**Item 614 – Work Zone Pavement Markings**

The following estimated quantities have been carried to the General Summary to be used as directed 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 pavement markings.

Work zone temporary marking widths shall be as given in CMS 614 or 641.

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

Item 614 – Work Zone Lane Line, Class I, 6", 642 Paint..... **1.90 Mile**
Item 614 – Work Zone Edge Line, Class I, 6", 642 Paint..... **3.80 Mile**
Item 614 – Work Zone Channelizing Line, Class I, 12", 642 Paint..... **785. Ft**
Item 614 – Work Zone Dotted Line, Class I, 6", 642 Paint..... **1,156. Ft**

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

Item 614 – Work Zone Lane Line, Class III, 6", 642 Paint..... **1.90 Mile**
Item 614 – Work Zone Edge Line, Class III, 6", 642 Paint..... **3.80 Mile**
Item 614 – Work Zone Channelizing Line, Class III, 12", 642 Paint..... **785 Ft**
Item 614 – Work Zone Dotted Line, Class III, 6", 642 Paint..... **1,156 Ft**

**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.

The estimated quantity provides for 3 PCMS units at 2 months each.

Item 614, Portable Changeable Message Sign, as per plan ..... **9 Sign Month(s)**
Assuming 3 PCMS Sign(s) for 2 Month(s)

**Portable Changeable Message Signs for Lane Closure(s)**

The Contractor shall place a PCMS 0.5 to 2 miles in advance of any lane closures or as directed by the Engineer. The PCMS shall read: ROAD WORK AHEAD/RIGHT (LEFT) (2) LANE(S) CLOSED. If traffic becomes congested and there is stopped traffic, the message board shall be changed to: STOPPED TRAFFIC AHEAD/PREPARE TO STOP. The WTS shall be responsible for monitoring traffic during lane closures and changing the message signs as necessary. The message shall be changed when there is no lane closure (e.g. ROAD WORK AHEAD/NIGHTLY LANE CLOSURES), or per the Engineer.

**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. The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

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

**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.

**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..... **120 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.



DESIGN AGENCY
DESIGNER JDA
REVIEWER XXX MM-DD-YY
PROJECT ID 107378
SHEET 10 TOTAL 19



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| SHEET NUM. | | | | | | | | | | | | PART. | | ITEM | ITEM EXT | GRAND TOTAL | UNIT | DESCRIPTION | SEE SHEET NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-7 | 8-11 | 12 | 13 | | | | | | | | | 01/NHS/PV | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | **ROADWAY** | |
| 156 | | | | | | | | | | | | 156 | | 209 | 60201 | 156 | STA | LINEAR GRADING, AS PER PLAN | 5 |
| LS | | | | | | | | | | | | LS | | 623 | 10001 | LS | | CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN | 4 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | **EROSION CONTROL** | |
| | | | | | | | | | | | | 1,000 | | 832 | 30000 | 1,000 | EACH | EROSION CONTROL | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | **PAVEMENT** | |
| 1,114 | | | | | | | | | | | | 1,114 | | 251 | 01021 | 1,114 | SY | PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN A | 6 |
| 958 | | | | | | | | | | | | 958 | | 251 | 01021 | 958 | SY | PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN B | 6 |
| 34 | | | | | | | | | | | | 34 | | 253 | 02001 | 34 | CY | PAVEMENT REPAIR, AS PER PLAN | 6 |
| | | 47,868 | | | | | | | | | | 47,868 | | 254 | 01001 | 47,868 | SY | PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5" | 6 |
| | | 4,070 | | | | | | | | | | 4,070 | | 407 | 20000 | 4,070 | GAL | NON-TRACKING TACK COAT | |
| | | | | | | | | | | | | | | | | | | | |
| | | 1,142 | | | | | | | | | | 1,142 | | 442 | 00100 | 1,142 | CY | ANTI-SEGREGATION EQUIPMENT | |
| | | 2,002 | | | | | | | | | | 2,002 | | 442 | 10301 | 2,002 | CY | ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5" | 6 |
| 96 | | | | | | | | | | | | 96 | | 617 | 10101 | 96 | CY | COMPACTED AGGREGATE, AS PER PLAN | 6 |
| 3.8 | | | | | | | | | | | | 3.8 | | 618 | 40601 | 3.8 | MILE | RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN | 6 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | **TRAFFIC CONTROL** | |
| | | | 146 | | | | | | | | | 146 | | 621 | 00100 | 146 | EACH | RPM | |
| 110 | | | | | | | | | | | | 110 | | 621 | 54000 | 110 | EACH | RAISED PAVEMENT MARKER REMOVED | |
| | | | 3.8 | | | | | | | | | 3.8 | | 646 | 10010 | 3.8 | MILE | EDGE LINE, 6" | |
| | | | 1.9 | | | | | | | | | 1.9 | | 646 | 10110 | 1.9 | MILE | LANE LINE, 6" | |
| | | | 785 | | | | | | | | | 785 | | 646 | 10310 | 785 | FT | CHANNELIZING LINE, 12" | |
| | | | | | | | | | | | | | | | | | | | |
| | | | 156 | | | | | | | | | 156 | | 646 | 10620 | 156 | FT | CHEVRON MARKING | |
| | | | 1,156 | | | | | | | | | 1,156 | | 646 | 20504 | 1,156 | FT | DOTTED LINE, 6" | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | **MAINTENANCE OF TRAFFIC** | |
| | 120 | | | | | | | | | | | 120 | | 614 | 11110 | 120 | HOUR | LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE | |
| | 25 | | | | | | | | | | | 25 | | 614 | 13001 | 25 | CY | ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN | 9 |
| | 9 | | | | | | | | | | | 9 | | 614 | 18601 | 9 | SNMT | PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN | 10 |
| | 1.9 | | | | | | | | | | | 1.9 | | 614 | 20110 | 1.9 | MILE | WORK ZONE LANE LINE, CLASS I, 6", 642 PAINT | |
| | 1.9 | | | | | | | | | | | 1.9 | | 614 | 20560 | 1.9 | MILE | WORK ZONE LANE LINE, CLASS III, 6", 642 PAINT | |
| | | | | | | | | | | | | | | | | | | | |
| | 3.8 | | | | | | | | | | | 3.8 | | 614 | 22110 | 3.8 | MILE | WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT | |
| | 3.8 | | | | | | | | | | | 3.8 | | 614 | 22360 | 3.8 | MILE | WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT | |
| | 785 | | | | | | | | | | | 785 | | 614 | 23210 | 785 | FT | WORK ZONE CHANNELIZING LINE, CLASS I, 12", 642 PAINT | |
| | 785 | | | | | | | | | | | 785 | | 614 | 23690 | 785 | FT | WORK ZONE CHANNELIZING LINE, CLASS III, 12", 642 PAINT | |
| | 1,156 | | | | | | | | | | | 1,156 | | 614 | 24202 | 1,156 | FT | WORK ZONE DOTTED LINE, CLASS I, 6", 642 PAINT | |
| | | | | | | | | | | | | | | | | | | | |
| | 1,156 | | | | | | | | | | | 1,156 | | 614 | 24612 | 1,156 | FT | WORK ZONE DOTTED LINE, CLASS III, 6", 642 PAINT | |
| | 300 | | | | | | | | | | | 300 | | 630 | 97800 | 300 | SF | SIGNING, MISC.: ADDITIONAL SIGNS, GROUND MOUNTED, AS DIRECTED BY THE ENGINEER | 10 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | **INCIDENTALS** | |
| | | | | | | | | | | | | LS | | 614 | 11000 | LS | | MAINTAINING TRAFFIC | |
| 6 | | | | | | | | | | | | 6 | | 619 | 16011 | 6 | MNTH | FIELD OFFICE, TYPE B, AS PER PLAN | 4 |
| | | | | | | | | | | | | LS | | 624 | 10000 | LS | | MOBILIZATION | |

General Summary

DESIGN AGENCY

DESIGNER JDA

REVIEWER XXX MM-DD-YY

PROJECT ID 107378

SHEET 11 TOTAL 19

LAK-2-13.40