



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET

Frankfort, Kentucky 40622
www.transportation.ky.gov/

Matthew G. Bevin
Governor

Greg Thomas
Secretary

March 19, 2019

CALL NO. 100
CONTRACT ID NO. 191210
ADDENDUM # 2

Subject: LAUREL COUNTY, NHPP IM 0752 (100)
Letting March 22, 2019

- (1) Revised - Proposal Bid Items - Pages 222-227 of 227
- (2) Added - Special Notes - Pages 1-6 of 6
- (3) Revised - Plan Sheets - R2H, R2I, R69, and R70

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in black ink that reads "Rachel Mills".

Rachel Mills, P.E.
Director
Division of Construction Procurement

RM:mr
Enclosures



An Equal Opportunity Employer M/F/D

PROPOSAL BID ITEMS

191210

Page 1 of 6

Report Date 3/19/19

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	115,232.00	TON		\$	
0020	00018		DRAINAGE BLANKET-TYPE II-ASPH	42,274.00	TON		\$	
0030	00100		ASPHALT SEAL AGGREGATE	615.00	TON		\$	
0040	00103		ASPHALT SEAL COAT	75.00	TON		\$	
0050	00190		LEVELING & WEDGING PG64-22	28,150.00	TON		\$	
0060	00214		CL3 ASPH BASE 1.00D PG64-22	35,605.00	TON		\$	
0070	00217		CL4 ASPH BASE 1.00D PG64-22	19,276.00	TON		\$	
0080	00219		CL4 ASPH BASE 1.00D PG76-22	32,752.00	TON		\$	
0090	00293		EMULSIFIED ASPHALT SS-1H	762.00	TON		\$	
0100	00335		CL4 ASPH SURF 0.50A PG76-22	1,202.00	TON		\$	
0110	00339		CL3 ASPH SURF 0.38D PG64-22	11,508.00	TON		\$	
0120	00342		CL4 ASPH SURF 0.38A PG76-22	23,254.00	TON		\$	
0130	00358		ASPHALT CURING SEAL	119.00	TON		\$	
0140	02107		BREAKING AND SEATING PAVEMENT	13,371.00	SQYD		\$	
0150	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0160	02677		ASPHALT PAVE MILLING & TEXTURING	19,422.00	TON		\$	
0170	02702		SAND FOR BLOTTER	373.00	TON		\$	
0180	20071EC		JOINT ADHESIVE	118,396.00	LF		\$	
0190	24904EC		CL3 ASPH BASE CK PG64-22	38,594.00	TON		\$	
0200	24905EC		CL4 ASPH BASE CK PG64-22	46,296.00	TON		\$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0210	00078		CRUSHED AGGREGATE SIZE NO 2	12,994.00	TON		\$	
0220	01000		PERFORATED PIPE-4 IN	60,410.00	LF		\$	
0230	01001		PERFORATED PIPE-6 IN	15,430.00	LF		\$	
0240	01010		NON-PERFORATED PIPE-4 IN	2,364.00	LF		\$	
0250	01011		NON-PERFORATED PIPE-6 IN	420.00	LF		\$	
0260	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM	1.00	LS		\$	
0270	01020		PERF PIPE HEADWALL TY 1-4 IN	37.00	EACH		\$	
0280	01024		PERF PIPE HEADWALL TY 2-4 IN	3.00	EACH		\$	
0290	01028		PERF PIPE HEADWALL TY 3-4 IN	46.00	EACH		\$	
0300	01032		PERF PIPE HEADWALL TY 4-4 IN	107.00	EACH		\$	
0310	01033		PERF PIPE HEADWALL TY 4-6 IN	1.00	EACH		\$	
0320	01741		CORED HOLE DRAINAGE BOX CON-6 IN	35.00	EACH		\$	
0330	01891		ISLAND HEADER CURB TYPE 2	200.00	LF		\$	
0340	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	204.00	EACH		\$	
0350	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	16.00	EACH		\$	
0360	01984		DELINEATOR FOR BARRIER - WHITE	1,240.00	EACH		\$	
0370	01985		DELINEATOR FOR BARRIER - YELLOW	2,485.00	EACH		\$	
0380	01986		DELINEATOR FOR BARRIER WALL-B/Y	193.00	EACH		\$	
0390	02002		REMOVE TEMP CONC BARRIER WALL	1,366.00	LF		\$	
0400	02003		RELOCATE TEMP CONC BARRIER	46,000.00	LF		\$	

PROPOSAL BID ITEMS

191210

Page 2 of 6

Report Date 3/19/19

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	02014		BARRICADE-TYPE III	6.00	EACH		\$	
0420	02159		TEMP DITCH	19,168.00	LF		\$	
0430	02160		CLEAN TEMP DITCH	9,584.00	LF		\$	
0440	02200		ROADWAY EXCAVATION	199,140.00	CUYD		\$	
0450	02242		WATER (FOR DUST CONTROL)	7,689.00	MGAL		\$	
0460	02268		REMOVE & REPLACE FENCE	46,907.00	LF		\$	
0470	02351		GUARDRAIL-STEEL W BEAM-S FACE	18,475.00	LF		\$	
0480	02363		GUARDRAIL CONNECTOR TO BRIDGE END TY A	5.00	EACH		\$	
0490	02367		GUARDRAIL END TREATMENT TYPE 1	25.00	EACH		\$	
0500	02369		GUARDRAIL END TREATMENT TYPE 2A	26.00	EACH		\$	
0510	02373		GUARDRAIL END TREATMENT TYPE 3	2.00	EACH		\$	
0520	02381		REMOVE GUARDRAIL	21,445.50	LF		\$	
0530	02383		REMOVE & RESET GUARDRAIL	550.00	LF		\$	
0540	02387		GUARDRAIL CONNECTOR TO BRIDGE END TY A-1	6.00	EACH		\$	
0550	02483		CHANNEL LINING CLASS II	1,861.00	TON		\$	
0560	02484		CHANNEL LINING CLASS III	2,251.00	TON		\$	
0570	02545		CLEARING AND GRUBBING (APPROXIMATELY 166.5 ACRES)	1.00	LS		\$	
0580	02555		CONCRETE-CLASS B	63.00	CUYD		\$	
0590	02562		TEMPORARY SIGNS	1,000.00	SQFT		\$	
0600	02585		EDGE KEY	180.00	LF		\$	
0610	02600		FABRIC GEOTEXTILE TY IV FOR PIPE	30,973.00	SQYD	\$2.00	\$	\$61,946.00
0620	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0630	02671		PORTABLE CHANGEABLE MESSAGE SIGN	4.00	EACH		\$	
0640	02696		SHOULDER RUMBLE STRIPS	110,460.00	LF		\$	
0650	02701		TEMP SILT FENCE	19,168.00	LF		\$	
0660	02703		SILT TRAP TYPE A	167.00	EACH		\$	
0670	02704		SILT TRAP TYPE B	167.00	EACH		\$	
0680	02705		SILT TRAP TYPE C	167.00	EACH		\$	
0690	02706		CLEAN SILT TRAP TYPE A	167.00	EACH		\$	
0700	02707		CLEAN SILT TRAP TYPE B	167.00	EACH		\$	
0710	02708		CLEAN SILT TRAP TYPE C	167.00	EACH		\$	
0720	02726		STAKING	1.00	LS		\$	
0730	02775		ARROW PANEL	4.00	EACH		\$	
0740	02898		RELOCATE CRASH CUSHION	5.00	EACH		\$	
0750	02929		CRASH CUSHION TYPE IX	2.00	EACH		\$	
0760	03147		CONC MEDIAN BARRIER TYPE 12C MOD	655.00	LF		\$	
0770	03171		CONCRETE BARRIER WALL TYPE 9T (REVISED: 3-19-19)	51,600.00	LF		\$	
0780	04903		REFERENCE MARKER	32.00	EACH		\$	
0790	04904		BARRIER MOUNTING BRACKET	32.00	EACH		\$	
0800	05950		EROSION CONTROL BLANKET	22,551.00	SQYD		\$	
0810	05952		TEMP MULCH	539,959.00	SQYD		\$	
0820	05953		TEMP SEEDING AND PROTECTION	402,954.00	SQYD		\$	
0830	05963		INITIAL FERTILIZER	25.00	TON		\$	
0840	05964		MAINTENANCE FERTILIZER	41.70	TON		\$	
0850	05985		SEEDING AND PROTECTION	805,908.00	SQYD		\$	
0860	05992		AGRICULTURAL LIMESTONE	499.50	TON		\$	

PROPOSAL BID ITEMS

191210

Page 3 of 6

Report Date 3/19/19

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0870	06401		FLEXIBLE DELINEATOR POST-M/W	65.00	EACH		\$	
0880	06403		FLEXIBLE DELINEATOR POST-B/W	153.00	EACH		\$	
0890	06404		FLEXIBLE DELINEATOR POST-M/Y	77.00	EACH		\$	
0900	06407		SBM ALUM SHEET SIGNS .125 IN	128.50	SQFT		\$	
0910	06410		STEEL POST TYPE 1	180.00	LF		\$	
0915	06511		PAVE STRIPING-TEMP PAINT-6 IN (ADDED: 3-19-19)	540,000.00	LF		\$	
0920	06513		PAVE STRIPING-TEMP PAINT-12 IN	9,443.00	LF		\$	
0930	06542		PAVE STRIPING-THERMO-6 IN W	83,651.00	LF		\$	
0940	06543		PAVE STRIPING-THERMO-6 IN Y	55,251.00	LF		\$	
0950	06546		PAVE STRIPING-THERMO-12 IN W	4,293.00	LF		\$	
0960	06549		PAVE STRIPING-TEMP REM TAPE-B (REVISED: 3-19-19)	20,100.00	LF		\$	
0970	06550		PAVE STRIPING-TEMP REM TAPE-W (REVISED: 3-19-19)	22,300.00	LF		\$	
0980	06551		PAVE STRIPING-TEMP REM TAPE-Y (REVISED: 3-19-19)	18,200.00	LF		\$	
0985	06556		PAVE STRIPING-DUR TY 1-6 IN W (ADDED: 3-19-19)	3,600.00	LF		\$	
0987	06557		PAVE STRIPING-DUR TY 1-6 IN Y (ADDED: 3-19-19)	2,400.00	LF		\$	
0990	06569		PAVE MARKING-THERMO CROSS-HATCH	15,311.00	SQFT		\$	
1000	06574		PAVE MARKING-THERMO CURV ARROW	15.00	EACH		\$	
1010	06578		PAVE MARKING-THERMO MERGE ARROW	10.00	EACH		\$	
1020	06580		PAVEMENT MARKER TYPE IV-MW	264.00	EACH		\$	
1030	06600		REMOVE PAVEMENT MARKER TYPE V	784.00	EACH		\$	
1040	08100		CONCRETE-CLASS A	16.90	CUYD		\$	
1050	08150		STEEL REINFORCEMENT	922.00	LB		\$	
1060	08903		CRASH CUSHION TY VI CLASS BT TL3	12.00	EACH		\$	
1070	10020NS		FUEL ADJUSTMENT	464,833.00	DOLL	\$1.00	\$	\$464,833.00
1080	10030NS		ASPHALT ADJUSTMENT	815,101.00	DOLL	\$1.00	\$	\$815,101.00
1090	20191ED		OBJECT MARKER TY 3	25.00	EACH		\$	
1100	20550ND		SAWCUT PAVEMENT	44,641.00	LF		\$	
1110	20912ND		BARRIER WALL POST	30.00	EACH		\$	
1120	21373ND		REMOVE SIGN	7.00	EACH		\$	
1130	21430ES508		CONC MEDIAN BARRIER TYPE 12C(50)	15,855.00	LF		\$	
1140	24255EC		REMOVE CABLE GUARDRAIL BARRIER SYSTEM	15,125.00	LF		\$	
1150	24489EC		INLAID PAVEMENT MARKER	1,875.00	EACH		\$	
1160	24631EC		BARCODE SIGN INVENTORY	52.00	EACH		\$	
1170	24779EC		INTELLIGENT COMPACTION FOR SOIL	120,778.00	CUYD		\$	
1180	24780EC		INTELLIGENT COMPACTION FOR AGGREGATE	115,232.00	TON		\$	
1190	24781EC		INTELLIGENT COMPACTION FOR ASPHALT	225,175.00	TON		\$	
1200	24873EC		CONTROL SYSTEM FOR INCIDENT MANAGEMENT	1.00	L S		\$	
1210	24891EC		PAVE MOUNT INFRARED TEMP EQUIPMENT	12,542,796.00	SF		\$	
1220	30012		MILE MARKER	11.00	EACH		\$	

Section: 0003 - DRAINAGE

PROPOSAL BID ITEMS

191210

Page 4 of 6

Report Date 3/19/19

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1230	00461		CULVERT PIPE-15 IN	187.00	LF		\$	
1240	00462		CULVERT PIPE-18 IN	314.00	LF		\$	
1250	00464		CULVERT PIPE-24 IN	150.00	LF		\$	
1260	00466		CULVERT PIPE-30 IN	54.00	LF		\$	
1270	00470		CULVERT PIPE-48 IN	27.00	LF		\$	
1280	00471		CULVERT PIPE-54 IN	60.00	LF		\$	
1290	00472		CULVERT PIPE-60 IN	32.00	LF		\$	
1300	00521		STORM SEWER PIPE-15 IN	585.00	LF		\$	
1310	00524		STORM SEWER PIPE-24 IN	708.00	LF		\$	
1320	00530		STORM SEWER PIPE-48 IN	4.00	LF		\$	
1330	00531		STORM SEWER PIPE-54 IN	68.00	LF		\$	
1340	01202		PIPE CULVERT HEADWALL-15 IN	7.00	EACH		\$	
1350	01204		PIPE CULVERT HEADWALL-18 IN	14.00	EACH		\$	
1360	01208		PIPE CULVERT HEADWALL-24 IN	8.00	EACH		\$	
1370	01210		PIPE CULVERT HEADWALL-30 IN	2.00	EACH		\$	
1380	01216		PIPE CULVERT HEADWALL-48 IN	1.00	EACH		\$	
1390	01220		PIPE CULVERT HEADWALL-60 IN	1.00	EACH		\$	
1400	01310		REMOVE PIPE	413.00	LF		\$	
1410	01480		CURB BOX INLET TYPE B	4.00	EACH		\$	
1420	01490		DROP BOX INLET TYPE 1	6.00	EACH		\$	
1430	01650		JUNCTION BOX	3.00	EACH		\$	
1440	01761		MANHOLE TYPE B	6.00	EACH		\$	
1450	01767		MANHOLE TYPE C	4.00	EACH		\$	
1460	21601NN		CONC MED BAR BOX INLET TY 12A2-50	3.00	EACH		\$	
1470	21602NN		CONC MED BARR BOX INLET TY 12B2-50	25.00	EACH		\$	
1480	23611NN		CONC MED BAR BOX INLET TY 12B1-50	3.00	EACH		\$	
1490	24026EC		PIPE CULVERT HEADWALL-54 IN	2.00	EACH		\$	
1500	24814EC		PIPELINE INSPECTION	9,210.00	LF		\$	
1510	24861EC		PVC FOLD AND FORM PIPE LINER-15 IN	2,253.00	LF		\$	
1520	24862EC		PVC FOLD AND FORM PIPE LINER-18 IN	1,942.00	LF		\$	
1530	24863EC		PVC FOLD AND FORM PIPE LINER-24 IN	2,435.00	LF		\$	
1540	24864EC		PVC FOLD AND FORM PIPE LINER-30 IN	393.00	LF		\$	

Section: 0004 - BRIDGE - LAUREL RIVER - STA. 1540+01.69 - DWG. 24534

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1550	02231		STRUCTURE GRANULAR BACKFILL	228.00	CUYD		\$	
1560	02403		REMOVE CONCRETE MASONRY	100.00	CUYD		\$	
1570	02998		MASONRY COATING	865.00	SQYD		\$	
1580	03299		ARMORED EDGE FOR CONCRETE	131.00	LF		\$	
1590	08001		STRUCTURE EXCAVATION-COMMON	233.00	CUYD		\$	
1600	08002		STRUCTURE EXCAV-SOLID ROCK	26.00	CUYD		\$	
1610	08019		CYCLOPEAN STONE RIP RAP	172.00	TON		\$	
1620	08033		TEST PILES	56.00	LF		\$	
1630	08037		COFFERDAM (PIER 1)	1.00	LS		\$	
1640	08037		COFFERDAM (PIER 2)	1.00	LS		\$	
1650	08046		PILES-STEEL HP12X53	256.00	LF		\$	

PROPOSAL BID ITEMS

191210

Page 5 of 6

Report Date 3/19/19

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1660	08094		PILE POINTS-12 IN	12.00	EACH		\$	
1670	08100		CONCRETE-CLASS A	271.00	CUYD		\$	
1680	08104		CONCRETE-CLASS AA	555.60	CUYD		\$	
1690	08150		STEEL REINFORCEMENT	30,834.00	LB		\$	
1700	08151		STEEL REINFORCEMENT-EPOXY COATED	147,186.00	LB		\$	
1710	08160		STRUCTURAL STEEL (APPROXIMATELY 1,006 LBS)	1.00	LS		\$	
1720	08269		ELECTRICAL CONDUIT (3-IN PVC)	1.00	LS		\$	
1730	08634		PRECAST PC I BEAM TYPE 4	1,958.70	LF		\$	
1740	20608NC		REMOVE EXIST SUPERSTRUCTURE AND ABUTMENT	1.00	LS		\$	
1750	21532ED		RAIL SYSTEM TYPE III	563.00	LF		\$	

Section: 0005 - BRIDGE - LAUREL RIVER - STA. 1404+94.0 - DWG. 24536

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1760	02231		STRUCTURE GRANULAR BACKFILL	120.00	CUYD		\$	
1770	02403		REMOVE CONCRETE MASONRY	109.50	CUYD		\$	
1780	02998		MASONRY COATING	2,067.00	SQYD		\$	
1790	03299		ARMORED EDGE FOR CONCRETE	244.70	LF		\$	
1800	08001		STRUCTURE EXCAVATION-COMMON	907.00	CUYD		\$	
1810	08002		STRUCTURE EXCAV-SOLID ROCK	220.00	CUYD		\$	
1820	08033		TEST PILES	49.00	LF		\$	
1830	08039		PRE-DRILLING FOR PILES	43.00	LF		\$	
1840	08046		PILES-STEEL HP12X53	187.00	LF		\$	
1850	08094		PILE POINTS-12 IN	15.00	EACH		\$	
1860	08100		CONCRETE-CLASS A	826.80	CUYD		\$	
1870	08104		CONCRETE-CLASS AA	2,300.80	CUYD		\$	
1880	08150		STEEL REINFORCEMENT	88,136.00	LB		\$	
1890	08151		STEEL REINFORCEMENT-EPOXY COATED	570,468.00	LB		\$	
1900	08160		STRUCTURAL STEEL (APPROXIMATELY 2,130,198 LBS)	1.00	LS		\$	
1910	08170		SHEAR CONNECTORS (APPROXIMATELY 10,301 LBS)	1.00	LS		\$	
1920	08269		ELECTRICAL CONDUIT (3-IN PVC)	1.00	LS		\$	
1930	08301		REMOVE SUPERSTRUCTURE	1.00	LS		\$	
1940	21532ED		RAIL SYSTEM TYPE III	1,042.00	LF		\$	
1950	21679EN		FIBERGLASS DRAIN PIPE (6-IN)	246.00	LF		\$	

Section: 0006 - TRAFFIC LOOPS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1960	04793		CONDUIT-1 1/4 IN	60.00	LF		\$	
1970	04795		CONDUIT-2 IN	30.00	LF		\$	
1980	04820		TRENCHING AND BACKFILLING	80.00	LF		\$	
1990	04829		PIEZOELECTRIC SENSOR	6.00	EACH		\$	

PROPOSAL BID ITEMS

191210

Page 6 of 6

Report Date 3/19/19

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2000	04830		LOOP WIRE	2,900.00	LF		\$	
2010	04895		LOOP SAW SLOT AND FILL	600.00	LF		\$	
2020	20359NN		GALVANIZED STEEL CABINET	2.00	EACH		\$	
2030	20360ES818		WOOD POST	4.00	EACH		\$	
2040	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	2.00	EACH		\$	

Section: 0007 - TRAINEES

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2050	02742		TRAINEE PAYMENT REIMBURSEMENT GROUP 2, 3, 4 OPERATOR	1,400.00	HOUR		\$	
2060	02742		TRAINEE PAYMENT REIMBURSEMENT GROUP 2, 3,4 OPERATOR	1,400.00	HOUR		\$	

Section: 0008 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2070	02568		MOBILIZATION	1.00	LS		\$	
2080	02569		DEMOBILIZATION	1.00	LS		\$	

SPECIAL NOTE FOR PORTABLE QUEUE WARNING ALERT SYSTEM

LAUREL COUNTY I-75 NHPP IM 0752 (100) ITEM NO. 11-00009.10

1.0 Description

This item shall consist of furnishing, installing, relocating, operating, servicing, and removing various components of a portable, quickly deployable, real-time automated ITS queue warning alert system (PQWAS), in accordance with the standard specifications and this special provision. The Contractor shall also provide the maintenance of the complete system for the duration of the project or as directed by the Project Engineer.

2.0 Materials

Materials shall be in accordance as follows:

All materials used shall meet the manufacturer's specifications and recommendations.

All PQWAS materials installed on the project shall be provided by the Contractor in excellent quality condition, shall be corrosion resistant and in strict accordance with all of the details show within Contractor's Plans approved by KYTC. The Contractor shall maintain an adequate inventory of parts and replacement units to support maintenance and repair of the PQWAS. Pre-deployment is a condition of the system's acceptance and is based on the successful performance demonstration for a (5) day continuous period in accordance to this specification and as set forth in the plans. Ensure compliance to all FCC and Department specifications.

The Contractor shall maintain this system and shall be locally available to service and maintain system components, move portable devices as necessary and respond to emergency situations. The Contractor has oversight responsibility for directing placement of devices in the project area. The Contractor is to be accessible seven (7) days a week and twenty-four (24) hours a day while the system is deployed. The Contractor shall provide contact information for the system's coordinator and others responsible for maintenance of the system prior to installation of the system. Furnish a System Coordinator for monitoring the PQWAS throughout all periods of deployment.

A. General Capabilities and Performance Requirements

1. Overall PQWAS capabilities and performance requirements include the following:
 - a. Furnish a system capable of providing advance traffic information to motorists when there is a queueing of traffic due to congestion resulting from lane reductions, emergency events or other conditions. The condition-responsive notification to the motorist occurs with the use of Portable Changeable Message Signs (PCMS) in accordance to the below capabilities and performance requirements, activated through real-time traffic data collected downstream of the PCMS locations. This equipment must be a packaged system, pre-programmed and operates as a stand-alone PQWAS meeting this specification. Conditions might exist that

require relocation of the portable sensors at any given time, the sensors shall be portable and shall not require re-calibration in the field for fast and easy deployments. Due to the potential need to replace damaged sensors or to change the position of one or more sensors at any given time, sensors must be interchangeable and re-locatable by an unskilled laborer. The system must continue to function if as many as half the sensors fail to function.

- b. Provide a PQWAS that consists of the following field equipment: portable radar sensors and portable changeable message signs (PCMS). Provide a system capable of withstanding inclement weather conditions while continuing to provide adequate battery power. The portable radar sensor battery, in a stand-alone state and without a solar panel for recharging, shall be capable of keeping power and capable of sending data for (10) consecutive days or longer. The system shall notify drivers of real-time queue events via specifically placed PCMS units up stream of the work zone. All predetermined/preprogrammed messages are to be approved by KYTC. The number and location of portable radar sensors and PCMS units are defined in the plans (see attachment-A) or as directed by the Project Engineer. The decision to deploy or relocate field equipment is made by the Project Engineer and instrumented through the System Coordinator. The decision for equipment removal is made by the Project Engineer after work is complete. The sensors and PCMS units shall be identifiable via global positioning system (GPS) and shall contain an accelerometer to detect and alert of unauthorized movement.
- c. The portable radar sensor shall be capable of collecting traffic speed data. The processed data is used to remotely control PCMS units to display user definable, Engineer approved and locally stored messages. The message trigger state thresholds for slow and stopped speeds shall be user configurable and revisable in less than (1) hour from the Project Engineer's request. Weekly Traffic Data Reports shall be presented to the Project Engineer and shall include speed data per sensor location, travel times, and queue lengths in graphical and numerical formats. In the event the Project Engineer requires a report, other than a weekly report, for any reason; then the Contractor shall provide report within (48) hours of request. Unlimited data reports shall be included within price of system. Sensors shall require no calibration or adjustments in the field. It should take no longer than (30) minutes to apply (1) Type-1 queue warning system and no more than (45) minutes to apply (1) Type-2 queue warning system (see attachment-A below). Sensor should begin transmitting data within (30) seconds of being turned on. If sensor loses cellular communication, then network functions shall automatically utilize satellite communications until cell communication is reconnected. Contractor shall identify the most trustworthy cellular provider within the project area.
- d. Data shall be accessible through a website and the Contractor shall provide a username and password for protection. The website shall be accessible seven (7) days a week and twenty-four (24) hours a day. The website shall provide historical & real-time data in graphical and numerical formats and shall have the capability of being integrated within the Department's Traffic Management Center (if requested). The website should be compatible to most hand held devices. Data shall be saved on the manufacturer's network for up to (5) years from the deployment date of system and shall be provided at the request of the Department at any time within the (5) year window. The use of the website shall be included within the price of system.

- e. Warning Alerts: queue events, low battery voltage warnings, sensor movement alerts, high and low speed alerts shall be provided via cellular text messaging and/or via email messaging at the request of select Contractor personnel and KYTC officials.
- f. The PQWAS system shall have the capabilities to provide alternate route messaging on specifically placed portable changeable message units and/or fixed Variable Message Systems (VMS). The intent of this service is to provide alternate route messaging to motorists before entering the project limits from all directions and giving them appropriate time to adjust their routes. Alternative routes shall be predefined and approved by KYTC. Additional PCMS units may be required for alternate route messaging and will be paid separately from the PQWAS pay item. KYTC's Traffic Management Center will provide detour messages via fixed VMS units during the term of the project.

B. Portable Radar Sensor Capabilities and Performance Requirements

The PQWAS shall include portable radar sensors (PRD) to monitor and detect queue events.

1. The Radar Sensor shall be FHWA accepted to meet NCHRP 350 test requirements
2. The Radar Sensor shall be locatable at all times via an internal Global Positioning System (GPS) and shall be capable of Cellular & Satellite Communications
3. The Radar Sensor shall have a dry-cell battery capable of powering the system for (10) consecutive days or longer
4. The Radar sensor shall be K-Band technology and have a line of sight up to 200 linear feet without obstruction
5. The Radar sensor shall have the ability to be charged in the field through adaptable solar recharging technology in the case the sensor is utilized for more than 10 consecutive days

C. PCMS Capabilities and Performance Requirements

The PQWAS shall include portable changeable message signs (PCMS) designated to relay automated messaging of queue events, alternate route messages, and caution for the work area defined by the project limits. PCMS placements shall meet the requirements set forth by the Cabinet in each direction of the National Highway System (NHS) – see **attachment-A** for specified PCMS & Sensor quantities below.

1. The PCMS unit shall be a Full Matrix 24 rows x 50 columns and shall be capable of 1 line, 2 line or 3 line messages
2. The PCMS unit shall be legible from a distance over twelve hundred feet (1200')
3. The height and size of characters shall be 18" to 58"
4. The PCMS shall be capable of storing up to 199 pre-programmed messages and up to 199 user-defined messages
5. The PCMS shall have a weather tight control cabinet with back lit LCD handheld controller.
6. The PCMS shall utilize a hydraulic lift to raise the unit to display height
7. The PCMS unit shall include solar recharging ports to allow for recharging of the portable radar sensors when they are not deployed.
8. The PCMS shall be NTCIP compliant and shall have an active Modem with active cellular service to be included within the price of the PQWAS System.

9. The user shall have the ability to communicate and override the PCMS remotely in the event of an emergency, Amber Alert, etc.
10. The PCMS unit shall have a docking station to include safety rails that allow a commercial safety strap to tie down the portable radar sensors while in transport. The docking station shall hold-up to (4) sensors safely and securely at all times.

3.0 Construction Requirements

All communication costs include cellular telephone services, FCC licensing, wireless data networks, satellite and internet subscription charges, and battery charging and maintenance. Additional to these requirements, the Contractor shall assume all responsibility for any and all damaged equipment due to crashes, vandalism, and adverse weather that may occur during the contract period.

The PQWAS shall operate continuously (24 hours / 7 Days) when deployed on the project. The system is in a constant "data collection" mode when deployed. The Contractor shall provide technical support for the PQWAS for all periods of operation.

In the event communication is lost with any component of the PQWAS, provide a means and staff to manually program a PCMS message. If communication is lost for more the 10 consecutive minutes, the system shall revert to a fail-safe ROADWORK/# MILES/AHEAD message displayed on the PCMS units until communication is restored.

System Operator, local control function and remote management operation must be password protected.

The PQWAS shall be capable of acquiring traffic information and selecting messages automatically without operator intervention after system utilization. The lag time between changes in threshold ranges and the posting of the appropriate PCMS message(s) shall be no greater than (60) seconds. The system operation and accuracy must not be appreciably degraded by inclement weather or degraded visibility conditions including precipitation, fog, darkness, excessive dust, and road debris.

The system shall be capable of storing ad-hoc messages created by the System Coordinator and logging this action when overriding any default or automatic advisory message.

The PQWAS communication system shall incorporate an error detection/correction mechanism to insure the integrity of all traffic conditions data and motorists information messages. Any required configuration of the PQWAS communication system shall be performed automatically during system initialization.

The system's acceptance is based on the successful performance demonstration of PQWAS for a (5) day continuous period in accordance to this specification and as set forth in the plans. Ensure compliance to all FCC and Department specifications.

4.0 Equipment Maintenance.

Maintain system components in good working condition at all times. Repair or replace damaged or malfunctioning components, at no cost to the Department, as soon as possible and within (12) hours of notification by the Engineer. Periodically clean PCMS units if necessary.

5.0 Method of Measurement.

Portable Queue Warning Alert System includes portable radar sensors, PCMS units, cellular/SAT communications, all supporting field equipment, website, and unlimited data reports will be measured by Type-1 or Type-2 queue warning plan for the PQWAS installed, maintained and removed. See plan Types 1 & 2 for specific number of radar sensors and PCMS units required for this project (see attachment-A). Specific Plan Type will be identified within proposal and/or project plans.

6.0 Basis of Payment.

Portable Queue Warning Alert System includes portable radar sensors, PCMS units, Cell/SAT communications, all supporting field equipment, website, and unlimited data reports for the term of the project will be paid for at the contract unit price per PQWAS system as defined as a Type-1 or Type-2 Queue Warning plan (see attachment-A for specified PCMS & sensor quantities). Price and payment shall include furnishing of all labor, equipment, and materials for the installation, maintenance, and relocation of sensors and supporting field equipment.

PCMS Units are included

Payment will be made under:

Pay Item

Control System for Incident Management

Pay Unit Symbol

Lump Sum

GENERAL SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
LAUREL	11-9.10	R2H

NOTES:

- ① APPROXIMATELY 166.5 ACRES
- ② INCLUDES 5,682 CU. YDS. FOR SURFACE DITCHES AND 8,000 CU. YDS. FOR UNDERCUTTING PURPOSES.
- ③ FOR CONTROLLING DUST CAUSED BY MAINTAINING TRAFFIC ONLY (1000 MGAL/MILE)
- ④ FOR USE AS DIRECTED BY THE ENGINEER.
- ⑤ CLEARING AND GRUBBING INCLUDES ALL AREAS WITHIN THE DISTURB LIMITS AND 10' BEYOND THE DISTURB AREAS AND OTHER AREAS WITHIN THE PROJECT RIGHT-OF-WAY, UNLESS DIRECTED BY THE ENGINEER.
- ⑥ PLAN QUANTITY OF TEMPORARY CONCRETE BARRIER WALL REMOVED SHALL REMAIN THE PROPERTY OF THE DEPARTMENT OF HIGHWAYS AND WILL BE REMOVED AND STORED AT THE LOADOMETER ADJACENT TO THE PROJECT STATION AS DIRECTED BY THE ENGINEER.
- ⑦ FOR UNDERCUTTING PURPOSES.
- ⑧ CONCRETE-CLASS B FOR RIGHT OF WAY FENCE INTERMEDIATE AND PULL POSTS.
- ⑨ INCLUDES 24,000 SQ. YD. FOR UNDERCUTTING PURPOSES.
- ⑩ PORTABLE CHANGEABLE MESSAGE SIGNS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.
- ⑪ 194 TONS CARRIED FORWARD FROM PERFORMED PIPE SUMMARY SHEET.
- ⑫ SEE SHEET R63 FOR DETAILS.

PROJECT EARTHWORK TOTALS

EMBANKMENT	120,778 CU. YDS.
TOTAL EMBANKMENT	120,778 CU. YDS.
COMMON SURF. DITCH	185,458 CU. YDS. + 5,682 CU. YDS.
TOTAL EXCAVATION	191,140 CU. YDS.

****SHRINK AND SWELL FACTORS ARE THE RESPONSIBILITY OF THE CONTRACTOR.**

WIDENING FOR GUARDRAIL AND END TREATMENTS ARE SHOWN ON THE CROSS-SECTIONS AND IS THEREFORE INCLUDED IN 'ROADWAY EXCAVATION'.

GENERAL SUMMARY

ITEM	DESCRIPTION	UNIT	L-75	RAMP C	RAMP D	M.O.T.						PROJECT TOTAL
78	CRUSHED AGGREGATE SIZE NO. 2 ⑦ ⑪	TON	12,994									12,994
1015	INSPECT & CERTIFY EDGE DRAIN SYSTEM	LS	1									1
1891	ISLAND HEADER CURB TYPE 2	LF	200									200
1982	DELINEATOR FOR GUARDRAIL MONODIRECTIONAL WHITE	EACH	197		7							204
1983	DELINEATOR FOR GUARDRAIL MONODIRECTIONAL YELLOW	EACH	16									16
1984	DELINEATOR FOR BARRIER - WHITE	EACH				1,240						1,240
1985	DELINEATOR FOR BARRIER - YELLOW	EACH	625			1,860						2,485
1986	DELINEATOR FOR BARRIER WALL-B/Y	EACH	193									193
2002	REMOVE TEMP CONC BARRIER WALL ⑥	LF	1,366									1,366
2003	RELOCATE TEMP CONC BARRIER	LF				46,000						46,000
2014	BARRICADE TYPE III	EACH				6						6
2159	TEMP DITCH	LF	19,168									19,168
2160	CLEAN TEMP DITCH	LF	9,584									9,584
2200	ROADWAY EXCAVATION ②	CU YD	194,191	46	4,903							199,140
2242	WATER ③	MGAL	7,072	336	281							7,689
2268	REMOVE & REPLACE FENCE	LF	46,907									46,907
2351	GUARDRAIL-STEEL W BEAM-S FACE	LF	17,825		650							18,475
2363	GUARDRAIL CONNECTOR TO BRIDGE END TY A	EACH	5									5
2367	GUARDRAIL END TREATMENT TYPE 1	EACH	24		1							25
2369	GUARDRAIL END TREATMENT TYPE 2A	EACH	25		1							26
2373	GUARDRAIL END TREATMENT TYPE 3	EACH	2									2
2381	REMOVE GUARDRAIL	LF	20,719.5		726							21,445.5
2383	REMOVE & RESET GUARDRAIL	LF	550									550
2387	GUARDRAIL CONNECTOR TO BRIDGE END TY A-1	EACH	6									6
2483	CHANNEL LINING CLASS II	TON	1,861									1,861
2484	CHANNEL LINING CLASS III	TON	1,873		378							2,251
2545	CLEARING & GRUBBING ①⑤	LS	1									1
2555	CONCRETE-CLASS B ⑧	CUYD	63									63
2562	TEMPORARY SIGNS	SOFT				1,000						1,000
2568	MOBILIZATION	LS	1									1
2569	DEMOBILIZATION	LS	1									1
2585	EDGE KEY	LF	120	36	24							180
2600	FABRIC GEOTEXTILE TY IV FOR PIPE ⑨	SO YD	30,973									30,973
2650	MAINTAIN & CONTROL TRAFFIC	LS				1						1
2671	PORTABLE CHANGEABLE MESSAGE SIGN ⑩	EACH				4						4
2696	SHOULDER RUMBLE STRIPS	LF	106,360	2,200	1,900							110,460
2701	TEMP SILT FENCE	LF	19,168									19,168
2703	SILT TRAP TYPE A	EACH	167									167
2704	SILT TRAP TYPE B	EACH	167		1							167
2705	SILT TRAP TYPE C	EACH	167									167
2706	CLEAN SILT TRAP TYPE A	EACH	167									167
2707	CLEAN SILT TRAP TYPE B	EACH	167									167
2708	CLEAN SILT TRAP TYPE C	EACH	167									167
2726	STAKING	LS	1									1
2775	ARROW PANEL	EACH				4						4
2898	RELOCATE CRASH CUSHION	EACH				5						5
2929	CRASH CUSHION TYPE IX	EACH	2									2
3147	CONC MEDIAN BARRIER TYPE 12C1 - MOD	LF	655									655
3171	CONCRETE BARRIER WALL TYPE 9T	LF	400			51,200						51,600
4903	REFERENCE MARKER ④ ⑫	EACH	32									32
4904	BARRIER MOUNTING BRACKET ④ ⑫	EACH	32									32
5950	EROSION CONTROL BLANKET	SO YD	21,420	135	996							22,551
5952	TEMPORARY MULCH	SO YD	539,959									539,959
5953	TEMP SEEDING AND PROTECTION	SO YD	402,954									402,954
5963	INITIAL FERTILIZER	TON	25									25

FILE NAME: J:\H502\PROJECT.MILESTONES\CONTRACT_PLANS_AND_PROPOSAL\CONTRACT_PLAN_SET\ROADWAY\R0020HSU.MU.DGN

DATE PLOTTED: February 6, 2019

USFz: mwir t zberger

E-SHEET NAME: R0020HSU

MicroStation v8.11.9.357

GENERAL SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
LAUREL	11-9.10	R2H

REVISED 3-19-2019

NOTES:

- ① APPROXIMATELY 166.5 ACRES
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- ⑧ CONCRETE-CLASS B FOR RIGHT OF WAY FENCE INTERMEDIATE AND PULL POSTS.
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GENERAL SUMMARY

ITEM	DESCRIPTION	UNIT	L-75	RAMP C	RAMP D	M.O.T.						PROJECT TOTAL
78	CRUSHED AGGREGATE SIZE NO. 2 (7) (11)	TON	12,994									12,994
1015	INSPECT & CERTIFY EDGE DRAIN SYSTEM	LS	1									1
1891	ISLAND HEADER CURB TYPE 2	LF	200									200
1982	DELINEATOR FOR GUARDRAIL MONODIRECTIONAL WHITE	EACH	197		7							204
1983	DELINEATOR FOR GUARDRAIL MONODIRECTIONAL YELLOW	EACH	16									16
1984	DELINEATOR FOR BARRIER - WHITE	EACH				1,240						1,240
1985	DELINEATOR FOR BARRIER - YELLOW	EACH	625			1,860						2,485
1986	DELINEATOR FOR BARRIER WALL-B/Y	EACH	193									193
2002	REMOVE TEMP CONC BARRIER WALL (6)	LF	1,366									1,366
2003	RELOCATE TEMP CONC BARRIER	LF				46,000						46,000
2014	BARRICADE TYPE III	EACH				6						6
2159	TEMP DITCH	LF	19,168									19,168
2160	CLEAN TEMP DITCH	LF	9,584									9,584
2200	ROADWAY EXCAVATION (2)	CU YD	194,191	46	4,903							199,140
2242	WATER (3)	MGAL	7,072	336	281							7,689
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2351	GUARDRAIL-STEEL W BEAM-S FACE	LF	17,825		650							18,475
2363	GUARDRAIL CONNECTOR TO BRIDGE END TY A	EACH	5									5
2367	GUARDRAIL END TREATMENT TYPE 1	EACH	24		1							25
2369	GUARDRAIL END TREATMENT TYPE 2A	EACH	25		1							26
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2387	GUARDRAIL CONNECTOR TO BRIDGE END TY A-1	EACH	6									6
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2484	CHANNEL LINING CLASS III	TON	1,873		378							2,251
2545	CLEARING & GRUBBING (1) (5)	LS	1									1
2555	CONCRETE-CLASS B (8)	CUYD	63									63
2562	TEMPORARY SIGNS	SOFT				1,000						1,000
2568	MOBILIZATION	LS	1									1
2569	DEMOBILIZATION	LS	1									1
2585	EDGE KEY	LF	120	36	24							180
2600	FABRIC GEOTEXTILE TY IV FOR PIPE (9)	SO YD	30,973									30,973
2650	MAINTAIN & CONTROL TRAFFIC	LS				1						1
2671	PORTABLE CHANGEABLE MESSAGE SIGN (10)	EACH				4						4
2696	SHOULDER RUMBLE STRIPS	LF	106,360	2,200	1,900							110,460
2701	TEMP SILT FENCE	LF	19,168									19,168
2703	SILT TRAP TYPE A	EACH	167									167
2704	SILT TRAP TYPE B	EACH	167		1							167
2705	SILT TRAP TYPE C	EACH	167									167
2706	CLEAN SILT TRAP TYPE A	EACH	167									167
2707	CLEAN SILT TRAP TYPE B	EACH	167									167
2708	CLEAN SILT TRAP TYPE C	EACH	167									167
2726	STAKING	LS	1									1
2775	ARROW PANEL	EACH				4						4
2898	RELOCATE CRASH CUSHION	EACH				5						5
2929	CRASH CUSHION TYPE IX	EACH	2									2
3147	CONC MEDIAN BARRIER TYPE 12C1 - MOD	LF	655									655
3171	CONCRETE BARRIER WALL TYPE 9T	LF	400			51,200						51,600
4903	REFERENCE MARKER (4) (2)	EACH	32									32
4904	BARRIER MOUNTING BRACKET (4) (2)	EACH	32									32
5950	EROSION CONTROL BLANKET	SO YD	21,420	135	996							22,551
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5963	INITIAL FERTILIZER	TON	25									25

GENERAL SUMMARY

ITEM	DESCRIPTION	UNIT	L-75	RAMP C	RAMP D	M.O.T.														
5964	20-10-10 FERTILIZER	TON	41.7																	41.7
5985	SEEDING AND PROTECTION	SO. YD	805,908																	805,908
5992	AGRICULTURAL LIMESTONE	TON	499.5																	499.5
6401	FLEXIBLE DELINEATOR POST-M/W	EACH		35	30															65
6403	FLEXIBLE DELINEATOR POST-B/W	EACH	153																	153
6404	FLEXIBLE DELINEATOR POST-M/Y	EACH		28	25	24														77
6407	SBM ALUMINUM SHEET SIGNS 0.125 IN	SQ. FT	128.5																	128.5
6410	STEEL POST TYPE 1	LF	180																	180
6513	PAVE STRIPING - TEMP PAINT - 12IN	LF	7,166	1,337	940															9,443
6542	PAVE STRIPING-THERMO-6 IN W	LF	79,628	2,166	1,857															83,651
6543	PAVE STRIPING-THERMO-6 IN Y	LF	53,175	980	1,096															55,251
6546	PAVE STRIPING-THERMO-12 IN W	LF	3,342	557	394															4,293
6549	PAVE STRIPING TEMP REM TAPE - BLACK	LF				20,100														20,100
6550	PAVE STRIPING TEMP REM TAPE - WHITE	LF				22,300														22,300
6551	PAVE STRIPING TEMP REM TAPE - YELLOW	LF				18,200														18,200
6569	PAVE MARKING-THERMO CROSS-HATCH	SOFT	15,311																	15,311
6574	PAVE MARKING-THERMO CURV ARROW	EACH		15																15
6578	PAVE MARKING-THERMO MERGE ARROW	EACH	10																	10
6580	PAVEMENT MARKER TYPE IV - MW	EACH	264																	264
6600	REMOVE PAVEMENT MARKER TYPE V	EACH	694	75	44															784
8100	CONCRETE - CLASS A ②③	CU YD	16.9																	16.9
8150	STEEL REINFORCEMENT ②④	LBS	922																	922
8903	CRASH CUSHION TYPE VI-BT TL3	EACH				12														12
30012	MILE MARKER ①⑦	EACH	11																	11
10020NS	FUEL ADJUSTMENT	DOLL	464,833																	464,833
10030NS	ASPHALT ADJUSTMENT	DOLL	815,101																	815,101
20191ED	OBJECT MARKER TYPE 3	EACH	24		1															25
20550ND	SAWCUT PAVEMENT ⑤	LF	44,641																	44,641
20912ND	BARRIER WALL POST ①	EACH	30																	30
21373ND	REMOVE SIGN ⑥	EACH	7																	7
24255EC	REMOVE CABLE GUARDRAIL BARRIER SYSTEM	LF	15,125																	15,125
24489EC	INLAID PAVEMENT MARKER	EACH	1,689	100	86															1,875
24631EC	BARCODE SIGN INVENTORY	EACH	52																	52
24779EC	INTELLIGENT COMPACTION FOR SOIL	CY	120,778																	120,778
24780EC	INTELLIGENT COMPACTION FOR AGGREGATE	TON	107,724	1,242	6,266															115,232
24781EC	INTELLIGENT COMPACTION FOR ASPHALT	TON	219,894	1,944	3,337															225,175
24873EC	CONTROL SYSTEM FOR INCIDENT MANAGEMENT	LS				1														1
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	SF	12,221,802	141,300	179,694															12,542,796
21430ES508	CONC MEDIAN BARRIER TYPE 12C-50	LF	15,855																	15,855
6511	PAVE STRIPING - TEMP PAINT - 6IN	LF				540,000														540,000
6556	PAVE STRIPING - DUR TY 1-6 IN W	LF				3,600														3,600
6557	PAVE STRIPING - DUR TY 1-6 IN Y	LF				2,400														2,400

NOTES:

- ① FOR USE AS DIRECTED BY THE ENGINEER.
- ② TO BE USED IN CONCRETE BARRIER WALL BETWEEN EXISTING KY 552 BRIDGE PIERS. SEE SHEET R81 FOR DETAIL.
- ③ 5.9 CUBIC YARDS CARRIED FORWARD FROM PIPE DRAINAGE SUMMARY SHEET.
- ④ 522 POUNDS CARRIED FORWARD FROM PIPE DRAINAGE SUMMARY SHEET.
- ⑤ SAWCUT PAVEMENT SHALL BE MINIMUM 6" DEPTH ALONG INSIDE SHOULDER FOR LENGTH OF PROJECT.
- ⑥ SIX (6) SIGNS SHALL BE REMOVED AT EXISTING SOUTHBOUND LANE DROP AND ONE (1) EXIT #29 SIGN.
- ⑦ SEE SHEET R60 FOR LOCATIONS.

REVISED 3-18-2019

GENERAL SUMMARY

NOTES:

- ① FOR USE AS DIRECTED BY THE ENGINEER.
- ② TO BE USED IN CONCRETE BARRIER WALL BETWEEN EXISTING KY 552 BRIDGE PIERS. SEE SHEET R81 FOR DETAIL.
- ③ 5.9 CUBIC YARDS CARRIED FORWARD FROM PIPE DRAINAGE SUMMARY SHEET.
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- ⑥ SIX (6) SIGNS SHALL BE REMOVED AT EXISTING SOUTHBOUND LANE DROP AND ONE (1) EXIT #29 SIGN.
- ⑦ SEE SHEET R60 FOR LOCATIONS.

ITEM	DESCRIPTION	UNIT	L-TS	RAMP C	RAMP D	M.O.T.															
5964	20-10-10 FERTILIZER	TON	41.7																		41.7
5985	SEEDING AND PROTECTION	SO. YD	805,908																		805,908
5992	AGRICULTURAL LIMESTONE	TON	499.5																		499.5
6401	FLEXIBLE DELINEATOR POST-M/W	EACH		35	30																65
6403	FLEXIBLE DELINEATOR POST-B/W	EACH	153																		153
6404	FLEXIBLE DELINEATOR POST-M/Y	EACH		28	25	24															77
6407	SBM ALUMINUM SHEET SIGNS 0.125 IN	SQ. FT	128.5																		128.5
6410	STEEL POST TYPE 1	LF	180																		180
6513	PAVE STRIPING - TEMP PAINT - 12IN	LF	7,166	1,337	940																9,443
6542	PAVE STRIPING-THERMO-6 IN W	LF	79,628	2,166	1,857																83,651
6543	PAVE STRIPING-THERMO-6 IN Y	LF	53,175	980	1,096																55,251
6546	PAVE STRIPING-THERMO-12 IN W	LF	3,342	557	394																4,293
6549	PAVE STRIPING TEMP REM TAPE - BLACK	LF				20,100															20,100
6550	PAVE STRIPING TEMP REM TAPE - WHITE	LF				22,300															22,300
6551	PAVE STRIPING TEMP REM TAPE - YELLOW	LF				18,200															18,200
6569	PAVE MARKING-THERMO CROSS-HATCH	SOFT	15,311																		15,311
6574	PAVE MARKING-THERMO CURV ARROW	EACH		15																	15
6578	PAVE MARKING-THERMO MERGE ARROW	EACH	10																		10
6580	PAVEMENT MARKER TYPE IV - MW	EACH	264																		264
6600	REMOVE PAVEMENT MARKER TYPE V	EACH	694	75	44																784
8100	CONCRETE - CLASS A ② ③	CU YD	16.9																		16.9
8150	STEEL REINFORCEMENT ② ④	LBS	922																		922
8903	CRASH CUSHION TYPE VI-BT TL3	EACH									12										12
30012	MILE MARKER ① ⑦	EACH	11																		11
10020NS	FUEL ADJUSTMENT	DOLL	464,833																		464,833
10030NS	ASPHALT ADJUSTMENT	DOLL	815,101																		815,101
20191ED	OBJECT MARKER TYPE 3	EACH	24		1																25
20550ND	SAWCUT PAVEMENT ⑤	LF	44,641																		44,641
20912ND	BARRIER WALL POST ①	EACH	30																		30
21373ND	REMOVE SIGN ⑥	EACH	7																		7
24255EC	REMOVE CABLE GUARDRAIL BARRIER SYSTEM	LF	15,125																		15,125
24489EC	INLAID PAVEMENT MARKER	EACH	1,689	100	86																1,875
24631EC	BARCODE SIGN INVENTORY	EACH	52																		52
24779EC	INTELLIGENT COMPACTION FOR SOIL	CY	120,778																		120,778
24780EC	INTELLIGENT COMPACTION FOR AGGREGATE	TON	107,724	1,242	6,266																115,232
24781EC	INTELLIGENT COMPACTION FOR ASPHALT	TON	219,894	1,944	3,337																225,175
24873EC	CONTROL SYSTEM FOR INCIDENT MANAGEMENT	LS									1										1
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	SF	12,221,802	141,300	179,694																12,542,796
243055008	CONC MEDIUM BARRIER TYPE 12S-50	LF	15,855																		15,855
6511	PAVE STRIPING - TEMP PAINT - 6IN	LF				540,000															540,000
6556	PAVE STRIPING - DUR TY 1-6 IN W	LF				3,600															3,600
6557	PAVE STRIPING - DUR TY 1-6 IN Y	LF				2,400															2,400

MAINTENANCE OF TRAFFIC I-75 TRAFFIC CONTROL NOTES

MAINTENANCE OF TRAFFIC NOTES

1. The Contractor shall maintain a four-lane traveling way on I-75 with a minimum lane width of 11', except where noted. The Contractor shall notify the London/Laurel Dispatch Center and Kentucky State Police a minimum of 24 hours in advance of all mainline closures. If police assistance is deemed desirable by the Contractor, any fee required by the police shall be at the Contractor's expense.

2. The Contractor will not be allowed to drive or haul construction equipment across the median from one side of the interstate to the other side, unless appropriate Barrier Wall Gates and/or lane closures are installed. All other equipment movements from one side of the interstate to the other shall utilize the nearest interchange. Hauling equipment that uses I-75 shall be restricted to licensed vehicles only. Vehicles shall not park or stop except within work areas designated by the Engineer. Any shoulder used for the deceleration lane and acceleration lane shall be widened and paved to adequately support heavy truck traffic. All expense to construct Barrier Wall Gates including but not limited to signing, widening and surfacing the existing shoulders, delineation, additional temporary barrier wall and crash cushions, and the concrete removal of the access shall be borne by the Contractor and be incidental to the contract. Pavement to construct barrier wall gates that will be incorporated into the permanent work will be measure for payment.

The Contractor's vehicles shall always move with and not against the flow of traffic. Vehicles shall enter and leave work areas in a manner which will not be hazardous to or interfere with normal traffic. The design for access gates into and out of the median area are shown within these plans. The location and number of gates shall be approved by the Engineer.

3. On I-75, a minimum of two 11' traffic lanes in each direction shall be maintained at all times except as provided herein. If the Contractor desires to deviate from the traffic control scheme and construction schedule outlined in these plans or in the proposal, an alternate plan shall be presented in writing to the Engineer. This alternate plan can only be used after review and approval of the Division of Traffic, Design, Construction and the FHWA.

a. ROAD CLOSURE

When setting beams, removing and setting overhead sign supports, and changing from one traffic pattern to another, traffic may be halted at the nearest interchange for a period not longer than 15 minutes. Road Closures shall be allowed only during hours of "minimum traffic volumes" as described in these Traffic Control Notes. These interruptions to traffic shall not occur more often than once in a period of "minimum traffic volumes" unless normal traffic has been restored in the opinion of the Engineer. The Contractor shall submit in writing, plans for approval by the Department and FHWA for stopping traffic.

In the notes and the following sequences of construction, the phrase "hours of minimum traffic volumes" is used to specify a time frame in which a roadway can be completely closed between two (2) adjacent interchanges in order to perform a particular construction sequence. Listed below are the periods of time for each day of the week that are to be considered "hours of minimum traffic volumes". Prior to the Contractor performing any construction sequence, he/she must apply in writing to the engineer for approval of the period of time selected. The Engineer may, at his/her discretion, cancel or shorten any period of time before and during a construction sequence. If the Engineer shortens a period of time during a construction sequence, the Contractor must remove all equipment and install all necessary traffic control devices. The time that a roadway is completely closed shall not exceed 15 minutes.

Southbound	Northbound
Mon 8:00 P.M. - Tue 6:00 A.M.	Mon 8:00 P.M. - Tue 6:00 A.M.
Tue 8:00 P.M. - Wed 6:00 A.M.	Tue 8:00 P.M. - Wed 6:00 A.M.
Wed 8:00 P.M. - Thu 6:00 A.M.	Wed 8:00 P.M. - Thu 6:00 A.M.
Thu 10:00 P.M. - Fri 6:00 A.M.	Thu 9:00 P.M. - Fri 6:00 A.M.
Fri 11:00 P.M. - Sat 6:00 A.M.	Fri 10:00 P.M. - Sat 6:00 A.M.
Sat 8:00 P.M. - Sun 6:00 A.M.	Sat 11:00 P.M. - Sun 6:00 A.M.
Sun 8:00 P.M. - Mon 6:00 A.M.	Sun 11:00 P.M. - Mon 6:00 A.M.

b. LANE CLOSURE

When construction within 8 feet of the traveled way is in progress and/or when installing barrier wall adjacent to a traveled way, one lane shall be closed. Lane closures shall be allowed only during "hours of low traffic volumes" as described in these Traffic Control Notes. All sign placement shall also be done during "hours of low traffic volume". Once construction adjacent to a traveled way has begun, that construction shall be expedited until complete. Existing guardrail shall be maintained at all times while traffic is in Phase I. If construction cannot be completed in a single-approved period of "hours of low traffic volumes" the Contractor will be required to remove the lane closure and provide the proper signing and delineation for a shoulder closure. Use Standard Drawing TCS-120-Current Edition (Lane Closure Case II) for delineation of open construction areas adjacent to pavement. Drums or Barricades Type II shall be required by the Engineer regardless of closure time and a portable flashing arrow shall be required. Contrary to the Standard Specifications, Lane Closure will not be a bid item on this contract and all signs, delineators, labor, etc. for lane closures will be incidental to the bid item Maintain and Control Traffic.

Southbound	Northbound
Mon 7:00 P.M. - Tue 7:00 A.M.	Mon 7:00 P.M. - Tue 7:00 A.M.
Tue 7:00 P.M. - Wed 7:00 A.M.	Tue 7:00 P.M. - Wed 7:00 A.M.
Wed 7:00 P.M. - Thu 7:00 A.M.	Wed 7:00 P.M. - Thu 7:00 A.M.
Thu 9:00 P.M. - Fri 7:00 A.M.	Thu 9:00 P.M. - Fri 7:00 A.M.
Sun 9:00 P.M. - Mon 7:00 A.M.	Sun 9:00 P.M. - Mon 7:00 A.M.

c. SHOULDER CLOSURE

In open construction areas within 30 feet of the edge of a traveled roadway, the shoulder shall be closed unless positive separation has already been provided. Use Standard Drawing TTC-135-Current Edition (Shoulder Closure) for delineation of open construction areas adjacent to pavement. Drums or Barricades Type II may be required by the Engineer regardless of the time of shoulder closure.

d. HOLIDAYS

Listed below are dates and times for holidays when lane closures, road closures, or blasting will not be allowed:

Christmas & New Year	6:00 A.M. December 20, 2018 to 6:00 A.M. January 2, 2019
KEA (Spring Break)	To Be Determined by the Department
Bristol Race (Spring)	6:00 A.M. April 4, 2019 to 6:00 A.M. April 6, 2019
Easter	6:00 A.M. April 19, 2019 to 6:00 A.M. April 22, 2019
Memorial Day	6:00 A.M. May 24, 2019 to 6:00 A.M. May 28, 2019
July 4th	6:00 A.M. July 3, 2019 to 6:00 A.M. July 8, 2019
Bristol Race (Fall)	6:00 A.M. August 15, 2019 to 6:00 A.M. August 19, 2019
Labor Day	6:00 A.M. August 30, 2019 to 6:00 A.M. September 3, 2019
Thanksgiving	6:00 A.M. November 27, 2019 to 6:00 A.M. December 2, 2019
Christmas & New Year	6:00 A.M. December 20, 2019 to 6:00 A.M. January 2, 2020

2020	To Be Determined by the Department
KEA (Spring Break)	To Be Determined by the Department
Bristol Race (Spring)	6:00 A.M. April 2, 2020 to 6:00 A.M. April 6, 2020
Easter	6:00 A.M. April 10, 2020 to 6:00 A.M. April 13, 2020
Memorial Day	6:00 A.M. May 22, 2020 to 6:00 A.M. May 26, 2020
July 4th	6:00 A.M. July 2, 2020 to 6:00 A.M. July 6, 2020
Bristol Race (Fall)	6:00 A.M. August 13, 2020 to 6:00 A.M. August 17, 2020
Labor Day	6:00 A.M. September 3, 2020 to 6:00 A.M. September 8, 2020
Thanksgiving	6:00 A.M. November 25, 2020 to 6:00 A.M. November 30, 2020
Christmas & New Year	6:00 A.M. December 18, 2020 to 6:00 A.M. January 2, 2021

Future holiday dates when lane closures will not be allowed shall be determined by the Department if necessary, comparable to above dates. The above dates are subject to change if the Department deems necessary.

e. BLASTING OPERATIONS

During blasting operations, traffic may be halted a maximum of 15 minutes per hour to allow the execution of the "shot" and to allow for removal of rock fragments and debris. The Contractor, when using explosive charges of any kind for the purpose of excavating, removal, etc., on this project shall halt all traffic a safe distance on either side of the impending explosion. The Contractor shall immediately inspect the pavements for any debris that may be a hazard to traffic before allowing traffic to proceed on the affected section. When blasting, the Contractor shall halt traffic, blast, clean the existing pavements and return traffic to normal operation in the least amount of time possible. Listed below are the periods of time for each day of the week traffic halts for blasting will be allowed:

Southbound	Northbound
Mon 9:00 A.M. - 3:00 P.M.	Mon 9:00 A.M. - 3:00 P.M.
Tue 9:00 A.M. - 3:00 P.M.	Tue 9:00 A.M. - 3:00 P.M.
Wed 9:00 A.M. - 3:00 P.M.	Wed 9:00 A.M. - 3:00 P.M.
Thu 9:00 A.M. - 3:00 P.M.	Thu 9:00 A.M. - 3:00 P.M.
Fri 9:00 A.M. - 11:00 A.M.	Fri 9:00 A.M. - 11:00 A.M.

4. PAVEMENT EDGE DROP-OFFS

Pavement edges that traffic is not expected to cross, except accidentally, should be treated as follows:

Less than 2' - No protection required. Uneven lanes signs W8-11 should be placed in advance and throughout the drop-off area.

2' to 4' - Place plastic drums, vertical panels, or barricades every 100 feet on tangent sections for speeds of 50 miles per hour or greater. Cones may be used in place of plastic drums, panels, and barricades during daylight hours only. Spacing for tapers should be in accordance with the Manual on Uniform Traffic Control Devices.

Greater than 4' - Concrete Barrier Walls or wedge with 3:1 or flatter slope needed. If there is 8 feet or more distance between the edge of pavement and drop-off drums, panels, or barricades may be used. If concrete barriers are used, special reflective devices or steady burn lights should be used for overnight installations. For temporary conditions, drop-offs greater than 4' may be protected with plastic drums, vertical panels, or barricades for short distances during daylight hours while work is being done in the drop-off area. Payment will be allowed for the DCA materials used for wedging.

5. TRAFFIC CONTROL COORDINATOR

A Traffic Control Coordinator shall be required on this project.

6. BUFFER ZONE

Barrels and other traffic control devices will be extended 0.5 miles beyond the project limits on the Northbound and Southbound lanes to create a buffer zone before entering the project area.

7. PORTABLE QUEUE WARNING ALERT SYSTEM

Portable Queue Warning Alert System is required on this project. Contrary to the special note for "Portable Queue Warning Alert System" in the proposal, SAT communication Service will not be required. This system shall be Ver-Mac Jamlogic Smart Work Zone or one that will seamlessly operate with the system currently under operation on other I-75 widening projects in the vicinity. All costs associated with furnishing and operating this system will be paid for by bid item 24873EC Control System for Incident Management. The unit for this bid item will be Lump Sum. System to include 12 Portable Changeable Message Signs.

MAINTENANCE OF TRAFFIC I-75 TRAFFIC CONTROL NOTES

MAINTENANCE OF TRAFFIC NOTES

1. The Contractor shall maintain a four-lane traveling way on I-75 with a minimum lane width of 11', except where noted. The Contractor shall notify the London/Laurel Dispatch Center and Kentucky State Police a minimum of 24 hours in advance of all mainline closures. If police assistance is deemed desirable by the Contractor, any fee required by the police shall be at the Contractor's expense.

2. The Contractor will not be allowed to drive or haul construction equipment across the median from one side of the interstate to the other side, unless appropriate Barrier Wall Gates and/or lane closures are installed. All other equipment movements from one side of the interstate to the other shall utilize the nearest interchange. Hauling equipment that uses I-75 shall be restricted to licensed vehicles only. Vehicles shall not park or stop except within work areas designated by the Engineer. Any shoulder used for the deceleration lane and acceleration lane shall be widened and paved to adequately support heavy truck traffic. All expense to construct Barrier Wall Gates including but not limited to signing, widening and surfacing the existing shoulders, delineation, additional temporary barrier wall and crash cushions, and the concrete removal of the access shall be borne by the Contractor and be incidental to the contract. Pavement to construct barrier wall gates that will be incorporated into the permanent work will be measure for payment.

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a. ROAD CLOSURE

When setting beams, removing and setting overhead sign supports, and changing from one traffic pattern to another, traffic may be halted at the nearest interchange for a period not longer than 15 minutes. Road Closures shall be allowed only during hours of "minimum traffic volumes" as described in these Traffic Control Notes. These interruptions to traffic shall not occur more often than once in a period of "minimum traffic volumes" unless normal traffic has been restored in the opinion of the Engineer. The Contractor shall submit in writing, plans for approval by the Department and FHWA for stopping traffic.

In the notes and the following sequences of construction, the phrase "hours of minimum traffic volumes" is used to specify a time frame in which a roadway can be completely closed between two (2) adjacent interchanges in order to perform a particular construction sequence. Listed below are the periods of time for each day of the week that are to be considered "hours of minimum traffic volumes". Prior to the Contractor performing any construction sequence, he/she must apply in writing to the engineer for approval of the period of time selected. The Engineer may, at his/her discretion, cancel or shorten any period of time before and during a construction sequence. If the Engineer shortens a period of time during a construction sequence, the Contractor must remove all equipment and install all necessary traffic control devices. The time that a roadway is completely closed shall not exceed 15 minutes.

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Southbound		Northbound	
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Thu 9:00 P.M. - Fri 7:00 A.M.	Fri 7:00 A.M. - Fri 7:00 P.M.	Sun 9:00 P.M. - Mon 7:00 A.M.	Mon 7:00 A.M. - Mon 7:00 P.M.

c. SHOULDER CLOSURE

In open construction areas within 30 feet of the edge of a traveled roadway, the shoulder shall be closed unless positive separation has already been provided. Use Standard Drawing TTC-135-Current Edition (Shoulder Closure) for delineation of open construction areas adjacent to pavement. Drums or Barricades Type II may be required by the Engineer regardless of the time of shoulder closure.

d. HOLIDAYS

Listed below are dates and times for holidays when lane closures, road closures, or blasting will not be allowed:

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Memorial Day	6:00 A.M. May 24, 2019 to 6:00 A.M. May 28, 2019
July 4th	6:00 A.M. July 3, 2019 to 6:00 A.M. July 8, 2019
Bristol Race (Fall)	6:00 A.M. August 15, 2019 to 6:00 A.M. August 19, 2019
Labor Day	6:00 A.M. August 30, 2019 to 6:00 A.M. September 3, 2019
Thanksgiving	6:00 A.M. November 27, 2019 to 6:00 A.M. December 2, 2019
Christmas & New Year	6:00 A.M. December 20, 2019 to 6:00 A.M. January 2, 2020

2020	To Be Determined by the Department
KEA (Spring Break)	To Be Determined by the Department
Bristol Race (Spring)	6:00 A.M. April 2, 2020 to 6:00 A.M. April 6, 2020
Easter	6:00 A.M. April 10, 2020 to 6:00 A.M. April 13, 2020
Memorial Day	6:00 A.M. May 22, 2020 to 6:00 A.M. May 26, 2020
July 4th	6:00 A.M. July 2, 2020 to 6:00 A.M. July 6, 2020
Bristol Race (Fall)	6:00 A.M. August 13, 2020 to 6:00 A.M. August 17, 2020
Labor Day	6:00 A.M. September 3, 2020 to 6:00 A.M. September 8, 2020
Thanksgiving	6:00 A.M. November 25, 2020 to 6:00 A.M. November 30, 2020
Christmas & New Year	6:00 A.M. December 18, 2020 to 6:00 A.M. January 2, 2021

Future holiday dates when lane closures will not be allowed shall be determined by the Department if necessary, comparable to above dates. The above dates are subject to change if the Department deems necessary.

COUNTY OF	ITEM NO.	SHEET NO.
LAUREL	11-9.10	R69

REVISED 3-14-2019

e. BLASTING OPERATIONS

During blasting operations, traffic may be halted a maximum of 15 minutes per hour to allow the execution of the "shot" and to allow for removal of rock fragments and debris. The Contractor, when using explosive charges of any kind for the purpose of excavating, removal, etc., on this project shall halt all traffic a safe distance on either side of the impending explosion. The Contractor shall immediately inspect the pavements for any debris that may be a hazard to traffic before allowing traffic to proceed on the affected section. When blasting, the Contractor shall halt traffic, blast, clean the existing pavements and return traffic to normal operation in the least amount of time possible. Listed below are the periods of time for each day of the week traffic halts for blasting will be allowed:

Southbound		Northbound	
Mon 9:00 A.M. - 3:00 P.M.	3:00 P.M. - 3:00 P.M.	Mon 9:00 A.M. - 3:00 P.M.	3:00 P.M. - 3:00 P.M.
Tue 9:00 A.M. - 3:00 P.M.	3:00 P.M. - 3:00 P.M.	Tue 9:00 A.M. - 3:00 P.M.	3:00 P.M. - 3:00 P.M.
Wed 9:00 A.M. - 3:00 P.M.	3:00 P.M. - 3:00 P.M.	Wed 9:00 A.M. - 3:00 P.M.	3:00 P.M. - 3:00 P.M.
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Fri 9:00 A.M. - 11:00 A.M.	11:00 A.M. - 11:00 A.M.	Fri 9:00 A.M. - 11:00 A.M.	11:00 A.M. - 11:00 A.M.

4. PAVEMENT EDGE DROP-OFFS

Pavement edges that traffic is not expected to cross, except accidentally, should be treated as follows:

Less than 2' - No protection required. Uneven lanes signs W8-11 should be placed in advance and throughout the drop-off area.

2' to 4' - Place plastic drums, vertical panels, or barricades every 100 feet on tangent sections for speeds of 50 miles per hour or greater. Cones may be used in place of plastic drums, panels, and barricades during daylight hours only. Spacing for tapers should be in accordance with the Manual on Uniform Traffic Control Devices.

Greater than 4' - Concrete Barrier Walls or wedge with 3:1 or flatter slope needed. If there is 8 feet or more distance between the edge of pavement and drop-off drums, panels, or barricades may be used. If concrete barriers are used, special reflective devices or steady burn lights should be used for overnight installations. For temporary conditions, drop-offs greater than 4' may be protected with plastic drums, vertical panels, or barricades for short distances during daylight hours while work is being done in the drop-off area. Payment will be allowed for the DOA materials used for wedging.

5. TRAFFIC CONTROL COORDINATOR

A Traffic Control Coordinator shall be required on this project.

6. BUFFER ZONE

Barrels and other traffic control devices will be extended 0.5 miles beyond the project limits on the Northbound and Southbound lanes to create a buffer zone before entering the project area.

7. PORTABLE QUEUE WARNING ALERT SYSTEM

Portable Queue Warning Alert System is required on this project. Contrary to the special note for "Portable Queue Warning Alert System" in the proposal, SAT communication Service will not be required. This system shall be Ver-Mac Jamlogic Smart Work Zone or one that will seamlessly operate with the system currently under operation on other I-75 widening projects in the vicinity. All costs associated with furnishing and operating this system will be paid for by bid item 24873EC Control System for Incident Management. The unit for this bid item will be Lump Sum. System to include 12 Portable Changeable Message Signs.

MAINTENANCE OF TRAFFIC I-75 TRAFFIC CONTROL NOTES

8. REMOVAL OF EXISTING PAVEMENT MARKERS

The lenses of the existing pavement markers shall be removed prior to showing a conflicting marking scheme in Phase I when lane line markings are shifted. No direct payment will be allowed for this and will be considered incidental to the "MAINTAIN AND CONTROL TRAFFIC" Bid Item.

9. DOUBLE FINE NOTE:

Locations not routinely protected by a barrier wall are eligible for DOUBLE FINE signs. A highway zone which has barrier wall but in which unusual or hazardous conditions exist which expose the workers to traffic hazards shall be eligible for the placement of the DOUBLE FINE signs. However, the double fine signs shall only be placed in portion of highway work zone where workers are exposed to traffic hazards.

The Contractor shall notify the Project Engineer at least 12 hours prior to using the DOUBLE FINE signs.

The Project Engineer shall contact the "Drive Smart Coordinator" with any project with double fines.

At the beginning of highway work zone, the "FINE DOUBLED IN WORK ZONE" sign will be placed. At the end of the highway work zone, the "END DOUBLE FINE" sign will be placed. The signs shall be removed or covered when the highway work zone does not have workers for more than two (2) hour period of time.

Payment for the signs shall be a unit bid price for sign erected. The moving and covering of signs shall be incidental to "MAINTAIN AND CONTROL TRAFFIC" Bid Item.

10. SPEED LIMIT

The speed limit will be reduced to 55mph in the work zone. Reduce Speed Ahead signs (R2-5A) and 55mph signs (R2-1) shall be installed both Northbound and Southbound. Payment for these signs shall be included in the bid item signs Code 2562.

11. CONCRETE BARRIER WALL DELINEATORS

An estimated quantity of delineators for the existing and permanent concrete barrier walls (mon white and mon yellow) is included on the General Summary. Delineators are to be installed on the existing and permanent barrier walls, bridge barrier walls and temporary barrier walls, prior to shifting traffic next to them. Contrary to the Standard Drawing RBM-020, delineators for permanent barrier walls will be required every 50 feet and delineators on temporary barrier walls will be required every 20 feet.

Delineators placed on the permanent concrete barrier wall shall conform to the location of traffic in each phase. Specifically, during construction Phase III when one lane of traffic is shifted to opposite side of the barrier wall, the delineators placed on the opposing side of the roadway during Phase II will not conform to the Phase III traffic configuration. Likewise in Phase III with the delineators placed in Phase II. After Phase III construction the delineators shall conform to the permanent traffic pattern.

Delineators placed on temporary concrete barrier wall will be incidental to the temporary barrier wall bid item and will become the property of the Contractor at completion of the project.

12. CONSTRUCTION ACCESS (INSIDE TO OUTSIDE)

The proposed location of access opening and the position of the changeable message sign will be approved by the Engineer before being placed in operation.

13. EXISTING RUMBLE STRIPS

The existing rumble strips on the Northbound and Southbound outside shoulder shall be removed prior to shifting traffic in Phase I by milling of 1 1/2" deep and 4 feet wide may be field adjusted to match existing surface layer. This area shall then be overlaid with 1 1/2" CL3 ASPH SURF 0.38D PG 64-22. All exposed areas that have been milled will be replaced with Asphalt before the lane closure can be removed. Quantities for both milling and the asphalt surface have been included in the plans.

14. LIQUIDATED DAMAGES AND DISINCENTIVES

The following damages will be assessed if road closures are kept for longer than 15 minutes:

- 15 minutes to 30 minutes: \$1,000.00
- 30 minutes to 45 minutes: \$2,000.00
- 45 minutes to 60 minutes: \$4,000.00

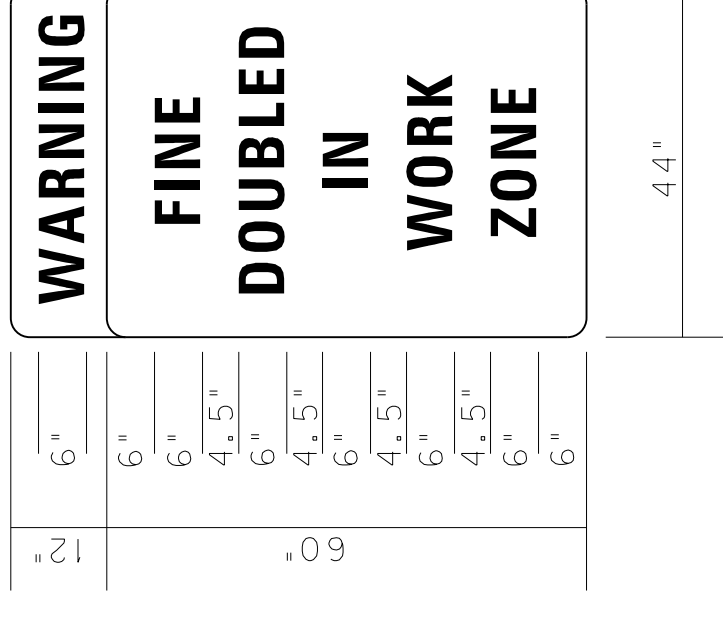
All road closures longer than 60 minutes will be assessed damages of \$4,000.00 per hour or fraction thereof. Damages for any fraction of an hour will be charged at the full \$4,000.00 hourly rate. Interruptions to traffic shall not occur more than once in a period of permitted road closures unless normal traffic flow has been restored and the Engineer approves another road closure.

The contractor shall submit in writing plans for stopping traffic which will be reviewed for approval by the Department of Highways and the FHWA.

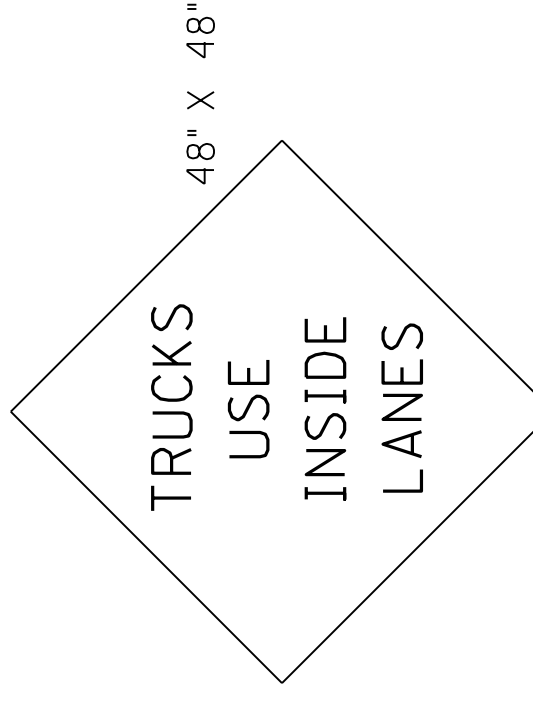
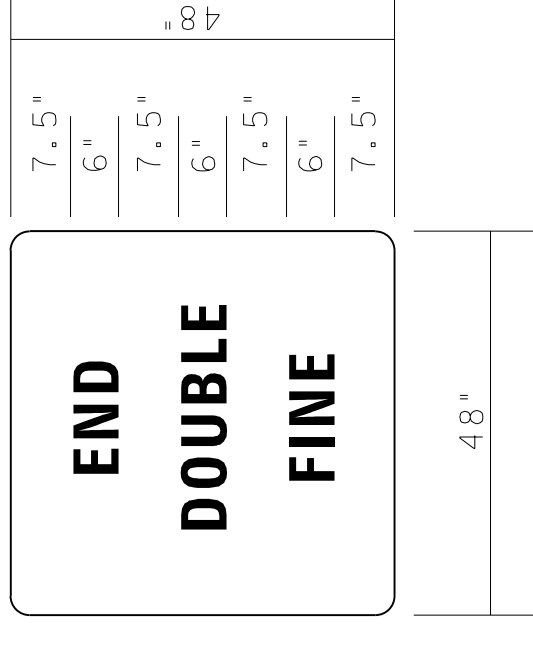
A disincentive fee of \$1,300.00 per lane closure per hour will be charged for the first hour or fraction of an hour that two lanes in each direction of I-75 are not open excepting for the permitted hours as defined as "hours of Low Traffic Volume". The \$1,300.00 per lane closure per hour disincentive also will be assessed for any single lane closure not specifically permitted in the traffic control plan. Lane closures in place for more than one hour in excess of permitted hours will be charged disincentive fees at a higher rate. The disincentive fee for the second hour of lane closure in place beyond permitted hours will be \$2,600.00 per lane closure per hour. The disincentive fee for the third hour of lane closure in place beyond permitted hours and for any additional hour or portion of an hour will be \$4,000.00 per lane closure per hour.

Lane closure liquidated damages shall be in addition to the above road closure liquidated damages for the duration of the project.

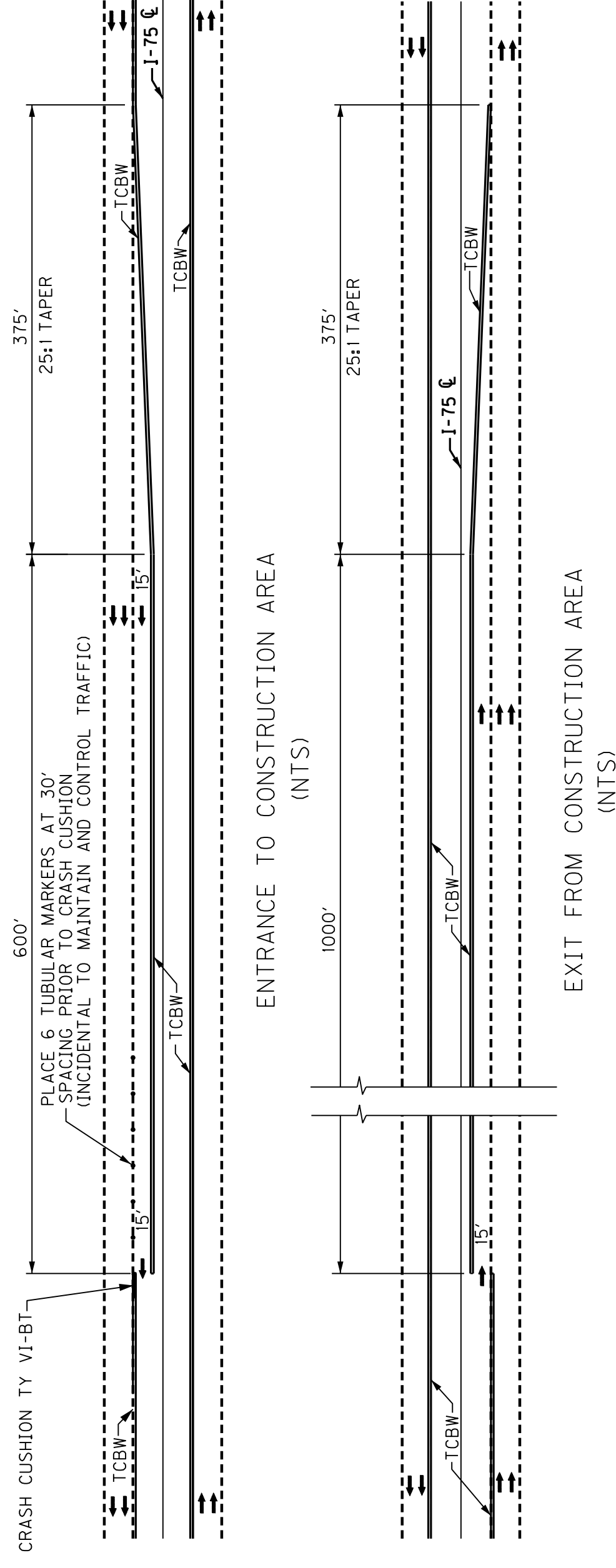
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SIGN DETAIL EXAMPLE (SEE NOTES)



CONSTRUCTION ACCESS DETAILS



MAINTENANCE OF TRAFFIC I-75 TRAFFIC CONTROL NOTES

COUNTY OF	ITEM NO.	SHEET NO.
LAUREL	11-9.10	R70

REVISED 3-14-2019

8. REMOVAL OF EXISTING PAVEMENT MARKERS

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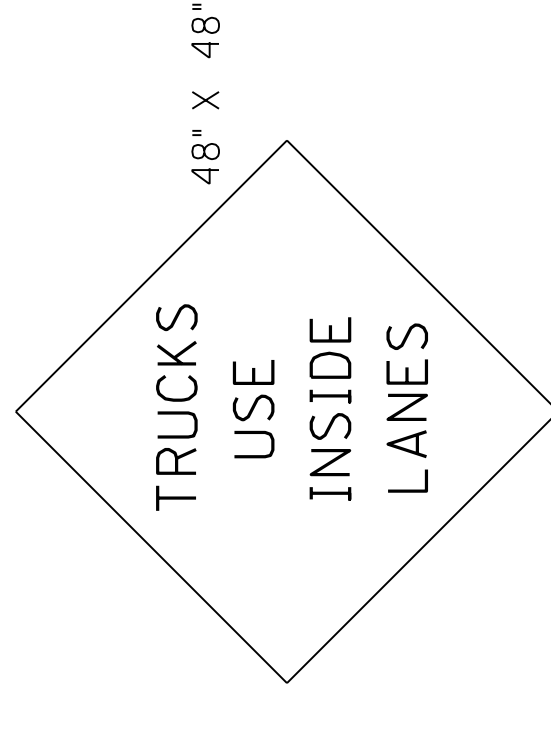
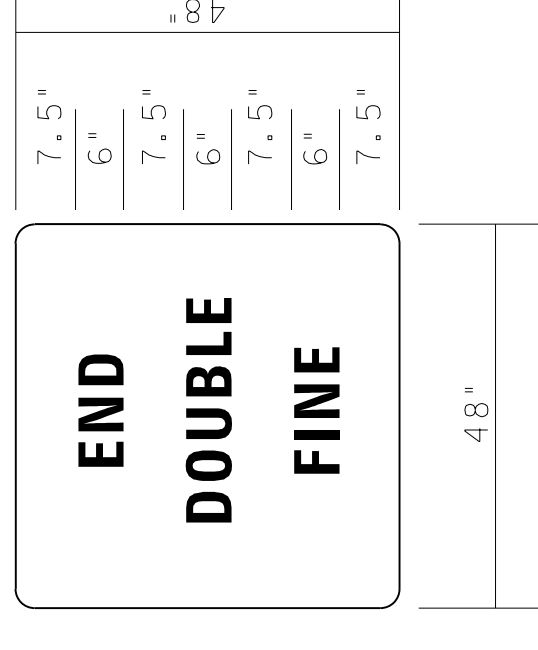
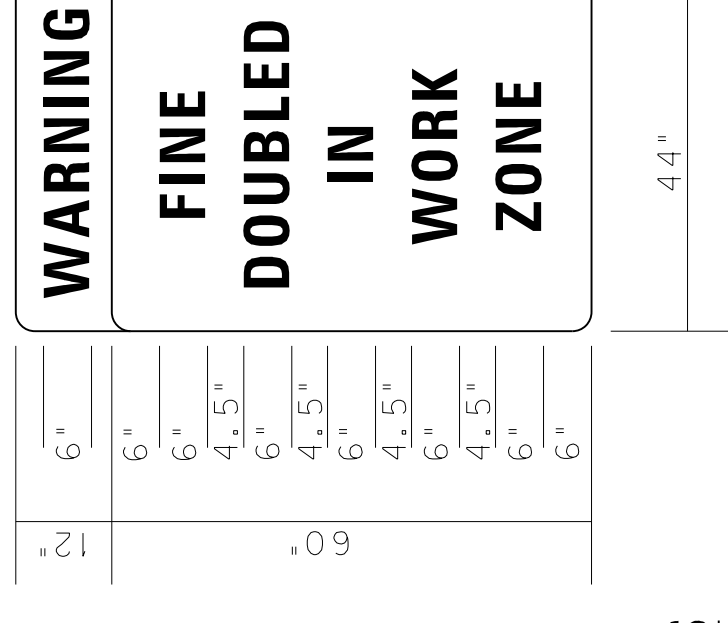
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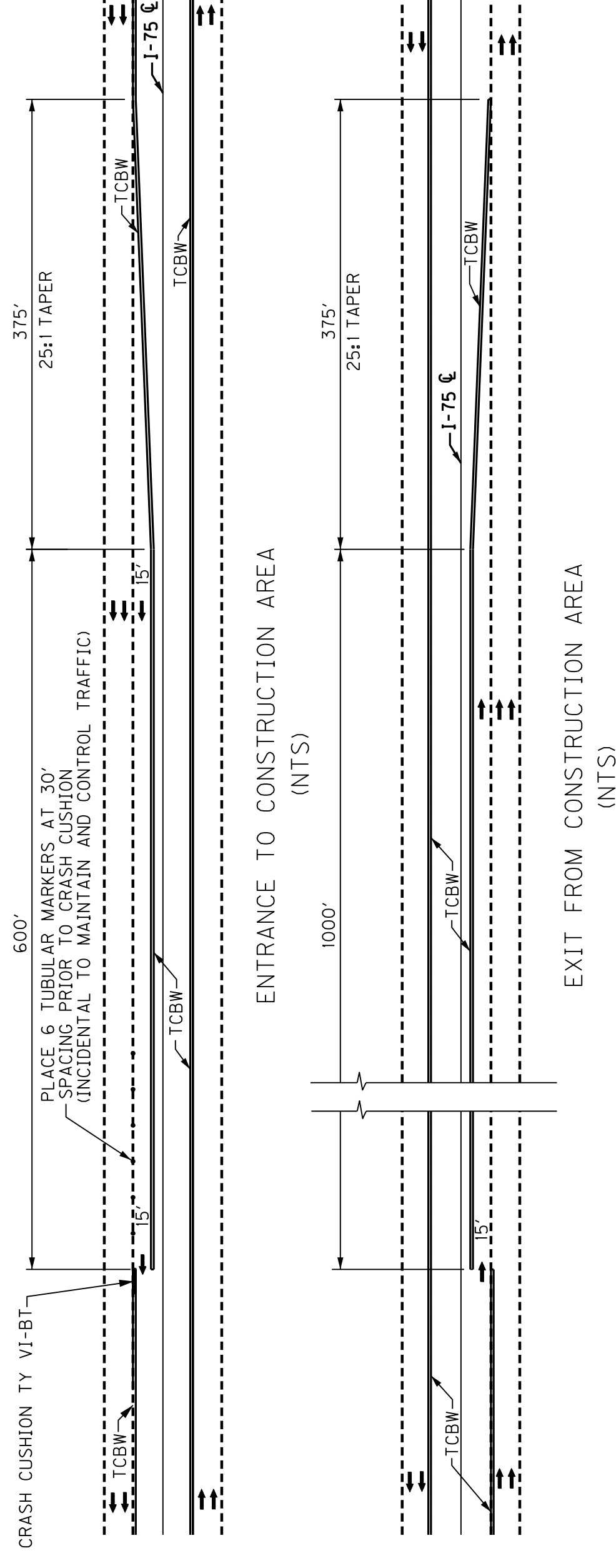
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SIGN DETAIL EXAMPLE

(SEE NOTES)



CONSTRUCTION ACCESS DETAILS



Maintenance of Traffic Notes