DISCREPANCIES**

If discrepancies in the plans are discovered while setting construction stakes, the Contractor shall immediately notify the Engineer. The Engineer will determine the nature of the discrepancy and make revisions to the plans as necessary. Any re-staking required by such revisions shall be the responsibility of the Contractor and shall be incidental to the contract.

#### **G. SUBMITTALS**

Upon completion of the project, the Contractor shall provide the County with all original surveying field notes, layouts, and computations in standard bound survey books. The Contractor shall also provide the County all electronic files, code libraries, CAD drawings and any other files or documents, whether electronic or paper, that are part of the survey work. Point code files shall be submitted in raw data file format and plain text ASCII, comma or space delimited format having one record of point number, northing, easting, elevation and point code (in that order per line). All electronic files must be submitted in an uncompressed file format on an uncompressed acceptable digital format. All data shall be labeled with the County project number, project location, date (month and year) of the survey and data number if more than one.

#### **H. METHOD OF MEASUREMENT**

The County will be responsible for any surveying or measurements necessary for computing final pay quantities. The Contractor shall notify the Engineer at least five (5) working days prior to disturbing any areas that may be used to calculate pay quantities.

## I. BASIS OF PAYMENT

No direct payment will be made for Contractor Provided Surveying and Construction Staking. Payment shall be subsidiary to Mobilization.

## TS-15 CLEARING AND GRUBBING, AND REMOVALS

### A. GENERAL

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), *Standard Specifications and Design Criteria* apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Clearing and Grubbing shall conform to APWA-KCMO Section 2101 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

One week prior to beginning any clearing and grubbing, removals, or site preparation, Contractor to contact Engineer to make arrangements to monitor initial clearing and excavation.

1. Section 2101.3.A shall be supplemented with the following:

Tree Clearing Restriction: The project is within the known breeding range of the federally endangered Indiana bat and federally threatened northern long-eared bat. Female Indiana and northern long-eared bats form maternity colonies and raise their young during the summer months. These maternity colonies roost in trees. MoDOT has determined that suitable roost trees exist within the project area. Therefore, to avoid possible impacts to roosting Indiana bats and northern long-eared bats, no removal of potential roost trees will be allowed during the bat's breeding season between April 1 and October 31.

No direct pay shall be provided for any labor, equipment, time, or materials necessary to complete this work.

2. Section 2101.3.B shall be replaced with the following:

Grubbing: Grubbing shall consist of removing and disposing of all vegetative matter such as stumps, roots, buried trees, and brush encountered below the surface of the ground or subgrade, whichever is lower, that has not been included in the description of clearing.

In all cases of grubbing, the vegetative matter shall be removed to a minimum depth of six (6) inches below ground line or subgrade, whichever is lower, except as provided in the description of demolition and removal.

When deleterious materials are encountered below the ground line which may be detrimental to the proposed improvement, they shall be removed to a depth necessary to provide adequate support for the proposed improvement.

3. Section 2101.3.D shall be replaced with the following:

Demolition and Removal: This work shall consist of demolishing, removing and disposing of all structures and improvements whether on, above or below the surface of the ground or subgrade within the construction limits unless included in other items of work as shown on the plans or in the Project Manual.

Any tables or notes on the plans are provided for information only and are not reflective of all demolition and removal required to complete the project and not all structures or improvements within the construction limits are shown on the plans or topographic survey. Contractor to inspect the project site prior to bidding to determine any and all items within the construction limits which need to be demolished or removed.

Demolition and removal shall include but not be limited to items such as buildings, drainage structures, pipes, pavements, fences, retaining walls, guard rails and signs.

Items such as fences and guard rails shall be salvaged and relinquished to the appropriate owner or relocated

if indicated on the plans or recorded right of way or easement documents.

Relocation of signs, fences, guardrails, etc. shall be considered incidental to removal work except where such relocation is listed separately in the Itemized Proposal of the Special Provisions. All pipes which are to be abandoned shall be removed unless approved by the Engineer.

**4. Section 2101.4.G shall be replaced with the following:**

**Borrow Areas:** No borrow areas have been identified for this project. All borrow shall be contractor furnished from off-site borrow areas. Off-site borrow areas shall be from a site approved as outlined in Section 203 of the Missouri Standard Specifications for Highway Construction.

**5. Section 2101.4.K shall be replaced with the following:**

**Items to be Left in Place or Concrete Saw Cutting:** Where part of the existing concrete curb, sidewalk, driveway, and asphaltic or Portland Cement Concrete pavement is to be removed at locations other than contraction or expansion joints, the existing concrete shall be cut with a concrete saw to a minimum depth of two (2) inches or one-half (1/2) the existing slab, whichever is greater. Water shall be used as required to control dust during sawing operations. In order to provide true alignment and a vertical face against which the new concrete will be placed, greater depth of cut may be necessary. If the remaining concrete is chipped or cracked during sawing or removal, it shall be re-sawed beyond the limits of the chip or crack, along a line parallel to or perpendicular with the nearest joint, and/or as directed by the County to assure uniform appearance.

**6. Section 2101.4.C paragraph 3 shall be replaced with the following two paragraphs:**

**Existing Structures and Private Facilities:** The plans do not designate trees, shrubs, landscaping, or other facilities to be saved. The Contractor shall inspect the project site before construction to determine which items are to be saved and take necessary steps to protect these items during construction.

Contractor to work with the Engineer and adjust trail centerline during clearing activities to avoid removing trees larger than 6" within the trail easement or within eight feet of the trail centerline.

**7. Section 2101.4.Q shall be added with the following:**

**Marking:** Prior to construction, individual trees and stands of trees to be removed within the limits of clearing may be marked with an "X" of brightly colored paint approximately 6 inches in length at a height visible to equipment operators. If trees to be removed are not noted with an "X," Contractor to stake the project centerline or trail easement and request the Engineer be present during clearing to determine which trees are to be removed.

**8. Section 2101.4.R shall be added with the following:**

**Removal of Rail and Ties:** Where track and track materials are designated on the Contract Drawings or specified to be removed, remove from the work site and dispose of in accordance with the Contract documents and local regulations. Removal of Rails and Ties shall include rail, ties, spikes, plates, anchors and Other Track Material (OTM). Removal of Rail and Ties shall also include special trackwork (e.g, switches and diamonds) and their associated timbers.

**9. Removal of Bridge Rail and Ties:** Where track and track materials are designated on the Contract Drawings or specified to be removed, remove from the work site and dispose of in accordance with the Contract documents and local regulations. Removal of Bridge Rails and Ties shall include rail, ties, timbers, spikes, plates, anchors, bolts, guards, ballast railings, spacers and Other Track Material (OTM).

**10. Removal of Improvements (Non-Rail):** Removal of Improvements (Non-rail) shall include demolition included in the plans and specifications that is not in the above sections of this Technical Specification TS-15. The

removal shall include, but not be limited to: Pedestrian Signals at Ward Rd, Tire Removals, Trash Removals, Existing Sidewalk, Curb, Gutter, Pavement, Drainage Structures, and other miscellaneous items that interfere with the construction of the project.

11. Remove Bridge Ballast (4 in. – 8 in. thick): Remove Bridge Ballast (4 in. – 8 in. thick) shall include the partial removal, and disposal of the existing ballast from the existing 3<sup>rd</sup> Street bridge as required to complete construction of the project. Removed ballast shall be used to backfill an existing erosion void located near the north end of the existing 3<sup>rd</sup> Street bridge.

## **B. METHOD OF MEASUREMENT**

1. Section 2103.A.1 - 5 shall be replaced with the following:

Clearing and Grubbing” will not be measured. In accordance with TS-9, measurement will be plan quantity. There will be no measurement of payment for “Tree Removal,” “Tree Protection,” or “Buffers.” Final measurement will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity.

Removal of Rail and Ties: Removal of Rail and Ties shall be measured parallel with the centerline of the mainline track to the nearest foot.

Removal of Bridge Rail and Ties: Removal of Bridge Rail and Ties shall be measured parallel with the centerline of the mainline track to the nearest foot. Measurement shall begin at first bridge timber and end at last bridge timber of the structure.

Removal of Improvements (Non-Rail) shall not be measured.

Remove Bridge Ballast (4 in. - 8 in. thick) shall not be measured. Plan quantity shall be used.

## **C. BASIS OF PAYMENT**

1. Section 2103.A.1, 2 and 3 shall be replaced with the following:

Payment will be made for Clearing and Grubbing per acre or tenth thereof for “Clearing and Grubbing” as listed in the Bid Form. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete these items.

Payment will be made for Removal of Rail and Ties per lineal foot. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete these items.

Payment will be made for Removal of Bridge Rail and Ties per lineal foot. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete these items.

Payment for Removal of Improvements (Non-Rail) shall be based on Engineer’s estimate of percent complete. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete these items.

Remove Bridge Ballast (4 in. - 8 in. thick) shall be based on Engineer’s estimate of percent complete. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete these items.

## **TS-16 SITE PREPARATION**

### **A. GENERAL**

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), Standard Specifications and Design Criteria apply. Sections of said Specifications will be hereinafter referred to

as "APWA-KCMO."

Site Preparation shall conform to APWA-KCMO Section 2102 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

1. Section 2102.2.B 1 - 5 shall be replaced with the following:

**Excavation:** Excavation is defined as the removal of materials from the construction area to the lines and grades as shown on the Plans and all excavation shall be unclassified regardless of material encountered.

The Contractor shall make its own assessments and determinations as to the quantity, position, extent, depth, and hardness of rock in preparing the bid and in the performance of the work through to its final completion. Disposal of debris shall be in accordance with the Plans and Specifications.

If performed, Geotechnical boring locations are indicated on the Contract Drawings, or the geotechnical report is available, for information only, as noted in the Bid Documents.

If provided, the bore logs are provided as information only. This information does not represent a complete or exhaustive exploration of the depth and/or position of rock, nor does this information indicate its formation age or composition.

If blasting is permitted, such demolition work shall conform to Article III, entitled "Blasting," of Chapter 14 of the Code of General Ordinances of Kansas City, Missouri, effective October 23, 1967, as amended. No blasting may be done without first obtaining a blasting permit from the County Engineer.

Contractor is required to execute a blasting bond to the County conditioned to save the County harmless and indemnify it from any loss or damage occurring as a result of such blasting. All blasting permit applicants shall first obtain a permit from the Kansas City, Missouri Fire Department or local governing authority for transportation, disposition, and storage of explosives.

2. Section 2102.2.J shall be replaced with the following:

**Waste:** Waste is defined as excavation material that is not used in embankments and is disposed of outside of the embankment areas. Excess material shall be placed and compacted on site according to specifications as directed by the Engineer and as indicated on the plans. All compaction of waste material is incidental to Embankment and Backfill and no additional compensation will be provided for waste material.

3. Section 2102.3.N shall be added with the following:

**Fill.** Place all fill in layers not to exceed six inches (6"), and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.

4. Section 2102.3.O shall be added with the following:

**Materials:** Field exploration of the site shall be made to determine if there is sufficient surface soil of good quality to justify stripping. Topsoil shall be friable and loamy: loam, sandy loam, silt loam, sandy clay loam, or clay loam. It shall be free of debris, trash, stumps, rocks, root, and noxious weeds and shall give evidence of being able to support healthy vegetation. It shall contain no substance that is potentially toxic to plant growth.

**Stripping and Stockpiling:** Topsoil shall be conserved wherever possible, and restored to the surface in preparation for plantings. All "A horizon" and topsoil shall be removed and segregated as a separate layer from the area to be disturbed. If topsoil is less than 6 inches thick, the operator may remove the topsoil and the unconsolidated materials immediately below the topsoil to a total depth of 6 inches and treat the mixture as topsoil. All material to be removed under this section shall be removed after the vegetative cover that would interfere with its salvage is cleared from the area to be disturbed, but before any drilling, blasting, excavating, or other surface disturbance takes place. Stockpiled material shall be reasonably free (less than 5 percent of total volume) of brush, weeds, and other litter, and free of roots, stumps, stones larger than 3/8



inch, in any dimension, and other extraneous or toxic matter harmful to plant growth.

Materials removed under this section shall be segregated and stockpiled when it is impractical to redistribute such materials promptly on regraded areas.

Stockpiled materials shall be selectively placed on a stable site within the construction area; be no greater than 4 feet in height; be protected from contaminants and unnecessary compaction that would interfere with revegetation; be protected from wind and water erosion in accordance with the temporary erosion control plan; and not be moved until required for redistribution unless approved by the Engineer.

Topsoil materials removed under this section shall be redistributed in a manner that achieves an approximately uniform, stable thickness consistent with the approved restoration plan, finished grading, and surface-water drainage systems; prevents excess compaction of the materials; and protects the materials from wind and water erosion before and after seeding and planting.

Before redistribution of the material removed under this section the regraded land shall be scarified to reduce potential slippage of the redistributed material and to promote root penetration.

5. Section 2102.3 B shall be supplemented by adding the following to the end of the section:

If any constructions activities disturb or damage private facilities or structures, public and private utilities, property lot corners, or other items not owned by the County, the Contractor shall notify the Engineer and the impacted property owner or business immediately and remedy the situation by the end of the calendar day.

6. Section 2102.5 shall be modified by adding the following:

**Remove and Replace Unsuitable Materials**

- a. The Work consists of removal and replacement of unsuitable materials encountered during excavation and subgrade treatment for roadways, trails, structures, and pipe trenches.
  - b. Trail and Roadway Subgrade: Soft, yielding, or otherwise unsatisfactory materials encountered within the limits of the areas to be surfaced with aggregate or concrete shall be removed and disposed of as directed by the Engineer. The areas shall be backfilled with suitable earth or granular materials as approved by the Engineer in accordance with Section 2102.5.A.
  - c. Structures: Whenever wet or otherwise unstable soil is encountered that is incapable of properly supporting the structures as determined by the Engineer, such soil shall be removed to the depth required and the excavation backfilled to the proper grade with coarse sand, fine gravel, or other suitable material as authorized in accordance with Section 2102.5.A.
  - d. Trenches: Where, in the opinion of the Engineer, the trench bottom is found to be wet or otherwise unstable materials for the proper construction and bearing for the pipe, the Contractor shall remove all unstable or unsuitable material to a depth of not less than four (4) inches below the elevation of the pipe subgrade and backfilled with suitable materials as authorized in accordance with Section 2102.5.A.
7. Section 2102.6.C shall be supplemented by adding the following to the end of the section:
- If Earth Embankments are used in areas of deep fill (i.e. greater than six (6) feet) consolidation of the embankment must be considered. If Earth Embankments are used, a minimum of two months must be allowed for consolidation of the embankment between the final lift of embankment and the final grading operations prior to paving. Up to ten inches of consolidation is anticipated in the deeper fills. The Contractor, at their sole discretion, may install sand or wick drains under the direction of a Missouri licensed geotechnical engineer, to accelerate the consolidation. Operation and materials shall be as specified in APWA-KCMO 2102.6. Compaction of embankments shall be done in accordance with APWA-KCMO 2102.6, except that the compaction of fill material in the top 18 inches of fill shall be 97 percent of the maximum dry density, and

below that it shall be 95 percent of the maximum dry density instead of the usual 90 percent. This applies under paved areas only. All other compacted areas shall be in accordance with other sections of APWA-KCMO 2102.

## **B. METHOD OF MEASUREMENT**

1. Section 2103.2.B shall be replaced with the following:

No measurement or payment will be made for "Grading," "Surface Roughening," "Topsoiling," or "Cleanup." All costs pertaining thereto shall be included in the contract prices for other items as listed in the Bid Form. "Unclassified Excavation" and "Embankment In Place (Contractor Furnished)" will be measured per cubic yard.

2. Should rock excavation (Class C Excavation) as categorized by the Missouri Standard Specifications for Highway Construction be encountered in the field, measurement shall be made in the field.
3. "Remove and Replace Unsuitable Material" will be measured in cubic yards to the limits authorized by the Engineer. Excavation and backfill beyond the authorized limits will be done at the Contractor's expense and will not be paid for.

## **C. BASIS OF PAYMENT**

1. Section 2103.3 A and B shall be replaced with the following:

Payment for all work required to perform "Unclassified Excavation" and "Embankment In Place (Contractor Furnished)" shall be included in the unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete these items.

2. Should rock excavation (Class C Excavation) as categorized by the Missouri Standard Specifications for Highway Construction be encountered in the field, payment will be made for the field measured quantity at the unit price per cubic yard included in the Bid Form for "Class C Excavation".
3. Payment for "Remove and Replace Unsuitable Material" will be made at the Contract unit price per cubic yard included in the Bid Form which price shall be full compensation for excavation, hauling and disposal, furnishing and placement of backfill materials, and compaction. Over-run, under-run, or complete elimination of the bid item for "Remove and Replace Unsuitable Material" shall not be justification for unit price adjustment.

## **TS-17 EROSION AND SEDIMENT CONTROL**

### **A. GENERAL**

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), *Standard Specifications and Design Criteria* apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

#### Referenced Standards

Missouri Standard Specifications for Highway Construction, 2017 Edition Sections:

Section 806 Pollution Erosion and Sediment Control

Division 1000 Material Details

Section 1011 Geotextile Fabric

Erosion and Sediment Control shall conform to APWA-KCMO Sections 2150, 2151, 2152, 2153, 2154, and 2156 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

1. Section 2153.5 shall be renamed "Seeding and Sodding, Temporary"

Section 2153.5 shall be supplemented by adding the following before the first paragraph in said sub-section: The terms "Seeding and Sodding" as listed in APWA-KCMO 2153 shall refer to temporary seeding and sodding as needed for this project. Contractor to submit seed, sod, and erosion control material along with a schedule for installation for approval by the Engineer prior to construction. If construction is not substantially complete and permanent seeding and sod required under APWA-KCMO 2400 is not completed during optimum and acceptable planting dates as noted in 2401.2.L, Contractor shall provide temporary seeding as directed in this section at no additional cost to the Owner.

2. Section 2153.5 shall be supplemented by the following:

If construction is not substantially complete and permanent seeding and sod required under APWA-KCMO 2400 is not completed during optimum and acceptable planting dates as noted in 2401.2.L, Contractor shall provide temporary seeding as directed in this section at no additional cost to the Owner.

3. Section 2154.18.B shall be added as follows:

**Duration:** Temporary Stream Crossings TSC shall not be installed with a rainfall greater than 1" forecasted within 48 hours at time of installation. Contractor to protect the waterway from destruction of the TSC caused by an increase in stormwater flow by removing the TSC prior to rainfall events. Contractor is responsible for any activity to remove, replace, or repair a TSC at no additional cost to the Owner.

4. Section 2154.7.B Rock Ditch Checks shall be added as follows:

The Contractor shall replace checks as directed by the Engineer. Periodic sediment removal shall include removal and disposal of sediment to a location where sediment will not erode into construction areas, streams or other bodies of water. The Contractor shall inspect the ditch checks for sediment accumulation after each storm event and shall remove the sediment when deposits reach approximately one-half the original height of the check. Alternate temporary erosion control methods shall be maintained in accordance with the manufacturer and as directed by the Engineer. Sediment removal shall be incidental to ditch checks or inlet protection.

## B. MEASUREMENT AND PAYMENT

1. Section 2156 shall be replaced with the following:

**Measurement:** There will be no measurement for payment for any items of work not specifically identified and listed in Bid Form.

Mulch Filter Berm and/or Silt Fence will be measured per linear foot.

Ditch Check shall be measured per each.

Stabilized Construction Entrance shall be measured per each

Sediment Removal shall be measured per cubic yard.

**Payment:** There will be no payment for any items of work not specifically identified and listed in Bid Form. Payment shall be made at the Contract Unit Price as listed in the Bid Form-Unit Prices for:

Mulch Filter Berm and/or Silt Fence

Ditch Check

Stabilized Construction Entrance

Sediment Removal

Such payment and price shall constitute full compensation for all labor, materials, and equipment necessary

to complete the items.

In the event that temporary erosion and sediment control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the Work as scheduled, and are ordered by the Engineer, such work shall be performed by the Contractor at its expense.

Where the Work to be performed is not attributed to the Contractor's negligence, carelessness or failure to install permanent controls and falls within the specifications for work that does not have a contract price, payment for such work will be as approved by the Engineer.

In case of repeated failures on the part of the Contractor to control erosion, pollution and/or siltation, the Engineer reserves the right to employ outside assistance or to use his own forces to provide the necessary corrective measures. Such incurred direct costs plus project engineering costs will be charged to the Contractor and appropriate deductions made from the Contractor's monthly progress estimate.

The Contractor may be required to establish temporary pollution control measures at its expense in keeping with the intent of these requirements on work outside the right-of-way where such work is necessary as a result of roadway construction such as Contractor-furnished borrow pits, haul roads, and equipment storage sites.

The erosion control features installed by the Contractor shall be acceptably maintained by the Contractor. All costs pertaining thereto shall be included in the Contract Unit Prices for other items as listed in the Bid Form.

## **TS-18 TRAIL SUBGRADE PREPARATION**

### **A. GENERAL:**

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), Standard Specifications and Design Criteria. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Trail Subgrade Preparation shall conform to APWA-KCMO Section 2201 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

Section 2201.5 and 2201.6 shall be replaced with the following:

### **B. MEASUREMENT**

Trail Subgrade Preparation will not be measured.

### **C. PAYMENT**

No direct payment will be made for Trail Subgrade Preparation. Payment shall be subsidiary to "Unclassified Excavation" and "Embankment In Place (Contractor Furnished).

## **TS-19 UNTREATED COMPACTED AGGREGATE**

### **A. GENERAL**

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), *Standard Specifications and Design Criteria* apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Untreated Compacted Aggregate shall conform to APWA-KCMO Section 2203 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

1. Section 2203.2 shall be amended to include the additional Referenced Standards:

Missouri Standard Specifications for Highway Construction, 2017 Edition Sections:

Section 1000 Material Details

Section 1007 Aggregate for Base

Kansas Standard Specifications for State Road and Bridge Construction, 2007 Edition

Section 1104 Aggregates for Aggregate Base Construction

2. Section 2203.3.A shall be replaced with the following:

**Materials:** The Contractor shall use one of following types of Untreated Compacted Aggregate for the aggregate base underneath trail pavement or other applications for the project unless specified otherwise in the plans or project manual:

MoDOT Type 5 Aggregate Base. Type 5 aggregate for base shall consist of crushed stone or sand and gravel. The aggregate shall not contain more than 15 percent deleterious rock and shale. If crushed stone is used, sand may be added only for the purpose of reducing the plasticity index of the fraction passing the No. 40 sieve in the finished product. The fraction passing the No. 40 sieve shall have a plasticity index not to exceed six. Any sand, silt and clay, and any deleterious rock and shale shall be uniformly distributed throughout the material. When sand and gravel aggregate are used, the fraction passing the No. 200 sieve shall be less than one half of that fraction passing the No. 30 sieve. Type 5 aggregate shall conform to the gradation requirements of MoDOT Standard Specifications for Highway Construction Section 1007.3.2 Type 5. ([http://www.modot.org/business/standards and specs/Sec1007.pdf](http://www.modot.org/business/standards_and_specs/Sec1007.pdf) or at <http://www.modot.org>)

AB-3 Aggregate Base. Type AB-3 aggregate for base shall consist of at least 85% limestone or dolomite produced by mechanical crushing. Type AB-3 aggregate for base shall conform to the gradation requirements of Kansas Department of Transportation Standard Specifications for State Road and Bridge Construction Section 1104. (<http://www.ksdot.org/burconsmain/specprov/2007/1104.pdf> or <http://www.ksdot.org>)

**B. MEASUREMENT**

Untreated Compacted Aggregates will be measured to the nearest square yard.

**C. PAYMENT**

Payment for Untreated Compacted Aggregates will be made per SY for the type specified in the Bid Form.

**TS-20 CRUSHED ROCK SURFACING**

**A. GENERAL**

1. RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

**B. DESCRIPTION**

1. The work includes:

Crushed rock trail surface.

2. Related Sections:

The following Sections contain requirements that relate to this Section:

See TS-18 for Trail Subgrade Preparation.

## C. MATERIALS

1. Crushed Rock Trail Surface: The contractor shall use material from local quarries commonly referred to as 3/8" minus or 3/8" dense.

General: Crushed rock trail surface shall be either limestone or dolomite and shall consist of clean, hard, tough and durable fragments. The aggregate shall not contain more than 15% deleterious rock and shale. Clay and sand shall be less than 5%. Sand may be added only for the purpose of reducing the plasticity index of the fraction passing the No. 40 (425um) sieve in the finished product. Any sand, silt and clay and any deleterious rock and shale shall be uniformly distributed throughout the material. The sieve analysis for the aggregate material shall be made in accordance with AASHTO Method T-27 and shall be graded so as to meet the following requirements:

Total passing 3/8" sieve	100%
Total passing #4 sieve	90 - 100%
Total passing #8 sieve	55 - 80%
Total passing #16 sieve	40 - 70%
Total passing #30 sieve	25 - 50%
Total passing #200	6 - 15%

Soundness: The fraction of crushed rock retained on the 9.5 um sieve shall have a loss ratio of not less than 0.75 when subjected to 26 cycles of freezing and thawing in accordance to AASHTO Method T-103.

Abrasion: Crushed rock, when tested for abrasion by AASHTO Method T-96, Grade B, shall have a percentage of wear of not more than 45 percent.

2. Gravel:

General: Gravel for backfill shall consist of durable particles of stone and sand with less than five percent (5%) of clay and silt.

Gradation:

Total retained on 25 mm sieve:	0%	
Total retained on 4.75 mm sieve:	22%	+/- 17%.
Total retained on 2.00 mm sieve:	85%	+/- 15%.
Total retained on 75 um sieve:	98%	+/- 2%

The percent passing the 75 µm sieve shall be determined in accordance with AASHTO Method T-11.

Soundness: The fraction of gravel contained on the 1.18 mm sieve shall a soundness not to exceed ten percent (10%) at the end of five (5) cycles, except that the material having a soundness loss greater than ten (10%) may be acceptable at the discretion of the Engineer, subject to an adjustment of the quantity for which payment will be made. Soundness shall be determined in accordance with AASHTO Method T-104, using sodium sulfate, except that the aggregate that is retained on the 1.18 mm sieve.

Sampling: Sampling of the material shall be done in accordance with AASHTO Method T-2.

#### D. EQUIPMENT

The Contractor shall furnish adequate equipment necessary for the completion of the work which shall include, but not be limited to, motor grader with scarifying equipment, sheepsfoot roller, pneumatic tire roller and water truck.

#### E. EXECUTION

##### PLACEMENT AND COMPACTION

##### 1. Trail Surfacing:

In general, this construction shall include placement of crushed rock on the subgrade and compaction to a depth of 8" to the widths and cross section as provided by the plans or directed by the Engineer.

The crushed rock trail surface material shall be deposited uniformly upon an approved subgrade and uniformly spread. The surface shall be compacted using an approved roller and water, as required, to the satisfaction of the Engineer to produce a uniform aggregate surface 8" thick to the widths and cross section as provided by the plans or directed by the engineer.

#### F. MEASUREMENT

Crushed Rock Surfacing will be measured to the nearest square yard.

#### G. PAYMENT

Payment for Crushed Rock Surfacing will be made per SY.

### TS-21 PORTLAND CEMENT PAVEMENT

#### A. GENERAL

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), *Standard Specifications and Design Criteria* apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Portland Cement Concrete Pavement shall conform to APWA-KCMO Section 2208 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

##### 1. Section 2208.3.B.4 shall be replaced with the following:

**Fiber reinforcement** shall be applied at the rate of 3 pounds per cubic yard (1.8 kg per cubic meter) of concrete. Fibers for concrete reinforcement shall be composed of only 100% virgin homopolymer polypropylene, fibrillated and graded. Fibers shall contain no reprocessed olefin materials, and shall be specifically manufactured to an optimum gradation for use as secondary concrete reinforcement, meeting the requirements of ASTM C 1116, Type III, 4.1.3, and ASTM C 1116 Performance Level 1, and a minimum residual strength of 30 psi (210 kPa) per ASTM C 1399, average of 4 beams sampled at the point of discharge (or when appropriate, the point of placement).

##### 2. Concrete Pavement (6 in. Reinforced) shall include the use of welded wire fabric for reinforcement in addition to fibers as indicated on the plans.

#### B. METHOD OF MEASUREMENT AND PAYMENT

##### 1. Sections 2208.7 shall be replaced with the following:

**Measurement:** Concrete Pavement (6 in. with Fibers) will be measured to the nearest 1/10 square yard. Concrete Pavement (6 in. Reinforced) will be measured to the nearest 1/10 square yard.

### C. BASIS OF PAYMENT

1. Sections 2208.8 shall be replaced with the following:

**Payment:** Payment shall be made at the Contract Unit Price as listed in the Bid Form for Concrete Pavement (6 in. with Fibers). Payment shall be made at the Contract Unit Price as listed in the Bid Form for Concrete Pavement (6 in. Reinforced). Such payment and price shall constitute full compensation for all labor, materials, and equipment necessary to complete the items.

## TS-22 SIDEWALKS, RAMPS, DRIVEWAYS, AND BICYCLE/PEDESTRIAN PATHS

### A. GENERAL

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), *Standard Specifications and Design Criteria* apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Standard Sidewalks/Trail, Sidewalk Curb Ramps, Driveways, and Bicycle/Pedestrian Paths shall conform to APWA-KCMO Section 2301 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

1. Section 2301.3.A.1 - 3 shall be replaced with the following:

**Concrete Mix:** Concrete shall conform to APWA-KCMO 2301.A.4 and include fiber reinforcement. All materials and placement shall be tested as outlined in the "Public Works Department Materials Testing Requirements" and APWA-KCMO Section 2208.3.A.6 except that field testing shall be by Contractor.

2. Section 2208.4.E.8 shall be replaced with the following:

Contractor shall recognize the effects of temperature, wind, and humidity when placing and curing concrete. When the ambient air temperature is 90 degrees F (32 degrees C) or higher, a retarder shall be used in the concrete mix. When the ambient air temperature is 90 degrees F (32 degrees C) or higher and the wind velocity is above 20 mph, evaporation shall also be controlled. When the ambient air or subgrade temperature is below 40 degrees F (4 degrees C) or less, no concrete shall be placed.

3. Section 2208.4.F shall be created with the following:

**Fiber reinforcement** shall be applied at the rate of 3 pounds per cubic yard (1.8 kg per cubic meter) of concrete. Fibers for concrete reinforcement shall be composed of only 100% virgin homopolymer polypropylene, fibrillated and graded. Fibers shall contain no reprocessed olefin materials, and shall be specifically manufactured to an optimum gradation for use as secondary concrete reinforcement, meeting the requirements of ASTM C 1116, Type III, 4.1.3, and ASTM C 1116 Performance Level 1, and a minimum residual strength of 30 psi (210 kPa) per ASTM C 1399, average of 4 beams sampled at the point of discharge (or when appropriate, the point of placement).

**Concrete curb ramps** shall be reinforced with 6 x 6 – W2.9 x W2.9 welded steel wire fabric placed with a three inch clearance from the ground and shall be constructed per the 2010 version of the United States Department of Justice's ADA Standards for Accessible Design. Concrete curb ramps shall be constructed at a minimum of 6" depth and reinforcement shall be incidental to concrete trail.

Where necessary, curbs on sidewalks, trails, or driveways that are necessary due to topography, existing right of way, existing structures, proposed structures, or other existing/proposed improvements to complete the work shall be included. Curbing shall be a minimum 6" width and the cost to complete shall be incidental.

4. Section 2208.4.C.1 shall be replaced with the following:

**Material and Size:** Forms for bicycle/pedestrian paths/trails shall be made of wood unless otherwise



approved by the Engineer and shall have a height equal to or greater than the depth of the bicycle/pedestrian path. Forms for sidewalks, sidewalk ramps, or driveways can be metal or wood and shall have a height equal to or greater than the depth of the sidewalk, sidewalk ramp, or driveway. When using nominal lumber sizes such as 2X4 or 2X6, contractor needs to account for actual lumber size and set forms off of the subgrade or aggregate base to provide the appropriate concrete trail or sidewalk depth.

5. Section 2208.4.D.6 shall be created with the following:

**Sidewalks:** Sidewalk surfaces shall be marked with a transverse joint spaced at a distance equal to the width of the sidewalk. Sidewalks greater than 6 feet (21.8 m) in width shall be divided by longitudinal joints spaced not less than 30 inches (760 mm) nor more than 60 inches (1.5 m) with transverse joints spaced to form a square pattern. Edger tool marks cannot remain showing (no "picture box frame" allowed). Curb joints should align with sidewalk joints where they abut.

6. Section 2208.D.2 shall be replaced with the following:

**Contraction joints:** Contraction joints shall be sawed 1/8 inch (3 mm) wide by 1/3rd the thickness of the slab. No edger marks shall remain. Contraction joints shall be spaced every 10 feet.

When sawing joints, the contractor shall begin as soon as the concrete hardens sufficiently to prevent excessive raveling along the saw cut and shall finish before conditions induce uncontrolled cracks, regardless of the time or weather. The longitudinal contraction joints shall be sawed immediately after sawing transverse joints. When joint sealing backup material is specified with sawed joints, the first stage, which provides a relief cut shall be approximately 1/8 inch (3 mm) wide, and shall be to plan depth. The second stage which widens the joints to allow the insertion of joint sealing backup material to plan depth shall not be performed until the concrete is at least 48 hours old, and shall be delayed longer when the sawing causes raveling of the concrete. If second stage sawing is performed prior to the completion of the curing period, the contractor shall maintain the cure by use of curing tapes, plastic devices, or other materials approved by the Engineer.

7. Section 2208.E 2 and 3 shall be supplanted with the following:

Finishing:

Strike off the concrete with a vibratory screed or a hand strike-off method when adequate consolidation is attained. Immediately after strike-off, the concrete may be bullfloated to remove any high or low spots. Minimize the use of the bullfloat.

Do not finish concrete with water standing on the surface or when edging tool makes a ridge on its inside edge. Resume finishing when excess moisture evaporates. Edger tool marks cannot remain showing (no "picture box frame" allowed).

After finishing, the surface of the concrete shall be broomed with a fine clean broom to provide an antiskid surface.

In all cases the finished sidewalk, driveway, or bicycle/pedestrian path shall have a true surface, free from sags, twists, or warps, and shall have a uniform color and appearance. No more than three indentions or obtrusions wider than an unused number 2 lead pencil eraser or deeper/taller than a pencil than an unused number 2 lead pencil eraser shall be visible on a ten foot by ten foot slab. The finish of the trail shall be smooth with no visible inconsistencies in the finish.

8. Section 2208.E.6 shall be replaced with the following:

**Surface Tolerances:** Sidewalks, driveways, or bicycle/pedestrian paths shall have a surface tolerance of 1/8 inch (3 mm) in 10 feet (3.05 m) when checked with a 10 foot (3.05m) straightedge. Vertical deflections at sidewalk joints shall not exceed 1/8 inch (3 mm).

Areas showing high spots shall be marked and ground down with approved grinding equipment to an elevation where the area or spot will not show surface deviations in excess of 1/8 inch when tested with a 10 foot straight edge. Grinding will be performed on the full width of the lane failing to meet the above criteria. The cost of correcting the smoothness and any other associated costs such as traffic control shall be at the Contractor's expense.

**9. Temporary Asphalt Surface (4" Thick)** shall be in accordance with 2302.4 except as follows:

Temporary Asphalt Surface (4" Thick) shall be placed directly on graded earth compacted to 90% maximum density and shall have a thickness of 4".

Should the location of Temporary Asphalt Surface fall within the limits of stabilized construction entrances, the contractor may need to increase the thickness of temporary asphalt surface to prevent damage from entering and exiting construction equipment across Temporary Asphalt Surface. Temporary Asphalt Surface for the purposes of maintaining pedestrian traffic shall be maintained in good condition at all times and shall meet all ADA guidelines throughout construction.

**10. Section 2208.4.G** shall be created with the following:

**ADA Pavers (Detectable Warnings, Truncated Domes):** References to Truncated Domes shall have the same meaning as ADA Pavers and Detectable Warnings.

Detectable warnings shall be installed and meet the requirements of the most current version of PROWAG R305. Detectable warnings shall be installed whenever sidewalk curb ramps are constructed or altered.

Detectable warnings are required standardized surface features built in to walking surfaces on sidewalks or ramps to warn visually impaired people of hazards on a circulation path. Those hazards include, but are not limited to interfaces between sidewalks and areas where moving vehicles may be present.

**B. METHOD OF MEASUREMENT**

**1. The measurement of items included in this Technical Specification shall be as follows:**

**Measurement:** There will be no measurement for payment for any items of work not specifically identified and listed in the Bid Form.

Concrete Sidewalk, 4" will be measured per square yard to the closest 1/10 square yard.

Temporary Asphalt Surface (4" Thick) will be measured per square yard to the closest 1/10 square yard.

Truncated Domes will be measured per square foot to the closest 1/10 square foot.

Curb Ramp will be measured per square yard to the closest 1/10 square foot.

Concrete Curb and Gutter (G-1) will be measured per lineal foot to the closest 1/10 foot

**C. BASIS OF PAYMENT**

**1. The payment for items included in this Technical Specification shall be as follows:**

**Payment:** There will be no payment for any items of work not specifically identified and listed in the Bid Form. Payment shall be made at the Contract Unit Price as listed in the Bid Form for:

Concrete Sidewalk, 4" will be paid for per square yard to the closest 1/10 square yard at the unit bid price included in the Bid Form.

Temporary Asphalt Surface (4" Thick) will be paid for per square yard to the closest 1/10 square yard at the unit bid price included in the Bid Form.

Truncated Domes will be paid for per square foot to the closest 1/10 square foot at the unit price included in

the Bid Form.

Curb Ramp will be paid for per square foot to the closest 1/10 square foot at the unit price included in the Bid Form.

Concrete Curb and Gutter (G-1) will be paid for per lineal foot to the closest 1/10 foot at the unit price included in the Bid Form. No direct payment will be made for asphalt, concrete, or aggregate base as indicated on the Curb Replacement Detail include in the plans.

Such payment and price shall constitute full compensation for all labor, materials, and equipment necessary to complete the items.

## **TS-23 ROCK BLANKET**

### **A. GENERAL**

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), *Standard Specifications and Design Criteria* apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Rock Blanket shall conform to APWA-KCMO Section 2303 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

1. Section 2303.2 shall be supplemented with the following:

**Stone:** Stone shall meet or exceed ¼ ton specifications.

Rock Ditch Liner Geotextile Fabric shall conform to Missouri Department of Transportation (MoDOT) Standard Specifications for Highway Construction, 2011 Edition Section 1011.3.3 Permanent Erosion Control Geotextile.

2. Section 2303.3 shall be supplemented with the following:

Rock Ditch Liner Geotextile Fabric will be installed prior to placement of Rock Blanket. Rock blanket shall be placed so the finished rock blanket surface will be flush with the spill slopes or fill embankment for the bicycle path. Permanent Erosion Control Geotextile conforming to Missouri Department of Transportation (MoDOT) Standard Specifications for Highway Construction 2011 edition Section 1011.3.3 shall be placed under and along the edges of the rock blanket.

**Rock Filter Dams** shall meet the requirements and specifications as shown on the plans or as directed by the Engineer.

**MoDOT Type I Rock Blanket** if specified on the plans shall meet the widths, lengths, and depths as shown on the plans and as shown in MoDOT Standard Plan 609.60C or as directed by the Engineer. Material shall conform to APWA-KCMO 2302.2 Light 18" specifications.

### **B. METHOD OF MEASUREMENT**

1. Sections 2303.4 shall be replaced with the following:

**Measurement:** There will be no measurement for payment for any items of work not specifically identified and listed in the Bid Form. "Rock Blanket" will be measured per cubic yard. "MoDOT Type I Rock Blanket" will be measured per cubic yard. Measurement will be parallel to sloping surfaces. The thickness of the riprap or rock blanket shall conform to the plan dimension. There shall be no measurement for payment of the filter fabric.

### C. BASIS OF PAYMENT

1. Section 2303.5 shall be replaced with the following:

**Payment:** There will be no payment for any items of work not specifically identified and listed in Bid Form. Payment shall be made at the Contract Unit Price as listed in the Bid Form for "Rock Blanket." Such payment and price shall constitute full compensation for all labor, materials, and equipment necessary to complete the items.

## TS-24 MAINTENANCE OF TRAFFIC

### A. GENERAL

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), *Standard Specifications and Design Criteria* apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

All traffic regulation devices shall conform to the "Manual on Uniform Traffic Control Devices (MUTCD)" 2009 edition with Revisions 1 and 2, May 2012 (recent edition) (<http://mutcd.fhwa.dot.gov>). No substitutions for the devices required by the above referenced manual or changes in the methods of traffic regulation as outlined herein will be allowed without the written approval of the Director of Public Works.

### B. REFERENCED STANDARDS

Manual on Uniform Traffic Control Devices (MUTCD) 2009 Edition with Revisions 1 and 2, May 2012

Missouri Standard Specifications for Highway Construction, 2017 Edition Sections:

Section 616 Temporary Traffic Control

Section 902 Traffic Signals

Section 1063 Temporary Traffic Control Devices

### C. GENERAL.

This work shall consist of furnishing, installing, operating, maintaining, cleaning, relocating and removing temporary traffic control devices and equipment, and the removal and relocation or covering and uncovering of existing signs and other traffic control devices in accordance with the contract documents or as directed by the County. For purposes of this specification, the work zone will be defined as the area between the first and last temporary traffic control device as shown on the plans for the work being performed.

For any work required for this project within the public right of way which has not been designed/detailed in the construction plans nor specifically identified and listed in Bid Form shall be considered subsidiary to other pay items and the Contractor shall submit a Traffic Control Plan which describes the actual control measures to be used to facilitate the movement of system users through or around the construction. The Temporary Traffic Control Plan shall conform to the guidelines established in Chapter 6 of the Manual on Uniform Traffic Control Devices (MUTCD), 2009 edition.

In addition to the details included in the plans, the MoDOT Engineering Policy Guide Section 616 Temporary Traffic Control ([http://epg.modot.mo.gov/index.php?title=Category:2305\\_Temporary\\_Traffic\\_Control](http://epg.modot.mo.gov/index.php?title=Category:2305_Temporary_Traffic_Control)), and MoDOT Engineering Policy Guide Section 616.23 Traffic Control for Field Operations ([http://epg.modot.mo.gov/index.php?title=2305.23\\_Traffic\\_Control\\_for\\_Field\\_Operations](http://epg.modot.mo.gov/index.php?title=2305.23_Traffic_Control_for_Field_Operations)) may be used as references in the development of the temporary traffic control plan. If any existing trail or sidewalk facilities are to be closed, the Traffic Control Plan shall include a MoDOT Type III barricade including flashers with a "Sidewalk (or Trail) Closed" sign as shown in Typical Application No. 28.

The scope and level of detail of the Traffic Control Plan shall match the complexity of the project. Typical Application No. 1, Work Beyond the Shoulder on Divided and Undivided Highways, Typical Application No. 5, Shoulder Work on Divided Highways and Typical Application No. 10 from MoDOT's "Traffic Control for Field Operations" are included in this section for reference.

#### **D. MATERIAL.**

All material shall be in accordance with Division 1000, Materials Details, and specifically Section 1063 of the MoDOT specifications.

#### **E. SAFETY REQUIREMENTS.**

All workers within highway right of way who are exposed to traffic or construction equipment shall wear high-visibility safety apparel meeting Class 2 or Class 3 requirements of ANSI/ISEA 107-2004 publication entitled, "American National Standard for High-Visibility Safety Apparel and Headwear".

All traffic control devices shall be in accordance with the MUTCD and any applicable safety and design codes.

The Contractor shall furnish a manufacturer's certification of crashworthiness, per NCHRP 350 Evaluation Criteria, for FHWA Category 1 traffic control devices and appurtenances. The contractor shall furnish the FHWA acceptance letter for FHWA Category 2 and Category 3 traffic control devices and appurtenances. The FHWA acceptance letter shall indicate that the device and appurtenance complies with the crash test requirements of NCHRP 350, Test Level 3 (TL-3). Regardless whether the device meets NCHRP 350 criteria, the Engineer reserves the right of final approval. Installation of a device prior to the engineer's approval will be at the contractor's risk.

The Contractor shall:

- (a) Designate a trained person at the project level who has the primary responsibility, with sufficient authority, for implementing the traffic management plan and other safety and mobility aspects of the project. The name of that person, proof they successfully completed MoDOT's Advanced Work Zone course, ATSSA's Traffic Control Supervisor course or an approved equivalent training course, and a 24-hour contact number for that person shall be provided to the Engineer at the pre-construction meeting. Re-certification will be required as dictated by the organization providing the training.
- (b) Ensure all contractor personnel are trained in traffic control to a level commensurate with their responsibilities.
- (c) Advise the Engineer, as required, at least two working days before any work requiring a lane closure begins and 14 calendar days prior to the imposition of height, width and weight restrictions.
- (d) Perform quality control of work zones to promote consistency and ensure compliance with contract documents, policies and guidelines

#### **F. CONSTRUCTION REQUIREMENTS.**

Performance and operational aspects of the devices shall be in accordance with the latest editions of the MUTCD and the Missouri Quality Standards for Temporary Traffic Control Devices.

All traffic control devices shall be removed as soon as practical when the devices are no longer needed. When work is suspended for short periods of time, traffic control devices that are no longer appropriate shall be turned away from traffic, removed or covered. All traffic control devices shall be removed after the completion of construction and shall remain the property of the Contractor unless specified otherwise. All permanent traffic control devices that are in conflict with temporary traffic control devices shall be covered or removed as shown on the plans or as directed by the Engineer. Upon completion of the work, all permanent traffic control devices to remain in place shall be restored to original condition.

All sign covers shall meet the requirements of the MoDOT Quality Standards for Temporary Traffic Control Devices.

All permanent traffic control devices relocated on a temporary basis shall be moved in the timeframe designated by the engineer, and shall remain visible to the traveling public during all stages of construction. The Contractor shall place temporarily relocated permanent traffic control devices in the final location when construction is complete. Damaged devices shall be replaced by the Contractor at the Contractor's expense.

The Contract will indicate the minimum requirements for traffic control. With the Engineer's approval, the contractor may add to the traffic control plan any temporary traffic control devices or services the Contractor considers necessary to adequately protect the public and the work. Device quantities may be adjusted accordingly.

Signs and sign quantities for blasting areas will not be included in the contract traffic control plan. The Contractor will be responsible for furnishing, installing, maintaining and removing blasting zone signs in accordance with the MUTCD, at the Contractor's expense. Placement of blasting zone signs will be subject to approval from the Engineer.

All changes to the traffic control plan resulting from Contractor staging revisions, including proposed total road closures for the Contractor's convenience, shall be submitted in writing to the Engineer for review and acceptance prior to implementation. Device quantities may be adjusted accordingly.

If the Engineer determines the need for additional traffic control devices not included in the traffic control plan, the Contractor will be notified in writing to provide the additional devices. Reimbursement for authorized changes to the traffic control plan will be made in accordance with SP-16 MODIFICATIONS AND ALTERATIONS and SP-17 EXTRA WORK unless covered by contract unit prices.

The Contractor shall monitor traffic flow through the project and verify that all traffic control devices are in place and functioning properly during both daytime and nighttime conditions, as applicable. If the Contractor determines that a deficiency in any traffic control device exists, the Contractor shall take corrective action. No additional payment will be made for the corrective action.

As soon as possible after observing a traffic control deficiency, the Engineer will report the deficiency to the Contractor, either verbally or in writing. After receiving notification, if the Contractor does not make corrections within an agreed upon timeline, order records or suspension of the work may occur. Regardless of the severity of the deficiency, corrections shall be made as soon as possible to maintain a quality work zone.

The severity of a deficiency will be categorized as follows:

- (a) Category 1 – Presents an immediate danger to the traveling public or workers and needs to be addressed immediately.
- (b) Category 2 – The situation doesn't pose an immediate threat to either the public or the workers, but can impact the proper functioning of the work zone.
- (c) Category 3 – The situation doesn't impact the functioning of the work zone but is more of a maintenance or aesthetic issue.

When the Engineer determines that the Contractor has not made a good faith effort in correcting a deficiency, an order record will be issued and the contractor will be notified of the following timelines to correct the deficiency.

- (a) A Category 1 deficiency shall be corrected within one hour.
- (b) A Category 2 deficiency shall be corrected within 24 hours.
- (c) A Category 3 deficiency shall be corrected within 96 hours.

When the Engineer determines the Contractor has not made a good faith effort in complying with an order record issued, the following action may be taken:

- (a) A second order record will be issued.
- (b) The Engineer may find the contractor in violation of the contract in accordance with Sec 105.

For reoccurring deficiencies of similar nature within the contractor's control, the Engineer may issue additional order records

The Contractor shall provide written notice to the Engineer of any pedestrian or vehicular accident when physical evidence or other information suggests an accident has occurred in the work zone. The Contractor shall obtain and provide to the Engineer copies of law enforcement accident reports for any accidents in the work zone.

Each flagger, automated flagger assistance devices (AFAD) operator, portable signal flagging device (PSFD) operator and pilot vehicle operator shall maintain a valid flagger certification card that certifies the individual has been trained in the principles of flagging in accordance with the MUTCD. Certifications will not be required in emergency situations that arise due to actions beyond the contractor's control when flagging is necessary to maintain safe traffic control on a temporary basis. All flagging, AFAD, PFD and pilot vehicle operations shall be in accordance with the MUTCD. Flaggers and pilot vehicles shall be provided as shown on the plans or as approved or directed by the engineer. When not specified in the plans, the contractor may use a Type B (Red/Yellow Lens) AFAD PSFD or pilot vehicle to supplement the flagging operation upon approval from the engineer. When two-way traffic is maintained over a single lane, each flagger, AFAD operator, if used in tandem, and pilot vehicle operator involved in the traffic flagging operation shall be equipped with a portable, two-way, communication system approved by the engineer. When the AFED or PSFD are not in use they shall be removed from the roadside.

Crossovers for hauling material will be permitted only at locations indicated in the traffic control plan or as authorized by the engineer. Modifications to specified locations shall be in accordance with applicable portions of Section 1410 of the Project Manual. Crossovers shall be signed in accordance with the traffic control plan. When the project has been completed, temporary crossovers shall be removed and the area restored to original condition. Existing crossovers shall be restored to original condition, including surface material.

Contractor's representative on this project shall make daily inspections of the traffic regulation devices installed as part of this contract and maintain records of any maintenance required and the date on which it was completed. These records will be maintained for the duration of the project and be incorporated as part of the final records. It shall be Contractor's responsibility to maintain all traffic regulation devices in proper working condition and placement at all times. Contractor shall promptly correct any deficiencies in traffic regulation.

Contractor will be required at the time of the pre-construction conference to designate a specific employee to be responsible for the maintenance of the traffic regulation devices and establish a method of contacting this person during both working and non-working hours. This information will be provided to the Engineer. Contractor may, at its option, establish a maintenance agreement with a qualified firm, approved by the County, to supply, install, and maintain the required traffic regulation devices throughout the duration of this project.

Damage to existing utilities during construction of this project which would require immediate repair may be considered as an "emergency", and as such may not be subject to all of the restrictions contained herein. Therefore, Contractor shall immediately contact the utility company whose facilities are involved and the County whenever any utilities are damaged which may require immediate repair. Such repair work, once declared an "emergency" by the utility company or by the County, shall be pursued on a continuous (24 hours per day) basis until complete or advanced to such a point that use of the roadway can be returned to normal operation and any subsequent repairs can be completed during regular working hours. However, the County reserves the right to determine which utility work will be considered an "emergency". Any costs incurred by Contractor for such "emergency" utility repair, including the cost of any additional traffic regulation that may be required, will be Contractor's sole responsibility.

County reserves the right to make adjustments or revisions in traffic handling requirements that may become necessary after construction on the project has started. These changes will be determined on the basis of periodic inspections throughout the duration of the project. Notice of such change will be transmitted to Contractor and it will be its responsibility to make the necessary changes as soon as practicable after receipt of the notification.

If Contractor encounters conditions that would require a change in method of traffic regulation Contractor shall immediately notify the Engineer. At least 48 hours before the start of the proposed change, the Engineer will

request approval of the change in method of maintaining traffic from the County. Upon approval Contractor shall obtain a revised street closure permit from the County. Contractor shall not proceed with the change without the approval of the County.

Contractor shall be required to maintain access to all properties served by streets affected by the construction work, unless otherwise stated in the Specific Requirements of this Project Manual.

Construction work that requires sidewalk closures or temporary restriction of on-street parking will be permitted along one side of alternating blocks on one side of the street at a time, or in any other combination, provided that in any one block both sidewalks or curb parking are not closed or restricted at the same time.

Segments of shared use path under construction shall be protected from entrance by the public through the use of Orange Construction Fencing stretched across primary entry points.

#### **G. LIGHTING REQUIREMENTS.**

All construction-related vehicles and equipment, except for haul trucks within paving operations, shall be equipped with a USDOT-approved warning light. Lights shall be amber in output, mounted such that the lights are visible to traffic from 360 degrees and activated while in the work zone.

Work zone lighting shall be provided between dusk and dawn. Lighting systems shall be positioned such that the lighting systems do not cause glare or hot spots, i.e. concentrated areas of high lighting intensity when compared to the average, for motorists, spillover to adjacent properties or become safety concerns. When work zone lighting is required, a lighting plan shall be submitted to the Engineer for review 14 days prior to the start of operations. The lighting plan shall show the areas to be illuminated, the type and layout of the lighting systems and calculations of average maintained footcandles.

Work area lighting shall be provided in areas where construction equipment and labor are active. Lighting shall provide a minimum maintained intensity of 5 footcandles.

Overhead lighting shall be provided for flaggers and other specified locations shown on the plans. Lighting in these areas shall provide a minimum maintained intensity of 0.6 footcandles.

#### **H. FLASHING ARROW PANEL**

Flashing Arrow Panels are not anticipated for this project. However, should conditions change and Flashing Arrow Panels become a requirement, the Contractor shall deploy, operate and maintain flashing arrow panels as directed by the Engineer for the duration agreed upon, in accordance with the manufacturer's recommendations, at the contractor's expense. A minimum vertical clearance of 7 feet shall be maintained from the edge of pavement to the bottom of the flashing arrow panel.

When not in use, trailer-mounted flashing arrow panels shall be stored in accordance with TS-12 PROJECT ADMINISTRATION of the Project Manual.

Control programs shall be as follows:

- (a) Caution: Flash the two highest and two lowest lamps on panel simultaneously.
- (b) Left or Right Arrow: Flash five lamps in the arrowhead and five lamps in the horizontal shank simultaneously.
- (c) Double Arrow: Flash five lamps in both the left and right arrowheads and three lamps in the horizontal shank simultaneously.

#### **I. CHANGEABLE MESSAGE SIGNS**

Changeable Message Signs are not anticipated for this project. However, should conditions change and Changeable Message Signs become a requirement, the Contractor shall place the changeable message sign (CMS) at locations directed by the engineer. The CMS shall not be located in the median.

The Contractor shall deploy, operate and maintain the CMS as specified in the traffic control plan and in



accordance with the manufacturer's recommendations for the duration of the project at the contractor's expense. The Contractor shall program the CMS as directed by the Engineer.

When the CMS is not in use, the message board shall be turned away from traffic.

When not required for longer than a 24-hour period, the CMS shall be stored in accordance with TS-21 PROJECT ADMINISTRATION of the Project Manual.

#### **J. WORK ZONE TRAFFIC SIGNALS**

Work Zone Traffic Signals are not anticipated for this project. However, should conditions change and Work Zone Traffic Signals become a requirement, the following shall apply. Work Zone Traffic Signals (WZTS) provide one-lane, two-way temporary traffic control through the use of a temporary traffic signal or a portable traffic signal programmed for two-phase operation. WZTS shall be in accordance with the provisions of this section. Unless otherwise shown on the plans, the Contractor may choose either method to fulfill the WZTS requirement.

The Contractor shall notify the Engineer at least 48 hours prior to the work zone traffic signal installation. After installation, the contractor shall receive approval from the engineer prior to activating the WZTS system. The Contractor shall provide a service technician to be available for day, night and weekend trouble calls as required under test period requirements in Section 902.2 of the Missouri Standard Specifications for Highway Construction, 2017 Edition. The Contractor shall furnish the telephone number or other contact information where the technician can be reached.

The Contractor shall operate and maintain the WZTS, at the contractor's expense, as specified in the traffic control plan until two-way traffic is restored.

When the WZTS is not in use, the signal heads shall be covered to the satisfaction of the Engineer.

Adequate traffic control, including flaggers, shall be provided at the Contractor's expense during the startup and shutdown of the WZTS installation. If the WZTS installation becomes inoperable due to alterations, malfunctions or periods of shutdown for required maintenance when one-way traffic control is required, the Contractor shall provide adequate traffic control, including flaggers, at the Contractor's expense.

All signal timing and programming shall be provided by the Contractor and furnished to the engineer for approval prior to use. The Contractor shall ensure proper signal timing is provided for the duration of the project. The Contractor shall provide the locations of the vehicle detection zones.

The WZTS and lighting system shall be removed after two-way traffic has resumed or as directed by the engineer. All equipment shall remain the property of the Contractor.

Measurement of WZTS system, including lighting and traffic signals at both ends of a one-lane, two-way section, will be made per each.

#### **K. TEMPORARY TRAFFIC SIGNALS**

Temporary Traffic Signals are not anticipated for this project. However, should conditions change and Temporary Traffic Signals become a requirement, temporary traffic signals and lighting shall be in accordance with Section 902.3 of the Missouri Standard Specifications for Highway Construction, 2011 Edition Sections.

#### **L. PORTABLE TRAFFIC SIGNALS**

Portable Traffic Signals are not anticipated for this project. However, should conditions change and Portable Traffic Signals become a requirement, portable traffic signals shall be in accordance with Section 1063 of the Missouri Standard Specifications for Highway Construction, 2011 Edition Sections. The Contractor shall place the portable traffic signal (PTS) units a minimum of 6 feet beyond the edge of shoulder at the location shown on the plans or as directed by the engineer. Each unit shall be level to the satisfaction of the engineer. Each PTS shall be delineated with a minimum of five non-metallic drum-like channelizers. The PTS shall not be located in the median.

When not required for a longer than a 24-hour period, the PTS shall be stored in accordance with Section 1410 of

the Project Manual.

The Contractor shall deploy, operate and maintain the PTS in accordance with the manufacturer's recommendations. The Contractor shall provide two copies of the operating manual to the engineer.

Overhead lighting with an average maintained intensity of 0.6 footcandles shall be provided and maintained at each PTS location as authorized by the engineer.

#### **M. METHOD OF MEASUREMENT:**

There will be no measurement for payment for any items of work not specifically identified and listed in the Bid Form.

Channelizers (Trim-Line) will be measured per each.

Temporary Construction Signs shall be measured per square foot of sign.

Type III Movable Barricades (8' Long) with Flashers shall be measured per each.

Flaggers shall be measured per each.

#### **N. BASIS OF PAYMENT**

There will be no payment for any items of work not specifically identified and listed in the Bid Form. Payment shall be made at the Contract Unit Price as listed in the Bid Form for:

Channelizers (Trim Line) will be paid for at the unit price per each.

Temporary Construction Signs shall be paid for at the unit price per square foot of sign.

Type III Movable Barricades (8' Long) with Flashers shall be paid for at the unit price per each.

Flaggers shall be paid for at the unit price per each.

All temporary traffic control devices shall be portable. No direct payment will be made for relocating Channelizers (Trim Line) and/or Temporary Construction Signs. The maximum quantity of devices including flaggers needed at any given time shall form the basis of payment.

### **TS-25 PAVEMENT MARKING**

#### **A. GENERAL**

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), *Standard Specifications and Design Criteria* apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Pavement Marking shall conform to APWA-KCMO Section 2306 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

Section 2306.3 shall be supplemented with the following:

Arrangement and dimensions of pavement markings shall conform to the 2009 Edition of the Manual on Uniform Traffic Control Devices (MUTCD). Where conflicts occur between the plans and the MUTCD, MUTCD shall govern.

All pavement markings for this project shall be Preformed Thermoplastic.

#### **B. METHOD OF MEASUREMENT**

1. Sections 2306.11 shall be replaced with the following:

There will be no measurement for payment for any items of work not specifically identified and listed in the Bid Form:

4 In. Double Yellow Preformed Thermoplastic Pavement Marking will be measured per linear feet

of line.

6 In. Yellow Preformed Thermoplastic Pavement Marking will be measured per linear feet of line.

12 In. Yellow Preformed Thermoplastic Pavement Marking will be measured per linear feet of line.

12 In. White Preformed Thermoplastic Pavement Marking will be measured per linear feet of line.

24 In. Yellow Preformed Thermoplastic Pavement Marking will be measured per linear feet of line.

24 In. White Preformed Thermoplastic Pavement Marking will be measured per linear feet of line.

### C. BASIS OF PAYMENT

1. Sections 2306.12 shall be replaced with the following:

There will be no payment for any items of work not specifically identified and listed in the Bid Form. Payment shall be made at the Contract Unit Price for each of the items listed in the Bid Form. Such payment and price shall constitute full compensation for all labor, materials, and equipment necessary to complete the items.

## TS-26 FENCING AND RAIL

### A. GENERAL

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), *Standard Specifications and Design Criteria* apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Fencing shall conform to APWA-KCMO Section 2308 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

1. Section 2308.1 shall be supplemented by adding the following Missouri Standard Specifications for Highway Construction:

Section 1050 Lumber, Timber, Piling, Posts, and Poles

2. Section 2308.2 shall be replaced with the following:

Materials:

Woven Wire Fence (48"): All materials used for the installation of Woven Wire Fence (48") shall conform to the plans and to Section 2307

48" Pedestrian Fence (Ground Mount): All materials used for the installation of 48" Pedestrian Fence (Ground Mount) shall conform to the details in the plans and specifications.

48" Pedestrian Fence (Bridge Mount): All materials used for the installation of 48" Pedestrian Fence (Bridge Mount) shall conform to the details in the plans and specifications.

Pedestrian Handrail: All materials used for the installation of Pedestrian Handrail shall conform to the details in the plans and specifications.

3. Section 2308.3 shall be replaced with the following:

Construction Details for Pedestrian Fence will be similar to those indicated in the following:

### B. 48" PEDESTRIAN FENCE (GROUND MOUNT) & (BRIDGE MOUNT)

The contractor shall provide all labor, materials, and appurtenances necessary for installation of the welded ornamental steel fence system (48" Pedestrian Fence (Ground Mount) & (Bridge Mount)) defined herein.

1. **Quality Assurance** The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

## 2. References

- a. ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the hot-dip process.
- b. ASTM B117 – Practice for Operating Salt-Spray (Fog) Apparatus.
- c. ASTM D523 – Test Method for Specular Gloss.
- d. ASTM D714 – Test Method for Evaluating Degree of Blistering in Paint.
- e. ASTM D822 – Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
- f. ASTM D1654 – Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- g. ASTM D2244 – Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
- h. ASTM D2794 – Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- i. ASTM D3359 – Test Method for Measuring Adhesion by Tape Test.
- j. ASTM F2408 – Ornamental Fences Employing Galvanized Steel Tubular Pickets.

**3. Submittals** The manufacture's literature shall be submitted prior to installation.

**4. Product Handling and Storage** Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism, and theft.

**5. Product Warranty** All structural fence components (i.e. rails, pickets, and posts) shall be warranted within the specified limitations, by the manufacturer for a period of 20 years from date of original purchase. Warranty shall cover defects in material finish, including cracking, peeling, chipping, blistering or corroding. The Warranty shall be transferred to Jackson County, Missouri upon completion and acceptance of the fence.

## 6. Material

- a. Steel material for fence panels and posts shall conform to the requirements of ASTM A653/A653M, with a minimum yield strength of 45,000 psi (310 MPa) and a minimum zinc (hot-dipped galvanized) coating weight of 0.60 oz/ft<sup>2</sup> (184 g/m<sup>2</sup>), Coating Designation G-60.
- b. Material for pickets shall be ¾" square x 18 Ga. Tubing. The rails shall be steel channel, 1.5" x 1.4375" x 14 Ga. Picket holes in the rail shall be spaced 4.675" o.c. Fence posts and gate posts shall meet the minimum size requirements of Table 1.

## 7. Fabrication

- a. Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.
- b. Pickets shall be inserted into the pre-punched holes in the rails and shall be aligned to standard spacing using a specially calibrated alignment fixture. The aligned pickets and rails shall be joined at each picket-to-rail intersection with an approved fusion welding process, thus completing the rigid panel assembly.
- c. The manufactured panels and posts shall be subjected to an inline electrode position coating process consisting of a multi-stage pretreatment/wash (with zinc phosphate), followed by a duplex application of an epoxy primer and an acrylic topcoat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils (0.058 mm). The color shall be black. The coated panels and posts shall be capable of meeting the performance requirements for each quality characteristics shown in Table 2.
- d. The manufactured fence system shall be capable of meeting the vertical load, horizontal load, and infill

performance requirements for Commercial weight fences under ASTM F2408.

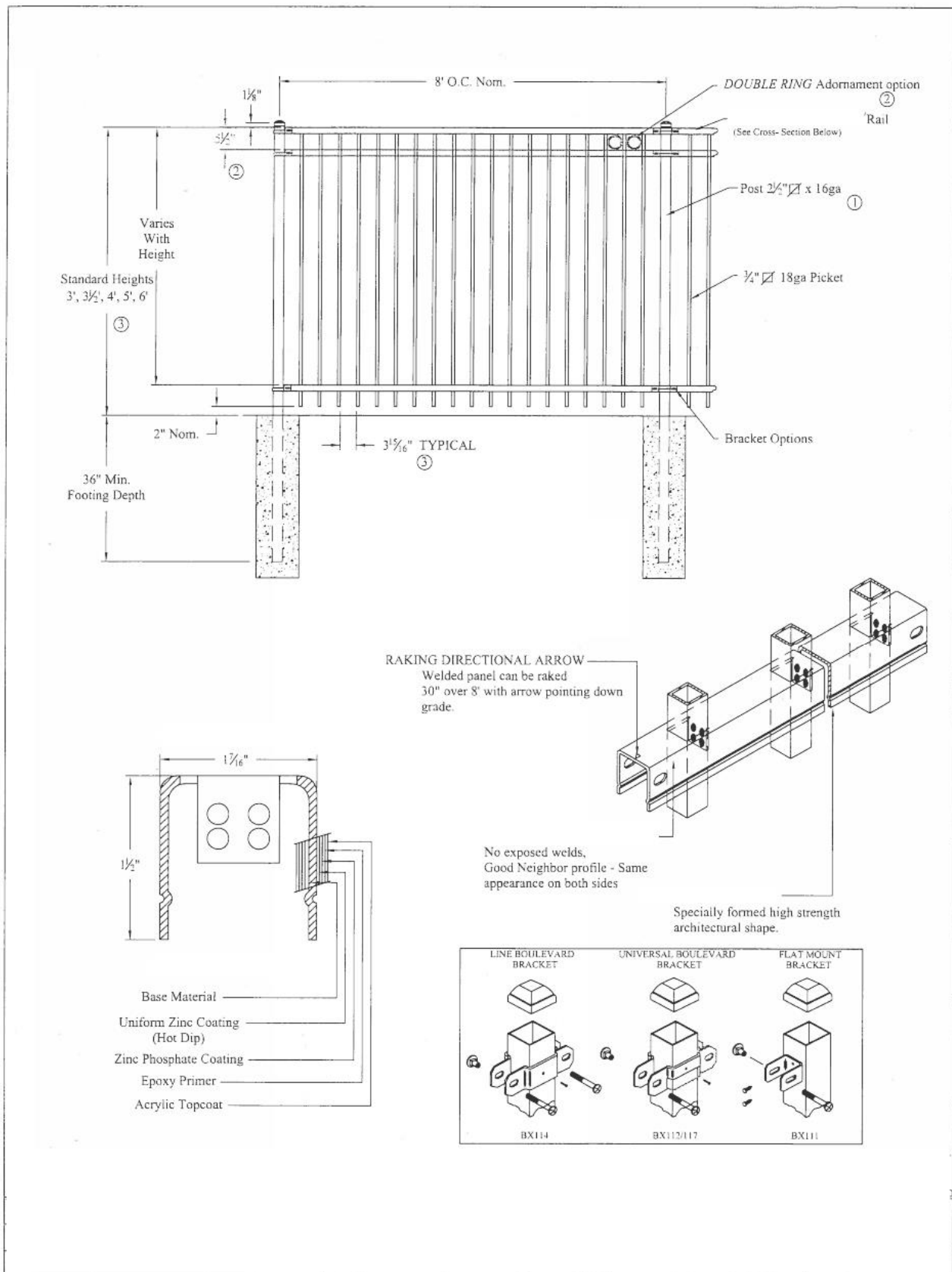
- 8. Preparation** All new installation shall be laid out by the contractor in accordance with the construction plans.
- 9. Installation** Fence post shall be spaced according to the detail below plus or minus ¼". For installations that must be raked to follow sloping grades, the post spacing dimension must be measured along the grade. Fence panels shall be attached to posts with brackets supplied by the manufacturer. Posts shall be set in concrete footers having a minimum depth of 36". See other technical specifications for material and construction requirements for concrete footers. Posts setting by other methods such as plated posts or grouted core-drilled footers are permissible only if shown by engineering analysis to be sufficient in strength for the intended application. Bridge Mount fence shall be attached as indicated in the plans and as coordinated with the fence manufacture.
- 10. Fence Installation Maintenance** When cutting/drilling rails or posts adhere to the following steps to seal the exposed steel surfaces: 1) Remove all metal shavings from cut areas. 2) Apply zing-rich primer to thoroughly cover cut edge and /or drilled hole; let dry. 3) Apply 2 coats of finish paint matching fence color. Failure to seal exposed surfaces per steps 1-3 above will negate warranty. Finish paint shall meet the requirements of the manufactures recommendations.
- 11. Cleaning** The contractor shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.

**Table 1 – Minimum Sizes for Posts**

Fence Posts	Panel Height
2-1/2" x 16 Ga.	Up to & Including 6' Height

**Table 2 – Coating Performance Requirements**

Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 1,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60-inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D822, D2244, D523 (60° Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units.)



12. Woven Wire Fence (48") may use wood or metal posts as indicated in the standard details.

### C. MEASUREMENT AND PAYMENT

1. Sections 2308.04 be replaced with the following:

**Measurement:** There will be no measurement for payment for any items of work not specifically identified and listed in the Bid Form. All hardware, footings, accessories, shall be incidental to their respective items. 48" Pedestrian Fence (Ground Mount), 48" Pedestrian Fence (Bridge Mount), Pedestrian Handrail, and Woven Wire Fence (48") will be field measured along the slope of the fence to the nearest linear foot.

**Payment:** There will be no payment for any items of work not specifically identified and listed in the Bid Form. All hardware, footings, accessories, shall be incidental to their respective items. Payment shall be made at the Contract Unit Price as listed in the Bid Form for 48" Pedestrian Fence (Ground Mount), 48" Pedestrian Fence (Bridge Mount), Pedestrian Handrail, and Woven Wire Fence (48"). Such payment and price shall constitute full compensation for all labor, materials, and equipment necessary to complete the items.

## TS-27 SIGNAGE

### A. GENERAL

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), Standard Specifications and Design Criteria apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

**Referenced Standards:** The following standards are referenced directly in this section.

The latest version of these standards shall be used.

Manual on Uniform Traffic Control Devices (MUTCD), 2009 edition

Missouri Standard Specifications for Highway Construction (and Supplemental Specifications), 2017 edition

### B. GENERAL:

This item shall consist of furnishing and erecting new permanent signs in the quantity and location shown on the plans, or as directed by the Engineer.

Work for signage shall conform to the City of Lee's Summit Design and Construction Manual. Where conflicts occur between the plans and the City of Lee's Summit specifications and standard plans, the City's specifications and standard plans shall govern. Arrangement and dimensions of signs shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). Where conflicts occur between the plans and the MUTCD, MUTCD shall govern.

### C. SIGN FOOTING:

It shall be the Contractor's responsibility to locate underground utilities in the vicinity of sign footings to eliminate any damage thereto. A breakaway sign post shall be installed in accordance with the manufacturer's specifications. All sign footings, sign posts, sign attachment hardware, or other assorted items to install signs shall be incidental.

### D. METHOD OF MEASUREMENT

There will be no measurement for payment for any items of work not specifically identified and listed in the Bid Form. "Permanent Signs" will be measured by square foot of sign face. "Sign Posts (Square Steel)" shall be measured per each. There will be no measurement for payment of sign attachment hardware, footings, or other assorted items to install signs.

## E. BASIS OF PAYMENT

There will be no payment for any items of work not specifically identified and listed in the Bid Form. Payment shall be made at the Contract Unit Price as listed in the Bid Form for "Permanent Signs" and "Sign Posts (Square Steel)." Such payment and price shall constitute full compensation for all labor, materials, and equipment necessary to complete the items. No separate payment will be made for removal of existing signs and associate appurtenances or the relocation of existing signs. All costs pertaining thereto shall be included in the Contract Unit Prices for other items as listed in the Bid Form.

## TS-28 SODDING, SEEDING AND OVERSEEDING

### A. GENERAL

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), Standard Specifications and Design Criteria apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Sodding, Seeding, and Overseeding shall conform to APWA-KCMO Section 2400 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

1. Section 2401.2 Materials shall be replaced with the following:

**Seed:** Seed shall be labeled in accordance with U.S. Department of Agriculture Rules and Regulations under Federal Seed Act. All seed shall be furnished in sealed standard containers unless exception is granted in writing by the Owner's Representative. Seed shall be free from noxious weeds and re-cleaned "Grade A" recent crop seed treated with appropriate fungicide at time of mixing. Seed which has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable. Seed mix to be used will be identified prior to sowing. The minimum percentage by weight of pure live seed in each lot seed shall be as follows:

A. Seeding – Mix #1 (Turf Areas):

Festuca arundinacea, Fineleaf Tall Fescue. Varieties- Hounddog V. Rebel Jr., Rebel III, Rebel 3D, Barlexas, Millennium, Southern Choice, Tar Heel, Wolf Pack, Bonsai 2000, Shortstop II Coyote, or other pre-approved substitutes 62.5%

Poa pratensis, Kentucky Bluegrass. Varieties- Baran, Nassau, Ram I, Nublu, Rugby II, Award, Blacksburg, Challenger, Eagleton, Limousine, Livingston, Midnight, Nuglade, Preakness, Princeton 105, Quantum Leap, 1757 or other approved substitutes 25.0%

Lolium multiflorum – annual ryegrass 12.5%

**B. Seeding Rate:** Seed mixture shall be sown at the minimum rate of 10 pounds per 1000 square feet for new seeding. See Section 2406.3.E.1 for overseeding rates.

2. Paragraphs under Section 2402.2 Materials shall be replaced with the following:

**H. Weather Conditions:** All sodding and seeding shall be performed during favorable weather conditions and only during normal and acceptable planting seasons when satisfactory growing conditions exist. The planting operations shall not be performed during times of extreme drought, when ground is frozen or during times of other unfavorable climatic conditions unless otherwise approved by Owner's Representative. The Contractor assumes full and complete responsibility for all such plantings and operations.

**I. Planting Dates:** All seeding shall be completed between March 15 through April 31 for spring planting and September 1 through October 15 for fall planting. All tree or shrub planting shall be completed between March 1 through April 15 for spring planting and September 1 through October 1 for fall planting.

3. Section 2401.3.H Construction shall be supplemented with the following:

6. Erosion Control Blanket. All areas that are disturbed require seeding and shall be protected and covered



with an Erosion Control Blanket conforming to APWA-KCMO 2152.4.1. Limits of seeding shall include all areas within 8 feet from the edge of the trail or in deep fill and cut areas required to construct the trail within the limits of construction. Any disturbed areas outside of the limits of seeding, if shown on the plans, or limits of construction as shown on the plans will be seeded and covered with an Erosion Control Blanket at no cost to the Owner.

Erosion Control Blanket shall be APWA Type D blanket meeting the following conditions:

- a. Description - 9.3lb leno woven biodegradable jute top net; 70% straw/30% coconut fiber matrix; 7.70 lb. woven biodegradable jute bottom net. Polypropylene netting will not be accepted.
- b. Permissible Shear Stress: Bare soil: 2.10
- c. 18 month longevity
- d. Install with minimum 2 staples per square yard.
- e. Contractor shall provide 6x6 inch square sample for approval

4. Section 2404.2 shall also include the following paragraph:

Areas to be hydroseeded shall be fertilized at rates specified in APWA KCMO 2401.3.F. The seed-bed shall be free of any irregularities in the surface, and shall be corrected to prevent formation of water pockets. Hydromulch used shall be a wood fiber mulch with tackifier, such as Conwit 2000, or approved equivalent. Hydromulch shall be applied at the minimum rate of 1500 lb/ac.

Sloped areas shall have minimum rates of application of:

< 4H:1V	2000 lb/ac
>4H:1V and <3H:1V	2500 lb/ac
>3H:1V and <2H:1v	3000 lb/ac

Seed Mixture types: Seed shall be comprised of a 90 percent mixture of at least two turf-type tall fescues such as "Bonanza" or "Tomahawk" fescue and 10 percent Perennial Rye grass such as "Catalina" or "Pennant II". Turf-type tall fescues shall be seeded at a rate of 7 pounds per 1,000 square feet.

5. Section 2407 shall be added after Section 2406:

2407 ACCEPTANCE OF SODDING AND SEEDING

**2407.1 Acceptance:** The Contractor shall be responsible for maintaining the installed grass seed and sod until all areas are complete and accepted by the Owner's Representative. Inspection for acceptance will be made within 60 days after seeding, excluding seeding dates that fall between September 30 and March 1. Seeding that occurs between September 30 and March 1 will be inspected no earlier than May 1.

Grass areas in excess of six square inches that are dead or in poor condition regarding color and quality shall be replaced at the Contractor's expense prior to final acceptance.

**2407.2 Sod Watering:** Throughout the project, the Contractor shall be responsible for watering the installed sod until it is established and ready for mowing. In the absence of rainfall, watering shall be performed daily during the first week and shall be sufficient to maintain moist soil to a depth of at least 4 inches. Soil on sod pads shall be kept moist at all times. Watering may be done during the heat of the day to help prevent wilting. After the second week, the Contractor shall water the sod as required to maintain adequate moisture in the upper 4 inches of topsoil necessary for the promotion of deep root growth until final acceptance as established turf areas ready for mowing.

**2407.3 Seed Watering:** The Contractor shall be responsible for watering seeded areas following the substantial germination of the seed and the occurrence of a dry or drought period. Continued watering during dry or drought periods will be required until final acceptance at no additional cost to the County.

**2407.4 Corrective Action:** Inadequate stands or any eroded or rutted areas shall be shall be reworked and reseeded within thirty days at the Contractor's expense.

**2407.5 Acceptance Notification:** After acceptance of the seeded or sodded area by the Owner's Representative, the Contractor shall by door hangers or other approved methods, notify all affected property owners that the maintenance of the grassed areas is now their responsibility.

## **B. MEASUREMENT AND PAYMENT**

1. "Permanent Seed and Mulch (Hydroseeding)" will be quantified per acre or tenth thereof. The quantity to be paid will be the field measured quantity. Payment for all work required to perform "Permanent Seed and Mulch" shall be included in the unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete these items including mulch.
2. "Temporary Seed and Mulch" will be quantified per acre or tenth thereof. The quantity to be paid will be the field measured quantity. Payment for all work required to perform "Temporary Seed and Mulch" shall be included in the unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete these items including mulch.
3. "Sodding" will be field measured per square yard. Payment for all work required to perform "Sodding" shall be included in the unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete these items.

## **TS-29 STORM SEWERS**

### **A. GENERAL**

All the requirements of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA), Standard Specifications and Design Criteria apply. Sections of said Specifications will be hereinafter referred to as "APWA-KCMO."

Storm Sewers shall conform to APWA-KCMO Section 2600 with the following modifications, deletions, or additions. All provisions that are not so amended, removed, or supplemented remain in full force and effect.

1. Section 2601.1 shall be replaced with the following:

**Description:** Storm sewer construction shall consist of furnishing all labor, materials, and equipment necessary for the complete installation of storm sewers and appurtenances in accordance with the Standard Drawings, Contract Drawings, General and/or Supplemental Conditions, specifications and standards referenced herein, and these specifications. Unless otherwise noted within these specifications, the word "sewers" shall refer to pipe sewers, box culvert sewers, or open channels. Any references to MoDOT Type A Pipe Collar, Type S-1 Precast Drop Inlet, Curved Vane Grate, connecting new or existing pipes to existing inlets or similar non-Kansas City approved standard sewer within the plans are covered by Section 03050 Miscellaneous Drainage Items if applicable.

2. Section 2602.3.A.1- shall be replaced with the following:

Unclassified excavation is defined as the removal of all material encountered regardless of its nature. All material excavated for this project will be considered Unclassified Excavation.

3. Section 2602.3.D shall be added as follows:

**Connection to Existing Systems:** Where a storm sewer pipe is being connected to an existing drainage structure, the work shall be constructed by sawing and chipping a hole through its sidewall to allow a minimum of three-inches of new concrete around the pipe. The invert shall be chipped away and replaced to shape a new doghouse collar and invert. The interior concrete surfaces shall be grouted smooth with non-shrink grout. Depending on the method and extent of the sidewall demolition, reinforcing bars may need to be doweled into the existing structure at the direction of the Engineer.

Pipe Trimming. Pipes connecting to structures shall be cut parallel with the inside face of structures with plane walls. Pipes connecting to other pipes shall be cut parallel with the spring line of the pipe. Projection of the pipe beyond the inside face shall not exceed one inch. Voids shall be grouted with non-shrink grout.

Where an inlet is being installed to an existing pipe, connection to the existing pipe and pipe trimming shall be incidental to the inlet.

Where an existing pipe is being extended, Contractor to install a pipe collar meeting the MoDOT Specifications Section 604.40 and MoDOT Standard Plans 604.40F and pipe collar to be incidental to the pipe installation.

4. Section 2602.3.E shall be added as follows:

**Inlet and Pipe Removal.** This Section consists of removing an inlet and associated pipe. Backfill shall be in accordance with Figure 1 APWA-KCMO 2602.3.C. The existing pipe removed shall be plugged with concrete plugs. Any abandoned pipes left in place shall be filled with Flowable Fill conforming to the specifications for Controlled Low Strength Material (CLSM) in APWA-KCMO 2602.2.I.

5. Section 2602.3.F shall be added as follows:

**Inlet Modification and Pipe Abandonment.** This Section consists of modifying and existing inlet and abandoning associated pipe. Contractor shall make modifications to existing inlet and pipe as shown on the plans or as directed by the Engineer. The existing pipe to be abandoned shall be plugged with concrete plugs with a minimum thickness of 6 inches or the width of the existing wall of any reinforced box culvert. Any abandoned pipes left in place shall be filled with Flowable Fill conforming to the specifications for Controlled Low Strength Material (CLSM) in APWA-KCMO 2602.2.I. Flowable fill and concrete used for "Inlet Modification and Pipe Abandonment" shall be incidental to the cost of "Inlet Modification and Pipe Abandonment."

6. Section 2602.3.G shall be added as follows:

**Tunneling:** Storm sewer pipes within the drip line of a tree marked to be saved shall be installed by tunneling under the roots. There will be no separate payment for tunneling operations of 30' or less.

7. Section 2602.3.H shall be added as follows:

**4" HDPE Underdrain:** Unforeseen drainage conditions may arise during construction. Contractor shall install 4" HDPE Underdrain in locations as directed by the Engineer to facilitate proper trail drainage. The unforeseen drainage conditions are anticipated to require installation of underdrain in 20' lengths to drain wet areas from the upstream to the downstream side of the trail. There will be no separate payment for excavation or backfill required to provide proper drainage.

8. Section 2604.2.G shall be replaced with the following:

**End Sections:** All installed storm sewer pipe shall also include flared end sections at both ends and shall be of standard manufacture in accordance with the applicable sections of the Standard Specifications. End sections materials shall meet or exceed APWA-KCMO 2604.2.D.2, APWA—KCMO 2602.2.E, or APWA-KCMO 2604.2.G.

9. Section 2604.2.H shall be replaced with the following:

**Toe Walls:** All flared end sections for concrete, HDPE, and steel pipe shall be set on a concrete toe wall centered on the end of the section. Toe walls shall be 8 inches thick by 24 inches deep or depth specified on the plans by the width of the bottom of the cut trench.

10. Section 2604.3.C shall be replaced with the following:

All excavation shall be done in conformance with APWA KCMO 2102. All Unclassified excavation is defined as the removal of all material encountered regardless of its nature. All material excavated for this project will be considered Unclassified Excavation.

11. Section 2605.1.B shall be replaced with the following:

**Stone or Riprap:** Stone/Rip Rap shall meet the specifications of with APWA KCMO 2303.

12. Section 2604.3.A.1 shall be replaced with the following:

**Precast Structures:** The Contractor may, at his option, construct precast concrete inlets and junction boxes in lieu of the cast-in-place structures indicated on the Contract Drawings; except that all concrete base slabs for pre-cast inlets, manholes, and junction boxes may be cast-in-place. Solid concrete brick or block shall be used to block inlets and similar structures to grade during placement of base slab concrete.

Precast structures shall be installed on a 4-inch leveling course of untreated compacted aggregate conforming to Section 2202 of the project manual or per precast manufacturer's specification if pre-cast manufacturer's specification is greater than 4 inches. Leveling courses shall extend 1 foot past the line of the structure and be finished to a true plane surface to provide uniform bearing for the precast structure

**Reinforced Concrete Box Culvert:** Contractor shall install cast-in-place Reinforced Concrete Box Culverts (RCB) for this project and is responsible for submitting engineered shop drawings for review and approval by the Engineer. Cast-in-place RCB's shall follow the details included in the plans. In addition, MoDOT Standard Plans Section 700 shall be used and can be found at:

[http://www.modot.org/business/standards\\_and\\_specs/currentsec700.htm](http://www.modot.org/business/standards_and_specs/currentsec700.htm)

The RCB shall be constructed at the minimum dimensions as detailed in the Contract Drawings. RCB materials shall meet or exceed APWA-KCMO 2604 and ASTM C1433.

**Reinforced Concrete Box Culvert Headwalls:** The RCB shall include headwalls as dimensioned and detailed in the Contract Drawings or equivalent dimensions provided by the manufacturer or meeting MoDOT Standard Plans Section 700 and approved by the OWNER. RCB Headwalls materials shall meet or exceed APWA-KCMO 2604 and ASTM C1433 and shall be incidental to their respective RCB.

Reinforcing steel for Reinforced Concrete Box Culverts shall be epoxy coated. Reinforcing steel lap lengths shall be adjusted accordingly as required for epoxy coating.

**B. MEASUREMENT AND PAYMENT:**

1. Sections 2606 shall be replaced with the following:

**Measurement and Payment:** There will be no measurement for payment for any items of work not specifically identified and listed in Section 00412, Bid Form-Unit Prices. All costs pertaining thereto shall be included in the contract prices for other items as listed in Section 00412 – Bid Form Unit Prices. All measurements will be plan measure except for authorized changes.

- a. 18 in. Pipe Group C will be measured to the nearest 1 linear foot of each size and type along the horizontal geometric centerline of the pipe to the inside walls of the structures at each end, be the structure be a concrete inlet, manhole, box culvert, concrete open channel liner, or headwall. Precast or prefabricated end sections will be excluded from the pipe measurement. Payment for all work required to perform 18 in. Pipe Group C shall be included in the respective unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, excavation, backfill, and equipment necessary to complete these items.
- b. Underdrain will be measured by to the nearest 1 linear foot. Payment for all work required to perform Underdrain shall be included in the respective unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, excavation, backfill, and equipment necessary to complete these items.
- c. 18" Flared End Section (Group C) will be measured by the number of each size and type. Payment for all work required to perform 18" Flared End Section (Group C) shall be included in the respective unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, excavation, backfill, and equipment necessary to complete these items.
- d. Structures: Inlets, manholes, flared end sections, end walls, curb inlets, field inlets, and other similar structures will be measured by their number of each size and type, as listed in the Contract Documents.

Payment for all work required to perform "Structures" shall be included in the respective unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, excavation, backfill, and equipment necessary to complete these items.

- e. Reinforced Concrete Box Culverts: Reinforced Concrete Box Culverts will be measured and paid for per cubic yard of reinforced concrete. Reinforcing steel shall be considered subsidiary to Reinforced Concrete Box Culverts and no direct payment will be made. Payment for all work required to perform "Reinforced Concrete Box Culverts" shall be included in the respective unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, headwalls, toe walls, material, excavation, backfill, granular backfill, concrete grade slab, and equipment necessary to complete these items.
- f. Inlet Modification and Pipe Abandonment will be measured for each installation. The materials and requirements to complete the inlet modification and pipe abandonment shall conform to the plan dimensions and requirements and shall be incidental to each installation. Payment for all work required to perform "Inlet Modification and Pipe Abandonment" shall be included in the unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, excavation, backfill, and equipment necessary to complete these items.
- g. Filter Blanket: Unless otherwise stated in the Agreement, there will be no separate measurement or payment for filter blanket. All costs for such work shall be included in the price of the related item. There will be no measurement for payment for "Filter Blanket" and all costs pertaining thereto shall be included in the contract prices for other items as listed in the Bid Form.
- h. Flowable Fill will be measured by the cubic yard. All measurements will be plan measure except for authorized changes. Payment for all work required to perform "Flowable Fill" shall be included in the unit price in the Bid Form. Payment and price shall constitute full compensation for all labor, material, excavation, backfill, and equipment necessary to complete these items.
- i. Rock Lining or Rock Blanket will be measured and compensated per the specifications of with Section 2303 of the project manual.
- j. Grates & Bearing Plates (5' x 3') will be measured and paid per each.

## **TS-30 CONCRETE MASONRY REPAIR**

### **A. DESCRIPTION:**

Remove the unsound concrete surface and replace the concrete according to the details in the Contract Documents.

### **B. MATERIALS:**

When specified, provide one of the following types of concrete:

1. Formed. Use Class B-1 Concrete with  $f'c = 4,000$  psi. Provide concrete with slump that is appropriate for the intended use and acceptable to the Engineer.
2. Pneumatically Applied. Use Shotcrete concrete with  $f'c = 4,000$  psi. Wet or dry process is permitted. Shotcrete materials shall be preapproved by the Engineer.
3. Hand packed. Use a MoDOT prequalified supplier of Rapid Set Concrete Patching Material with  $f'c = 4,000$  psi.

### **C. CONSTRUCTION REQUIREMENTS:**

Depending on the nature and size of the concrete surface repair, the Engineer will designate the type of concrete used for the repair and the process used for the repair (such as formed and poured, hydraulically applied or hand packed) in the Contract Documents.

1. Remove the unsound concrete to the limits designated in the Contract Documents or as directed by the Engineer. The maximum size of chipping hammer allowed for concrete removal is 15 pounds.
2. Remove the existing concrete to a depth of 2½ inch (minimum), or deeper if necessary to expose sound concrete. Remove the existing concrete at least ¾ inch beyond any existing steel reinforcement exposed during the removal of the unsound concrete.
3. Do not wedge the tip of the chipping hammer between the concrete and reinforcement during concrete removal. Do not impact directly on reinforcement. Debonding of concrete caused by such actions will be repaired at no cost to County.
4. Confirm reinforcement bond adjacent to the repair area. Do this by sounding concrete over the reinforcement in the presences of the Engineer prior to placement.
5. Chip the perimeter edge of the repair area to near perpendicular (to the concrete surface). Do not feather the edge of the repair area.
6. Sandblast, then use compressed air (90 psi min) to clean the prepared repair area and exposed steel reinforcement to remove all bond-inhibiting materials.
7. Dampen the clean surface to a surface saturated dry condition just prior to concrete placement.
8. Place the repair concrete as specified in the Contract Documents. Match the lines of the existing surface unless shown otherwise in the Contract Documents.
9. Cure the concrete as directed by the Engineer.

Additional Requirements for Shotcrete: During the preconstruction meeting, demonstrate competence of the nozzleman by providing a copy of a current ACI Shotcrete Nozzleman certificate for the appropriate application.

Apply the shotcrete according to the manufacturer's recommendations. Provide the Engineer with a printed copy of the manufacturer's recommendations.

#### **D. MEASUREMENT:**

The Engineer will field measure the concrete surface repairs by the square foot. The extent of repairs may vary from the estimated quantities, but the contract unit price shall prevail regardless of the variation.

#### **E. PAYMENT:**

Accepted quantities of concrete surface repairs will be paid for at the contract unit price included in the Bid Form for each of the pay items included in the contract. No payment will be made for replacement of reinforcing steel cut or broken by the contractor.

### **TS-31 CONCRETE MASONRY SEALER**

#### **A. DESCRIPTION:**

This specification covers cement based polymer or acrylic polymer water seal for use in coating and sealing the exterior face of exterior prestressed concrete beams, joints between concrete overlays, bridge curb faces, masonry and other applications as stated in the Contract Documents.

#### **B. MATERIAL REQUIREMENTS:**

Provide materials with the following properties:

1. Coats and waterproofs concrete and masonry.
2. Does not produce a vapor barrier (breathes).
3. Is thermally compatible with portland cement mortar and concrete.
4. Exhibits no chalking, checking, cracking, scaling, blistering or other deleterious effects after 5000 hours in a Xenon Arc Light Apparatus. (ASTM G 155).

5. Color is to be gray to retain a natural concrete appearance, unless otherwise specified in the Contract Documents.
6. All concrete masonry coatings shall be preapproved by the Engineer. The following items shall be submitted for approval:
7. A complete description, technical data, and set of instructions and recommendations.
8. A copy of test results from an independent laboratory regularly inspected by a national reference organization (CCRL, AMRL, etc) confirming the various properties outlined above.
9. Material Safety Data Sheets (MSDS).

**C. MEASUREMENT:**

Measurement of concrete masonry sealer will be made by the square foot.

**D. PAYMENT:**

Accepted quantity for concrete masonry sealer will be paid for at the contract unit price included in the Bid Form.

**TS-32 BANNISTER TUNNEL LIGHTING**

**A. GENERAL:**

All materials, equipment, and construction methods to complete Bannister Tunnel Lighting shall be in accordance with the 2017 Missouri Standard Specifications for Highway Construction and the manufactures recommendations unless otherwise indicated on the plans.

**B. MEASURE & PAYMENT:**

There will be no payment for any items of work not specifically identified and listed in the Bid Form. Each item included in the Bid Form shall be measured and paid for at the unit cost included in the Bid Form. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete the work.

**TS-33 TRAFFIC SIGNAL CONSTRUCTION**

**A. GENERAL:**

All materials, equipment, and construction methods to complete Traffic Signal Construction shall be in accordance with the City of Lee's Summit Standard Specifications and the manufactures recommendations unless otherwise indicated on the plans.

**B. MEASURE & PAYMENT:**

There will be no payment for any items of work not specifically identified and listed in the Bid Form. Each item included in the Bid Form shall be measured and paid for at the unit cost included in the Bid Form. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete the work.

**TS-34 BRIDGE MODIFICATIONS**

**A. GENERAL:**

All bridge modification construction included at the Little Blue River Bridge and the 3<sup>rd</sup> Street Bridge shall be in accordance with the following sections of the Missouri Standard Specifications for Highway Construction unless otherwise indicated on the plans:

- |             |   |
|-------------|---|
| Section 703 | Concrete Masonry Construction             |
| Section 705 | Prestressed Concrete Members for Bridges  |
| Section 706 | Reinforcing Steel for Concrete Structures |
| Section 712 | Structural Steel Construction             |

**B. MEASURE & PAYMENT:**

There will be no payment for any items of work not specifically identified and listed in the Bid Form. Each item included in the Bid Form shall be measured and paid for at the unit cost included in the Bid Form. Payment and price shall constitute full compensation for all labor, material, and equipment necessary to complete the work.

**TS-35 COLLAPSIBLE BOLLARDS**

**A. GENERAL:**

1. Collapsible bollards, base plates, and foundations.

**B. PART SPECIFICATIONS**

1. ASTM A500 – bollard post: 2 – 6" x 2" x 1/4" steel tubes
2. ASTM A36 – bollard base plate: 12" x 12" base plate
3. 8-18 Stainless Steel - 3/4" x 8" hinge pins, 3/4" x 5" lock pin

**C. PERFORMANCE REQUIREMENTS**

1. Bollard posts will collapse to a 3-inch clearance allowing vehicle traffic to pass.
2. Bollard posts come together in upright position and locks with stainless steel lock pin & padlock.

**D. SUBMITTALS**

1. Follow manufacturer's specifications and installation instructions as required.

**E. QUALITY**

1. Bollard posts and base plate must provide consistent quality in appearance and performance.

**F. DELIVERY, STORAGE AND HANDLING**

1. Inspect materials upon receipt to ensure that the correct materials have been received and that they are in good condition.
2. If not installing immediately, store units to avoid damage from other construction activities and elements.

**G. MANUFACTURERS**

1. TrafficGuard Direct, Inc., MaxiForce, Reliance-Foundry, or other approved equal.

**H. MATERIALS**

1. Bollards supplied should be free from surface blemishes and defects where exposed to view in the finished installation.
2. Steel Tube: ASTM A500
3. Steel Plate: ASTM A36
4. Steel Pins: 18-8 stainless steel

**I. FABRICATION**

1. After fabrication, all units are prepared by removing scale and slag through the sand blasting process.

**J. FINISHES**

1. All surfaces are primed with rust & corrosion resistant, zinc rich primer w/ 5,000-hour salt spray performance.
2. Standard finish, TGIC Polyester outdoor finish RAL1028 Yellow. TGIC Polyester powder definition; meets decorative and functional requirements for gloss retention, physical properties, chemical resistance and weatherability.



#### K. INSTALLATION

1. Comply with manufacturer provided instructions and drawings.
2. Provide foundation and anchor system that complies with the manufactures provided instructions.
3. Install base true and level on your selected anchor system using flat washers and hex nuts or as recommended by the manufacture.
4. Install posts to base using hinge bolts, flat washers, and hex nuts. Tack weld hex nuts to hinge bolt so it cannot be easily removed.
5. Install locking pin thru up position bollard posts and install padlock.
6. If touch up painting in the field, be careful not to paint moving parts which may restrict the bollard's proper function.

#### L. SITE STORAGE AND PROTECTION

1. Upon receipt of bollard unit(s) all materials should be thoroughly inspected to ensure that all parts have been received in good condition.
2. Store units in a dry location away from possible damage until the time of installation.

#### M. MEASURE AND PAYMENT

There will be no payment for any items of work not specifically identified and listed in the Bid Form. Each item included in the Bid Form shall be measured and paid for at the unit cost included in the Bid Form. Payment and price shall constitute full compensation for all labor, material, padlocks, foundations, and equipment necessary to complete the work.

### **TS-36 GUIDELINES FOR OBTAINING ENVIRONMENTAL CLEARANCE FOR PROJECT SPECIFIC LOCATIONS**

This article provides guidelines for obtaining environmental clearance for disturbed areas such as:

Borrow Sites	Haul Roads
Burn Pits	Staging Areas
and Spoil Sites	

at project-specific locations.

The necessary clearances for disturbed areas such as those referenced above shall be obtained prior to using these areas for projects. The contractor is encouraged to consider using material from previously disturbed locations (substantial disturbance) or disturbed areas that have previously been cleared, precluding the need to address most, if not all, of the issues described below. The contractor should include the federal project number on all correspondence. The following addresses the primary environmental issues related to clearance of disturbed areas such as borrow sites:

#### A. 127.27.1 THE ENDANGERED SPECIES ACT

The Federal Endangered Species Act protects rare species and their habitats. The U.S. Fish and Wildlife Service (USFWS) administers the Act. Violations of this act can result in extensive project delays and severe fines. To determine if an activity will impact any rare species or their habitats, contact the Missouri Department of Conservation's Policy and Coordination Section at (573) 751-4115 to request a query of the MDC Heritage Database. All queries must be accompanied by a good quality map illustrating the location of the proposed site with a description of the activity. Allow at least three weeks for a response to all requests.

If there are no known records of rare species or sensitive habitats at the proposed site, and it is unlikely that any will be impacted by the activity, the contractor will be given clearance to proceed. However, if rare species are

known or likely to occur at the site, or known critical habitat exists, further coordination with MDC and the USFWS will be necessary. Written clearance from the U.S. Fish and Wildlife Service may be required before the project can proceed.

Missouri Department of Conservation (MDC)

Planning Division

P.O. Box 180

Jefferson City MO 65102-0180

Telephone Number (573) 751-4115 or FAX (573) 751-4495

U.S. Fish and Wildlife Service (FWS)

Columbia Field Office

101 Park DeVillie Drive - Suite A

Columbia, MO 65203-0007

Telephone Number (573) 234-2131 or Fax (573) 234-2182

**B. 127.27.2 FLOODPLAIN/REGULATORY FLOODWAY**

An evaluation of floodplain impacts is mandated by Executive Order 11988, Floodplain Management, and subsequent federal floodplain management guidelines. When available, flood hazard boundary maps (National Flood Insurance Program) and flood insurance studies for the project area are used to determine the limits of the base (100-year) floodplain and the extent of encroachment.

The Federal Emergency Management Agency (FEMA) and Federal Highway Administration (FHWA) guidelines 23 CFR 650 have identified the base (100-year) flood as the flood having a one percent probability of being equaled or exceeded in any given year. The base floodplain is the area of 100-year flood hazard within a county or community. The regulatory floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without increasing the base flood elevation more than a specified amount. FEMA has mandated that projects can cause no rise in the regulatory floodway, and a one-foot cumulative rise for all projects in the base (100-year) floodplain. For projects that involve the state of Missouri, the State Emergency Management Agency (SEMA) issues floodplain development permits. In the case of projects proposed within regulatory floodways, a "No-Rise" Certification, if applicable, should be obtained prior to issuance of a permit.

Questions regarding floodplain and regulatory floodway should be addressed to:

SEMA

P.O. Box 116

Jefferson City MO

65102

(573) 526-9141

Documentation of consultation with SEMA regarding the presence of 100-year floodplain/regulatory floodway should be included in the final collection of information to be submitted to MoDOT staff.

**C. 127.27.3 FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) BUYOUT LANDS**

The Flood Disaster Protection Act of 1973, as amended by the Disaster Relief and Emergency Assistance Act of 1988 (The Stafford Act), identified the use of disaster relief funds under Section 404 for the Hazard Mitigation Grand Program (HMGP), including the acquisition and relocation of flood damaged property. The Volkmer Bill

further expanded the use of HMGP funds under Section 404 to "buy out" flood damaged property, which had been affected by the Great Flood of 1993.

There are numerous restrictions on these FEMA buyout properties. No structures or improvements may be erected on these properties unless they are open on all sides. The site shall be used only for open space purposes, and shall stay in public ownership. These conditions and restrictions (among others), along with the right to enforce same, are deemed to be covenants running with the land in perpetuity and are binding on subsequent successors, grantees, or assigns. Any decision involving these properties should take into consideration that 2-3 years is necessary to process an exemption from FEMA to utilize this parcel. This exemption would likely be a permanent easement rather than a transfer of property. If any proposed site is located on a FEMA buyout property, an alternative site should be chosen.

#### **D. 127.27.4 FARMLAND PROTECTION**

In order to comply with the Farmland Protection Policy Act, which has the purpose of minimizing Federal programs' contributions to the unnecessary and irreversible conversion of farmland caused by nonagricultural uses, the Form AD-1006 will need to be completed. This can be accomplished through coordination with United States Department of Agricultural (USDA)-Natural Resources Conservation Service (NRCS), and the completion of Form AD-1006. To receive the Form AD-1006, call the NRCS State office in Columbia at (573) 876-9411. An aerial map of the site or sites will also be required with the area to be disturbed identified on the map. This aerial map can be obtained from the local SCS office. In some areas of the state this office may be located in an adjoining county.

The contractor will need to complete Parts I and III of Form AD-1006. The form should then be sent to the NRCS State Office for completion of Parts II, IV and V. The address for NRCS State Office is:

Mr. Dennis Potter

State Soil Scientist

Natural Resource Conservation Service

601 Business Loop 70 West

Parkade Center, Suite 250

Columbia, MO 65203

1-573-876-9411

After the NRCS office returns the form, the contractor will complete remaining Parts VI and VII. The contractor will provide a copy of the completed form to the MoDOT district contact to document compliance with the Farmland Protection Policy Act.

#### **E. 127.27.5 WETLANDS**

Federal executive order has decreed a national policy of "no net loss of wetlands." Under this policy, impacts to wetlands must be avoided if at all practical. Where wetlands are impacted, these impacts must be mitigated by construction or enhancement of a like quantity and quality of new wetlands. For these reasons, avoiding impacts to wetlands is a primary goal.

To determine whether wetlands occur on a site, contact the USDA, NRCS. The NRCS has identified and mapped wetlands as a requirement under the Food Security Act. These maps are available from county NRCS offices, usually located in the county seat. For all other non-farmland sites, consult the US Fish and Wildlife Service's Wetlands Map. If wetlands are identified on Food Security Act wetland maps, a site visit may be needed to confirm the location of wetlands. If there are no wetland impacts, no other action need be taken.

If there are any questions about the extent of wetlands in the event that wetlands cannot be avoided, contact the U.S. Army Corps of Engineers (COE). If wetlands cannot be avoided, a COE Section 404 permit would be processed through the appropriate COE district. There are five COE districts in Missouri. Information about COE

district locations, addresses and phone numbers is available on the COE website.

#### **F. 127.27.6 WATER QUALITY/LAND DISTURBANCE**

The National Pollutant Discharge Elimination Systems (NPDES) program regulates construction activities where 1 acre or more of land is disturbed. If the project proponent has a general NPDES permit for all of their construction activities, this is adequate. If the project proponent does not have a valid general permit and the site to be disturbed is greater than 1 acre in size, a project-specific NPDES permit from DNR is required. If the project is entirely within MoDOT right of way, the sponsor may use MoDOT's general permit. In either case, the sponsor will need to develop a site-specific stormwater pollution prevention plan for the project. The sponsor shall contact the Missouri Department of Natural Resources (DNR) NPDES Storm Water Program office at (573) 751-1300 or (800) 361-4827 for further directions. A few cities (Kansas City, Columbia, and others) and counties have obtained their own land disturbance permits from DNR for generic land disturbance purposes; see additional discussion on stormwater and erosion control in 136.4 Environmental and Cultural Requirements of the LPA Policy.

#### **G. 127.27.7 HAZARDOUS WASTE SITES**

More than likely, areas to be disturbed will be located in rural areas that have been used for agriculture or similar purposes. Hazardous wastes are most typically associated with commercial or previous industrial properties.

If the proposed area is basically farmland or pasture, and has not been used for any commercial activity or dumping, hazardous wastes are unlikely. The contractor should simply document the existing and historic land use of the parcel and tell how this assessment was obtained.

In nonrural, suburban or commercial areas a nonintrusive investigation may be used to "diagnose" the environmental conditions of a selected site. The following is a list of suggested items, but not inclusive, for a cursory nonintrusive investigation.

- Examine any noticeable contamination in the form of surface staining, oil sheen, odors, stressed vegetation, spills, leaks, illegal dumping, etc.

- Conduct interviews of local citizens and current owners to identify past land use practices and hazardous waste management practices.

- Consult with local and state (Missouri Department of Natural Resources, Hazardous Waste Program, 573-751-3176) environmental regulatory agencies to identify if any past problems (complaints, citations, etc.) have occurred at the site, if any permits/licenses have been filed for the site, or if enforcement actions have occurred.

If the above analyses produce negative results, the contractor should provide documentation to the MoDOT Design Division-Environmental Section as to who was contacted and the results of the contact. However, if through the search for information described above, potential problems are identified, it would be wise to locate another site.

The potential to encounter wastes from sites that are unknown should always be a consideration. Any unknown sites that are found will be handled in accordance with Federal and State Laws and Regulations.

#### **H. 127.27.8 HISTORIC PRESERVATION**

All jobs requiring environmental clearance for historic preservation (archaeological sites, buildings, and structures) must be reviewed and approved by the State Historic Preservation office (SHPO), Department of Natural Resources. To initiate SHPO's review and clearance of a proposed site for cultural resources, a "Section 106 Project Information Form" must be completed and submitted to SHPO along with a copy of a United States Geological Survey (USGS) topographic map indicating the location of the project. In addition, photographs of any structures that will be impacted must be provided. The "Section 106 Project Information Form" can be obtained from the SHPO website or requested from the SHPO by telephone, (573) 751-7858, or mail:

Missouri Department of Natural Resources

State Historic Preservation Office

Attn: Section 106 Review

P.O. Box 176

Jefferson City, MO, 65102-0176

Based on the information supplied, SHPO may clear the project at that time or request that the contractor acquire the services of an archaeological consultant to conduct a historic preservation survey of the proposed area. A listing of currently acceptable and available archaeological consultants who can complete a survey if required can be viewed at the SHPO's website. Any questions can be directed to the Design Division-Historic Preservation Section, at (573) 751-0473.

**I. 127.27.9 PUBLIC LAND**

If borrow sites are proposed on any publicly owned land, contact the MoDOT district representative before proceeding. Section 4(f) of the Department of Transportation Act of 1966 (now codified as 49 U.S.C. 303 and 23 U.S.C. 138) protects certain public lands. Section 4(f) requires that all U.S. DOT-funded transportation projects must avoid impacts to public parkland and wildlife refuges (and cultural resources deemed eligible for the National Register of Historic Places), unless it is successfully demonstrated that no feasible and prudent alternative exists that avoid "use" or impacts to the park or refuge. It is strongly recommended that public lands not be considered as potential borrow sites.

Once the contractor has obtained all of the above information, it should be provided to the MoDOT district contact. The transmittal letter must include county, route and job number of the project, along with a map depicting the location and limits of the site(s).