Work Zone Markings

The following estimated quantities have been carried to the General Summary for use at locations identified by the Engineer for work zone pavement markings per the requirements of CMS 614.04 and 614.11. Place temporary markings at the same locations as the proposed permanent markings.

After the planing is completed, use the following temporary markings:

Item 614 – Work Zone Center Line, Class I, 642 Paint ..... **4.38 Miles**
Item 614 – Work Zone Edge Line, Class I, 6", 642 Paint ..... **7.89 Miles**
Item 614 – Work Zone Stop Channelizing Line, Class I, 642 Paint ..... **721 FT**
Item 614 – Work Zone Stop Line, Class I, 642 Paint ..... **154 FT**
Item 614 – Work Zone Lane Arrow, Class I, 642 Paint ..... **17 Each**

After the surface course is placed, use the following temporary markings:

Item 614 – Work Zone Center Line, Class III, 642 Paint ..... **3.77 Miles**
Item 614 – Work Zone Edge Line, Class III, 6", 642 Paint ..... **6.98 Miles**
Item 614 – Work Zone Stop Channelizing Line, Class III, 642 Paint..... **721 FT**
Item 614 – Work Zone Stop Line, Class III, 642 Paint ..... **154 FT**
Item 614 – Work Zone Lane Arrow, Class III, 642 Paint ..... **17 Each**

Work Zone Marking Signs

After planing or paving, the Contractor may place these signs instead of placing work zone edge lines, which shall be non-performed, as directed by the Engineer. These signs shall be removed when painted edge lines are present. The following estimated quantity has been carried to the General Summary:

Item 614 – Work Zone Marking Signs ..... **12 Each**

Major Work Items

The following major work items will require traffic maintenance which shall be incorporated into the Contractor's sequence of operations.

A. Removal of existing RPMs
B. Planing of asphalt concrete
C. Completion of pavement repairs
D. Adjustment/reconstruction of existing castings
E. Placing of asphalt concrete
F. Placing proposed pavement markings and raised pavement markers

Continuous Access

The Contractor shall maintain safe and adequate driveways and walkways in order to provide continuous access for pedestrians, passenger vehicles, trucks, and safety equipment to all adjoining properties

The cost for all materials, equipment, and labor necessary to provide continuous access shall be included in the lump sum price for Item 614 – Maintaining Traffic.

Properties with multiple driveways shall only have work performed at one driveway at a time. The Contractor shall coordinate the time period of the work with the property owner to ensure that access is maintained at all times.

Covering of Ground-Mounted Signs – General

When required by other items or incidentally to Item 614 – Maintaining Traffic, cover existing ground-mounted signs with plywood or OSB blanks (1/2" minimum thickness) covering 80% of the sign area and all of the sign legend. The use of low quality materials such as duct tape and black plastic is not permitted.

Work Hour Description

Off-peak hours are defined as any period other than 6:00-9:00 am and 3:00-6:00 pm (Monday thru Friday) and legal holidays.

Maintaining Traffic and Sequence of Operations

All asphalt concrete operations shall be conducted in a manner that will assure minimum danger and inconvenience to highway users. The procedure for the removal or placement of any existing or proposed asphalt course shall be such that no greater than 1-1/2" discontinuity in the elevation of the travelled surface shall be exposed to traffic.

Traffic shall not be permitted to cross any partial-width removal or resurfacing joint during the actual removal or paving operation except as necessary. Any partial-width longitudinal joints which must be exposed to traffic shall be ramped using Item 614 – Asphalt Concrete for Maintaining Traffic at a rate not steeper than 6:1.

Temporary transverse removal or paving joints which must be exposed to traffic shall be ramped using Item 614 – Asphalt Concrete for Maintaining Traffic as a rate not to exceed 1" in 10'.

For removal of existing overlays, a transition may be planed into the existing overlay and may be substituted for the asphalt ramps previously described, provided the transition is removed in a subsequent operation within 24 hours.

Whenever traffic is subject to partial width removals or overlays prior to full width completion, the Contractor shall provide W8-11-48 "UNEVEN LANES" signs (dual sign installation). Placement shall be as directed by the Engineer and included in the lump sum payment for Item 614 – Maintaining Traffic.

Whenever any part of the traveled surface is closed, the motorists shall be warned and diverted by the Contractor through the use of a flashing arrow, in addition to those provisions set forth in the OMUTCD, the Traffic Engineering Manual and the applicable Standard Construction Drawings.

Notifications and Contacts

The contractor shall notify the following entities in writing and via telephone at least eighteen (18) days prior to the beginning of construction activities and at least seven (7) days prior to a switch in traffic patterns. Included in the notification shall be the projected dates and time frames of any road closures.

Ohio Department of Transportation
District 12
5500 Transportation Blvd.
Garfield Heights, OH 44125
(216) 581-2100

Ohio State Highway Patrol
Chardon Patrol Post
530 Center Street
Chardon, OH 44024
(440) 286-6612

Bainbridge Service Department
17800 Haskins Road
Chagrin Falls, Ohio 44023
(440) 543-9871

Bainbridge Police Department
8353 Bainbridge Road
Chagrin Falls, Ohio 44023
(440) 543-8252

Bainbridge Fire Department
17822 Chillicothe Road
Chagrin Falls, Ohio 44023
(440) 543-9873

Chagrin Falls Board Of Education
400 E Washington Street
Chagrin Falls, Ohio 44022
(440) 247-3933

Should the projected dates and time frames of the start and end of the lane closures change throughout the duration of the project, the agencies listed above must be notified immediately of such changes.

Dust Control

The contractor shall furnish and apply water for dust control as directed by the engineer. The following estimated quantities have been included for dust control purposes:

Item 616 – Water..... **15 MGal**

Sequence of Construction

Phase 1 (East Widening)

The contractor shall shift and reduce traffic to two ten-foot lanes on the west side of the road by SCD MT-102.30. During construction the contractor shall maintain one-lane two-way by flagger control using SCD MT-97.10. At the end of each working day the contractor shall reopen the closed lane in order to maintain the two ten-foot lanes.

The contractor shall complete all drainage and roadway improvements up to and including the intermediate course.

Prior to phase 2 the contractor shall mill the remaining surface and intermediate course on SR 306. The intermediate course shall be placed on the pavement (not included in areas of the Phase 2 Shoulder Widening) by MT-97.12 during off peak hours.

Phase 2 (West Widening)

The contractor shall shift and reduce traffic to two ten-foot lanes on the east side of the road by SCD MT-102.30. During construction the contractor shall maintain one-lane two-way by flagger control using SCD MT-97.10. At the end of each working day the contractor shall reopen the closed lane in order to maintain the two ten-foot lanes.

The contractor shall complete all drainage and roadway improvements up to and including the intermediate course.

Phase 3 (SR 306 Surface Course and Pavement Markings)

The contractor shall thoroughly clean the asphalt intermediate course and place the final asphalt surface course and the final pavement markings throughout the project limits. The work shall be restricted to off-peak hours. During placement of the asphalt surface course, traffic shall be maintained under flagger control in accordance with MT-97.12. During final pavement marking operations, traffic shall be maintained in accordance with MT-99.20.

Overnight Trench Closing

The base widening shall be completed to a depth of no more than 1.5 inches below the existing pavement by the end of each workday. No trench shall be left open overnight except for a short length (25 feet or less) of a work section at the end of the trench. In case work must be suspended because of inclement weather or other reasons, the trench for the uncompleted base widening shall be backfilled at the direction of the engineer.

Trench for Widening

Trench excavation for base widening shall be only on one side of the pavement at a time. The open trench shall be adequately maintained and protected with drums or barricades at all times. Placement of proposed subbase and base material shall follow as closely as possible behind excavation operations. The length of widening trench which is open at any one time shall be held to a minimum and shall at all times be subject to approval of the engineer.

MAINTENANCE OF TRAFFIC NOTES

DESIGN AGENCY

DESIGNER KHD
REVIEWER DAB 05-13-21
PROJECT ID 99694
SHEET P.13 TOTAL 78

GEA-306-4.45

Placement of Asphalt Concrete

Two-way traffic shall be maintained at all times except that one-way traffic will be permitted for minimum periods of time consistent with the requirements of the specifications for protection of completed asphalt concrete courses.

Notification of Traffic Restriction

Throughout the duration of the project, the contractor shall notify the project engineer in writing of all traffic restrictions and upcoming maintenance of traffic changes. This notification shall be received by the project engineer prior to the physical setup of any applicable signs or message boards.

Information should include, but is not limited to, all construction activities that impact or interfere with traffic and shall list the specific location, type of work, road status, date and time of restriction, duration of restriction, number of lanes maintained, number of lanes closed, minimum vertical clearance, minimum width of drivable pavement, detour routes, if applicable, and any other information requested by the project engineer.

Notification Time Table		
Item	Duration of Lane Closure	Notice Due to Permits and PIO
Lane Closures and Restrictions	>= 2 Weeks	14 Calendar Days Prior to Closure
	< 2 Weeks	14 Calendar Days Prior to Closure
Start of Construction and Traffic Pattern Changes	N/A	14 Calendar Days Prior to Closure

Any unforeseen conditions not specified in the plans requiring traffic restrictions shall also be reported to the project engineer using the notification timetable.

Item 614 – Asphalt Concrete for Maintaining Traffic, As Per Plan

This item shall be used to install and remove temporary asphalt ramps at butt joints, and drainage/utility castings, where required. Material shall be removed prior to the placement of the next course of asphalt. The following estimated quantity has been carried to the general summary to accomplish this item of work.

Item 614 – Asphalt Concrete for Maintaining Traffic, As Per Plan…..... **25 CY**

Item 630 – Signing Misc.: Additional Signs, Ground Mounted, As Directed by the Engineer

When additional signing is needed to maintain traffic, the Contractor shall furnish the sign or signs as directed by the Engineer. These signs shall be ground mounted and meet all the specifications of the plan, proposal and current year CMS.

Payment for this item shall include, but not be limited to, the cost to furnish and erect the sign, including driving posts or other approved methods of sign support, maintaining the sign and removal of the sign.

This item of work shall be used to provide signs that are beyond the requirements of the signage detailed in the Standard Construction Drawings and the OMUTCD.

The following estimated quantity has been carried to the General Summary to be used as directed by the Engineer:

Item 630 – Signing Misc.: Additional Signs, Ground Mounted, As Directed by the Engineer ..... **300 Sq Ft**

Item 614 - Law Enforcement Officer (With Patrol Car) for Assistance

Use of Law Enforcement Officers (LEOs) by contractors other than the uses specified below will not be permitted at project cost. LEOs should not be used where the OMUTCD intends that flaggers be used.

In addition to the requirements of C&MS 614 and the OMUTCD, a uniformed LEO with an official patrol car (car with top-mounted emergency flashing lights and complete markings of the appropriate law enforcement agency) shall be provided for the following traffic control tasks:

- During the entire advance preparation and closure sequence where complete blockage of traffic is required.
- During a traffic signal installation when impacting the normal function of the signal or the flow of traffic, or when traffic needs to be directed through an energized traffic signal contrary to the signal display (e.g., directing motorists through a red light).

In addition to the requirement of C&MS 614 and the OMUTCD, a uniformed LEO with an official patrol car (car with top-mounted emergency flashing lights and complete markings of the appropriate law enforcement agency) may be provided for the following traffic control tasks as approved by the Engineer:

- For lane closures: during initial set-up periods, tear down periods, substantial shifts of a closure point or when new lane closure arrangements are initiated for long-term lane closures/shifts (for the first and last day of major changes in traffic control setup).

In general, LEOs should be positioned in advance of and on the same side as the lane restriction or at the point of road closure, and to manually control traffic movements through signalized intersections in work zones.

LEOs should not forgo their traffic control responsibilities to apprehend motorists for routine traffic violations. However, if a motorist's actions are considered to be reckless, then pursuit of the motorist is appropriate.

The LEOs work at the direction of the Contractor. The Contractor is responsible for securing the services of the LEOs with the appropriate agencies and communicating the intentions of the plans with respect to duties of the LEOs. The Engineer shall have final control over the LEOs' duties and placement, and will resolve any issues that may arise between the two parties.

The LEO shall report in to the Contractor prior to the start of the shift, in order to receive instructions regarding specific work assignments during his/her shift. The LEO is expected to stay at the project site for the entire duration of his/her shift. The LEO shall report to the Contractor at the end of his/her shift. Once the LEO has completed the duties described above and still has time remaining on his/her shift, the LEO may be asked to patrol through the work zone (with flashing lights off) or be placed at a location to deter motorists from speeding. Should it be necessary to leave the project site, the LEO shall notify the Engineer. The Contractor shall provide the LEO with a two-way communication device which shall be returned to the Contractor at the end of his/her shift.

LEOs (with patrol car) required by the traffic maintenance tasks above shall be paid for on a unit price (hourly) basis under Item 614, Law Enforcement Officer (With Patrol Car) for Assistance. The following estimated quantities have been carried to the General Summary.

Item 614 – Law Enforcement Officer
with Patrol Car for Assistance…….. **104 Hours**

The hours paid shall include any minimum show-up time required by the law enforcement agency involved. Any additional costs (administrative or otherwise) incurred by the Contractor to obtain the services of an LEO are included with the bid unit price for Item 614, Law Enforcement Officer With Patrol Car for Assistance.

Item 614 – Portable Changeable Message Signs, As Per Plan

The Contractor shall furnish, install, maintain and remove, when no longer needed, a changeable message sign. The sign shall be of a type shown on a list of approved PCMS units available on the Office of Materials Management web page. The list contains Class A and B units with minimum legibility distances of 800 feet and 650 feet, respectively.

Each sign shall be trailer-mounted and equipped with a functional dimming mechanism, to dim the sign during darkness, and a tamper and vandal proof enclosure. Each sign shall be provided with appropriate training and operation instructions to enable on-site personnel to operate and troubleshoot the unit. The sign shall also be capable of being powered by an electrical service drop from a local utility company. The PCMS shall be delineated in accordance with C&MS 614.03.

Placement, operation, maintenance and all activation of the signs by the Contractor shall be as directed by the Engineer. The PCMS shall be located in a highly visible position yet protected from traffic. The Contractor shall, at the direction of the Engineer, relocate the PCMS to improve visibility or accommodate changed conditions. When not in use, the PCMS shall be turned off. Additionally, when not in use for extended periods of time, the PCMS shall be turned away from all traffic.

The Engineer shall be provided access to each sign unit and shall be provided with appropriate training and operation instructions to enable ODOT personnel to operate and troubleshoot the unit, and to revise sign messages, if necessary.

All messages to be displayed on the sign will be provided by the Engineer. A list of all required pre-programmed messages will be given to the Contractor at the project preconstruction conference. The sign shall have the capability to store up to 99 messages. Message memory or pre-programmed displays shall not be lost as a result of power failures to the on-board computer. The sign legend shall be capable of being changed in the field. Three-line presentation formats with up to six message phases shall be supported. PCMS format shall permit the complete message for each phase to be read at least twice.

The PCMS shall contain an accurate clock and programming logic which will allow the sign to be activated, deactivated or messages changed automatically at different times of the day for different days of the week.

The PCMS unit shall be maintained in good working order by the Contractor in accordance with the provisions of C&MS 614.07. The Contractor shall, prior to activating the unit, make arrangements, with an authorized service agent for the PCMS, to assure prompt service in the event of failure. Any failure shall not result in the sign being out of service for more than 12 hours, including weekends. Failure to comply may result in an order to stop work and open all traffic lanes and/or in the Department taking appropriate action to safely control traffic. The entire cost to control traffic, accrued by the Department due to the Contractor's noncompliance, will be deducted from moneys due, or to become due the Contractor on his contract.

The Contractor shall be responsible for 24-hour-per-day operation and maintenance of these signs on the project for the duration of the phases when the plan requires their use.

Payment for the above described item shall be at the contract unit price. Payment shall include all labor, materials, equipment, fuels, lubricating oils, software, hardware and incidentals to perform the above described work.

Item 614, Portable Changeable Message Sign, as per plan.… **6 Sign Month(s)**
Assuming 2 PCMS Sign(s) for 3 Month(s)

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DESIGN AGENCY

DESIGNER KHD

REVIEWER DAB 05-13-21

PROJECT ID 99694

SHEET P.14 TOTAL 78

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
Office Calcs	6	8	10	11		13	14	19	20	42		62	01/S>2/PV						
																		SANITARY SEWER	
										4			4	611	99654	4	EACH	MANHOLE ADJUSTED TO GRADE	
																		PAVEMENT	
			800										800	251	01000	800	SY	PARTIAL DEPTH PAVEMENT REPAIR (441)	
27			60									80	167	252	01500	167	FT	FULL DEPTH PAVEMENT SAWING	
			40										40	253	02000	40	CY	PAVEMENT REPAIR	
541			10										551	301	56000	551	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
			10										10	304	20001	10	CY	AGGREGATE BASE, AS PER PLAN A	10
570			10									75	655	304	20001	655	CY	AGGREGATE BASE, AS PER PLAN B	10
679								5,502				19	6,200	407	20000	6,200	GAL	NON-TRACKING TACK COAT	
195								1,680					1,875	424	14001	1,875	CY	FINE GRADED POLYMER ASPHALT CONCRETE, TYPE B, (448), AS PER PLAN, 1.0"	10
180												16	196	441	10200	196	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)	
								18				12	30	441	70500	30	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), (DRIVEWAYS)	
												5	5	609	14000	5	FT	CURB, TYPE 2-A	
124													124	617	10101	124	CY	COMPACTED AGGREGATE, AS PER PLAN	10
								4,622					4,622	875	10000	4,622	LB	LONGITUDINAL JOINT ADHESIVE	
3,781								60,493					64,274	897	01010	64,274	SY	PAVEMENT PLANING, ASPHALT CONCRETE, CLASS A, 1.0"	
																		WATER WORK	
										1			1	638	10300	1	EACH	FIRE HYDRANT EXTENDED AND ADJUSTED TO GRADE	
										5			5	638	10800	5	EACH	VALVE BOX ADJUSTED TO GRADE	
		1											1	638	10801	1	EACH	VALVE BOX ADJUSTED TO GRADE, AS PER PLAN	8
																		TRAFFIC CONTROL	
									337				337	621	00100	337	EACH	RPM	
				253									253	621	54000	253	EACH	RAISED PAVEMENT MARKER REMOVED	
									6.98				6.98	646	10010	6.98	MILE	EDGE LINE, 6"	
									3.77				3.77	646	10200	3.77	MILE	CENTER LINE	
									721				721	646	10300	721	FT	CHANNELIZING LINE, 8"	
									154				154	646	10400	154	FT	STOP LINE	
									184				184	646	10600	184	FT	TRANSVERSE/DIAGONAL LINE	
									17				17	646	20300	17	EACH	LANE ARROW	
				LS									LS	SPECIAL	69098400	LS		INVENTORY EXISTING PAVEMENT MARKINGS	11
																		TRAFFIC SIGNALS	
				8									8	632	26501	8	EACH	DETECTOR LOOP, AS PER PLAN	11
																		MAINTENANCE OF TRAFFIC	
							104						104	614	11110	104	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
						12							12	614	12460	12	EACH	WORK ZONE MARKING SIGN	
							25						25	614	13001	25	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN	14
							6						6	614	18601	6	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	14
						4.38							4.38	614	21100	4.38	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	
						3.77							3.77	614	21650	3.77	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
						7.89							7.89	614	22110	7.89	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT	
						6.98							6.98	614	22360	6.98	MILE	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT	
						721							721	614	23200	721	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 8", 642 PAINT	
						721							721	614	23680	721	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 8", 642 PAINT	
						154							154	614	26200	154	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
						154							154	614	26610	154	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	
						17							17	614	30200	17	EACH	WORK ZONE ARROW, CLASS I, 642 PAINT	
						17							17	614	30650	17	EACH	WORK ZONE ARROW, CLASS III, 642 PAINT	
						15							15	616	10000	15	MGAL	WATER	
							300						300	630	97800	300	SF	SIGNING, MISC.: ADDITIONAL SIGNS, GROUND MOUNTED, AS DIRECTED BY THE ENGINEER	14
																		INCIDENTALS	
													LS	614	11000	LS		MAINTAINING TRAFFIC	
	12												12	619	16011	12	MNTH	FIELD OFFICE, TYPE B, AS PER PLAN	6
													LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
													LS	624	10000	LS		MOBILIZATION	

GENERAL SUMMARY

GEA-306-4.45

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DESIGN AGENCY

DESIGNER KHD

REVIEWER DAB 05-13-21

PROJECT ID 99694

SHEET P.18 TOTAL 78